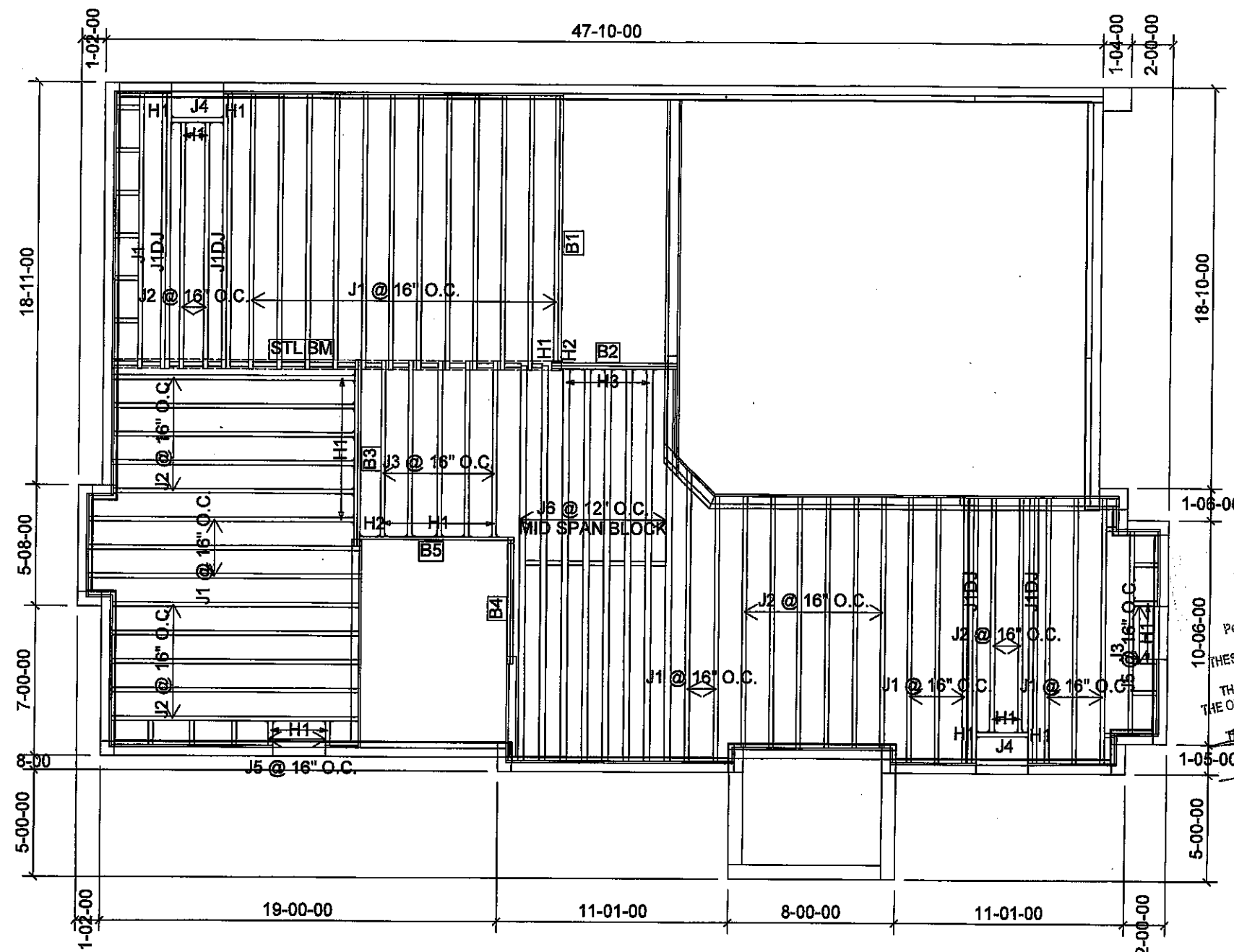
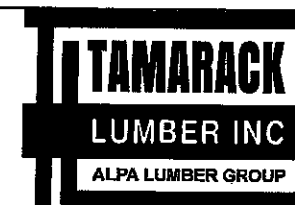




CITY OF HAMILTON
Building Division
21-1349
Permit No. 21-1349
THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE
THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH
THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW
These drawings and specifications have been reviewed
FOR CHIEF BUILDING OFFICIAL



FROM PLAN DATED: 2021/1
BUILDER: GREENPARK HOMES
SITE: RUSSELL GARDENS PH 3
MODEL: VALLEYCREEK 12A
ELEVATION: 1
LOT:
CITY: WATERDOWN
SALESMAN: MARIO DICIANO
DESIGNER: AJ
REVISION:

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.
1-JOIST BLOCKING ALONG BEARING AND
RIMBOARD CLOSURE AT ENDS. SEE
FIGURES 4 & 5 FOR REINFORCEMENT
REQUIREMENTS. FOR **HOLES** INCLUDING
DUCT CHASE AND **FIELD CUT OPENINGS**
SEE FIGURE 7, TABLES 1 & 2. **CERAMIC TILE**
APPLICATION AS PER O.B.C 9.30.6.

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

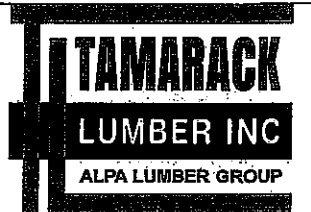
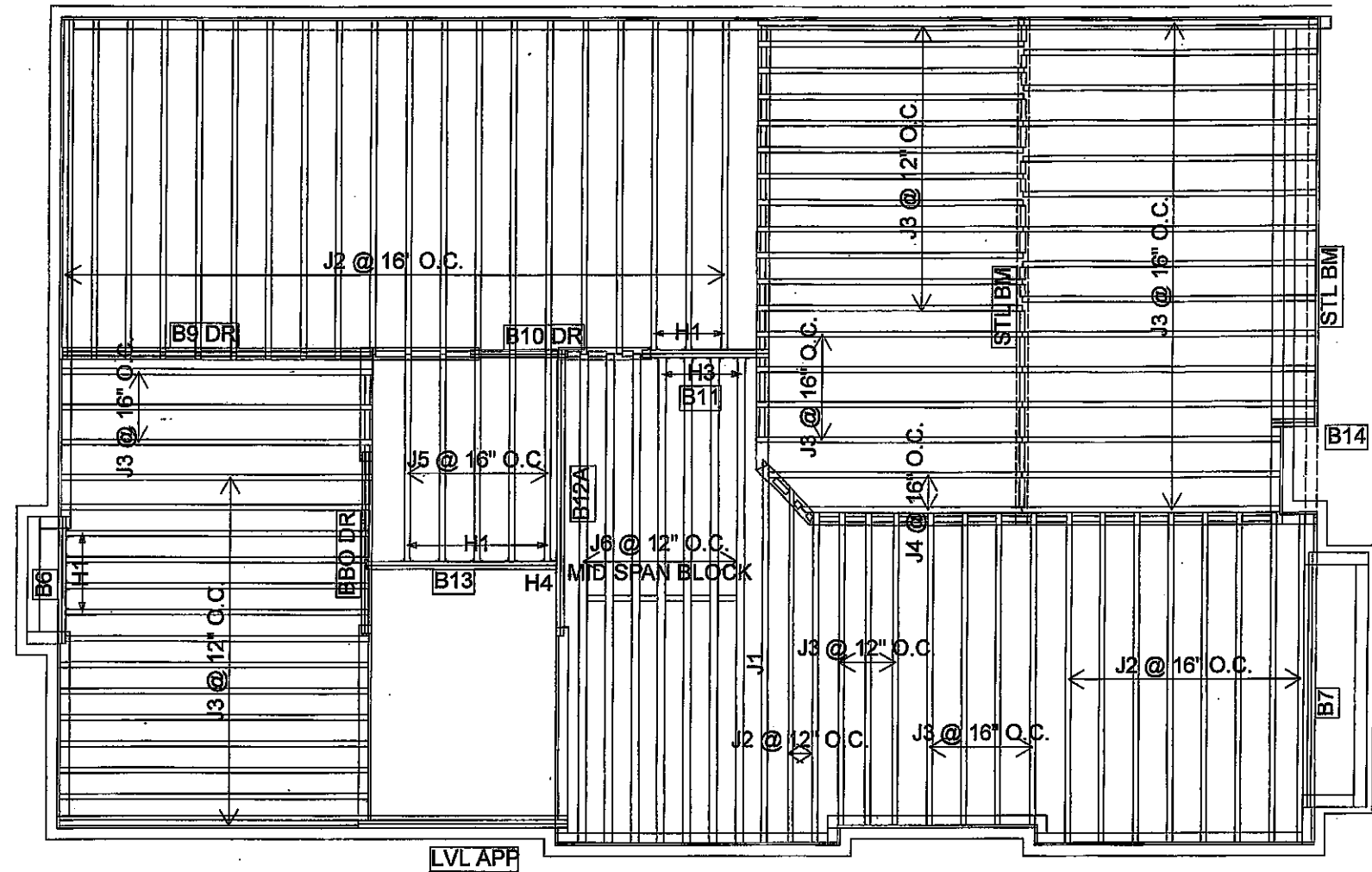
DATE: 2021-03-23

1st FLOOR

SUBFLOOR: 3/4" GLUED AND NAILED

Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	24	MFD
J1DJ	14-00-00	9 1/2" NI-40x	2	8	MFD
J2	12-00-00	9 1/2" NI-40x	1	20	MFD
J3	10-00-00	9 1/2" NI-40x	1	6	MFD
J4	4-00-00	9 1/2" NI-40x	1	2	MFD
J5	2-00-00	9 1/2" NI-40x	1	4	MFD
J6	20-00-00	9 1/2" NI-80	1	8	MFD
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD

Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
2	H2	HUS1.81/10
5	H3	IUS3.56/9.5



FROM PLAN DATED: JAN 2020
 BUILDER: GREENPARK HOMES
 SITE: RUSSELL GARDENS PH #
 MODEL: VALLEYCREEK 12A
 ELEVATION: 1
 LOT:
 CITY: WATERDOWN
 SALESMAN: MARIO DICIANO
 DESIGNER: AJ
 REVISION:

NOTES:
 REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P. 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 RI-
 JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIELD CUT OPENINGS SEE FIGURE 7, TABLES 1 & 2. **CERAMIC T** APPLICATION AS PER O.B.C 9.30.6.

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

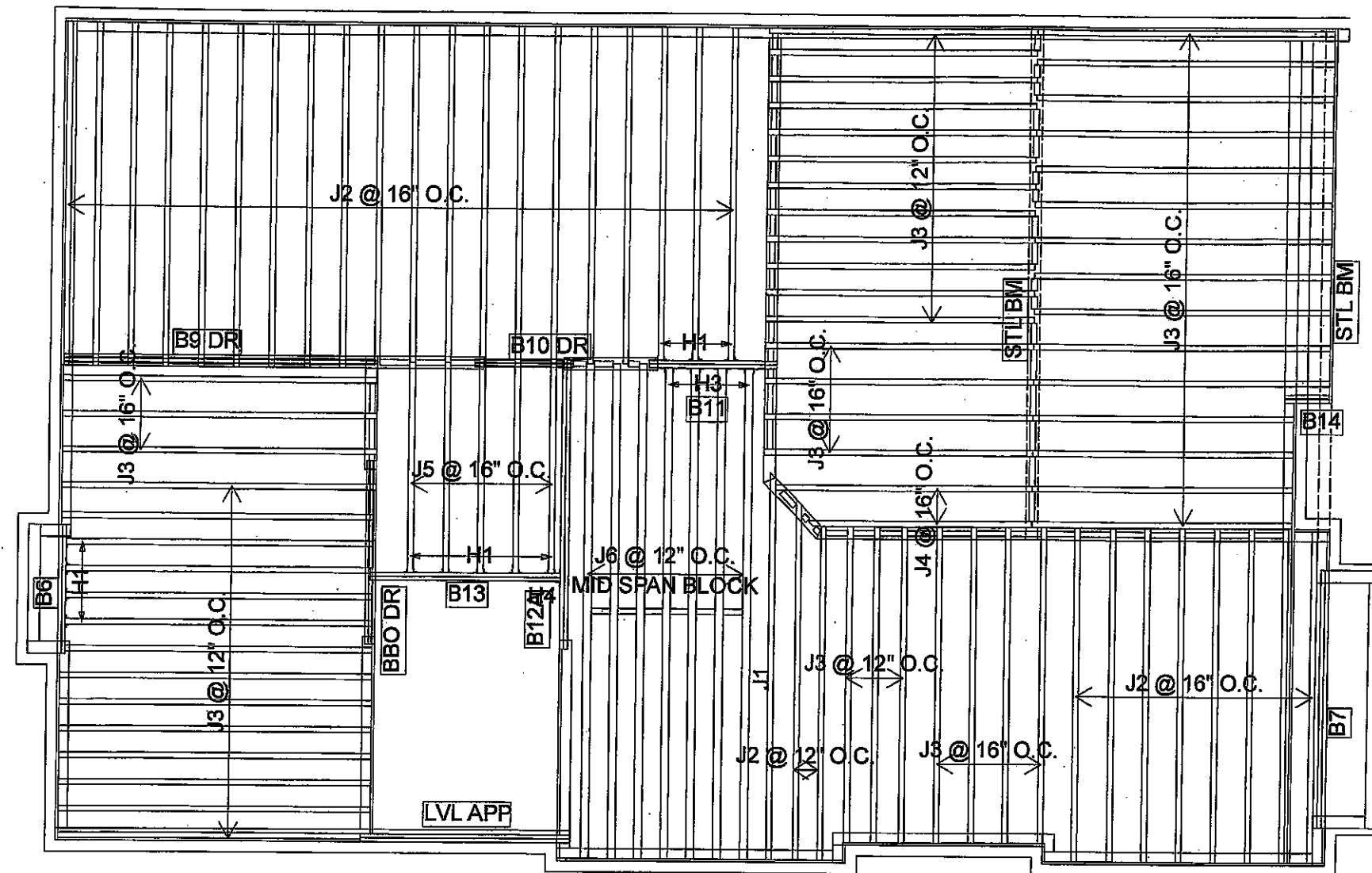
Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	1
J2	14-00-00	9 1/2" NI-40x	1	30
J3	12-00-00	9 1/2" NI-40x	1	55
J4	10-00-00	9 1/2" NI-40x	1	2
J5	8-00-00	9 1/2" NI-40x	1	5
J6	20-00-00	9 1/2" NI-80	1	7
B12A	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B7	10-00-00	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
LVL APP	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10 DR	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/9.5
4	H3	IUS3.56/9.5
1	H4	HGUS410

