

FROM PLAN DATED:
2021/6

BUILDER:
ROYAL PINE HOMES
SITE:
VALES OF HUMBER NORTH
MODEL: 5003 COR
ELEVATION: B
LOT:

CITY: BRAMPTON

SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

DATE: 2021-09-27

1st FLOOR

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

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

SUBFLOOR: 3/4" GLUED AND NAILED

DATE 100421

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.

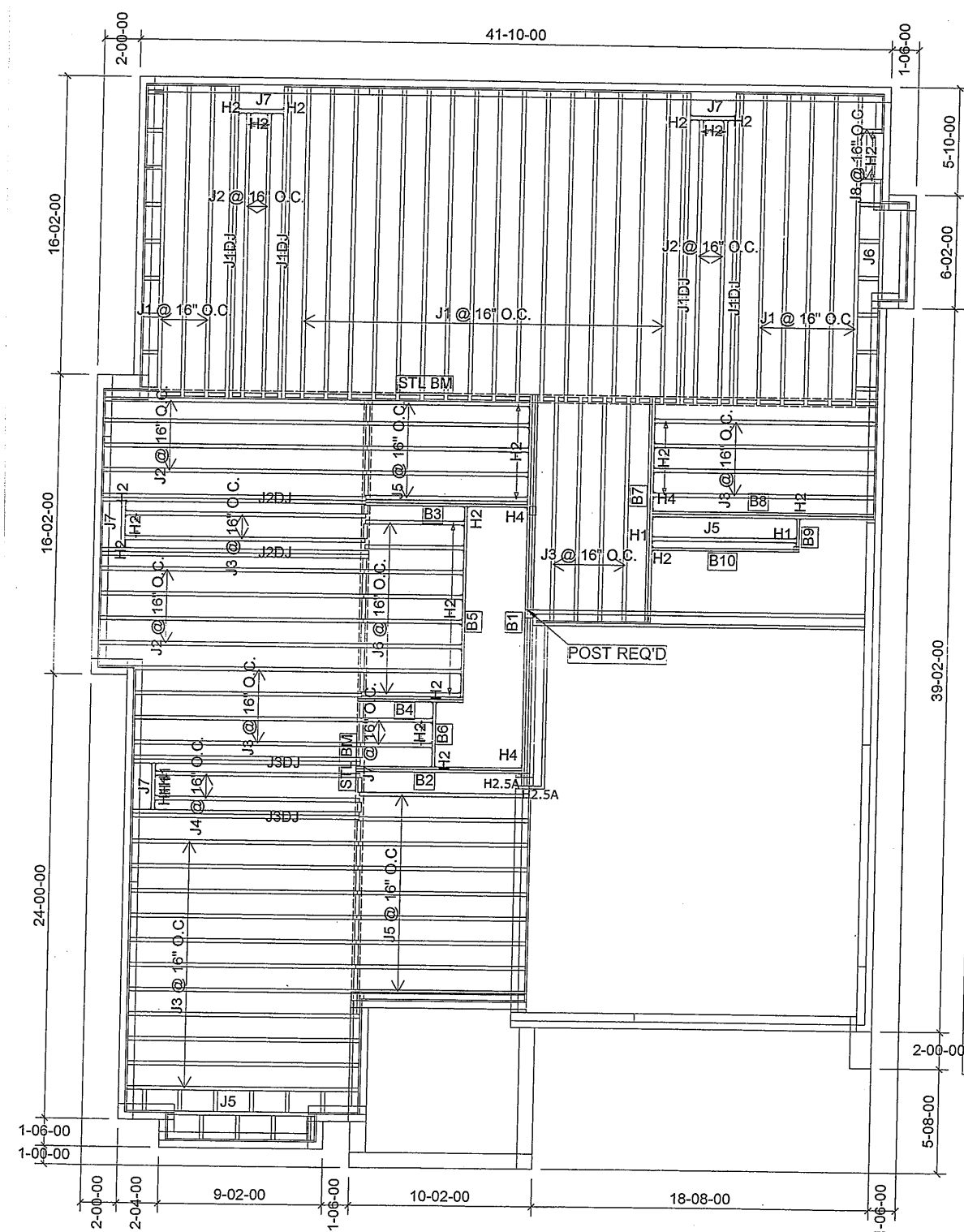
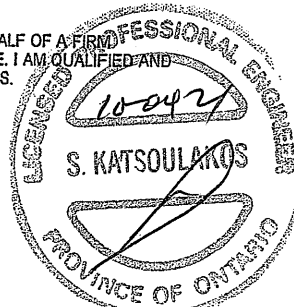
DWG# TAM 17231 THROUGH DWG# TAM 17932-21, INCLUSIVE DATED 100421

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

I REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK ON BEHALF OF A FIRM REGISTERED UNDER SUBSECTION 3.2.5 OF THE ONTARIO BUILDING CODE. I AM QUALIFIED AND HE FIRM IS REGISTERED, IN APPROPRIATE CLASSES AND/OR CATEGORIES.

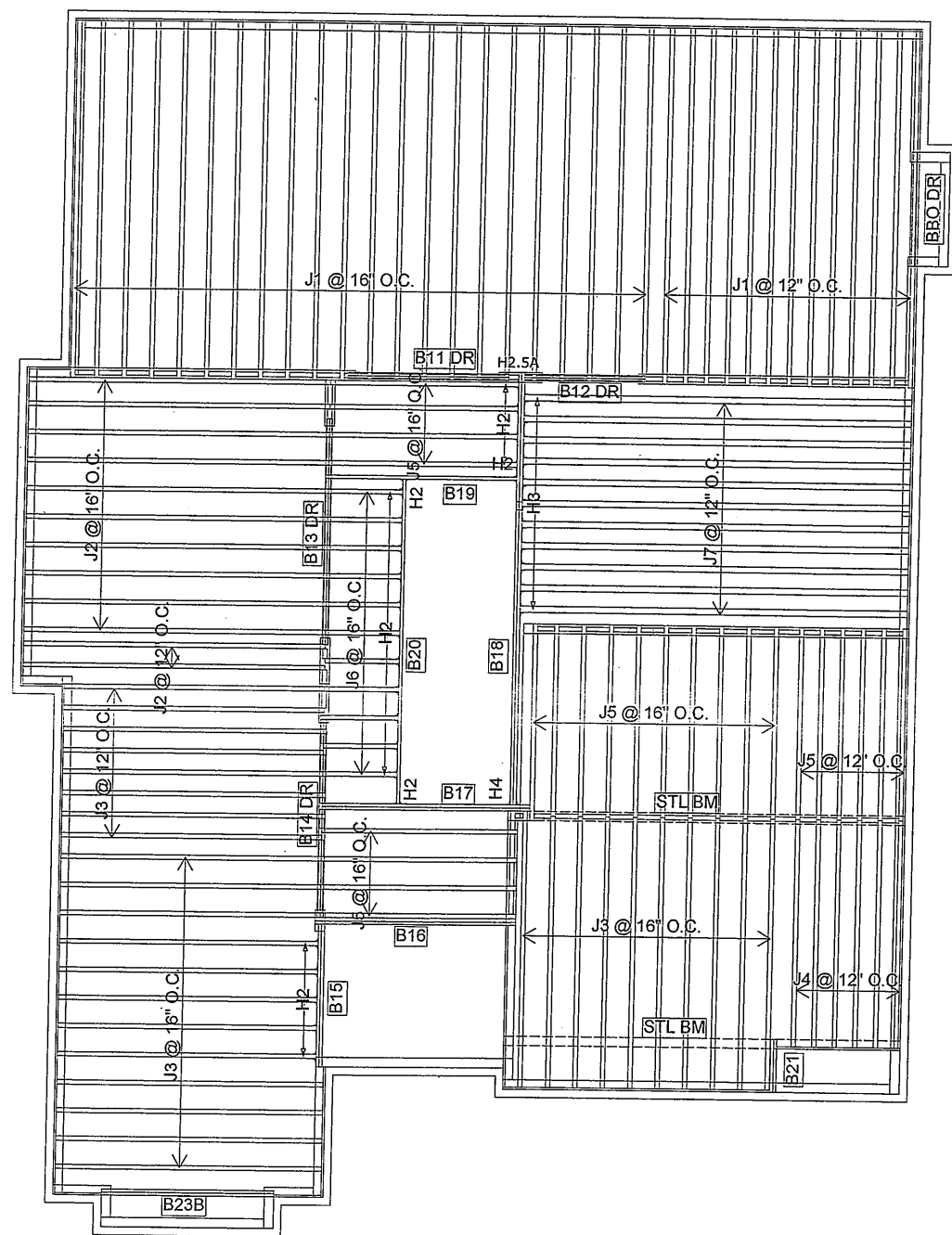
REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 21538-21
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL
COMPONENTS ONLY



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	24
J1DJ	18-00-00	11 7/8" NI-40x	2	8
J2	16-00-00	11 7/8" NI-40x	1	12
J2DJ	16-00-00	11 7/8" NI-40x	2	4
J3	14-00-00	11 7/8" NI-40x	1	25
J3DJ	14-00-00	11 7/8" NI-40x	2	4
J4	12-00-00	11 7/8" NI-40x	1	2
J5	10-00-00	11 7/8" NI-40x	1	16
J6	6-00-00	11 7/8" NI-40x	1	9
J7	4-00-00	11 7/8" NI-40x	1	6
J8	2-00-00	11 7/8" NI-40x	1	2
B1	22-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B7	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B8	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B5	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B10	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	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
B4	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
1	H1	IUS2.56/11.88
1	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
10	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
5	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
1	H2	HUS1.81/10
4	H2	HUS1.81/10
1	H4	HGUS410
2	H4	HGUS410
2	H2.5A	H2.5A*



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	35
J2	16-00-00	11 7/8" NI-40x	1	12
J3	14-00-00	11 7/8" NI-40x	1	30
J4	12-00-00	11 7/8" NI-40x	1	6
J5	10-00-00	11 7/8" NI-40x	1	24
J6	4-00-00	11 7/8" NI-40x	1	11
J7	20-00-00	11 7/8" NI-80	1	11
B13 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B14 DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B11 DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B12 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B18	22-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2
B20	16-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	1	1
B17	12-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2
B16	10-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	1	1
B19	10-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	1	1
B23B	10-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2
B15	8-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2
B21	4-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/11.88
9	H1	IUS2.56/11.88
1	H2	HUS1.81/10
2	H2	HUS1.81/10
11	H3	IUS3.56/11.88
1	H4	HGUS410
1	H2.5A	H2.5A*

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

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE 100424
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.

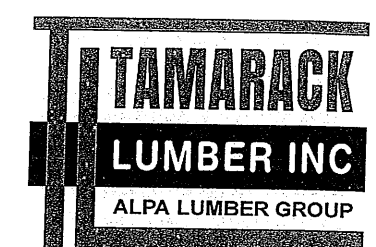
DWG# TAM 179224 THROUGH DWG# TAM 179224 INCLUSIVE DATED 100424

SEALED STRUCTURAL COMPONENTS ONLY: 179334
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 1/16" DEEPER THAN JOIST DEPTH. SEE NORDIC LITERATURE FOR NAILING REQUIREMENT.

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REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 21539-24
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY



FROM PLAN DATED: 2021/6

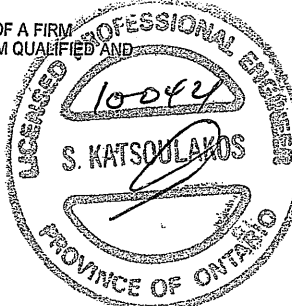
BUILDER: ROYAL PINE HOMES
SITE: VALES OF HUMBER NORTH
MODEL: 5003 COR
ELEVATION: B
LOT:

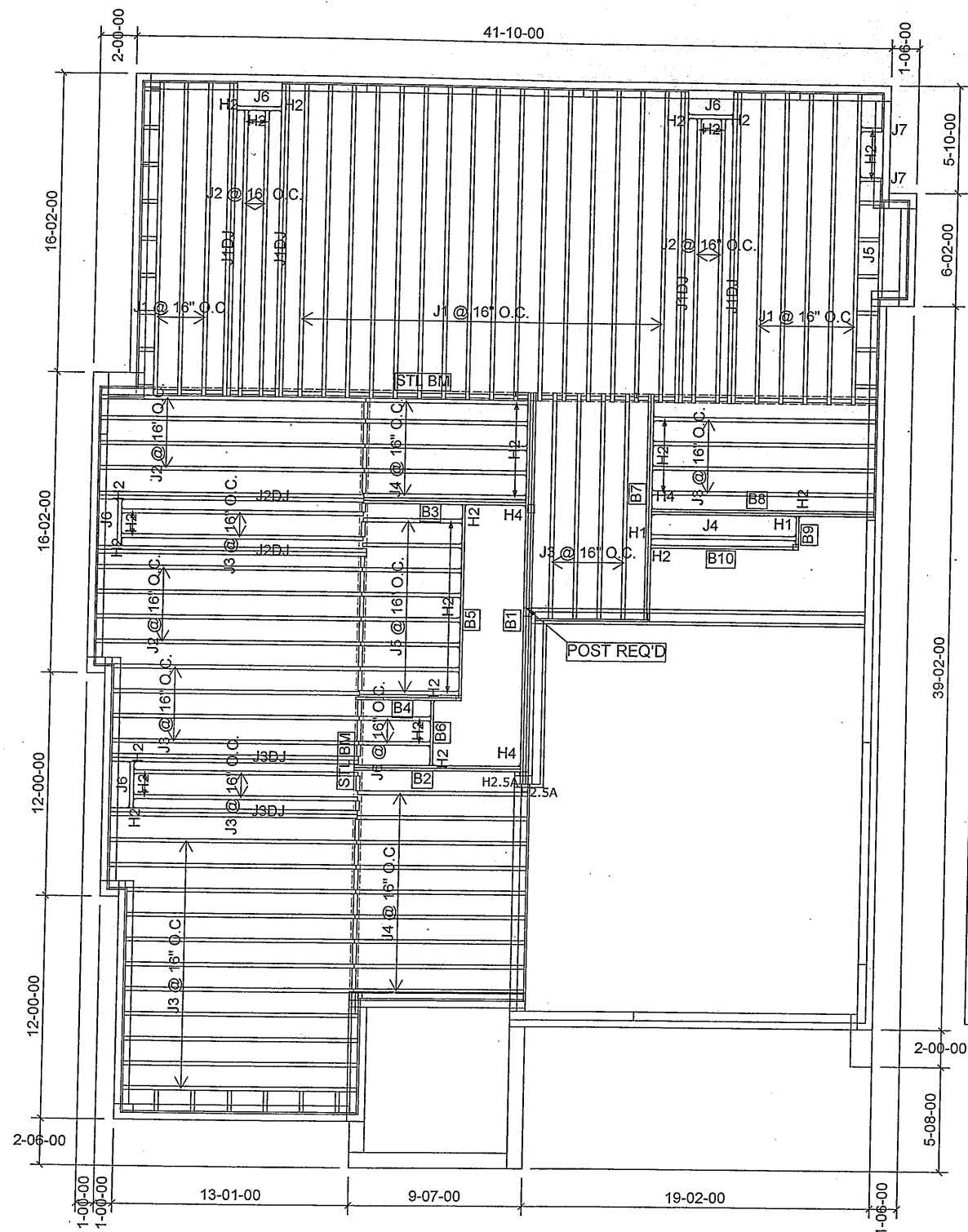
CITY: BRAMPTON

SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

DATE: 2021-09-27

2nd FLOOR





Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	24
J1DJ	18-00-00	11 7/8" NI-40x	2	8
J2	16-00-00	11 7/8" NI-40x	1	12
J2DJ	16-00-00	11 7/8" NI-40x	2	4
J3	14-00-00	11 7/8" NI-40x	1	27
J3DJ	14-00-00	11 7/8" NI-40x	2	4
J4	10-00-00	11 7/8" NI-40x	1	15
J5	6-00-00	11 7/8" NI-40x	1	9
J6	4-00-00	11 7/8" NI-40x	1	6
J7	2-00-00	11 7/8" NI-40x	1	2
B1	22-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B7	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B8	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B5	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B10	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	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
B4	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
1	H1	IUS2.56/11.88
1	H1	IUS2.56/11.88
10	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
5	H1	IUS2.56/11.88
10	H1	IUS2.56/11.88
1	H2	HUS1.81/10
4	H2	HUS1.81/10
1	H4	HGUS410
2	H4	HGUS410
2	H2.5A	H2.5A*

