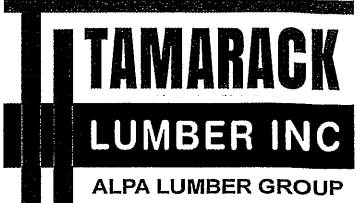


Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	6
J1DJ	14-00-00	9 1/2" NI-40x	2	4
J2	12-00-00	9 1/2" NI-40x	1	2
J3	8-00-00	9 1/2" NI-40x	1	3
J4DJ	8-00-00	9 1/2" NI-40x	2	4
J4	6-00-00	9 1/2" NI-40x	1	10
J5	4-00-00	9 1/2" NI-40x	1	13
J6	2-00-00	9 1/2" NI-40x	1	2
B10A	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B2 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B1 DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary		
Qty	Manuf	Product
2	H1	IUS2.56/9.5
1	H3	HGUS410
1	H4	HUC410
2	H5	HUS1.81/10
2	H7	HU310-2
11	H9	IUS2.56/9.5
4	H9	IUS2.56/9.5
4	H9	IUS2.56/9.5
4	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 FIGURE 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 7 TABLES 1 & 2 OF THE INSTALLATION GUIDE. **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
TILED AREAS: 20 lb/ft₂

SUBFLOOR: 5/8" GLUE AND NAIL



FROM PLAN DATED:
FEB 2018
BUILDER:
ROYAL PINE HOMES
SITE:
FOREST SIDE
MODEL: UNIT 1804 END
ELEVATION: A & B
LOT:
CITY: BRAMPTON
SALESMAN: M D
DESIGNER: AJ
REVISION:
DATE: 11/6/2018
1st FLOOR
STANDARD

DATE 11/28

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.

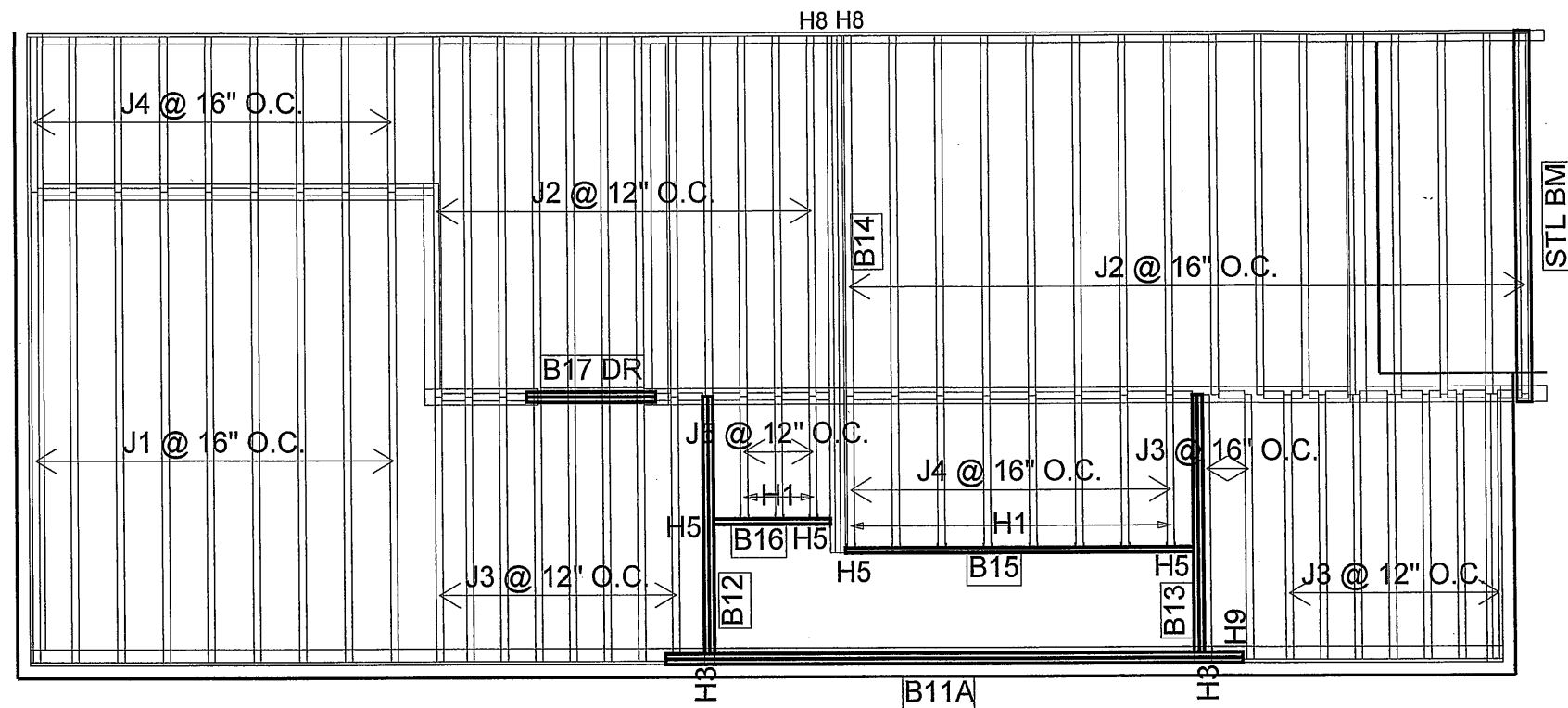
DWG# TAM B371184 THROUGH DWG# TAM B383184 INCLUSIVE DATED 11/27/18

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 1/16" 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 3108218
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL
COMPONENTS ONLY



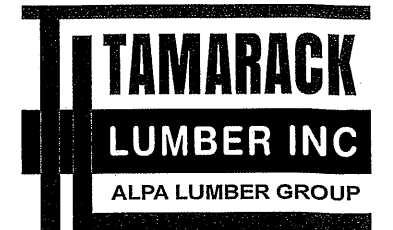
Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	9
J2	12-00-00	9 1/2" NI-40x	1	28
J3	8-00-00	9 1/2" NI-40x	1	17
J4	6-00-00	9 1/2" NI-40x	1	17
J5	4-00-00	9 1/2" NI-40x	1	3
B14 ✓	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B15 ✓	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12 ✓	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13 ✓	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16 ✓	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B17 DR ✓	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11A ✓	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/9.5
2	H3	HGUS410
2	H5	HUS1.81/10
2	H5	HUS1.81/10
1	H9	IUS2.56/9.5
2	H8	H2.5A*

NOTES:
REFER TO THE **NORDIC INSTALLATION** GUIDE FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.
MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURE 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING DUCT CHASE AND **FIELD CUT OPENINGS** SEE FIGURE 7 TABLES 1 & 2 OF THE INSTALLATION GUIDE. **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
TILED AREAS: 20 lb/ft₂

SUBFLOOR: 5/8" GLUE AND NAIL



FROM PLAN DATED:
FEB 2018

BUILDER:
ROYAL PINE HOMES

SITE:
FOREST SIDE

MODEL: UNIT 1804 END
ELEVATION: A & B

LOT:

CITY: BRAMPTON

SALESMAN: M D
DESIGNER: AJ
REVISION:

DATE: 11/6/2018

2nd FLOOR

DATE 11/26

BCIN: 26064; FIRM: 29991

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

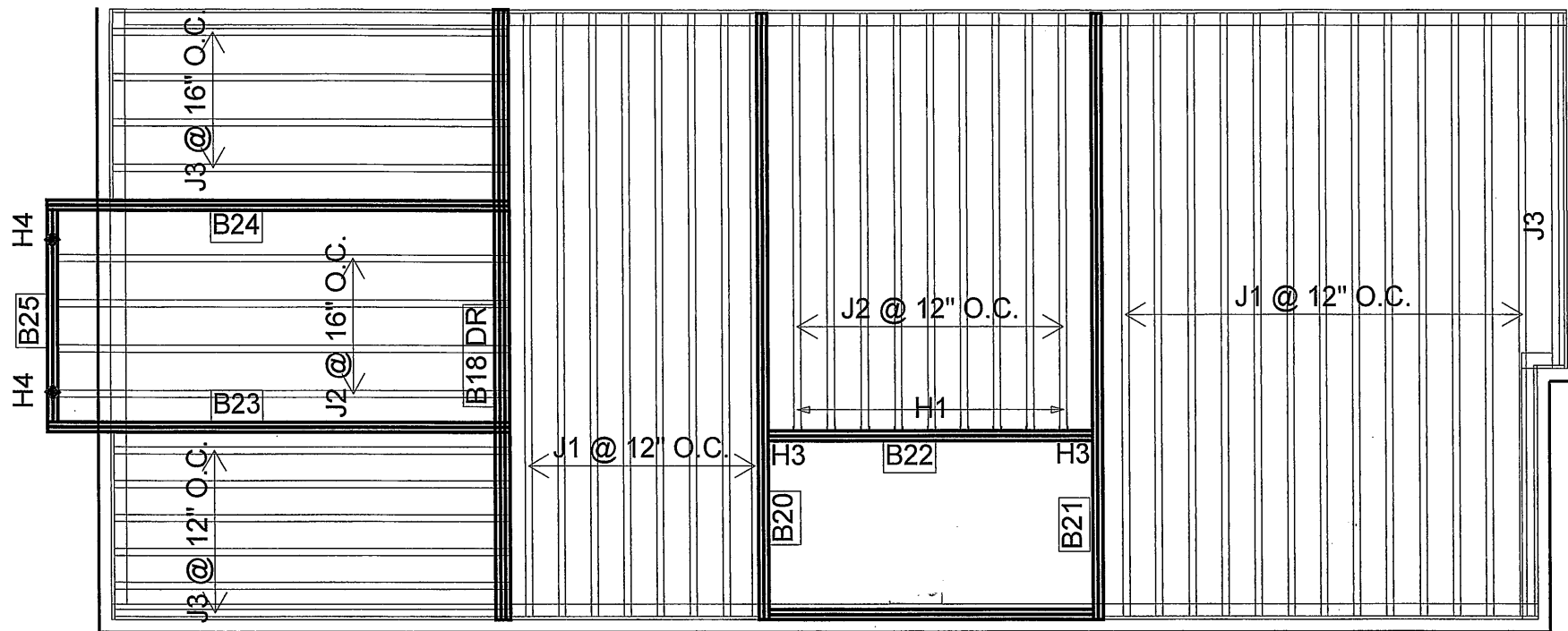
DWG# TAM B304704 THROUGH DWG# TAM B390104 INCLUSIVE DATED 11/26

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 1/16" 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 310370
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL
COMPONENTS ONLY

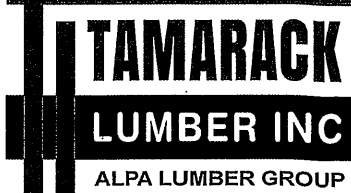


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	21
J2	14-00-00	11 7/8" NI-40x	1	13
J3	12-00-00	11 7/8" NI-40x	1	11
B20 ✓	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B21 ✓	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B18 DR ✓	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B23 ✓	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B24 ✓	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B22 ✓	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B25 ✓	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
9	H1	IUS2.56/11.88
2	H3	HGUS410
2	H4	HUC410

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 FIGURE 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 7 TABLES 1 & 2 OF THE INSTALLATION GUIDE. **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
TILED AREAS: 20 lb/ft₂

SUBFLOOR: 5/8" GLUE AND NAIL



FROM PLAN DATED:
FEB 2018

BUILDER:
ROYAL PINE HOMES

SITE:
FOREST SIDE

MODEL: UNIT 1804 END

ELEVATION: A & B

LOT:

CITY: BRAMPTON

SALESMAN: M D

DESIGNER: AJ

REVISION:

DATE: 11/6/2018

3rd FLOOR

DATE 11/24/18

BCIN: 26064; FIRM: 29991

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

DWG# TAM 0397184 THROUGH DWG# TAM 0397184, INCLUSIVE DATED 11/24/18

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

REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 3100478
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY



Refer to the *Installation Guide for Residential Floors* for additional information.
CCMC EVALUATION REPORT 13032-R

WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.

- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the longest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is **not** considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.

- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
- All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- Limit three maximum size holes per span, of which one may be a duct chase opening.
- A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS
Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

Joist Depth	Joist Series	Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.)											
		Round Hole Diameter (in.)											
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
9-1/2"	NI-20	0'-7"	1'-6"	2'-10"	4'-3"	5'-8"	6'-0"	---	---	---	---	---	---
	NI-40x	0'-7"	1'-6"	3'-0"	4'-4"	6'-0"	6'-4"	---	---	---	---	---	---
	NI-60	1'-3"	2'-6"	4'-0"	5'-4"	7'-0"	7'-5"	---	---	---	---	---	---
	NI-70	2'-0"	3'-4"	4'-9"	6'-3"	8'-0"	8'-4"	---	---	---	---	---	---
	NI-80	2'-3"	3'-6"	5'-0"	6'-6"	8'-2"	8'-8"	---	---	---	---	---	---
11-7/8"	NI-20	0'-7"	0'-8"	1'-0"	2'-4"	3'-8"	4'-0"	5'-0"	6'-6"	7'-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'-9"	6'-0"	7'-3"	8'-10"	10'-0"	---	---	---
	NI-70	1'-3"	2'-6"	4'-0"	5'-4"	6'-9"	7'-2"	8'-4"	10'-0"	11'-2"	---	---	---
	NI-80	1'-6"	2'-10"	4'-2"	5'-6"	7'-0"	7'-5"	8'-6"	10'-3"	11'-4"	---	---	---
14"	NI-20	0'-7"	0'-8"	1'-5"	3'-2"	4'-10"	5'-4"	6'-9"	8'-9"	10'-2"	---	---	---
	NI-40x	0'-7"	0'-8"	0'-9"	2'-5"	4'-4"	4'-9"	6'-3"	---	---	---	---	---
	NI-60	0'-7"	0'-8"	0'-8"	1'-0"	2'-4"	2'-9"	3'-9"	5'-2"	6'-6"	8'-3"	10'-2"	---
	NI-70	0'-7"	0'-8"	1'-8"	3'-0"	4'-3"	4'-8"	5'-8"	7'-2"	8'-0"	8'-8"	10'-4"	11'-9"
	NI-80	0'-7"	0'-8"	1'-10"	3'-0"	4'-5"	5'-10"	6'-2"	7'-3"	8'-9"	9'-0"	10'-4"	12'-3"
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"	0'-8"	1'-6"	2'-10"	3'-2"	4'-2"	5'-6"	6'-4"	7'-0"	8'-5"	9'-8"
	NI-60	0'-7"	1'-0"	2'-3"	3'-6"	4'-10"	5'-3"	6'-3"	7'-8"	8'-6"	9'-2"	10'-8"	12'-0"
	NI-70	0'-7"	1'-3"	2'-6"	3'-10"	5'-3"	5'-6"	6'-6"	8'-0"	9'-0"	9'-5"	11'-0"	12'-3"
	NI-80	0'-7"	0'-8"	0'-8"	1'-9"	3'-3"	3'-8"	4'-9"	6'-5"	7'-5"	8'-0"	9'-10"	11'-3"

