

Products				
PlotID	Length	Product	Plies	Net Qty
J1	22-00-00	11 7/8" NI-40x	2	4
J2	20-00-00	11 7/8" NI-40x	1	2
J3	18-00-00	11 7/8" NI-40x	1	22
J3DJ	18-00-00	11 7/8" NI-40x	2	4
J4	16-00-00	11 7/8" NI-40x	1	5
J5	10-00-00	11 7/8" NI-40x	1	8
J5DJ	10-00-00	11 7/8" NI-40x	2	4
J6	8-00-00	11 7/8" NI-40x	1	4
J7	6-00-00	11 7/8" NI-40x	1	1
J8	4-00-00	11 7/8" NI-40x	1	3
J9	2-00-00	11 7/8" NI-40x	1	4
J10	22-00-00	11 7/8" NI-80	1	21
B7A ✓	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B6 ✓	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1 ✓	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3 ✓	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B8A ✓	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B5 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2 ✓	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4 ✓	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/11.88
21	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
2	H2	HUS1.81/10
2	H3	HU312-2
2	H3	HU312-2
3	H3	IUS3.56/11.88
1	H4	HGUS410
1	H9	LS90

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

DATE 10/22/21

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 DAS 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.

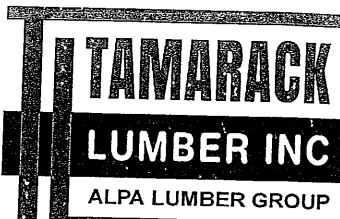
DWG# TAM 22390-21 THROUGH DWG# TAM 22395-21, INCLUSIVE DATED 10/22/21

SEALED STRUCTURAL COMPONENTS ONLY (+22406-21 + 22407-21)
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 PROFESSIONAL ENGINEER REGISTERED UNDER SUBSECTION 3.2.5 OF THE ONTARIO BUILDING CODE. I AM QUALIFIED AND HE FIRM IS REGISTERED, IN APPROPRIATE CLASSES AND/OR CATEGORIES.

REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 22406-21
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY



FROM PLAN DATED: 2021/06

BUILDER:

ROYAL PINE HOMES

SITE:

VALES OF HUMBER NORTH
MODEL: 4504 FLANKAGE COR

ELEVATION: A

LOT: 57

CITY: BRAMPTON

SALESMAN: RICK DICIANO

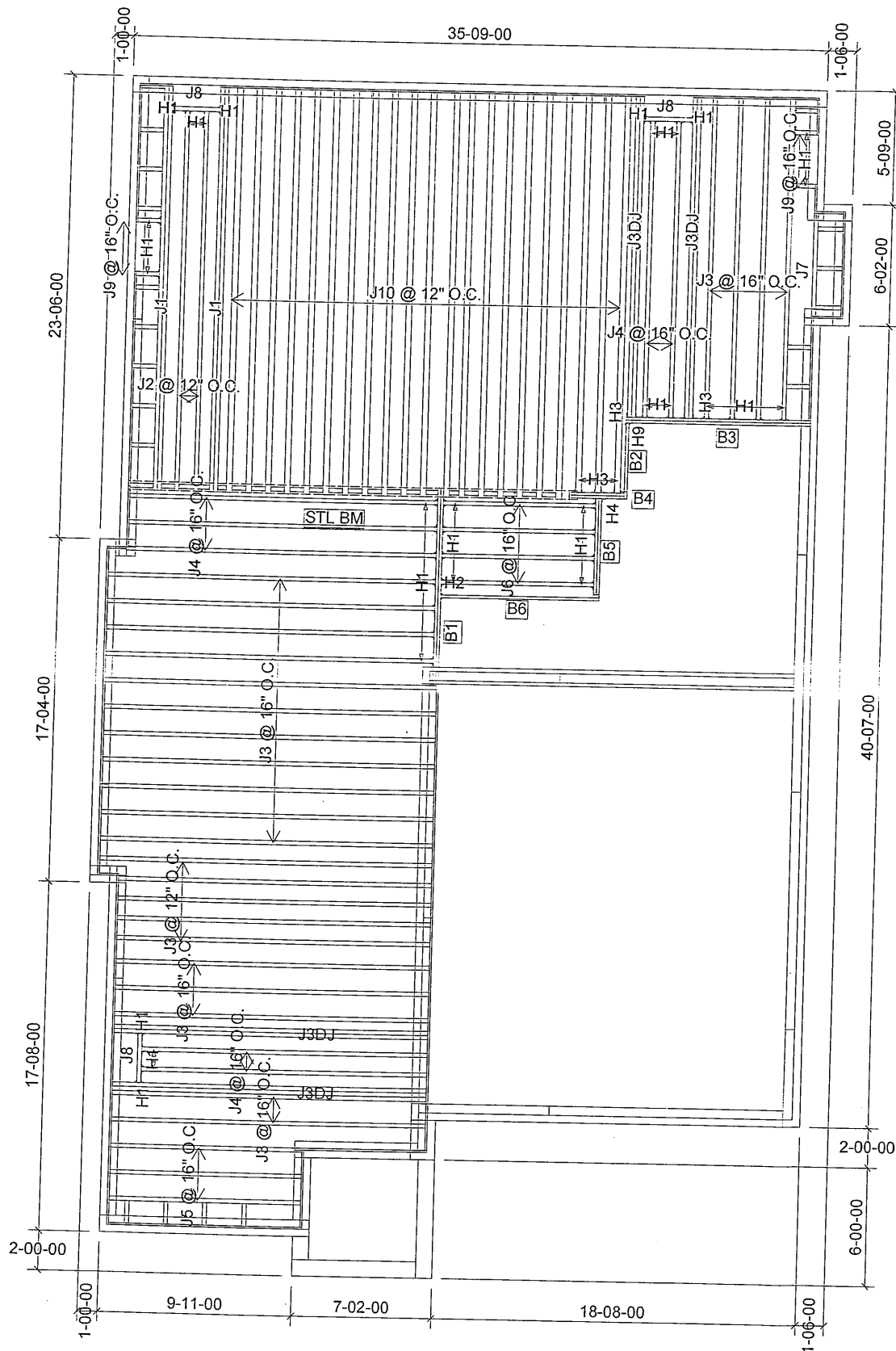
DESIGNER: AJ

REVISION:

DATE: 2021-10-02

1st FLOOR

SUNKEN



Products				
PlotID	Length	Product	Plies	Net Qty
J1	22-00-00	11 7/8" NI-40x	2	4
J2	20-00-00	11 7/8" NI-40x	1	2
J3	18-00-00	11 7/8" NI-40x	1	25
J3DJ	18-00-00	11 7/8" NI-40x	2	8
J4	16-00-00	11 7/8" NI-40x	1	7
J5	10-00-00	11 7/8" NI-40x	1	3
J6	8-00-00	11 7/8" NI-40x	1	4
J7	6-00-00	11 7/8" NI-40x	1	1
J8	4-00-00	11 7/8" NI-40x	1	3
J9	2-00-00	11 7/8" NI-40x	1	4
J10	22-00-00	11 7/8" NI-80	1	21
B6 ✓	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1 ✓	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3 ✓	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B5 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2 ✓	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4 ✓	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
21	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
1	H2	HUS1.81/10
2	H3	HU312-2
3	H3	IUS3.56/11.88
1	H4	HGUS410
1	H9	LS90

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

DATE 10/24

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 OAS 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.

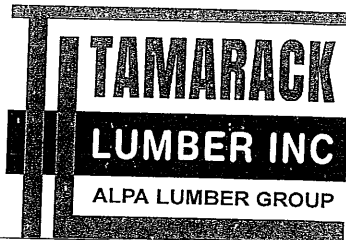
DWG# TAM 22390.21 THROUGH DWG# TAM 22395.21 INCLUSIVE DATED 10/24

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.
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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 22409.21
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY



FROM PLAN DATED: 2021/06

BUILDER:

ROYAL PINE HOMES

SITE:

VALES OF HUMBER NORTH

MODEL: 4504 FLANKAGE COR

ELEVATION: A

LOT: 57

CITY: BRAMPTON

SALESMAN: RICK DICIANO

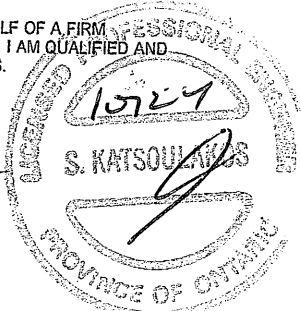
DESIGNER: AJ

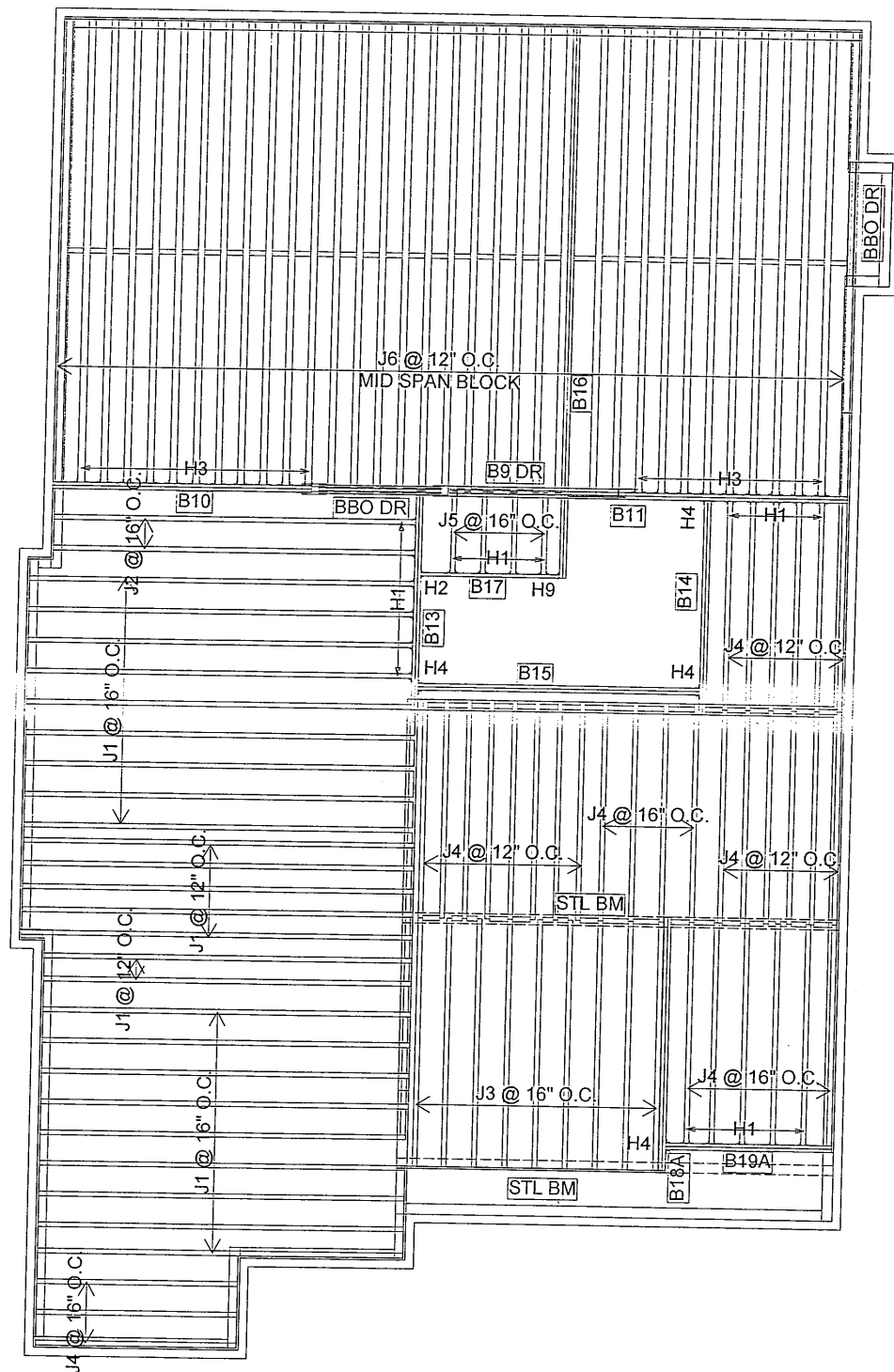
REVISION:

DATE: 2021-10-02

1st FLOOR

STD





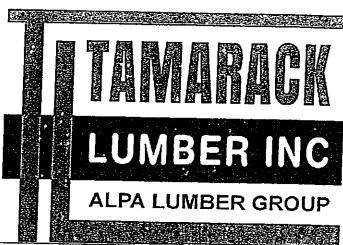
Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	25
J2	16-00-00	11 7/8" NI-40x	1	2
J3	12-00-00	11 7/8" NI-40x	1	9
J4	10-00-00	11 7/8" NI-40x	1	33
J5	4-00-00	11 7/8" NI-40x	1	4
J6	22-00-00	11 7/8" NI-80	1	35
B9 DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B16	24-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B15	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B10	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B18A	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B11	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B13	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B14	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B17	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B19A	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
4	H1	IUS2.56/11.88
16	H1	IUS2.56/11.88
1	H2	HUS1.81/10
20	H3	IUS3.56/11.88
4	H4	HGUS410
1	H9	LS90

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

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 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 NORTH
MODEL: 4504 FLANKAGE COR

ELEVATION: A

LOT: 57

CITY: BRAMPTON

SALESMAN: RICK DICIANO

DESIGNER: AJ

REVISION:

DATE: 2021-10-02

2nd FLOOR

DATE 10/22/21

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 DAS 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, LENGHTS, AND DETAILS, REMAINS THE RESPONSIBILITY OF THE FLOOR SYSTEM INSTALLATION CONTRACTOR.