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

SUBFLOOR: 3/4" GLUED AND NAILED

DATE 9/01/21
BCIN: 26064; FIRM: 29991
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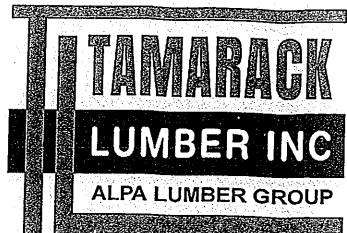
DWG# TAM 17923-21 THROUGH DWG# TAM 17932-21, INCLUSIVE DATED 8/14/21

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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REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 19529-21
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY



FROM PLAN DATED:
2021/6

BUILDER:
ROYAL PINE HOMES
SITE:
VALES OF HUMBER NORTH
MODEL: 5003 COR
ELEVATION: A
LOT:

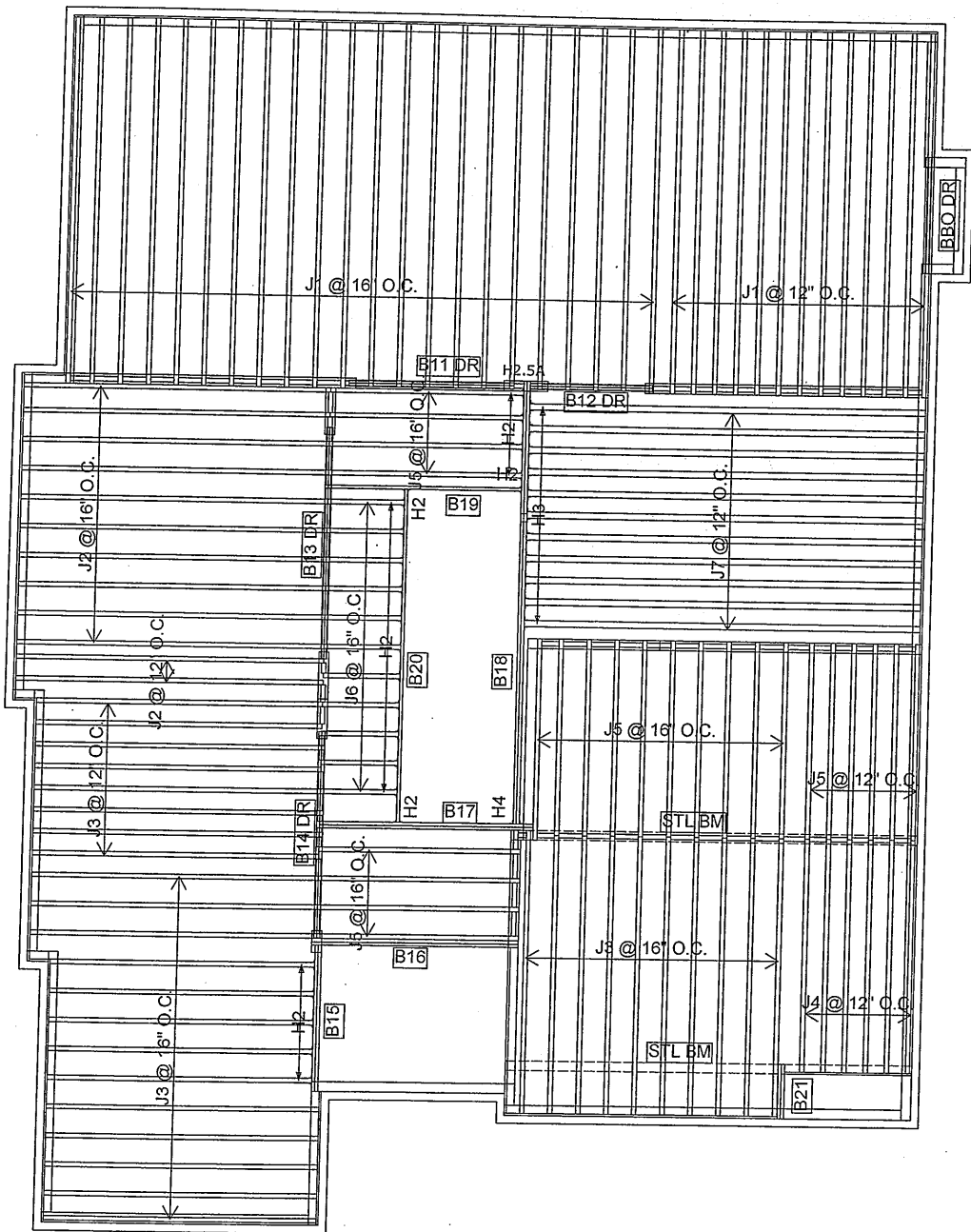
CITY: BRAMPTON

SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

DATE: 2021-08-27

1st FLOOR





Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	35
J2	16-00-00	11 7/8" NI-40x	1	12
J3	14-00-00	11 7/8" NI-40x	1	31
J4	12-00-00	11 7/8" NI-40x	1	6
J5	10-00-00	11 7/8" NI-40x	1	24
J6	4-00-00	11 7/8" NI-40x	1	11
J7	20-00-00	11 7/8" NI-80	1	11
B13 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14 DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11 DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B18	22-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B20	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B17	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B16	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B19	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B15	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B21	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/11.88
9	H1	IUS2.56/11.88
1	H2	HUS1.81/10
2	H2	HUS1.81/10
11	H3	IUS3.56/11.88
1	H4	HGUS410
1	H2.5A	H2.5A*

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

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE 9/01/24
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 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.

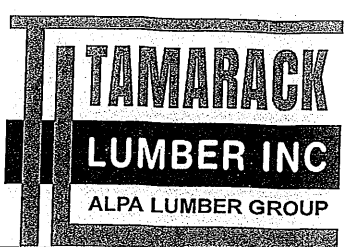
DWG# TAM 1791221 THROUGH DWG# TAM 179224, INCLUSIVE DATED 8/14/24

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.
A COMPLETE FRAMING PLAN REQUIRES THE NORDIC PUBLISHED LITERATURE, WHICH INCLUDES INSTALLATION REQUIREMENTS, HANDLING AND STORAGE GUIDELINES, AND FORMS AN INTEGRAL PART OF THIS SEALED DOCUMENT. INSTALL SQUASH BLOCKS FOR TRANSFERRING POINT LOADS FROM GIRDER TRUSSES, HEADERS, AND BEAMS DOWN TO FOUNDATION COMPONENTS. FOR PROPER INSTALLATION, SEE NORDIC LITERATURE. PROVIDE 2 X 4 OR 2 X 6 STUD GRADE OR BETTER SQUASH BLOCKS, MATCHING SUPPORTED WALL WIDTH ABOVE BLOCKS. INSTALL SQUASH BLOCKS ON EACH SIDE OF JOIST. BLOCKING TO BE 1/160 DEEPER THAN JOIST DEPTH. SEE NORDIC LITERATURE FOR NAILING REQUIREMENT.

I REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK ON BEHALF OF A FIRM REGISTERED UNDER SUBSECTION 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 19531-21
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY



FROM PLAN DATED: 2021/6

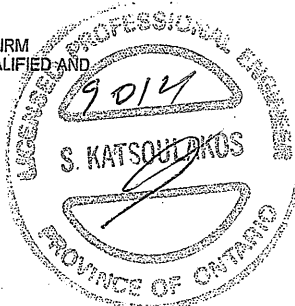
BUILDER:
ROYAL PINE HOMES
SITE:
VALES OF HUMBER NORTH
MODEL: 5003 COR
ELEVATION: A
LOT:

CITY: BRAMPTON

SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

DATE: 2021-08-27

2nd FLOOR



NORDIC

INSTALLATION GUIDE NORDIC JOIST

NS-G133 
ENGLISH
VERSION
2020-10-01

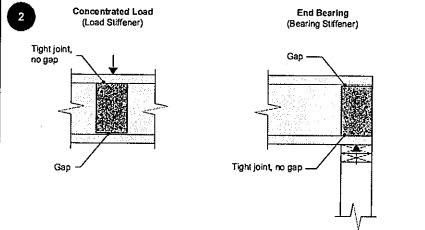
Engineered Wood Products BASIC INSTALLATION GUIDE FOR RESIDENTIAL FLOORS

 **NORDIC
JOIST**

NORDIC STRUCTURES

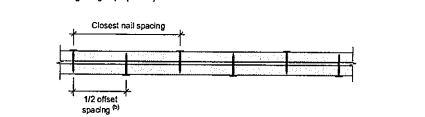
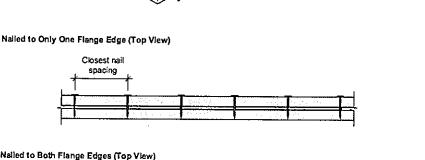
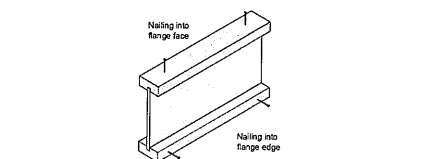
nordic.ca

WEB STIFFENERS



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

NAIL SPACING



Recommended Closest Nail Spacing for Fastening Sheathing to Joist Flanges to Minimize Splitting	
Flange face nailing ^(a)	
Nail spacing (in.)	
Fastener size (diameter x length)	End distance (in.)
0.128" or smaller in diameter, and 3-1/4" or shorter in length	2
Greater than 0.128" up to 0.148" in diameter, and 3-1/4" or shorter in length	3

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 pcf, and 6,600 pcf 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-GT3).
- 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		NI-40x		NI-60		NI-80		NI-90	
2x3	S-P-F No. 2	2x3	1950f MSR	2x3	2100f MSR	2x4	2100f MSR	2x4	2400f MSR
3/8 in. web		3/8 in. web		3/8 in. web		3/8 in. web		7/16 in. web	
Depths		Depths		Depths		Depths		Depths	
9-1/2 and 11-7/8 in.		9-1/2, 11-7/8 and 14 in.		9-1/2, 11-7/8, 14 and 16 in.		9-1/2, 11-7/8, 14 and 16 in.		11-7/8, 14 and 16 in.	
33 pieces per unit		33 pieces per unit		33 pieces per unit		23 pieces per unit		23 pieces per unit	

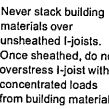
SAFETY AND CONSTRUCTION PRECAUTIONS

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

Avoid Accidents by Following these Important Guidelines:

- 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 2x12-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.

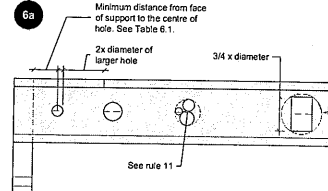


WEB HOLES AND OPENINGS

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 sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- 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 length of the longest side of the largest rectangular hole, and each hole must be sized and located in compliance with the requirements of Table 6.1.
- 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.
- Limit three maximum size holes per span.
- 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.

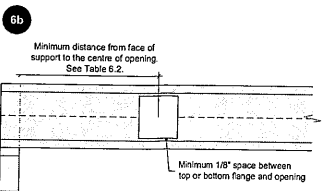


Notes:
1. Never drill, cut or notch the flange, or over-cut the web.
2. Holes in web should be cut with a sharp saw.
3. For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole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

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.

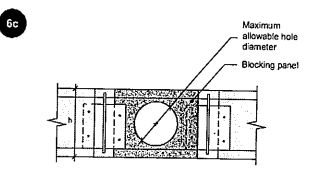


Notes:
1. Never drill, cut or notch the flange, or over-cut the web.
2. Holes in web should be cut with a sharp saw.
3. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch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

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 aside 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.
 - Weld 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
8-1/4	6-1/4
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		Round hole diameter (in.)															
Joist depth	Joist series	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	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-60	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	-	-	-	-	-	-	-	-	-	-
	NI-80	2-3"	3-8"	5-0"	6-6"	8-2"	8-8"	-	-	-	-	-	-	-	-	-	-
11-7/8"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-8"	-	-	-	-	-	-	-
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	-	-	-	-	-	-	-
	NI-60	0-7"	1-8"	3-0"	4-3"	5-9"	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-20	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	-	-	-	-	-	-	-
	NI-40x	0-7"	0-8"	0-8"	1-0"	2-4"	2-9"	3-9"	5-2"	6-4"	6-8"	8-3"	10-2"	-	-	-	-
	NI-60	0-7"	0-8"	1-8"	3-0"	4-3"	4-8"	5-8"	7-2"	8-0"	8-8"	10-4"	11-6"	-	-	-	-
	NI-80	0-10"	2-0"	3-4"	4-9"	6-2"	6-5"	7-6"	9-4"	10-0"	10-8"	12-4"	13-9"	-	-	-	-
16"	NI-20	0-7"	0-8"	0-10"	2-5"	4-0"	4-5"	5-5"	6-8"	8-8"	11-4"	12-11"	-	-	-	-	-
	NI-40x	0-7"	0-8"	0-8"	1-6"	2-10"	3-2"	4-2"	5-6"	6-4"	7-0"	8-5"	10-2"	12-2"	13-9"	-	-
	NI-60	0-7"	1-3"	2-6"	3-10"	5-3"	5-6"	6-8"	8-0"	9-5"	11-0"	12-3"	12-9"	14-5"	16-0"	-	-
	NI-80	0-7"	0-8"	0-8"	1-8"	3-3"	3-8"	4-9"	6-5"	7-5"	8-0"	9-10"	11-3"	11-9"	13-9"	15-4"	-

Notes:
1. Tabulated values are applicable to residential floor construction meeting the above design criteria.
2. 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

