

Products					
PlotID	Length	Product	Plies	Net Qty	
J1	18-00-00	11 7/8" NI-40x	1	12	
J1DJ	18-00-00	11 7/8" NI-40x	2	4	
J2	16-00-00	11 7/8" NI-40x	1	24	
J3	14-00-00	11 7/8" NI-40x	1	9	
J3DJ	14-00-00	11 7/8" NI-40x	2	4	
J4	12-00-00	11 7/8" NI-40x	1	8	
J4DJ	12-00-00	11 7/8" NI-40x	2	4	
J5	8-00-00	11 7/8" NI-40x	1	3	
J6	6-00-00	11 7/8" NI-40x	1	3	
J7	4-00-00	11 7/8" NI-40x	1	4	
J8	2-00-00	11 7/8" NI-40x	1	4	
B3 ✓	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3	
B9 ✓	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	
B7 ✓	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	
B18 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	
B19 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	
B4 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	
B5 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	
B6 ✓	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	

Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
11	H1	IUS2.56/11.88
10	H1	IUS2.56/11.88
1	H2	HUS1.81/10
1	H2	HUS1.81/10
1	H2	HUS1.81/10
1	H4	HGUS410

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

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

SUBFLOOR: 3/4" GLUED AND NAILED

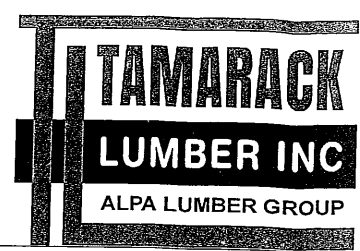
DATE 9-02-24
BCIN: 26064; FIRM: 29991
ENGINEERING ONLY - DIMENSIONS TO BE VERIFIED ON SITE SUPPORTING STRUCTURE TO BE VERIFIED BY QUALIFIED BUILDING DESIGNER. ALL CONVENTIONAL FRAMING TO BE SPECIFIED, REVIEWED, AND CONFIRMED BY BUILDING DESIGNER PRIOR TO JOIST(S) AND FLOOR BEAM(S) INSTALLATION. ALL NOTES DESIGNATING MORE OR LESS (AS 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 1969321 THROUGH DWG# TAM 1969221, INCLUSIVE DATED 9-02-24
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 THE FIRM IS REGISTERED, IN APPROPRIATE CLASSES AND/OR CATEGORIES.

REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

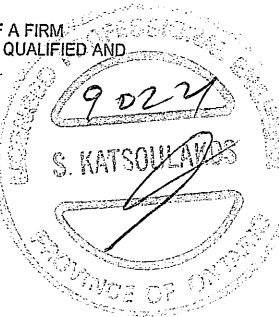
DWG # TAM 1969321
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY

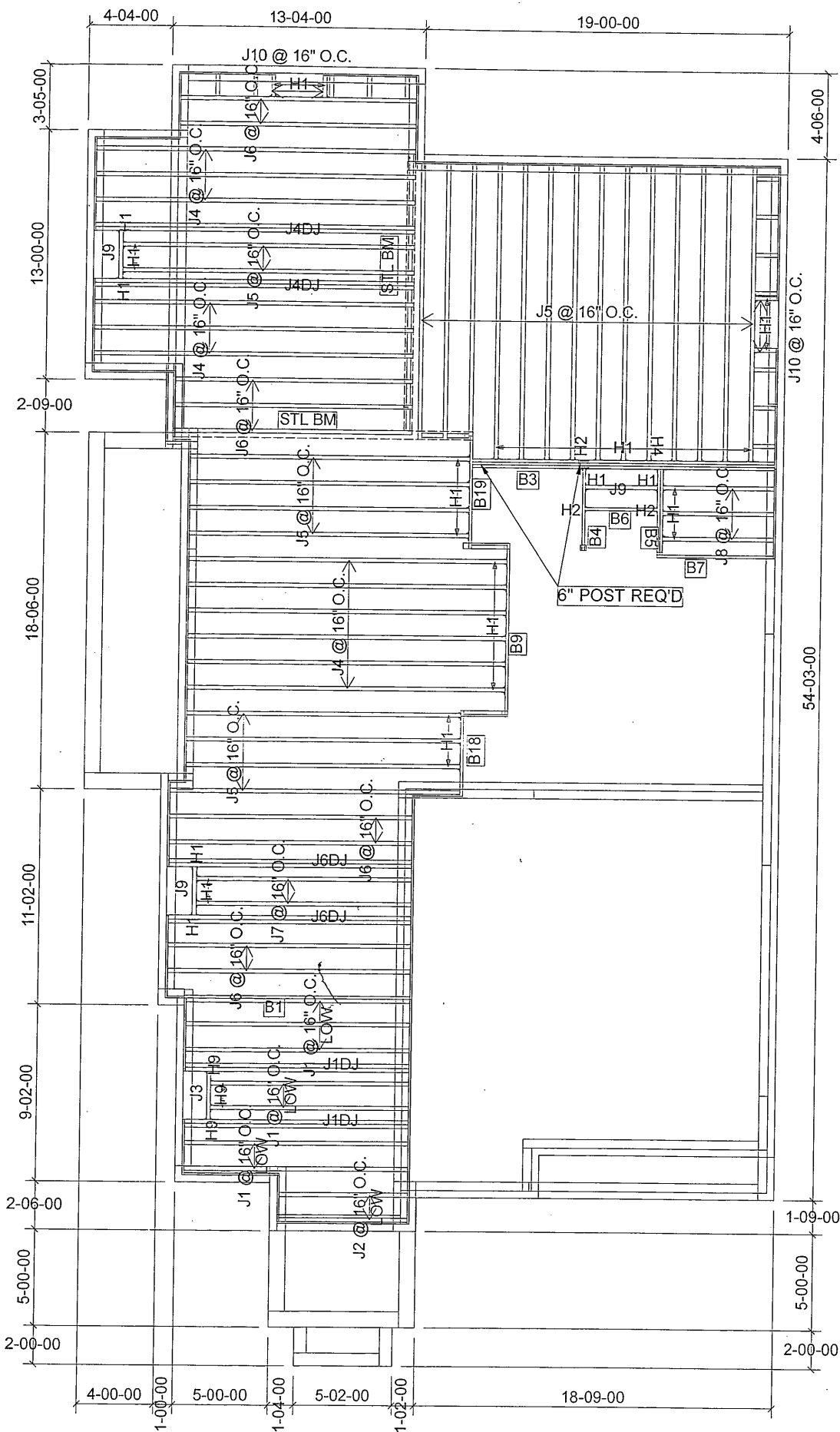


FROM PLAN DATED: 2021/04
BUILDER: ROYAL PINE HOMES
SITE: VALES OF HUMBER NORTH
MODEL: 40-4
ELEVATION: A,B
LOT:
CITY: BRAMPTON
SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

DATE: 2021-08-20

1st FLOOR





Products					
PlotID	Length	Product	Plies	Net Qty	
J1	12-00-00	9 1/2" NI-40x	1	7	
J1DJ	12-00-00	9 1/2" NI-40x	2	4	
J2	8-00-00	9 1/2" NI-40x	1	2	
J3	4-00-00	9 1/2" NI-40x	1	1	
J4	18-00-00	11 7/8" NI-40x	1	12	
J4DJ	18-00-00	11 7/8" NI-40x	2	4	
J5	16-00-00	11 7/8" NI-40x	1	24	
J6	14-00-00	11 7/8" NI-40x	1	9	
J6DJ	14-00-00	11 7/8" NI-40x	2	4	
J7	12-00-00	11 7/8" NI-40x	1	2	
J8	6-00-00	11 7/8" NI-40x	1	3	
J9	4-00-00	11 7/8" NI-40x	1	3	
J10	2-00-00	11 7/8" NI-40x	1	4	
B3 ✓	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3	
B1 ✓	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	
B9 ✓	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	
B7 ✓	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	
B18 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	
B19 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	
B4 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	
B5 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	
B6 ✓	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	

Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
11	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
1	H2	HUS1.81/10
1	H2	HUS1.81/10
1	H2	HUS1.81/10
1	H4	HGUS410
2	H9	IUS2.56/9.5
2	H9	IUS2.56/9.5

NOTES:

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

LOADING:

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

SUBFLOOR: 3/4" GLUED AND NAILED

DATE 9/02/24
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 DASH 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.

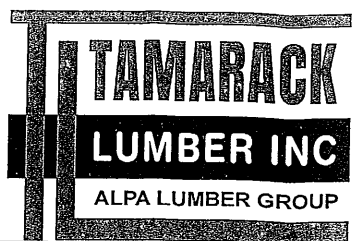
DWG# TAM 196794 THROUGH DWG# TAM 196794, INCLUSIVE DATED 9/02/24

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 THE FIRM IS REGISTERED, IN APPROPRIATE CLASSES AND/OR CATEGORIES.

REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 196794
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL
COMPONENTS ONLY



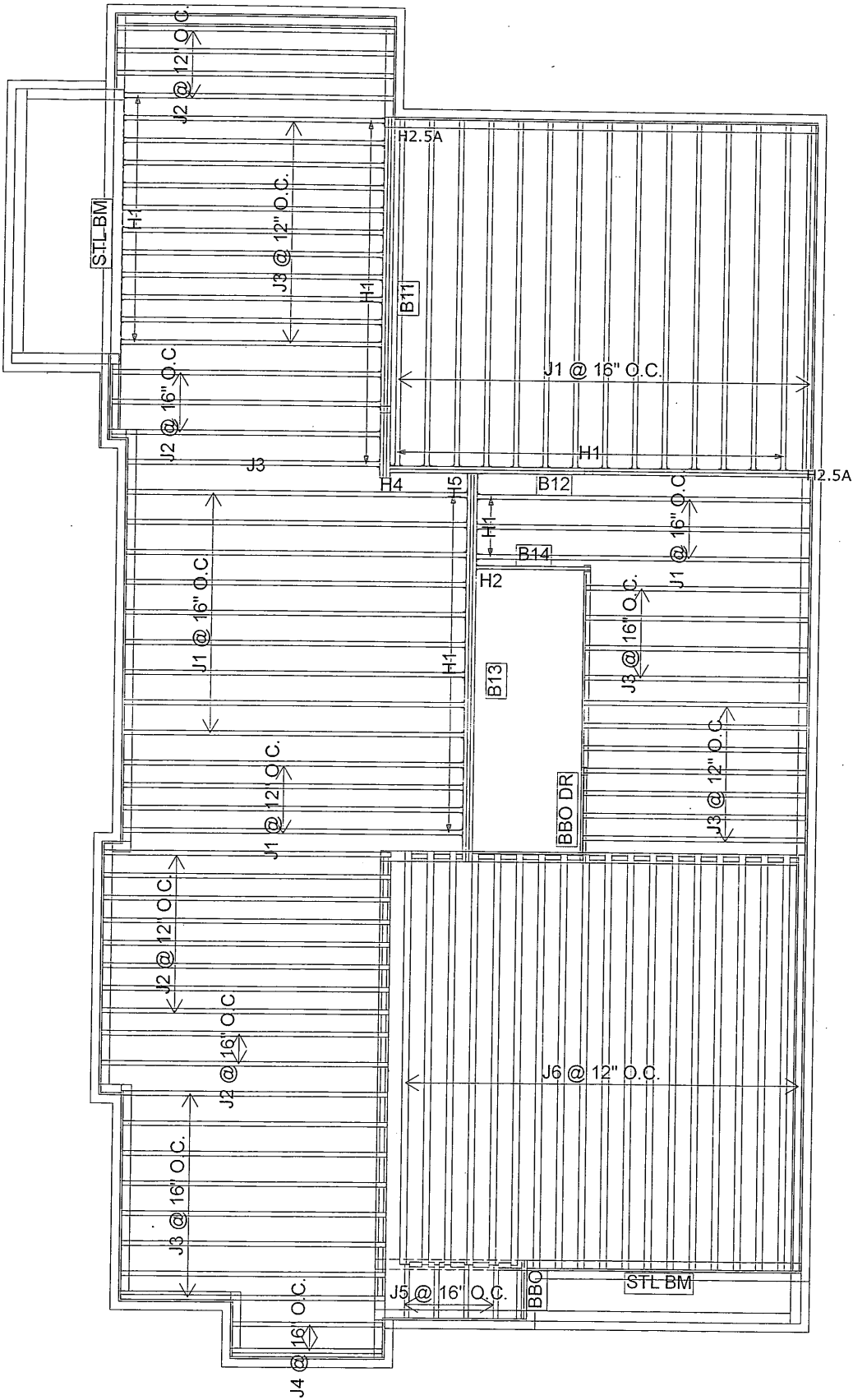
FROM PLAN DATED:
2021/04

BUILDER:
ROYAL PINE HOMES
SITE:
VALES OF HUMBER NORTH
MODEL: 40-4
ELEVATION: A,B
LOT:
CITY: BRAMPTON
SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