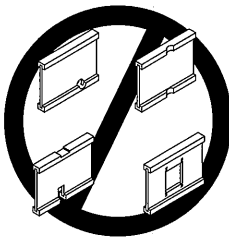
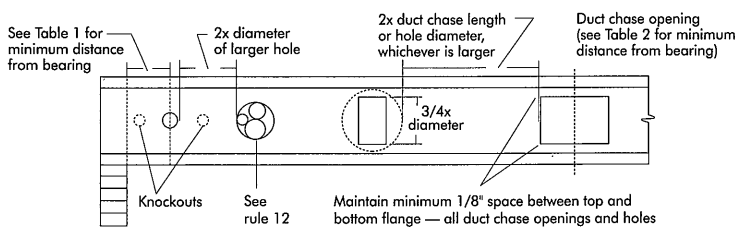
- Above table may be used for I-joist spacing of 24 inches on centre or less.
- Hole location distance is measured from inside face of supports to centre of hole.
- Distances in this chart are based on uniformly loaded joists.
- The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS
Simple Span Only

Joist Depth	Joist Series	Minimum distance from inside face of supports to centre of opening (ft - in.)											
		Duct Chase Length (in.)											
		8	10	12	14	16	18	20	22	24	---	---	---
9-1/2"	NI-20	4'-1"	4'-5"	4'-10"	5'-4"	5'-8"	6'-1"	6'-6"	7'-1"	7'-5"	---	---	---
	NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"	---	---	---
	NI-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-5"	8'-0"	8'-3"	8'-9"	---	---	---
	NI-70	5'-1"	5'-5"	5'-10"	6'-3"	6'-7"	7'-1"	7'-6"	8'-1"	8'-4"	---	---	---
	NI-80	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"	---	---	---
11-7/8"	NI-20	5'-9"	6'-2"	6'-6"	7'-1"	7'-5"	8'-3"	8'-9"	9'-4"	9'-4"	---	---	---
	NI-40x	6'-8"	7'-2"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	10'-1"	10'-9"	---	---	---
	NI-60	7'-3"	7'-8"	8'-0"	8'-6"	9'-0"	9'-3"	9'-9"	10'-3"	11'-0"	---	---	---
	NI-70	7'-1"	7'-4"	7'-9"	8'-3"	8'-7"	9'-1"	9'-6"	10'-1"	10'-4"	---	---	---
	NI-80	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-6"	---	---	---
14"	NI-20	7'-6"	7'-11"	8'-4"	8'-9"	9'-2"	9'-7"	10'-1"	10'-7"	10'-11"	---	---	---
	NI-40x	7'-7"	8'-1"	8'-5"	8'-10"	9'-4"	9'-8"	10'-2"	10'-8"	11'-2"	---	---	---
	NI-60	8'-1"	8'-7"	9'-0"	9'-6"	10'-1"	10'-7"	11'-2"	12'-0"	12'-8"	---	---	---
	NI-70	8'-9"	9'-3"	9'-8"	10'-1"	10'-6"	11'-1"	11'-6"	13'-3"	13'-0"	---	---	---
	NI-80	8'-7"	9'-1"	9'-5"	9'-10"	10'-4"	10'-8"	11'-2"	11'-7"	12'-3"	---	---	---
16"	NI-20	9'-0"	9'-3"	9'-9"	10'-1"	10'-7"	11'-1"	11'-6"	12'-1"	12'-6"	---	---	---
	NI-40x	9'-2"	9'-8"	10'-0"	10'-6"	10'-11"	11'-5"	11'-9"	12'-4"	12'-11"	---	---	---
	NI-60	9'-4"	9'-9"	10'-3"	10'-7"	11'-1"	11'-7"	12'-1"	12'-7"	13'-2"	---	---	---
	NI-70	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	13'-2"	14'-1"	14'-10"	---	---	---
	NI-80	10'-1"	10'-5"	11'-0"	11'-4"	11'-10"	12'-3"	12'-8"	13'-3"	14'-0"	---	---	---

- Above table may be used for I-joist spacing of 24 inches on centre or less.
- Duct chase opening location distance is measured from inside face of supports to centre of opening.
- The above table is based on simple-span joists only. For other applications, contact your local distributor.
- Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480.
- The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

FIGURE 7
FIELD-CUT HOLE LOCATOR



Knockouts are prescored holes provided for the contractor's convenience to install electrical or small plumbing lines. They are 1-1/2 inches in diameter, and are spaced 15 inches on centre along the length of the I-joist. Where possible, it is preferable to use knockouts instead of field-cut holes.

Never drill, cut or notch the flange, or over-cut the web.

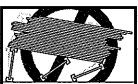
Holes in webs should be cut with a sharp saw.

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

SAFETY AND CONSTRUCTION PRECAUTIONS



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 over-stress I-joists with concentrated loads from building materials.

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

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

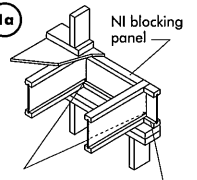
Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines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



PRODUCT WARRANTY

Chantiers Chibougamau guarantees that, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.

Furthermore, Chantiers Chibougamau warrants that our products, when utilized in accordance with our handling and installation instructions, will meet or exceed our specifications for the lifetime of the structure.

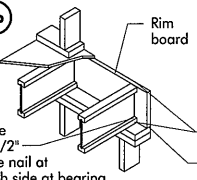


Attach I-joist to top plate per detail 1b

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

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

2-1/2" nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with some nailing as required for decking)



One 2-1/2" face nail at each side at bearing

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

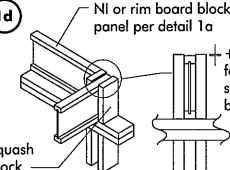
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

One 2-1/2" wire or spiral nail at top and bottom flange

Attach rim board to top plate using 2-1/2" wire or spiral toe-nails at 6" o.c.

To avoid splitting flange, start nails at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate.

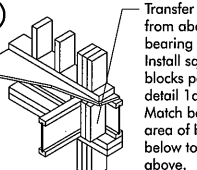
Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.



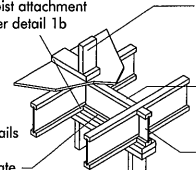
Squash block

Pair of Squash Blocks	Maximum Factored Vertical Load Pair of Squash Blocks (lbs)	
	3-1/2" wide	5-1/2" wide
2x Lumber	5,500	8,500
1-1/8" Rim Board Plus	4,300	6,600

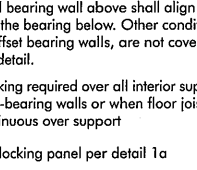
Provide lateral bracing per detail 1a or 1b



Transfer load from above to bearing below. Install squash blocks per detail 1d. Match bearing area of blocks below to post above.



Joist attachment per detail 1b

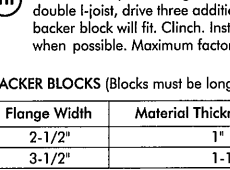


Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by this detail.

Blocking required over all interior supports under load-bearing walls or when floor joists are not continuous over support

2-1/2" nails at 6" o.c. to top plate

NI blocking panel per detail 1a

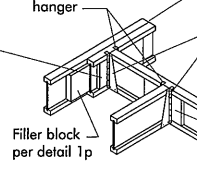


Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3" nails, clinched when possible. Maximum factored resistance for hanger for this detail = 1,620 lbs.

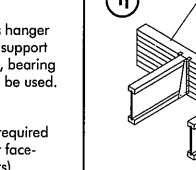
BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting)

Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2"	1"	5-1/2"
3-1/2"	1-1/2"	7-1/4"

* 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-C325 or CAN/CSA-C437 Standard.
** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".



Top- or face-mount hanger



Nordic Lam or Structural Composite Lumber (SCL)

Double I-joist header

Filler block per detail 1p

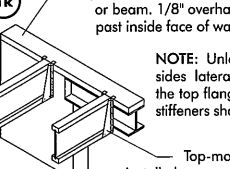
Backer block required (both sides for face-mount hangers)

NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

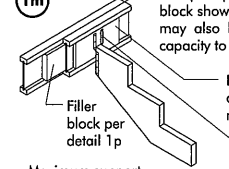
For nailing schedules for multiple beams, see the manufacturer's recommendations.

Top- or face-mount hanger installed per manufacturer's recommendations

NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.



2x plate flush with inside face of wall or beam. 1/8" overhang allowed past inside face of wall or beam.



Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify double I-joist capacity to support concentrated loads.

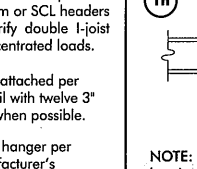
NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

Top-mount hanger installed per manufacturer's recommendations

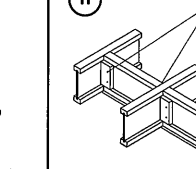
Backer block attached per detail 1h. Nail with twelve 3" nails, clinch when possible.

Install hanger per manufacturer's recommendations

Maximum support capacity = 1,620 lbs.



Do not bevel-cut joist beyond inside face of wall



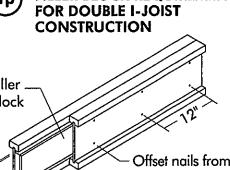
Lumber 2x4 min., extend block to face of adjacent web. Two 2-1/2" spiral nails from each web to lumber piece, alternate on opposite side.

Attach I-joist per detail 1b

NOTE: Blocking required at bearing for lateral support, not shown for clarity.

NI blocking panel

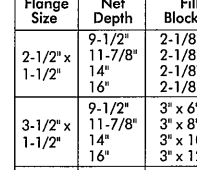
OPTIONAL: Minimum 1x4 inch strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.



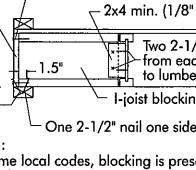
Filler block

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

1/8" to 1/4" gap between top flange and filler block



Rim board



One 2-1/2" nail at top and bottom flange

2x4 min. (1/8" gap minimum)

Two 2-1/2" nails from each web to lumber piece

One 2-1/2" nail one side only

NOTES:

- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.

Flange Size	Net Depth	Filler Block Size
2-1/2" x 1-1/2"	9-1/2" 11-7/8" 14" 16"	2-1/8" x 6" 2-1/8" x 8" 2-1/8" x 10" 2-1/8" x 12"
3-1/2" x 1-1/2"	9-1/2" 11-7/8" 14" 16"	3" x 6" 3" x 8" 3" x 10" 3" x 12"
3-1/2" x 2"	9-1/2" 11-7/8" 14" 16"	3" x 7" 3" x 9" 3" x 11"

All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

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												
Telephone number (519) 287-2242 Business	Fax number (519) 287-5750	Cell number													
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]															
<table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> House</td> <td><input type="checkbox"/> HVAC – House</td> <td><input checked="" type="checkbox"/> Building Structural</td> </tr> <tr> <td><input type="checkbox"/> Small Buildings</td> <td><input type="checkbox"/> Building Services</td> <td><input type="checkbox"/> Plumbing – House</td> </tr> <tr> <td><input type="checkbox"/> Large Buildings</td> <td><input type="checkbox"/> Detection, Lighting and Power</td> <td><input type="checkbox"/> Plumbing – All Buildings</td> </tr> <tr> <td><input type="checkbox"/> Complex Buildings</td> <td><input type="checkbox"/> Fire Protection</td> <td><input type="checkbox"/> On-site Sewage Systems</td> </tr> </table>				<input type="checkbox"/> House	<input type="checkbox"/> HVAC – House	<input checked="" type="checkbox"/> Building Structural	<input type="checkbox"/> Small Buildings	<input type="checkbox"/> Building Services	<input type="checkbox"/> Plumbing – House	<input type="checkbox"/> Large Buildings	<input type="checkbox"/> Detection, Lighting and Power	<input type="checkbox"/> Plumbing – All Buildings	<input type="checkbox"/> Complex Buildings	<input type="checkbox"/> Fire Protection	<input type="checkbox"/> On-site Sewage Systems
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<input type="checkbox"/> Large Buildings	<input type="checkbox"/> Detection, Lighting and Power	<input type="checkbox"/> Plumbing – All Buildings													
<input type="checkbox"/> Complex Buildings	<input type="checkbox"/> Fire Protection	<input type="checkbox"/> On-site Sewage Systems													
Description of designer's work ROYAL PINE HOMES – FOREST SIDE – MODEL: UNIT 1804 - ELEV. A OR B - END 1ST FLOOR – STANDARD (SCHEDULE IS NOT ISSUED AS LOT SPECIFIC) REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK ROOF TRUSSES INC. (SEE DWG #TAM31082-18 DATED 11-12-18). SUPPORTING STRUCTURE 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		<u>11/24/18</u> Signature of Designer													

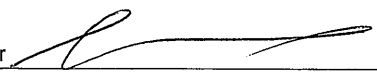
NOTE:

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

DWG #TAM31082-18
 DWG #TAM31085-18

Schedule 1: Designer Information

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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
Telephone number (519) 287-2242 Business	Fax number (519) 287-5750	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 – FOREST SIDE – MODEL: UNIT 1804 - ELEV. A OR B - END 2ND FLOOR (SCHEDULE IS NOT ISSUED AS LOT SPECIFIC) REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK ROOF TRUSSES INC. (SEE DWG #TAM31083-18 DATED 11-12-18). SUPPORTING STRUCTURE 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	<u>11/24/18</u> Signature of Designer 		

NOTE:

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

DWG #TAM 31083-18s
 DWG #TAM 31086-18s

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												
Telephone number (519) 287-2242 Business	Fax number (519) 287-5750	Cell number													
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]															
<table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> House</td> <td><input type="checkbox"/> HVAC – House</td> <td><input checked="" type="checkbox"/> Building Structural</td> </tr> <tr> <td><input type="checkbox"/> Small Buildings</td> <td><input type="checkbox"/> Building Services</td> <td><input type="checkbox"/> Plumbing – House</td> </tr> <tr> <td><input type="checkbox"/> Large Buildings</td> <td><input type="checkbox"/> Detection, Lighting and Power</td> <td><input type="checkbox"/> Plumbing – All Buildings</td> </tr> <tr> <td><input type="checkbox"/> Complex Buildings</td> <td><input type="checkbox"/> Fire Protection</td> <td><input type="checkbox"/> On-site Sewage Systems</td> </tr> </table>				<input type="checkbox"/> House	<input type="checkbox"/> HVAC – House	<input checked="" type="checkbox"/> Building Structural	<input type="checkbox"/> Small Buildings	<input type="checkbox"/> Building Services	<input type="checkbox"/> Plumbing – House	<input type="checkbox"/> Large Buildings	<input type="checkbox"/> Detection, Lighting and Power	<input type="checkbox"/> Plumbing – All Buildings	<input type="checkbox"/> Complex Buildings	<input type="checkbox"/> Fire Protection	<input type="checkbox"/> On-site Sewage Systems
<input type="checkbox"/> House	<input type="checkbox"/> HVAC – House	<input checked="" type="checkbox"/> Building Structural													
<input type="checkbox"/> Small Buildings	<input type="checkbox"/> Building Services	<input type="checkbox"/> Plumbing – House													
<input type="checkbox"/> Large Buildings	<input type="checkbox"/> Detection, Lighting and Power	<input type="checkbox"/> Plumbing – All Buildings													
<input type="checkbox"/> Complex Buildings	<input type="checkbox"/> Fire Protection	<input type="checkbox"/> On-site Sewage Systems													
Description of designer's work ROYAL PINE HOMES – FOREST SIDE – MODEL: UNIT 1804 - ELEV. A OR B - END 3RD FLOOR (SCHEDULE IS NOT ISSUED AS LOT SPECIFIC) REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK ROOF TRUSSES INC. (SEE DWG #TAM31084-18 DATED 11-12-18). SUPPORTING STRUCTURE 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.
- 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 #TAM **31084-18**
 DWG #TAM **31087-18**

NORDIC STRUCTURES

COMPANY
J9 1ST FLOOR
July 7, 2018 09:23

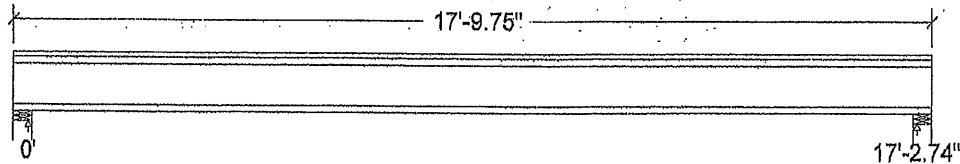
PROJECT
J1 3RD FLOOR
J1 3RD FLOOR 1804 END

Design Check Calculation Sheet Nordic Sizer - Canada 7.1

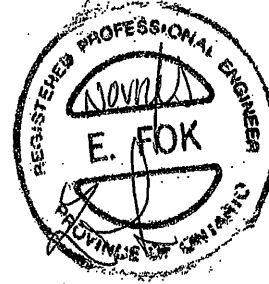
Loads:

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

Maximum Reactions (lbs), Bearing Resistances (lbs) and Bearing Lengths (in) :



Unfactored:			
Dead	172		172
Live	345		345
Factored:			
Total	732		732
Bearing:			
Resistance			
Joist	2336		2336
Support	7744		7744
Des ratio			
Joist	0.31		0.31
Support	0.09		0.09
Load case	#2		#2
Length	4-3/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		1.00
fcp sup	769		769
Kzcp sup	1.15		1.15



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

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

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

Total length: 17'-9.75"; Clear span: 17'-0.99"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 732	Vr = 2336	lbs	Vf/Vr = 0.31
Moment (+)	Mf = 3154	Mr = 6255	lbs-ft	Mf/Mr = 0.50
Perm. Defl'n	0.10 = < L/999	0.57 = L/360	in	0.18
Live Defl'n	0.21 = < L/999	0.43 = L/480	in	0.48
Total Defl'n	0.31 = L/668	0.86 = L/240	in	0.36
Bare Defl'n	0.24 = L/873	0.57 = L/360	in	0.41
Vibration	Lmax = 17'-2.8	Lv = 18'-11.1	ft	0.91
Defl'n	= 0.028	= 0.037	in	0.77

DWNO. YAM 0376-18 H
STRUCTURAL
COMPONENT ONLY

T-LSW431

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:

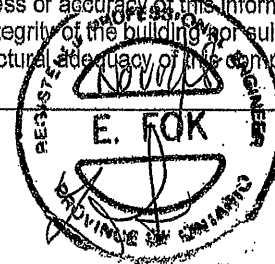
Shear : LC #2 = 1.25D + 1.5L
 Moment(+) : LC #2 = 1.25D + 1.5L
 Deflection: LC #1 = 1.0D (permanent)
 LC #2 = 1.0D + 1.0L (live)
 LC #2 = 1.0D + 1.0L (total)
 LC #2 = 1.0D + 1.0L (bare joist)
 Bearing : Support 1 = LC #2 = 1.25D + 1.5L
 Support 2 = LC #2 = 1.25D + 1.5L
 Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake
 L=live(use,occupancy) Ls=live(storage,equipment) f=fire
 All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:

Deflection: E_{IEff} = 433e06 lb-in² K= 6.18e06 lbs
 "Live" deflection = Deflection from all non-dead loads (live, wind, snow...)

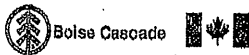
Design Notes:

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-09 Engineering Design in Wood standard, which includes Update No.1
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. 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 or suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of the component based on the design criteria and loadings shown.



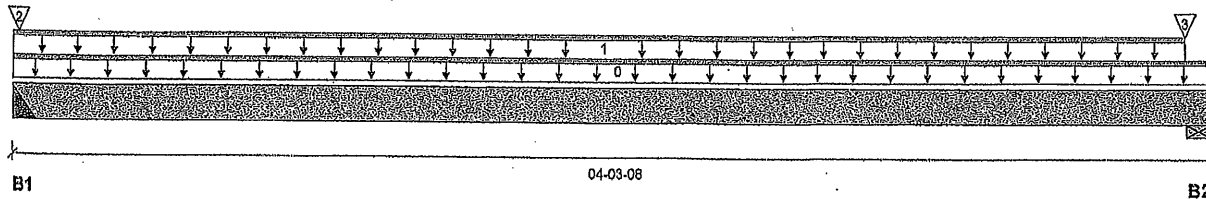
DWG NO. YAM B376-18
 STRUCTURAL
 COMPONENT ONLY

T-LSK431(1)

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED**BC CALC® Member Report
Build 6475

Dry | 1 span | No cant.

July 7, 2018 09:13:05

Job name:
Address:
City, Province, Postal Code: BRA...ON
Customer:
Code reports: CCMC 12472-RFile name: UNIT 1804 END.mmdl
Description: 1ST FLOOR FRAMING\Dro...ed Beams\B2 DR(I1171)
Specifier:
Designer: AJ
Company:**Reaction Summary (Down / Uplift) (lbs)**

Bearing	Live	Dead	Snow	Wind
B1, 2-1/2"	63 / 0	58 / 0		
B2, 3-1/2"	61 / 0	56 / 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	04-03-08	Top	1.00	0.65	1.00	1.15	
1	R1(I1178)	Unf. Lin. (lb/ft)	L	00-00-00	04-02-06	Top	28	16			n/a
2	R1(I1178)	Conc. Pt. (lbs)	L	00-00-04	00-00-04	Top	5	4			n/a
3	R1(I1178)	Conc. Pt. (lbs)	L	04-02-06	04-02-06	Top	3	1			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	141 ft-lbs	23,220 ft-lbs	0.6%	1	02-01-04
End Shear	81 lbs	11,571 lbs	0.7%	1	01-00-00
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	02-01-04
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-01-04
Max Defl.	0.001"	n/a	n/a	4	02-01-04
Span / Depth	4.9				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2-1/2" x 3-1/2"	167 lbs	n/a	1.6%	HUC410
B2	Wall/Plate 3-1/2" x 3-1/2"	161 lbs	1.2%	1.1%	Unspecified

Cautions

Header for the hanger HUC410 at B1 is a Triple 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF.
Hanger model HUC410 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.
Calculations assume member is fully braced.
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
CONFORMS TO OBC 2012
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Member has no side loads.

DWG NO. YAM 0377-18
STRUCTURAL
COMPONENT ONLY

Handwritten signature



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

PASSED

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

July 7, 2018 09:13:05

File name: UNIT 1804 END.mmdl

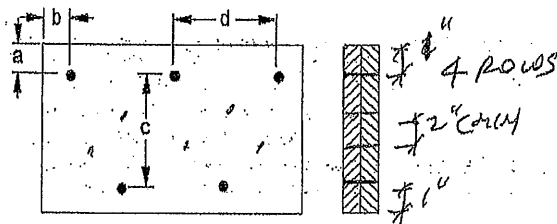
Description: 1ST FLOOR FRAMING\Drop...ed Beams\B2 DR\1171

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



a minimum = 1"

c = 1-1/2"

b minimum = 3"

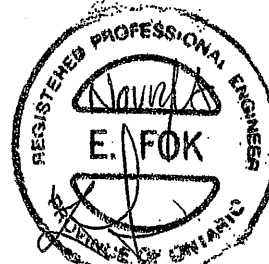
d = 1"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



Disclosure

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

OWEN YAM 0377-18th
STRUCTURAL
COMPONENT ONLY

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

T. L. Simpson



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

PASSED

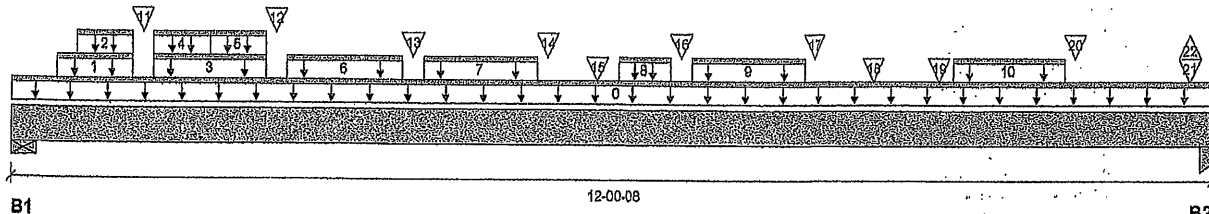
BC CALC® Member Report
Build 6475

Dry | 1 span | No cant.

July 7, 2018 09:13:05

Job name:
Address:
City, Province, Postal Code: BRA...ON
Customer:
Code reports: CCMC 12472-R

File name: UNIT 1804 END.mmdl
Description: 1ST FLOOR FRAMING\Flush Beams\B1 DR\1221
Specifier:
Designer: AJ
Company:



Total Horizontal Product Length = 12-00-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	3,761 / 0	2,431 / 0		
B2, 5-1/4"	5,370 / 4	3,882 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-00-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	Bk2(11161)	Unf. Lin. (lb/ft)	L	00-05-08	01-02-12	Top		81			n/a
2	Bk2(11161)	Unf. Lin. (lb/ft)	L	00-08-00	01-02-12	Top	328	164			n/a
3	Bk2(11191)	Unf. Lin. (lb/ft)	L	01-05-04	02-06-12	Top		81			n/a
4	Bk2(11191)	Unf. Lin. (lb/ft)	L	01-05-04	02-00-00	Top	328	164			n/a
5	Bk2(11191)	Unf. Lin. (lb/ft)	L	02-00-00	02-06-12	Top	354	177			n/a
6	Bk2(11192)	Unf. Lin. (lb/ft)	L	02-09-04	03-10-12	Top	354	258			n/a
7	Bk2(11176)	Unf. Lin. (lb/ft)	L	04-01-04	05-02-12	Top	354	258			n/a
8	Bk2(11332)	Unf. Lin. (lb/ft)	L	06-00-08	06-06-12	Top	354	258			n/a
9	Bk2(11279)	Unf. Lin. (lb/ft)	L	06-09-04	07-10-12	Top	354	258			n/a
10	Bk2(11294)	Unf. Lin. (lb/ft)	L	09-05-04	10-06-12	Top	354	258			n/a
11	-	Conc. Pt. (lbs)	L	01-04-00	01-04-00	Top	559	237			n/a
12	-	Conc. Pt. (lbs)	L	02-08-00	02-08-00	Top	550	233			n/a
13	-	Conc. Pt. (lbs)	L	04-00-00	04-00-00	Top	553	234			n/a
14	-	Conc. Pt. (lbs)	L	05-04-00	05-04-00	Top	471	204			n/a
15	J1DJ(11159)	Conc. Pt. (lbs)	L	05-10-00	05-10-00	Top	388	256			n/a
16	-	Conc. Pt. (lbs)	L	06-08-00	06-08-00	Top	457	246			n/a
17	-	Conc. Pt. (lbs)	L	08-00-00	08-00-00	Top	444	180			n/a
18	-	Conc. Pt. (lbs)	L	08-07-06	08-07-06	Top	511	224			n/a
19	-	Conc. Pt. (lbs)	L	09-03-07	09-03-07	Top	548	314			n/a
20	-	Conc. Pt. (lbs)	L	10-08-00	10-08-00	Top	748	459			n/a
21	B4(11233)	Conc. Pt. (lbs)	L	11-09-14	11-09-14	Top	1,485	1,348			n/a
22	B4(11233)	Conc. Pt. (lbs)	L	11-09-14	11-09-14	Top	-4				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	26,878 ft-lbs	55,212 ft-lbs	48.7%	1	05-10-00
End Shear	8,712 lbs	21,696 lbs	40.2%	1	10-07-06
Total Load Deflection	L/447 (0.307")	n/a	53.7%	6	06-00-08
Live Load Deflection	L/733 (0.187")	n/a	49.1%	8	06-00-08
Max Defl.	0.307"	n/a	n/a	6	06-00-08
Span / Depth	11.6				

OWNED BY TAM B378184
STRUCTURAL
COMPONENT ONLY

T-LSHUP33



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

PASSED

BC CALC® Member Report
Build 6476

Dry | 1 span | No cant.

July 7, 2018 09:13:05

Job name:
Address:
City, Province, Postal Code: BRA...ON
Customer:
Code reports: CCMC 12472-R

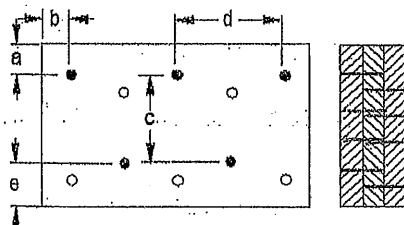
File name: UNIT 1804 END.mmdl
Description: 1ST FLOOR FRAMING\Flush Beams\B1 DR(1221)
Specifier:
Designer: AJ
Company:

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 3-1/2" x 5-1/4"	8,666 lbs	41.7%	38.7%	Unspecified
B2	Column 5-1/4" x 5-1/4"	12,907 lbs	72.1%	38.4%	Unspecified

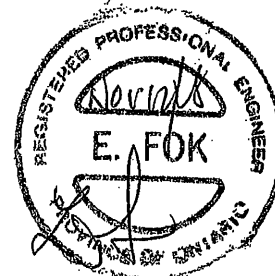
Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume unbraced length of Top: 00-10-10, Bottom: 00-10-10.
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
CONFORMS TO OBC 2012
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Nailing schedule applies to both sides of the member.