TABLE 6.2 - LOCATION OF DUCT CHASE OPENINGS

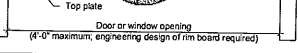
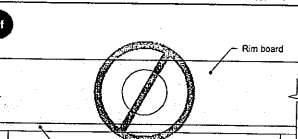
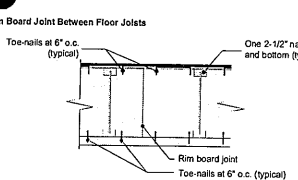
Simple span		Duct chase length (in.)															
Joist depth	Joist series	8	10	12	14	16	18	20	22	24							
9-1/2"	NI-20	4-3"	4-10"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	NI-40x	5-3"	6-8"	6-0"	6-5"	7-1"	7-5"	8-0"	-	-	-	-	-	-	-	-	-
	NI-60	5-4"	6-9"	6-2"	6-7"	7-3"	7-8"	8-3"	-	-	-	-	-	-	-	-	-
	NI-80	5-3"	6-8"	6-0"	6-5"	7-1"	7-5"	8-0"	-	-	-	-	-	-	-	-	-
11-7/8"	NI-20	5-8"	6-2"	6-6"	-	-	-	-	-	-	-	-	-	-	-	-	-
	NI-40x	6-8"	7-2"	7-6"	8-1"	8-5"	9-1"	9-5"	-	-	-	-	-	-	-	-	-
	NI-60	7-3"	7-8"	8-0"	8-6"	9-0"	9-3"	9-9"	-	-	-	-	-	-	-	-	-
	NI-80	7-2"	7-7"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-8"	-	-	-	-	-	-	-
14"	NI-20	7-6"	7-11"	8-4"	8-9"	9-2"	9-7"	10-1"	10-7"	11-2"	-	-	-	-	-	-	-
	NI-40x	8-1"	8-7"	9-0"	9-6"	10-1"	10-7"	11-2"	-	-	-	-	-	-	-	-	-
	NI-60	8-3"	9-3"	9-8"	10-11"	10-6"	11-1"	11-5"	-	-	-	-	-	-	-	-	-
	NI-80	9-0"	9-3"	9-8"	10-11"	10-7"	11-1"	11-6"	12-1"	12-6"	-	-	-	-	-	-	-
16"	NI-20	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-1"	13-8"	14-4"	-	-	-	-	-	-	-
	NI-40x	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-1"	13-8"	14-4"	-	-	-	-	-	-	-
	NI-60	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-1"	13-8"	14-4"	-	-	-	-	-	-	-
	NI-80	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-1"	13-8"	14-4"	-	-	-	-	-	-	-

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

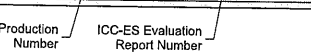
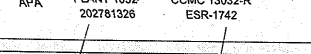
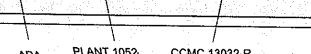
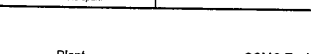
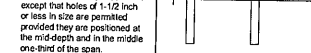
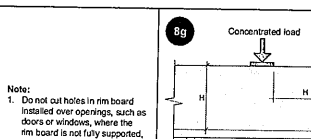
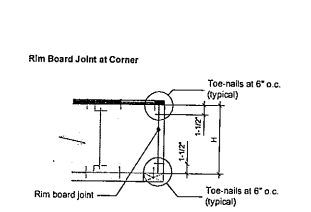
Design Criteria	
Joist spacing	Up to 24 inches
Loads	Live load = 40 psf and dead load = 15 psf
Deflection limits	L/480 under live load and L/240 under total load

RIM BOARDS

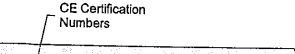
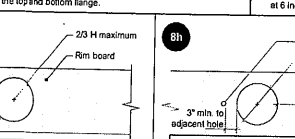
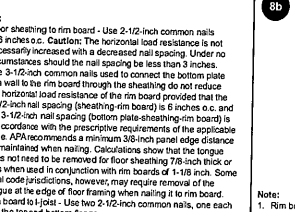
Rim Board Joint Between Floor Joists



Rim Board Joint at Corner



Rim Board at End of Joist



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: 5003-COR-ELEV. B-1ST FLOOR-NOT LOT SPECIFIC REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK LUMBER INC. (SEE DWG #TAM19530-21 DATED 9-01-21). SUPPORTING STRUCTURE (S) TO BE REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.				
D. Declaration of Designer				
I, SAM KATSOULAKOS declare that (choose one as appropriate): <div style="text-align: center;">(print name)</div> <div style="margin-left: 20px;"> <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> </div> <div style="margin-left: 20px;"> <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: _____ </div> <div style="margin-left: 20px;"> <input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____ </div>				
I certify that: 1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.				
Date		Signature of Designer		

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 #TAM19530-21S
DWG #TAM19534-21S

9013

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]																
<table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> House</td> <td><input type="checkbox"/> HVAC – House</td> <td><input checked="" type="checkbox"/> Building Structural</td> </tr> <tr> <td><input type="checkbox"/> Small Buildings</td> <td><input type="checkbox"/> Building Services</td> <td><input type="checkbox"/> Plumbing – House</td> </tr> <tr> <td><input type="checkbox"/> Large Buildings</td> <td><input type="checkbox"/> Detection, Lighting and Power</td> <td><input type="checkbox"/> Plumbing – All Buildings</td> </tr> <tr> <td><input type="checkbox"/> Complex Buildings</td> <td><input type="checkbox"/> Fire Protection</td> <td><input type="checkbox"/> On-site Sewage Systems</td> </tr> </table>					<input type="checkbox"/> House	<input type="checkbox"/> HVAC – House	<input checked="" type="checkbox"/> Building Structural	<input type="checkbox"/> Small Buildings	<input type="checkbox"/> Building Services	<input type="checkbox"/> Plumbing – House	<input type="checkbox"/> Large Buildings	<input type="checkbox"/> Detection, Lighting and Power	<input type="checkbox"/> Plumbing – All Buildings	<input type="checkbox"/> Complex Buildings	<input type="checkbox"/> Fire Protection	<input type="checkbox"/> On-site Sewage Systems
<input type="checkbox"/> House	<input type="checkbox"/> HVAC – House	<input checked="" type="checkbox"/> Building Structural														
<input type="checkbox"/> Small Buildings	<input type="checkbox"/> Building Services	<input type="checkbox"/> Plumbing – House														
<input type="checkbox"/> Large Buildings	<input type="checkbox"/> Detection, Lighting and Power	<input type="checkbox"/> Plumbing – All Buildings														
<input type="checkbox"/> Complex Buildings	<input type="checkbox"/> Fire Protection	<input type="checkbox"/> On-site Sewage Systems														
Description of designer's work: ROYAL PINE HOMES-PROJECT:VALES OF HUMBER NORTH-MODEL: 5003-COR-ELEV. A-2ND FLOOR-NOT LOT SPECIFIC REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK LUMBER INC. (SEE DWG #TAM19531-21 DATED 9-01-21). SUPPORTING STRUCTURE (S) TO BE REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.																
D. Declaration of Designer																
I, SAM KATSOULAKOS 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>																
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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														

NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
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DWG #TAM19531-21S
DWG #TAM19535-21S

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@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; flex-wrap: wrap;"> <div style="width: 33%;"> <input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings </div> <div style="width: 33%;"> <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: 33%;"> <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: 5003-COR-ELEV. B-2ND FLOOR-NOT LOT SPECIFIC REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK LUMBER INC. (SEE DWG #TAM19532-21 DATED 9-01-21). 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> <div style="margin-left: 100px;"> <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. </div> <div style="margin-left: 100px;"> Individual BCIN: <u>26064</u> </div> <div style="margin-left: 100px;"> Firm BCIN: <u>29991</u> </div> <div style="margin-left: 100px;"> <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. </div> <div style="margin-left: 100px;"> Individual BCIN: _____ </div> <div style="margin-left: 100px;"> Basis for exemption from registration: _____ </div> <div style="margin-left: 100px;"> <input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. </div> <div style="margin-left: 100px;"> Basis for exemption from registration and qualification: _____ </div>					
I certify that: <ol style="list-style-type: none"> The information contained in this schedule is true to the best of my knowledge. I have submitted this application with the knowledge and consent of the firm. 					
Date		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.
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DWG #TAM19532-21S
DWG #TAM19536-21S

9012

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]

- | | | |
|--|--|---|
| <input type="checkbox"/> House | <input type="checkbox"/> HVAC – House | <input checked="" type="checkbox"/> Building Structural |
| <input type="checkbox"/> Small Buildings | <input type="checkbox"/> Building Services | <input type="checkbox"/> Plumbing – House |
| <input type="checkbox"/> Large Buildings | <input type="checkbox"/> Detection, Lighting and Power | <input type="checkbox"/> Plumbing – All Buildings |
| <input type="checkbox"/> Complex Buildings | <input type="checkbox"/> Fire Protection | <input type="checkbox"/> On-site Sewage Systems |

Description of designer's work:

ROYAL PINE HOMES-PROJECT:VALES OF HUMBER NORTH-MODEL: 5003-COR-ELEV. A-1ST FLOOR-NOT LOT SPECIFIC REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK LUMBER INC. (SEE DWG #TAM19529-21 DATED 9-01-21). SUPPORTING STRUCTURE (S) TO BE REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.

D. Declaration of Designer

I, **SAM KATSOULAKOS**

declare that (choose one as appropriate):

(print name)

- ☒ 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: 26064

Firm BCIN: 29991

- ☐ 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: _____

- ☐ The design work is exempt from the registration and qualification requirements of the Building Code.

Basis for exemption from registration and qualification: _____

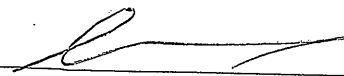
I certify that:

- The information contained in this schedule is true to the best of my knowledge.
- I have submitted this application with the knowledge and consent of the firm.

Date

9-01-21

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.
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DWG #TAM19529-21S
DWG #TAM19533-21S

9-01-21

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:UNIT 5003 COR-ELEV. B-1ST FLOOR-NOT LOT SPECIFIC REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK LUMBER INC. (SEE DWG #TAM21538-21 DATED 10-04-21). 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> <div style="margin-left: 20px;"> <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> </div> <div style="margin-left: 20px;"> <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: _____ </div> <div style="margin-left: 20px;"> <input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____ </div>				
I certify that: <ol style="list-style-type: none"> The information contained in this schedule is true to the best of my knowledge. I have submitted this application with the knowledge and consent of the firm. 				
Date		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.
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DWG #TAM21538-21S
DWG #TAM21540-21S

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@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]

☐ House

☐ HVAC – House

☒ Building Structural

☐ Small Buildings

☐ Building Services

☐ Plumbing – House

☐ Large Buildings

☐ Detection, Lighting and Power

☐ Plumbing – All Buildings

☐ Complex Buildings

☐ Fire Protection

☐ On-site Sewage Systems

Description of designer's work:

ROYAL PINE HOMES-PROJECT: VALES OF HUMBER NORTH-MODEL:UNIT 5003 COR-ELEV. B-2ND FLOOR-NOT LOT SPECIFIC
REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY
TAMARACK LUMBER INC. (SEE DWG #TAM21539-21 DATED 10-04-21). SUPPORTING STRUCTURE (S) TO BE
REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.

D. Declaration of Designer

I, SAM KATSOULAKOS

declare that (choose one as appropriate):

(print name)

- ☒ 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: 26064

Firm BCIN: 29991

- ☐ 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: _____

- ☐ 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:

- The information contained in this schedule is true to the best of my knowledge.
- I have submitted this application with the knowledge and consent of the firm.

Date

100421

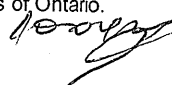
Signature of Designer



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.
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DWG #TAM21539-21S
DWG #TAM21541-21S



NORDIC STRUCTURES

COMPANY
July 19, 2021 08:45

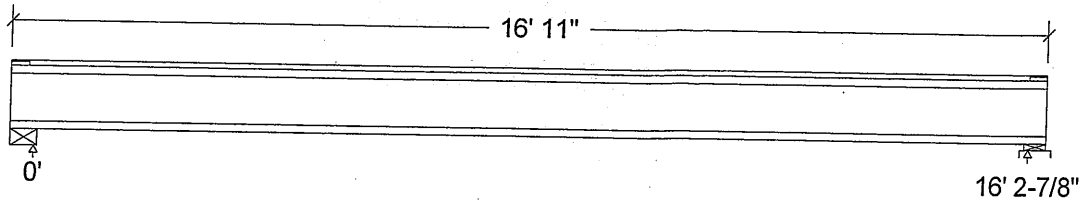
PROJECT
J1 1ST FLOOR.wwb

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	217		217
Live	433		433
Factored:			
Total	920		920
Bearing:			
Capacity			
Joist	2336		2336
Support	-		7744
Des ratio			
Joist	0.39		0.39
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: 16' 11"; Clear span: 16' 1-3/8"; 3/4" nailed and glued OSB sheathing

This section PASSES the design code check.



DWG NO. TAM17909-21
STRUCTURAL
COMPONENT ONLY

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 920	Vr = 2336	lbs	Vf/Vr = 0.39
Moment(+)	Mf = 3736	Mr = 6255	lbs-ft	Mf/Mr = 0.60
Perm. Defl'n	0.10 = < L/999	0.54 = L/360	in	0.19
Live Defl'n	0.21 = L/933	0.41 = L/480	in	0.51
Total Defl'n	0.31 = L/622	0.81 = L/240	in	0.39
Bare Defl'n	0.26 = L/753	0.54 = L/360	in	0.48
Vibration	Lmax = 16'-2.9	Lv = 18'-1.3	ft	0.90
Defl'n	= 0.028	= 0.039	in	0.71

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

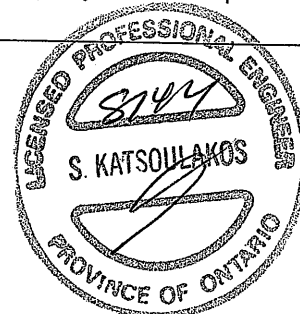
CALCULATIONS:

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**

- 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).
- Please verify that the default deflection limits are appropriate for your application.
- Refer to Nordic Structures technical documentation for installation guidelines and construction details.
- Nordic I-joists are listed in CCMC evaluation report 13032-R.
- Joists shall be laterally supported at supports and continuously along the compression edge.
- 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.
- Floor vibration design from the CCMC Concluding Report (1997) on vibration controlled spans for engineered wood products.
- The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



OWB NO. TAM 17909-21
 STRUCTURAL
 COMPONENT ONLY

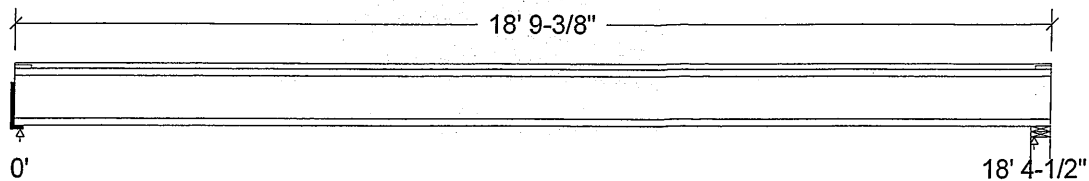
Design Check Calculation Sheet

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	184		184
Live	367		367
Factored:			
Total	781		781
Bearing:			
Capacity			
Joist	2154		2336
Support	-		10841
Des ratio			
Joist	0.36		0.33
Support	-		0.07
Load case	#2		#2
Length	2		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
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.

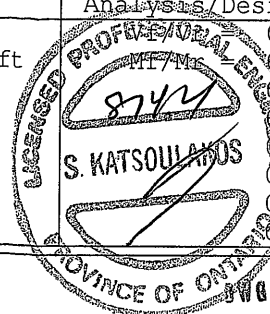
Supports: 1 - Hanger; 2 - Lumber Wall, No.1/No.2;

Total length: 18' 9-3/8"; Clear span: 18' 3"; 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 = 781	Vr = 2336	lbs	0.33
Moment (+)	Mf = 3587	Mr = 11609	lbs-ft	0.31
Perm. Defl'n	0.10 = < L/999	0.61 = L/360	in	0.16
Live Defl'n	0.19 = < L/999	0.46 = L/480	in	0.42
Total Defl'n	0.29 = L/759	0.92 = L/240	in	0.32
Bare Defl'n	0.22 = < L/999	0.61 = L/360	in	0.35
Vibration	Lmax = 18'-4.5	Lv = 20'-5.8	ft	0.90
Defl'n	= 0.026	= 0.034	in	0.77



PROVINCE OF ONTARIO
JWB NO. TAM 17910-21
STRUCTURAL
COMPONENT ONLY

Additional Data:

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



DWG NO. TAN/17910-21
 STRUCTURAL
 COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
July 19, 2021 09:27

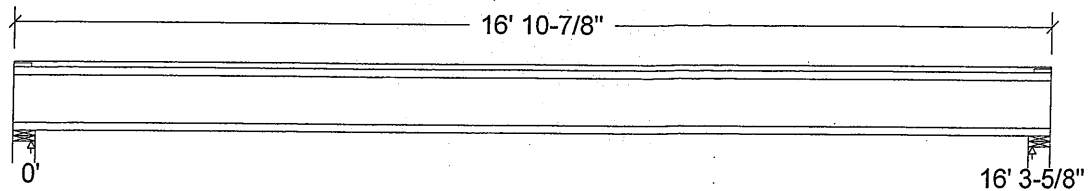
PROJECT
J1 2ND FLOOR.wwb

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	217		217
Live	435		435
Factored:			
Total	924		924
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.

