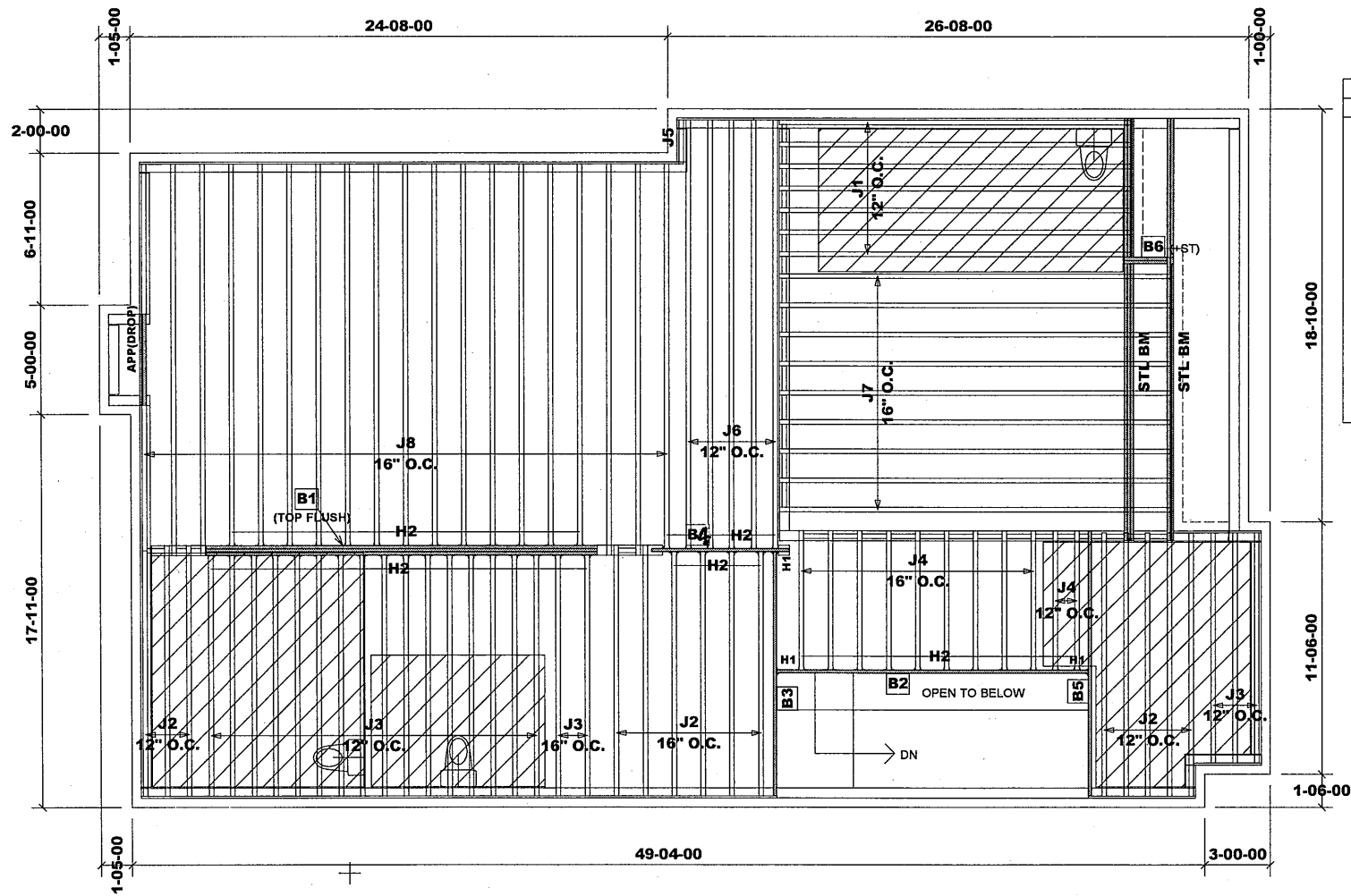




Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	17'-00-00	11 7/8" NI-20	1	7	MFD
J2	12'-00-00	11 7/8" NI-20	1	14	MFD
J3	11'-00-00	11 7/8" NI-20	1	21	MFD
J4	7'-00-00	11 7/8" NI-20	1	11	MFD
J5	2'-00-00	11 7/8" NI-20	1	1	MFD
J6	20'-00-00	11 7/8" NI-40x	1	5	MFD
J7	19'-00-00	11 7/8" NI-40x	1	9	MFD
J8	18'-00-00	11 7/8" NI-40x	1	19	MFD
B2	15'-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B5	13'-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B3	12'-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B4	7'-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B6	3'-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
B1	18'-00-00	1-3/4" x 14" VERSA-LAM@ 2.0 3100 SP	3	3	MFD
Ca1	150'-00-00	1 1/8" x 11 7/8" Rim Board	1	1	FF
Bk1	32'-00-00	11 7/8" NI-20	1	1	FF

Connector Summary			
PlotID	Qty	Manuf	Product
H1	3		HUS1.81/10
H2	52		LT251188

RIMBOARD
1- 1/8" X 11 7/8" O.S.B.
SUBFLOOR - 3/4" GLUE & NAILED
APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6
Blocking panels are required over all interior supports
Squash blocks are required under concentrated loads.

MODEL: 4008(HILLSDALE)- EL.A

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

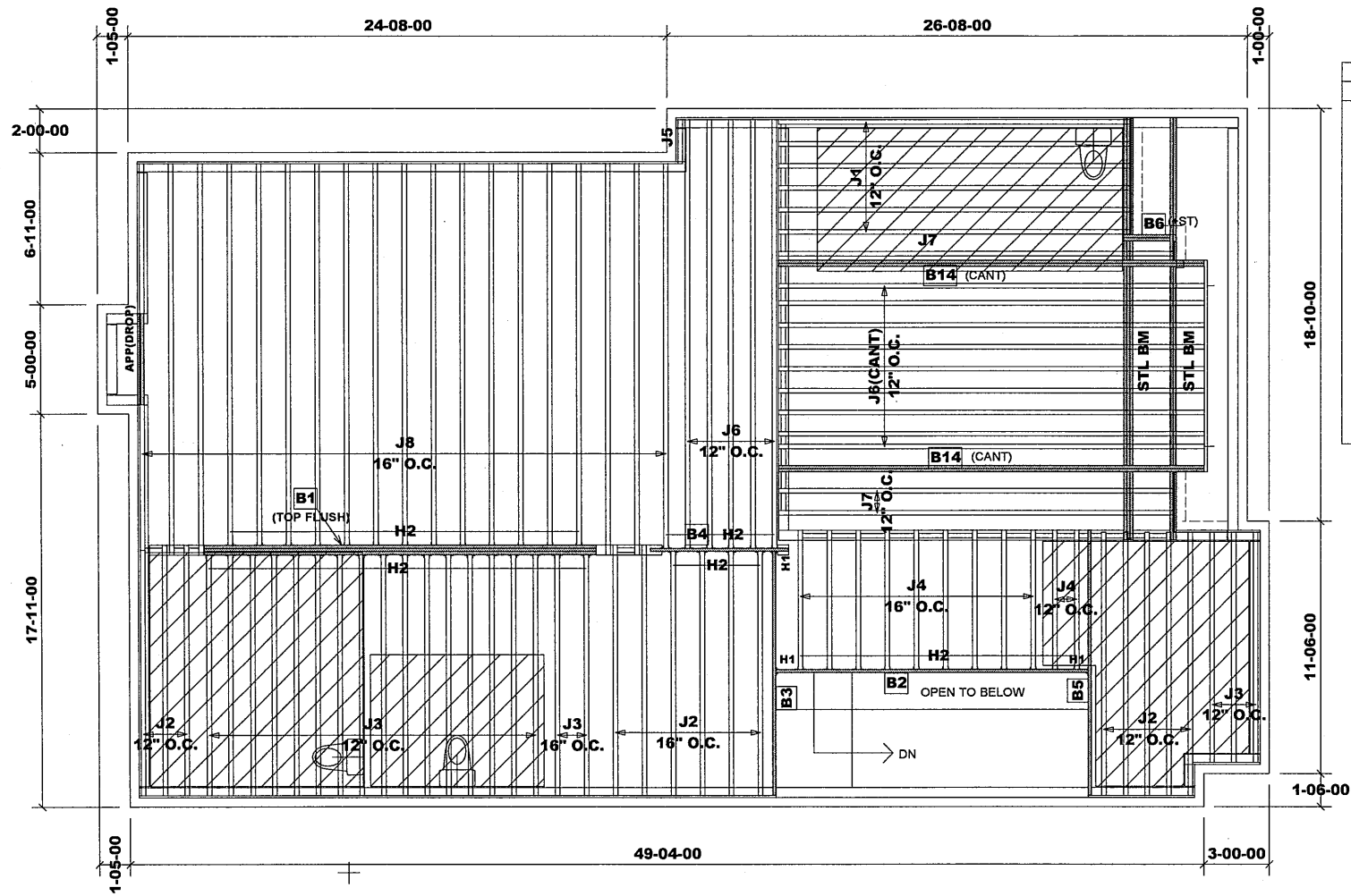
SE007537 - SE007555



4008(HILLSDALE)		LUMBER DEALER:	
		HOME LUMBER	
Gold Park		SALES REPRESENTATIVE:	
Pine Valley		Derek	
		DATE:	
DRAWN BY:		February 3, 2020	
NL	Vaughan		

REVISIONS:	
1	
2	
3	
LEGEND:	
J#	Joist Mark
B#	Beam Mark
Ca #	Rimboard
Bk #	Blocking

JT / PL	45147/105350		
LI	316865		
LOADING			
Live	40 psf	dead	15 psf
DEFLECTION CRITERIA			
Live:	L/360	Total	L/240
1	OF	6	



MODEL: 4008(HILLSDALE)- EL.B

Second Floor Framing

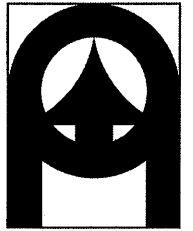
Do not scale - refer to architectural plans for dimensions

Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	17-00-00	11 7/8" NI-20	1	6	MFD
J2	12-00-00	11 7/8" NI-20	1	14	MFD
J3	11-00-00	11 7/8" NI-20	1	21	MFD
J4	7-00-00	11 7/8" NI-20	1	11	MFD
J5	2-00-00	11 7/8" NI-20	1	1	MFD
J6	20-00-00	11 7/8" NI-40x	1	14	MFD
J7	19-00-00	11 7/8" NI-40x	1	3	MFD
J8	18-00-00	11 7/8" NI-40x	1	19	MFD
B14	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	4	MFD
B2	15-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B5	13-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B3	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B4	7-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B6	3-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B1	18-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3	MFD
Ca1	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	FF
Ca2	140-00-00	1 1/8" x 11 7/8" Rim Board	1	1	FF
Bk1	38-00-00	11 7/8" NI-20	1	1	FF

Connector Summary			
PlotID	Qty	Manuf	Product
H1	3		HUS1.81/10
H2	52		LT251188

RIMBOARD
1- 1/8" X 11 7/8" O.S.B.
SUBFLOOR - 3/4" GLUE & NAILED
APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6
Provide I-Joist Blocking between cantilevered joists (along bearing) and rimboard closure at ends.
Blocking panels are required over all interior supports
Squash blocks are required under concentrated loads.



LUMBER DEALER:
HOME LUMBER
SALES REPRESENTATIVE:
Derek
DATE:
February 3, 2020

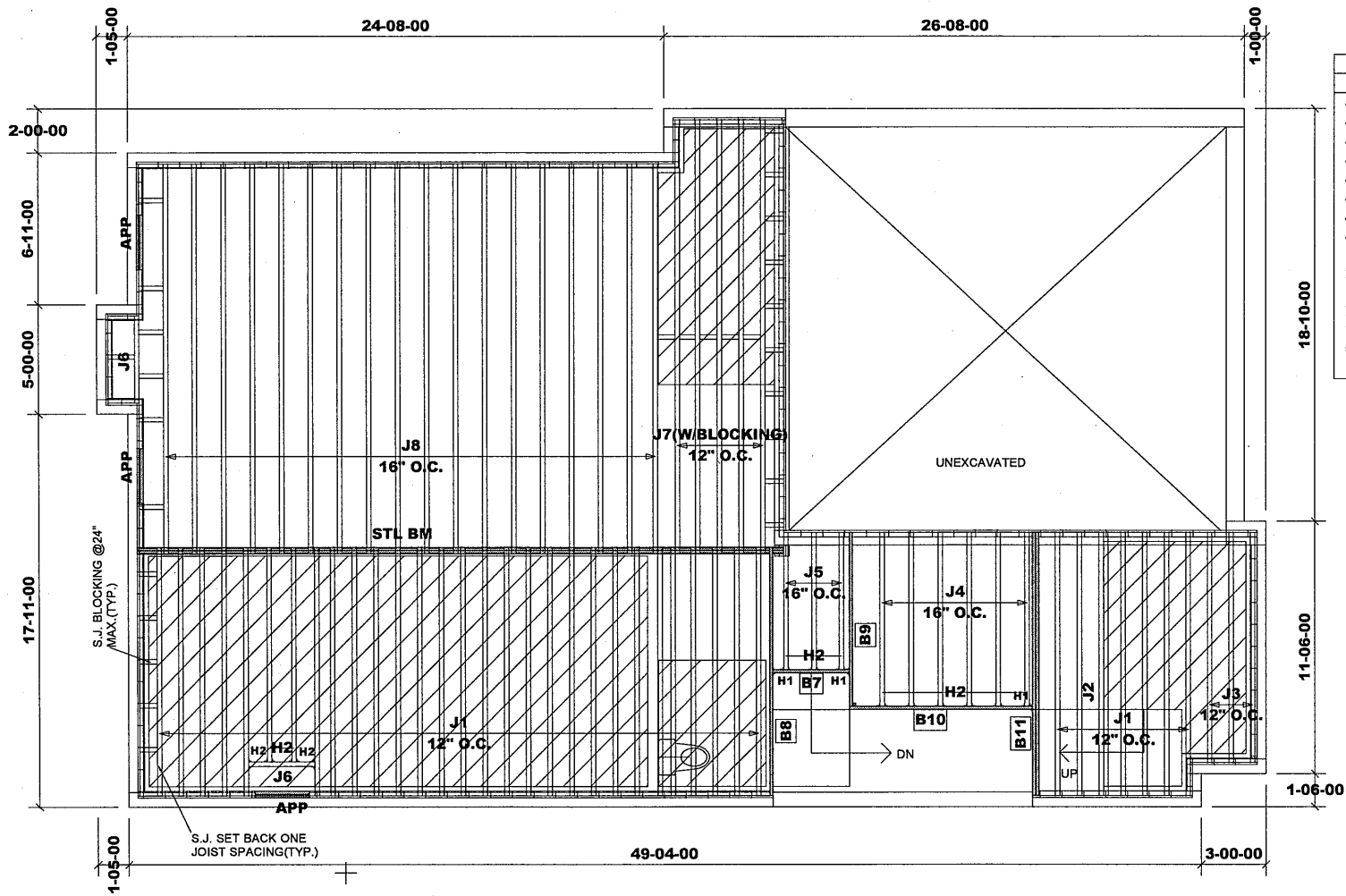
4008(HILLSDALE)
Gold Park
Pine Valley
DRAWN BY:
NL
LOCATION:
Vaughan

REVISIONS:	
1	
2	
3	
LEGEND:	
J#	Joist Mark
B#	Beam Mark
Ca #	Rimboard
Bk #	Blocking

JT / PL 45147/105350
LI 316865

LOADING			
Live	40 psf	dead	15 psf
DEFLECTION CRITERIA			
Live:	L/360	Total	L/240

2 OF 6



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	12-00-00	11 7/8" NI-20	1	35	MFD
J2	12-00-00	11 7/8" NI-20	2	2	MFD
J3	11-00-00	11 7/8" NI-20	1	3	MFD
J4	8-00-00	11 7/8" NI-20	1	6	MFD
J5	7-00-00	11 7/8" NI-20	1	3	MFD
J6	4-00-00	11 7/8" NI-20	1	2	MFD
J7	20-00-00	11 7/8" NI-40x	1	5	MFD
J8	18-00-00	11 7/8" NI-40x	1	18	MFD
B8	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B11	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B10	9-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B9	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B7	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
Ca1	156-00-00	1 1/8" x 11 7/8" Rim Board	1	1	FF
Bk1	48-00-00	11 7/8" NI-20	1	1	FF

Connector Summary			
PlotID	Qty	Manuf	Product
H1	3		HUS1.81/10
H2	13		LT251188

RIMBOARD
1- 1/8" X 11 7/8" O.S.B.
SUBFLOOR - 3/4" GLUE & NAILED
APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6
Blocking panels are required over all interior supports
Squash blocks are required under concentrated loads.