DATE: 2021-03-23

2ND FLOOR

SUBFLOOR: 5/8" GLUED AND NAILED

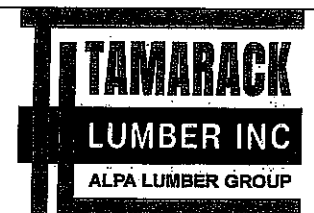


Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	1
J2	14-00-00	9 1/2" NI-40x	1	30
J3	12-00-00	9 1/2" NI-40x	1	55
J4	10-00-00	9 1/2" NI-40x	1	2
J5	8-00-00	9 1/2" NI-40x	1	5
J6	20-00-00	9 1/2" NI-80	1	7
B12A	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B7	10-00-00	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
LVL APP	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10 DR	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/9.5
4	H3	IUS3.56/9.5
1	H4	HGUS410

DATE: 2021-03-23

2ND FLOOR

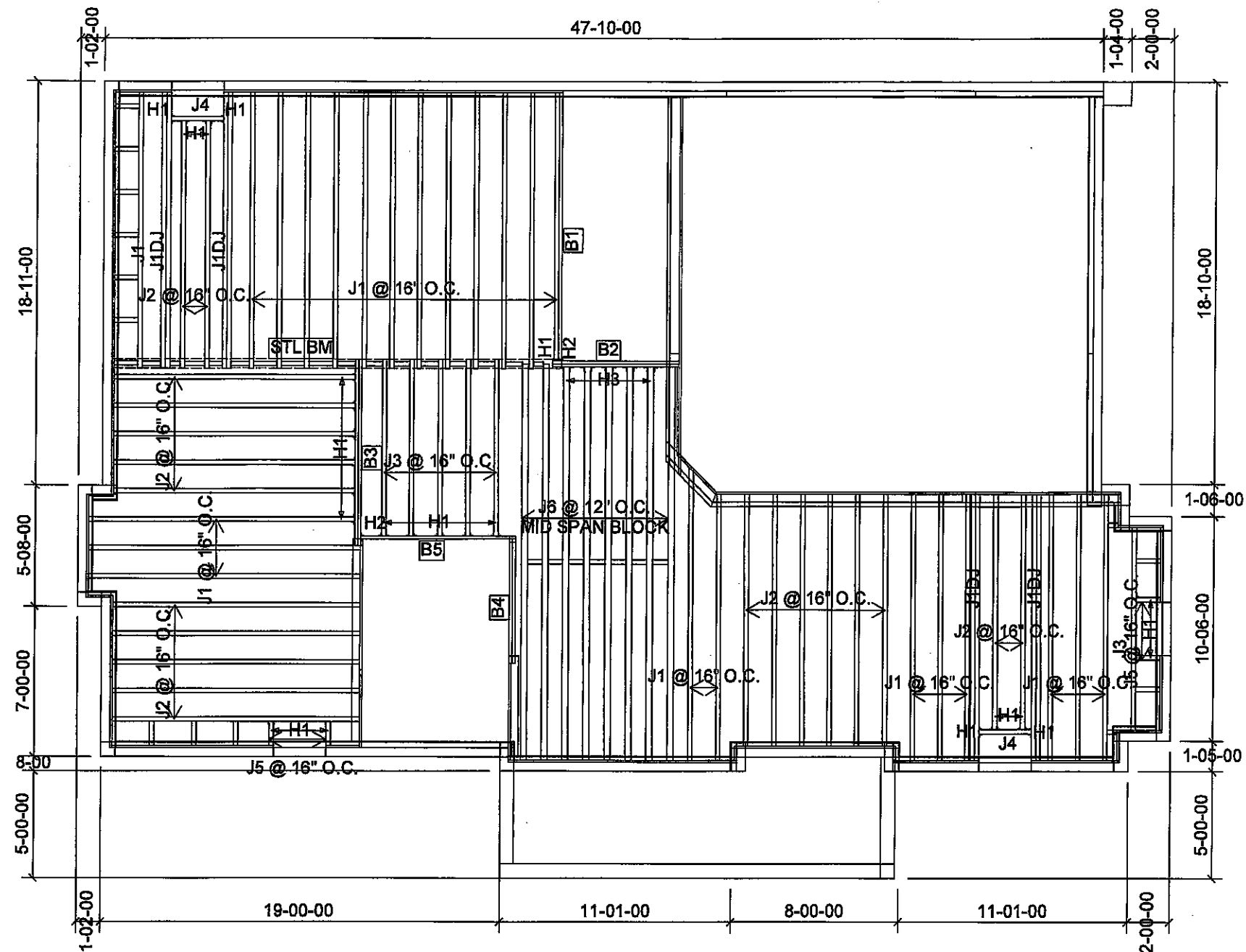


FROM PLAN DATED: JAN 2020
 BUILDER: GREENPARK HOMES
 SITE: RUSSELL GARDENS PH 4
 MODEL: VALLEYCREEK 12A
 ELEVATION: 2
 LOT:
 CITY: WATERDOWN
 SALESMAN: MARIO DICIANO
 DESIGNER: AJ
 REVISION:

NOTES:
 REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P 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 RI I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 7, TABLES 1 & 2. **CERAMIC T** APPLICATION AS PER O.B.C 9.30.6.

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

SUBFLOOR: 5/8" GLUED AND NAILED

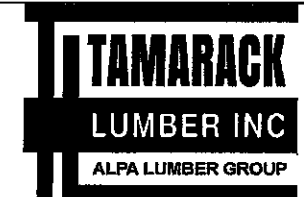


Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	24	MFD
J1DJ	14-00-00	9 1/2" NI-40x	2	8	MFD
J2	12-00-00	9 1/2" NI-40x	1	20	MFD
J3	10-00-00	9 1/2" NI-40x	1	6	MFD
J4	4-00-00	9 1/2" NI-40x	1	2	MFD
J5	2-00-00	9 1/2" NI-40x	1	4	MFD
J6	20-00-00	9 1/2" NI-80	1	8	MFD
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD

Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
2	H2	HUS1.81/10
5	H3	IUS3.56/9.5

DATE: 2021-03-23

1st FLOOR



FROM PLAN DATED: JAN 2019

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: VALLEYCREEK 12A

ELEVATION: 2

LOT:

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.

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

LOADING:

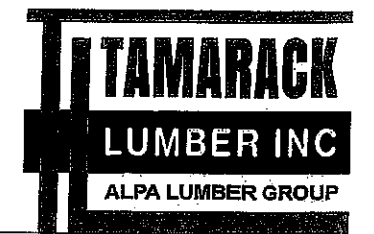
DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 15.0 lb/ft²

TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED



FROM PLAN DATED: JAN 2020

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 4

MODEL: VALLEYCREEK 12A

ELEVATION: 3

LOT:

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

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. **MULTIP SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALO BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURE 7 TABLES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES INCLUDING DUCT CHASE AND FIRE CUT OPENINGS** SEE FIGURE 7 TABLES 1 OF THE INSTALLATION GUIDE. **CERAMIC T** APPLICATION AS PER O.B.C. 9.30.6

LOADING:

DESIGN LOADS: L/480.000

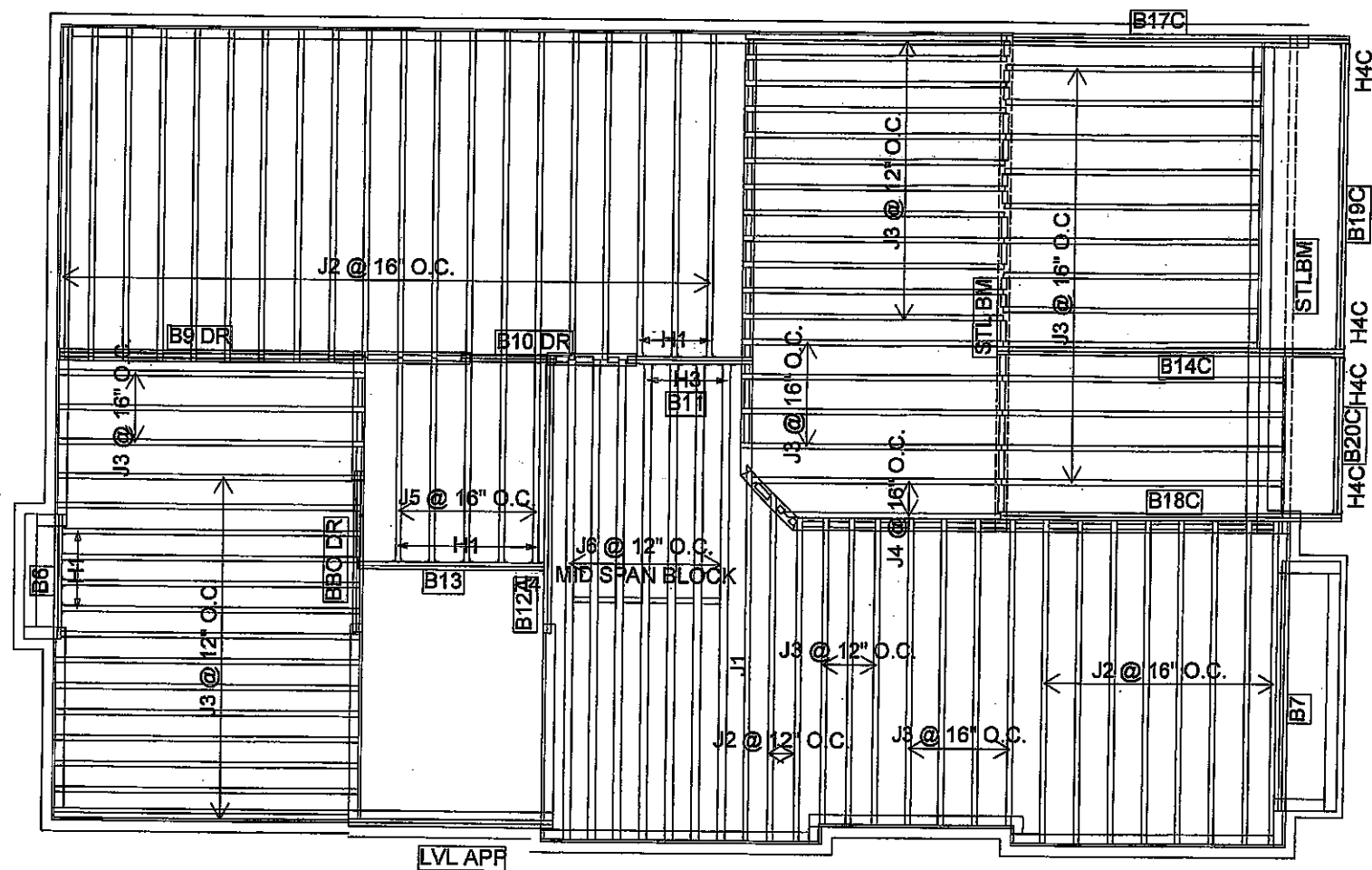
LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