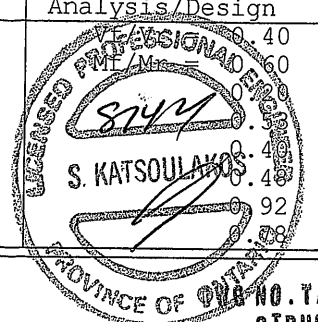
Supports: All - Lumber Wall, No.1/No.2

Total length: 16' 10-7/8"; Clear span: 16' 2-1/8"; 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 = 924	Vr = 2336	lbs	0.40
Moment (+)	Mf = 3764	Mr = 6255	lbs-ft	0.60
Perm. Defl'n	0.11 = < L/999	0.54 = L/360	in	0.40
Live Defl'n	0.22 = L/902	0.41 = L/480	in	0.40
Total Defl'n	0.33 = L/601	0.82 = L/240	in	0.40
Bare Defl'n	0.26 = L/748	0.54 = L/360	in	0.40
Vibration	Lmax = 16'-3.6	Lv = 17'-8.1	ft	0.92
Defl'n	= 0.030	= 0.039	in	0.78



NO. 12911-21
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:

E_{leff} = 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**

AMENDED 2020

Design Notes:

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



DWG NO. TAM 17911-21
 STRUCTURAL
 COMPONENT ONLY

2ND FLR FRAMING\Dropped Beams\B11 DR(i1271) (Dropped Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

July 19, 2021 09:19:58

Build 7773

Job name:

File name: 5003 COR EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B11 DR(i1271)

City, Province, Postal Code:

Specifier:

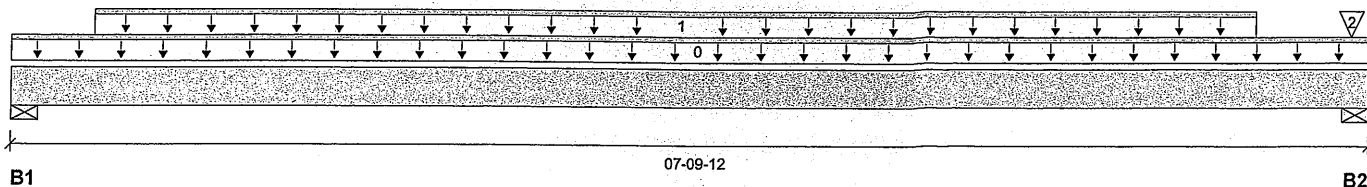
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-09-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1156 / 0	616 / 0		
B2, 5-3/4"	1517 / 0	798 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-09-12	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-05-12	07-01-12	Top	329	165			n/a
2	J2(i1319)	Conc. Pt. (lbs)	L	07-08-08	07-08-08	Top	437	219			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4714 ft-lbs	23219 ft-lbs	20.3%	1	03-08-08
End Shear	2388 lbs	11571 lbs	20.6%	1	01-01-08
Total Load Deflection	L/999 (0.06")	n/a	n/a	4	03-09-12
Live Load Deflection	L/999 (0.039")	n/a	n/a	5	03-09-12
Max Defl.	0.06"	n/a	n/a	4	03-09-12
Span / Depth	9.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	2505 lbs	13.4%	14.7%	Spruce-Pine-Fir
B2	Wall/Plate 5-3/4" x 3-1/2"	3273 lbs	12.2%	13.3%	Spruce-Pine-Fir

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 01-01-08, Bottom: 07-09-12.

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAM/17912-21
STRUCTURAL
COMPONENT ONLY



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: 5003 COR EL A.mmdl

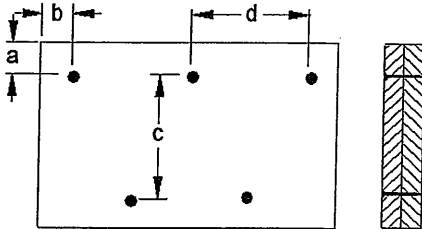
Description: 2ND FLR FRAMING\Dropped Beams\B11 DR(i1271)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/2"

b minimum = 3"

d = 8"

Connectors are: 1 Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 17912-21
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 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Dropped Beams\B12 DR(i2251) (Dropped Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

July 19, 2021 09:19:58

Build 7773

Job name:

File name: 5003 COR EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B12 DR(i2251)

City, Province, Postal Code:

Specifier:

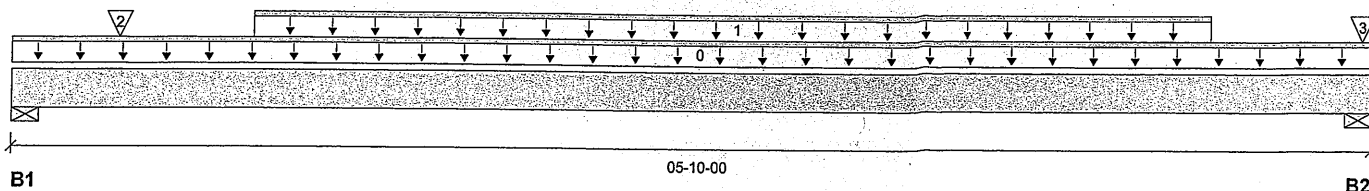
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 05-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 10"	1156 / 0	610 / 0		
B2, 4"	1077 / 0	565 / 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	05-10-00	Top	1.00	10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-00-04	05-01-08	Top	322	162			n/a
2	J1(i1289)	Conc. Pt. (lbs)	L	00-05-08	00-05-08	Top	437	219			n/a
3	J1(i1301)	Conc. Pt. (lbs)	L	05-09-08	05-09-08	Top	382	191			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2250 ft-lbs	23219 ft-lbs	9.7%	1	03-01-08
End Shear	1499 lbs	11571 lbs	13.0%	1	01-07-08
Total Load Deflection	L/999 (0.013")	n/a	n/a	4	03-02-02
Live Load Deflection	L/999 (0.008")	n/a	n/a	5	03-02-02
Max Defl.	0.013"	n/a	n/a	4	03-02-02
Span / Depth	6.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 10" x 3-1/2"	2496 lbs	5.3%	5.8%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	2321 lbs	12.4%	13.6%	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.

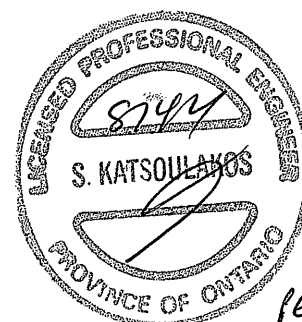
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 01-01-08, Bottom: 05-10-00.

CONFORMS TO OBC 2012

AMENDED 2020


 DWG NO. TAM/2913-21
 STRUCTURAL
 COMPONENT ONLY



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: 5003 COR EL A.mmdl

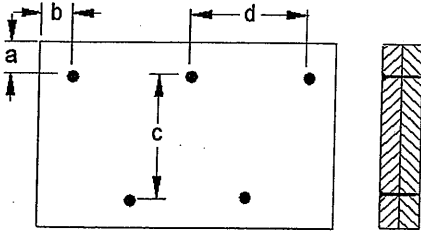
Description: 2ND FLR FRAMING\Dropped Beams\B12 DR(i2251)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 5-1/2"

d = 6"

Connectors are: 1- Nails

3 1/2" ARDOX SPIRAL



DWG NO. FAM 17913-11
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

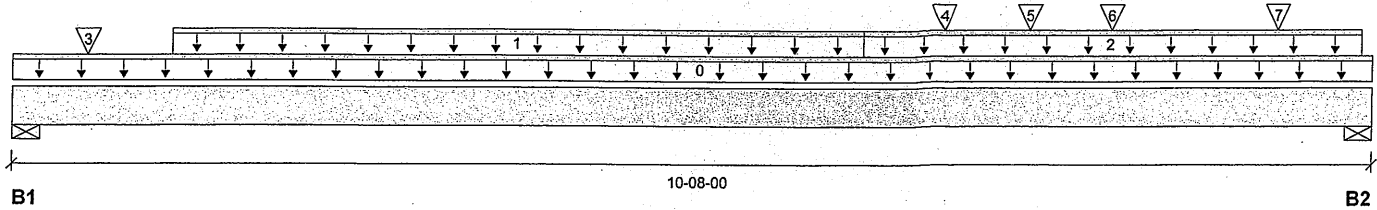
File name: 5003 COR EL A.mmdl

Description: 2ND FLR FRAMING\Dropped Beams\B13 DR(i2484)

Specifier:

Designer: AJ

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	2035 / 0	1083 / 0		
B2, 4"	2558 / 0	1373 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-08-00	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-03-00	06-07-00	Top	362	182			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	06-07-00	10-07-00	Top	289	145			n/a
3	-	Conc. Pt. (lbs)	L	00-07-00	00-07-00	Top	387	193			n/a
4	J6(i2559)	Conc. Pt. (lbs)	L	07-03-00	07-03-00	Top	75	37			n/a
5	B19(i2487)	Conc. Pt. (lbs)	L	07-11-04	07-11-04	Top	614	361			n/a
6	J5(i2532)	Conc. Pt. (lbs)	L	08-07-00	08-07-00	Top	184	92			n/a
7	J5(i2512)	Conc. Pt. (lbs)	L	09-11-00	09-11-00	Top	246	123			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	12067 ft-lbs	23219 ft-lbs	52.0%	1	05-11-00
End Shear	4904 lbs	11571 lbs	42.4%	1	09-06-08
Total Load Deflection	L/385 (0.316")	n/a	62.4%	4	05-05-00
Live Load Deflection	L/591 (0.205")	n/a	60.9%	5	05-05-00
Max Defl.	0.316"	n/a	n/a	4	05-05-00
Span / Depth	12.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	4406 lbs	23.6%	25.8%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	5553 lbs	29.7%	32.5%	Spruce-Pine-Fir

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 01-02-12, Bottom: 10-08-00.

CONFORMS TO OBC 2012

AMENDED 2020


 DWG NO. TAM 12914-21
 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: 5003 COR EL A.mmdl

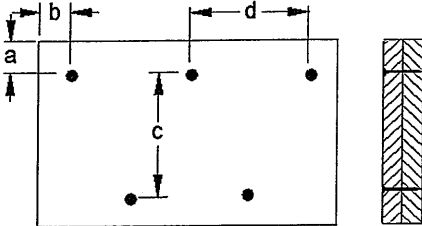
Description: 2ND FLR FRAMING\Dropped Beams\B13 DR(i2484)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member

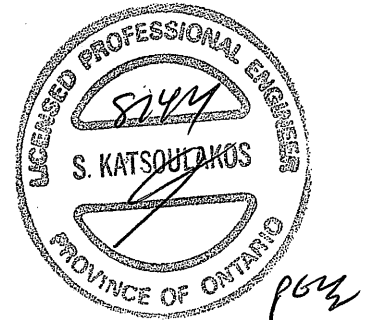


a minimum = 2"
b minimum = 3"

c = 5-1/2"
d = 6"

Connectors are: 1 Nails

3 1/2" ARDOX SPIRAL



DWG NO. YAM 17914-21
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®,



Build 7773

Job name:

File name: 5003 COR EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B14 DR(i2471)

City, Province, Postal Code: BRAMPTON

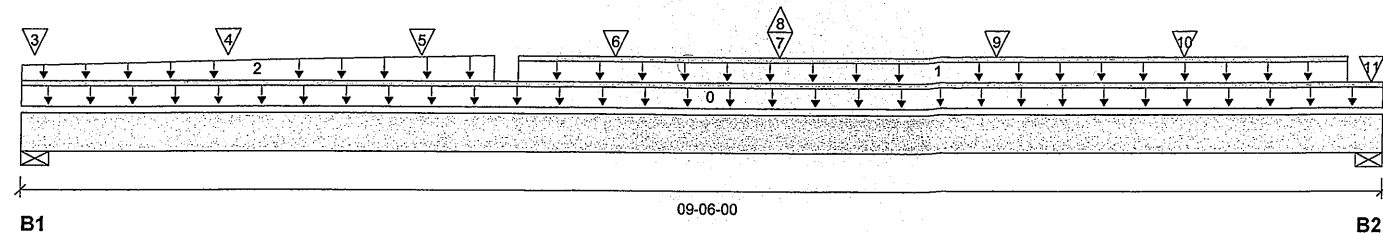
Specifier:

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, 4"	2450 / 2	1307 / 0		
B2, 4"	1978 / 2	1079 / 0		

Load Summary

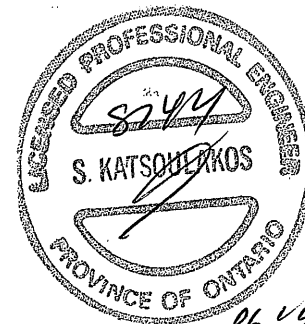
Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-06-00	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	03-05-00	09-03-00	Top	277	138			n/a
2	Smoothed Load	Trapezoidal (lb/ft)	L	00-00-00	03-03-00	Top	173	86			n/a
3	J3(i2525)	Conc. Pt. (lbs)	L	00-01-00	00-01-00	Top	356	178			n/a
4	J3(i2571)	Conc. Pt. (lbs)	L	01-05-00	01-05-00	Top	359	179			n/a
5	J5(i2569)	Conc. Pt. (lbs)	L	02-09-00	02-09-00	Top	249	125			n/a
6	J5(i2570)	Conc. Pt. (lbs)	L	04-01-00	04-01-00	Top	263	132			n/a
7	B17(i2575)	Conc. Pt. (lbs)	L	05-02-10	05-02-10	Top	535	350			n/a
8	B17(i2575)	Conc. Pt. (lbs)	L	05-02-10	05-02-10	Top	-4				n/a
9	J6(i2546)	Conc. Pt. (lbs)	L	06-09-00	06-09-00	Top	106	53			n/a
10	J6(i2542)	Conc. Pt. (lbs)	L	08-01-00	08-01-00	Top	98	49			n/a
11	J6(i2475)	Conc. Pt. (lbs)	L	09-05-00	09-05-00	Top	98	49			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	10828 ft-lbs	23219 ft-lbs	46.6%	1	04-09-00
End Shear	4141 lbs	11571 lbs	35.8%	1	01-01-08
Total Load Deflection	L/499 (0.215")	n/a	48.1%	6	04-09-00
Live Load Deflection	L/773 (0.139")	n/a	46.6%	8	04-09-00
Max Defl.	0.215"	n/a	n/a	6	04-09-00
Span / Depth	11.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	5308 lbs	28.4%	31.1%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	4316 lbs	23.1%	25.3%	Spruce-Pine-Fir



DWG NO. YAW 12915-21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Dropped Beams\B14 DR(i2471) (Dropped Beam)
Dry | 1 span | No cant.

