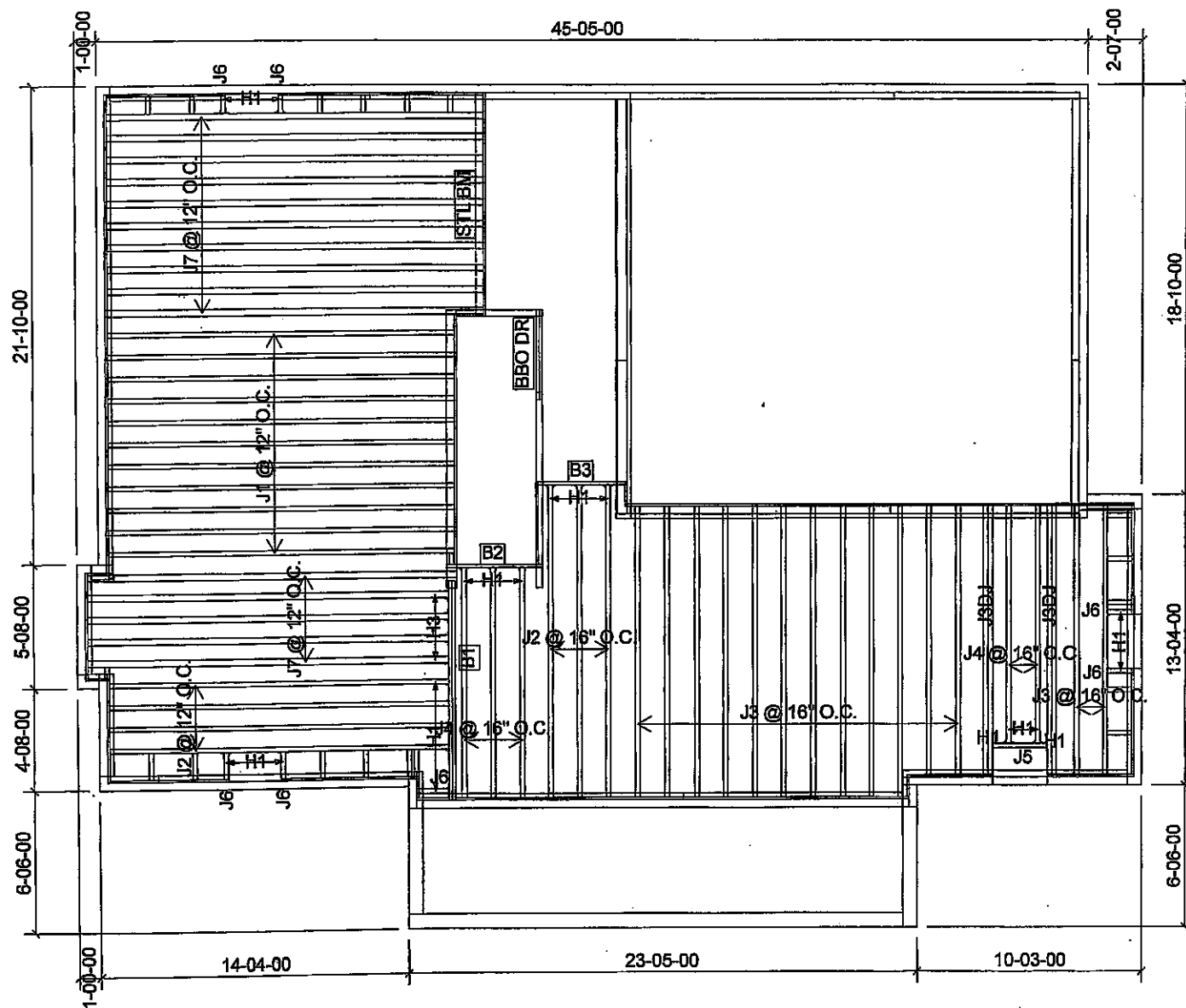




Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	11
J2	16-00-00	9 1/2" NI-40x	1	7
J3	14-00-00	9 1/2" NI-40x	1	14
J3DJ	14-00-00	9 1/2" NI-40x	2	4
J4	12-00-00	9 1/2" NI-40x	1	5
J5	4-00-00	9 1/2" NI-40x	1	1
J6	2-00-00	9 1/2" NI-40x	1	7
J7	18-00-00	9 1/2" NI-80	1	15
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B2	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
5	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
4	H3	IUS3.56/9.5

CITY OF HAMILTON
Building Division

Permit No. **21-150626**

THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE
THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH
THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW

These drawings and/or specifications have been reviewed by

OCT 04 2021
DATE

DATE: 2021-05-27

1st FLOOR



FROM PLAN DATED: 2021/3

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 4

MODEL: VALLEYCREEK 10

ELEVATION: 1

LOT:

CITY: HAMILTON

SALESMAN: RICK DICIANO

DESIGNER: AJ

REVISION:

NOTES:

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

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.I 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 RE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIELD CUT OPENINGS SEE FIGURE 7, TABLES 1 & 2. CERAMIC TILE APPLICATION AS PER O.B.C 9.30.6.

LOADING:

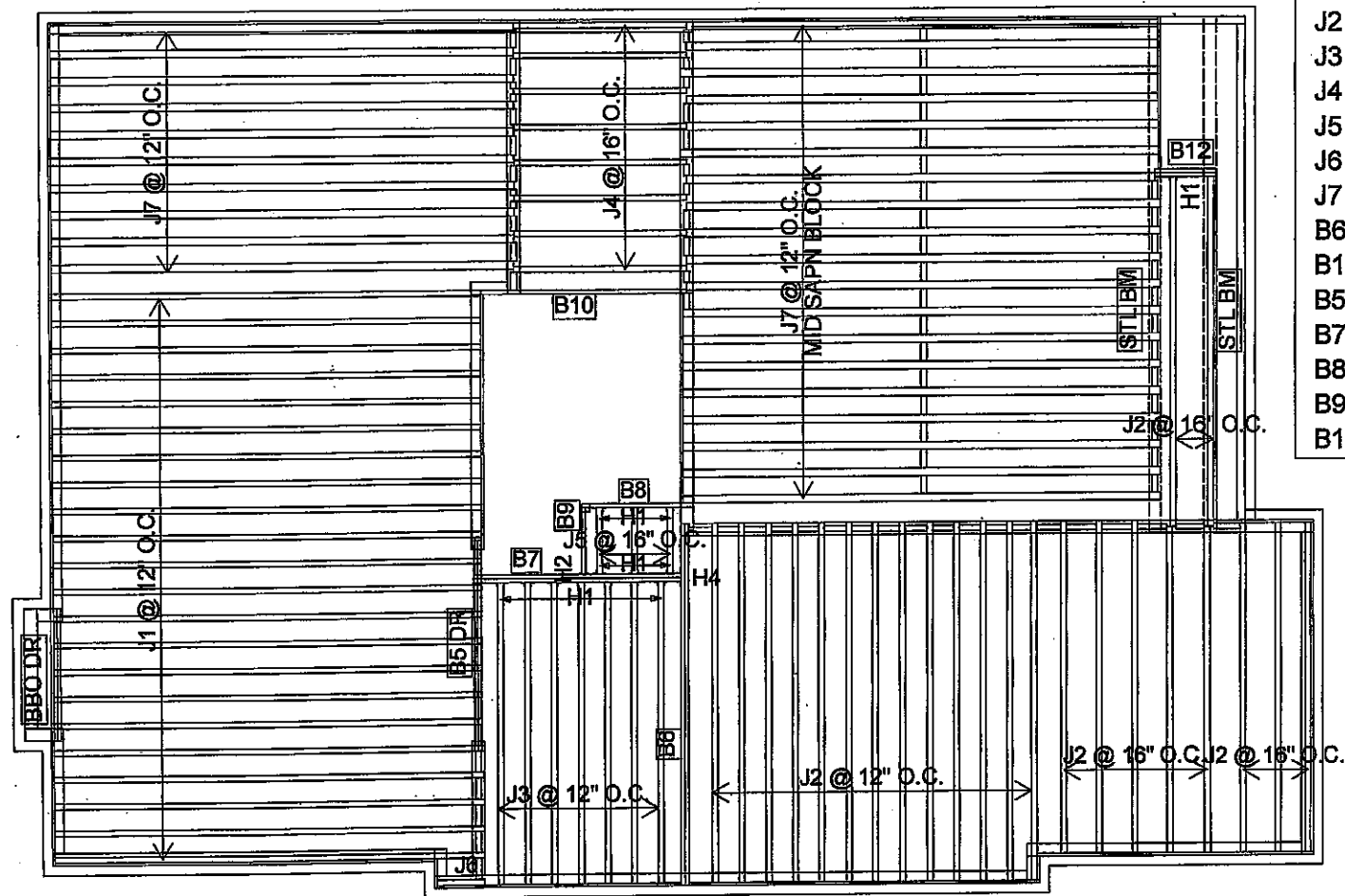
DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 15.0 lb/ft²

TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	22
J2	14-00-00	9 1/2" NI-40x	1	23
J3	12-00-00	9 1/2" NI-40x	1	7
J4	8-00-00	9 1/2" NI-40x	1	8
J5	4-00-00	9 1/2" NI-40x	1	3
J6	2-00-00	9 1/2" NI-40x	1	1
J7	18-00-00	9 1/2" NI-80	1	29
B6	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5 DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
3	H1	IUS2.56/9.5
11	H1	IUS2.56/9.5
1	H2	HUS1.81/10
1	H4	HGUS410



FROM PLAN DATED: 2021/3
BUILDER: GREENPARK HOMES
SITE: RUSSELL GARDENS PH 4
MODEL: VALLEYCREEK 10
ELEVATION: 1
LOT:
CITY: HAMILTON
SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

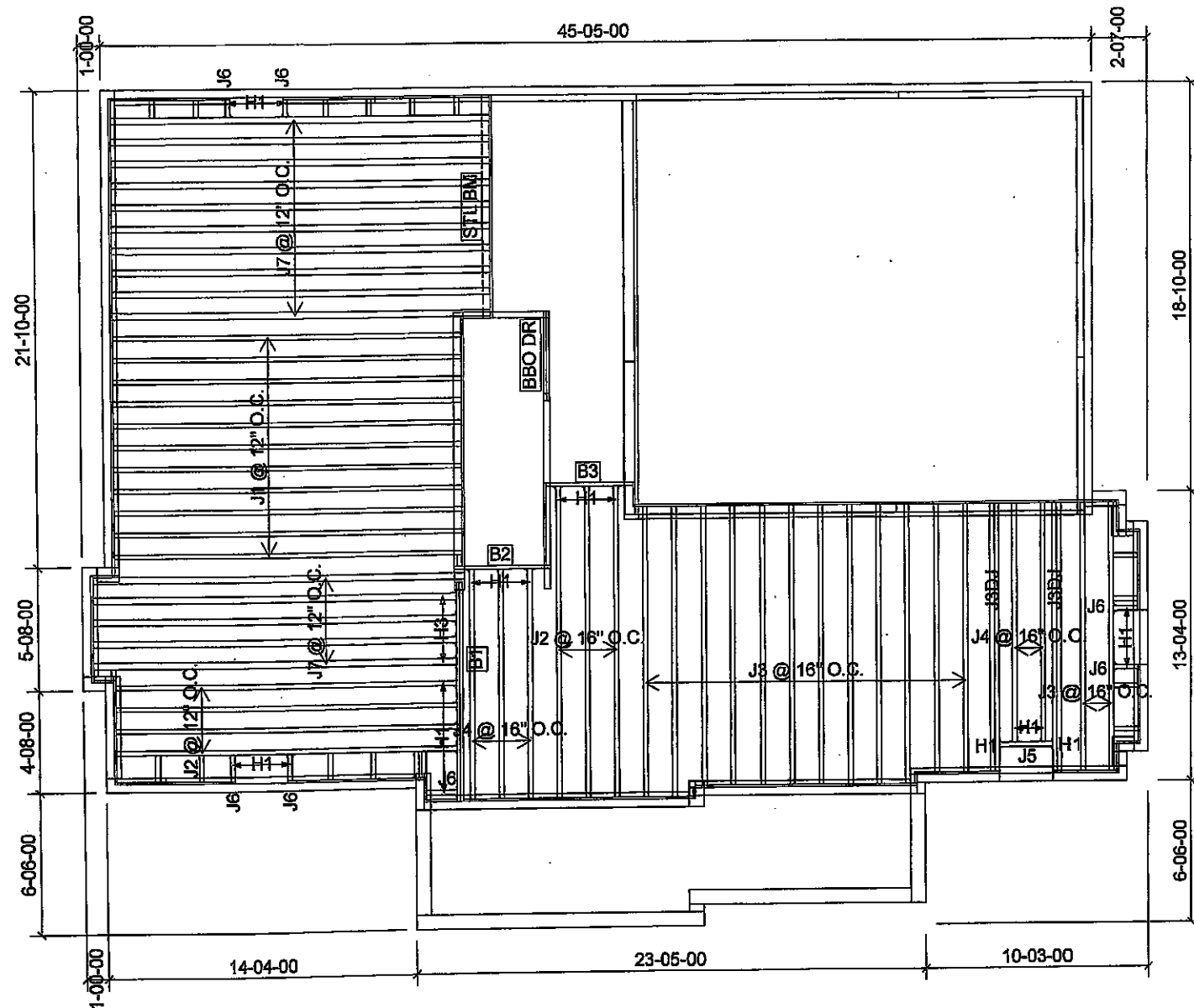
NOTES:
 REFER TO THE **NORDIC INSTALLATION**
 GUIDE FOR PROPER STORAGE AND
 INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.
 REQ'D UNDER INTERIOR UNIFORM LOAD
 BEARING WALLS. **MULTIPLE SQUASH**
BLOCKS REQ'D UNDER CONCENTRATED
 LOADS. SEE FIGURE 1. **CANTILEVERED**
JOISTS INCLUDING **CANT' OVER BRICK R**
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 T**
 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
 TILE LOAD: 20.0 lb/ft²

