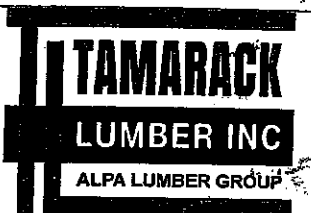
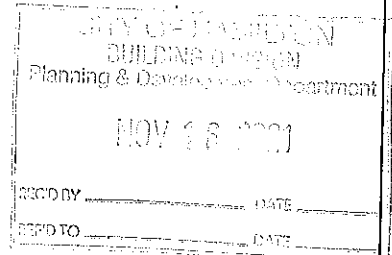


Products				
PlotID	Length	Product	Plies	Net Qty
J10	16-00-00	9 1/2" NI-40x	1	6
J1	20-00-00	11 7/8" NI-40x	2	4
J2	18-00-00	11 7/8" NI-40x	1	10
J3	14-00-00	11 7/8" NI-40x	1	2
J4	4-00-00	11 7/8" NI-40x	1	1
J5	22-00-00	11 7/8" NI-80	1	4
J6	20-00-00	11 7/8" NI-80	1	49
B31 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B32	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
2	H1	IUS2.56/11.88
10	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
1	H2	HUS1.81/10
1	H2	HUS1.81/10
9	H3	IUS3.56/11.88
1	H4	HGUS412



FROM PLAN DATED: FEB. 2021
 BUILDER: GREENPARK HOMES
 SITE: RUSSELL GARDENS PH. 4
 MODEL: SPRINGFIELD 2
 ELEVATION: 1
 LOT: 562
 CITY: WATERDOWN
 SALESMAN: RICK DICIANO
 DESIGNER: AJ
 REVISION: CH

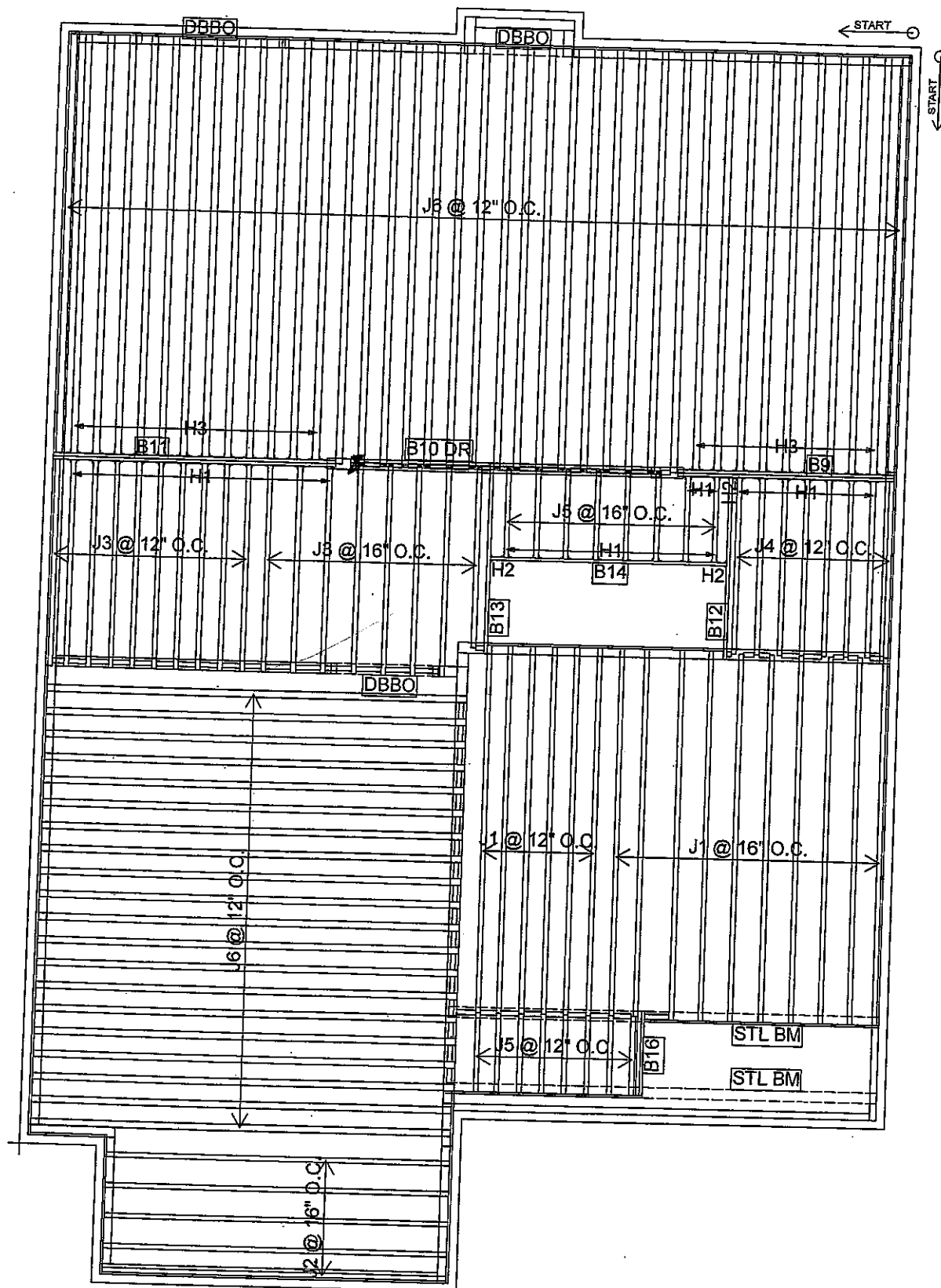
NOTES:
 REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.
 SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST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

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

DATE: 8/16/21

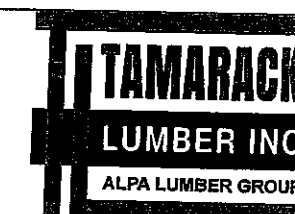
1st FLOOR FRAMING

SUBFLOOR: 3/4" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	16
J2	16-00-00	11 7/8" NI-40x	1	5
J3	10-00-00	11 7/8" NI-40x	1	18
J4	8-00-00	11 7/8" NI-40x	1	8
J5	4-00-00	11 7/8" NI-40x	1	16
J6	20-00-00	11 7/8" NI-80	1	59
B11	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B10 DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B14	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B12	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B13	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B16	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/11.88
21	H1	IUS2.56/11.88
2	H2	HUS1.81/10
1	H2	HUS1.81/10
21	H3	IUS3.56/11.88



FROM PLAN DATED: FEB. 2021

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH. 4

MODEL: SPRINGFIELD 2

ELEVATION: 1

LOT: 562

CITY: WATERDOWN

SALESMAN: RICK DICIANO

DESIGNER: AJ

REVISION: CH

NOTES:

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

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

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

DATE: 8/16/21

2ND FLOOR FRAMING

SUBFLOOR: 5/8" GLUED AND NAILED



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

PASSED

2ND FLR FRAMING\Dropped Beams\B10 DR(i629) (Dropped Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 09:56:22

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B10 DR(i629)

City, Province, Postal Code:

Specifier:

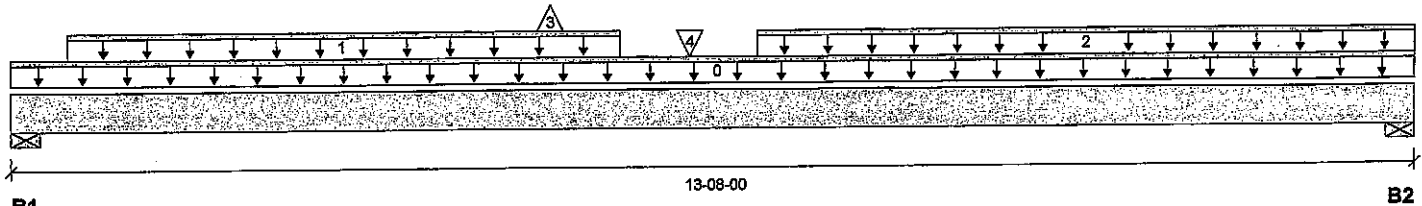
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 13-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	3576 / 0	1932 / 0		
B2, 4"	3460 / 0	1874 / 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	13-08-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-08	05-10-08	Top	603	301			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	07-02-08	13-08-00	Top	481	241			n/a
3	J3(i734)	Conc. Pt. (lbs)	L	05-02-08	05-02-08	Top	0				n/a
4	-	Conc. Pt. (lbs)	L	06-06-11	06-06-11	Top	714	398			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	24709 ft-lbs	55211 ft-lbs	44.8%	1	06-06-14
End Shear	7062 lbs	21696 lbs	32.5%	1	01-03-14
Total Load Deflection	L/432 (0.365")	n/a	55.6%	4	06-09-13
Live Load Deflection	L/667 (0.236")	n/a	54.0%	5	06-09-13
Max Defl.	0.365"	n/a	n/a	4	06-09-13
Span / Depth	13.3				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 5-1/4"	7779 lbs	27.8%	30.4%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 5-1/4"	7532 lbs	26.9%	29.4%	Spruce-Pine-Fir

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-10-04, Bottom: 13-08-00.