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

File name: 5003 COR EL A.mmdl

Description: 2ND FLR FRAMING\Dropped Beams\B14 DR(i2471)

Specifier:

Designer: AJ

Company:

August 10, 2021 09:08:31

Notes

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

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

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

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

Design based on Dry Service Condition.

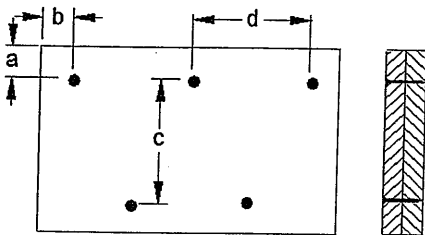
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 01-03-04, Bottom: 09-06-00.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 5-1/2"

d = 8"

Connectors are: 1 Nails

3 1/2" ARDOX SPIRAL



OWB NO. TAM 17915-21
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\B15(i1279) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

July 19, 2021 09:19:58

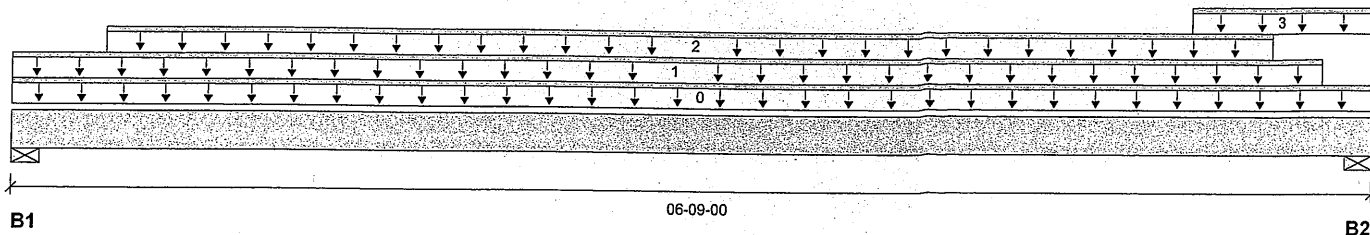
File name: 5003 COR EL A.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B15(i1279)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 06-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	942 / 0	691 / 0		
B2, 4"	786 / 0	601 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-09-00	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	06-06-00	Top	263	132			n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-05-08	06-02-14	Top		60			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	05-10-00	06-09-00	Top	20				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2959 ft-lbs	35392 ft-lbs	8.4%	1	03-02-00
End Shear	1605 lbs	14464 lbs	11.1%	1	05-05-02
Total Load Deflection	L/999 (0.014")	n/a	n/a	4	03-05-00
Live Load Deflection	L/999 (0.008")	n/a	n/a	5	03-05-00
Max Defl.	0.014"	n/a	n/a	4	03-05-00
Span / Depth	6.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	2277 lbs	19.2%	9.7%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	1931 lbs	22.4%	11.3%	Spruce-Pine-Fir

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020


 DWG NO. TAM/19/16-21
 STRUCTURAL
 COMPONENT ONLY



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: 5003 COR EL A.mmdl

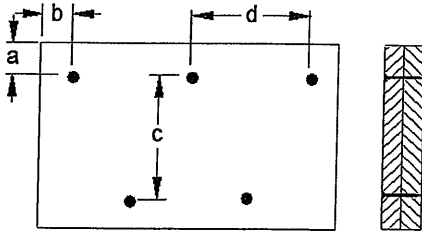
Description: 2ND FLR FRAMING\Flush Beams\B15(i1279)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 8"

Calculated Side Load = 731.0 lb/ft

Connectors are: 16d 1 Nails

3 1/2" ARDOX SPIRAL



OWN NO. 12916-21
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
2ND FLR FRAMING\Flush Beams\B16(i1280) (Flush Beam)
PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

July 19, 2021 09:19:58

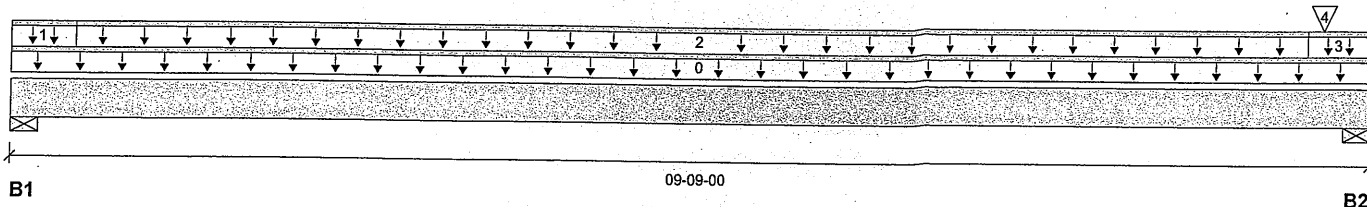
File name: 5003 COR EL A.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B16(i1280)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 09-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	16 / 0	37 / 0		
B2, 5-1/2"	17 / 0	38 / 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	09-09-00	Top		6			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	00-05-08	Top	7	3			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-05-08	09-03-08	Top	3	2			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	09-03-08	09-09-00	Top	5	3			n/a
4	FC2 Floor Decking (Plan View Fill)	Conc. Pt. (lbs)	L	09-04-14	09-04-14	Top	2	1			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	105 ft-lbs	11502 ft-lbs	0.9%	0	04-10-08
End Shear	36 lbs	4701 lbs	0.8%	0	01-05-06
Total Load Deflection	L/999 (0.003")	n/a	n/a	4	04-10-08
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	04-10-08
Max Defl.	0.003"	n/a	n/a	4	04-10-08
Span / Depth	9.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	52 lbs	1.4%	0.7%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 1-3/4"	53 lbs	1.4%	0.7%	Spruce-Pine-Fir

Notes

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

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

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

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

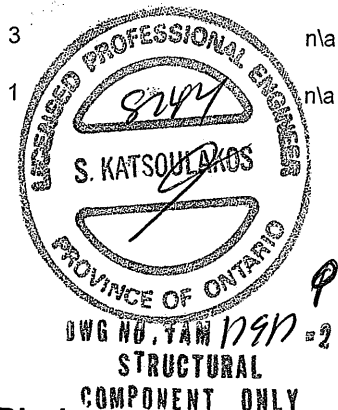
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020


Disclosure

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



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

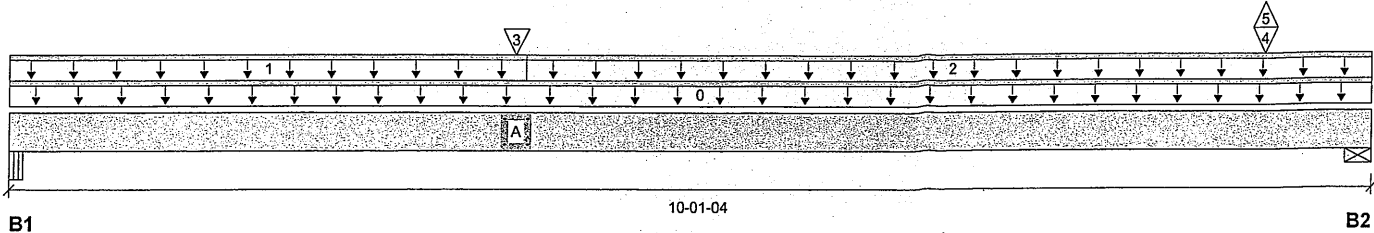
File name: 5003 COR EL A.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B17(i2262)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 10-01-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	532 / 3	351 / 0		
B2, 5-3/4"	780 / 62	406 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-01-04	Top		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	03-09-04	Top	53	27			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	03-09-04	10-01-04	Top	6	3			n/a
3	B20(i1285)	Conc. Pt. (lbs)	L	03-08-06	03-08-06	Top	532	311			n/a
4	B18(i2305)	Conc. Pt. (lbs)	L	09-03-08	09-03-08	Top	538	203			n/a
5	B18(i2305)	Conc. Pt. (lbs)	L	09-03-08	09-03-08	Top	-65				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3503 ft-lbs	35392 ft-lbs	9.9%	1	03-08-06
End Shear	1082 lbs	14464 lbs	7.5%	1	01-02-08
Total Load Deflection	L/999 (0.036")	n/a	n/a	6	04-08-03
Live Load Deflection	L/999 (0.022")	n/a	n/a	8	04-08-03
Max Defl.	0.036"	n/a	n/a	6	04-08-03
Span / Depth	9.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 2-5/8" x 3-1/2"	1237 lbs	11.0%	11.0%	VL 2.0 3100 SP
B2	Wall/Plate 5-3/4" x 3-1/2"	1678 lbs	13.6%	6.8%	Spruce-Pine-Fir

Cautions

Concentrated side load(s) 5 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: 05-04-08.

CONFORMS TO OBC 2012

AMENDED 2020



OWG NO. TAM 17918-21
STRUCTURAL
COMPONENT ONLY

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

July 19, 2021 09:19:58

File name: 5003 COR EL A.mmdl

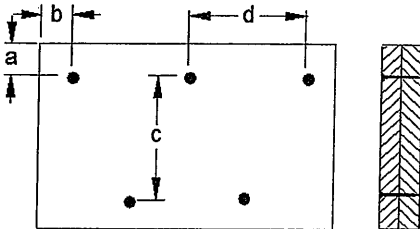
Description: 2ND FLR FRAMING\Flush Beams\B17(i2262)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

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

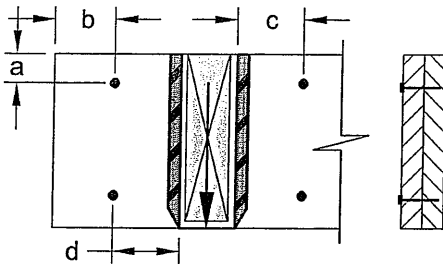
Calculated Side Load = 48.8 lb/ft

Connectors are: 1 Nails

3 1/2" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Connection Tag: A Applies to load tag(s): 2



a minimum = 2"
b minimum = 4"
c minimum = 4"
d maximum = 12"

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



UWB NO. TAM 17918-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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



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

PASSED

2ND FLR FRAMING\Flush Beams\B18(i2305) (Flush Beam)

Dry | 2 spans | No cant.

July 19, 2021 09:19:58

BC CALC® Member Report

Build 7773

Job name:

File name: 5003 COR EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B18(i2305)

City, Province, Postal Code:

Specifier:

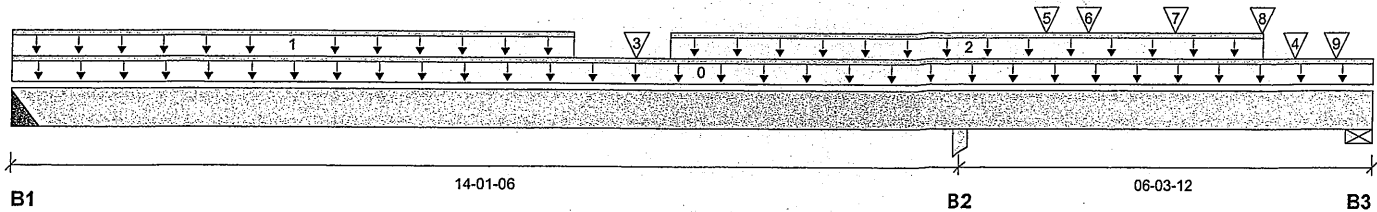
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	344 / 67	209 / 0		
B2, 4-1/2"	4860 / 0	2640 / 0		
B3, 5-1/2"	1575 / 479	560 / 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	20-05-02	Top		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	08-03-14	Top	21	11			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	09-08-14	18-08-14	Top	380	190			n/a
3	J7(i2240)	Conc. Pt. (lbs)	L	09-02-14	09-02-14	Top	453	227			n/a
4	J7(i2090)	Conc. Pt. (lbs)	L	19-02-14	19-02-14	Top	356	178			n/a
5	B19(i1284)	Conc. Pt. (lbs)	L	15-04-14	15-04-14	Top	1000	545			n/a
6	J5(i1453)	Conc. Pt. (lbs)	L	16-00-10	16-00-10	Top	188	94			n/a
7	J5(i1422)	Conc. Pt. (lbs)	L	17-04-10	17-04-10	Top	248	124			n/a
8	J5(i1435)	Conc. Pt. (lbs)	L	18-08-10	18-08-10	Top	230	115			n/a
9	J5(i1986)	Conc. Pt. (lbs)	L	19-10-06	19-10-06	Top	137	69			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4429 ft-lbs	35392 ft-lbs	12.5%	3	17-02-14
Neg. Moment	-8281 ft-lbs	-21887 ft-lbs	37.8%	1	14-01-06
End Shear	2539 lbs	14464 lbs	17.6%	3	18-11-12
Cont. Shear	5595 lbs	14464 lbs	38.7%	1	15-03-08
Total Load Deflection	L/999 (0.089")	n/a	n/a	9	07-05-06
Live Load Deflection	L/999 (0.062")	n/a	n/a	12	07-05-06
Total Neg. Defl.	L/999 (-0.01")	n/a	n/a	9	16-02-14
Max Defl.	0.089"	n/a	n/a	9	07-05-06
Span / Depth	14.0				

Bearing Supports			Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	4" x 3-1/2"		777 lbs	n/a	4.5%	HGUS410
B2	Column	4-1/2" x 3-1/2"		10589 lbs	82.8%	55.1%	Unspecified
B3	Wall/Plate	5-1/2" x 3-1/2"		3063 lbs	25.9%	13.0%	Spruce-Pine-Fir
B3	Uplift			214 lbs			



OWU NO. TAM 17919-21
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

Dry | 2 spans | No cant.

July 19, 2021 09:19:58

File name: 5003 COR EL A.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B18(i2305)

Specifier:

Designer:

Company:

Cautions

Uplift of 214 lbs found at bearing B3. *C SIMPSON 2-H-54 @ B3*
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. *or*

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.

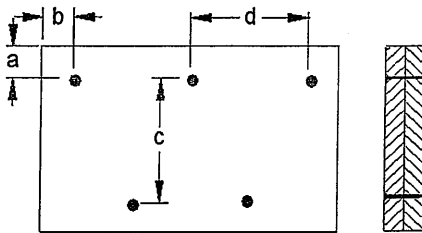
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 09-01-02.