DATE: 2021-08-20

1st FLOOR

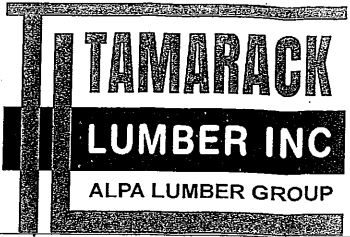
SUNKEN



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-40x	1	31
J2	14-00-00	11 7/8" NI-40x	1	17
J3	12-00-00	11 7/8" NI-40x	1	31
J4	8-00-00	11 7/8" NI-40x	1	2
J5	4-00-00	11 7/8" NI-40x	1	4
J6	20-00-00	11 7/8" NI-80	1	19
B12 ✓	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B11 ✓	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B13 ✓	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B14 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/11.88
31	H1	IUS2.56/11.88
12	H1	IUS2.56/11.88
1	H2	HUS1.81/10
1	H4	HGUS410
1	H5	HGUS5.5/11.88

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.



FROM PLAN DATED:
2021/04
BUILDER:
ROYAL PINE HOMES
SITE:
VALES OF HUMBER NORTH
MODEL: 40-4
ELEVATION: A
LOT:
CITY: BRAMPTON
SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

DATE: 2021-08-20
2nd FLOOR

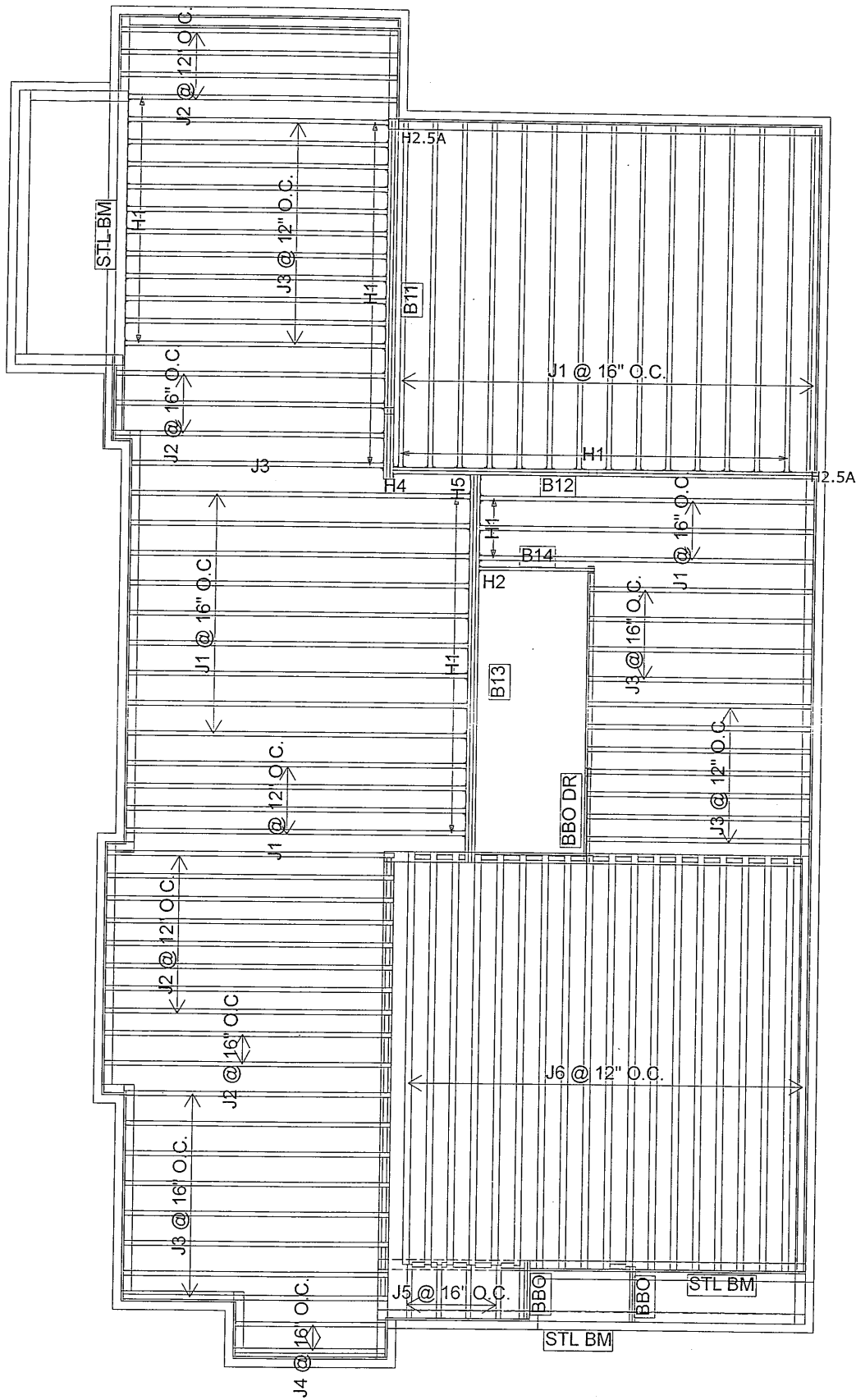
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 20.0 lb/ft²
SNOW LOAD: 24.0 lb/ft²
SUBFLOOR: 5/8" GLUED AND NAILED

DATE 9-02-24
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, LENGTHS, AND DETAILS, REMAINS THE RESPONSIBILITY OF THE FLOOR SYSTEM INSTALLATION CONTRACTOR.

DWG# TAM 19698-21 THROUGH DWG# TAM 19692-21, INCLUSIVE DATED 9-02-24
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 19698-21
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY





Products					
PlotID	Length	Product	Plies	Net Qty	
J1	16-00-00	11 7/8" NI-40x	1	31	
J2	14-00-00	11 7/8" NI-40x	1	17	
J3	12-00-00	11 7/8" NI-40x	1	31	
J4	8-00-00	11 7/8" NI-40x	1	2	
J5	4-00-00	11 7/8" NI-40x	1	4	
J6	20-00-00	11 7/8" NI-80	1	19	
B12 ✓	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	
B11 ✓	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3	
B13 ✓	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3	
B14 ✓	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	

Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/11.88
31	H1	IUS2.56/11.88
12	H1	IUS2.56/11.88
1	H2	HUS1.81/10
1	H4	HGUS410
1	H5	HGUS5.5/11.88

NOTES:

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

LOADING:

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE 9024
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 (AS 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.

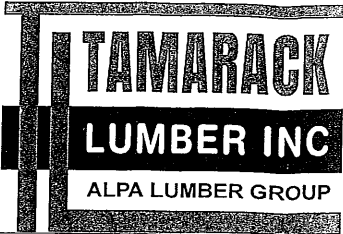
DWG# TAM 196924 THROUGH DWG# TAM 196924 INCLUSIVE DATED 9024

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 THE FIRM IS REGISTERED, IN APPROPRIATE CLASSES AND/OR CATEGORIES.

REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 19696-21
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY



FROM PLAN DATED:
2021/04

BUILDER:
ROYAL PINE HOMES
SITE:
VALES OF HUMBER NORTH
MODEL: 40-4

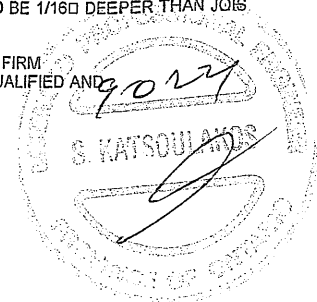
ELEVATION: B

LOT:
CITY: BRAMPTON

SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

DATE: 2021-08-20

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

INSTALLING NORDIC I-JOISTS

1. Installation of Nordic I-joists shall be as shown in details 1.
2. Except for cutting to length, I-joist flanges should never be cut, drilled or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. Concentrated loads should only be applied to the top surface of the top flange. Concentrated loads should not be suspended from the bottom flange with the exception of light loads, such as ceiling fans or light fixtures.
5. I-joists must be protected from the weather prior to installation.
6. I-joists must not be used in applications where they will be permanently exposed to weather, or will reach a moisture content of 15 percent or greater, such as in swimming pool or hot tub areas. They must not be installed where they will remain in direct contact with concrete or masonry.
7. End bearing length must be at least 1-3/4 inch. For multiple-span joists, intermediate bearing length must be at least 3-1/2 inches.
8. Ends of floor joists shall be restrained to prevent rollover. Use rim board or I-joist blocking panels.
9. I-joists installed beneath bearing walls perpendicular to the joists shall have full-depth blocking panels, rim board, or squash blocks (cripple blocks) to transfer gravity loads from above the floor system to the wall or foundation below.
10. For I-joists installed directly beneath bearing walls parallel to the joists or used as rim board or blocking panels, the maximum vertical load using a single I-joist is 3,300 pft, and 6,600 pft if double I-joists are used.
11. Continuous lateral support of the I-joist's compression flange is required to prevent rotation and buckling. In simple span uses, lateral support of the top flange is normally supplied by the floor sheathing. In multiple-span or cantilever applications, bracing of the I-joist's bottom flange is also required at interior supports of multiple-span joists, and at the end support next to the cantilever extension. The ends of all cantilever extensions must be laterally braced as shown in details 3, 4, or 5.
12. Nails installed in flange face or edge shall be spaced in accordance with the applicable building code requirements or approved building plans, but should not be closer than those specified on page 3.3 of the Nordic Joist Technical Guide (NS-GT3).
13. Details 1 show only I-joist-specific fastener requirements. For other fastener requirements, see the applicable building code.
14. For proper temporary bracing of wood I-joists and placement of temporary construction loads, see **APA Technical Note: Temporary Construction Loads over I-Joist Roofs and Floors, Form J735**.

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

SAFETY AND CONSTRUCTION PRECAUTIONS

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

Avoid Accidents by Following these Important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-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.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2-inch nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lay ends of adjoining bracing over at least two I-joists.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
5. Never install a damaged I-joist.

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



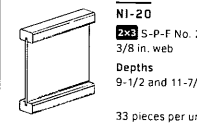
Do not walk on I-joists until fully fastened and braced, or serious injuries can result.



