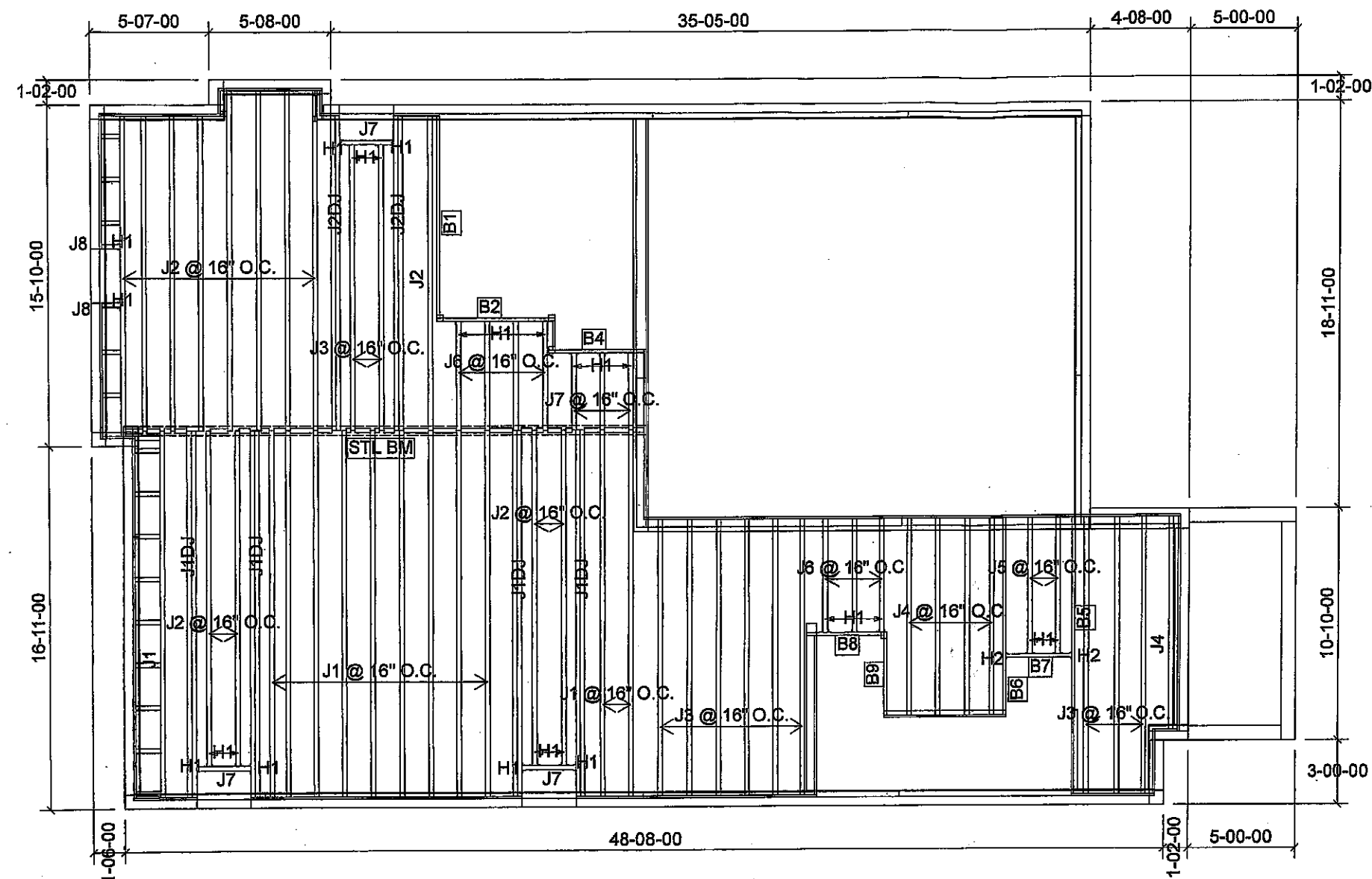


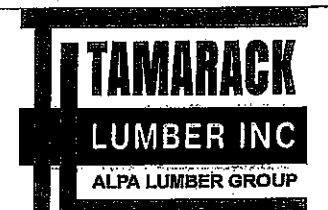


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	12
J1DJ	18-00-00	11 7/8" NI-40x	2	8
J2	16-00-00	11 7/8" NI-40x	1	13
J2DJ	16-00-00	11 7/8" NI-40x	2	4
J3	14-00-00	11 7/8" NI-40x	1	11
J4	10-00-00	11 7/8" NI-40x	1	5
J5	8-00-00	11 7/8" NI-40x	1	2
J6	6-00-00	11 7/8" NI-40x	1	7
J7	4-00-00	11 7/8" NI-40x	1	6
J8	2-00-00	11 7/8" NI-40x	1	2
B1	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
2	H2	HUS1.81/10

DATE: 2021-05-26

1st FLOOR



FROM PLAN DATED: JAN 2019

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 4

MODEL: VALLEYCREEK 3A

ELEVATION: 1,2

LOT:

CITY: WATERDOWN

SALESMAN: MARIO 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 TILE APPLICATION AS PER O.B.C 9.30.6.

LOADING:

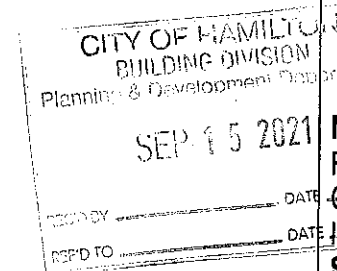
DESIGN LOADS: L/480.000

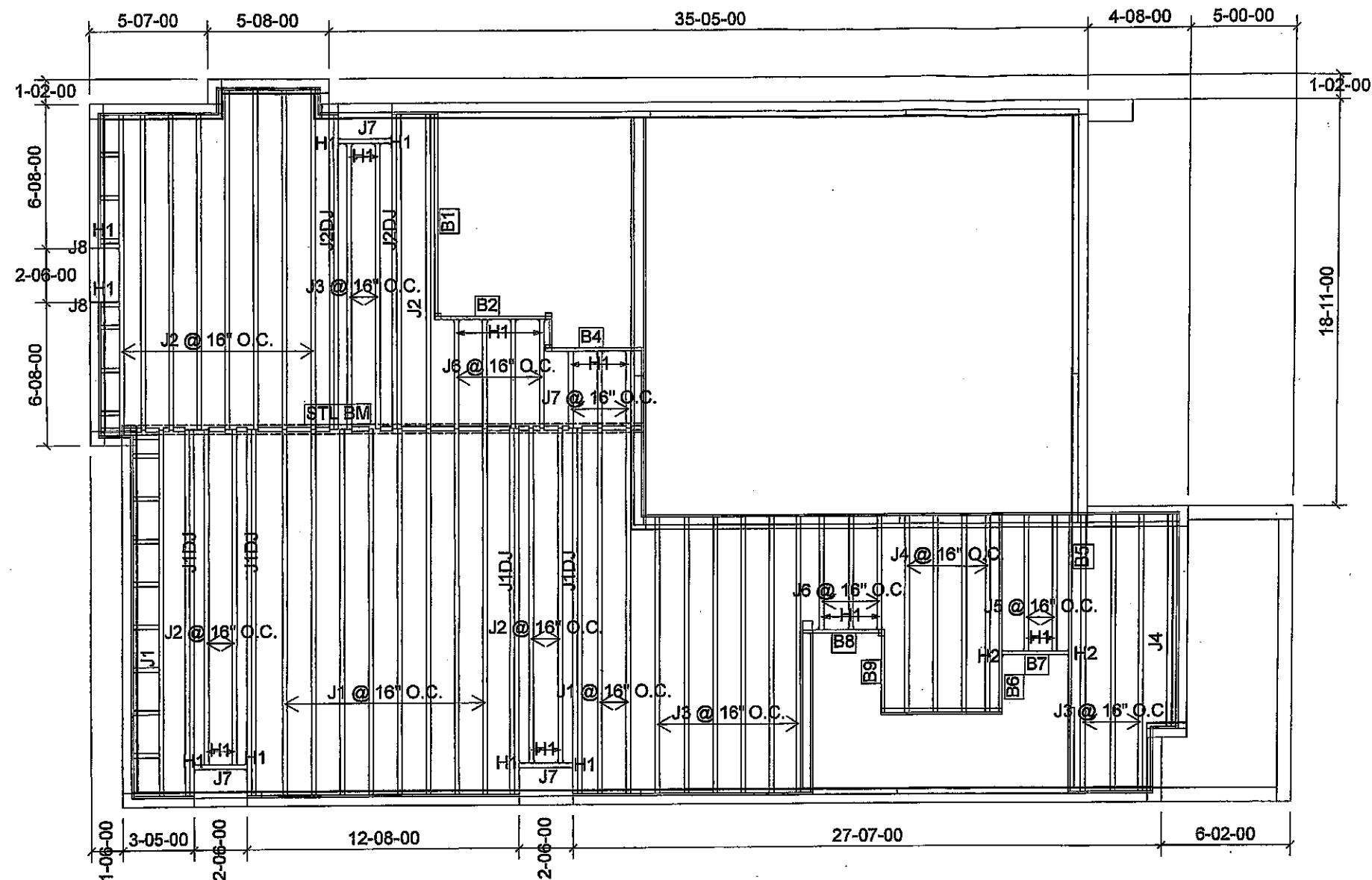
LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 15.0 lb/ft²

TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED



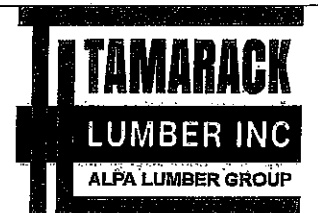


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	11
J1DJ	18-00-00	11 7/8" NI-40x	2	8
J2	16-00-00	11 7/8" NI-40x	1	13
J2DJ	16-00-00	11 7/8" NI-40x	2	4
J3	14-00-00	11 7/8" NI-40x	1	11
J4	10-00-00	11 7/8" NI-40x	1	5
J5	8-00-00	11 7/8" NI-40x	1	2
J6	6-00-00	11 7/8" NI-40x	1	7
J7	4-00-00	11 7/8" NI-40x	1	6
J8	2-00-00	11 7/8" NI-40x	1	2
B1	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
2	H2	HUS1.81/10

DATE: 2021-05-26

1st FLOOR



FROM PLAN DATED: JAN 2019

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 4

MODEL: VALLEYCREEK 3

ELEVATION: 3

LOT:

CITY: WATERDOWN

SALESMAN: MARIO 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 TI** APPLICATION AS PER O.B.C 9.30.6.

LOADING:

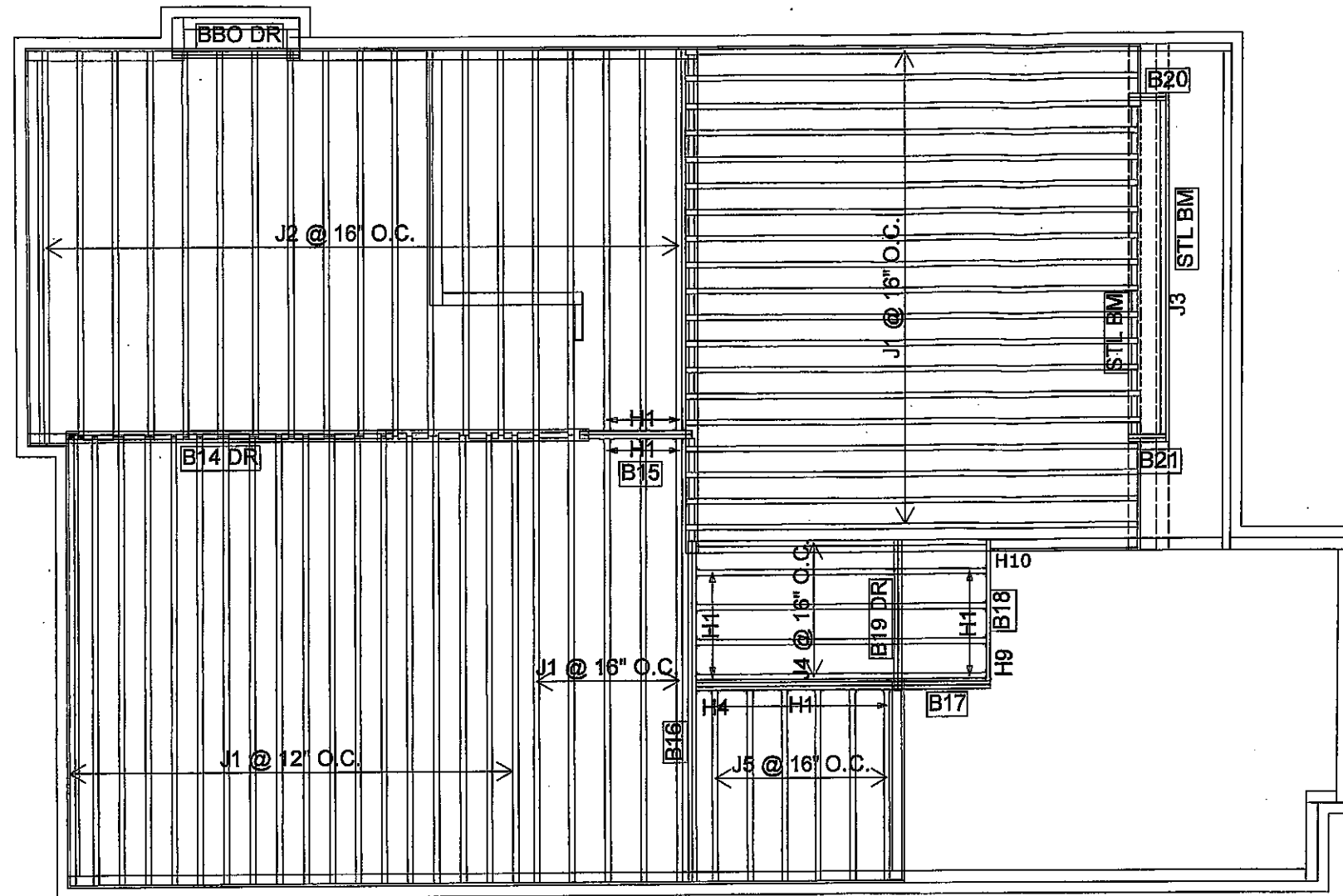
DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 15.0 lb/ft²

TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

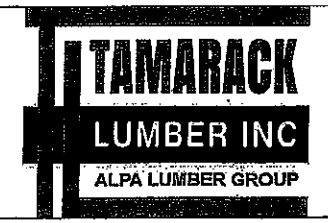


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	42
J2	16-00-00	11 7/8" NI-40x	1	19
J3	14-00-00	11 7/8" NI-40x	1	1
J4	12-00-00	11 7/8" NI-40x	1	5
J5	8-00-00	11 7/8" NI-40x	1	6
B16	14-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2
B14 DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	3	3
B17	12-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2
B18	6-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	1	1
B15	6-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2
B19 DR	6-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2
B20	2-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2
B21	2-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
4	H1	IUS2.56/11.88
16	H1	IUS2.56/11.88
1	H4	HGUS410
1	H9	LS90
1	H10	H2.5A*

DATE: 2021-05-26

2ND FLOOR

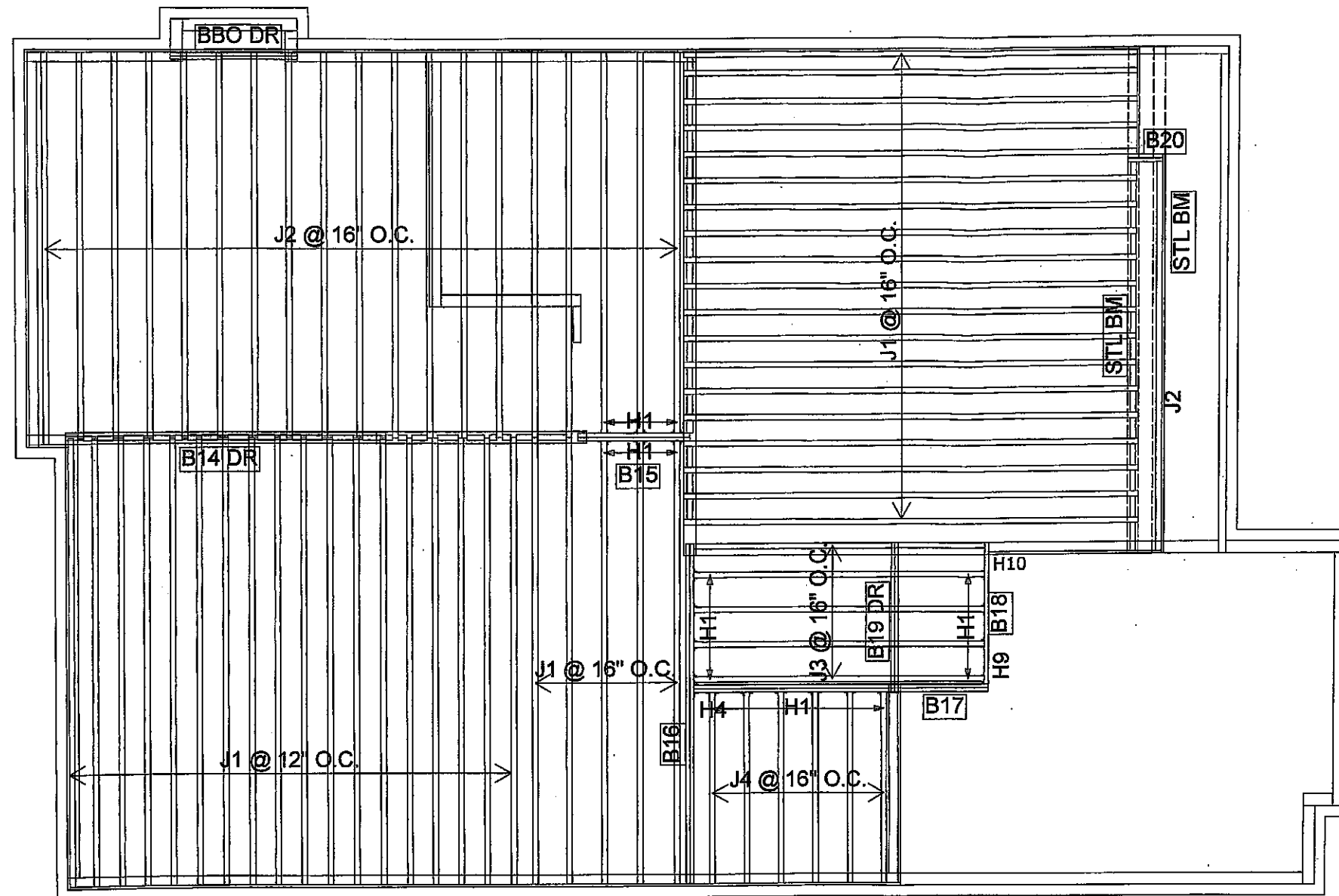


FROM PLAN DATED: JAN 2019
BUILDER: GREENPARK HOMES
SITE: RUSSELL GARDENS PH 4
MODEL: VALLEYCREEK 3A
ELEVATION: 1
LOT:
CITY: WATERDOWN
SALESMAN: MARIO DICIANO
DESIGNER: AJ
REVISION:

NOTES:
REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK F 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 1 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: 5/8" GLUED AND NAILED

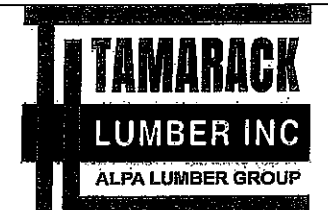


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	42
J2	16-00-00	11 7/8" NI-40x	1	20
J3	12-00-00	11 7/8" NI-40x	1	5
J4	8-00-00	11 7/8" NI-40x	1	6
B16	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B14 DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B17	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B18	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B15	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B19 DR	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B20	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
4	H1	IUS2.56/11.88
16	H1	IUS2.56/11.88
1	H4	HGUS410
1	H9	LS90
1	H10	H2.5A*

DATE: 2021-05-26

2ND FLOOR



FROM PLAN DATED: JAN 2019

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 4

MODEL: VALLEYCREEK 3A

ELEVATION: 2

LOT:

CITY: WATERDOWN

SALESMAN: MARIO 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:

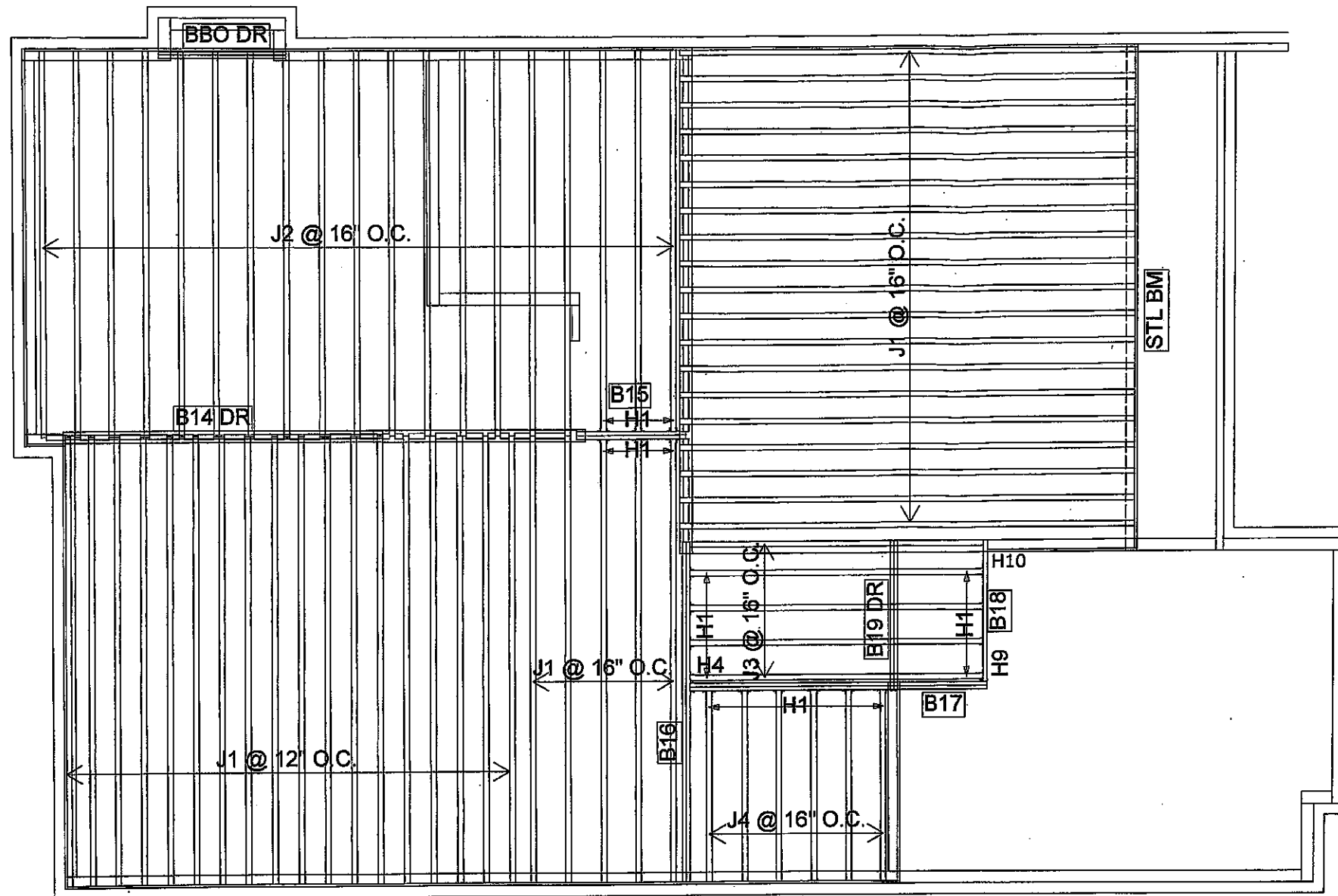
DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 15.0 lb/ft²

TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

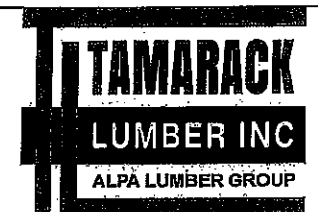


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	42
J2	16-00-00	11 7/8" NI-40x	1	19
J3	12-00-00	11 7/8" NI-40x	1	5
J4	8-00-00	11 7/8" NI-40x	1	6
B16	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B14 DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B17	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B18	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B15	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B19 DR	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
4	H1	IUS2.56/11.88
16	H1	IUS2.56/11.88
1	H4	HGUS410
1	H9	LS90
1	H10	H2.5A*

DATE: 2021-05-26

2ND FLOOR

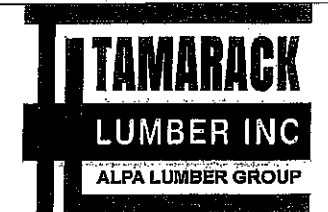


FROM PLAN DATED: JAN 2019
 BUILDER: GREENPARK HOMES
 SITE: RUSSELL GARDENS PH 4
 MODEL: VALLEYCREEK 3A
 ELEVATION: 3
 LOT:
 CITY: WATERDOWN
 SALESMAN: MARIO DICIANO
 DESIGNER: AJ
 REVISION:

NOTES:
 REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.
 SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK 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 1 APPLICATION AS PER O.B.C 9.30.6.

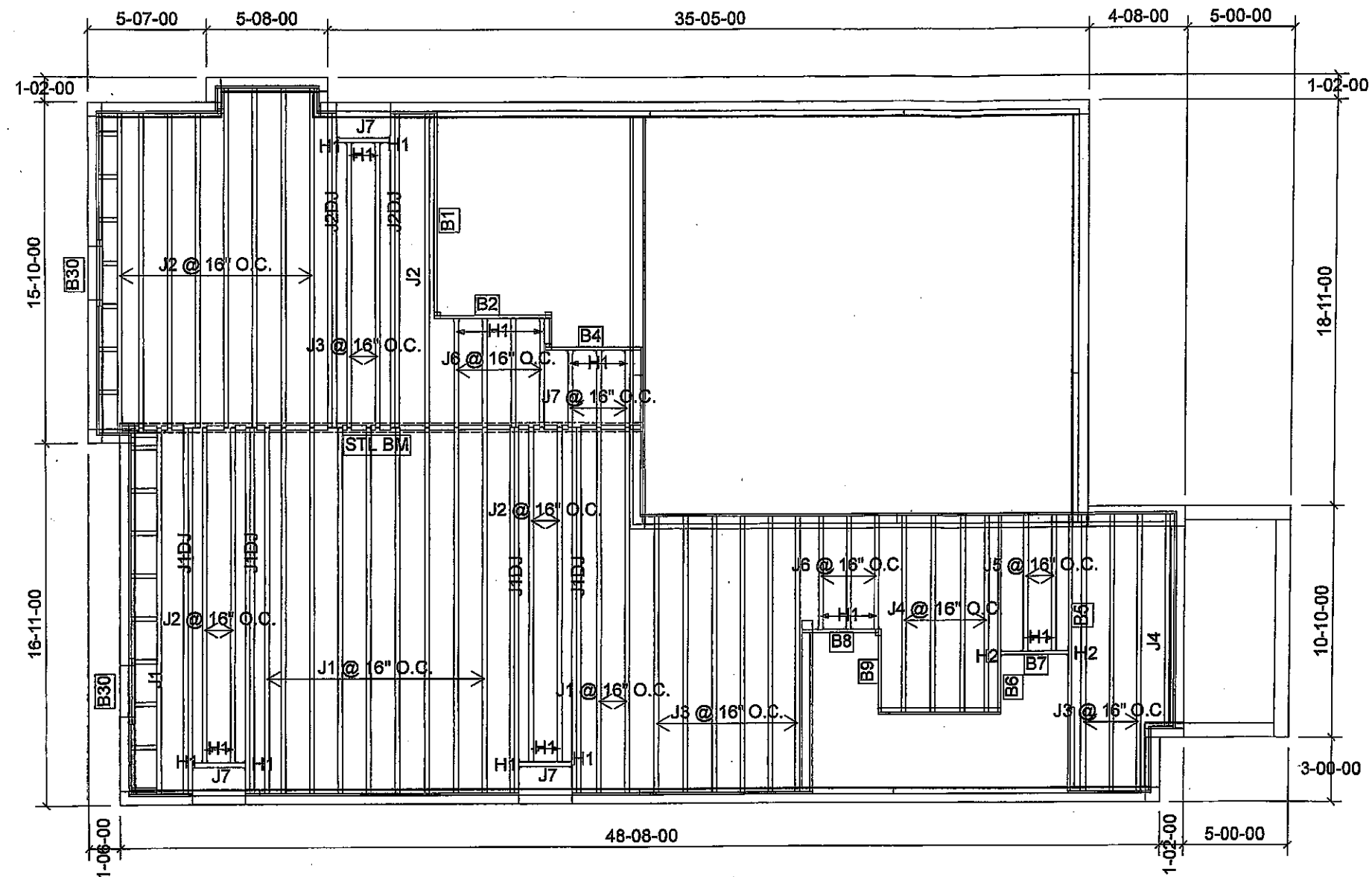
LOADING:
 DESIGN LOADS: L/480.000
 LIVE LOAD: 40.0 lb/ft²
 DEAD LOAD: 15.0 lb/ft²
 TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED



SUBFLOOR: 3/4" GLUED AND NAILED

1st FLOOR WITH DECK
CONDITION

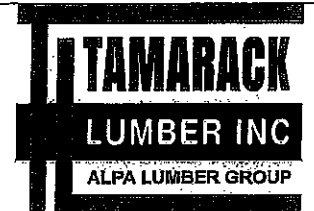


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	12
J1DJ	18-00-00	11 7/8" NI-40x	2	8
J2	16-00-00	11 7/8" NI-40x	1	13
J2DJ	16-00-00	11 7/8" NI-40x	2	4
J3	14-00-00	11 7/8" NI-40x	1	11
J4	10-00-00	11 7/8" NI-40x	1	5
J5	8-00-00	11 7/8" NI-40x	1	2
J6	6-00-00	11 7/8" NI-40x	1	7
J7	4-00-00	11 7/8" NI-40x	1	6
B1	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B30	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	4

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
2	H2	HUS1.81/10

DATE: 2021-05-26

**1st FLOOR WITH DECK
CONDITION**



FROM PLAN DATED: JAN 2019

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH4

MODEL: VALLEYCREEK 3A

ELEVATION: 1,2

LOT:

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

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

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** F 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** 1 APPLICATION AS PER O.B.C 9.30.6.

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

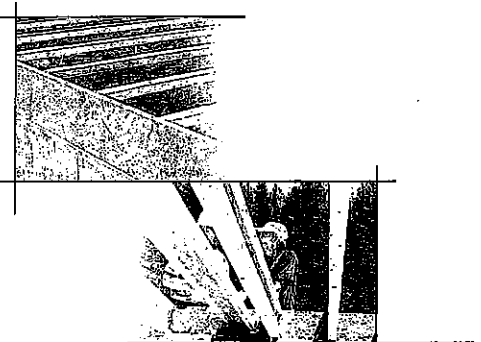
DEAD LOAD: 15.0 lb/ft²

TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED



INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



Distributed by:



SAFETY AND CONSTRUCTION PRECAUTIONS



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



Never stack building materials over unshathed I-joists. Once shathed, do not over-stress I-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.

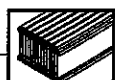
Avoid Accidents by Following these Important Guidelines:

- Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bracing at joist ends. When I-joists are applied continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on 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.
- For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bracing.
- Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or joists only.
- Never install a damaged I-joist.

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

STORAGE AND HANDLING GUIDELINES

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



MAXIMUM FLOOR SPANS

- Maximum clear spans applicable to 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 live loads of 1.50 + 1.2SD. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Limit States Design per CAN/CSA C08-09 Standard, and NBC 2010.
- SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

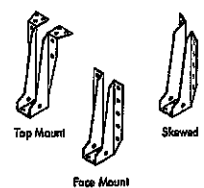
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

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

CCMC EVALUATION REPORT 13032-R

I-JOIST HANGERS

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



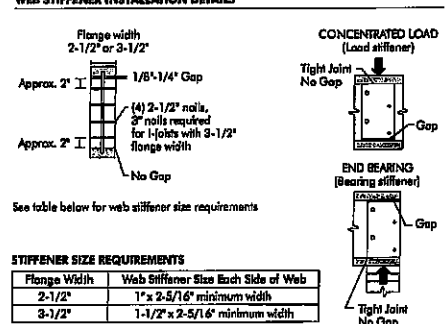
WEB STIFFENERS

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



See table below for web stiffener size requirements

STIFFENER SIZE REQUIREMENTS

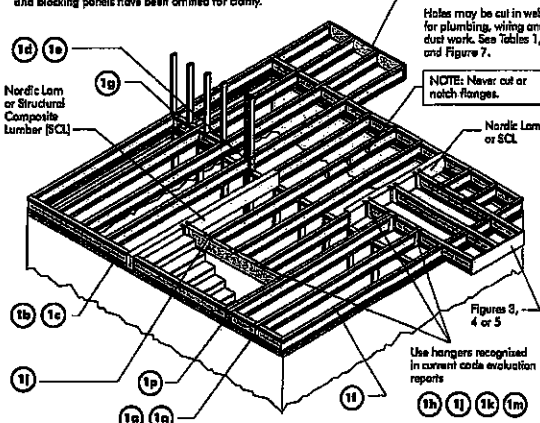
Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

