

Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	21
J2	18-00-00	11 7/8" NI-40x	1	22
J2DJ	18-00-00	11 7/8" NI-40x	2	8
J3	16-00-00	11 7/8" NI-40x	1	19
J4	12-00-00	11 7/8" NI-40x	1	5
J5	8-00-00	11 7/8" NI-40x	1	2
J6	4-00-00	11 7/8" NI-40x	1	5
J7	2-00-00	11 7/8" NI-40x	1	6
B7	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B5	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B6	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B8	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B4	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
1	H1	IUS2.56/11.88
3	H1	IUS2.56/11.88
26	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
10	H1	IUS2.56/11.88
1	H2	HUS1.81/10
1	H2	HUS1.81/10
2	H4	HGUS412

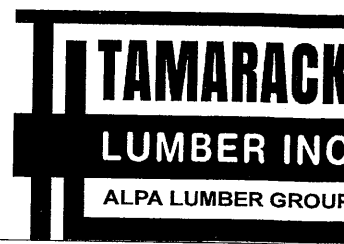
NOTES:

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

LOADING:

DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft²  
DEAD LOAD: 20.0 lb/ft²  
SNOW LOAD: 24.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED



FROM PLAN DATED: 2021/06  
BUILDER: ROYAL PINE HOMES  
SITE: VALES OF HUMBER  
MODEL: 40-7 CNR  
ELEVATION: A  
LOT:  
CITY: BRAMPTON  
SALESMAN: RICK DICIANO  
DESIGNER: AJ  
REVISION:

DATE: 2021-10-19

1st FLOOR

DATE 2-17-22

BCIN: 28064; FIRM: 29991

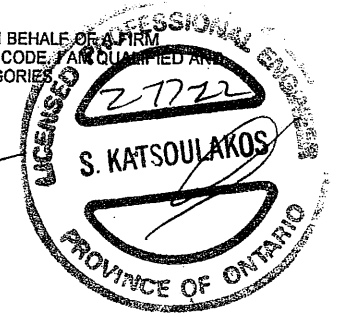
ENGINEERING ONLY - DIMENSIONS TO BE VERIFIED ON SITE SUPPORTING STRUCTURE TO BE VERIFIED BY QUALIFIED BUILDING DESIGNER. ALL CONVENTIONAL FRAMING TO BE SPECIFIED, REVIEWED, AND CONFIRMED BY BUILDING DESIGNER PRIOR TO JOIST(S) AND FLOOR BEAM(S) INSTALLATION. ALL NOTES DESIGNATING MORE OR LESS QAS PER PLAN WORK DO NOT REPRESENT A PART OF THE SCOPE OF WORK WITHIN THE BOUNDARIES OF THE SEAL. THIS WORK IS DELEGATED TO A QUALIFIED BUILDING DESIGNER HAVING RESPONSIBILITY FOR THIS PROJECT. ALL BEAMS NOT ADDRESSED IN THIS DESCRIPTION AND LABELLED ON THIS LAYOUT ARE BEAMS SPECIFIED BY BUILDING DESIGNER AND/OR PROJECT ENGINEER AND ARE TO BE REVIEWED AND CONFIRMED BY THE SAME DESIGNER(S) PRIOR TO FABRICATION TO ENSURE ADEQUATE LOAD CAPACITY WITH RESPECT TO THE FLOOR SYSTEM COMPONENTS REVIEWED IN THIS SUBMISSION. MUNICIPALITY HAVING JURISDICTION TO OBTAIN LOT SPECIFIC SCHEDULE 1 FORM FROM THIS OFFICE PRIOR TO BUILDING PERMIT APPROVAL. INSTALLERS OF THIS FLOOR SYSTEM AND THEIR COMPANIES HAVE THE RESPONSIBILITY OF ENSURING THEY HAVE A COPY OF THE NORDIC INSTALLATION GUIDE AND ANY OTHER MANUFACTURER'S PRODUCT LITERATURE WHICH WILL AID IN THE OVERALL PROPER INSTALLATION OF THIS FLOOR SYSTEM. INSTALLERS ARE TO READ ALL PRODUCT LITERATURE AND INSTALLATION GUIDELINES BEFORE PROCEEDING. THE SUPPLIER AND SEALING ENGINEER OF THIS FLOOR SYSTEM ARE NOT RESPONSIBLE FOR SURPLUS OR DEFICIT OF PRODUCTS AT PROJECT'S END. THIS LAYOUT IS A GUIDE ONLY. CONFIRMATION OF ALL QUANTITIES, LENGTHS, AND DETAILS, REMAINS THE RESPONSIBILITY OF THE FLOOR SYSTEM INSTALLATION CONTRACTOR.

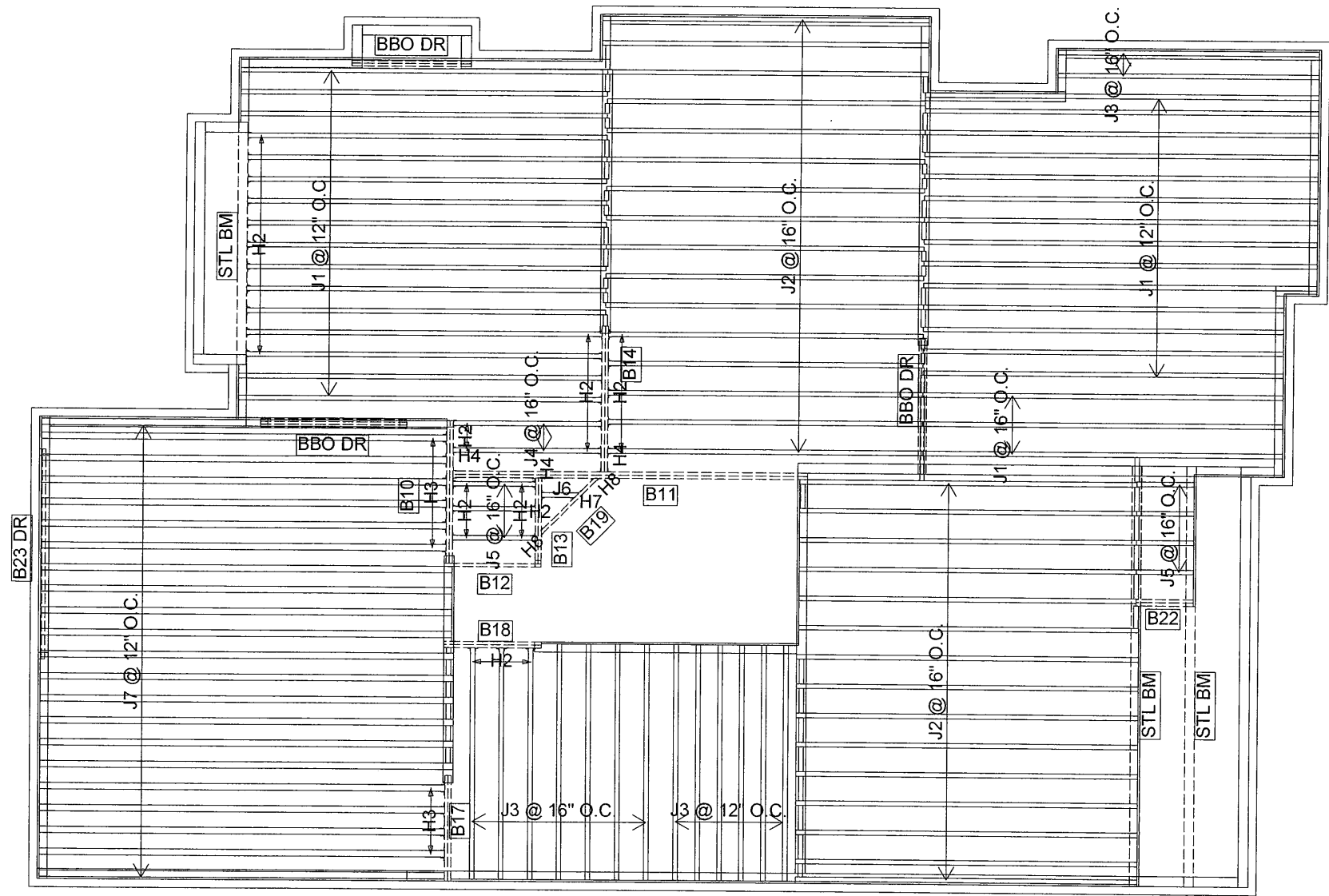
DWG# TAM 3059-22 THROUGH DWG# TAM 3067-22, INCLUSIVE DATED 2-17-22

SEALED STRUCTURAL COMPONENTS ONLY:  
SEALED, THIRD PARTY LVL TYPE BEAMS, BUILT-UP CONVENTIONAL BEAMS, HEADERS, AND CONCENTRATED LOADED NORDIC WOOD-I JOIST ONLY. 2 X 6 SQUASH BLOCK REQUIRED AT ALL EXTERIOR SUPPORTS OR AS PER PROJECT ENGINEER'S SPECIFICATIONS. WEB FILLER REINFORCEMENT REQUIRED AT ALL HANGER SUPPORTED JOIST EXCEEDING A REACTION OF 1500 LBS (FACTORED)-SEE DETAILS.  
A COMPLETE FRAMING PLAN REQUIRES THE NORDIC PUBLISHED LITERATURE, WHICH INCLUDES INSTALLATION REQUIREMENTS, HANDLING AND STORAGE GUIDELINES, AND FORMS AN INTEGRAL PART OF THIS SEALED DOCUMENT. INSTALL SQUASH BLOCKS FOR TRANSFERRING POINT LOADS FROM GIRDER TRUSSES, HEADERS, AND BEAMS DOWN TO FOUNDATION COMPONENTS. FOR PROPER INSTALLATION, SEE NORDIC LITERATURE. PROVIDE 2 X 4 OR 2 X 6 STUD GRADE OR BETTER SQUASH BLOCKS, MATCHING SUPPORTED WALL WIDTH ABOVE BLOCKS. INSTALL SQUASH BLOCKS ON EACH SIDE OF JOIST. BLOCKING TO BE 1/160 DEEPER THAN JOIST DEPTH. SEE NORDIC LITERATURE FOR NAILING REQUIREMENT.

I REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK ON BEHALF OF A FIRM REGISTERED UNDER SUBSECTION 32.5 OF THE ONTARIO BUILDING CODE, I AM A QUALIFIED PROFESSIONAL ENGINEER. THE FIRM IS REGISTERED, IN APPROPRIATE CLASSES AND/OR CATEGORIES.  
REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 3078-22  
BCIN: 28064  
FIRM: 29991  
SEALED STRUCTURAL COMPONENTS ONLY





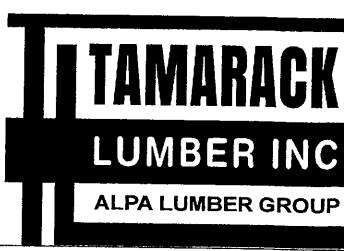
Products				
PlotID	Length	Product	Plies	Net Qty
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J2	16-00-00	11 7/8" NI-40x	1	31
J3	12-00-00	11 7/8" NI-40x	1	15
J4	8-00-00	11 7/8" NI-40x	1	2
J5	4-00-00	11 7/8" NI-40x	1	7
J6	2-00-00	11 7/8" NI-40x	1	1
J7	20-00-00	11 7/8" NI-80	1	22
B23 DR ✓	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11 ✓	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B10 ✓	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B14 ✓	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B12 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B17 ✓	6-00-00	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	2	2
B19 ✓	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B13 ✓	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B22 ✓	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
2	H1	IUS2.56/11.88
21	H1	IUS2.56/11.88
11	H1	IUS2.56/11.88
10	H3	IUS3.56/11.88
3	H4	HGUS412
1	H7	LSSR2.56Z
1	H8	LSSR1.81Z
1	H8	LSSR1.81Z

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

LOADING:  
DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft²  
DEAD LOAD: 20.0 lb/ft²  
SNOW LOAD: 24.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED



FROM PLAN DATED:  
2021/06

BUILDER:  
ROYAL PINE HOMES

SITE:  
VALES OF HUMBER

MODEL: 40-7 CNR

ELEVATION: A

LOT:

CITY: BRAMPTON

SALESMAN: RICK DICIANO

DESIGNER: AJ

REVISION:

DATE: 2022-02-17

2nd FLOOR

DATE 2/17/22

BCIN: 26064; FIRM: 29991

ENGINEERING ONLY - DIMENSIONS TO BE VERIFIED ON SITE SUPPORTING STRUCTURE TO BE VERIFIED BY QUALIFIED BUILDING DESIGNER. ALL CONVENTIONAL FRAMING TO BE SPECIFIED, REVIEWED, AND CONFIRMED BY BUILDING DESIGNER PRIOR TO JOIST(S) AND FLOOR BEAM(S) INSTALLATION. ALL NOTES DESIGNATING MORE OR LESS GAS PER PLAN WORK DO NOT REPRESENT A PART OF THE SCOPE OF WORK WITHIN THE BOUNDARIES OF THE SEAL. THIS WORK IS DELEGATED TO A QUALIFIED BUILDING DESIGNER HAVING RESPONSIBILITY FOR THIS PROJECT. ALL BEAMS NOT ADDRESSED IN THIS DESCRIPTION AND LABELLED ON THIS LAYOUT ARE BEAMS SPECIFIED BY BUILDING DESIGNER AND/OR PROJECT ENGINEER AND ARE TO BE REVIEWED AND CONFIRMED BY THE SAME DESIGNER(S) PRIOR TO FABRICATION TO ENSURE ADEQUATE LOAD CAPACITY WITH RESPECT TO THE FLOOR SYSTEM COMPONENTS REVIEWED IN THIS SUBMISSION. MUNICIPALITY HAVING JURISDICTION TO OBTAIN LOT SPECIFIC SCHEDULE 1 FORM FROM THIS OFFICE PRIOR TO BUILDING PERMIT APPROVAL. INSTALLERS OF THIS FLOOR SYSTEM AND THEIR COMPANIES HAVE THE RESPONSIBILITY OF ENSURING THEY HAVE A COPY OF THE NORDIC INSTALLATION GUIDE AND ANY OTHER MANUFACTURER'S PRODUCT LITERATURE WHICH WILL AID IN THE OVERALL PROPER INSTALLATION OF THIS FLOOR SYSTEM. INSTALLERS ARE TO READ ALL PRODUCT LITERATURE AND INSTALLATION GUIDELINES BEFORE PROCEEDING. THE SUPPLIER AND SEALING ENGINEER OF THIS FLOOR SYSTEM ARE NOT RESPONSIBLE FOR SURPLUS OR DEFICIT OF PRODUCTS AT PROJECT'S END. THIS LAYOUT IS A GUIDE ONLY. CONFIRMATION OF ALL QUANTITIES, LENGTHS, AND DETAILS, REMAINS THE RESPONSIBILITY OF THE FLOOR SYSTEM INSTALLATION CONTRACTOR.

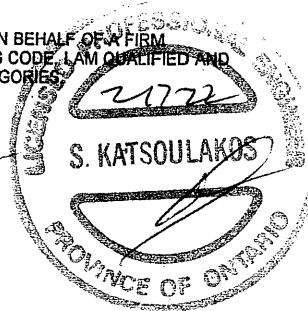
DWG# TAM 3068-22 THROUGH DWG# TAM 3077-22, INCLUSIVE DATED 2/17/22

SEALED STRUCTURAL COMPONENTS ONLY:  
SEALED, THIRD PARTY LVL TYPE BEAMS, BUILT-UP CONVENTIONAL BEAMS, HEADERS, AND CONCENTRATED LOADED NORDIC WOOD-JOIST ONLY. 2 X 6 SQUASH BLOCK REQUIRED AT ALL EXTERIOR SUPPORTS OR AS PER PROJECT ENGINEER'S SPECIFICATIONS. WEB FILLER REINFORCEMENT REQUIRED AT ALL HANGER SUPPORTED JOIST EXCEEDING A REACTION OF 1500 LBS (FACTORED)-SEE DETAILS.  
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I REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK ON BEHALF OF A FIRM REGISTERED UNDER SUBSECTION 3.2.5 OF THE ONTARIO BUILDING CODE. I AM QUALIFIED AND THE FIRM IS REGISTERED, IN APPROPRIATE CLASSES AND/OR CATEGORIES.

REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 3079-22  
BCIN: 26064  
FIRM: 29991  
SEALED STRUCTURAL  
COMPONENTS ONLY



# NORDIC

## INSTALLATION GUIDE NORDIC JOIST

NS-GI33   
ENGLISH  
VERSION  
2020-10-01

### Engineered Wood Products

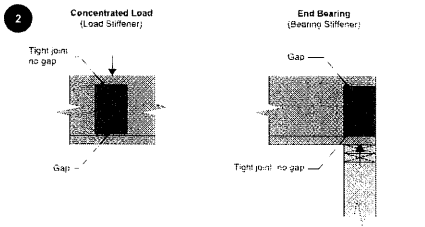
## BASIC INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



## NORDIC STRUCTURES

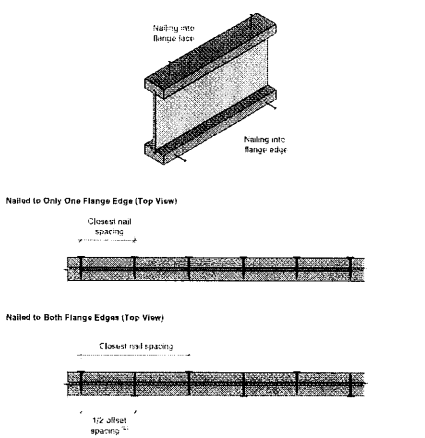
nordic.ca

### WEB STIFFENERS



Stiffener Size Requirements	
Flange width (in.)	3-1/2"
Web stiffener on each side of web (in.)	1 x 2-5/16 Minimum width
	1-1/2" x 2-5/16 Minimum width

### NAIL SPACING



Recommended Closest Nail Spacing for Fastening Sheathing to Joist Flanges to Minimize Splitting					
Flange face nailing (in.)			Flange edge nailing (in.)		
Fastener size (diameter x length)	End distance (in.)	Nail spacing (in.)	End distance (in.)	Nail spacing (in.)	Nail spacing (in.)
6-1/8" or smaller in diameter and 2-1/4" or shorter in length	4	2	2	2	4
Greater than 6-1/8" up to 6-1/4" in diameter and 3-1/4" or shorter in length	2	2	2	2	6

Notes:  
1. Fastener size (diameter x length)  
2. End distance (in.)  
3. Nail spacing (in.)  
4. Closest nail spacing (in.)  
5. Fastener size (diameter x length)  
6. End distance (in.)  
7. Nail spacing (in.)  
8. Closest nail spacing (in.)

### INSTALLING NORDIC I-JOISTS

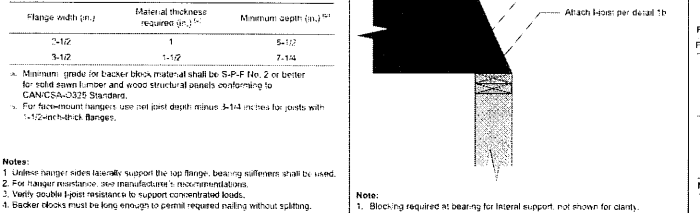
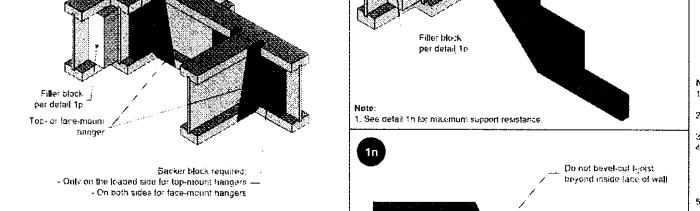
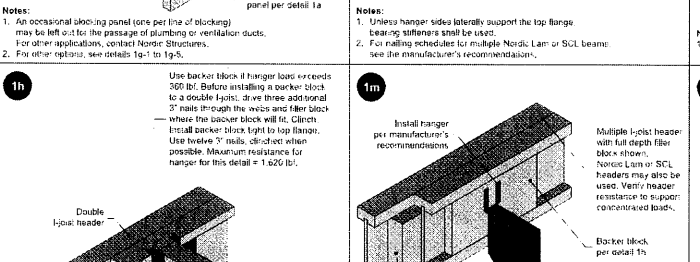
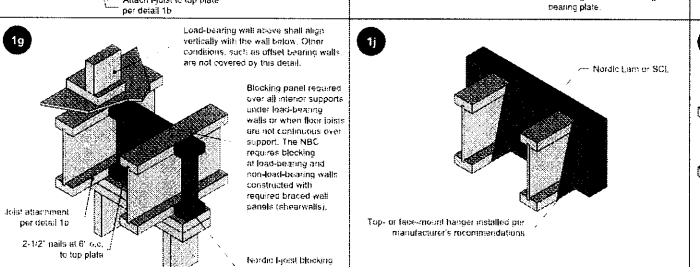
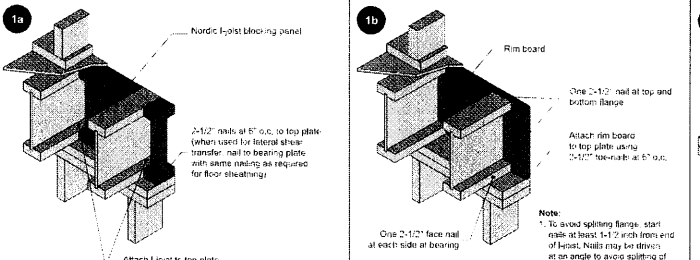
1. Installation of Nordic I-joists shall be as shown in details 1.
2. Except for cutting to length, I-joist flanges should never be cut, drilled or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. Concentrated loads should only be applied 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 15 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 (scrimp 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 details 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 blocking 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 T735.

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 I-JOIST SERIES

#### RESIDENTIAL SERIES

NI-20	NI-20x	NI-40x	NI-60	NI-80	NI-90
2x3 S-P-F No. 2	2x3 S-P-F No. 2	2x3 1950F MSP	2x3 2100F MSP	2x4 2100F MSP	2x4 2400F MSP
3/8 in. web	3/8 in. web	3/8 in. web	3/8 in. web	3/8 in. web	3/8 in. web
Depths	Depths	Depths	Depths	Depths	Depths
9-1/2" and 11-7/8"	9-1/2" and 11-7/8"	9-1/2" and 11-7/8"	9-1/2" and 11-7/8"	11-7/8" and 14"	11-7/8" and 14"
33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit	23 pieces per unit	23 pieces per unit



### 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 centre, 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.



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

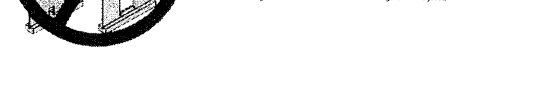


Never stack building materials over unheated I-joists. Once sheathed, do not overstress I-joist with concentrated loads from building materials.

### WEB HOLES IN I-JOISTS

#### Rules for Cutting Holes in I-joists

1. The distance between the inside edge of the support and the centreline 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, holes should be centered on the middle of the web.
4. The maximum size hole that can be cut in an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole and the adjacent I-joist flange.
5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole - or twice the length of the longest side of the longest rectangular hole - 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 that it meets the requirements of rule number 6 above.
9. All holes shall be cut in accordance with the minimum load above and as illustrated in detail 6a.
10. Limit three maximum-size holes per span.
11. A group of round holes is approximately the same location shall be permitted if it meets the requirements for a single round hole circumscribed 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-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

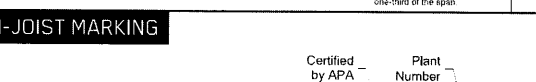
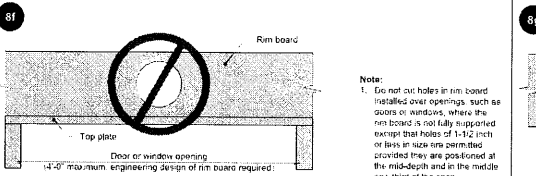
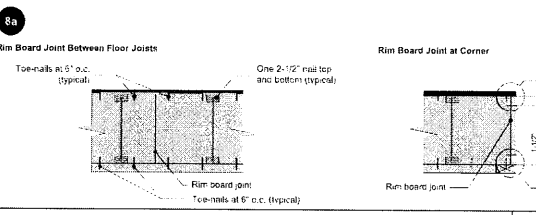
#### TABLE 6.1 - LOCATION OF WEB HOLES

Simple or multiple span		Round hole diameter (in.)													
Joist depth	Joist series	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12
9-1/2"	NI-20	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
	NI-40x	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
	NI-60	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
	NI-80	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
11-7/8"	NI-20	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
	NI-40x	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
	NI-60	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
	NI-80	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
14"	NI-20	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
	NI-40x	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
	NI-60	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
	NI-80	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
16"	NI-20	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
	NI-40x	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
	NI-60	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"
	NI-80	0-7"	1-0"	1-3"	1-6"	2-0"	2-4"	2-8"	3-2"	3-6"	4-0"	4-4"	4-8"	5-2"	5-6"

Notes:  
1. Tabulated values are approximate to residential floor construction meeting the above design criteria.  
2. The above table is based on the I-joist being used at their maximum spans. The minimum distance as given above may be reduced for smaller spans, contact your local distributor.

Design Criteria:  
Joist spacing: Up to 24 inches  
Loads: Live load = 40 psf and dead load = 15 psf  
Deflection limits: L/480 under live load and L/240 under total load

### RIM BOARDS



Notes:  
1. Do not cut holes in rim board installed and openings, such as doors or windows, where the rim board is not fully supported except that holes of 1-1/2 inch or less in size are permitted provided they are positioned at the mid-depth and in the middle one-third of the span.

2. Rim board to I-joist - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

3. Rim board to sill plate - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

4. Rim board to I-joist - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

5. Rim board to I-joist - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

6. Rim board to I-joist - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

7. Rim board to I-joist - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

8. Rim board to I-joist - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

9. Rim board to I-joist - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

10. Rim board to I-joist - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

11. Rim board to I-joist - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

12. Rim board to I-joist - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

13. Rim board to I-joist - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

14. Rim board to I-joist - Use two 2-1/2-inch common nails, one each into the top and bottom flange.

### DUCT CHASE OPENINGS

#### Rules for Cutting Duct Chase Openings in I-joists

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

4. Holes in web should be cut with a sharp saw.

5. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended.

6. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

7. Holes in web should be cut with a sharp saw.

8. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended.

9. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

10. Holes in web should be cut with a sharp saw.

11. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended.

12. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

13. Holes in web should be cut with a sharp saw.

14. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended.

15. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

16. Holes in web should be cut with a sharp saw.

17. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended.

18. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

19. Holes in web should be cut with a sharp saw.

20. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended.

21. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

22. Holes in web should be cut with a sharp saw.

23. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended.

24. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

25. Holes in web should be cut with a sharp saw.

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33. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

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42. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

43. Holes in web should be cut with a sharp saw.

44. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended.

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49. Holes in web should be cut with a sharp saw.

50. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended.

51. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

52. Holes in web should be cut with a sharp saw.

53. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended.

54. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

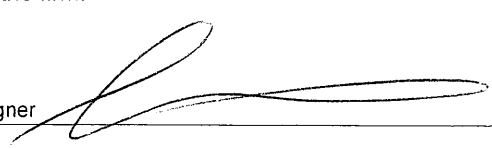
55. Holes in web should be cut with a sharp saw.

56. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended.

57. Starting

## Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

<b>A. Project Information</b>		<b>Application number:</b>	
Building number, street name:		Unit no.	Lot/con.
Municipality <b>BRAMPTON</b>	Postal code	Plan number/ other description	
<b>B. Individual who reviews and takes responsibility for design activities</b>			
Name <b>SAM KATSOULAKOS</b>		Firm <b>MICRO CITY ENGINEERING SERVICES INC.</b>	
Street address <b>R.R #1, PO BOX 61</b>		Unit no.	Lot/con.
Municipality <b>GLENCOE</b>	Postal code <b>N0L 1M0</b>	Province <b>ONTARIO</b>	E-mail <b>mcengr@xplornet.com</b>
Telephone number <b>(519) 287-2242 Business</b>		Fax number	Cell number
<b>C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]</b>			
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <input type="checkbox"/> House  <input type="checkbox"/> Small Buildings  <input type="checkbox"/> Large Buildings  <input type="checkbox"/> Complex Buildings </div> <div style="width: 30%;"> <input type="checkbox"/> HVAC – House  <input type="checkbox"/> Building Services  <input type="checkbox"/> Detection, Lighting and Power  <input type="checkbox"/> Fire Protection </div> <div style="width: 30%;"> <input checked="" type="checkbox"/> Building Structural  <input type="checkbox"/> Plumbing – House  <input type="checkbox"/> Plumbing – All Buildings  <input type="checkbox"/> On-site Sewage Systems </div> </div>			
Description of designer's work: <b>ROYAL PINE HOMES-PROJECT:VALES OF HUMBER-MODEL:40-7-CNR-EL. A-1ST FLR-NOT LOT SPECIFIC</b> REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK LUMBER INC. (SEE DWG #TAM3078-22 DATED <u>2-17-22</u> ). SUPPORTING STRUCTURE (S) TO BE REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.			
<b>D. Declaration of Designer</b>			
I, <b>SAM KATSOULAKOS</b>		declare that (choose one as appropriate):	
(print name)			
<input checked="" type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.			
Individual BCIN: <u>26064</u>			
Firm BCIN: <u>29991</u>			
<input type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code.			
Individual BCIN: _____			
Basis for exemption from registration: _____			
<input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code.			
Basis for exemption from registration and qualification: _____			
I certify that:			
1. The information contained in this schedule is true to the best of my knowledge.			
2. I have submitted this application with the knowledge and consent of the firm.			
Date <u>2-17-22</u>		Signature of Designer 	

**NOTE:**

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d). of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

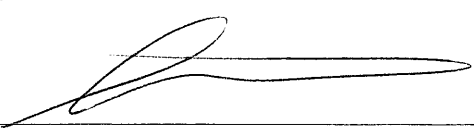
DWG #TAM3078-22S  
DWG #TAM3080-22S

2-17-22



## Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

<b>A. Project Information</b>			<b>Application number:</b>	
Building number, street name:			Unit no.	Lot/con.
Municipality <b>BRAMPTON</b>	Postal code	Plan number/ other description		
<b>B. Individual who reviews and takes responsibility for design activities</b>				
Name <b>SAM KATSOULAKOS</b>		Firm <b>MICRO CITY ENGINEERING SERVICES INC.</b>		
Street address <b>R.R #1, PO BOX 61</b>			Unit no.	Lot/con.
Municipality <b>GLENCOE</b>	Postal code <b>N0L 1M0</b>	Province <b>ONTARIO</b>	E-mail <b>mcengr@xplornet.com</b>	
Telephone number <b>(519) 287-2242 Business</b>		Fax number	Cell number	
<b>C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]</b>				
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <input type="checkbox"/> House  <input type="checkbox"/> Small Buildings  <input type="checkbox"/> Large Buildings  <input type="checkbox"/> Complex Buildings </div> <div style="width: 30%;"> <input type="checkbox"/> HVAC – House  <input type="checkbox"/> Building Services  <input type="checkbox"/> Detection, Lighting and Power  <input type="checkbox"/> Fire Protection </div> <div style="width: 30%;"> <input checked="" type="checkbox"/> Building Structural  <input type="checkbox"/> Plumbing – House  <input type="checkbox"/> Plumbing – All Buildings  <input type="checkbox"/> On-site Sewage Systems </div> </div>				
Description of designer's work: <b>ROYAL PINE HOMES-PROJECT:VALES OF HUMBER-MODEL:40-7-CNR-EL. A-2ND FLR-NOT LOT SPECIFIC</b> REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK LUMBER INC. (SEE DWG #TAM3079-22 DATED <u>2-17-22</u> ). SUPPORTING STRUCTURE (S) TO BE REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.				
<b>D. Declaration of Designer</b>				
I, <u><b>SAM KATSOULAKOS</b></u> declare that (choose one as appropriate): <div style="text-align: center;">(print name)</div> <div style="margin-left: 40px;"> <input checked="" type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.               Individual BCIN: <u><b>26064</b></u>               Firm BCIN: <u><b>29991</b></u> </div> <div style="margin-left: 40px;"> <input type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code.              Individual BCIN: _____               Basis for exemption from registration: _____  <input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code.              Basis for exemption from registration and qualification: _____ </div>				
I certify that: 1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.				
Date		Signature of Designer		
<u><b>2022</b></u>				

**NOTE:**

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
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DWG #TAM3079-22S  
DWG #TAM3081-22S

**2022**

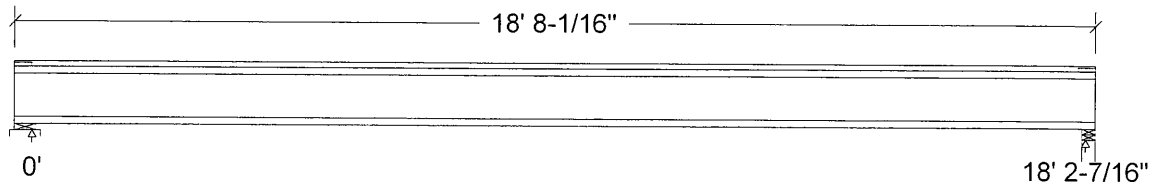
## Design Check Calculation Sheet

Nordic Sizer – Canada 8.0

### 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	182		182
Live	364		364
Factored:			
Total	774		774
Bearing:			
Capacity			
Joist	2336		2155
Support	7735		4756
Des ratio			
Joist	0.33		0.36
Support	0.10		0.16
Load case	#2		#2
Length	4-3/8		2-3/4
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	1.15		-

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

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

### Nordic Joist 11-7/8" NI-40x Floor joist @ 12" o.c.

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

Total length: 18' 8-1/16"; Clear span: 18' 15/16"; 3/4" nailed and glued OSB sheathing