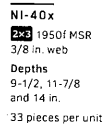
Never stack building materials over unshathed I-joists. Once sheathed, do not overstress I-joist with concentrated loads from building materials.

NORDIC I-JOIST SERIES

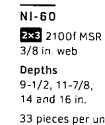
RESIDENTIAL SERIES



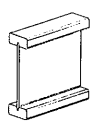
NI-20
2x3 S-P-F No. 2
3/8 in. web
Depths
9-1/2 and 11-7/8 in.
33 pieces per unit



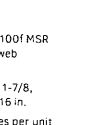
NI-40x
2x3 1950F MSR
3/8 in. web
Depths
9-1/2, 11-7/8 and 14 in.
33 pieces per unit



NI-60
2x3 2100F MSR
3/8 in. web
Depths
9-1/2, 11-7/8, 14 and 16 in.
33 pieces per unit



NI-80
2x4 2100F MSR
3/8 in. web
Depths
9-1/2, 11-7/8, 14 and 16 in.
23 pieces per unit

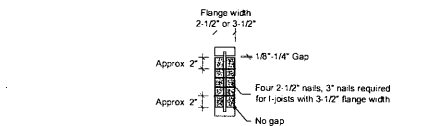
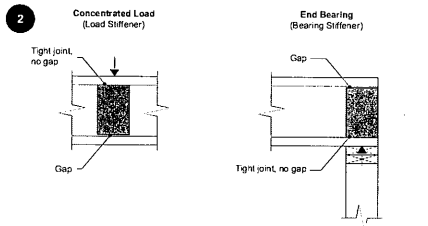


NI-90
2x4 2400F MSR
7/16 in. web
Depths
11-7/8, 14 and 16 in.
23 pieces per unit

RIM BOARDS

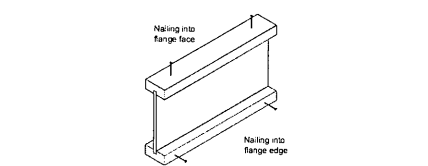
Width Length
1-1/8 in. 16 ft
Depths
9-1/2 to 16 in.
APA Rim Board Plus

WEB STIFFENERS



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

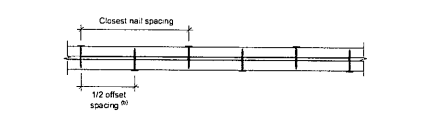
NAIL SPACING



Nailed to Only One Flange Edge (Top View)



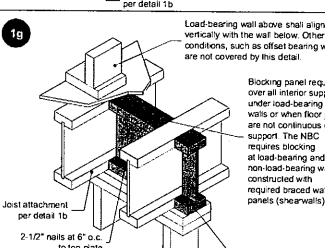
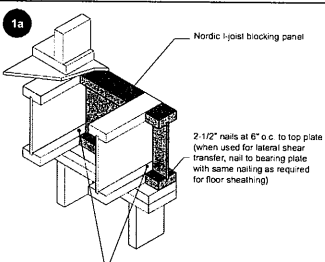
Nailed to Both Flange Edges (Top View)



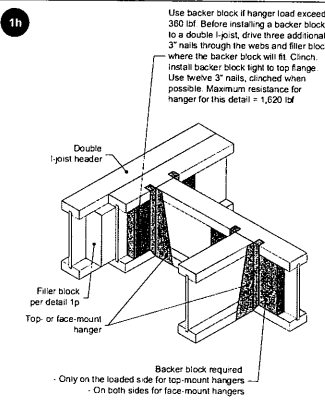
Recommended Closest Nail Spacing for Fastening Sheathing to I-Joist Flanges to Minimize Splitting

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

1. If more than one row is required, offset rows a minimum of 1/2 inch and stagger.
2. Closest nail spacing measured from one flange edge. Nails on opposite flange edge must be offset one-half the minimum spacing.



1. An occasional blocking panel (one per line of blocking) may be left out for the passage of plumbing or ventilation ducts. For other applications, contact Nordic Structures.
2. For other options, see details 1g to 1j.

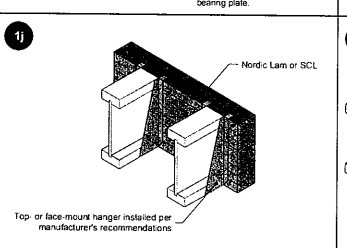
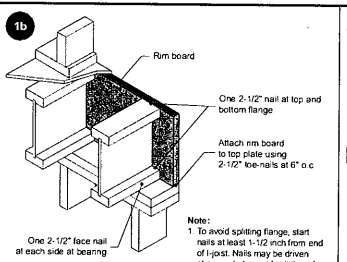


Notes:

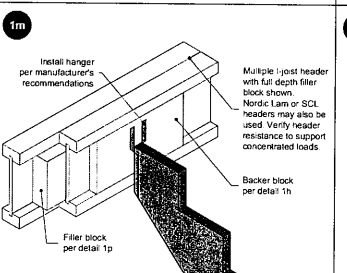
1. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.
2. For railing schedules for multiple Nordic Lam or SCL beams, see the manufacturer's recommendations.

Flange width (in.)	Material thickness required (in.) ⁽¹⁾	Minimum depth (in.) ⁽²⁾
2-1/2	1	5-1/2
3-1/2	1	7-1/4

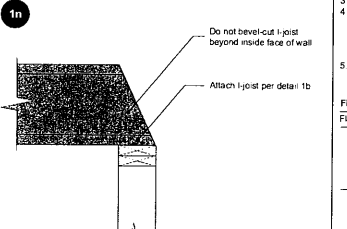
1. Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 Standard.
2. For face-mount hangers use net joist depth minus 3-1/4 inches for joists with 1-1/2 inch thick flanges.



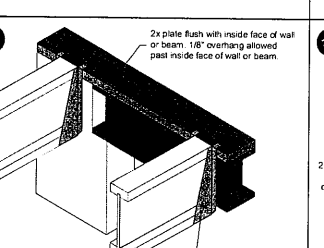
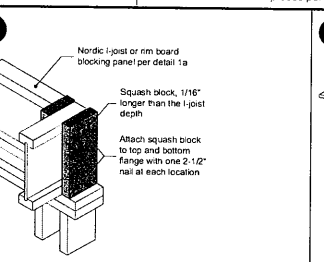
1. This detail may be used to reduce floor vibration.
2. Blocking panels may be used of any I-joist series. Nails attaching lumber piece to I-joist web should be driven from the web side and clinched on the lumber side.
3. One occasional blocking panel may be left out for the passage of plumbing or ventilation ducts. Otherwise, a hole of not more than 2/3 of the lesser dimension of the blocking depth or length may be drilled in the blocking panel.



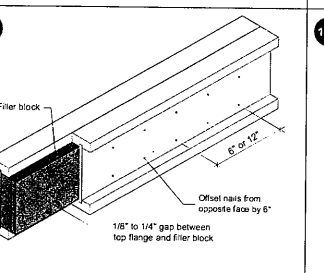
1. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.
2. For railing schedules for multiple Nordic Lam or SCL beams, see the manufacturer's recommendations.



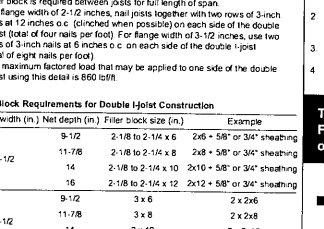
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2. For railing schedules for multiple Nordic Lam or SCL beams, see the manufacturer's recommendations.



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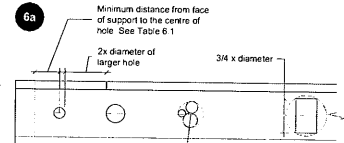
1. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.
2. For railing schedules for multiple Nordic Lam or SCL beams, see the manufacturer's recommendations.

WEB HOLES AND OPENINGS

WEB HOLES IN I-JOISTS

Rules for Cutting Holes in I-Joists

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



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

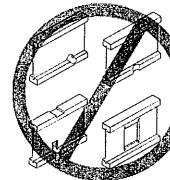


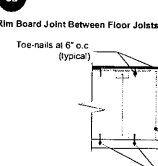
TABLE 6.1 - LOCATION OF WEB HOLES

Simple or multiple span		Minimum distance from inside face of any support to centre of hole (in.)													
Joist depth	Joist series	2	3	4	5	6	6-1/4	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"	-	-	-	-	-	-	-	-
11-7/8"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	-	-	-	-	-
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	-	-	-	-	-
	NI-60	0-7"	1-8"	3-0"	4-3"	5-8"	6-0"	7-3"	8-10"	10-0"	-	-	-	-	-
14"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	-	-	-	-	-
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	-	-	-	-	-
	NI-60	0-7"	1-8"	3-0"	4-3"	5-8"	6-0"	7-3"	8-10"	10-0"	-	-	-	-	-
16"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	-	-	-	-	-
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	-	-	-	-	-
	NI-60	0-7"	1-8"	3-0"	4-3"	5-8"	6-0"	7-3"	8-10"	10-0"	-	-	-	-	-

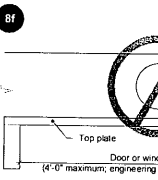
- Notes:
1. Tabulated values are applicable to residential floor construction meeting the above design criteria.
 2. The above table is based on the I-joist being used at its maximum spans. The minimum distance as given above may be reduced for shorter spans; consult your local distributor.

RIM BOARDS

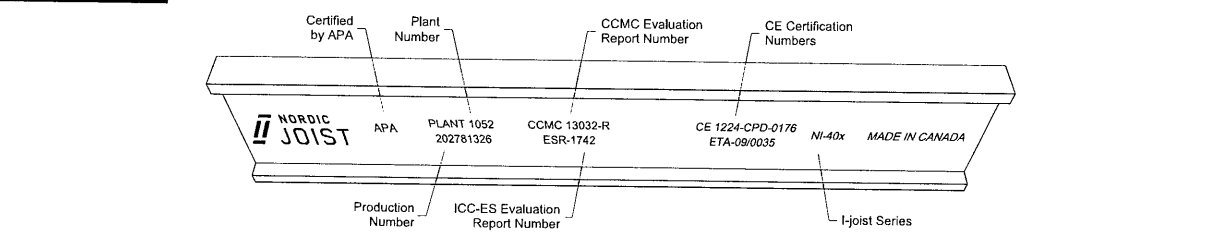
Rim Board Joint Between Floor Joists



Rim Board Joint at Corner

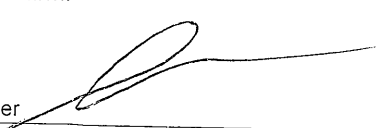


I-JOIST MARKING



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: 40-4-ELEV.A OR B-1ST FLOOR-NOT LOT SPECIFIC REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK LUMBER INC. (SEE DWG #TAM19693-21 DATED 9-02-21). 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: 26064					
Firm BCIN: 29991					
<input type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code.					
Individual BCIN: _____					
Basis for exemption from registration: _____					
<input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code.					
Basis for exemption from registration and qualification: _____					
I certify that:					
1. The information contained in this schedule is true to the best of my knowledge.					
2. I have submitted this application with the knowledge and consent of the firm.					
Date		Signature of Designer 			

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 #TAM19693-21S
DWG #TAM19697-21S