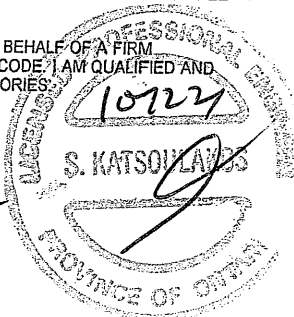
DWG# TAM 2239624 THROUGH DWG# TAM 2240521 INCLUSIVE DATED 10/22/21

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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REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 22410-21
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY



NORDIC

INSTALLATION GUIDE NORDIC JOIST

NS-G133 

ENGLISH

VERSION

2020-10-01

Engineered Wood Products

BASIC INSTALLATION GUIDE FOR RESIDENTIAL FLOORS

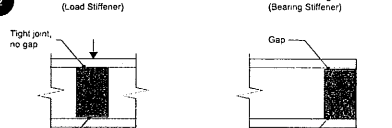
NORDIC
STRUCTURES

NORDIC
JOIST

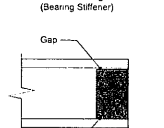
nordic.ca

WEB STIFFENERS

2 Concentrated Load (Load Stiffener)



End Bearing (Bearing Stiffener)



Flange width 2-1/2" or 3-1/2"

Approx. 2"

Approx. 2"

1/8" - 1/4" Gap

Four 2-1/2" nails, 3" nails required for joists with 3-1/2" flange width

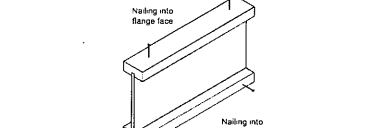
No gap

Stiffener Size Requirements

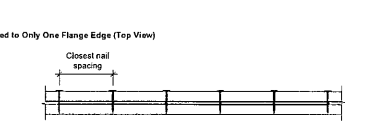
Flange width (in.)	Web stiffener size each side of web (in.)
2-1/2	1 x 2x16 Minimum width
3-1/2	1-1/2 x 2x16 Minimum width

NAIL PLACING

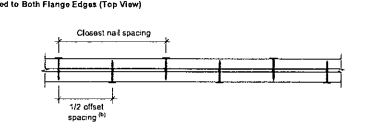
1a Nailing into flange face



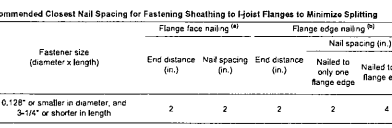
1b Nailing into flange edge



1c Nailing into flange face



1d Nailing into flange edge



Recommended Closest Nail Spacing for Fastening Sheathing to Joist Flanges to Minimize Splitting

Fastener size (diameter x length)	Flange face nailing ^(a)		Flange edge nailing ^(b)	
	End distance (in.)	Nail spacing (in.)	End distance (in.)	Nail spacing (in.)
0.128" or smaller in diameter, and 3-1/4" or shorter in length	2	2	2	2
Greater than 0.128" up to 0.148" in diameter, and 3-1/4" or shorter in length	2	3	2	3

^(a) If more than one row is required, offset rows a minimum of 1/2 inch and stagger.

^(b) Closest nail spacing measured from one flange edge. Nails on opposite flange edge must be offset one-half the minimum spacing.

INSTALLING NORDIC I-JOISTS

- Installation of Nordic I-joists shall be as shown in details 1.
- Except for cutting to length, I-joist flanges should never be cut, drilled or notched.
- Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
- 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.
- I-joists must be protected from the weather prior to installation.
- 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.
- 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.
- Ends of floor joists shall be restrained to prevent rollover. Use rim board or I-joist blocking panels.
- I-joists installed beneath bearing walls perpendicular to the joists shall have full-depth blocking panels, rim board, or squash blocks (cripple blocks) to transfer gravity loads from above the floor system to the wall or foundation below.
- 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.
- 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.
- Nails installed in flange face or edge shall be spaced in accordance with the applicable building code requirements or approved building plans, but should not be closer than those specified on page 3.3 of the Nordic Joist Technical Guide (NS-G13).
- Details 1 show only I-joist-specific fastener requirements. For other fastener requirements, see the applicable building code.
- For proper temporary bracing of wood I-joists and placement of temporary construction loads, see [APA Technical Note: Temporary Construction Loads over I-Joist Roofs and Floors, Form J735](#).

All nails shown in the details are assumed to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.128 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

2x2 S-P-F No. 2

3/8 in. web

Depths 9-1/2 and 11-7/8 in.

33 pieces per unit

NI-40x

2x3 1950F MSR

3/8 in. web

Depths 9-1/2, 11-7/8 and 14 in.

33 pieces per unit

NI-60

2x3 2100F MSR

3/8 in. web

Depths 9-1/2, 11-7/8, 14 and 16 in.

33 pieces per unit

NI-80

2x4 2100F MSR

3/8 in. web

Depths 9-1/2, 11-7/8, 14 and 16 in.

23 pieces per unit

NI-90

2x4 2400F MSR

7/8 in. web

Depths 11-7/8, 14 and 16 in.

23 pieces per unit

RIM BOARDS

Width 1-1/8 in.

Length 16 ft

Depths 9-1/2 to 16 in.

APA Rim Board Plus

SAFETY AND CONSTRUCTION PRECAUTIONS

- I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.
- Avoid Accidents by Following these Important Guidelines:**
- Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
 - When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, 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.
 - For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
 - Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
 - Never install a damaged I-joist.**
- Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.



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



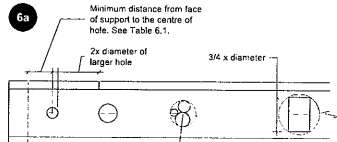
Never stack building materials over unshathed I-joists. Once sheathed, do not overstress I-joist with concentrated loads from building materials.

WEB HOLES AND OPENINGS

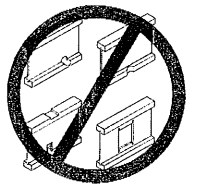
WEB HOLES IN I-JOISTS

Rules for Cutting Holes in I-joists

- 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.
- I-joist top and bottom flanges must never be cut, notched or otherwise modified.
- Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole and the adjacent I-joist flange.
- The sizes of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole or twice the length of the longest side of the longest rectangular hole, and each hole must be sized and located in compliance with the requirements of Table 6.1.
- 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.
- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
- All holes shall be cut in accordance with the restrictions listed above and as illustrated in detail 6a.
- A group of round holes at approximately the same location shall be permitted if it meets the requirements for a single round hole circumscribed around them.



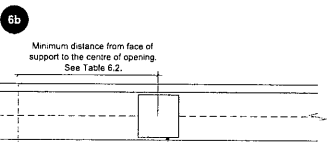
- Notes:**
- Never drill, cut or notch the flange, or over-cut the web.
 - Holes in web should be cut with a sharp saw.
 - For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch-diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.



DUCT CHASE OPENINGS

Rules for Cutting Duct Chase Openings in I-joists

- The distance between the inside edge of the support and the centreline of a duct chase opening shall be in compliance with the requirements of Table 6.2.
- I-joist top and bottom flanges must never be cut, notched or otherwise modified.
- The maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the opening and the adjacent I-joist flange.
- All openings shall be cut in accordance with the restrictions listed above and as illustrated in detail 6b.
- Limit one maximum-size duct chase opening per span.



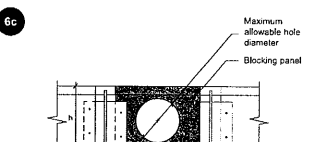
- Notes:**
- Never drill, cut or notch the flange, or over-cut the web.
 - Holes in web should be cut with a sharp saw.
 - Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch-diameter 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.

I-joist depth (in.)	Maximum depth of the opening (in.)
9-1/2	6-1/4
11-7/8	8-5/8
14	10-3/4
16	12-3/4

HOLES IN BLOCKING PANELS

Maximum Allowable Hole Size in Lateral-restraint-only Blocking Panels

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



I-joist or rim board blocking depth (in.)	Maximum allowable hole diameter (in.) ^(a)
9-1/2	6-1/4
11-7/8	7-3/4
14	9-1/4
16	10-1/2

^(a) Maximum allowable hole diameter in blocking panel, where the blocking panel is longer than its height.

TABLE 6.1 - LOCATION OF WEB HOLES

Simple or multiple span

Minimum distance from inside face of any support to centre of hole (ft.-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	12-3/4
9-1/2"	NI-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	-	-	-	-	-	-	-	-	-
	NI-40x	0-7"	1-6"	3-0"	4-4"	6-0"	6-4"	-	-	-	-	-	-	-	-	-
	NI-40	1-3"	2-4"	4-0"	5-4"	7-0"	7-5"	-	-	-	-	-	-	-	-	-
	NI-80	2-3"	3-5"	5-0"	6-6"	8-2"	8-8"	-	-	-	-	-	-	-	-	-
11-7/8"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-5"	7-9"	-	-	-	-	-	-
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	-	-	-	-	-	-
	NI-60	0-7"	1-5"	3-0"	4-3"	5-8"	6-0"	7-3"	8-10"	10-0"	-	-	-	-	-	-
	NI-80	1-6"	2-10"	4-2"	5-6"	7-0"	7-5"	8-6"	10-3"	11-4"	-	-	-	-	-	-
14"	NI-90	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-8"	8-9"	10-2"	-	-	-	-	-	-
	NI-40x	0-7"	0-8"	0-8"	1-0"	2-4"	2-8"	3-9"	5-2"	6-0"	6-6"	8-3"	10-2"	-	-	-
	NI-60	0-7"	0-8"	1-8"	3-2"	4-3"	4-8"	5-8"	7-2"	8-0"	8-8"	10-4"	11-8"	-	-	-
	NI-80	0-10"	2-0"	3-4"	4-9"	6-2"	6-8"	7-8"	9-9"	10-0"	10-8"	12-4"	13-9"	-	-	-
16"	NI-90	0-7"	0-8"	0-10"	2-8"	4-0"	4-5"	5-8"	7-5"	8-8"	9-4"	11-4"	12-11"	-	-	-
	NI-40x	0-7"	0-8"	0-8"	1-0"	2-4"	2-8"	3-9"	5-2"	6-0"	6-6"	8-3"	10-2"	-	-	-
	NI-60	0-7"	0-8"	1-4"	2-10"	3-2"	3-8"	4-2"	5-4"	6-4"	7-0"	8-5"	9-8"	10-2"	12-2"	13-9"
	NI-80	0-7"	1-3"	2-6"	3-10"	5-3"	5-6"	6-8"	8-0"	9-0"	9-5"	11-0"	12-3"	12-8"	14-5"	16-0"
18"	NI-90	0-7"	0-8"	0-8"	1-9"	3-3"	3-8"	4-9"	6-5"	7-5"	8-0"	9-10"	11-3"	11-9"	13-9"	15-4"
	NI-80	0-7"	0-8"	0-8"	1-9"	3-3"	3-8"	4-9"	6-5"	7-5"	8-0"	9-10"	11-3"	11-9"	13-9"	15-4"

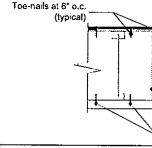
- Notes:**
- Tabulated values are applicable to residential floor construction meeting the above design criteria.
 - The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

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

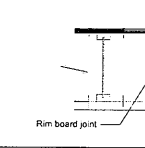
RIM BOARDS

6a

Rim Board Joint Between Floor Joists

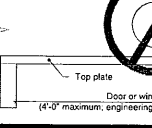


Rim Board Joint at Corner



6b

Rim Board



Note: 1. Do not cut holes in rim board installed over 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.

I-JOIST MARKING

6c

Concentrated load



Note: 1. Do not cut holes in rim board installed over 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.

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

NORDIC **APA** **PLANT 1052 202781326** **CCMC 13032-R ESR-1742** **CE 1224-CPD-0176 ETA-090035** **NI-40x** **MADE IN CANADA**


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

This document supersedes all previous versions. For the latest version, consult [nordic.ca](#) or contact Nordic Structures.

