

Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	11
J1DJ	16-00-00	9 1/2" NI-40x	2	4
J2	14-00-00	9 1/2" NI-40x	1	19
J2DJ	14-00-00	9 1/2" NI-40x	2	12
J3	12-00-00	9 1/2" NI-40x	1	10
J4	10-00-00	9 1/2" NI-40x	1	12
J5	8-00-00	9 1/2" NI-40x	1	2
J6	6-00-00	9 1/2" NI-40x	1	3
J7	4-00-00	9 1/2" NI-40x	1	7
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

C	Connector Summary				
Qty	Manuf	Product			
8	H1	IUS2.56/9.5			
8	H1	IUS2.56/9.5			
6	H1	IUS2.56/9.5			
2	H3	HUS1.81/10			
2	H3	HUS1.81/10			

1st FLOOR

CITY OF RICHMOND HILL BUILDING DIVISION

11/16/2021

RECEIVED

Per:___danielle.devitt



FROM PLAN DATED: AUG 2020 BUILDER: ROYALPINE HOMES

SITE: CENTREFIELD MODEL: 38-10 ELEVATION: A

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV **REVISION:** AJ

NOTES:

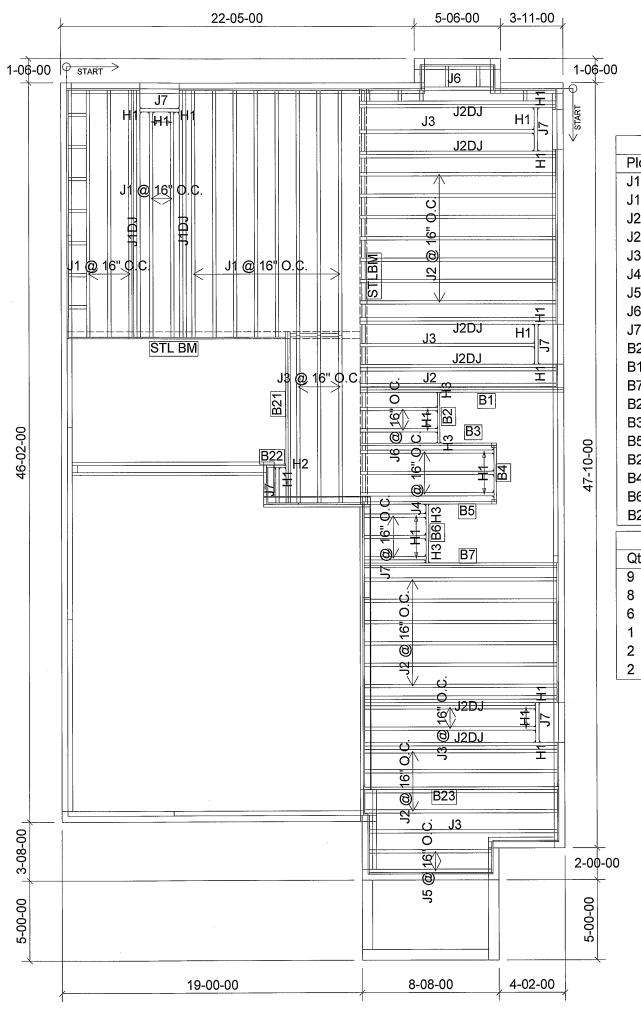
REFER TO THE **NORDIC INSTALLATION**GUIDE FOR PROPER STORAGE AND

INSTALLATION.

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

LOADING:

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



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	13
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J5	8-00-00	9 1/2" NI-40x	1	2
J6	6-00-00	9 1/2" NI-40x	1	3
J7	4-00-00	9 1/2" NI-40x	1	8
B23	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B21	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
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B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B22	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary				
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8	H1	IUS2.56/9.5		
6	H1	IUS2.56/9.5		
1	H2	HUS1.81/10		
2	H3	HUS1.81/10		
2	H3	HUS1.81/10		

1st FLOOR SUNKEN MUDROOM





FROM PLAN DATED: AUG 2020

BUILDER: ROYALPINE HOMES

SITE: CENTREFIELD

MODEL: 38-10

ELEVATION: A

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV REVISION: AJ

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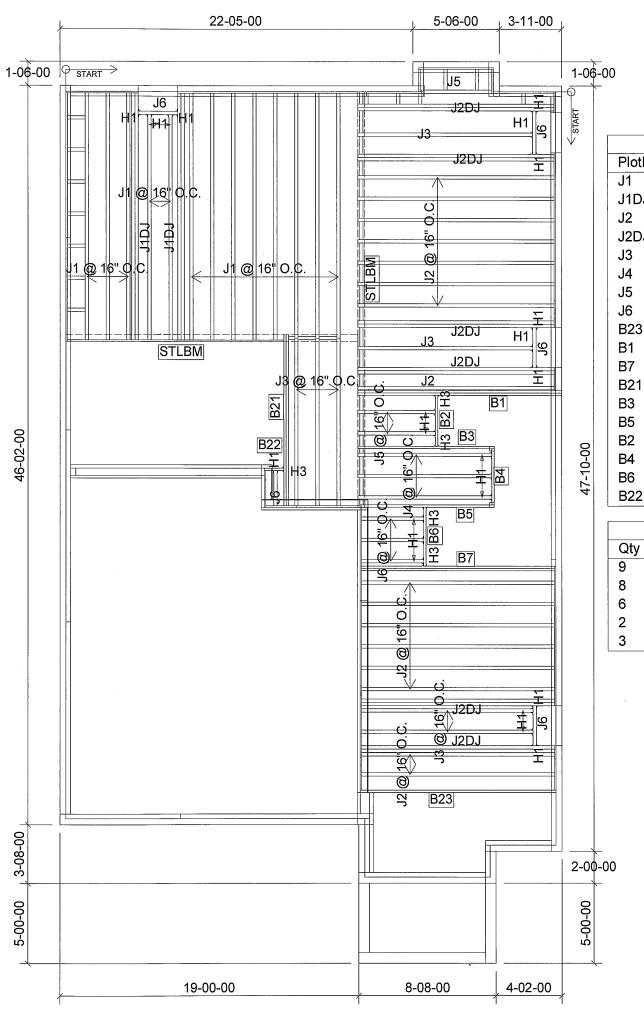
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B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
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B22	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary				
Qty	Manuf	Product		
9	H1	IUS2.56/9.5		
8	H1	IUS2.56/9.5		
6	H1	IUS2.56/9.5		
2	H3	HUS1.81/10		
3	H3	HUS1.81/10		

1st FLOOR SUNKEN





FROM PLAN DATED: AUG 2020
BUILDER: ROYALPINE HOMES

SITE: CENTREFIELD

MODEL: 38-10 ELEVATION: A

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV REVISION: AJ

NOTES:

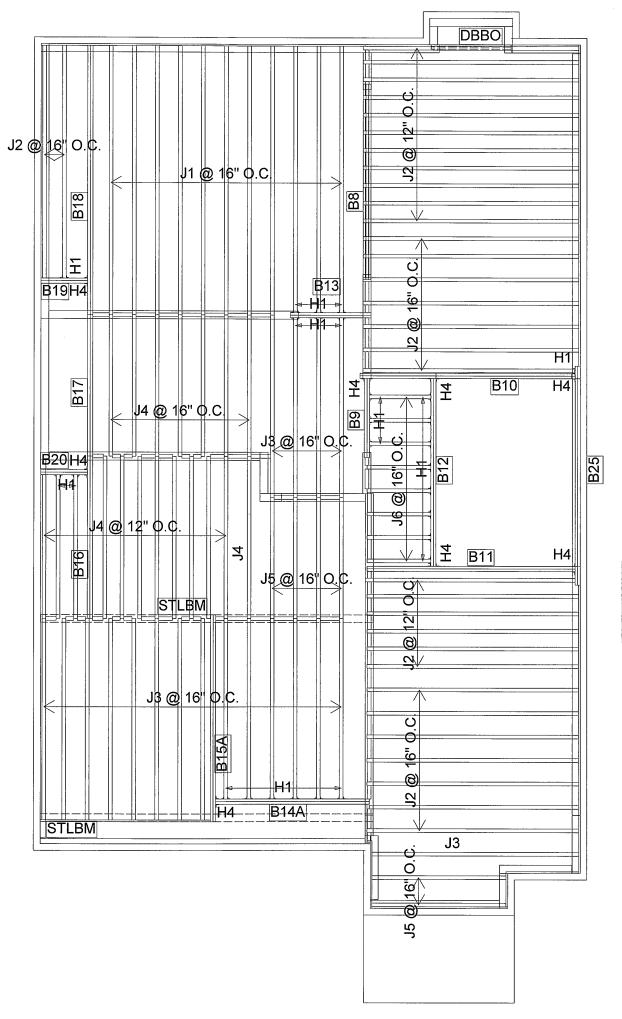
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LOADING:

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



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	11
J2	14-00-00	9 1/2" NI-40x	1	33
J3	12-00-00	9 1/2" NI-40x	1	19
J4	10-00-00	9 1/2" NI-40x	1	19
J5	8-00-00	9 1/2" NI-40x	1	6
J6	4-00-00	9 1/2" NI-40x	1	8
B18	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B25	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	. 2	2
B15A	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B14A	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B17	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B19	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B20	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary					
Qty	Manuf	Product			
27	H1	IUS2.56/9.5			
8	H4	HGUS410			

CITY OF RICHMOND HILL
BUILDING DIVISION

11/16/2021

RECEIVED
Per:___danielle.devitt____



FROM PLAN DATED: AUG 2020
BUILDER: ROYALPINE HOMES

SITE: CENTREFIELD

MODEL: 38-10 ELEVATION: A

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV REVISION:

NOTES:

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

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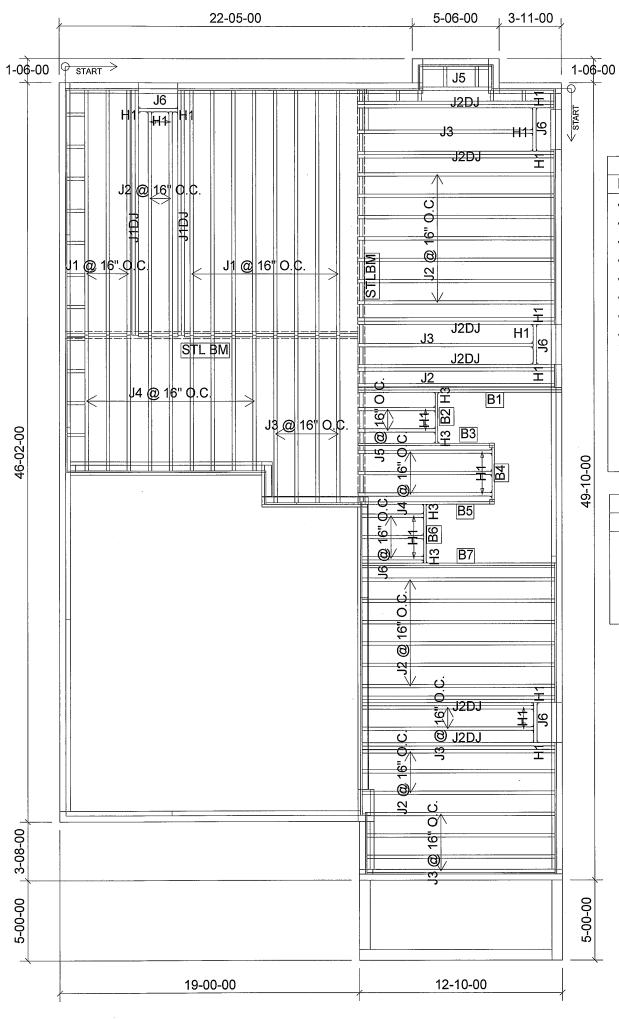
LOADING:

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

SUBFLOOR: 5/8" GLUED AND NAILED

2ND FLOOR

DATE: 2021-06-04



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	11
J1DJ	16-00-00	9 1/2" NI-40x	2	4
J2	14-00-00	9 1/2" NI-40x	1	19
J2DJ	14-00-00	9 1/2" NI-40x	2	12
J3	12-00-00	9 1/2" NI-40x	1	12
J4	10-00-00	9 1/2" NI-40x	1	12
J5	6-00-00	9 1/2" NI-40x	1	3
J6	4-00-00	9 1/2" NI-40x	1	7
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
В3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary				
Qty	Qty Manuf Product			
8	H1	IUS2.56/9.5		
8	H1	IUS2.56/9.5		
6	H1	IUS2.56/9.5		
2	H3	HUS1.81/10		
2	H3	HUS1.81/10		

1st FLOOR

CITY OF RICHMOND HILL BUILDING DIVISION 11/16/2021

RECEIVED

Per: danielle.devitt



FROM PLAN DATED: AUG 2020
BUILDER: ROYALPINE HOMES

SITE: CENTREFIELD

MODEL: 38-10 ELEVATION: B

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV REVISION: AJ

NOTES:

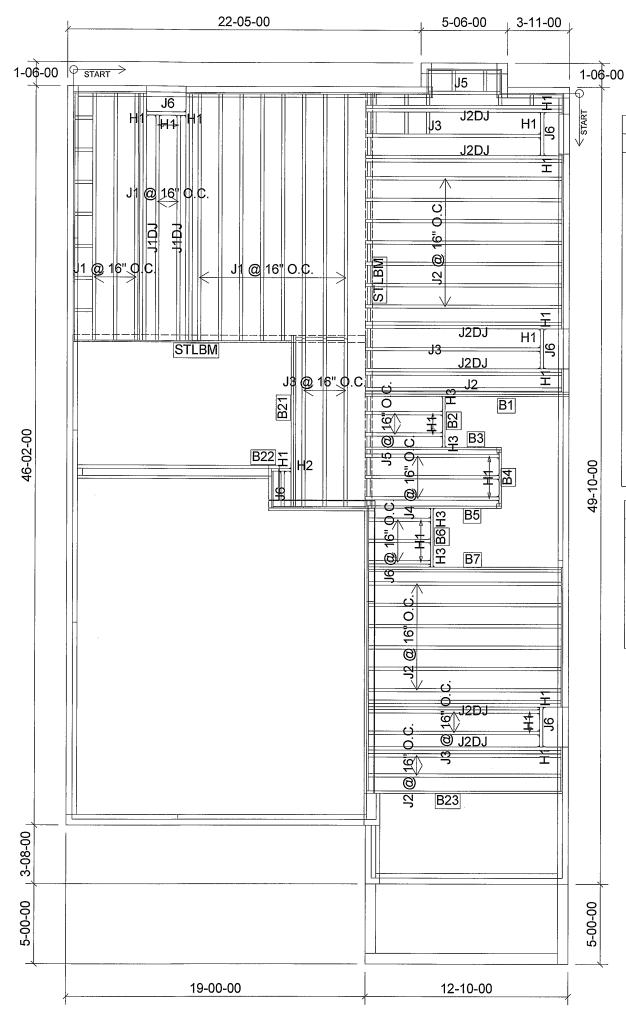
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LOADING:

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6	H1	IUS2.56/9.5			
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CITY OF RICHMOND HILL BUILDING DIVISION

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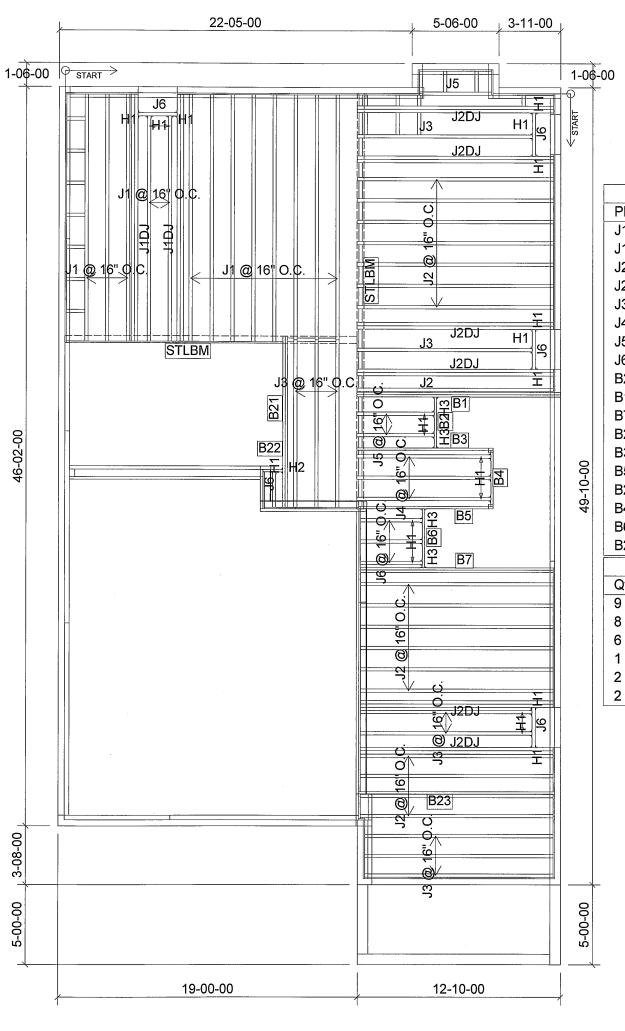
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DATE: 2021-06-04

1st FLOOR

SUNKEN OPTIONS LOADING:

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8	H1	IUS2.56/9.5	Ì
6	H1	IUS2.56/9.5	1
1	H2	HUS1.81/10	
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SEE FIGURE 7, TABLES 1 & 2. CERAMIC TILE
APPLICATION AS PER O.B.C 9.30.6.

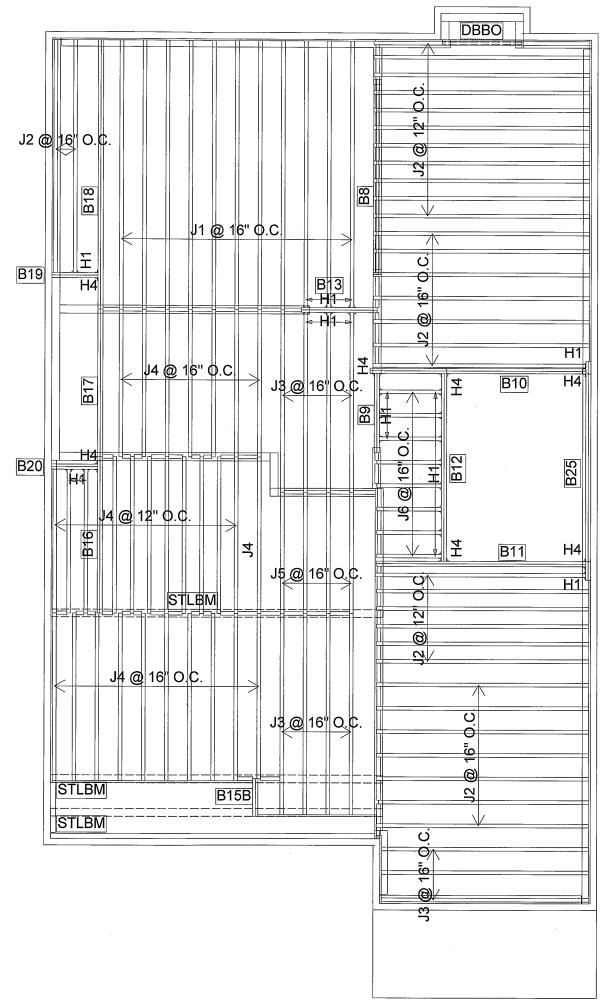
. | [

DATE: 2021-06-04

1st FLOOR

SUNKEN MUDROOM LOADING:

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



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	11
J2	14-00-00	9 1/2" NI-40x	1	33
J3	12-00-00	9 1/2" NI-40x	1	11
J4	10-00-00	9 1/2" NI-40x	1	29
J5	8-00-00	9 1/2" NI-40x	1	4
J6	4-00-00	9 1/2" NI-40x	1	8
B18	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B25	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B16	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B17	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
В9	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15B	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B19	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B20	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary				
Qty Manuf Product				
22	H1	IUS2.56/9.5		
7	H4	HGUS410		

CITY OF RICHMOND HILL BUILDING DIVISION

11/16/2021

RECEIVED

Per:____danielle.devitt



FROM PLAN DATED: AUG 2020

BUILDER: ROYALPINE HOMES

SITE: CENTREFIELD

MODEL: 38-10

ELEVATION: B

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV **REVISION:**

NOTES:

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

INSTALLATION.