**This section PASSES the design code check.**

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 774	Vr = 2336	lbs	Vf/Vr = 0.33
Moment (+)	Mf = 3521	Mr = 6255	lbs-ft	Mf/Mr = 0.56
Perm. Defl'n	0.12 = < L/999	0.61 = L/360	in	0.20
Live Defl'n	0.25 = L/878	0.46 = L/480	in	0.55
Total Defl'n	0.37 = L/585	0.91 = L/240	in	0.41
Bare Defl'n	0.30 = L/735	0.61 = L/360	in	0.49
Vibration	Lmax = 18'-2.4	Lv = 19'-6.3	ft	0.93
Defl'n	= 0.029	= 0.034	in	0.84



PROVINCE OF ONTARIO  
STRUCTURAL  
COMPONENT ONLY

**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<sub>eff</sub> = 443.45 lb-in<sup>2</sup> K = 6.18e06 lbs GA = 0.77e06 lb

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

**AMENDED 2020****Design Notes:**

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. Allowable vibration-controlled span as per the Concluding Report, Development of Design Procedures for Vibration Controlled Spans using Engineered Wood Members, CWC et al for CCMC, 1997.
7. Floor vibration design from the CCMC Concluding Report (1997) on vibration controlled spans for engineered wood products.
8. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWG NO. FAN 3057-22  
 STRUCTURAL  
 COMPONENT ONLY

# NORDIC STRUCTURES

COMPANY  
Oct. 19, 2021 10:16

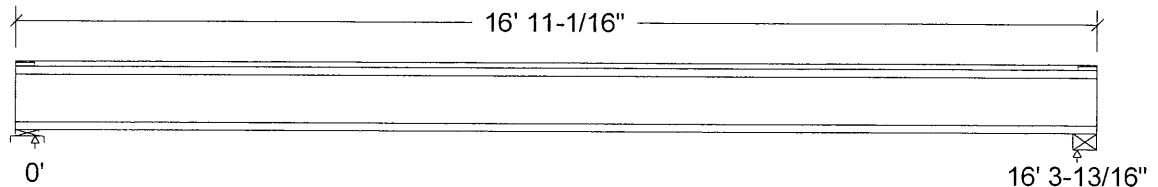
PROJECT  
J2 1ST FLOOR.wwb

## Design Check Calculation Sheet Nordic Sizer – Canada 8.0

### 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	218		218
Live	435		435
Factored:			
Total	925		925
Bearing:			
Capacity			
Joist	2336		2336
Support	7744		-
Des ratio			
Joist	0.40		0.40
Support	0.12		-
Load case	#2		#2
Length	4-3/8		4-3/8
Min req'd	1-1/2		1-1/2
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcp sup	769		-
Kzcp sup	1.15		-

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

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

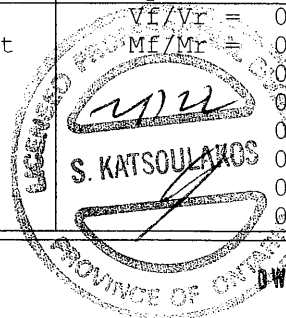
Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Steel Beam, W;

Total length: 16' 11-1/16"; Clear span: 16' 2-5/16"; 3/4" nailed and glued OSB sheathing

**This section PASSES the design code check.**

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 925	Vr = 2336	lbs	Vf/Vr = 0.40
Moment (+)	Mf = 3772	Mr = 6255	lbs-ft	Mf/Mr = 0.60
Perm. Defl'n	0.11 = < L/999	0.54 = L/360	in	0.20
Live Defl'n	0.21 = L/921	0.41 = L/480	in	0.52
Total Defl'n	0.32 = L/614	0.82 = L/240	in	0.39
Bare Defl'n	0.26 = L/743	0.54 = L/360	in	0.48
Vibration	Lmax = 16'-3.8	Lv = 18'-1.3	ft	0.90
Defl'n	= 0.028	= 0.039	in	0.72



DWG NO. TAM 3058-22  
STRUCTURAL  
COMPONENT ONLY



**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:**

$EI_{eff} = 459.76 \text{ lb-in}^2$      $K = 6.18e06 \text{ lbs}$      $GA = 0.77e06 \text{ lb}$   
 "Live" deflection is due to all non-dead loads (live, wind, snow...) **CONFORMS TO OBC 2012**

**Design Notes:****AMENDED 2020**

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. Allowable vibration-controlled span as per the Concluding Report, Development of Design Procedures for Vibration Controlled Spans using Engineered Wood Members, CWC et al for CCMC, 1997.
7. Floor vibration design from the CCMC Concluding Report (1997) on vibration controlled spans for engineered wood products.
8. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWS NO. TAM 305B -22  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Member Report

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Build 7773

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1(i2146)

City, Province, Postal Code: BRAMPTON

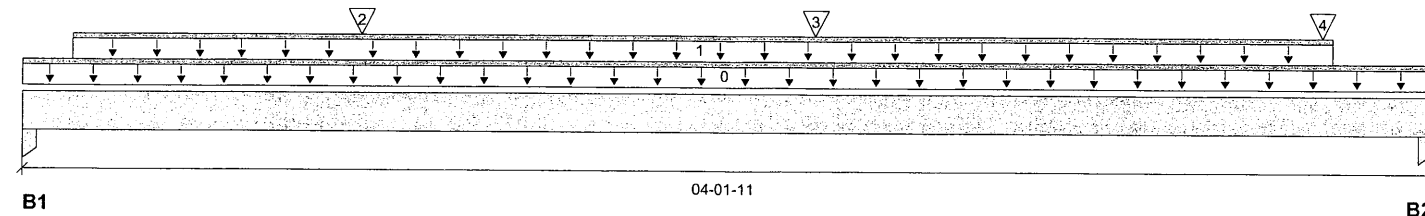
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 04-01-11

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

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	578 / 0	312 / 0		
B2, 3-1/2"	1148 / 0	722 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-01-11	Top	1.00	0.65	1.00	1.15	00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-01-12	03-10-03	Top	240	120			n/a
2	J6(i2110)	Conc. Pt. (lbs)	L	01-00-00	01-00-00	Top	105	52			n/a
3	J6(i2215)	Conc. Pt. (lbs)	L	02-04-00	02-04-00	Top	113	56			n/a
4	-	Conc. Pt. (lbs)	L	03-09-13	03-09-13	Top	616	431			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1283 ft-lbs	35392 ft-lbs	3.6%	1	02-01-05
End Shear	704 lbs	14464 lbs	4.9%	1	01-01-10
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	01-11-15
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-11-15
Max Defl.	0.002"	n/a	n/a	4	01-11-15
Span / Depth	3.9				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 1-3/4" x 3-1/2"	1257 lbs	25.3%	16.8%	Unspecified
B2	Column 3-1/2" x 3-1/2"	2624 lbs	26.4%	17.6%	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 OBC 2012

AMENDED 2020


 DWG NO. TAM 3059-22  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Member Report  
Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1(i2146)

City, Province, Postal Code: BRAMPTON

Specifier:

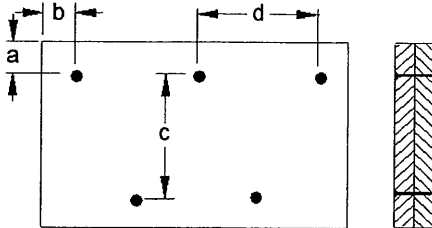
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

### Connection Diagram: Full Length of Member



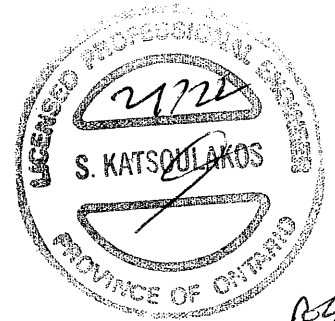
a minimum = 2"  
b minimum = 3"

c = 7-7/8"  
d = 20 3/4"

Calculated Side Load = 119.8 lb/ft

Connectors are: 1 Nails

3-1/2" ARDOX SPIRAL



OWG NO. TAM 3059-22  
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®

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

October 19, 2021 11:56:37

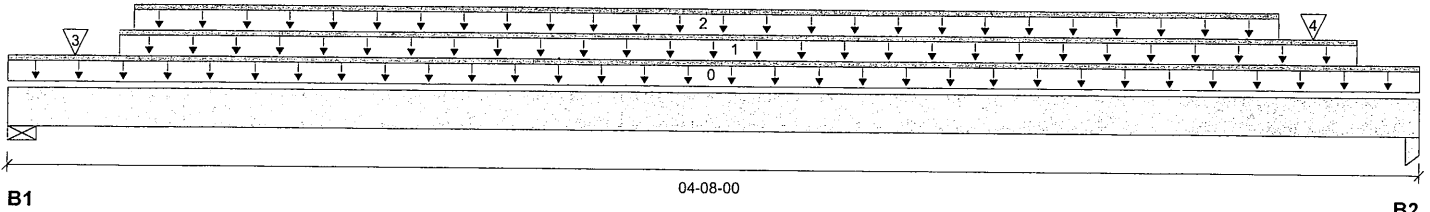
File name: 40-7 CRN EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B2(i2217)

Specifier:

Designer: AJ

Company:


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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	366 / 0	212 / 0		
B2, 6"	3313 / 0	2664 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-08-00	Top	1.00	0.65	1.00	1.15	
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-04-06	04-05-08	Top	23	11			00-00-00 n/a
2	STAIR	Unf. Lin. (lb/ft)	L	00-04-15	04-02-06	Top	120	60			n/a
3	6(i664)	Conc. Pt. (lbs)	L	00-02-10	00-02-10	Top	93	62			n/a
4	7(i676)	Conc. Pt. (lbs)	L	04-03-12	04-03-12	Top	3038	2512			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	571 ft-lbs	17696 ft-lbs	3.2%	1	02-03-12
End Shear	269 lbs	7232 lbs	3.7%	1	01-05-06
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	02-03-12
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	02-03-12
Max Defl.	0.002"	n/a	n/a	4	02-03-12
Span / Depth	3.9				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	814 lbs	13.7%	6.9%	Spruce-Pine-Fir
B2	Column 6" x 1-3/4"	8300 lbs	97.4%	64.8%	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: 00-02-08, Bottom: 03-08-08.

CONFORMS TO CBC 2012

AMENDED 2020


 DWG NO. TAM 3060-22  
**STRUCTURAL COMPONENT ONLY**
**Disclosure**

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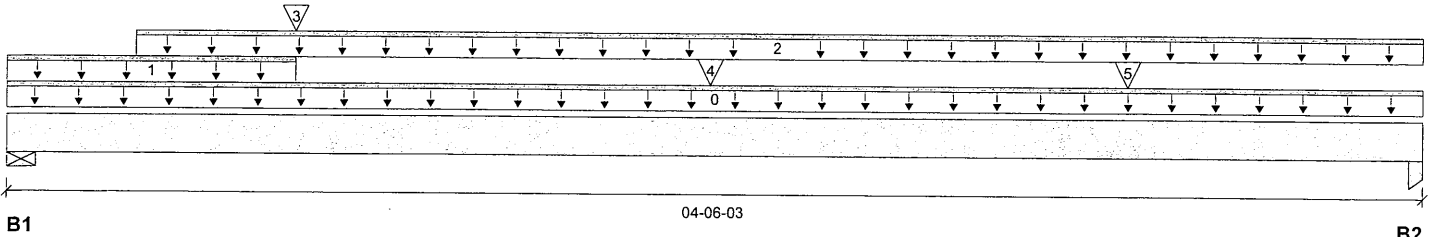
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

BC CALC® Member Report  
 Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

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

 File name: 40-7 CRN EL A.mmdl  
 Description: 1ST FLR FRAMING\Flush Beams\B3(i2228)  
 Specifier:  
 Designer: AJ  
 Company:


Total Horizontal Product Length = 04-06-03

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

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	693 / 0	492 / 0		
B2, 1-3/4"	631 / 0	469 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-06-03	Top	1.00	0.65	1.00	1.15	
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	00-10-14	Top	19				n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-04-14	04-06-03	Top		60			n/a
3	J2(i2092)	Conc. Pt. (lbs)	L	00-10-14	00-10-14	Top	404	202			n/a
4	J2(i2208)	Conc. Pt. (lbs)	L	02-02-14	02-02-14	Top	449	224			n/a
5	J2(i2163)	Conc. Pt. (lbs)	L	03-06-14	03-06-14	Top	441	220			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1832 ft-lbs	35392 ft-lbs	5.2%	1	02-02-14
End Shear	1244 lbs	14464 lbs	8.6%	1	03-04-09
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	02-04-03
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	02-04-03
Max Defl.	0.004"	n/a	n/a	4	02-04-03
Span / Depth	4.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 3-1/2"	1654 lbs	17.6%	8.9%	Spruce-Pine-Fir
B2	Column 1-3/4" x 3-1/2"	1533 lbs	30.9%	20.6%	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 OBC 2012

AMENDED 2020


 DWG NO. TAM 3061 -22  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

October 19, 2021 11:56:37

File name: 40-7 CRN EL A.mmdl

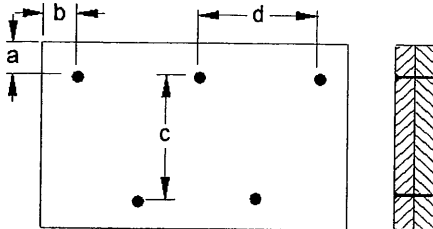
Description: 1ST FLR FRAMING\Flush Beams\B3(i2228)

Specifier:

Designer: AJ

Company:

## Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 3"

Calculated Side Load = 476.8 lb/ft

Connectors are: 3-1/2" ARDOX SPIRAL

3-1/2" ARDOX SPIRAL



DWG NO. TAM 3061-22  
STRUCTURAL  
COMPONENT ONLY

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





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

**PASSED**

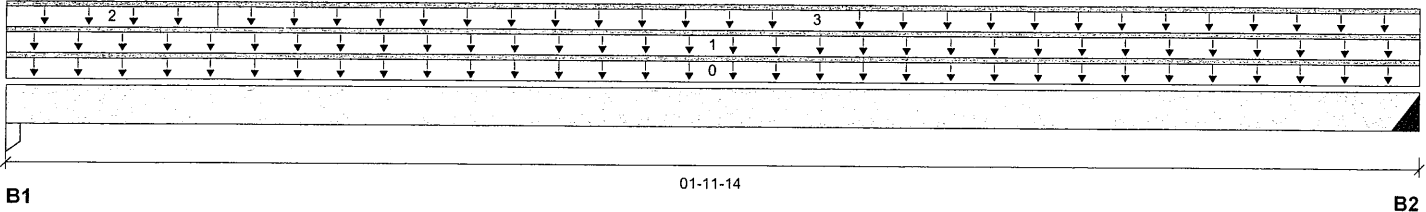
BC CALC® Member Report  
Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

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

File name: 40-7 CRN EL A.mmdl  
Description: 1ST FLR FRAMING\Flush Beams\B4(i2165)  
Specifier:  
Designer: AJ  
Company:



Total Horizontal Product Length = 01-11-14

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

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	8 / 0	74 / 0		
B2, 2"	7 / 0	65 / 0		

## Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-11-14	Top	1.00	0.65	1.00	1.15	00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	01-11-14	Top		60			n/a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	00-03-09	Top	6				n/a
3	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-03-09	01-11-14	Top	8	4			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	34 ft-lbs	11502 ft-lbs	0.3%	0	01-00-11
End Shear	16 lbs	4701 lbs	0.3%	0	01-03-06
Span / Depth	1.7				

## Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column	3-1/2" x 1-3/4"	103 lbs	3.2%	2.1%
B2	Hanger	2" x 1-3/4"	91 lbs	n/a	3.3%

## Cautions

Header for the hanger HUS1.81/10 is a Double 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

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: 01-08-06.