9-2-21

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; 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: 40-4-ELEV.A OR B-1ST FLOOR-SUNKEN-NOT LOT SPECIFIC REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK LUMBER INC. (SEE DWG #TAM19694-21 DATED 9-02-21). SUPPORTING STRUCTURE (S) TO BE REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.				
D. Declaration of Designer				
I, <u>SAM KATSOULAKOS</u> declare that (choose one as appropriate): (print name)				
<input checked="" type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.				
Individual BCIN: <u>26064</u>				
Firm BCIN: <u>29991</u>				
<input type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code.				
Individual BCIN: _____				
Basis for exemption from registration: _____				
<input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code.				
Basis for exemption from registration and qualification: _____				
I certify that:				
1. The information contained in this schedule is true to the best of my knowledge.				
2. I have submitted this application with the knowledge and consent of the firm.				
Date		Signature of Designer		

NOTE:

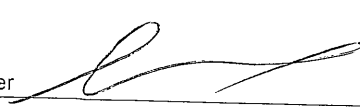
- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
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DWG #TAM19694-21S
DWG #TAM19698-21S

922

Schedule 1: Designer Information

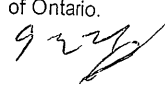
Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

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: 40-4-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 #TAM19695-21 DATED 9-02-21). SUPPORTING STRUCTURE (S) TO BE REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.				
D. Declaration of Designer				
I, <u>SAM KATSOULAKOS</u> declare that (choose one as appropriate): (print name)				
<input checked="" type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.				
Individual BCIN: <u>26064</u>				
Firm BCIN: <u>29991</u>				
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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 #TAM19695-21S
DWG #TAM19699-21S



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; justify-content: space-between;"> <div> <input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings </div> <div> <input type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection </div> <div> <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: 40-4-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 #TAM19696-21 DATED 9-02-21). 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> <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> <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> <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		9-22-21 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 #TAM19696-21S
DWG #TAM19700-21S

9-22-21

NORDIC STRUCTURES

COMPANY
July 13, 2021 11:33

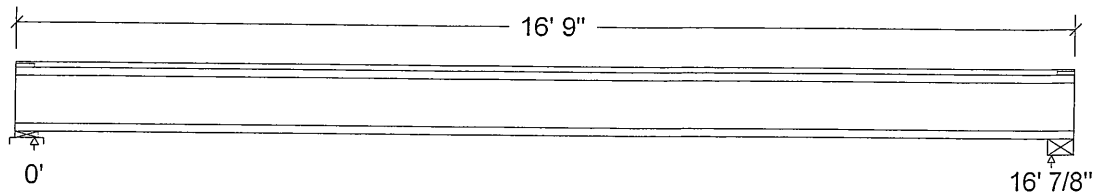
PROJECT
J4 1ST FLOOR.wwb

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):

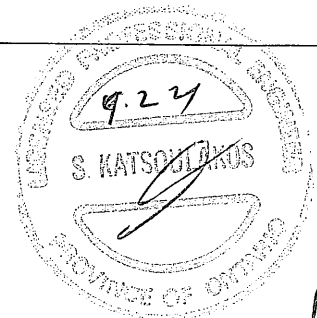


Unfactored:			
Dead	214		214
Live	429		429
Factored:			
Total	911		911
Bearing:			
Capacity			
Joist	2336		2336
Support	7744		-
Des ratio			
Joist	0.39		0.39
Support	0.12		-
Load case	#2		#2
Length	4-3/8		5-1/4
Min req'd	1-1/2		1-1/2
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcp sup	769		-
Kzcp sup	1.15		-

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

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

Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Steel Beam, W;
Total length: 16' 9"; Clear span: 15' 11-3/8"; 3/4" nailed and glued OSB sheathing
This section PASSES the design code check.



DWG NO. TAM19677-21
STRUCTURAL
COMPONENT ONLY

pg 12

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 911	Vr = 2336	lbs	Vf/Vr = 0.39
Moment(+)	Mf = 3659	Mr = 6255	lbs-ft	Mf/Mr = 0.59
Perm. Defl'n	0.10 = < L/999	0.54 = L/360	in	0.19
Live Defl'n	0.20 = L/959	0.40 = L/480	in	0.50
Total Defl'n	0.30 = L/639	0.80 = L/240	in	0.38
Bare Defl'n	0.25 = L/774	0.54 = L/360	in	0.46
Vibration	Lmax = 16'-0.9	Lv = 18'-1.3	ft	0.89
Defl'n	= 0.027	= 0.040	in	0.69

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

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

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

Load Types: D=dead L=live(use, occupancy)

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

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

CALCULATIONS:

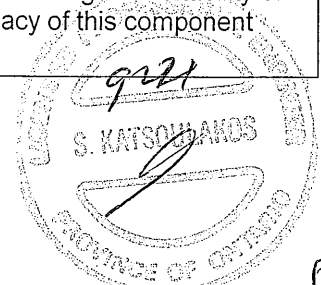
EI_{eff} = 459.76 lb-in² K = 6.18e06 lbs GA = 0.77e06 lb

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

Design Notes:

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.

AMENDED 2020



OWG NO. 7AM 19677-21
 STRUCTURAL
 COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
July 13, 2021 11:31

PROJECT
J6 2ND FLOOR.wwb

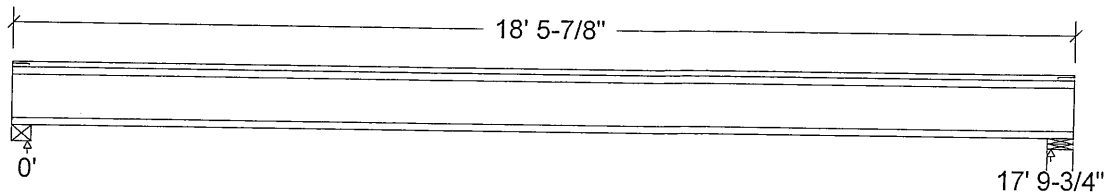
Design Check Calculation Sheet

Nordic Sizer – Canada 8.0

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			20.00	psf
Load2	Live	Full Area			40.00	psf

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



Unfactored:			
Dead	178		178
Live	356		356
Factored:			
Total	757		757
Bearing:			
Capacity			
Joist	2336		2336
Support	-		13614
Des ratio			
Joist	0.32		0.32
Support	-		0.06
Load case	#2		#2
Length	4-1/8		5-1/2
Min req'd	1-1/2		1-1/2
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	-		-
Kzcp sup	-		769

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

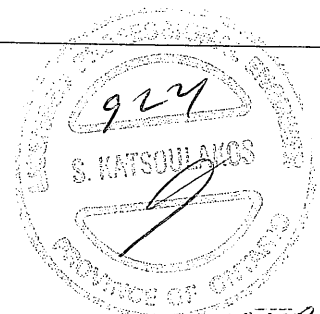
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

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

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

Total length: 18' 5-7/8"; Clear span: 17' 8-1/4"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.



OWNED, JAN 1968, 21
STRUCTURAL
COMPONENT ONLY

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 757$	$V_r = 2336$	lbs	$V_f/V_r = 0.32$
Moment(+)	$M_f = 3371$	$M_r = 11609$	lbs-ft	$M_f/M_r = 0.29$
Perm. Defl'n	$0.09 = < L/999$	$0.59 = L/360$	in	0.15
Live Defl'n	$0.17 = < L/999$	$0.45 = L/480$	in	0.39
Total Defl'n	$0.26 = L/826$	$0.89 = L/240$	in	0.29
Bare Defl'n	$0.19 = < L/999$	$0.59 = L/360$	in	0.33
Vibration	$L_{max} = 17'-9.7$	$L_v = 19'-11$	ft	0.89
Defl'n	$= 0.026$	$= 0.035$	in	0.75

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

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

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

Load Types: D=dead L=live(use, occupancy)

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

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

CALCULATIONS:

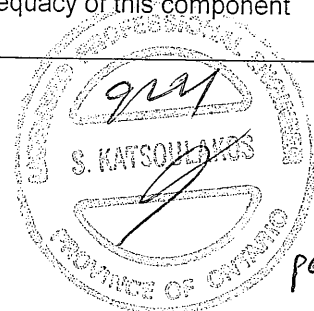
$EI_{eff} = 613.27 \text{ lb-in}^2$ $K = 6.18e06 \text{ lbs}$ $GA = 0.77e06 \text{ lb}$

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

Design Notes:

AMENDED 2020

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 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.



UWA NO. 74W 1967B-21
 STRUCTURAL
 COMPONENT ONLY



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

1ST FLR FRAMING\Flush Beams\B1(i1614) (Flush 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: 40-4 EL A SUNKEN.mmdl

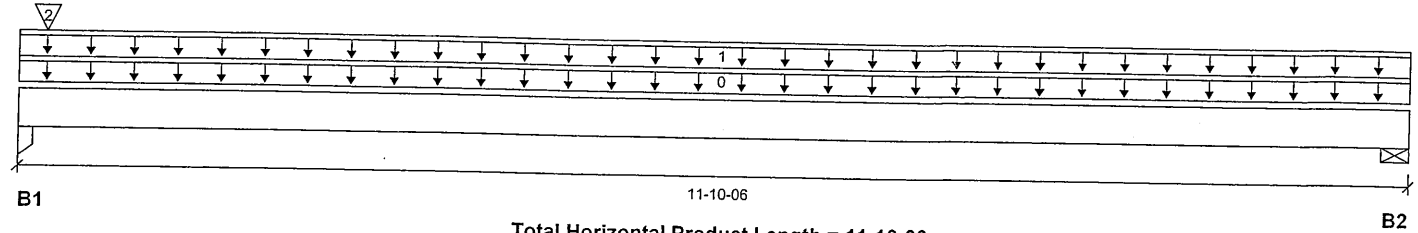
Description: 1ST FLR FRAMING\Flush Beams\B1(i1614)

Specifier:

Designer: AJ

Company:

July 13, 2021 11:29:22



Total Horizontal Product Length = 11-10-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	337 / 0	241 / 0		
B2, 4-3/8"	167 / 0	119 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-10-06	Top	1.00	0.65	1.00	1.15	
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	11-10-06	Top	28	14			00-00-00 n/a
2	E4(i312)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	168	121			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1060 ft-lbs	17696 ft-lbs	6.0%	1	05-11-10
End Shear	308 lbs	7232 lbs	4.3%	1	01-05-02
Total Load Deflection	L/999 (0.035")	n/a	n/a	4	05-11-10
Live Load Deflection	L/999 (0.02")	n/a	n/a	5	05-11-10
Max Defl.	0.035"	n/a	n/a	4	05-11-10
Span / Depth	11.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 5-1/4" x 1-3/4"	808 lbs	10.8%	7.2%	Unspecified
B2	Wall/Plate 4-3/8" x 1-3/4"	399 lbs	8.5%	4.3%	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.

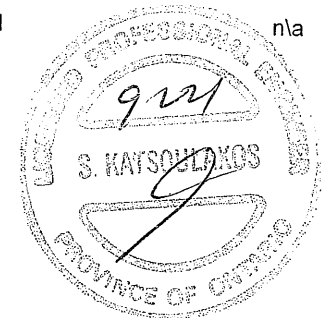
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020


 05-11-10, TAM 19679-21
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®,



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

PASSED

1ST FLR FRAMING\Flush Beams\B3(i1728) (Flush Beam)

Dry | 2 spans | No cant.