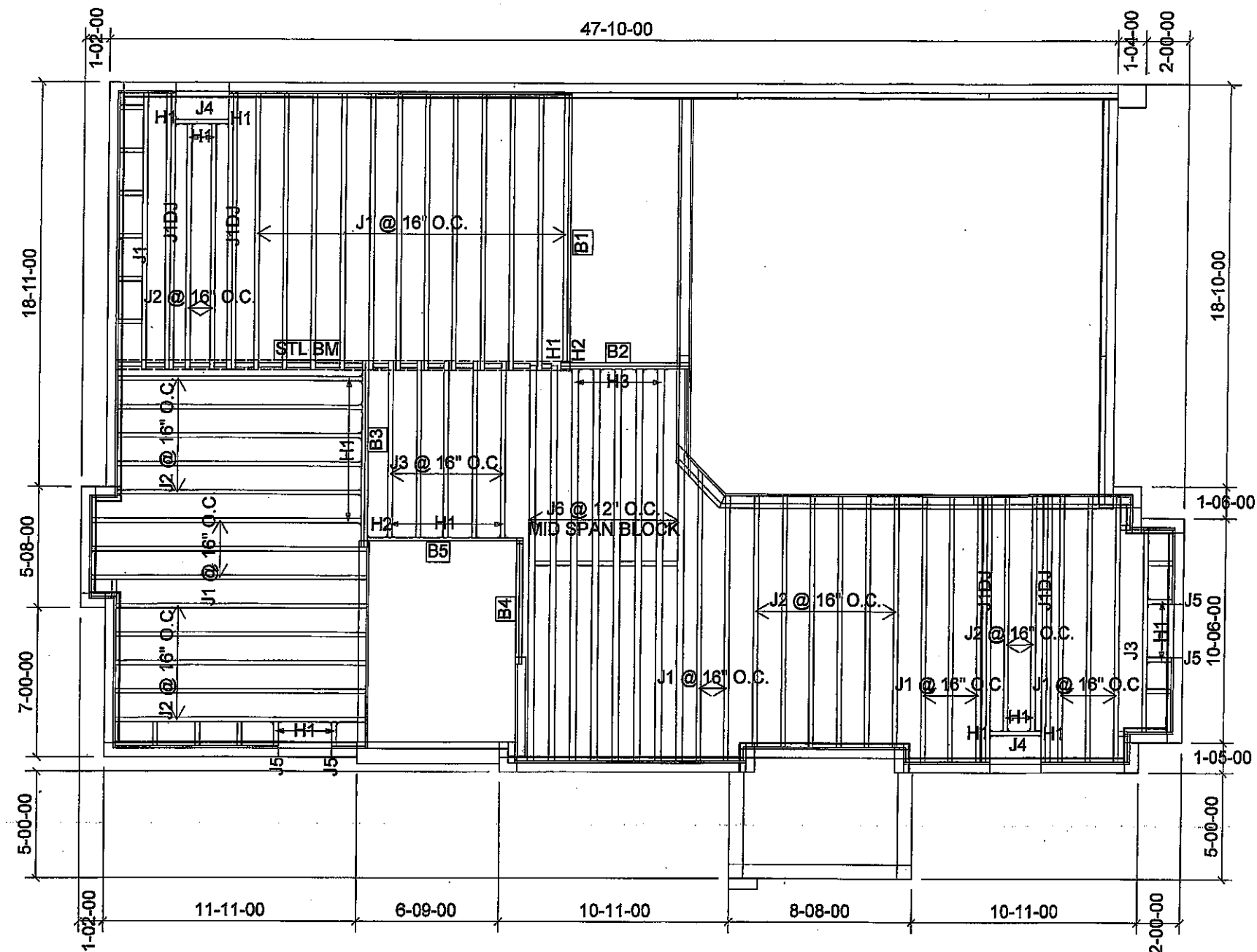
DATE: 2021-03-23

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	1
J2	14-00-00	9 1/2" NI-40x	1	30
J3	12-00-00	9 1/2" NI-40x	1	53
J4	10-00-00	9 1/2" NI-40x	1	2
J5	8-00-00	9 1/2" NI-40x	1	5
J6	20-00-00	9 1/2" NI-80	1	7
B14C	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B17C	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B18C	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B12A	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B19C	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B9 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	3	3
B7	10-00-00	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
B20C	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
LVL APP	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B11	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B6	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B10 DR	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/9.5
4	H3	IUS3.56/9.5
4	H4C	HUC410
1	H4	HGUS410

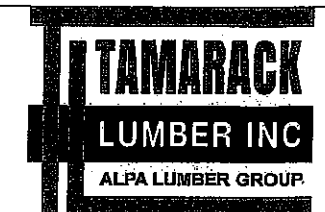


Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	24
J1DJ	14-00-00	9 1/2" NI-40x	2	8
J2	12-00-00	9 1/2" NI-40x	1	20
J3	10-00-00	9 1/2" NI-40x	1	6
J4	4-00-00	9 1/2" NI-40x	1	2
J5	2-00-00	9 1/2" NI-40x	1	4
J6	20-00-00	9 1/2" NI-80	1	8
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	10-00-00	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	1	1
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
2	H2	HUS1.81/10
5	H3	IUS3.56/9.5

DATE: 2021-03-23

1st FLOOR



FROM PLAN DATED: JAN 2020

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 4

MODEL: VALLEYCREEK 12A

ELEVATION: 3

LOT:

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P. 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** RE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 7, TABLES 1 & 2. **CERAMIC TI** APPLICATION AS PER O.B.C 9.30.6.

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 15.0 lb/ft²

TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

NORDIC STRUCTURES

COMPANY
Apr. 9, 2020 12:05

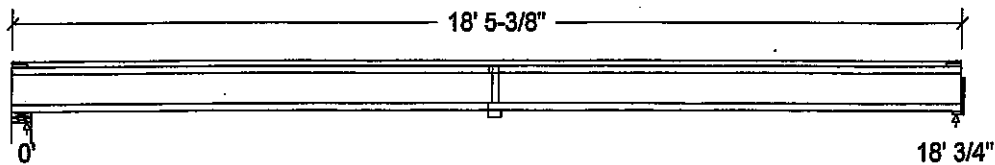
PROJECT
J6 2ND FLOOR.wwb

Design Check Calculation Sheet Nordic Sizer - Canada 7.2

Loads:

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

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



Unfactored:			
Dead	181		181
Live	361		361
Factored:			
Total	768		768
Bearing:			
Capacity			
Joist	1893		1893
Support	10829		-
Des ratio			
Joist	0.41		0.41
Support	0.07		-
Load case	#2		#2
Length	4-3/8		2
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		-
Kzcp sup	-		-

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

Nordic 9-1/2" NI-80 Floor joist @ 12" o.c.

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

Total length: 18' 5-3/8"; Clear span: 17' 11"; 5/8" nailed and glued OSB sheathing with 1 row of blocking; strapping at blocking locations and 1/2" gypsum ceiling

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 768	Vr = 1895	lbs	Vf/Vr = 0.41
Moment(+)	Mf = 3467	Mr = 8958	lbs-ft	Mf/Mr = 0.39
Perm. Defl'n	0.15 = < L/999	0.60 = L/360	in	0.24
Live Defl'n	0.29 = L/740	0.45 = L/480	in	0.65
Total Defl'n	0.44 = L/493	0.90 = L/240	in	0.49
Bare Defl'n	0.33 = L/662	0.60 = L/360	in	0.54
Vibration	Lmax = 18'-0.8	Lv = 20'-0.5	ft	0.90
Defl'n	= 0.027	= 0.034	in	0.79



PROVINCE OF ONTARIO
STRUCTURAL
ENGINEER

P6 1/2

-20

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#2
EI	324.1 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

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

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

CALCULATIONS:E_Ieff = 367.27 lb-in² K= 4.94e06 lbs

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

CONFORMS TO OBC 2012

AMENDED 2020

Design Notes:

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



DWG NO. YAW5070 -20
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
Apr. 9, 2020 12:06

PROJECT
J6 1ST FLOOR.wwb

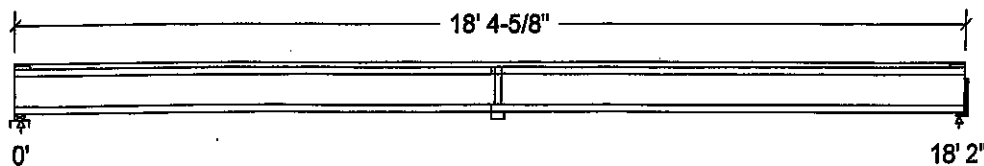
Design Check Calculation Sheet

Nordic Sizer - Canada 7.2

Loads:

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

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



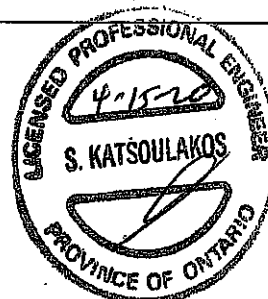
Unfactored:			
Dead	182		182
Live	363		363
Factored:			
Total	772		772
Bearing:			
Capacity			
Joist	1893		1893
Support	5559		-
Des ratio			
Joist	0.41		0.41
Support	0.14		-
Load case	#2		#2
Length	2-3/8		2
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcp sup	769		-
Kzcp sup	1.09		-

Nordic 9-1/2" NI-80 Floor joist @ 12" o.c.

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

Total length: 18' 4-5/8"; Clear span: 18' 1/4"; 3/4" nailed and glued OSB sheathing with 1 row of blocking and strapping at blocking locations

This section PASSES the design code check.



ENG NO. TANSB71-20
STRUCTURAL
COMPONENT ONLY

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 772$	$V_r = 1895$	lbs	$V_f/V_r = 0.41$
Moment (+)	$M_f = 3507$	$M_r = 8958$	lbs-ft	$M_f/M_r = 0.39$
Perm. Defl'n	$0.15 = < L/999$	$0.61 = L/360$	in	0.24
Live Defl'n	$0.29 = L/743$	$0.45 = L/480$	in	0.65
Total Defl'n	$0.44 = L/495$	$0.91 = L/240$	in	0.48
Bare Defl'n	$0.33 = L/651$	$0.61 = L/360$	in	0.55
Vibration	$L_{max} = 18'-2$	$L_v = 20'-4.9$	ft	0.89
Defl'n	$= 0.026$	$= 0.034$	in	0.77

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#2
EI	324.1 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

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

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

CALCULATIONS:

$EI_{eff} = 375.38 \text{ lb-in}^2$ $K = 4.94e06 \text{ lbs}$

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

CONFORMS TO OBC 2012

AMENDED 2020

Design Notes:

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



DWG NO. YAM5871 -20
 STRUCTURAL

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B1(i1135) (Flush Beam)**

Dry | 1 span | No cant.

February 14, 2020 17:03:20

BC CALC® Member Report

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1(i1135)

City, Province, Postal Code:

Specifier:

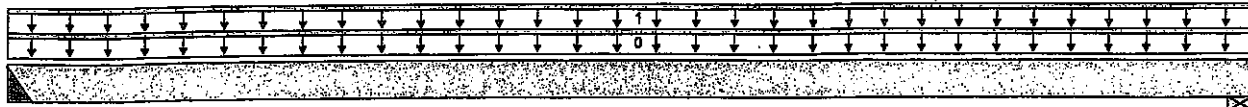
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



B1

12-06-10

B2

Total Horizontal Product Length = 12-06-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	31 / 0	46 / 0		
B2, 1-7/8"	31 / 0	46 / 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	12-06-10	Top	1.00	0.65	1.00	1.16	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-06-10	Top	5	2			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	318 ft-lbs	11610 ft-lbs	2.7%	1	06-03-06
End Shear	89 lbs	5785 lbs	1.5%	1	00-11-08
Total Load Deflection	L/999 (0.026")	n/a	n/a	4	06-03-06
Live Load Deflection	L/999 (0.01")	n/a	n/a	5	06-03-06
Max Defl.	0.026"	n/a	n/a	4	06-03-06
Span / Depth	15.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	105 lbs	n/a	2.4%	HUS1.81/10
B2	Wall/Plate 1-7/8" x 1-3/4"	104 lbs	5.2%	2.6%	Spruce-Pine-Fir

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.