CONFORMS TO CBC 2012

AMENDED 2020



STRUCTURAL COMPONENT ONLY

## Disclosure

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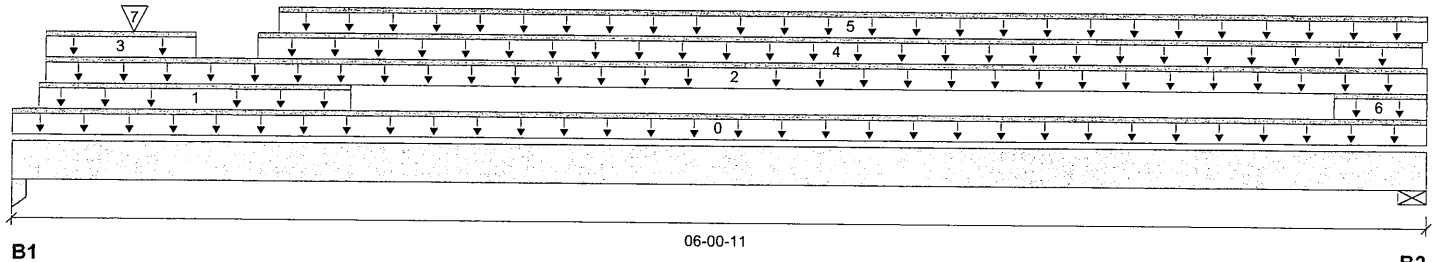
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BC CALC® Member Report  
 Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

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

 File name: 40-7 CRN EL A.mmdl  
 Description: 1ST FLR FRAMING\Flush Beams\B5(i2187)  
 Specifier:  
 Designer: AJ  
 Company:


Total Horizontal Product Length = 06-00-11

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

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	2991 / 0	1854 / 0		
B2, 3-1/8"	2433 / 0	1511 / 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	06-00-11	Top		12			00-00-00
1	6(i664)	Unf. Lin. (lb/ft)	L	00-01-05	01-05-05	Top	275	138			n/a
2	6(i664)	Unf. Lin. (lb/ft)	L	00-01-11	06-00-11	Top		81			n/a
3	6(i664)	Unf. Lin. (lb/ft)	L	00-01-11	00-09-04	Top	1182	628			n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	01-00-07	06-00-07	Top	375	188			n/a
5	6(i664)	Unf. Lin. (lb/ft)	L	01-01-09	06-00-11	Top	373	188			n/a
6	6(i664)	Unf. Lin. (lb/ft)	L	05-07-15	06-00-11	Top	242	142			n/a
7	-	Conc. Pt. (lbs)	L	00-06-01	00-06-01	Top	401	265			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	7155 ft-lbs	35392 ft-lbs	20.2%	1	02-11-01
End Shear	4851 lbs	14464 lbs	33.5%	1	01-03-06
Total Load Deflection	L/999 (0.03")	n/a	n/a	4	03-00-15
Live Load Deflection	L/999 (0.019")	n/a	n/a	5	03-00-15
Max Defl.	0.03"	n/a	n/a	4	03-00-15
Span / Depth	5.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Column	3-1/2" x 3-1/2"	6803 lbs	68.4%	45.5%	Unspecified
B2 Wall/Plate	3-1/8" x 3-1/2"	5538 lbs	82.0%	41.3%	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.

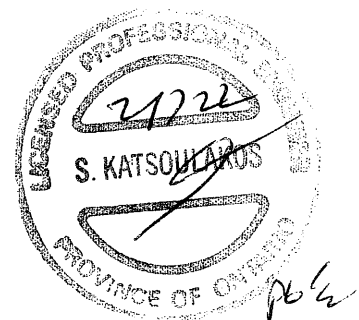
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-01-11, Bottom: 00-09-08.

CONFORMS TO OBC 2012

AMENDED 2020


 DWG NO. YAM3063 -22  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Member Report  
Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B5(i2187)

City, Province, Postal Code: BRAMPTON

Specifier:

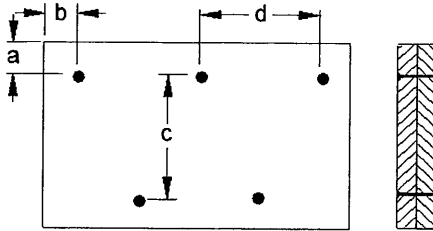
Customer:

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 = 12" <sup>el</sup>

Calculated Side Load = 799.0 lb/ft

Connectors are: 16d <sup>el</sup> Nails

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



## Disclosure

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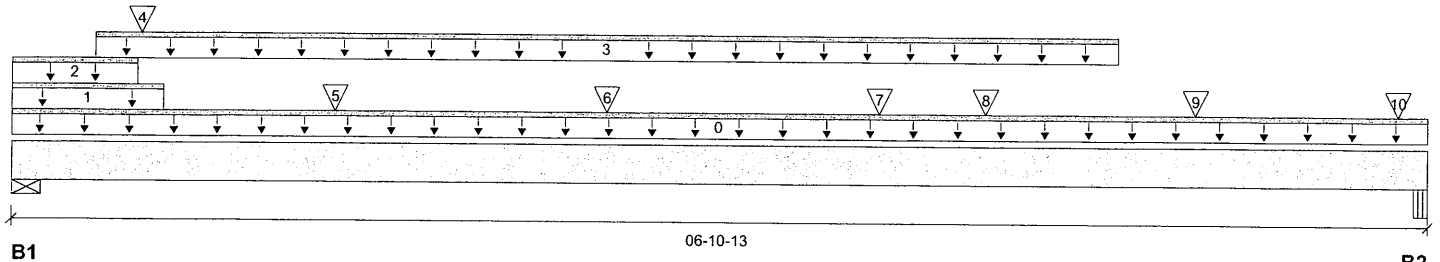
BC CALC® Member Report  
Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

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

File name: 40-7 CRN EL A.mmdl  
Description: 1ST FLR FRAMING\Flush Beams\B6(i2267)  
Specifier:  
Designer: AJ  
Company:



Total Horizontal Product Length = 06-10-13

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

Bearing	Live	Dead	Snow	Wind
B1, 8-3/16"	4324 / 0	2413 / 0		
B2, 5-1/4"	4024 / 0	2358 / 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	06-10-13	Top		12			00-00-00
1	6(i664)	Unf. Lin. (lb/ft)	L	00-00-00	00-08-11	Top	304	246			n/a
2	6(i664)	Unf. Lin. (lb/ft)	L	00-00-00	00-07-03	Top	389	195			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-12	05-04-12	Top	371	185			n/a
4	-	Conc. Pt. (lbs)	L	00-07-07	00-07-07	Top	1937	1079			n/a
5	J4(i2157)	Conc. Pt. (lbs)	L	01-06-12	01-06-12	Top	308	154			n/a
6	J4(i2136)	Conc. Pt. (lbs)	L	02-10-12	02-10-12	Top	319	160			n/a
7	J4(i2182)	Conc. Pt. (lbs)	L	04-02-12	04-02-12	Top	222	111			n/a
8	B7(i2279)	Conc. Pt. (lbs)	L	04-09-00	04-09-00	Top	561	384			n/a
9	-	Conc. Pt. (lbs)	L	05-09-05	05-09-05	Top	521	261			n/a
10	PBO8(i679)	Conc. Pt. (lbs)	L	06-09-01	06-09-01	Top	2149	1308			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6505 ft-lbs	35392 ft-lbs	18.4%	1	03-10-12
End Shear	3752 lbs	14464 lbs	25.9%	1	05-05-11
Total Load Deflection	L/999 (0.029")	n/a	n/a	4	03-07-12
Live Load Deflection	L/999 (0.019")	n/a	n/a	5	03-07-12
Max Defl.	0.029"	n/a	n/a	4	03-07-12
Span / Depth	6.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 8-3/16" x 3-1/2"	9503 lbs	53.8%	27.1%	Spruce-Pine-Fir
B2	Beam 5-1/4" x 3-1/2"	8983 lbs	91.5%	40.1%	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: 00-09-08.

CONFORMS TO CBC 2012

AMENDED 2020



OWG NO. TAM 3062-22  
STRUCTURAL  
COMPONENT ONLY

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

File name: 40-7 CRN EL A.mmdl

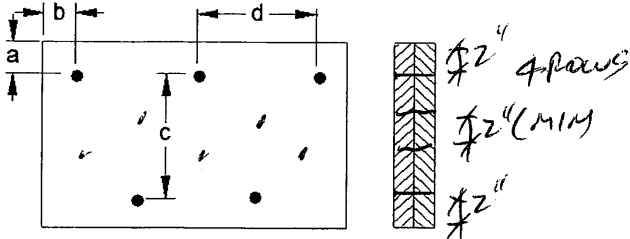
Description: 1ST FLR FRAMING\Flush Beams\B6(i2267)

Specifier:

Designer: AJ

Company:

### Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 23"

Calculated Side Load = 1235.9 lb/ft

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



### Disclosure

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BC CALC® Member Report

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Build 7773

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B7(i2279) (Flush Beam)

City, Province, Postal Code: BRAMPTON

Specifier:

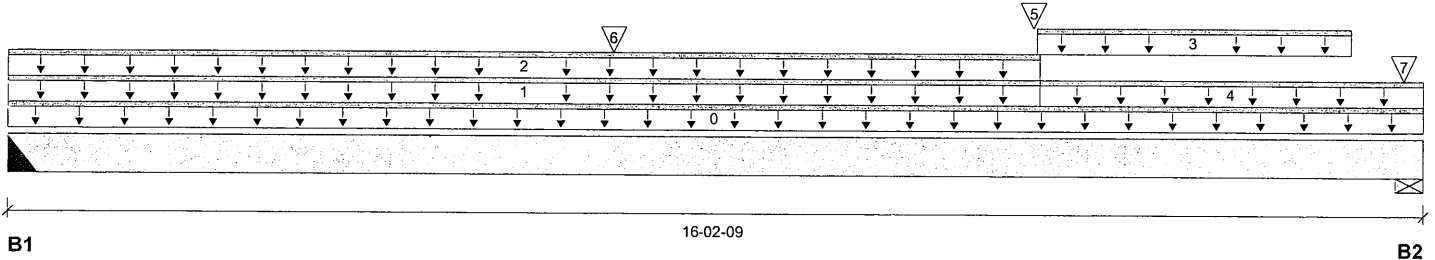
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 16-02-09

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

Bearing	Live	Dead	Snow	Wind
B1, 4"	568 / 0	389 / 0		
B2, 5-1/2"	1348 / 0	822 / 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	16-02-09	Top		12			00-00-00
1	-	Unf. Lin. (lb/ft)	L	00-00-00	11-09-13	Top	16	8			n/a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	11-09-13	Top	10	5			n/a
3	STAIR	Unf. Lin. (lb/ft)	L	11-09-07	15-04-09	Top	240	120			n/a
4	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	11-09-13	16-02-09	Top	19	10			n/a
5	B9(i2151)	Conc. Pt. (lbs)	L	11-08-15	11-08-15	Top	454	239			n/a
6	B8(i2266)	Conc. Pt. (lbs)	L	06-11-03	06-11-03	Top	200	109			n/a
7	2(i660)	Conc. Pt. (lbs)	L	15-11-13	15-11-13	Top		37			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8312 ft-lbs	35392 ft-lbs	23.5%	1	11-08-15
End Shear	2924 lbs	14464 lbs	20.2%	1	14-09-03
Total Load Deflection	L/738 (0.253")	n/a	32.5%	4	08-05-04
Live Load Deflection	L/1195 (0.156")	n/a	30.1%	5	08-05-04
Max Defl.	0.253"	n/a	n/a	4	08-05-04
Span / Depth	15.7				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 3-1/2"	1338 lbs	n/a	7.8%	HGUS412
B2	Wall/Plate 5-1/2" x 3-1/2"	3051 lbs	25.8%	13.0%	Spruce-Pine-Fir

**Cautions**

Header for the hanger HGUS412 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS412 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.


 DWG NO. TAM 3065-22  
 STRUCTURAL  
 COMPONENT ONLY





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

**PASSED**

## 1ST FLR FRAMING\Flush Beams\B7(i2279) (Flush Beam)

Dry | 1 span | No cant.

October 19, 2021 11:56:37

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

File name: 40-7 CRN EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B7(i2279)

Specifier:

Designer: AJ

Company:

### Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

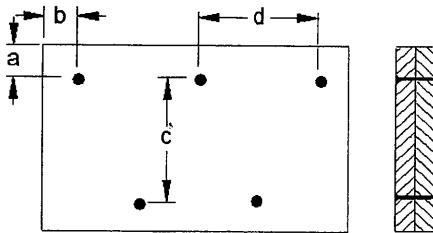
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 06-09-07.

CONFORMS TO OBC 2012

AMENDED 2020

### Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 6-1/4"

Calculated Side Load = 489.9 lb/ft

Connectors are: 1 Nails

3-1/2" ARDOX SPIRAL



UWB NO. TAM 3065-22  
STRUCTURAL  
COMPONENT ONLY

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BC CALC® Member Report

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Build 7773

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B8(i2266)

City, Province, Postal Code: BRAMPTON

Specifier:

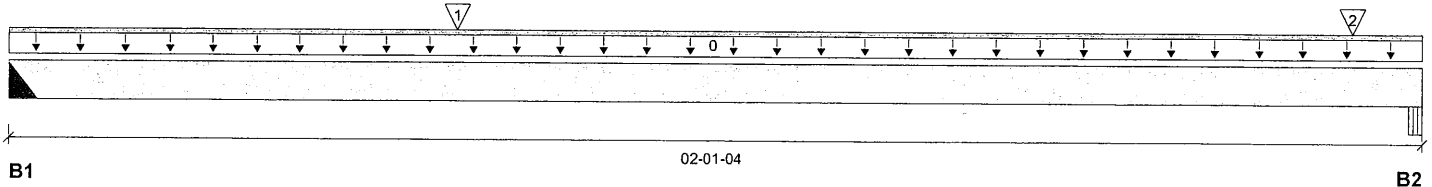
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:


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

Bearing	Live	Dead	Snow	Wind
B1, 4"	363 / 0	193 / 0		
B2, 6-7/16"	537 / 0	282 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	02-01-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	-	Conc. Pt. (lbs)	L	00-08-00	00-08-00	Top	513	257			n/a
2	J3(i2112)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	Top	387	193			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	309 ft-lbs	35392 ft-lbs	0.9%	1	00-08-00
End Shear	215 lbs	14464 lbs	1.5%	1	00-06-15
Total Load Deflection	L/999 (0")	n/a	n/a	4	00-10-09
Max Defl.	0"	n/a	n/a	4	00-10-09
Span / Depth	1.4				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 3-1/2"	786 lbs	n/a	4.6%	HGUS412
B2	Beam 6-7/16" x 3-1/2"	1158 lbs	9.6%	4.2%	Unspecified

**Cautions**

Header for the hanger HGUS412 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS412 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

**Notes**

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020


 DWG NO. TAM 3066-22  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Member Report  
Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B8(i2266)

City, Province, Postal Code: BRAMPTON

Specifier:

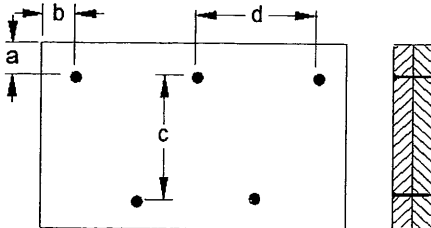
Customer:

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 = 410.9 lb/ft

Connectors are: 16d <sup>1</sup>/<sub>4</sub>" x 3" Nails

3-1/2" ARDOX SPIRAL



STRUCTURAL  
COMPONENT ONLY

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BC CALC® Member Report

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Build 7773

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B9(i2151)

City, Province, Postal Code: BRAMPTON

Specifier:

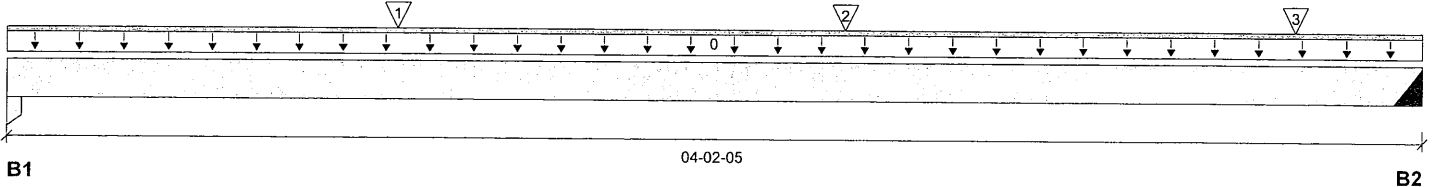
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-02-05

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

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	376 / 0	201 / 0		
B2, 2"	465 / 0	245 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-02-05	Top	1.00	0.65	1.00	1.15	00-00-00
1	J4(i2157)	Conc. Pt. (lbs)	L	01-01-13	01-01-13	Top	300	150			n/a
2	J4(i2136)	Conc. Pt. (lbs)	L	02-05-13	02-05-13	Top	319	160			n/a
3	J4(i2182)	Conc. Pt. (lbs)	L	03-09-13	03-09-13	Top	222	111			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	968 ft-lbs	17696 ft-lbs	5.5%	1	02-05-13
End Shear	723 lbs	7232 lbs	10.0%	1	01-03-06
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	02-01-12
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	02-01-12
Max Defl.	0.004"	n/a	n/a	4	02-01-12
Span / Depth	3.9				

**Bearing Supports**

Bearing Supports			Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column	3-1/2" x 1-3/4"	816 lbs	16.4%	10.9%	Unspecified	
B2	Hanger	2" x 1-3/4"	1003 lbs	n/a	23.5%	HUS1.81/10	

**Cautions**

Header for the hanger HUS1.81/10 is a Double 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


**Disclosure**

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BC CALC® Member Report  
 Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B10(i1252)

City, Province, Postal Code: BRAMPTON

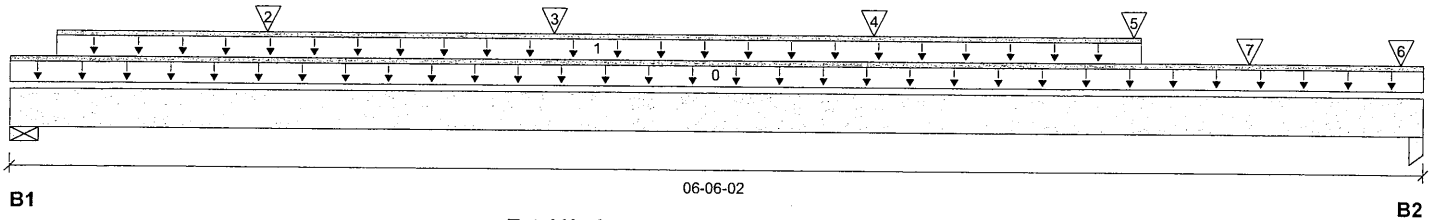
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:


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

Bearing	Live	Dead	Snow	Wind
B1, 4"	1825 / 0	1024 / 0		
B2, 3-1/2"	2191 / 0	1253 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-06-02	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-02-08	05-02-08	Top	370	185			n/a
2	J5(i1354)	Conc. Pt. (lbs)	L	01-02-01	01-02-01	Top	104	52			n/a
3	J5(i1359)	Conc. Pt. (lbs)	L	02-06-01	02-06-01	Top	101	50			n/a
4	-	Conc. Pt. (lbs)	L	03-11-12	03-11-12	Top	1314	847			n/a
5	J4(i1313)	Conc. Pt. (lbs)	L	05-02-01	05-02-01	Top	168	84			n/a
6	J4(i1486)	Conc. Pt. (lbs)	L	06-04-14	06-04-14	Top	165	83			n/a
7	J7(i1243)	Conc. Pt. (lbs)	L	05-08-08	05-08-08	Top	304	152			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8158 ft-lbs	35392 ft-lbs	23.1%	1	03-11-15
End Shear	4170 lbs	14464 lbs	28.8%	1	05-02-12
Total Load Deflection	L/999 (0.036")	n/a	n/a	4	03-04-02
Live Load Deflection	L/999 (0.023")	n/a	n/a	5	03-04-02
Max Defl.	0.036"	n/a	n/a	4	03-04-02
Span / Depth	6.1				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	4018 lbs	46.7%	23.5%	Spruce-Pine-Fir
B2	Column 3-1/2" x 3-1/2"	4853 lbs	48.8%	32.5%	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.