INSTALLING NORDIC I-JOISTS

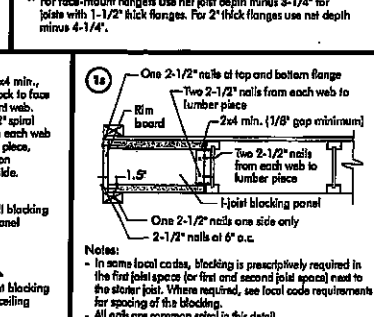
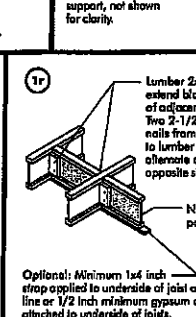
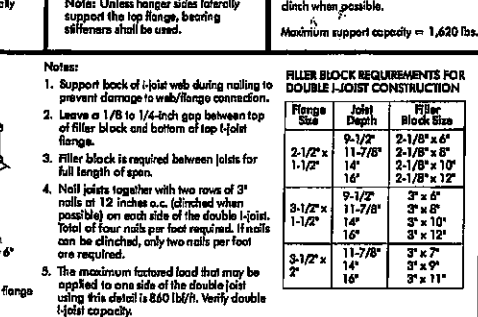
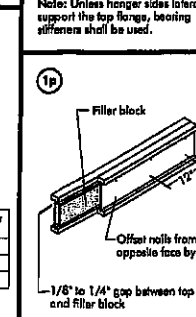
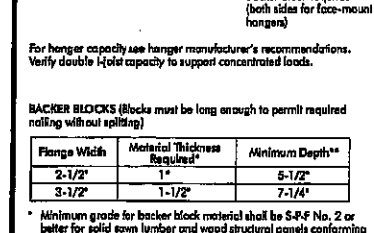
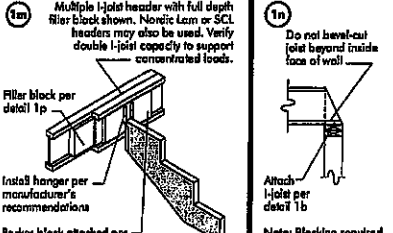
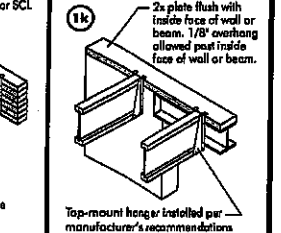
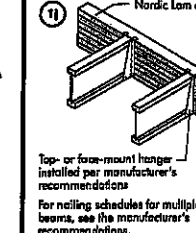
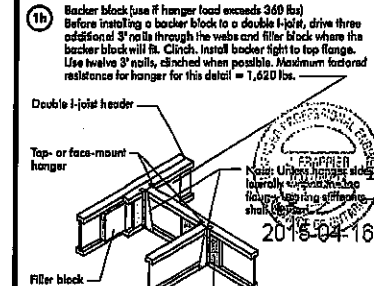
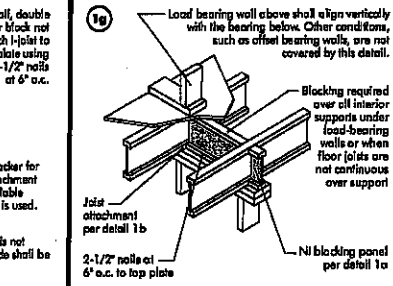
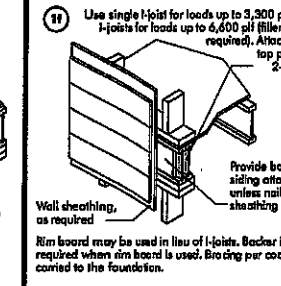
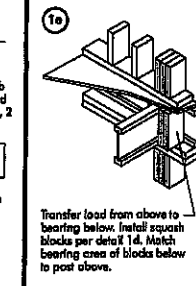
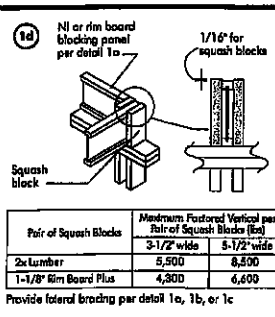
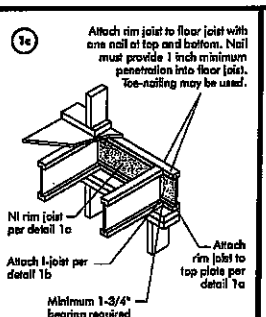
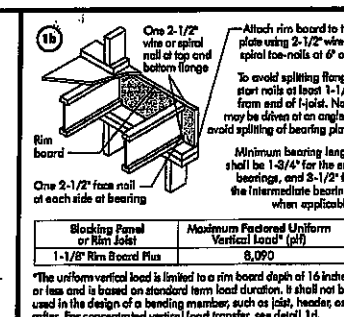
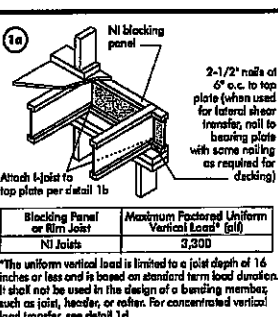
- Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, consult the supplier.
- Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
- Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical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

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

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



All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.125" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.



*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.

*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.

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*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.

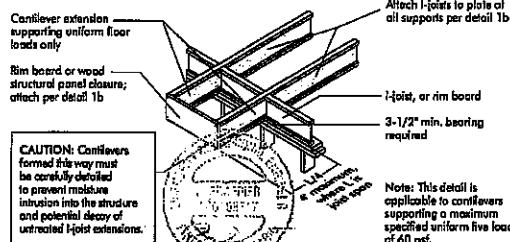
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

*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.

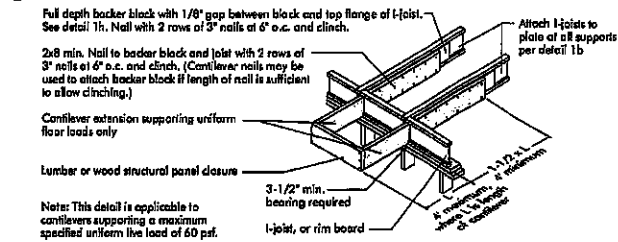
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

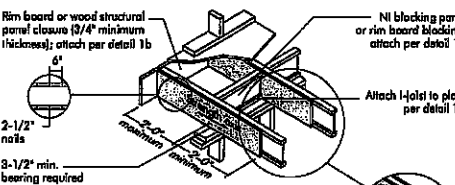


3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE



Method 2 — SHEATHING REINFORCEMENT TWO SIDES

- Use same installation as Method 1 but reinforce both sides of I-joist with sheathing.
- Use nailing pattern shown for Method 1 with opposite face nailing offset by 3".

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

4b Alternate Method 2 — DOUBLE I-JOIST

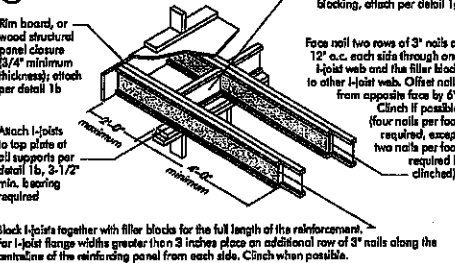


FIGURE 4 (continued)



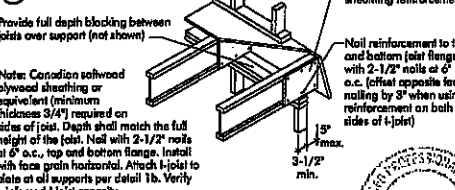
CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (IN.)	ROOF TRUSS SPACING (IN.)	JOIST SPACING (IN.)												JOIST SPACING (IN.)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
		12	16	17	24	27	30	36	40	48	54	60	72	84	96	108	120	144	168	192	216	240	270	300	360	420	480	540	600	720	840	960	1080	1200	1440	1680	1920	2160	2400	2700	3000	3600	4200	4800	5400	6000	7200	8400	9600	10800	12000	14400	16800	19200	21600	24000	27000	30000	36000	42000	48000	54000	60000	72000	84000	96000	108000	120000	144000	168000	192000	216000	240000	270000	300000	360000	420000	480000	540000	600000	720000	840000	960000	1080000	1200000	1440000	1680000	1920000	2160000	2400000	2700000	3000000	3600000	4200000	4800000	5400000	6000000	7200000	8400000	9600000	10800000	12000000	14400000	16800000	19200000	21600000	24000000	27000000	30000000	36000000	42000000	48000000	54000000	60000000	72000000	84000000	96000000	108000000	120000000	144000000	168000000	192000000	216000000	240000000	270000000	300000000	360000000	420000000	480000000	540000000	600000000	720000000	840000000	960000000	1080000000	1200000000	1440000000	1680000000	1920000000	2160000000	2400000000	2700000000	3000000000	3600000000	4200000000	4800000000	5400000000	6000000000	7200000000	8400000000	9600000000	10800000000	12000000000	14400000000	16800000000	19200000000	21600000000	24000000000	27000000000	30000000000	36000000000	42000000000	48000000000	54000000000	60000000000	72000000000	84000000000	96000000000	108000000000	120000000000	144000000000	168000000000	192000000000	216000000000	240000000000	270000000000	300000000000	360000000000	420000000000	480000000000	540000000000	600000000000	720000000000	840000000000	960000000000	1080000000000	1200000000000	1440000000000	1680000000000	1920000000000	2160000000000	2400000000000	2700000000000	3000000000000	3600000000000	4200000000000	4800000000000	5400000000000	6000000000000	7200000000000	8400000000000	9600000000000	10800000000000	12000000000000	14400000000000	16800000000000	19200000000000	21600000000000	24000000000000	27000000000000	30000000000000	36000000000000	42000000000000	48000000000000	54000000000000	60000000000000	72000000000000	84000000000000	96000000000000	108000000000000	120000000000000	144000000000000	168000000000000	192000000000000	216000000000000	240000000000000	270000000000000	300000000000000	360000000000000	420000000000000	480000000000000	540000000000000	600000000000000	720000000000000	840000000000000	960000000000000	1080000000000000	1200000000000000	1440000000000000	1680000000000000	1920000000000000	2160000000000000	2400000000000000	2700000000000000	3000000000000000	3600000000000000	4200000000000000	4800000000000000	5400000000000000	6000000000000000	7200000000000000	8400000000000000	9600000000000000	10800000000000000	12000000000000000	14400000000000000	16800000000000000	19200000000000000	21600000000000000	24000000000000000	27000000000000000	30000000000000000	36000000000000000	42000000000000000	48000000000000000	54000000000000000	60000000000000000	72000000000000000	84000000000000000	96000000000000000	108000000000000000	120000000000000000	144000000000000000	168000000000000000	192000000000000000	216000000000000000	240000000000000000	270000000000000000	300000000000000000	360000000000000000	420000000000000000	480000000000000000	540000000000000000	600000000000000000	720000000000000000	840000000000000000	960000000000000000	1080000000000000000	1200000000000000000	1440000000000000000	1680000000000000000	1920000000000000000	2160000000000000000	2400000000000000000	2700000000000000000	3000000000000000000	3600000000000000000	4200000000000000000	4800000000000000000	5400000000000000000	6000000000000000000	7200000000000000000	8400000000000000000	9600000000000000000	10800000000000000000	12000000000000000000	14400000000000000000	16800000000000000000	19200000000000000000	21600000000000000000	24000000000000000000	27000000000000000000	30000000000000000000	36000000000000000000	42000000000000000000	48000000000000000000	54000000000000000000	60000000000000000000	72000000000000000000	84000000000000000000	96000000000000000000	108000000000000000000	120000000000000000000	144000000000000000000	168000000000000000000	192000000000000000000	216000000000000000000	240000000000000000000	270000000000000000000	300000000000000000000	360000000000000000000	420000000000000000000	480000000000000000000	540000000000000000000	600000000000000000000	720000000000000000000	840000000000000000000	960000000000000000000	1080000000000000000000	1200000000000000000000	1440000000000000000000	1680000000000000000000	1920000000000000000000	2160000000000000000000	2400000000000000000000	2700000000000000000000	3000000000000000000000	3600000000000000000000	4200000000000000000000	4800000000000000000000	5400000000000000000000	6000000000000000000000	7200000000000000000000	8400000000000000000000	9600000000000000000000	10800000000000000000000	12000000000000000000000	14400000000000000000000	16800000000000000000000	19200000000000000000000	21600000000000000000000	24000000000000000000000	27000000000000000000000	30000000000000000000000	36000000000000000000000	42000000000000000000000	48000000000000000000000	54000000000000000000000	60000000000000000000000	72000000000000000000000	840000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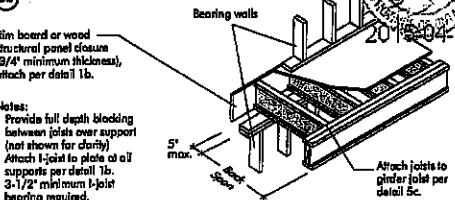
1. N = No reinforcement required.
2. N = Reinforced with 3/4" wood structural panel on one side only.
3. N = Reinforced with 3/4" wood structural panel on both sides, or double I-joist.
4. N = Try a deeper joist or closer spacing.
5. N = Maximum design load shall be 15 psf roof dead load, 30 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door opening.
6. For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
7. Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for closer spacing.
8. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge beam, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
9. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

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

5a SHEATHING REINFORCEMENT



5b SEE-BACK DETAIL



5c SEE-BACK CONNECTION

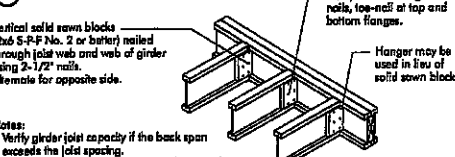


FIGURE 5 (continued)



BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	JOIST SPACING (in.)	Lx=36'-0" (N/A) Sx=12'-0" (N/A)												Lx=40'-0" (N/A) Sx=12'-0" (N/A)												Lx=50'-0" (N/A) Sx=12'-0" (N/A)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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		1219	1524	1829	2134	2438	2743	3048	3353	3658	3963	4268	4573	4878	5183	5488	5793	6098	6403	6708	7013	7318	7623	7928	8233	8538	8843	9148	9453	9758	10063	10368	10673	10978	11283	11588	11893	12198	12503	12808	13113	13418	13723	14028	14333	14638	14943	15248	15553	15858	16163	16468	16773	17078	17383	17688	17993	18298	18603	18908	19213	19518	19823	20128	20433	20738	21043	21348	21653	21958	22263	22568	22873	23178	23483	23788	24093	24398	24703	25008	25313	25618	25923	26228	26533	26838	27143	27448	27753	28058	28363	28668	28973	29278	29583	29888	30193	30498	30803	31108	31413	31718	32023	32328	32633	32938	33243	33548	33853	34158	34463	34768	35073	35378	35683	35988	36293	36598	36903	37208	37513	37818	38123	38428	38733	39038	39343	39648	39953	40258	40563	40868	41173	41478	41783	42088	42393	42698	43003	43308	43613	43918	44223	44528	44833	45138	45443	45748	46053	46358	46663	46968	47273	47578	47883	48188	48493	48798	49103	49408	49713	50018	50323	50628	50933	51238	51543	51848	52153	52458	52763	53068	53373	53678	53983	54288	54593	54898	55203	55508	55813	56118	56423	56728	57033	57338	57643	57948	58253	58558	58863	59168	59473	59778	60083	60388	60693	60998	61303	61608	61913	62218	62523	62828	63133	63438	63743	64048	64353	64658	64963	65268	65573	65878	66183	66488	66793	67098	67403	67708	68013	68318	68623	68928	69233	69538	69843	70148	70453	70758	71063	71368	71673	71978	72283	72588	72893	73198	73503	73808	74113	74418	74723	75028	75333	75638	75943	76248	76553	76858	77163	77468	77773	78078	78383	78688	78993	79298	79603	79908	80213	80518	80823	81128	81433	81738	82043	82348	82653	82958	83263	83568	83873	84178	84483	84788	85093	85398	85703	86008	86313	86618	86923	87228	87533	87838	88143	88448	88753	89058	89363	89668	89973	90278	90583	90888	91193	91498	91803	92108	92413	92718	93023	93328	93633	93938	94243	94548	94853	95158	95463	95768	96073	96378	96683	96988	97293	97598	97903	98208	98513	98818	99123	99428	99733	100038	100343	100648	100953	101258	101563	101868	102173	102478	102783	103088	103393	103698	104003	104308	104613	104918	105223	105528	105833	106138	106443	106748	107053	107358	107663	107968	108273	108578	108883	109188	109493	109798	110103	110408	110713	111018	111323	111628	111933	112238	112543	112848	113153	113458	113763	114068	114373	114678	114983	115288	115593	115898	116203	116508	116813	117118	117423	117728	118033	118338	118643	118948	119253	119558	119863	120168	120473	120778	121083	121388	121693	121998	122303	122608	122913	123218	123523	123828	124133	124438	124743	125048	125353	125658	125963	126268	126573	126878	127183	127488	127793	128098	128403	128708	129013	129318	129623	129928	130233	130538	130843	131148	131453	131758	132063	132368	132673	132978	133283	133588	133893	134198	134503	134808	135113	135418	135723	136028	136333	136638	136943	137248	137553	137858	138163	138468	138773	139078	139383	139688	139993	140298	140603	140908	141213	141518	141823	142128	142433	142738	143043	143348	143653	143958	144263	144568	144873	145178	145483	145788	146093	146398	146703	147008	147313	147618	147923	148228	148533	148838	149143	149448	149753	150058	150363	150668	150973	151278	151583	151888	152193	152498	152803	153108	153413	153718	154023	154328	154633	154938	155243	155548	155853	156158	156463	156768	157073	157378	157683	157988	158293	158598	158903	159208	159513	159818	160123	160428	160733	161038	161343	161648	161953	162258	162563	162868	163173	163478	163783	164088	164393	164698	165003	165308	165613	165918	166223	166528	166833	167138	167443	167748	168053	168358	168663	168968	169273	169578	169883	170188	170493	170798	171103	171408	171713	172018	172323	172628	172933	173238	173543	173848	174153	174458	174763	175068	175373	175678	175983	176288	176593	176898	177203	177508	177813	178118	178423	178728	179033	179338	179643	179948	180253	180558	180863	181168	181473	181778	182083	182388	182693	182998	183303	183608	183913	184218	184523	184828	185133	185438	185743	186048	186353	186658	186963	187268	187573	187878	188183	188488	188793	189098	189403	189708	190013	190318	190623	190928	191233	191538	191843	192148	192453	192758	193063	193368	193673	193978	194283	194588	194893	195198	195503	195808	196113	196418	196723	197028	197333	197638	197943	198248	198553	198858	199163	199468	199773	200078	200383	200688	200993	201298	201603	201908	202213	202518	202823	203128	203433	203738	204043	204348	204653	204958	205263	205568	205873	206178	206483	206788	207093	207398	207703	208008	208313	208618	208923	209228	209533	209838	210143	210448	210753	211058	211363	211668	211973	212278	212583	212888	213193	213498	213803	214108	214413	214718	215023	215328	215633	215938	216243	216548	216853	217158	217463	217768	218073	218378	218683	218988	219293	219598	219903	220208	220513	220818	221123	221428	221733	222038	222343	222648	222953	223258	223563	223868	224173	224478	224783	225088	225393	225698	226003	226308	226613	226918	227223	227528	227833	228138	228443	228748	229053	229358	229663	229968	230273	230578	230883	231188	231493	231798	232103	232408	232713	233018	233323	233628	233933	234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NORDIC