First Floor Framing

MODEL: 4008(HILLSDALE)- EL.A+B

±W.O.D. CONDITION

Do not scale - refer to architectural plans for dimensions



LUMBER DEALER:
HOME LUMBER
SALES REPRESENTATIVE:
Derek
DATE:
February 3, 2020

4008(HILLSDALE)
Gold Park
Pine Valley
LOCATION:
Vaughan
DRAWN BY:
NL

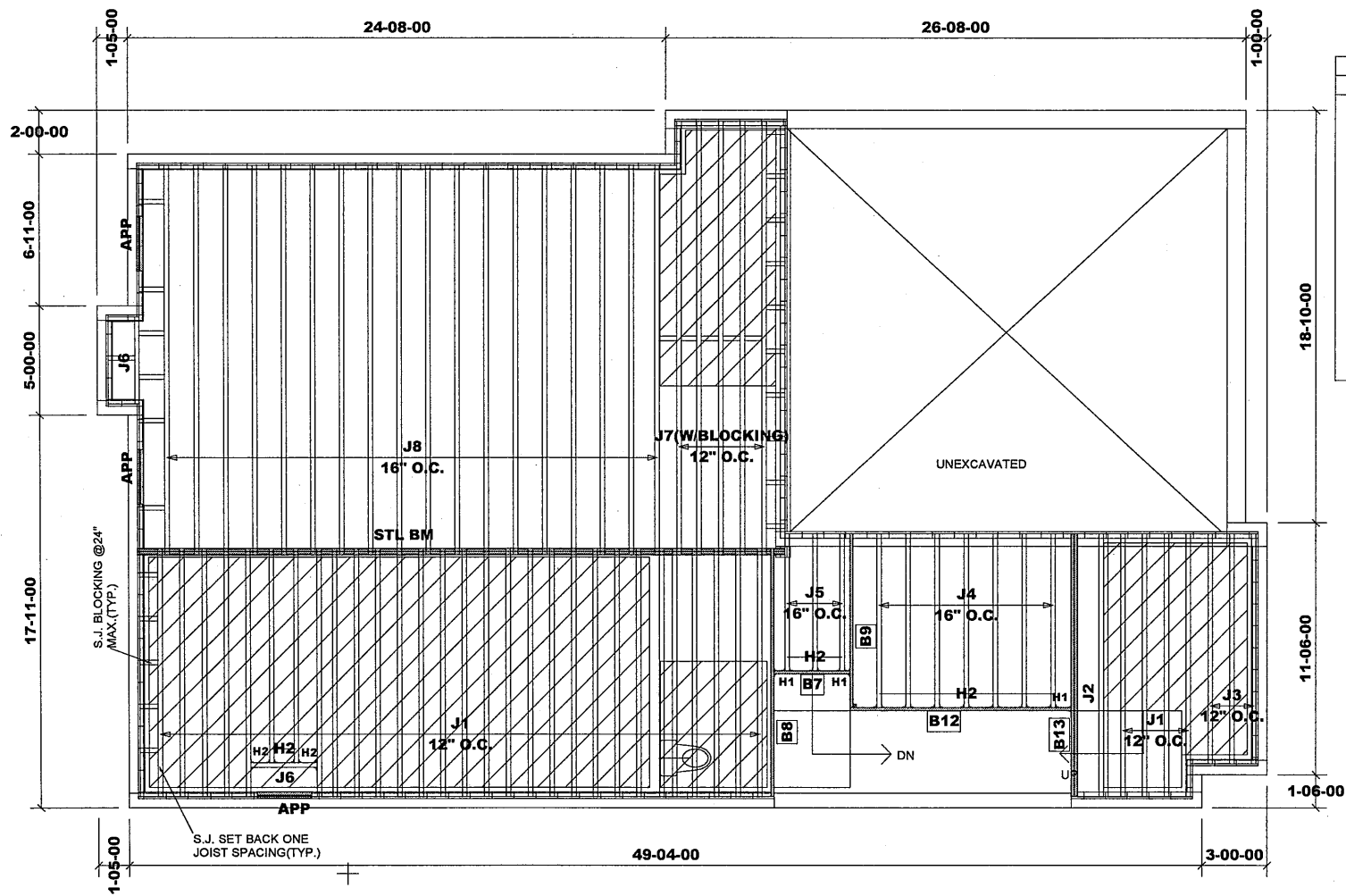
REVISIONS:	
1	
2	
3	
LEGEND:	
J#	Joist Mark
B#	Beam Mark
Ca #	Rimboard
Bk #	Blocking

JT / PL	45147/105350
LI	316865

LOADING			
Live	40 psf	dead	15 psf

DEFLECTION CRITERIA			
Live:	L/360	Total	L/240

3	OF	6
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Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	12-00-00	11 7/8" NI-20	1	33	MFD
J2	12-00-00	11 7/8" NI-20	2	2	MFD
J3	11-00-00	11 7/8" NI-20	1	3	MFD
J4	8-00-00	11 7/8" NI-20	1	7	MFD
J5	7-00-00	11 7/8" NI-20	1	3	MFD
J6	4-00-00	11 7/8" NI-20	1	2	MFD
J7	20-00-00	11 7/8" NI-40x	1	5	MFD
J8	18-00-00	11 7/8" NI-40x	1	18	MFD
B8	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B13	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B12	11-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B9	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B7	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
Ca1	154-00-00	1 1/8" x 11 7/8" Rim Board	1	1	FF
Bk1	48-00-00	11 7/8" NI-20	1	1	FF

Connector Summary			
PlotID	Qty	Manuf	Product
H1	3		HUS1.81/10
H2	14		LT251188

RIMBOARD
1- 1/8" X 11 7/8" O.S.B.
SUBFLOOR - 3/4" GLUE & NAILED
APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6
Blocking panels are required over all interior supports
Squash blocks are required under concentrated loads.

First Floor Framing

Do not scale - refer to architectural plans for dimensions

MODEL: 4008(HILLSDALE)- EL.A+B
W/OPT. 9' CEILING BSMT

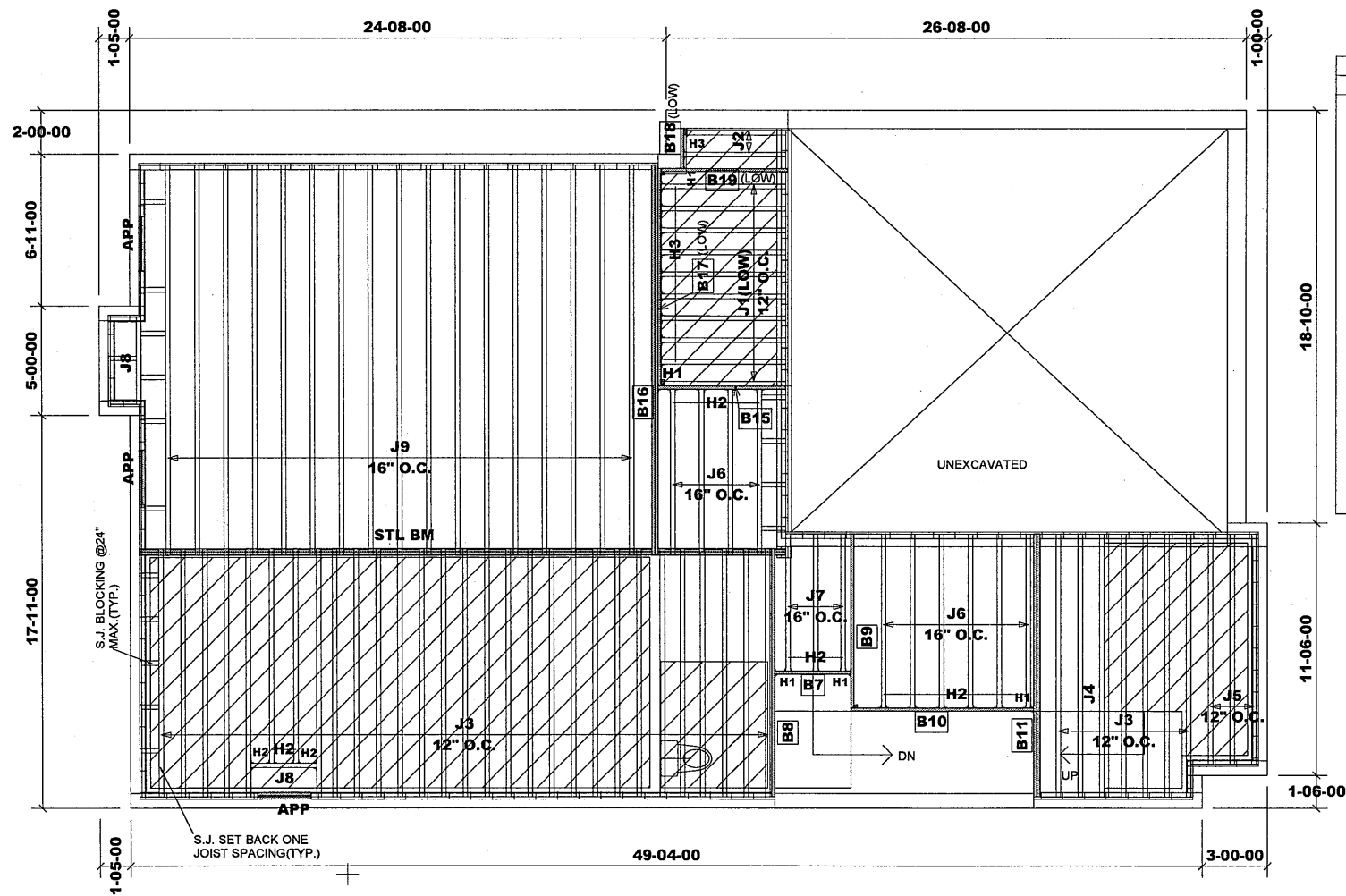


LUMBER DEALER:
HOME LUMBER
SALES REPRESENTATIVE:
Derek
DATE:
February 3, 2020

4008(HILLSDALE)
Gold Park
Pine Valley
LOCATION:
Vaughan
DRAWN BY:
NL

REVISIONS:	
1	
2	
3	
LEGEND:	
J#	Joist Mark
B#	Beam Mark
Ca #	Rimboard
Bk #	Blocking

JT / PL	45147/105350		
LI	316865		
LOADING			
Live	40 psf	dead	15 psf
DEFLECTION CRITERIA			
Live:	L/360	Total	L/240
4	OF	6	



MODEL: 4008(HILLSDALE)- EL.A+B
W/SUNKEN MUD RM
OPT. 9' CEILING BSMT SIMILAR

First Floor Framing

Do not scale - refer to architectural plans for dimensions

Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	6'-00"	9 1/2" NI-20	1	10	MFD
J2	5'-00"	9 1/2" NI-20	1	2	MFD
J3	12'-00"	11 7/8" NI-20	1	35	MFD
J4	12'-00"	11 7/8" NI-20	2	2	MFD
J5	11'-00"	11 7/8" NI-20	1	3	MFD
J6	8'-00"	11 7/8" NI-20	1	10	MFD
J7	7'-00"	11 7/8" NI-20	1	3	MFD
J8	4'-00"	11 7/8" NI-20	1	2	MFD
J9	18'-00"	11 7/8" NI-40x	1	17	MFD
B17	10'-00"	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B19	6'-00"	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B18	2'-00"	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B16	18'-00"	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B8	12'-00"	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B11	12'-00"	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B10	9'-00"	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B9	8'-00"	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B15	6'-00"	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B7	4'-00"	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
Ca1	18'-00"	1 1/8" x 9 1/2" Rim Board	1	1	FF
Ca2	136'-00"	1 1/8" x 11 7/8" Rim Board	1	1	FF
Bk1	40'-00"	11 7/8" NI-20	1	1	FF

Connector Summary			
PlotID	Qty	Manuf	Product
H1	5		HUS1.81/10
H2	17		LT251188
H3	10		LT259

RIMBOARD
1- 1/8" X 9 1/2" O.S.B.
1- 1/8" X 11 7/8" O.S.B.
SUBFLOOR - 3/4" GLUE & NAILED
APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6
Blocking panels are required over all interior supports
Squash blocks are required under concentrated loads.