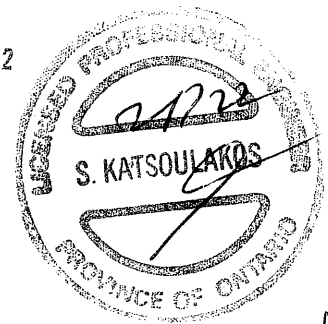
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-08-02.

CONFORMS TO OBC 2012

AMENDED 2020


 DWG NO. TAM3068-22  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Member Report

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Build 7773

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B10(i1252)

City, Province, Postal Code: BRAMPTON

Specifier:

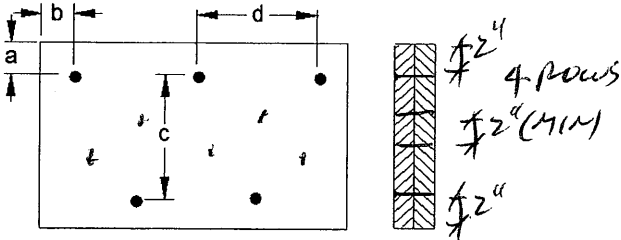
Customer:

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 3/4"

Calculated Side Load = 1621.9 lb/ft

Connectors are: 1 1/2" Nails

3-1/2" ARDOX SPIRAL



OWB NO. TAM 3068-22  
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®,





BC CALC® Member Report

Dry | 1 span | No cant.

February 17, 2022 12:53:49

Build 7773

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B11(i2752)

City, Province, Postal Code: BRAMPTON

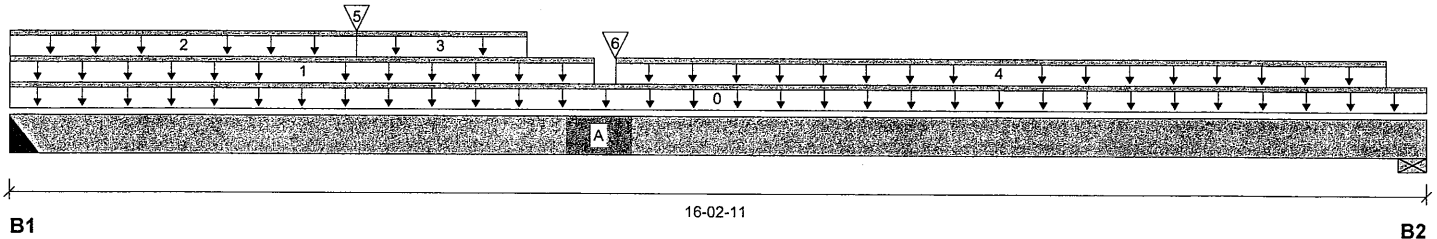
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 16-02-11

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

Bearing	Live	Dead	Snow	Wind
B1, 4"	1240 / 0	766 / 0		
B2, 5-1/2"	890 / 0	571 / 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	16-02-11	Top		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	06-08-05	Top	22	11			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	03-11-06	Top	9	4			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	03-11-06	05-11-00	Top	19	9			n/a
4	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	06-11-06	15-09-03	Top	25	13			n/a
5	B13(i2589)	Conc. Pt. (lbs)	L	03-11-06	03-11-06	Top	222	138			n/a
6	-	Conc. Pt. (lbs)	L	06-11-03	06-11-03	Top	1453	776			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	15245 ft-lbs	35392 ft-lbs	43.1%	1	06-11-06
End Shear	2712 lbs	14464 lbs	18.8%	1	01-03-14
Total Load Deflection	L/459 (0.406")	n/a	52.2%	4	07-08-03
Live Load Deflection	L/735 (0.254")	n/a	49.0%	5	07-08-03
Max Defl.	0.406"	n/a	n/a	4	07-08-03
Span / Depth	15.7				

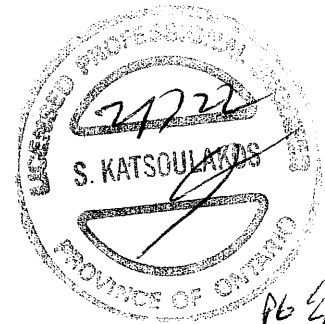
### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 3-1/2"	2819 lbs	n/a	16.5%	HGUS412
B2	Wall/Plate 5-1/2" x 3-1/2"	2048 lbs	17.3%	8.7%	Spruce-Pine-Fir

### Cautions

Header for the hanger HGUS412 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS412 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.



UWG NO. TAM 3069-22  
STRUCTURAL  
COMPONENT ONLY

BC CALC® Member Report  
Build 7773

Dry | 1 span | No cant.

February 17, 2022 12:53:49

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B11(i2752)

City, Province, Postal Code: BRAMPTON

Specifier:

Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:

## Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

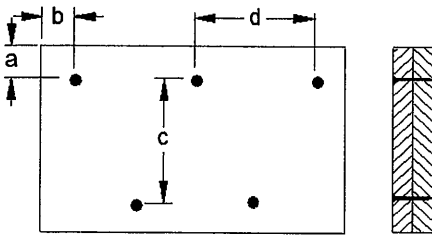
Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020

## Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 8 1/4"

Calculated Side Load = 252.8 lb/ft

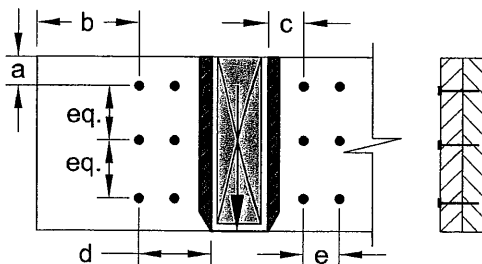
Connectors are: 1 3/4" ARDOX SPIRAL Nails

3 1/2" ARDOX SPIRAL

## Connection Diagrams: Concentrated Side Loads

Connection Tag: A

Applies to load tag(s): 6+9



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

e minimum = 4"

Connectors are: 1 3/4" ARDOX SPIRAL Nails

3 1/2" ARDOX SPIRAL



## Disclosure

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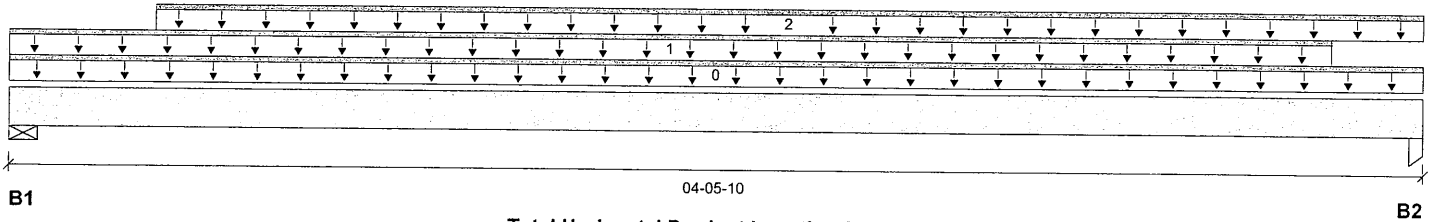
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

BC CALC® Member Report  
 Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

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

 File name: 40-7 CRN EL A.mmdl  
 Description: 2ND FLR FRAMING\Flush Beams\B12(i1557)  
 Specifier:  
 Designer: AJ  
 Company:

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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	328 / 0	178 / 0		
B2, 3-1/2"	280 / 0	153 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-05-10	Top	1.00	0.65	1.00	1.15	
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	04-02-02	Top	120	60			00-00-00
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-05-08	04-05-10	Top	26	13			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	587 ft-lbs	17696 ft-lbs	3.3%	1	02-03-13
End Shear	277 lbs	7232 lbs	3.8%	1	01-05-06
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	02-03-13
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	02-03-13
Max Defl.	0.002"	n/a	n/a	4	02-03-13
Span / Depth	3.9				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	714 lbs	12.1%	6.1%	Spruce-Pine-Fir
B2	Column 3-1/2" x 1-3/4"	611 lbs	12.3%	8.2%	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: 03-08-10.

CONFORMS TO CBC 2012

AMENDED 2020


**Disclosure**

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

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

## 2ND FLR FRAMING\Flush Beams\B13(i1345) (Flush Beam)

**PASSED**

 BC CALC® Member Report  
 Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B13(i1345)

City, Province, Postal Code: BRAMPTON

Specifier:

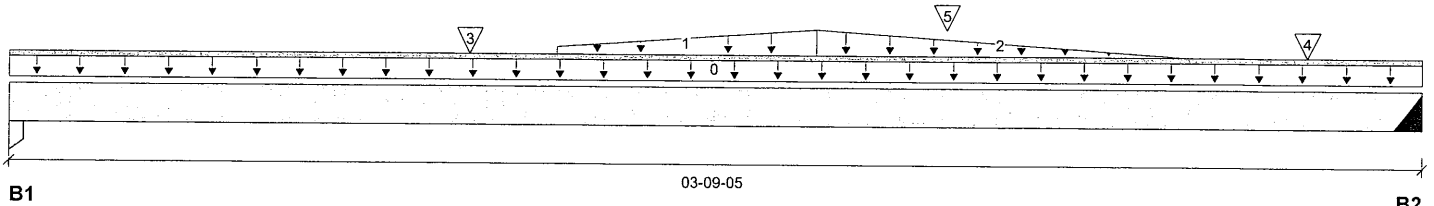
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 03-09-05

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

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	132 / 0	94 / 0		
B2, 4"	223 / 0	138 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-09-05	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Decking (Plan View Fill)	Trapezoidal (lb/ft)	L	01-05-09	02-01-14	Top	6	3			n/a
2	FC2 Floor Decking (Plan View Fill)	Trapezoidal (lb/ft)	L	02-01-14	03-01-12	Top	39	20			n/a
3	-	Conc. Pt. (lbs)	L	01-02-12	01-02-12	Top	132	77			n/a
4	-	Conc. Pt. (lbs)	L	03-05-10	03-05-10	Top	92	45			n/a
5	J5(i1359)	Conc. Pt. (lbs)	L	02-06-01	02-06-01	Top	101	50			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	349 ft-lbs	35392 ft-lbs	1.0%	1	01-05-09
End Shear	301 lbs	14464 lbs	2.1%	1	02-05-07
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	01-09-12
Live Load Deflection	L/999 (0")	n/a	n/a	5	01-09-12
Max Defl.	0.001"	n/a	n/a	4	01-09-12
Span / Depth	3.5				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column	1-3/4" x 3-1/2"	315 lbs	6.3%	Unspecified
B2	Hanger	4" x 3-1/2"	507 lbs	n/a	HGUS412

### Cautions

Header for the hanger HGUS412 is a Triple 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS412 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.


 DWG NO. FAM3071 -22  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Member Report  
Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B13(i1345)

City, Province, Postal Code: BRAMPTON

Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

## Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

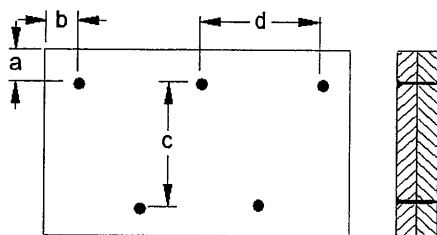
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-00-13.

CONFORMS TO OBC 2012

AMENDED 2020

## Connection Diagram: Full Length of Member



a minimum = 2"  
b minimum = 3"

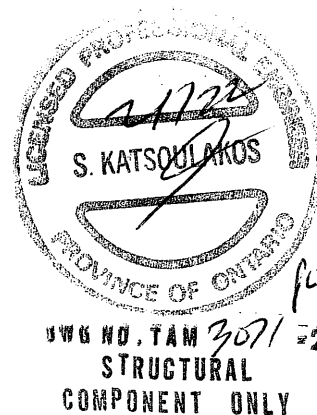
c = 7-7/8"  
d = 6"

Calculated Side Load = 118.3 lb/ft

Connectors are:

Nails

3-1/2" ARDOX SPIRAL



## Disclosure

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

## 2ND FLR FRAMING\Flush Beams\B14(i1396) (Flush Beam)

**PASSED**

BC CALC® Member Report

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Build 7773

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B14(i1396)

City, Province, Postal Code: BRAMPTON

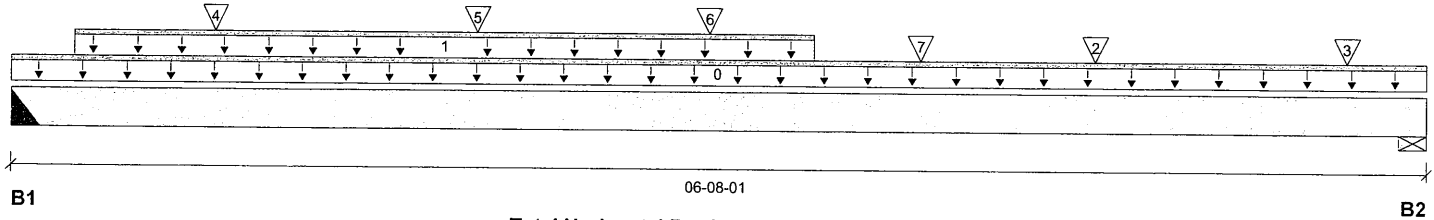
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 06-08-01

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

Bearing	Live	Dead	Snow	Wind
B1, 4"	1503 / 0	792 / 0		
B2, 4"	2132 / 0	1107 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-08-01	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-03-08	03-09-08	Top	334	167			n/a
2	-	Conc. Pt. (lbs)	L	05-01-05	05-01-05	Top	719	360			n/a
3	-	Conc. Pt. (lbs)	L	06-03-08	06-03-08	Top	717	359			n/a
4	J4(i1313)	Conc. Pt. (lbs)	L	00-11-08	00-11-08	Top	165	82			n/a
5	J4(i1486)	Conc. Pt. (lbs)	L	02-02-05	02-02-05	Top	165	83			n/a
6	J1(i1300)	Conc. Pt. (lbs)	L	03-03-08	03-03-08	Top	352	176			n/a
7	J1(i1391)	Conc. Pt. (lbs)	L	04-03-08	04-03-08	Top	332	166			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5669 ft-lbs	35392 ft-lbs	16.0%	1	03-07-08
End Shear	3037 lbs	14464 lbs	21.0%	1	05-04-03
Total Load Deflection	L/999 (0.027")	n/a	n/a	4	03-04-08
Live Load Deflection	L/999 (0.018")	n/a	n/a	5	03-04-08
Max Defl.	0.027"	n/a	n/a	4	03-04-08
Span / Depth	6.2				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 3-1/2"	3244 lbs	n/a	19.0%	HGUS412
B2	Wall/Plate 4" x 3-1/2"	4581 lbs	53.2%	26.8%	Spruce-Pine-Fir

### Cautions

Header for the hanger HGUS412 is a Triple 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS412 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.


 DWS NO. TAM 3072 = 22  
 STRUCTURAL  
 COMPONENT ONLY



BC CALC® Member Report  
Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B14(i1396)

City, Province, Postal Code: BRAMPTON

Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

## Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

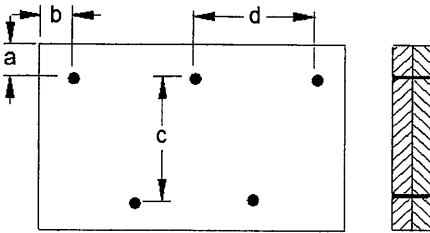
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-00-05.