INSTALLATION GUIDE
NORDIC JOIST

NS-G133
ENGLISH
VERSION
2020-10-01

Engineered Wood Products BASIC INSTALLATION GUIDE FOR RESIDENTIAL FLOORS

NORDIC
JOIST

NORDIC
STRUCTURES

nordic.ca

INSTALLING NORDIC I-JOISTS

1. Installation of Nordic I-joists shall be as shown in details 1.
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. Concentrated loads should only be applied to the top surface of the top flange. Concentrated loads should not be suspended from the bottom flange with the exception of light loads, such as ceiling fans or light fixtures.
5. I-joists must be protected from the weather prior to installation.
6. I-joists must not be used in applications where they will be permanently exposed to weather, or will reach a moisture content of 16 percent or greater, such as in swimming pool or hot tub areas. They must not be installed where they will remain in direct contact with concrete or masonry.
7. End bearing length must be at least 1-3/4 inch. For multiple-span joists, intermediate bearing length must be at least 3-1/2 inches.
8. Ends of floor joists shall be restrained to prevent rollover. Use rim board or I-joist blocking panels.
9. I-joists installed beneath bearing walls perpendicular to the joists shall have full-depth blocking panels, rim board, or squash blocks (cripple blocks) to transfer gravity loads from above the floor system to the wall or foundation below.
10. For I-joists installed directly beneath bearing walls parallel to the joists or used as rim board or blocking panels, the maximum vertical load using a single I-joist is 3,300 plf, and 6,600 plf if double I-joists are used.
11. Continuous lateral support of the I-joist's compression flange is required to prevent rotation and buckling. In simple span uses, lateral support of the top flange is normally supplied by the floor sheathing. In multiple-span or cantilever applications, bracing of the I-joist's bottom flange is also required at interior supports of multiple-span joists, and at the end support next to the cantilever extension. The ends of all cantilever extensions must be laterally braced as shown in detail 3, 4, or 5.
12. Nails installed in flange face or edge shall be spaced in accordance with the applicable building code requirements or approved building plans, but should not be closer than those specified on page 3.3 of the Nordic Joist Technical Guide (NS-GT3).
13. Details 1 show only I-joist-specific fastener requirements. For other fastener requirements, see the applicable building code.
14. For proper temporary bracing of wood I-joists and placement of temporary construction loads, see APA Technical Note, "Temporary Construction Loads over I-Joist Roofs and Floors, Form J735."

All nails shown in the details are assumed to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.125 inch for 2-1/2-inch nails, or 0.144 inch for 3-inch nails. Individual components not shown to scale for clarity.

NORDIC I-JOIST SERIES

RESIDENTIAL SERIES

NI-2D	NI-40x
2x6 S-P-F No. 2	2x6 1950F MSR
3/8 in. web	3/8 in. web
Depth: 9-1/2 and 11-7/8 in.	Depth: 9-1/2, 11-7/8 and 14 in.
33 pieces per unit	33 pieces per unit

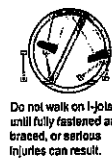
NI-6D	NI-8D
2x8 2100F MSR	2x8 2100F MSR
3/8 in. web	3/8 in. web
Depth: 9-1/2, 11-7/8, 14 and 16 in.	Depth: 11-7/8, 14 and 16 in.
33 pieces per unit	23 pieces per unit

NI-10D	NI-12D
2x10 2400F MSR	2x10 2400F MSR
3/8 in. web	3/8 in. web
Depth: 11-7/8, 14 and 16 in.	Depth: 11-7/8, 14 and 16 in.
23 pieces per unit	23 pieces per unit

RIM BOARDS
Width: 1-1/2 in. 16 ft
Depth: 9-1/2 to 16 in.
APA Rim Board Plus

SAFETY AND CONSTRUCTION PRECAUTIONS

- 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-bracing at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
 2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on center, and must be secured with a minimum of two 2-1/2-inch 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-bracing.
 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.

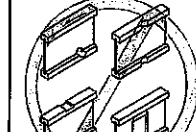
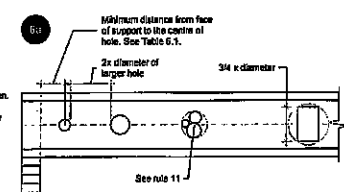


Never stack building materials over unbraced I-joists. Once sheathed, do not over-stress I-joist with concentrated loads from building materials.

WEB HOLES AND OPENINGS

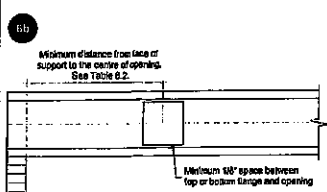
WEB HOLES IN I-JOISTS

- Rules for Cutting Holes in I-joists
1. The distance between the inside edge of the support and the centerline of any hole shall be in compliance with the requirements of Table 6.1.
 2. I-joist top and bottom flanges must never be cut, notched or otherwise modified.
 3. Whenever possible, end cut holes should be located on the middle of the web.
 4. The maximum size hole that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the opening and the adjacent I-joist flange.
 5. The sides of square holes or largest sides of rectangular holes should not exceed 2/3 of the diameter of the maximum round hole permitted at that location.
 6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole - or twice the length of the longest side of the largest rectangular hole - and each hole must be sized and located in compliance with the requirements of Table 6.1.
 7. Holes measuring 1-1/2 inch or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.
 8. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided it is made in compliance with the requirements of rule number 6 above.
 9. All holes shall be cut in accordance with the restrictions listed above and as illustrated in detail 6a.
 10. Limit three maximum-size holes per span.
 11. A group of round holes at approximately the same location shall be permitted if it meets the requirements for a single round hole dimensioned around them.
- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
 2. Holes in web should be cut with a sharp saw.
 3. For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1/4-inch-diameter hole in each of the four corners and then making the hole between the holes is another good method to minimize damage to the I-joist.



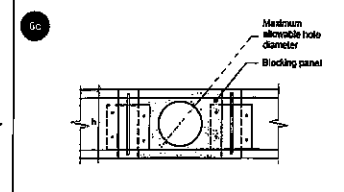
DUCT CHASE OPENINGS

- Rules for Cutting Duct Chase Openings in I-joists
1. The distance between the inside edge of the support and the centerline of a duct chase opening shall be in compliance with the requirements of Table 6.2.
 2. I-joist top and bottom flanges must never be cut, notched or otherwise modified.
 3. The maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the opening and the adjacent I-joist flange.
 4. All openings shall be cut in accordance with the restrictions listed above and as illustrated in detail 6b.
 5. Limit one maximum-size duct chase opening per span.
- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
 2. Holes in web should be cut with a sharp saw.
 3. The maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the opening and the adjacent I-joist flange.
 4. All openings shall be cut in accordance with the restrictions listed above and as illustrated in detail 6b.
 5. Limit one maximum-size duct chase opening per span.

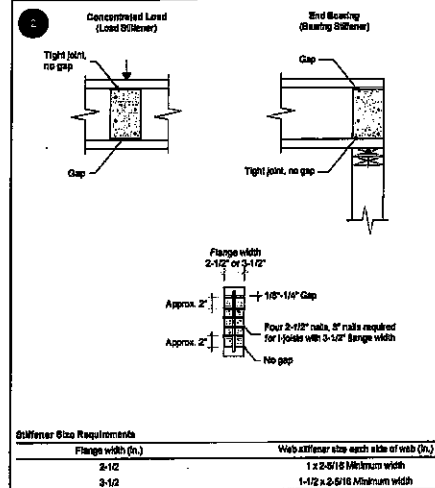


HOLES IN BLOCKING PANELS

- Maximum Allowable Hole Size in Lateral-restraint-only Blocking Panels
1. The maximum allowable hole size for a lateral-restraint-only blocking panel is 2/3 of the lesser dimension of the blocking depth or length. Assuming the blocking panel is longer than its height for depth, the table side applies. For other applications, consult Nordic Structures.
 2. Holes cut into the blocking panels are subject to the following limitations:
 - The top and bottom flanges of an I-joist blocking panel must never be cut, notched or otherwise modified.
 - While round holes are preferred, rectangular holes may be used provided the corners are not over-cut. Slightly rounding the corners or pre-drilling corners with a 1/4-inch-diameter bit is recommended.
 - All holes must be cut in a vertical-like manner in accordance with the limitations listed above.



WEB STIFFENERS



NAIL SPACING

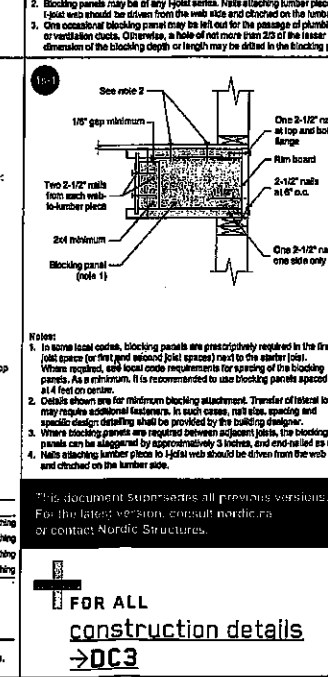
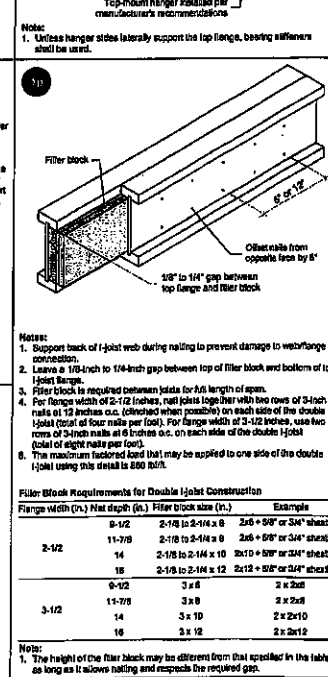
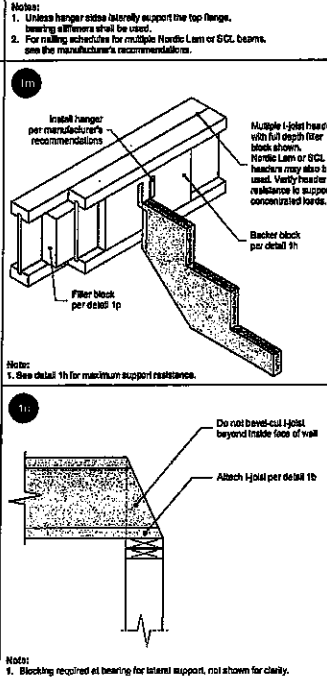
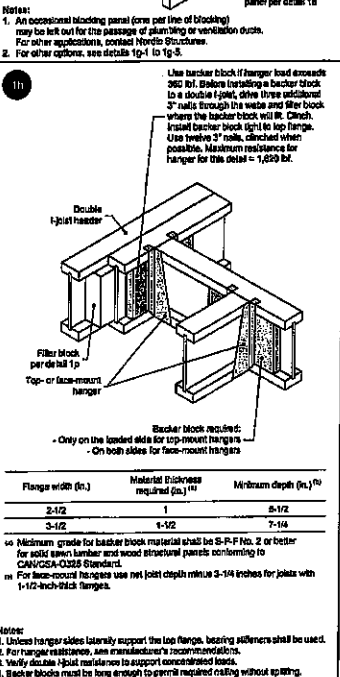
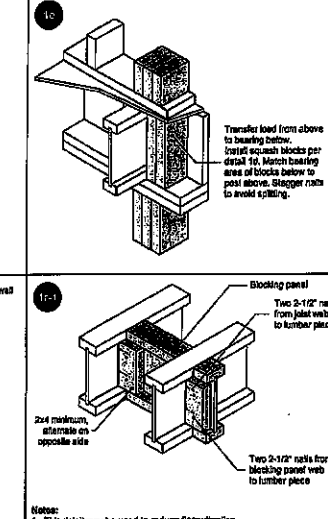
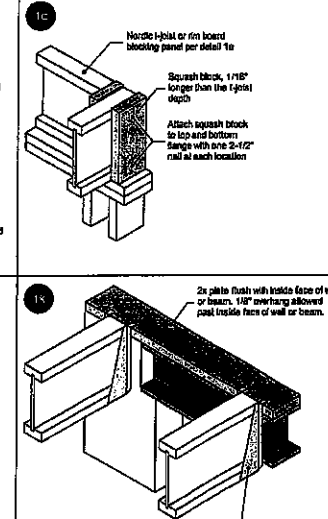
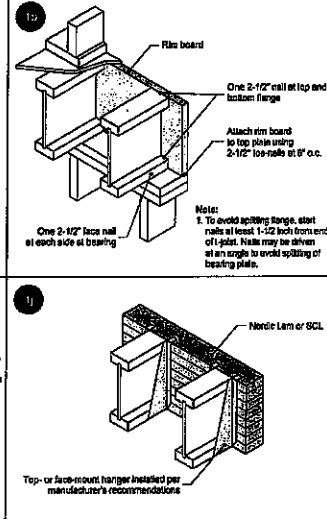
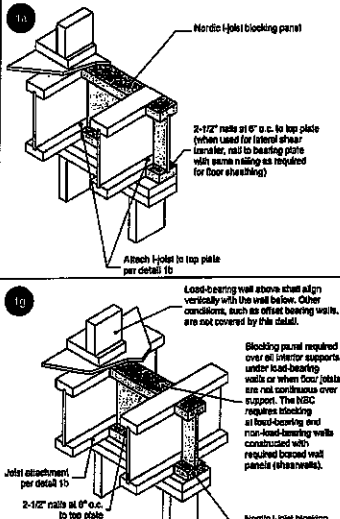
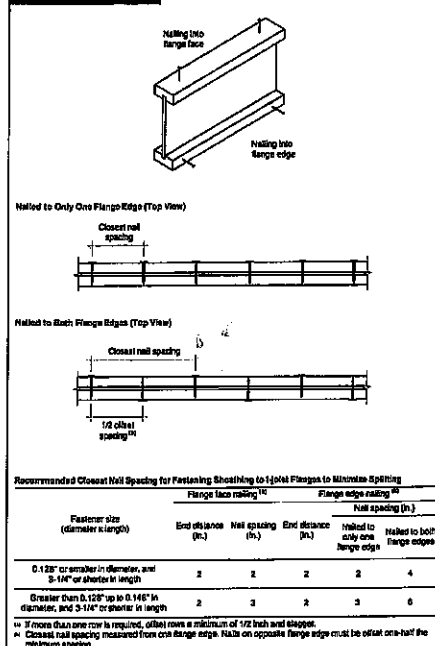


TABLE 6.1 - LOCATION OF WEB HOLES

TABLE 6.1 - LOCATION OF WEB HOLES													
Single or multiple span													
Minimum distance from hole face of any support to centre of hole (ft.-in.)													
Joist depth	Joist spans	1	2	3	4	5	6	7	8	9	10	11	12
Round hole diameter (in.)													
		1 1/2	2	3	4	5	6	7	8	9	10	11	12
9-1/2"	N-20	0-7"	1-4"	2-1"	2-10"	4-3"	5-8"	6-3"	-	-	-	-	-
	N-40x	0-7"	1-8"	3-0"	4-4"	5-0"	6-4"	-	-	-	-	-	-
	N-60	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	-	-	-	-	-	-
	N-80	2-3"	3-6"	5-0"	6-6"	8-2"	8-8"	-	-	-	-	-	-
11-7/8"	N-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-0"	7-0"	-	-	-
	N-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-6"	5-4"	7-0"	8-0"	-	-	-
	N-60	0-7"	1-8"	3-0"	4-3"	6-0"	6-8"	7-3"	8-10"	10-7"	-	-	-
	N-80	1-8"	2-10"	4-2"	5-6"	7-0"	7-8"	8-6"	10-3"	11-4"	-	-	-
14"	N-20	0-7"	0-8"	1-5"	3-2"	4-10"	6-4"	6-8"	-	-	-	-	-
	N-40x	0-7"	0-8"	0-8"	1-0"	2-4"	2-8"	3-8"	5-2"	6-0"	8-0"	8-6"	-
	N-60	0-7"	0-8"	1-8"	3-0"	4-3"	4-8"	5-8"	7-2"	8-4"	8-8"	10-8"	-
	N-80	0-10"	2-0"	3-4"	4-6"	8-2"	8-8"	7-8"	9-2"	10-7"	10-8"	10-8"	-
16"	N-20	0-7"	0-8"	0-10"	2-8"	-	4-6"	4-6"	7-6"	8-4"	8-6"	-	-
	N-40	0-7"	0-8"	0-8"	1-6"	2-10"	3-2"	4-2"	5-8"	6-4"	7-0"	-	-
	N-60	0-7"	1-3"	2-8"	3-10"	5-3"	5-8"	6-6"	8-0"	9-0"	9-0"	-	-
	N-80	0-7"	0-8"	0-8"	1-8"	3-3"	3-8"	4-4"	5-8"	7-0"	8-0"	-	-

Notes:

1. Tabulated values are applicable to residential floor construction meeting the above design criteria.
2. The above table is based on the joists being used at their maximum spans. The maximum distance as given above may be reduced for shorter spans; contact your local distributor.