FOR ALL
construction details
→DC3

Schedule 1: Designer Information

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

A. Project Information			Application number:	
Building number, street name:			Unit no.	Lot/con. 57
Municipality CITY OF BRAMPTON	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design activities				
Name SAM KATSOULAKOS		Firm MICRO CITY ENGINEERING SERVICES INC.		
Street address R.R #1, PO BOX 61			Unit no.	Lot/con.
Municipality GLENCOE	Postal code N0L 1M0	Province ONTARIO	E-mail mcengr@xplornet.com	
Telephone number (519) 287-2242 Business		Fax number	Cell number	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]				
<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: ROYAL PINE HOMES-PROJECT: VALES OF HUMBER NORTH-MODEL:4504 FLANKAGE COR-ELEV.A-1ST FLOOR-SUNKEN-LOT SPECIFIC REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK LUMBER INC. (SEE DWG #TAM22408-21 DATED 10-12-21). SUPPORTING STRUCTURE (S) TO BE REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.				
D. Declaration of Designer				
I, <u>SAM KATSOULAKOS</u> declare that (choose one as appropriate): <div style="text-align: center;">(print name)</div> <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>10/12/21</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 #TAM22408-21S
DWG #TAM22411-21S



Schedule 1: Designer Information

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

A. Project Information			Application number:	
Building number, street name:			Unit no.	Lot/con.
Municipality CITY OF BRAMPTON			Postal code	Plan number/ other description
B. Individual who reviews and takes responsibility for design activities				
Name SAM KATSOULAKOS			Firm MICRO CITY ENGINEERING SERVICES INC.	
Street address R.R #1, PO BOX 61			Unit no.	Lot/con.
Municipality GLENCOE	Postal code N0L 1M0	Province ONTARIO	E-mail mcengr@explornet.com	
Telephone number (519) 287-2242 Business		Fax number	Cell number	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]				
<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: ROYAL PINE HOMES-PROJECT: VALES OF HUMBER NORTH-MODEL:4504 FLANKAGE COR-ELEV.A-1ST FLOOR-STD-LOT SPECIFIC REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK LUMBER INC. (SEE DWG #TAM22409-21 DATED 10-12-21). SUPPORTING STRUCTURE (S) TO BE REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.				
D. Declaration of Designer				
I, <u>SAM KATSOULAKOS</u> 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		Signature of Designer		
10/12/21				

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 #TAM22409-21S
DWG #TAM22412-21S

10/12/21

Schedule 1: Designer Information

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

A. Project Information			Application number:	
Building number, street name:			Unit no.	Lot/con.
Municipality CITY OF BRAMPTON			Postal code	Plan number/ other description
B. Individual who reviews and takes responsibility for design activities				
Name SAM KATSOULAKOS			Firm MICRO CITY ENGINEERING SERVICES INC.	
Street address R.R #1, PO BOX 61			Unit no.	Lot/con.
Municipality GLENCOE	Postal code N0L 1M0	Province ONTARIO	E-mail mcengr@xplornet.com	
Telephone number (519) 287-2242 Business		Fax number	Cell number	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]				
<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: ROYAL PINE HOMES-PROJECT: VALES OF HUMBER NORTH-MODEL:4504 FLANKAGE COR-ELEV.A-2ND FLOOR-LOT SPECIFIC REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK LUMBER INC. (SEE DWG #TAM22410-21 DATED 10-12-21). SUPPORTING STRUCTURE (S) TO BE REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.				
D. Declaration of Designer				
I, <u>SAM KATSOULAKOS</u> (print name) declare that (choose one as appropriate):				
<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		Signature of Designer		
10/22/21				

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 #TAM22410-21S
DWG #TAM22413-21S

10/22/21

NORDIC STRUCTURES

COMPANY
Oct. 2, 2021 08:29

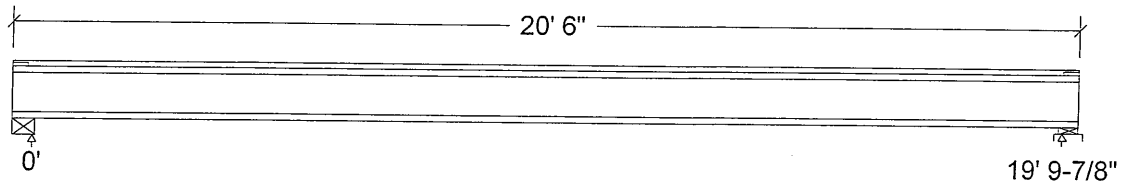
PROJECT
J10 1ST FLOOR.wwb

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	198		198
Live	396		396
Factored:			
Total	842		842
Bearing:			
Capacity			
Joist	2336		2336
Support	-		10841
Des ratio			
Joist	0.36		0.36
Support	-		0.08
Load case	#2		#2
Length	5-1/4		4-3/8
Min req'd	1-1/2		1-1/2
Stiffener	No		No
KD	1.00		1.00
KB support	-		1.00
fcpsup	-		769
Kzcp sup	-		1.15

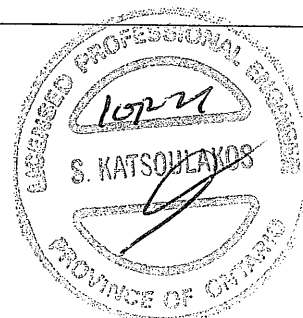
*Minimum bearing length for joists is 1-1/2" for exterior supports

Nordic Joist 11-7/8" NI-80 Floor joist @ 12" o.c.

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

Total length: 20' 6"; Clear span: 19' 8-3/8"; 3/4" nailed and glued OSB sheathing

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



OWB NO. 74M 22386.21
STRUCTURAL
COMPONENT ONLY

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 842$	$V_r = 2336$	lbs	$V_f/V_r = 0.36$
Moment (+)	$M_f = 4175$	$M_r = 11609$	lbs-ft	$M_f/M_r = 0.36$
Perm. Defl'n	$0.13 = < L/999$	$0.66 = L/360$	in	0.19
Live Defl'n	$0.25 = L/941$	$0.50 = L/480$	in	0.51
Total Defl'n	$0.38 = L/627$	$0.99 = L/240$	in	0.38
Bare Defl'n	$0.29 = L/823$	$0.66 = L/360$	in	0.44
Vibration	$L_{max} = 19'-9.9$	$L_v = 21'-2.7$	ft	0.93
Defl'n	$= 0.027$	$= 0.032$	in	0.85

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	11609	1.00	1.00	-	1.000	-	-	-	#2
EI	547.1 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:

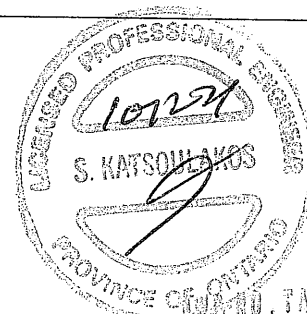
$EI_{eff} = 625.37 \text{ lb-in}^2$ $K = 6.18e06 \text{ lbs}$ $GA = 0.77e06 \text{ lb}$

"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.



NO. TAN 22366-21
 STRUCTURAL
 COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
Oct. 2, 2021 08:31

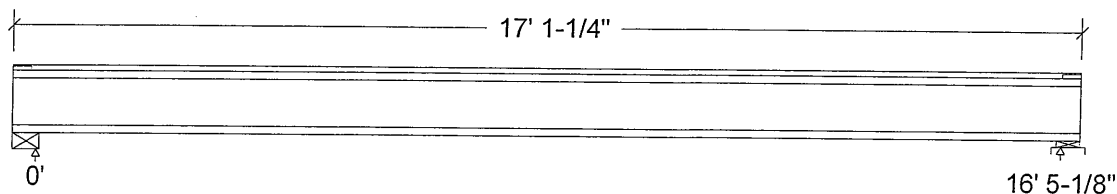
PROJECT
J3 1ST FLOOR.wwb

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	219		219
Live	438		438
Factored:			
Total	931		931
Bearing:			
Capacity			
Joist	2336		2336
Support	-		7744
Des ratio			
Joist	0.40		0.40
Support	-		0.12
Load case	#2		#2
Length	5-1/4		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.

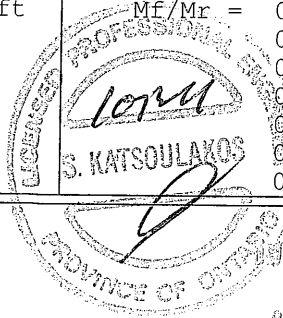
Supports: 1 - Steel Beam, W; 2 - Lumber Sill plate, No.1/No.2;

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

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 931	Vr = 2336	lbs	Vf/Vr = 0.40
Moment (+)	Mf = 3823	Mr = 6255	lbs-ft	Mf/Mr = 0.61
Perm. Defl'n	0.11 = < L/999	0.55 = L/360	in	0.20
Live Defl'n	0.22 = L/904	0.41 = L/480	in	0.53
Total Defl'n	0.33 = L/602	0.82 = L/240	in	0.40
Bare Defl'n	0.27 = L/729	0.55 = L/360	in	0.49
Vibration	Lmax = 16'-5.1	Lv = 18'-1.3	ft	0.91
Defl'n	= 0.029	= 0.039	in	0.74



PG 12
NO. 22367-21
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 lb-in² K = 6.18e06 lbs GA = 0.77e06 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.



004 NO. TAN 22387-21
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
Oct. 2, 2021 08:32

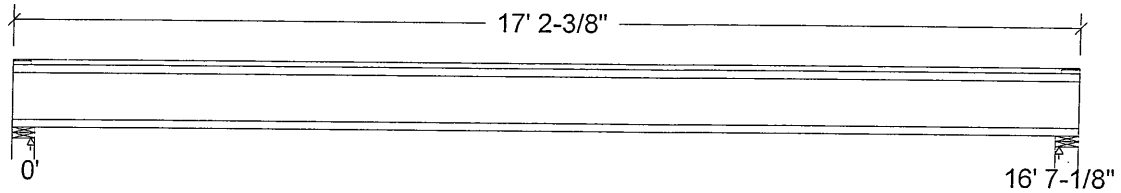
PROJECT
J1 2ND FLOOR.wwb

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	221		221
Live	442		442
Factored:			
Total	940		940
Bearing:			
Capacity			
Joist	2336		2336
Support	7744		7744
Des ratio			
Joist	0.40		0.40
Support	0.12		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	-		-
fcp sup	769		769
Kzcp sup	-		-

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

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

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

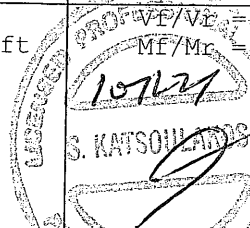
Supports: All - Lumber Wall, No.1/No.2

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

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 940	Vr = 2336	lbs	Vf/Vr = 0.40
Moment(+)	Mf = 3900	Mr = 6255	lbs-ft	Mf/Mr = 0.62
Perm. Defl'n	0.12 = < L/999	0.55 = L/360	in	0.21
Live Defl'n	0.23 = L/859	0.41 = L/480	in	0.56
Total Defl'n	0.35 = L/572	0.83 = L/240	in	0.42
Bare Defl'n	0.28 = L/712	0.55 = L/360	in	0.51
Vibration	Lmax = 16'-7.1	Lv = 17'-8.1	ft	0.94
Defl'n	= 0.031	= 0.038	in	0.82



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:E_Ieff = 447.63 lb-in² K = 6.18e06 lbs GA = 0.77e06 lb

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



WWS NO. 22368-21
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
Oct. 2, 2021 08:34

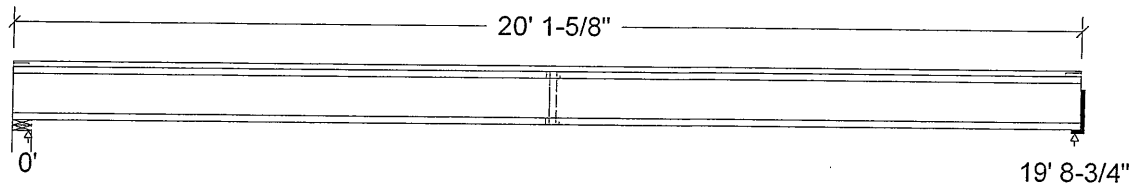
PROJECT
J6 2ND FLOOR.wwb

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	197		197
Live	395		395
Factored:			
Total	838		838
Bearing:			
Capacity			
Joist	2336		2154
Support	10841		-
Des ratio			
Joist	0.36		0.39
Support	0.08		-
Load case	#2		#2
Length	4-3/8		2
Min req'd	1-1/2		1-1/2
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		-
Kzcp sup	-		-

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

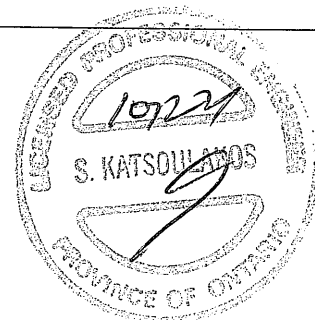
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

Nordic Joist 11-7/8" NI-80 Floor joist @ 12" o.c.

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

Total length: 20' 1-5/8"; Clear span: 19' 7-1/4"; 5/8" nailed and glued OSB sheathing with 1 row of blocking and 1/2" gypsum ceiling

This section PASSES the design code check.



DWG NO. TAM 22307-21
STRUCTURAL
COMPONENT ONLY

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 838$	$V_r = 2336$	lbs	$V_f/V_r = 0.36$
Moment (+)	$M_f = 4135$	$M_r = 11609$	lbs-ft	$M_f/M_r = 0.36$
Perm. Defl'n	$0.13 = < L/999$	$0.66 = L/360$	in	0.19
Live Defl'n	$0.25 = L/937$	$0.49 = L/480$	in	0.51
Total Defl'n	$0.38 = L/624$	$0.99 = L/240$	in	0.38
Bare Defl'n	$0.28 = L/836$	$0.66 = L/360$	in	0.43
Vibration	$L_{max} = 19'-8.7$	$L_v = 23'-5.6$	ft	0.84
Defl'n	$= 0.022$	$= 0.032$	in	0.68

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	11609	1.00	1.00	-	1.000	-	-	-	#2
EI	547.1 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:

$EI_{eff} = 613.27 \text{ lb-in}^2$ $K = 6.18e06 \text{ lbs}$ $GA = 0.77e06 \text{ lb}$

"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.



BY NO. TAM 22389-21
 STRUCTURAL
 DESIGN BY S.M.V.