LUMBER DEALER:
HOME LUMBER

SALES REPRESENTATIVE:
Derek

DATE:
February 4, 2020

4008(HILLSDALE)

Gold Park

Pine Valley

DRAWN BY:
NL

LOCATION:
Vaughan

REVISIONS:

1

2

3

LEGEND:

J#

Joist Mark

B#

Beam Mark

Ca #

Rimboard

Bk #

Blocking

JT / PL

45147/105350

LI

316865

LOADING

Live

40 psf

dead

15 psf

DEFLECTION CRITERIA

Live:

L/360

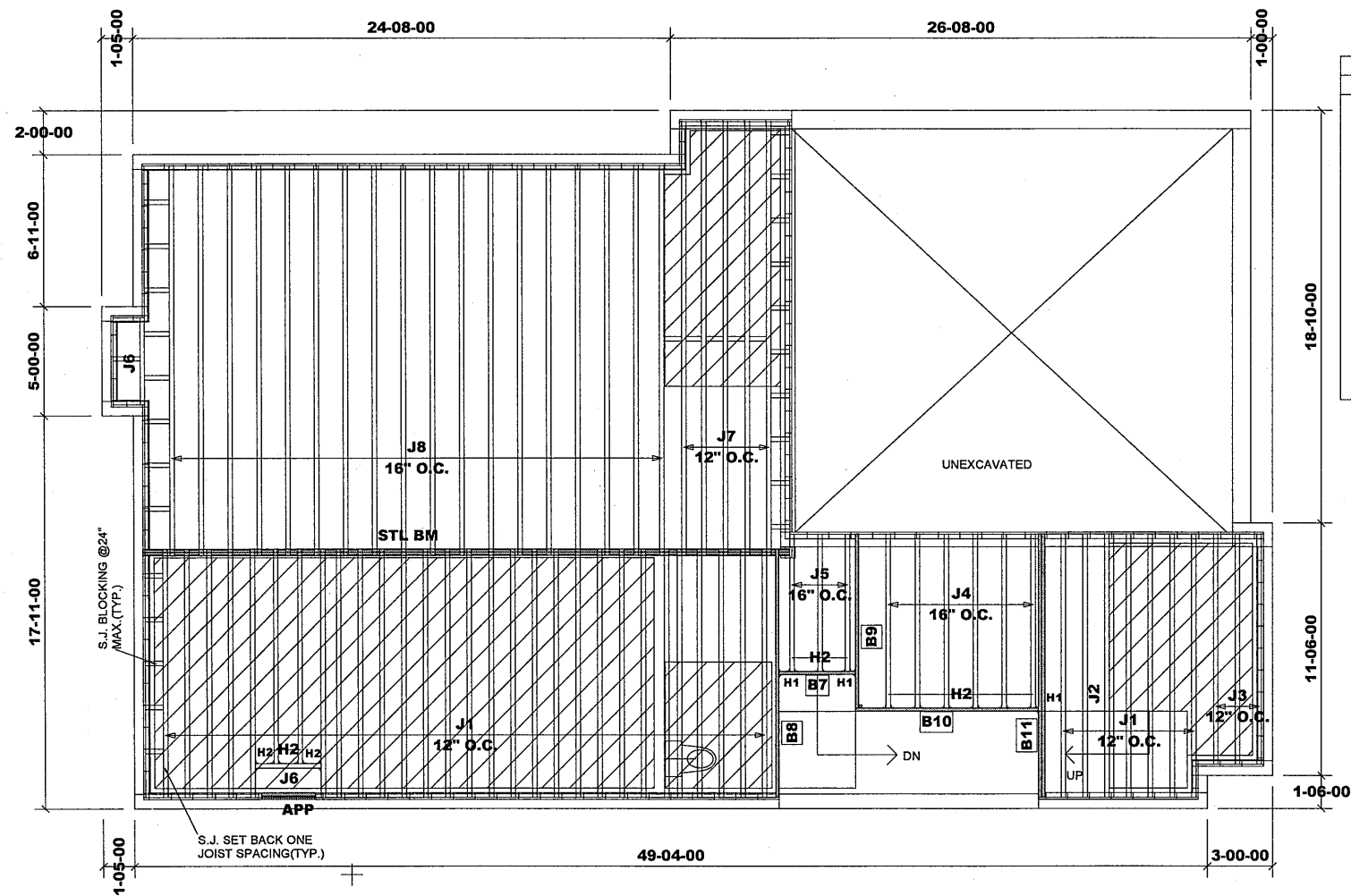
Total

L/240

5

OF

6



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	12'-00.00	11 7/8" NI-20	1	35	MFD
J2	12'-00.00	11 7/8" NI-20	2	2	MFD
J3	11'-00.00	11 7/8" NI-20	1	3	MFD
J4	8'-00.00	11 7/8" NI-20	1	6	MFD
J5	7'-00.00	11 7/8" NI-20	1	3	MFD
J6	4'-00.00	11 7/8" NI-20	1	2	MFD
J7	20'-00.00	11 7/8" NI-40x	1	5	MFD
J8	18'-00.00	11 7/8" NI-40x	1	18	MFD
B8	12'-00.00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B11	12'-00.00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B10	9'-00.00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B9	8'-00.00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B7	4'-00.00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD
Ca1	156'-00.00	1 1/8" x 11 7/8" Rim Board	1	1	FF
Bk1	40'-00.00	11 7/8" NI-20	1	1	FF
Bk2	12'-00.00	11 7/8" NI-20	1	1	FF

Connector Summary			
PlotID	Qty	Manuf	Product
H1	3		HUS1.81/10
H2	13		LT251188

RIMBOARD
1- 1/8" X 11 7/8" O.S.B.
SUBFLOOR - 3/4" GLUE & NAILED
APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentrated loads.

First Floor Framing

Do not scale - refer to architectural plans for dimensions

MODEL: 4008(HILLSDALE)- EL.A+B
W/L.O.D. & W.O.B. CONDITION



LUMBER DEALER:	HOME LUMBER
SALES REPRESENTATIVE:	Derek
DATE:	February 4, 2020

4008(HILLSDALE)	Gold Park	Pine Valley	LOCATION:	Vaughan
DRAWN BY:	NL			

REVISIONS:	
1	
2	
3	
LEGEND:	
J#	Joist Mark
B#	Beam Mark
Ca #	Rimboard
Bk #	Blocking

JT / PL	45147/105350
LI	316865

LOADING			
Live	40 psf	dead	15 psf
DEFLECTION CRITERIA			
Live:	L/360	Total	L/240
6	OF	6	

Triple 1-3/4" x 14" VERSA-LAM® 2.0 3100 SP

2nd Floor - Supply/BOM\Flush Beams\B1(i18619) (Flush Beam)

PASSED

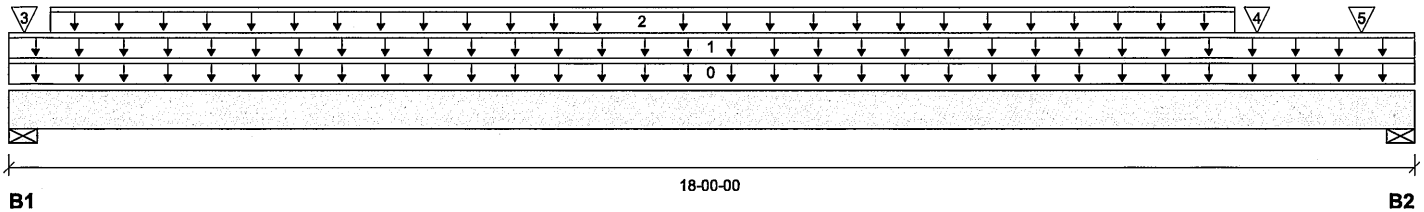
BC CALC® Member Report
Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:42:19

Job name: 45147(4008)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File name: 316865-A.mmdl
Description: 2nd Floor - Supply/BOM\Flush Beams\B1(i18619)
Specifier:
Designer: NL
Company: Alpa Roof Trusses



Total Horizontal Product Length = 18-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6"	5035 / 0	3249 / 0		
B2, 6"	5156 / 0	3310 / 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	18-00-00	Top		21			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	18-00-00	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-06	15-08-06	Top	559	279			n/a
3	J3(i18605)	Conc. Pt. (lbs)	L	00-02-06	00-02-06	Top	222	111			n/a
4	-	Conc. Pt. (lbs)	L	15-11-13	15-11-13	Top	727	364			n/a
5	-	Conc. Pt. (lbs)	L	17-03-15	17-03-15	Top	761	381			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	48498 ft-lbs	75349 ft-lbs	64.4%	1	09-02-06
End Shear	10384 lbs	25578 lbs	40.6%	1	01-08-00
Total Load Deflection	L/271 (0.758")	n/a	88.5%	4	09-02-06
Live Load Deflection	L/445 (0.462")	n/a	80.9%	5	09-02-06
Max Defl.	0.758"	n/a	n/a	4	09-02-06
Span / Depth	14.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6" x 5-1/4"	11614 lbs	59.9%	30.2%	Spruce-Pine-Fir
B2	Wall/Plate 6" x 5-1/4"	11872 lbs	61.3%	30.9%	Spruce-Pine-Fir

Notes

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

NAIL ONE PLY TO ANOTHER WITH 3-1/2" SPIRAL NAILS @ 6" O/C,
STAGGERED IN 2 ROWS



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

SE007537

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2nd Floor - Supply/BOM\Flush Beams\B2(i18470) (Flush Beam)

PASSED

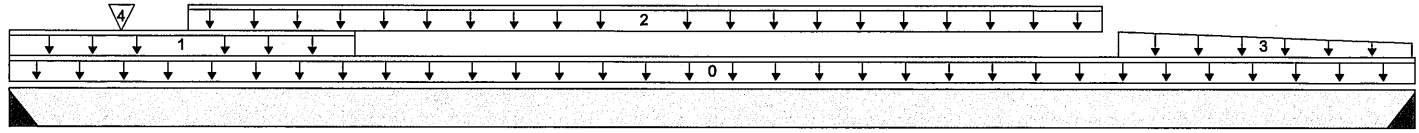
BC CALC® Member Report
 Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:42:19

Job name: 45147(4008)
 Address: Pine Valley
 City, Province, Postal Code: Vaughan, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 316865-A.mmdl
 Description: 2nd Floor - Supply/BOM\Flush Beams\B2(i18470)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



14-04-00

B1

Total Horizontal Product Length = 14-04-00

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	971 / 0	511 / 0		
B2, 2"	906 / 0	492 / 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	14-04-00	Top		6			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Top	40	15			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-09-10	11-01-10	Top	128	64			n/a
3	Smoothed Load	Trapezoidal (lb/ft)	L	11-03-10	14-03-10	Top	161	81			n/a
4	J4(i18490)	Conc. Pt. (lbs)	L	01-01-10	01-01-10	Top	160	80			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	7169 ft-lbs	17696 ft-lbs	40.5%	1	06-05-10
End Shear	1989 lbs	7232 lbs	27.5%	1	01-01-14
Total Load Deflection	L/452 (0.375")	n/a	53.1%	4	07-01-10
Live Load Deflection	L/695 (0.244")	n/a	51.8%	5	07-01-10
Max Defl.	0.375"	n/a	n/a	4	07-01-10
Span / Depth	14.3				



Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger 2" x 1-3/4"	2096 lbs	n/a	49.1%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	1974 lbs	n/a	46.2%	HUS1.81/10

SE007538

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2nd Floor - Supply/BOM\Flush Beams\B3(i18515) (Flush Beam)

PASSED

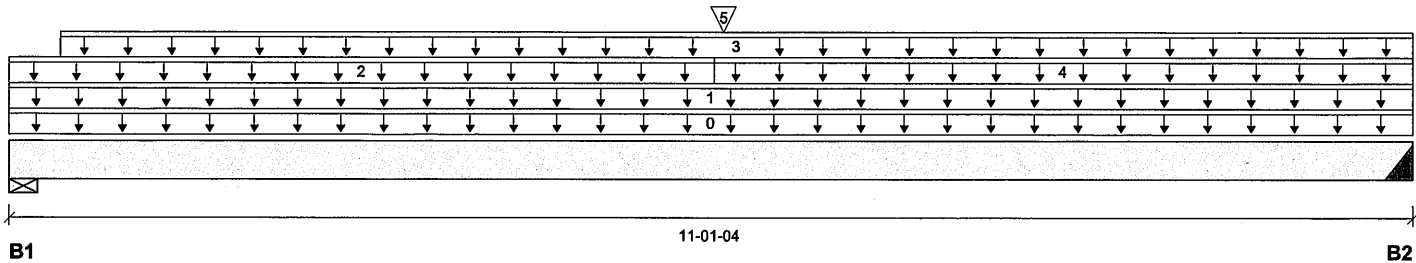
BC CALC® Member Report
 Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:42:19

Job name: 45147(4008)
 Address: Pine Valley
 City, Province, Postal Code: Vaughan, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 316865-A.mmdl
 Description: 2nd Floor - Supply/BOM\Flush Beams\B3(i18515)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 11-01-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	710 / 0	716 / 0		
B2, 2"	769 / 0	757 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-01-04	Top		6			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-01-04	Top	13	6			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-06-14	Top	3				n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-04-14	11-01-04	Top	20	70			n/a
4	FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-06-14	11-01-04	Top	24	12			n/a
5	B2(i18470)	Conc. Pt. (lbs)	L	05-07-12	05-07-12	Top	971	511			

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	8206 ft-lbs	17696 ft-lbs	46.4%	1	05-07-12
End Shear	1904 lbs	7232 lbs	26.3%	1	01-04-04
Total Load Deflection	L/595 (0.216")	n/a	40.3%	4	05-07-12
Live Load Deflection	L/999 (0.116")	n/a	n/a	5	05-07-12
Max Defl.	0.216"	n/a	n/a	4	05-07-12
Span / Depth	10.8				



Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 4-3/8" x 1-3/4"	1960 lbs	41.6%	21.0%	Spruce-Pine-Fir
B2	Hanger 2" x 1-3/4"	2100 lbs	n/a	49.2%	HUS1.81/10

SE007539

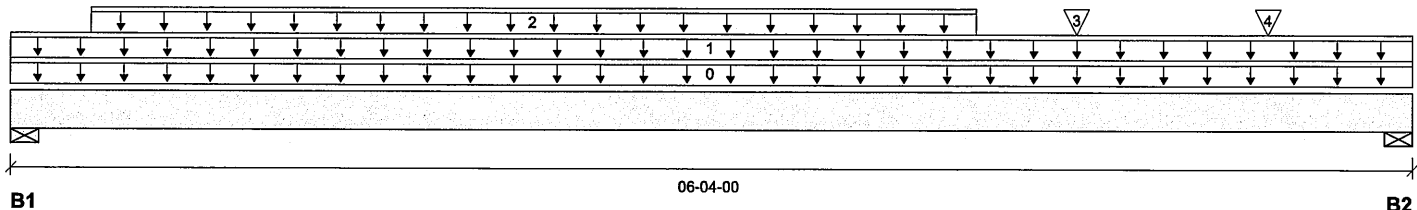
BC CALC® Member Report
 Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:42:19

Job name: 45147(4008)
 Address: Pine Valley
 City, Province, Postal Code: Vaughan, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 316865-A.mmdl
 Description: 2nd Floor - Supply/BOM\Flush Beams\B4(i18439)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 06-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6"	1759 / 0	1090 / 0		
B2, 6"	2328 / 0	1741 / 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	06-04-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	06-04-00	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-06	04-04-06	Top	610	306			n/a
3	-	Conc. Pt. (lbs)	L	04-09-13	04-09-13	Top	605	302			n/a
4	-	Conc. Pt. (lbs)	L	05-08-03	05-08-03	Top	1032	884			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4935 ft-lbs	17696 ft-lbs	27.9%	1	02-10-10
End Shear	2894 lbs	7232 lbs	40.0%	1	01-05-14
Total Load Deflection	L/999 (0.039")	n/a	n/a	4	03-01-10
Live Load Deflection	L/999 (0.024")	n/a	n/a	5	03-01-10
Max Defl.	0.039"	n/a	n/a	4	03-01-10
Span / Depth	5.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6" x 1-3/4"	4001 lbs	61.9%	31.2%	Spruce-Pine-Fir
B2	Wall/Plate 6" x 1-3/4"	5668 lbs	87.7%	44.2%	Spruce-Pine-Fir

Notes

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



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.