Connection Diagram: Full Length of Member



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



Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Nailing schedule applies to both sides of the member.
Connectors are: 1 Nails

3-1/2" ARDOX SPIRAL

Disclosure

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

BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,
STRUCTURAL COMPONENT ONLY P62

T-111433(y)



Boise Cascade

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR FRAMING\Flush Beams\B10A(1206)**

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Bulld 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

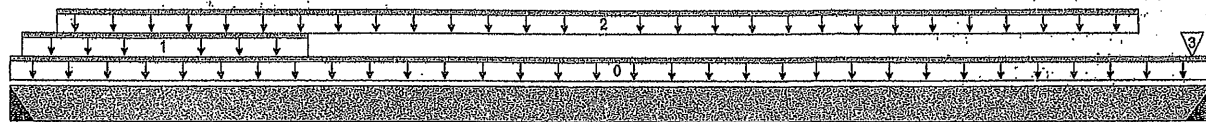
File name: UNIT 1804 END.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B10A(1206)

Specifier:

Designer: AJ

Company:



B1

14-09-12

B2

Total Horizontal Product Length = 14-09-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	1,261 / 0	686 / 0		
B2, 2"	673 / 0	373 / 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	14-09-12	Top	1.00	0.65	1.00	1.15	00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-01-12	03-07-12	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-07-00	13-11-00	Top	76	38			n/a
3	J5(11146)	Conc. Pt. (lbs)	L	14-07-00	14-07-00	Top	71	36			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6,233 ft-lbs	11,610 ft-lbs	53.7%	1	06-07-00
End Shear	2,305 lbs	5,785 lbs	39.8%	1	00-11-08
Total Load Deflection	L/254 (0.689")	n/a	94.4%	4	07-01-00
Live Load Deflection	L/393 (0.446")	n/a	91.7%	5	07-01-00
Max Defl.	0.689"	n/a	n/a	4	07-01-00
Span / Depth	18.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	2,724 lbs	n/a	63.8%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	1,475 lbs	n/a	34.5%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. 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 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

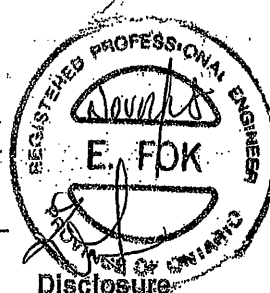
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

DWG NO. TAM 8379-18 H
STRUCTURAL
COMPONENT ONLY

**Disclosure**

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0768 before installation.

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

T-1814240



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

PASSED

BC CALCO® Member Report

1ST FLOOR FRAMING\Flush Beams\B3(11167)

Dry | 1 span | No cant.

July 7, 2018 09:13:05

Buld 6475

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B3(11167)

City, Province, Postal Code: BRA...ON

Specifier:

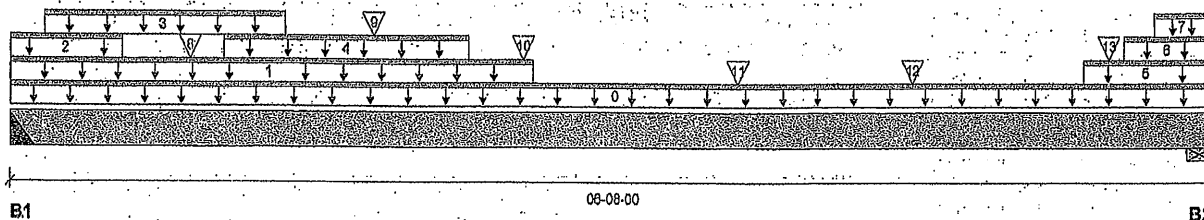
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 06-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	1,557 / 0	1,004 / 0		
B2, 5-1/2"	1,748 / 0	1,037 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-08-00	Top	10				00-00-00
1	2(1132)	Unf. Lin. (lb/ft)	L	00-00-00	02-10-08	Top	81				n/a
2	2(1132)	Unf. Lin. (lb/ft)	L	00-00-00	00-07-08	Top	218	105			n/a
3	2(1132)	Unf. Lin. (lb/ft)	L	00-02-04	01-06-04	Top	251	126			n/a
4	2(1132)	Unf. Lin. (lb/ft)	L	01-02-04	02-06-04	Top	266	133			n/a
5	3(1322)	Unf. Lin. (lb/ft)	L	05-11-08	06-08-00	Top	81				n/a
6	3(1322)	Unf. Lin. (lb/ft)	L	06-02-04	06-08-00	Top	112	56			n/a
7	3(1322)	Unf. Lin. (lb/ft)	L	06-04-04	06-08-00	Top	208	103			n/a
8	J3(11187)	Conc. Pt. (lbs)	L	01-00-00	01-00-00	Top	173	86			n/a
9	J4DJ(11327)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	Top	188	94			n/a
10		Conc. Pt. (lbs)	L	02-09-14	02-09-14	Top	842	440			n/a
11	J4(1942)	Conc. Pt. (lbs)	L	04-00-00	04-00-00	Top	129	65			n/a
12	J4DJ(11236)	Conc. Pt. (lbs)	L	05-00-00	05-00-00	Top	188				n/a
13		Conc. Pt. (lbs)	L	06-01-04	06-01-04	Top	843				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,153 ft-lbs	23,220 ft-lbs	22.2%	1	02-09-08
End Shear	2,883 lbs	11,671 lbs	24.9%	1	01-00-08
Total Load Deflection	L/999 (0.045")	n/a	n/a	4	03-01-08
Live Load Deflection	L/999 (0.028")	n/a	n/a	5	03-01-08
Max Defl.	0.045"	n/a	n/a	4	03-01-08
Span / Depth	7.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 3" x 3-1/2"	3,591 lbs	n/a	28.0%	HGUS410
B2	Wall/Plate 5-1/2" x 3-1/2"	3,918 lbs	47.6%	16.7%	Unspecified

Cautions

Header for the hanger HGUS410 at B1 is a Triple 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

DWG NO. FAN B3801R 1/1
STRUCTURAL
COMPONENT ONLY

T. L. 8/4/15



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR FRAMING\Flush Beams\B3\I1167)**

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

File name: UNIT 1804 END.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B3\I1167)

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.

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

Hanger Manufacturer: Unassigned

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

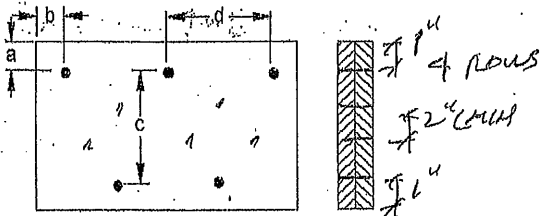
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connection Diagram: Full Length of Member

a minimum = 2"

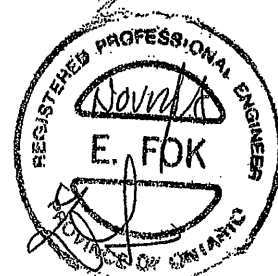
b minimum = 3"

c = 1-1/2"

d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 16d Nails

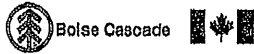
3-1/2" ARDOX SPIRAL**Disclosure**

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

BWRND.TAM B300-184
STRUCTURAL
COMPONENT ONLY 16d

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

T-1811435(v)



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

PASSED

BC CALC® Member Report

1ST FLOOR FRAMING\Flush Beams\B4(1233)

Dry | 1 span | No cant.

July 7, 2018 09:13:05

Build 6475

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B4(1233)

City, Province, Postal Code: BRA...ON

Specifier:

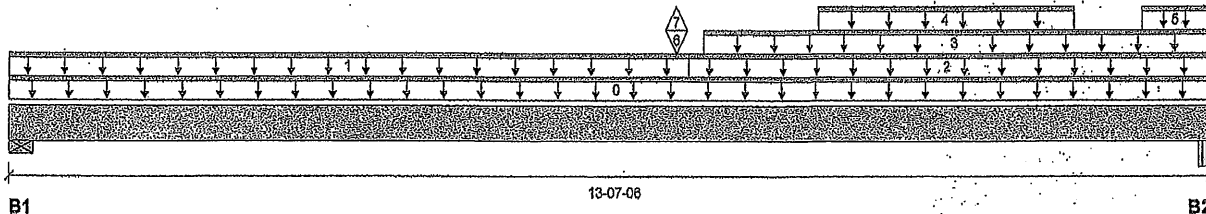
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 13-07-06

Reaction Summary (Down / Uplift) (lbs)

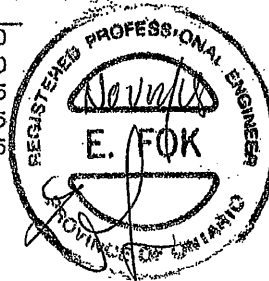
Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	1,057 / 3	825 / 0		
B2, 5-1/4"	1,481 / 4	1,345 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	13-07-06	Top		14			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-07-06	Top	47	24			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	07-07-06	13-07-06	Top	28	14			n/a
3	4(1237)	Unf. Lin. (lb/ft)	L	07-09-06	13-07-06	Top		81			n/a
4	4(1237)	Unf. Lin. (lb/ft)	L	09-01-10	12-00-10	Top	53	21			n/a
5	4(1237)	Unf. Lin. (lb/ft)	L	12-10-02	13-07-06	Top	254	120			n/a
6	-	Conc. Pt. (lbs)	L	07-05-11	07-05-11	Top	1,660	1,084			n/a
7	-	Conc. Pt. (lbs)	L	07-05-11	07-05-11	Top	-7				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	15,875 ft-lbs	36,222 ft-lbs	43.8%	1	07-05-10
End Shear	3,453 lbs	17,356 lbs	19.9%	1	12-04-10
Total Load Deflection	L/397 (0.397")	n/a	60.5%	6	06-10-05
Live Load Deflection	L/712 (0.221")	n/a	50.6%	8	06-10-05
Max Defl.	0.397"	n/a	n/a	6	06-10-05
Span / Depth	16.6				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 5-1/4"	2,617 lbs	49.1%	17.2%	Unspecified
B2	Beam 5-1/4" x 5-1/4"	3,903 lbs	16.2%	11.6%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

CONFORMS TO UBC 2012

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Nailing schedule applies to both sides of the member.

DWG NO. TAM B3B1-18 H
STRUCTURAL
COMPONENT ONLY

T-1811436



Boise Cascade

**Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR FRAMING\Flush Beams\B4\11233)**

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

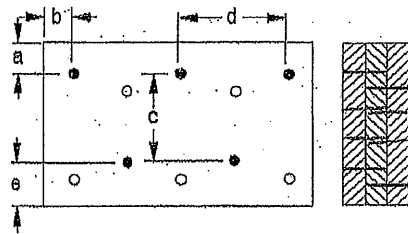
File name: UNIT 1804 END.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B4\11233)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member

4 Pous

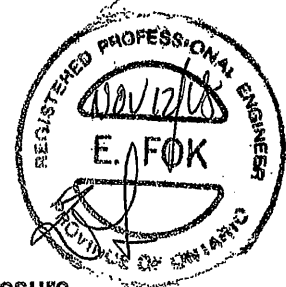
a minimum = 8"
b minimum = 3"

c = 6 1/2"
d = 4"
e minimum = 2"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Nailing schedule applies to both sides of the member.

Connectors are: 16d Nails

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

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DWG NO. TAM 8381-181
STRUCTURAL
COMPONENT ONLY 102
BC CALC®, BC FRAMER®, AJS™,
ALLJOIST®, BC RIM BOARD™, BC®,
BOISE GLULAM™, BC FloorValue®,
VERSA-LAM®, VERSA-RIM PLUS®

F-18049661

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED**

BC CALC® Member Report

1ST FLOOR FRAMING\Flush Beams\B5(1158)

Dry | 1 span | No cant.

July 7, 2018 09:13:05

Build 6475

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B5(1158)

City, Province, Postal Code: BRA...ON

Specifier:

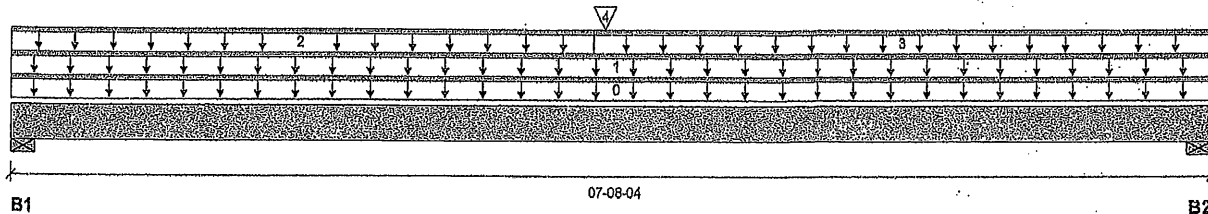
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-08-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	706 / 0	407 / 0		
B2, 4-3/8"	769 / 0	435 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.85	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-08-04	Top		10			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-08-04	Top	10	5			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-08-06	Top	6	3			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-08-06	07-08-04	Top	28	14			n/a
4	B10A(1206)	Conc. Pt. (lbs)	L	03-09-04	03-09-04	Top	1,255	663			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	5,374 ft-lbs	23,220 ft-lbs	23.1%	1	03-09-04
End Shear	1,575 lbs	11,571 lbs	13.6%	1	06-06-06
Total Load Deflection	L/999 (0.059")	n/a	n/a	4	03-09-04
Live Load Deflection	L/999 (0.038")	n/a	n/a	5	03-09-04
Max Defl.	0.059"	n/a	n/a	4	03-09-04
Span / Depth	9.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 2-3/8" x 3-1/2"	1,568 lbs	44.1%	15.5%	Unspecified
B2	Wall/Plate 4-3/8" x 3-1/2"	1,682 lbs	25.7%	9.0%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

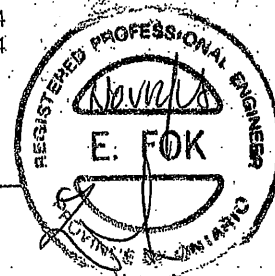
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO CBC 2012

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

DWG NO. TAM 6382-18b
STRUCTURAL
COMPONENT ONLY

T-1811437



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR FRAMING\Flush Beams\B5(i1158)**

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B5(i1158)

City, Province, Postal Code: BRA...ON

Specifier:

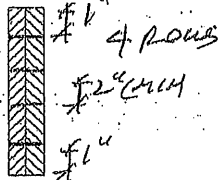
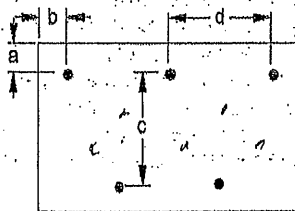
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:

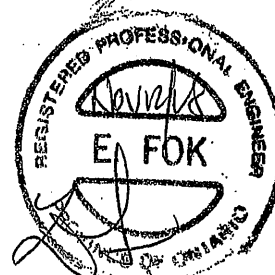
Connection Diagram: Full Length of Member

a minimum = 8"
b minimum = 3"

c = 3-1/2"
d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 16d Nails

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

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DWONG.TAM B782-186
STRUCTURAL
COMPONENT ONLY

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

T-LSW43767



Bolse Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR FRAMING\Flush Beams\B6(11179)**

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

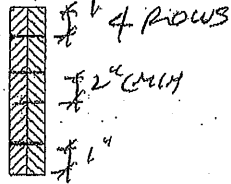
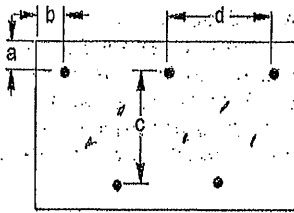
File name: UNIT 1804 END.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B6(11179)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member

a minimum = 8"

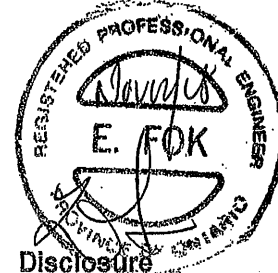
c = 2-1/2"

b minimum = 3"

d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 1 Nails

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

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BWR NO. TAM 0303-18
STRUCTURAL
COMPONENT ONLY

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

T-181143861



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B6(11179)

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

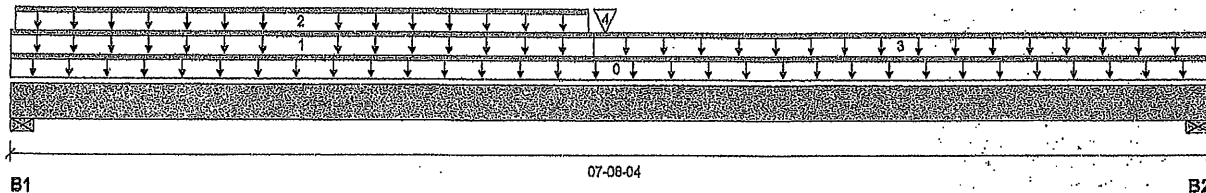
File name: UNIT 1804 END.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B6(11179)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 07-08-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	1,047 / 0	578 / 0		
B2, 4-3/8"	588 / 0	350 / 0		

Load Summary

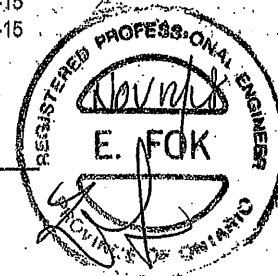
Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-08-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-08-06	Top	12	6			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	00-00-06	03-07-15	Top	240	120			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-08-06	07-08-04	Top	10	5			n/a
4	B10A(11206)	Conc. Pt. (lbs)	L	03-09-04	03-09-04	Top	679	376			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,514 ft-lbs	23,220 ft-lbs	19.4%	1	03-09-04
End Shear	1,768 lbs	11,571 lbs	15.3%	1	00-11-14
Total Load Deflection	L/999 (0.054")	n/a	n/a	4	03-07-15
Live Load Deflection	L/999 (0.034")	n/a	n/a	5	03-07-15
Max Defl.	0.054"	n/a	n/a	4	03-07-15
Span / Depth	9.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 3-1/2"	2,294 lbs	84.6%	22.8%	Unspecified
B2	Wall/Plate 4-3/8" x 3-1/2"	1,321 lbs	20.2%	7.1%	Unspecified



Notes

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

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

Calculations assume member is fully braced.

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.

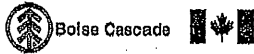
Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

DWG NO. TAM B383-104
STRUCTURAL
COMPONENT ONLY

T-111428



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

PASSED

2ND FLOOR FRAMING\Dropped Beams\B17 DR(11323)

BC CALC® Member Report

Dry | 1 span | No cant.

July 7, 2018 09:13:05

Build 6475

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 2ND FLOOR FRAMING\Dro...d Beams\B17 DR(11323)

City, Province, Postal Code: BRA...ON

Specifier:

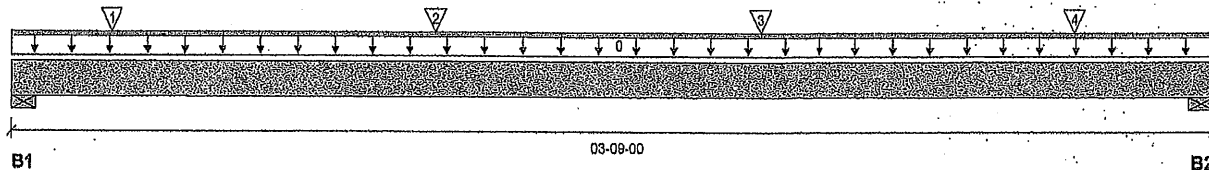
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	727 / 0	382 / 0		
B2, 4"	673 / 0	354 / 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	03-09-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	-	Conc. Pt. (lbs)	L	00-03-12	00-03-12	Top	350	175			n/a
2	-	Conc. Pt. (lbs)	L	01-03-12	01-03-12	Top	350	175			n/a
3	-	Conc. Pt. (lbs)	L	02-03-12	02-03-12	Top	350	175			n/a
4	-	Conc. Pt. (lbs)	L	03-03-12	03-03-12	Top	350	175			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	939 ft-lbs	23,220 ft-lbs	4.0%	1	02-03-12
End Shear	810 lbs	11,571 lbs	7.0%	1	01-01-08
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	01-10-08
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-10-08
Max Defl.	0.002"	n/a	n/a	4	01-10-08
Span / Depth	4.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	1,568 lbs	17.2%	9.2%	Unspecified
B2	Wall/Plate 4" x 3-1/2"	1,452 lbs	16.0%	8.5%	Unspecified

Notes

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

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

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

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.

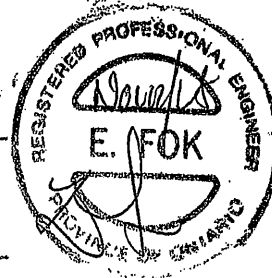
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.



DWG NO. TAM B3B4-1814
STRUCTURAL
COMPONENT ONLY
p6 1/4

T-1811429



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLOOR FRAMING\Dropped Beams\B17 DR(11323)**

Dry | 1 span | No cant.

PASSED

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

File name: UNIT 1804 END.mmdl

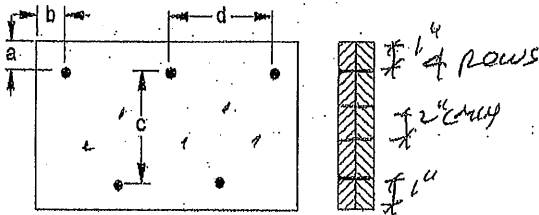
Description: 2ND FLOOR FRAMING\Dro...d Beams\B17 DR(11323)

Specifier:

Designer: AJ

Company:

July 7, 2018 09:13:05

Connection Diagram: Full Length of Member

a minimum = 1"
b minimum = 3"

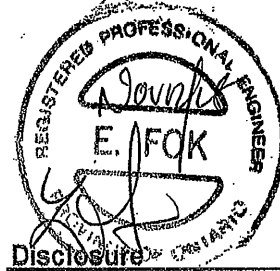
c = 3-1/2"
d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.

Connectors are: 16d 1 Nails

3-1/2" ARDOX SPIRAL

**Disclosure**

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

OWNER: TAM 030418H BC CALC®, BC FRAMER®, AJS™,
STRUCTURAL ALLJOIST®, BC RIM BOARD™, BC®,
COMPONENT ONLY 16d BOISE GLULAM™, BC FloorValue®,
VERSA-LAM®, VERSA-RIM PLUS®

T-180429(1)



Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Flush Beams\B11A(1222)**

BC CALC® Member Report

Dry | 1 span | No cant.

July 7, 2018 09:13:05

Build 6475

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 2ND FLOOR FRAMING\Flush Beams\B11A(1222)

City, Province, Postal Code: BRA...ON

Specifier:

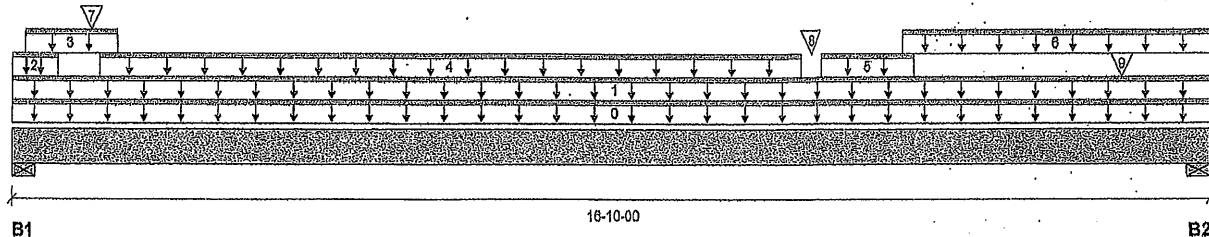
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 16-10-00

Reaction Summary (Down / Uplift) (lbs)

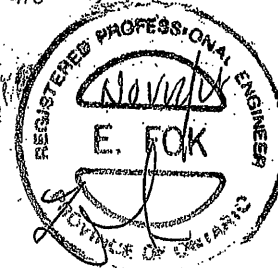
Bearing	Live	Dead	Snow	Wind
B1, 13-1/2"	2,811 / 0	2,890 / 0		
B2, 11"	3,298 / 0	2,807 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	16-10-00	Top		12			00-00-00
1	E21(185)	Unf. Lin. (lb/ft)	L	00-00-00	16-10-00	Top		81			n/a
2	E21(185)	Unf. Lin. (lb/ft)	L	00-00-00	00-07-14	Top	252	126			n/a
3	E21(185)	Unf. Lin. (lb/ft)	L	00-02-04	01-06-04	Top	160	80			n/a
4	E21(185)	Unf. Lin. (lb/ft)	L	01-03-00	11-00-00	Top		12			n/a
5	E21(185)	Unf. Lin. (lb/ft)	L	11-03-14	12-07-14	Top	259	160			n/a
6	E21(185)	Unf. Lin. (lb/ft)	L	12-05-14	16-10-00	Top	360	180			n/a
7		Conc. Pt. (lbs)	L	01-01-10	01-01-10	Top	1,800	1,378			n/a
8	E21(185)	Conc. Pt. (lbs)	L	11-01-12	11-01-12	Top	1,176	980			n/a
9		Conc. Pt. (lbs)	L	15-07-03	15-07-03	Top	845	473			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	18,696 ft-lbs	35,392 ft-lbs	52.8%	1	11-01-12
End Shear	6,517 lbs	14,484 lbs	38.1%	1	14-11-02
Total Load Deflection	L/368 (0.486")	n/a	65.2%	4	09-00-11
Live Load Deflection	L/824 (0.217")	n/a	43.7%	5	09-04-00
Max Defl.	0.486"	n/a	n/a	4	09-00-11
Span / Depth	15.1				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 13-1/2" x 3-1/2"	7,830 lbs	38.8%	13.6%	Unspecified
B2	Wall/Plate 11" x 3-1/2"	8,457 lbs	51.4%	18.0%	Unspecified

DWG NO. TAM B3851817
STRUCTURAL
COMPONENT ONLY

T-1811440



Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Flush Beams\B11A(I1222)**

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

File name: UNIT 1804 END.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B11A(I1222)

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.

Calculations assume member is fully braced.

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

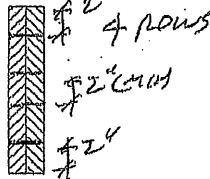
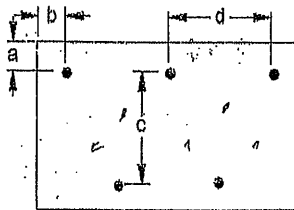
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

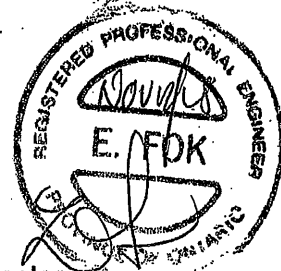
CONFORMS TO QBC 2012

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connection Diagram: Full Length of Membera minimum = 2"
b minimum = 3"c = 7-7/8"
d = 3-1/2"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 1 Nails

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

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

DWG NO. TAM 0305184
STRUCTURAL
COMPONENT ONLY

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

T-181149061



Boise Cascade



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B12(1262)

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

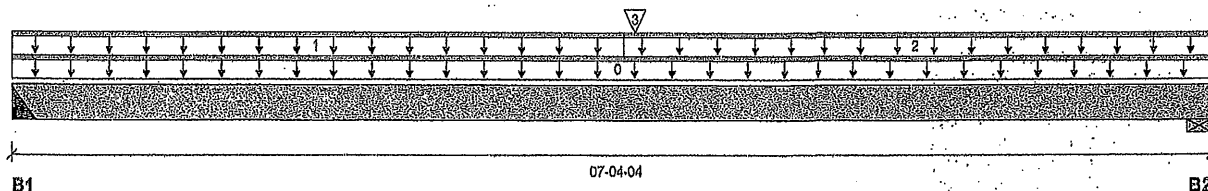
File name: UNIT 1804 END.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B12(1262)

Specifier:

Designer: AJ

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	338 / 0	208 / 0		
B2, 2-3/4"	394 / 0	237 / 0		

Load Summary

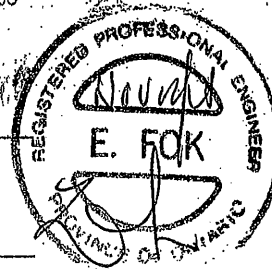
Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-04-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-08-08	Top	22	11			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-08-08	07-04-04	Top	40	20			n/a
3	B16(1268)	Conc. Pt. (lbs)	L	03-09-06	03-09-06	Top	504	260			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,400 ft-lbs	23,220 ft-lbs	10.3%	1	03-09-06
End Shear	787 lbs	11,571 lbs	6.8%	1	06-04-00
Total Load Deflection	L/999 (0.026")	n/a	n/a	4	03-08-08
Live Load Deflection	L/999 (0.016")	n/a	n/a	5	03-08-08
Max Defl.	0.026"	n/a	n/a	4	03-08-08
Span / Depth	8.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 3-1/2"	767 lbs	n/a	9.0%	HGUS410
B2	Wall/Plate 2-3/4" x 3-1/2"	886 lbs	21.6%	7.5%	Unspecified



Cautions

Header for the hanger HGUS410 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 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
 Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

CONFORMS TO OBC 2012

DWG NO. TAM B30618H
 STRUCTURAL
 COMPONENT ONLY

T-811041



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Flush Beams\B12(11262)**

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

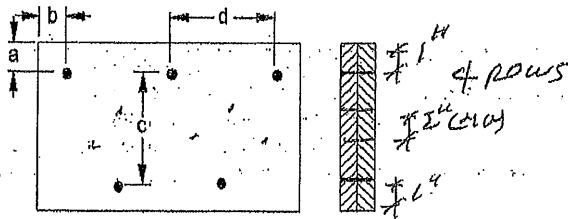
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Description: 2ND FLOOR FRAMING\Flush Beams\B12(11262)

Specifier:

Designer: AJ

Company:

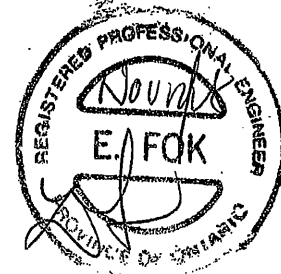
Connection Diagram: Full Length of Member

a minimum = 3"
b minimum = 3"

c = 8-1/2"
d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

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

**Disclosure**

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DWG NO. TAM B386-18H
STRUCTURAL
COMPONENT ONLY

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

T-181144(1)

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED**

BC CALC® Member Report

2ND FLOOR FRAMING\Flush Beams\B13(i1291)

Dry | 1 span | No cant.