CONFORMS TO OBC 2012

AMENDED 2020



OWB NO. YAM 9544-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLR FRAMING\Dropped Beams\B10 DR(i629) (Dropped Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 09:56:22

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B10 DR(i629)

City, Province, Postal Code:

Specifier:

Customer:

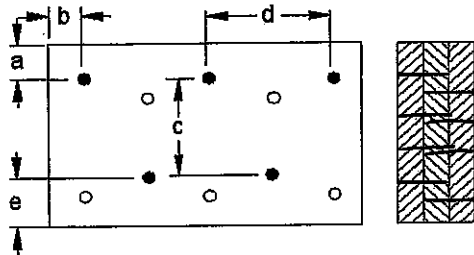
Designer:

Code reports:

CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 1"

c = 8-7/8"

b minimum = 3"

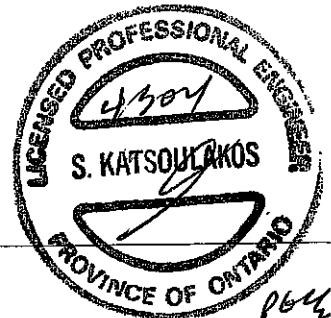
d = 8"

e minimum = 3"

Nailing applies to both sides of the member

Connectors are: Nails

3 1/2" ARDOX SPIRAL



DWG NO. YAM 9544-21
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®



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

2ND FLR FRAMING\Flush Beams\B12(i1151) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 09:56:22

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B12(i1151)

City, Province, Postal Code:

Specifier:

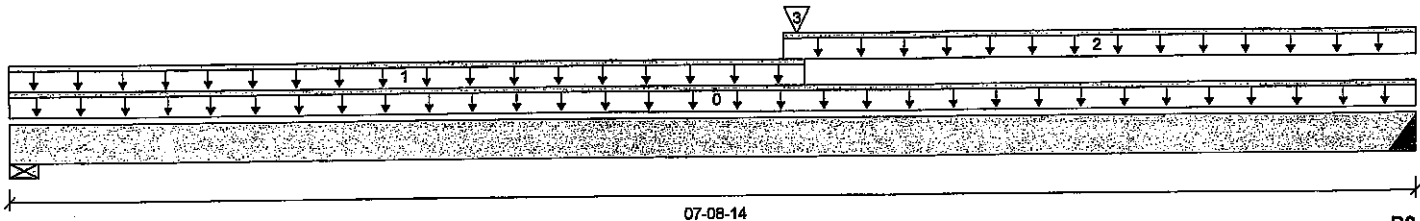
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



B1

07-08-14

B2

Total Horizontal Product Length = 07-08-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/4"	966 / 0	521 / 0		
B2, 2"	621 / 0	351 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-08-14	Top	1.00	0.65	1.00	1.15	00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	04-04-02	Top	240	120			n/a
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-02-12	07-08-14	Top	53	27			n/a
3	B14(i633)	Conc. Pt. (lbs)	L	04-03-10	04-03-10	Top	345	204			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3875 ft-lbs	17696 ft-lbs	21.9%	1	04-00-08
End Shear	1463 lbs	7232 lbs	20.2%	1	01-02-10
Total Load Deflection	L/999 (0.053")	n/a	n/a	4	03-10-04
Live Load Deflection	L/999 (0.034")	n/a	n/a	5	03-10-04
Max Defl.	0.053"	n/a	n/a	4	03-10-04
Span / Depth	7.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/4" x 1-3/4"	2100 lbs	70.9%	35.8%	Spruce-Pine-Fir
B2	Hanger 2" x 1-3/4"	1370 lbs	n/a	32.1%	HUS1.81/10

Cautions

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

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

Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020



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



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

2ND FLR FRAMING\Flush Beams\B13(i632) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 09:56:22

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B13(i632)

City, Province, Postal Code:

Specifier:

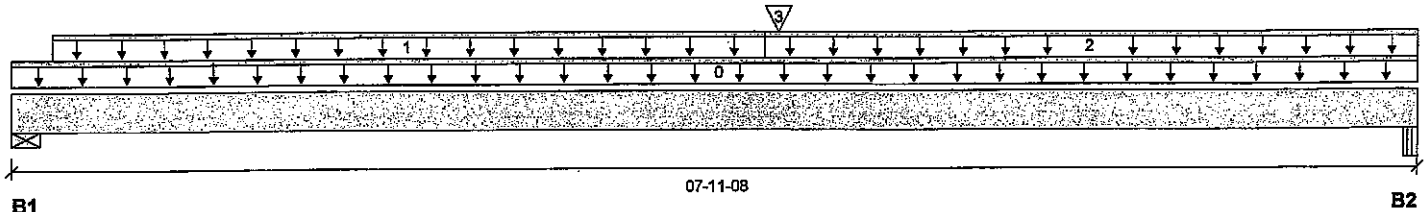
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-11-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/4"	212 / 0	145 / 0		
B2, 2-5/8"	345 / 0	214 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-11-08	Top		6			00-00-00
1	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-12	04-02-12	Top	3	2			n/a
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-02-12	07-11-08	Top	53	27			n/a
3	B14(i633)	Conc. Pt. (lbs)	L	04-03-10	04-03-10	Top	347	205			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1942 ft-lbs	17696 ft-lbs	11.0%	1	04-03-10
End Shear	639 lbs	7232 lbs	8.8%	1	06-09-00
Total Load Deflection	L/999 (0.025")	n/a	n/a	4	04-01-10
Live Load Deflection	L/999 (0.015")	n/a	n/a	5	04-01-10
Max Defl.	0.025"	n/a	n/a	4	04-01-10
Span / Depth	7.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/4" x 1-3/4"	499 lbs	16.9%	8.5%	Spruce-Pine-Fir
B2	Beam 2-5/8" x 1-3/4"	785 lbs	14.0%	14.0%	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: 04-00-00.

CONFORMS TO OBC 2012

AMENDED 2020



OWG NO. TAM 9546-21

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



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

2ND FLR FRAMING\Flush Beams\B14(i633) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 09:56:22

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B14(i633)

City, Province, Postal Code:

Specifier:

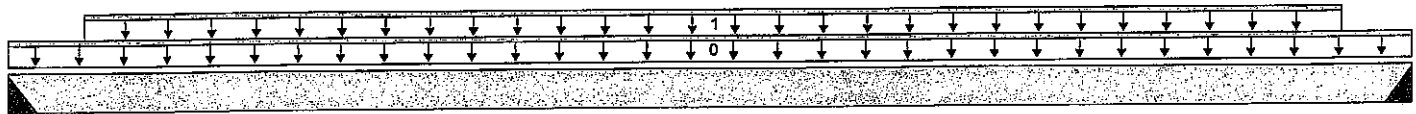
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



B1

10-05-04

B2

Total Horizontal Product Length = 10-05-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	347 / 0	205 / 0		
B2, 2"	345 / 0	204 / 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	10-05-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-12	09-10-12	Top	74	37			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2190 ft-lbs	17696 ft-lbs	12.4%	1	05-02-12
End Shear	767 lbs	7232 lbs	10.6%	1	01-01-14
Total Load Deflection	L/999 (0.059")	n/a	n/a	4	05-02-12
Live Load Deflection	L/999 (0.037")	n/a	n/a	5	05-02-12
Max Defl.	0.059"	n/a	n/a	4	05-02-12
Span / Depth	10.3				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	2" x 1-3/4"	776 lbs	n/a	18.2%	HUS1.81/10
B2 Hanger	2" x 1-3/4"	773 lbs	n/a	18.1%	HUS1.81/10

Cautions

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

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

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. AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

CONFORMS TO OBC 2012

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



OWB NO. TAM 9547-21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B16(i639) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 09:56:22

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B16(i639)

City, Province, Postal Code:

Specifier:

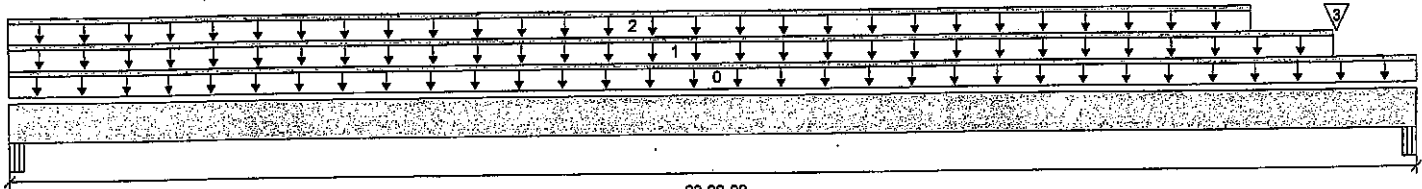
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



03-08-02

B2

Total Horizontal Product Length = 03-08-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-1/8"	32 / 0	233 / 0	82 / 0	
B2, 5-1/4"	30 / 0	231 / 0	88 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-08-02	Top		12			00-00-00
1	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	03-05-08	Top	18	9			n/a
2	E27(i1113)	Unf. Lin. (lb/ft)	L	00-00-00	03-02-14	Top		109	46		n/a
3	E28(i1112)	Conc. Pt. (lbs)	L	03-05-10	03-05-10	Top		36	21		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	207 ft-lbs	23005 ft-lbs	0.9%	0	01-09-08
End Shear	83 lbs	9401 lbs	0.9%	0	01-04-00
Total Load Deflection	L/999 (0")	n/a	n/a	35	01-09-08
Live Load Deflection	L/999 (0")	n/a	n/a	51	01-09-08
Max Defl.	0"	n/a	n/a	35	01-09-08
Span / Depth	3.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 4-1/8" x 3-1/2"	326 lbs	6.5%	2.8%	Unspecified
B2	Beam 5-1/4" x 3-1/2"	324 lbs	5.1%	2.2%	Unspecified

Notes

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

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020



ENG NO. TAM 9548-21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B16(i639) (Flush Beam)

PASSED

BC CALC® Member Report
Build 7773

Dry | 1 span | No cant.

March 17, 2021 09:56:22

Job name:

File name: SPRINGFIELD 2 EL 2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B16(i639)

City, Province, Postal Code:

Specifier:

Customer:

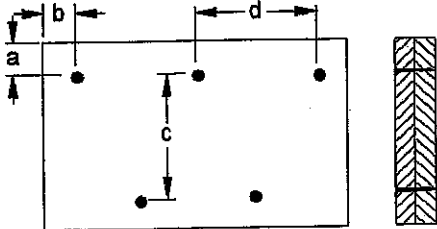
Designer:

Code reports:

CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 8"

Connectors are:

Nails

3 1/2" ARDOX SPIRAL



**STRUCTURAL
COMPONENT ONLY**

Disclosure

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



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

1ST FLR FRAMING\Flush Beams\B1(i1238) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 09:56:22

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1(i1238)

City, Province, Postal Code:

Specifier:

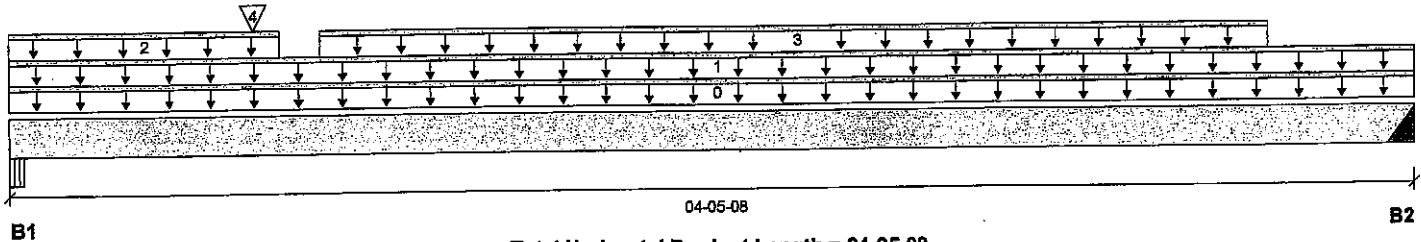
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 10-7/8"	3673 / 0	2043 / 0		
B2, 2"	568 / 0	295 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-05-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	04-05-08	Top	19	10			n/a
2	4(i627)	Unf. Lin. (lb/ft)	L	00-00-00	00-10-04	Top		81			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	00-11-12	03-11-12	Top	373	186			n/a
4	4(i627)	Conc. Pt. (lbs)	L	00-09-04	00-09-04	Top	3018	1631			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1368 ft-lbs	17696 ft-lbs	7.7%	1	02-05-12
End Shear	1020 lbs	7232 lbs	14.1%	1	03-03-10
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	02-07-00
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	02-07-00
Max Defl.	0.004"	n/a	n/a	4	02-07-00
Span / Depth	3.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	10-7/8" x 1-3/4"	8064 lbs	79.3%	34.7%	Unspecified
B2 Hanger	2" x 1-3/4"	1221 lbs	n/a	28.6%	HUS1.81/10