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**AMENDED 2020**

DWG NO. TAM 5000-20

STRUCTURAL**COMPONENT ONLY****Disclosure**

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

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

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B2(1128) (Flush Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

February 14, 2020 17:03:20

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B2(1128)

City, Province, Postal Code:

Specifier:

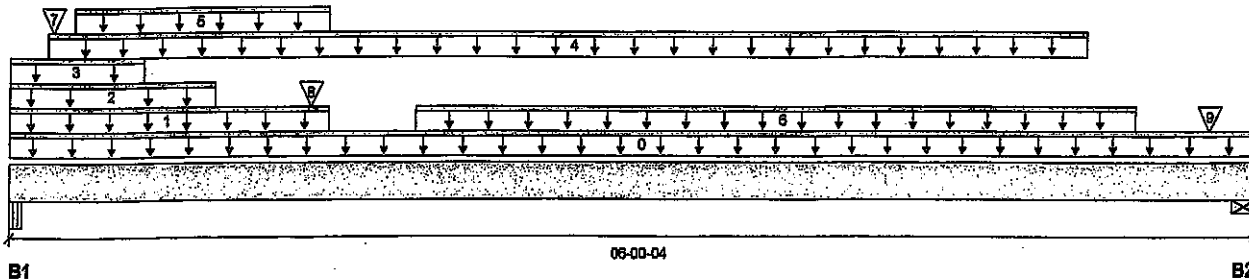
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:

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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	3384 / 0	1891 / 0		
B2, 5-1/2"	2511 / 0	2324 / 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	06-00-04	Top		10			00-00-00
1	7(i448)	Unf. Lin. (lb/ft)	L	00-00-00	01-06-04	Top		81			n/a
2	7(i448)	Unf. Lin. (lb/ft)	L	00-00-00	00-11-12	Top	250	125			n/a
3	7(i448)	Unf. Lin. (lb/ft)	L	00-00-00	00-07-12	Top	277	139			n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	00-02-04	05-02-04	Top	378	188			n/a
5	7(i448)	Unf. Lin. (lb/ft)	L	00-03-12	01-06-04	Top	305	153			n/a
6	STAIR	Unf. Lin. (lb/ft)	L	01-11-04	05-05-04	Top	120	60			n/a
7	-	Conc. Pt. (lbs)	L	00-02-09	00-02-09	Top	186	139			n/a
8	7(i448)	Conc. Pt. (lbs)	L	01-05-04	01-05-04	Top	1460	754			n/a
9	3(i444)	Conc. Pt. (lbs)	L	05-09-08	05-09-08	Top	1067	1558			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5727 ft-lbs	23220 ft-lbs	24.7%	1	02-08-04
End Shear	5063 lbs	11571 lbs	43.8%	1	01-02-12
Total Load Deflection	L/999 (0.04")	n/a	n/a	4	02-10-08
Live Load Deflection	L/999 (0.026")	n/a	n/a	5	02-10-08
Max Defl.	0.04"	n/a	n/a	4	02-10-08
Span / Depth	6.6				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/4" x 3-1/2"	7440 lbs	75.8%	33.2%	Unspecified
B2 Wall/Plate	5-1/2" x 3-1/2"	6671 lbs	56.3%	28.4%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**

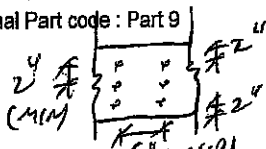
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 6" O/C FOR MULTI-PLY NAILING, MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



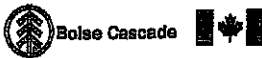
UWG NO. TAN 5001-20
STRUCTURAL

DISCLOSURE ONLY

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA).

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

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



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

PASSED

1ST FLR FRAMING\Flush Beams\B3(11189) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant

February 14, 2020 17:03:20

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B3(11189)

City, Province, Postal Code:

Specifier:

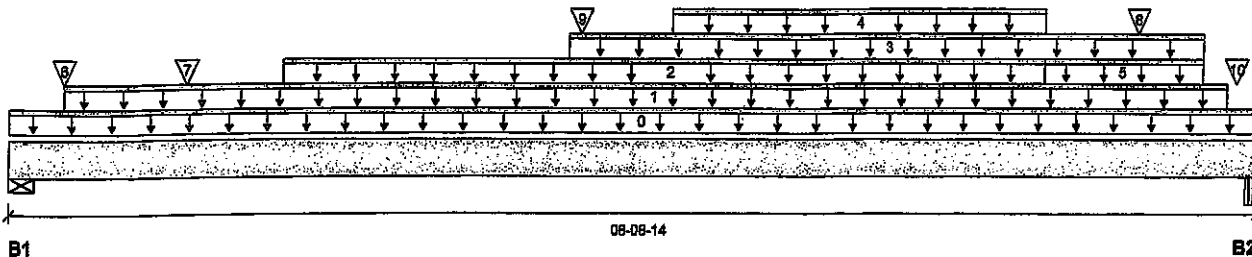
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 08-08-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-3/4"	3261 / 0	1816 / 0		
B2, 5-1/4"	3065 / 0	1929 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-08-14	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-04-10	08-06-04	Top	25	12			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-12	07-02-12	Top	235	118			n/a
3	10(i453)	Unf. Lin. (lb/ft)	L	03-10-04	08-04-04	Top		81			n/a
4	10(i453)	Unf. Lin. (lb/ft)	L	04-06-12	07-02-12	Top	232	116			n/a
5	10(i453)	Unf. Lin. (lb/ft)	L	07-02-12	08-04-04	Top	247	124			n/a
6	B5(11241)	Conc. Pt. (lbs)	L	00-04-10	00-04-10	Top	1384	709			n/a
7	J1(11253)	Conc. Pt. (lbs)	L	01-02-12	01-02-12	Top	345	175			n/a
8	J2(11188)	Conc. Pt. (lbs)	L	07-10-12	07-10-12	Top	231	115			n/a
9	10(i453)	Conc. Pt. (lbs)	L	03-11-04	03-11-04	Top	1161	625			n/a
10	6(i447)	Conc. Pt. (lbs)	L	08-07-00	08-07-00	Top	740	438			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	12109 ft-lbs	23220 ft-lbs	52.1%	1	03-11-04
End Shear	4513 lbs	11571 lbs	39.0%	1	07-06-02
Total Load Deflection	L/511 (0.19")	n/a	46.9%	4	04-05-08
Live Load Deflection	L/999 (0.118")	n/a	n/a	5	04-05-08
Max Defl.	0.19"	n/a	n/a	4	04-05-08
Span / Depth	10.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-3/4" x 3-1/2"	7182 lbs	88.7%	44.7%	Spruce-Pine-Fir
B2	Beam 5-1/4" x 3-1/2"	7010 lbs	71.4%	31.3%	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: 00-00-00, 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.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO CBC 2012

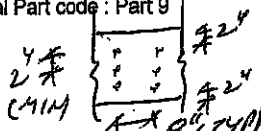
AMENDED 2020

PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING, MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS

DWG NO. TAM 5882-20
STRUCTURAL
COMPONENT ONLY
Disclosure

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

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



**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B4(1260) (Flush Beam)**

Dry | 1 span | No cant.

February 14, 2020 17:03:20

BC CALC® Member Report

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B4(1260)

City, Province, Postal Code:

Specifier:

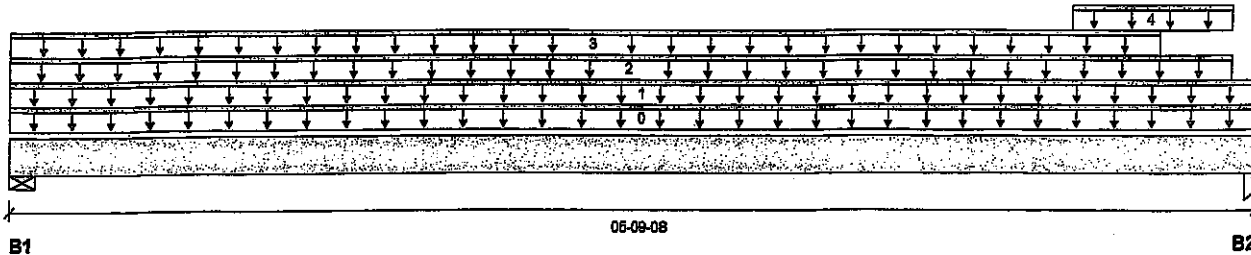
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 05-09-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	195 / 0	381 / 0		
B2, 1-3/4"	1215 / 0	926 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-09-08	Top	1.00	0.85	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-09-08	Top	14	7			n/a
2	9(450)	Unf. Lin. (lb/ft)	L	00-00-00	05-08-00	Top		81			n/a
3	9(450)	Unf. Lin. (lb/ft)	L	00-00-00	05-04-00	Top	20	12			n/a
4	9(450)	Unf. Lin. (lb/ft)	L	04-11-00	05-08-00	Top	1825	912			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1366 ft-lbs	23220 ft-lbs	5.9%	1	04-01-02
End Shear	2778 lbs	11571 lbs	24.0%	1	04-10-04
Total Load Deflection	L/999 (0.011")	n/a	n/a	4	03-02-00
Live Load Deflection	L/999 (0.005")	n/a	n/a	5	03-03-06
Max Defl.	0.011"	n/a	n/a	4	03-02-00
Span / Depth	6.9				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	533 lbs	9.5%	4.8%	Spruce-Pine-Fir
B2	Column 1-3/4" x 3-1/2"	2980 lbs	59.9%	39.9%	Unspecified

Notes

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

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

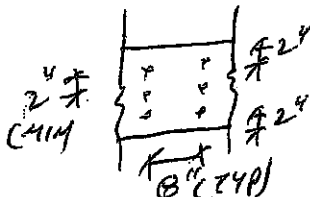
Calculations assume member is fully braced.

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

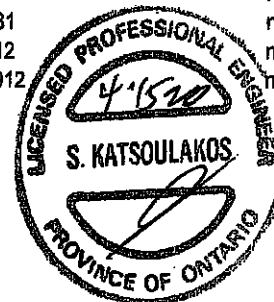
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012**AMENDED 2020**

PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING, MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



OWN NO. TANYB83-20

STRUCTURAL**COMPONENT ONLY****Disclosure**

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

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



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

1ST FLR FRAMING\Flush Beams\B5(11241) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

February 14, 2020 17:03:20

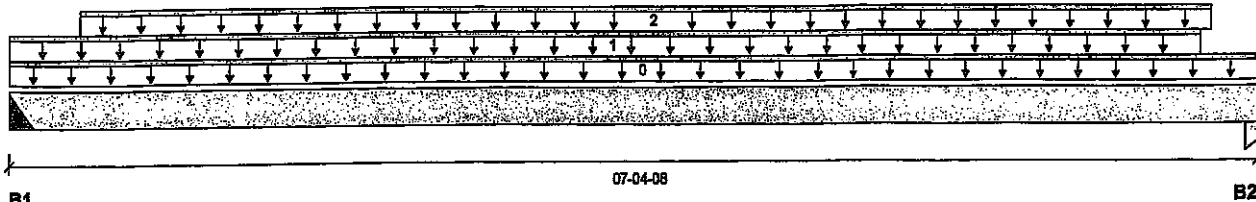
File name: VALLYCREEK 12 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B5(11241)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 07-04-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	1401 / 0	717 / 0		
B2, 3-1/2"	1394 / 0	715 / 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	07-04-08	Top	1.00	0.85	1.00	1.15	00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	07-00-04	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-05-00	07-01-00	Top	166	82			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5452 ft-lbs	11810 ft-lbs	47.0%	1	03-09-00
End Shear	2902 lbs	5785 lbs	50.2%	1	06-03-08
Total Load Deflection	L/620 (0.136")	n/a	38.7%	4	03-08-00
Live Load Deflection	L/999 (0.09")	n/a	n/a	5	03-08-00
Max Defl.	0.136"	n/a	n/a	4	03-08-00
Span / Depth	8.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	2998 lbs	n/a	70.2%	HUS1.81/10
B2	Column 3-1/2" x 1-3/4"	2985 lbs	60.0%	39.9%	Unspecified

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.

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. **AMENDED 2020**

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012



ENG NO. TAM 5884-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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

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



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

2ND FLR FRAMING\Flush Beams\B6(i451) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 14, 2020 17:03:20

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B6(i451)

City, Province, Postal Code:

Specifier:

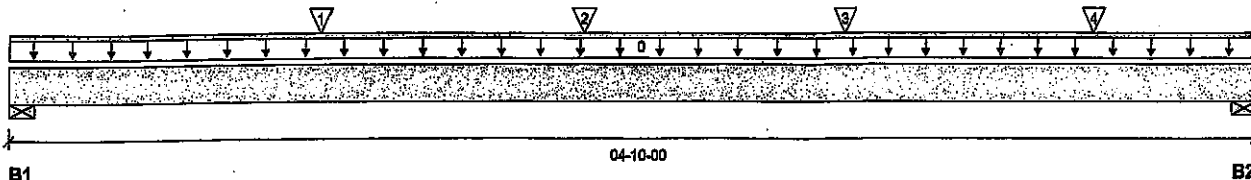
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	425 / 0	235 / 0		
B2, 5-1/2"	546 / 0	296 / 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	04-10-00	Top	10				00-00-00
1	J3(i678)	Conc. Pt. (lbs)	L	01-02-06	01-02-06	Top	240	120			n/a
2	J3(i679)	Conc. Pt. (lbs)	L	02-02-06	02-02-06	Top	272	136			n/a
3	J3(i680)	Conc. Pt. (lbs)	L	03-02-06	03-02-06	Top	219	109			n/a
4	J3(i681)	Conc. Pt. (lbs)	L	04-02-06	04-02-06	Top	240	120			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1139 ft-lbs	23220 ft-lbs	4.9%	1	02-02-06
End Shear	883 lbs	11571 lbs	7.6%	1	01-03-00
Total Load Deflection	L/999 (0.005")	n/a	n/a	4	02-05-00
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	02-05-00
Max Defl.	0.005"	n/a	n/a	4	02-05-00
Span / Depth	5.1				



ONE NO. YAM 5816-20

STRUCTURAL

COMPONENT ONLY

Disclosure

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

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

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	931 lbs	7.9%	4.0%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	1190 lbs	10.0%	5.1%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

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

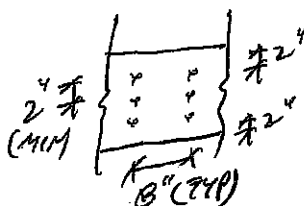
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B7(i452) (Flush Beam)**

Dry | 1 span | No cant.