Design Criteria

Joist spacing	Up to 24 inches
Live load	Live load = 40 psf and dead load = 10 psf
Deflection limits	L/400 under live load and L/240 under total load

TABLE 6.2 - LOCATION OF DUCT CHASE OPENINGS

TABLE 6.2 - LOCATION OF DUCT CHASE OPENINGS																														
Simple span																														
Minimum distance from inside face of any support to center of opening (ft.-in.)																														
Joist depth (in.)		Joist span (ft.)		Chase length (ft.)																										
10	10-3/4	11	12	12-3/4	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
-	-	-	-	-	NB-20	4'-1"	4'-1"	4'-1"	4'-10"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	NB-42x	5'-3"	5'-8"	5'-8"	5'-8"	5'-8"	5'-10"	5'-10"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"	7'-8"
-	-	-	-	-	NB-60	6'-8"	6'-8"	6'-8"	6'-8"	6'-7"	7'-1"	7'-5"	7'-5"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"	6'-8"
-	-	-	-	-	NB-80	8'-8"	8'-8"	8'-8"	8'-8"	8'-8"	8'-10"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"	7'-5"
-	-	-	-	-	NB-100	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"
-	-	-	-	-	NB-120	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"	12'-8"
-	-	-	-	-	NB-140x	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"	14'-8"
-	-	-	-	-	NB-160	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"	16'-8"
-	-	-	-	-	NB-180	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"	18'-8"
-	-	-	-	-	NB-200	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"	20'-8"
-	-	-	-	-	NB-220x	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"	22'-8"
-	-	-	-	-	NB-240	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"	24'-8"
-	-	-	-	-	NB-260	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"	26'-8"
-	-	-	-	-	NB-280	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"	28'-8"
-	-	-	-	-	NB-300	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"	30'-8"
-	-	-	-	-	NB-320x	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"	32'-8"
-	-	-	-	-	NB-340	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"	34'-8"
-	-	-	-	-	NB-360	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"	36'-8"
-	-	-	-	-	NB-380	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"	38'-8"
-	-	-	-	-	NB-400	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"	40'-8"
-	-	-	-	-	NB-420x	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"	42'-8"
-	-	-	-	-	NB-440	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"	44'-8"
-	-	-	-	-	NB-460	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"	46'-8"
-	-	-	-	-	NB-480	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"	48'-8"
-	-	-	-	-	NB-500	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"	50'-8"
-	-	-	-	-	NB-520x	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"	52'-8"
-	-	-	-	-	NB-540	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"	54'-8"
-	-	-	-	-	NB-560	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"	56'-8"
-	-	-	-	-	NB-580	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"	58'-8"
-	-	-	-	-	NB-600	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"	60'-8"
-	-	-	-	-	NB-620x	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"	62'-8"
-	-	-	-	-	NB-640	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"	64'-8"
-	-	-	-	-	NB-660	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"	66'-8"
-	-	-	-	-	NB-680	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"	68'-8"
-	-	-	-	-	NB-700	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"	70'-8"
-	-	-	-	-	NB-720x	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"	72'-8"
-	-	-	-	-	NB-740	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"	74'-8"
-	-	-	-	-	NB-760	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"	76'-8"
-	-	-	-	-	NB-780	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"	78'-8"
-	-	-	-	-	NB-800	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"	80'-8"
-	-	-	-	-	NB-820x	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"	82'-8"
-	-	-	-	-	NB-840	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"	84'-8"
-	-	-	-	-	NB-860	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"	86'-8"
-	-	-	-	-	NB-880	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"	88'-8"
-	-	-	-	-	NB-900	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"	90'-8"
-	-	-	-	-	NB-920x	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"	92'-8"
-	-	-	-	-	NB-940	94'-8"	94'-8"	94'-8"																						

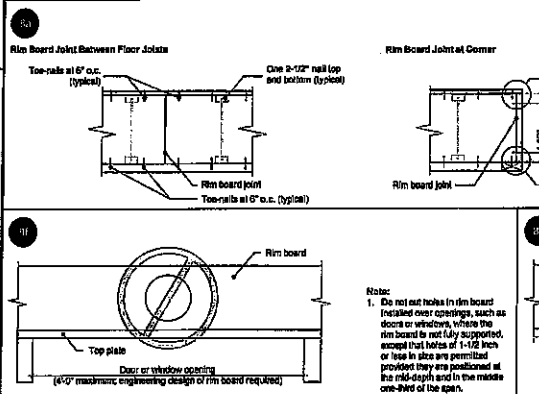
Notes:

1. Tabulated values are applicable to residential floor construction meeting the above design criteria.

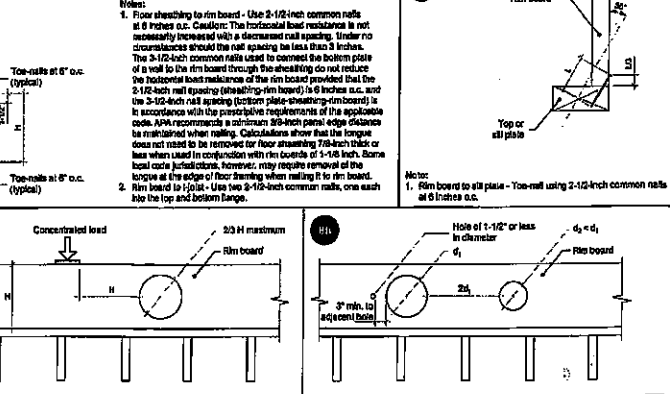
Design Criteria

Joist spacing	Up to 24 inches
Live load	Live load = 40 psf and dead load = 10 psf
Deflection limits	L/400 under live load and L/240 under total load

RIM BOARDS



JOIST MARKING



Certified by APA Plant Number CCMC Evaluation Report Number CE Certification Numbers

NORDIC JOIST

APA PLANT 1092 202161228 CCMC 13032-R ESR-1742 CE 1224-CPD-0176 ETA-09/0036 NI-40x MADE IN CANADA

Production Number ICC-ES Evaluation Report Number I-Joist Series

FOR ALL construction details

NORDIC STRUCTURES

COMPANY
Feb. 19, 2020 09:11

PROJECT
J1 1ST FLOOR.wwb

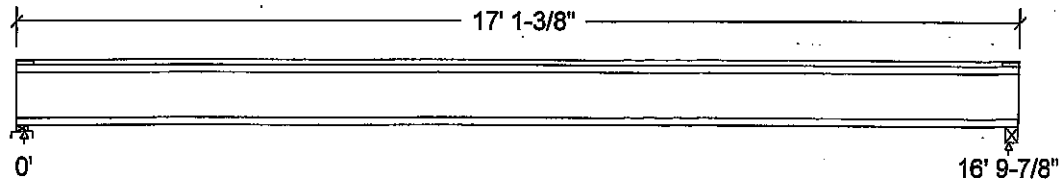
Design Check Calculation Sheet

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):

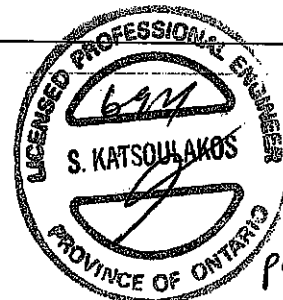


Unfactored:			
Dead	224		224
Live	449		449
Factored:			
Total	953		953
Bearing:			
Capacity			
Joist	2101		2138
Support	3971		4043
Des ratio			
Joist	0.45		0.45
Support	0.24		0.24
Load case	#2		#2
Length	2-3/8		2-5/8
Min req'd	1-1/2		1-1/2
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		1.00
fcp sup	769		769
Kzcp sup	1.09		1.00

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

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

Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Lumber Beam, No.1/No.2;
Total length: 17' 1-3/8"; Clear span: 16' 8-3/8"; 3/4" nailed and glued OSB sheathing
This section PASSES the design code check.



846 NO. TAM 11784-21
STRUCTURAL
COMPONENT ONLY

Limit States Design using CSA-O86-09 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 953	Vr = 2336	lbs	Vf/Vr = 0.41
Moment(+)	Mf = 4009	Mr = 6255	lbs-ft	Mf/Mr = 0.64
Perm. Defl'n	0.12 = < L/999	0.56 = L/360	in	0.21
Live Defl'n	0.24 = L/847	0.42 = L/480	in	0.57
Total Defl'n	0.36 = L/564	0.84 = L/240	in	0.43
Bare Defl'n	0.30 = L/683	0.56 = L/360	in	0.53
Vibration	Lmax = 16'-9.9	Lv = 18'-1.3	ft	0.93
Defl'n	= 0.030	= 0.038	in	0.79

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

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

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

Load Types: D=dead 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} = 459.76 lb-in² K = 6.18e06 lbs GA = 0.77e06 lb

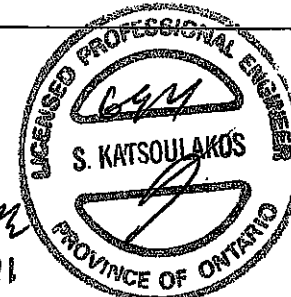
"Live" deflection is due to all non-dead loads (live, wind, snow...)

CONFORMS TO CBC 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 O86-09 Engineering Design in Wood standard, which includes Update No. 1
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. FAM 11784-21
 STRUCTURAL
 COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
Feb. 19, 2020 09:13

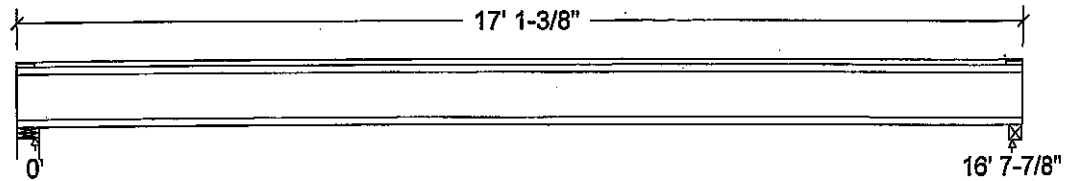
PROJECT
J1 2ND FLOOR.wwb

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	222		222
Live	444		444
Factored:			
Total	944		944
Bearing:			
Capacity			
Joist	2336		2138
Support	7735		4043
Des ratio			
Joist	0.40		0.44
Support	0.12		0.23
Load case	#2		#2
Length	4-3/8		2-5/8
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	-		1.00

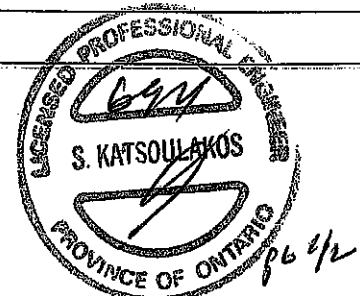
*Minimum bearing length for joists is 1-1/2" for exterior supports
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

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

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

Total length: 17' 1-3/8"; Clear span: 16' 6-3/8"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling.

This section PASSES the design code check.



OWN NO. YAM 11785-21
STRUCTURAL
COMPONENT ONLY

Limit States Design using CSA-086-09 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 944	Vr = 2336	lbs	Vf/Vr = 0.40
Moment(+)	Mf = 3930	Mr = 6255	lbs-ft	Mf/Mr = 0.63
Perm. Defl'n	0.12 = < L/999	0.56 = L/360	in	0.21
Live Defl'n	0.24 = L/850	0.42 = L/480	in	0.56
Total Defl'n	0.35 = L/566	0.83 = L/240	in	0.42
Bare Defl'n	0.28 = L/705	0.56 = L/360	in	0.51
Vibration	Lmax = 16'-7.9	Lv = 17'-8.1	ft	0.94
Defl'n	= 0.032	= 0.038	in	0.83

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

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

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

Load Types: D=dead 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

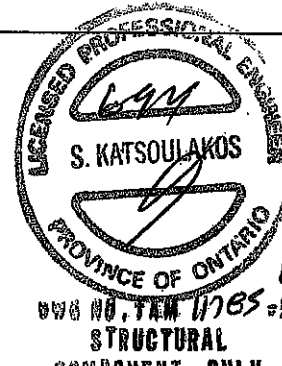
CALCULATIONS:

EI_{eff} = 447.63 lb-in² K = 6.18e06 lbs GA = 0.77e06 lb

"Live" deflection is due to all non-dead loads (live, wind, snow...) **CONFORMS TO CBC 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 086-09 Engineering Design in Wood standard, which includes Update No. 1
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.



**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B1(i4053) (Flush Beam)**

Dry | 1 span | No cant.

May 26, 2021 12:00:17

BC CALC® Member Report

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1(i4053)

City, Province, Postal Code: WATERDOWN

Specifier:

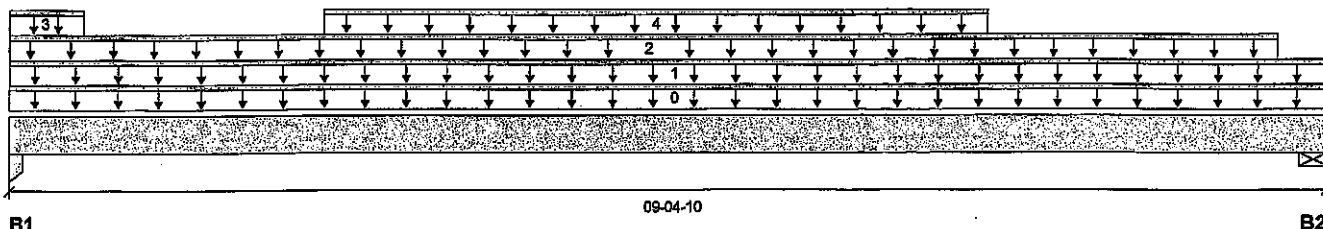
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 09-04-10

Reaction Summary (Down / Uplift) (lbs)

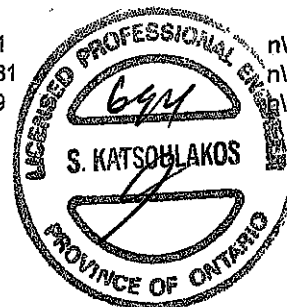
Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	396 / 0	590 / 0		
B2, 1-7/8"	192 / 0	468 / 0		

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	09-04-10	Top		6			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	09-04-10	Top	9	5			n/a
2	12(i1307)	Unf. Lin. (lb/ft)	L	00-00-00	09-00-04	Top		81			n/a
3	12(i1307)	Unf. Lin. (lb/ft)	L	00-00-00	00-06-04	Top	392	181			n/a
4	12(i1307)	Unf. Lin. (lb/ft)	L	02-02-08	06-10-14	Top	64	29			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1693 ft-lbs	11502 ft-lbs	14.7%	0	04-08-07
End Shear	1082 lbs	7232 lbs	15.0%	1	01-01-10
Total Load Deflection	L/999 (0.056")	n/a	n/a	4	04-08-07
Live Load Deflection	L/999 (0.019")	n/a	n/a	5	04-08-07
Max Defl.	0.056"	n/a	n/a	4	04-08-07
Span / Depth	9.3				



ENG NO. FAM1786-21
STRUCTURAL
COMPONENT ONLY

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 1-3/4" x 1-3/4"	1332 lbs	53.6%	35.7%	Unspecified
B2	Wall/Plate 1-7/8" x 1-3/4"	656 lbs	50.0%	25.2%	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. **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: 09-02-12.

CONFORMS TO CBC 2012**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 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B2(i4054) (Flush Beam)**

Dry | 1 span | No cant.

May 26, 2021 12:00:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

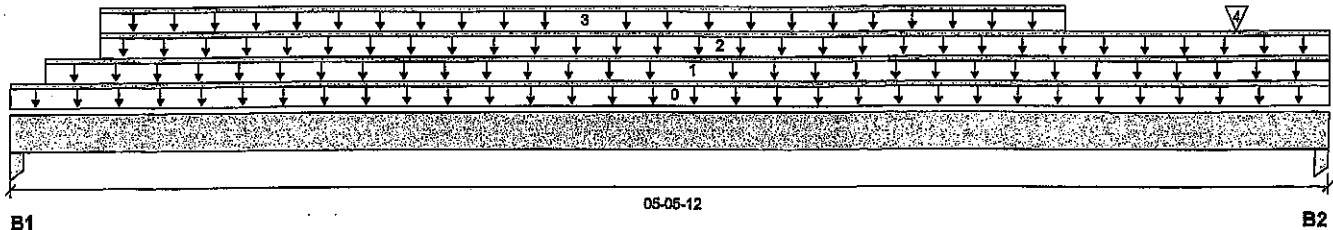
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Description: 1ST FLR FRAMING\Flush Beams\B2(i4054)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 05-05-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1150 / 0	802 / 0		
B2, 3-1/2"	1329 / 0	946 / 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	05-05-12	Top		6			00-00-00
1	13(i1308)	Unf. Lin. (lb/ft)	L	00-01-12	05-05-12	Top		81			n/a
2	13(i1308)	Unf. Lin. (lb/ft)	L	00-04-06	05-05-12	Top	380	191			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-06	04-04-06	Top	105	52			n/a
4	-	Conc. Pt. (lbs)	L	05-01-00	05-01-00	Top	108	100			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3584 ft-lbs	17696 ft-lbs	20.3%	1	02-07-14
End Shear	2529 lbs	7232 lbs	35.0%	1	01-03-06
Total Load Deflection	L/999 (0.024")	n/a	n/a	4	02-08-06
Live Load Deflection	L/999 (0.014")	n/a	n/a	5	02-08-06
Max Defl.	0.024"	n/a	n/a	4	02-08-06
Span / Depth	5.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	2728 lbs	54.9%	36.5%	Unspecified
B2	Column 3-1/2" x 1-3/4"	3176 lbs	63.9%	42.5%	Unspecified

Notes

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

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

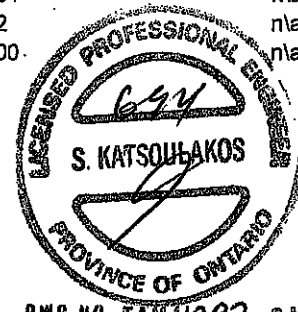
Resistance Factor phi has been applied to all presented results per CSA O86.

