

Products					
PlotID	Length	Product	Plies	Net Qty	
J1	16-00-00	9 1/2" NI-40x	1	28	
J1DJ	16-00-00	9 1/2" NI-40x	2	12	
J2	14-00-00	9 1/2" NI-40x	1	6	
J3	12-00-00	9 1/2" NI-40x	1	11	
J4	8-00-00	9 1/2" NI-40x	1	5	
J5	6-00-00	9 1/2" NI-40x	1	5	
J6	4-00-00	9 1/2" NI-40x	1	3	
J7	2-00-00	9 1/2" NI-40x	1	2	
B2	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B6	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B7	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	

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



FROM PLAN DATED: 28 MAY 2021 **BUILDER: ROYAL PINE HOMES**

SITE: CENTREFIELD PH. 2 **MODEL:** 38-14 COVENTRY

ELEVATION: A, B, C

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO **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:

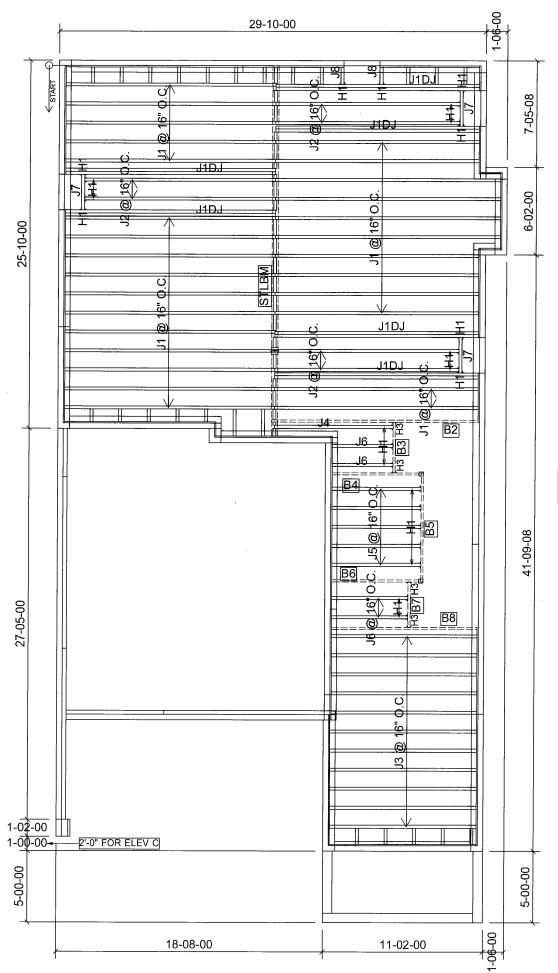
DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft² TILE LOAD: 20.0 lb/ft²

STANDARD

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2021-07-16

1st FLOOR



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	28
J1DJ	16-00-00	9 1/2" NI-40x	2	12
J2	14-00-00	9 1/2" NI-40x	1	6
J3	12-00-00	9 1/2" NI-40x	1	11
J4	10-00-00	9 1/2" NI-40x	1	1
J5	8-00-00	9 1/2" NI-40x	1	5
J6	6-00-00	9 1/2" NI-40x	1	4
J7	4-00-00	9 1/2" NI-40x	1	3
J8	2-00-00	9 1/2" NI-40x	1	2
B2	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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



FROM PLAN DATED: 28 MAY 2021
BUILDER: ROYAL PINE HOMES
SITE: CENTREFIELD PH. 2
MODEL: 38-14 COVENTRY

ELEVATION: A, B, C

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO 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.