July 7, 2018 09:13:05

Build 6475

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 2ND FLOOR FRAMING\Flush Beams\B13(i1291)

City, Province, Postal Code: BRA...ON

Specifier:

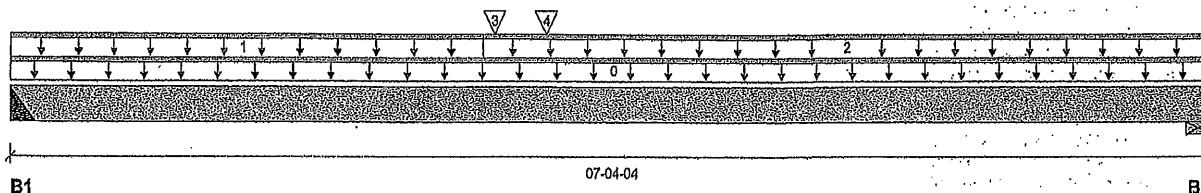
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:

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

Bearing	Live	Dead	Snow	Wind
B1, 2"	717 / 0	409 / 0		
B2, 2-3/4"	529 / 0	310 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-04-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-10-08	Top	8	4			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	02-10-08	07-04-04	Top	21	11			n/a
3	B15(i1170)	Conc. Pt. (lbs)	L	02-11-06	02-11-06	Top	1,030	541			n/a
4	STAIR	Conc. Pt. (lbs)	L	03-03-02	03-03-02	Top	98	49			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,387 ft-lbs	23,220 ft-lbs	18.9%	1	02-11-06
End Shear	1,559 lbs	11,571 lbs	13.5%	1	00-11-08
Total Load Deflection	L/999 (0.046")	n/a	n/a	4	03-05-07
Live Load Deflection	L/999 (0.029")	n/a	n/a	5	03-05-07
Max Defl.	0.046"	n/a	n/a	4	03-05-07
Span / Depth	8.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 3-1/2"	1,586 lbs	n/a	18.8%	HGUS410
B2	Wall/Plate 2-3/4" x 3-1/2"	1,181 lbs	28.7%	10.1%	Unspecified

Cautions

Header for the hanger HGUS410 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

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

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

Calculations assume member is fully braced.

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

CONFORMS TO OBC 2012

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

DWG NO. TAM 8387-18 H
STRUCTURAL
COMPONENT ONLY

T-1811422



Boise Cascade



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

2ND FLOOR FRAMING\Flush Beams\B14(I1328)

BC CALC® Member Report

Dry | 2 spans | L cant.

July 7, 2018 09:13:05

Build 6475

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 2ND FLOOR FRAMING\Flush Beams\B14(I1328)

City, Province, Postal Code: BRA...ON

Specifier:

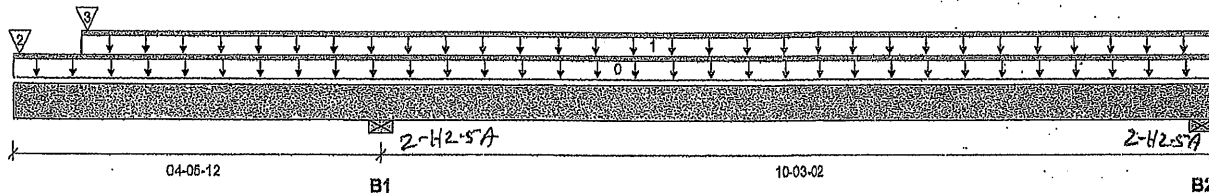
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 14-08-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1,777 / 0	1,087 / 0		
B2, 2-3/8"	115 / 460	0 / 126		

Load Summary

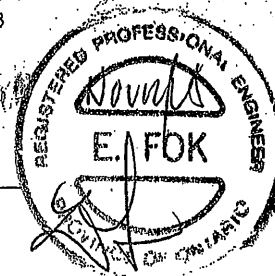
Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	14-08-14	Top		14			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-10-00	14-08-14	Top	22	11			n/a
2	B15(I1170)	Conc. Pt. (lbs)	L	00-00-14	00-00-14	Top	592	322			n/a
3	B16(I1268)	Conc. Pt. (lbs)	L	00-10-14	00-10-14	Top	522	268			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	23 ft-lbs	36,222 ft-lbs	n/a	6	13-09-00
Neg. Moment	-10,262 ft-lbs	-36,222 ft-lbs	28.3%	1	04-05-12
End Shear	829 lbs	17,356 lbs	4.8%	2	13-09-00
Cont. Shear	2,616 lbs	17,356 lbs	15.1%	1	03-05-08
Total Load Deflection	2xL/310 (0.347")	n/a	77.4%	9	00-00-00
Live Load Deflection	2xL/468 (0.23")	n/a	76.9%	12	00-00-00
Total Neg. Defl.	L/999 (-0.102")	n/a	n/a	9	08-08-08
Max Defl.	-0.102"	n/a	n/a	9	08-08-08
Span / Depth	12.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 5-1/2" x 5-1/4"	4,024 lbs	32.6%	11.4%	Unspecified
B2	Wall/Plate 2-3/8" x 5-1/4"	59 lbs	1.1%	0.4%	Unspecified
B2	Uplift	848 lbs			



Cautions

Uplift of 848 lbs found at span 2 - Right. (SIM PS on 2-H2-57A @ ST. B2 - B1)

DWG NO. TAM 0308-18 H
STRUCTURAL
COMPONENT ONLY

T-161443



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Flush Beams\B13(i1291)**

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

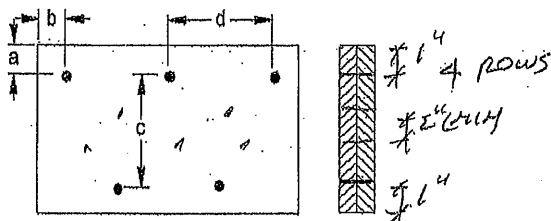
File name: UNIT 1804 END.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B13(i1291)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member

a minimum = 2"

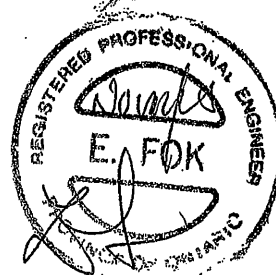
c = 1-1/2"

b minimum = 3"

d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 16d Nails

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

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

BOISE CASCADE
STRUCTURAL
COMPONENT ONLY

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

T-1814426



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

2ND FLOOR FRAMING\Flush Beams\B14(I1328)

Dry | 2 spans | L cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

File name: UNIT 1804 END.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B14(I1328)

Specifier:

Designer: AJ

Company:

Notes

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

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

Calculations assume member is fully braced.

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.

CONFORMS TO OBC 2012

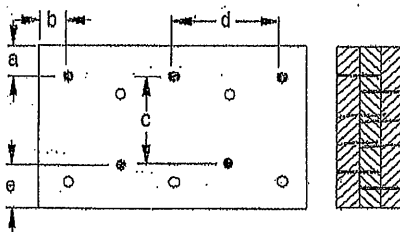
Importance Factor: Normal Part code: Part 9

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

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Nailing schedule applies to both sides of the member.

Connection Diagram: Full Length of Member



a minimum = 4"
b minimum = 3"

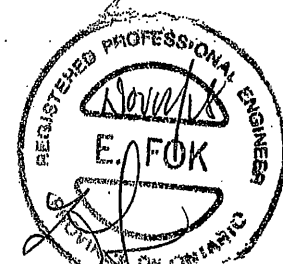
c = 6 1/2"
d = 6"
e minimum = 3"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Nailing schedule applies to both sides of the member.

Connectors are: 1 Nails

3-1/2" ARDOX SPIRAL



Disclosure

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DWG NO. TAM B360.184
STRUCTURAL
COMPONENT ONLY

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

T-18114436



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

PASSED

BC CALC® Member Report

Buld 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

July 7, 2018 09:13:05

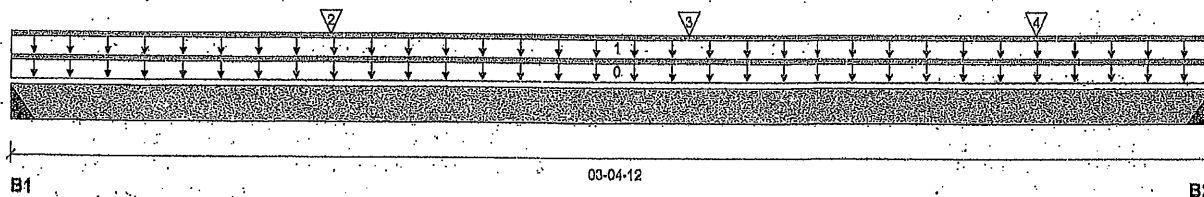
File name: UNIT 1804 END.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B16(11268)

Specifier:

Designer: AJ

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	503 / 0	259 / 0		
B2, 2"	522 / 0	268 / 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	03-04-12	Top	1.00	0.65	1.00	1.15	00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-04-12	Top	240	120			n/a
2	J5(11297)	Conc. Pt. (lbs)	L	00-10-12	00-10-12	Top	74	37			n/a
3	J5(11151)	Conc. Pt. (lbs)	L	01-10-12	01-10-12	Top	73	36			n/a
4	J5(11163)	Conc. Pt. (lbs)	L	02-10-12	02-10-12	Top	63	31			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	854 ft-lbs	11,610 ft-lbs	7.4%	1	01-09-05
End Shear	572 lbs	5,785 lbs	9.9%	1	00-11-08
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	01-08-05
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	01-08-05
Max Defl.	0.004"	n/a	n/a	4	01-08-05
Span / Depth	4.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	1,079 lbs	n/a	25.3%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	1,119 lbs	n/a	26.2%	HUS1.81/10

Cautions

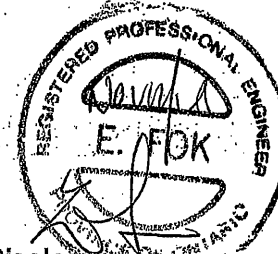
Header for the hanger HUS1.81/10 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.
Header for the hanger HUS1.81/10 at B2 is a Triple 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
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

CONFORMS TO OBC 2012

OWNED BY TAM 8390-1811
STRUCTURAL
COMPONENT ONLY

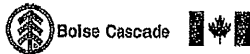


Disclosure

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Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

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

T-1811405



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B15(11170)

BC CALC® Member Report

Dry | 1 span | No cant.

July 7, 2018 09:13:05

Build 6475

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 2ND FLOOR FRAMING\Flush Beams\B15(11170)

City, Province, Postal Code: BRA...ON

Specifier:

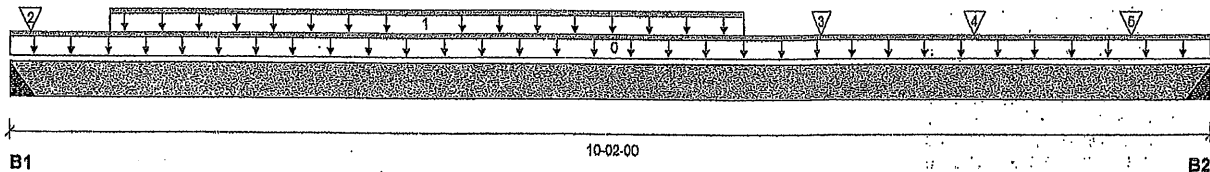
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 10-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	586 / 0	319 / 0		
B2, 2"	1,036 / 0	544 / 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	10-02-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-00	06-02-00	Top	89	45			n/a
2	J4(11175)	Conc. Pt. (lbs)	L	00-02-00	00-02-00	Top	80	40			n/a
3	J4(11306)	Conc. Pt. (lbs)	L	06-10-00	08-10-00	Top	274	137			n/a
4	J4(11284)	Conc. Pt. (lbs)	L	08-02-00	08-02-00	Top	439	220			n/a
5	J4(11289)	Conc. Pt. (lbs)	L	09-06-00	09-06-00	Top	353	177			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3,938 ft-lbs	11,610 ft-lbs	33.9%	1	06-10-00
End Shear	1,953 lbs	5,785 lbs	33.7%	1	09-02-08
Total Load Deflection	L/609 (0.196")	n/a	39.4%	4	05-04-00
Live Load Deflection	L/935 (0.128")	n/a	38.5%	5	05-04-00
Max Defl.	0.196"	n/a	n/a	4	05-04-00
Span / Depth	12.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	1,277 lbs	n/a	29.9%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	2,235 lbs	n/a	52.3%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 at B1 is a Triple 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

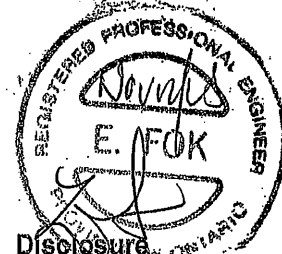
Header for the hanger HUS1.81/10 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
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

CONFORMS TO OBC 2012

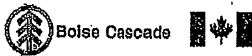
DWG NO. TAM 0309-18 H
STRUCTURAL
COMPONENT ONLY



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

T-181444



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

PASSED

3RD FLOOR FRAMING\Dropped Beams\B18 DR(1922)

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Buld 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