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

PASSED

1ST FLR FRAMING\Flush Beams\B1(i2495) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1(i2495)

City, Province, Postal Code: BRAMPTON

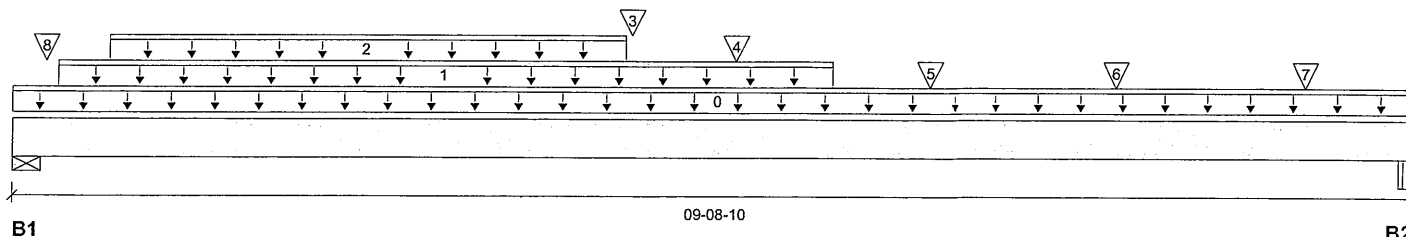
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 09-08-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	4179 / 0	2805 / 0		
B2, 5-1/4"	2213 / 0	1277 / 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	09-08-10	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-03-12	05-07-12	Top	342	171			n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-08-00	04-02-10	Top	240	120			n/a
3	B6(i2813)	Conc. Pt. (lbs)	L	04-03-02	04-03-02	Top		291			n/a
4	J6(i2805)	Conc. Pt. (lbs)	L	04-11-12	04-11-12	Top	171	85			n/a
5	-	Conc. Pt. (lbs)	L	06-03-12	06-03-12	Top	641	321			n/a
6	-	Conc. Pt. (lbs)	L	07-07-12	07-07-12	Top	641	321			n/a
7	-	Conc. Pt. (lbs)	L	08-11-12	08-11-12	Top	444	222			n/a
8	6(i1175)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	1742	1382			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	12006 ft-lbs	35392 ft-lbs	33.9%	1	04-11-12
End Shear	4951 lbs	14464 lbs	34.2%	1	01-05-06
Total Load Deflection	L/999 (0.125")	n/a	n/a	4	04-09-09
Live Load Deflection	L/999 (0.077")	n/a	n/a	5	04-09-09
Max Defl.	0.125"	n/a	n/a	4	04-09-09
Span / Depth	9.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	9775 lbs	82.5%	41.6%	Spruce-Pine-Fir
B2	Beam 5-1/4" x 3-1/2"	4915 lbs	50.1%	21.9%	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. FAW 22390-21
 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: 4504 LOT 57.mmdl

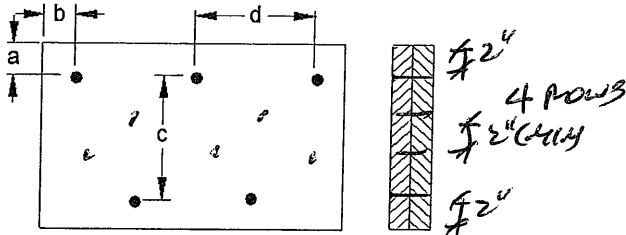
Description: 1ST FLR FRAMING\Flush Beams\B1(i2495)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 6"

Calculated Side Load = 970.5 lb/ft

Connectors are: 1 Nails

3-1/2" ARDOX SPIRAL



SWC NO. 7AM22390-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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



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

PASSED

1ST FLR FRAMING\Flush Beams\B2(i2496) (Flush Beam)

Dry | 1 span | No cant.

October 2, 2021 08:16:02

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

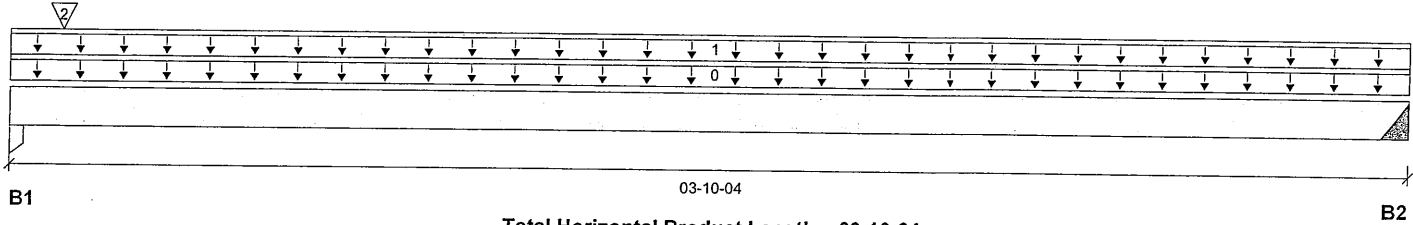
File name: 4504 LOT 57.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B2(i2496)

Specifier:

Designer: AJ

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-1/2"	2373 / 0	1698 / 0		
B2, 2"	17 / 0	20 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-10-04	Top	1.00	0.65	1.00	1.15	
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	03-10-04	Top	10	5			00-00-00
2	5(i323)	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Top	2354	1676			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	41 ft-lbs	17696 ft-lbs	0.2%	1	02-00-06
End Shear	19 lbs	7232 lbs	0.3%	1	01-04-06
Total Load Deflection	L/999 (0")	n/a	n/a	4	02-00-06
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-00-06
Max Defl.	0"	n/a	n/a	4	02-00-06
Span / Depth	3.5				

Bearing Supports

				Demand/ Resistance Support	Demand/ Resistance Member	
Bearing Supports		Dim. (LxW)	Demand			Material
B1	Column	4-1/2" x 1-3/4"	5683 lbs	88.9%	59.1%	Unspecified
B2	Hanger	2" x 1-3/4"	51 lbs	n/a	1.2%	LS90

Cautions

Header for the hanger LS90 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model LS90 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

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

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

Hanger Manufacturer: Unassigned

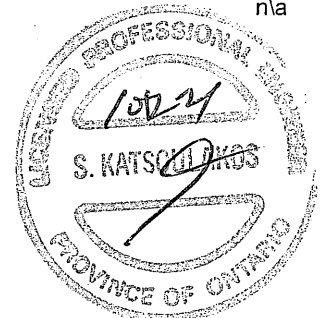
Resistance Factor phi has been applied to all presented results per CSA O86.

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 03-06-12.


 DWG NO. TAM 22391-21
 STRUCTURAL
 COMPONENT ONLY

Disclosure

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



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

PASSED

1ST FLR FRAMING\Flush Beams\B3(i2671) (Flush Beam)

Dry | 1 span | No cant.

October 2, 2021 08:16:02

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

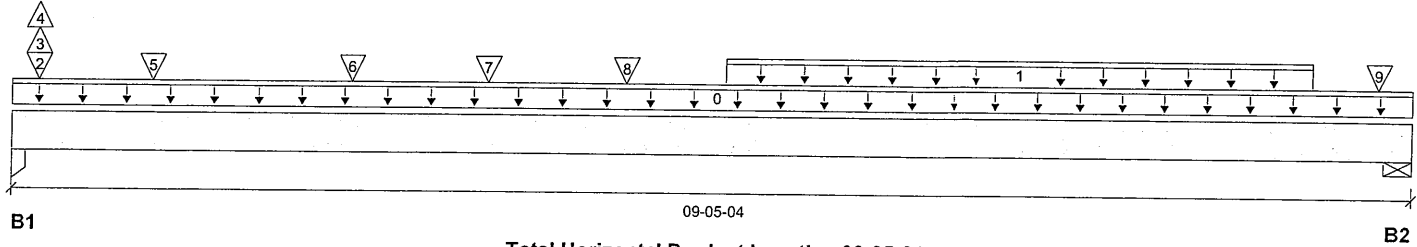
File name: 4504 LOT 57.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B3(i2671)

Specifier:

Designer: AJ

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1556 / 176	716 / 0		
B2, 5-1/2"	1379 / 0	773 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-05-04	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	04-09-04	08-09-04	Top	333	166			n/a
2	-	Conc. Pt. (lbs)	L	00-02-03	00-02-03	Top	232	116			n/a
3	-	Conc. Pt. (lbs)	L	00-02-03	00-02-03	Top		-118			n/a
4	-	Conc. Pt. (lbs)	L	00-02-03	00-02-03	Top	-176				n/a
5	J4(i2815)	Conc. Pt. (lbs)	L	00-11-04	00-11-04	Top	313	156			n/a
6	J4(i2812)	Conc. Pt. (lbs)	L	02-03-04	02-03-04	Top	352	176			n/a
7	J3DJ(i2365)	Conc. Pt. (lbs)	L	03-02-04	03-02-04	Top	323	162			n/a
8	J3(i2451)	Conc. Pt. (lbs)	L	04-01-04	04-01-04	Top	373	187			n/a
9	E7(i314)	Conc. Pt. (lbs)	L	09-02-08	09-02-08	Top		30			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6943 ft-lbs	35392 ft-lbs	19.6%	1	04-01-04
End Shear	2851 lbs	14464 lbs	19.7%	1	07-11-14
Total Load Deflection	L/999 (0.07")	n/a	n/a	6	04-07-04
Live Load Deflection	L/999 (0.046")	n/a	n/a	8	04-07-04
Max Defl.	0.07"	n/a	n/a	6	04-07-04
Span / Depth	8.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 3-1/2"	3229 lbs	32.4%	21.6%	Unspecified
B2	Wall/Plate 5-1/2" x 3-1/2"	3034 lbs	25.6%	12.9%	Spruce-Pine-Fir

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020



006 00. TAM 22392-21
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: 4504 LOT 57.mmdl

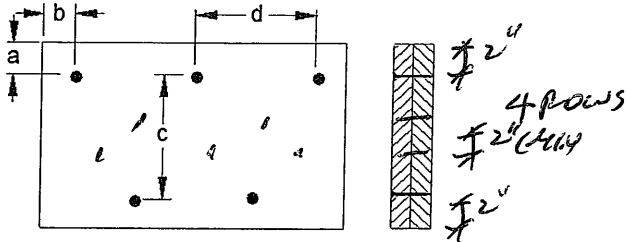
Description: 1ST FLR FRAMING\Flush Beams\B3(i2671)

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 = 1114.1 lb/ft

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



OWN NO. TAM 22392-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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



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

1ST FLR FRAMING\Flush Beams\B4(i2385) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B4(i2385)

City, Province, Postal Code: BRAMPTON

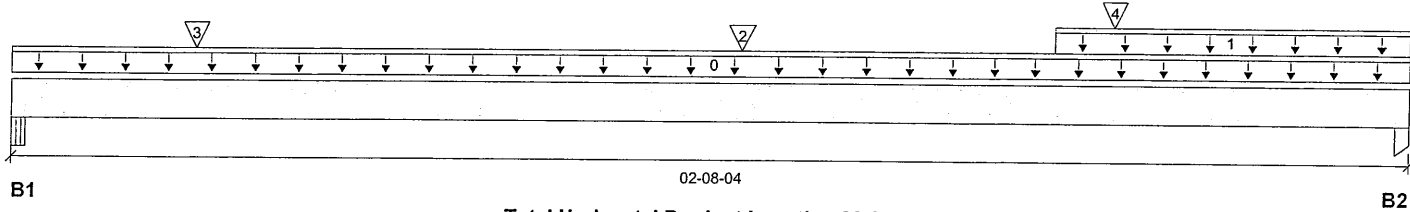
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1481 / 0	844 / 0		
B2, 2-1/4"	2603 / 0	1634 / 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	02-08-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	5(i323)	Unf. Lin. (lb/ft)	L	02-00-00	02-08-04	Top		81			n/a
2	-	Conc. Pt. (lbs)	L	01-04-12	01-04-12	Top	1113	586			n/a
3	J10(i2649)	Conc. Pt. (lbs)	L	00-04-04	00-04-04	Top	403	201			n/a
4	-	Conc. Pt. (lbs)	L	02-01-06	02-01-06	Top	2548	1593			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2684 ft-lbs	35392 ft-lbs	7.6%	1	01-05-00
End Shear	2373 lbs	14464 lbs	16.4%	1	01-03-14
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	01-05-13
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	01-05-13
Max Defl.	0.002"	n/a	n/a	4	01-05-13
Span / Depth	2.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 4" x 3-1/2"	3278 lbs	43.8%	19.2%	Unspecified
B2	Column 2-1/4" x 3-1/2"	5948 lbs	93.1%	62.0%	Unspecified

Cautions

Concentrated side load(s) 4 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.