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 = 1553.9 lb/ft

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



OWB NO. 7AM 17919-21
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

2ND FLR FRAMING\Flush Beams\B19(i1284) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

July 19, 2021 09:19:58

Build 7773

Job name:

File name: 5003 COR EL A.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B19(i1284)

City, Province, Postal Code:

Specifier:

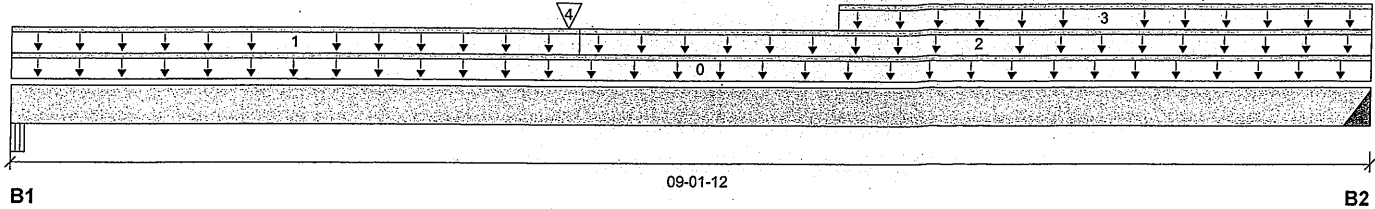
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 09-01-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	611 / 0	360 / 0		
B2, 2"	1006 / 0	548 / 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	09-01-12	Top		6			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	03-09-04	Top	27	13			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	03-09-04	09-01-12	Top	14	7			n/a
3	STAIR	Unf. Lin. (lb/ft)	L	05-05-12	09-01-12	Top	240	120			n/a
4	B20(i1285)	Conc. Pt. (lbs)	L	03-08-06	03-08-06	Top	559	324			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4401 ft-lbs	17696 ft-lbs	24.9%	1	03-08-06
End Shear	1560 lbs	7232 lbs	21.6%	1	07-11-14
Total Load Deflection	L/999 (0.088")	n/a	n/a	4	04-07-08
Live Load Deflection	L/999 (0.056")	n/a	n/a	5	04-07-08
Max Defl.	0.088"	n/a	n/a	4	04-07-08
Span / Depth	9.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 2-5/8" x 1-3/4"	1367 lbs	24.4%	24.4%	VL 2.0 3100 SP
B2	Hanger 2" x 1-3/4"	2194 lbs	n/a	51.4%	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.

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.

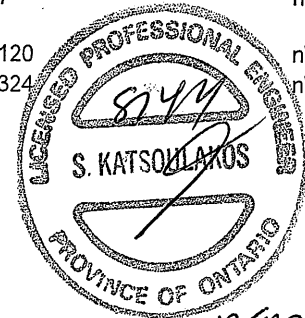
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 05-04-08.

CONFORMS TO OBC 2012

AMENDED 2020


 DWG NO. TAM 12920.21
 STRUCTURAL
 COMPONENT ONLY

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BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

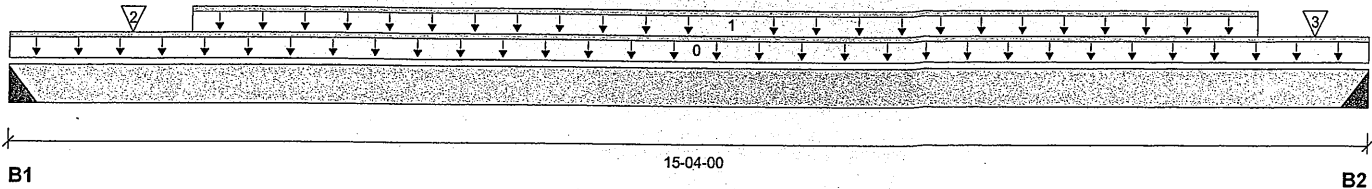
File name: 5003 COR EL A.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B20(i1285)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 15-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	532 / 0	311 / 0		
B2, 2"	559 / 0	324 / 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	15-04-00	Top		6			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	02-00-10	14-00-10	Top	76	38			n/a
2	J7(i1428)	Conc. Pt. (lbs)	L	01-04-10	01-04-10	Top	108	54			n/a
3	J7(i1434)	Conc. Pt. (lbs)	L	14-08-10	14-08-10	Top	76	38			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4802 ft-lbs	17696 ft-lbs	27.1%	1	08-00-10
End Shear	1177 lbs	7232 lbs	16.3%	1	01-01-14
Total Load Deflection	L/633 (0.287")	n/a	37.9%	4	07-08-10
Live Load Deflection	L/999 (0.182")	n/a	36.0%	5	07-08-10
Max Defl.	0.287"	n/a	n/a	4	07-08-10
Span / Depth	15.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Hanger	2" x 1-3/4"	1186 lbs	n/a	27.8%	HUS1.81/10
B2 Hanger	2" x 1-3/4"	1244 lbs	n/a	29.1%	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.

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

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: 01-03-06.

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAM 1294-21
STRUCTURAL
COMPONENT ONLY

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BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

July 19, 2021 09:19:58

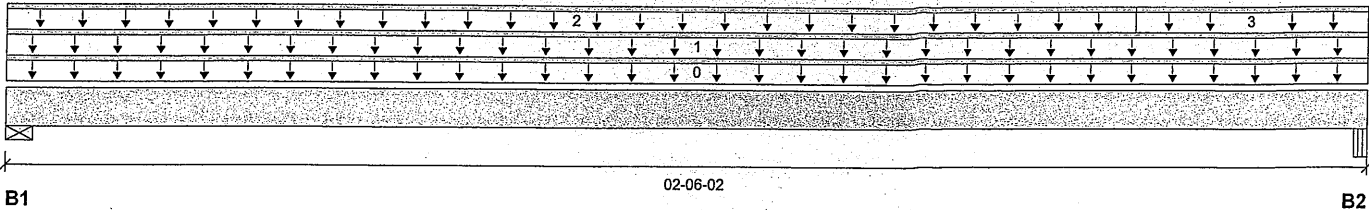
File name: 5003 COR EL A.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B21(i1286)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 02-06-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	11 / 0	122 / 0		
B2, 5-1/4"	9 / 0	119 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	02-06-02	Top		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	02-06-02	Top		80			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	02-00-14	Top	8	4			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	02-00-14	02-06-02	Top	5				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	51 ft-lbs	23005 ft-lbs	0.2%	0	01-03-03
End Shear	25 lbs	9401 lbs	0.3%	0	01-05-06
Span / Depth	1.8				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	170 lbs	2.2%	1.1%	Spruce-Pine-Fir
B2	Beam 5-1/4" x 3-1/2"	167 lbs	2.6%	1.1%	Unspecified

Notes

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

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

Design based on Dry Service Condition.

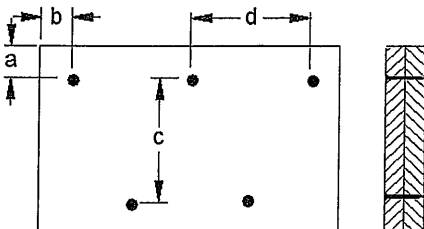
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-07-06.

CONFORMS TO CBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



P6 1/2

UWO NO. TAM 17922-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLR FRAMING\Flush Beams\B21(i1286) (Flush Beam)

Dry | 1 span | No cant.

July 19, 2021 09:19:58

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File name: 5003 COR EL A.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B21(i1286)

Specifier:

Designer:

Company:

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



DWG NO. TAM 17922-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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

1ST FLR FRAMING\Flush Beams\B1(i2450) (Flush Beam)

Dry | 2 spans | No cant.

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: 5003 COR EL A.mmdl

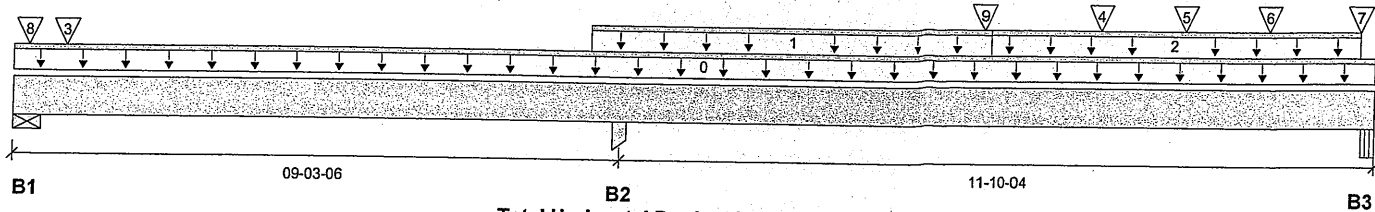
Description: 1ST FLR FRAMING\Flush Beams\B1(i2450)

Specifier:

Designer:

Company:

July 19, 2021 09:19:58



Total Horizontal Product Length = 21-01-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	300 / 920	0 / 200		
B2, 5-1/4"	5084 / 0	3056 / 0		
B3, 5-1/4"	4713 / 3	2388 / 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	21-01-10	Top		18			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	08-10-00	15-00-06	Top	27	13			n/a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	15-00-06	20-10-14	Top	25	13			n/a
3	B2(i2407)	Conc. Pt. (lbs)	L	00-09-12	00-09-12	Top	308	212			n/a
4	J4(i2380)	Conc. Pt. (lbs)	L	16-09-08	16-09-08	Top	247	124			n/a
5	J4(i2380)	Conc. Pt. (lbs)	L	18-01-08	18-01-08	Top	247	124			n/a
6	J4(i2396)	Conc. Pt. (lbs)	L	19-05-08	19-05-08	Top	229	115			n/a
7	-	Conc. Pt. (lbs)	L	20-10-14	20-10-14	Top	1719	661			n/a
8	2(i1264)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top		51			n/a
9	-	Conc. Pt. (lbs)	L	14-11-02	14-11-02	Top	6100	3418			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	31901 ft-lbs	47422 ft-lbs	67.3%	3	14-10-04
Neg. Moment	-18313 ft-lbs	-31822 ft-lbs	57.5%	1	09-03-06
End Shear	6554 lbs	21696 lbs	30.2%	3	19-08-08
Cont. Shear	9129 lbs	21696 lbs	42.1%	1	10-05-14
Total Load Deflection	L/513 (0.269")	n/a	46.8%	10	15-03-13
Live Load Deflection	L/804 (0.171")	n/a	44.8%	13	15-03-13
Total Neg. Defl.	L/999 (-0.075")	n/a	n/a	10	05-07-01
Max Defl.	0.269"	n/a	n/a	10	15-03-13
Span / Depth	11.6				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Wall/Plate	5-1/2" x 5-1/4"	269 lbs	1.5%	0.8%	Spruce-Pine-Fir
B1 Uplift		1631 lbs			
B2 Column	5-1/4" x 5-1/4"	11445 lbs	51.1%	34.0%	Unspecified
B3 Beam	5-1/4" x 5-1/4"	10055 lbs	68.3%	29.9%	Unspecified

Cautions

Uplift of 1630 lbs found at bearing B1. (SIMPSON 3-42-54 @ B1).



UWG NO. TAM17923-21
STRUCTURAL
COMPONENT ONLY



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: 5003 COR EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B1(i2450)

Specifier:

Designer:

Company:

Notes

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

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

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

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

Design based on Dry Service Condition.

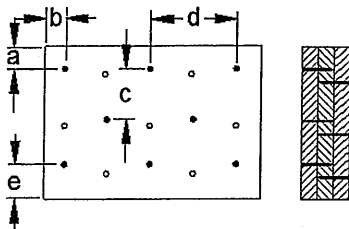
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 07-10-08, Bottom: 14-00-14.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 4"

d = 8"

e minimum = 3"

Calculated Side Load = 1615.3 lb/ft

Nailing applies to both sides of the member

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



OWG NO. 7AM 1793-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
1ST FLR FRAMING\Flush Beams\B10(i2140) (Flush Beam)
PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

July 19, 2021 09:19:58

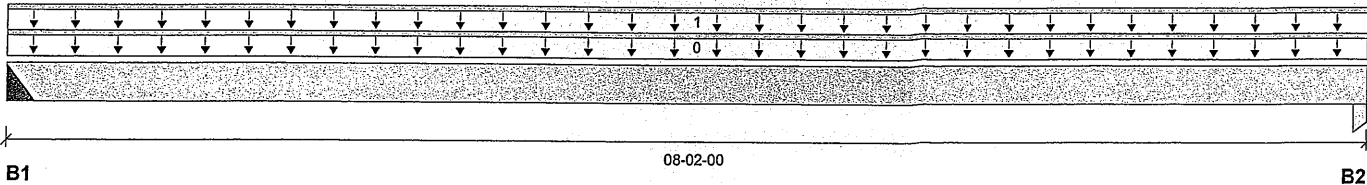
File name: 5003 COR EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B10(i2140)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 08-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	49 / 0	49 / 0		
B2, 3-1/2"	51 / 0	50 / 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	08-02-00	Top		6			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	08-02-00	Top	12	6			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	256 ft-lbs	17696 ft-lbs	1.4%	1	04-00-04
End Shear	96 lbs	7232 lbs	1.3%	1	01-01-14
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	04-00-04
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	04-00-04
Max Defl.	0.004"	n/a	n/a	4	04-00-04
Span / Depth	7.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	2" x 1-3/4"	134 lbs	n/a	3.1%	HUS1.81/10
B2 Column	3-1/2" x 1-3/4"	139 lbs	2.8%	1.9%	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: 08-00-04.

CONFORMS TO CBC 2012

AMENDED 2020


 DWG NO. TAM 1794-21
 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

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

July 19, 2021 09:19:58

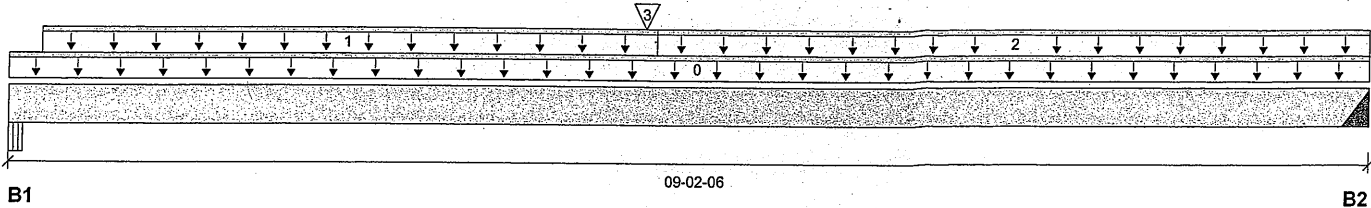
File name: 5003 COR EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B2(i2407) (Flush Beam)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 09-02-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	381 / 0	252 / 0		
B2, 4"	299 / 0	209 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-02-06	Top		12			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-10	04-03-14	Top	53	27			n/a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-03-14	09-02-06	Top	30	15			n/a
3	B6(i2415)	Conc. Pt. (lbs)	L	04-03-00	04-03-00	Top	311	166			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2354 ft-lbs	35392 ft-lbs	6.6%	1	04-03-00
End Shear	721 lbs	14464 lbs	5.0%	1	01-05-02
Total Load Deflection	L/999 (0.02")	n/a	n/a	4	04-06-09
Live Load Deflection	L/999 (0.012")	n/a	n/a	5	04-06-09
Max Defl.	0.02"	n/a	n/a	4	04-06-09
Span / Depth	8.6				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/4" x 3-1/2"	886 lbs	9.0%	4.0%	Unspecified
B2 Hanger	4" x 3-1/2"	709 lbs	n/a	4.1%	HGUS410

Cautions

Header for the hanger HGUS410 is a Triple 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. *OK*

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: 04-10-08.