July 13, 2021 11:29:22

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

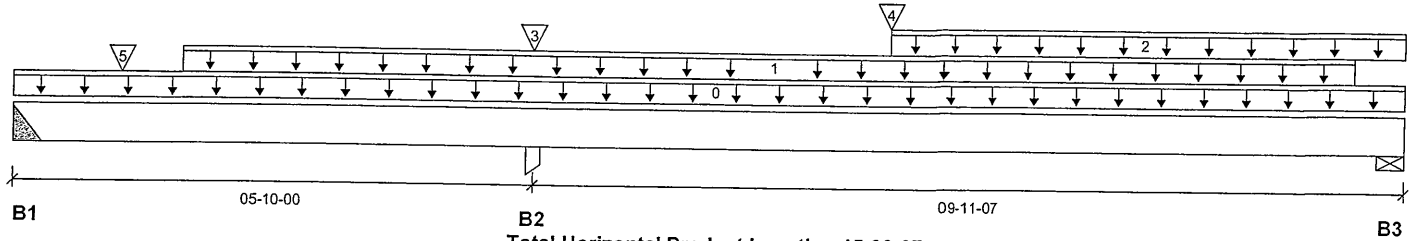
File name: 40-4 EL A SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B3(i1728)

Specifier:

Designer: AJ

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	766 / 515	125 / 0		
B2, 5-1/4"	9660 / 0	5532 / 0		
B3, 4-3/8"	1409 / 48	792 / 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	15-09-07	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-09	15-02-09	Top	314	156			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	09-10-00	15-09-07	Top	24	12			n/a
3	-	Conc. Pt. (lbs)	L	05-10-00	05-10-00	Top	5937	3426			n/a
4	B5(i1686)	Conc. Pt. (lbs)	L	09-10-00	09-10-00	Top	311	281			n/a
5	J5(i1690)	Conc. Pt. (lbs)	L	01-02-09	01-02-09	Top	394	197			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6915 ft-lbs	55211 ft-lbs	12.5%	3	10-06-09
Neg. Moment	-7445 ft-lbs	-55211 ft-lbs	13.5%	1	05-10-00
End Shear	2883 lbs	21696 lbs	13.3%	3	14-05-03
Cont. Shear	4234 lbs	21696 lbs	19.5%	1	07-00-08
Total Load Deflection	L/999 (0.05")	n/a	n/a	10	11-00-09
Live Load Deflection	L/999 (0.032")	n/a	n/a	13	11-00-09
Total Neg. Defl.	L/999 (-0.009")	n/a	n/a	10	03-07-09
Max Defl.	0.05"	n/a	n/a	10	11-00-09
Span / Depth	9.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	4" x 5-1/4"	1305 lbs	n/a	5.1%	HGUS5.5/11.88
B1 Uplift		660 lbs			
B2 Column	5-1/4" x 5-1/4"	21405 lbs	95.6%	63.7%	Unspecified
B3 Wall/Plate	4-3/8" x 5-1/4"	3103 lbs	22.0%	11.1%	Spruce-Pine-Fir

Cautions

Uplift of 660 lbs found at bearing B1.

Hanger B1 cannot handle uplift of -660 lbs.) - (SIMPSON 1-HGUS5.5/11.88 C.D.B1)

Header for the hanger HGUS5.5/11.88 is a Quadruple 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS5.5/11.88 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.) OK



DWG NO. TAN19680121
STRUCTURAL
COMPONENT ONLY



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

1ST FLR FRAMING\Flush Beams\B3(i1728) (Flush Beam)

Dry | 2 spans | 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: 40-4 EL A SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B3(i1728)

Specifier:

Designer: AJ

Company:

July 13, 2021 11:29:22

Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

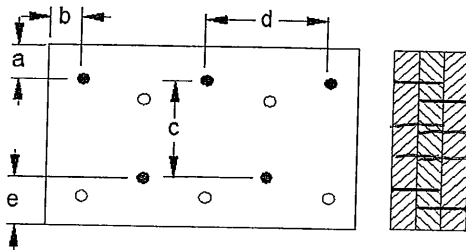
Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



4 rows

a minimum = 2"
b minimum = 3"

c = 6-7/8"
d = 8"
e minimum = 2"

Calculated Side Load = 898.3 lb/ft

Nailing applies to both sides of the member

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



OWN NO. TAN 19680121
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\B9(i1863) (Flush 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: 40-4 EL A.mmdl

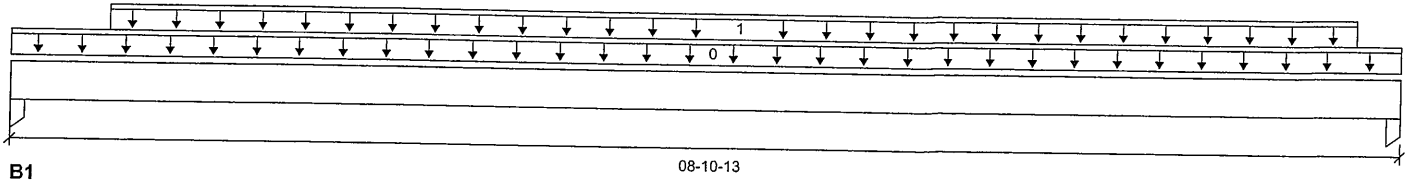
Description: 1ST FLR FRAMING\Flush Beams\B9(i1863)

Specifier:

Designer: AJ

Company:

August 10, 2021 12:45:07



Total Horizontal Product Length = 08-10-13

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	1273 / 0	663 / 0		
B2, 3-1/2"	1400 / 0	727 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-10-13	Top	1.00	0.65	1.00	1.15	
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-07-07	08-07-07	Top	334	167			00-00-00 n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6584 ft-lbs	17696 ft-lbs	37.2%	1	03-11-07
End Shear	2729 lbs	7232 lbs	37.7%	1	01-02-04
Total Load Deflection	L/999 (0.125")	n/a	n/a	4	04-05-07
Live Load Deflection	L/999 (0.082")	n/a	n/a	5	04-05-07
Max Defl.	0.125"	n/a	n/a	4	04-05-07
Span / Depth	8.6				

Bearing Supports

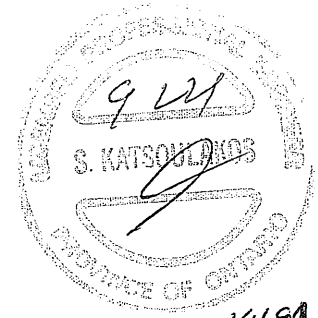
	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 2-3/8" x 1-3/4"	2738 lbs	81.1%	54.0%	Unspecified
B2	Column 3-1/2" x 1-3/4"	3009 lbs	60.5%	40.3%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-02-03.

COMPLIES TO CBC 2012

AMENDED 2020


 STRUCTURAL
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Disclosure

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

1ST FLR FRAMING\Flush Beams\B7(i1707) (Flush 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: 40-4 EL A SUNKEN.mmdl

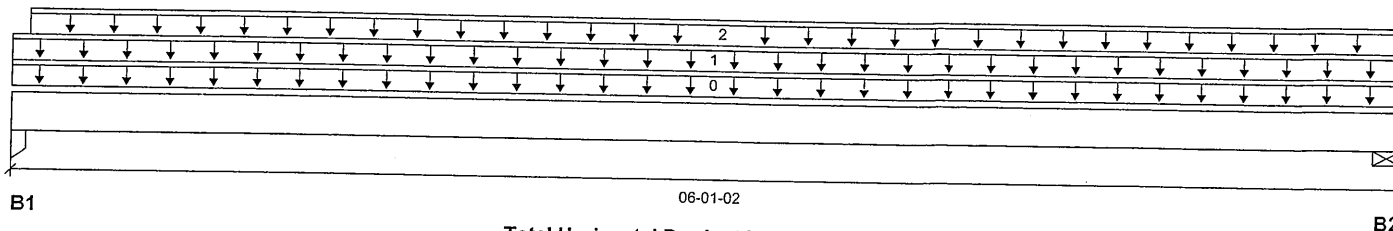
Description: 1ST FLR FRAMING\Flush Beams\B7(i1707)

Specifier:

Designer: AJ

Company:

July 13, 2021 11:29:22



Total Horizontal Product Length = 06-01-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	58 / 0	228 / 0		
B2, 4-3/8"	61 / 0	234 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-01-02	Top	1.00	0.65	1.00	1.15	
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	06-01-02	Top		60			00-00-00
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-14	06-01-02	Top	20	10			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	411 ft-lbs	11502 ft-lbs	3.6%	0	03-00-02
End Shear	184 lbs	4701 lbs	3.9%	0	01-03-06
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	03-00-02
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	03-00-02
Max Defl.	0.004"	n/a	n/a	4	03-00-02
Span / Depth	5.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	319 lbs	9.9%	6.6%	Unspecified
B2	Wall/Plate 4-3/8" x 1-3/4"	327 lbs	10.7%	5.4%	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: 05-05-04.

CONFORMS TO CBC 2012

AMENDED 2020



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

1ST FLR FRAMING\Flush Beams\B18(i1858) (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.

August 10, 2021 12:45:07

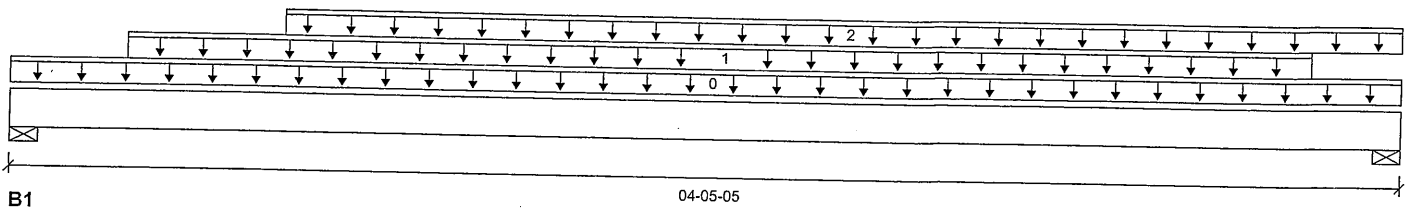
File name: 40-4 EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B18(i1858)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 04-05-05

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	626 / 0	326 / 0		
B2, 3-1/2"	989 / 0	507 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-05-05	Top	1.00	0.65	1.00	1.15	
1	STAIR	Unf. Lin. (lb/ft)	L	00-04-06	04-01-13	Top	120	60			00-00-00
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-06	04-05-05	Top	319	159			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1558 ft-lbs	17696 ft-lbs	8.8%	1	02-04-06
End Shear	1329 lbs	7232 lbs	18.4%	1	01-04-04
Total Load Deflection	L/999 (0.006")	n/a	n/a	4	02-02-14
Live Load Deflection	L/999 (0.004")	n/a	n/a	5	02-02-14
Max Defl.	0.006"	n/a	n/a	4	02-02-14
Span / Depth	4.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 1-3/4"	1347 lbs	28.6%	14.4%	Spruce-Pine-Fir
B2	Wall/Plate 3-1/2" x 1-3/4"	2117 lbs	56.2%	28.3%	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 CBC 2012

AMENDED 2020


 JWB NO. 19689-21
 STRUCTURAL
 COMPONENT ONLY

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BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

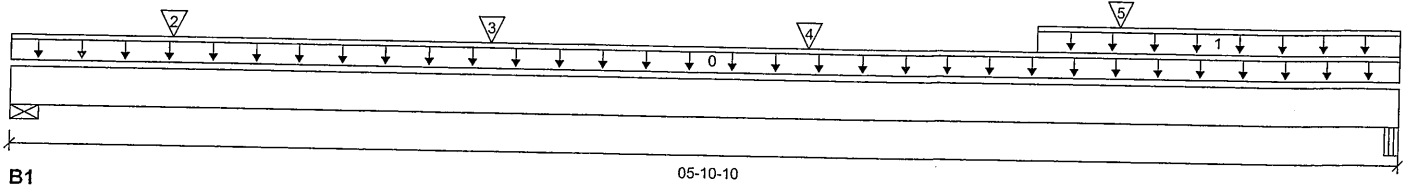
File name: 40-4 EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B19(i1859)