DATE: 2021-05-27

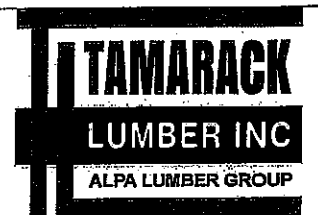
2ND FLOOR

SUBFLOOR: 5/8" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	11
J2	16-00-00	9 1/2" NI-40x	1	7
J3	14-00-00	9 1/2" NI-40x	1	14
J3DJ	14-00-00	9 1/2" NI-40x	2	4
J4	12-00-00	9 1/2" NI-40x	1	5
J5	4-00-00	9 1/2" NI-40x	1	1
J6	2-00-00	9 1/2" NI-40x	1	7
J7	18-00-00	9 1/2" NI-80	1	15
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B2	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
5	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
4	H3	IUS3.56/9.5



FROM PLAN DATED: 2021/3
BUILDER: GREENPARK HOMES
SITE: RUSSELL GARDENS PH 4
MODEL: VALLEYCREEK 10
ELEVATION: 2
LOT:
CITY: HAMILTON

SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

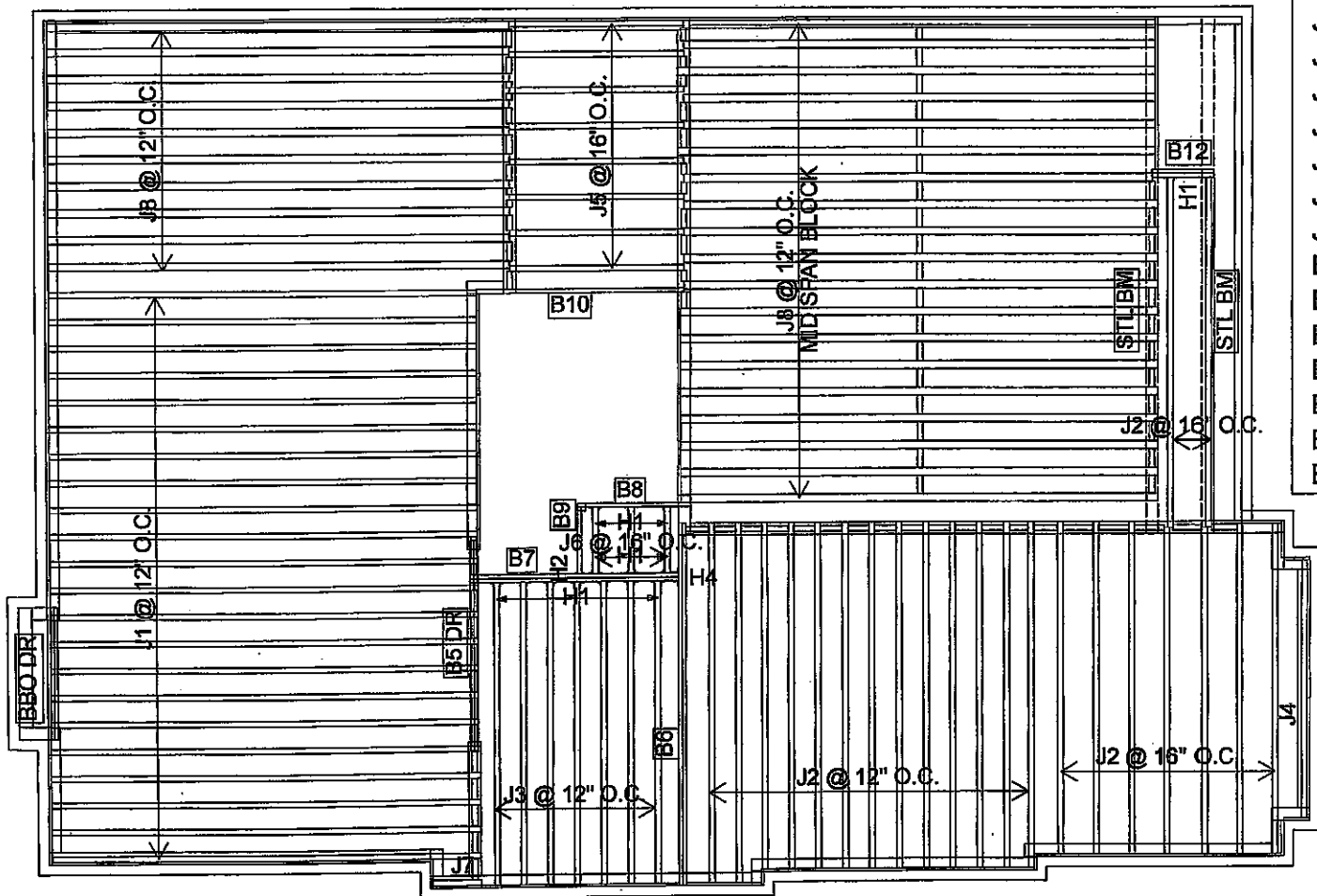
NOTES:
 REFER TO THE **NORDIC INSTALLATION**
 GUIDE FOR PROPER STORAGE AND
 INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.
 REQ'D UNDER INTERIOR UNIFORM LOAD
 BEARING WALLS. **MULTIPLE SQUASH**
BLOCKS REQ'D UNDER CONCENTRATED
 LOADS. SEE FIGURE 1. **CANTILEVERED**
JOISTS INCLUDING CANT' OVER BRICK RE
 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 T**
 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
 TILE LOAD: 20.0 lb/ft²

DATE: 2021-05-27

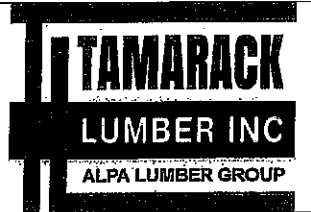
1st FLOOR

SUBFLOOR: 3/4" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	22
J2	14-00-00	9 1/2" NI-40x	1	22
J3	12-00-00	9 1/2" NI-40x	1	7
J4	10-00-00	9 1/2" NI-40x	1	1
J5	8-00-00	9 1/2" NI-40x	1	8
J6	4-00-00	9 1/2" NI-40x	1	3
J7	2-00-00	9 1/2" NI-40x	1	1
J8	18-00-00	9 1/2" NI-80	1	29
B6	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5 DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
3	H1	IUS2.56/9.5
11	H1	IUS2.56/9.5
1	H2	HUS1.81/10
1	H4	HGUS410



FROM PLAN DATED: 2021/3
BUILDER: GREENPARK HOMES
SITE: RUSSELL GARDENS PH 4
MODEL: VALLEYCREEK 10
ELEVATION: 2
LOT:
CITY: HAMILTON
SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

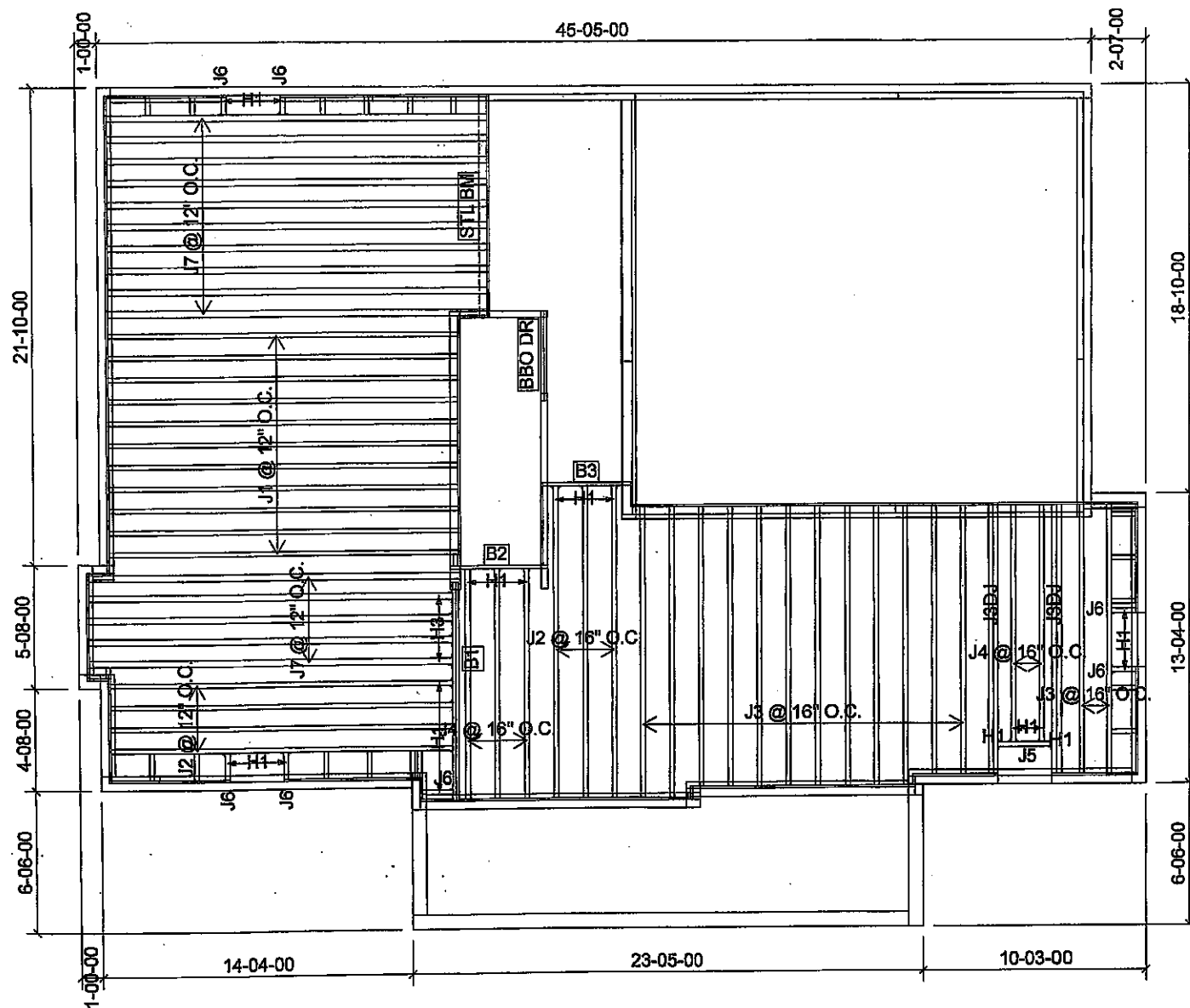
NOTES:
 REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING CANT' OVER BRICK R 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 T** 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
 TILE LOAD: 20.0 lb/ft²

DATE: 2021-05-27

2ND FLOOR

SUBFLOOR: 5/8" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	11
J2	16-00-00	9 1/2" NI-40x	1	7
J3	14-00-00	9 1/2" NI-40x	1	14
J3DJ	14-00-00	9 1/2" NI-40x	2	4
J4	12-00-00	9 1/2" NI-40x	1	5
J5	4-00-00	9 1/2" NI-40x	1	1
J6	2-00-00	9 1/2" NI-40x	1	7
J7	18-00-00	9 1/2" NI-80	1	15
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B2	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
5	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
4	H3	IUS3.56/9.5