Cautions

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

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

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. AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012



STRUCTURAL COMPONENT ONLY

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



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

1ST FLR FRAMING\Flush Beams\B2(i1169) (Flush Beam)

PASSED

BC CALC® Member Report
Build 7773

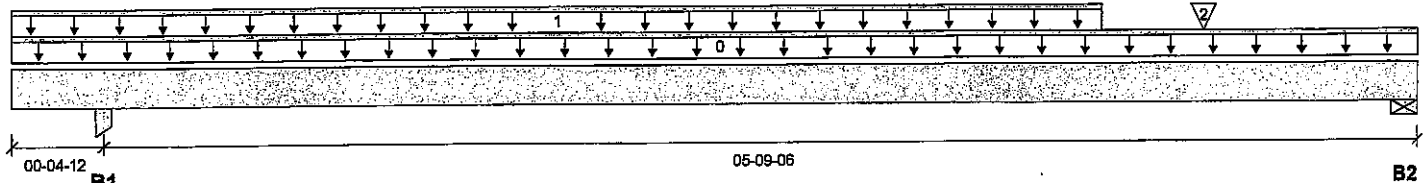
Dry | 2 spans | L cant.

March 17, 2021 09:56:22

Job name:
Address:
City, Province, Postal Code:
Customer:
Code reports:

CCMC 12472-R

File name: SPRINGFIELD 2 EL 2.mmdl
Description: 1ST FLR FRAMING\Flush Beams\B2(i1169)
Specifier:
Designer:
Company:



Total Horizontal Product Length = 06-02-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1280 / 0	659 / 0		
B2, 2-3/8"	954 / 0	495 / 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	06-02-02	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	04-09-04	Top	383	191			n/a
2	J7(i530)	Conc. Pt. (lbs)	L	05-02-12	05-02-12	Top	379	190			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3232 ft-lbs	17696 ft-lbs	18.3%	1	03-03-04
End Shear	1834 lbs	7232 lbs	25.4%	1	04-11-14
Cont. Shear	1736 lbs	7232 lbs	24.0%	1	01-06-06
Total Load Deflection	L/999 (0.026")	n/a	n/a	8	03-02-08
Live Load Deflection	L/999 (0.017")	n/a	n/a	11	03-02-08
Total Neg. Defl.	2xL/1998 (-0.006")	n/a	n/a	10	00-00-00
Max Defl.	0.026"	n/a	n/a	8	03-02-08
Span / Depth	5.7				

Bearing Supports

				Demand/ Resistance Support	Demand/ Resistance Member	Material
Bearing Supports	Dim. (LxW)	Demand				
B1	Column	3-1/2" x 1-3/4"	2744 lbs	55.2%	36.7%	Unspecified
B2	Wall/Plate	2-3/8" x 1-3/4"	2050 lbs	80.2%	40.4%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Resistance Factor phi has been applied to all presented results per CSA O86. **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
Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.
Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-08-08.

CONFORMS TO CBC 2012



ENG NO. TAM 9550-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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

1ST FLR FRAMING\Flush Beams\B3(i1232) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 09:56:22

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B3(i1232)

City, Province, Postal Code:

Specifier:

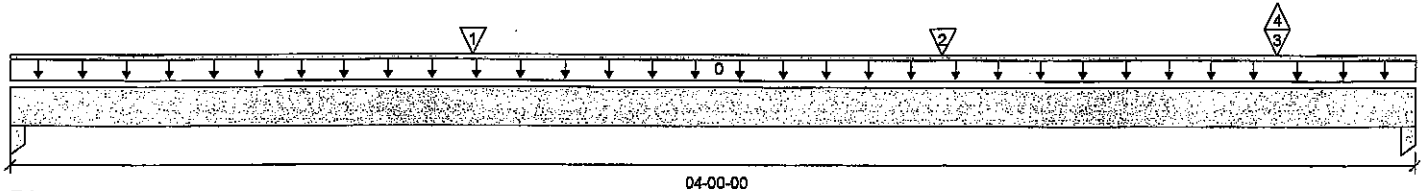
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	431 / 0	228 / 0		
B2, 1-3/4"	844 / 2	435 / 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	04-00-00	Top		6			00-00-00
1	J3(i547)	Conc. Pt. (lbs)	L	01-03-10	01-03-10	Top	375	188			n/a
2	J3(i1237)	Conc. Pt. (lbs)	L	02-07-10	02-07-10	Top	337	168			n/a
3	B1(i1238)	Conc. Pt. (lbs)	L	03-07-04	03-07-04	Top	561	282			n/a
4	B1(i1238)	Conc. Pt. (lbs)	L	03-07-04	03-07-04	Top	-2				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1150 ft-lbs	17696 ft-lbs	6.5%	1	02-07-10
End Shear	921 lbs	7232 lbs	12.7%	1	01-03-06
Total Load Deflection	L/999 (0.004")	n/a	n/a	6	02-01-02
Live Load Deflection	L/999 (0.003")	n/a	n/a	8	02-01-02
Max Defl.	0.004"	n/a	n/a	6	02-01-02
Span / Depth	3.7				

Bearing Supports

			Demand/ Resistance Support	Demand/ Resistance Member	
Bearing Supports	Dim. (LxW)	Demand			Material
B1	Column	3-1/2" x 1-3/4"	931 lbs	18.7%	12.5%
B2	Column	1-3/4" x 1-3/4"	1809 lbs	72.7%	48.4%
					Unspecified

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020



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

**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B4(i476) (Flush Beam)**

Dry | 1 span | No cant.

March 17, 2021 09:56:22

BC CALC® Member Report

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B4(i476)

City, Province, Postal Code:

Specifier:

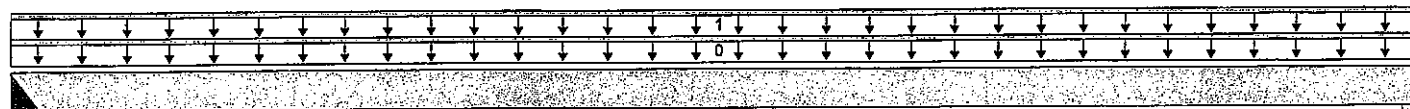
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



13-11-04

B1

B2

Total Horizontal Product Length = 13-11-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	182 / 0	133 / 0		
B2, 1-3/4"	181 / 0	132 / 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	13-11-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	13-11-04	Top	26	13			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1486 ft-lbs	17696 ft-lbs	8.4%	1	06-11-12
End Shear	366 lbs	7232 lbs	5.1%	1	01-01-14
Total Load Deflection	L/999 (0.074")	n/a	n/a	4	06-11-12
Live Load Deflection	L/999 (0.043")	n/a	n/a	5	06-11-12
Max Defl.	0.074"	n/a	n/a	4	06-11-12
Span / Depth	13.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	439 lbs	n/a	10.3%	HUS1.81/10
B2	Column 1-3/4" x 1-3/4"	437 lbs	17.6%	11.7%	Unspecified

Cautions

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

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

Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 13-11-04.

CONFORMS TO CBC 2012

AMENDED 2020

DWG NO. YAM 9552-21
STRUCTURAL COMPONENT ONLY**Disclosure**

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



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

1ST FLR FRAMING\Flush Beams\B5(i1212) (Flush Beam)

PASSED

March 17, 2021 09:56:22

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

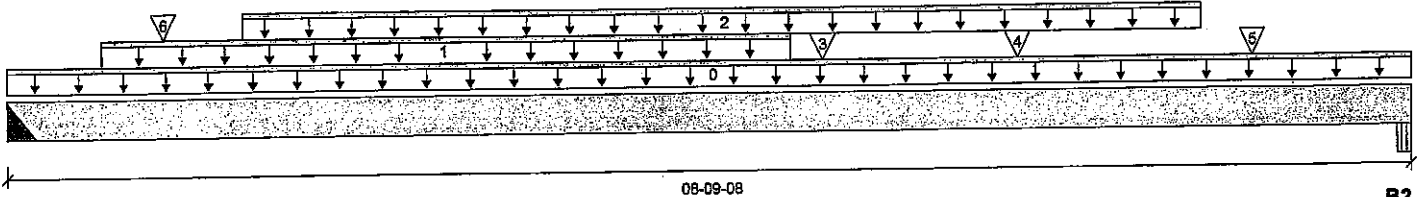
File name: SPRINGFIELD 2 EL 2.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B5(i1212)

Specifier:

Designer:

Company:



B1

B2

Total Horizontal Product Length = 08-09-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	2402 / 0	1270 / 0		
B2, 3-1/8"	2402 / 0	1276 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-09-08	Top		12			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-07-00	04-10-08	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-05-10	07-05-10	Top	358	179			n/a
3	B4(i476)	Conc. Pt. (lbs)	L	05-00-14	05-00-14	Top	181	132			n/a
4	J3(i547)	Conc. Pt. (lbs)	L	06-03-10	06-03-10	Top	371	186			n/a
5	-	Conc. Pt. (lbs)	L	07-09-09	07-09-09	Top	657	328			n/a
6	J2(i542)	Conc. Pt. (lbs)	L	00-11-10	00-11-10	Top	395	197			n/a

Controls Summary

Pos. Moment	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
End Shear	11402 ft-lbs	35392 ft-lbs	32.2%	1	04-05-01
Total Load Deflection	4870 lbs	14464 lbs	33.7%	1	01-03-14
Live Load Deflection	L/999 (0.103")	n/a	n/a	4	04-05-01
Max Defl.	L/999 (0.087")	n/a	n/a	5	04-05-01
Span / Depth	0.103"	n/a	n/a	4	04-05-01
	8.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	4" x 3-1/2"	5190 lbs	n/a	30.4%	HGUS412
B2 Beam	3-1/8" x 3-1/2"	5198 lbs	89.0%	39.0%	Unspecified

Cautions

Header for the hanger HGUS412 is a Triple 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS412 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.



STRUCTURAL COMPONENT ONLY



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

1ST FLR FRAMING\Flush Beams\B5(i1212) (Flush Beam)

Dry | 1 span | No cant.