CONFORMS TO CBC 2012

AMENDED 2020

## Connection Diagram: Full Length of Member



a minimum = 2"  
b minimum = 3"

c = 7-7/8"  
d = 10-0/0"

Calculated Side Load = 824.5 lb/ft  
Connectors are: 16d x 1 Nails

3-1/2" ARDOX SPIRAL



## Disclosure

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



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

## 2ND FLR FRAMING\Flush Beams\B17(i1291) (Flush Beam)

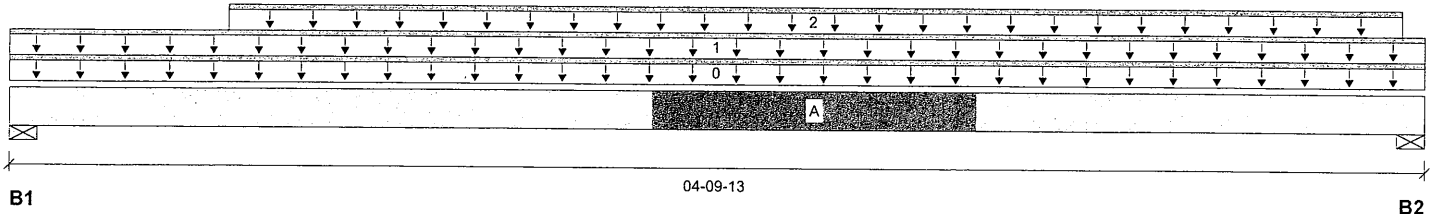
**PASSED**

 BC CALC® Member Report  
 Build 7773

Dry | 1 span | No cant.

October 19, 2021 11:56:37

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

 File name: 40-7 CRN EL A.mmdl  
 Description: 2ND FLR FRAMING\Flush Beams\B17(i1291)  
 Specifier:  
 Designer: AJ  
 Company:


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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	699 / 0	379 / 0		
B2, 4"	888 / 0	472 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-09-13	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	04-09-13	Top	22	11			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-08-14	04-08-14	Top	370	185			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1869 ft-lbs	35392 ft-lbs	5.3%	1	02-02-14
End Shear	1267 lbs	14464 lbs	8.8%	1	01-05-06
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	02-05-14
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	02-05-14
Max Defl.	0.004"	n/a	n/a	4	02-05-14
Span / Depth	4.2				

### Bearing Supports

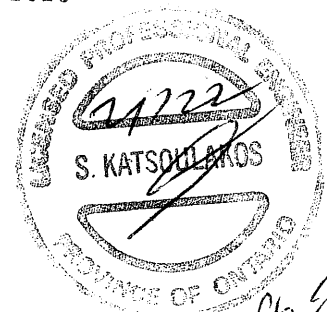
	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	1522 lbs	12.9%	6.5%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	1922 lbs	22.3%	11.3%	Spruce-Pine-Fir

### 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: 00-08-08.

CONFORMS TO OBC 2012

AMENDED 2020


 DWG NO. TAM3073 = 22  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

October 19, 2021 11:56:37

File name: 40-7 CRN EL A.mmdl

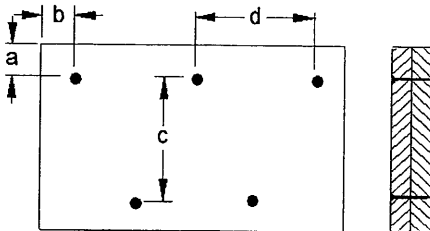
Description: 2ND FLR FRAMING\Flush Beams\B17(i1291)

Specifier:

Designer: AJ

Company:

## Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 8"

Calculated Side Load = 393.1 lb/ft

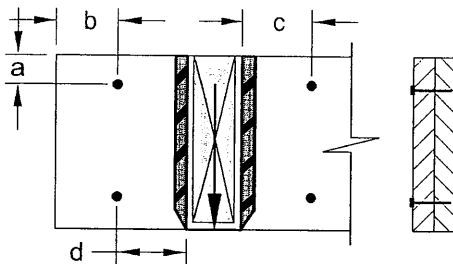
Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

## Connection Diagrams: Concentrated Side Loads

Connection Tag: A

Applies to load tag(s): 3+4



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

Connectors are: 16d

Nails

3-1/2" ARDOX SPIRAL



## Disclosure

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BC CALC® Member Report

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Build 7773

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B18(i1275)

City, Province, Postal Code: BRAMPTON

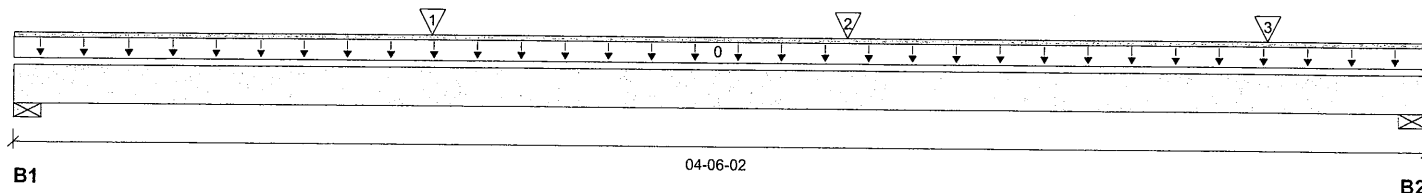
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 04-06-02

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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	341 / 0	198 / 0		
B2, 4"	507 / 0	281 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-06-02	Top	1.00	0.65	1.00	1.15	00-00-00
1	J3(i1270)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	Top	265	132			n/a
2	J3(i1436)	Conc. Pt. (lbs)	L	02-08-00	02-08-00	Top	289	145			n/a
3	J3(i1370)	Conc. Pt. (lbs)	L	04-00-00	04-00-00	Top	289	145			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	901 ft-lbs	35392 ft-lbs	2.5%	1	02-08-00
End Shear	672 lbs	14464 lbs	4.6%	1	01-05-06
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	02-03-14
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	02-03-14
Max Defl.	0.002"	n/a	n/a	4	02-03-14
Span / Depth	3.9				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	759 lbs	6.4%	3.2%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	1112 lbs	12.9%	6.5%	Spruce-Pine-Fir

**Notes**

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020


 SWG NO. TAM 3074-22  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Member Report  
Build 7773

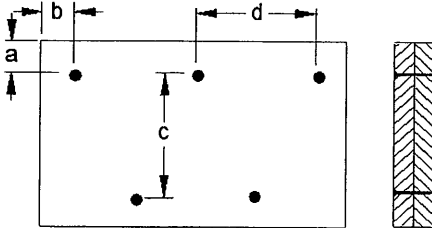
Dry | 1 span | No cant.

October 19, 2021 11:56:37

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

File name: 40-7 CRN EL A.mmdl  
Description: 2ND FLR FRAMING\Flush Beams\B18(i1275)  
Specifier:  
Designer: AJ  
Company:

### Connection Diagram: Full Length of Member



a minimum = 2"      c = 7-7/8"  
b minimum = 3"      d = 8"

Calculated Side Load = 307.4 lb/ft  
Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



DWG NO. TAM 3014 -22  
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\B19(i1331) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Build 7773

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B19(i1331)

City, Province, Postal Code: BRAMPTON

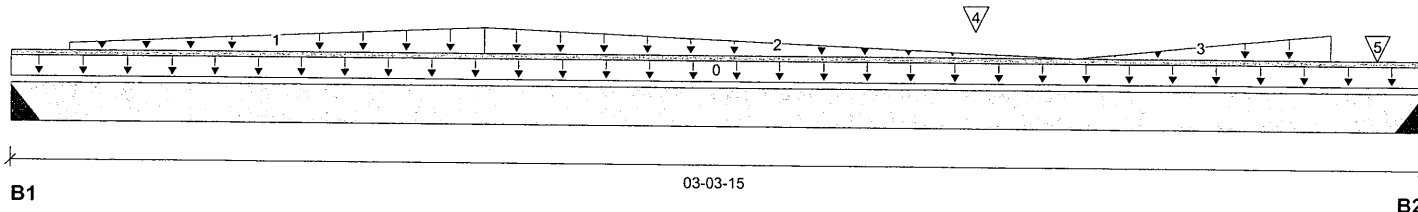
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	23 / 0	22 / 0		
B2, 2"	37 / 0	29 / 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	03-03-15	Top		6			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Trapezoidal (lb/ft)	L	00-01-10	01-01-06	Top	4	2			n/a
2	FC2 Floor Decking (Plan View Fill)	Trapezoidal (lb/ft)	L	01-01-06	02-06-01	Top	14	7			n/a
3	FC2 Floor Decking (Plan View Fill)	Trapezoidal (lb/ft)	L	02-06-01	03-01-05	Top	0	0			n/a
4	J6(i1324)	Conc. Pt. (lbs)	L	02-03-04	02-03-04	Top	24	12			n/a
5	FC2 Floor Decking (Plan View Fill)	Conc. Pt. (lbs)	L	03-02-10	03-02-10	Top	32	16			n/a
							2	1			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	69 ft-lbs	17696 ft-lbs	0.4%	1	02-03-04
End Shear	73 lbs	7232 lbs	1.0%	1	02-02-01
Total Load Deflection	L/999 (0")	n/a	n/a	4	01-08-12
Live Load Deflection	L/999 (0")	n/a	n/a	5	01-09-02
Max Defl.	0"	n/a	n/a	4	01-08-12
Span / Depth	3.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	62 lbs	n/a	1.5%	LSSR1.81Z
B2	Hanger 2" x 1-3/4"	91 lbs	n/a	2.1%	LSSR1.81Z

Cautions

Header for the hanger LSSR1.81Z is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model LSSR1.81Z and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Header for the hanger LSSR1.81Z is a Triple 1-3/4" x 11-7/8" LVL Beam.



OWG NO. TAM3075-22  
STRUCTURAL  
COMPONENT ONLY



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP  
2ND FLR FRAMING\Flush Beams\B19(i1331) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 19, 2021 11:56:37

Build 7773

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B19(i1331)

City, Province, Postal Code: BRAMPTON

Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

## Notes

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

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

Hanger Manufacturer: Unassigned

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

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

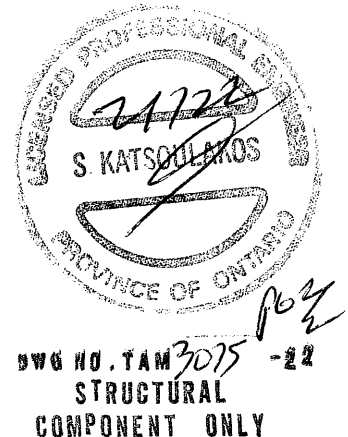
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-01-12, Bottom: 02-00-13.

CONFORMS TO OBC 2012

AMENDED 2020



## Disclosure

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BC CALC® Member Report

Dry | 1 span | No cant.

October 20, 2021 08:09:15

Build 7773

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B22(i2367) (Flush Beam)

City, Province, Postal Code: BRAMPTON

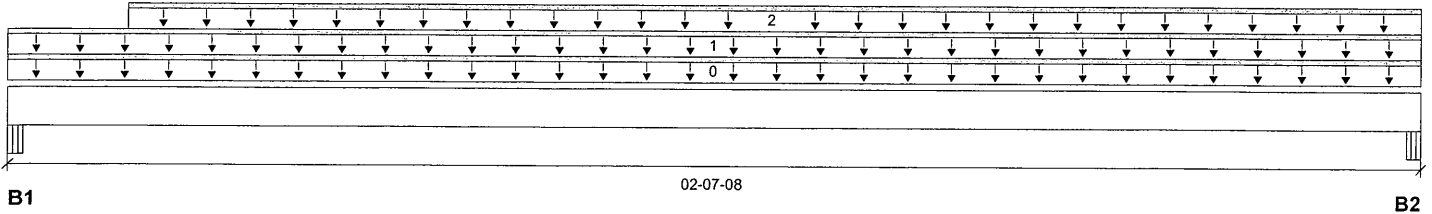
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:


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

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	32 / 0	83 / 0	75 / 0	
B2, 4-1/8"	42 / 0	95 / 0	83 / 0	

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	02-07-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	02-07-08	Top		42	60		n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-10	02-07-08	Top	31	15			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	124 ft-lbs	35392 ft-lbs	0.4%	13	01-03-00
End Shear	8 lbs	14464 lbs	n/a	1	01-02-08
Total Load Deflection	L/999 (0")	n/a	n/a	35	01-03-00
Live Load Deflection	L/999 (0")	n/a	n/a	51	01-03-00
Max Defl.	0"	n/a	n/a	35	01-03-00
Span / Depth	2.2				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 2-5/8" x 3-1/2"	249 lbs	5.1%	2.2%	Unspecified
B2	Beam 4-1/8" x 3-1/2"	285 lbs	3.7%	1.6%	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.

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: 02-00-12.

CONFORMS TO OBC 2012

AMENDED 2020


 164  
 006 NO. 1 AM 2020-22  
 STRUCTURAL  
 COMPONENT ONLY



BC CALC® Member Report  
Build 7773

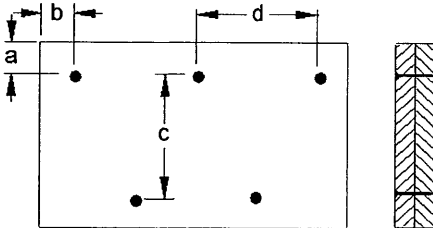
Dry | 1 span | No cant.

October 20, 2021 08:09:15

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

File name: 40-7 CRN EL A.mmdl  
Description: 2ND FLR FRAMING\Flush Beams\B22(i2367)  
Specifier:  
Designer: AJ  
Company:

### Connection Diagram: Full Length of Member



a minimum = 2"  
b minimum = 3"  
c = 7-7/8"  
d = 0"

Connectors are: 1 Nails

3-1/2" ARDOX SPIRAL



DWG NO. TAM 3076-22  
STRUCTURAL  
COMPONENT ONLY

### Disclosure

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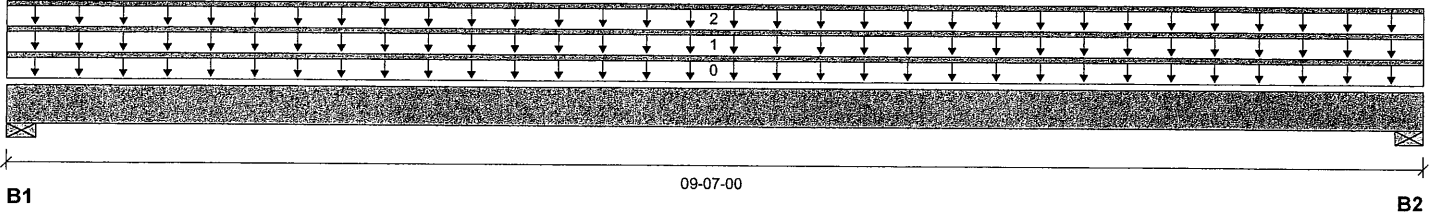
BC CALC® Member Report  
 Build 7773

Dry | 1 span | No cant.

February 17, 2022 12:53:49

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

File name: 40-7 CRN EL A.mmdl  
 Description: 2ND FLR FRAMING\Dropped Beams\B23 DR(i2748)  
 Specifier:  
 Designer: AJ  
 Company:



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

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1905 / 0	1857 / 0	872 / 0	
B2, 3-1/2"	1844 / 0	1826 / 0	872 / 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	09-07-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	09-07-00	Top	391	196			n/a
2	R1(i2723)	Unf. Lin. (lb/ft)	L	00-00-00	09-07-00	Top		179	182		n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	12599 ft-lbs	23219 ft-lbs	54.3%	1	04-11-07
End Shear	4793 lbs	11571 lbs	41.4%	1	01-01-00
Total Load Deflection	L/377 (0.29")	n/a	63.7%	35	04-09-15
Live Load Deflection	L/632 (0.173")	n/a	57.0%	51	04-09-15
Max Defl.	0.29"	n/a	n/a	35	04-09-15
Span / Depth	11.5				

### Bearing Supports

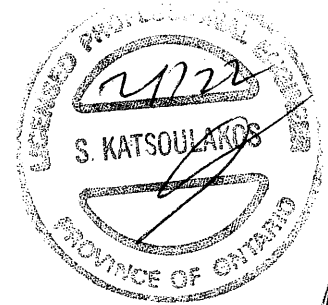
	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	6051 lbs	37.0%	40.5%	Spruce-Pine-Fir
B2	Wall/Plate 3-1/2" x 3-1/2"	5920 lbs	36.2%	39.6%	Spruce-Pine-Fir

### Notes

Design meets Code minimum (L/240) Total load deflection criteria.  
 Design meets Code minimum (L/360) Live load deflection criteria.  
 Resistance Factor phi has been applied to all presented results per CSA O86.  
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.  
 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: 00-09-10, Bottom: 09-07-00.

CONFORMS TO OBC 2012

AMENDED 2020



UWG NO. TAM 3077-22  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Member Report  
Build 7773

Dry | 1 span | No cant.