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

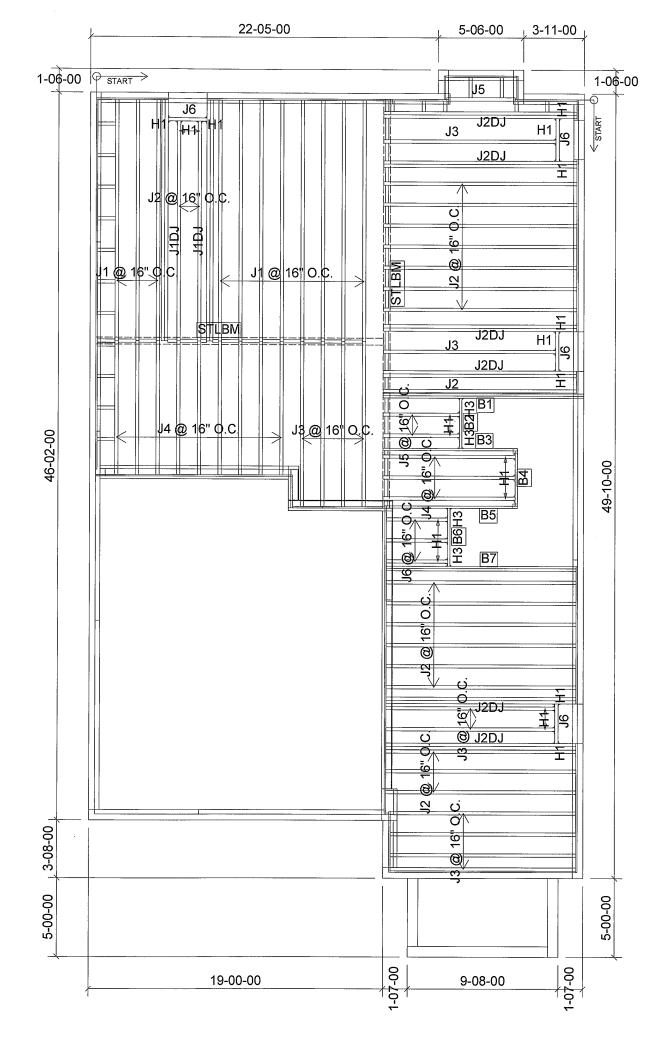
LOADING:

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

SUBFLOOR: 5/8" GLUED AND NAILED

2ND FLOOR

DATE: 2021-06-04



	Products				
PlotID	Length	Product	Plies	Net Qty	
J1	16-00-00	9 1/2" NI-40x	1	11	
J1DJ	16-00-00	9 1/2" NI-40x	2	4	
J2	14-00-00	9 1/2" NI-40x	1	19	
J2DJ	14-00-00	9 1/2" NI-40x	2	12	
J3	12-00-00	9 1/2" NI-40x	1	12	
J4	10-00-00	9 1/2" NI-40x	1	12	
J5	6-00-00	9 1/2" NI-40x	1	3	
J6	4-00-00	9 1/2" NI-40x	1	7	
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B7	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1 .	

	Connector Summary				
Qty	Manuf	Product			
8	H1	IUS2.56/9.5			
8	H1	IUS2.56/9.5			
6	H1	IUS2.56/9.5			
2	H3	HUS1.81/10			
2	H3	HUS1.81/10			

CITY OF RICHMOND HILL BUILDING DIVISION 11/16/2021

RECEIVED

Per:____danielle.devitt_



FROM PLAN DATED: AUG 2020

BUILDER: ROYALPINE HOMES

SITE: CENTREFIELD

MODEL: 38-10 ELEVATION: C

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV REVISION: AJ

NOTES:

REFER TO THE NORDIC INSTALLATION
GUIDE FOR PROPER STORAGE AND

INSTALLATION.

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

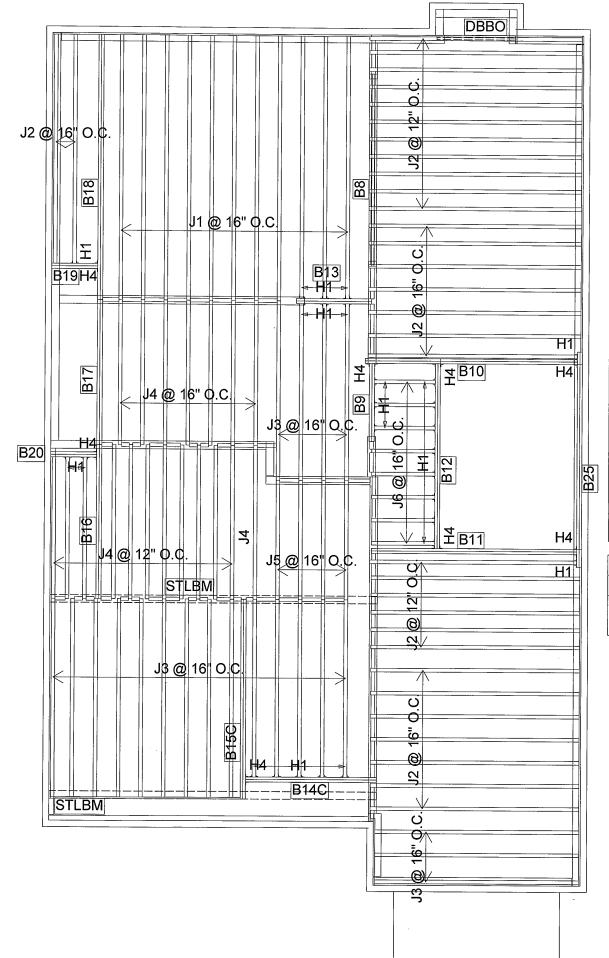
LOADING:

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

SUBFLOOR: 3/4" GLUED AND NAILED

1st FLOOR

DATE: 2021-06-04



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	11
J2	14-00-00	9 1/2" NI-40x	1	33
J3	12-00-00	9 1/2" NI-40x	1	21
J4	10-00-00	9 1/2" NI-40x	1	19
J5	8-00-00	9 1/2" NI-40x	1	4
J6	4-00-00	9 1/2" NI-40x	1	8
B18	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B25	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15C	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B16	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B17	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14C	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B19	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B20	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary				
Qty	Manuf	Product		
27	H1	IUS2.56/9.5		
8	H4	HGUS410		

2ND FLOOR

CITY OF RICHMOND HILL BUILDING DIVISION

11/16/2021

RECEIVED
Per:___danielle.devitt_



FROM PLAN DATED: AUG 2020

BUILDER: ROYALPINE HOMES

SITE: CENTREFIELD

MODEL: 38-10 ELEVATION: C

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV

REVISION:

NOTES:

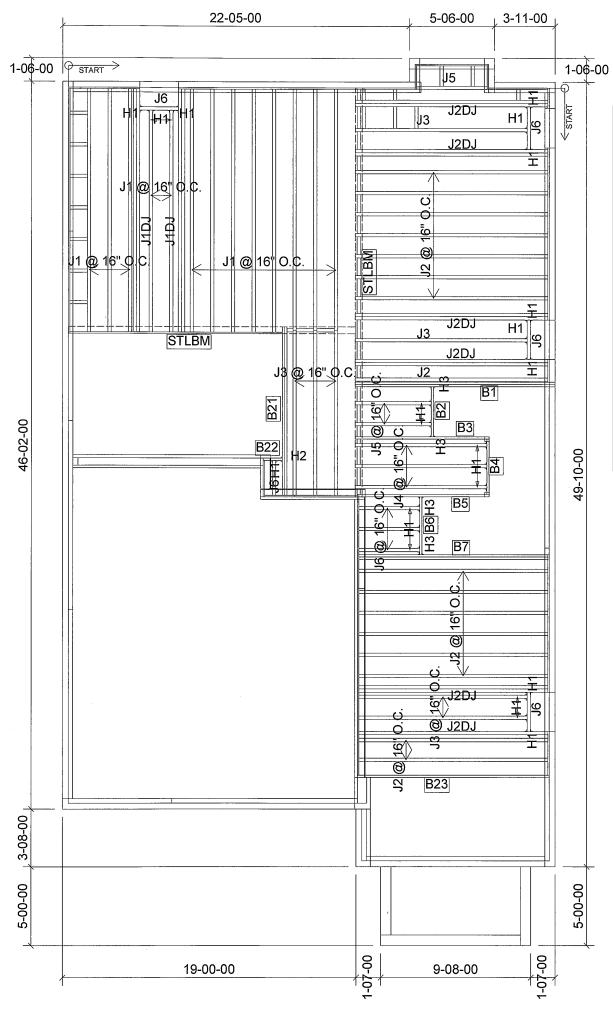
REFER TO THE **NORDIC INSTALLATION**GUIDE FOR PROPER STORAGE AND

INSTALLATION.

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

LOADING:

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



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	13
J1DJ	16-00-00	9 1/2" NI-40x	2	4
J2	14-00-00	9 1/2" NI-40x	1	16
J2DJ	14-00-00	9 1/2" NI-40x	2	12
J3	12-00-00	9 1/2" NI-40x	1	7
J4	10-00-00	9 1/2" NI-40x	1	3
J5	6-00-00	9 1/2" NI-40x	1	3
J6	4-00-00	9 1/2" NI-40x	1	8
B23	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B21	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B22	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary				
Qty	Manuf	Product		
9	H1	IUS2.56/9.5		
8	H1	IUS2.56/9.5		
6	H1	IUS2.56/9.5		
1	H2	HUS1.81/10		
2	H3	HUS1.81/10		
2	H3	HUS1.81/10		

1st FLOOR

SUNKEN OPTIONS CITY OF RICHMOND HILL
BUILDING DIVISION

11/16/2021

RECEIVED
Per:____danielle.devitt____



FROM PLAN DATED: AUG 2020

BUILDER: ROYALPINE HOMES

SITE: CENTREFIELD

MODEL: 38-10 ELEVATION: C

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV **REVISION:** AJ

NOTES:

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

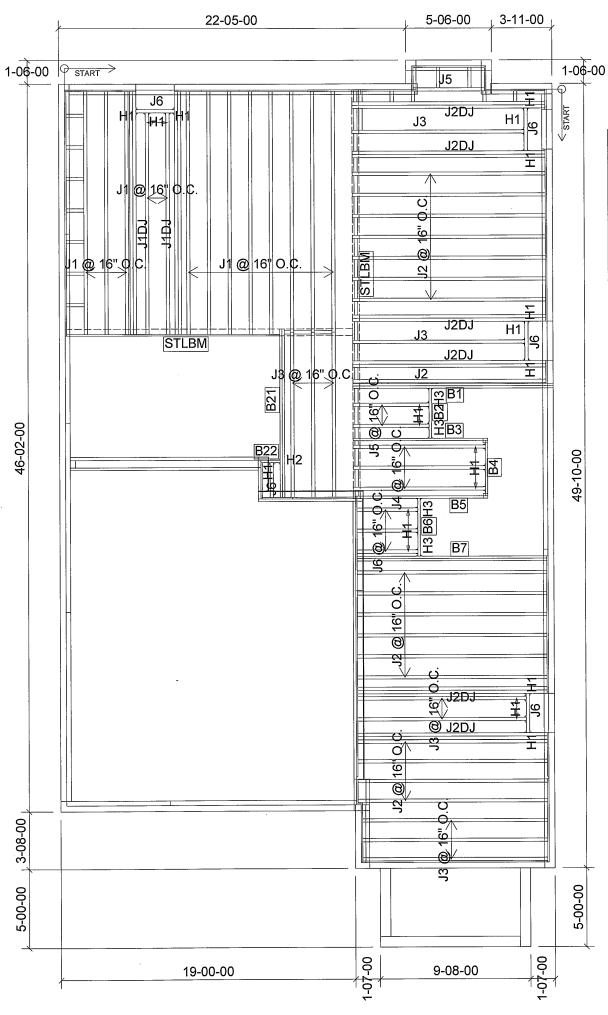
INSTALLATION.

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

LOADING:

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

TILE LOAD: 20.0 lb/ft²



	***************************************	Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	13
J1DJ	16-00-00	9 1/2" NI-40x	2	4
J2	14-00-00	9 1/2" NI-40x	1	18
J2DJ	14-00-00	9 1/2" NI-40x	2	12
J3	12-00-00	9 1/2" NI-40x	1	10
J4	10-00-00	9 1/2" NI-40x	1	3
J5	6-00-00	9 1/2" NI-40x	1	3
J6	4-00-00	9 1/2" NI-40x	1	8
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B21	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B22	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

C	Connector Summary				
Qty	Manuf	Product			
9	H1	IUS2.56/9.5			
8	H1	IUS2.56/9.5			
6	H1	IUS2.56/9.5			
1	H2	HUS1.81/10			
2	H3	HUS1.81/10			
2	H3	HUS1.81/10			

1st FLOOR

SUNKEN MUDROOM CITY OF RICHMOND HILL
BUILDING DIVISION

11/16/2021

RECEIVED
Per:____danielle.devitt_____



FROM PLAN DATED: AUG 2020

BUILDER: ROYALPINE HOMES

SITE: ÇENTREFIELD

MODEL: 38-10 ELEVATION: C

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV REVISION: AJ

NOTES:

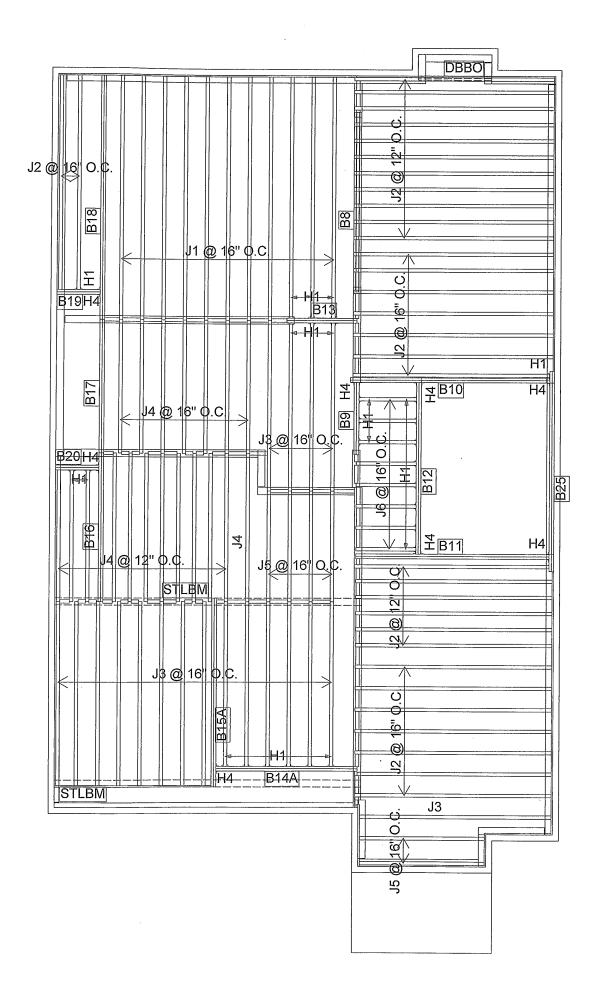
REFER TO THE **NORDIC INSTALLATION**GUIDE FOR PROPER STORAGE AND

INSTALLATION.

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

LOADING:

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



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	11
J2	14-00-00	9 1/2" NI-40x	1	33
J3	12-00-00	9 1/2" NI-40x	1	19
J4	10-00-00	9 1/2" NI-40x	1	19
J5	8-00-00	9 1/2" NI-40x	1	6
J6	4-00-00	9 1/2" NI-40x	1	8
B18	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B25	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15A	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B14A	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B17	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B19	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B20	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
Con	nector Sumn	nary		

Qty

27

8

Manuf

H1

H4

Product

IUS2.56/9.5

HGUS410

DATE: 2020-10-20

2ND FLOOR



FROM PLAN DATED: AUG 2020

BUILDER: ROYALPINE HOMES

SITE: CENTREFIELD MODEL: 38-10 ELEVATION: A

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV REVISION:

NOTES:

REFER TO THE NORDIC INSTALLATION
GUIDE FOR PROPER STORAGE AND

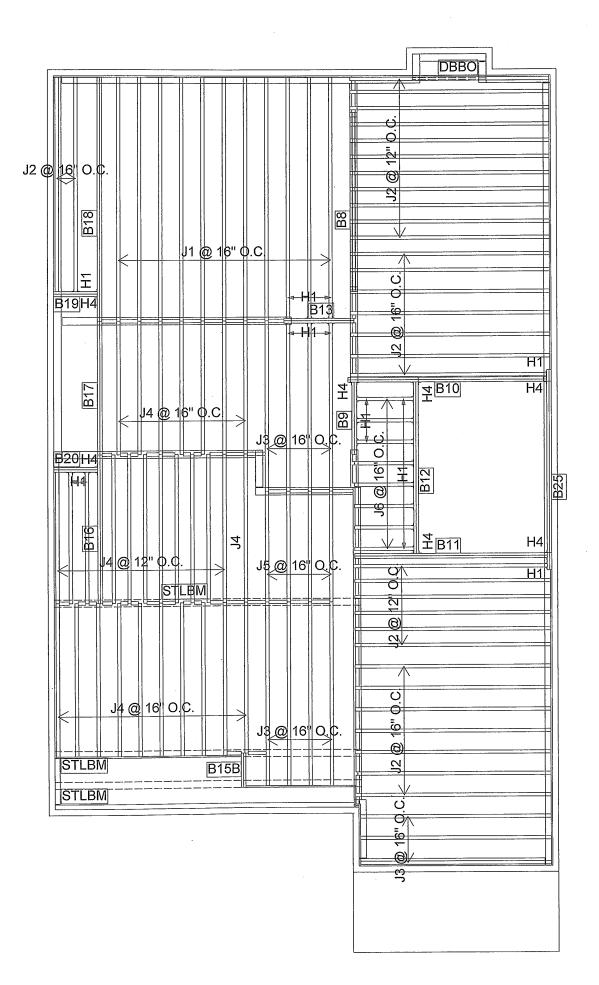
INSTALLATION.

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.I REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK RE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIELD CUT OPENINGS SEE FIGURE 7, TABLES 1 & 2. CERAMIC TI APPLICATION AS PER 9 B.C 9 30.6.

LOADING:

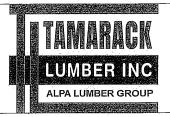
DESIGN LOADS: L/480.000D LIVE LOAD: 40.0db/ft²le.devitt DEAD LOAD: 15.0 lb/ft²

TILE LOAD: 20.0 lb/ft²



Products										
PlotID	Length	Product	Plies	Net Qty						
J1	16-00-00	9 1/2" NI-40x	1	11						
J2	14-00-00	9 1/2" NI-40x	1	33						
J3	12-00-00	9 1/2" NI-40x	1	11						
J4	10-00-00	9 1/2" NI-40x	. 1	29						
J5	8-00-00	9 1/2" NI-40x	1	4						
J6	4-00-00	9 1/2" NI-40x	1	8						
B18	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2						
B10	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2						
B25	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2						
B11	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2						
B12	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2						
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3						
B16	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2						
B17	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2						
B13	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2						
B9	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2						
B15B	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2						
B19	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2						
B20	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2						

C	connector	Summary
Qty	Manuf	Product
22	H1	IUS2.56/9.5
7	H4	HGUS410



FROM PLAN DATED: AUG 2020 **BUILDER: ROYALPINE HOMES**

SITE: CENTREFIELD

MODEL: 38-10

ELEVATION: B

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV

REVISION:

NOTES:

REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND

INSTALLATION.

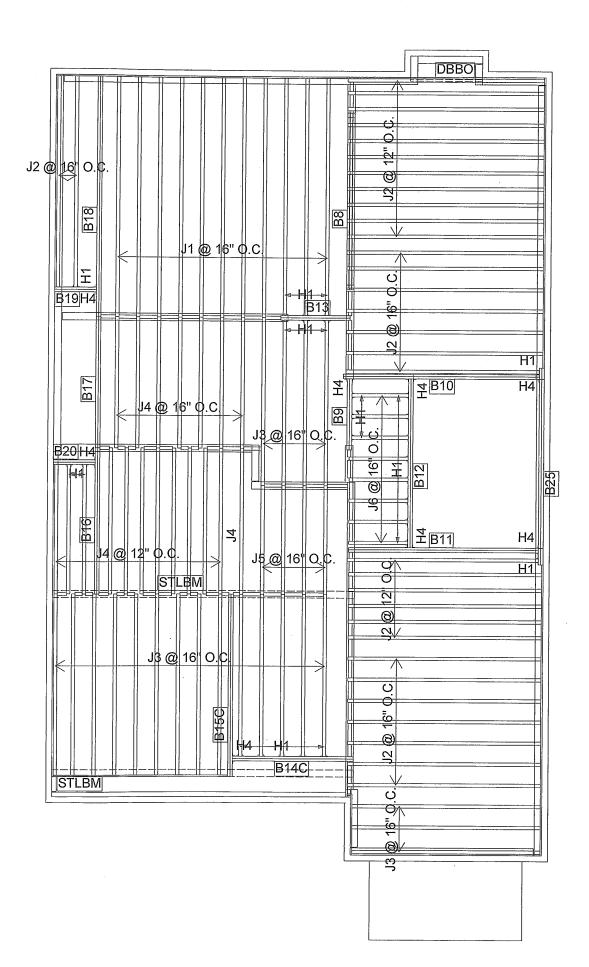
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.I REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH **BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK RE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT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

LOADING: 11/16/2021

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 16/ft2 VED DEAD COAD: 15.0 16/ft devitt TILE LOAD: 20.0 lb/ft²

2ND FLOOR

DATE: 2020-10-20



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	11
J2	14-00-00	9 1/2" NI-40x	1	33
J3	12-00-00	9 1/2" NI-40x	1	21
J4	10-00-00	9 1/2" NI-40x	1	19
J5	8-00-00	9 1/2" NI-40x	1	4
J6	4-00-00	9 1/2" NI-40x	1	8
B18	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B25	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15C	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B16	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B17	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14C	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B19	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B20	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

	Connector	Summary
Qty	Manuf	Product
27	H1	IUS2.56/9.5
8	H4	HGUS410



FROM PLAN DATED: AUG 2020

BUILDER: ROYALPINE HOMES

SITE: CENTREFIELD

MODEL: 38-10 ELEVATION: C

LOT:

CITY: RICHMOND HILL

SALESMAN: WILL GARCIA

DESIGNER: LBV REVISION:

NOTES:

REFER TO THE NORDIC INSTALLATION
GUIDE FOR PROPER STORAGE AND

INSTALLATION.