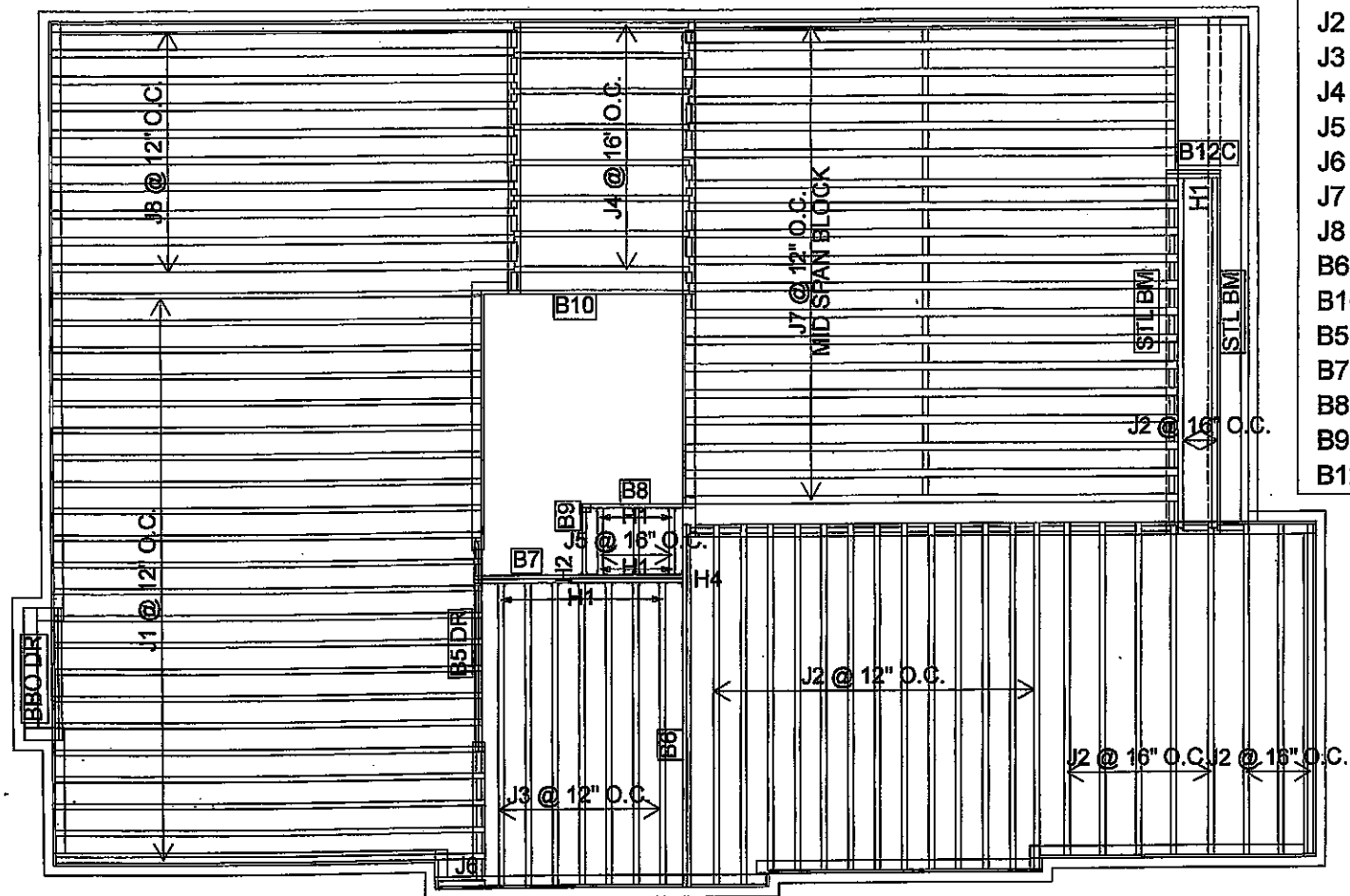
FROM PLAN DATED: 2021/3
BUILDER: GREENPARK HOMES
SITE: RUSSELL GARDENS PH 4
MODEL: VALLEYCREEK 10
ELEVATION: 3
LOT:
CITY: HAMILTON
SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

NOTES:
REFER TO THE **NORDIC INSTALLATION**
GUIDE FOR PROPER STORAGE AND
INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P
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 R
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 T**
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
TILE LOAD: 20.0 lb/ft²

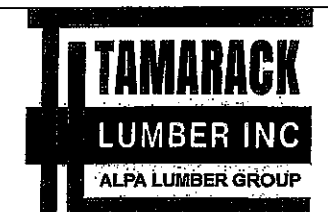
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2021-05-27
1st FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	22
J2	14-00-00	9 1/2" NI-40x	1	23
J3	12-00-00	9 1/2" NI-40x	1	7
J4	8-00-00	9 1/2" NI-40x	1	8
J5	4-00-00	9 1/2" NI-40x	1	3
J6	2-00-00	9 1/2" NI-40x	1	1
J7	20-00-00	9 1/2" NI-80	1	19
J8	18-00-00	9 1/2" NI-80	1	10
B6	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B10	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B5 DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B7	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B8	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B12C	2-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
3	H1	IUS2.56/9.5
11	H1	IUS2.56/9.5
1	H2	HUS1.81/10
1	H4	HGUS410



FROM PLAN DATED: 2021/3
 BUILDER: GREENPARK HOMES
 SITE: RUSSELL GARDENS PH 4
 MODEL: VALLEYCREEK 10
 ELEVATION: 3
 LOT:
 CITY: HAMILTON
 SALESMAN: RICK DICIANO
 DESIGNER: AJ
 REVISION:

NOTES:
 REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P. 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 RI-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 T** 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
 TILE LOAD: 20.0 lb/ft²

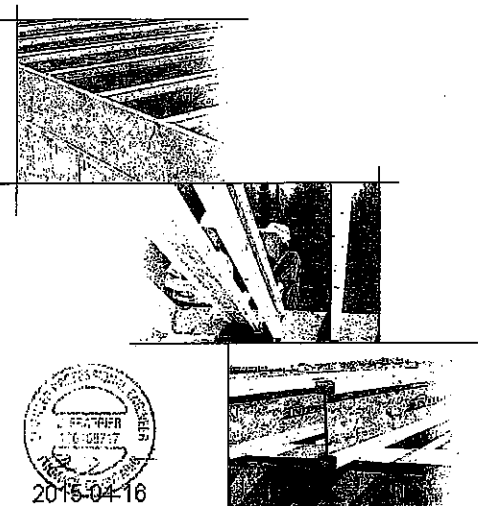
DATE: 2021-05-27

2ND FLOOR

SUBFLOOR: 5/8" GLUED AND NAILED



INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



Distributed by:



SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

WARNING

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

Avoid Accidents by Following these Important Guidelines:

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

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, stock, and handle I-joists vertically and level only.
3. Always stock and handle I-joists in the upright position only.
4. Do not store I-joists in direct contact with the ground and/or flatwise.
5. Protect I-joists from weather, and use spacers to separate bundles.
6. Bundled units should be kept intact until time of installation.
7. When handling I-joists with a crane on the job site, take a few simple precautions to prevent damage to the I-joists and injury to your work crew.
 - Pick I-joists in bundles as shipped by the supplier.
 - Orient the bundle 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 five load deflection limit of L/460. 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-nail oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGOS-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 3-1/2 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 Limit States Design per CAN/CSA C084-09 Standard, and NRC 2010.
7. SI units conversion: 1 inch = 25.4 mm, 1 foot = 0.305 m

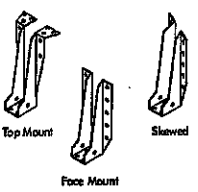
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

Joist Depth	Joist Spacing	Simple Span					Multiple Span				
		12"	16"	19.2"	24"	32"	12"	16"	19.2"	24"	32"
9-1/2"	NI-20	15'-1"	14'-2"	13'-5"	13'-5"	14'-3"	16'-3"	15'-4"	14'-10"	14'-7"	14'-7"
	NI-40x	16'-1"	15'-2"	14'-6"	14'-9"	14'-9"	17'-5"	16'-5"	15'-10"	15'-5"	15'-5"
	NI-60	16'-3"	15'-4"	14'-10"	14'-11"	14'-11"	17'-7"	16'-7"	15'-10"	15'-1"	15'-1"
	NI-70	17'-1"	16'-1"	15'-6"	15'-7"	15'-7"	18'-2"	17'-2"	16'-6"	16'-10"	16'-10"
11-7/8"	NI-20	17'-3"	16'-3"	15'-8"	15'-9"	15'-9"	18'-10"	17'-9"	16'-11"	16'-7"	16'-7"
	NI-40x	18'-1"	17'-0"	16'-5"	16'-6"	16'-6"	20'-0"	18'-9"	17'-9"	17'-9"	17'-9"
	NI-60	18'-4"	17'-2"	16'-7"	16'-9"	16'-9"	20'-3"	19'-2"	18'-0"	18'-1"	18'-1"
	NI-70	19'-4"	18'-2"	17'-6"	17'-7"	17'-7"	21'-6"	19'-11"	19'-0"	19'-1"	19'-1"
14"	NI-80	19'-9"	18'-3"	17'-6"	17'-7"	17'-7"	21'-9"	20'-2"	19'-2"	19'-4"	19'-4"
	NI-90	20'-2"	18'-7"	17'-10"	17'-11"	17'-11"	22'-3"	20'-7"	19'-6"	19'-7"	19'-7"
	NI-90x	20'-4"	18'-9"	17'-11"	18'-0"	18'-0"	22'-5"	20'-9"	19'-7"	19'-11"	19'-11"
	NI-40x	20'-1"	18'-7"	17'-10"	17'-11"	17'-11"	22'-2"	20'-6"	19'-8"	19'-4"	19'-4"
16"	NI-40	20'-5"	18'-11"	18'-1"	18'-2"	18'-2"	22'-7"	20'-11"	20'-0"	20'-1"	20'-1"
	NI-70	21'-7"	20'-0"	19'-1"	19'-2"	19'-2"	23'-10"	22'-11"	21'-11"	21'-2"	21'-2"
	NI-80	21'-11"	20'-3"	19'-4"	19'-5"	19'-5"	24'-3"	22'-5"	21'-5"	21'-6"	21'-6"
	NI-90	22'-5"	20'-8"	19'-9"	19'-10"	19'-10"	24'-9"	22'-10"	21'-10"	21'-10"	21'-10"
18"	NI-90x	22'-7"	20'-11"	19'-11"	20'-0"	20'-0"	25'-0"	23'-1"	22'-0"	22'-0"	22'-0"
	NI-70	23'-6"	21'-9"	20'-9"	20'-10"	20'-10"	24'-7"	23'-2"	21'-9"	21'-10"	21'-10"
	NI-80	23'-11"	22'-1"	21'-1"	21'-2"	21'-2"	25'-5"	24'-5"	23'-5"	23'-4"	23'-4"
	NI-90	24'-5"	22'-4"	21'-5"	21'-6"	21'-6"	26'-11"	24'-10"	23'-9"	23'-9"	23'-9"
20"	NI-90x	24'-8"	22'-7"	21'-7"	21'-10"	21'-10"	27'-3"	25'-2"	24'-0"	24'-1"	24'-1"
	NI-90x	24'-8"	22'-7"	21'-7"	21'-10"	21'-10"	27'-3"	25'-2"	24'-0"	24'-1"	24'-1"

CCMC EVALUATION REPORT 11012 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.