CONFORMS TO OBC 2012

AMENDED 2020



OWC NO. TAM 12925-21
STRUCTURAL
COMPONENT ONLY



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File name: 5003 COR ELA.mmdl

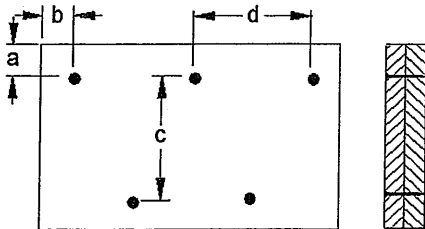
Description: 1ST FLR FRAMING\Flush Beams\B2(i2407)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 8"

Calculated Side Load = 337.0 lb/ft

Connectors are: 16d Nails

3/4" ARDOX SPIRAL



OWG NO. TAM 17925-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

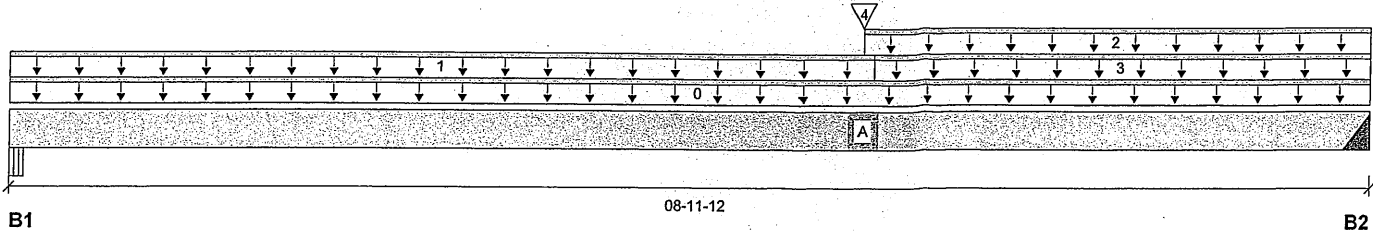
File name: 5003 COR EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B3(i2393)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 08-11-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	447 / 0	289 / 0		
B2, 4"	1094 / 0	622 / 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	08-11-12	Top		12			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	05-07-08	Top	27	13			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	05-06-11	08-11-12	Top	240	120			n/a
3	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	05-07-08	08-11-12	Top	9	4			n/a
4	B5(i2395)	Conc. Pt. (lbs)	L	05-06-10	05-06-10	Top	541	302			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4461 ft-lbs	35392 ft-lbs	12.6%	1	05-06-10
End Shear	1699 lbs	14464 lbs	11.7%	1	07-07-14
Total Load Deflection	L/999 (0.036")	n/a	n/a	4	04-08-14
Live Load Deflection	L/999 (0.023")	n/a	n/a	5	04-08-14
Max Defl.	0.036"	n/a	n/a	4	04-08-14
Span / Depth	8.6				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	2-5/8" x 3-1/2"	1031 lbs	21.0%	9.2%	Unspecified
B2 Hanger	4" x 3-1/2"	2418 lbs	n/a	14.2%	HGUS410

Cautions

Header for the hanger HGUS410 is a Triple 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.



OWB NO. TAM 1792621
STRUCTURAL
COMPONENT ONLY

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

July 19, 2021 09:19:58

File name: 5003 COR EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B3(i2393)

Specifier:

Designer:

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.

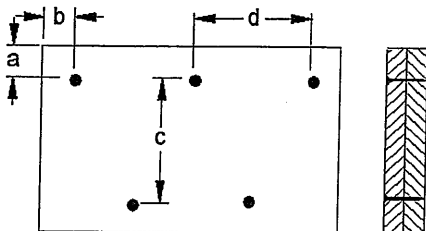
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 05-03-02.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

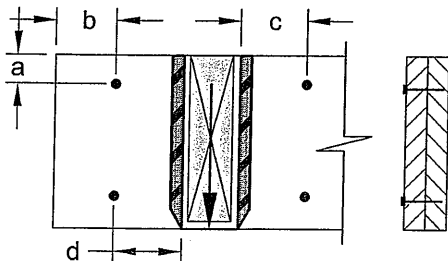
d = 8"

Connectors are: 1 Nails

3 1/2" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Connection Tag: A Applies to load tag(s): 2



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



OWG NO. YAM 129621
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\B4(i2368) (Flush Beam)

Dry | 1 span | No cant.

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File name: 5003 COR EL A.mmdl

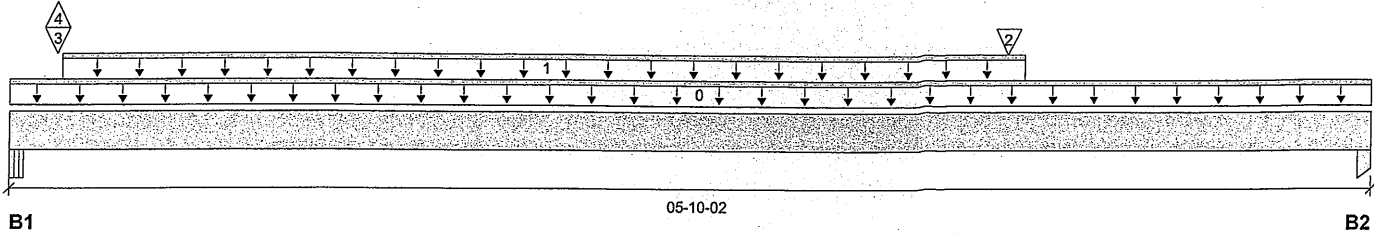
Description: 1ST FLR FRAMING\Flush Beams\B4(i2368)

Specifier:

Designer:

Company:

July 19, 2021 09:19:58



Total Horizontal Product Length = 05-10-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	1653 / 2	938 / 0		
B2, 3-1/2"	287 / 0	168 / 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	05-10-02	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-10	04-03-14	Top	28	14			n/a
2	B6(i2415)	Conc. Pt. (lbs)	L	04-03-00	04-03-00	Top	317	169			n/a
3	10(i1275)	Conc. Pt. (lbs)	L	00-02-06	00-02-06	Top	1496	839			n/a
4	10(i1275)	Conc. Pt. (lbs)	L	00-02-06	00-02-06	Top	-2				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	844 ft-lbs	17696 ft-lbs	4.8%	1	04-03-00
End Shear	609 lbs	7232 lbs	8.4%	1	04-06-12
Total Load Deflection	L/999 (0.005")	n/a	n/a	6	03-02-05
Live Load Deflection	L/999 (0.003")	n/a	n/a	8	03-02-05
Max Defl.	0.005"	n/a	n/a	6	03-02-05
Span / Depth	5.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5-1/4" x 1-3/4"	3652 lbs	74.4%	32.6%	Unspecified
B2	Column 3-1/2" x 1-3/4"	640 lbs	12.9%	8.6%	Unspecified

Notes

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

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

Resistance Factor phi has been applied to all presented results per CSA O86. 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: 03-08-14.

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAM 1792-21

STRUCTURAL

COMPONENT ONLY

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


Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
1ST FLR FRAMING\Flush Beams\B5(i2395) (Flush Beam)

Dry | 1 span | No cant.

PASSED

July 19, 2021 09:19:58

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

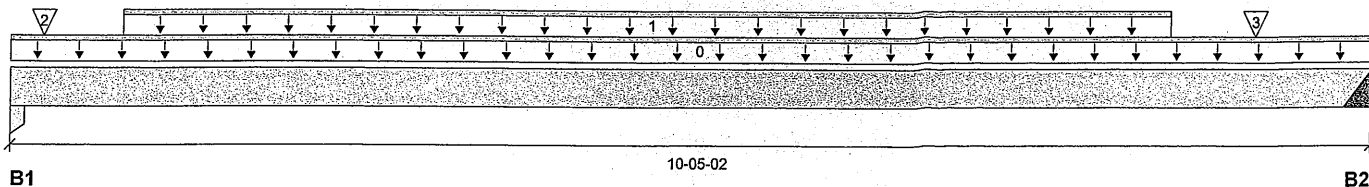
File name: 5003 COR EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B5(i2395)

Specifier:

Designer:

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	577 / 0	320 / 0		
B2, 2"	544 / 0	303 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-05-02	Top		6			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-04	08-10-04	Top	112	56			n/a
2	J8(i2173)	Conc. Pt. (lbs)	L	00-03-00	00-03-00	Top	92	46			n/a
3	J8(i2228)	Conc. Pt. (lbs)	L	09-06-04	09-06-04	Top	134	67			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3231 ft-lbs	17696 ft-lbs	18.3%	1	05-06-04
End Shear	1114 lbs	7232 lbs	15.4%	1	09-03-04
Total Load Deflection	L/999 (0.088")	n/a	n/a	4	05-02-04
Live Load Deflection	L/999 (0.056")	n/a	n/a	5	05-02-04
Max Defl.	0.088"	n/a	n/a	4	05-02-04
Span / Depth	10.3				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Column	1-3/4" x 1-3/4"	1265 lbs	50.9%	33.9%	Unspecified
B2 Hanger	2" x 1-3/4"	1194 lbs	n/a	28.0%	HUS1.81/10

Cautions

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

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

Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020


 DWG NO. TAM 179221
STRUCTURAL COMPONENT ONLY
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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,



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

1ST FLR FRAMING\Flush Beams\B6(i2415) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

July 19, 2021 09:19:58

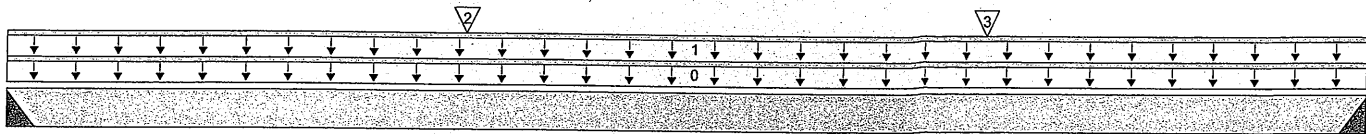
File name: 5003 COR EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B6(i2415)

Specifier:

Designer:

Company:



B1

03-06-00

B2

Total Horizontal Product Length = 03-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	311 / 0	165 / 0		
B2, 2"	317 / 0	169 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Top		6			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Top	120	60			n/a
2	J9(i2198)	Conc. Pt. (lbs)	L	01-02-00	01-02-00	Top	109	54			n/a
3	J9(i2101)	Conc. Pt. (lbs)	L	02-06-00	02-06-00	Top	99	49			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	573 ft-lbs	17696 ft-lbs	3.2%	1	01-08-03
End Shear	369 lbs	7232 lbs	5.1%	1	01-01-14
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	01-09-01
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	01-09-01
Max Defl.	0.002"	n/a	n/a	4	01-09-01
Span / Depth	3.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	673 lbs	n/a	15.8%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	687 lbs	n/a	16.1%	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.

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

Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020


 DWG NO. YAM 1794-21
 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\B7(i2458) (Flush Beam)

Dry | 1 span | No cant.

July 19, 2021 09:19:58

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

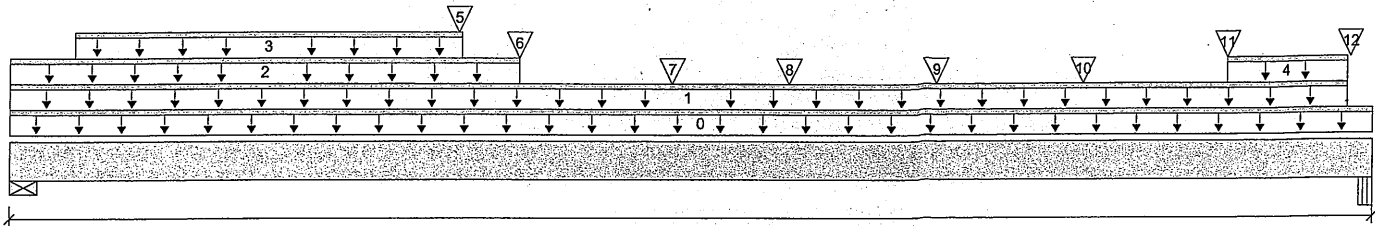
File name: 5003 COR EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B7(i2458)

Specifier:

Designer:

Company:



B1

12-02-08

B2

Total Horizontal Product Length = 12-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	825 / 0	710 / 0		
B2, 5-1/4"	1452 / 0	902 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-02-08	Top		12			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	11-11-12	Top	26	13			n/a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	04-05-15	Top	6				n/a
3	WALL	Unf. Lin. (lb/ft)	L	00-06-14	03-11-13	Top		60			n/a
4	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	10-10-08	11-11-12	Top	21				n/a
5	B10(i2140)	Conc. Pt. (lbs)	L	03-11-08	03-11-08	Top	48	48			n/a
6	J4(i2096)	Conc. Pt. (lbs)	L	04-05-15	04-05-15	Top	161	81			n/a
7	B8(i2430)	Conc. Pt. (lbs)	L	05-10-02	05-10-02	Top	367	257			n/a
8	J3(i2432)	Conc. Pt. (lbs)	L	06-10-08	06-10-08	Top	290	145			n/a
9	J3(i2440)	Conc. Pt. (lbs)	L	08-02-08	08-02-08	Top	328	164			n/a
10	J3(i2440)	Conc. Pt. (lbs)	L	09-06-08	09-06-08	Top	328	164			n/a
11	J3(i2429)	Conc. Pt. (lbs)	L	10-10-08	10-10-08	Top	288	144			n/a
12	6(i1269)	Conc. Pt. (lbs)	L	12-00-02	12-00-02	Top	103	75			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8763 ft-lbs	35392 ft-lbs	24.8%	1	06-07-06
End Shear	2901 lbs	14464 lbs	20.1%	1	10-09-06
Total Load Deflection	L/934 (0.148")	n/a	25.7%	4	06-02-12
Live Load Deflection	L/999 (0.088")	n/a	n/a	5	06-02-12
Max Defl.	0.148"	n/a	n/a	4	06-02-12
Span / Depth	11.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 3-1/2"	2124 lbs	22.6%	11.4%	Spruce-Pine-Fir
B2	Beam 5-1/4" x 3-1/2"	3305 lbs	33.7%	14.7%	Unspecified



OWG NO. TAM 17930-21
STRUCTURAL
COMPONENT ONLY



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: 5003 COR EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B7(i2458)

Specifier:

Designer:

Company:

Notes

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

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

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

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

Design based on Dry Service Condition.

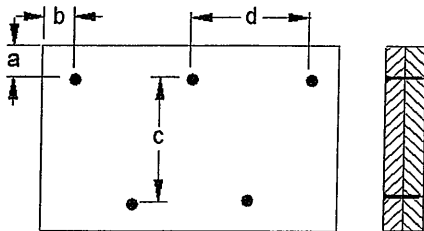
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 03-06-04.

CONFORMS TO CBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

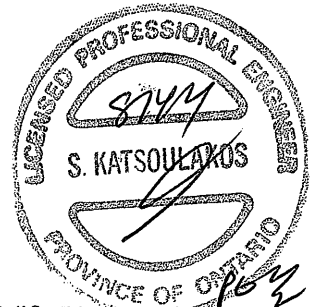
c = 7-7/8"

d = 8"

Calculated Side Load = 744.0 lb/ft

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 17930-21
STRUCTURAL
COMPONENT ONLY

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

1ST FLR FRAMING\Flush Beams\B8(i2430) (Flush Beam)

Dry | 1 span | No cant.