Specifier:

Designer: AJ

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1170 / 0	602 / 0		
B2, 2-5/8"	895 / 0	464 / 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	05-10-10	Top	1.00	0.65	1.00	1.15	
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-03-13	05-10-10	Top	26	13			00-00-00 n/a
2	J2(i1671)	Conc. Pt. (lbs)	L	00-08-02	00-08-02	Top	517	258			n/a
3	J2(i1665)	Conc. Pt. (lbs)	L	02-00-02	02-00-02	Top	553	276			n/a
4	J2(i1717)	Conc. Pt. (lbs)	L	03-04-02	03-04-02	Top	542	271			n/a
5	J2(i1715)	Conc. Pt. (lbs)	L	04-08-02	04-08-02	Top	405	202			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3253 ft-lbs	17696 ft-lbs	18.4%	1	03-04-02
End Shear	1843 lbs	7232 lbs	25.5%	1	04-08-02
Total Load Deflection	L/999 (0.025")	n/a	n/a	4	02-11-01
Live Load Deflection	L/999 (0.017")	n/a	n/a	5	02-11-01
Max Defl.	0.025"	n/a	n/a	4	02-11-01
Span / Depth	5.6				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 1-3/4"	2507 lbs	66.5%	33.5%	Spruce-Pine-Fir
B2	Beam 2-5/8" x 1-3/4"	1923 lbs	78.4%	34.3%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria. **CONFORMS TO CBC 2012**

Design meets Code minimum (L/360) Live load deflection criteria. **AMENDED 2020**

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

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

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.

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

PASSED

1ST FLR FRAMING\Flush Beams\B4(i1633) (Flush Beam)

Dry | 1 span | No cant.

July 13, 2021 11:29:22

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

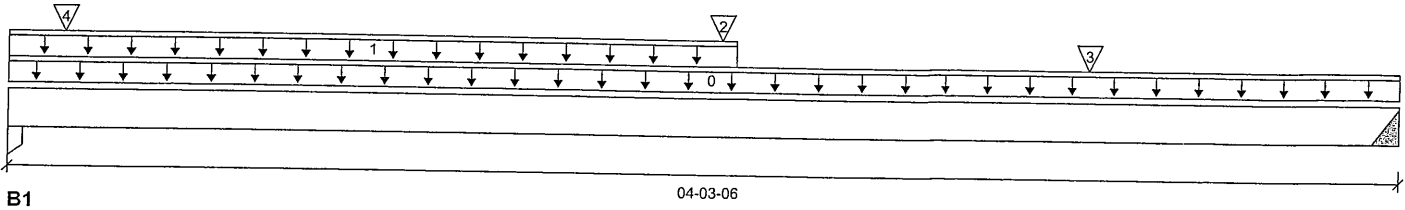
File name: 40-4 EL A SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B4(i1633)

Specifier:

Designer: AJ

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	77 / 0	316 / 0		
B2, 2"	103 / 0	155 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-03-06	Top	1.00	0.65	1.00	1.15	
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	02-02-09	Top		60			00-00-00
2	B6(i1552)	Conc. Pt. (lbs)	L	02-02-00	02-02-00	Top	50	150			n/a
3	J10(i1551)	Conc. Pt. (lbs)	L	03-03-12	03-03-12	Top	100	50			n/a
4	PBO10(i457)	Conc. Pt. (lbs)	L	00-02-00	00-02-00	Top	30	113			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	337 ft-lbs	11098 ft-lbs	3.0%	0	02-02-00
End Shear	194 lbs	4701 lbs	4.1%	0	03-01-08
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	02-02-09
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	02-03-15
Max Defl.	0.002"	n/a	n/a	4	02-02-09
Span / Depth	4.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column	3-1/2" x 1-3/4"	443 lbs	13.7%	9.1%
B2	Hanger	2" x 1-3/4"	348 lbs	n/a	8.1%

Cautions

Header for the hanger HUS1.81/10 is a Triple 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 086.

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020


 924
 S. KATSOULAKOS
 STRUCTURAL
 COMPONENT ONLY

Disclosure

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



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

1ST FLR FRAMING\Flush Beams\B5(i1686) (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 13, 2021 11:29:22

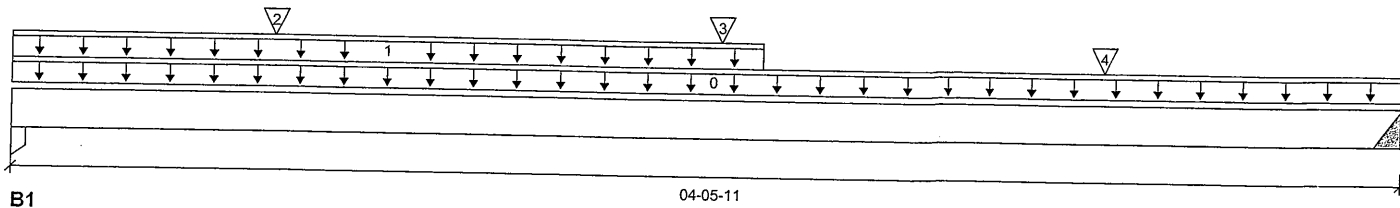
File name: 40-4 EL A SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B5(i1686)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 04-05-11

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	250 / 0	311 / 0		
B2, 4"	329 / 0	300 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-05-11	Top	1.00	0.65	1.00	1.15	
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	02-04-11	Top		12			00-00-00
2	J9(i1640)	Conc. Pt. (lbs)	L	00-10-01	00-10-01	Top	136	68			n/a
3	-	Conc. Pt. (lbs)	L	02-03-01	02-03-01	Top	201	225			n/a
4	-	Conc. Pt. (lbs)	L	03-06-01	03-06-01	Top	238	119			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	995 ft-lbs	35392 ft-lbs	2.8%	1	02-02-01
End Shear	668 lbs	14464 lbs	4.6%	1	03-01-13
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	02-02-01
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	02-02-01
Max Defl.	0.002"	n/a	n/a	4	02-02-01
Span / Depth	4.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Column	1-3/4" x 3-1/2"	763 lbs	15.4%	10.2%	Unspecified
B2 Hanger	4" x 3-1/2"	869 lbs	n/a	5.1%	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 086.

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020





BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

File name: 40-4 EL A SUNKEN.mmdl

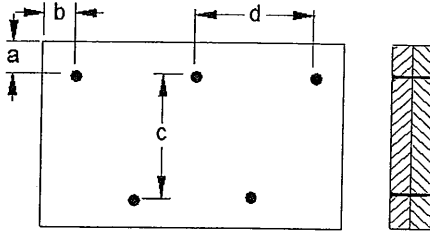
Description: 1ST FLR FRAMING\Flush Beams\B5(i1686)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 8"

Calculated Side Load = 153.0 lb/ft

Connectors are: 1 Nails

3 1/2" ARDOX SPIRAL



9224
S. KATSOULAKOS
PROVINCE OF ONTARIO
P64
000 NO. TAM1968021
STRUCTURAL 6
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\B6(i1552) (Flush Beam)

Dry | 1 span | No cant.

PASSED

July 13, 2021 11:29:22

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

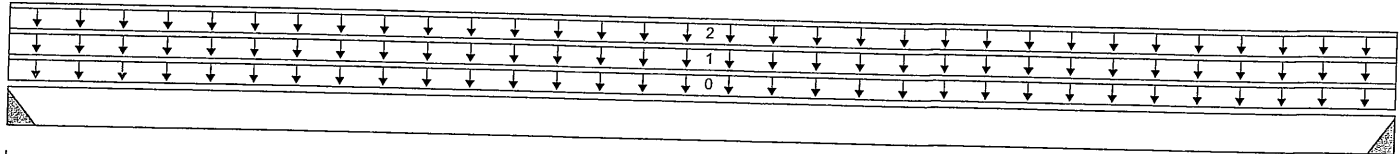
File name: 40-4 EL A SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B6(i1552)

Specifier:

Designer: AJ

Company:



B1

03-09-06

B2

Total Horizontal Product Length = 03-09-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	46 / 0	148 / 0		
B2, 2"	46 / 0	148 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-09-06	Top	1.00	0.65	1.00	1.15	
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	03-09-06	Top		60			00-00-00
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	03-09-06	Top	24	12			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	175 ft-lbs	11502 ft-lbs	1.5%	0	01-10-11
End Shear	80 lbs	4701 lbs	1.7%	0	01-01-14
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	01-10-11
Live Load Deflection	L/999 (0")	n/a	n/a	5	01-10-11
Max Defl.	0.001"	n/a	n/a	4	01-10-11
Span / Depth	3.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	207 lbs	n/a	7.5%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	207 lbs	n/a	7.5%	HUS1.81/10

Cautions

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

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

Header for the hanger HUS1.81/10 is a Double 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: 03-09-06.

CONFORMS TO CBC 2012

AMENDED 2020



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



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

1ST FLR FRAMING\Flush Beams\B3(i1776) (Flush Beam)

Dry | 2 spans | 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: 40-4 EL A.mmdl

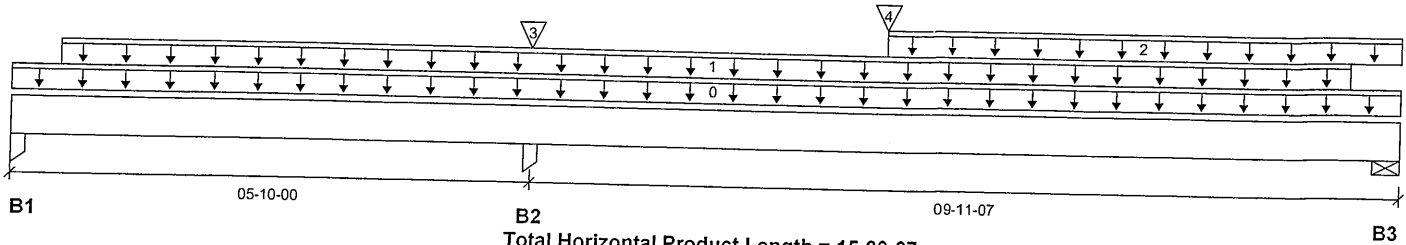
Description: 1ST FLR FRAMING\Flush Beams\B3(i1776)

Specifier:

Designer: AJ

Company:

August 10, 2021 12:47:35



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	730 / 529	101 / 0		
B2, 5-1/4"	9655 / 0	5530 / 0		
B3, 4-3/8"	1407 / 45	792 / 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	15-09-07	Top	1.00	0.65	1.00	1.15	
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-09	15-02-09	Top	314	157			00-00-00
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	09-10-00	15-09-07	Top	24	12			n/a
3	-	Conc. Pt. (lbs)	L	05-10-00	05-10-00	Top	5937	3426			n/a
4	B5(i1763)	Conc. Pt. (lbs)	L	09-10-00	09-10-00	Top	311	281			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6900 ft-lbs	55211 ft-lbs	12.5%	3	10-06-09
Neg. Moment	-7442 ft-lbs	-55211 ft-lbs	13.5%	1	05-10-00
End Shear	2880 lbs	21696 lbs	13.3%	3	14-05-03
Cont. Shear	4234 lbs	21696 lbs	19.5%	1	07-00-08
Total Load Deflection	L/999 (0.049")	n/a	n/a	10	11-00-09
Live Load Deflection	L/999 (0.032")	n/a	n/a	13	11-00-09
Total Neg. Defl.	L/999 (-0.009")	n/a	n/a	10	03-07-09
Max Defl.	0.049"	n/a	n/a	10	11-00-09
Span / Depth	9.8				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Column	5-1/4" x 5-1/4"	1222 lbs	5.5%	3.6%	Unspecified
B1 Uplift		703 lbs			
B2 Column	5-1/4" x 5-1/4"	21395 lbs	95.6%	63.6%	Unspecified
B3 Wall/Plate	4-3/8" x 5-1/4"	3100 lbs	21.9%	11.1%	Spruce-Pine-Fir

Cautions

Uplift of 703 lbs found at bearing B1. *LSIMPSON 2-HZ-SA (ST. 31)*



UWO NO. YAM 19698-21
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
1ST FLR FRAMING\Flush Beams\B3(i1776) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

Dry | 2 spans | No cant.