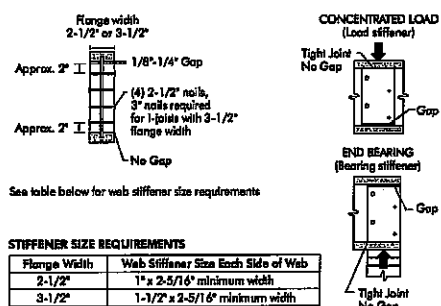
WEB STIFFENERS

RECOMMENDATIONS:

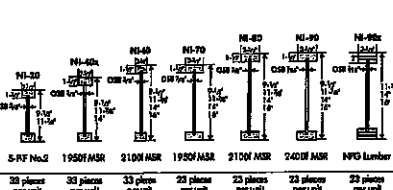
- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is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

SI units conversion: 1 inch = 25.4 mm

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



NORDIC I-JOIST SERIES



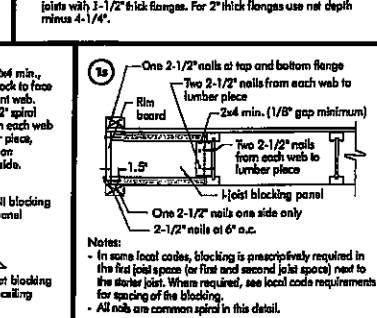
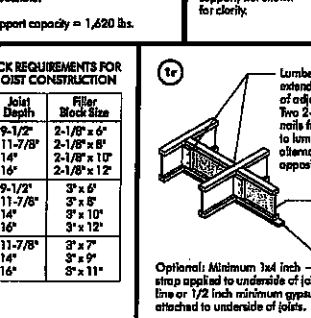
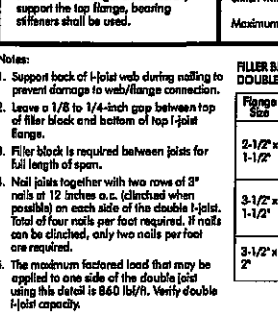
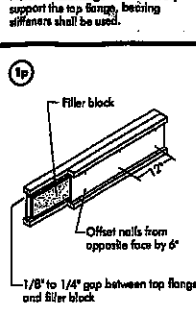
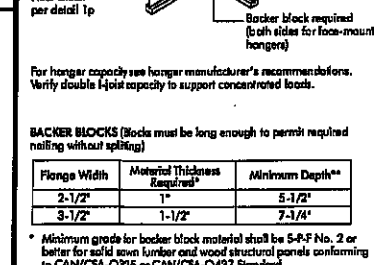
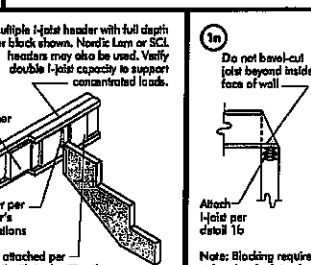
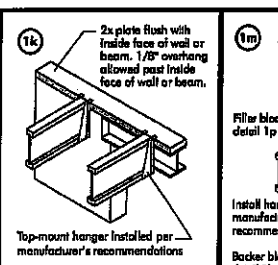
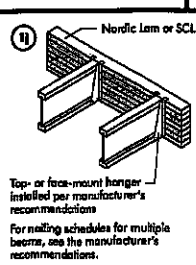
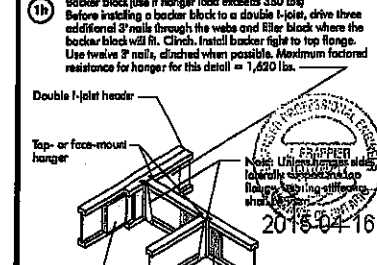
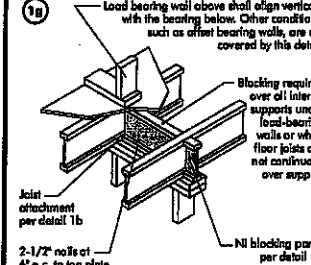
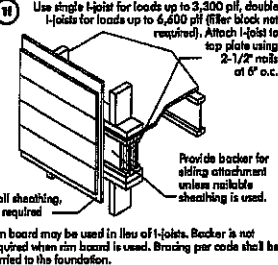
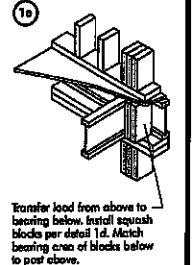
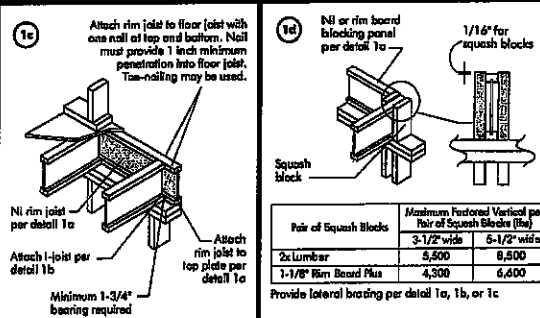
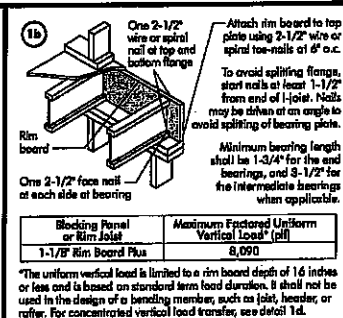
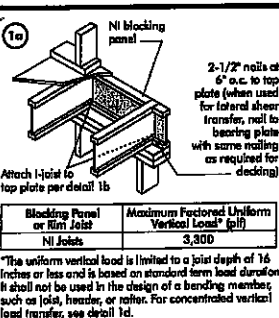
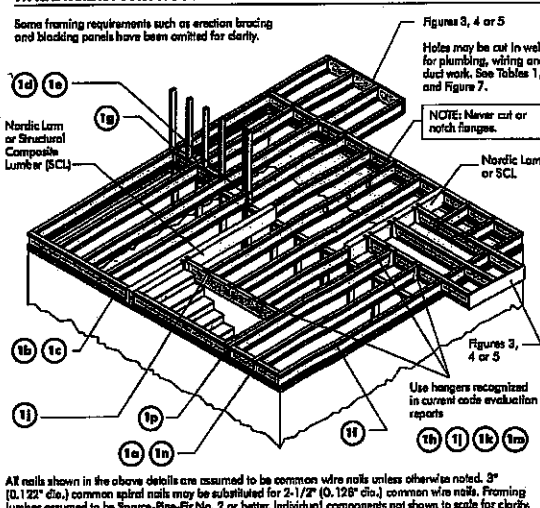
Chomies Chibougoum Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures through its manufacturing process. Every phase of the operation, from logging to the finished product, reflects our commitment to quality.

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

INSTALLING NORDIC I-JOISTS

1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, consult your supplier.
2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple spans must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist 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, outlet equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squish blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. I-joist blocking panels or other engineered wood products - such as rim board - must be cut to fit between the I-joists, and 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: Spacing 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



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

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

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

Offset nails from opposite face by 6"

Notes:
1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clashed when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clashed, only two nails per foot are required.
5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joist capacity.

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

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

NORDIC STRUCTURES

COMPANY
May 27, 2021 08:01

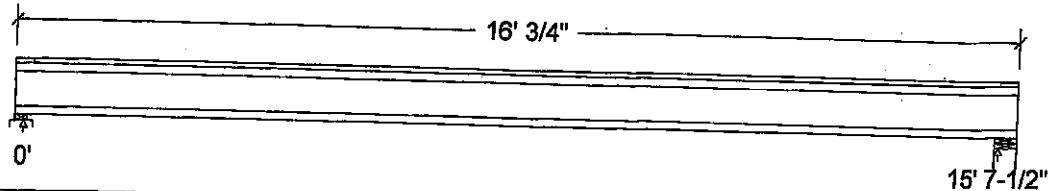
PROJECT
J1 1ST FLOOR.wwb.

Design Check Calculation Sheet Nordic Sizer – Canada 7.3.1

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

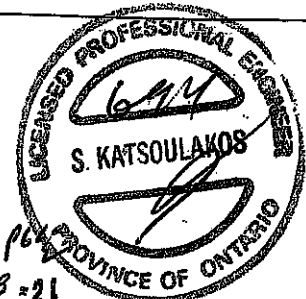
Maximum Reactions (lbs) and Support Bearing (in):



Unfactored:			
Dead	156		156
Live	312		312
Factored:			
Total	664		664
Bearing:			
Capacity			
Joist	1865		1893
Support	3971		7744
Des ratio			
Joist	0.36		0.35
Support	0.17		0.09
Load case	#2		#2
Length	2-3/8		4-3/8
Min req'd	1-1/2		1-1/2
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcp sup	769		769
Kzcp sup	1.09		-

*Minimum bearing length for joists is 1-1/2" for exterior supports
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

Nordic Joist 9-1/2" NI-40x Floor joist @ 12" o.c.
Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Lumber Wall, No.1/No.2;
Total length: 16' 3/4"; Clear span: 15' 6"; 3/4" nailed and glued OSB sheathing
This section PASSES the design code check.



ENG NO. 1641768-21
STRUCTURAL
COMPONENT ONLY

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 664$	$V_r = 1895$	lbs	$V_f/V_r = 0.35$
Moment(+)	$M_f = 2594$	$M_r = 4824$	lbs-ft	$M_f/M_r = 0.54$
Perm. Defl'n	$0.11 = < L/999$	$0.52 = L/360$	in	0.22
Live Defl'n	$0.23 = L/829$	$0.39 = L/480$	in	0.58
Total Defl'n	$0.34 = L/553$	$0.78 = L/240$	in	0.43
Bare Defl'n	$0.27 = L/682$	$0.52 = L/360$	in	0.53
Vibration	$L_{max} = 15'-7.5$	$L_v = 17'-1.8$	ft	0.91
Defl'n	$= 0.031$	$= 0.041$	in	0.74

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	4824	1.00	1.00	-	1.000	-	-	-	#2
EI	218.1 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 L=live(use,occupancy)

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:

$EI_{eff} = 265.29 \text{ lb-in}^2$ $K = 4.94e06 \text{ lbs}$ $GA = 0.62e06 \text{ lb}$

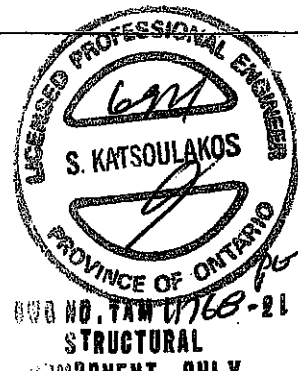
"Live" deflection is due to all non-dead loads (live, wind, snow...)

CONFORMS TO OBC 2012

Design Notes:

AMENDED 2020

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. Allowable vibration-controlled span as per the Concluding Report, Development of Design Procedures for Vibration Controlled Spans using Engineered Wood Members, CWC et al for CCMC, 1997.
7. Floor vibration design from the CCMC Concluding Report (1997) on vibration controlled spans for engineered wood products.
8. 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.



NORDIC STRUCTURES

COMPANY
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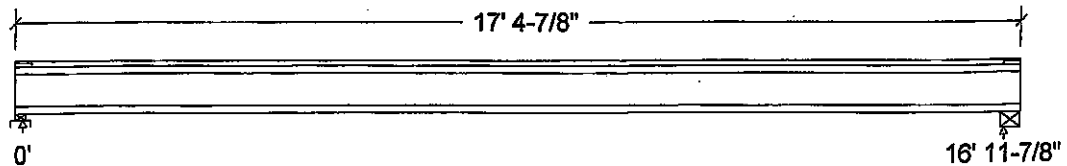
PROJECT
J6 1ST FLOOR.wwb

Design Check Calculation Sheet Nordic Sizer – Canada 7.3.1

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) and Support Bearing (in):



Unfactored:			
Dead	170		170
Live	340		340
Factored:			
Total	722		722
Bearing:			
Capacity			
Joist	1893		1893
Support	5559		-
Des ratio			
Joist	0.38		0.38
Support	0.13		-
Load case	#2		#2
Length	2-3/8		4-1/8
Min req'd	1-1/2		1-1/2
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcp sup	769		-
Kzcp sup	1.09		-

*Minimum bearing length for joists is 1-1/2" for exterior supports

Nordic 9-1/2" NI-80 Floor joist @ 12" o.c.

Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Steel Beam, W;
Total length: 17' 4-7/8"; Clear span: 16' 10-3/8"; 3/4" nailed and glued OSB sheathing
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	$V_f = 722$	$V_r = 1895$	lbs	$V_f/V_r = 0.38$
Moment(+)	$M_f = 3067$	$M_r = 8958$	lbs-ft	$M_f/M_r = 0.34$
Perm. Defl'n	$0.11 = < L/999$	$0.57 = L/360$	in	0.20
Live Defl'n	$0.23 = L/895$	$0.42 = L/480$	in	0.54
Total Defl'n	$0.34 = L/596$	$0.85 = L/240$	in	0.40
Bare Defl'n	$0.26 = L/772$	$0.57 = L/360$	in	0.47
Vibration	$L_{max} = 16'-11.9$	$L_v = 18'-4.9$	ft	0.92
Defl'n	$= 0.029$	$= 0.037$	in	0.79

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
V_r	1895	1.00	1.00	-	-	-	-	-	#2
M_r	8958	1.00	1.00	-	1.000	-	-	-	#2
EI	324.1 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 L=live(use,occupancy)

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

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

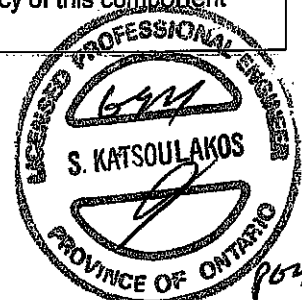
CALCULATIONS:

$EI_{eff} = 375.38 \text{ lb-in}^2$ $K = 4.94e06 \text{ lbs}$ $GA = 0.62e06 \text{ lb}$

"Live" deflection is due to all non-dead loads (live, wind, snow...) **CONFORMS TO OBC 2012**

AMENDED 2020**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 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. Allowable vibration-controlled span as per the Concluding Report, Development of Design Procedures for Vibration Controlled Spans using Engineered Wood Members, CWC et al for CCMC, 1997.
7. Floor vibration design from the CCMC Concluding Report (1997) on vibration controlled spans for engineered wood products.
8. 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.