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SE007540

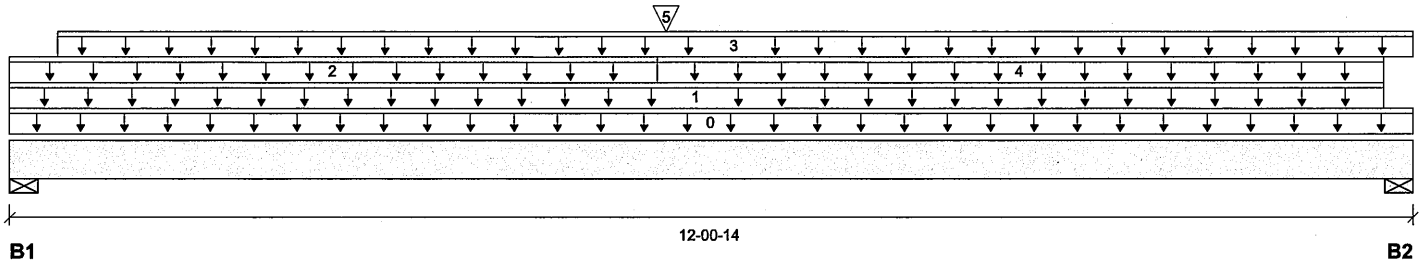
BC CALC® Member Report
 Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:42:19

Job name: 45147(4008)
 Address: Pine Valley
 City, Province, Postal Code: Vaughan, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 316865-A.mmdl
 Description: 2nd Floor - Supply/BOM\Flush Beams\B5(i18477)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	702 / 0	743 / 0		
B2, 5-1/2"	682 / 0	761 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-00-14	Top		6			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-09-14	Top	13	6			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-06-14	Top	3				n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-04-14	12-00-14	Top	20	70			n/a
4	FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-06-14	11-09-14	Top	12	6			n/a
5	B2(i18470)	Conc. Pt. (lbs)	L	05-07-12	05-07-12	Top	906	492			

Controls Summary

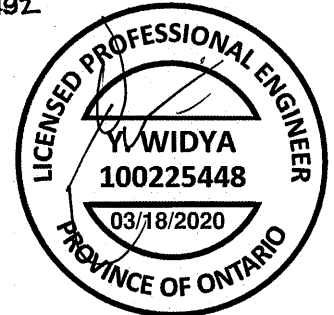
	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	8321 ft-lbs	17696 ft-lbs	47.0%	1	05-07-12
End Shear	1925 lbs	7232 lbs	26.6%	1	01-04-04
Total Load Deflection	L/548 (0.249")	n/a	43.8%	4	05-11-08
Live Load Deflection	L/1055 (0.129")	n/a	34.1%	5	05-11-08
Max Defl.	0.249"	n/a	n/a	4	05-11-08
Span / Depth	11.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 4-3/8" x 1-3/4"	1981 lbs	42.1%	21.2%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 1-3/4"	1974 lbs	33.3%	16.8%	Spruce-Pine-Fir

Notes

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



Disclosure

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SE007541

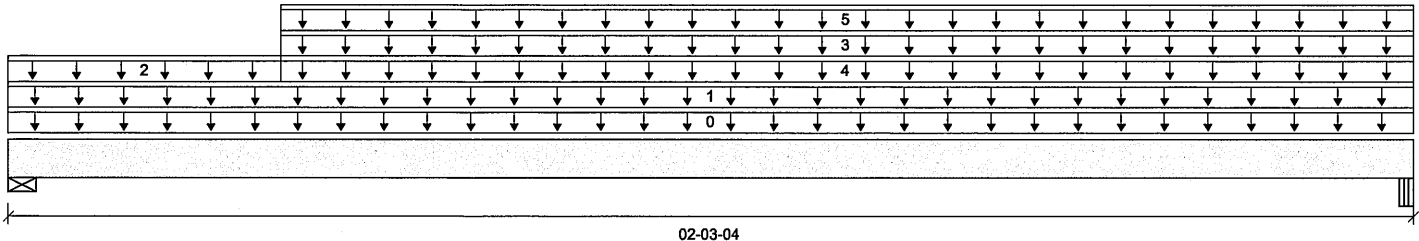
BC CALC® Member Report
 Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:42:19

Job name: 45147(4008)
 Address: Pine Valley
 City, Province, Postal Code: Vaughan, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 316865-A.mmdl
 Description: 2nd Floor - Supply/BOM\Flush Beams\B6(i18534)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 02-03-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	22 / 0	191 / 0	65 / 0	
B2, 3-1/2"	18 / 0	189 / 0	89 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	02-03-04	Top		12			00-00-00
1	E21(i17460)	Unf. Lin. (lb/ft)	L	00-00-00	02-03-04	Top		101			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-05-04	Top	20	10			n/a
3	E21(i17460)	Unf. Lin. (lb/ft)	L	00-05-04	02-03-04	Top		42	63		n/a
4	User Load	Unf. Lin. (lb/ft)	L	00-05-04	02-03-04	Top		14	21		n/a
5	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	02-03-04	Top	17	9			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	86 ft-lbs	23005 ft-lbs	0.4%	0	01-02-08
End Shear	54 lbs	9401 lbs	0.6%	0	01-05-02
Total Load Deflection	L/999 (0")	n/a	n/a	35	01-02-08
Max Defl.	0"	n/a	n/a	35	01-02-08
Span / Depth	1.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/4" x 3-1/2"	268 lbs	3.6%	1.8%	Spruce-Pine-Fir
B2	Beam 3-1/2" x 3-1/2"	265 lbs	5.4%	2.7%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Unbalanced snow loads determined from building geometry were used in selected product's verification.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

NAIL ONE PLY TO ANOTHER WITH 3-1/2" SPIRAL NAILS @ 4" O/C,
 STAGGERED IN 2 ROWS



Disclosure

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SE007542

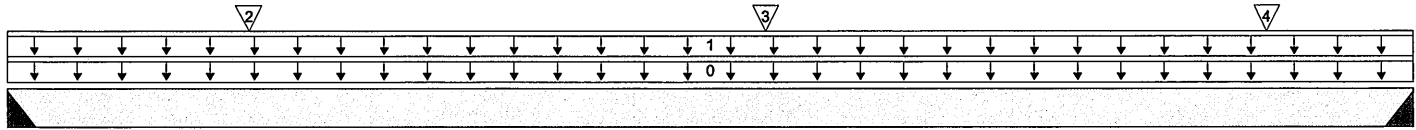
BC CALC® Member Report
 Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:42:19

Job name: 45147(4008)
 Address: Pine Valley
 City, Province, Postal Code: Vaughan, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 316865-A.mmdl
 Description: 1st Floor - Supply/BOMFlush Beams\B7(i18500)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



B1

03-06-00

B2

Total Horizontal Product Length = 03-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	261 / 0	132 / 0		
B2, 2"	278 / 0	140 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Top		6			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Top	40	15			n/a
2	J5(i18508)	Conc. Pt. (lbs)	L	00-07-02	00-07-02	Top	126	63			n/a
3	J5(i18423)	Conc. Pt. (lbs)	L	01-10-10	01-10-10	Top	164	82			n/a
4	J5(i18431)	Conc. Pt. (lbs)	L	03-01-10	03-01-10	Top	109	54			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	493 ft-lbs	17696 ft-lbs	2.8%	1	01-10-10
End Shear	308 lbs	7232 lbs	4.3%	1	02-04-02
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	01-09-00
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	01-09-00
Max Defl.	0.001"	n/a	n/a	4	01-09-00
Span / Depth	3.3				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	557 lbs	n/a	13.0%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	592 lbs	n/a	13.9%	HUS1.81/10



Disclosure

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Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Hanger Manufacturer: Unassigned
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

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

SE007543

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
1st Floor - Supply/BOM\Flush Beams\B8(i18494) (Flush Beam)

PASSED

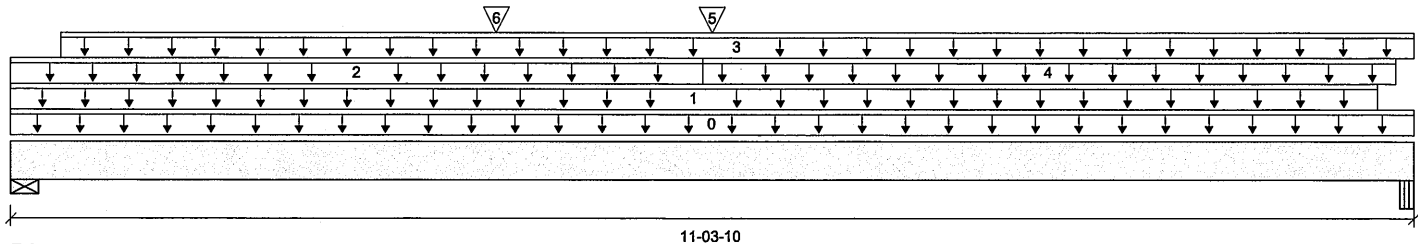
BC CALC® Member Report
 Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:42:19

Job name: 45147(4008)
 Address: Pine Valley
 City, Province, Postal Code: Vaughan, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 316865-A.mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B8(i18494)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 11-03-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-7/8"	487 / 0	569 / 0		
B2, 3-1/2"	455 / 0	595 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-03-10	Top		6			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-00-02	Top	12	6			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-06-14	Top	3				n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-04-14	11-03-10	Top	20	70			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	05-06-14	11-01-14	Top	13	7			n/a
5	B7(i18500)	Conc. Pt. (lbs)	L	05-07-12	05-07-12	Top	262	133			
6	User Load	Conc. Pt. (lbs)	L	03-10-14	03-10-14	Top	240	90			

Controls Summary

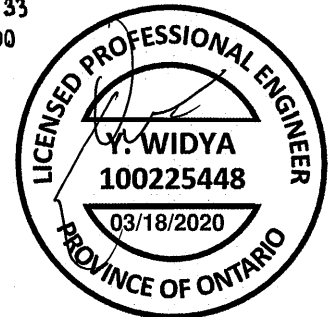
	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4949 ft-lbs	17696 ft-lbs	28.0%	1	05-07-12
End Shear	1397 lbs	7232 lbs	19.3%	1	01-01-12
Total Load Deflection	L/873 (0.151")	n/a	27.5%	4	05-06-14
Live Load Deflection	L/999 (0.073")	n/a	n/a	5	05-05-10
Max Defl.	0.151"	n/a	n/a	4	05-06-14
Span / Depth	11.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 1-7/8" x 1-3/4"	1442 lbs	71.4%	36.0%	Spruce-Pine-Fir
B2	Beam 3-1/2" x 1-3/4"	1427 lbs	37.9%	19.1%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA 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



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

SE007544



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

PASSED

1st Floor - Supply/BOM/Flush Beams\B9(i18416) (Flush Beam)

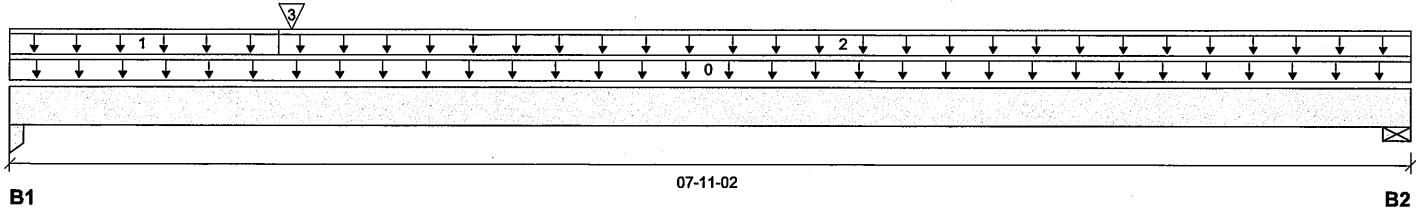
BC CALC® Member Report
Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:42:19

Job name: 45147(4008)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File name: 316865-A.mmdl
Description: 1st Floor - Supply/BOM/Flush Beams\B9(i18416)
Specifier:
Designer: NL
Company: Alpa Roof Trusses



Total Horizontal Product Length = 07-11-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	359 / 0	205 / 0		
B2, 2-3/8"	202 / 0	125 / 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	07-11-02	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-06-04	Top	30	15			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-06-04	07-11-02	Top	37	19			n/a
3	B7(i18500)	Conc. Pt. (lbs)	L	01-07-02	01-07-02	Top	277	140			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1156 ft-lbs	17696 ft-lbs	6.5%	1	02-07-11
End Shear	714 lbs	7232 lbs	9.9%	1	01-01-10
Total Load Deflection	L/999 (0.018")	n/a	n/a	4	03-08-03
Live Load Deflection	L/999 (0.011")	n/a	n/a	5	03-08-03
Max Defl.	0.018"	n/a	n/a	4	03-08-03
Span / Depth	7.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 1-3/4" x 1-3/4"	795 lbs	15.0%	21.3%	Spruce-Pine-Fir
B2	Wall/Plate 2-3/8" x 1-3/4"	460 lbs	18.0%	9.1%	Spruce-Pine-Fir

Notes

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



Disclosure

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

SE007545



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
1st Floor - Supply/BOMFlush Beams\B10(i18478) (Flush Beam)

PASSED

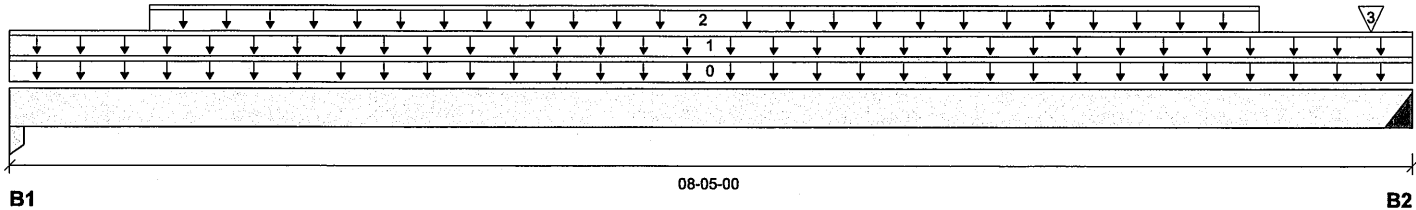
BC CALC® Member Report
 Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:42:19

Job name: 45147(4008)
 Address: Pine Valley
 City, Province, Postal Code: Vaughan, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 316865-A.mmdl
 Description: 1st Floor - Supply/BOMFlush Beams\B10(i18478)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 08-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	565 / 0	564 / 0		
B2, 2"	665 / 0	606 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-05-00	Top		6			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	08-05-00	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-00	07-06-00	Top	164	82			n/a
3	J4(i18512)	Conc. Pt. (lbs)	L	08-02-00	08-02-00	Top	140	70			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3507 ft-lbs	17696 ft-lbs	19.8%	1	04-02-00
End Shear	1447 lbs	7232 lbs	20.0%	1	01-03-06
Total Load Deflection	L/999 (0.06")	n/a	n/a	4	04-03-00
Live Load Deflection	L/999 (0.031")	n/a	n/a	5	04-03-00
Max Defl.	0.06"	n/a	n/a	4	04-03-00
Span / Depth	8.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	1553 lbs	14.6%	20.8%	Spruce-Pine-Fir
B2	Hanger 2" x 1-3/4"	1756 lbs	n/a	41.1%	HUS1.81/10