D

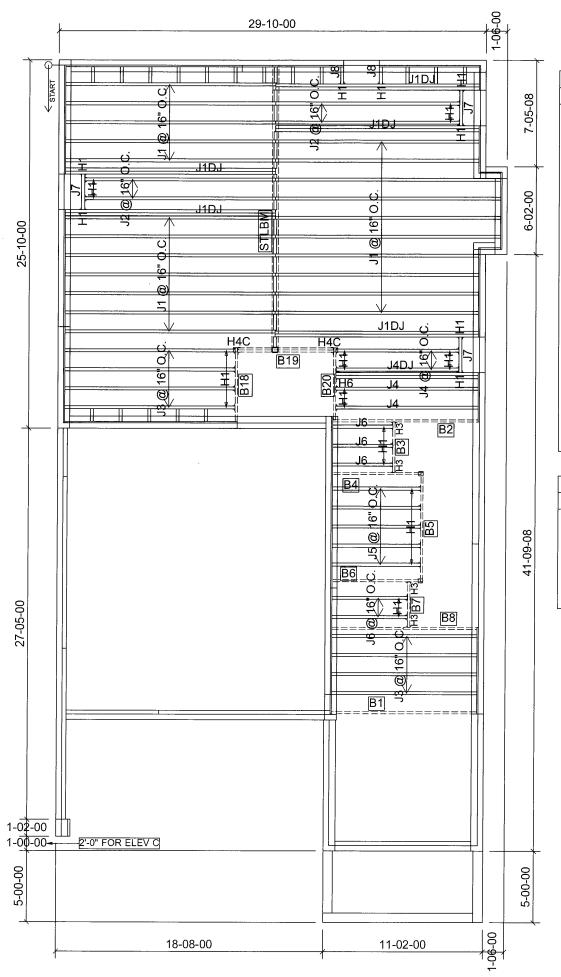
DATE: 2021-07-16

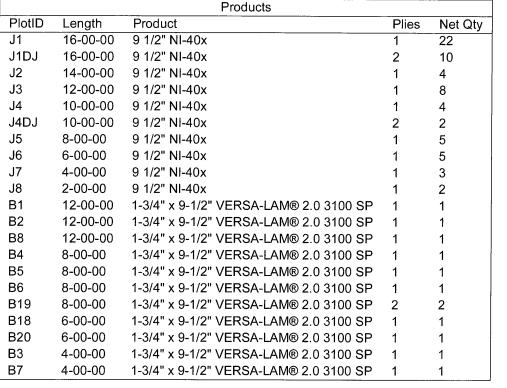
1st FLOOR

STD W/ OPT. GROUND FLOOR 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





Connector Summary				
Qty	Manuf	Product		
18	H1	IUS2.56/9.5		
8	H1	IUS2.56/9.5		
6	H1	IUS2.56/9.5		
4	H3	HUS1.81/10		
2	H4C	HUC410		
1	H6	HU312-2		



FROM PLAN DATED: 28 MAY 2021

BUILDER: ROYAL PINE HOMES

SITE: CENTREFIELD PH. 2

MODEL: 38-14
ELEVATION: A, B, C

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO 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.

DATE: 2021-07-16

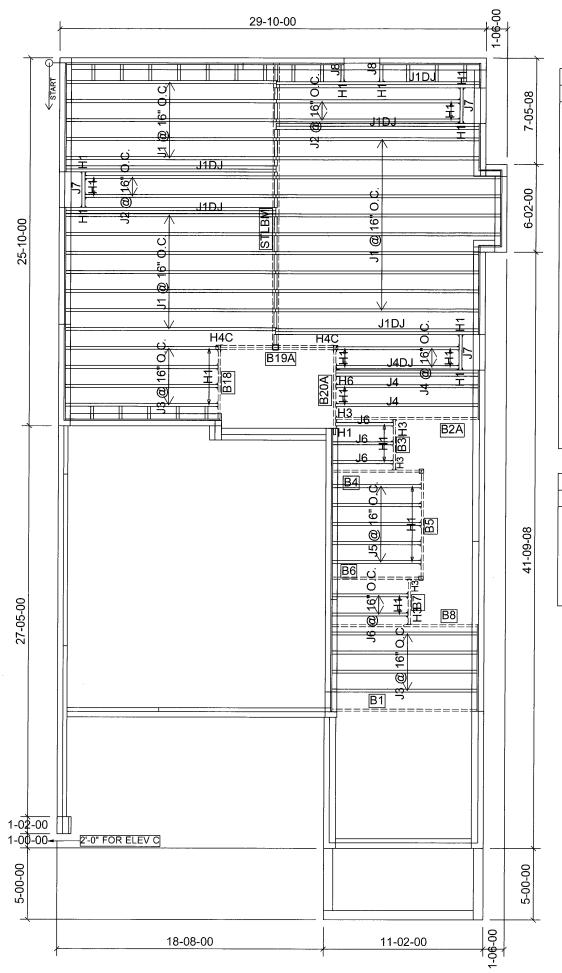
1st FLOOR

SUNKEN

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



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	22
J1DJ	16-00-00	9 1/2" NI-40x	2	10
J2	14-00-00	9 1/2" NI-40x	1	4
J3	12-00-00	9 1/2" NI-40x	1	8
J4	10-00-00	9 1/2" NI-40x	1	4
J4DJ	10-00-00	9 1/2" NI-40x	2	2
J5	8-00-00	9 1/2" NI-40x	1	5
J6	6-00-00	9 1/2" NI-40x	1	5
J7	4-00-00	9 1/2" NI-40x	1	3
J8	2-00-00	9 1/2" NI-40x	1	2
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2A	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B20A	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B19A	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B18	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary				
Qty	Manuf	Product		
19	H1	IUS2.56/9.5		
8	H1	IUS2.56/9.5		
6	H1	IUS2.56/9.5		
5	H3	HUS1.81/10		
2	H4C	HUC410		
1	H6	HU312-2		



FROM PLAN DATED: 28 MAY 2021
BUILDER: ROYAL PINE HOMES

SITE: CENTREFIELD PH. 2

MODEL: 38-14
ELEVATION: A, B, C

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO 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.