PASSED

March 17, 2021 09:58:22

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File name: SPRINGFIELD 2 EL 2.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B5(i1212)

Specifier:

Designer:

Company:

Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

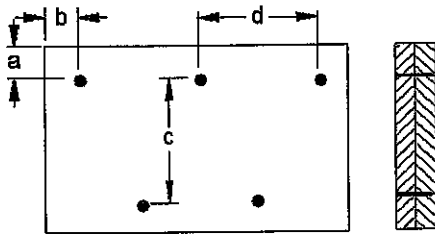
Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-10-06.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

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

Calculated Side Load = 766.5 lb/ft

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



STRUCTURAL
COMPONENT ONLY

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Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
1ST FLR FRAMING\Flush Beams\B6(i1218) (Flush Beam)

PASSED

BC CALC® Member Report
 Build 7773

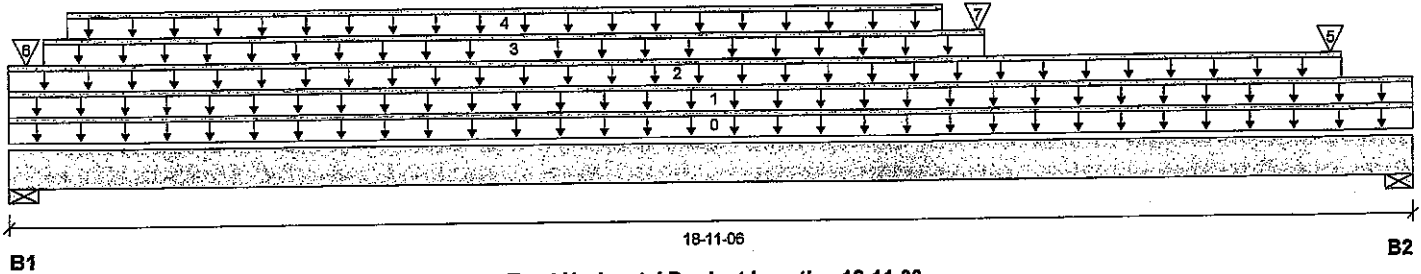
Dry | 1 span | No cant.

March 17, 2021 09:56:22

Job name:
 Address:
 City, Province, Postal Code:
 Customer:
 Code reports:

CCMC 12472-R

File name: SPRINGFIELD 2 EL 2.mmdl
 Description: 1ST FLR FRAMING\Flush Beams\B6(i1218)
 Specifier:
 Designer:
 Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	2325 / 0	2073 / 0		
B2, 4-3/8"	3848 / 0	2542 / 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	18-11-06	Top		18			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	18-11-06	Top	19	10			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	17-11-08	Top	24	12			n/a
3	5(i634)	Unf. Lin. (lb/ft)	L	00-05-08	13-01-08	Top		81			n/a
4	5(i634)	Unf. Lin. (lb/ft)	L	00-09-04	12-06-12	Top	182	91			n/a
5	B5(i1212)	Conc. Pt. (lbs)	L	17-09-12	17-09-12	Top	2331	1233			n/a
6	E24(i1107)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	127	136			n/a
7	5(i634)	Conc. Pt. (lbs)	L	13-00-08	13-00-08	Top	609	331			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	27876 ft-lbs	55211 ft-lbs	50.5%	1	09-05-04
End Shear	7745 lbs	21696 lbs	35.7%	1	17-07-02
Total Load Deflection	L/263 (0.84")	n/a	91.2%	4	09-05-04
Live Load Deflection	L/481 (0.46")	n/a	74.9%	5	09-05-04
Max Defl.	0.84"	n/a	n/a	4	09-05-04
Span / Depth	18.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 5-1/4"	6079 lbs	53.8%	27.1%	Spruce-Pine-Fir
B2	Wall/Plate 4-3/8" x 5-1/4"	8950 lbs	63.3%	31.9%	Spruce-Pine-Fir

Cautions

Concentrated side load(s) 17 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.



9554-21
 STRUCTURAL
 COMPONENT ONLY



Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
1ST FLR FRAMING\Flush Beams\B6(i1218) (Flush Beam)

PASSED

BC CALC® Member Report
 Build 7773

Dry | 1 span | No cant.

March 17, 2021 09:56:22

Job name:

File name: SPRINGFIELD 2 EL 2.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B6(i1218)

City, Province, Postal Code:

Specifier:

Customer:

Designer:

Code reports:

CCMC 12472-R

Company:

Notes

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

CONFORMS TO OBC 2012

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

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

AMENDED 2020

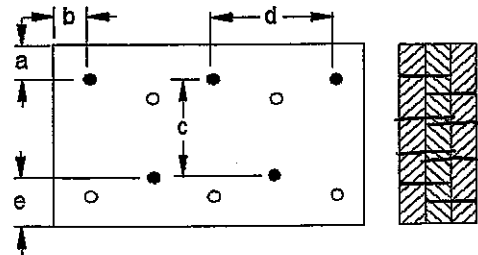
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 17-04-08.

Connection Diagram: Full Length of Member



4 rows

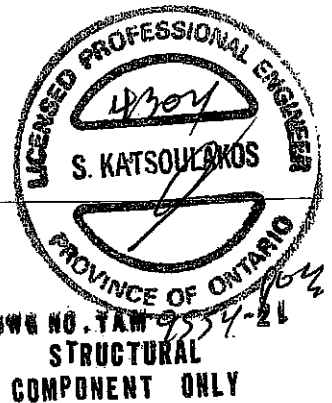
a minimum = 2"
 b minimum = 3"

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

Nailing applies to both sides of the member

Connectors are: Nails

3/4" ARDOX SPIRAL



Disclosure

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

**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B7(i516) (Flush Beam)**

Dry | 1 span | No cant.

March 17, 2021 09:56:22

BC CALC® Member Report

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B7(i516)

City, Province, Postal Code:

Specifier:

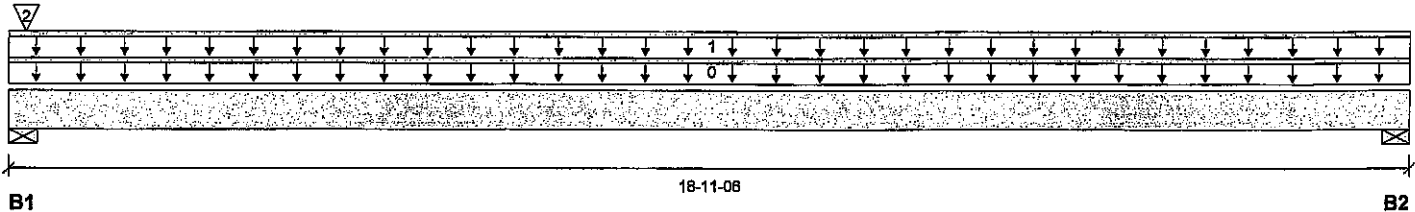
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:

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

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	219 / 0	191 / 0		
B2, 2-3/8"	189 / 0	151 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	18-11-06	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	18-11-06	Top	20	10			n/a
2	E24(i1107)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	29	38			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2159 ft-lbs	17696 ft-lbs	12.2%	1	09-06-04
End Shear	412 lbs	7232 lbs	5.7%	1	01-03-06
Total Load Deflection	L/1127 (0.198")	n/a	21.3%	4	09-06-04
Live Load Deflection	L/999 (0.11")	n/a	n/a	5	09-06-04
Max Defl.	0.198"	n/a	n/a	4	09-06-04
Span / Depth	18.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 1-3/4"	567 lbs	15.1%	7.6%	Spruce-Pine-Fir
B2	Wall/Plate 2-3/8" x 1-3/4"	472 lbs	18.4%	9.3%	Spruce-Pine-Fir

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 18-05-08.

CONFORMS TO OBC 2012

AMENDED 2020



OWG NO. YAM9555 -21
STRUCTURAL
COMPONENT ONLY

Disclosure

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



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B12A(i1491) (Flush Beam)
 Dry | 1 span | No cant.

PASSED

BC CALC® Member Report

March 17, 2021 10:26:15

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2 HIGH CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B12A(i1491)

City, Province, Postal Code: HAMILTON

Specifier:

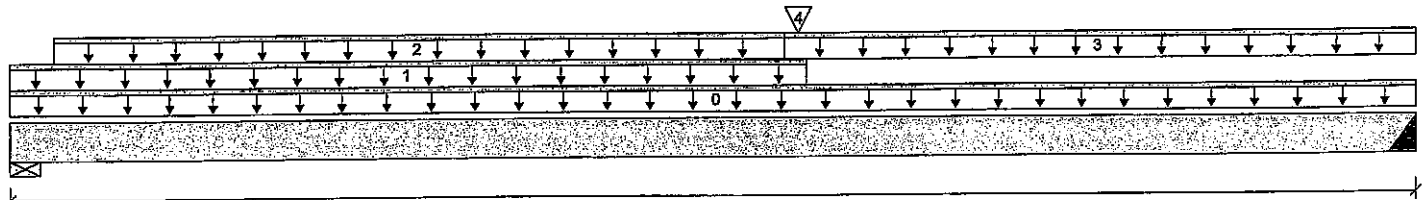
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



07-08-14

B2

Total Horizontal Product Length = 07-08-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/4"	1047 / 0	563 / 0		
B2, 2"	624 / 0	356 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-08-14	Top		6			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	04-04-02	Top	240	120			n/a
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-12	04-02-12	Top	23	11			n/a
3	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-02-12	07-08-14	Top	27	13			n/a
4	B14A(i1457)	Conc. Pt. (lbs)	L	04-03-10	04-03-10	Top	444	259			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4244 ft-lbs	17696 ft-lbs	24.0%	1	04-00-08
End Shear	1595 lbs	7232 lbs	22.1%	1	01-02-10
Total Load Deflection	L/999 (0.058")	n/a	n/a	4	03-10-04
Live Load Deflection	L/999 (0.037")	n/a	n/a	5	03-10-04
Max Defl.	0.058"	n/a	n/a	4	03-10-04
Span / Depth	7.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/4" x 1-3/4"	2274 lbs	76.8%	38.7%	Spruce-Pine-Fir
B2	Hanger 2" x 1-3/4"	1381 lbs	n/a	32.3%	HUS1.81/10

Cautions

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

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



ENG NO. TAM 9556 -21
 STRUCTURAL
 COMPONENT ONLY



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B12A(i1491) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 10:26:15

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2 HIGH CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B12A(i1491)

City, Province, Postal Code: HAMILTON

Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020



ENG NO. TAM 9556 -21
STRUCTURAL
COMPONENT ONLY

Disclosure

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



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B13A(i1534) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 10:26:15

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2 HIGH CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B13A(i1534)