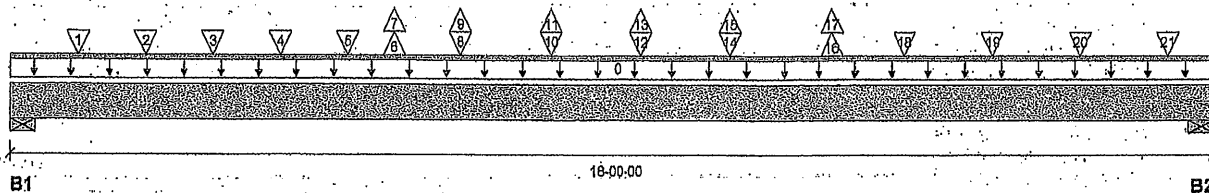
File name: UNIT 1804 END.mmdl

Description: 3RD FLOOR FRAMING\Dro...ed Beams\B18 DR(1922)

Specifier:

Designer: AJ

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	2,069 / 50	1,162 / 0	0 / 55	
B2, 5-1/2"	2,122 / 50	1,190 / 0	0 / 55	

Load Summary

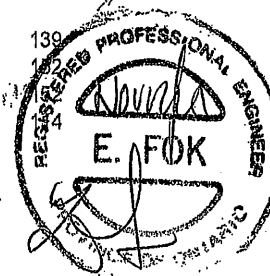
Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	18-00-00	Top		18			00-00-00
1	J3(1208)	Conc. Pt. (lbs)	L	01-00-00	01-00-00	Top	206	103			n/a
2	J3(1286)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	Top	228	114			n/a
3	J3(1286)	Conc. Pt. (lbs)	L	03-00-00	03-00-00	Top	228	114			n/a
4	J3(1286)	Conc. Pt. (lbs)	L	04-00-00	04-00-00	Top	228	114			n/a
5	J3(196)	Conc. Pt. (lbs)	L	05-00-00	05-00-00	Top	192	96			n/a
6	B20(1846)	Conc. Pt. (lbs)	L	05-08-04	05-08-04	Top	193	72	-55		n/a
7	B20(1846)	Conc. Pt. (lbs)	L	05-08-04	05-08-04	Top	-29				n/a
8	J2(1822)	Conc. Pt. (lbs)	L	06-08-00	06-08-00	Top	267	130			n/a
9	J2(1822)	Conc. Pt. (lbs)	L	06-08-00	06-08-00	Top	-9				n/a
10	J2(1927)	Conc. Pt. (lbs)	L	08-00-00	08-00-00	Top	308	149			n/a
11	J2(1927)	Conc. Pt. (lbs)	L	08-00-00	08-00-00	Top	-10				n/a
12	J2(1817)	Conc. Pt. (lbs)	L	08-04-00	09-04-00	Top	308	149			n/a
13	J2(1817)	Conc. Pt. (lbs)	L	09-04-00	09-04-00	Top	-10				n/a
14	J2(1859)	Conc. Pt. (lbs)	L	10-08-00	10-08-00	Top	335	164			n/a
15	J2(1859)	Conc. Pt. (lbs)	L	10-08-00	10-08-00	Top	-11				n/a
16	B21(1831)	Conc. Pt. (lbs)	L	12-02-12	12-02-12	Top	308	132	-55		n/a
17	B21(1831)	Conc. Pt. (lbs)	L	12-02-12	12-02-12	Top	-31				n/a
18	J3(116)	Conc. Pt. (lbs)	L	13-04-00	13-04-00	Top	278	139			n/a
19	J3(154)	Conc. Pt. (lbs)	L	14-08-00	14-08-00	Top	304				n/a
20	J3(154)	Conc. Pt. (lbs)	L	16-00-00	16-00-00	Top	304				n/a
21	J3(1116)	Conc. Pt. (lbs)	L	17-04-00	17-04-00	Top	228				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	19,947 ft-lbs	55,212 ft-lbs	36.1%	21	09-04-00
End Shear	4,313 lbs	21,696 lbs	19.9%	21	01-05-06
Total Load Deflection	L/403 (0.512")	n/a	59.6%	56	09-02-12
Live Load Deflection	L/625 (0.33")	n/a	57.6%	83	09-02-12
Max Defl.	0.512"	n/a	n/a	56	09-02-12
Span / Depth	17.4				

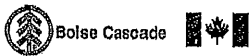
Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 5-1/4"	4,556 lbs	24.3%	12.9%	Unspecified
B2	Wall/Plate 5-1/2" x 5-1/4"	4,670 lbs	24.9%	13.3%	Unspecified



DWR NO. TAM B391-18 H
STRUCTURAL
COMPONENT ONLY

T-1811446



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

PASSED

3RD FLOOR FRAMING\Dropped Beams\B18 DR\1922

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

File name: UNIT 1804 END.mmdl

Description: 3RD FLOOR FRAMING\Dro...ed Beams\B18 DR\1922

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.

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

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

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

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

Design based on Dry Service Condition.

CONFORMS TO OBC 2012

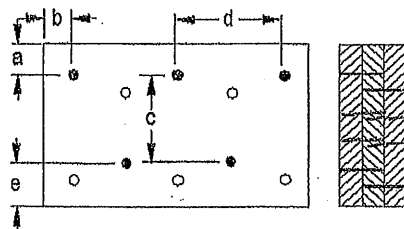
Importance Factor: Normal Part code: Part 9

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Nailing schedule applies to both sides of the member.

Member has no side loads.

Connection Diagram: Full Length of Member



a minimum = 1"

b minimum = 3"

c = 8-7/8"

d = 12"

e minimum = 2"

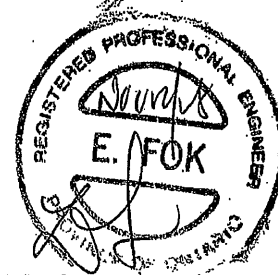
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Nailing schedule applies to both sides of the member.

Member has no side loads.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



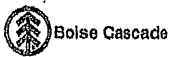
Disclosure

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

DWG NO. TAW B391 - 18H
STRUCTURAL
COMPONENT ONLY

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

T-181144661



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

PASSED

3RD FLOOR FRAMING\Flush Beams\B20(I219)

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

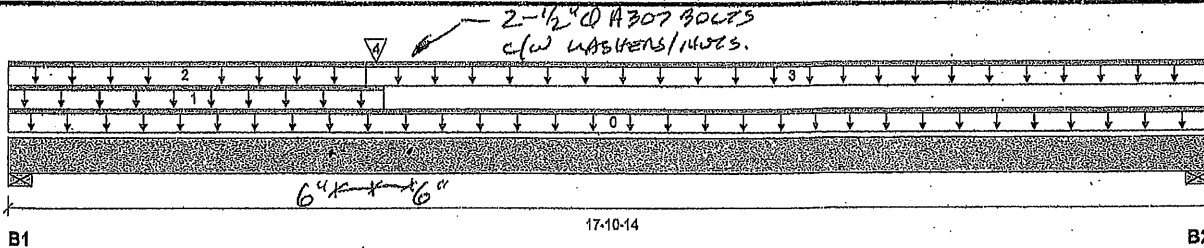
File name: UNIT 1804 END.mmdl

Description: 3RD FLOOR FRAMING\Flush Beams\B20(I219)

Specifier:

Designer: AJ

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1,439 / 0	1,156 / 0		
B2, 4-3/8"	749 / 0	545 / 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	17-10-14	Top	1.00	0.65	1.00	1.15	00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	05-06-10	Top		60			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-03-08	Top	8	4			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	05-03-08	17-10-14	Top	25	13			n/a
4	B19(I244)	Conc. Pt. (lbs)	L	05-05-04	05-05-04	Top	1,826	972			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	16,602 ft-lbs	35,392 ft-lbs	46.9%	1	05-05-04
End Shear	3,450 lbs	14,464 lbs	23.8%	1	01-05-06
Total Load Deflection	L/390 (0.53")	n/a	61.6%	4	08-03-10
Live Load Deflection	L/656 (0.315")	n/a	54.8%	5	08-03-10
Max Defl.	0.53"	n/a	n/a	4	08-03-10
Span / Depth	17.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	3,604 lbs	43.8%	15.3%	Unspecified
B2	Wall/Plate 4-3/8" x 3-1/2"	1,806 lbs	27.6%	9.7%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

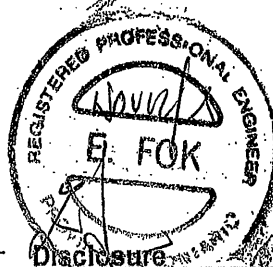
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9.

Concentrated side-load exceeds allowable magnitude for connection design. Please consult a technical representative or Professional Engineer for the design of the connection.

CONFORMS TO OBC 2012



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

PROVIDE 4 ROWS OF 3-1/2" ARDOX SPIRAL NAILS @ 12" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE / END DISTANCE. DO NOT USE AIR NAILS.

BWR NO. TAN 0392-18 H
STRUCTURAL
COMPONENT ONLY

T. 08/14/17



Boise Cascade



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

PASSED

3RD FLOOR FRAMING\Flush Beams\B21(I10)

BC CALC® Member Report

Dry | 1 span | No cant.

July 7, 2018 09:13:05

Build 6475

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 3RD FLOOR FRAMING\Flush Beams\B21(I10)

City, Province, Postal Code: BRA...ON

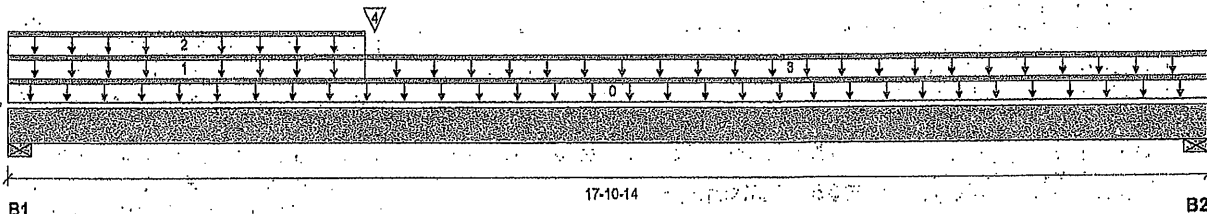
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1,166 / 0	974 / 0		
B2, 4-3/8"	697 / 0	511 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	17-10-14	Top		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	05-03-08	Top		51			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-03-08	Top	20	10			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	05-03-08	17-10-14	Top	37	19			n/a
4	B21(I244)	Conc. Pt. (lbs)	L	05-05-04	05-05-04	Top	1,288	703			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	13,179 ft-lbs	35,392 ft-lbs	37.2%	1	05-05-04
End Shear	2,791 lbs	14,464 lbs	19.3%	1	01-05-06
Total Load Deflection	L/488 (0.442")	n/a	51.3%	4	08-04-11
Live Load Deflection	L/798 (0.259")	n/a	45.1%	5	08-04-11
Max Defl.	0.442"	n/a	n/a	4	08-04-11
Span / Depth	17.4				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	2,967 lbs	36.1%	12.6%	Unspecified
B2	Wall/Plate 4-3/8" x 3-1/2"	1,685 lbs	25.8%	9.0%	Unspecified

Notes

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

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

Calculation's assume member is fully braced.

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

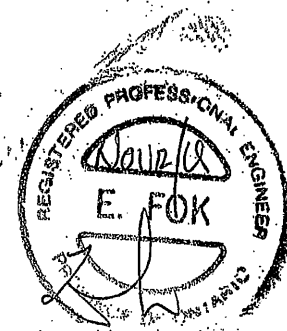
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

CONFORMS TO OBC 2012

Importance Factor: Normal Part code: Part 9

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.



DWG NO. TAM3393-18
STRUCTURAL
COMPONENT ONLY

T-L811468



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

PASSED

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

July 7, 2018 09:13:05

File name: UNIT 1804 END.mmdl

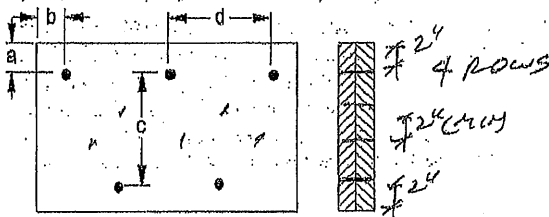
Description: 3RD FLOOR FRAMING\Flush Beams\B21(I10)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

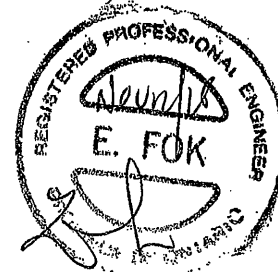
c = 7-7/8"
d = 8"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are:

Nails

3-1/2" ARDOX SPIRAL



Disclosure

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DWG NO. TAM0393-10
STRUCTURAL
COMPONENT ONLY
BC CALC®, BC FRAMER®, AJST®,
TALLJOIST®, BC RIM BOARD™, BCI®,
BOISE GLULAM™, BC FloorValue®,
VERSA-LAM®, VERSA-RIM PLUS®

T-08114986



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

PASSED

3RD FLOOR FRAMING\Flush Beams\B22(I244)

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

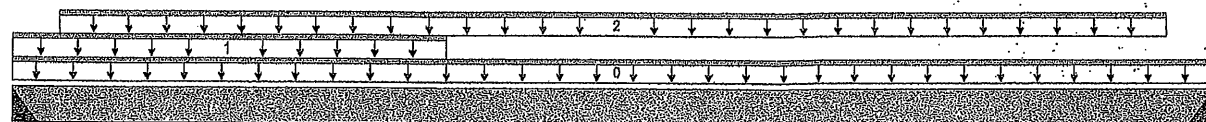
File name: UNIT 1804 END.mmdl

Description: 3RD FLOOR FRAMING\Flush Beams\B22(I244)

Specifier:

Designer: AJ

Company:



B1

09-09-00

B2

Total Horizontal Product Length = 09-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	1,832 / 0	975 / 0		
B2, 2"	1,282 / 0	700 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-09-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-08	09-04-08	Top	253	126			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7,821 ft-lbs	35,392 ft-lbs	22.1%	1	03-10-08
End Shear	3,205 lbs	14,464 lbs	22.2%	1	01-01-14
Total Load Deflection	L/999 (0.094")	n/a	n/a	4	04-09-00
Live Load Deflection	L/999 (0.061")	n/a	n/a	5	04-09-00
Max Defl.	0.094"	n/a	n/a	4	04-09-00
Span / Depth	9.6				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	2" x 3-1/2"	3,967 lbs	n/a	46.4%	HGUS410
B2 Hanger	2" x 3-1/2"	2,798 lbs	n/a	32.8%	HGUS410

Cautions

Header for the hanger HGUS410 at B1 is a Double 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Header for the hanger HGUS410 at B2 is a Double 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF.

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA Q86.