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.I REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK RE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIELD CUT OPENINGS SEE FIGURE 7, TIABLES/15&021 CERAMIC TIL APPLICATION AS PER O.B.C 9.30.6.

LOADING:

JD TII

DESIGN LOADS: L/480,000 LIVE LOAD: 40,0 lb/ftfie.devitt DEAD LOAD: 15.0 lb/ft²

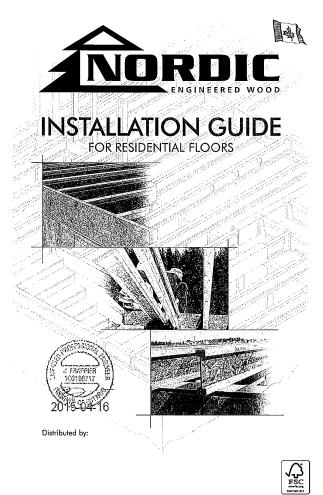
TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

11/16/2021

DATE: 2020-10-20

2ND FLOOR



SAFETY AND CONSTRUCTION PRECAUTIONS

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



Never stack building materials over unsheathed I-joists.

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

Avoid Accidents by Following these Important Guidelines:

- Brace and noil each I-joist as it is installed, using hangers, blocking ponels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joids. 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 how 2-1/2" noils fostened to the top surface of each I-joist. Noil the bracing to a lateral restraint at the end of each boy. Lop ends of adjoining bracing over at least two I-joists.
- Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of 1-joists at the end of the bay.
- 3. For cantilevered !-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. 5. Never install a damaged I-joist.

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

MAXIMUM FLOOR SPANS

- num **clear** spans applicable to simple-span o Maximum dear spons applicable to simple-spon or multiple-spon residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceobility limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spons shall be 40% or more of the adjacent span.
- 2. Spans are based on a composite floor with glued-nailed oriented strand board (CSB) sheathing with a minimum thickness of 5/8 link for a joist spacing of 19/2 linches or less, or 3/4 linch for joist spacing of 2/4 inches. Adhesive shall meet the requirements given in CGBS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be ochieved with the used 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 Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
- 7. SI units conversion: 1 inch = 25.4 mm1 foot = 0.305 m

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

a Lepin &	Series	ALC: North Call States	District States of the last		Section in a second							
		12	16"	19.2	249	12	16"	19.2"	24 ⁿ			
1.70	NI-20	15'-1"	14'-2'	13'-9'	13'-5"	16'-3"	15'-4"	14'-10"	14'-7"			
	NI-40x	16'-1"	15'-2'	14'-8'	14'-9"	17-5"	16'-5"	15'-10"	15'-5"			
9-1/2	NI-60	16'-3"	15'-4"	14'-10'	14'-11"	17-7*	16'-7"	16'-0'	16'-1"			
	NI-70	17'-1"	16'-1"	15'-6"	15'-7"	18'-7"	17'-4"	16'-9'	16'-10'			
174	NI-80	17'-3'	16'-3"	15'-8'	15'-9"	18'-10"	17'-6"	16'-11'	17'-0"			
	NI-20	16'-11"	16'-0"	15'-5"	15'-6'	18'-4"	17'-3"	16'-8'	16'-7"			
	NI-40x	18'-1"	17'-0"	16'-5"	16'-6"	20'-0"	18'-6"	17'-9'	17'-7"			
	NI-60	18'-4"	17'-3"	16'-7"	16'-9"	20'-3"	18'-9"	18'-0"	18'-1"			
11-7/8	NI-70	19'-6"	18'-0"	17:-4	17'-5*	21'-6'	19'-11"	19'-0"	19'-1"			
	NI-80	19'-9"	18'-3'	17'-6"	17'-7"	21'-9'	20'-2"	19'-3"	19'-4"			
	NI-90	20'-2"	18'-7"	17'-10"	17'-11"	22'-3'	20'-7"	19'-8"	19'-9'			
	NI-90x	20'-4"	18'-9'	17'-11"	18'-0"	22'-5"	20'-9"	19'-10"	19'-11'			
	NI-40x	20'-1"	18'-7"	17'-10"	17-11	22'-2"	20'-6"	19'-8'	19'-4"			
de la facilita	NI-60	20'-5"	18'-11"	18'-1"	18'-2"	22'-7"	20'-11'	20'-0"	20'-1"			
14"	NI-70	21'-7"	20'-0"	19'-1"	19'-2"	23'-10'	22'-1"	21'-1"	21'-2"			
14	NI-80	21-11	20'-3"	19'-4"	19'-5"	24'-3"	22'-5"	21'-5"	21'-6"			
	NI-90	22'-5'	20'-8"	19'-9"	19'-10'	24'-9"	22'-10"	21'-10"	21'-10"			
100 00000000000000000000000000000000000	NI-90x	22'-7'	20'-11"	19'-11"	20'-0"	25'-0"	23'-1"	22'-0"	22'-2"			
arelegive.	NI-60	22'-3'	20'-8"	19'-9"	19'-10"	24'-7'	22'-9"	21'-9'	21'-10'			
1.12	NI-70	23'-6"	21,-6,	20'-9"	20'-10"	26'-0'	24'-0"	22'-11"	23'-0"			
16"	NI-80	23'-11'	22'-1"	21'-1"	21'-2"	26'-5"	24'-5"	23'-3"	23'-4"			
18 18	NI-90	24'-5"	22'-6"	21'-5"	21'-6"	26'-11"	24'-10"	23'-9"	23'-9"			
y 7 dr. (1.1)	NI-90x	24'-8"	22'-9'	21'-9'	21'-10"	27-3	25'-2'	24'-0"	24'-1"			

CONCENTRATED LOAD

END BEARING

(1)

I-JOIST HANGERS

1. Hangers shown illustrate the three

2. All nailing must meet the hanger

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.

most commonly used metal hangers to support i-joists.

Face Mount

CCMC EVALUATION REPORT 13032-R

STORAGE AND HANDLING GUIDELINES

- . Bundle wrap can be slippery when wet. Avoid walking on wrapped
- 2. Store, stack, and handle I-joists vertically and level only. 3. Always stack and handle I-joists in the upright position only. -
- 4. Do not store I-joists in direct contact with the ground and/or flatwise
- 5. Protect I-joists from weather, and use spacers to separate bundles. -
- 6. Bundled units should be kept intact until time of installation.
- 7. When handling 1-joists with a crone on the job site, take a few -
- 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
- 8. Do not handle 1-joists in a horizontal orientation.
- 9. NEVER USE OR TRY TO REPAIR A DAMAGED 1-JOIST.

WEB STIFFENERS

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the 1-joist properties table found of the 1-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the l-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 to
- **A load stiffener is required at locations where a factored concentrated load gracter than 2,370 lbs is applied to the top flange between supports, or in the case of a cartillever, anywhere between the cantilever ip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitt by the code. The gap between the stiffener and the flange is at the bottom. SI units conversion: 1 inch = 25.4 mm

WEB STIFFENER INSTALLATION DETAILS

See table below for web stiffener size requiremen

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

(1g)

2-1/2" nails at -

Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL

3" nails required for I-joists with 3-1/2" flange width

NORDIC I-JOIST SERIES

S-P-F No.2 1950f MSR 2100f MSR 1950f MSR 2100f MSR 2400f MSR NPG Lumber 33 pieces 33 pieces 33 pieces 23 pieces 23 pieces 23 pieces 23 pieces per unit per unit per unit per unit per unit per unit per unit

Chantiers Chibougamau Ltd. harvests its own trees, which enables Nazylia products to adhere to strict quality control procedures through the manufacturing process. Every phase of the operation, from forest of the finished product, reflects our commitment to quality. Nordic Engineered Wood I-joists use only finger-jointed cick sputch FFLS lumber in their flonges, ensuring consistent quality, superior streets and sputch for the street of the street

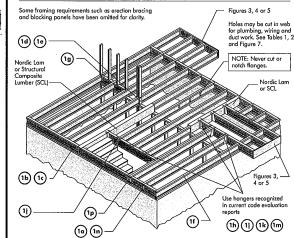
longer span carrying capacity.

\M2>/ 2015-04-1

INSTALLING NORDIC I-JOISTS

- 1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contributions
- 2. Except for cutting to length, I-joist flonges should **never** be cut, drilled, or notched.
- 3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for be level.
- 5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearing
- 6. When using hangers, seat 1-joists firmly in hanger bottoms to minimize settlement. 7. Leave a 1/16-inch gap between the I-joist end and a header.
- 8. 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, oudio equipment and security cameras. Never suspend unusual or heavy loads from the Lipist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the Lipist. Or, attach the load to blocking that has been securely fastened to the Lipist 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.
- 10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
- 11. 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.
- 12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. I-jois panels or other engineered wood produds such as rim board must be cut to fit between the I-joists, and a I-joist-compatible depth selected. 13. Provide permanent lateral support of the bottom flange of all 1-joists at interior supports of multiple-span joists. Similarly, support the bottom flange of all contilevered 1-joists at the end support next to the cartilever 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.
- 14. If square-edge panels are used, edges must be supported between 1-joists with 2x4 blacking. Glue panels to blacking to minimize squacks. Blacking is not required under structural finish flooring, such as wood strip flooring, or if a separate underlayment layer is installed.
- 15. Nail spacing: Space nails installed to the flonge's top face in accordance with the applicable building code required approved building plans.

TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS



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

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

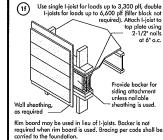
(II)

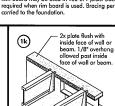
Top- or face-mount hanger – installed per manufacturer's recommendations

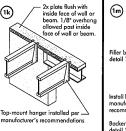
For nailing schedules for multiple

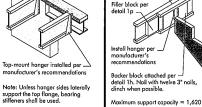
Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

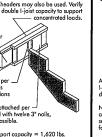
- Nordic Lam or SCI





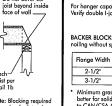






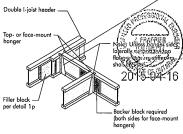


(1n)



— NI blocking panel per detail 1 a

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



BACKER BLOCKS (Blocks must be long enough to permit required

İ	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 booker block materials shall be S-R-F No. 2 or better for solid sown lumber and wood structural panels conforming to CAN/CSA-0325 or CAN/CSA-0437, Standard.

To face-mount hangers use net joist depth minus 3-1/4* for joists with 1-1/2* thick flonges. For 2* thick flonges use net depth. **MOND HILL** DIVISION



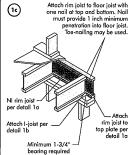
2-1/2" nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing

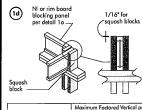
Attach rim board to top plate using 2-1/2" wire or spiral toe-nails at 6" o.c. nay be driven at an angle t I splitting of bearing plate

A PROPRIET

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

1-1/8" Rim Board Plus 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.

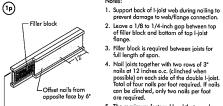




Maximum Factorea venicus pair of Squash Blocks (lbs)

3-1/2* wide 5-1/2* wide Pair of Squash Blocks
 2x Lumber
 5,500
 8,500

 1-1/8* Rim Board Plus
 4,300
 6,600
 ovide lateral bracing per detail 1a, 1b, or 1c



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

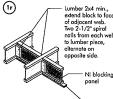
3. Filler block is required between joists for full length of span. uni tengin or spon.

A. Noil joist sogeher with two rows of 3* noils of 12 inches o. c. (clinched when possible) on each side of the double I-joist. Total of four nails per foot required. If noils can be clinched, only two noils per foot are required.

5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lbf/ft. Verify double l-joist capacity.

Support back of I-joist web during nailing to prevent damage to web/flange connection. | Conversity | C Flange Joist Filler Size Depth Block Size

9-1/2" 11-7/8" 14" 16" 2-1/8" x 12" 9-1/2" 11-7/8" 14" 16" 3-1/2" x 11-7/8" 3" x 7" 14" 3" x 9" 16" 3" x 11"



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

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

-2x4 min. (1/8" gap minimum) 15 / Two 2-1/2" nails from each web to lumber piece le.devitt I-joist blocking panel – One 2-1/2" nails one side only - 2-1/2¹

Notes:

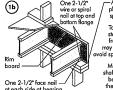
In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the stater joist. Where required, see local code requirement for spacing of the blocking.

All nails are common spiral in this detail.

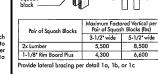


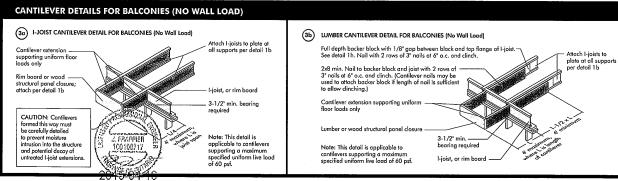
Blocking Panel or Rim Joist Maximum Factored Uniform Vertical Load* (plf)

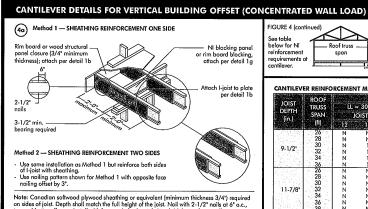
NI Joists 3,300 "The uniform vertical load is limited to a joist depth of 16 inches or less and is based on standard term load duratio It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



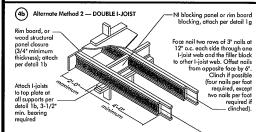
when applicable Maximum Factored Uniform Vertical Load* (plf)







Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") require on sides of joist. Depth shall match the full height of the joist. Notil with $2\cdot1/2$ " noils 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 appachy.



Block I-joists together with filler blocks for the full length of the reinforcement. For I-joist flange widths greater than 3 inches place an additional row of 3" nails along the centreline of the reinforcing panel from each side. Clinch when possible.

Note: Canadian softwood phywood sheathing or equivalent (minimum thickness 3/41) required on sides of joist. Depth shall match the full height of the joist. Notil with 2-12? rails of 6 oc., to gan ab bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail 1b. Verify reinforced I-joist capacity.

Note: Canadian softwood

5b SET-BACK DETAIL

Rim board or wood --structural panel closure (3/4" minimum thickness), attach per detail 1b.

Provide full death blocking between joists over support (not shown for clarity)

Attach I-joist to plate at all

(5c) SET-BACK CONNECTION

Vertical solid sawn blocks
(2x6 S-P-F No. 2 or better) nailed
through joist web and web of girder
using 2-1/2" nails.
Alternate for opposite side.

Notes:

- Verify girder joist capacity if the back span exceeds the joist spacing.

- Attach double 1-joist per detail 1p, if required.

supports per detail 1b. 3-1/2" minimum 1-joist bearing required.

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

3-1/2"

—Nall reinforcement to to and bottom joist flanges with 2-1/2" nails at 6" o.c. (offset opposite face nailing by 3" when using reinforcement on both sides of 1-joist)

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... Attach joists to girder joist per detail 5c.

Hanger may be used in lieu of solid sawn block

Roof trusses Girder Roof truss Span Jack trusses 13"-0" maximum Jack trusses For hip roofs with the jack trusses running parallel to the cantilevered floor joists the I-joist reinforcement FIGURE 4 (continued) requirements for a span of 26 ft. shall be permitted to CANTILEVER REINFORCEMENT METHODS ALLOWED 1 2005

JOIST DEPTH	TRUSS				psf							,DL = 15	
(in.)	SPAN				1)			ACING (in.			OIST SP	ACING (in	
	(ft)	12	16	192	24	12	16	192	22	12	16	19.2	2073
11.00	26	N	N	1	2	N	1	2	X	N	2	X	X
	28	N	N	1	Х	N	1.	2	X	N	2	Х	х
9-1/2°	30	N	1	1	X !	N	1	2	X	1 1	2	Х	Х
7-1/2	32	N	1	2	Х	N	2	Х	Χ '	1	Х	Х	Х
-1	34	N	1	2	X !	N	2	Х	х	1 1	Х	Х	X
إضارين	36	N N	1	2	X	$\perp \perp$	2	X	X	1_1_	X	X	X
76. gr)	26	N	N	N	1 1	N	N	1	2	N	N	1	2
Descript.	28	N	N	N	1 /	N	N	1	2	N	1	1	Х
الهوادات	30	N	N	N	1 !	N.	N	1	2	N	1	2	х
11-7/8"	32	N	N	1	1 /	N	N	1	2	N	1	2	Х
17 July 1	34	N	N	1	2	N	1	1	X	N	1	2	X
3 - N	36	N	N	1	2	N	1	2	X	N	1	2	Х
	38	N	. N	1	2	N	1	2	. X	. N	2	X	X_
	26	N	N	N	N	N	N	N	1	N	N	N	1
, J. 1891	28	N	. N	N	N	N	N	N	1 '	N	N	1	1
. 1	30	N	N	N	N	N	N	N	1 !	N	N	1	2
14"	32	. N	N	N	1 !	N	N	N	1 '	N	N	1	2
Mr 1991	34	N	N	N	1 !	N	N	1	1 !	N	N	1	2
80 SMJ	36	N	N	N	1 !	N	N	1	2	N	1	1	2
A 55 T	38	N	N	N	1 !	N	N	1	2	N	1	1	Х
16 C. C.	40	N	N	N	1	N.	N	1	2	. N	1	2	. X
,≅seg∎	26	N N	N	N	N	N	N	N	N	N	N	N	1
2,414	28	N	N	N	N	N	N	N	1 !	N	N	N	. 1
45.59	30 32	N	N	N	N I	N	N	N	1 !	N	Ν.	. N	1
30 J	32	. N	N	N	N	N	N	N	1 1	N -	N	1	1
16"	34	N	N	N	N I	N	N	N	1 7	N	. N	1	2
4.1	36	N	N	N	1 1	N	N	N	1 1	N	N	1	2
44.004	38	N	N	N	1 1	N	N	N	1 !	N	N	1	2
3000	40	N	N	N	1 1	N	N	1	2	N	N	1	2 X
31 a 1 a 1	42	l N	N	N	1 1	N	N	-1	2 !	N	1	1	Х

- 1. N = No reinforcement required.
 1 = NI reinforced with 3/4 wood structural panel on one side only.
 2 = NI reinforced with 3/4 wood structural panel on both sides, or double 1-joist.
 X = Try a deeppr joid or closer spacing.
 2. Moximum design lood shall be: 15 pst foof
- dead load, 55 psf floor total load, and 80 plf wall load. Wall load is based on 3'-0'

— Roof truss —

span

 For conventional roof construction using a ridge beam, the Roof Truss Span column obove is equivolent to the distance between the supporting wall and the ridge beam. When the roof is formed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a tissue between the supporting walls as if a tissue supporting agirder trusses or roof beams may require additional reinfarcing. For larger openings, or multiple 3:0° width openings spaced less than 6:10° oc., additional joist beneath the opening's cripple stud may be required.

3. Toble applies to joist 12' to 24' oc. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and alive load off each off this off the span of live load off each off this off lesser spacing.

Roof trusses
Girder Roof truss
Truss
Roof truss
Span
Roof truss
2'_0' maximum
cantilever

For hip roofs with the jack trusses running parallel to the cantilevered floor joists

requirements for a spon of 26 ft. shall be permitted to be used.

the I-joist reinforce

Full depth backer block with 1/8* gap between block and top flange of I-joist. See detail 1h. Nail with 2 rows of 3" nails at 6" o.c. and clinch. Plate at all supports
2x8 min. Nail to backer block and joist with 2 rows of per detail 1b
3" nails at 6" o.c. and clinch. (Cantilever nails may be
used to attach backer block if length of nail is sufficient to allow dinchina.)
Contilever extension supporting uniform
floor loads only
2+3
Lumber or wood structural panel closure

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED LL = 30 psf, DL = 15 psf | LL = 40 psf, DL = 15 psf | LL = 50 psf, DL = 15 psf | OSST SPACING (in) | OSST SPACING (in) JOIST SPACING (in.) JOIST SPACING (in.) JOIST SPACING (in.) 12 16 19.2 24 12 16 19.2 24 12 16 19.2 24 14" 1. N = No reinforcement required. 1 = NI reinforced with 3/4" wood structural panel on one side only. 2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist. X = Tily a deeper joist or closer spacing. 2. Maximum design lood shall be 1.5 per roof dead lood, 5.5 per floor total tood, and 80 pf wall lood. Woll lood is based on 3-0" maximum width window or door openings. 4. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent or the distance between the supporting woll and the ridge beam. When the roof is framed using a ridge board, the Roof Trus Span is equivalent to the distance between the supporting wolls as if a trus is used. 5. Confilerered joist supporting girder trusses or roof beams may require additional reinfording. For larger openings, or multiple 3'-0' width openings spaced less than 6'-0' o.c., additional joists beneath the opening's cripple oddifional joists beneath the opening's cripple studs may be required. 3. Table applies to joists 12' to 24' to.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load defection limit of L/480. Use 12° to.c. requirements for lesser spacing.

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.
- 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.
- 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 boltom 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 sages state sector whee the dimenter of the uniges frontin time of whee the size of the largest square hole (or twice the length of the langest side of the langest 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 dud chose openings.
- 8. Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to
- 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

FIELD-CUT HOLE LOCATOR

(8)

12. 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.