City, Province, Postal Code: HAMILTON

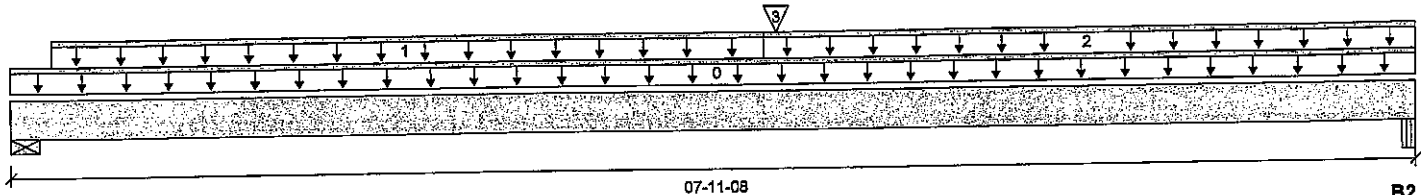
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 07-11-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/4"	240 / 0	161 / 0		
B2, 2-5/8"	378 / 0	233 / 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	07-11-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-12	04-02-12	Top	3	2			n/a
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-02-12	07-11-08	Top	53	27			n/a
3	B14A(i1457)	Conc. Pt. (lbs)	L	04-03-10	04-03-10	Top	407	240			

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2195 ft-lbs	17696 ft-lbs	12.4%	1	04-03-10
End Shear	711 lbs	7232 lbs	9.8%	1	06-09-00
Total Load Deflection	L/999 (0.028")	n/a	n/a	4	04-01-10
Live Load Deflection	L/999 (0.017")	n/a	n/a	5	04-01-10
Max Defl.	0.028"	n/a	n/a	4	04-01-10
Span / Depth	7.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/4" x 1-3/4"	560 lbs	18.9%	9.5%	Spruce-Pine-Fir
B2	Beam 2-5/8" x 1-3/4"	857 lbs	15.3%	15.3%	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: 04-00-00.

CONFORMS TO OBC 2012

AMENDED 2020



STRUCTURAL
COMPONENT ONLY

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



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

2ND FLR FRAMING\Flush Beams\B14A(i1457) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 10:26:15

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 2 HIGH CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B14A(i1457)

City, Province, Postal Code: HAMILTON

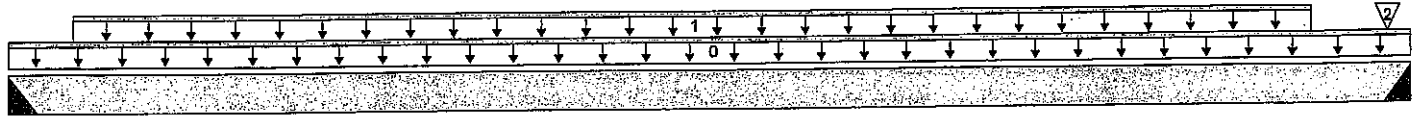
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



12-01-04

B1

B2

Total Horizontal Product Length = 12-01-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	408 / 0	240 / 0		
B2, 2"	443 / 0	259 / 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	12-01-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-12	11-02-12	Top	74	37			n/a
2	J6(i1595)	Conc. Pt. (lbs)	L	11-10-12	11-10-12	Top	59	30			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2918 ft-lbs	17696 ft-lbs	16.5%	1	06-06-12
End Shear	903 lbs	7232 lbs	12.5%	1	01-01-14
Total Load Deflection	L/999 (0.108")	n/a	n/a	4	06-00-12
Live Load Deflection	L/999 (0.068")	n/a	n/a	5	06-00-12
Max Defl.	0.108"	n/a	n/a	4	06-00-12
Span / Depth	12-0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	912 lbs	n/a	21.4%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	988 lbs	n/a	23.1%	HUS1.81/10



DWG NO. TAM 9558-21
STRUCTURAL
COMPONENT ONLY

Cautions

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

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

Notes

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012

AMENDED 2020

Disclosure

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BC CALC®, BC FRAMER®, AJSTM®, ALLJOIST®, BC RIM BOARD™, BC®, 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\B24C(i1159) (Dropped Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 11:00:36

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 3 HIGH CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B24C(i1159)

City, Province, Postal Code:

Specifier:

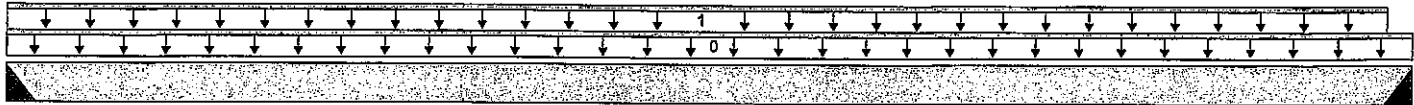
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



B1

09-03-00

B2

Total Horizontal Product Length = 09-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"		156 / 0	213 / 0	
B2, 2"		152 / 0	205 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-03-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	LOW ROOF	Unf. Lin. (lb/ft)	L	00-00-00	09-01-00	Top		24	46		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1135 ft-lbs	17202 ft-lbs	6.6%	1	04-07-08
End Shear	407 lbs	11571 lbs	3.5%	1	00-11-08
Total Load Deflection	L/999 (0.024")	n/a	n/a	12	04-07-08
Live Load Deflection	L/999 (0.014")	n/a	n/a	17	04-07-08
Max Defl.	0.024"	n/a	n/a	12	04-07-08
Span / Depth	11.4				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	2" x 3-1/2"	514 lbs	n/a	6.0%	HUC412
B2 Hanger	2" x 3-1/2"	497 lbs	n/a	5.8%	HUC412

Cautions

Header for the hanger HUC412 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUC412 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Header for the hanger HUC412 is a Double 1-3/4" x 9-1/2" LVL Beam.

Notes

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

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

Hanger Manufacturer: Unassigned

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

AMENDED 2020

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: 09-03-00, Bottom: 09-03-00.

CONFORMS TO OBC 2012



DWG NO. TAM 9559-21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Dropped Beams\B24C(I1159) (Dropped Beam)

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

March 17, 2021 11:00:36

File name: SPRINGFIELD 2 EL 3 HIGH CEILING.mmdl

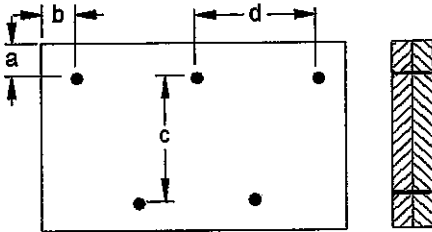
Description: 2ND FLR FRAMING\Dropped Beams\B24C(I1159)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 5-1/2"

d = 8"

Connectors are: 1 Nails

3 1/2" ARDOX SPIRAL



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



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

2ND FLR FRAMING\Flush Beams\B16C(i639) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 3 spans | L cant.

March 17, 2021 11:00:36

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 3 HIGH CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B16C(i639)

City, Province, Postal Code:

Specifier:

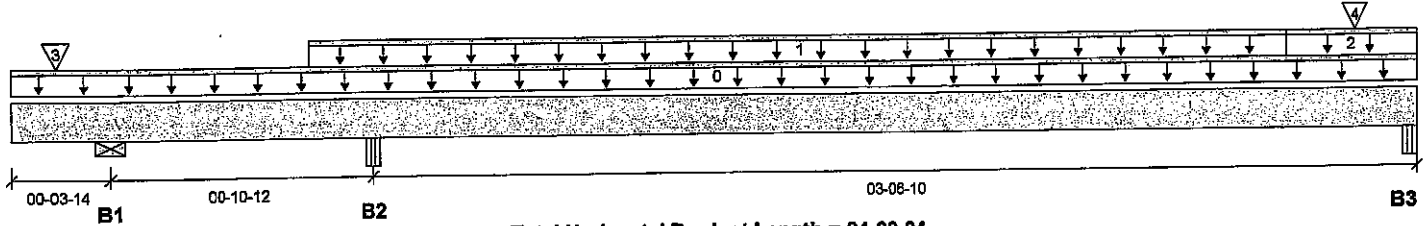
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-09-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	0 / 9	366 / 0	509 / 0	
B2, 5-1/4"	25 / 0	0 / 16	0 / 95	
B3, 5-1/4"	12 / 0	52 / 0	3 / 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	04-09-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	01-00-00	04-04-00	Top	8	4			n/a
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-04-00	04-09-04	Top	5				n/a
3	-	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Top		306	417		n/a
4	E28(11112)	Conc. Pt. (lbs)	L	04-06-12	04-06-12	Top		24			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	22 ft-lbs	23005 ft-lbs	n/a	0	03-00-00
Neg. Moment	-181 ft-lbs	-33987 ft-lbs	0.5%	37	00-03-14
End Shear	8 lbs	9401 lbs	n/a	0	03-04-02
Cont. Shear	1011 lbs	14464 lbs	7.0%	37	00-02-02
Total Load Deflection	L/999 (0")	n/a	n/a	83	02-10-10
Max Defl.	0"	n/a	n/a	83	02-10-10
Span / Depth	3.2				

Bearing Supports			Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	3-1/2" x 3-1/2"	1222 lbs	16.2%	8.2%	Spruce-Pine-Fir	
B2	Beam	5-1/4" x 3-1/2"	24 lbs	0.2%	0.1%	Unspecified	
B2	Uplift		162 lbs				
B3	Beam	5-1/4" x 3-1/2"	72 lbs	1.1%	0.5%	Unspecified	

Cautions

Uplift of 162 lbs found at bearing B2.

(SIMPSON 2-H25A @ B2)



NO. TAN 9560-21
STRUCTURAL
COMPONENT ONLY



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

2ND FLR FRAMING\Flush Beams\B16C(i639) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

Dry | 3 spans | L cant.