OWS NO. TAM 11769 -21
 STRUCTURAL
 COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
May 27, 2021 08:03

PROJECT
J7 2ND FLOOR ABOVE GARAGE.wwb

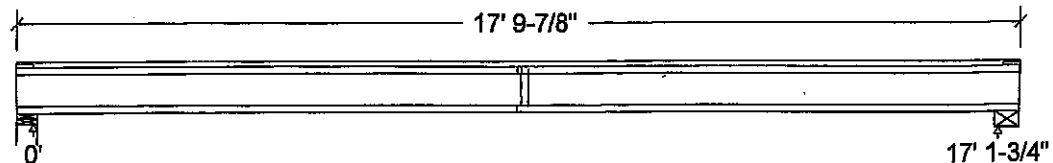
Design Check Calculation Sheet

Nordic Sizer – Canada 7.3.1

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) and Support Bearing (in):



Unfactored:			
Dead	171		171
Live	343		343
Factored:			
Total	729		729
Bearing:			
Capacity			
Joist	1893		1893
Support	10829		-
Des ratio			
Joist	0.38		0.38
Support	0.07		-
Load case	#2		#2
Length	4-3/8		5-1/4
Min req'd	1-1/2		1-1/2
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		-
Kzcp sup	-		-

*Minimum bearing length for joists is 1-1/2" for exterior supports
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

Nordic 9-1/2" NI-80 Floor joist @ 12" o.c.

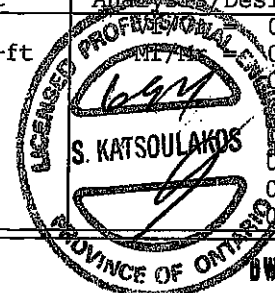
Supports: 1 - Lumber Wall, No.1/No.2; 2 - Steel Beam, W;

Total length: 17' 9-7/8"; Clear span: 17' 1/4"; 5/8" nailed and glued OSB sheathing with 1 row of blocking

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 = 729	Vr = 1895	lbs	0.38
Moment (+)	Mf = 3123	Mr = 8958	lbs-ft	0.35
Perm. Defl'n	0.12 = < L/999	0.57 = L/360	in	0.21
Live Defl'n	0.24 = L/856	0.43 = L/480	in	0.56
Total Defl'n	0.36 = L/570	0.86 = L/240	in	0.42
Bare Defl'n	0.27 = L/755	0.57 = L/360	in	0.48
Vibration	Lmax = 17'-1.7	Lv = 18'-5.4	ft	0.93
Defl'n	= 0.030	= 0.037	in	0.81



DWG NO. TAM/1770-21
STRUCTURAL
CONSTRUCTION

P6 1/2

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#2
EI	324.1 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 L=live(use, occupancy)

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:E_{ieff} = 367.27 lb-in² K = 4.94e06 lbs GA = 0.62e06 lb

"Live" deflection is due to all non-dead loads (live, wind, snow...)

CONFORMS TO OBC 2012

Design Notes:

AMENDED 2020

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. Allowable vibration-controlled span as per the Concluding Report, Development of Design Procedures for Vibration Controlled Spans using Engineered Wood Members, CWC et al for CCMC, 1997.
7. Floor vibration design from the CCMC Concluding Report (1997) on vibration controlled spans for engineered wood products.
8. 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.



OWB NO. TAM 11770-21
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
May 27, 2021 08:04

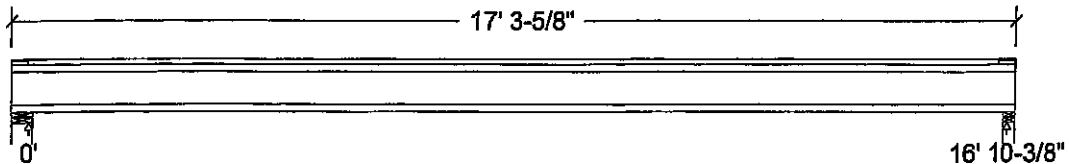
PROJECT
J7 2ND FLOOR.wwb

Design Check Calculation Sheet Nordic Sizer – Canada 7.3.1

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) and Support Bearing (in):



Unfactored:			
Dead	169		169
Live	337		337
Factored:			
Total	717		717
Bearing:			
Capacity			
Joist	1893		1893
Support	10841		5573
Des ratio			
Joist	0.38		0.38
Support	0.07		0.13
Load case	#2		#2
Length	4-3/8		2-3/8
Min req'd	1-1/2		1-1/2
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		769
Kzcp sup	-		-

*Minimum bearing length for joists is 1-1/2" for exterior supports
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

Nordic 9-1/2" NI-80 Floor joist @ 12" o.c.

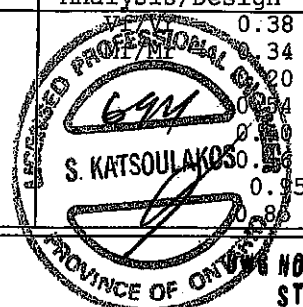
Supports: All - Lumber Wall, No.1/No.2

Total length: 17' 3-5/8"; Clear span: 16' 8-7/8"; 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 = 717	Vr = 1895	lbs	0.38
Moment (+)	Mf = 3021	Mr = 8958	lbs-ft	0.34
Perm. Defl'n	0.11 = < L/999	0.56 = L/360	in	0.20
Live Defl'n	0.23 = L/896	0.42 = L/480	in	0.54
Total Defl'n	0.34 = L/597	0.84 = L/240	in	0.50
Bare Defl'n	0.26 = L/790	0.56 = L/360	in	0.56
Vibration	Lmax = 16'-10.4	Lv = 17'-9.5	ft	0.95
Defl'n	= 0.032	= 0.038	in	0.86



NO. 7411771-21
STRUCTURAL
PROFESSIONAL ENGINEER

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#2
EI	324.1 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 L=live(use, occupancy)

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:E_{Ieff} = 367.27 lb-in² K = 4.94e06 lbs GA = 0.62e06 lb"Live" deflection is due to all non-dead loads (live, wind, snow...) **CONFORMS TO OBC 2012****Design Notes:****AMENDED 2020**

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. Allowable vibration-controlled span as per the Concluding Report, Development of Design Procedures for Vibration Controlled Spans using Engineered Wood Members, CWC et al for CCMC, 1997.
7. Floor vibration design from the CCMC Concluding Report (1997) on vibration controlled spans for engineered wood products.
8. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWG NO. TAM 1/221 -21
 STRUCTURAL
 COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
May 27, 2021 08:05

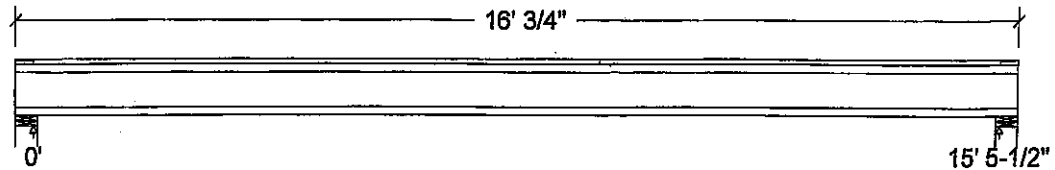
PROJECT
J1 2ND FLOOR.wwb

Design Check Calculation Sheet Nordic Sizer – Canada 7.3.1

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) and Support Bearing (in):



Unfactored:			
Dead	155		155
Live	309		309
Factored:			
Total	657		657
Bearing:			
Capacity			
Joist	1893		1893
Support	7744		7744
Des ratio			
Joist	0.35		0.35
Support	0.08		0.08
Load case	#2		#2
Length	4-3/8		4-3/8
Min req'd	1-1/2		1-1/2
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		769
Kzcp sup	-		-

*Minimum bearing length for joists is 1-1/2" for exterior supports

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

Nordic 9-1/2" NI-40x Floor joist @ 12" o.c.

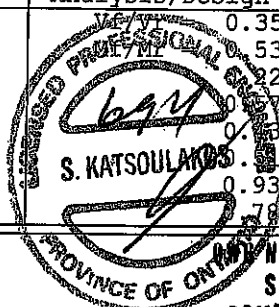
Supports: All - Lumber Wall, No.1/No.2

Total length: 16' 3/4"; Clear span: 15' 4"; 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 = 657	Vr = 1895	lbs	0.35
Moment (+)	Mf = 2539	Mr = 4824	lbs-ft	0.53
Perm. Defl'n	0.11 = < L/999	0.52 = L/360	in	0.22
Live Defl'n	0.22 = L/835	0.39 = L/480	in	0.57
Total Defl'n	0.33 = L/556	0.77 = L/240	in	0.33
Bare Defl'n	0.26 = L/705	0.52 = L/360	in	0.50
Vibration	Lmax = 15'-5.5	Lv = 16'-8.5	ft	0.93
Defl'n	= 0.033	= 0.042	in	0.78



NO. 1772-21
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	4824	1.00	1.00	-	1.000	-	-	-	#2
EI	218.1 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 L=live(use, occupancy)
 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:

E_{Ieff} = 258.29 lb-in² K = 4.94e06 lbs GA = 0.62e06 lb
 "Live" deflection is due to all non-dead loads (live, wind, snow...)

CONFORMS TO OBC 2012

Design Notes:

AMENDED 2020

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. Allowable vibration-controlled span as per the Concluding Report, Development of Design Procedures for Vibration Controlled Spans using Engineered Wood Members, CWC et al for CCMC, 1997.
7. Floor vibration design from the CCMC Concluding Report (1997) on vibration controlled spans for engineered wood products.
8. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWG NO. TAM 11772-21
 STRUCTURAL
 COMPONENT ONLY

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B1(11023) (Flush Beam)**

Dry | 1 span | No cant.

May 27, 2021 08:12:17

BC CALCO® Member Report

Build 7773

Job name:

File name: VALLEYCREEK 10 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1(11023)

City, Province, Postal Code:

Specifier:

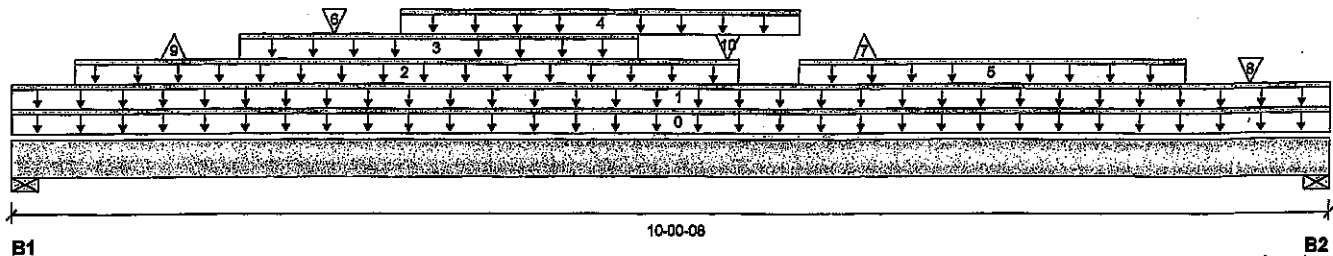
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 10-00-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	2664 / 40	1692 / 0		
B2, 4"	2829 / 9	1598 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-00-08	Top		10			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	10-00-08	Top	11	6			n/a
2	10(i230)	Unf. Lin. (lb/ft)	L	00-05-08	05-05-08	Top		81			n/a
3	10(i230)	Unf. Lin. (lb/ft)	L	01-08-06	04-08-06	Top	313	156			n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	02-11-00	05-11-00	Top	319	160			n/a
5	Smoothed Load	Unf. Lin. (lb/ft)	L	05-11-00	08-11-00	Top	339	168			n/a
6	J2(i1070)	Conc. Pt. (lbs)	L	02-05-00	02-05-00	Top	457	226			n/a
7	J6(i1071)	Conc. Pt. (lbs)	L	06-05-00	06-05-00	Top	-7				n/a
8	J6(i1022)	Conc. Pt. (lbs)	L	09-05-00	09-05-00	Top	327	163			n/a
9	10(i230)	Conc. Pt. (lbs)	L	01-02-08	01-02-06	Top	-42	-3			n/a
10	10(i230)	Conc. Pt. (lbs)	L	05-04-08	05-04-08	Top	1614	852			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	19799 ft-lbs	23219 ft-lbs	85.3%	1	05-04-08
End Shear	5978 lbs	11571 lbs	51.7%	1	01-01-00
Total Load Deflection	L/268 (0.427")	n/a	89.6%	6	05-00-07
Live Load Deflection	L/425 (0.27")	n/a	84.7%	8	05-00-07
Max Defl.	0.427"	n/a	n/a	6	05-00-07
Span / Depth	12.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	3-1/2" x 3-1/2"	6111 lbs	81.1%	40.9%	Spruce-Pine-Fir
B2	4" x 3-1/2"	6242 lbs	72.5%	36.5%	Spruce-Pine-Fir



OWG NO. TAM 4773-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

1ST FLR FRAMING\Flush Beams\B1(i1023) (Flush Beam)

Dry | 1 span | No cant.