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



QWB NO. 7AM 22393-21
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 2, 2021 08:16:02

File name: 4504 LOT 57.mmdl

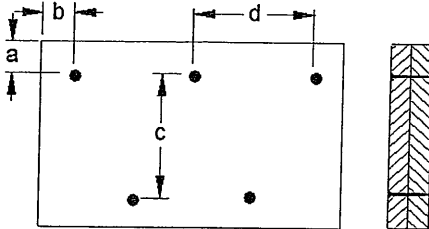
Description: 1ST FLR FRAMING\Flush Beams\B4(i2385)

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 = 427.9 lb/ft

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



OWN NO. TAN 2239321
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.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B5(i2763)

City, Province, Postal Code: BRAMPTON

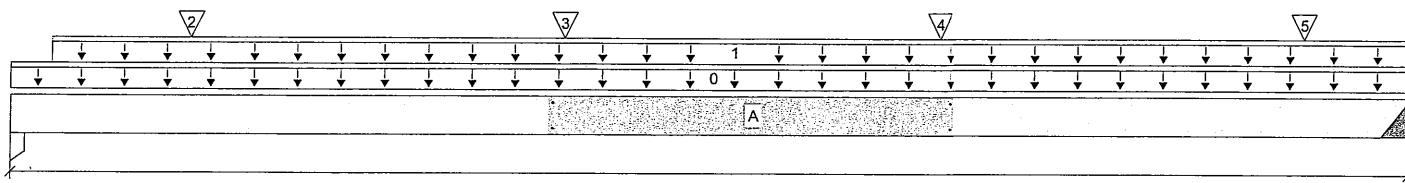
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



B1

05-00-04

B2

Total Horizontal Product Length = 05-00-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	633 / 0	346 / 0		
B2, 4"	743 / 0	402 / 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	05-00-04	Top	12				00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-01-12	05-00-04	Top	120	60			n/a
2	J6(i2805)	Conc. Pt. (lbs)	L	00-07-12	00-07-12	Top	179	90			n/a
3	J6(i2807)	Conc. Pt. (lbs)	L	01-11-12	01-11-12	Top	225	112			n/a
4	J6(i2816)	Conc. Pt. (lbs)	L	03-03-12	03-03-12	Top	225	112			n/a
5	J6(i2762)	Conc. Pt. (lbs)	L	04-07-12	04-07-12	Top	162	81			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1654 ft-lbs	35392 ft-lbs	4.7%	1	02-00-12
End Shear	923 lbs	14464 lbs	6.4%	1	01-01-10
Total Load Deflection	L/999 (0.005")	n/a	n/a	4	02-04-12
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	02-04-12
Max Defl.	0.005"	n/a	n/a	4	02-04-12
Span / Depth	4.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Column	1-3/4" x 3-1/2"	1381 lbs	27.8%	18.5%	Unspecified
B2 Hanger	4" x 3-1/2"	1618 lbs	n/a	9.5%	HGUS410

Cautions

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

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

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.

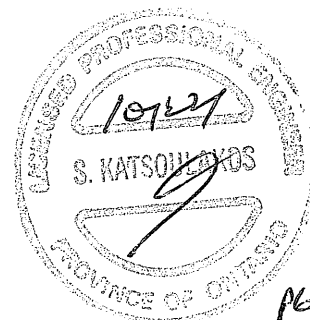
Design based on Dry Service Condition.

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


 2020.10.27
 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 2, 2021 08:16:02

File name: 4504 LOT 57.mmdl

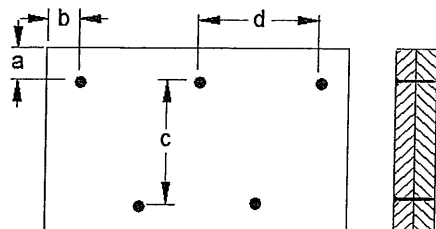
Description: 1ST FLR FRAMING\Flush Beams\B5(i2763)

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 = 190.5 lb/ft

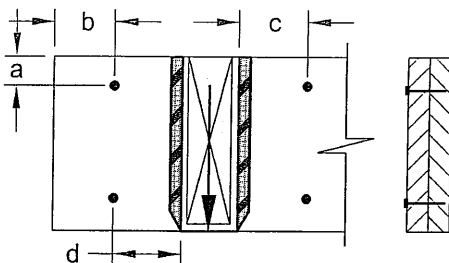
Connectors are: 1 Nails

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: 1

Nails

3-1/2" ARDOX SPIRAL



OWN NO. TAM 22394-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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



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

PASSED

1ST FLR FRAMING\Flush Beams\B6(i2813) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B6(i2813)

City, Province, Postal Code: BRAMPTON

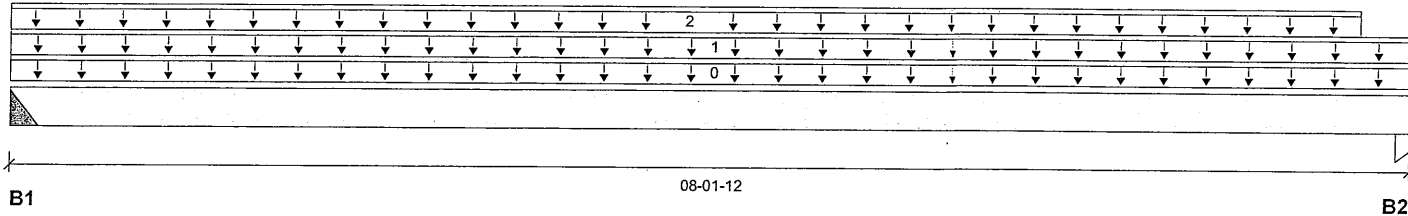
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	63 / 0	296 / 0		
B2, 3-1/2"	65 / 0	288 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-01-12	Top	1.00	0.65	1.00	1.15	
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	08-01-12	Top	16	8			00-00-00
2	WALL	Unf. Lin. (lb/ft)	L	00-00-00	07-10-04	Top		60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	790 ft-lbs	11502 ft-lbs	6.9%	0	04-00-02
End Shear	295 lbs	4701 lbs	6.3%	0	01-01-14
Total Load Deflection	L/999 (0.015")	n/a	n/a	4	04-00-02
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	04-00-02
Max Defl.	0.015"	n/a	n/a	4	04-00-02
Span / Depth	7.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	415 lbs	n/a	15.0%	HUS1.81/10
B2	Column 3-1/2" x 1-3/4"	404 lbs	12.5%	8.3%	Unspecified

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: 07-10-04.



Disclosure

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

CONFORMS TO CBC 2012

AMENDED 2020



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

2ND FLR FRAMING\Dropped Beams\B9 DR(i2517) (Dropped Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B9 DR(i2517)

City, Province, Postal Code: BRAMPTON

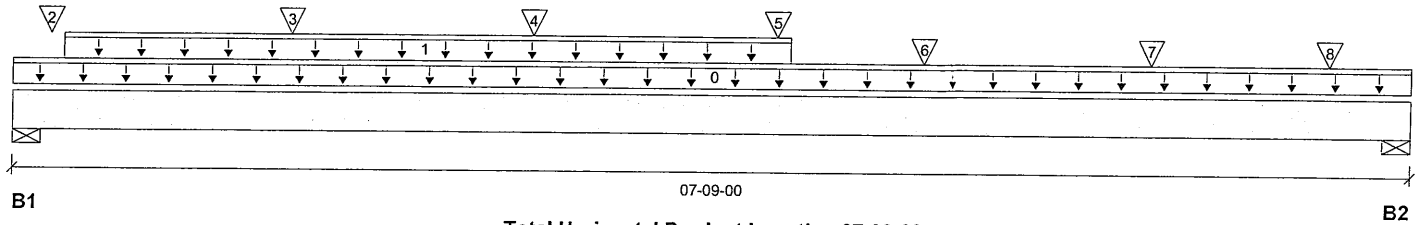
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1996 / 0	1140 / 0		
B2, 4"	2221 / 0	1429 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-09-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-03-06	04-03-06	Top	402	201			n/a
2	J5(i2626)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	Top	105	53			n/a
3	J5(i2543)	Conc. Pt. (lbs)	L	01-06-08	01-06-08	Top	98	49			n/a
4	J5(i2492)	Conc. Pt. (lbs)	L	02-10-08	02-10-08	Top	98	49			n/a
5	J5(i2436)	Conc. Pt. (lbs)	L	04-02-08	04-02-08	Top	82	41			n/a
6	-	Conc. Pt. (lbs)	L	05-00-02	05-00-02	Top	1345	893			n/a
7	J6(i2665)	Conc. Pt. (lbs)	L	06-03-10	06-03-10	Top	461	298			n/a
8	J6(i2678)	Conc. Pt. (lbs)	L	07-03-10	07-03-10	Top	411	267			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8988 ft-lbs	36222 ft-lbs	24.8%	1	04-09-04
End Shear	4284 lbs	17356 lbs	24.7%	1	06-07-08
Total Load Deflection	L/999 (0.078")	n/a	n/a	4	03-11-15
Live Load Deflection	L/999 (0.049")	n/a	n/a	5	03-10-11
Max Defl.	0.078"	n/a	n/a	4	03-11-15
Span / Depth	9.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 5-1/4"	4419 lbs	15.8%	17.2%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 5-1/4"	5117 lbs	18.3%	20.0%	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.

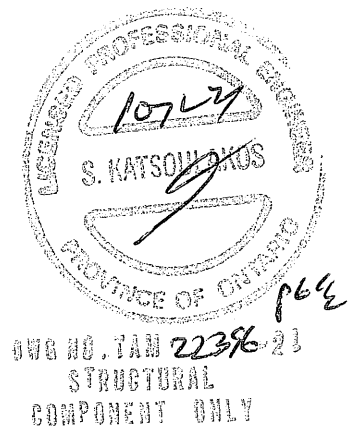
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-11-12, Bottom: 07-09-00.

CONFORMS TO CBC 2012

AMENDED 2020


 DWG NO. 1211 2238-21
 STRUCTURAL
 COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Dropped Beams\B9 DR(i2517) (Dropped Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B9 DR(i2517)

City, Province, Postal Code: BRAMPTON

Specifier:

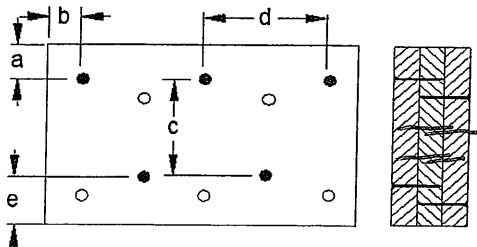
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



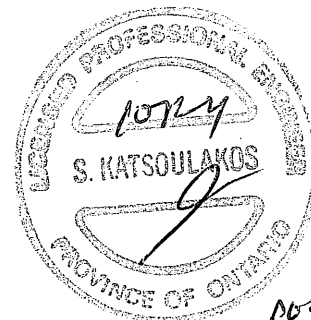
a minimum = 1"
b minimum = 3"

c = 6 1/2"
d = 8"
e minimum = 3"

Nailing applies to both sides of the member

Connectors are: 1 Nails

3-1/2" ARDOX SPIRAL



OWN NO. TAM 22396-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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



BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B10(i2404)

City, Province, Postal Code: BRAMPTON

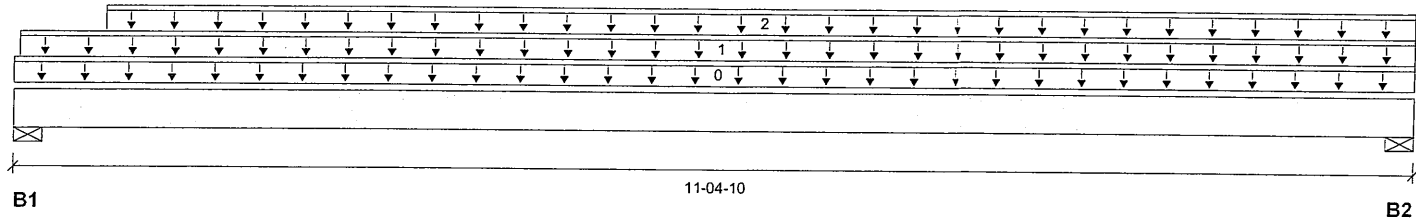
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 11-04-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	2159 / 0	1146 / 0		
B2, 5-1/8"	2586 / 0	1358 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-04-10	Top	1.00	0.65	1.00	1.15	
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-09	11-04-10	Top	28	14			00-00-00
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-08-14	11-04-10	Top	416	208			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	13075 ft-lbs	35392 ft-lbs	36.9%	1	05-04-06
End Shear	4386 lbs	14464 lbs	30.3%	1	01-05-06
Total Load Deflection	L/661 (0.193")	n/a	36.3%	4	05-08-14
Live Load Deflection	L/1010 (0.126")	n/a	35.7%	5	05-08-14
Max Defl.	0.193"	n/a	n/a	4	05-08-14
Span / Depth	10.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	4670 lbs	39.4%	19.9%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/8" x 3-1/2"	5577 lbs	50.5%	25.5%	Spruce-Pine-Fir

Notes

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

CONFORMS TO OBC 2012

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

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

AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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


 AUG 10, 2021 22:39:21
 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 2, 2021 08:16:02

File name: 4504 LOT 57.mmdl

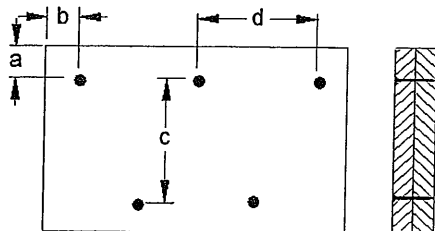
Description: 2ND FLR FRAMING\Flush Beams\B10(i2404)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

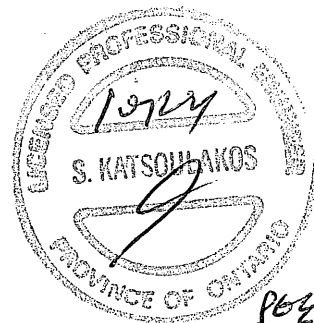
b minimum = 3"

d = 6"

Calculated Side Load = 855.8 lb/ft

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



DVD NO. TAM 22397-21
STRUCTURAL
COMPONENT ONLY

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

PASSED

2ND FLR FRAMING\Flush Beams\B11(i2620) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B11(i2620)

City, Province, Postal Code: BRAMPTON

Specifier:

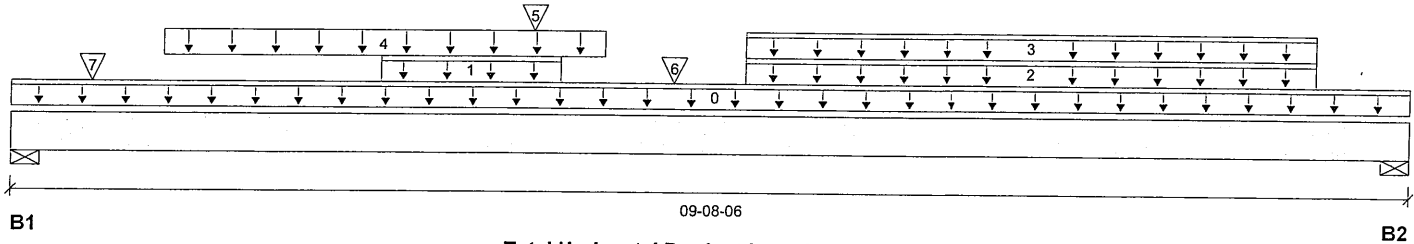
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 09-08-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6"	2356 / 0	1659 / 0		
B2, 4-3/8"	2346 / 0	1396 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-08-06	Top		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	02-06-10	03-09-07	Top		30			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	05-00-10	09-00-10	Top	404	202			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	05-00-10	09-00-10	Top	184	92			n/a
4	Smoothed Load	Trapezoidal (lb/ft)	L	01-00-10	04-01-02	Top	401	274			n/a
5	B14(i2527)	Conc. Pt. (lbs)	L	03-07-04	03-07-04	Top	111	418			n/a
6	-	Conc. Pt. (lbs)	L	04-06-13	04-06-13	Top	596	299			n/a
7	J6(i2566)	Conc. Pt. (lbs)	L	00-06-10	00-06-10	Top	410	265			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	12727 ft-lbs	35392 ft-lbs	36.0%	1	04-07-02
End Shear	4963 lbs	14464 lbs	34.3%	1	08-04-02
Total Load Deflection	L/807 (0.133")	n/a	29.7%	4	04-11-07
Live Load Deflection	L/999 (0.08")	n/a	n/a	5	04-11-07
Max Defl.	0.133"	n/a	n/a	4	04-11-07
Span / Depth	9.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6" x 3-1/2"	5608 lbs	43.4%	21.9%	Spruce-Pine-Fir
B2	Wall/Plate 4-3/8" x 3-1/2"	5263 lbs	55.9%	28.2%	Spruce-Pine-Fir

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020





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 2, 2021 08:16:02

File name: 4504 LOT 57.mmdl

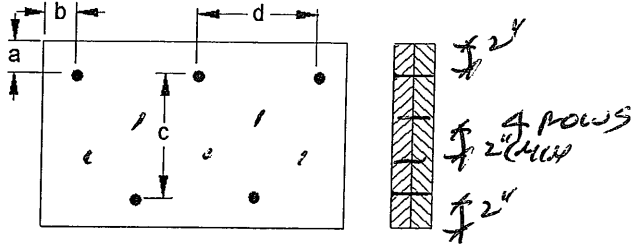
Description: 2ND FLR FRAMING\Flush Beams\B11(i2620)

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 = 934.0 lb/ft

Connectors are: 1 : Nails

3-1/2" ARDOX SPIRAL



OWN NO. TAM 22398-21
STRUCTURAL
COMPONENT ONLY

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

2ND FLR FRAMING\Flush Beams\B13(i2630) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B13(i2630)

City, Province, Postal Code: BRAMPTON

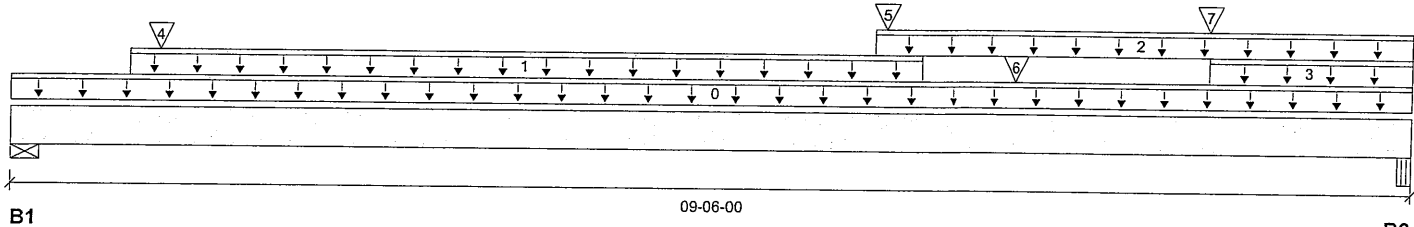
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 09-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1588 / 0	1275 / 0		
B2, 2-1/4"	1530 / 0	862 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-06-00	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-09-08	06-01-08	Top	343	171			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	05-09-12	09-06-00	Top	30	15			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	08-01-08	09-06-00	Top	36	18			n/a
4	B15(i2610)	Conc. Pt. (lbs)	L	01-00-00	01-00-00	Top	112	502			n/a
5	B17(i2502)	Conc. Pt. (lbs)	L	05-10-10	05-10-10	Top	178	108			n/a
6	J2(i2625)	Conc. Pt. (lbs)	L	06-09-08	06-09-08	Top	424	212			n/a
7	J2(i2419)	Conc. Pt. (lbs)	L	08-01-08	08-01-08	Top	406	203			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8536 ft-lbs	35392 ft-lbs	24.1%	1	05-05-08
End Shear	3591 lbs	14464 lbs	24.8%	1	01-05-06
Total Load Deflection	L/999 (0.09")	n/a	n/a	4	04-11-08
Live Load Deflection	L/999 (0.057")	n/a	n/a	5	04-11-08
Max Defl.	0.09"	n/a	n/a	4	04-11-08
Span / Depth	9.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	3975 lbs	33.6%	16.9%	Spruce-Pine-Fir
B2	Beam 2-1/4" x 3-1/2"	3373 lbs	69.6%	35.1%	Spruce-Pine-Fir

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020


 JWC RD, TAN 2239-21
 STRUCTURAL
 COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B13(i2630) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B13(i2630)

City, Province, Postal Code: BRAMPTON

Specifier:

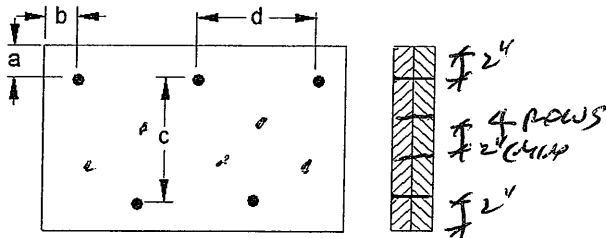
Customer:

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 = 0 B"

Calculated Side Load = 974.8 lb/ft

Connectors are: Nails

3-1/2" ARDOX SPIRAL



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

2ND FLR FRAMING\Flush Beams\B14(i2527) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B14(i2527)

City, Province, Postal Code: BRAMPTON

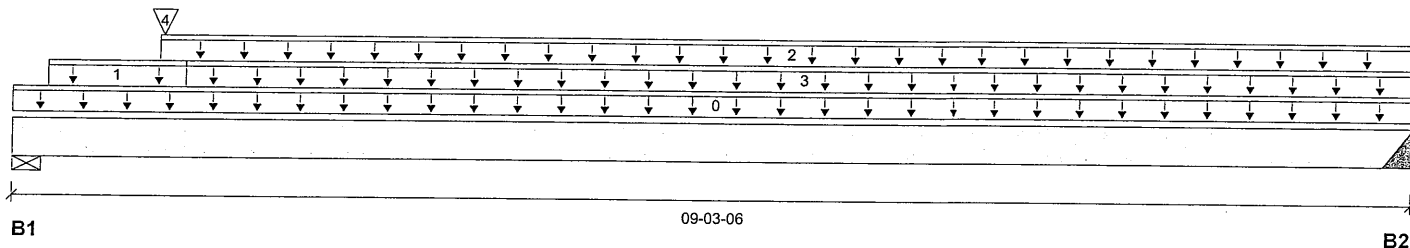
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	194 / 0	793 / 0		
B2, 4"	111 / 0	416 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-03-06	Top		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-12	01-01-12	Top	6				n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-11-11	09-03-06	Top		60			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	01-01-12	09-03-06	Top	23	11			n/a
4	B15(i2610)	Conc. Pt. (lbs)	L	01-00-00	01-00-00	Top	115	503			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1296 ft-lbs	23005 ft-lbs	5.6%	0	04-03-09
End Shear	766 lbs	9401 lbs	8.1%	0	01-05-06
Total Load Deflection	L/999 (0.016")	n/a	n/a	4	04-07-03
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	04-07-03
Max Defl.	0.016"	n/a	n/a	4	04-07-03
Span / Depth	8.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	1110 lbs	14.4%	7.3%	Spruce-Pine-Fir
B2	Hanger 4" x 3-1/2"	582 lbs	n/a	5.2%	HGUS410

Cautions

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

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

Concentrated side load(s) 3 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.



OWN NO. 22400-21
 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 2, 2021 08:16:02

File name: 4504 LOT 57.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B14(i2527)

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.

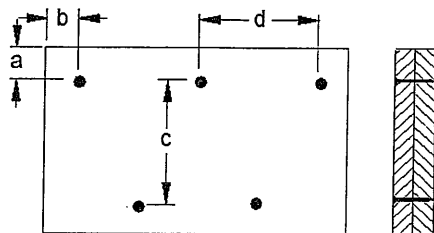
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 08-01-10.

CONFORMS TO CBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 8"

Connectors are: 1 Nails

3-1/2" ARDOX SPIRAL



UWO NO. TAM22400-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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

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



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

2ND FLR FRAMING\Flush Beams\B15(i2610) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B15(i2610)

City, Province, Postal Code: BRAMPTON

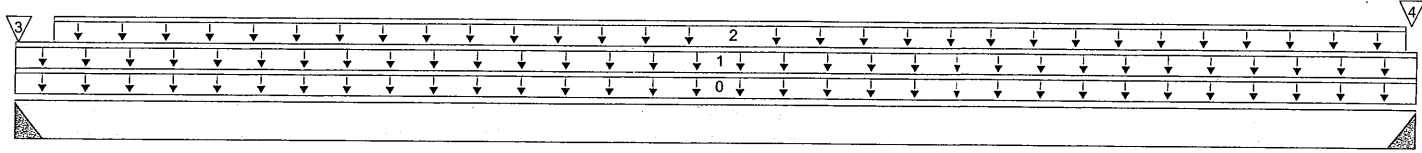
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



B1

12-04-08

B2

Total Horizontal Product Length = 12-04-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	112 / 0	502 / 0		
B2, 4"	115 / 0	503 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-04-08	Top		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	12-04-08	Top		60			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-04-00	12-03-04	Top	18	9			n/a
3	FC2 Floor Decking (Plan View Fill)	Conc. Pt. (lbs)	L	00-00-04	00-00-04	Top	4				n/a
4	FC2 Floor Decking (Plan View Fill)	Conc. Pt. (lbs)	L	12-03-14	12-03-14	Top	4				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1990 ft-lbs	23005 ft-lbs	8.6%	0	06-01-12
End Shear	566 lbs	9401 lbs	6.0%	0	01-03-14
Total Load Deflection	L/999 (0.045")	n/a	n/a	4	06-01-12
Live Load Deflection	L/999 (0.008")	n/a	n/a	5	06-01-12
Max Defl.	0.045"	n/a	n/a	4	06-01-12
Span / Depth	12.0				

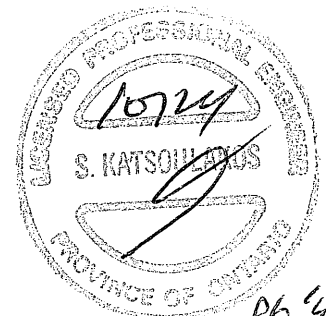
Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 3-1/2"	702 lbs	n/a	6.3%	HGUS410
B2	Hanger 4" x 3-1/2"	705 lbs	n/a	6.3%	HGUS410

Cautions

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

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


 070 NO. 7AM 22401-21
 STRUCTURAL
 COMPONENT ONLY



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

2ND FLR FRAMING\Flush Beams\B15(i2610) (Flush Beam)

PASSED

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 2, 2021 08:16:02

File name: 4504 LOT 57.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B15(i2610)

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.