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 NBC 2012**AMENDED 2020**

DWS NO. TAM11787-21

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 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B4(i5010) (Flush Beam)**

Dry | 1 span | No cant.

May 26, 2021 12:00:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

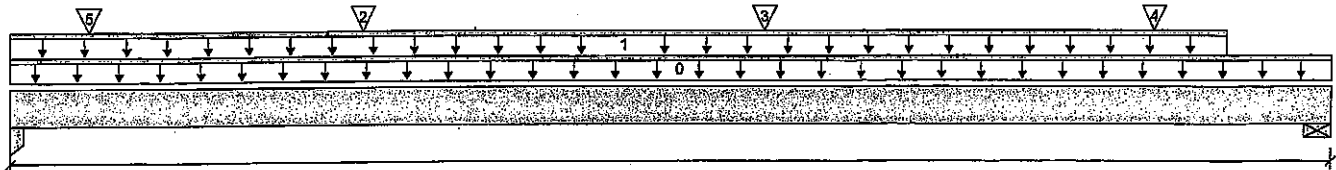
File name: VALLEYCREEK 3A EL 1,2.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B4(i5010)

Specifier:

Designer: AJ

Company:



B1

Total Horizontal Product Length = 04-05-08

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	394 / 0	250 / 0		
B2, 4-3/8"	380 / 0	204 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-05-08	Top		6			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	04-01-02	Top	120	60			n/a
2	J7(i3970)	Conc. Pt. (lbs)	L	01-02-02	01-02-02	Top	100	50			n/a
3	J7(i3970)	Conc. Pt. (lbs)	L	02-06-02	02-06-02	Top	100	50			n/a
4	J7(i4018)	Conc. Pt. (lbs)	L	03-10-02	03-10-02	Top	76	38			n/a
5	-	Conc. Pt. (lbs)	L	00-03-02	00-03-02	Top		44			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	811 ft-lbs	17696 ft-lbs	4.6%	1	02-04-12
End Shear	480 lbs	7232 lbs	6.6%	1	01-03-06
Total Load Deflection	L/999 (0.003")	n/a	n/a	4	02-02-07
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	02-02-07
Max Defl.	0.003"	n/a	n/a	4	02-02-07
Span / Depth	4.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	903 lbs	18.2%	12.1%	Unspecified
B2	Wall/Plate 4-3/8" x 1-3/4"	825 lbs	17.5%	8.8%	Spruce-Pine-Fir

Notes

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

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

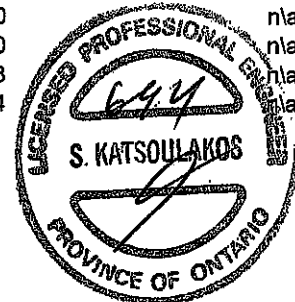
Resistance Factor phi has been applied to all presented results per CSA O86.

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 CBC 2012**AMENDED 2020****DWG NO. TAM 1708-21****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 11-7/8" VERSA-LAM® 2.0 3100 SP

PASSED

1ST FLR FRAMING\Flush Beams\B5(i4003) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B5(i4003)

City, Province, Postal Code: WATERDOWN

Specifier:

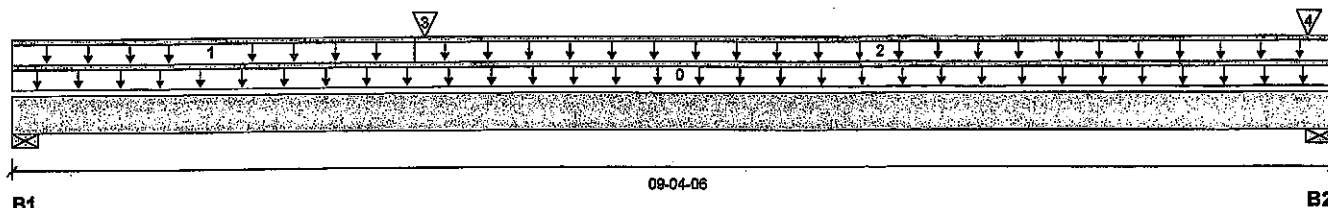
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 09-04-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	340 / 0	205 / 0		
B2, 4-3/8"	227 / 0	160 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-04-06	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	02-10-00	Top	13	7			n/a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	02-10-00	09-04-06	Top	27	13			n/a
3	B7(i3986)	Conc. Pt. (lbs)	L	02-10-14	02-10-14	Top	355	187			n/a
4	FC1 Floor Decking (Plan View Fill)	Conc. Pt. (lbs)	L	09-02-03	09-02-03	Top		16			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1869 ft-lbs	17696 ft-lbs	10.6%	1	02-10-14
End Shear	719 lbs	7232 lbs	9.9%	1	01-03-14
Total Load Deflection	L/999 (0.033")	n/a	n/a	4	04-05-01
Live Load Deflection	L/999 (0.021")	n/a	n/a	5	04-04-02
Max Defl.	0.033"	n/a	n/a	4	04-05-01
Span / Depth	8.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 1-3/4"	766 lbs	17.8%	9.0%	Spruce-Pine-Fir
B2	Wall/Plate 4-3/8" x 1-3/4"	541 lbs	11.5%	5.8%	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: 06-00-04.

CONFORMS TO CBC 2012

AMENDED 2020



OWG NO. TAM11209-21
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®


Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
PASSED
1ST FLR FRAMING\Flush Beams\B6(I3978) (Flush Beam)

May 26, 2021 12:00:17

BC CALC® Member Report

Dry | 1 span | No cant.

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B6(I3978)

City, Province, Postal Code: WATERDOWN

Specifier:

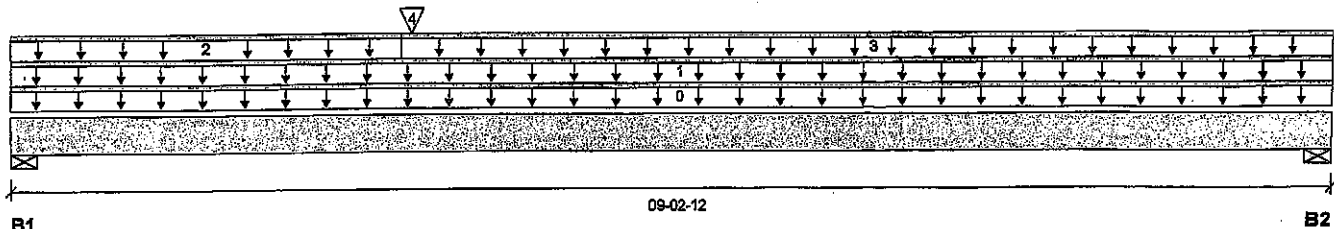
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 09-02-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	340 / 0	204 / 0		
B2, 4-3/8"	260 / 0	161 / 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	09-02-12	Top		6			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	09-02-12	Top	12	6			n/a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	02-08-06	Top	3	2			n/a
3	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	02-08-06	09-02-12	Top	25	12			n/a
4	B7(I3986)	Conc. Pt. (lbs)	L	02-09-04	02-09-04	Top	321	170			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1867 ft-lbs	17696 ft-lbs	10.5%	1	02-09-04
End Shear	719 lbs	7232 lbs	9.9%	1	01-02-04
Total Load Deflection	L/999 (0.035")	n/a	n/a	4	04-03-07
Live Load Deflection	L/999 (0.022")	n/a	n/a	5	04-03-07
Max Defl.	0.035"	n/a	n/a	4	04-03-07
Span / Depth	8.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 1-3/4"	765 lbs	29.9%	15.1%	Spruce-Pine-Fir
B2	Wall/Plate 4-3/8" x 1-3/4"	592 lbs	12.6%	6.3%	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.

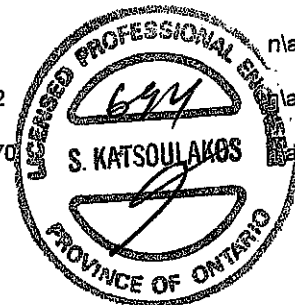
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 06-00-04.

CONFORMS TO CBC 2012

AMENDED 2020


 DWG NO. FAM11790-21
**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®,

**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B7(I3986) (Flush Beam)**

May 26, 2021 12:00:17

BC CALC® Member Report

Dry | 1 span | No cant.

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B7(I3986)

City, Province, Postal Code: WATERDOWN

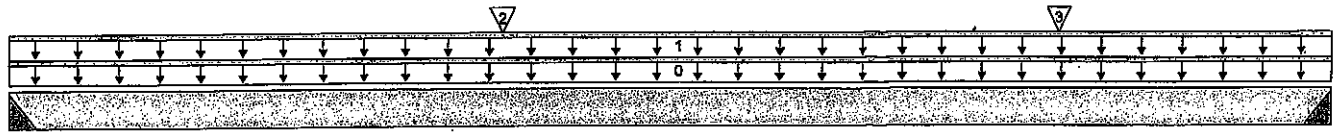
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



B1 03-02-00 B2

Total Horizontal Product Length = 03-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	320 / 0	170 / 0		
B2, 2"	356 / 0	187 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	Top	120	60			n/a
2	J5(I3994)	Conc. Pt. (lbs)	L	01-02-00	01-02-00	Top	164	82			n/a
3	J5(I4016)	Conc. Pt. (lbs)	L	02-06-00	02-06-00	Top	132	66			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	561 ft-lbs	17696 ft-lbs	3.2%	1	01-03-09
End Shear	389 lbs	7232 lbs	5.4%	1	01-01-14
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	01-07-01
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	01-07-01
Max Defl.	0.001"	n/a	n/a	4	01-07-01
Span / Depth	3.0				

Bearing Supports

	Dlm. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	692 lbs	n/a	16.2%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	768 lbs	n/a	18.0%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Single 1-3/4" x 11-7/8" 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.

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: 01-01-08.

CONFORMS TO CBC 2012

AMENDED 2020



DWG NO. FAM11791-21

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®



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

PASSED

1ST FLR FRAMING\Flush Beams\B8(13974) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B8(13974)

City, Province, Postal Code: WATERDOWN

Specifier:

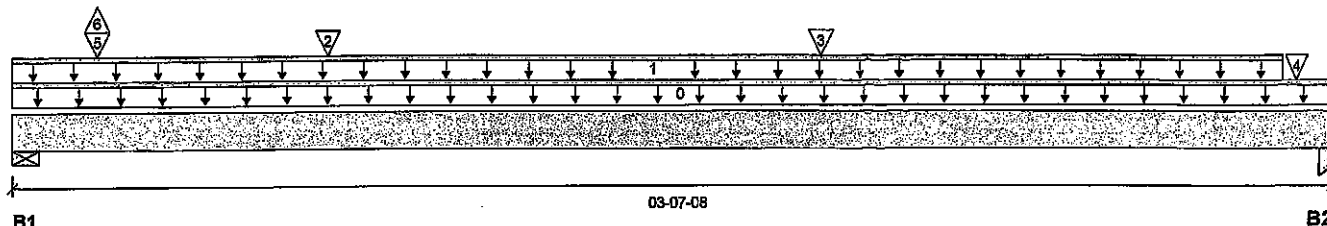
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 03-07-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	2664 / 244	1395 / 0		
B2, 1-3/4"	423 / 0	221 / 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	03-07-08	Top		6			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-05-12	Top	120	60			n/a
2	J6(I4023)	Conc. Pt. (lbs)	L	00-10-04	00-10-04	Top	126	63			n/a
3	J6(I4021)	Conc. Pt. (lbs)	L	02-02-04	02-02-04	Top	142	71			n/a
4	J6(I4009)	Conc. Pt. (lbs)	L	03-06-04	03-06-04	Top	142	71			n/a
5	17(I1315)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	2256	1179			n/a
6	17(I1315)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	-244				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	604 ft-lbs	17696 ft-lbs	3.4%	1	02-02-04
End Shear	348 lbs	7232 lbs	4.8%	1	02-05-14
Total Load Deflection	L/999 (0.001")	n/a	n/a	6	01-11-08
Live Load Deflection	L/999 (0.001")	n/a	n/a	8	01-11-08
Max Defl.	0.001"	n/a	n/a	6	01-11-08
Span / Depth	3.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	5739 lbs	96.9%	48.9%	Spruce-Pine-Fir
B2	Column 1-3/4" x 1-3/4"	911 lbs	36.6%	24.4%	Unspecified

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

Disclosure

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

**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B9(13980) (Flush Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B9(13980)

City, Province, Postal Code: WATERDOWN

Specifier:

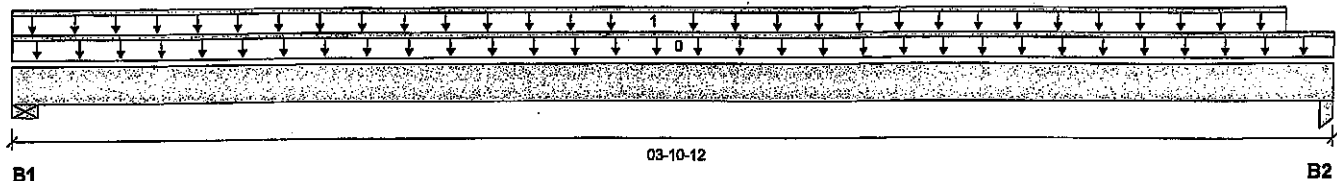
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 03-10-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	47 / 0	35 / 0		
B2, 3-1/2"	45 / 0	35 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-10-12	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	03-09-00	Top	25	12			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	93 ft-lbs	17696 ft-lbs	0.5%	1	01-10-13
End Shear	43 lbs	7232 lbs	0.6%	1	01-02-04
Total Load Deflection	L/999 (0")	n/a	n/a	4	01-10-13
Live Load Deflection	L/999 (0")	n/a	n/a	5	01-10-13
Max Defl.	0"	n/a	n/a	4	01-10-13
Span / Depth	3.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 1-3/4"	114 lbs	4.4%	2.2%	Spruce-Pine-Fir
B2	Column 3-1/2" x 1-3/4"	112 lbs	2.2%	1.5%	Unspecified

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: 03-06-10.

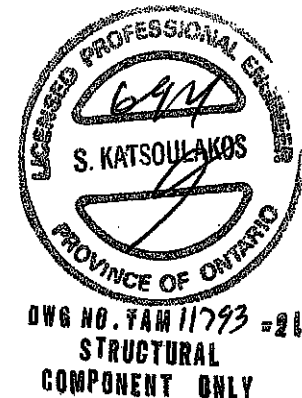
CONFORMS TO CBC 2012

AMENDED 2020

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Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Dropped Beams\B14 DR(i4425) (Dropped Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B14 DR(i4425)

City, Province, Postal Code: WATERDOWN

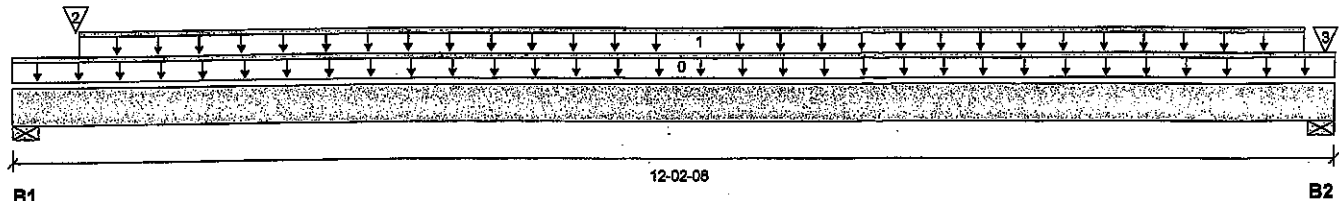
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 12-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-7/16"	3660 / 0	1943 / 0		
B2, 4"	3878 / 0	2051 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-02-08	Top		18			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-07-06	11-11-00	Top	602	302			n/a
2	J2(i4385)	Conc. Pt. (lbs)	L	00-07-00	00-07-00	Top	386	193			n/a
3	J1(i4449)	Conc. Pt. (lbs)	L	12-01-06	12-01-06	Top	339	169			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	23084 ft-lbs	55211 ft-lbs	41.8%	1	06-01-06
End Shear	7162 lbs	21696 lbs	33.0%	1	10-10-10
Total Load Deflection	L/516 (0.27")	n/a	46.5%	4	06-01-06
Live Load Deflection	L/789 (0.177")	n/a	45.6%	5	06-01-06
Max Defl.	0.27"	n/a	n/a	4	06-01-06
Span / Depth	11.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 4-7/16" x 5-1/4"	7919 lbs	25.4%	27.8%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 5-1/4"	8381 lbs	29.9%	32.7%	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: 00-10-12, Bottom: 11-10-01.

CONFORMS TO OBC 2012

AMENDED 2020



OWN NO. FAM 11794 -B1
**STRUCTURAL
 COMPONENT ONLY**



Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Dropped Beams\B14 DR(i4425) (Dropped Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B14 DR(i4425)

City, Province, Postal Code: WATERDOWN

Specifier:

Customer:

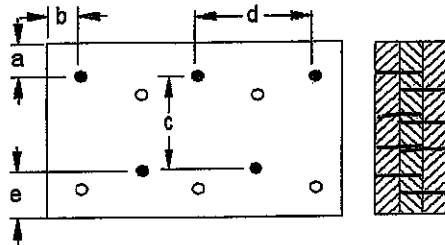
Designer: AJ

Code reports:

CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



4 rows

a minimum = 8"
b minimum = 3"

c = 8-7/8" *tr*
d = 8"
e minimum = 3"

Nailing applies to both sides of the member
Connectors are: Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAN 11794 -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®

2ND FLR FRAMING\Dropped Beams\B19 DR(i4355) (Dropped Beam)

May 26, 2021 12:00:17

BC CALC® Member Report

Dry | 1 span | No cant.