February 17, 2022 12:53:49

Job name:

File name: 40-7 CRN EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B23 DR(i2748)

City, Province, Postal Code: BRAMPTON

Specifier:

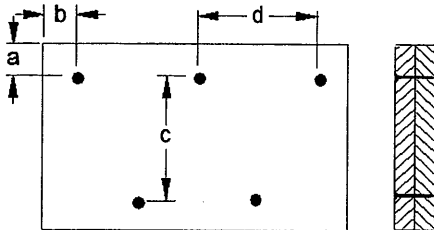
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

### Connection Diagram: Full Length of Member



a minimum = 2"  
b minimum = 3"

c = 5-1/2"  
d = 8"

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



DWG NO. TAM 3077-22  
STRUCTURAL  
COMPONENT ONLY

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# NORDIC

## STRUCTURES

### Maximum Floor Spans – S2.1

#### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued oriented strand board (OSB) sheathing

#### Maximum Floor Spans

Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-3"	13'-10"	-	15'-7"	14'-9"	14'-3"	-
	NI-40x	16'-2"	15'-3"	14'-8"	-	16'-7"	15'-8"	15'-1"	-
	NI-60	16'-4"	15'-4"	14'-10"	-	16'-9"	15'-9"	15'-3"	-
	NI-80	17'-3"	16'-3"	15'-8"	-	17'-8"	16'-7"	16'-0"	-
11-7/8"	NI-20	17'-0"	16'-0"	15'-6"	-	17'-6"	16'-7"	16'-0"	-
	NI-40x	18'-2"	17'-1"	16'-6"	-	18'-9"	17'-6"	16'-11"	-
	NI-60	18'-5"	17'-3"	16'-8"	-	19'-0"	17'-8"	17'-1"	-
	NI-80	19'-9"	18'-3"	17'-7"	-	20'-4"	18'-10"	18'-0"	-
	NI-90	20'-2"	18'-8"	17'-10"	-	20'-9"	19'-2"	18'-4"	-
14"	NI-40x	20'-1"	18'-8"	17'-10"	-	20'-10"	19'-4"	18'-6"	-
	NI-60	20'-6"	18'-11"	18'-2"	-	21'-2"	19'-8"	18'-9"	-
	NI-80	21'-11"	20'-3"	19'-4"	-	22'-7"	20'-11"	20'-0"	-
	NI-90	22'-5"	20'-8"	19'-9"	-	23'-0"	21'-4"	20'-4"	-
16"	NI-60	22'-4"	20'-8"	19'-9"	-	23'-1"	21'-5"	20'-6"	-
	NI-80	23'-11"	22'-1"	21'-1"	-	24'-8"	22'-10"	21'-9"	-
	NI-90	24'-5"	22'-6"	21'-6"	-	25'-1"	23'-2"	22'-2"	-

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-8"	15'-3"	14'-5"	-	16'-8"	15'-3"	14'-5"	-
	NI-40x	17'-11"	17'-0"	16'-1"	-	18'-5"	17'-1"	16'-1"	-
	NI-60	18'-2"	17'-1"	16'-4"	-	18'-8"	17'-4"	16'-4"	-
	NI-80	19'-5"	18'-0"	17'-5"	-	19'-10"	18'-5"	17'-8"	-
11-7/8"	NI-20	19'-7"	18'-2"	17'-3"	-	19'-11"	18'-3"	17'-3"	-
	NI-40x	21'-1"	19'-7"	18'-8"	-	21'-8"	20'-2"	19'-2"	-
	NI-60	21'-4"	19'-9"	18'-11"	-	21'-11"	20'-5"	19'-6"	-
	NI-80	22'-9"	21'-1"	20'-2"	-	23'-3"	21'-8"	20'-8"	-
	NI-90	23'-3"	21'-6"	20'-6"	-	23'-9"	22'-0"	21'-0"	-
14"	NI-40x	23'-8"	21'-11"	20'-11"	-	24'-4"	22'-8"	21'-8"	-
	NI-60	24'-0"	22'-3"	21'-3"	-	24'-8"	22'-11"	21'-11"	-
	NI-80	25'-7"	23'-9"	22'-7"	-	26'-2"	24'-4"	23'-3"	-
	NI-90	26'-1"	24'-2"	23'-0"	-	26'-8"	24'-9"	23'-7"	-
16"	NI-60	26'-5"	24'-6"	23'-5"	-	27'-2"	25'-3"	24'-2"	-
	NI-80	28'-2"	26'-1"	24'-10"	-	28'-10"	26'-9"	25'-6"	-
	NI-90	28'-8"	26'-6"	25'-3"	-	29'-3"	27'-2"	25'-11"	-

#### Notes:

- The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

# NORDIC

## STRUCTURES

### Maximum Floor Spans – S4.1

#### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued oriented strand board (OSB) sheathing

#### Maximum Floor Spans

Joist depth	Joist series	Bare				1/2 in. gypsum ceiling			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-11"	15'-0"	14'-6"	13'-5"	16'-5"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-10"	17'-5"	16'-5"	15'-10"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-7"	16'-7"	16'-0"	15'-4"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"
11-7/8"	NI-20	17'-11"	16'-11"	16'-3"	15'-8"	18'-7"	17'-5"	16'-10"	16'-2"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-7"	19'-11"	18'-6"	17'-9"	17'-0"
	NI-60	19'-7"	18'-2"	17'-6"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"
	NI-80	21'-1"	19'-6"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
	NI-90	21'-6"	19'-10"	18'-11"	17'-11"	22'-0"	20'-4"	19'-5"	18'-4"
14"	NI-40x	21'-5"	19'-11"	18'-11"	18'-0"	22'-1"	20'-7"	19'-7"	18'-7"
	NI-60	21'-10"	20'-2"	19'-3"	18'-3"	22'-6"	20'-10"	19'-11"	18'-10"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
	NI-90	23'-10"	22'-1"	21'-0"	19'-10"	24'-5"	22'-7"	21'-6"	20'-4"
16"	NI-60	23'-9"	22'-0"	21'-0"	19'-10"	24'-6"	22'-9"	21'-8"	20'-7"
	NI-80	25'-6"	23'-7"	22'-5"	21'-2"	26'-2"	24'-3"	23'-1"	21'-10"
	NI-90	26'-0"	24'-0"	22'-10"	21'-6"	26'-7"	24'-8"	23'-5"	22'-2"

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap				Mid-span blocking and 1/2 in. 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-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'-8"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"
	NI-80	23'-8"	22'-0"	20'-11"	19'-10"	24'-1"	22'-6"	21'-6"	20'-0"
	NI-90	24'-1"	22'-5"	21'-4"	20'-2"	24'-7"	22'-11"	21'-10"	20'-7"
14"	NI-40x	24'-5"	22'-9"	21'-9"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
	NI-60	24'-10"	23'-2"	22'-1"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
	NI-80	26'-6"	24'-8"	23'-6"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
	NI-90	27'-0"	25'-1"	23'-11"	22'-7"	27'-6"	25'-8"	24'-6"	23'-2"
16"	NI-60	27'-3"	25'-5"	24'-3"	22'-11"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-80	29'-1"	27'-1"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90	29'-7"	27'-6"	26'-2"	24'-9"	30'-2"	28'-2"	26'-10"	25'-5"

#### Notes:

- The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

# NORDIC STRUCTURES

## Maximum Floor Spans – S6.1

### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued Canadian softwood plywood

### Maximum Floor Spans

Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	14'-11"	14'-1"	13'-7"	-	15'-4"	14'-6"	14'-1"	-
	NI-40x	15'-11"	15'-0"	14'-6"	-	16'-4"	15'-5"	14'-11"	-
	NI-60	16'-1"	15'-2"	14'-8"	-	16'-6"	15'-7"	15'-1"	-
	NI-80	17'-1"	16'-1"	15'-6"	-	17'-5"	16'-5"	15'-10"	-
11-7/8"	NI-20	16'-9"	15'-10"	15'-4"	-	17'-4"	16'-4"	15'-10"	-
	NI-40x	17'-10"	16'-10"	16'-3"	-	18'-6"	17'-4"	16'-9"	-
	NI-60	18'-1"	17'-0"	16'-5"	-	18'-9"	17'-6"	16'-11"	-
	NI-80	19'-6"	18'-0"	17'-4"	-	20'-1"	18'-7"	17'-9"	-
	NI-90	19'-11"	18'-4"	17'-8"	-	20'-5"	18'-11"	18'-1"	-
14"	NI-40x	19'-10"	18'-4"	17'-8"	-	20'-6"	19'-1"	18'-3"	-
	NI-60	20'-2"	18'-8"	17'-11"	-	20'-10"	19'-4"	18'-6"	-
	NI-80	21'-8"	20'-0"	19'-1"	-	22'-4"	20'-8"	19'-9"	-
	NI-90	22'-1"	20'-5"	19'-6"	-	22'-9"	21'-0"	20'-1"	-
16"	NI-60	22'-0"	20'-4"	19'-6"	-	22'-9"	21'-1"	20'-2"	-
	NI-80	23'-7"	21'-10"	20'-10"	-	24'-4"	22'-6"	21'-6"	-
	NI-90	24'-1"	22'-2"	21'-2"	-	24'-9"	22'-11"	21'-10"	-

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-6"	15'-1"	14'-3"	-	16'-6"	15'-1"	14'-3"	-
	NI-40x	17'-9"	16'-10"	15'-11"	-	18'-2"	16'-11"	15'-11"	-
	NI-60	17'-11"	16'-11"	16'-2"	-	18'-5"	17'-2"	16'-2"	-
	NI-80	19'-3"	17'-10"	17'-3"	-	19'-8"	18'-3"	17'-7"	-
11-7/8"	NI-20	19'-4"	18'-0"	17'-1"	-	19'-9"	18'-1"	17'-1"	-
	NI-40x	20'-10"	19'-4"	18'-6"	-	21'-5"	19'-11"	19'-0"	-
	NI-60	21'-1"	19'-7"	18'-8"	-	21'-8"	20'-2"	19'-3"	-
	NI-80	22'-6"	20'-10"	19'-11"	-	23'-1"	21'-5"	20'-5"	-
	NI-90	23'-0"	21'-3"	20'-4"	-	23'-6"	21'-10"	20'-10"	-
14"	NI-40x	23'-5"	21'-8"	20'-9"	-	24'-0"	22'-5"	21'-5"	-
	NI-60	23'-9"	22'-0"	21'-0"	-	24'-5"	22'-8"	21'-8"	-
	NI-80	25'-4"	23'-6"	22'-5"	-	25'-11"	24'-1"	23'-0"	-
	NI-90	25'-10"	23'-11"	22'-9"	-	26'-5"	24'-6"	23'-4"	-
16"	NI-60	26'-2"	24'-3"	23'-2"	-	26'-11"	25'-0"	23'-11"	-
	NI-80	27'-11"	25'-10"	24'-7"	-	28'-7"	26'-6"	25'-3"	-
	NI-90	28'-5"	26'-3"	25'-0"	-	29'-0"	26'-11"	25'-8"	-

### Notes:

1. The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

# NORDIC

## STRUCTURES

### Maximum Floor Spans – S7.1

#### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued Canadian softwood plywood

#### Maximum Floor Spans

Joist depth	Joist series	Bare				1/2 in. 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	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	15'-1"
	NI-60	17'-1"	16'-1"	15'-6"	14'-10"	17'-6"	16'-6"	15'-11"	15'-3"
	NI-80	18'-1"	17'-0"	16'-4"	15'-8"	18'-7"	17'-4"	16'-8"	16'-0"
11-7/8"	NI-20	17'-10"	16'-10"	16'-2"	15'-7"	18'-5"	17'-4"	16'-9"	16'-1"
	NI-40x	19'-3"	17'-10"	17'-2"	16'-6"	19'-10"	18'-5"	17'-8"	16'-11"
	NI-60	19'-6"	18'-1"	17'-4"	16'-8"	20'-1"	18'-8"	17'-10"	17'-1"
	NI-80	20'-11"	19'-4"	18'-5"	17'-7"	21'-5"	19'-10"	18'-11"	17'-11"
	NI-90	21'-4"	19'-9"	18'-9"	17'-10"	21'-10"	20'-3"	19'-3"	18'-3"
14"	NI-40x	21'-4"	19'-9"	18'-10"	17'-11"	22'-0"	20'-5"	19'-6"	18'-6"
	NI-60	21'-8"	20'-1"	19'-2"	18'-2"	22'-4"	20'-9"	19'-9"	18'-9"
	NI-80	23'-3"	21'-6"	20'-5"	19'-4"	23'-10"	22'-1"	21'-0"	19'-11"
	NI-90	23'-9"	21'-11"	20'-10"	19'-8"	24'-3"	22'-6"	21'-5"	20'-3"
16"	NI-60	23'-7"	21'-10"	20'-10"	19'-9"	24'-4"	22'-7"	21'-7"	20'-5"
	NI-80	25'-4"	23'-5"	22'-3"	21'-1"	26'-0"	24'-1"	22'-11"	21'-8"
	NI-90	25'-10"	23'-10"	22'-8"	21'-5"	26'-5"	24'-6"	23'-4"	22'-0"

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap				Mid-span blocking and 1/2 in. 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'-7"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-60	18'-10"	17'-6"	16'-6"	15'-5"	19'-1"	17'-6"	16'-6"	15'-5"
	NI-80	20'-2"	18'-9"	17'-11"	16'-10"	20'-7"	19'-2"	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'-9"	20'-3"	19'-4"	17'-8"	22'-4"	20'-5"	19'-4"	17'-8"
	NI-60	22'-0"	20'-6"	19'-7"	18'-4"	22'-7"	20'-10"	19'-8"	18'-4"
	NI-80	23'-6"	21'-10"	20'-10"	19'-9"	24'-0"	22'-5"	21'-4"	20'-0"
	NI-90	24'-0"	22'-4"	21'-3"	20'-1"	24'-6"	22'-10"	21'-9"	20'-7"
14"	NI-40x	24'-4"	22'-8"	21'-8"	19'-5"	25'-0"	23'-2"	21'-9"	19'-5"
	NI-60	24'-9"	23'-0"	22'-0"	20'-9"	25'-5"	23'-8"	22'-4"	20'-10"
	NI-80	26'-5"	24'-6"	23'-4"	22'-1"	27'-0"	25'-2"	24'-0"	22'-8"
	NI-90	26'-11"	25'-0"	23'-10"	22'-6"	27'-5"	25'-7"	24'-5"	23'-1"
16"	NI-60	27'-2"	25'-4"	24'-2"	22'-10"	27'-11"	26'-1"	24'-9"	23'-1"
	NI-80	29'-0"	26'-11"	25'-8"	24'-3"	29'-7"	27'-7"	26'-4"	24'-11"
	NI-90	29'-6"	27'-5"	26'-1"	24'-8"	30'-1"	28'-1"	26'-9"	25'-4"

#### Notes:

- The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

### Maximum Floor Spans – M2.1

#### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued oriented strand board (OSB) sheathing

#### Maximum Floor Spans

Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-3"	13'-10"	-	15'-7"	14'-9"	14'-3"	-
	NI-40x	16'-2"	15'-3"	14'-8"	-	16'-7"	15'-8"	15'-1"	-
	NI-60	16'-4"	15'-4"	14'-10"	-	16'-9"	15'-9"	15'-3"	-
	NI-80	17'-3"	16'-3"	15'-8"	-	17'-8"	16'-7"	16'-0"	-
11-7/8"	NI-20	17'-0"	16'-0"	15'-6"	-	17'-6"	16'-7"	16'-0"	-
	NI-40x	18'-2"	17'-1"	16'-6"	-	18'-9"	17'-6"	16'-11"	-
	NI-60	18'-5"	17'-3"	16'-8"	-	19'-0"	17'-8"	17'-1"	-
	NI-80	19'-9"	18'-3"	17'-7"	-	20'-4"	18'-10"	18'-0"	-
	NI-90	20'-2"	18'-8"	17'-10"	-	20'-9"	19'-2"	18'-4"	-
14"	NI-40x	20'-1"	18'-8"	17'-10"	-	20'-10"	19'-4"	18'-6"	-
	NI-60	20'-6"	18'-11"	18'-2"	-	21'-2"	19'-8"	18'-9"	-
	NI-80	21'-11"	20'-3"	19'-4"	-	22'-7"	20'-11"	20'-0"	-
	NI-90	22'-5"	20'-8"	19'-9"	-	23'-0"	21'-4"	20'-4"	-
16"	NI-60	22'-4"	20'-8"	19'-9"	-	23'-1"	21'-5"	20'-6"	-
	NI-80	23'-11"	22'-1"	21'-1"	-	24'-8"	22'-10"	21'-9"	-
	NI-90	24'-5"	22'-6"	21'-6"	-	25'-1"	23'-2"	22'-2"	-

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-8"	15'-3"	14'-5"	-	16'-8"	15'-3"	14'-5"	-
	NI-40x	17'-11"	17'-0"	16'-1"	-	18'-5"	17'-1"	16'-1"	-
	NI-60	18'-2"	17'-1"	16'-4"	-	18'-8"	17'-4"	16'-4"	-
	NI-80	19'-5"	18'-0"	17'-5"	-	19'-10"	18'-5"	17'-8"	-
11-7/8"	NI-20	19'-7"	18'-2"	17'-3"	-	19'-11"	18'-3"	17'-3"	-
	NI-40x	21'-1"	19'-7"	18'-8"	-	21'-8"	20'-2"	19'-0"	-
	NI-60	21'-4"	19'-9"	18'-11"	-	21'-11"	20'-5"	19'-6"	-
	NI-80	22'-9"	21'-1"	20'-2"	-	23'-3"	21'-8"	20'-8"	-
	NI-90	23'-3"	21'-6"	20'-6"	-	23'-9"	22'-0"	21'-0"	-
14"	NI-40x	23'-8"	21'-11"	20'-11"	-	24'-4"	22'-8"	20'-11"	-
	NI-60	24'-0"	22'-3"	21'-3"	-	24'-8"	22'-11"	21'-11"	-
	NI-80	25'-7"	23'-9"	22'-7"	-	26'-2"	24'-4"	23'-3"	-
	NI-90	26'-1"	24'-2"	23'-0"	-	26'-8"	24'-9"	23'-7"	-
16"	NI-60	26'-5"	24'-6"	23'-5"	-	27'-2"	25'-3"	24'-2"	-
	NI-80	28'-2"	26'-1"	24'-10"	-	28'-10"	26'-9"	25'-6"	-
	NI-90	28'-8"	26'-6"	25'-3"	-	29'-3"	27'-2"	25'-11"	-

#### Notes:

- The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.