March 17, 2021 11:00:36

File name: SPRINGFIELD 2 EL 3 HIGH CEILING.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B16C(i639)

Specifier:

Designer:

Company:

Notes

Design meets Code minimum (L/240) Total 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

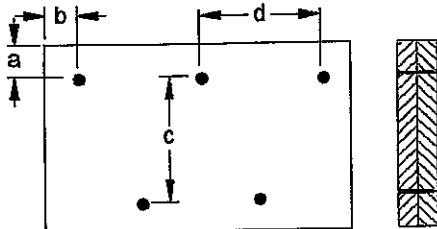
Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

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

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

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

Calculated Side Load = 253.0 lb/ft

Connectors are:

3 1/2" ARDOX SPIRAL

Nails



ENG NO. TAM 9560-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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



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

2ND FLR FRAMING\Flush Beams\B22C(i1155) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 17, 2021 11:00:36

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 3 HIGH CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B22C(i1155)

City, Province, Postal Code:

Specifier:

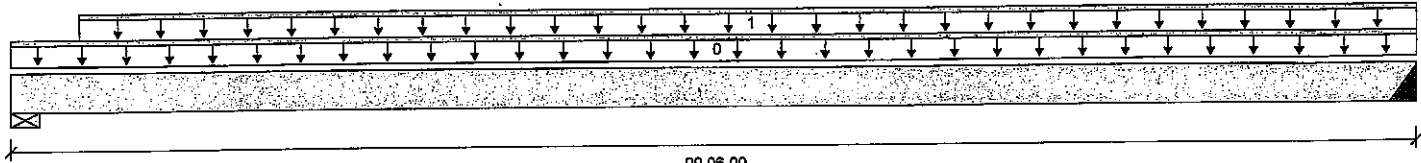
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



09-06-00

B2

B1

Total Horizontal Product Length = 09-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"		154 / 0	204 / 0	
B2, 2"		155 / 0	212 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-06-00	Top		10			00-00-00
1	LOW ROOF	Unf. Lin. (lb/ft)	L	00-05-08	09-06-00	Top		24	46		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1124 ft-lbs	17470 ft-lbs	6.4%	1	04-10-12
End Shear	405 lbs	11571 lbs	3.5%	1	01-03-00
Total Load Deflection	L/999 (0.024")	n/a	n/a	12	04-10-12
Live Load Deflection	L/999 (0.014")	n/a	n/a	17	04-10-12
Max Defl.	0.024"	n/a	n/a	12	04-10-12
Span / Depth	11.4				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	498 lbs	4.2%	2.1%	Spruce-Pine-Fir
B2	Hanger 2" x 3-1/2"	511 lbs	n/a	6.0%	HUC412

Cautions

Header for the hanger HUC412 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUC412 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: 09-00-08, Bottom: 09-00-08.

CONFORMS TO OBC 2012

AMENDED 2020



096 NO. YAM 9561 -21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B22C(i1155) (Flush Beam)

PASSED

BC CALC® Member Report
Build 7773

Dry | 1 span | No cant.

March 17, 2021 11:00:36

Job name:

File name: SPRINGFIELD 2 EL 3 HIGH CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B22C(i1155)

City, Province, Postal Code:

Specifier:

Customer:

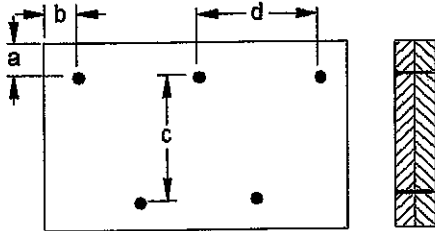
Designer:

Code reports:

CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/2"

b minimum = 3"

d = 8"

Connectors are: 1 Nails

3 1/2" ARDOX SPIRAL



ENG NO. TAM 9561 -21
STRUCTURAL
COMPONENT ONLY

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BC CALC®, BC FRAMER®, AJS™,
ALLJOIST®, BC RIM BOARD™, BC®,
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\B23C(i1157) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | L cant.

March 17, 2021 11:00:36

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 3 HIGH CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B23C(i1157)

City, Province, Postal Code:

Specifier:

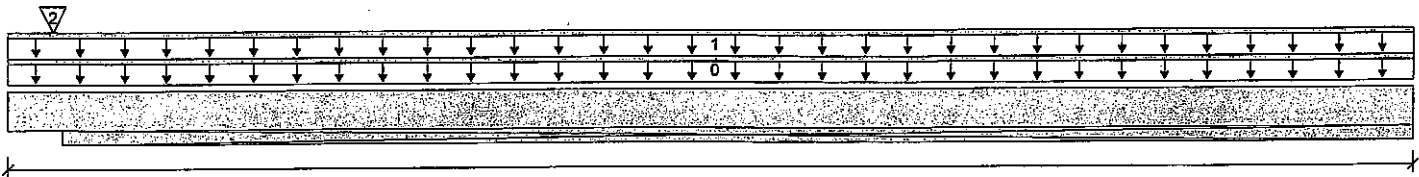
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-09-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 55-1/8"		314 / 0	428 / 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	04-09-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	LOW ROOF	Unf. Lin. (lb/ft)	L	00-00-00	04-09-04	Top		24	46		n/a
2	B24C(i1159)	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Top		154	209		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
End Shear	20 lbs	11571 lbs	0.2%	1	00-02-02
Span / Depth	0.2				
Dist. Load (B1)	99 lb/ft	57645.1 lb/ft	0.2%		

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 55-1/8" x 3-1/2"	1036 lbs	1.0%	0.4%	Unspecified

Notes

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

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

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

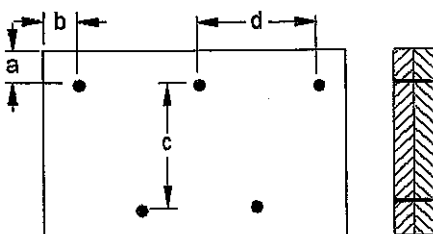
Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

Calculations assume unbraced length of Top: 04-00-08, Bottom: 02-10-12.

CONFORMS TO OBC 2012

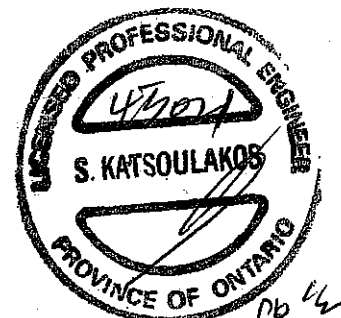
AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

c = 5-1/2"
d = 8"



OWG NO. TAM 9562-21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B23C(i1157) (Flush Beam)

PASSED

BC CALC® Member Report
Build 7773

Dry | 1 span | L cant.

March 17, 2021 11:00:36

Job name:

File name: SPRINGFIELD 2 EL 3 HIGH CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B23C(i1157)

City, Province, Postal Code:

Specifier:

Customer:

Designer:

Code reports:

CCMC 12472-R

Company:

Connection Diagram: Full Length of Member

Calculated Side Load = 253.0 lb/ft

Connectors are: 1 Gun Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 9562-21
**STRUCTURAL
COMPONENT ONLY**

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

2ND FLR FRAMING\Flush Beams\B11(11289) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

April 29, 2021 08:46:48

Build 7773

Job name:

File name: SPRINGFIELD 2 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B11(11289)

City, Province, Postal Code: HAMILTON

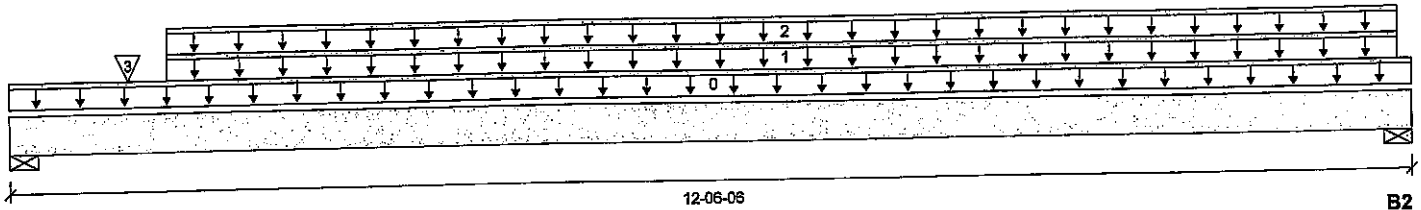
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 12-06-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	3200 / 0	1675 / 0		
B2, 4"	3431 / 0	1790 / 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	12-06-06	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-14	12-04-14	Top	373	186			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-14	12-04-14	Top	178	89			n/a
3	-	Conc. Pt. (lbs)	L	01-00-09	01-00-09	Top	565	283			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	21403 ft-lbs	35392 ft-lbs	60.5%	1	06-06-14
End Shear	6494 lbs	14464 lbs	44.9%	1	01-04-04
Total Load Deflection	L/360 (0.399")	n/a	66.7%	4	06-02-14
Live Load Deflection	L/547 (0.262")	n/a	65.8%	5	06-02-14
Max Defl.	0.399"	n/a	n/a	4	06-02-14
Span / Depth	12.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 3-1/2"	6893 lbs	73.2%	36.9%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	7384 lbs	85.7%	43.2%	Spruce-Pine-Fir

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020



STRUCTURAL COMPONENT ONLY



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

2ND FLR FRAMING\Flush Beams\B11(i1289) (Flush Beam)

Dry | 1 span | No cant.

PASSED

April 29, 2021 08:46:48

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer:

Code reports: CCMC 12472-R

File name: SPRINGFIELD 2 EL 1.mmdl

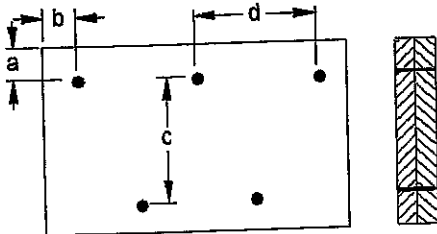
Description: 2ND FLR FRAMING\Flush Beams\B11(i1289)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

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

Calculated Side Load = 796.9 lb/ft
Connectors are: 16d x 4 Nails

3 1/2" ARDOX SPIRAL



ENG NO. TAM 9563 -21
**STRUCTURAL
COMPONENT ONLY**

Disclosure

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

2ND FLR FRAMING\Flush Beams\B9(i1303) (Flush Beam)

Dry | 1 span | No cant.