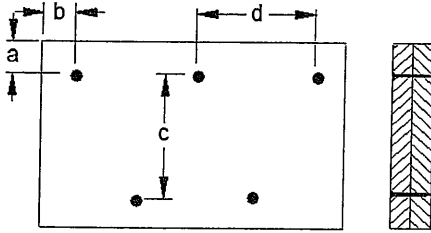
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 12-04-08.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 8"

Connectors are: 1 Nails

3-1/2" ARDOX SPIRAL



000 NO. TAM 22401-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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



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

2ND FLR FRAMING\Flush Beams\B16(i2468) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 2 spans | L cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B16(i2468)

City, Province, Postal Code: BRAMPTON

Specifier:

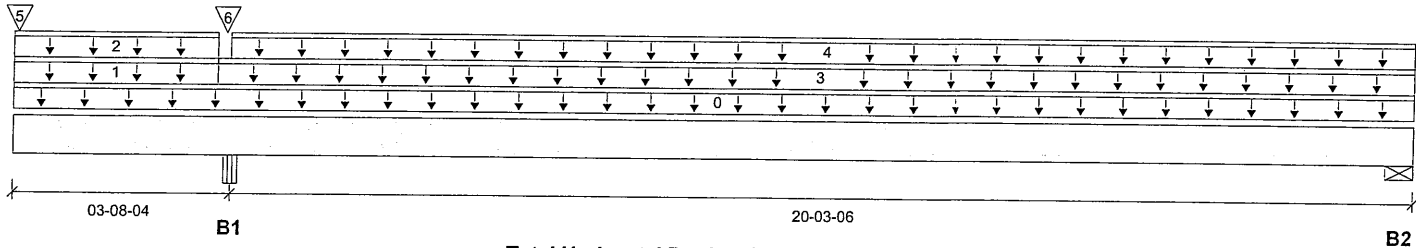
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 23-11-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	1090 / 0	765 / 0		
B2, 4-3/8"	315 / 85	231 / 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	23-11-10	Top		12			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-05-10	Top	120	60			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	03-05-10	Top	20	10			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	03-05-10	23-11-10	Top	25	12			n/a
4	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	03-08-04	23-11-10	Top	6	3			n/a
5	B17(i2502)	Conc. Pt. (lbs)	L	00-00-14	00-00-14	Top	208	123			n/a
6	WALL	Conc. Pt. (lbs)	L	03-07-06	03-07-06	Top		29			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3397 ft-lbs	35392 ft-lbs	9.6%	3	14-05-06
Neg. Moment	-3803 ft-lbs	-20124 ft-lbs	18.9%	1	03-08-04
End Shear	653 lbs	14464 lbs	4.5%	3	22-07-06
Cont. Shear	1240 lbs	14464 lbs	8.6%	1	02-05-12
Total Load Deflection	L/1420 (0.169")	n/a	16.9%	10	13-10-13
Live Load Deflection	L/999 (0.112")	n/a	n/a	13	13-07-07
Total Neg. Defl.	2xL/1998 (-0.075")	n/a	n/a	10	00-00-00
Max Defl.	0.169"	n/a	n/a	10	13-10-13
Span / Depth	20.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5-1/4" x 3-1/2"	2591 lbs	11.6%	11.6%	VL 2.0 3100 SP
B2	Wall/Plate 4-3/8" x 3-1/2"	762 lbs	8.1%	4.1%	Spruce-Pine-Fir


 094 NO. 22462-21
 STRUCTURAL
 COMPONENT ONLY



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

2ND FLR FRAMING\Flush Beams\B16(i2468) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

Dry | 2 spans | L cant.

October 2, 2021 08:16:02

File name: 4504 LOT 57.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B16(i2468)

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.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

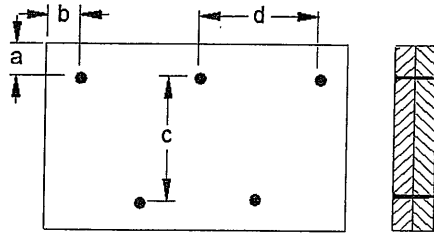
Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

Calculations assume unbraced length of Top: 00-00-00, Bottom: 09-10-11.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 0"

Calculated Side Load = 232.9 lb/ft

Connectors are: Nails

3-1/2" ARDOX SPIRAL



OWNED, TAM 22402721
STRUCTURAL
COMPONENT ONLY

Disclosure

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

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



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 2, 2021 08:16:02

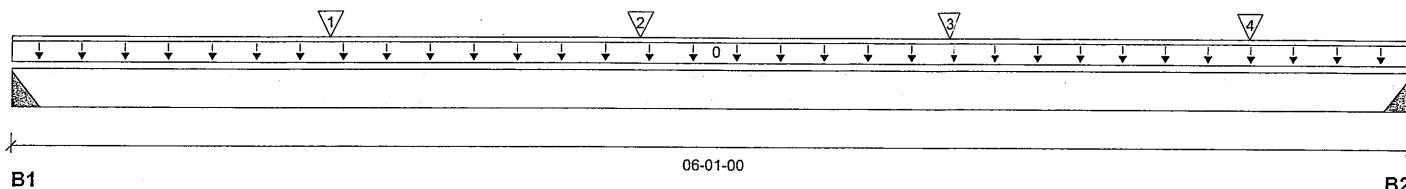
File name: 4504 LOT 57.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B17(i2502)

Specifier:

Designer: AJ

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	178 / 0	108 / 0		
B2, 2"	208 / 0	123 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-01-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	J5(i2626)	Conc. Pt. (lbs)	L	01-04-08	01-04-08	Top	105	53			n/a
2	J5(i2543)	Conc. Pt. (lbs)	L	02-08-08	02-08-08	Top	98	49			n/a
3	J5(i2492)	Conc. Pt. (lbs)	L	04-00-08	04-00-08	Top	98	49			n/a
4	J5(i2436)	Conc. Pt. (lbs)	L	05-04-08	05-04-08	Top	85	43			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	719 ft-lbs	17696 ft-lbs	4.1%	1	02-08-08
End Shear	393 lbs	7232 lbs	5.4%	1	01-01-14
Total Load Deflection	L/999 (0.006")	n/a	n/a	4	03-00-08
Live Load Deflection	L/999 (0.004")	n/a	n/a	5	03-00-08
Max Defl.	0.006"	n/a	n/a	4	03-00-08
Span / Depth	5.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	401 lbs	n/a	9.4%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	466 lbs	n/a	10.9%	LS90

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.

Header for the hanger LS90 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model LS90 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.


 AUG 20, 2021 22:40:21
 STRUCTURAL
 COMPONENT ONLY



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B17(i2502) (Flush Beam)

PASSED

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 2, 2021 08:16:02

File name: 4504 LOT 57.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B17(i2502)

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. CONFORMS TO CBC 2012

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

AMENDED 2020

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-03-04.



OWN NO. TAM 2240321
STRUCTURAL
COMPONENT ONLY

Disclosure

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



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

2ND FLR FRAMING\Flush Beams\B18A(i2598) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B18A(i2598)

City, Province, Postal Code: BRAMPTON

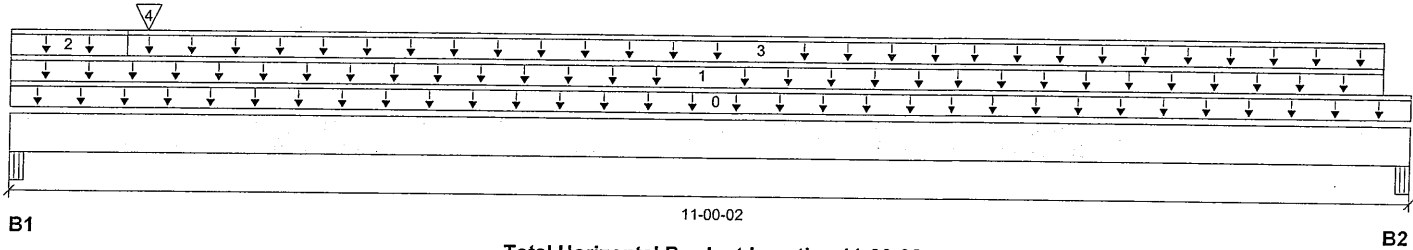
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-1/8"	718 / 0	1120 / 0	532 / 0	
B2, 5-1/4"	189 / 0	215 / 0	45 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-00-02	Top		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	10-09-08	Top	6	3			n/a
2	E14(i1161)	Unf. Lin. (lb/ft)	L	00-00-00	00-10-14	Top		81			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-10-14	10-09-08	Top	21	10			n/a
4	-	Conc. Pt. (lbs)	L	01-00-14	01-00-14	Top	633	992	577		n/a

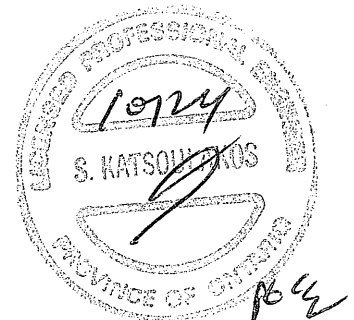
Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2369 ft-lbs	35392 ft-lbs	6.7%	1	02-05-15
End Shear	2193 lbs	14464 lbs	15.2%	1	01-04-00
Total Load Deflection	L/999 (0.035")	n/a	n/a	35	04-11-05
Live Load Deflection	L/999 (0.018")	n/a	n/a	51	04-11-05
Max Defl.	0.035"	n/a	n/a	35	04-11-05
Span / Depth	10.5				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 4-1/8" x 3-1/2"	3009 lbs	39.0%	17.1%	Unspecified
B2	Beam 5-1/4" x 3-1/2"	597 lbs	6.1%	2.7%	Unspecified

Cautions

Concentrated side load(s) 5 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.



OWN NO. TAN 22404-21
STRUCTURAL
COMPONENT ONLY



BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B18A(i2598)

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.

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.

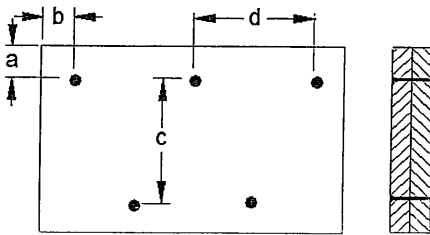
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 09-04-08.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 8"

Connectors are: 1 Nails

3-1/2" ARDOX SPIRAL



OWN NO, YAM 22409-271
STRUCTURAL
COMPONENT ONLY

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

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:16:02

Build 7773

Job name:

File name: 4504 LOT 57.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B19A(i2473)

City, Province, Postal Code: BRAMPTON

Specifier:

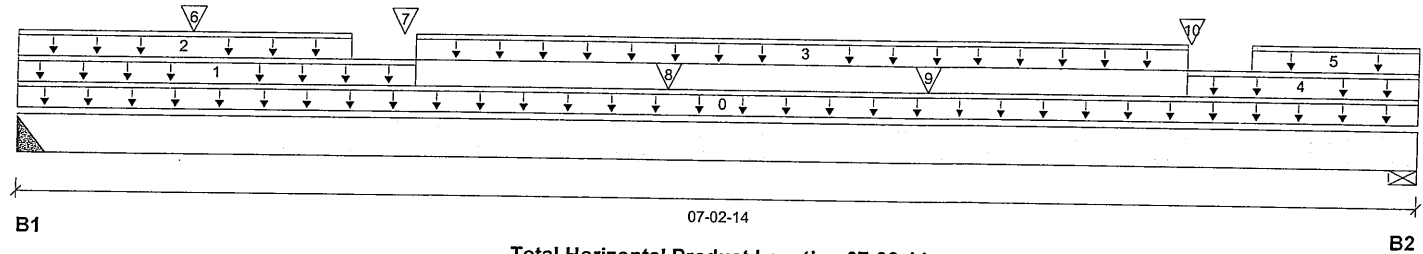
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-02-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	647 / 0	806 / 0	282 / 0	
B2, 4-3/8"	597 / 0	783 / 0	282 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-02-14	Top		12			00-00-00
1	E15(i1159)	Unf. Lin. (lb/ft)	L	00-00-00	02-00-08	Top		81			n/a
2	E15(i1159)	Unf. Lin. (lb/ft)	L	00-00-00	01-08-08	Top		42	78		n/a
3	E16(i1162)	Unf. Lin. (lb/ft)	L	02-00-08	06-00-08	Top		61			n/a
4	E17(i1163)	Unf. Lin. (lb/ft)	L	06-00-08	07-02-14	Top		81			n/a
5	E17(i1163)	Unf. Lin. (lb/ft)	L	06-04-08	07-02-14	Top		42	78		n/a
6	J4(i2627)	Conc. Pt. (lbs)	L	00-10-12	00-10-12	Top	215	108			n/a
7	-	Conc. Pt. (lbs)	L	01-11-12	01-11-12	Top	245	256	184		n/a
8	J4(i2642)	Conc. Pt. (lbs)	L	03-04-00	03-04-00	Top	268	134			n/a
9	J4(i2370)	Conc. Pt. (lbs)	L	04-08-00	04-08-00	Top	268	134			n/a
10	-	Conc. Pt. (lbs)	L	06-00-11	06-00-11	Top	248	256	180		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3465 ft-lbs	35392 ft-lbs	9.8%	1	03-04-00
End Shear	1906 lbs	14464 lbs	13.2%	1	05-10-10
Total Load Deflection	L/999 (0.021")	n/a	n/a	35	03-07-00
Live Load Deflection	L/999 (0.012")	n/a	n/a	51	03-07-00
Max Defl.	0.021"	n/a	n/a	35	03-07-00
Span / Depth	6.7				

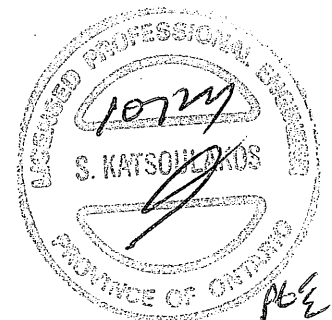
Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 3-1/2"	2261 lbs	n/a	13.2%	HGUS410
B2	Wall/Plate 4-3/8" x 3-1/2"	2156 lbs	22.9%	11.5%	Spruce-Pine-Fir

Cautions

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

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



000 NO. TAM 22405-21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B19A(i2473) (Flush Beam)

PASSED

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 2, 2021 08:16:02

File name: 4504 LOT 57.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B19A(i2473)

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 086.

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

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

Design based on Dry Service Condition.