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File name: 5003 COR EL A.mmdl

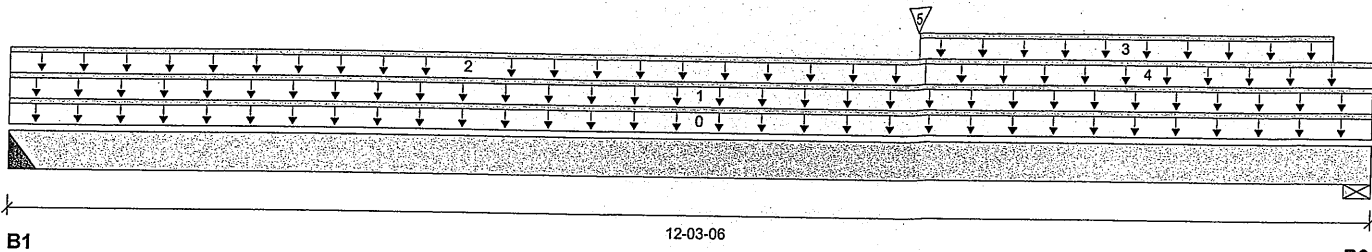
Description: 1ST FLR FRAMING\Flush Beams\B8(i2430)

Specifier:

Designer:

Company:

July 19, 2021 09:19:58



Total Horizontal Product Length = 12-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	370 / 0	260 / 0		
B2, 4-3/8"	630 / 0	392 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-03-06	Top	1.00	0.65	1.00	1.15	
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	12-03-06	Top	21	10			00-00-00 n/a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	08-02-00	Top	27	14			n/a
3	STAIR	Unf. Lin. (lb/ft)	L	08-01-05	11-11-00	Top	120	60			n/a
4	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	08-02-00	12-03-06	Top	6	3			n/a
5	B9(i2072)	Conc. Pt. (lbs)	L	08-01-02	08-01-02	Top	45	27			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3102 ft-lbs	35392 ft-lbs	8.8%	1	07-08-01
End Shear	1086 lbs	14464 lbs	7.5%	1	10-11-02
Total Load Deflection	L/999 (0.056")	n/a	n/a	4	06-04-13
Live Load Deflection	L/999 (0.033")	n/a	n/a	5	06-04-13
Max Defl.	0.056"	n/a	n/a	4	06-04-13
Span / Depth	11.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 3-1/2"	881 lbs	n/a	5.2%	HGUS410
B2	Wall/Plate 4-3/8" x 3-1/2"	1434 lbs	15.2%	7.7%	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. OK



DWG NO. YAM 17931-21
STRUCTURAL
COMPONENT ONLY



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File name: 5003 COR EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B8(i2430)

Specifier:

Designer:

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.

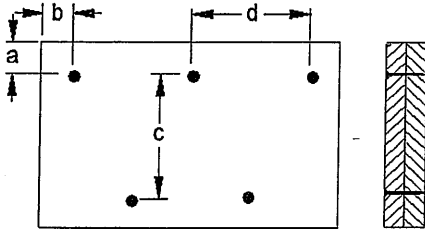
Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 8"

Calculated Side Load = 50.6 lb/ft

Connectors are: 1. Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 17931-21

STRUCTURAL

COMPONENT ONLY

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BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

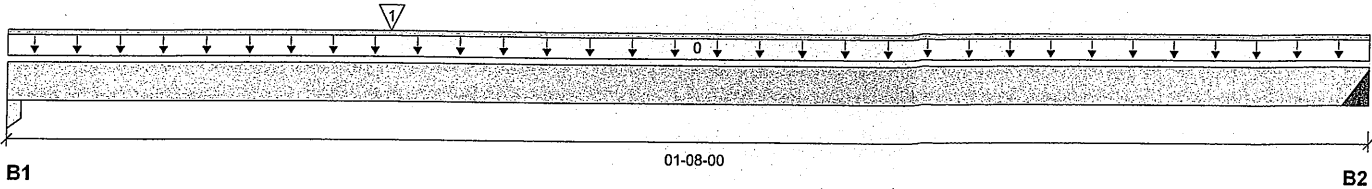
File name: 5003 COR EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B9(i2072)

Specifier:

Designer:

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	121 / 0	65 / 0		
B2, 2"	42 / 0	26 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-08-00	Top	1.00	0.65	1.00	1.15	
1	J7(i2096)	Conc. Pt. (lbs)	L	00-05-09	00-05-09	Top	163	81			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	99 ft-lbs	17696 ft-lbs	0.6%	1	00-05-09
End Shear	87 lbs	7232 lbs	1.2%	1	00-06-02
Total Load Deflection	L/999 (0")	n/a	n/a	4	00-08-15
Max Defl.	0"	n/a	n/a	4	00-08-15
Span / Depth	1.5				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Column	1-3/4" x 1-3/4"	263 lbs	10.6%	7.0%	Unspecified
B2 Hanger	2" x 1-3/4"	95 lbs	n/a	2.2%	HUS1.81/10

Cautions

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

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

Notes

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

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: 01-01-03.


 DWG NO. TAM 17992-21
STRUCTURAL COMPONENT ONLY
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CONFORMS TO CBC 2012

AMENDED 2020



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B23B(i3145) (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.

July 19, 2021 09:52:05

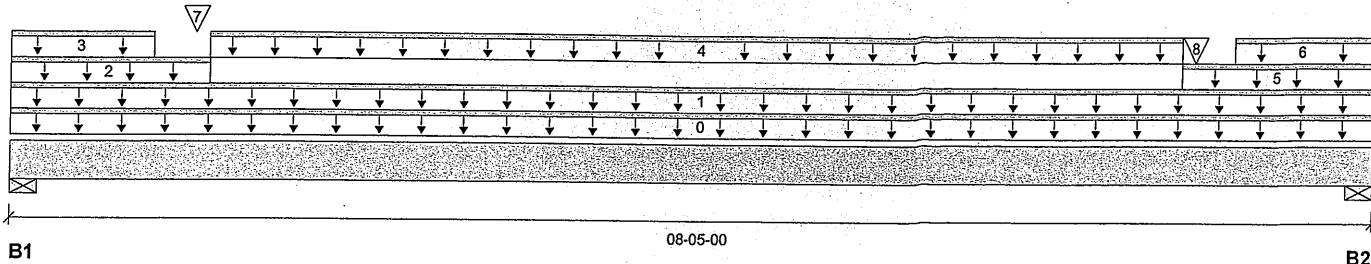
File name: 5003 COR EL B.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B23B(i3145)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 08-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	112 / 0	615 / 0	329 / 0	
B2, 5-1/2"	112 / 0	613 / 0	327 / 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	08-05-00	Top		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	08-05-00	Top	27	13			n/a
2	E28(i3151)	Unf. Lin. (lb/ft)	L	00-00-00	01-02-08	Top		81			n/a
3	E28(i3151)	Unf. Lin. (lb/ft)	L	00-00-00	00-10-08	Top		42	78		n/a
4	E35(i3153)	Unf. Lin. (lb/ft)	L	01-02-08	07-02-08	Top		61			n/a
5	E36(i3154)	Unf. Lin. (lb/ft)	L	07-02-08	08-05-00	Top		81			n/a
6	E36(i3154)	Unf. Lin. (lb/ft)	L	07-06-08	08-05-00	Top		42	78		n/a
7	E28(i3151)	Conc. Pt. (lbs)	L	01-01-08	01-01-08	Top		191	261		n/a
8	E36(i3154)	Conc. Pt. (lbs)	L	07-03-08	07-03-08	Top		189	259		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1088 ft-lbs	23005 ft-lbs	4.7%	0	04-02-08
End Shear	643 lbs	9401 lbs	6.8%	0	01-05-06
Total Load Deflection	L/999 (0.013")	n/a	n/a	35	04-02-08
Live Load Deflection	L/999 (0.005")	n/a	n/a	51	04-02-08
Max Defl.	0.013"	n/a	n/a	35	04-02-08
Span / Depth	7.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	1374 lbs	11.6%	5.9%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	1370 lbs	11.6%	5.8%	Spruce-Pine-Fir



OWG NO. TAM 11933-21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B23B(i3145) (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.

July 19, 2021 09:52:05

File name: 5003 COR EL B.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B23B(i3145)

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.

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

Design based on Dry Service Condition.

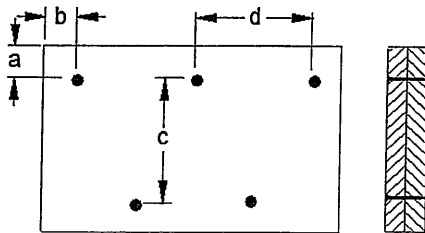
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 08-05-00.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 6"

Connectors are: 1/2" ARDOX SPIRAL

1/2" ARDOX SPIRAL



DWG NO. TAM 17933-21

STRUCTURAL

COMPONENT ONLY

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

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap				Mid-span blocking and 1/2 in. gypsum ceiling			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"
11-7/8"	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"
	NI-40x	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"
	NI-60	22'-1"	20'-7"	19'-8"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"
	NI-80	23'-8"	22'-0"	20'-11"	19'-10"	24'-1"	22'-6"	21'-6"	20'-0"
	NI-90	24'-1"	22'-5"	21'-4"	20'-2"	24'-7"	22'-11"	21'-10"	20'-7"
14"	NI-40x	24'-5"	22'-9"	21'-9"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
	NI-60	24'-10"	23'-2"	22'-1"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
	NI-80	26'-6"	24'-8"	23'-6"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
	NI-90	27'-0"	25'-1"	23'-11"	22'-7"	27'-6"	25'-8"	24'-6"	23'-2"
16"	NI-60	27'-3"	25'-5"	24'-3"	22'-11"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-80	29'-1"	27'-1"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90	29'-7"	27'-6"	26'-2"	24'-9"	30'-2"	28'-2"	26'-10"	25'-5"

Notes:

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

NORDIC STRUCTURES

Maximum Floor Spans – S6.1

Design Criteria

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

Maximum Floor Spans

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

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

Notes:

- 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 – S7.1

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

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

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap				Mid-span blocking and 1/2 in. gypsum ceiling			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-7"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-60	18'-10"	17'-6"	16'-6"	15'-5"	19'-1"	17'-6"	16'-6"	15'-5"
	NI-80	20'-2"	18'-9"	17'-11"	16'-10"	20'-7"	19'-2"	18'-2"	16'-10"
11-7/8"	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"
	NI-40x	21'-9"	20'-3"	19'-4"	17'-8"	22'-4"	20'-5"	19'-4"	17'-8"
	NI-60	22'-0"	20'-6"	19'-7"	18'-4"	22'-7"	20'-10"	19'-8"	18'-4"
	NI-80	23'-6"	21'-10"	20'-10"	19'-9"	24'-0"	22'-5"	21'-4"	20'-0"
	NI-90	24'-0"	22'-4"	21'-3"	20'-1"	24'-6"	22'-10"	21'-9"	20'-7"
14"	NI-40x	24'-4"	22'-8"	21'-8"	19'-5"	25'-0"	23'-2"	21'-9"	19'-5"
	NI-60	24'-9"	23'-0"	22'-0"	20'-9"	25'-5"	23'-8"	22'-4"	20'-10"
	NI-80	26'-5"	24'-6"	23'-4"	22'-1"	27'-0"	25'-2"	24'-0"	22'-8"
	NI-90	26'-11"	25'-0"	23'-10"	22'-6"	27'-5"	25'-7"	24'-5"	23'-1"
16"	NI-60	27'-2"	25'-4"	24'-2"	22'-10"	27'-11"	26'-1"	24'-9"	23'-1"
	NI-80	29'-0"	26'-11"	25'-8"	24'-3"	29'-7"	27'-7"	26'-4"	24'-11"
	NI-90	29'-6"	27'-5"	26'-1"	24'-8"	30'-1"	28'-1"	26'-9"	25'-4"

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

NORDIC STRUCTURES

Maximum Floor Spans – 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				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'-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				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'-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.

NORDIC STRUCTURES

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 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"	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 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"	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:

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

NORDIC STRUCTURES

Maximum Floor Spans – M6.1

Design Criteria

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

Maximum Floor Spans

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

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

Notes:

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

NORDIC

STRUCTURES

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

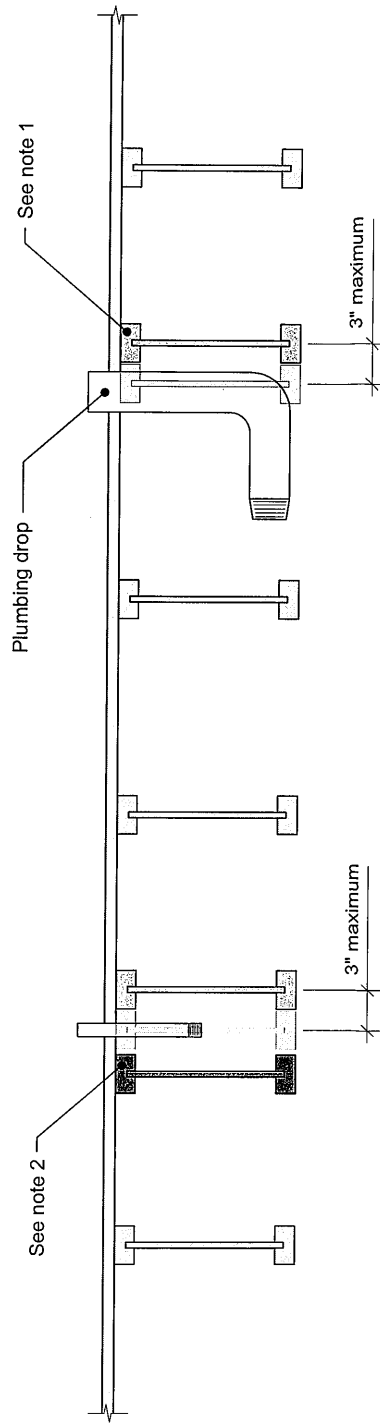
Maximum Floor Spans

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:


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.



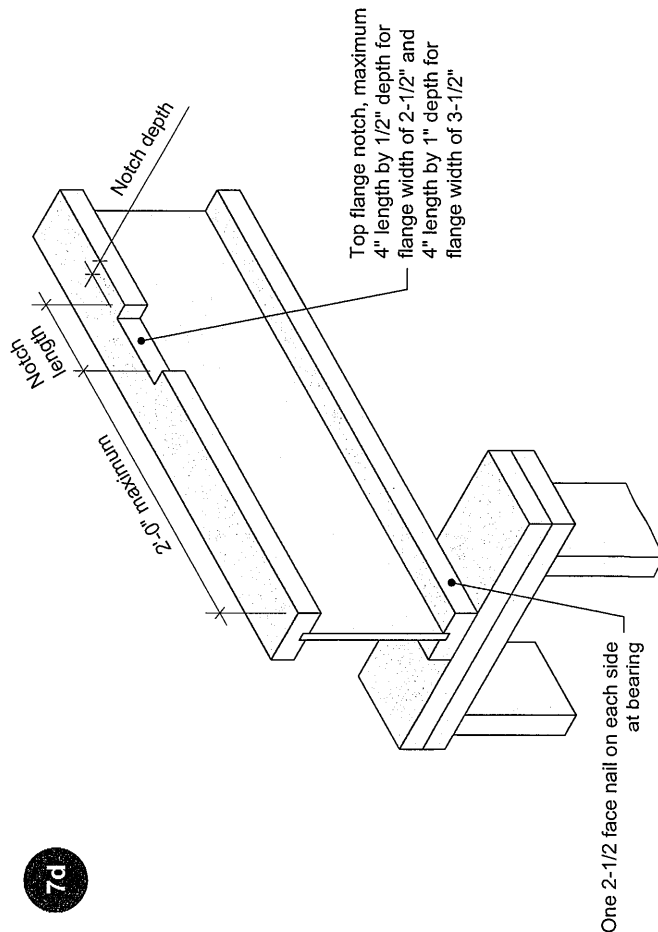
Notes:

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 	<div>DETAILS</div> <div>NORDIC JOIST</div>	TITLE		DRAWING	
			Allowance for Piping		7c	
			CATEGORY	SCALE	DATE	PAGE
			Openings for Vertical Elements			-

7d



Maximum 1/2" depth for flange width of 2-1/2" and 1" depth for flange width of 3-1/2"

Heat register

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.

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NS-DC3 **I+I**
DETAILS
NORDIC JOIST

TITLE
Notch in I-joist for Heat Register

CATEGORY
Openings for Vertical Elements

DRAWING
7d

SCALE
-
DATE
2020-10-01
PAGE
3.11