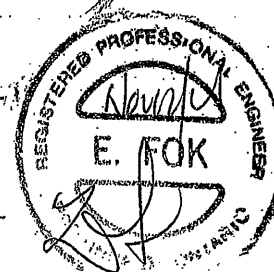
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA Q86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.



DWG NO. TAM 8394-1817
STRUCTURAL
COMPONENT ONLY

T-1811449



Boise Cascade

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

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRANSON

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

July 7, 2018 09:13:05

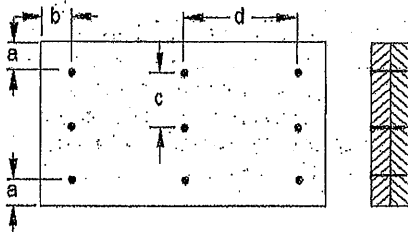
File name: UNIT 1804 END.mmdl

Description: 3RD FLOOR FRAMING\Flush Beams\B22\I244

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member

a minimum = 2"

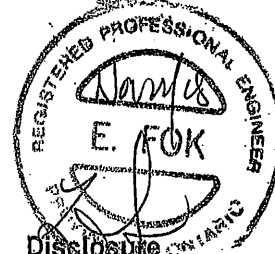
c = 4"

b minimum = 3"

d = 12"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 16d Nails

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

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OWNED BY: 0394-104
STRUCTURAL
COMPONENT ONLY

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

T-181144961



Boise Cascade



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

PASSED

3RD FLOOR FRAMING\Flush Beams\B23(1846)

Dry | 2 spans | L cant.

July 7, 2018 09:13:05

BC CALCO® Member Report

Build 6475

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 3RD FLOOR FRAMING\Flush Beams\B23(1846)

City, Province, Postal Code: BRA...ON

Specifier:

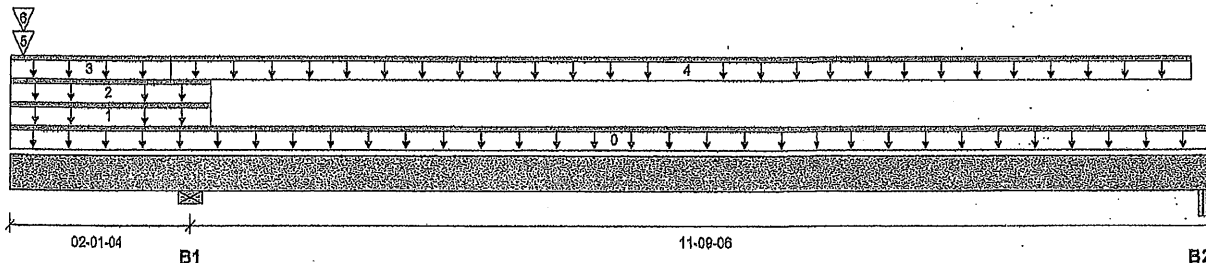
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 13-10-10

Reaction Summary (Down / Uplift) (lbs)

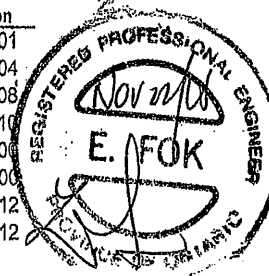
Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	444 / 0	953 / 0	435 / 0	
B2, 5-1/4"	195 / 28	78 / 0	0 / 51	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	13-10-10	Top		12			00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	02-04-00	Top	33	30	72		n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-00-00	02-04-00	Top		80			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-10-08	Top	23	11			n/a
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	01-10-08	13-08-00	Top	33	17			n/a
5	B22(1808) B25	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Top	99	378	216		n/a
6	WALL	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Top		12			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	815 ft-lbs	35,392 ft-lbs	2.3%	45	09-02-01
Neg. Moment	-2,515 ft-lbs	-35,392 ft-lbs	7.1%	50	02-01-04
End Shear	284 lbs	14,464 lbs	2.0%	45	12-05-08
Cont. Shear	1,202 lbs	14,464 lbs	8.3%	50	00-10-10
Total Load Deflection	2xL/1,998 (0.026")	n/a	n/a	122	00-00-00
Live Load Deflection	2xL/1,998 (0.015")	n/a	n/a	174	00-00-00
Total Neg. Defl.	L/999 (-0.018")	n/a	n/a	122	06-03-12
Max Defl.	-0.018"	n/a	n/a	122	06-03-12
Span / Depth	11.5				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	2,292 lbs	27.9%	9.8%	Unspecified
B2	Beam 5-1/4" x 3-1/2"	391 lbs	2.4%	1.7%	Unspecified

DWG NO. TAM B395-18 JH
STRUCTURAL
COMPONENT ONLY

T-1811450



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

PASSED

BC CALC® Member Report
Build 6476

3RD FLOOR FRAMING\Flush Beams\B23(1846)

Dry | 2 spans | L cant.

July 7, 2018 09:13:05

Job name:
Address:
City, Province, Postal Code: BRA...ON
Customer:
Code reports: CCMC 12472-R

File name: UNIT 1804 END.mmdl
Description: 3RD FLOOR FRAMING\Flush Beams\B23(1846)
Specifier:
Designer: AJ
Company:

Notes

Design meets User specified (2xL/240) Total load deflection criteria.
Design meets User specified (2xL/360) Live load deflection criteria.
Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

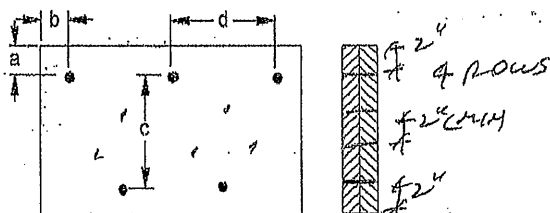
CONFORMS TO OBC 2012.

Importance Factor: Normal Part code: Part 9

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

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

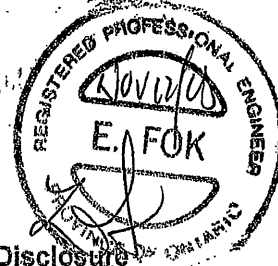
c = 7-7/8"
d = 12"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are:

Nails

3-1/2" ARDOX SPIRAL

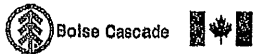


Disclosure

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

T-1811450(4)



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

PASSED

BC CALC® Member Report

3RD FLOOR FRAMING\Flush Beams\B24\I831

Dry | 2 spans | L cant.

July 7, 2018 09:13:05

Build 6475

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 3RD FLOOR FRAMING\Flush Beams\B24\I831

City, Province, Postal Code: BRA...ON

Specifier:

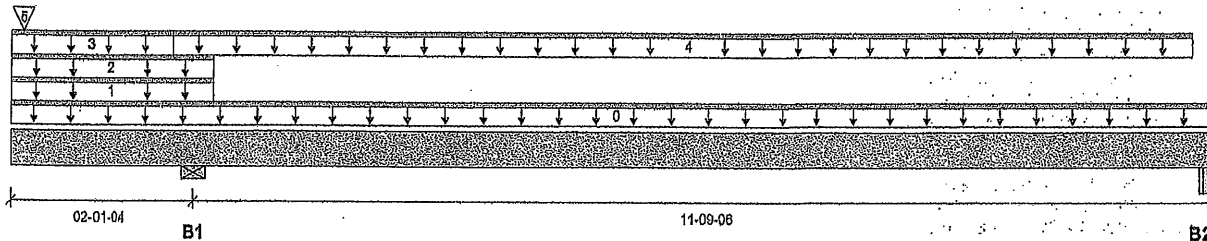
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 13-10-10

Reaction Summary (Down / Uplift) (lbs)

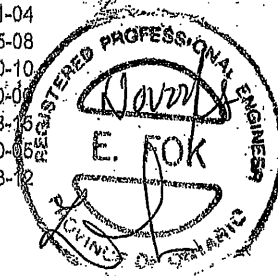
Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	586 / 0	1,011 / 0	435 / 0	
B2, 5-1/4"	313 / 30	138 / 0	0 / 51	

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	13-10-10	Top	12				00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	02-04-00	Top	33	30	72		n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-00-00	02-04-00	Top		80			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-10-08	Top	34	17			n/a
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	01-10-08	13-08-00	Top	53	27			n/a
5	B24\I808	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Top	99	378	216		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,486 ft-lbs	35,392 ft-lbs	4.2%	45	08-08-15
Neg. Moment	-2,529 ft-lbs	-35,392 ft-lbs	7.1%	49	02-01-04
End Shear	483 lbs	14,464 lbs	3.3%	45	12-05-08
Cont. Shear	1,205 lbs	14,464 lbs	8.3%	49	00-10-10
Total Load Deflection	2xL/1,998 (0.024")	n/a	n/a	122	00-00-00
Live Load Deflection	L/999 (0.021")	n/a	n/a	160	07-08-15
Total Neg. Defl.	L/999 (-0.015")	n/a	n/a	122	08-00-05
Max Defl.	0.021"	n/a	n/a	108	08-03-12
Span / Depth	11.5				



Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	2,578 lbs	31.3%	11.0%	Unspecified
B2	Beam 5-1/4" x 3-1/2"	641 lbs	4.0%	2.9%	Unspecified

DWG NO. TAM03961021
STRUCTURAL
COMPONENT ONLY

T-1811451



Boise Cascade

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

BC CALC® Member Report

Build 6475

3RD FLOOR FRAMING\Flush Beams\B24(i831)

Dry | 2 spans | L cant.

July 7, 2018 09:13:05

Job name:

File name: UNIT 1804 END.mmdl

Address:

Description: 3RD FLOOR FRAMING\Flush Beams\B24(i831)

City, Province, Postal Code: BRA...ON

Specifier:

Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:

Notes

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

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

Calculations assume member is fully braced.

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

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

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

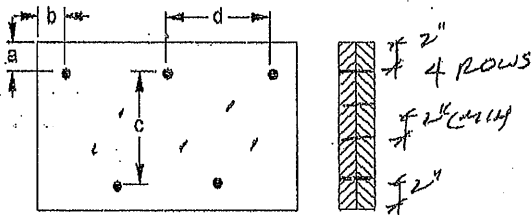
Design based on Dry Service Condition.

CONFORMS TO OBC 2012

Importance Factor: Normal Part code: Part 9

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

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connection Diagram: Full Length of Member

a minimum = 2"

c = 7-7/8"

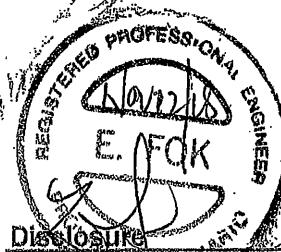
b minimum = 3"

d = 12"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are:

Nails

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

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

BWA NO. TAM

STRUCTURAL

COMPONENT ONLY

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

T-181145161



Boise Cascade



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

PASSED

3RD FLOOR FRAMING\Flush Beams\B25(I808)

Dry | 1 span | No cant.

July 7, 2018 09:13:05

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports: CCMC 12472-R

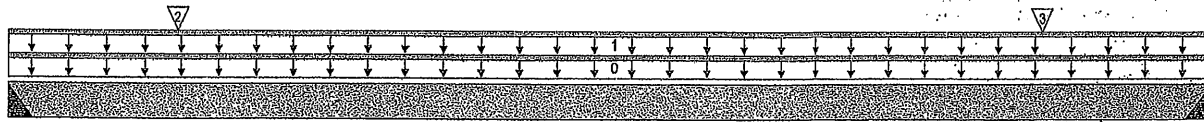
File name: UNIT 1804 END.mmdl

Description: 3RD FLOOR FRAMING\Flush Beams\B25(I808)

Specifier:

Designer: AJ

Company:



B1

06-03-00

B2

Total Horizontal Product Length = 06-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	99 / 0	378 / 0	216 / 0	
B2, 2"	99 / 0	378 / 0	216 / 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	06-03-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	06-03-00	Top		80			n/a
2	WINDOW	Conc. Pt. (lbs)	L	00-10-08	00-10-08	Top	99	90	216		n/a
3	WINDOW	Conc. Pt. (lbs)	L	05-04-08	05-04-08	Top	99	90	216		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	685 ft-lbs	23,005 ft-lbs	3.0%	0	03-01-08
End Shear	610 lbs	14,464 lbs	4.2%	13	01-01-14
Total Load Deflection	L/999 (0.005")	n/a	n/a	35	03-01-08
Live Load Deflection	L/999 (0.002")	n/a	n/a	51	03-01-08
Max Defl.	0.005"	n/a	n/a	35	03-01-08
Span / Depth	6.1				

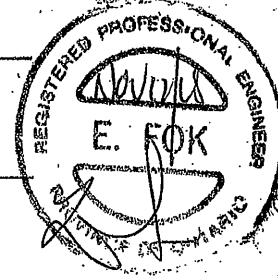
Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 3-1/2"	895 lbs	n/a	10.5%	HUC410
B2	Hanger 2" x 3-1/2"	895 lbs	n/a	10.5%	HUC410

Cautions

Header for the hanger HUC410 at B1 is a Double 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF. Hanger model HUC410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Header for the hanger HUC410 at B2 is a Double 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF.



DWNGO.TAM B397-18 H
STRUCTURAL
COMPONENT ONLY
PO 12

T-1811452



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

PASSED

BC CALC® Member Report
Build 6475

Dry | 1 span | No cant.

July 7, 2018 09:13:05

Job name:
Address:
City, Province, Postal Code: BRA...ON
Customer:
Code reports: CCMC 12472-R

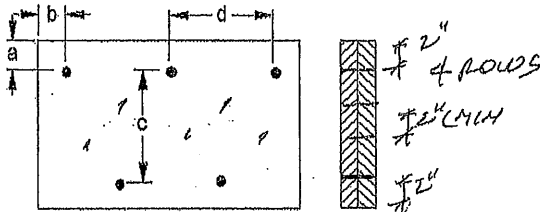
File name: UNIT 1804 END.mmdl
Description: 3RD FLOOR FRAMING\Flush Beams\B25(1808)
Specifier:
Designer: AJ
Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
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.
Unbalanced snow loads determined from building geometry were used in selected product's verification.
Design based on Dry Service Condition.
Importance Factor: Normal Part code: Part 9
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Member has no side loads.

CONFORMS TO OBC 2012

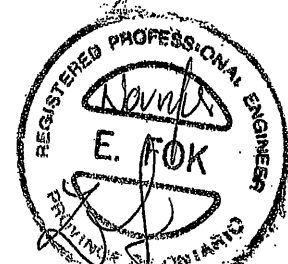
Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"
c = 7-7/8" 12"
d = 12"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Member has no side loads.
Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



Disclosure

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DRWGNO.TAM 039718H
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ALLJOIST®, BC RIM BOARD™, BCI®,
BOISE GLULAM™, BC FloorValue®,
VERSA-LAM®, VERSA-RIM PLUS®,

T-181000000