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Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Hanger Manufacturer: Unassigned
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

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

SE007546



Boise Cascade



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

1st Floor - Supply/BOM\Flush Beams\B11(i18422) (Flush Beam)

PASSED

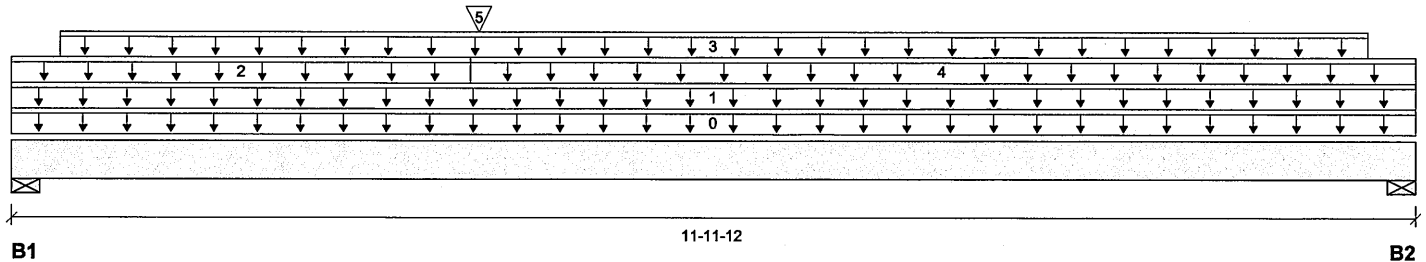
BC CALC® Member Report
Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:42:19

Job name: 45147(4008)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File name: 316865-A.mmdl
Description: 1st Floor - Supply/BOM\Flush Beams\B11(i18422)
Specifier:
Designer: NL
Company: Alpa Roof Trusses



Total Horizontal Product Length = 11-11-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	715 / 0	947 / 0		
B2, 2-3/8"	494 / 0	743 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-11-12	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-11-12	Top	20	10			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-10-14	Top	6				n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-04-14	11-06-14	Top	20	70			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-10-14	11-11-12	Top	8	4			n/a
5	B10(i18478)	Conc. Pt. (lbs)	L	03-11-12	03-11-12	Top	662	602			

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7376 ft-lbs	35392 ft-lbs	20.8%	1	03-11-12
End Shear	2174 lbs	14464 lbs	15.0%	1	01-02-04
Total Load Deflection	L/1123 (0.125")	n/a	21.4%	4	05-08-03
Live Load Deflection	L/999 (0.054")	n/a	n/a	5	05-08-03
Max Defl.	0.125"	n/a	n/a	4	05-08-03
Span / Depth	11.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 3-1/2"	2256 lbs	44.1%	22.2%	Spruce-Pine-Fir
B2	Wall/Plate 2-3/8" x 3-1/2"	1669 lbs	32.6%	16.5%	Spruce-Pine-Fir

Notes

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

NAIL ONE PLY TO ANOTHER WITH 3-1/2" SPIRAL NAILS @ 12" O/C,
STAGGERED IN 2 ROWS

**Disclosure**

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SE007547



Boise Cascade



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

1st Floor - Supply/BOMFlush Beams\B12(i18954) (Flush Beam)

PASSED

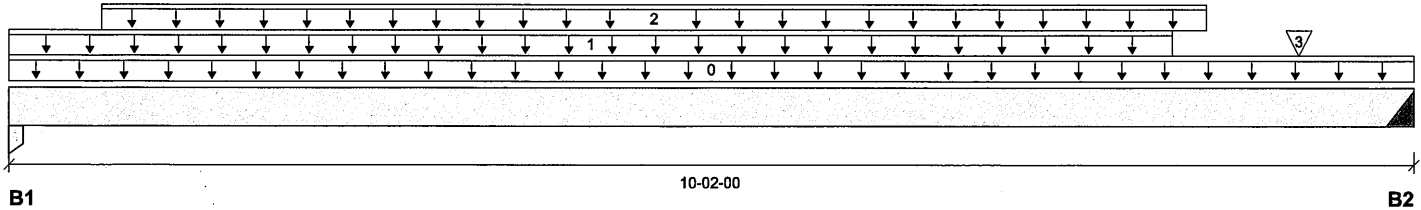
BC CALC® Member Report
Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:30:17

Job name: 45147(4008)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File name: 316865-B.mmdl
Description: 1st Floor - Supply/BOMFlush Beams\B12(i18954)
Specifier:
Designer: NL
Company: Alpa Roof Trusses



Total Horizontal Product Length = 10-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	721 / 0	692 / 0		
B2, 2"	758 / 0	614 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-02-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	08-05-00	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-08-00	08-08-00	Top	162	81			n/a
3	J4(i18985)	Conc. Pt. (lbs)	L	09-04-00	09-04-00	Top	187	94			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5131 ft-lbs	17696 ft-lbs	29.0%	1	05-04-00
End Shear	1842 lbs	7232 lbs	25.5%	1	01-03-06
Total Load Deflection	L/902 (0.131")	n/a	26.6%	4	05-02-00
Live Load Deflection	L/999 (0.069")	n/a	n/a	5	05-02-00
Max Defl.	0.131"	n/a	n/a	4	05-02-00
Span / Depth	9.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	1947 lbs	18.3%	26.1%	Spruce-Pine-Fir
B2	Hanger 2" x 1-3/4"	1904 lbs	n/a	44.6%	HUS1.81/10

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Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

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

SE007548



Boise Cascade



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

1st Floor - Supply/BOMFlush Beams\B13(i19101) (Flush Beam)

PASSED

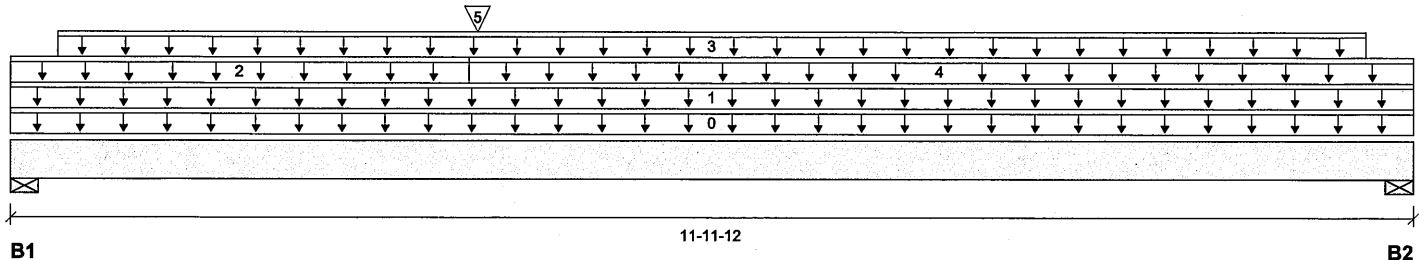
BC CALC® Member Report
Build 7239

Dry | 1 span | No cant.

February 3, 2020 16:30:17

Job name: 45147(4008)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File name: 316865-B.mmdl
Description: 1st Floor - Supply/BOMFlush Beams\B13(i19101)
Specifier:
Designer: NL
Company: Alpa Roof Trusses



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	849 / 0	988 / 0		
B2, 2-3/8"	628 / 0	798 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-11-12	Top		12			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-11-12	Top	27	13			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-10-14	Top	6				n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-04-14	11-06-14	Top	20	70			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-10-14	11-11-12	Top	20	10			n/a
5	B12(i18954)	Conc. Pt. (lbs)	L	03-11-12	03-11-12	Top	751	609			

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8227 ft-lbs	35392 ft-lbs	23.2%	1	03-11-12
End Shear	2408 lbs	14464 lbs	16.7%	1	01-02-04
Total Load Deflection	L/1001 (0.14")	n/a	24.0%	4	05-09-08
Live Load Deflection	L/999 (0.065")	n/a	n/a	5	05-08-03
Max Defl.	0.14"	n/a	n/a	4	05-09-08
Span / Depth	11.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 3-1/2"	2509 lbs	49.1%	24.7%	Spruce-Pine-Fir
B2	Wall/Plate 2-3/8" x 3-1/2"	1940 lbs	37.9%	19.1%	Spruce-Pine-Fir

Notes

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

NAIL ONE PLY TO ANOTHER WITH 3-1/2" SPIRAL NAILS @ 12" O/C,
STAGGERED IN 2 ROWS



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SE007549

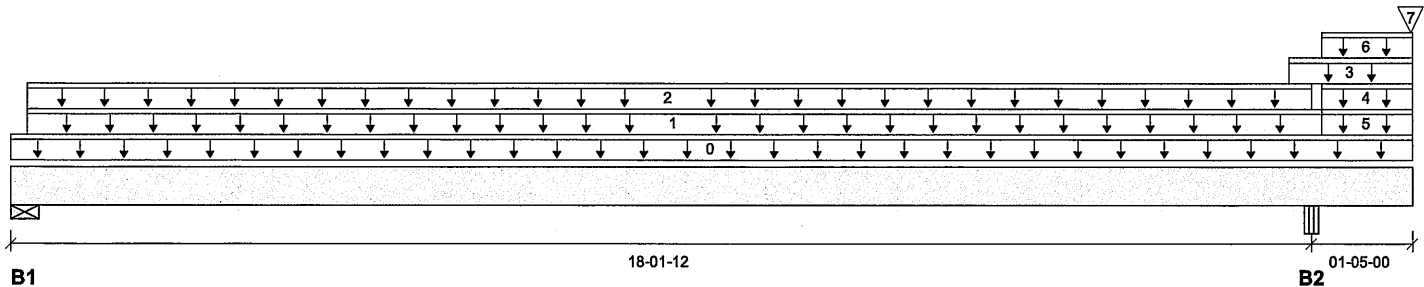


Boise Cascade

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2nd Floor - Supply/BOM\Flush Beams\B14(i19115) (Flush Beam)**BC CALC® Member Report
Build 7239

Dry | 2 spans | R cant.

February 3, 2020 16:30:17

Job name: 45147(4008)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-RFile name: 316865-B.mmdl
Description: 2nd Floor - Supply/BOM\Flush Beams\B14(i19115)
Specifier:
Designer: NL
Company: Alpa Roof Trusses

Total Horizontal Product Length = 19-06-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	367 / 1	284 / 0	0 / 5	
B2, 3-1/2"	394 / 0	599 / 0	121 / 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	19-06-12	Top		12			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	18-03-08	Top	20	10			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	18-01-12	Top	20	10			n/a
3	E37(i18716)	Unf. Lin. (lb/ft)	L	17-10-00	19-06-12	Top		101			n/a
4	E37(i18716)	Unf. Lin. (lb/ft)	L	18-03-08	19-06-12	Top		42	63		n/a
5	FC1 Floor Material	Unf. Lin. (lb/ft)	L	18-03-08	19-06-12	Top	23	12			n/a
6	User Load	Unf. Lin. (lb/ft)	L	18-03-08	19-06-12	Top		14	21		n/a
7	E37(i18716)	Conc. Pt. (lbs)	L	19-06-08	19-06-08	Top		21	9		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3865 ft-lbs	35392 ft-lbs	10.9%	32	09-02-12
Neg. Moment	-294 ft-lbs	-23005 ft-lbs	1.3%	0	18-01-12
End Shear	779 lbs	14464 lbs	5.4%	32	01-05-06
Cont. Shear	827 lbs	14464 lbs	5.7%	1	17-00-02
Total Load Deflection	L/1334 (0.16")	n/a	18.0%	79	09-02-12
Live Load Deflection	L/999 (0.093")	n/a	n/a	117	09-02-12
Total Neg. Defl.	2xL/1998 (-0.039")	n/a	n/a	79	19-06-12
Max Defl.	0.16"	n/a	n/a	79	09-02-12
Span / Depth	17.9				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	906 lbs	7.6%	3.9%	Spruce-Pine-Fir
B2	Beam 3-1/2" x 3-1/2"	1462 lbs	15.5%	9.8%	Unspecified

NAIL ONE PLY TO ANOTHER WITH 3-1/2" SPIRAL NAILS @ 12" O/C,
STAGGERED IN 2 ROWS

SE007550



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
1st Floor - Supply/BOM\Flush Beams\B15(i19226) (Flush Beam)

PASSED

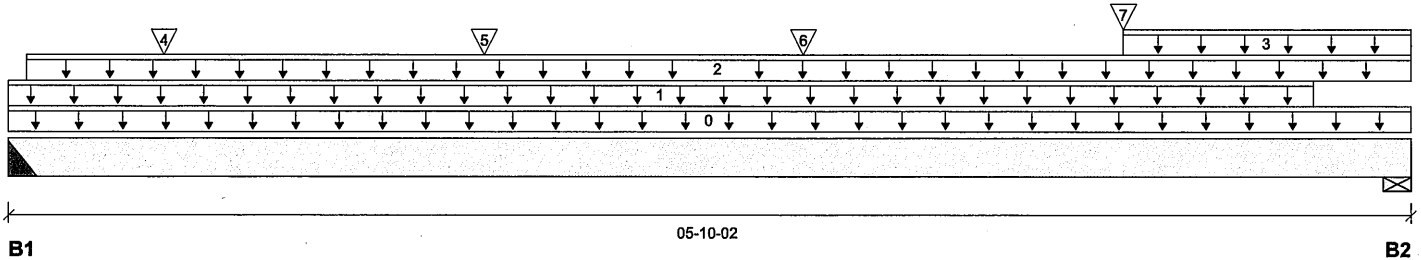
BC CALC® Member Report
Build 7239

Dry | 1 span | No cant.