August 10, 2021 12:47:35

File name: 40-4 EL A.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B3(i1776)

Specifier:

Designer: AJ

Company:

Notes

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

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

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

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

Design based on Dry Service Condition.

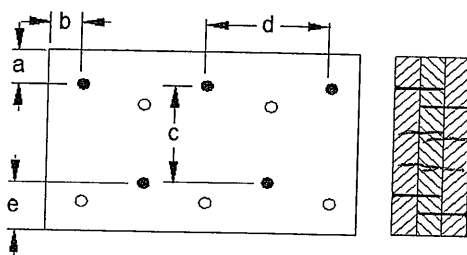
Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



4 rows

a minimum = 2"
b minimum = 3"

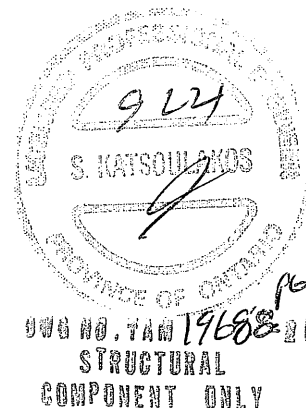
c = 3-7/8"
d = 3-1/2"
e minimum = 2"

Calculated Side Load = 898.3 lb/ft

Nailing applies to both sides of the member

Connectors are: 16d 1 Nails

3 1/2" ARCOX SPIRAL



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

2ND FLR FRAMING\Flush Beams\B11(i1714) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

Dry | 2 spans | L cant.

July 13, 2021 11:29:22

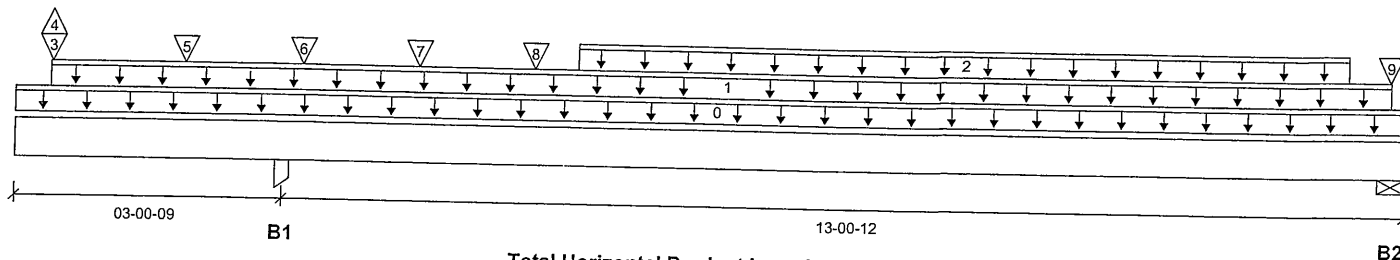
File name: 40-4 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B11(i1714)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 16-01-05

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	6191 / 277	3280 / 0		
B2, 5-1/2"	1760 / 736	636 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	16-01-05	Top	1.00	0.65	1.00	1.15	
1	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-04-12	15-11-05	Top	11	6			00-00-00 n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	06-05-05	15-05-05	Top	243	121			n/a
3	-	Conc. Pt. (lbs)	L	00-05-00	00-05-00	Top	3399	1708			n/a
4	-	Conc. Pt. (lbs)	L	00-05-00	00-05-00	Top	-227				n/a
5	J2(i1664)	Conc. Pt. (lbs)	L	01-11-05	01-11-05	Top	305	151			n/a
6	J2(i1657)	Conc. Pt. (lbs)	L	03-03-05	03-03-05	Top	327	164			n/a
7	J2(i1703)	Conc. Pt. (lbs)	L	04-07-05	04-07-05	Top	328	164			n/a
8	J3(i1637)	Conc. Pt. (lbs)	L	05-11-05	05-11-05	Top	283	142			n/a
9	-	Conc. Pt. (lbs)	L	15-11-03	15-11-03	Top	164	119			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8948 ft-lbs	55211 ft-lbs	16.2%	4	09-11-05
Neg. Moment	-19933 ft-lbs	-55211 ft-lbs	36.1%	1	03-00-09
End Shear	2830 lbs	21696 lbs	13.0%	4	14-07-15
Cont. Shear	7939 lbs	21696 lbs	36.6%	1	01-10-15
Total Load Deflection	2xL/339 (0.216")	n/a	70.9%	12	00-00-00
Live Load Deflection	2xL/425 (0.172")	n/a	84.8%	16	00-00-00
Total Neg. Defl.	L/999 (-0.116")	n/a	n/a	12	07-11-05
Max Defl.	-0.116"	n/a	n/a	12	07-11-05
Span / Depth	12.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 5-1/4"	13387 lbs	89.7%	59.7%	Unspecified
B2	Wall/Plate 5-1/2" x 5-1/4"	3434 lbs	19.3%	9.7%	Spruce-Pine-Fir
B2	Uplift	531 lbs			

Cautions

Uplift of 531 lbs found at bearing B2. (SIMPSON 2-H25A @ ST. B2)
Concentrated side load(s) 1 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.) OK



406 NO. 3AM 19689-21
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B11(i1714) (Flush Beam)
Dry | 2 spans | L cant.

PASSED

BC CALC® Member Report
Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

File name: 40-4 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B11(i1714)

Specifier:

Designer: AJ

Company:

July 13, 2021 11:29:22

Notes

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

Design meets User specified (2xL/360) Live load deflection criteria.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

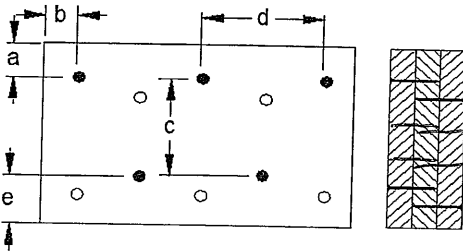
Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

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

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



4 POUNDS

a minimum = 2"

b minimum = 3"

c = 8-7/8"

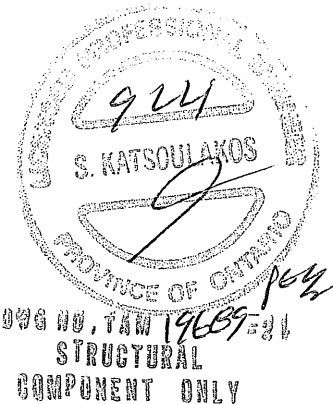
d = 8"

e minimum = 2"

Calculated Side Load = 696.3 lb/ft

Nailing applies to both sides of the member

Connectors are: 3 1/2" ARDOX SPIRAL



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



Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B13(i1738) (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 13, 2021 11:29:22

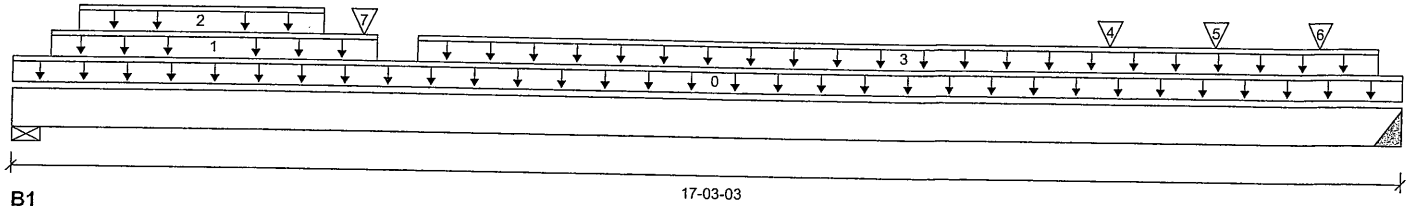
File name: 40-4 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B13(i1738)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 17-03-03

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	3114 / 0	1717 / 0		
B2, 4"	3628 / 0	1981 / 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	17-03-03	Top	1.00	0.65	1.00	1.15	
1	STAIR	Unf. Lin. (lb/ft)	L	00-05-08	04-05-08	Top	120	60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-09-08	03-09-08	Top	317	158			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	04-11-08	16-11-08	Top	312	156			n/a
4	J1(i1354)	Conc. Pt. (lbs)	L	13-06-11	13-06-11	Top	330	165			n/a
5	J1(i1309)	Conc. Pt. (lbs)	L	14-10-11	14-10-11	Top	403	202			n/a
6	J1(i1323)	Conc. Pt. (lbs)	L	16-02-11	16-02-11	Top	381	191			n/a
7	J1(i1386)	Conc. Pt. (lbs)	L	04-03-08	04-03-08	Top	369	185			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	27456 ft-lbs	55211 ft-lbs	49.7%	1	08-11-08
End Shear	7362 lbs	21696 lbs	33.9%	1	15-11-05
Total Load Deflection	L/296 (0.672")	n/a	81.0%	4	08-07-08
Live Load Deflection	L/460 (0.433")	n/a	78.3%	5	08-07-08
Max Defl.	0.672"	n/a	n/a	4	08-07-08
Span / Depth	16.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 5-1/4"	6816 lbs	38.4%	19.3%	Spruce-Pine-Fir
B2	Hanger 4" x 5-1/4"	7919 lbs	n/a	30.9%	HGUS5.5/11.88

Cautions

Header for the hanger HGUS5.5/11.88 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS5.5/11.88 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.





Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B13(i1738) (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 13, 2021 11:29:22

File name: 40-4 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B13(i1738)

Specifier:

Designer: AJ

Company:

Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

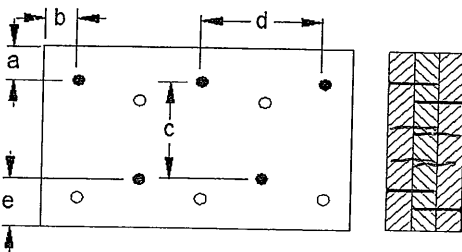
Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



4 rows

a minimum = 1"

b minimum = 3"

c = 8-7/8"

d = 8"

e minimum = 2"

Calculated Side Load = 896.8 lb/ft

Nailing applies to both sides of the member

Connectors are: 16d : 1 : Nails

3 1/2" ARDOX SPIRAL



OWN NO. TAN 1969021
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\B14(i1438) (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 13, 2021 11:29:22

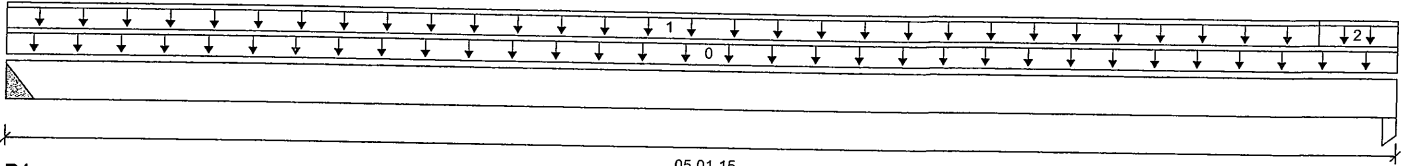
File name: 40-4 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B14(i1438)

Specifier:

Designer: AJ

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	28 / 0	29 / 0		
B2, 3-1/2"	29 / 0	30 / 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	05-01-15	Top	1.00	0.65	1.00	1.15	
1	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	04-10-07	Top	11	6			00-00-00 n/a
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-10-07	05-01-15	Top	10	5			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	90 ft-lbs	17696 ft-lbs	0.5%	1	02-06-03
End Shear	42 lbs	7232 lbs	0.6%	1	01-01-14
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	02-06-03
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-06-03
Max Defl.	0.001"	n/a	n/a	4	02-06-03
Span / Depth	4.9				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	2" x 1-3/4"	78 lbs	n/a	1.8%	HUS1.81/10
B2 Column	3-1/2" x 1-3/4"	80 lbs	1.6%	1.1%	Unspecified

Cautions

Header for the hanger HUS1.81/10 is a Triple 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: 04-10-07.

CONFORMS TO CBC 2012

AMENDED 2020



Disclosure

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

PASSED

2ND FLR FRAMING\Flush Beams\B12(i1725) (Flush Beam)

Dry | 2 spans | No cant.

July 13, 2021 11:29:22

BC CALCO® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: BRAMPTON

Customer:

Code reports: CCMC 12472-R

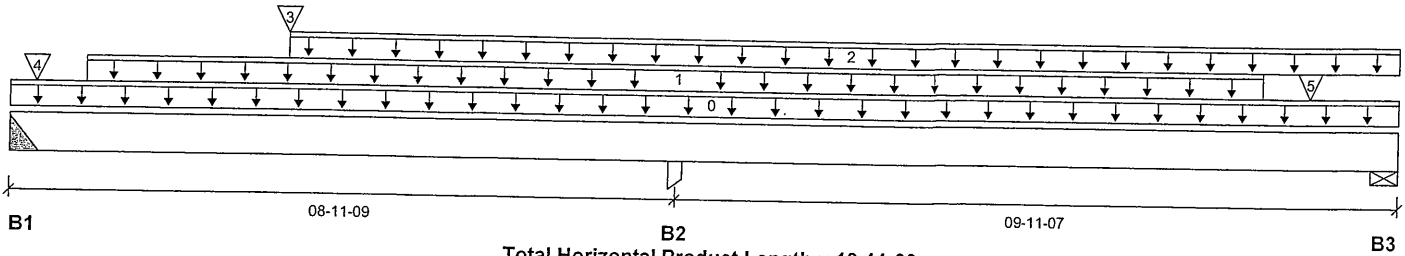
File name: 40-4 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B12(i1725)

Specifier:

Designer: AJ

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	3224 / 236	1621 / 0		
B2, 4-1/2"	5780 / 0	3114 / 0		
B3, 4-3/8"	1293 / 410	478 / 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	18-11-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-00-02	17-00-02	Top	310	155			n/a
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	03-08-12	18-11-00	Top	24	12			n/a
3	B13(i1738)	Conc. Pt. (lbs)	L	03-08-12	03-08-12	Top	3577	1953			n/a
4	J1(i1670)	Conc. Pt. (lbs)	L	00-04-02	00-04-02	Top	293	147			n/a
5	J1(i1163)	Conc. Pt. (lbs)	L	17-08-02	17-08-02	Top	382	191			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	18712 ft-lbs	35392 ft-lbs	52.9%	2	03-08-12
Neg. Moment	-13055 ft-lbs	-35392 ft-lbs	36.9%	1	08-11-09
End Shear	6157 lbs	14464 lbs	42.6%	2	01-03-14
Cont. Shear	7188 lbs	14464 lbs	49.7%	1	07-09-07
Total Load Deflection	L/774 (0.135")	n/a	31.0%	9	04-02-04
Live Load Deflection	L/999 (0.093")	n/a	n/a	12	04-02-04
Total Neg. Defl.	L/999 (-0.042")	n/a	n/a	9	12-04-02
Max Defl.	0.135"	n/a	n/a	9	04-02-04
Span / Depth	9.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 3-1/2"	6863 lbs	n/a	40.2%	HGUS410
B2	Column 4-1/2" x 3-1/2"	12563 lbs	98.2%	65.4%	Unspecified
B3	Wall/Plate 4-3/8" x 3-1/2"	2537 lbs	26.9%	13.6%	Spruce-Pine-Fir
B3	Uplift	184 lbs			

Cautions

Uplift of 184 lbs found at bearing B3.) - (Simpson 2-H2"5A @ B3)
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.



1969 NO. 74119692-21
STRUCTURAL
COMPONENT ONLY



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

2ND FLR FRAMING\Flush Beams\B12(i1725) (Flush Beam)

Dry | 2 spans | 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: 40-4 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B12(i1725)

Specifier:

Designer: AJ

Company:

July 13, 2021 11:29:22

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.

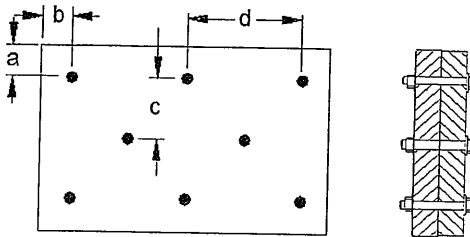
Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2 1/2"
b minimum = 2-1/2" c = 3 1/2"
d = 6"

Calculated Side Load = 3903.4 lb/ft

Bolts are assumed to be Grade A307 or Grade 2 or higher.

Connectors are: 1/2 in. Staggered Through Bolt



OWG NO. TAM 19692-21
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®,

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				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'-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.

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

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

Notes:

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

Maximum Floor Spans – M2.1

Design Criteria

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

Maximum Floor Spans

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

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

Notes:

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

Maximum Floor Spans – M4.1

Design Criteria

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

Maximum Floor Spans

Joist depth	Joist series	Bare 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.

Maximum Floor Spans – M6.1

Design Criteria

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

Maximum Floor Spans

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

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

Notes:

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

Maximum Floor Spans – M7.1

Design Criteria

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

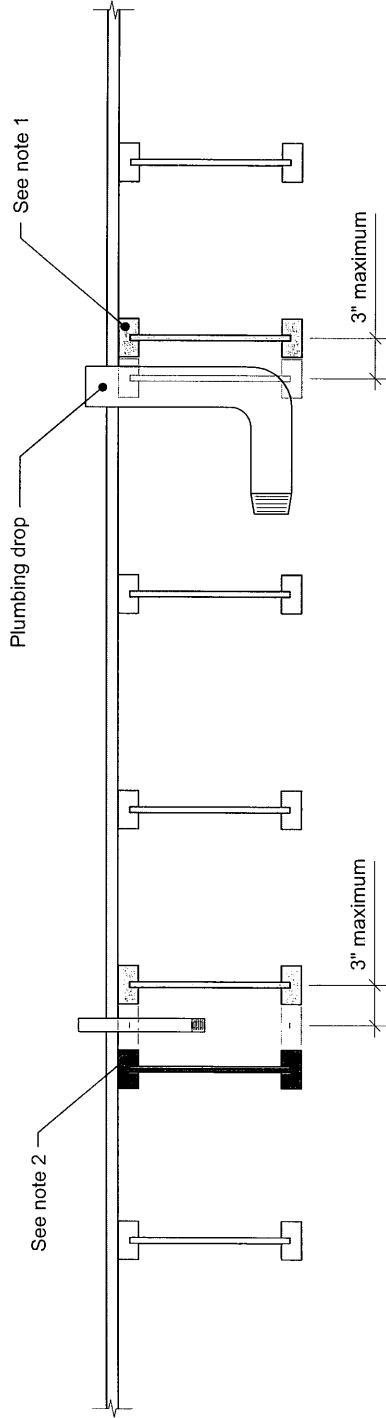
Maximum Floor Spans

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

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

Notes:



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



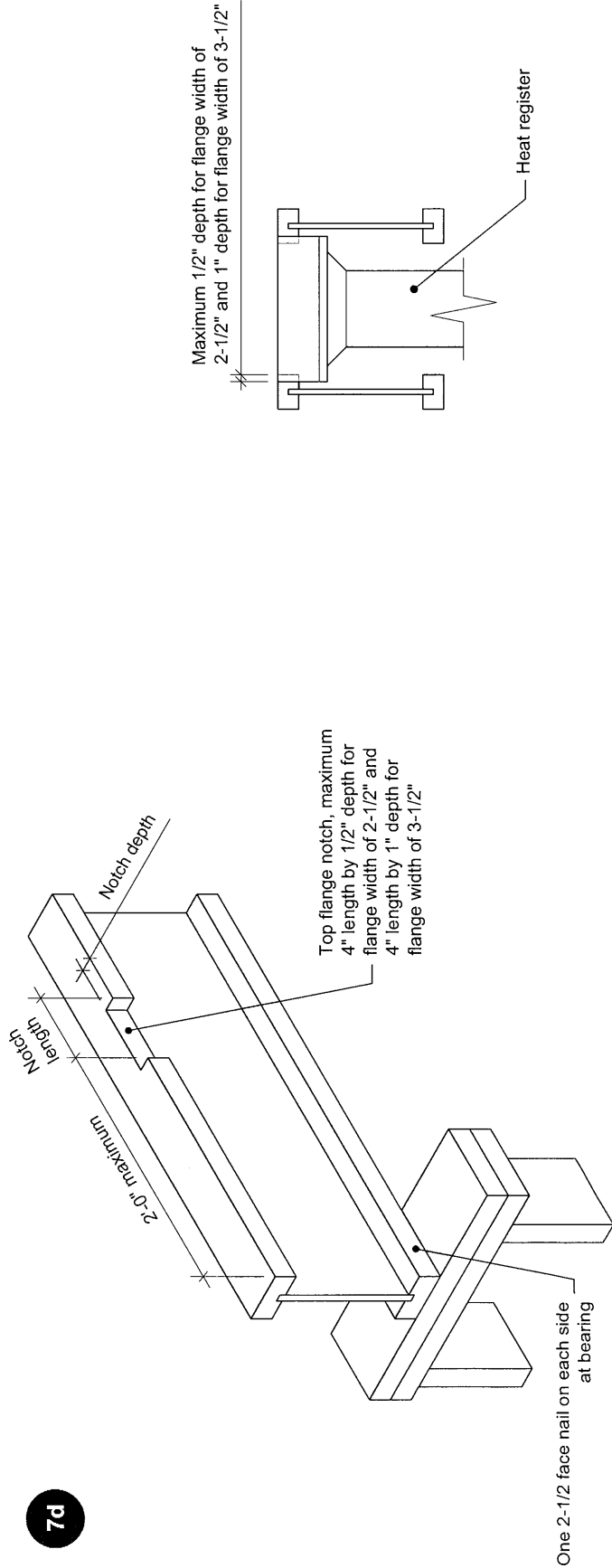
Notes:

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

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

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

7d



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

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

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