February 14, 2020 17:03:20

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

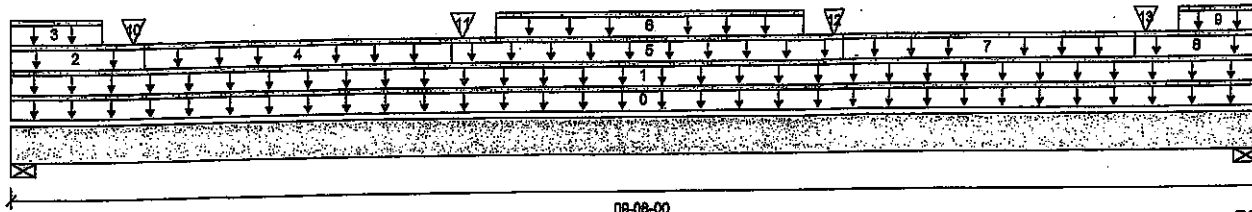
File name: VALLYCREEK 12 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B7(i452)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 09-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	215 / 0	609 / 0	306 / 0	
B2, 5-1/2"	213 / 0	608 / 0	303 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-08-00	Top		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-08-00	Top	11	6			n/a
2	E30(i922)	Unf. Lin. (lb/ft)	L	00-00-00	01-00-08	Top		81			n/a
3	E30(i922)	Unf. Lin. (lb/ft)	L	00-00-00	00-08-08	Top	33	30	63		n/a
4	E29(i921)	Unf. Lin. (lb/ft)	L	01-00-08	03-04-08	Top		61			n/a
5	E28(i920)	Unf. Lin. (lb/ft)	L	03-04-08	06-04-08	Top		81			n/a
6	E28(i920)	Unf. Lin. (lb/ft)	L	03-08-08	06-00-08	Top	33	30	63		n/a
7	E27(i919)	Unf. Lin. (lb/ft)	L	06-04-08	08-08-08	Top		61			n/a
8	E25(i918)	Unf. Lin. (lb/ft)	L	08-08-08	09-08-00	Top		81			n/a
9	E25(i918)	Unf. Lin. (lb/ft)	L	09-00-08	09-08-00	Top	33	30	63		n/a
10	E30(i922)	Conc. Pt. (lbs)	L	00-11-08	00-11-08	Top	51	69	97		n/a
11	E28(i920)	Conc. Pt. (lbs)	L	03-05-08	03-05-08	Top	48	66	92		n/a
12	E28(i920)	Conc. Pt. (lbs)	L	06-03-08	06-03-08	Top	51	69	97		n/a
13	E25(i918)	Conc. Pt. (lbs)	L	08-09-08	08-09-08	Top	48	67	92		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2915 ft-lbs	23220 ft-lbs	12.6%	13	04-10-08
End Shear	1180 lbs	11571 lbs	10.2%	13	01-03-00
Total Load Deflection	L/999 (0.064")	n/a	n/a	35	04-10-08
Live Load Deflection	L/999 (0.029")	n/a	n/a	51	04-10-08
Max Defl.	0.064"	n/a	n/a	35	04-10-08
Span / Depth	11.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	1435 lbs	12.1%	6.1%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	1428 lbs	12.1%	6.1%	Spruce-Pine-Fir



NO. 5879-20
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLR FRAMING\Flush Beams\B7(1452) (Flush Beam)

Dry | 1 span | No cant.

February 14, 2020 17:03:20

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: VALLYCREEK 12 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B7(1452)

Specifier:

Designer:

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 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.

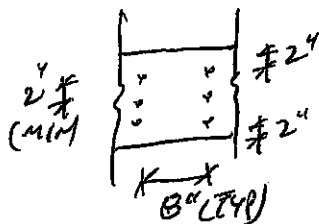
Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/8" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



DWG NO. YAN 5079-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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

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



Boise Cascade

**Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Dropped Beams\B9 DR(I455) (Dropped Beam)**

Dry | 1 span | No cant.

February 14, 2020 17:03:20

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

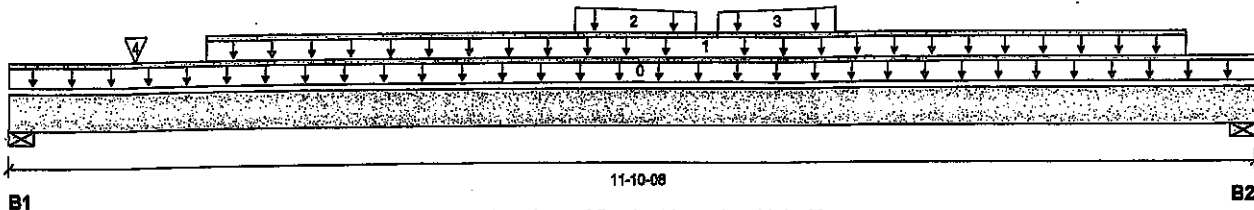
File name: VALLYCREEK 12 EL 1.mmdl

Description: 2ND FLR FRAMING\Dropped Beams\B9 DR(I455)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 11-10-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1349 / 0	781 / 0		
B2, 5-1/2"	1379 / 0	778 / 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	11-10-08	Top		14			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-08	11-02-08	Top	247	124			n/a
2	Bk1(I935)	Trapezoidal (lb/ft)	L	05-03-12	06-05-04	Top	48	24			n/a
3	Bk1(I931)	Trapezoidal (lb/ft)	L	06-07-12	07-09-04	Top	40	20			n/a
4	J2(I501)	Conc. Pt. (lbs)	L	01-02-08	01-02-08	Top	305	152			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	9078 ft-lbs	36222 ft-lbs	25.1%	1	06-03-09
End Shear	3018 lbs	17356 lbs	17.4%	1	10-07-08
Total Load Deflection	L/696 (0.193")	n/a	34.5%	4	05-10-08
Live Load Deflection	L/999 (0.124")	n/a	n/a	5	05-10-08
Max Defl.	0.193"	n/a	n/a	4	05-10-08
Span / Depth	14.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 4" x 5-1/4"	2975 lbs	10.6%	11.6%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 5-1/4"	3041 lbs	7.9%	8.6%	Spruce-Pine-Fir

Notes

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

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

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.

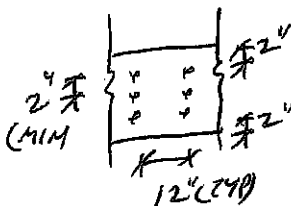
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

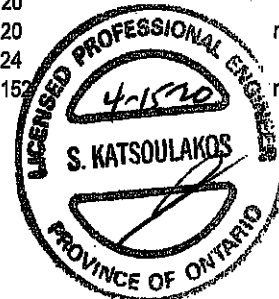
Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3x3" ARDOX SPIRAL NAILS @ 12" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS. SPACER NAILS 6" BETWEEN PLIES.



DWG NO. YAM 5873-20

STRUCTURAL

COMPONENT ONLY

Disclosure

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

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

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Dropped Beams\B10 DR(1456) (Dropped Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

February 14, 2020 17:03:20

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B10 DR(1456)

City, Province, Postal Code:

Specifier:

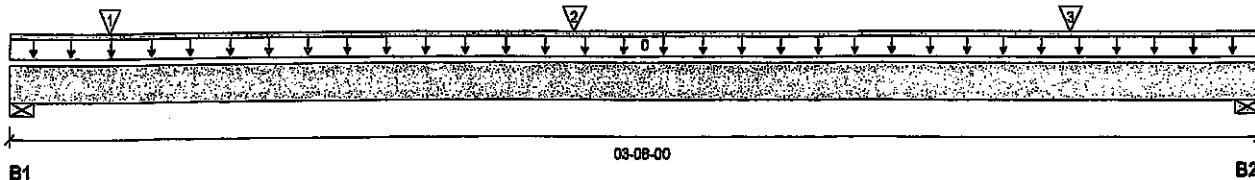
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:

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

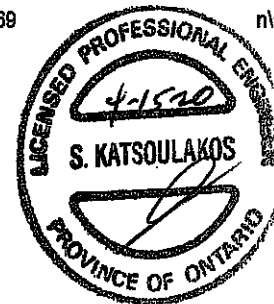
Bearing	Live	Dead	Snow	Wind
B1, 4"	917 / 0	475 / 0		
B2, 4"	819 / 0	471 / 0		

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	03-08-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	-	Conc. Pt. (lbs)	L	00-03-08	00-03-08	Top	543	271			n/a
2	-	Conc. Pt. (lbs)	L	01-07-08	01-07-08	Top	543	271			n/a
3	-	Conc. Pt. (lbs)	L	03-01-04	03-01-04	Top	650	369			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1091 ft-lbs	23220 ft-lbs	4.7%	1	01-07-08
End Shear	845 lbs	11571 lbs	7.3%	1	02-06-08
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	01-09-15
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-09-15
Max Defl.	0.002"	n/a	n/a	4	01-09-15
Span / Depth	3.9				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	1970 lbs	10.5%	11.5%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	1817 lbs	9.7%	10.6%	Spruce-Pine-Fir

BWA NO. YAW 5872-20
STRUCTURAL
COMPONENT ONLY

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: 00-02-09, Bottom: 00-02-09.

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

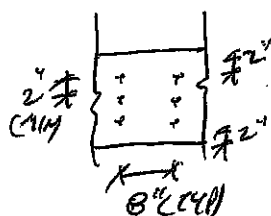
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/8" ARDOX
SPIRAL NAILS @ 8" O/C FOR
MULTI-PLY NAILING. MAINTAIN
A MIN. 2" LUMBER EDGE/END
DISTANCE. DO NOT USE AIR NAILS

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®.

PROVIDE 3 ROWS OF 3 1/2" ARDOX
SPIRAL NAILS @ 6" O/C FOR
MULTI-PLY NAILING, MAINTAIN
A MIN. 2" LUMBER EDGE/END
DISTANCE. DO NOT USE AIR NAILS



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

2ND FLR FRAMING\Flush Beams\B12A(i1865) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 23, 2021 09:21:51

Build 7773

Job name:

File name: VALLYCREEK 12A EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B12A(i1865)

City, Province, Postal Code: WATERDOWN

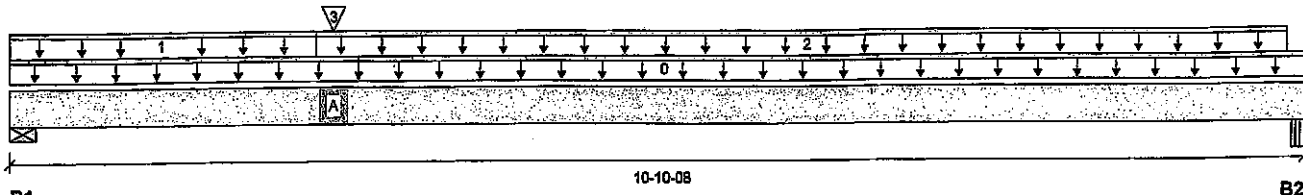
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 10-10-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1025 / 0	591 / 0		
B2, 3-1/2"	411 / 0	265 / 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	10-10-08	Top	10				00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	02-06-08	Top	20	10			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	02-06-08	10-08-12	Top	27	13			n/a
3	B13(i1862)	Conc. Pt. (lbs)	L	02-08-04	02-08-04	Top	1167	617			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5309 ft-lbs	23219 ft-lbs	22.9%	1	02-08-04
End Shear	2215 lbs	11571 lbs	19.1%	1	01-01-08
Total Load Deflection	1/999 (0.12")	n/a	n/a	4	04-10-14
Live Load Deflection	1/999 (0.075")	n/a	n/a	5	04-10-14
Max Defl.	0.12"	n/a	n/a	4	04-10-14
Span / Depth	13.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	2277 lbs	26.4%	13.3%	Spruce-Pine-Fir
B2	Beam 3-1/2" x 3-1/2"	948 lbs	6.3%	6.3%	VL 2.0 3100 SP

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 07-08-01.