Duct chase opening (see Table 2 for minimum distance from bearing)

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

... Minimum distance from inside face of any support to centre of hole (fi-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/

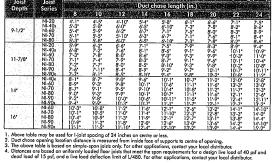
Above table may be used for I-joist spacing of 24 inches on centre or less.
 Hale location distance is measured from inside face of supports to centre of hole.
 Distances in this chart are based on uniformly loaded joists.

The obove 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 the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

DUCT CHASE OPENING SIZES AND LOCATIONS - Simple Span Only Minimum distance from inside face of any support to centre of opening (ff-in. 9-1/2

Knockouts are prescored holes provided for the contractor's convenience to instel 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 1-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. 11-7/8

For redangular holes, evoid over-cutting the corners, as this can cause unnecessariess concentrations. Bilightly rounding the corners is recommended. Starting the redangular 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



2015-04-16

INSTALLING THE GLUED FLOOR SYSTEM

1. Wipe any mud, dirt, water, or ice from 1-joist flanges before gluing.

A knockout is **NOT** considered a hole, may be utilized wherever it occurs ond may be ignored for purposes of calculating minimum distances between holes.

- 2. Snap a chalk line across the L-joists four feet in 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 recommendate the alue manufacturer.

Maintain minimum 1/8" space between top and bottom flange — all duct chase openings and holes

- 4. Lay the first panel with tongue side to the wall, and noil in place. This protects the tongue of the next panel from damage when topped into place with a block and sledgehammer.
- 5. Apply a continuous line of glue (about 1/4-inch diameter) to the top flonge of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
- 6. Apply two lines of glue on 1-joists where panel ends butt to assure proper gluing of each end. 7. 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 fininer line (1/8 inch) than used on 1-joist flanges.
- 8. Tap the second row of panels into place, using a block to protect groove edges.
- Stagger end 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 tool or an 2-1/2" common nail to assure accurate and considert spacing.)
- not to assure occurre and consistent spacing.)

 10. Complete all nailing of each panel before glue sets, Check the manufacturer's recommendation for cure time. (Warm weather accelerates glue setting.) Use 2' ring- or scew-shank nails for panels 3/4-inch thick or less, and 2-1/2' ring- or scew-shank nails for thicker panels. Space nails per the table below. Closer nail spacing may be required by some cades, or for disphragm construction finished deck can be walked on right away and will carry construction loads without damage to the

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

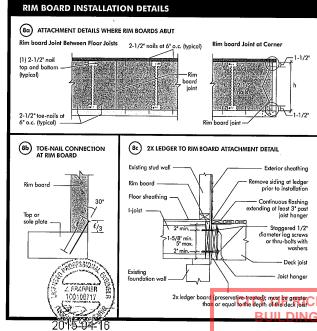
Joist	Panel	Common Ring Thread			of Fasteners			
Spacing (in.)	Thickness (in.)	Wire or Spiral Nails	Nails or Screws	Staples	Edges	Interm. Supports		
16	5/8	2'	1-3/4*	2'	6"	12"		
20	5/8	2•	1-3/4"	2"	6*	12"		
24	3/4	2'	1-3/4"	2*	6*	12*		

- 1. 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.
- 3. Flooring screws shall not be less than 1/8-inch in diameter
- 4. Special conditions may impose heavy traffic and concentrated loads that require construction in excess of the minimums shown.
- 5. Use only adhesives conforming to CAN/CGS8-71.26 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

Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

IMPORTANT NOTE:

INTERVIEW INVIE:
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.



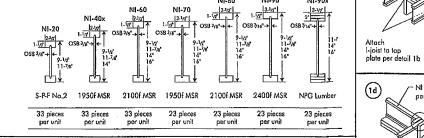




MOND HILL



FSC



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

WEB HOLE SPECIFICATIONS

- 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.
- 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.
- 4. The maximum size hale or the maximum death of a duct chose opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.
- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- 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 or duct chose opening) and each hole and duct chose 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 hales and/or duct chase openings
- 8. Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Hales 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 llustrated 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 at approximately the same location shall be permitted if they meet the requirements for a single round hale circumscribed around them.

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

		L	M	inimun	n Distar	ice fro	m Insid	e Face	of Any	Suppor	to Ce	ntre of	Hole (ft	· in.)		
Joist Depth	Joist Series						Rou	nd Hol	e Diam	eter (in.)					
Борііі		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4
	NI-20	0'-7"	1'-6"	2'-10"	4'-3"	5'-8"	6'-0"									
	NI-40x	0'-7"	1'-6"	3'-0"	4'-4"	6'-0"	6'-4"		**-						***	
9-1/2"	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"	85-44									
	NI-80	2'-3"	3'-6"	5'-0"	6'-6"	81-21	8'-8*							~~·		•••
	NI-20	0'-7"	0'-8"	1'-0"	2'-4"	3'-8"	4'-0"	5'-0"	6'-6"	7'-9"						
i l	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'-6"	3'-0"	4'-3"	5'-9"	6'-0"	7'-3"	8'-10"	10-0						
11-7/8"	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"			•••	•••			
	NI-90	0'-7"	0'-8"	1-5	3'-2"	4'-10"		6'-9"	8'-9"	10'-2"						
	NI-90x	0'-7"	0'-8"	0'-9"	2'-5"	4'-4"	41-91	6'-3"	***				***			
	NI-40x	0'-7"	0'-8"	0'-8"	1'-0"	21-44	21-9"	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"			
14"	NI-70	0'-8"	1.10	3'-0"	4'-5"	5'-10"		7'-3'	8'-9"	91.9"	10'-4"		13'-5"			}
	NJ-80	0'-10"	2'-0"	3-4	4'-9"	6'-2"	6'-5"	7'-6"	9'-0"	10'-0"	10'-8"		13'-9"		***	
	NJ-90	0'-7"	0'-8"	0'-10"	2'-5"	4'-0"	4'-5"	5'-9"	7'-5"	8'-8"	9'-4"	11'-4"	12'-11"			j
	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"		4-2	5'-6"	6'-4"	7'-0"	8'-5"	9'-8'	10'-2"		13'-9"
	NI-70	0'-7"	1'-0"	2'-3"	3'-6"	4'-10'		6'-3"	7'-8"	8'-6"	9-2	10'-8"	12'-0"		14'-0"	15'-6"
16"	NI-80	0'-7°	11-3"	2-6°	3'-10"	5'-3"	5-6	6'-6"	8'-0"	9'-0"	9-5	11'-0"	12-3		14'-5"	16'-0"
	NI-90	0'-7°	0'-8"	0'-8"	1'-9"	3'-3"	3'-8"	4-9"	6'-5"	7'-5"	8,-0,	9'-10"	11'-3'		13'-9"	15'-4"
	NI-90x	0'-7"	0'-8"	0'-9"	2'-0"	3'-6*	4'-0"	5'-0*	6'-9'	7'-9"	8'-4"	10'-2"	11'-6"	12'-0"		

- . Above table may be used for 1-joist spacing of 24 inches on centre or less. . Hole location distance is measured from inside face of supports to centre of hole Distances in this chart are based on uniformly loaded joists
- 4. The above table is based on the 1-joists being used at their maximum spans. The minimum distance as given above may be reduced for sharter spans; contact your local distributor.

DUCT CHASE OPENING SIZES AND LOCATIONS

Simple Span Only

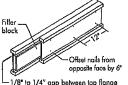
Joist	Joist	Minimum distance from inside face of supports to centre of opening (ft - in.)										
Depth	Series		Duct Chase Length (in.)									
D Opin	00,100	8	10	12	14	16	18	20	22	24		
	NI-20	4'-1"	4'-5"	4'-10"	5'-4"	5'-8'	6'-1"	6'-6"	7'-1"	7'-5"		
	NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"		
9-1/2"	NI-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-5"	8'-0"	8'-3"	8'-9"		
	NI-70	5'-1"	5'-5"	5'-10"	6'-3"	6'-7"	7'-1"	7'-6"	8'-1"	8'-4"		
	NI-80	5'-3'	5'-8"	6'-0"	6'-5"	6'-10"	7'-3°	7'-8"	8'-2"	8'-6"		
	NI-20	5'-9"	6'-2"	6'-6"	7-11	7'-5'	7'-9"	8'-3"	8'-9"	9'-4"		
	NI-40x	6'-8"	7.2"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	10'-1"	10'-9"		
	NI-60	7'-3"	7'-8"	8'-0"	B'-6"	9.0	9'-3"	9'-9"	10'-3"	11'-0"		
11-7/8"	NI-70	7'-1*	7'-4"	7'-9"	8'-3"	8'-7"	۰۱۰	9'-6"	10'-1"	10'-4"		
	NI-80	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9-3	9'-8"	10'-2"	10'-8*		
	NI-90	7'-6"	7'-11"	8'-4"	8'-9"	9'-2"	9'-7°	10'-1"	10'-7"	10-11		
	NJ-90x	7'-7*	8'-1"	8'-5"	8'-10"	9'-4"	9'-8"	10'-2"	10'-8"	11421		
	NI-40x	8'-1"	8'-7"	9'-0"	9'-6"	10:-1°	10'-7"	11'-2"	12'-0"	12'-8"		
	NI-60	8'-9"	9'-3"	9'-8"	10'-1"	10'-6"	11'-1"	11'-6"	13'-3"	13'-0"		
14*	NI-70	8'-7"	9'-1"	9'-5"	9'-10"	10'-4"	10'-8"	11'-2"	11.7	12'-3'		
14	NI-80	ም- 0"	9-3	9'-9"	10'-1"	10'-7"	11'-1"	11'-6"	12'-1"	12'-6"		
	NI-90	9'-2"	9'-8"	10'-0"	10'-6"		' 11'-5°	11'-9"	12'-4"	12111		
	NI-90x	9'-4"	9-9"	10'-3"	10'-7°	11'-1"	11-7	1241*	12'-7"	13'-2"		
	NI-60	10'-3"	10'-8"	11'-2"	11-6	12'-1"	12'-6"	13'-2"	14'-1"	14-10		
	NI-70	10'-1"	10'-5"	11'-0"	11-4	11'-10'		12'-8"	13'-3"	14'-0'		
16"	NI-80	10'-4'	10'-9"	11'-3"	11'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'-4"		
	NI-90	10'-9"	11'-2"	13'-8"	12'-0"	12'-6"	13'-0"	13'-6°	14'-2"	14'-10"		
	NI-90x	1351	111-5"	11'-10"	12'-4"	12'-10'	' 13'-2"	13'-9"	14-4	15'-2"		

Joist	faioL	Minimum distance from inside face of supports to centre of opening (ft - in								ft - in.)
Depth	Series			1	Duct Ch	ase Leng	th (in.)			
Dop	00,100	8	10	12	14	16	18	20	22	24
	NI-20	4'-1"	4'-5"	4'-10"	5'-4"	5'-8'	6'-1"	6'-6"	7'-1"	7'-5°
	NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"
9-1/2"	NI-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-5"	8'-0"	8'-3"	8'-9"
	NI-70	5'-1"	5'-5"	5'-10"	6'-3"	6'-7"	7'-1"	7'-6"	8'-1"	8'-4"
	NI-80	5'-3'	5'-8"	6'-0"	6'-5"	6'-10"	7'-3°	7'-8"	8'-2"	8'-6"
	NI-20	5-9*	6'-2"	6'-6"	7-1"	7'-5'	7'-9"	8'-3"	8'-9"	9'-4"
	NI-40x	6'-8"	7'-2"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	10'-1"	10'-9"
11-7/8"	NI-60	7'-3"	7'-8"	8'-0"	B'-6"	9.0	9'-3"	9'-9"	10'-3"	11'-0"
	NI-70	7'-1*	7'-4"	7'-9"	8'-3"	8'-7"	۰۱-۱۶	9'-6"	10'-1"	10'-4"
	NI-80	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-8*
	NI-90	7'-6"	7'-11"	8'-4"	8'-9"	9'-2"	9'-7°	10'-1"	10'-7"	10'-11"
	NI-90x	7'-7*	8'-1"	8'-5"	8'-10"	9'-4"	9'-8"	10'-2"	10'-8"	11421
	NI-40x	8'-1"	8'-7"	9'-0"	9'-6"	10:-1°	10'-7"	11'-2"	12'-0"	12'-8"
	NI-60	8'-9"	9'-3"	9'-8"	10:-1"	10'-6"	11'-1"	11'-6"	13'-3"	13'-0'
14*	NI-70	8'-7"	9'-1"	9'-5"	9'-10"	10'-4"	10'-8"	11'-2"	11'-7"	12'-3'
14	NI-80	9'-0"	9-3	9'-9"	10'-1"	10'-7"	11'-1"	11'-6"	12'-1"	12'-6"
	NI-90	9'-2"	9'-8"	10'-0"	10'-6"	10'-33"		11'-9"	12'-4"	12'-11'
	NI-90x	9-4	9-9"	10'-3"	10'-7°	11'-1"	11-7	1241*	12'-7"	13'-2"
	NI-60	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	13'-2"	14'-1"	14'-10"
	NI-70	10'-1"	10'-5"	11'-0"	11-4	11'-10'	12'-3"	12'-8"	13'-3"	14'-0"
16"	NI-80	10-4	10'-9"	11'-3"	11'-9"	12'-3"	1247"	13'-1"	13'-8"	14'-4"
	N(-90	10-9	11'-2"	11'-8"	12'-0"	12'-6"	13'-0"	13'-6"	14'-2"	14'-10"
	NI-90x	1341"	111-5"	11410	12'-4"	12'-10'	13'-2"	13'-9"	14-4	15'-2"

- 1. Above table may be used for 1-joist spacing of 24 inches on centre or less.
 2. Duct chase opening location distance is measured from inside face of supports 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 uniformly loaded floor joists that meet the span requirements for a design live load of 40 pst and dead load of 15 pst, and a live load deflection limit of L/480.
 5. The above table is based on the 1-joist being used of their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

NI blocking





NI or rim board blocking Maximum Factored panel per defail la Vertical Load per Pai of Squash Blocks (ibs Pair of Squash 3-1/2" wide 5-1/2' wide 5,500 8,500 1-1/8" Rim Board Plus 4,300 6,600 Provide lateral bracing per detail 1a or 1b

Maximum Factored Uniform

Vertical Load* (plf)

3.300

*The uniform vertical load is limited to a joist depth of 16

aches or less and is based on standard term load duration Its shall not be used in the design of a bending member, such as joist, header, or rofter. For concentrated vertical load transfer, see detail 1d.

2-1/2" nails at 6° a.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing as

2-1/2*face nail at

each side at bearing

from above t bearing belo Install squasi Match bearing area of blocks below to past

Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable. per detail 1b 2-1/2° nails to top plate -

One 2-1/2' wire or spiral noil at top and bottom flange

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

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

1-1/8" Rim Board Plus

Maximum Factored Unifor Vertical Load* (plf)

*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.

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

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

—Ní blocking panel per detail 1a

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

or Rim Joist

NI Joists

required for decking)

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

Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2*	1,0	5-1/2"
3-1/2*	1-1/2"	7-1/4*

- Minimum grade for backer black material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard.
 ** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges

Double I-joist header NOTE: Unless hange sides laterally support the top flange, bearing stiffeners shall be used Filler block Backer black read (both sides for face

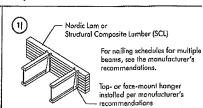
For hanger capacity see hanger manufacturer's ndations. Verify double I-joist capacity to suppor

7-1/8" x 6"

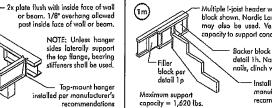
2-1/8" x 8" 2-1/8" x 10"

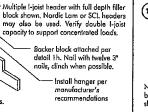
2-1/8" x 12"

3"x 12"



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





Flange Size

2-1/2" x

1-1/2"

3-1/2*:

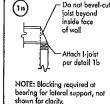
I-1/2°

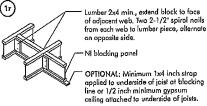
3-1/2"

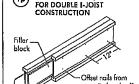
9-1/2"

-7/8"

11-7/8*







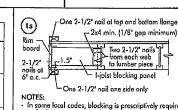


Verify double I-joist capacity

1-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.

5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lbf/fi.

FIGURE 2



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.

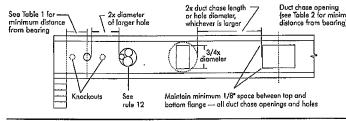
END REARING

the above details are assumed to be on wire nail unless otherwise noted. 3" (0,122" dia.) common spiral nails may be substituted fo 2-1/2" (0.128" dia.) common wire nat Framina lumber or better. Individual component components not she to scale for clarity.

All nails shown in

FIGURE 7

FIELD-CUT HOLE LOCATOR





Knockauts are prescared 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 1-joist. Where possible, it is preferable to use knockouts instead of field-cut hales.

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

toles in webs should be cut with a sharp saw,

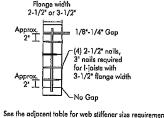
For rectangular hales, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another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

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 of the I-joist Construction Guide (C101). The gop between the stiffener and the flange is at
- A hearing 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 lop 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 conflever 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.

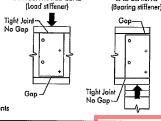
WEB STIFFENER INSTALLATION DETAILS



Use same installation as Method

but reinforce both sides of l-joist with sheathing.

pattern shown for Method 1



CONCENTRATED LOAD

STIFFENER SIZE REQUIREMENTS Web Stiffener Size Fach Side of Wel 1" x 2-5/16" 2-1/2" 1-1/2" x 2-5/16" 3-1/2° minimum width

SAFETY AND CONSTRUCTION PRECAUTIONS



erious injuries con result



Never stack building materials over unsheathed 1-joists. Once sheathed, do not over-stres

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, blacking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will
- to e required at the interior support.

 2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover.
- sheating is applied, temporary oracing, often called strots, or temporary sheatining those 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 fostened to the top surface of each l-joist. Nail the bracing to a lateral restraint at the end of each bay. Lop ends of odjoining bracing over at least two 1-joists.

 **Port sheathing (temporary or permanent) can be notified to the top flange of the first 4 feet of 1-joists at the end of the boy.

 3. For cantilevered 1-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
- Install and fully noting permanent shealthing to each I-joist before placing loads on the floor system. Then, stock building materials over beams or walls only. 5. Never install a damaged I-joist.

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

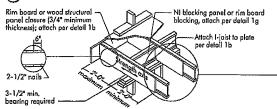


PRODUCT WARRANTY

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

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

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET Method 1 — SHEATHING REINFORCEMENT ONE SIDE Method 2 -SHEATHING REINFORCEMENT



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" a.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 copacity.

OND HILL RIM BOARD INSTALLATION DETAILS 8b) TOE-NAIL (8a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT CONNECTION Rim Board Joint Between Find Rim board Colo plate t e/ 1/2 1-1/2" Rim Board Jains at Came Rim board joint



BC CALC® Member Report



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

PASSED

2ND FLR FRAMING\Dropped Beams\B8(i2378) (Dropped Beam)

Dry | 1 span | No cant.

October 8, 2020 17:23:39

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

File name:

Description: 2ND FLR FRAMING\Dropped Beams\B8(i2378)

38-10.mmdl

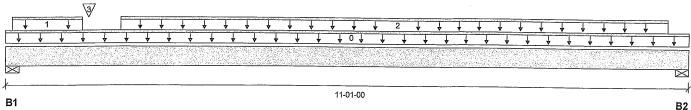
Specifier:

Designer: LBV

Customer: Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 11-01-00

Reaction Summary (Down / Unlift) (lbs)

izcaction oun	miary (Down i o	pility (INS)			
Bearing	Live	Dead	Snow	Wind	
B1, 3-1/2"	1322 / 0	746 / 0			
B2, 3-1/2"	1421 / 0	796 / 0			

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	_
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-01-00	Тор		14			00-00-00
1	Bk2(i2880)	Unf. Lin. (lb/ft)	L	00-01-04	01-02-12	Тор	29	15			n\a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-00	10-08-12	Тор	247	124			n\a
3	J2(i2357)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	Тор	278	139			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
				Gase	
Pos. Moment	8334 ft-lbs	36222 ft-lbs	23.0%	1	05-04-00
End Shear	2870 lbs	17356 lbs	16.5%	1	10-00-00
Total Load Deflection	L/799 (0.159")	n\a	30.0%	4	05-05-04
Live Load Deflection	L/999 (0.102")	n\a	n\a	5	05-05-04
Max Defl.	0.159"	n\a	n\a	4	05-05-04
Span / Depth	13.4				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	3-1/2" x 5-1/4"	2916 lbs	11.9%	13.0%	Spruce-Pine-Fir
B2	Wall/Plate	3-1/2" x 5-1/4"	3126 lbs	12.8%	13.9%	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 unbraced length of Top: 01-01-08, Bottom: 01-01-08.

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 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012 AMENDED 2020 CITY OF R





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

PASSED

October 8, 2020 17:23:39

2ND FLR FRAMING\Dropped Beams\B8(i2378) (Dropped Beam)

BC CALC® Member Report

Build 7493

Job name: Address:

Customer: Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

Dry | 1 span | No cant.