February 3, 2020 17:00:11

Job name: 45147(4008)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File name: 316865-A-SUNKEN.mmdl
Description: 1st Floor - Supply/BOM\Flush Beams\B15(i19226)
Specifier:
Designer: NL
Company: Alpa Roof Trusses



Total Horizontal Product Length = 05-10-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	413 / 0	398 / 0		
B2, 2-3/8"	374 / 0	357 / 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	05-10-02	Top		6			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	05-05-04	Top		60			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-14	05-10-02	Top	4	2			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	04-07-12	05-10-02	Top	9				n/a
4	J6(i19192)	Conc. Pt. (lbs)	L	00-07-12	00-07-12	Top	161	81			n/a
5	J6(i19172)	Conc. Pt. (lbs)	L	01-11-12	01-11-12	Top	201	100			
6	J6(i19176)	Conc. Pt. (lbs)	L	03-03-12	03-03-12	Top	202	101			
7	J6(i19208)	Conc. Pt. (lbs)	L	04-07-12	04-07-12	Top	192	96			

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1611 ft-lbs	17696 ft-lbs	9.1%	1	03-03-12
End Shear	968 lbs	7232 lbs	13.4%	1	04-07-14
Total Load Deflection	L/999 (0.013")	n/a	n/a	4	02-10-12
Live Load Deflection	L/999 (0.007")	n/a	n/a	5	02-10-12
Max Defl.	0.013"	n/a	n/a	4	02-10-12
Span / Depth	5.7				



Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger 2" x 1-3/4"	1118 lbs	n/a	26.2%	HUS1.81/10
B2	Wall/Plate 2-3/8" x 1-3/4"	1008 lbs	39.4%	19.9%	Spruce-Pine-Fir

SE007551

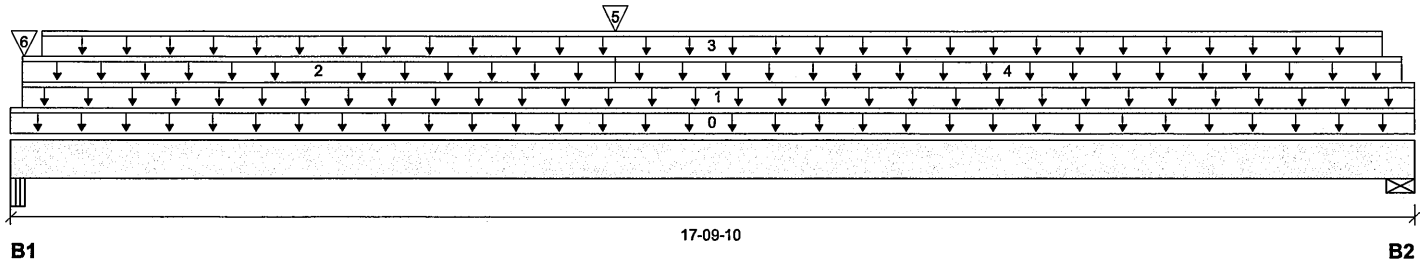
BC CALC® Member Report
Build 7239

Dry | 1 span | No cant.

February 3, 2020 17:00:11

Job name: 45147(4008)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File name: 316865-A-SUNKEN.mmdl
Description: 1st Floor - Supply/BOM\Flush Beams\B16(i19225)
Specifier:
Designer: NL
Company: Alpha Roof Trusses



Total Horizontal Product Length = 17'-09-10"

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1857 / 0	1826 / 0		
B2, 2-3/8"	422 / 0	904 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	17-09-10	Top		12			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-01-12	17-09-10	Top	22	11			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-01-12	07-07-14	Top	16	8			n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-04-12	17-04-12	Top		60			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	07-07-14	17-07-12	Top	4				n/a
5	B15(i19226)	Conc. Pt. (lbs)	L	07-07-14	07-07-14	Top	407	391			
6	5(i17468)	Conc. Pt. (lbs)	L	00-02-00	00-02-00	Top	1326	832			

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	6886 ft-lbs	23005 ft-lbs	29.9%	0	07-07-14
End Shear	1340 lbs	9401 lbs	14.3%	0	01-03-06
Total Load Deflection	L/521 (0.402")	n/a	46.1%	4	08-09-05
Live Load Deflection	L/1474 (0.142")	n/a	24.4%	5	08-09-05
Max Defl.	0.402"	n/a	n/a	4	08-09-05
Span / Depth	17.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam 3-1/2" x 3-1/2"	5067 lbs	67.2%	33.9%	Unspecified
B2	Wall/Plate 2-3/8" x 3-1/2"	1266 lbs	38.1%	19.2%	Spruce-Pine-Fir

Notes

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

NAIL ONE PLY TO ANOTHER WITH 3-1/2" SPIRAL NAILS @
STAGGERED IN 2 ROWS

O/C,



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.

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SE007552

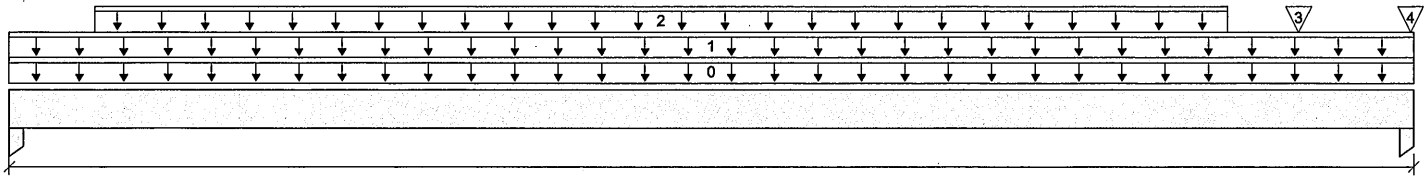
BC CALC® Member Report
 Build 7239

Dry | 1 span | No cant.

February 3, 2020 17:00:11

Job name: 45147(4008)
 Address: Pine Valley
 City, Province, Postal Code: Vaughan, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 316865-A-SUNKEN.mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B17(i19211)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



B1 B2
 09-11-00
 Total Horizontal Product Length = 09-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	521 / 0	283 / 0		
B2, 3-1/2"	588 / 0	347 / 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	09-11-00	Top	5				00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-11-00	Top	4	2			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-07-04	08-07-04	Top	114	57			n/a
3	J1(i19223)	Conc. Pt. (lbs)	L	09-01-04	09-01-04	Top	101	50			n/a
4	E6(i17411)	Conc. Pt. (lbs)	L	09-10-12	09-10-12	Top	46	54			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2906 ft-lbs	11610 ft-lbs	25.0%	1	05-01-04
End Shear	1119 lbs	5785 lbs	19.3%	1	01-01-00
Total Load Deflection	L/862 (0.132")	n/a	27.8%	4	04-11-12
Live Load Deflection	L/999 (0.086")	n/a	n/a	5	04-11-12
Max Defl.	0.132"	n/a	n/a	4	04-11-12
Span / Depth	11.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	1136 lbs	10.7%	15.2%	Spruce-Pine-Fir
B2	Column 3-1/2" x 1-3/4"	1315 lbs	12.4%	17.6%	Spruce-Pine-Fir

Notes

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



Disclosure

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

SE007553

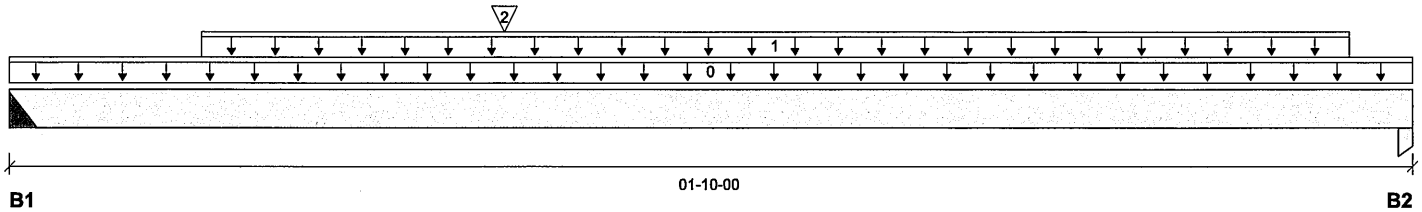


Boise Cascade

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1st Floor - Supply/BOM\Flush Beams\B18(i19221) (Flush Beam)**BC CALC® Member Report
Build 7239

Dry | 1 span | No cant.

February 3, 2020 17:00:11

Job name: 45147(4008)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-RFile name: 316865-A-SUNKEN.mmdl
Description: 1st Floor - Supply/BOM\Flush Beams\B18(i19221)
Specifier:
Designer: NL
Company: Alpa Roof Trusses

Total Horizontal Product Length = 01-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	62 / 0	170 / 0		
B2, 3-1/2"	43 / 0	223 / 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	01-10-00	Top		5			00-00-00
1	E7(i17410)	Unf. Lin. (lb/ft)	L	00-03-00	01-09-00	Top	15	228			n/a
2	J2(i19204)	Conc. Pt. (lbs)	L	00-07-12	00-07-12	Top	83	41			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	106 ft-lbs	7546 ft-lbs	1.4%	0	00-09-10
End Shear	209 lbs	3761 lbs	5.6%	0	00-11-08
Total Load Deflection	L/999 (0")	n/a	n/a	4	00-10-02
Live Load Deflection	L/999 (0")	n/a	n/a	5	00-09-10
Max Defl.	0"	n/a	n/a	4	00-10-02
Span / Depth	1.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger 2" x 1-3/4"	238 lbs	n/a	8.6%	HUS1.81/10
B2	Column 3-1/2" x 1-3/4"	312 lbs	4.5%	6.4%	Spruce-Pine-Fir

**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.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

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

SE007554

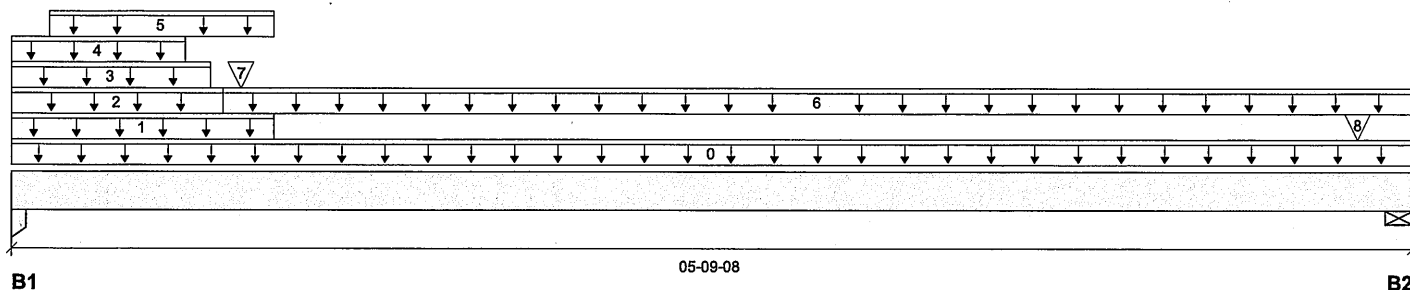
BC CALC® Member Report
 Build 7239

Dry | 1 span | No cant.

February 3, 2020 17:00:11

Job name: 45147(4008)
 Address: Pine Valley
 City, Province, Postal Code: Vaughan, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 316865-A-SUNKEN.mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B19(i19213)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 05-09-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	367 / 0	522 / 0		
B2, 3-1/2"	159 / 0	143 / 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	05-09-08	Top		5			00-00-00
1	E6(i17411)	Unf. Lin. (lb/ft)	L	00-00-00	01-01-00	Top		114			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-10-08	Top	16	8			n/a
3	E6(i17411)	Unf. Lin. (lb/ft)	L	00-00-00	00-09-14	Top	313	156			n/a
4	E6(i17411)	Unf. Lin. (lb/ft)	L	00-00-00	00-08-10	Top		101			n/a
5	E6(i17411)	Unf. Lin. (lb/ft)	L	00-01-14	01-01-00	Top		30			n/a
6	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-10-08	05-09-08	Top	29	15			n/a
7	B18(i19221)	Conc. Pt. (lbs)	L	00-11-06	00-11-06	Top	60	171			n/a
8	1(i17464)	Conc. Pt. (lbs)	L	05-06-12	05-06-12	Top	48	34			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	606 ft-lbs	11610 ft-lbs	5.2%	1	01-03-12
End Shear	943 lbs	5785 lbs	16.3%	1	00-11-04
Total Load Deflection	L/999 (0.009")	n/a	n/a	4	02-07-06
Live Load Deflection	L/999 (0.004")	n/a	n/a	5	02-08-01
Max Defl.	0.009"	n/a	n/a	4	02-07-06
Span / Depth	6.9				



Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column 1-3/4" x 1-3/4"	1202 lbs	22.6%	32.2%	Spruce-Pine-Fir
B2	Wall/Plate 3-1/2" x 1-3/4"	417 lbs	11.1%	5.6%	Spruce-Pine-Fir

Notes

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

SE007555

Maximum Floor Spans – M4.1, L/360

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/360 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued oriented strand board (OSB) sheathing



Maximum Floor Spans

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

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

Notes:

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

The construction details for residential designs are prone to changes.

Details released after April 2014 supersedes N-C301

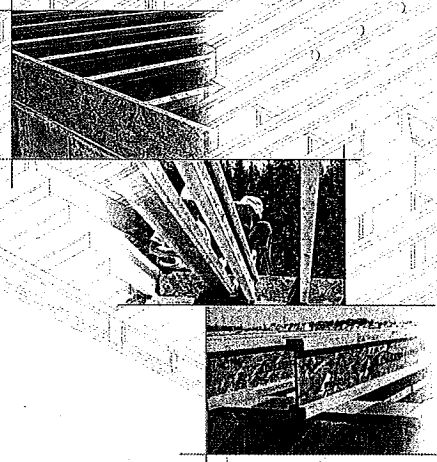
Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

This document 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 its component based on the design criteria and loadings shown on the calculation sheets.

(Nordic Request 1810-095)

NORDIC ENGINEERED WOOD

INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



Distributed by:



SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

WARNING

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

Avoid Accidents by Following these Important Guidelines:

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

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

STORAGE AND HANDLING GUIDELINES

- Bundle wrap can be slippery when wet. Avoid walking on wrapped bundles.
- Store, stack, and handle I-joists vertically and level only.
- Always stack and handle I-joists in the upright position only.
- Do not store I-joists in direct contact with the ground and/or flammable.
- Protect I-joists from weather, and use spacers to separate bundles.
- Bundled units should be kept intact until time of installation.
 - Pick I-joists in bundles as shipped by the supplier.
 - Orient the bundles so that the webs of the I-joists are vertical.
 - Pick the bundles at the 5th points, using a spreader bar if necessary.
- Do not handle I-joists in a horizontal orientation.
- NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST.

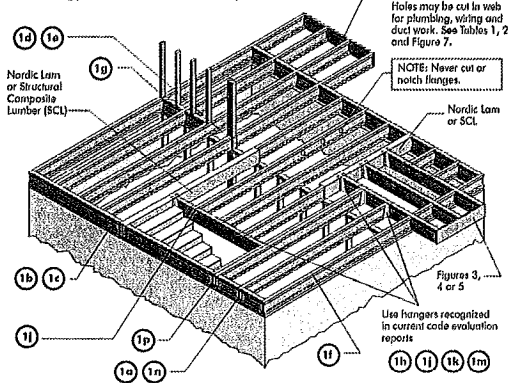


INSTALLING NORDIC I-JOISTS

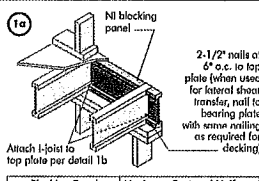
- Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
- Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
- Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
- I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple-span joists must be level.
- Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
- When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
- Leave a 1/16-inch gap between the I-joist end and a header.
- Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unbraced or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
- Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
- Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
- For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
- Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. I-joist blocking panels or other engineered wood products – such as rim board – must be cut to fit between the I-joists, and an I-joist-compatible depth selected.
- Provide permanent lateral support of the bottom flange of all I-joists at interior supports of multiple-span joists. Similarly, support the bottom flange of all cantilevered I-joists at the end support next to the cantilever extension. In the completed structure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or struts must be used.
- If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Glue panels to blocking to minimize squeaks. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate underlayment layer is installed.
- Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.

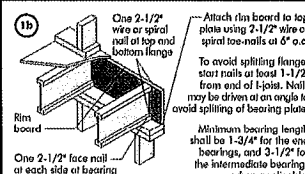


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.125" dia.) common spiral nails may be substituted for 2-1/2" (0.120" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.