CONFORMS TO OBC 2012

AMENDED 2020



DATE NO. 7062-21
STRUCTURAL
COMPONENT ONLY



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

2ND FLR FRAMING\Flush Beams\B12A(i1865) (Flush Beam)

PASSED

BC CALCO® Member Report

Dry | 1 span | No cant.

March 23, 2021 09:21:51

Build 7773

Job name:

File name: VALLYCREEK 12A EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B12A(i1865)

City, Province, Postal Code: WATERDOWN

Specifier:

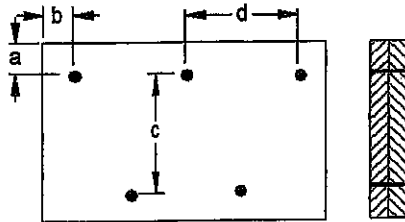
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/2"

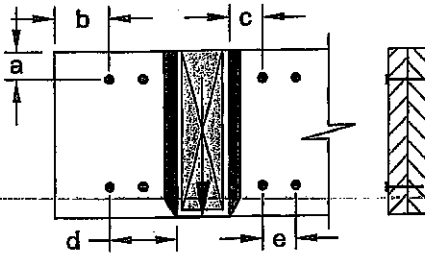
b minimum = 3"

d = 2" @ 12"

Connectors are: 3 1/2" ARDOX SPIRAL Nails

Connection Diagrams: Concentrated Side Loads

Connection Tag: A Applies to lead tag(s): 3



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

e minimum = 4"

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



OWG NO. 74M 2062-21

STRUCTURAL
COMPONENT ONLY

Disclosure

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

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

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B13(i461) (Flush Beam)**

Dry | 1 span | No cant.

February 14, 2020 17:03:20

BC CALC® Member Report

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B13(i461)

City, Province, Postal Code:

Specifier:

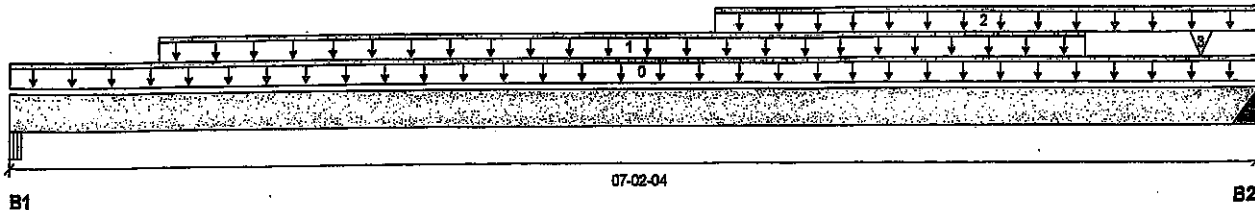
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-02-04

Reaction Summary (Down / Uplift) (lbs)

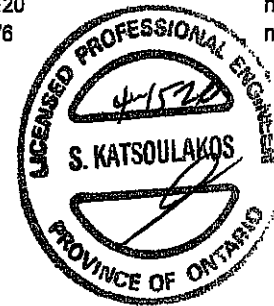
Bearing	Live	Dead	Snow	Wind
B1, 2-1/4"	599 / 0	333 / 0		
B2, 4"	1216 / 0	643 / 0		

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	07-02-04	Top	1.00	0.85	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-04	06-02-04	Top	168	84			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	03-11-15	07-02-04	Top	240	120			n/a
3	J5()	Conc. Pt. (lbs)	L	06-10-04	06-10-04	Top	153	76			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3319 ft-lbs	23220 ft-lbs	14.3%	1	04-02-04
End Shear	1715 lbs	11571 lbs	14.8%	1	06-00-12
Total Load Deflection	L/999 (0.038")	n/a	n/a	4	03-07-11
Live Load Deflection	L/999 (0.024")	n/a	n/a	5	03-07-11
Max Defl.	0.038"	n/a	n/a	4	03-07-11
Span / Depth	8.6				



Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	2-1/4" x 3-1/2"	1315 lbs	27.2%	13.7%	Spruce-Pine-Fir
B2 Hanger	4" x 3-1/2"	2627 lbs	n/a	15.4%	HGUS410

DWG NO. YAM5876-20

STRUCTURAL COMPONENT ONLY**Disclosure**

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

BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC1®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®.

Cautions

Header for the hanger HGUS410 at B2 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.

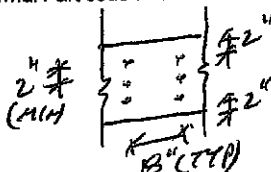
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012**AMENDED 2020**

PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS





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

2ND FLR FRAMING\Flush Beams\B14(i462) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 14, 2020 17:03:20

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B14(i462)

City, Province, Postal Code:

Specifier:

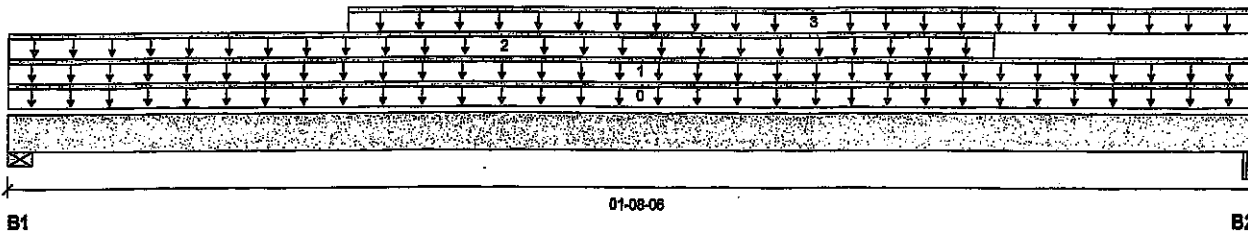
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 01-08-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	43 / 0	115 / 0	57 / 0	
B2, 4-1/8"	28 / 0	62 / 0	27 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-08-06	Top	10				00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-08-06	Top	6				n/a
2	E22(i914)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-00	Top	33	111	63		n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-08	01-08-06	Top	6	3			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	39 ft-lbs	23220 ft-lbs	0.2%	13	00-10-14
End Shear	106 lbs	11571 lbs	0.9%	13	01-03-00
Span / Depth	1.3				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	272 lbs	2.3%	1.2%	Spruce-Pine-Fir
B2	Beam 4-1/8" x 3-1/2"	147 lbs	1.9%	0.8%	Unspecified

Notes

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.

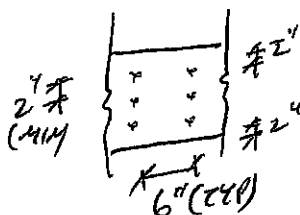
Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO CBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 6" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



DWG NO. TAM 5871 - 20
STRUCTURAL
COMPONENT ONLY

Disclosure

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

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



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

2ND FLR FRAMING\Flush Beams\B14C(I2225) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 2 spans | R cant.

February 5, 2021 16:19:00

Build 7773

Job name:

File name: VALLYCREEK 12 EL 3.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B14C(I2225)

City, Province, Postal Code: WATERDOWN

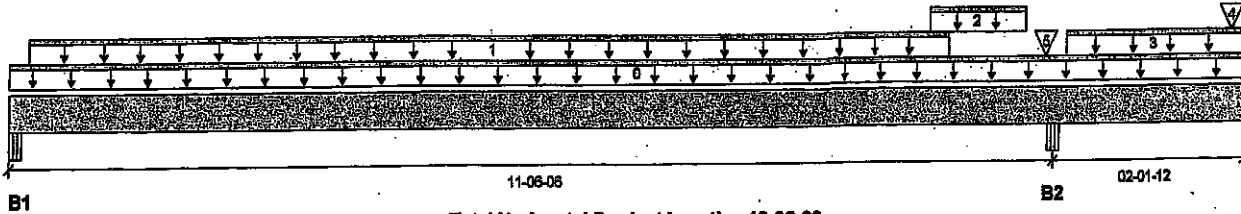
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 13-08-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	154 / 0	125 / 0	0 / 112	
B2, 3-1/2"	216 / 0	452 / 0	941 / 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	13-08-02	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-10	10-04-02	Top	27	13			n/a
2	E35(I1674)	Unf. Lin. (lb/ft)	L	10-01-10	11-02-10	Top	33	111	63		n/a
3	ROOF	Unf. Lin. (lb/ft)	L	11-08-02	13-08-02	Top			63		n/a
4	-	Conc. Pt. (lbs)	L	13-08-06	13-08-06	Top		86	565		n/a
5	-	Conc. Pt. (lbs)	L	11-05-05	11-05-05	Top	64	104	73		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1015 ft-lbs	23219 ft-lbs	4.4%	15	05-08-14
Neg. Moment	-2156 ft-lbs	-16941 ft-lbs	12.7%	17	11-08-08
End Shear	315 lbs	11571 lbs	2.7%	15	01-02-12
Cont. Shear	1084 lbs	11571 lbs	9.4%	17	12-05-10
Total Load Deflection	2xL/1998 (0.035")	n/a	n/a	59	13-08-02
Live Load Deflection	2xL/1998 (0.041")	n/a	n/a	81	13-08-02
Total Neg. Defl.	L/999 (-0.022")	n/a	n/a	59	07-05-14
Max Defl.	0.032"	n/a	n/a	46	05-11-08
Span / Depth	14.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5-1/4" x 3-1/2"	387 lbs	3.9%	1.7%	Unspecified
B2	Beam 3-1/2" x 3-1/2"	2193 lbs	33.5%	14.7%	Unspecified

Cautions

Uplift of 55 lbs found at bearing B1. (SIMPSON 2-42-54 @ B1)



SWG NO. TAN 2482-21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B14C(I2225) (Flush Beam)
 Dry | 2 spans | R cant.

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

File name: VALLYCREEK 12 EL 3.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B14C(I2225)

Specifier:

Designer: AJ

Company:

February 5, 2021 16:19:00

Notes

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

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

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

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

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

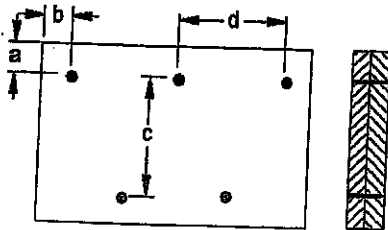
Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

Calculations assume unbraced length of Top: 01-11-08, Bottom: 09-05-06.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

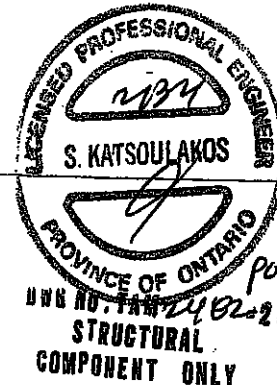
c = 5-1/2"

d = 5-1/2"

Calculated Side Load = 315.4 lb/ft

Connectors are: 16d x 3" Nails

3/4" 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®

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLR FRAMING\Flush Beams\B17C(I2226) (Flush Beam)****PASSED**

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | R cant.

February 5, 2021 16:19:00

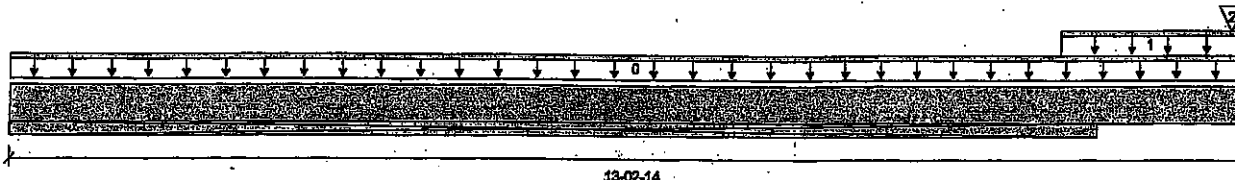
File name: VALLYCREEK 12 EL 3.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B17C(I2226)

Specifier:

Designer: AJ

Company:



B1

Total Horizontal Product Length = 13-02-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 139-7/8"		184 / 0	499 / 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	13-02-14	Top		10			00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	11-02-14	13-02-14	Top			63		n/a
2	B19C(I2227)	Conc. Pt. (lbs)	L	13-01-02	13-01-02	Top		57	373		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	0 ft-lbs	22569 ft-lbs	n/a	6	13-02-14
Neg. Moment	-1040 ft-lbs	-16448 ft-lbs	6.3%	1	11-07-14
End Shear	715 lbs	11571 lbs	6.2%	1	12-05-06
Total Load Deflection	2xL/1998 (0.002")	n/a	n/a	12	13-02-14
Live Load Deflection	2xL/1998 (0.002")	n/a	n/a	17	13-02-14
Span./Depth	2.0				
Dist. Load (B1)	94.5 lb/ft	57645.1 lb/ft	0.2%		

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 139-7/8" x 3-1/2"	979 lbs	0.3%	0.2%	Spruce-Pine-Fir

Notes

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

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

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

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

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

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

Calculations assume unbraced length of Top: 03-00-08, Bottom: 09-09-12.