May 27, 2021 08:12:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File name: VALLEYCREEK 10 EL. 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B1(i1023)

Specifier:

Designer:

Company:

Notes

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

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

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.

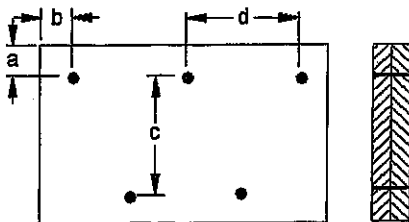
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-09-08.

CONFORMS TO CBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/2"

b minimum = 3"

d = 6"

Calculated Side Load = 823.3 lb/ft

Connectors are: 16d x 1" Nails

3 1/2" ARDOX SPIRAL



STRUCTURAL
COMPONENT ONLY

Disclosure

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

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

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B2(11020) (Flush Beam)**

Dry | 1 span | No cant.

May 27, 2021 08:12:17

BC CALC® Member Report

Build 7773

Job name:

File name: VALLEYCREEK 10 EL.1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B2(11020)

City, Province, Postal Code:

Specifier:

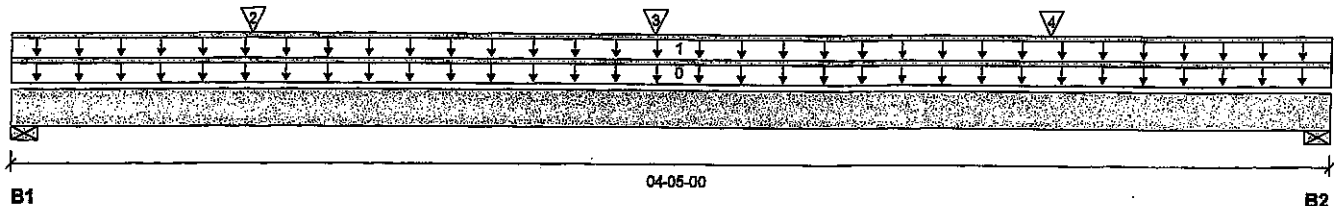
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	949 / 0	486 / 0		
B2, 3-1/2"	894 / 0	457 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-05-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	04-05-00	Top	240	120			n/a
2	J4(i1125)	Conc. Pt. (lbs)	L	00-09-08	00-09-08	Top	208	104			n/a
3	J4(i1101)	Conc. Pt. (lbs)	L	02-01-08	02-01-08	Top	286	143			n/a
4	J4(i1128)	Conc. Pt. (lbs)	L	03-05-08	03-05-08	Top	284	142			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1789 ft-lbs	11610 ft-lbs	15.4%	1	02-01-08
End Shear	1257 lbs	5785 lbs	21.7%	1	03-04-00
Total Load Deflection	L/999 (0.013")	n/a	n/a	4	02-03-05
Live Load Deflection	L/999 (0.008")	n/a	n/a	5	02-03-05
Max Defl.	0.013"	n/a	n/a	4	02-03-05
Span / Depth	4.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	2031 lbs	34.3%	17.3%	Spruce-Pine-Fir
B2	Wall/Plate 3-1/2" x 1-3/4"	1912 lbs	50.7%	25.6%	Spruce-Pine-Fir

Notes

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

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

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

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-01-08.

CONFORMS TO ODS 2012

AMENDED 2020



DWG NO. TAM 1174-21
**STRUCTURAL
 COMPONENT ONLY**

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA).

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

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

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****1ST FLR FRAMING\Flush Beams\B3(1123) (Flush Beam)****PASSED**

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

May 27, 2021 08:12:17

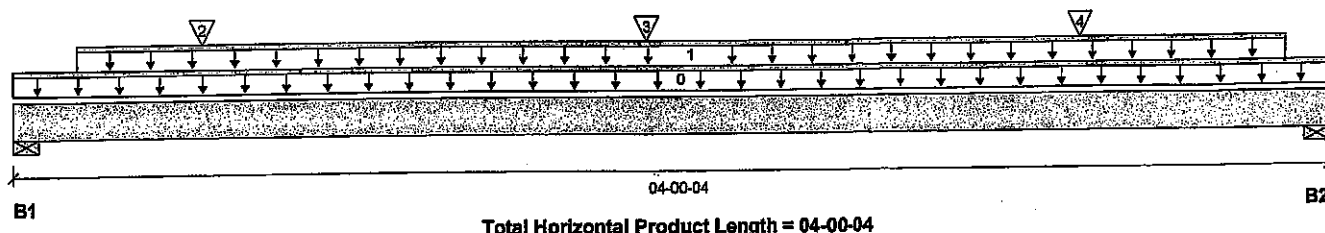
File name: VALLEYCREEK 10 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B3(1123)

Specifier:

Designer:

Company:

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

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	962 / 0	490 / 0		
B2, 4-3/8"	1028 / 0	524 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-00-04	Top		5			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-02-06	03-10-09	Top	240	120			n/a
2	J2(11115)	Conc. Pt. (lbs)	L	00-06-14	00-06-14	Top	342	171			n/a
3	J2(11222)	Conc. Pt. (lbs)	L	01-10-14	01-10-14	Top	387	193			n/a
4	J2(11100)	Conc. Pt. (lbs)	L	03-02-14	03-02-14	Top	377	189			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1914 ft-lbs	11610 ft-lbs	16.5%	1	01-10-14
End Shear	1293 lbs	5785 lbs	22.3%	1	02-10-06
Total Load Deflection	L/999 (0.012")	n/a	n/a	4	01-11-04
Live Load Deflection	L/999 (0.008")	n/a	n/a	5	01-11-04
Max Defl.	0.012"	n/a	n/a	4	01-11-04
Span / Depth	4.5				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 1-3/4"	2055 lbs	80.4%	40.5%	Spruce-Pine-Fir
B2	Wall/Plate 4-3/8" x 1-3/4"	2198 lbs	46.7%	23.5%	Spruce-Pine-Fir



DWG NO. TAM 11275-21
**STRUCTURAL
 COMPONENT ONLY**

Disclosure

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

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 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
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-01-08.

CONFORMS TO CBC 2012

AMENDED 2020



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

2ND FLR FRAMING\Dropped Beams\B5 DR(i738) (Dropped Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

May 27, 2021 08:12:17

Build 7773

Job name:

File name: VALLEYCREEK 10 EL 1.mindl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B5 DR(i738)

City, Province, Postal Code:

Specifier:

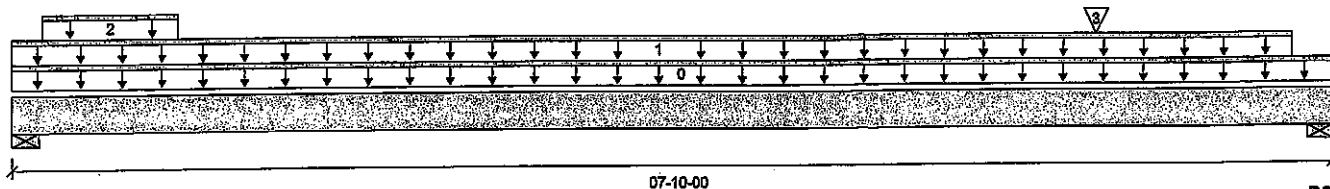
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1607 / 0	849 / 0		
B2, 4"	1898 / 0	1022 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-10-00	Top	100	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	07-06-14	Top	334	167			n/a
2	Bk2(i822)	Unf. Lin. (lb/ft)	L	00-02-02	00-11-10	Top	106	53			n/a
3	B7(i740)	Conc. Pt. (lbs)	L	06-04-12	06-04-12	Top	881	483			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5780 ft-lbs	23219 ft-lbs	24.9%	1	04-00-14
End Shear	3800 lbs	11571 lbs	32.8%	1	06-08-08
Total Load Deflection	L/999 (0.08")	n/a	n/a	4	04-00-14
Live Load Deflection	L/999 (0.052")	n/a	n/a	5	04-00-14
Max Defl.	0.08"	n/a	n/a	4	04-00-14
Span / Depth	9.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	3471 lbs	18.6%	20.3%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	4124 lbs	22.1%	24.1%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 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
 Calculations assume unbraced length of Top: 00-09-08, Bottom: 07-10-00.

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. FAM 11776 -21
 STRUCTURAL
 COMPONENT ONLY



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

PASSED

2ND FLR FRAMING\Dropped Beams\B5 DR(I738) (Dropped Beam)

Dry | 1 span | No cant.

May 27, 2021 08:12:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: VALLEYCREEK 10 EL 1.mmdl

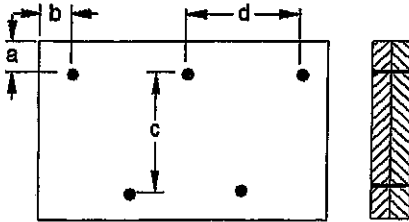
Description: 2ND FLR FRAMING\Dropped Beams\B5 DR(I738)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 5-1/2"

d = 8"

Connectors are: Nails

3/4" ARDOX SPIRAL



DWG NO. TAM 11776-21

STRUCTURAL
COMPONENT ONLY

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



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

PASSED

2ND FLR FRAMING\Flush Beams\B10(i748) (Flush Beam)

Dry | 1 span | No cant.

May 27, 2021 08:12:17

BC CALC® Member Report

Build 7773

Job name:

File name: VALLEYCREEK 10 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B10(i748)

City, Province, Postal Code:

Specifier:

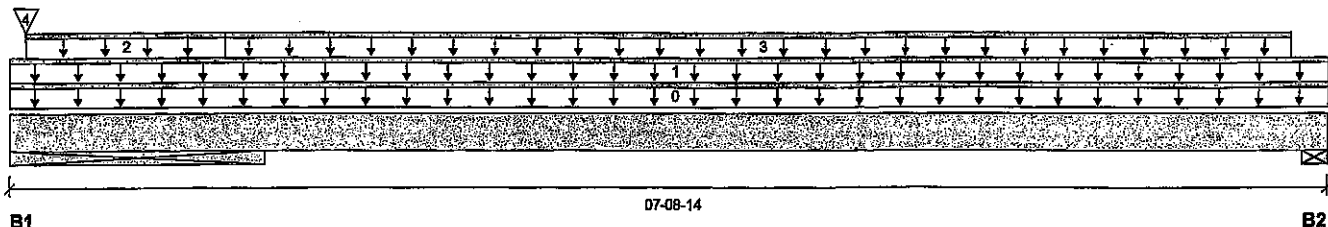
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-08-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 17-5/8"	86 / 0	334 / 0		
B2, 2-3/4"	55 / 0	238 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-08-14	Top	5				00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	07-08-14	Top	60				n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-01-02	01-02-14	Top	22	11			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	01-02-14	07-06-02	Top	18	9			n/a
4	FC2 Floor Decking (Plan View Fill)	Conc. Pt. (lbs)	L	00-01-02	00-01-02	Top	2				

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	492 ft-lbs	7546 ft-lbs	6.5%	0	04-05-14
End Shear	231 lbs	3761 lbs	6.1%	0	02-03-02
Total Load Deflection	L/999 (0.012")	n/a	n/a	4	04-05-14
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	04-05-14
Max Defl.	0.012"	n/a	n/a	4	04-05-14
Span / Depth	7.8				
Dist. Load (B1)	99.02 lb/ft	18734.66 lb/ft	0.5%		
Conc. Load (B1)	4 lbs	8407 lbs	n/a		

Bearing Supports

	Dlm. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 17-5/8" x 1-3/4"	468 lbs	3.8%	1.9%	Spruce-Pine-Fir
B2	Wall/Plate 2-3/4" x 1-3/4"	334 lbs	17.3%	8.7%	Spruce-Pine-Fir

Notes

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

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

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.

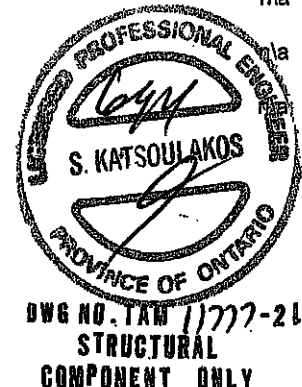
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 06-00-08.