PASSED

April 29, 2021 08:46:48

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer:

Code reports: CCMC 12472-R

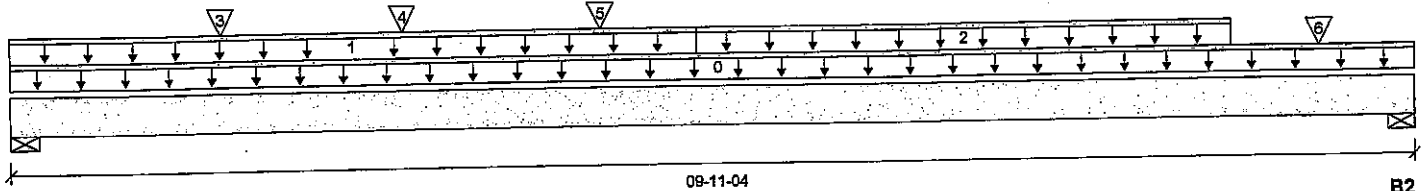
File name: SPRINGFIELD 2 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B9(i1303)

Specifier:

Designer: AJ

Company:



B1

Total Horizontal Product Length = 09-11-04

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	2787 / 0	1483 / 0		
B2, 4"	2459 / 0	1299 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-11-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	04-09-12	Top	395	198			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	04-09-12	08-07-12	Top	573	286			n/a
3	J5(i1283)	Conc. Pt. (lbs)	L	01-05-12	01-05-12	Top	98	49			n/a
4	B12(i1327)	Conc. Pt. (lbs)	L	02-09-02	02-09-02	Top	343	211			n/a
5	J4(i1291)	Conc. Pt. (lbs)	L	04-01-12	04-01-12	Top	245	123			n/a
6	-	Conc. Pt. (lbs)	L	09-03-01	09-03-01	Top	463	231			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	12765 ft-lbs	35392 ft-lbs	36.1%	1	05-01-12
End Shear	4790 lbs	14464 lbs	33.1%	1	01-05-02
Total Load Deflection	L/778 (0.143")	n/a	30.8%	4	05-00-04
Live Load Deflection	L/999 (0.094")	n/a	n/a	5	05-00-04
Max Defl.	0.143"	n/a	n/a	4	05-00-04
Span / Depth	9.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/4" x 3-1/2"	6034 lbs	53.4%	26.9%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	5312 lbs	61.7%	31.1%	Spruce-Pine-Fir

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020



OWB NO. TAM 9564-21
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B9(i1303) (Flush Beam)

PASSED

BC CALC® Member Report
Build 7773

Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

April 29, 2021 08:46:48

File name: SPRINGFIELD 2 EL 1.mmdl

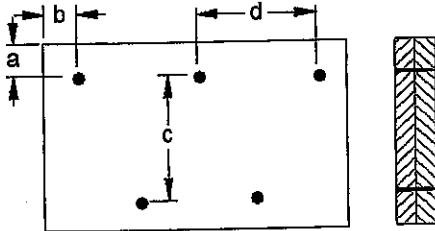
Description: 2ND FLR FRAMING\Flush Beams\B9(i1303)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 8"

Calculated Side Load = 796.9 lb/ft

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



**STRUCTURAL
COMPONENT ONLY**

Disclosure

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

NORDIC STRUCTURES

COMPANY
Mar. 18, 2021 15:14

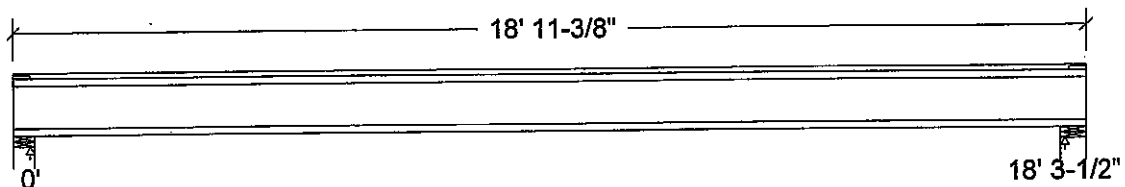
PROJECT
J6 2ND FLOOR.wwb

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	183		183
Live	366		366
Factored:			
Total	777		777
Bearing:			
Capacity			
Joist	2336		2336
Support	10841		12995
Des ratio			
Joist	0.33		0.33
Support	0.07		0.06
Load case	#2		#2
Length	4-3/8		5-1/4
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		769
Kzcp sup	-		-

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

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

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

Total length: 18' 11-3/8"; Clear span: 18' 1-3/4"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 777	Vr = 2336	lbs	Vf/Vr = 0.33
Moment (+)	Mf = 3555	Mr = 11609	lbs-ft	Mf/Mr = 0.31
Perm. Defl'n	0.10 = < L/999	0.61 = L/360	in	0.16
Live Defl'n	0.19 = < L/999	0.46 = L/480	in	0.42
Total Defl'n	0.29 = L/769	0.91 = L/240	in	0.31
Bare Defl'n	0.21 = < L/999	0.61 = L/360	in	0.34
Vibration	Lmax = 18'-3.5	Lv = 19'-11	ft	0.92
Defl'n	= 0.028	= 0.034	in	0.81



NO. TAM 9541 -21
STRUCTURAL

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L
 Moment(+) : LC #2 = 1.25D + 1.5L
 Deflection: LC #1 = 1.0D (permanent)
 LC #2 = 1.0D + 1.0L (live)
 LC #2 = 1.0D + 1.0L (total)
 LC #2 = 1.0D + 1.0L (bare joist)
 Bearing : Support 1 - LC #2 = 1.25D + 1.5L
 Support 2 - LC #2 = 1.25D + 1.5L
 Load Types: D=dead 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:

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

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

Design Notes:
AMENDED 2020

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. 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.



NORDIC STRUCTURES

COMPANY
Mar. 18, 2021 15:15

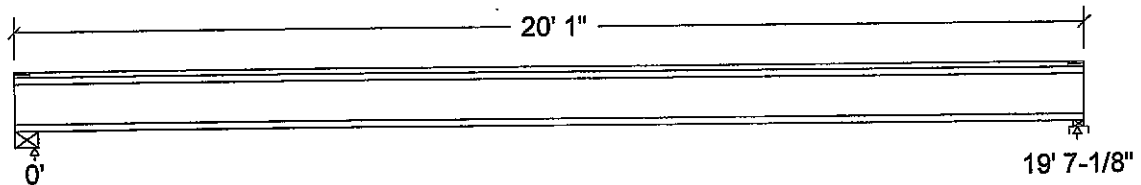
PROJECT
J6 1ST FLOOR.wwb

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	196		196
Live	392		392
Factored:			
Total	833		833
Bearing:			
Capacity			
Joist	2336		2188
Support	-		5573
Des ratio			
Joist	0.36		0.38
Support	-		0.15
Load case	#2		#2
Length	5-1/4		2-3/8
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 Joist 11-7/8" NI-80 Floor joist @ 12" o.c.

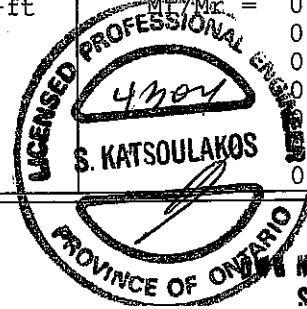
Supports: 1 - Steel Beam, W; 2 - Lumber Sill plate, No.1/No.2;

Total length: 20' 1"; Clear span: 19' 5-3/8"; 3/4" nailed and glued OSB sheathing

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 833	Vr = 2336	lbs	Vf/Vr = 0.36
Moment(+)	Mf = 4079	Mr = 11609	lbs-ft	Mf/Mr = 0.35
Perm. Defl'n	0.12 = < L/999	0.65 = L/360	in	0.19
Live Defl'n	0.24 = L/971	0.49 = L/480	in	0.49
Total Defl'n	0.36 = L/647	0.98 = L/240	in	0.37
Bare Defl'n	0.27 = L/863	0.65 = L/360	in	0.42
Vibration	Lmax = 19'-7.1	Lv = 21'-2.7	ft	0.92
Defl'n	= 0.027	= 0.033	in	0.82



NO. YAN 9542-21
STRUCTURAL

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

Moment(+) : LC #2 = 1.25D + 1.5L

Deflection: LC #1 = 1.0D (permanent)

LC #2 = 1.0D + 1.0L (live)

LC #2 = 1.0D + 1.0L (total)

LC #2 = 1.0D + 1.0L (bare joist)

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

Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead 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} = 625.37 lb-in² K= 6.18e06 lbs

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

CONFORMS TO OBC 2012**Design Notes:****AMENDED 2020**

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. 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.



HWB NO. TAM9542-21

STRUCTURAL
COMPONENT ONLY

PROJECT
J7 1ST FLOOR.wwb

Loads:

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

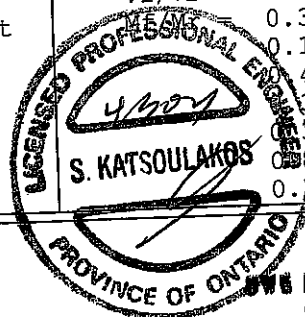
18' 11"

18' 5-1/8"

0'		
Unfactored:		184
Dead	184	369
Live	369	
Factored:		783
Total	783	
Bearing:		2188
Capacity		5573
Joist	2336	
Support	-	
Des ratio		0.36
Joist	0.34	0.14
Support	-	#2
Load case	#2	2-3/8
Length	5-1/4	1-3/4
Min req'd	1-3/4	No
Stiffener	No	1.00
KD	1.00	1.00
KB support	-	769
fcg sup	-	1.09
Kzcp sup	-	

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 783	Vr = 2336	lbs	Vf/Vr = 0.34
Moment(+)	Mf = 3608	Mr = 11609	lbs-ft	Mf/Mr = 0.31
Perm. Defl'n	0.10 = < L/999	0.61 = L/360	in	0.16
Live Defl'n	0.19 = < L/999	0.46 = L/480	in	0.42
Total Defl'n	0.29 = L/766	0.92 = L/240	in	0.31
Bare Defl'n	0.22 = < L/999	0.61 = L/360	in	0.35
Vibration	Lmax = 18'-5.1	Lv = 21'-2.7	ft	0.87
Defl'n	= 0.024	= 0.034	in	0.71



NO. TAM 9543-21
STRUCTURAL

J7 1ST FLOOR.wwb

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

Moment(+) : LC #2 = 1.25D + 1.5L

Deflection: LC #1 = 1.0D (permanent)

LC #2 = 1.0D + 1.0L (live)

LC #2 = 1.0D + 1.0L (total)

LC #2 = 1.0D + 1.0L (bare joist)

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

Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead 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 = 625.37 lb-in² K= 6.18e06 lbs

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

CONFORMS TO CBC 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. TAN 9543 -21

STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Dropped Beams\B31 DR(i2763) (Dropped Beam)

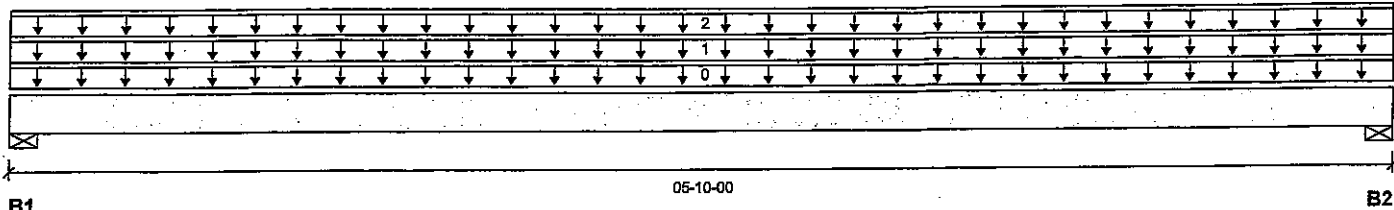
PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

August 16, 2021 13:17:30

Build 7773	File name: LOT 562.mmdl
Job name:	Description: 1ST FLR FRAMING\Dropped Beams\B31 DR(i2763)
Address:	Specifier:
City, Province, Postal Code: WATERDOWN	Designer: AJ
Customer:	Company:
Code reports: CCMC 12472-R	



Total Horizontal Product Length = 05-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	1157 / 0	898 / 0		
B2, 3"	1123 / 0	881 / 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	05-10-00	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	05-10-00	Top	391	195			n/a
2	R2(i2685)	Unf. Lin. (lb/ft)	L	00-00-00	05-10-00	Top		100			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3493 ft-lbs	23219 ft-lbs	15.0%	1	03-02-04
End Shear	2048 lbs	11571 lbs	17.7%	1	04-09-08
Total Load Deflection	L/999 (0.027")	n/a	n/a	4	02-11-04
Live Load Deflection	L/999 (0.015")	n/a	n/a	5	02-11-04
Max Defl.	0.027"	n/a	n/a	4	02-11-04
Span / Depth	6.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3" x 3-1/2"	2859 lbs	20.4%	22.3%	Spruce-Pine-Fir
B2	Wall/Plate 3" x 3-1/2"	2785 lbs	19.9%	21.7%	Spruce-Pine-Fir

Notes

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

CONFORMS TO OBC 2012

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

AMENDED 2020

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-09-10, Bottom: 05-10-00.