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B19 DR(i4355)

City, Province, Postal Code: WATERDOWN

Specifier:

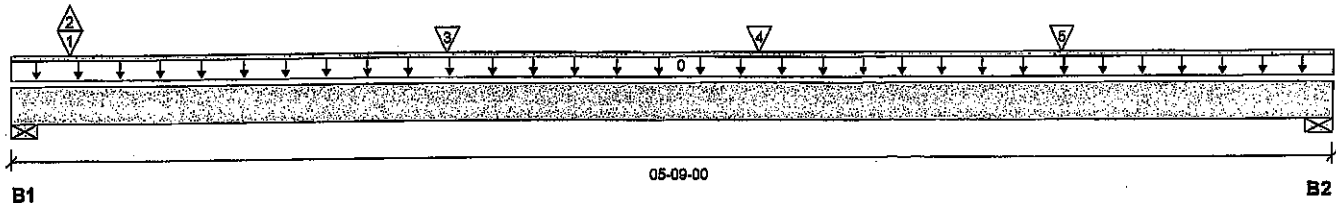
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 05-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	2174 / 233	1126 / 0		
B2, 5-1/2"	727 / 0	399 / 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	05-09-00	Top		12			00-00-00
1	-	Conc. Pt. (lbs)	L	00-03-01	00-03-01	Top	1651	831			n/a
2	-	Conc. Pt. (lbs)	L	00-03-01	00-03-01	Top	-233				n/a
3	J4(i4472)	Conc. Pt. (lbs)	L	01-10-08	01-10-08	Top	429	214			n/a
4	J4(i4364)	Conc. Pt. (lbs)	L	03-02-08	03-02-08	Top	429	214			n/a
5	J4(i4353)	Conc. Pt. (lbs)	L	04-06-08	04-06-08	Top	392	196			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2252 ft-lbs	35392 ft-lbs	6.4%	1	03-02-08
End Shear	1366 lbs	14484 lbs	9.4%	1	04-03-10
Total Load Deflection	L/999 (0.007")	n/a	n/a	6	02-09-08
Live Load Deflection	L/999 (0.005")	n/a	n/a	8	02-09-08
Max Defl.	0.007"	n/a	n/a	6	02-09-08
Span / Depth	5.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	4667 lbs	25.0%	27.3%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	1589 lbs	6.2%	6.8%	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: 01-01-08, Bottom: 05-03-08.

CONFORMS TO OBC 2012

AMENDED 2020


 DWG NO. TAN 11295-21
 STRUCTURAL
 COMPONENT ONLY

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B15(I4452) (Flush Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmd\

Address:

Description: 2ND FLR FRAMING\Flush Beams\B15(I4452)

City, Province, Postal Code: WATERDOWN

Specifier:

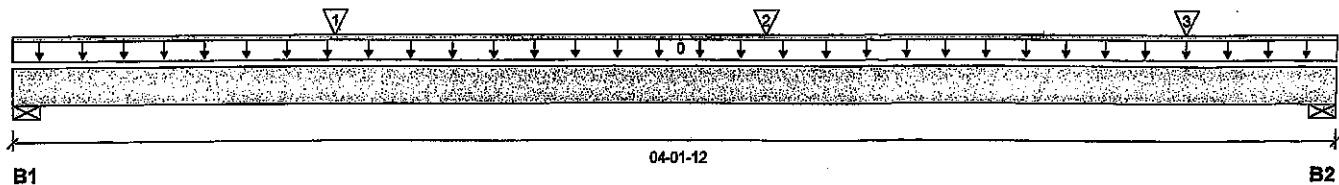
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-01-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1099 / 0	575 / 0		
B2, 2-3/4"	1211 / 0	631 / 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	04-01-12	Top		12			00-00-00
1	-	Conc. Pt. (lbs)	L	01-00-00	01-00-00	Top	838	419			n/a
2	-	Conc. Pt. (lbs)	L	02-04-00	02-04-00	Top	838	419			n/a
3	-	Conc. Pt. (lbs)	L	03-08-00	03-08-00	Top	634	318			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2465 ft-lbs	35392 ft-lbs	7.0%	1	02-04-00
End Shear	1765 lbs	14464 lbs	12.2%	1	01-03-14
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	02-01-12
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	02-01-12
Max Defl.	0.004"	n/a	n/a	4	02-01-12
Span / Depth	3.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	2366 lbs	27.5%	13.9%	Spruce-Pine-Fir
B2	Wall/Plate 2-3/4" x 3-1/2"	2606 lbs	44.0%	22.2%	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



UWS NO. FAM 11796-21
 STRUCTURAL
 COMPONENT ONLY



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

2ND FLR FRAMING\Flush Beams\B15(i4452) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B15(i4452)

City, Province, Postal Code: WATERDOWN

Specifier:

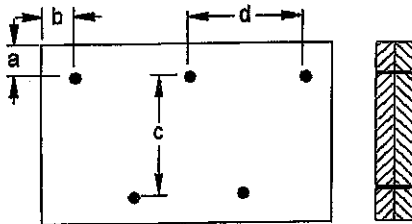
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

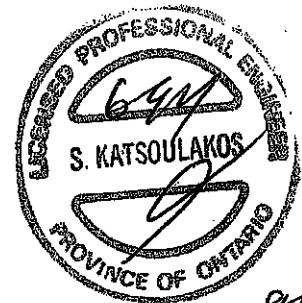
b minimum = 3"

d = 6'

Calculated Side Load = 480.3 lb/ft.

Connectors are: 1 Nails

3/4" ARDOX SPIRAL



DWG NO. TAM 11796-21

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®



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

PASSED

2ND FLR FRAMING\Dropped Beams\B19 DR(i4355) (Dropped Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B19 DR(i4355)

City, Province, Postal Code: WATERDOWN

Specifier:

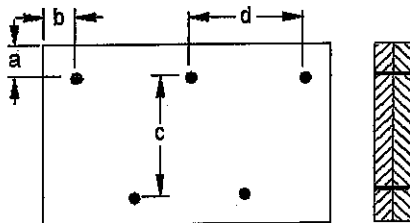
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

Connection Diagram: Full Length of Member

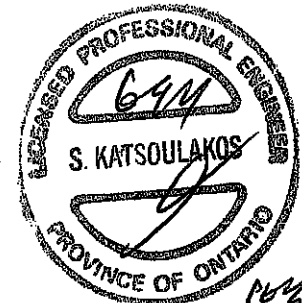


a minimum = 2"
b minimum = 3"

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

Connectors are: Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 11795-21
STRUCTURAL
COMPONENT ONLY

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**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B16(I4381) (Flush Beam)**

May 26, 2021 12:00:17

BC CALC® Member Report

Dry | 1 span | No cant.

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B16(I4381)

City, Province, Postal Code: WATERDOWN

Specifier:

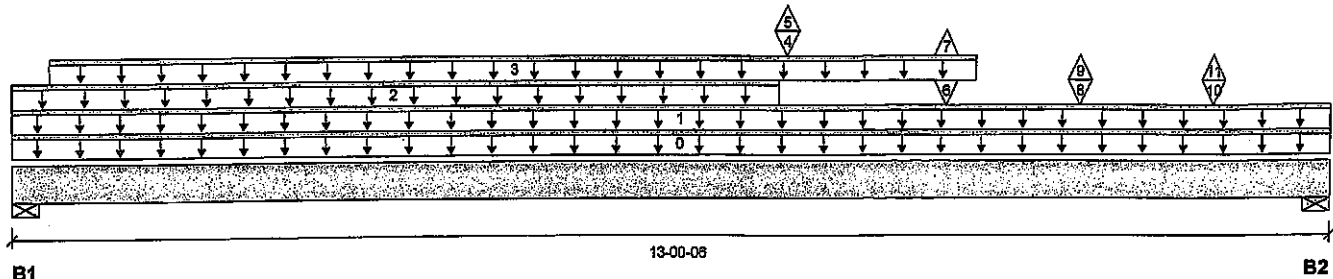
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 13-00-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	526 / 77	672 / 0		
B2, 5-1/2"	924 / 112	727 / 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	13-00-06	Top		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	13-00-06	Top	10	5			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	07-05-10	Top	17	9			n/a
3	WALL	Unf. Lin. (lb/ft)	L	00-04-06	09-05-06	Top		60			n/a
4	-	Conc. Pt. (lbs)	L	07-06-08	07-06-08	Top	673	314			n/a
5	-	Conc. Pt. (lbs)	L	07-06-08	07-06-08	Top	-180				n/a
6	J4(I4472)	Conc. Pt. (lbs)	L	09-01-14	09-01-14	Top	180	88			n/a
7	J4(I4472)	Conc. Pt. (lbs)	L	09-01-14	09-01-14	Top	-3				n/a
8	J4(I4364)	Conc. Pt. (lbs)	L	10-05-14	10-05-14	Top	180	88			n/a
9	J4(I4364)	Conc. Pt. (lbs)	L	10-05-14	10-05-14	Top	-3				n/a
10	J4(I4353)	Conc. Pt. (lbs)	L	11-09-14	11-09-14	Top	164	81			n/a
11	J4(I4353)	Conc. Pt. (lbs)	L	11-09-14	11-09-14	Top	-3				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7779 ft-lbs	35392 ft-lbs	22.0%	1	07-05-10
End Shear	2160 lbs	14464 lbs	14.9%	1	11-07-00
Total Load Deflection	L/1042 (0.142")	n/a	23.0%	6	06-08-07
Live Load Deflection	L/999 (0.074")	n/a	n/a	8	06-10-12
Max Defl.	0.142"	n/a	n/a	6	06-08-07
Span / Depth	12.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 3-1/2"	1628 lbs	17.3%	8.7%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	2295 lbs	19.4%	9.8%	Spruce-Pine-Fir



UWS NO. TAM 11297-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLR FRAMING\Flush Beams\B16(14381) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B16(14381)

City, Province, Postal Code: WATERDOWN

Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

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.

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

AMENDED 2020

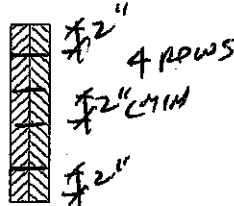
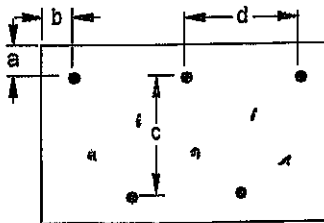
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 06-11-08.

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 8"

Calculated Side Load = 891.0 lb/ft

Connectors are: 3 1/2" ARDOX SPIRAL Nails

3 1/2" ARDOX SPIRAL



ENGINEER NO. 11797-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B17(i4387) (Flush Beam)**

BC CALC® Member Report

Dry | 2 spans | R cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B17(i4387)

City, Province, Postal Code: WATERDOWN

Specifier:

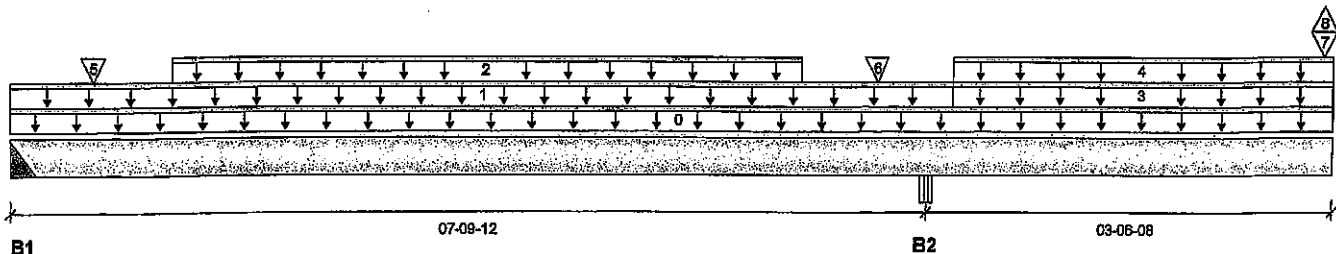
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:

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

Bearing	Live	Dead	Snow	Wind
B1, 4"	651 / 190	264 / 0		
B2, 3-1/2"	1365 / 234	687 / 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	11-04-04	Top		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	08-00-08	Top	7	4			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-08	06-08-08	Top	146	74			n/a
3	STAIR	Unf. Lin. (lb/ft)	L	08-00-08	11-04-04	Top	120	60			n/a
4	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	08-00-08	11-04-04	Top	10	5			n/a
5	J5(i4415)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	Top	160	80			n/a
6	J5(i4363)	Conc. Pt. (lbs)	L	07-04-08	07-04-08	Top	144	72			n/a
7	B18(i4444)	Conc. Pt. (lbs)	L	11-03-06	11-03-06	Top	178	24			n/a
8	B18(i4444)	Conc. Pt. (lbs)	L	11-03-06	11-03-06	Top	-160				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2446 ft-lbs	35392 ft-lbs	6.9%	3	04-08-08
Neg. Moment	-2850 ft-lbs	-33712 ft-lbs	8.5%	1	07-09-12
End Shear	1056 lbs	14464 lbs	7.3%	3	01-03-14
Cont. Shear	1383 lbs	14464 lbs	9.6%	1	06-08-02
Total Load Deflection	2xL/1998 (0.034")	n/a	n/a	13	11-04-04
Live Load Deflection	2xL/1998 (0.032")	n/a	n/a	17	11-04-04
Total Neg. Defl.	2xL/1998 (-0.027")	n/a	n/a	12	11-04-04
Max Defl.	0.018"	n/a	n/a	12	04-00-08
Span / Depth	7.6				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 3-1/2"	1307 lbs	n/a	7.6%	HGUS410
B2	Beam 3-1/2" x 3-1/2"	2906 lbs	19.4%	19.4%	VL 2.0 3100 SP



046 NO. TAM 11798-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLR FRAMING\Flush Beams\B17(i4387) (Flush Beam)

Dry | 2 spans | R cant.

May 26, 2021 12:00:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

File name: VALLEYCREEK 3A EL 1,2.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B17(i4387)

Specifier:

Designer: AJ

Company:

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 11-7/8" LVL Beam.

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

Long Cantilever: Sheathing required on bottom flange and adjacent back span or bracing designed by the design professional of record. Design professional of record must address uplift at supports.

Notes

Design meets User specified (2xL/240) Total load deflection criteria.

Design meets User specified (2xL/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

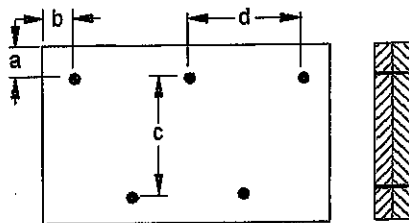
Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

Calculations assume unbraced length of Top: 00-00-00, Bottom: 03-02-00.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 8"

Calculated Side Load = 415.0 lb/ft

Connectors are: 16d Nails

3/4" ARDOX SPIRAL



WWW.HQ.TAM 11298-21
STRUCTURAL
COMPONENT ONLY

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

2ND FLR FRAMING\Flush Beams\B18(i4444) (Flush Beam)

PASSED

BC CALCO® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B18(i4444)

City, Province, Postal Code: WATERDOWN

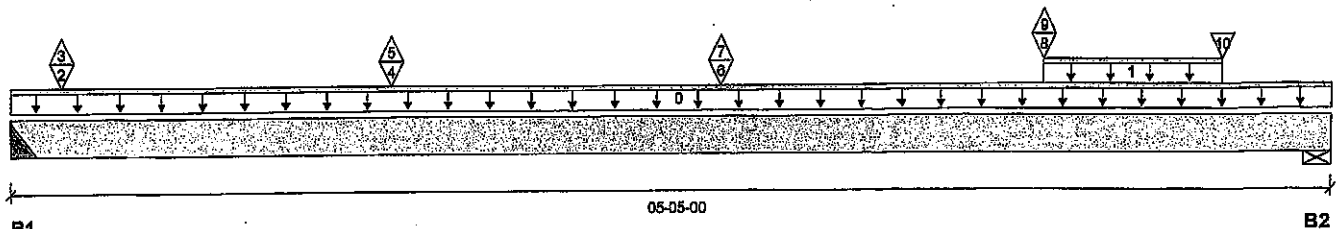
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 05-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	179 / 161	25 / 0		
B2, 5-1/2"	151 / 136	25 / 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	05-05-00	Top		6			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-02-08	04-11-08	Top		2			n/a
2	J4(i4442)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	Top	62	4			n/a
3	J4(i4442)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	Top	-53				n/a
4	J4(i4472)	Conc. Pt. (lbs)	L	01-06-08	01-06-08	Top	91	4			n/a
5	J4(i4472)	Conc. Pt. (lbs)	L	01-06-08	01-06-08	Top	-84				n/a
6	J4(i4364)	Conc. Pt. (lbs)	L	02-10-08	02-10-08	Top	91	4			n/a
7	J4(i4364)	Conc. Pt. (lbs)	L	02-10-08	02-10-08	Top	-84				n/a
8	J4(i4353)	Conc. Pt. (lbs)	L	04-02-08	04-02-08	Top	82	3			n/a
9	J4(i4353)	Conc. Pt. (lbs)	L	04-02-08	04-02-08	Top	-76				n/a
10	FC2 Floor Decking (Plan View Fill)	Conc. Pt. (lbs)	L	04-11-08	04-11-08	Top		1			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	346 ft-lbs	17696 ft-lbs	2.0%	1	02-10-08
Neg. Moment	-283 ft-lbs	-17272 ft-lbs	1.5%	4	02-10-08
End Shear	213 lbs	7232 lbs	2.9%	1	03-11-10
Total Load Deflection	L/999 (0.002")	n/a	n/a	6	02-07-00
Live Load Deflection	L/999 (0.002")	n/a	n/a	8	02-07-00
Total Neg. Defl.	L/999 (-0.001")	n/a	n/a	7	02-07-00
Max Defl.	0.002"	n/a	n/a	6	02-07-00
Span / Depth	5.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	298 lbs	n/a	7.0%	LS90
B1	Uplift	219 lbs			
B2	Wall/Plate 5-1/2" x 1-3/4"	257 lbs	4.3%	2.2%	Spruce-Pine-Fir
B2	Uplift	183 lbs			



006 NO. TAM 11789-21
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B18(14444) (Flush Beam)

PASSED

BC CALC® Member Report
Build 7773

Dry | 1 span | No cant.