CONFORMS TO CBC 2012

AMENDED 2020



Disclosure

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



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

2ND FLR FRAMING\Flush Beams\B12(i1252) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

May 27, 2021 08:12:17

Build 7773

Job name:

File name: VALLEYCREEK 10 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B12(i1252)

City, Province, Postal Code:

Specifier:

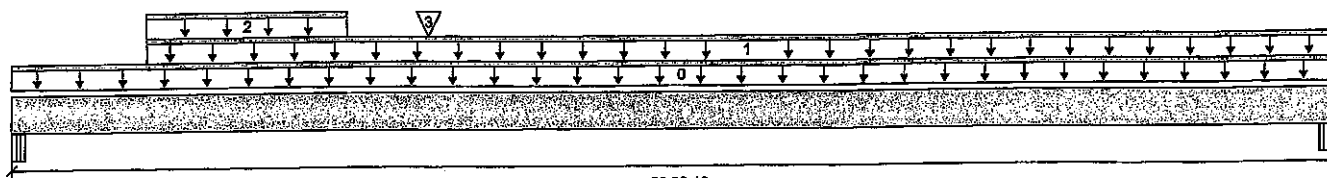
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



B1

02-02-10

B2

Total Horizontal Product Length = 02-02-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	250 / 0	230 / 0	56 / 0	
B2, 5-1/4"	91 / 0	207 / 0	88 / 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	02-02-10	Top		10			00-00-00
1	E26(i1263)	Unf. Lin. (lb/ft)	L	00-02-10	02-02-10	Top		123	72		n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-10	00-06-10	Top	268	134			n/a
3	J2(i1237)	Conc. Pt. (lbs)	L	00-08-04	00-08-04	Top	251	125			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	297 ft-lbs	23219 ft-lbs	1.3%	1	00-08-04
End Shear	310 lbs	11571 lbs	2.7%	1	01-00-02
Total Load Deflection	L/999 (0")	n/a	n/a	35	00-11-07
Live Load Deflection	L/999 (0")	n/a	n/a	51	00-11-03
Max Defl.	0"	n/a	n/a	35	00-11-07
Span / Depth	2.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	2-5/8" x 3-1/2"	719 lbs	18.3%	6.4%	Unspecified
B2 Beam	5-1/4" x 3-1/2"	483 lbs	6.2%	2.2%	Unspecified

Notes

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

CONFORMS TO OBC 2012

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

AMENDED 2020

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

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-11-14.



OWG NO. TAM 1177B-21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B12(11252) (Flush Beam)

PASSED

BC CALC® Member Report
Build 7773

Dry | 1 span | No cant.

May 27, 2021 08:12:17

Job name:

File name: VALLEYCREEK 10 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B12(11252)

City, Province, Postal Code:

Specifier:

Customer:

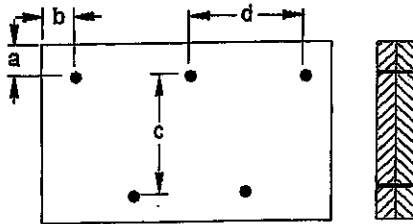
Designer:

Code reports:

CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



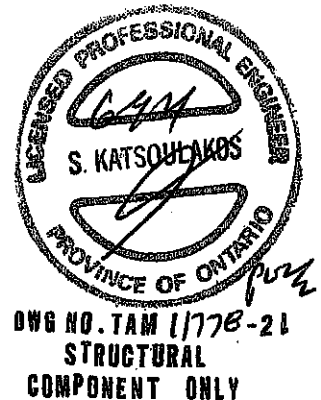
a minimum = 2"
b minimum = 3"

c = 5-1/2"
d = 2'0"

Calculated Side Load = 266.4 lb/ft

Connectors are: 1 Nails

3 1/2" ARDOX SPIRAL



Disclosure

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**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLR FRAMING\Flush Beams\B6(i809) (Flush Beam)****PASSED**

BC CALC® Member Report

Dry | 1 span | No cant.

May 27, 2021 08:12:17

Build 7773

Job name:

File name: VALLEYCREEK 10 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B6(i809)

City, Province, Postal Code:

Specifier:

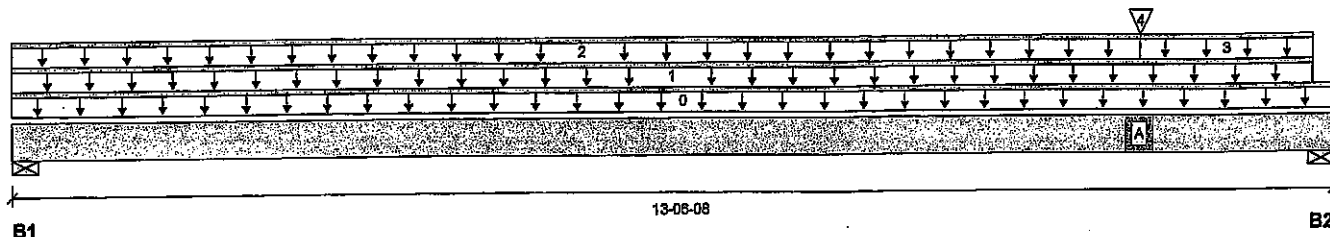
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 13-06-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	391 / 0	286 / 0		
B2, 5-1/2"	1076 / 0	638 / 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	13-06-08	Top		10			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	13-03-12	Top	22	11			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	11-06-04	Top	18	9			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	11-06-04	13-03-12	Top	9	4			n/a
4	B7(i740)	Conc. Pt. (lbs)	L	11-06-04	11-06-04	Top	952	516			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3996 ft-lbs	23219 ft-lbs	17.2%	1	09-05-03
End Shear	2331 lbs	11571 lbs	20.1%	1	12-03-08
Total Load Deflection	L/928 (0.165")	n/a	25.9%	4	07-02-04
Live Load Deflection	L/999 (0.101")	n/a	n/a	5	07-02-04
Max Defl.	0.165"	n/a	n/a	4	07-02-04
Span / Depth	16.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	919 lbs	7.8%	3.9%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	2412 lbs	20.4%	10.3%	Spruce-Pine-Fir

Notes

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

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

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

Calculations assume unbraced length of Top: 00-00-00, Bottom: 10-11-00.

CONFORMS TO OBC 2012

AMENDED 2020



OWN NO. 9AM 11779-21
STRUCTURAL
COMPONENT ONLY



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

2ND FLR FRAMING\Flush Beams\B6(i809) (Flush Beam)

Dry | 1 span | No cant.

PASSED

May 27, 2021 08:12:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File name: VALLEYCREEK 10 EL 1.mmdl

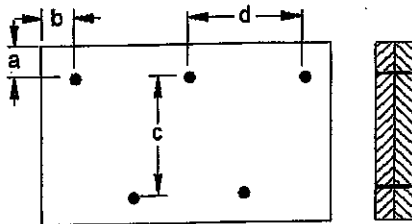
Description: 2ND FLR FRAMING\Flush Beams\B6(i809)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

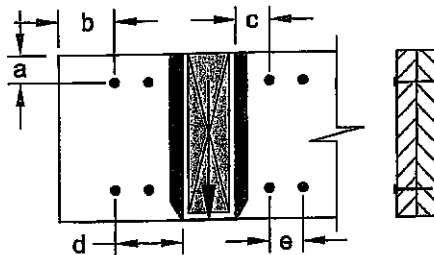
c = 5-1/2"

d = 6"

Connectors are: 3/4" ARDOX SPIRAL Nails

Connection Diagrams: Concentrated Side Loads

Connection Tag: A Applies to load tag(s): 3



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

e minimum = 4"

Connectors are: Nails

3/4" ARDOX SPIRAL



DWG NO. TAM 11779-21
STRUCTURAL
COMPONENT ONLY

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

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B7(i740) (Flush Beam)**

Dry | 1 span | No cant.

May 27, 2021 08:12:17

BC CALCS® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

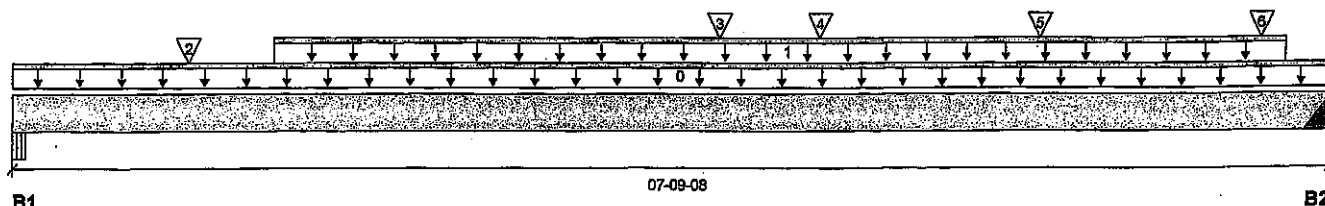
File name: VALLEYCREEK 10 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B7(i740)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 07-09-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	848 / 0	465 / 0		
B2, 4"	985 / 0	534 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-09-08	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-06-04	07-06-04	Top	226	113			n/a
2	J3(i844)	Conc. Pt. (lbs)	L	01-00-04	01-00-04	Top	265	133			n/a
3	B9(i849)	Conc. Pt. (lbs)	L	04-01-06	04-01-06	Top		14			n/a
4	J5(i835)	Conc. Pt. (lbs)	L	04-08-08	04-08-08	Top	54	27			n/a
5	J5(i847)	Conc. Pt. (lbs)	L	06-00-08	06-00-08	Top	74	37			n/a
6	J5(i843)	Conc. Pt. (lbs)	L	07-04-08	07-04-08	Top	60	30			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3754 ft-lbs	23219 ft-lbs	16.2%	1	04-00-04
End Shear	1798 lbs	11571 lbs	15.5%	1	06-08-00
Total Load Deflection	L/999 (0.05")	n/a	n/a	4	03-10-12
Live Load Deflection	L/999 (0.033")	n/a	n/a	5	03-10-12
Max Defl.	0.05"	n/a	n/a	4	03-10-12
Span / Depth	9.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 3-1/2" x 3-1/2"	1854 lbs	12.4%	12.4%	VL 2.0 3100 SP
B2	Hanger 4" x 3-1/2"	2145 lbs	n/a	12.6%	HGUS410

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 9-1/2" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

DWG NO. TAM 11780-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLR FRAMING\Flush Beams\B7(i740) (Flush Beam)

Dry | 1 span | No cant.

May 27, 2021 08:12:17

BC CALC® Member Report
Build 7773

Job name:

File name: VALLEYCREEK 10 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B7(i740)

City, Province, Postal Code:

Specifier:

Customer:

Designer:

Code reports:

CCMC 12472-R

Company:

Notes

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

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

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.

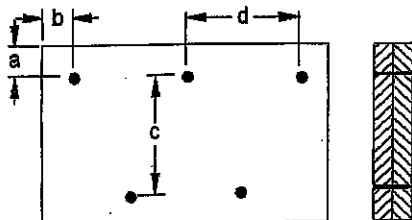
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-09-08.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/2"

b minimum = 3"

d = 4"

Calculated Side Load = 491.5 lb/ft

Connectors are: Nails

3/4" ARDOX SPIRAL



OWG NO. TAM 11/20-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B8(i837) (Flush Beam)**

Dry | 1 span | No cant.

May 27, 2021 08:12:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

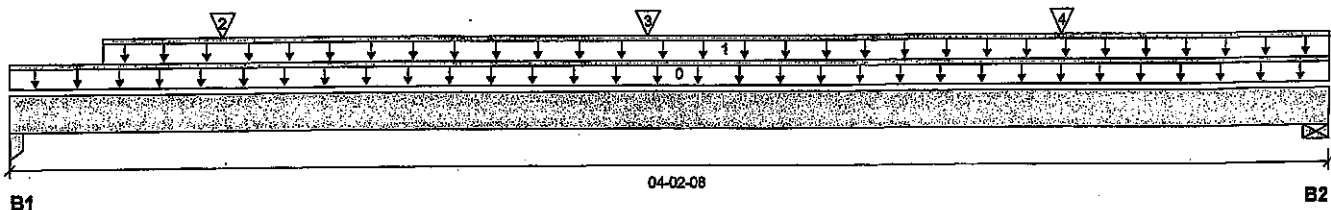
File name: VALLEYCREEK 10 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B8(i837)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 04-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	510 / 0	265 / 0		
B2, 5-1/2"	628 / 0	325 / 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	04-02-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-03-08	04-02-08	Top	240	120			n/a
2	J5(i835)	Conc. Pt. (lbs)	L	00-08-00	00-08-00	Top	56	28			n/a
3	J5(i847)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	Top	74	37			n/a
4	J5(i843)	Conc. Pt. (lbs)	L	03-04-00	03-04-00	Top	60	30			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1025 ft-lbs	11610 ft-lbs	8.8%	1	02-00-00
End Shear	626 lbs	5785 lbs	10.8%	1	02-11-08
Total Load Deflection	L/999 (0.007")	n/a	n/a	4	02-00-06
Live Load Deflection	L/999 (0.004")	n/a	n/a	5	02-00-06
Max Defl.	0.007"	n/a	n/a	4	02-00-06
Span / Depth	4.5				

Bearing Supports

			Demand/ Resistance Support	Demand/ Resistance Member		
Bearing Supports	Dim. (LxW)	Demand			Material	
B1	Column	3-1/2" x 1-3/4"	1095 lbs	27.5%	14.7%	Unspecified
B2	Wall/Plate	5-1/2" x 1-3/4"	1348 lbs	22.8%	11.5%	Spruce-Pine-Fir

Notes

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

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

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

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-01-08.