 906 NO. TAM 19503-21
 STRUCTURAL
 COMPONENT ONLY



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

File name: LOT 562.mmdl

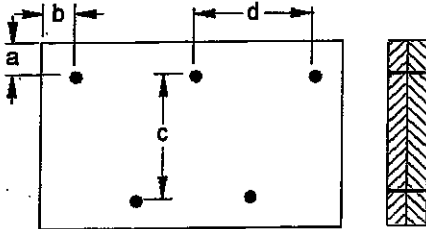
Description: 1ST FLR FRAMING\Dropped Beams\B31 DR(i2763)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 5-1/2"

d = 8"

Connectors are: 1 Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 19503-21
STRUCTURAL
COMPONENT ONLY

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

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

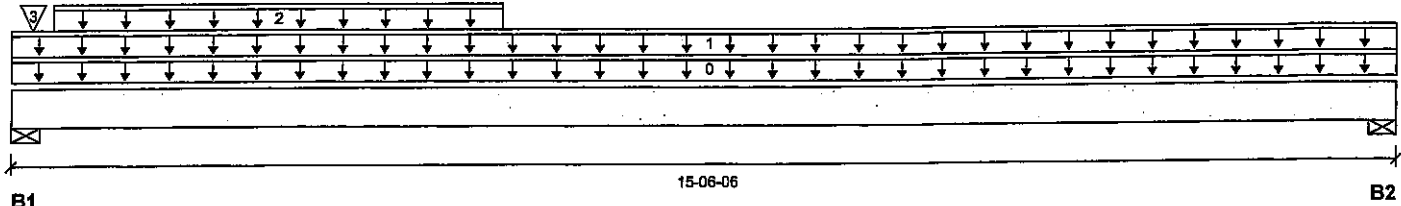
File name: LOT 562.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B32(i2624)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 15-06-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	143 / 0	422 / 0		
B2, 2-3/8"	142 / 0	171 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	15-06-06	Top		6			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	15-06-06	Top	18	9			n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-05-08	05-05-08	Top		60			n/a
3	E17(i501)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top		57			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1307 ft-lbs	11502 ft-lbs	11.4%	0	05-02-06
End Shear	483 lbs	4701 lbs	10.3%	0	01-03-06
Total Load Deflection	L/999 (0.12")	n/a	n/a	4	07-06-08
Live Load Deflection	L/999 (0.045")	n/a	n/a	5	07-09-13
Max Defl.	0.12"	n/a	n/a	4	07-06-08
Span / Depth	15.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 1-3/4"	590 lbs	24.1%	12.2%	Spruce-Pine-Fir
B2	Wall/Plate 2-3/8" x 1-3/4"	426 lbs	16.7%	8.4%	Spruce-Pine-Fir

Notes

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

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

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

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

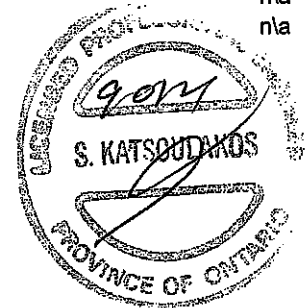
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 15-04-00.

CONFORMS TO CBC 2012

AMENDED 2020


 DWG NO. TAM 19504-21
STRUCTURAL COMPONENT ONLY
Disclosure

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

NORDIC STRUCTURES

Maximum Floor Spans – S2.1

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued oriented strand board (OSB) sheathing

Maximum Floor Spans

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

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

Notes:

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

NORDIC STRUCTURES

Maximum Floor Spans – S4.1

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued oriented strand board (OSB) sheathing

Maximum Floor Spans

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

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

Notes:

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

NORDIC STRUCTURES

Maximum Floor Spans – S6.1

Design Criteria

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

Maximum Floor Spans

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

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

Notes:

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

NORDIC STRUCTURES

Maximum Floor Spans – S7.1

Design Criteria

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

Maximum Floor Spans

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

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

Notes:

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

NORDIC STRUCTURES

Maximum Floor Spans – M2.1

Design Criteria

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

Maximum Floor Spans

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

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

Notes:

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

NORDIC STRUCTURES

Maximum Floor Spans – M4.1

Design Criteria

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

Maximum Floor Spans

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

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

Notes:

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

NORDIC STRUCTURES

Maximum Floor Spans – M6.1

Design Criteria

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

Maximum Floor Spans

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

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

Notes:

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

NORDIC STRUCTURES

Maximum Floor Spans – M7.1

Design Criteria

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

Maximum Floor Spans

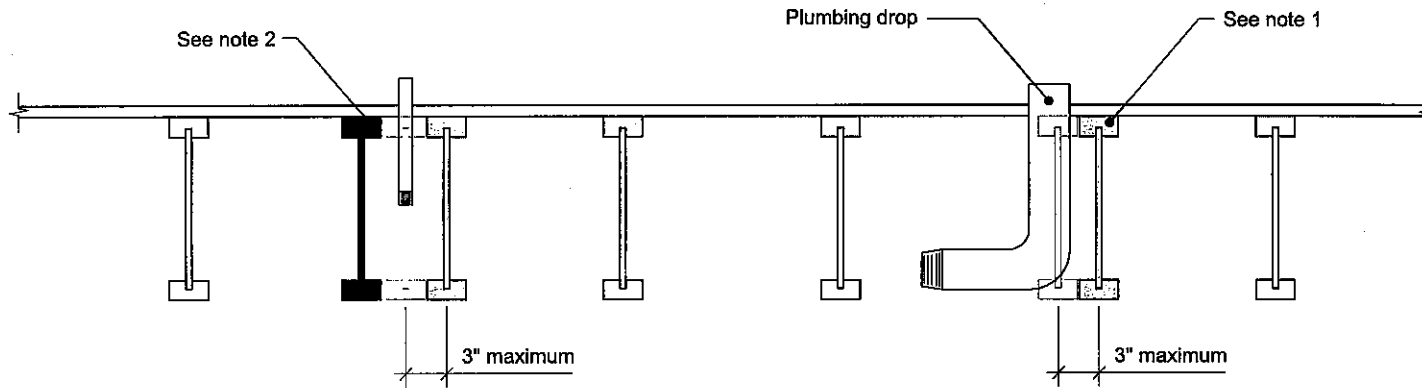
Joist depth	Joist series	Bare				1/2 in. gypsum ceiling			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	14'-11"
	NI-60	17'-1"	16'-1"	15'-6"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

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

Notes:

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

7c

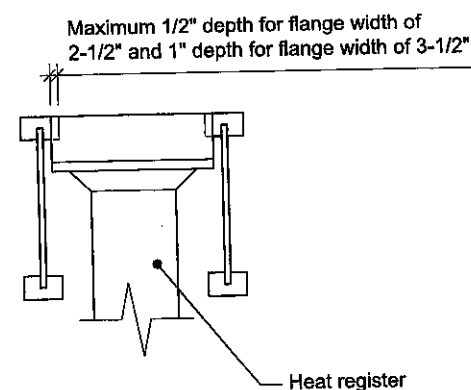
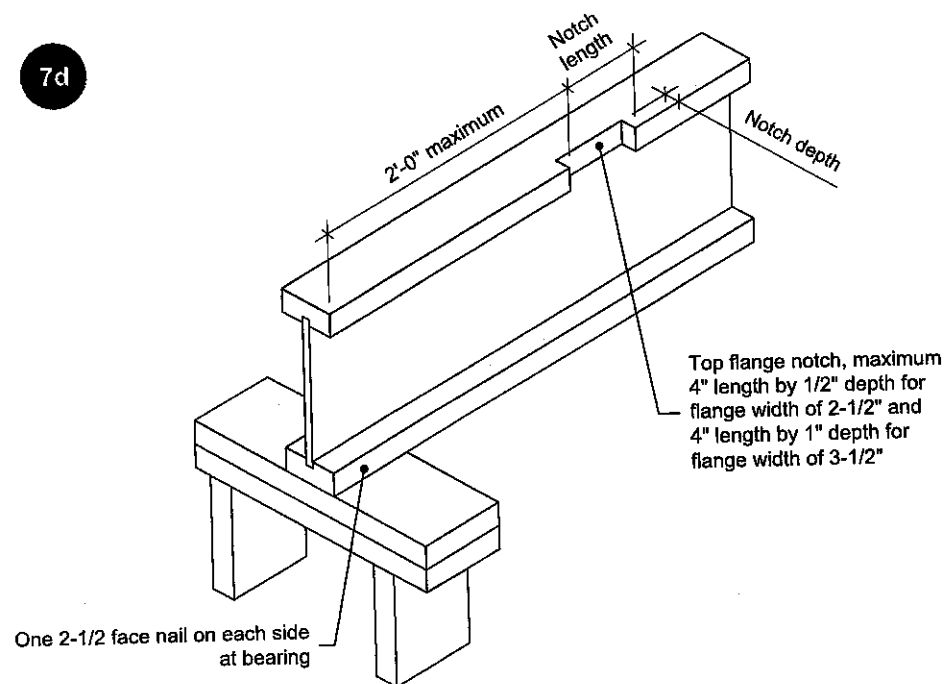


Notes:

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

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

7d



Notes:

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

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

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NS-DC3 
DETAILS
NORDIC JOIST

TITLE
Notch in I-joist for Heat Register
CATEGORY
Openings for Vertical Elements

DRAWING
7d

SCALE
-

DATE
2020-10-01

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