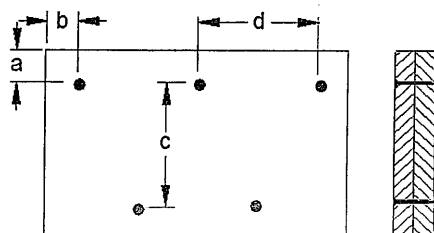
Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

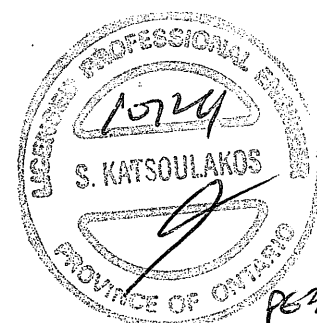
c = 7-7/8"

d = 8"

Calculated Side Load = 569.5 lb/ft

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



PROV. NO. 22405-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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

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

1ST FLR FRAMING\Flush Beams\B7A(i3021) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 2, 2021 08:27:37

Build 7773

Job name:

File name: 4504 LOT 57 SUNKEN.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B7A(i3021)

City, Province, Postal Code: BRAMPTON

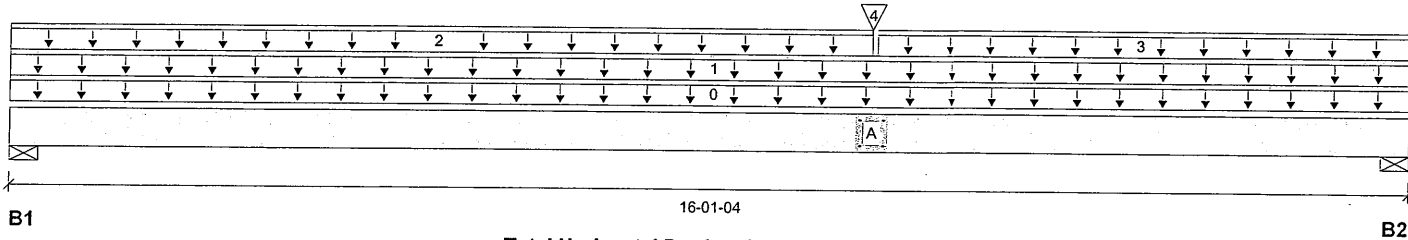
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	829 / 0	520 / 0		
B2, 4-3/8"	1485 / 0	853 / 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	16-01-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	16-01-04	Top	20	10			n/a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	09-10-00	Top	17	9			n/a
3	STAIR	Unf. Lin. (lb/ft)	L	09-10-11	16-01-04	Top	120	60			n/a
4	B8A(i3004)	Conc. Pt. (lbs)	L	09-10-00	09-10-00	Top	1085	564			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	13547 ft-lbs	35392 ft-lbs	38.3%	1	09-10-00
End Shear	2872 lbs	14464 lbs	19.9%	1	14-09-00
Total Load Deflection	L/510 (0.365")	n/a	47.1%	4	08-06-01
Live Load Deflection	L/806 (0.231")	n/a	44.7%	5	08-06-01
Max Defl.	0.365"	n/a	n/a	4	08-06-01
Span / Depth	15.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 3-1/2"	1892 lbs	20.1%	10.1%	Spruce-Pine-Fir
B2	Wall/Plate 4-3/8" x 3-1/2"	3294 lbs	35.0%	17.6%	Spruce-Pine-Fir

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 09-04-12.

CONFORMS TO CBC 2012

AMENDED 2020



09/04/21, 22:46:21
 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: 4504 LOT 57 SUNKEN.mmdl

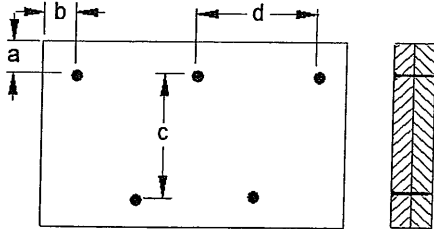
Description: 1ST FLR FRAMING\Flush Beams\B7A(i3021)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 8"

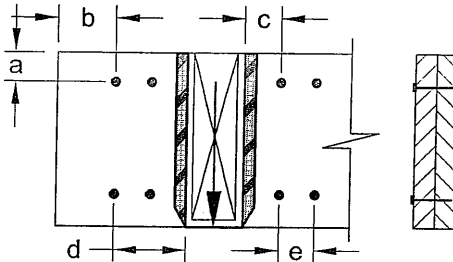
Connectors are: 16d x Nails

3-1/2" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Connection Tag: A

Applies to load tag(s): 3



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

e minimum = 4"

Connectors are: 16d x Nails

3-1/2" ARDOX SPIRAL



UWD NO. TAM 22406-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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



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

1ST FLR FRAMING\Flush Beams\B8A(i3004) (Flush Beam)

PASSED

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.

File name: 4504 LOT 57 SUNKEN.mmdl

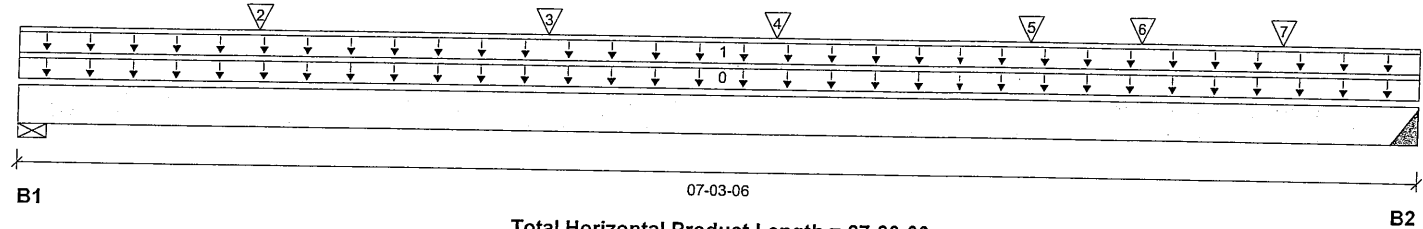
Description: 1ST FLR FRAMING\Flush Beams\B8A(i3004)

Specifier:

Designer: AJ

Company:

October 2, 2021 08:27:37



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	1082 / 0	564 / 0		
B2, 2"	1080 / 0	561 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-03-06	Top		6			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	07-03-06	Top	127	64			n/a
2	J5(i2507)	Conc. Pt. (lbs)	L	01-02-14	01-02-14	Top	257	129			n/a
3	-	Conc. Pt. (lbs)	L	02-08-13	02-08-13	Top	310	155			n/a
4	J5(i2485)	Conc. Pt. (lbs)	L	03-10-14	03-10-14	Top	197	99			n/a
5	J5(i2453)	Conc. Pt. (lbs)	L	05-02-14	05-02-14	Top	162	81			n/a
6	J5DJ(i3017)	Conc. Pt. (lbs)	L	05-09-14	05-09-14	Top	155	77			n/a
7	J5(i2659)	Conc. Pt. (lbs)	L	06-06-14	06-06-14	Top	154	77			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4050 ft-lbs	17696 ft-lbs	22.9%	1	03-10-14
End Shear	1888 lbs	7232 lbs	26.1%	1	01-04-04
Total Load Deflection	L/999 (0.05")	n/a	n/a	4	03-09-06
Live Load Deflection	L/999 (0.033")	n/a	n/a	5	03-09-06
Max Defl.	0.05"	n/a	n/a	4	03-09-06
Span / Depth	6.9				

Bearing Supports			Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 1-3/4"	2327 lbs	49.4%	24.9%	Spruce-Pine-Fir	
B2	Hanger	2" x 1-3/4"	2322 lbs	n/a	54.4%	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.



09/09/2021 14:22:47
STRUCTURAL
COMPONENT ONLY

**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****1ST FLR FRAMING\Flush Beams\B8A(i3004) (Flush Beam)****PASSED**

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 2, 2021 08:27:37

File name: 4504 LOT 57 SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B8A(i3004)

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.

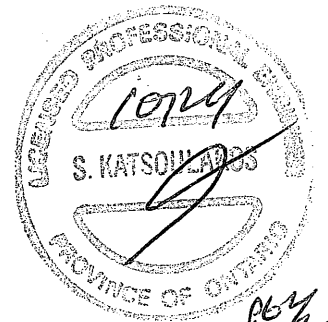
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020

DVD NO. TAM 22407-21
STRUCTURAL
COMPONENT ONLY**Disclosure**

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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:

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 – 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 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'-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 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'-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.

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				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	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				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'-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.

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 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'-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 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'-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:

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 – 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:

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 – 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:

- 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 – 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

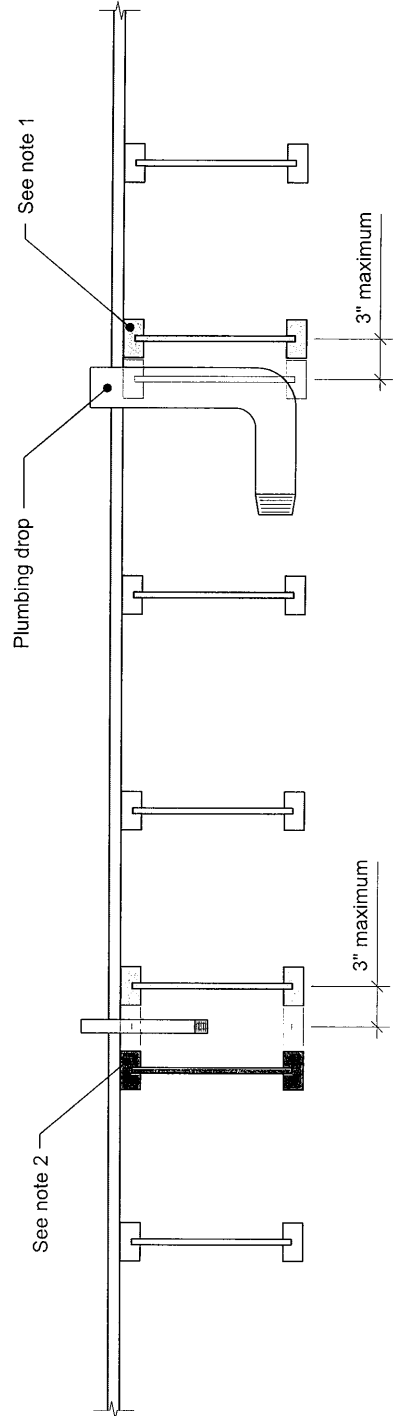
Maximum Floor Spans

Joist depth	Joist series	Bare 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'-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 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'-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.

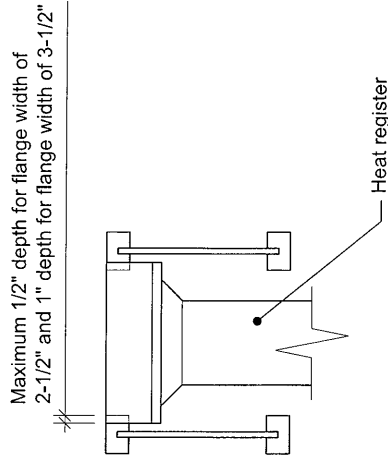
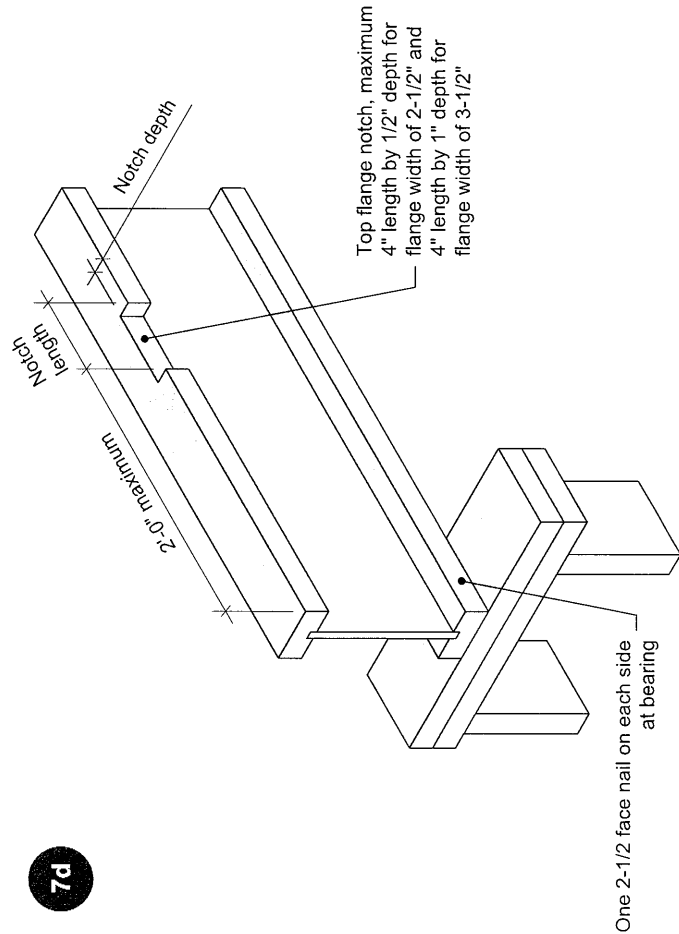


Notes:

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.


NORDIC STRUCTURES nordic.ca	NS-DC3  DETAILS NORDIC JOIST	TITLE		DRAWING	
		Allowance for Piping		7c	
		CATEGORY	SCALE	DATE	PAGE
		Openings for Vertical Elements		-	2020-10-01



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.

NORDIC STRUCTURES nordic.ca	NS-DC3  <div>DETAILS</div> NORDIC JOIST	TITLE		DRAWING	
		Notch in I-joist for Heat Register		7d	
		CATEGORY		SCALE	
		Openings for Vertical Elements		-	
				DATE	
		2020-10-01		PAGE	
				3.11	