38-10.mmdl

Description: 2ND FLR FRAMING\Dropped Beams\B8(i2378)

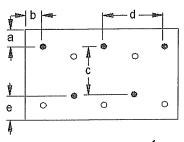
Specifier:

File name:

Designer: LBV

Company:

Connection Diagram: Full Length of Member





a minimum = 2" b minimum = 3" e minimum = 2"

Nailing applies to both sides of the member . Nails Connectors are: (

3-1/2" ARDOX SPIRAL

PROFESSION, PONTINCE OF OF

DWG NO. TAW 14514-20 STRUCTURAL COMPONENT ONLY

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular

application. The output here is based on

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

before installation evitt

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





City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

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

PASSED

2ND FLR FRAMING\Flush Beams\B10(i3312) (Flush Beam) Dry | 2 spans | L cant.

BC CALC® Member Report

Build 7493 Job name:

Address:

Customer:

Code reports:

Description:

October 20, 2020 11:58:13

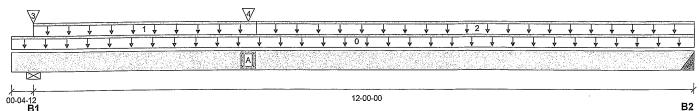
File name: 38-10.mmdl

2ND FLR FRAMING\Flush Beams\B10(i3312)

Specifier:

Designer: LBV

Company:



Total Horizontal Product Length = 12-04-12

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead			
B1, 5-1/2"	1068 / 0	649 / 0			
B2, 4"	434 / 0	293 / 0			

Load Summary							Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-04-12	Тор		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-04-12	04-04-12	Top	30	15			n\a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	04-04-12	12-04-12	Top	9	4			n\a
3	B9(i3438)	Conc. Pt. (lbs)	L	00-04-12	00-04-12	Тор	201	121			n\a
4	B12(i3441)	Conc. Pt. (lbs)	L	04-03-00	04-03-00	Тор	1109	605			n\a

		Factored	Demand/		
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	6974 ft-lbs	23220 ft-lbs	30.0%	1	04-03-00
End Shear	981 lbs	11571 lbs	8.5%	1	11-03-04
Cont. Shear	1878 lbs	11571 lbs	16.2%	1	01-05-00
Total Load Deflection	L/717 (0.196")	n\a	33.5%	4	05-09-08
Live Load Deflection	L/999 (0.122")	n\a	n\a	5	05-09-08
Total Neg. Defl.	2xL/1998 (-0.023")	n\a	n\a	4	00-00-00
Max Defl.	0.196"	n\a	n\a	4	05-09-08
Span / Depth	14.8				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	5-1/2" x 3-1/2"	2413 lbs	20.4%	10.3%	Spruce-Pine-Fir
B2	Hanger	4" x 3-1/2"	1016 lbs	n\a	6.0%	HGUS410

Header for the hanger HGUS410 is a Double 1-3/4" x 9-1/2" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for

adequate capacity.

CITY OF





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

PASSED

2ND FLR FRAMING\Flush Beams\B10(i3312) (Flush Beam) Dry | 2 spans | L cant.

October 20, 2020 11:58:13

Build 7493

Job name:

Address:

File name:

38-10.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B10(i3312)

City, Province, Postal Code: RICHMOND HILL

BC CALC® Member Report

Specifier:

Customer: Code reports:

CCMC 12472-R

Designer:

Company:

Notes

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

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

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

CONFORMS TO OBE 2012

Hanger Manufacturer: Unassigned

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

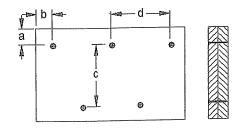
AMENDED 2020

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

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9

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

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 5-1/2" 4 d = 249'6

Calculated Side Load = 226.4 lb/ft

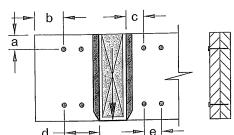
Connectors are:

، Nails 3-1/2" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Connection Tag: A

Applies to load tag(s): 3



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

e minimum = 4"

Connectors are: 16d / Nails

3-1/2" ARDOX SPIRAL



STRUCTURAL COMPONENT ONLY

Disclosure

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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 vitt

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





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

PASSED

2ND FLR FRAMING\Flush Beams\B11(i3383) (Flush Beam)

BC CALC® Member Report

Build 7493

Dry | 1 span | No cant.

October 20, 2020 11:58:13

Job name:

Address:

File name: Description:

38-10.mmdl 2ND FLR FRAMING\Flush Beams\B11(i3383)

City, Province, Postal Code: RICHMOND HILL

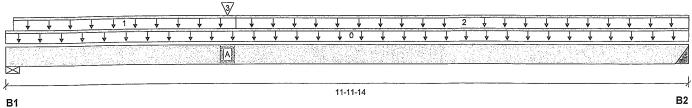
Specifier: Designer:

LBV

Customer: Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 11-11-14

Reaction Sun	nmary (Down / Ul	plift) (lbs)			
Bearing	Live	Dead	Snow	Wind	
B1, 4-3/8"	508 / 0	347 / 0			
B2, 4"	276 / 0	211 / 0			

Load Summary							Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-11-14	Тор		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-01-10	03-11-14	Тор	21	10			n\a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-11-14	11-11-14	Top	16	. 8			n\a
3	B12(i3441)	Conc. Pt. (lbs)	L	03-10-02	03-10-02	Тор	578	340			n\a

		Factored	Demand/		
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	3840 ft-lbs	23220 ft-lbs	16.5%	1	03-10-02
End Shear	1136 lbs	11571 lbs	9.8%	1	01-01-14
Total Load Deflection	L/999 (0.107")	n\a	n\a	4	05-07-04
Live Load Deflection	L/999 (0.064")	n\a	n\a	5	05-07-04
Max Defl.	0.107"	n\a	n\a	4	05-07-04
Span / Depth	14.4				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 3-1/2"	1196 lbs	12.7%	6.4%	Spruce-Pine-Fir
B2	Hanger	4" x 3-1/2"	678 lbs	n\a	4.0%	HGUS410

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 9-1/2" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

ITY OF **BUILD** CONFORMS TO OBG 2012

2020

Per:__

ON NOE OF ONE RECE _danjellerdevitt#145/6

COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B11(i3383) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 20, 2020 11:58:13

Build 7493

Job name: Address:

City, Province, Postal Code: RICHMOND HILL

Description: 2ND FLR FRAMING\Flush Beams\B11(i3383) Specifier:

File name:

Customer:

Designer: LBV

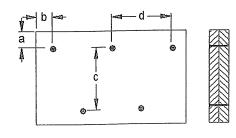
38-10.mmdl

Code reports:

CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 5-1/2" (/d = 20" 8

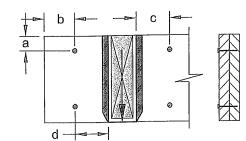
Connectors are:

3-1/2" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Connection Tag: A

Applies to load tag(s): 2



a minimum = 2"

b minimum = 4" c minimum = 4"

d maximum = 12"

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



HWG NO. TAM 145/620 STRUCTURÁL COMPONENT ONLY

Disclosure

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

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





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B25(i3425) (Flush Beam)

PASSED

October 20, 2020 11:58:13

BC CALC® Member Report

Build 0

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

File name: 38-10.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B25(i3425)

Specifier:

Designer: LBV

Company:

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	10000								0.15			escited.	1.00	30												a 2000. II Nasadoni					100 A		

Total Horizontal Product Length = 12-05-08

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-05-08	Тор		10			00-00-00
1	E22(i613)	Unf. Lin. (lb/ft)	L	00-00-00	12-05-08	Тор		81			n\a
2	B11(i3383)	Conc. Pt. (lbs)	L	00-10-14	00-10-14	Тор	282	214			n\a
3	-	Conc. Pt. (lbs)	L	11-11-11	11-11-11	Тор	640	395			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Dist. Load	113.26 lb/ft	37469.25 lb/ft	0.3%		
Conc. Load	1454 lbs	16813 lbs	8.6%		

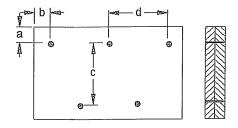
CONFORMS TO OBC 2012

AMENDED 2020

Cautions

Concentrated side load(s) 3 are closer than 18" from end of member, Please consult a technical representative or Professional of Record.

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 5-1/2"d = 000 12

Calculated Side Load = 345.3 lb/ft Connectors are: 16d /

3-1/2" ARDOX SPIRAL



TWE NO. TAW 145/7-20 STRUCTURAL COMPONENT ONLY

Disclosure

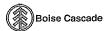
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before installation evitt

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





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

PASSED

October 8, 2020 17:23:39

2ND FLR FRAMING\Flush Beams\B12(i2973) (Flush Beam)

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

File name:

38-10.mmdl

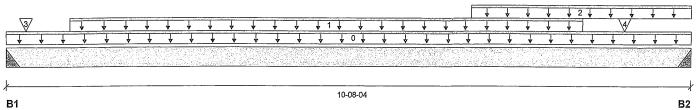
Wind

Description: 2ND FLR FRAMING\Flush Beams\B12(i2973)

Specifier:

Designer: LBV

Company:



Total Horizontal Product Length = 10-08-04

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 4"	568 / 0	335 / 0
B2, 4"	1120 / 0	610 / 0

Loa Tag	ad Summary Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-08-04		1.00	10	1.00	1.13	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-11-10	08-11-10	Тор	82	41			n\a
2	STAIR	Unf. Lin. (lb/ft)	L	07-02-04	10-08-04	Тор	240	120			n\a
3	J6(i3006)	Conc. Pt. (lbs)	L	00-03-10	00-03-10	Тор	87	44			n\a
4	J6(i2964)	Conc. Pt. (lbs)	L	09-07-10	09-07-10	Тор	105	52			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3933 ft-lbs	23220 ft-lbs	16.9%	1	06-11-10
End Shear	1834 lbs	11571 lbs	15.8%	1	09-06-12
Total Load Deflection	L/999 (0.102")	n\a	n\a	4	05-07-10
Live Load Deflection	L/999 (0.065")	n\a	n\a	5	05-07-10
Max Defl.	0.102"	n\a	n\a	4	05-07-10
Snan / Denth	12 8				

Bearing	Supports	Dim. (LxW)	Demand	Resistance Support	Resistance Member	Material
B1	Hanger	4" x 3-1/2"	1270 lbs	n\a	7.4%	HGUS410
B2	Hanger	4" x 3-1/2"	2442 lbs	n\a	14.3%	HGUS410

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 9-1/2" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CITY OF R

CONFORMS TO OBC 2012

AMENDED 2020

RECOMME PAN 14518-20

_danielle.s<mark>fpp.jit</mark>f*####. COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B12(i2973) (Flush Beam)

PASSED

October 8, 2020 17:23:39

BC CALC® Member Report

Build 7493

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

Dry | 1 span | No cant.

File name:

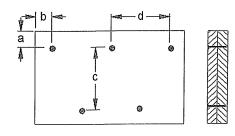
38-10.mmdl Description: 2ND FLR FRAMING\Flush Beams\B12(i2973)

Specifier:

Designer: LBV

Company:

Connection Diagram: Full Length of Member



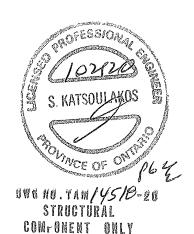
a minimum = 2" b minimum = 3" c = 5-1/2" if d = 24 B

Calculated Side Load = 235.3 lb/ft

Connectors are:

Nails

3-1/2" ARDOX SPIRAL



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BC CALC® Member Report



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

PASSED

2ND FLR FRAMING\Flush Beams\B13(i2367) (Flush Beam)

Dry | 1 span | No cant.

October 8, 2020 17:23:39

Build 7493

Job name: Address:

File name: Description: 38-10.mmdl

Wind

2ND FLR FRAMING\Flush Beams\B13(i2367)

City, Province, Postal Code: RICHMOND HILL

Specifier: Designer:

LBV

Customer: Code reports:

CCMC 12472-R

Company:

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										r atsasta		1.00				on year	. 785	2018			44.00	1000	
regrammed to service a 1 of the relation																							

Total Horizontal Product Length = 04-04-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1. 5-1/2"	1388 / 0	716 / 0
B2, 2-3/4"	723 / 0	382 / 0

	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-04-08	Тор		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	03-07-00	Top	568	284			n\a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	02-11-00	04-04-08	Тор	53	27			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1887 ft-lbs	23220 ft-lbs	8.1%	1	02-11-00
End Shear	1518 lbs	11571 lbs	13.1%	1	01-03-00
Total Load Deflection	L/999 (0.007")	n\a	n\a	4	02-03-08
Live Load Deflection	L/999 (0.005")	n\a	n\a	5	02-03-08
Max Defl.	0.007"	n\a	n\a	4	02-03-08
Span / Depth	4.8				

Rearin	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	5-1/2" x 3-1/2"	2978 lbs	25.1%	12.7%	Spruce-Pine-Fir
B2	Wall/Plate	2-3/4" x 3-1/2"	1562 lbs	26.4%	13.3%	Spruce-Pine-Fir

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012 AMENDED 2020

CITY OF R

RECEIVE 11 / 45/9-20 _danielle Jevenun l COM. ONENT ONLY





City, Province, Postal Code: RICHMOND HILL

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B13(i2367) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7493

Job name: Address:

Dry | 1 span | No cant.

October 8, 2020 17:23:39

File name:

38-10.mmdl

LBV

Description:

2ND FLR FRAMING\Flush Beams\B13(i2367)

Specifier:

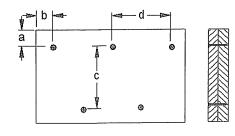
Designer:

Customer: Code reports:

CCMC 12472-R

Company:

Connection Diagram: Full Length of Member

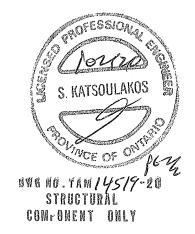


a minimum = 2" b minimum = 3"

c = 5-1/2" d = 28 B

Calculated Side Load = 427.1 lb/ft Connectors are: 16d 🚧 Nails

3-1/2" ARDOX SPIRAL



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BC CALC® Member Report



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

2ND FLR FRAMING\Flush Beams\B16(i2629) (Flush Beam)

Dry | 1 span | No cant.

October 8, 2020 17:23:39

PASSED

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

File name:

38-10.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B16(i2629)

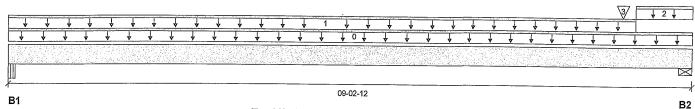
Specifier:

Designer: LBV

Customer: Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 09-02-12

Reaction Summary (Down / Unlift) (lbs)

11000 CIOII GOI	inition y (as o to in i as	Dint) (120)			
Bearing	Live	Dead	Snow	Wind	
B1, 2-5/8"	167 / 0	154 / 0	24 / 0		
B2, 2-3/4"	279 / 0	622 / 0	498 / 0		

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	-
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-02-12	Тор		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-05-08	Тор	33	17			n\a
2	E32(i606)	Unf. Lin. (lb/ft)	L	08-05-08	09-02-12	Тор		319	475		n\a
3	-	Conc. Pt. (lbs)	L	08-03-06	08-03-06	Тор	164	300	155		n\a

0 (1 0		Factored	Demand/		
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	1239 ft-lbs	23220 ft-lbs	5.3%	1	05-07-07
End Shear	1467 lbs	11571 lbs	12.7%	13	08-02-08
Total Load Deflection	L/999 (0.027")	n\a	n\a	35	04-10-00
Live Load Deflection	L/999 (0.015")	n\a	n\a	51	04-10-00
Max Defl.	0.027"	n\a	n\a	35	04-10-00
Span / Depth	11.3				

Bear	ing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	2-5/8" x 3-1/2"	466 lbs	11.9%	4.2%	Unspecified
B2	Wall/Plate	2-3/4" x 3-1/2"	1804 lbs	30.5%	15.4%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

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

CONFORMS TO OBC 2012 AMENDED 2020

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

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

verification.

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9 **CITY OF RI**

BWG NO. TAN 1452020 RECESTRICTURAL dan@@Na.@NEVNT_ UNLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B16(i2629) (Flush Beam)

Dry | 1 span | No cant.

PASSED

October 8, 2020 17:23:39

BC CALC® Member Report

Build 7493

Job name:

Customer:

Code reports:

Address: City, Province, Postal Code: RICHMOND HILL

File name:

38-10.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B16(i2629)

Specifier:

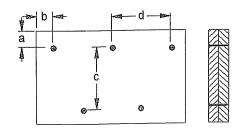
Designer:

Company:

CCMC 12472-R

LBV

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 5-1/2" d=@'B'

Calculated Side Load = 269.0 lb/ft

Nails

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



Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular

application. The output here is based on building code-accepted design

Burroperties and analysis methods. Installation of Boise Cascade

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

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





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B17(i2453) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 8, 2020 17:23:39

Build 7493 Address:

Job name:

City, Province, Postal Code: RICHMOND HILL

File name: Description:

38-10.mmdl 2ND FLR FRAMING\Flush Beams\B17(i2453)

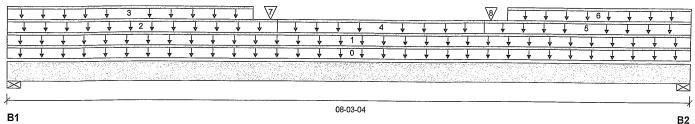
Specifier:

Designer: LBV

Customer: Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 08-03-04

Reaction Summary (Down / Uplift) (lbs)

	J (1 / (/		
Bearing	Live	Dead	Snow	Win
B1, 2-3/4"	110 / 0	1391 / 0	1968 / 0	
B2, 2-3/4"	110 / 0	1383 / 0	1961 / 0	

Loa	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-03-04	Тор		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-03-04	Top	27	13			n\a
2	E32(i606)	Unf. Lin. (lb/ft)	L	00-00-00	03-02-12	Тор		81			n\a
3	E32(i606)	Unf. Lin. (lb/ft)	L	00-00-00	02-11-04	Тор		238	475		n\a
4	E37(i1268)	Unf. Lin. (lb/ft)	L	03-02-12	05-08-12	Тор		41			n\a
5	E36(i1267)	Unf. Lin. (lb/ft)	L	05-08-12	08-03-04	Top		81			n\a
6	E36(i1267)	Unf. Lin. (lb/ft)	L	06-00-04	08-03-04	Top		238	475		n\a
7	E32(i606)	Conc. Pt. (lbs)	L	03-01-12	03-01-12	Top		395	743		n\a
8	E36(i1267)	Conc. Pt. (lbs)	L	05-09-12	05-09-12	Тор		385	721		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	8571 ft-lbs	23220 ft-lbs	36.9%	13	03-01-12
End Shear	3611 lbs	11571 lbs	31.2%	13	01-00-04
Total Load Deflection	L/669 (0.142")	n\a	35.9%	35	04-01-01
Live Load Deflection	L/999 (0.085")	n\a	n\a	51	04-01-01
Max Defl.	0.142"	n\a	n\a	35	04-01-01
Snan / Denth	10.0				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	2-3/4" x 3-1/2"	4802 lbs	81.1%	40.9%	Spruce-Pine-Fir
B2	Wall/Plate	2-3/4" x 3-1/2"	4781 lbs	80.7%	40.7%	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 086. 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

COMPORMS TO OBE 20

AMENDED 2020

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City, Province, Postal Code: RICHMOND HILL

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

PASSED

October 8, 2020 17:23:39

2ND FLR FRAMING\Flush Beams\B17(i2453) (Flush Beam)

BC CALC® Member Report Build 7493

Job name: Address:

Customer:

Dry | 1 span | No cant.

38-10.mmdl

File name: Description:

2ND FLR FRAMING\Flush Beams\B17(i2453)

Specifier:

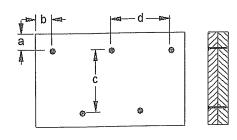
Designer: LBV

Company:

Code reports:

CCMC 12472-R

Connection Diagram: Full Length of Member



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

Connectors are:

Nails

3-1/2" ARDOX SPIRAL



BWG NO. TAM 14521-20 STRUCTURAL COMPONENT ONLY

Disclosure

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evidence of suitability for a particular application. The output here is based on

before installationevi

B 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

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





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

PASSED

October 8, 2020 17:23:39

2ND FLR FRAMING\Flush Beams\B18(i2382) (Flush Beam)

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

File name: 38-10.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B18(i2382)

Specifier:

LBV Designer:

Company:

, <u> </u>

Reaction Summary (Down / Unlift) (lbs)

i teachon ear	minimity (section)	(1.00)			
Bearing	Live	Dead	Snow	Wind	
B1, 2-3/4"	490 / 0	976 / 0	838 / 0		
B2, 4-3/8"	418 / 0	325 / 0	47 / 0		

Loa	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	15-00-06	Тор		10			00-00-00
1	E36(i1267)	Unf. Lin. (lb/ft)	L	00-00-00	02-00-00	Тор		81			n\a
2	E36(i1267)	Unf. Lin. (lb/ft)	L	00-00-00	01-09-04	Top		238	475		n\a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-06-08	Тор	27	13			n\a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-06-08	15-00-06	Тор	53	27			n\a
5	B19(i2346)	Conc. Pt. (lbs)	L	01-08-04	01-08-04	Тор	148	190	36		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4331 ft-lbs	23220 ft-lbs	18.7%	1	06-05-07
End Shear	1832 lbs	11571 lbs	15.8%	1	01-00-04
Total Load Deflection	L/687 (0.254")	n\a	34.9%	35	07-02-06
Live Load Deflection	L/1181 (0.148")	n\a	30.5%	51	07-02-06
Max Defl.	0.254"	n\a	n\a	35	07-02-06
Span / Depth	18.4				

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	2-3/4" x 3-1/2"	2967 lbs	50.1%	25.3%	Spruce-Pine-Fir
B2	Wall/Plate	4-3/8" x 3-1/2"	1080 lbs	11.5%	5.8%	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 086.