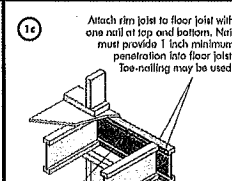
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
Ni Joists	3,300

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



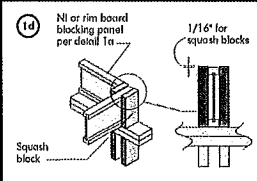
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

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



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

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



Pair of Squash Blocks	Maximum Factored Uniform Vertical Load* (plf)
2x Lumber	5,500
1-1/8" Rim Board Plus	4,300

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

The construction details for residential designs are prone to changes.

Details released after April 2014 supersedes N-C301

Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

This document 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 its component based on the design criteria and loadings shown on the calculation sheets.

MAXIMUM FLOOR SPANS

- Maximum clear spans applicable to single-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.35L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in C085-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Unit States Design per CAN/CSA C085-07 Standard, and NBC 2010.
- SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

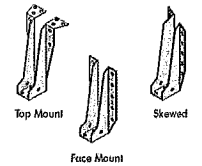
SINGLE AND MULTIPLE SPANS

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	Ni-20	15'-1"	14'-2"	13'-3"	12'-5"	16'-3"	15'-4"	14'-5"	13'-7"
	Ni-40x	16'-1"	15'-2"	14'-3"	13'-5"	17'-3"	16'-4"	15'-5"	14'-7"
	Ni-60	16'-3"	15'-4"	14'-5"	13'-7"	17'-5"	16'-6"	15'-7"	14'-9"
	Ni-80	17'-1"	16'-1"	15'-2"	14'-3"	18'-1"	17'-2"	16'-3"	15'-5"
11-7/8"	Ni-20	16'-11"	15'-0"	14'-1"	13'-3"	17'-3"	16'-4"	15'-5"	14'-7"
	Ni-40x	18'-1"	17'-0"	16'-1"	15'-2"	19'-3"	18'-4"	17'-5"	16'-7"
	Ni-60	18'-4"	17'-3"	16'-4"	15'-5"	20'-3"	19'-4"	18'-5"	17'-7"
	Ni-80	19'-6"	18'-0"	17'-4"	16'-5"	21'-6"	20'-7"	19'-8"	18'-9"
14"	Ni-20	19'-9"	18'-3"	17'-4"	16'-5"	21'-9"	20'-8"	19'-9"	18'-11"
	Ni-40x	20'-2"	18'-7"	17'-10"	16'-11"	22'-3"	20'-7"	19'-8"	18'-9"
	Ni-60	20'-4"	18'-9"	17'-11"	16'-12"	22'-5"	20'-9"	19'-10"	18'-11"
	Ni-80	21'-1"	19'-11"	18'-1"	17'-1"	23'-2"	21'-11"	20'-10"	19'-11"
16"	Ni-20	21'-7"	20'-0"	19'-1"	18'-2"	23'-10"	22'-1"	21'-1"	20'-2"
	Ni-40x	21'-11"	20'-3"	19'-4"	18'-5"	24'-3"	22'-5"	21'-5"	20'-6"
	Ni-60	22'-3"	20'-8"	19'-9"	19'-0"	24'-9"	22'-11"	21'-10"	20'-11"
	Ni-80	22'-7"	21'-1"	20'-2"	19'-3"	25'-0"	23'-1"	22'-0"	21'-1"

CCMC EVALUATION REPORT 13032-R

I-JOIST HANGERS

- Hangers shown illustrate the three most commonly used metal hangers to support I-joists.
- All nailing must meet the hanger manufacturer's recommendations.
- Hangers should be selected based on the joist depth, flange width and load capacity based on the maximum spans.
- Web stiffeners are required when the sides of the hangers do not laterally brace the top flange of the I-joist.



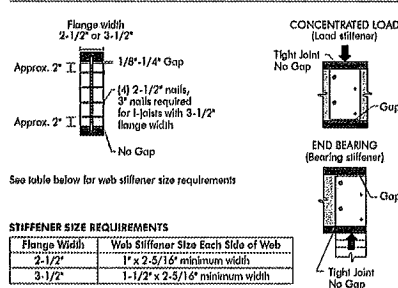
WEB STIFFENERS

RECOMMENDATIONS:

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A load stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

SI units conversion: 1 inch = 25.4 mm

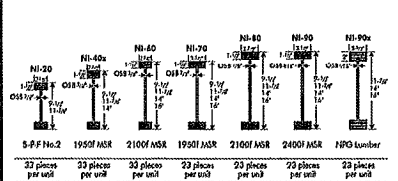
FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



STIFFENER SIZE REQUIREMENTS

Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

NORDIC I-JOIST SERIES



Chantiers Chibougon Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures throughout the manufacturing process. Every phase of the operation, from forest to the finished product, reflects our commitment to quality.

Nordic Engineered Wood I-Joists use only finger-jointed black spruce lumber in their flanges, ensuring consistent quality, superior strength, and longer span carrying capacity.

(Nordic Request 1810-095)



1a Transfer load from above to bearing below. Install squish blocks per detail 1d. Match bearing area of blocks below to peak above.

1b Use single I-joist for loads up to 3,300 plf, double I-joists for loads up to 6,600 plf (filler block not required). Attach I-joist to top plate using 2-1/2" nails at 6" o.c.

1c Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by this detail.

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

1e Double I-joist header

1f Top- or face-mount hanger

1g Filler block per detail 1p

1h Backer block required (both sides for face-mount hangers)

1i For hanger capacity see hanger manufacturer's recommendations. Verify double I-joist capacity to support concentrated loads.

1j BACKER BLOCKS (Blocks must be long enough to permit required nailing without spilling)

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

* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-C0325 or CAN/CSA-C0437 Standard.

** For face-mount hangers use nail joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use nail depth minus 4-1/4".

1k Nordic Lumber or SCL

1l Top- or face-mount hanger installed per manufacturer's recommendations

1m Top-mount hanger installed per manufacturer's recommendations

1n Multiple I-joist header with full depth filler block shown. Nordic Lumber or SCL headers may also be used. Vary double I-joist capacity to support concentrated loads.

1o Do not bowl-cut joist beyond inside face of wall

1p Filler block per detail 1p

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

1r Filler block requirements for double I-joist construction

Flange Size	Joist Depth	Filler Block Size
9-1/2"	2-1/8" x 6"	3" x 6"
11-7/8"	2-1/8" x 8"	3" x 8"
14"	2-1/8" x 10"	3" x 10"
16"	2-1/8" x 12"	3" x 12"
9-1/2"	3" x 6"	3" x 6"
11-7/8"	3" x 8"	3" x 8"
14"	3" x 10"	3" x 10"
16"	3" x 12"	3" x 12"
9-1/2"	3" x 7"	3" x 7"
11-7/8"	3" x 9"	3" x 9"
14"	3" x 11"	3" x 11"
16"	3" x 13"	3" x 13"

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

1t NI blocking panel

1u One 2-1/2" nails at top and bottom flange

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

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

1x NI blocking panel

1y One 2-1/2" nails one side only

1z Two 2-1/2" nails at 6" o.c.

1aa Notes:

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

The construction details for residential designs are prone to changes.

Details released after April 2014 supersedes N-C301

Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

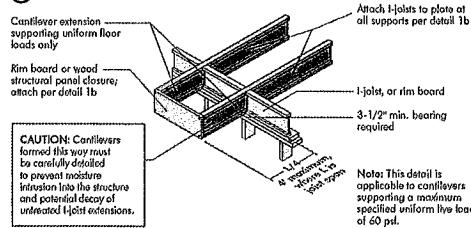
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(Nordic Request 1810-095)

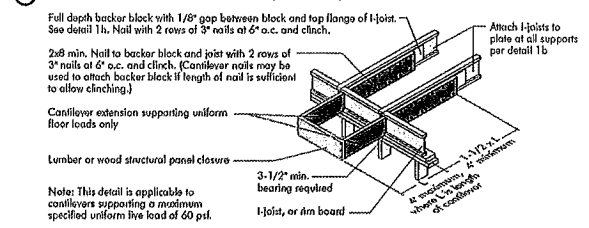


CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

3a I-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

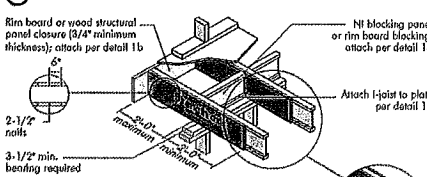


3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE

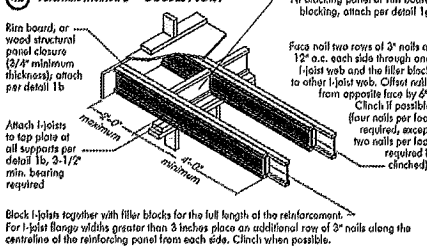


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

- Use same installation as Method 1 but reinforce both sides of I-joist with sheathing.
- Use nailing pattern shown for Method 1 with opposite face nailing offset by 9\"/>

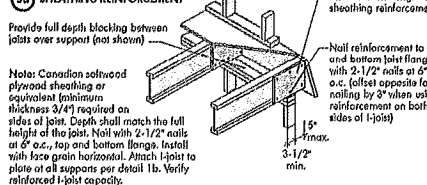
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4\"/>

4b Alternate Method 2 — DOUBLE I-JOIST

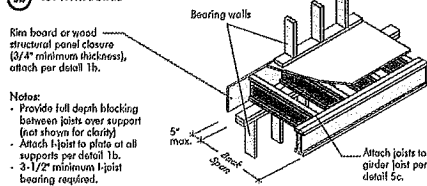


BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

5a SHEATHING REINFORCEMENT



5b SET-BACK DETAIL



5c SET-BACK CONNECTION

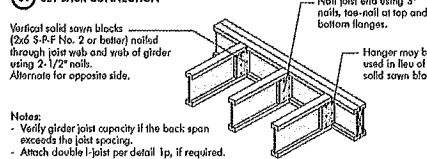


FIGURE 4 (continued)



CANTILEVER REINFORCEMENT METHODS ALLOWED

Joint Depth (in.)	Roof Truss Span (ft)	ROOF LOADING (UNFACTORED)														
		LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf						
		Joint Spacing (in.)				Joint Spacing (in.)				Joint Spacing (in.)						
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24			
9-1/2	26	N	N	N	1	2	N	N	1	2	X	N	2	X	X	X
	28	N	N	N	1	X	N	N	1	2	X	N	2	X	X	X
	30	N	N	1	1	X	N	N	1	2	X	N	2	X	X	X
	32	N	N	1	2	X	N	N	2	X	X	N	2	X	X	X
	34	N	N	1	2	X	N	N	2	X	X	N	2	X	X	X
36	N	N	1	2	X	N	N	2	X	X	N	2	X	X	X	
11-7/8	26	N	1	N	N	1	1	N	1	2	2	N	1	1	2	X
	28	N	1	N	N	1	2	N	1	2	2	N	1	2	2	X
	30	1	N	N	1	1	2	N	1	2	2	N	1	2	X	X
	32	1	N	1	1	2	2	N	1	2	X	N	1	2	X	X
	34	1	N	1	2	2	X	1	2	X	X	1	2	2	X	X
36	2	N	1	2	X	X	1	2	X	X	2	X	1	2	X	X
38	2	N	1	2	X	X	1	2	X	X	2	X	1	2	X	X
14	26	N	N	N	N	N	N	N	N	1	N	N	N	N	N	1
	28	N	N	N	N	N	N	N	N	1	N	N	N	N	N	1
	30	N	N	N	N	N	N	N	N	1	N	N	N	N	N	1
	32	N	N	N	N	1	1	N	N	1	N	N	N	N	1	2
	34	N	N	N	N	1	1	N	N	1	N	N	N	N	1	2
36	N	N	N	N	1	1	N	N	1	2	N	1	1	2	X	
38	N	N	N	N	1	1	N	N	1	2	N	1	1	2	X	
40	N	N	N	N	1	1	N	N	1	2	N	1	1	2	X	
16	26	N	N	N	N	N	N	N	N	1	N	N	N	N	N	1
	28	N	N	N	N	N	N	N	N	1	N	N	N	N	N	1
	30	N	N	N	N	N	N	N	N	1	N	N	N	N	N	1
	32	N	N	N	N	N	N	N	N	1	N	N	N	N	1	2
	34	N	N	N	N	N	N	N	N	1	N	N	N	N	1	2
36	N	N	N	N	N	N	N	N	1	N	N	N	N	1	2	
38	N	N	N	N	1	N	N	N	1	N	N	N	N	1	2	
40	N	N	N	N	1	N	N	1	2	N	N	N	N	1	2	

- N = No reinforcement required.
- 1 = N1 reinforced with 3/4\"/>

FIGURE 5 (continued)



BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

Joint Depth (in.)	Roof Truss Span (ft)	ROOF LOADING (UNFACTORED)												
		LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf				
		Joint Spacing (in.)				Joint Spacing (in.)				Joint Spacing (in.)				
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24	
9-1/2	26	1	X	X	X	2	X	X	X	2	X	X	X	
	28	1	X	X	X	2	X	X	X	X	X	X	X	
	30	1	X	X	X	2	X	X	X	X	X	X	X	
	32	2	X	X	X	2	X	X	X	X	X	X	X	
	34	2	X	X	X	X	X	X	X	X	X	X	X	
	36	2	X	X	X	X	X	X	X	X	X	X	X	
	11-7/8	26	X	2	X	X	X	X	X	X	X	X	X	X
		28	X	2	X	X	X	X	X	X	X	X	X	X
		30	X	2	X	X	X	X	X	X	X	X	X	X
		32	X	2	X	X	X	X	X	X	X	X	X	X
34		X	X	X	X	X	X	X	X	X	X	X	X	
	36	X	X	X	X	X	X	X	X	X	X	X	X	
	38	X	X	X	X	X	X	X	X	X	X	X	X	
	14	26	H	2	X	X	1	X	X	X	1	X	X	X
		28	H	2	X	X	1	X	X	X	2	X	X	X
		30	1	2	X	X	1	X	X	X	2	X	X	X
32		1	2	X	X	1	X	X	X	2	X	X	X	
34		1	X	X	X	2	X	X	X	2	X	X	X	
	36	1	X	X	X	2	X	X	X	2	X	X	X	
	38	1	X	X	X	2	X	X	X	X	X	X	X	
	40	1	X	X	X	2	X	X	X	X	X	X	X	
	16	26	1	2	X	X	1	X	X	X	2	X	X	X
		28	1	2	X	X	1	X	X	X	2	X	X	X
30		1	X	X	X	1	X	X	X	2	X	X	X	
32		1	X	X	X	2	X	X	X	2	X	X	X	
34		1	X	X	X	2	X	X	X	2	X	X	X	
	36	1	X	X	X	2	X	X	X	X	X	X	X	
	38	1	X	X	X	2	X	X	X	X	X	X	X	
	40	2	X	X	X	2	X	X	X	X	X	X	X	

- N = No reinforcement required.
- 1 = N1 reinforced with 3/4\"/>

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WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- I-Joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-Joist web shall equal the clear distance between the flanges of the I-Joist minus 1/4 inch. A minimum of 1/8 inch shall always be maintained between the top or bottom of the hole or opening and the adjacent I-Joist flange.
- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the largest side of the largest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a confined section of a joist. Holes of greater size may be permitted subject to verification.
- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
- All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- Limit three maximum size holes per span, of which one may be a duct chase opening.
- A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

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

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (8 in.)												Span adjustment factor
		2	3	4	5	6	7	8	9	10	11	12	13	
9-1/2"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
11-7/8"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
14"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
16"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0

1. Above table may be used for I-Joist spacing of 24 inches on centre or less.
2. Hole location distance is measured from inside face of support to centre of hole.
3. Distances in this chart are based on uniformly loaded joists.