CONFORMS TO OBC 2012

AMENDED 2020



ENG NO. YAM 2483-21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B17C(i2226) (Flush Beam)

PASSED

BC CALC® Member Report
 Build 7773

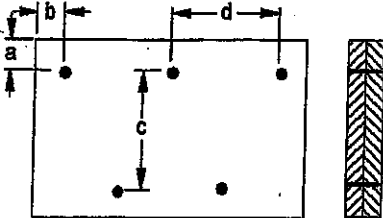
Dry | 1 span | R cant.

February 5, 2021 16:19:00

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

File name: VALLYCREEK 12 EL 3.mmdl
 Description: 2ND FLR FRAMING\Flush Beams\B17C(i2226)
 Specifier:
 Designer: AJ
 Company:

Connection Diagram: Full Length of Member



a minimum = 2" c = 5-1/2"
 b minimum = 3" d = 6"

Calculated Side Load = 315.4 lb/ft
 Connectors are: 16d 1/4" Nails

3 1/2" ARDOX SPIRAL



SWG NO. TAM 248321

**STRUCTURAL
 COMPONENT ONLY**

Disclosure

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

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

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B18C(12212) (Flush Beam)**

BC CALC® Member Report

Dry | 2 spans | R cant.

February 5, 2021 16:19:00

Build 7773

Job name:

File name: VALLYCREEK 12 EL 3.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B18C(12212)

City, Province, Postal Code: WATERDOWN

Specifier:

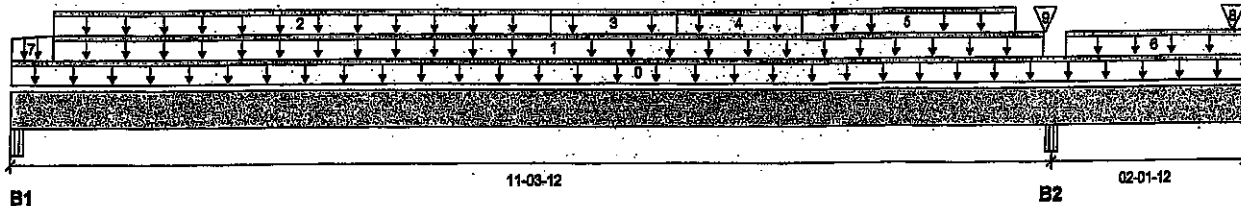
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:

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

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	193 / 0	145 / 0	0 / 47	
B2, 3-1/2"	226 / 0	345 / 0	446 / 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	13-05-08	Top		10			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-05-08	11-02-08	Top	26	13			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-05-08	05-09-08	Top	8	4			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	05-09-08	07-01-08	Top	8	4			n/a
4	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	07-01-08	08-05-08	Top	8	4			n/a
5	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	08-05-08	10-10-12	Top	8	4			n/a
6	ROOF	Unf. Lin. (lb/ft)	L	11-05-08	13-05-08	Top			63		n/a
7	FC2 Floor Decking (Plan View Fill)	Trapezoidal (lb/ft)	L	00-00-00	00-05-08	Top	30	15			n/a
							35	17			
8	B20C(12228)	Conc. Pt. (lbs)	L	13-03-12	13-03-12	Top		29	192		n/a
9	E37(11676)	Conc. Pt. (lbs)	L	11-02-12	11-02-12	Top	42	142	81		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1253 ft-lbs	23219 ft-lbs	5.4%	15	05-07-08
Neg. Moment	-893 ft-lbs	-23219 ft-lbs	3.8%	17	11-03-12
End Shear	443 lbs	11571 lbs	3.8%	15	01-00-02
Cont. Shear	457 lbs	11571 lbs	3.9%	1	10-04-08
Total Load Deflection	L/999 (0.04")	n/a	n/a	46	05-07-08
Live Load Deflection	L/999 (0.024")	n/a	n/a	68	05-09-08
Total Neg. Defl.	2xL/1998 (-0.023")	n/a	n/a	46	13-05-08
Max Defl.	0.04"	n/a	n/a	46	05-07-08
Span / Depth	14.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	2-5/8" x 3-1/2"	471 lbs	9.6%	4.2%	Unspecified
B2 Beam	3-1/2" x 3-1/2"	1327 lbs	20.3%	8.9%	Unspecified



OWN NO. TAM 2404-21

STRUCTURAL

COMPONENT ONLY



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

2ND FLR FRAMING\Flush Beams\B18C(i2212) (Flush Beam)

Dry | 2 spans | R cant.

PASSED

February 5, 2021 16:19:00

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

File name: VALLYCREEK 12 EL 3.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B18C(i2212)

Specifier:

Designer: AJ

Company:

Notes

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

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

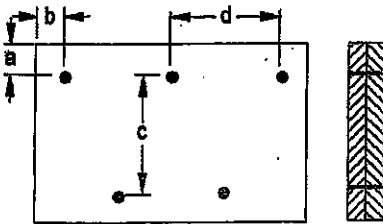
Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

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

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/2"

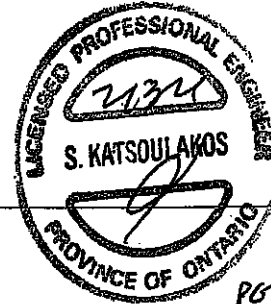
b minimum = 3"

d = 6"

Calculated Side Load = 162.1 lb/ft

Connectors are: 3" ARDOX SPIRAL

3 1/2" ARDOX SPIRAL



STRUCTURAL COMPONENT ONLY

Disclosure

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

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

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Dropped Beams\B19C(I2227) (Dropped Beam)**

BC CALC® Member Report

Dry | 1, span | No cant.

February 5, 2021 16:19:00

Build 7773

Job name:

File name: VALLYCREEK 12 EL 3.mxd

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B19C(I2227)

City, Province, Postal Code: WATERDOWN

Specifier:

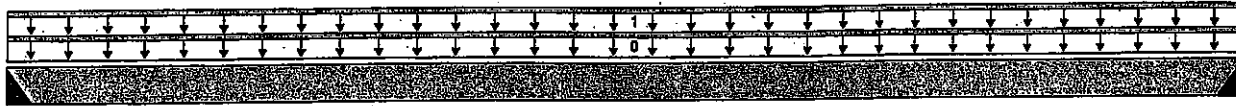
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



B1 11-10-00 B2

Total Horizontal Product Length = 11-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"		57 / 0	373 / 0	
B2, 2"		57 / 0	373 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-10-00	Top		10			00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	11-10-00	Top			63		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1800 ft-lbs	13794 ft-lbs	13.0%	1	05-11-00
End Shear	528 lbs	11571 lbs	4.6%	1	00-11-08
Total Load Deflection	L/999 (0.06")	n/a	n/a	12	05-11-00
Live Load Deflection	L/999 (0.052")	n/a	n/a	17	05-11-00
Max Defl.	0.06"	n/a	n/a	12	05-11-00
Span / Depth	14.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	2" x 3-1/2"	630 lbs	n/a	7.4%	HUC410
B2 Hanger	2" x 3-1/2"	630 lbs	n/a	7.4%	HUC410

Cautions

Header for the hanger HUC410 is a Double 1-3/4" x 9-1/2" LVL Beam.

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.

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

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

CONFORMS TO OBC 2012

AMENDED 2020



096 NO. TAM 2480-21

STRUCTURAL

COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Dropped Beams\B19C(i2227) (Dropped Beam)

PASSED

BC CALC® Member Report
 Build 7773

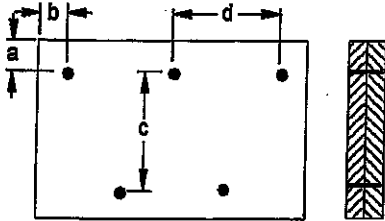
Dry | 1 span | No cant.

February 5, 2021 16:19:00

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

File name: VALLYCREEK 12 EL 3.mmdl
 Description: 2ND FLR FRAMING\Dropped Beams\B19C(i2227)
 Specifier:
 Designer: AJ
 Company:

Connection Diagram: Full Length of Member



a minimum = 2" c = 5-1/2"
 b minimum = 3" d = 6"

Connectors are: 1 Nail
 3/4" 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®



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

2ND FLR FRAMING\Dropped Beams\B20C(i2228) (Dropped Beam)

PASSED

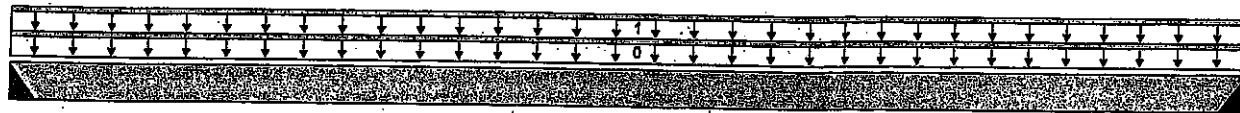
BC CALCO Member Report
Build 7773

Dry | 1 span | No cant.

February 6, 2021 16:19:00

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

File name: VALLYCREEK 12 EL 3.mmdl
Description: 2ND FLR FRAMING\Dropped Beams\B20C(i2228)
Specifier:
Designer: AJ
Company:



B1

08-01-00

B2

Total Horizontal Product Length = 08-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"		29 / 0	192 / 0	
B2, 2"		29 / 0	192 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-01-00	Top		10			00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	06-01-00	Top			63		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	460 ft-lbs	20617 ft-lbs	2.2%	1	03-00-08
End Shear	222 lbs	11571 lbs	1.9%	1	00-11-08
Total Load Deflection	L/999 (0.004")	n/a	n/a	12	03-00-08
Live Load Deflection	L/999 (0.003")	n/a	n/a	17	03-00-08
Max Defl.	0.004"	n/a	n/a	12	03-00-08
Span / Depth	7.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 3-1/2"	324 lbs	n/a	3.8%	HUC410
B2	Hanger 2" x 3-1/2"	324 lbs	n/a	3.8%	HUC410

Cautions

Header for the hanger HUC410 is a Double 1-3/4" x 9-1/2" LVL Beam.
Hanger model HUC410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity. *OK*

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Unbalanced snow loads determined from building geometry were used in selected product's verification.
Design based on Dry Service Condition.
Importance Factor: Normal Part code: Part 9
Calculations assume unbraced length of Top: 06-01-00, Bottom: 06-01-00.

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAN 24B1-21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Dropped Beams\B20C(12228) (Dropped Beam)

PASSED

BC CALC® Member Report
Build 7773

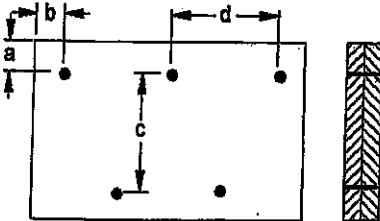
Dry | 1 span | No cant.

February 5, 2021 16:19:00

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

File name: VALLYCREEK 12 EL 3.mmdl
Description: 2ND FLR FRAMING\Dropped Beams\B20C(12228)
Specifier:
Designer: AJ
Company:

Connection Diagram: Full Length of Member



a minimum = 2" c = 5-1/2"
b minimum = 3" d = 6"

Connectors are: 3/4" ARDOX SPIRAL Nails



ENG NO. TAM 2401-21
**STRUCTURAL
COMPONENT ONLY**

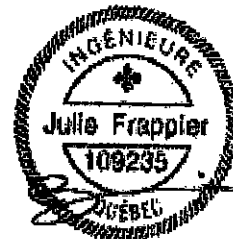
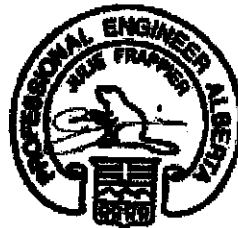
Disclosure

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

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

Maximum Floor Spans

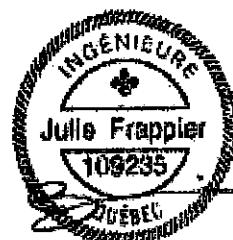
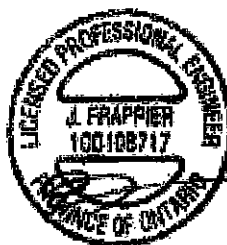
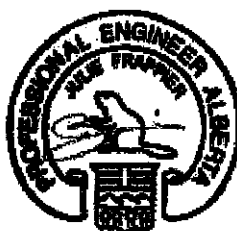
Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing



Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	14'-2"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
11-7/8"	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
14"	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-8"	15'-3"	14'-5"	N/A	16'-8"	15'-3"	14'-5"	N/A
	NI-40x	17'-11"	16'-11"	16'-1"	N/A	18'-5"	17'-1"	16'-1"	N/A
	NI-60	18'-2"	17'-1"	16'-4"	N/A	18'-7"	17'-4"	16'-4"	N/A
	NI-70	19'-2"	17'-10"	17'-2"	N/A	19'-7"	18'-3"	17'-7"	N/A
	NI-80	19'-5"	18'-0"	17'-4"	N/A	19'-10"	18'-5"	17'-8"	N/A
11-7/8"	NI-20	19'-6"	18'-1"	17'-3"	N/A	19'-11"	18'-3"	17'-3"	N/A
	NI-40x	21'-0"	19'-6"	18'-8"	N/A	21'-7"	20'-2"	19'-2"	N/A
	NI-60	21'-4"	19'-9"	18'-11"	N/A	21'-11"	20'-4"	19'-6"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-5"	20'-5"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-8"	N/A
14"	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-11"	20'-11"	N/A	24'-3"	22'-7"	21'-7"	N/A
	NI-60	24'-0"	22'-3"	21'-3"	N/A	24'-8"	22'-11"	21'-11"	N/A
	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-11"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
16"	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	25'-3"	24'-2"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of $1.50L + 1.25D$. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans

Live Load = 40 psf, Dead Load = 15 psf

Simple Spans, L/480 Deflection Limit

3/4" OSB G&N Sheathing

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	16'-7"	15'-11"	15'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-7"	18'-5"	17'-3"	16'-7"	15'-11"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"
11-7/8"	NI-20	17'-10"	16'-10"	16'-2"	15'-6"	18'-6"	17'-4"	16'-9"	16'-1"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	18'-6"	17'-9"	17'-0"
	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"
	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
14"	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-11"	22'-1"	20'-6"	19'-7"	18'-7"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"
	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
16"	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"
	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"
	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"
	NI-70	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17'-10"	16'-7"
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"
11-7/8"	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"
	NI-40x	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"
	NI-60	22'-1"	20'-7"	19'-7"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"
	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"	21'-2"	19'-9"
	NI-80	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"	21'-5"	20'-0"
14"	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"
	NI-40x	24'-5"	22'-9"	21'-8"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
	NI-60	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
	NI-70	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"	23'-9"	22'-4"
	NI-80	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
16"	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"
	NI-60	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"
	NI-80	29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90x	29'-11"	27'-10"	26'-6"	25'-0"	30'-6"	28'-5"	27'-2"	25'-8"

1. Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.

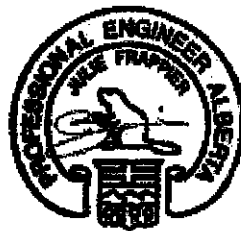
2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

3. Minimum bearing length shall be 1-3/4 inches for the end bearings.

4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

5. This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

6. Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



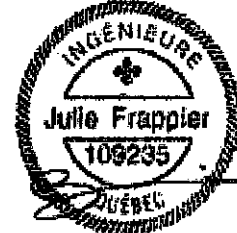
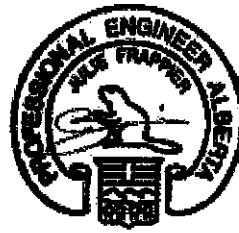
Maximum Floor Spans

Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
11-7/8"	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
14"	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
16"	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	17'-9"	16'-1"	15'-1"	N/A	17'-9"	16'-1"	15'-1"	N/A
	NI-60	18'-1"	16'-4"	15'-4"	N/A	18'-1"	16'-4"	15'-4"	N/A
	NI-70	19'-2"	17'-10"	16'-9"	N/A	19'-7"	17'-10"	16'-9"	N/A
	NI-80	19'-5"	18'-0"	17'-1"	N/A	19'-10"	18'-3"	17'-1"	N/A
11-7/8"	NI-20	18'-9"	17'-0"	16'-0"	N/A	18'-9"	17'-0"	16'-0"	N/A
	NI-40x	21'-0"	19'-3"	17'-9"	N/A	21'-3"	19'-3"	17'-9"	N/A
	NI-60	21'-4"	19'-8"	18'-5"	N/A	21'-8"	19'-8"	18'-5"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-4"	20'-0"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-5"	N/A
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
14"	NI-40x	23'-7"	21'-5"	19'-6"	N/A	24'-1"	21'-5"	19'-6"	N/A
	NI-60	24'-0"	22'-3"	21'-0"	N/A	24'-8"	22'-5"	21'-0"	N/A
	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-9"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
16"	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	24'-10"	23'-4"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans

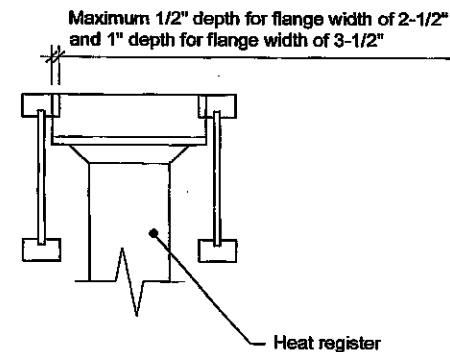
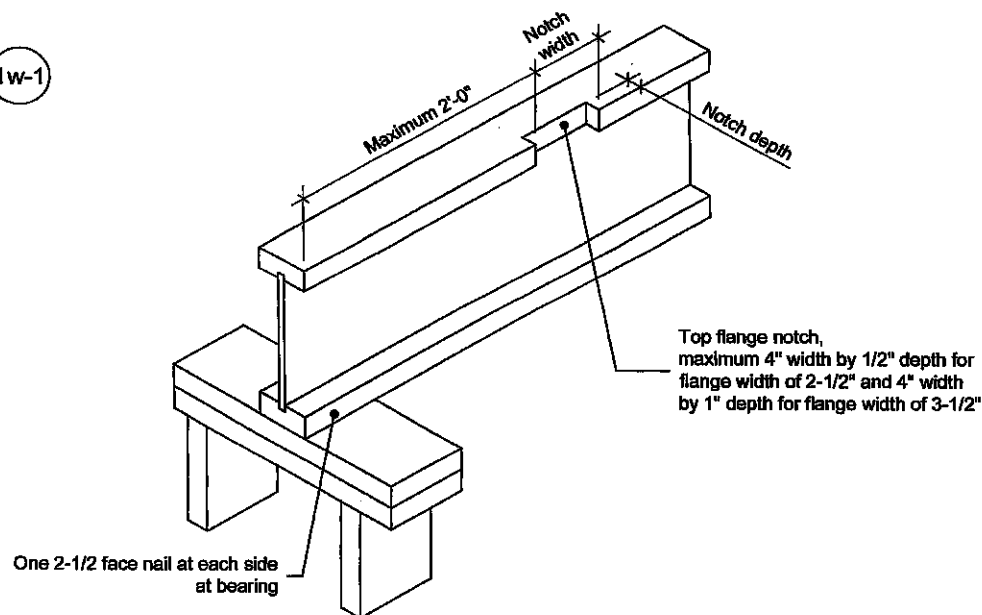
Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
3/4" OSB G&N Sheathing

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	16'-5"	15'-5"	14'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-6"	18'-5"	17'-3"	16'-7"	15'-6"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	15'-10"
11-7/8"	NI-20	17'-10"	16'-10"	16'-0"	14'-10"	18'-6"	17'-1"	16'-0"	14'-10"
	NI-40x	19'-4"	17'-11"	17'-3"	15'-10"	19'-11"	18'-6"	17'-9"	15'-10"
	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-1"
	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
14"	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-5"	22'-1"	20'-6"	19'-6"	17'-5"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"
	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
16"	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"
	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"
	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"
	NI-60	18'-1"	16'-5"	15'-5"	14'-3"	18'-1"	16'-5"	15'-5"	14'-3"
	NI-70	19'-10"	17'-11"	16'-9"	15'-6"	19'-10"	17'-11"	16'-9"	15'-6"
	NI-80	20'-2"	18'-3"	17'-1"	15'-10"	20'-2"	18'-3"	17'-1"	15'-10"
11-7/8"	NI-20	18'-10"	17'-1"	16'-0"	14'-10"	18'-10"	17'-1"	16'-0"	14'-10"
	NI-40x	21'-3"	19'-3"	17'-9"	15'-10"	21'-3"	19'-3"	17'-9"	15'-10"
	NI-60	21'-9"	19'-8"	18'-5"	17'-1"	21'-9"	19'-8"	18'-5"	17'-1"
	NI-70	23'-4"	21'-5"	20'-1"	18'-6"	23'-8"	21'-5"	20'-1"	18'-6"
	NI-80	23'-7"	21'-10"	20'-5"	18'-11"	24'-1"	21'-10"	20'-5"	18'-11"
14"	NI-90x	24'-3"	22'-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"
	NI-40x	24'-2"	21'-5"	19'-6"	17'-5"	24'-2"	21'-5"	19'-6"	17'-5"
	NI-60	24'-9"	22'-5"	21'-0"	19'-6"	24'-9"	22'-5"	21'-0"	19'-6"
	NI-70	26'-1"	24'-3"	22'-9"	21'-0"	26'-8"	24'-3"	22'-9"	21'-0"
	NI-80	26'-6"	24'-7"	23'-3"	21'-6"	27'-1"	24'-10"	23'-3"	21'-6"
16"	NI-90x	27'-3"	25'-4"	24'-1"	22'-4"	27'-9"	25'-10"	24'-3"	22'-4"
	NI-60	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"
	NI-70	28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"
	NI-80	29'-1"	27'-0"	25'-9"	23'-10"	29'-8"	27'-6"	25'-10"	23'-10"
	NI-90x	29'-11"	27'-10"	26'-6"	24'-10"	30'-6"	28'-5"	26'-11"	24'-10"

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of $1.50L + 1.25D$. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

1w-1



Notes:

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

This document supersedes all previous versions. If the document has been in effect for more than one year, consult nordic.ca or contact Nordic Structures.

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

**NORDIC
STRUCTURES**

T 514-871-8526
1 888 817-3418
nordic.ca

TITLE

Notch in I-joist for Heat Register

CATEGORY

I-joist - Typical Floor Framing and Construction Details

DOCUMENT

-

DATE

2018-04-10

NUMBER

1w-1



Construction Detail

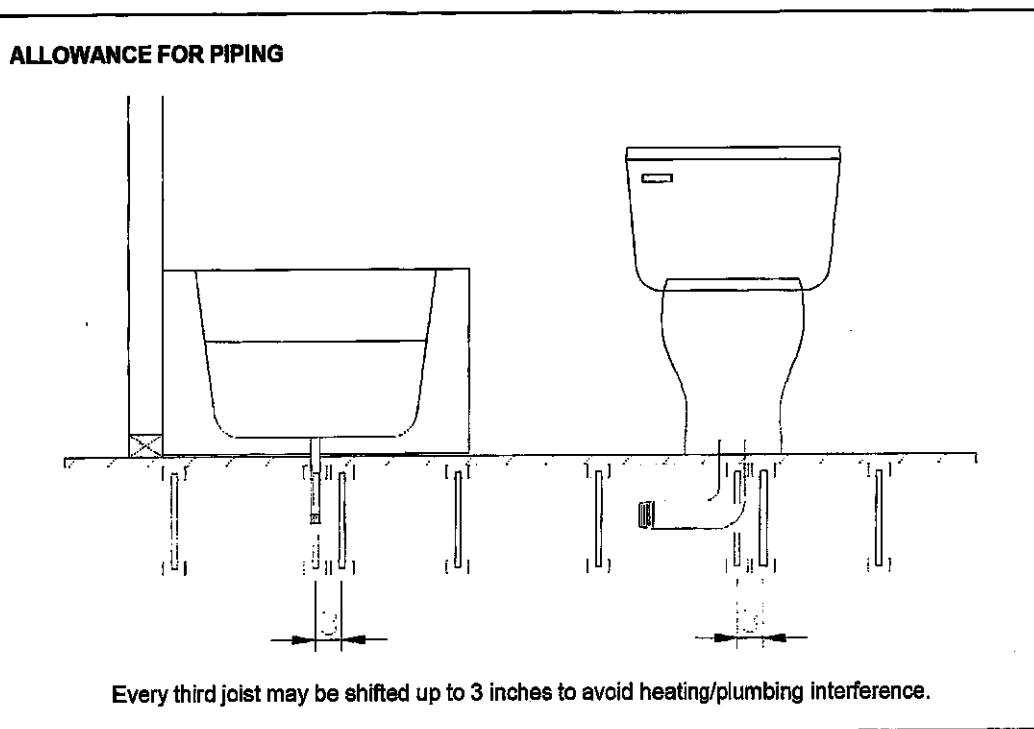
Limit States Design

Allowance for Piping (Installation Notes)

The floor layouts have usually not been checked for heating and/or plumbing interference. On-site adjustment of joists of up to 3 inches is permitted to avoid interferences. When moving a joist, the subfloor thickness shall be checked with code requirements when the joist spacing exceeds 19.2 inches. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.

Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced for shorter spans; contact your distributor for additional information.

The detail below shows the 3-inch allowance for piping. Every third joist may be shifted up to 3 inches to avoid heating/plumbing interference. For other applications, please contact your distributor.



Revised April 12, 2012