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAM11781-21

STRUCTURAL COMPONENT ONLY

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.

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

PASSED

2ND FLR FRAMING\Flush Beams\B9(i849) (Flush Beam)

Dry | 1 span | No cant.

May 27, 2021 08:12:17

BC CALC® Member Report

Build 7773

Job name:

File name: VALLEYCREEK 10 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B9(i849)

City, Province, Postal Code:

Specifier:

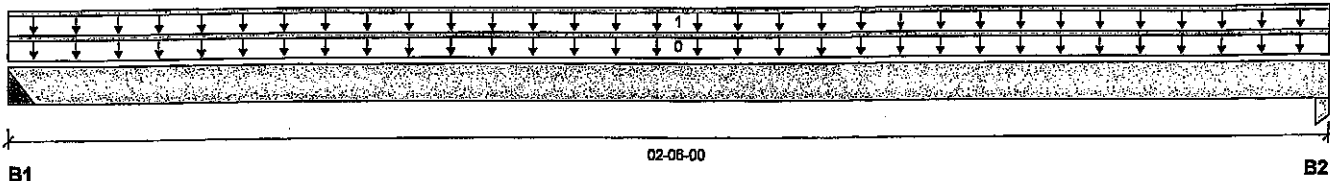
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 02-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	17 / 0	14 / 0		
B2, 1-3/4"	17 / 0	14 / 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	02-06-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	02-06-00	Top	13	7			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	23 ft-lbs	11610 ft-lbs	0.2%	1	01-03-02
End Shear	10 lbs	5785 lbs	0.2%	1	00-11-08
Total Load Deflection	L/999 (0")	n/a	n/a	4	01-03-02
Max Defl.	0"	n/a	n/a	4	01-03-02
Span / Depth	2.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	43 lbs	n/a	1.0%	HUS1.81/10
B2	Column 1-3/4" x 1-3/4"	43 lbs	2.1%	1.1%	Unspecified

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 9-1/2" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

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

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**

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

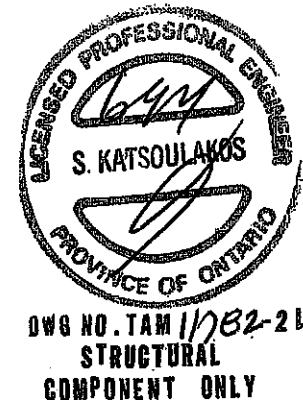
Calculations assume unbraced length of Top: 00-00-00, Bottom: 02-06-00.

CONFORMS TO OBC 2012

Disclosure

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

2ND FLR FRAMING\Flush Beams\B12C(i1766) (Flush Beam)

PASSED

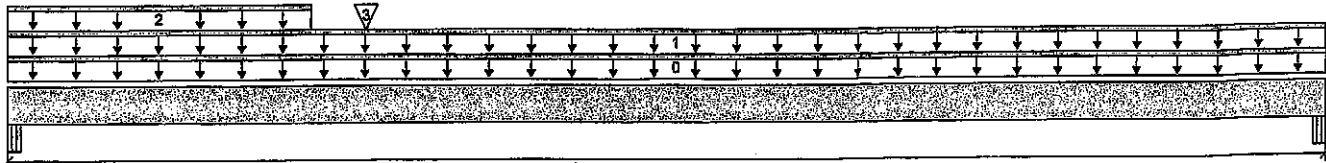
BC CALC® Member Report
Build 7773

Dry | 1 span | No cant.

May 27, 2021 08:47:10

Job name:
Address:
City, Province, Postal Code: HAMILTON
Customer:
Code reports: CCMC 12472-R

File name: VALLEYCREEK 10 EL 3.mmdl
Description: 2ND FLR FRAMING\Flush Beams\B12C(i1766)
Specifier:
Designer: AJ
Company:



B1 01-11-04 B2
Total Horizontal Product Length = 01-11-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	208 / 0	256 / 0	70 / 0	
B2, 5-1/4"	0 / 0	128 / 0	70 / 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	01-11-04	Top		10			00-00-00
1	E26(i1263)	Unf. Lin. (lb/ft)	L	00-00-00	01-11-04	Top		123	72		n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	00-05-04	Top	6				n/a
3	-	Conc. Pt. (lbs)	L	00-06-03	00-06-03	Top	205	126			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	33 ft-lbs	15093 ft-lbs	0.2%	0	00-11-10
End Shear	48 lbs	7521 lbs	0.6%	0	01-02-12
Span / Depth	1.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/4" x 3-1/2"	701 lbs	7.1%	3.1%	Unspecified
B2 Beam	5-1/4" x 3-1/2"	180 lbs	2.8%	1.2%	Unspecified

Notes

Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Unbalanced snow loads determined from building geometry were used in selected product's verification.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9
Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-10-04.

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. FAM 11783-21
STRUCTURAL
COMPONENT ONLY



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

2ND FLR FRAMING\Flush Beams\B12C(i1766) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

May 27, 2021 08:47:10

Build 7773

Job name:

File name: VALLEYCREEK 10 EL 3.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B12C(i1766)

City, Province, Postal Code: HAMILTON

Specifier:

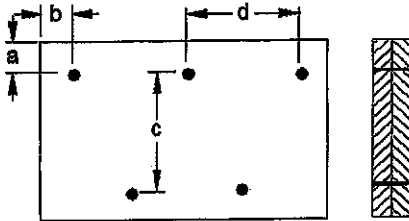
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/2"

b minimum = 3"

d = 5-1/2"

Calculated Side Load = 217.5 lb/ft

Connectors are: 3/4" ARDOX SPIRAL



BWG NO. FAM 11789-21

STRUCTURAL
COMPONENT ONLY

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



Maximum Floor Spans

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

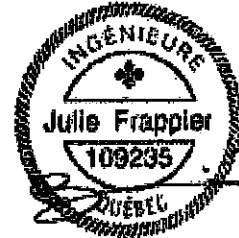
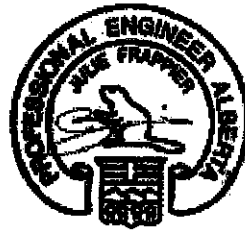
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	14'-2"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"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

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

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

Maximum Floor Spans

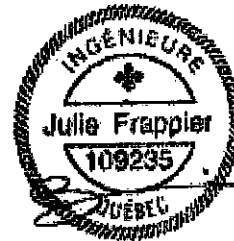
Live Load = 40 psf, Dead Load = 15 psf
 Simple Spans, L/480 Deflection Limit
 3/4" OSB G&N Sheathing



Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	16'-7"	15'-11"	15'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-7"	18'-5"	17'-3"	16'-7"	15'-11"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"
11-7/8"	NI-20	17'-10"	16'-10"	16'-2"	15'-6"	18'-6"	17'-4"	16'-9"	16'-1"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	18'-6"	17'-9"	17'-0"
	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"
	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
14"	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-11"	22'-1"	20'-6"	19'-7"	18'-7"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"
	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
16"	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"
	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"
	NI-80	25'-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'-8"
	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-L274C.



Maximum Floor Spans

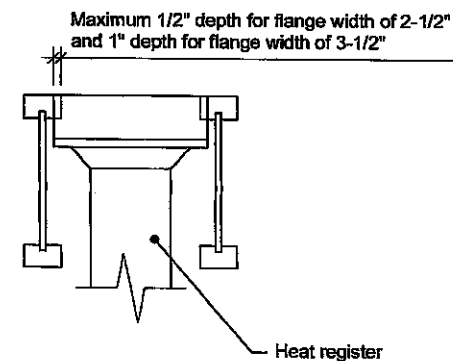
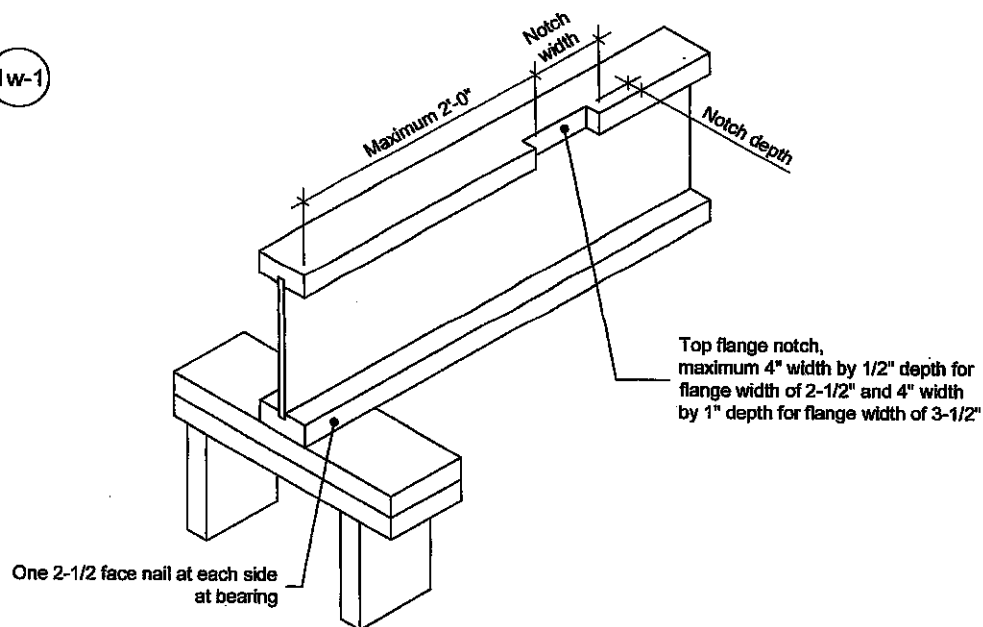
Live Load = 40 psf, Dead Load = 30 psf
 Simple Spans, L/480 Deflection Limit
 5/8" OSB G&N Sheathing

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

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

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

1w-1



Notes:

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

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

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

**NORDIC
STRUCTURES**

T 514-871-8528
1 888 817-3418
nordic.ca

TITLE
Notch in I-joist for Heat Register

CATEGORY
I-joist - Typical Floor Framing and Construction Details

DOCUMENT

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DATE
2018-04-10

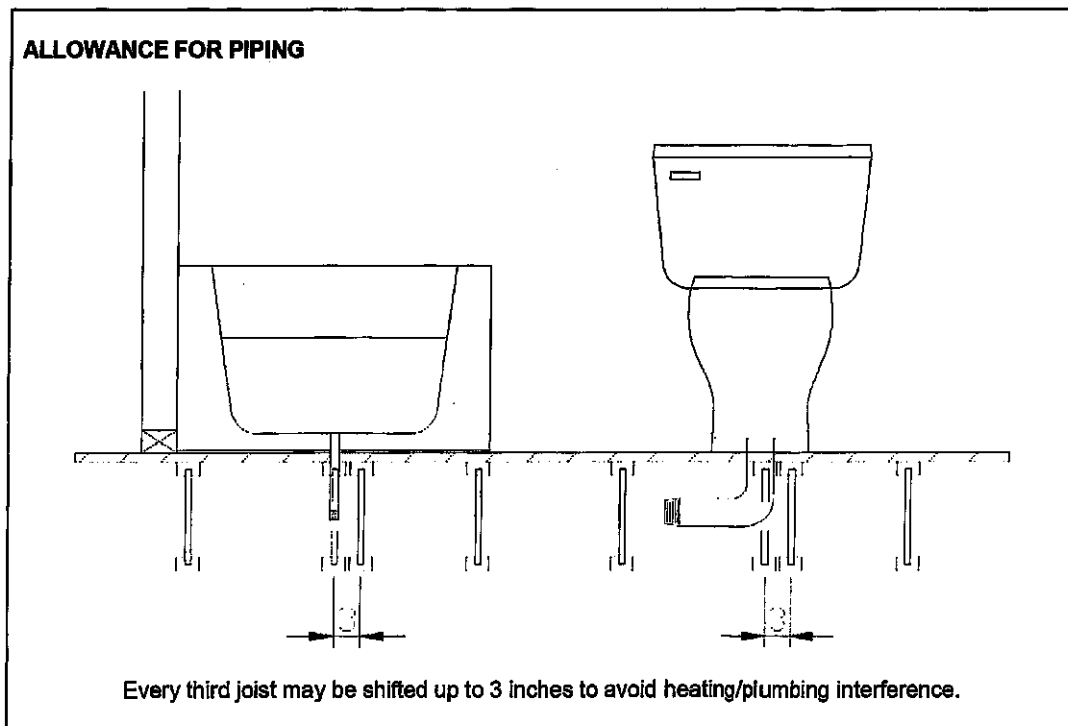
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Allowance for Piping (Installation Notes)

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

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

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



Revised April 12, 2012