May 26, 2021 12:00:17

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

File name: VALLEYCREEK 3A EL 1,2.mmdl
Description: 2ND FLR FRAMING\Flush Beams\B18(14444)
Specifier:
Designer: AJ
Company:

Cautions

Uplift of 219 lbs found at bearing B1.
Hanger B1 cannot handle uplift of ~219 lbs.) - SIMPSON LS90 @ B1)
Header for the hanger LS90 is a Double 1-3/4" x 11-7/8" LVL Beam.
Hanger model LS90 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
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: 01-01-08.

CONFORMS TO OBC 2012

AMENDED 2020



UWB NO. TAM 11749 -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®,

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B20(i4443) (Flush Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B20(i4443)

City, Province, Postal Code: WATERDOWN

Specifier:

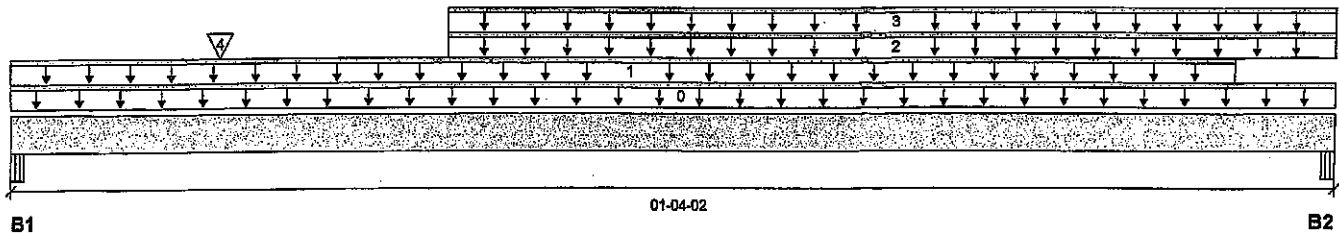
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:

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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	33 / 0	82 / 0	47 / 0	
B2, 4-1/8"	29 / 0	81 / 0	39 / 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	01-04-02	Top		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	01-02-14	Top	10	5			n/a
2	E29(i2653)	Unf. Lin. (lb/ft)	L	00-05-04	01-04-02	Top	33	111	63		n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-05-04	01-04-02	Top	6	3			n/a
4	E28(i2652)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	Top	15	37	29		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	18 ft-lbs	35392 ft-lbs	n/a	13	00-08-10
End Shear	87 lbs	14464 lbs	0.6%	13	00-05-04
Span / Depth	0.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5-1/4" x 3-1/2"	206 lbs	2.1%	0.9%	Unspecified
B2	Beam 4-1/8" x 3-1/2"	189 lbs	2.5%	1.1%	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: 00-06-12.

CONFORMS TO CBC 2012

AMENDED 2020



DWG NO. FAM 11800-26
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLR FRAMING\Flush Beams\B20(i4443) (Flush Beam)

May 26, 2021 12:00:17

BC CALC® Member Report

Dry | 1 span | No cant.

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B20(i4443)

City, Province, Postal Code: WATERDOWN

Specifier:

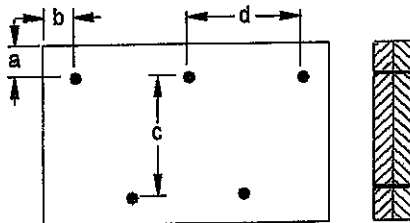
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

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

Connectors are: .. Nails
3 1/2" ARDOX SPIRAL



046 NO. TAM/1800-21
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®,

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B21(i4466) (Flush Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B21(i4466)

City, Province, Postal Code: WATERDOWN

Specifier:

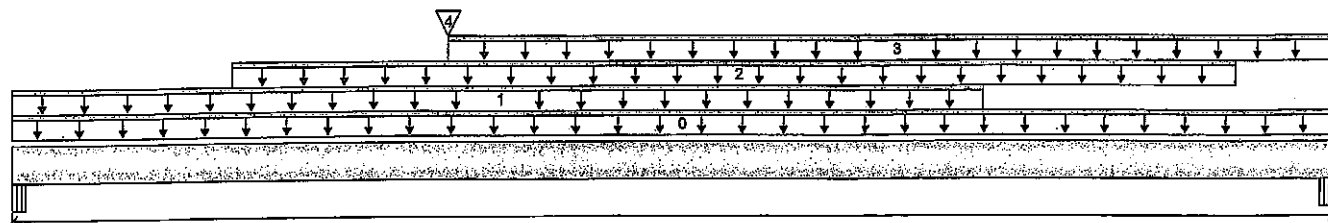
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



B1

01-04-02

B2

Total Horizontal Product Length = 01-04-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	41 / 0	96 / 0	45 / 0	
B2, 4-1/8"	27 / 0	46 / 0	17 / 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	01-04-02	Top		12			00-00-00
1	E31(i2650)	Unf. Lin. (lb/ft)	L	00-00-00	00-11-12	Top	33	111	63		n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-10	01-02-14	Top	28	14			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-05-04	01-04-02	Top	6	3			n/a
4	FC2 Floor Decking (Plan View Fill)	Conc. Pt. (lbs)	L	00-05-04	00-05-04	Top	1				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	20 ft-lbs	35392 ft-lbs	n/a	1	00-08-10
End Shear	94 lbs	14464 lbs	0.6%	1	00-05-04
Span / Depth	0.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/4" x 3-1/2"	228 lbs	2.3%	1.0%	Unspecified
B2 Beam	4-1/8" x 3-1/2"	115 lbs	1.5%	0.7%	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: 00-06-12.

CONFORMS TO OBC 2012

AMENDED 2020



OWN NO. TAM 1/B01-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLR FRAMING\Flush Beams\B21(14466) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 12:00:17

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1,2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B21(14466)

City, Province, Postal Code: WATERDOWN

Specifier:

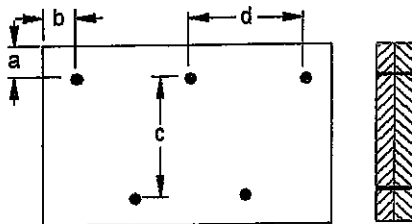
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

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

Connectors are: 1. Nails
3 1/2" ARDOX SPIRAL



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®

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B30(i5011) (Flush Beam)**

Dry | 1 span | No cant.

May 26, 2021 15:19:54

BC CALC® Member Report

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1 DECK.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B30(i5011)

City, Province, Postal Code: WATERDOWN

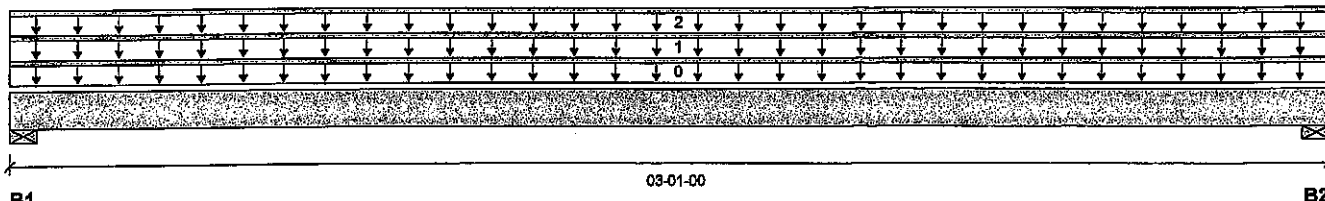
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



B1

B2

Total Horizontal Product Length = 03-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	57 / 0	172 / 0		
B2, 3"	57 / 0	172 / 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	03-01-00	Top		12			00-00-00
1	E36(i4911)	Unf. Lin. (lb/ft)	L	00-00-00	03-01-00	Top	15	88			n/a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	03-01-00	Top	22	11			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	143 ft-lbs	23005 ft-lbs	0.6%	0	01-06-08
End Shear	104 lbs	14464 lbs	0.7%	1	01-10-02
Total Load Deflection	L/999 (0")	n/a	n/a	4	01-06-08
Live Load Deflection	L/999 (0")	n/a	n/a	5	01-06-08
Max Defl.	0"	n/a	n/a	4	01-06-08
Span / Depth	2.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 3" x 3-1/2"	240 lbs	5.7%	2.9%	Spruce-Pine-Fir
B2	Wall/Plate 3" x 3-1/2"	240 lbs	5.7%	2.9%	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: 01-10-12.

CONFORMS TO OBC 2012**AMENDED 2020**

DESIGN NO. TAM 11/2021-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

1ST FLR FRAMING\Flush Beams\B30(i5011) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

May 26, 2021 15:19:54

Build 7773

Job name:

File name: VALLEYCREEK 3A EL 1 DECK.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B30(i5011)

City, Province, Postal Code: WATERDOWN

Specifier:

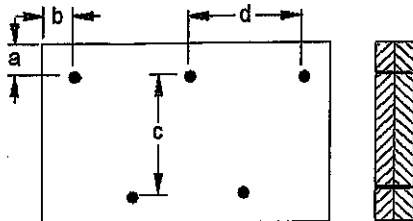
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 8"

Connectors are: 3/4" ARDOX SPIRAL Nails

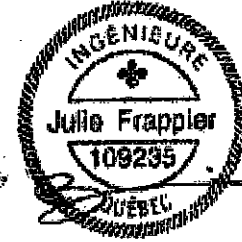
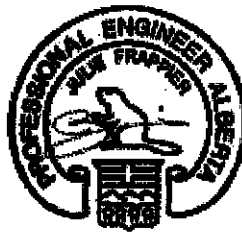


OWG NO. TAM/1802-21
STRUCTURAL
COMPONENT ONLY

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



Maximum Floor Spans

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

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

1. 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.

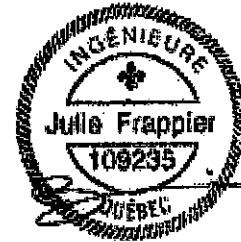
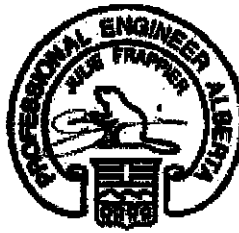
2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

3. Minimum bearing length shall be 1-3/4 inches for the end bearings.

4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

5. This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

6. Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans

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

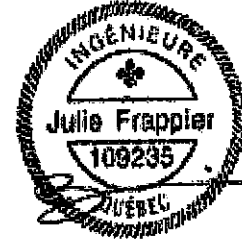
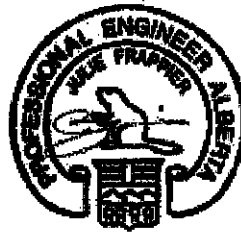
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"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

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

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

Maximum Floor Spans

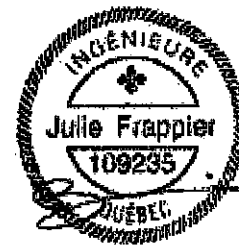
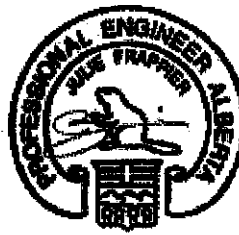
Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing



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

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

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



Maximum Floor Spans

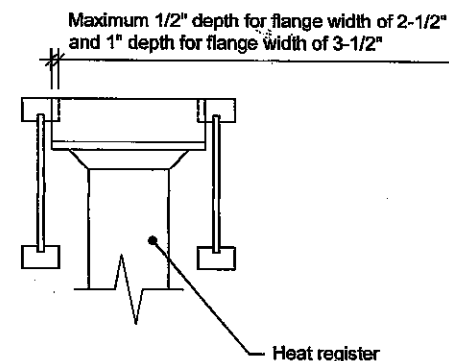
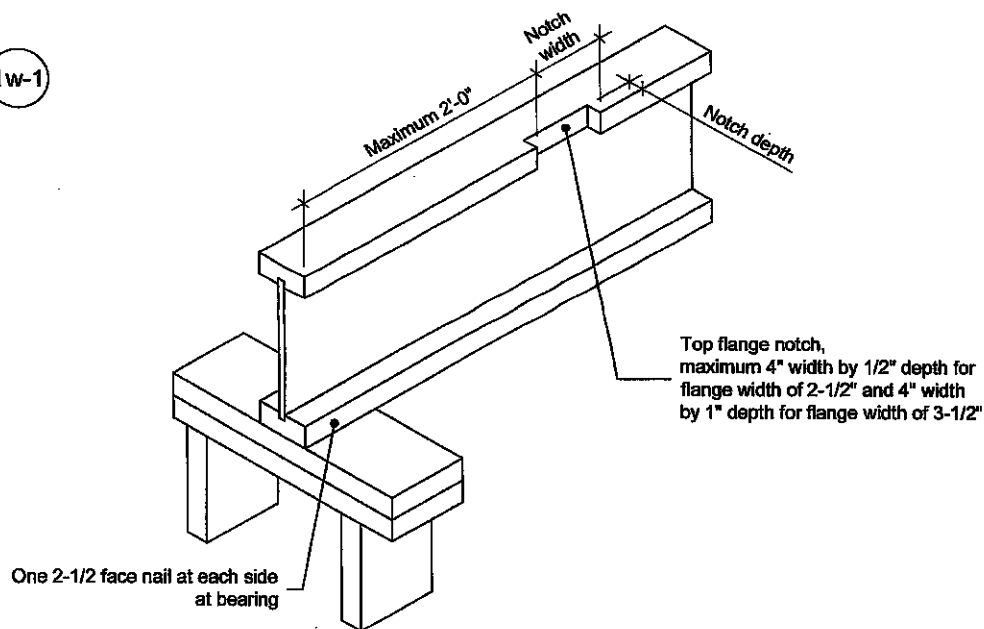
Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
3/4" OSB G&N Sheathing

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

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

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

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
1 888 817-3419
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TITLE

Notch in I-joist for Heat Register

CATEGORY

I-joist - Typical Floor Framing and Construction Details

DOCUMENT

-

DATE

2018-04-10

NUMBER

1w-1



Construction Detail

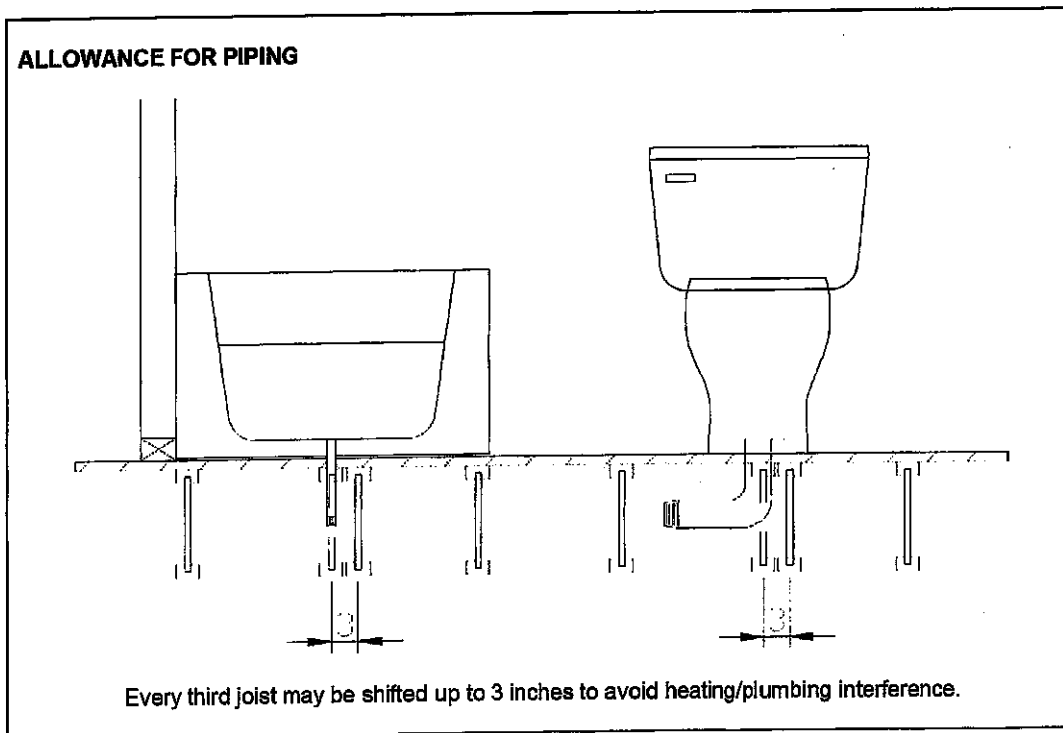
Limit States Design

Allowance for Piping (Installation Notes)

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

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

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



Revised April 12, 2012