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBUZOOZ AMENDED

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Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B18(i2382) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7493

Dry | 1 span | No cant.

October 8, 2020 17:23:39

Job name: Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

File name:

38-10.mmdl

Description:

2ND FLR FRAMING\Flush Beams\B18(i2382)

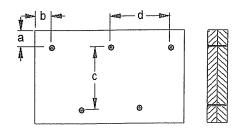
Specifier:

CCMC 12472-R

Designer: LBV

Company:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

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

Connectors are: 3

. Nails

3-1/2" ARDOX SPIRAL



BWG NO. TAM 145220 STRUCTURAL COMPONENT ONLY

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular

application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788

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City, Province, Postal Code: RICHMOND HILL

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

PASSED

2ND FLR FRAMING\Flush Beams\B19(i2346) (Flush Beam)

BC CALC® Member Report

Build 7493

Job name:

Address:

Dry | 1 span | No cant.

October 8, 2020 17:23:39

File name:

38-10.mmdl Description: 2ND FLR FRAMING\Flush Beams\B19(i2346)

Specifier:

Designer: LBV

Customer: Code reports:

CCMC 12472-R

Company:

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1																2 00																		J

Total Horizontal Product Length = 02-08-00

Peaction Summary (Down / Unlift) (lhs)

i teaction oun	mindly (Scanil S				
Bearing	Live	Dead	Snow	Wind	
B1, 5-1/2"	187 / 0	239 / 0	45 / 0	<u> </u>	
B2, 4"	166 / 0	215/0	41 / 0		

Loa	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	02-08-00	Тор		10			00-00-00
1	E33(i609)	Unf. Lin. (lb/ft)	L	00-00-00	02-08-00	Top		95	32		n\a
2	J2(i2349)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	Тор	353	176			n\a

		Factored	Demand/		
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	454 ft-lbs	23220 ft-lbs	2.0%	1	01-04-00
End Shear	422 lbs	11571 lbs	3.6%	1	01-03-00
Total Load Deflection	L/999 (0")	n\a	n\a	35	01-04-10
Live Load Deflection	L/999 (0")	n\a	n\a	51	01-04-08
Max Defl.	0"	n\a	n\a	35	01-04-10
Span / Depth	2.5				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	5-1/2" x 3-1/2"	625 lbs	5.3%	2.7%	Spruce-Pine-Fir
B2	Hanger	4" x 3-1/2"	558 lbs	n\a	3.3%	HGUS410

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 9-1/2" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

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

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9 CONFORMS TO AMENDED

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COMPONENT



BC CALC® Member Report



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

2ND FLR FRAMING\Flush Beams\B19(i2346) (Flush Beam)

Dry | 1 span | No cant.

October 8, 2020 17:23:39

PASSED

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer: Code reports:

CCMC 12472-R

File name:

38-10.mmdl

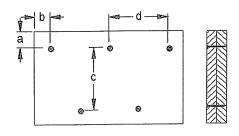
2ND FLR FRAMING\Flush Beams\B19(i2346) Description:

Specifier:

Designer:

LBV Company:

Connection Diagram: Full Length of Member



a minimum = 2"

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

b minimum = 3"

Calculated Side Load = 374.8 lb/ft Connectors are: 16d (A ... Nails

3-1/2" ARDOX SPIRAL



144 NO. TAM/4523-20 STRUCTURAL COMPONENT ONLY

Disclosure

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PASSED

October 8, 2020 17:23:39

2ND FLR FRAMING\Flush Beams\B20(i2614) (Flush Beam)

BC CALC® Member Report

Build 7493

Code reports:

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

CCMC 12472-R

Dry | 1 span | No cant.

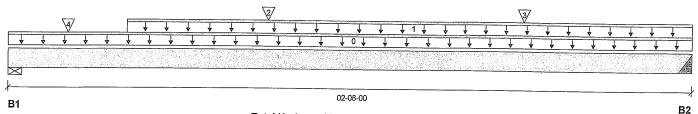
File name: 38-10.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B20(i2614)

Specifier:

Designer: LBV

Company:



Total Horizontal Product Length = 02-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	128 / 0	189 / 0	43 / 0	
B2, 4"	183 / 0	232 / 0	43 / 0	

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	02-08-00	Тор		10			00-00-00
1	E31(i608)	Unf. Lin. (lb/ft)	L	00-05-08	02-08-00	Top		95	32		n\a
2	J4(i2541)	Conc. Pt. (lbs)	L	01-00-00	01-00-00	Top	155	78			n\a
3	J4(i2586)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	Тор	156	78			n\a
4	E30(i614)	Conc. Pt. (lbs)	L	00-02-12	00-02-12		.00	30	15		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	295 ft-lbs	23220 ft-lbs	1.3%	1	01-00-00
End Shear	371 lbs	11571 lbs	3.2%	1	01-01-00
Total Load Deflection	L/999 (0")	n\a	n\a	35	01-03-12
Live Load Deflection	L/999 (0")	n\a	n\a	51	01-03-12
Max Defl.	0"	n\a	n\a	35	01-03-12
Span / Depth	2.7				

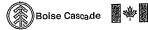
Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	3-1/2" x 3-1/2"	472 lbs	6.3%	3.2%	Spruce-Pine-Fir
B2	Hanger	4" x 3-1/2"	607 lbs	n\a	3.6%	HGUS410

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 9-1/2" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.







Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B20(i2614) (Flush Beam)

PASSED

October 8, 2020 17:23:39

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

CCMC 12472-R Code reports:

Dry | 1 span | No cant.

38-10.mmdl

CONFORMS TO OBC 2012

AMENDED 2020

File name: 2ND FLR FRAMING\Flush Beams\B20(i2614)

Description:

Specifier:

LBV Designer:

Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria. Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

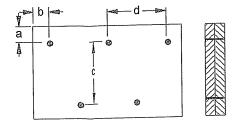
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

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

verification.

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 5-1/2" d = 20 8

Calculated SideLoad = 165.8 lb/ft Nails

Connectors are:

3-1/2" ARDOX SPIRAL

NOVINCE OF ONLY 148 NO. TAM 14529 STRUCTURAL COMPONENT ONLY

Disclosure

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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 betdrerinstallations vitt





PASSED

2ND FLR FRAMING\Flush Beams\B9(i3009) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

October 8, 2020 17:23:39

Build 7493

Job name:

File name:

38-10.mmdl

Address:

City, Province, Postal Code: RICHMOND HILL

Description: Specifier:

2ND FLR FRAMING\Flush Beams\B9(i3009)

Customer:

Designer:

LBV

Code reports:

CCMC 12472-R

Company:

	
, <u> </u>	

Total Horizontal Product Length = 04-06-02

action Summary (Down / Unlift) (lbs)

Reaction Jun	Illialy (Down of	pine, (ibb)			
Bearing	Live	Dead	Snow	Wind	
B1, 3-1/2"	227 / 0	134 / 0			
B2 //"	208 / 0	126 / 0			

l o	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-06-02	Тор		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-06-02	Тор	29	15			n\a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-01-08	04-01-08	Тор	76	38			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	508 ft-lbs	23220 ft-lbs	2.2%	1	02-01-08
End Shear	367 lbs	11571 lbs	3.2%	1	03-04-10
Total Load Deflection	L/999 (0.002")	n\a	n\a	4	02-02-15
Live Load Deflection	L/999 (0.001")	n\a	n\a	5	02-02-15
Max Defl.	0.002"	n\a	n\a	4	02-02-15
Span / Depth	5.1				

Bearing	a Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material_
B1	Wall/Plate	3-1/2" x 3-1/2"	509 lbs	6.8%	3.4%	Spruce-Pine-Fir
B2	Hanger	4" x 3-1/2"	470 lbs	n\a	2.8%	HGUS410

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 9-1/2" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

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

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012 DO ON OF ON

danielle.devitt OWE NO. TAN 14525-20

STRUCTURAL COMPONENT ONLY





City, Province, Postal Code: RICHMOND HILL

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

PASSED

2ND FLR FRAMING\Flush Beams\B9(i3009) (Flush Beam)

BC CALC® Member Report Build 7493

Job name: Address:

Customer:

Dry | 1 span | No cant.

October 8, 2020 17:23:39

File name: 38-10.mmdl

Description:

2ND FLR FRAMING\Flush Beams\B9(i3009)

Specifier:

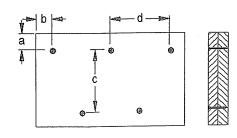
Designer: LBV

Company:

Code reports:

CCMC 12472-R

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 5-1/2" d = 00'8"

Calculated Side Load = 109.1 lb/ft

Connectors are:

Nails

3-1/2" ARDOX SPIRAL



STRUCTURAL COMPONENT ONLY

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as

evidence of suitability for a particular CITY 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 evitt





PASSED

1ST FLR FRAMING\Flush Beams\B1(i2975) (Flush Beam)

BC CALC® Member Report

Dry | 2 spans | R cant.

October 8, 2020 17:23:39

Build 7493

Job name:

File name:

38-10.mmdl

Address:

Description:

1ST FLR FRAMING\Flush Beams\B1(i2975)

Customer:

City, Province, Postal Code: RICHMOND HILL

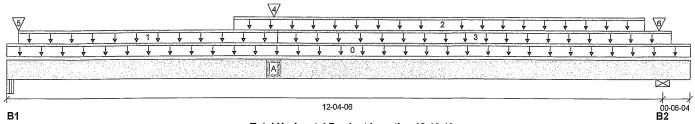
Specifier: Designer:

LBV

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 12-10-10

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 5-1/4"	842 / 0	731 / 0
B2 3-1/2"	455 / 0	877 / 0

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	-	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-10-10	Тор		10			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	05-00-08	Top	24	12			n\a
2	5(i2665)	Unf. Lin. (lb/ft)	L	04-02-10	12-00-02	Тор		65			n\a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-00-08	12-06-02	Top	6	3			n\a
4	B2(i2168)	Conc. Pt. (lbs)	L	04-11-10	04-11-10	Top	495	255			n\a
5	2(i562)	Conc. Pt. (lbs)	L	00-02-10	00-02-10	Top	430	280			n\a
6	E9(i432)	Conc. Pt. (lbs)	L	12-03-06	12-03-06	Тор	213	365			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4685 ft-lbs	23220 ft-lbs	20.2%	2	04-11-10
Neg. Moment	-2 ft-lbs	-15093 ft-lbs	n\a	0	12-04-06
End Shear	1116 lbs	11571 lbs	9.6%	1	01-02-12
Cont. Shear	693 lbs	7521 lbs	9.2%	0	11-05-02
Total Load Deflection	L/912 (0.158")	n\a	26.3%	9	06-01-11
Live Load Deflection	L/999 (0.068")	ņ\a	n\a	12	05-11-05
Total Neg. Defl.	2xL/1998 (-0.021")	n\a	n\a	9	12-10-10
Max Defl.	0.158"	n\a	n\a	9	06-01-11
Span / Depth	15.1				

	Bearing	Supports	Dim. (LxW)	Demand	Resistance Support	Resistance Member	Material
E	31	Beam	5-1/4" x 3-1/2"	2177 lbs	27.7%	9.7%	Unspecified
E	32	Wall/Plate	3-1/2" x 3-1/2"	1228 lbs	25.1%	12.6%	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: 00-04-08, Bottom: 00-04-08.

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 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

CONFORMS TO OBG 20 2020

AMENDED

PICE OF O

STRUCTURAL COMPONENT ONLY





PASSED

1ST FLR FRAMING\Flush Beams\B1(i2975) (Flush Beam)

Dry | 2 spans | R cant.

October 8, 2020 17:23:39

BC CALC® Member Report Build 7493

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name: 38-10.mmdl

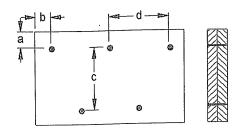
1ST FLR FRAMING\Flush Beams\B1(i2975) Description:

Specifier:

Designer: **LBV**

Company:

Connection Diagram: Full Length of Member



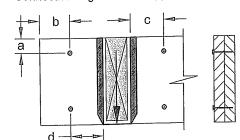
a minimum = 2" b minimum = 3" c = 5-1/2" d= 88 "

Connectors are: 3-1/2" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Connection Tag: A

Applies to load tag(s): 4



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

Connectors are: 5

Nails

3-1/2" ARDOX SPIRAL



184 NO. TAM/452620 STRUCTURAL COMPONENT ONLY

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular

application. The output here is based on building code-accepted design properties and analysis methods.

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

before installation vitt



BC CALC® Member Report



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

1ST FLR FRAMING\Flush Beams\B2(i2168) (Flush Beam)

Dry | 1 span | No cant.

File name:

October 8, 2020 17:23:39

PASSED

Build 7493

Job name:

38-10.mmdl

Address:

City, Province, Postal Code: RICHMOND HILL

Description: Specifier:

1ST FLR FRAMING\Flush Beams\B2(i2168)

Customer:

Designer:

LBV

Wind

Code reports:

CCMC 12472-R

Company:

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										(Ta) Grá																							ia.		7	er ye. Gan			k
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14																			03-02	2-04	ļ																		ь

Total Horizontal Product Length = 03-02-04

Reaction Summary (Down / Unlift) (lbs)

izeaction ou	HILLION & Inches	pine) (iioo)	
Bearing	Live	Dead	Snow
B1, 3"	507 / 0	261 / 0	
B2, 3"	494 / 0	255 / 0	

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-02-04	Top		5			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-02-04	Тор	240	120			n\a
2	J6(i2167)	Conc. Pt. (lbs)	L	00-09-10	00-09-10	Top	110	55			n\a
3	J6(i2188)	Conc. Pt. (lbs)	L	02-01-10	02-01-10	Тор	126	63	STATE OF STATE	FESSIO	n\a

		Factored	Demand/		
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	698 ft-lbs	11610 ft-lbs	6.0%	1	01-07-14
End Shear	521 lbs	5785 lbs	9.0%	1	02-01-12
Total Load Deflection	L/999 (0.003")	n\a	n\a	4	01-07-01
Live Load Deflection	L/999 (0.002")	n\a	n\a	5	01-07-01
Max Defl.	0.003"	n\a	n\a	4	01-07-01
Span / Depth	3.6				

Beari	ing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Hanger	3" x 1-3/4"	1087 lbs	n\a	17.0%	HUS1.81/10	
B2	Hanger	3" x 1-3/4"	1059 lbs	n\a	16.5%	HUS1.81/10	

Cautions

Header for the hanger HUS1.81/10 is a Single 1-3/4" x 9-1/2" LVL Beam.

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

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 9-1/2" LVL Beam.

Notes	

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

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

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 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

OLYNCE OF ON BWE NO. TAM 14527. STRUCTURAL COMPONENT ONLY

Disclosure

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

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

CUNFORMS TO DBC 2012 AMENDED 2020





PASSED

1ST FLR FRAMING\Flush Beams\B3(i2171) (Flush Beam)

Dry | 1 span | No cant. **BC CALC® Member Report**

October 8, 2020 17:23:39

Build 7493 Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer: Code reports:

CCMC 12472-R

File name:

38-10.mmdl

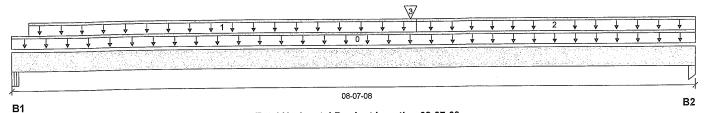
Wind

1ST FLR FRAMING\Flush Beams\B3(i2171) Description:

Specifier:

Designer: LBV

Company:



(Daven / Haliff) /lhe)

Total Horizontal Product Length = 08-07-08

Snow

Reaction	Summary (Down /	opini, (ipa)
Bearing	Live	Dead
B1, 5-1/4"	316 / 0	183 / 0
B2, 3-1/2"	357 / 0	203 / 0

Load Summary							Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
n	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-07-08	Тор		5			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	05-00-08	Top	27	13			n\a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-00-08	08-07-08	Top	11	5			n\a
۷ ع	R2/i2168)	Conc. Pt. (lbs)	L	04-11-10	04-11-10	Тор	506	261		garage and a second	n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2514 ft-lbs	11610 ft-lbs	21.7%	1	04-11-10
End Shear	758 lbs	5785 lbs	13.1%	1	07-06-08
Total Load Deflection	L/999 (0.069")	n\a	n\a	4	04-06-00
Live Load Deflection	L/999 (0.044")	n\a	n\a	5	04-06-00
Max Defl.	0.069"	n\a	n\a	4	04-06-00
Span / Depth	10.1				

Rear	ing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Beam	5-1/4" x 1-3/4"	702 lbs	17.9%	6.3%	Unspecified	
B2	Column	3-1/2" x 1-3/4"	789 lbs	19.8%	10.6%	Unspecified	

Notes

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

OUNCE OF ONTE DWG NO. TAM 14526 STRUCTURAL

COMPONENT ONLY

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input CONFORMS TO ORC 2012 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 installatione vitt





PASSED

October 8, 2020 17:23:39

1ST FLR FRAMING\Flush Beams\B4(i2988) (Flush Beam)

BC CALC® Member Report

Build 7493

Job name: Address:

Dry | 1 span | No cant.

LBV

Wind

38-10.mmdl 1ST FLR FRAMING\Flush Beams\B4(i2988) Description:

City, Province, Postal Code: RICHMOND HILL

Specifier:

Designer:

File name:

Customer: Code reports:

CCMC 12472-R

Company:

03-06-04 B2

Total Horizontal Product Length = 03-06-04

Summary (Down / Unlift) (lbs)

Reaction Jun	Illiary (Down 1	pine, (inc.)	0	
Bearing	Live	Dead	Snow	
B1. 1-3/4"	269 / 0	142 / 0		
B2 1-3/4"	277 / 0	147 / 0	•	

_	_						Live	Dead	Snow	Wind	Tributary
	Summary	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
	escription	Unf. Lin. (lb/ft)	L	00-00-00	03-06-04	Тор		5			00-00-00
•	elf-Weight	Conc. Pt. (lbs)	ī	00-05-10	00-05-10	Top	163	81			n\a
	1(i2996)	• •	-	01-09-10			227	113			n\a
2 J4	1(i3001)	Conc. Pt. (lbs)	L			,	156	78			n\a
3 J4	4(i2197)	Conc. Pt. (lbs)	L	03-01-10	03-01-10	τυρ	150	10		and the second second	Controllation.

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location_
Pos. Moment	528 ft-lbs	11610 ft-lbs	4.6%	1	01-09-10
	371 lbs	5785 lbs	6.4%	1	00-11-04
End Shear	L/999 (0.003")	n\a	n\a	4	01-09-00
Total Load Deflection	L/999 (0.002")	n\a	n\a	5	01-09-00
Live Load Deflection Max Defl.	0.003"	n\a	n\a	4	01-09-00
Span / Depth	4.2				

Paarin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
	Column	1-3/4" x 1-3/4"	582 lbs	29.2%	15.6%	Unspecified
B1	Column	1-3/4" x 1-3/4"	599 lbs	30.1%	16.0%	Unspecified

COMPONENT ONLY Disclosure

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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 vitt

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

Notes

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

Design meets Code minimum (L/360) Live load deflection criteria. CONFORMS TO OBC 2012 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. AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



646 NO. TAM 14529-20 STRUCTURAL.





PASSED

1ST FLR FRAMING\Flush Beams\B5(i2990) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

October 8, 2020 17:23:39

Build 7493

Job name:

Address:

File name: Description: 38-10.mmdl 1ST FLR FRAMING\Flush Beams\B5(i2990)

City, Province, Postal Code: RICHMOND HILL

Specifier:

LBV

Customer: Code reports:

CCMC 12472-R

Designer: Company:

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Date Marks	Hilliam W	ar Palata			713.	200		in Alter				14 10 44	W 932				Strike		i ing sa in	Majir v			A ROSE		

Total Horizontal Product Length = 08-04-12

Reaction Sun	nmary (Down / O	pinity (ibs)			
Bearing	Live	Dead	Snow	Wind	
B1, 4-7/8"	370 / 0	211 / 0			
B2. 3-1/2"	324 / 0	186 / 0			

l o	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	•	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-04-12	Тор		5			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-00-12	Top	15	7			n\a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	04-00-12	08-04-12	Top	12	6		and the second	n\a
3	B6(i3021)	Conc. Pt. (lbs)	L	03-11-14	03-11-14	Тор	580	300		TOFES	SON n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2690 ft-lbs	11610 ft-lbs	23.2%	1	03-11-14
End Shear	774 lbs	5785 lbs	13.4%	1	01-02-06
Total Load Deflection	L/999 (0.069")	n\a	n\a	4	04-02-00
Live Load Deflection	L/999 (0.044")	n\a	n\a	5	04-02-00
Max Defl.	0.069"	n\a	n\a	4	04-02-00
Span / Depth	9.9				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	4-7/8" x 1-3/4" 3-1/2" x 1-3/4"	819 lbs 718 lbs	22.5% 18.1%	7.9% 9.6%	Unspecified Unspecified
B2	Column	3-1/2 X 1-3/4	7 10 105	10.170	3.070	Orispedilled

Notes

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

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

Calculations assume member is fully braced.