### Maximum Floor Spans – M4.1

#### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued oriented strand board (OSB) sheathing

#### Maximum Floor Spans

Joist depth	Joist series	Bare				1/2 in. gypsum ceiling			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-11"	15'-0"	14'-6"	13'-5"	16'-5"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-10"	17'-5"	16'-5"	15'-10"	14'-11"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-7"	16'-7"	16'-0"	15'-4"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"
11-7/8"	NI-20	17'-11"	16'-11"	16'-3"	15'-8"	18'-7"	17'-5"	16'-10"	16'-1"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-7"	19'-11"	18'-6"	17'-9"	17'-0"
	NI-60	19'-7"	18'-2"	17'-6"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"
	NI-80	21'-1"	19'-6"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
	NI-90	21'-6"	19'-10"	18'-11"	17'-11"	22'-0"	20'-4"	19'-5"	18'-4"
14"	NI-40x	21'-5"	19'-11"	18'-11"	18'-0"	22'-1"	20'-7"	19'-7"	18'-7"
	NI-60	21'-10"	20'-2"	19'-3"	18'-3"	22'-6"	20'-10"	19'-11"	18'-10"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
	NI-90	23'-10"	22'-1"	21'-0"	19'-10"	24'-5"	22'-7"	21'-6"	20'-4"
16"	NI-60	23'-9"	22'-0"	21'-0"	19'-10"	24'-6"	22'-9"	21'-8"	20'-7"
	NI-80	25'-6"	23'-7"	22'-5"	21'-2"	26'-2"	24'-3"	23'-1"	21'-10"
	NI-90	26'-0"	24'-0"	22'-10"	21'-6"	26'-7"	24'-8"	23'-5"	22'-2"

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap				Mid-span blocking and 1/2 in. 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"	14'-11"	18'-10"	17'-2"	16'-3"	14'-11"
	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"
	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'-1"	20'-1"	18'-5"	17'-5"	16'-1"
	NI-40x	21'-10"	20'-4"	19'-0"	17'-0"	22'-5"	20'-6"	19'-0"	17'-0"
	NI-60	22'-1"	20'-7"	19'-8"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"
	NI-80	23'-8"	22'-0"	20'-11"	19'-10"	24'-1"	22'-6"	21'-6"	20'-0"
	NI-90	24'-1"	22'-5"	21'-4"	20'-2"	24'-7"	22'-11"	21'-10"	20'-7"
14"	NI-40x	24'-5"	22'-9"	20'-11"	18'-8"	25'-1"	22'-11"	20'-11"	18'-8"
	NI-60	24'-10"	23'-2"	22'-1"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
	NI-80	26'-6"	24'-8"	23'-6"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
	NI-90	27'-0"	25'-1"	23'-11"	22'-7"	27'-6"	25'-8"	24'-6"	23'-2"
16"	NI-60	27'-3"	25'-5"	24'-3"	22'-11"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-80	29'-1"	27'-1"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90	29'-7"	27'-6"	26'-2"	24'-9"	30'-2"	28'-2"	26'-10"	25'-5"

#### Notes:

- The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

## Maximum Floor Spans – M6.1

### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued Canadian softwood plywood

### Maximum Floor Spans

Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	14'-11"	14'-1"	13'-7"	-	15'-4"	14'-6"	14'-1"	-
	NI-40x	15'-11"	15'-0"	14'-6"	-	16'-4"	15'-5"	14'-11"	-
	NI-60	16'-1"	15'-2"	14'-8"	-	16'-6"	15'-7"	15'-1"	-
	NI-80	17'-1"	16'-1"	15'-6"	-	17'-5"	16'-5"	15'-10"	-
11-7/8"	NI-20	16'-9"	15'-10"	15'-4"	-	17'-4"	16'-4"	15'-10"	-
	NI-40x	17'-10"	16'-10"	16'-3"	-	18'-6"	17'-4"	16'-9"	-
	NI-60	18'-1"	17'-0"	16'-5"	-	18'-9"	17'-6"	16'-11"	-
	NI-80	19'-6"	18'-0"	17'-4"	-	20'-1"	18'-7"	17'-9"	-
	NI-90	19'-11"	18'-4"	17'-8"	-	20'-5"	18'-11"	18'-1"	-
14"	NI-40x	19'-10"	18'-4"	17'-8"	-	20'-6"	19'-1"	18'-3"	-
	NI-60	20'-2"	18'-8"	17'-11"	-	20'-10"	19'-4"	18'-6"	-
	NI-80	21'-8"	20'-0"	19'-1"	-	22'-4"	20'-8"	19'-9"	-
	NI-90	22'-1"	20'-5"	19'-6"	-	22'-9"	21'-0"	20'-1"	-
16"	NI-60	22'-0"	20'-4"	19'-6"	-	22'-9"	21'-1"	20'-2"	-
	NI-80	23'-7"	21'-10"	20'-10"	-	24'-4"	22'-6"	21'-6"	-
	NI-90	24'-1"	22'-2"	21'-2"	-	24'-9"	22'-11"	21'-10"	-

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-6"	15'-1"	14'-3"	-	16'-6"	15'-1"	14'-3"	-
	NI-40x	17'-9"	16'-10"	15'-11"	-	18'-2"	16'-11"	15'-11"	-
	NI-60	17'-11"	16'-11"	16'-2"	-	18'-5"	17'-2"	16'-2"	-
	NI-80	19'-3"	17'-10"	17'-3"	-	19'-8"	18'-3"	17'-7"	-
11-7/8"	NI-20	19'-4"	18'-0"	17'-1"	-	19'-9"	18'-1"	17'-1"	-
	NI-40x	20'-10"	19'-4"	18'-6"	-	21'-5"	19'-11"	19'-0"	-
	NI-60	21'-1"	19'-7"	18'-8"	-	21'-8"	20'-2"	19'-3"	-
	NI-80	22'-6"	20'-10"	19'-11"	-	23'-1"	21'-5"	20'-5"	-
	NI-90	23'-0"	21'-3"	20'-4"	-	23'-6"	21'-10"	20'-10"	-
14"	NI-40x	23'-5"	21'-8"	20'-9"	-	24'-0"	22'-5"	20'-11"	-
	NI-60	23'-9"	22'-0"	21'-0"	-	24'-5"	22'-8"	21'-8"	-
	NI-80	25'-4"	23'-6"	22'-5"	-	25'-11"	24'-1"	23'-0"	-
	NI-90	25'-10"	23'-11"	22'-9"	-	26'-5"	24'-6"	23'-4"	-
16"	NI-60	26'-2"	24'-3"	23'-2"	-	26'-11"	25'-0"	23'-11"	-
	NI-80	27'-11"	25'-10"	24'-7"	-	28'-7"	26'-6"	25'-3"	-
	NI-90	28'-5"	26'-3"	25'-0"	-	29'-0"	26'-11"	25'-8"	-

### Notes:

1. The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

### Maximum Floor Spans – M7.1

#### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued Canadian softwood plywood

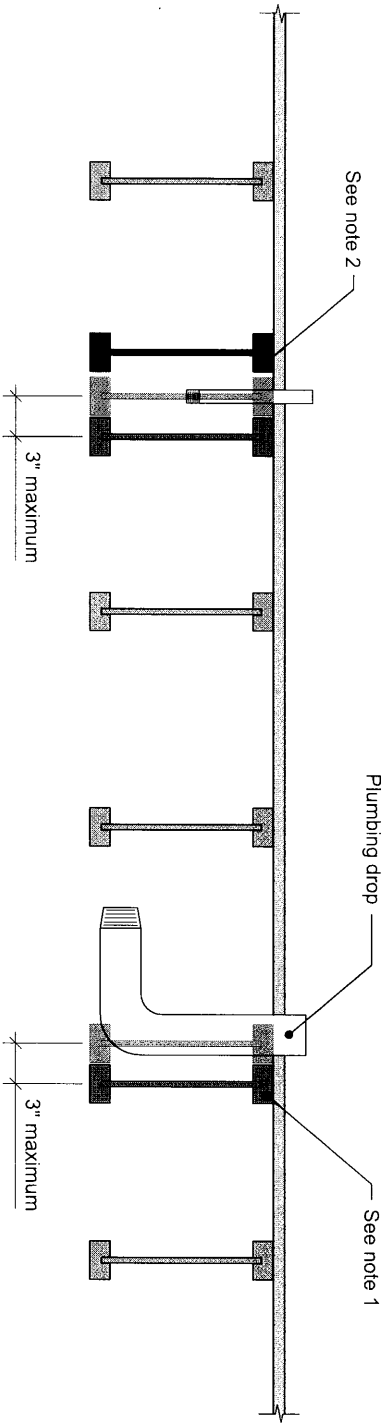
#### Maximum Floor Spans

Joist depth	Joist series	Bare				1/2 in. 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	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	14'-11"
	NI-60	17'-1"	16'-1"	15'-6"	14'-10"	17'-6"	16'-6"	15'-11"	15'-3"
	NI-80	18'-1"	17'-0"	16'-4"	15'-8"	18'-7"	17'-4"	16'-8"	16'-0"
11-7/8"	NI-20	17'-10"	16'-10"	16'-2"	15'-7"	18'-5"	17'-4"	16'-9"	16'-1"
	NI-40x	19'-3"	17'-10"	17'-2"	16'-6"	19'-10"	18'-5"	17'-8"	16'-11"
	NI-60	19'-6"	18'-1"	17'-4"	16'-8"	20'-1"	18'-8"	17'-10"	17'-1"
	NI-80	20'-11"	19'-4"	18'-5"	17'-7"	21'-5"	19'-10"	18'-11"	17'-11"
	NI-90	21'-4"	19'-9"	18'-9"	17'-10"	21'-10"	20'-3"	19'-3"	18'-3"
14"	NI-40x	21'-4"	19'-9"	18'-10"	17'-11"	22'-0"	20'-5"	19'-6"	18'-6"
	NI-60	21'-8"	20'-1"	19'-2"	18'-2"	22'-4"	20'-9"	19'-9"	18'-9"
	NI-80	23'-3"	21'-6"	20'-5"	19'-4"	23'-10"	22'-1"	21'-0"	19'-11"
	NI-90	23'-9"	21'-11"	20'-10"	19'-8"	24'-3"	22'-6"	21'-5"	20'-3"
16"	NI-60	23'-7"	21'-10"	20'-10"	19'-9"	24'-4"	22'-7"	21'-7"	20'-5"
	NI-80	25'-4"	23'-5"	22'-3"	21'-1"	26'-0"	24'-1"	22'-11"	21'-8"
	NI-90	25'-10"	23'-10"	22'-8"	21'-5"	26'-5"	24'-6"	23'-4"	22'-0"

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap				Mid-span blocking and 1/2 in. 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'-7"	17'-2"	16'-3"	14'-11"	18'-10"	17'-2"	16'-3"	14'-11"
	NI-60	18'-10"	17'-6"	16'-6"	15'-5"	19'-1"	17'-6"	16'-6"	15'-5"
	NI-80	20'-2"	18'-9"	17'-11"	16'-10"	20'-7"	19'-2"	18'-2"	16'-10"
11-7/8"	NI-20	20'-1"	18'-5"	17'-5"	16'-1"	20'-1"	18'-5"	17'-5"	16'-1"
	NI-40x	21'-9"	20'-3"	19'-0"	17'-0"	22'-4"	20'-5"	19'-0"	17'-0"
	NI-60	22'-0"	20'-6"	19'-7"	18'-4"	22'-7"	20'-10"	19'-8"	18'-4"
	NI-80	23'-6"	21'-10"	20'-10"	19'-9"	24'-0"	22'-5"	21'-4"	20'-0"
	NI-90	24'-0"	22'-4"	21'-3"	20'-1"	24'-6"	22'-10"	21'-9"	20'-7"
14"	NI-40x	24'-4"	22'-8"	20'-11"	18'-8"	25'-0"	22'-11"	20'-11"	18'-8"
	NI-60	24'-9"	23'-0"	22'-0"	20'-9"	25'-5"	23'-8"	22'-4"	20'-10"
	NI-80	26'-5"	24'-6"	23'-4"	22'-1"	27'-0"	25'-2"	24'-0"	22'-8"
	NI-90	26'-11"	25'-0"	23'-10"	22'-6"	27'-5"	25'-7"	24'-5"	23'-1"
16"	NI-60	27'-2"	25'-4"	24'-2"	22'-10"	27'-11"	26'-1"	24'-9"	23'-1"
	NI-80	29'-0"	26'-11"	25'-8"	24'-3"	29'-7"	27'-7"	26'-4"	24'-11"
	NI-90	29'-6"	27'-5"	26'-1"	24'-8"	30'-1"	28'-1"	26'-9"	25'-4"

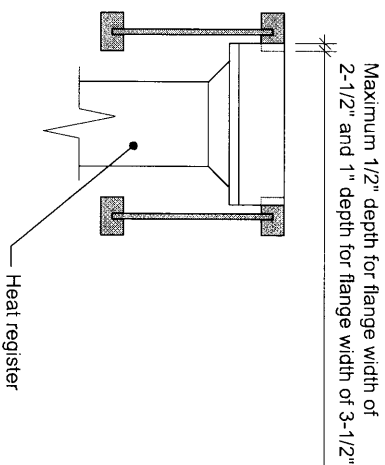
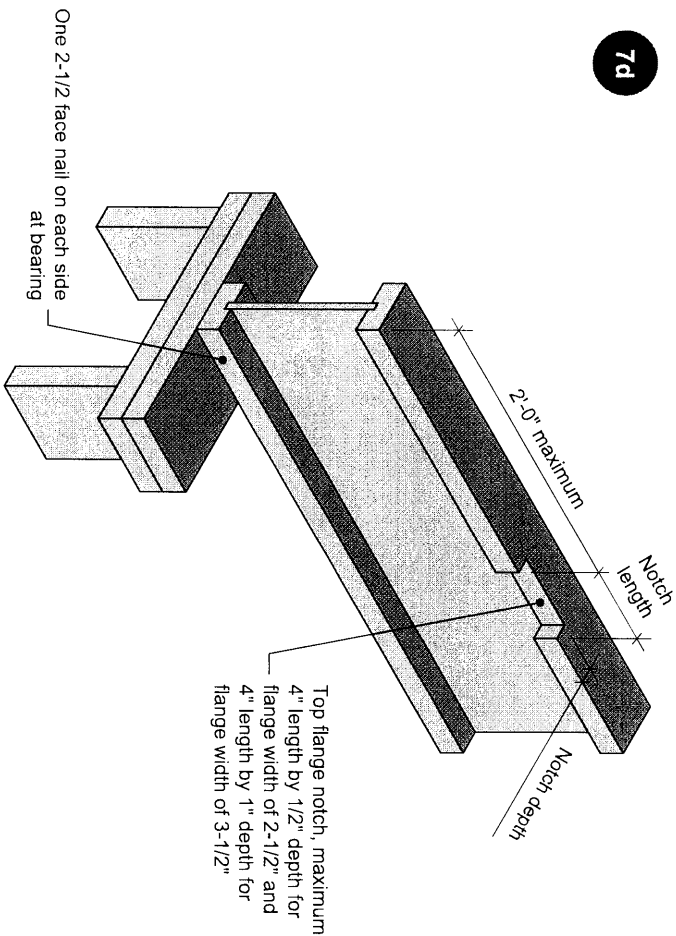
#### Notes:

- The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.



- Notes:**
1. To prevent interference with plumbing, a joist may be shifted up to 3 inches if the edge of the floor panel is supported and the span rating is not exceeded.
  2. In all other cases, an additional joist is required.

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.



- 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 length by 1/2-inch depth for flange width of 2-1/2 inches, and 4-inch length 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.

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.