OPTIONAL:

The above table is based on the I-Joist used at their maximum span. If the I-Joists are placed at less than their full maximum span (see Maximum Floor Span), the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

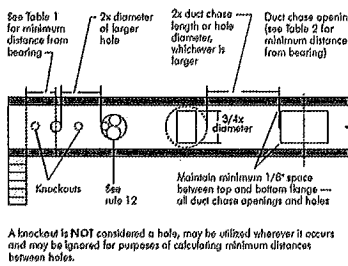
$$\text{Reduced } D = \frac{\text{Actual Span}}{\text{Maximum Span}} \times D$$

Where:

- Reduced = Distance from the inside face of any support to centre of hole, reduced for less than maximum span applications (D).
- Actual = The actual measured span distance between the inside faces of supports (S).
- Maximum = The maximum span distance from the inside face of any support to centre of hole from this table.
- Span Adjustment Factor given in this table.

If Actual is greater than 1, use 1 in the above calculation for Actual.

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

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

Holes in webs should be cut with a sharp saw.

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

TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of opening (8 in.)												Span adjustment factor
		2	3	4	5	6	7	8	9	10	11	12	13	
9-1/2"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
11-7/8"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
14"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
16"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0

1. Above table may be used for I-Joist spacing of 24 inches on centre or less.
2. Duct chase opening location distance is measured from inside face of support to centre of opening.
3. The above table is based on simple span joists only. For other applications, contact your local distributor.
4. Distances are based on uniform loaded joist joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/400. For other applications, contact your local distributor.

INSTALLING THE GLUED FLOOR SYSTEM

- Wipe any mud, dirt, water, or ice from I-Joist flanges before gluing.
- Snap a chalk line across the I-Joists four feet from the wall for panel edge alignment and as a boundary for spreading glue.
- Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
- Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when tapped into place with a block and sledgehammer.
- Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-Joist. Apply glue in a wavy pattern on wide areas, such as with double I-Joists.
- Apply two lines of glue on I-Joists where panel ends butt to assure proper gluing of each end.
- After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on I-Joist flanges.
- Tap the second row of panels into place, using a block to protect groove edges.
- Stagger and joints in each succeeding row of panels. A 1/8-inch space between all end joints and 1/8 inch at all edges, including T&G edges, is recommended. (Use a spacer block or an 1/2" common nail to assure accurate and consistent spacing.)
- Complete all nailing of each panel before glue sets. Check the manufacturer's recommendations for cure time. (Warm weather accelerates glue setting.) Use 2" ring- or screw-shank nails for panels 3/4-inch thick or less, and 2-1/2" ring- or screw-shank nails for thicker panels. Space nails per the table below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

FASTENERS FOR SHEATHING AND SUBFLOORING⁽¹⁾

Maximum Joist Spacing (in.)	Minimum Panel Thickness (in.)	Nail Size and Type				Maximum Spacing of Fasteners	
		Common Wire or Spiral Nails	Ring Threaded Nails or Screws	Staples		Edges	Interior Supports
16	5/8	2"	1-3/4"	2"		6"	12"
20	5/8	2"	1-3/4"	2"		6"	12"
24	3/4	2"	1-3/4"	2"		6"	12"

- Fasteners of sheathing and subflooring shall conform to the above table.
- Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to framing.
- Flooring screws shall not be less than 1/8-inch in diameter.
- Special conditions may impose heavy traffic and concentrated loads that require construction in excess of the minimums shown.
- Use only adhesives conforming to CAN/CSB-71.26 Standard, Adhesives for Field-Gluing Plywood to Lumber Framing for Floor System, applied in accordance with the manufacturer's recommendations. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glues check with panel manufacturer.

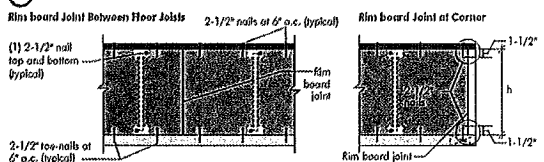
Ref.: NBC-CNBC, National Building Code of Canada 2010, Table 9.23.3.5.

IMPORTANT NOTE:

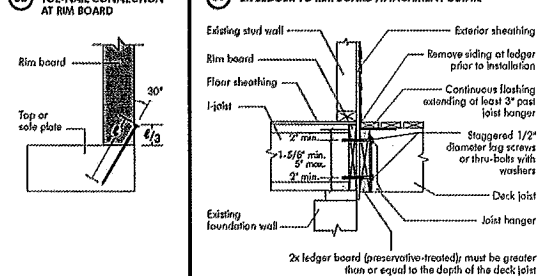
Floor sheathing must be field glued to the I-Joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-Joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

(a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



(b) TOE-NAIL CONNECTION AT RIM BOARD

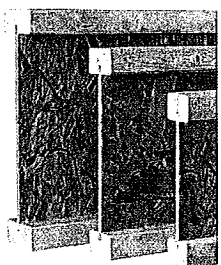


DIAMANTIER

PRODUCT WARRANTY

Chantier Diamantier warrants that, in accordance with our specifications, Nordic products are free from manufacturing defect in material and workmanship.

Furthermore, Chantier Diamantier warrants that our products, when installed in accordance with our building and installation instructions, will meet or exceed our specifications for the lifetime of the structure.





CONSTRUCTION DETAILS FOR RESIDENTIAL FLOORS

N-C303 / September 2013



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

WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

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

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

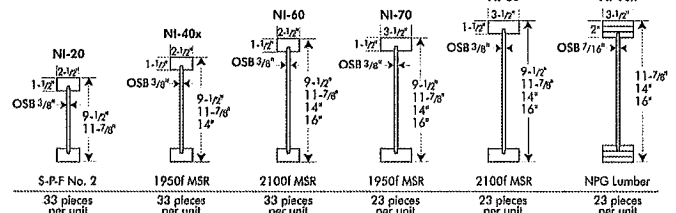
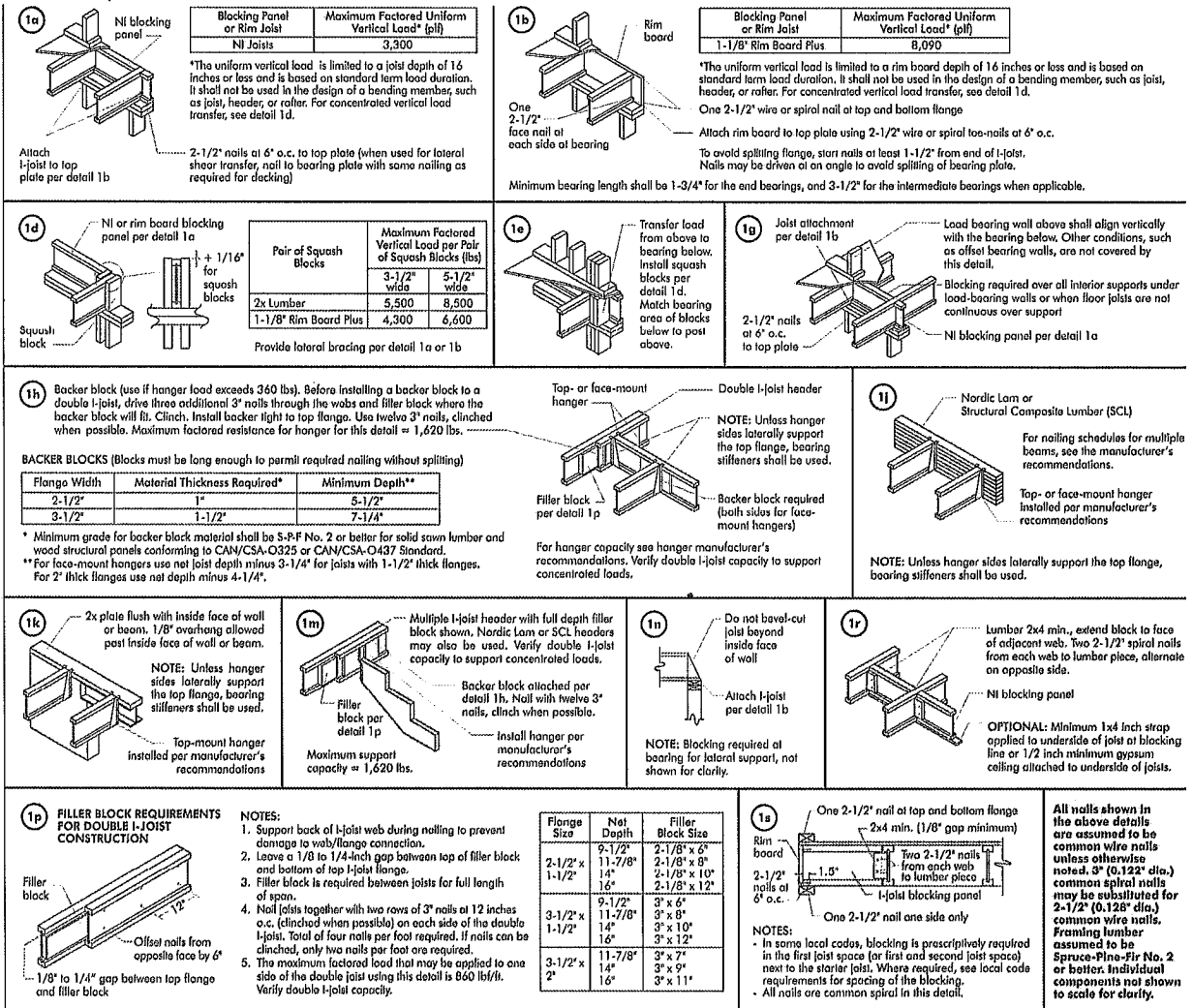


TABLE 1

LOCATION OF CIRCULAR HOLES IN JOIST WEBS

Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

Joist Depth	Joist Series	Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.)														
		Round Hole Diameter (in.)														
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4
9-1/2"	NI-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---	---	---	---
	NI-40	0-7"	1-6"	3-0"	4-4"	6-0"	6-4"	---	---	---	---	---	---	---	---	---
	NI-60	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	---	---	---	---	---	---	---	---	---
	NI-70	2-0"	3-4"	4-9"	6-3"	8-0"	8-4"	---	---	---	---	---	---	---	---	---
	NI-80	2-3"	3-6"	5-0"	6-6"	8-2"	8-8"	---	---	---	---	---	---	---	---	---
11-7/8"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---	---	---	---
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	---	---	---	---	---	---
	NI-60	0-7"	1-8"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-0"	11-2"	---	---	---	---	---
	NI-70	1-3"	2-6"	4-0"	5-4"	6-9"	7-2"	8-4"	10-0"	11-2"	---	---	---	---	---	---
	NI-80	1-6"	2-10"	4-2"	5-6"	7-0"	7-5"	8-6"	10-3"	11-4"	---	---	---	---	---	---
14"	NI-90x	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	---	---	---	---	---	---	---	---
	NI-40x	0-7"	0-8"	0-8"	1-0"	2-4"	2-9"	3-9"	5-2"	6-0"	6-6"	8-3"	10-2"	---	---	---
	NI-60	0-7"	0-8"	1-8"	3-0"	4-3"	4-8"	5-8"	7-2"	8-0"	8-8"	10-4"	11-9"	---	---	---
	NI-70	0-8"	1-10"	3-0"	4-5"	5-10"	6-2"	7-3"	8-9"	9-9"	10-4"	12-0"	13-5"	---	---	---
	NI-80	0-10"	2-0"	3-4"	4-9"	6-2"	6-5"	7-6"	9-0"	10-0"	10-8"	12-4"	13-9"	---	---	---
16"	NI-90x	0-7"	0-8"	0-8"	2-0"	3-9"	4-2"	5-5"	7-3"	8-5"	9-2"	---	---	---	---	---
	NI-60	0-7"	0-8"	0-8"	1-6"	2-10"	3-2"	4-2"	5-6"	6-4"	7-0"	8-5"	9-8"	10-2"	12-2"	13-9"
	NI-70	0-7"	1-0"	2-3"	3-6"	4-10"	5-3"	6-3"	7-8"	8-6"	9-2"	10-8"	12-0"	12-4"	14-0"	15-6"
	NI-80	1-3"	2-6"	4-0"	5-4"	6-9"	7-2"	8-4"	10-0"	11-2"	12-0"	13-5"	14-8"	16-0"	---	---
	NI-90x	0-7"	0-8"	0-9"	2-0"	3-9"	4-2"	5-0"	6-9"	7-2"	8-4"	10-2"	11-6"	12-0"	---	---



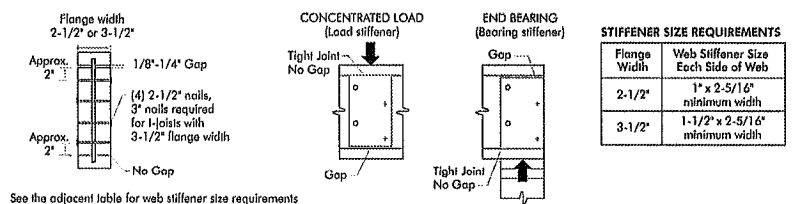
WEB STIFFENERS

RECOMMENDATIONS:

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A load stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

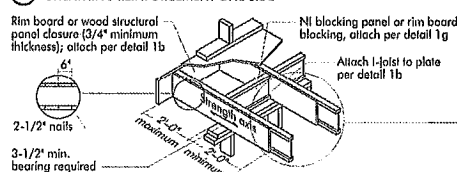
FIGURE 2

WEB STIFFENER INSTALLATION DETAILS



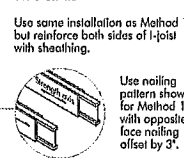
CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

Method 1 — SHEATHING REINFORCEMENT ONE SIDE



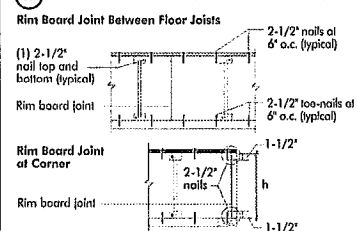
NOTE: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail 1b. Verify reinforced I-joist capacity.

Method 2 — SHEATHING REINFORCEMENT TWO SIDES

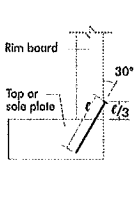


RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



8b TOE-NAIL CONNECTION AT RIM BOARD



The construction details for residential designs are prone to changes.

Details released after September 2013 supersedes N-303

Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

This document 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 its component based on the design criteria and loadings shown on the calculation sheets.