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

AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

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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

JONNOE OF

OWE NO. TAM/4530-20 STRUCTURAL COMPONENT ONLY

application. The output here is based on building code-accepted design properties and analysis methods.

before installation evitt

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





PASSED

1ST FLR FRAMING\Flush Beams\B6(i3021) (Flush Beam) **BC CALC® Member Report**

Dry | 1 span | No cant.

October 8, 2020 17:23:39

Build 7493

Job name:

38-10.mmdl

Address:

City, Province, Postal Code: RICHMOND HILL

Description:

1ST FLR FRAMING\Flush Beams\B6(i3021)

Customer:

Specifier: Designer:

File name:

LBV

Code reports:

CCMC 12472-R

Company:

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Total Horizontal Product Length = 03-08-04

Reaction Su	mmary (Down / O	pind (ins)		
Bearing	Live	Dead	Snow	Wind
B1, 3"	587 / 0	303 / 0		
B2, 3"	578 / 0	298 / 0		

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-08-04	Top		5			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-08-04	Тор	240	120			n\a
2	J7(i2969)	Conc. Pt. (lbs)	L	00-03-10	00-03-10	Тор	69	35			n\a
3	J7(i2963)	Conc. Pt. (lbs)	L	01-07-10	01-07-10	Top	104	52	- 12 T		⊳ _∞ n\a
4	J7(i2961)	Conc. Pt. (lbs)	L	02-11-10	02-11-10	Тор	107	54	100 COL	FESSIC	****** *** III CI

		Factored	Demand/		
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	932 ft-lbs	11610 ft-lbs	8.0%	1	01-08-12
End Shear	609 lbs	5785 lbs	10.5%	1	02-07-12
Total Load Deflection	L/999 (0.005")	n\a	n\a	4	01-10-04
Live Load Deflection	L/999 (0.003")	n\a	n\a	5	01-10-04
Max Defl.	0.005"	n\a	n\a	4	01-10-04
Span / Depth	4.2				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Nember	Material	
B1	Hanger	3" x 1-3/4"	1260 lbs	n\a	19.7%	HUS1.81/10	
B2	Hanger	3" x 1-3/4"	1239 lbs	n\a	19.4%	HUS1.81/10	

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 9-1/2" LVL Beam.

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

Header for the hanger HUS1.81/10 is a Single 1-3/4" x 9-1/2" LVL Beam.

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Installation of Boise Cascade engineered wood products must be in CONFORMS TO OBE 2012 accordance with current Installation

Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788

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

Completeness and accuracy of input

qualified engineer or other appropriate

must be reviewed and verified by a

BC CALC®. BC FRAMER® , AJS™

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



owe no. Tam 14 STRUCTURAL COMPONENT ONLY

Disclosure

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.

before installation evitt





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B7(i2981) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 8, 2020 17:23:39

Build 7493 Job name:

Address:

File name: 38-10.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B7(i2981)

City, Province, Postal Code: RICHMOND HILL

Specifier:

Designer: LBV

Wind

Customer: Code reports:

CCMC 12472-R

Company:

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																			12-02	-04																		
1																																						E

Total Horizontal Product Length = 12-02-04

Snow

Reaction Summary (Down / Uplift) (lbs)

Live Dead Bearing 558 / 0 345 / 0 B1, 4-3/8" 327 / 0 224/0 B2, 2-3/8"

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0.	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-02-04	Тор		10			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-02-04	Тор	18	9			n\a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-00-12	Тор	9	4			n\a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	04-00-12	12-02-04	Тор	6	3			n\a
4	B6(i3021)	Conc. Pt. (lbs)	L	03-11-14	03-11-14	Тор	585	302			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4130 ft-lbs	23220 ft-lbs	17.8%	1	03-11-14
End Shear	1188 lbs	11571 lbs	10.3%	1	01-01-14
Total Load Deflection	L/999 (0.125")	n\a	n\a	4	05-10-03
Live Load Deflection	L/999 (0.077")	n\a	n\a	5	05-10-03
Max Defl.	0.125"	n\a	n\a	4	05-10-03
Span / Depth	14.8				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Wall/Plate	4-3/8" x 3-1/2"	1267 lbs	13.5%	6.8%	Spruce-Pine-Fir	
B2	Wall/Plate	2-3/8" x 3-1/2"	771 lbs	15.1%	7.6%	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.

AMENDED

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

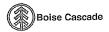
CONFORMS TO OBC 2012

OVER OF ON **OF RICH BUILDING DI**

UWG NO. TAM 1453220 COMPONENT ONLY

RECEIVED

danielle.devitt



Job name:

Customer:

Code reports:

Address:



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

PASSED

October 8, 2020 17:23:39

1ST FLR FRAMING\Flush Beams\B7(i2981) (Flush Beam)

Dry | 1 span | No cant. **BC CALC® Member Report Build 7493**

CCMC 12472-R

File name: 38-10.mmdl

1ST FLR FRAMING\Flush Beams\B7(i2981) Description:

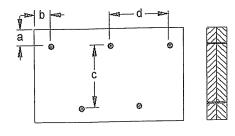
Specifier:

Designer: LBV

Company:

City, Province, Postal Code: RICHMOND HILL

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

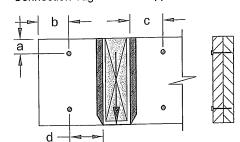
c = 5-1/2" d=20 8 "

Connectors are: William Mails 3-1/2" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Connection Tag: A

Applies to load tag(s): 3



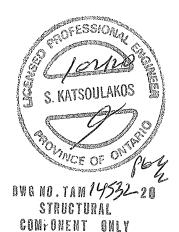
a minimum = 2"

b minimum = 4" c minimum = 4"

d maximum = 12"

Connectors are: 16d / Nails

3-1/2" ARDOX SPIRAL



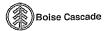
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evidence of suitability for a particular application. The output here is based on

BUbuilding 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 evitt





PASSED

1ST FLR FRAMING\Flush Beams\B21(i3238) (Flush Beam)

BC CALC® Member Report

Build 7493

Job name:

Dry | 1 span | No cant.

October 8, 2020 17:36:33

Address:

File name: Description: 38-10 SUNKEN.mmdl

Specifier:

1ST FLR FRAMING\Flush Beams\B21(i3238)

City, Province, Postal Code: RICHMOND HILL

Designer:

LBV

Wind

Customer: Code reports:

CCMC 12472-R

Company:

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	Service Co.				algebra (- 18 (). - 18 ().				34 y 100 A 100 y 24					

Total Horizontal Product Length = 10-08-08

Reaction Summary (Down / Uplift) (lbs)

Snow Live Bearing 109 / 0 121/0 B1, 4-3/8" 265/0 345 / 0 B2, 5-1/4"

l o	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-08-08	Тор		10	(40)		00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-08-06	Тор	27	13			n\a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	02-08-06	10-03-04	Top	16	8			n\a
3	B22(i3261)	Conc. Pt. (lbs)	L	02-07-08	02-07-08	Top	14	4			n\a
4	4(i590)	Conc. Pt. (lbs)	L	10-08-04	10-08-04	Top	260	171			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	640 ft-lbs	23220 ft-lbs	2.8%	1	05-00-06
End Shear	239 lbs	11571 lbs	2.1%	1	01-01-14
Total Load Deflection	L/999 (0.017")	n\a	n\a	4	05-02-14
Live Load Deflection	L/999 (0.009")	n\a	n\a	5	05-02-14
Max Defl.	0.017"	n\a	n\a	4	05-02-14
Span / Depth	12.7				

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Waterial
B1	Wall/Plate	4-3/8" x 3-1/2"	318 lbs	3.4%	1.7%	Spruce-Pine-Fir
B2	Beam	5-1/4" x 3-1/2"	848 lbs	10.8%	3.8%	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.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

2020 MEDELDE **BUILDING DIVISIO** OVE NO. TAN 14533-20 6/STRUCTURAL COM: ONERT ONLY

RECEIVED

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Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B21(i3238) (Flush Beam)

PASSED

October 8, 2020 17:36:33

BC CALC® Member Report

Build 7493

Job name:

Address: City, Province, Postal Code: RICHMOND HILL

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

38-10 SUNKEN.mmdl

File name: Description:

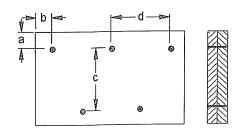
1ST FLR FRAMING\Flush Beams\B21(i3238)

Specifier:

Designer: LBV

Company:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 5-1/2" d = 🐠 8 '

Calculated Side Load = 13.0 lb/ft

Connectors are:

3-1/2" ARDOX SPIRAL



Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular

application. The output here is based on building code-accepted design

B 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.
danielle.devitt

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14. <u>24.</u> 11. 3





1ST FLR FRAMING\Flush Beams\B22(i3261) (Flush Beam)

Dry | 1 span | No cant.

October 8, 2020 17:36:33

PASSED

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

BC CALC® Member Report

Customer: Code reports:

CCMC 12472-R

File name:

38-10 SUNKEN.mmdl

1ST FLR FRAMING\Flush Beams\B22(i3261)

Description: Specifier:

Company:

Designer:

LBV

Wind

CONFORMS TO OBC 2012

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P4	01-03-00	В2

Total Horizontal Product Length = 01-03-00

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 5-1/2"	20 / 0	26 / 0
B2 2"	15 / 0	9/0

	and Crimmony						Live	Dead	Snow	Wind	Tributary
	oad Summary ag Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
-10	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-03-00	Тор		5			00-00-00
1	-	Conc. Pt. (lbs)	L	00-07-07	00-07-07	Тор	35	29			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	14 ft-lbs	11610 ft-lbs	0.1%	1	80-80-00
End Shear	6 lbs	5785 lbs	0.1%	1	00-03-08
Span / Depth	0.9				

Rearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1		5-1/2" x 1-3/4"	63 lbs	1.1%	0.5%	Spruce-Pine-Fir
B2	Hanger	2" x 1-3/4"	34 lbs	n\a	0.8%	Hanger

Cautions

Hanger model Hanger was not found. Hanger has not been analyzed for adequate capacity.

Notes

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86. Resistance Factor phi has been applied to all presented results per CSA O86. AMENDED 2020 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure

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POWNCE OF

BWG NO. TAN 14534-20 STRUCTURAL

evidence of suitability for a particular application. The output here is based on

Bubuilding 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 vitt







PASSED

B2

October 8, 2020 17:36:33

1ST FLR FRAMING\Flush Beams\B23(i3350) (Flush Beam) Dry | 1 span | No cant.

BC CALC® Member Report

Build 7493

Job name:

Customer:

B1

Code reports:

Address:

City, Province, Postal Code: RICHMOND HILL

File name:

38-10 SUNKEN.mmdl

Description:

LBV

1ST FLR FRAMING\Flush Beams\B23(i3350)

Specifier:

Designer:

CCMC 12472-R

Company:

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Total Horizontal Product Length = 12-04-08

Poaction Summary (Down / Unlift) (lbs)

Reaction Sun	minery (Dogani)	pine, (ibo)		
Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	364 / 0	405 / 0	152 / 0	
B2, 3-1/2"	173 / 0	140 / 0		

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-04-08	Тор		5			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-04-08	Тор	22	11			n\a
2	E43(i3386)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Тор	223	304	152		n\a
3	E11(i445)	Conc. Pt. (lbs)	L	12-01-12	12-01-12	Top	36	42	غنينان غنينان	COFES!	5/0//_m\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	929 ft-lbs	11610 ft-lbs	8.0%	1	06-03-04
End Shear	270 lbs	5785 lbs	4.7%	1	01-03-00
Total Load Deflection	L/999 (0.066")	n\a	n\a	35	06-03-04
Live Load Deflection	L/999 (0.039")	n\a	n\a	51	06-03-04
Max Defl.	0.066"	n\a	n\a	35	06-03-04
Span / Depth	14.8				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	5-1/2" x 1-3/4"	1204 lbs	20.3%	10.3%	Spruce-Pine-Fir
B2	Wall/Plate	3-1/2" x 1-3/4"	435 lbs	11.5%	5.8%	Spruce-Pine-Fir

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. AMENDED 2020 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

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

POLYNCE OF BWG NU. TAM 14535 - 20 STRUCTURAL COMPONENT ONLY

Disclosure

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application. The output here is based on building code-accepted design B 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® Member Report



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

PASSED

2ND FLR FRAMING\Flush Beams\B14A(i2435) (Flush Beam)

Dry | 1 span | No cant.

October 8, 2020 17:12:23

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer: Code reports:

CCMC 12472-R

File name:

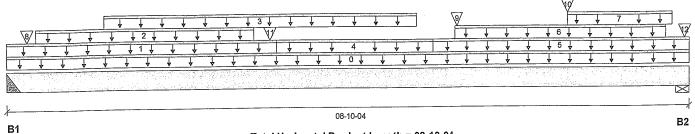
38-10.mmdl

2ND FLR FRAMING\Flush Beams\B14A(i2435) Description:

Specifier:

Designer: LBV

Company:



Total Horizontal Product Length = 08-10-04

Reaction Sui	nmary (Down / O		•	10ff and	
Bearing	Live	Dead	Snow	Wind	
B1, 4"	913 / 0	1325 / 0	1053 / 0		
B2 2-3/4"	772 / 0	1268 / 0	1112 / 0		

100	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-10-04	Тор		10			00-00-00
1	E40(i1271)	Unf. Lin. (lb/ft)	L	00-00-00	03-05-08	Тор		81			n\a
2	E40(i1271)	Unf. Lin. (lb/ft)	L	00-04-08	03-02-00	Тор		56	129		n\a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	01-03-00	05-03-00	Тор	214	107			n\a
4	E41(i1272)	Unf. Lin. (lb/ft)	L	03-05-08	05-05-08	Top		41			n\a
5	E27(i618)	Unf. Lin. (lb/ft)	L	05-05-08	08-10-04	Top		81			n\a
6	E27(i618)	Unf. Lin. (lb/ft)	L	05-09-00	08-06-08	Top		56	129		n∖a
7	FC2 Floor Material	Unf. Lin. (lb/ft)	L	07-03-00	08-07-08	Top	14				n\a
, 8		Conc. Pt. (lbs)	L	00-03-02	00-03-02	Top	221	363	523		n\a
9	-	Conc. Pt. (lbs)	L	05-09-05	05-09-05	Тор	285	233	163		n\a
-	- J3(i2625)	Conc. Pt. (lbs)	L	07-03-00	07-03-00	Top	305	152			n\a
10	(Conc. Pt. (lbs)	L	03-04-08	03-04-08	Top		93	170		n\a
11 12	E40(i1271) E27(i618)	Conc. Pt. (lbs)	Ĺ	08-09-08	08-09-08	Тор		279	589		n\a

Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	6606 ft-lbs	23220 ft-lbs	28.4%	1	04-07-00
End Shear	2791 lbs	11571 lbs	24.1%	1	01-01-08
Total Load Deflection	L/770 (0.131")	n\a	31.2%	35	04-05-05
	L/999 (0.076")	n\a	n\a	51	04-05-05
Live Load Deflection	0.131"	n\a	n\a	35	04-05-05
Max Defl.	01.0.	1116			
Span / Depth	10.6				

Demand/ Demand/ Resistance Resistance Material Member Bearing Supports Dim. (LxW) Demand Support HGUS410 24.3% 4" x 3-1/2" 4148 lbs n∖a B1 Hanger Spruce-Pine-Fir 34.3% 4025 lbs 68.0% Wall/Plate 2-3/4" x 3-1/2" B2

Cautions Header for the hanger HGUS410 is a Double 1-3/4" x 9-1/2" LVL Beam.

Header for the hanger 11803410 is a 23005 to the Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for Per: adequate capacity.

CITY OF R

1146 NO. TAM/453620 RECEISTRUCTURAL

danicow.dwent ONLY





PASSED

2ND FLR FRAMING\Flush Beams\B14A(i2435) (Flush Beam) Dry | 1 span | No cant.

BC CALC® Member Report Build 7493

Job name: Address:

October 8, 2020 17:12:23

File name: 38-10.mmdl Description:

LBV

2ND FLR FRAMING\Flush Beams\B14A(i2435)

Customer:

City, Province, Postal Code: RICHMOND HILL

Specifier:

Designer:

Code reports:

CCMC 12472-R

Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria. Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

CONFORMS TO OBC 2012

Hanger Manufacturer: Unassigned

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

AMENDED 2020

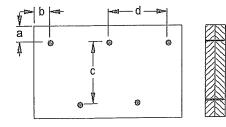
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

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

verification.

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 5-1/2" d = 1818"

Calculated Side Load = 626.9 lb/ft Connectors are: 16d 🥎 Nails

3-1/2" ARDOX SPIRAL



Disclosure

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application. The output here is based on building code-accepted design

Buproperties 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.

danielle.devitt





PASSED

October 8, 2020 17:12:23

2ND FLR FRAMING\Flush Beams\B15A(i2587) (Flush Beam)

BC CALC® Member Report

Build 7493

Job name: Address:

Dry | 1 span | No cant.

38-10.mmdl File name:

Description:

2ND FLR FRAMING\Flush Beams\B15A(i2587)

City, Province, Postal Code: RICHMOND HILL

Specifier:

LBV

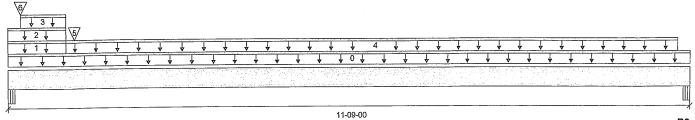
Customer: Code reports:

B1

CCMC 12472-R

Designer:

Company:



Total Horizontal Product Length = 11-09-00

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow
B1, 5-1/4"	969 / 0	1528 / 0	1147 / 0
B2, 5-1/4"	212 / 0	228 / 0	77 / 0

Los	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-09-00	Тор		10			00-00-00
1	E28(i617)	Unf. Lin. (lb/ft)	L	00-00-00	00-11-14	Тор		81			n\a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-11-14	Тор	15				n\a
3	E28(i617)	Unf. Lin. (lb/ft)	L	00-02-10	00-11-14	Тор		75	163		n\a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-11-14	11-06-06	Тор	27	13			n\a
5	-	Conc. Pt. (lbs)	L	01-01-10	01-01-10	Top	885	1344	1069		n\a
6	E28(i617)	Conc. Pt. (lbs)	L	00-02-10	00-02-10	Тор			30		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3249 ft-lbs	23220 ft-lbs	14.0%	13	01-02-10
End Shear	3914 lbs	11571 lbs	33.8%	13	01-02-12
Total Load Deflection	L/999 (0.101")	n\a	n\a	35	05-03-07
Live Load Deflection	L/999 (0.058")	n\a	n\a	51	05-03-07
Max Defl.	0.101"	n\a	n\a	35	05-03-07
Snan / Denth	13.9				

Bearing	a Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	5-1/4" x 3-1/2"	4600 lbs	58.6%	20.5% 3.0%	Unspecified
B2	Beam	5-1/4" x 3-1/2"	680 lbs	8.7%	3.0%	Unspecified

Cautions

Concentrated side load(s) 14,15,16,17,18 are closer than 18" from end of member. Please consult a CITY OF RIC technical representative or Professional of Record.

BUILDING

danielle.devitt



BC CALC® Member Report



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

PASSED

October 8, 2020 17:12:23

2ND FLR FRAMING\Flush Beams\B15A(i2587) (Flush Beam) Dry | 1 span | No cant.

Build 7493

Job name: Address:

File name: Description: 38-10.mmdl

2ND FLR FRAMING\Flush Beams\B15A(i2587)

City, Province, Postal Code: RICHMOND HILL

Specifier:

LBV

Customer: Code reports:

CCMC 12472-R

Designer:

Company:

Notes

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

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

CONFORMS TO OBC 2012

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

AMENDED 2020

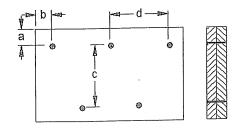
Resistance Factor phi has been applied to all presented results per CSA O86. BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

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

verification.

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 5-1/2" d = 289 0 11

Connectors are:

A. Nails 3-1/2" ARDOX SPIRAL

SOUNCE OF ONE uws no. Tan 14 COMPONENT ONLY

Disclosure

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evidence of suitability for a particular application. The output here is based on

Bubuilding 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 vitt





2ND FLR FRAMING\Flush Beams\B15B(i3483) (Flush Beam)

Dry | 1 span | No cant.

October 9, 2020 08:05:16

PASSED

Build 7493

Job name:

File name:

Address:

City, Province, Postal Code: RICHMOND HILL

Description: 2ND FLR FRAMING\Flush Beams\B15B(i3483)

38-10 EL B.mmdl

Specifier:

Customer:

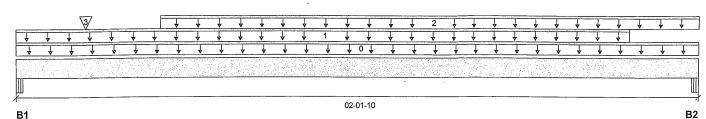
BC CALC® Member Report

Designer: LBV

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 02-01-10

Reaction Summary (Down / Uplift) (lbs)

I COOCIOII GOII		10 0) ()		
Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	39 / 0	199 / 0	187 / 0	
B2, 2-3/4"	25 / 0	172 / 0	157 / 0	

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	02-01-10	Тор		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-11-00	Тор	33	17			n\a
2	E28(i617)	Unf. Lin. (lb/ft)	L	00-05-06	02-01-10	Тор		156	163		n\a
3	E40(i1271)	Conc. Pt. (lbs)	L	00-02-10	00-02-10	Тор		55	69		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	160 ft-lbs	23220 ft-lbs	0.7%	13	01-02-01
End Shear	317 lbs	11571 lbs	2.7%	23	01-02-12
Total Load Deflection	L/999 (0")	n\a	n\a	35	01-02-01
Live Load Deflection	L/999 (0")	n\a	n\a	51	01-02-01
Max Defl.	0"	n\a	n\a	35	01-02-01
Span / Depth	2.0				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	5-1/4" x 3-1/2"	569 lbs	7.2%	2.5%	Unspecified
B2	Beam	2-3/4" x 3-1/2"	475 lbs	11.5%	4.0%	Unspecified

Notes

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

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

Calculations assume 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 086.

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

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9 CONFORMS TO OBG 2012 AMENDED 2020 **CITY OF RI** ONLY danielle.devitt



BC CALC® Member Report



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

PASSED

2ND FLR FRAMING\Flush Beams\B15B(i3483) (Flush Beam)

Dry | 1 span | No cant.

October 9, 2020 08:05:16

Build 7493

Job name: Address:

City, Province, Postal Code: RICHMOND HILL

Description:

Specifier:

File name:

Designer:

Customer: Code reports:

CCMC 12472-R

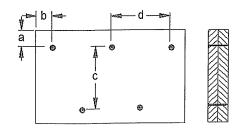
LBV

38-10 EL B.mmdl

2ND FLR FRAMING\Flush Beams\B15B(i3483)

Company:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

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

Connectors are:

A Nails 3-1/2" ARDOX SPIRAL

AOUNGE OF OPIN

OWG NO. TAN 1 4538-20 STRUCTURAL COMPONENT ONLY

Disclosure

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application. The output here is based on CITY building code-accepted design

B 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..

danielle.devitt





PASSED

2ND FLR FRAMING\Flush Beams\B14C(i4493) (Flush Beam)

Dry | 1 span | No cant.

October 9, 2020 08:50:30

BC CALC® Member Report Build 7493

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

File name:

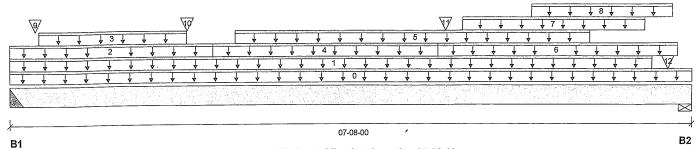
38-10 EL C.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B14C(i4493)

Specifier:

Designer: LBV

Company: CCMC 12472-R



Total Horizontal Product Length = 07-08-00

(Down / Unlift) (lbs)

Reaction Sun	Illiary (Down / O	pind (ipa)			
Bearing	Live	Dead	Snow	Wind	
B1. 4"	771 / 0	983 / 0	611 / 0		
B2 5-1/2"	648 / 0	1058 / 0	817 / 0		

Los	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-08-00	Top		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-02-08	Top	6	3			n\a
2	E46(i3782)	Unf. Lin. (lb/ft)	L	00-00-00	02-03-00	Top		81			n\a
3	E46(i3782)	Unf. Lin. (lb/ft)	L	00-03-15	01-11-08	Top		48	110		n\a
4	E45(i3785)	Unf. Lin. (lb/ft)	L	02-03-00	04-09-00	Top		41			n\a
5	Smoothed Load	Unf. Lin. (lb/ft)	L	02-06-00	06-06-00	Тор	207	104			n\a
6	E44(i3780)	Unf. Lin. (lb/ft)	L	04-09-00	07-06-00	Top		81			n\a
7	E44(i3780)	Unf. Lin. (lb/ft)	L	05-00-08	07-01-08	Тор		48	110		n\a
8	FC2 Floor Material	Unf. Lin. (lb/ft)	L	05-10-00	07-05-04	Тор	41	20			n\a
9	-	Conc. Pt. (lbs)	L	00-03-08	00-03-08	Тор	206	222	232		n\a
10	-	Conc. Pt. (lbs)	L	01-11-09	01-11-09	Тор	277	237	172		n\a
11	E44(i3780)	Conc. Pt. (lbs)	L	04-10-00	04-10-00	Тор		96	167		n\a
12	(,	Conc. Pt. (lbs)	L	07-04-11	07-04-11	Тор		258	449		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4202 ft-lbs	23220 ft-lbs	18.1%	1	04-02-00
End Shear	2126 lbs	11571 lbs	18.4%	1	06-05-00
Total Load Deflection	L/999 (0.058")	n\a	n\a	35	03-09-00
Live Load Deflection	L/999 (0.034")	n\a	n\a	51	03-09-00
Max Defl.	0.058"	n\a	n\a	35	03-09-00
Span / Depth	8.8				

Bearing	ı Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	4" x 3-1/2"	2997 lbs	n\a	17.5%	HGUS410
B2	Wall/Plate	5-1/2" x 3-1/2"	3196 lbs	27.0%	13.6%	Spruce-Pine-

Cautions Header for the hanger HGUS410 is a Double 1-3/4" x 9-1/2" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for example 100 cm. adequate capacity.

CITY OF R



BC CALC® Member Report



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

PASSED

2ND FLR FRAMING\Flush Beams\B14C(i4493) (Flush Beam)

Dry | 1 span | No cant.

October 9, 2020 08:50:30

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports:

File name:

38-10 EL C.mmdl

LBV

Description:

2ND FLR FRAMING\Flush Beams\B14C(i4493) Specifier:

Designer:

Company: CCMC 12472-R

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.

CONFORMS TO OBC 2012

Hanger Manufacturer: Unassigned

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

AMENDED 2020

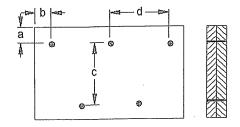
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

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

verification.

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 5-1/2"8" d = 1000

Calculated Side Load = 589.3 lb/ft Connectors are: 16d (4): Nails

3-1/2" ARDOX SPIRAL



OWE NO. TAM 1453720 STRUCTURAL COMPONENT ONLY

Disclosure

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building code-accepted design

BUproperties 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.

danielle.devitt





PASSED

October 9, 2020 08:50:30

2ND FLR FRAMING\Flush Beams\B15C(i4448) (Flush Beam)

BC CALC® Member Report

Build 7493

Customer:

Code reports:

Job name: Address:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

Dry | 1 span | No cant.

38-10 EL C.mmdl

Wind

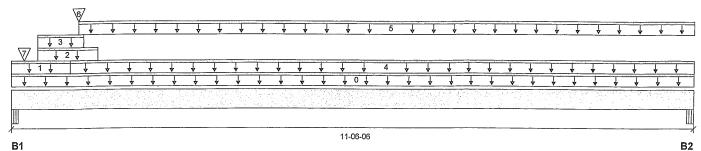
File name:

Description: 2ND FLR FRAMING\Flush Beams\B15C(i4448)

Specifier:

Designer: LBV

Company:



Total Horizontal Product Length = 11-06-06

Reaction Summary (Down / Uplift) (lbs)

Live Dead Snow 834 / 0 1203 / 0 754 / 0 B1, 5-1/4" 202/0 47 / 0 202 / 0 B2, 2-5/8"

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-06-06	Тор		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-11-13	Тор	17				n\a
2	E47(i3779)	Unf. Lin. (lb/ft)	L	00-05-06	01-05-06	Тор		81			n\a
3	E47(i3779)	Unf. Lin. (lb/ft)	L	00-05-06	01-02-10	Тор		75	163		n\a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-11-13	11-06-06	Top	14	7			n\a
5	FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-01-10	11-06-06	Тор	13	6			n\a
6	B14C(i4493)	Conc. Pt. (lbs)	L	01-01-10	01-01-10	Тор	740	950	600		n\a
7	E48(i3784)	Conc. Pt. (lbs)	L	00-02-10	00-02-10	Тор		57	75		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2544 ft-lbs	23220 ft-lbs	11.0%	1	02-08-11
End Shear	2989 lbs	11571 lbs	25.8%	1	01-02-12
Total Load Deflection	L/999 (0.082")	n\a	n\a	35	05-05-00
Live Load Deflection	L/999 (0.046")	n\a	n\a	51	05-05-00
Max Defl.	0.082"	n\a	n\a	35	05-05-00
Span / Depth	13.9				

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	5-1/4" x 3-1/2"	3508 lbs	35.8%	15.7%	Unspecified
B2	Beam	2-5/8" x 3-1/2"	602 lbs	12.3%	5.4%	Unspecified

Cautions

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

CITY OF R





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B15C(i4448) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7493

Job name: Address:

Dry | 1 span | No cant.

October 9, 2020 08:50:30

File name:

38-10 EL C.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B15C(i4448)

Customer:

City, Province, Postal Code: RICHMOND HILL

Specifier:

Designer: LBV

Code reports:

CCMC 12472-R

Company:

Notes

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

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

CONFORMS TO OBC 2012

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.

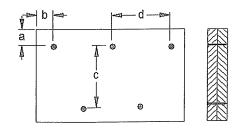
AWENDED 2020

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086. Unbalanced snow loads determined from building geometry were used in selected product's

verification.

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 5-1/2" d = @ 0"

Calculated Side Load = 450.0 lb/ft

Connectors are:

Nails

3-1/2" ARDOX SPIRAL

OVINCE OF ONLY 946 NO. TAM 14540-20 STRUCTURAL COMPONENT ONLY

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular

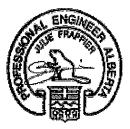
application. The output here is based on building code-accepted design

B 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 evitt



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







			Ba	are			1/2" Gypsum Ceiling On Centre Spacing				
Depth	Series		On Centi	re Spacing							
•		12"	16"	19.2"	24"	12"	16"	19.2"	24"		
	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	14'-2"	N/A		
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A		
9-1/2"	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A		
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A		
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A		
	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A		
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A		
44 7 (0)	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A		
11-7/8"	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A		
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A		
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A		
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A		
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A		
14"	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A		
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A		
	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A		
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A		
4.611	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A		
16"	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A		
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A		

			Mid-Spar	n Blocking	Mid-Span Blocking and 1/2" Gypsum Ceiling				
Depth	Series		On Centr	e Spacing			On Cent	re Spacing	
•		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	16'-8"	15'-3"	14'-5"	N/A	16'-8"	15'-3"	14'-5"	N/A
	NI-40x	17'-11"	· 16'-11"	16'-1"	N/A	18'-5"	17'-1"	16'-1"	N/A
9-1/2"	N1-60	18'-2"	17'-1"	16'-4"	N/A	18'-7"	17'-4"	16'-4"	N/A
	NI-70	19'-2"	17'-10"	17'-2"	N/A	19'-7"	18'-3"	17'-7"	N/A
	NI-80	19'-5"	18'-0"	17'-4"	N/A	19'-10"	18'-5"	17'-8"	N/A
	NI-20	19'-6"	18'-1"	17'-3"	N/A	19'-11"	18'-3"	17'-3"	N/A
	Ni-40x	21'-0"	19'-6"	18'-8"	N/A	21'-7"	20'-2"	19'-2"	N/A
	NI-60	21'-4"	19'-9"	18'-11"	N/A	21'-11"	20'-4"	19'-6"	N/A
11-7/8"	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-5"	20'-5"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-8"	N/A
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-11"	20'-11"	N/A	24'-3"	22'-7"	21'-7"	N/A
	N1-60	24'-0"	22'-3"	21'-3"	N/A	24'-8"	22'-11"	21'-11"	N/A
14"	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-11"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	25'-3"	24'-2"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
16"	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A

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

a live load deflection limit of L/480 and a total load deflection limit of L/240.

2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

^{3.} Minimum bearing length shall be 1-3/4 inches for the end bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

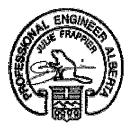
^{5.} This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

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

Per: danielle.devitt



Live Load = 40 psf, Dead Load = 15 psf Simple Spans, L/480 Deflection Limit 3/4" OSB G&N Sheathing







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

			Mid-Spar	n Blocking	Mid-Span Blocking and 1/2" Gypsum Ceiling				
Depth	Series		On Centr	e Spacing			On Centi	re Spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
9-1/2"	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"
	NI-70	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17'-10"	16'-7"
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"
	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"
	NI-40x	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"
/	NI-60	22'-1"	20'-7"	19'-7"	18 [′] -4"	22'-8"	20'-10"	19'-8"	18'-4"
11-7/8"	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"	21'-2"	19'-9"
	N1-80	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"	21'-5"	20'-0"
	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"
	NI-40x	24'-5"	22'-9"	21'-8"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
	NI-60	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
14"	NI-70	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"	23'-9"	22'-4"
	NI-80	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"
	NI-60	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"
16"	NI-80	29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90x	29'-11"	27'-10"	26'-6"	25'-0"	30'-6"	28'-5"	27'-2"	25'-8"

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

a live load deflection limit of L/480 and a total load deflection limit of L/240.

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

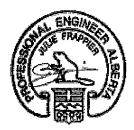
^{3.} Minimum bearing length shall be 1-3/4 inches for the end bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

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

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



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







			Ba	are		l	1/2" Gypsum Ceiling On Centre Spacing				
Depth	Series		On Centr	e Spacing							
00000	•	12"	16"	19.2"	24"	12"	16"	19.2"	24"		
	NI-20	15'-1"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A		
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A		
9-1/2"	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A		
,	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A		
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A		
	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A		
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A		
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A		
11-7/8"	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A		
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A		
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A		
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A		
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A		
14"	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A		
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A		
	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A		
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A		
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A		
16"	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A		
•	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A		

			Mid-Spar	n Blocking	Mid-Span Blocking and 1/2" Gypsum Ceiling					
Depth	Series		On Centr	e Spacing		On Centre Spacing				
Берил	30,,03	12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	15'-7"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A	
	NI-40x	17'-9"	16'-1"	15'-1"	N/A	17'-9"	16'-1"	15'-1"	N/A	
9-1/2"	NI-60	18'-1"	16'-4"	15'-4"	N/A	18'-1"	16'-4"	15'-4"	N/A	
J 1/4	NI-70	19'-2"	17'-10"	16'-9"	N/A	19'-7"	17'-10"	16'-9"	N/A	
	NI-80	19'-5"	18'-0"	17'-1"	N/A	19'-10"	18'-3"	17'-1"	N/A	
	NI-20	18'-9"	17'-0"	16'-0"	N/A	18'-9"	17'-0"	16'-0"	N/A	
	NI-40x	21'-0"	19'-3"	17'-9"	N/A	21'-3"	19'-3"	17'-9"	N/A	
	NI-60	21'-4"	19'-8"	18'-5"	N/A	21'-8"	19'-8"	18'-5"	N/A	
11-7/8"	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-4"	20'-0"	N/A	
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-5"	N/A	
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A	
	NI-40x	23'-7"	21'-5"	19'-6"	N/A	24'-1"	21'-5"	19'-6"	N/A	
	NI-60	24'-0"	22'-3"	21'-0"	N/A	24'-8"	22'-5"	21'-0"	N/A	
14"	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-9"	N/A	
14	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A	
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A	
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	24'-10"	23'-4"	N/A	
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A	
16"	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A	
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A	

^{1.} Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.

Per: danielle.devitt

^{2.} Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of \$/8 inch for a joist MOND HILL spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-spanwith strappings DIVISION Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

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

^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers. 6/2021

5. This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required.

based on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012.
6. Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C. Report PR-L274



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







			Ba	are		1/2" Gypsum Ceiling					
Depth	Series		On Centi	re Spacing			On Centre Spacing				
		12"	16"	19.2"	24"	12"	16"	19.2"	24"		
	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"		
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"		
9-1/2"	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	16'-5"	15'-5"	14'-3"		
	NI-70	18'-0"	16'-11"	16'-3"	15'-6"	18'-5"	17'-3"	16'-7"	15'-6"		
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	15'-10"		
	NI-20	17'-10"	16'-10"	16'-0"	14'-10"	18'-6"	17'-1"	16'-0"	14'-10"		
	NI-40x	19'-4"	17'-11"	17'-3"	15'-10"	19'-11"	18'-6"	17'-9"	15'-10"		
44 7/00	NI-60	19'-7"	18'-2"	17'- 5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-1"		
11-7/8"	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"		
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"		
	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"		
	NI-40x	21'-5"	19'-10"	18'-11"	17'-5"	22'-1"	20'-6"	19'-6"	17'-5"		
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"		
14"	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"		
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"		
	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"		
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"		
4.511	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"		
16"	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"		
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"		

			Mid-Spai	n Blocking		Mid-Span Blocking and 1/2" Gypsum Ceiling On Centre Spacing				
Depth	Series		On Centr	e Spacing						
•	,	12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"	
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"	
9-1/2"	NI-60	18'-1"	16'-5"	15'-5"	14'-3"	18'-1"	16'-5"	15'-5"	14'-3"	
	NI-70	19'-10"	17'-11"	16'-9"	15'-6"	19'-10"	17'-11"	16'-9"	15'-6"	
		18'-3"	17'-1"	15'-10"						
	NI-20	18'-10"	17'-1"	16'-0"	14'-10"	18'-10"	17'-1"	16'-0"	14'-10"	
	NI-40x	21'-3"	19'-3"	17'-9"	15'-10"	21'-3"	19'-3"	17'-9"	15'-10"	
= /0!!	NI-60	21'-9"	19'-8"	18'-5"	17'-1"	21'-9"	19'-8"	18'-5"	17'-1"	
11-7/8"	NI-70	23'-4"	21'-5"	20'-1"	18'-6"	23'-8"	21'-5"	20'-1"	18'-6"	
	NI-80	23'-7"	2 1'- 10"	20'-5"	18'-11"	24'-1"	21'-10"	20'-5"	18'-11"	
	NI-90x	24'-3"	22'-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"	
	NI-40x	24'-2"	21'-5"	19'-6"	17'-5"	24'-2"	21'-5"	19'-6"	17'-5"	
	NI-60	24'-9"	22'-5"	21'-0"	19'-6"	24'-9"	22'-5"	21'-0"	19'-6"	
14"	NI-70	26'-1"	24'-3"	22'-9"	21'-0"	26'-8"	24'-3"	22'-9"	21'-0"	
	NI-80	26'-6"	24'-7"	23'-3"	21'-6"	27'-1"	24'-10"	23'-3"	21'-6"	
	NI-90x	27'-3"	25'-4"	24'-1"	22'-4"	27'-9"	25'-10"	24'-3"	22'-4"	
	NI-60	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"	
4.6%	NI-70	28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"	
16"	NI-80	29'-1"	27'-0"	25'-9"	23'-10"	29'-8"	27'-6"	25'-10"	23'-10"	
	NI-90x	29'-11"	27'-10"	26'-6"	24'-10"	30 '- 6"	28'-5"	26'-11"	24'-10"	

^{1.} Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.

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

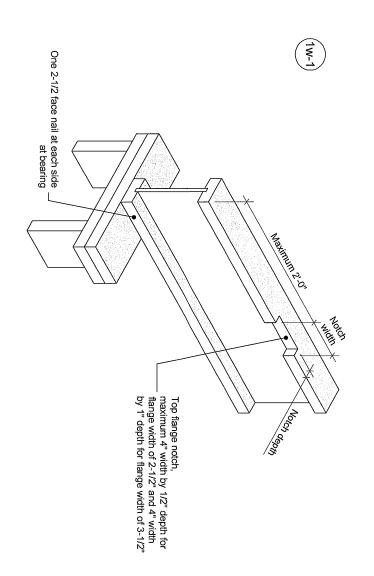
6. Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation EIVED guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

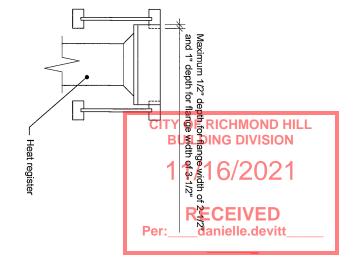
Per: danielle.devitt

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

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

^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers. 16/202





- Notes:

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

 2. The maximum dimensions for a notch on the side of the top flange are 4-inch width by 1/2-inch depth for flange width of 2-1/2 inches, and 4-inch width by 1-inch depth for flange width of 3-1/2 inches.

 3. This detail applies to simple-span joists and multiple-span joists where the notch is located at the end half-span.

 4. For other applications, contact Nordic Structures.

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STRUCTURES

nordic.ca

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

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

Notch in I-joist for Heat Register

DATE

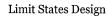
DOCUMENT

1w-1 NUMBER

I-joist - Typical Floor Framing and Construction Details

2018-04-10

Construction Detail



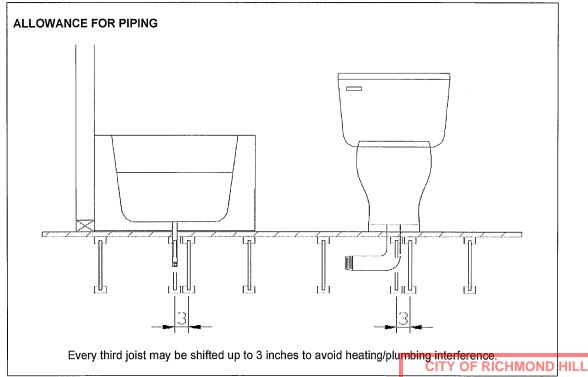


Allowance for Piping (Installation Notes)

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

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

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



BUILDING DIVISION

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