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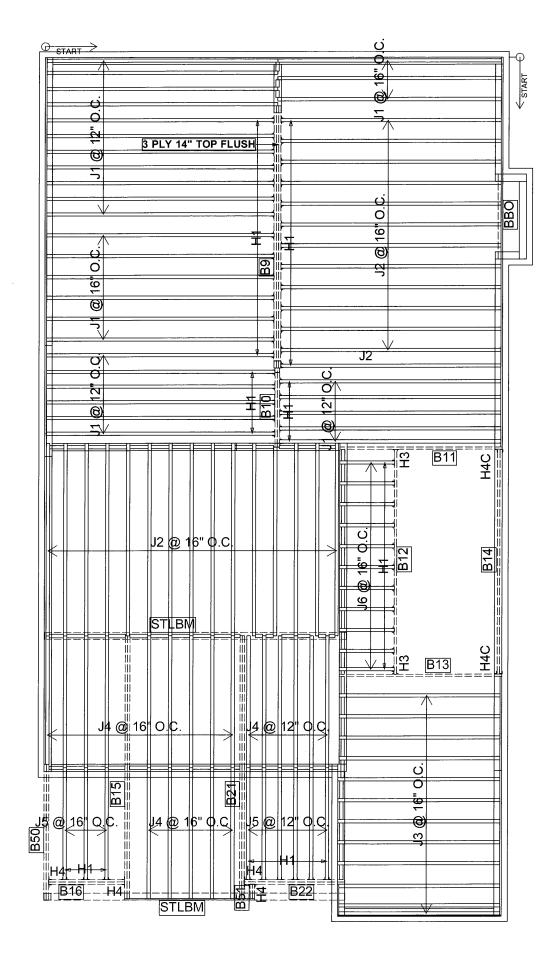
DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft² TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

1st FLOOR

DATE: 2021-07-16

SUNKEN W/ OPT. GROUND FLOOR



Products					
PlotID	Length	Product	Plies	Net Qty	
J1	16-00-00	9 1/2" NI-40x	1	31	
J2	14-00-00	9 1/2" NI-40x	1	28	
J3	12-00-00	9 1/2" NI-40x	1	12	
J4	10-00-00	9 1/2" NI-40x	1	20	
J5	8-00-00	9 1/2" NI-40x	1	9	
J6	4-00-00	9 1/2" NI-40x	1	11	
B15	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B21	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B14	16-00-00	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	1	1	
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B50	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B22	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B10	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B16	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B51	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B9	18-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3	

Connector Summary				
Qty	Manuf	Product		
11	H1	IUS2.56/9.5		
19	H1	IUS2.56/9.5		
27	H1	IUS2.56/9.5		
2	H3	HUS1.81/10		
2	H4C	HUC410		
4	H4	HGUS410		



FROM PLAN DATED: 28 MAY 2021

BUILDER: ROYAL PINE HOMES

SITE: CENTREFIELD PH. 2

MODEL: 38-14 ELEVATION: A

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO 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.

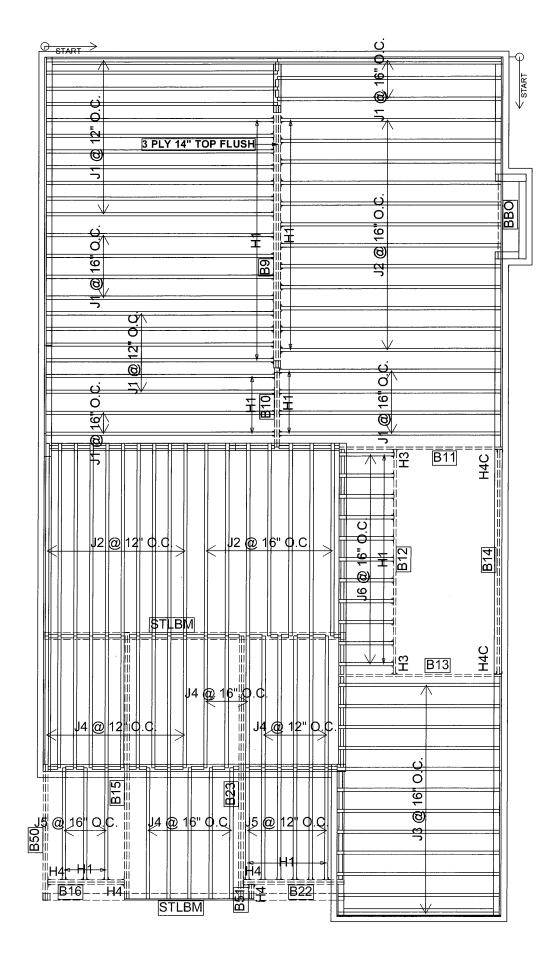
LOADING:

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

DATE: 2021-07-16

2ND FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	30
J2	14-00-00	9 1/2" NI-40x	1	29
J3	12-00-00	9 1/2" NI-40x	1	12
J4	10-00-00	9 1/2" NI-40x	1	23
J5	8-00-00	9 1/2" NI-40x	1	9
J6	4-00-00	9 1/2" NI-40x	1	11
B15	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B23	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	16-00-00	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	1	1
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B50	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B22	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B51	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	18-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary				
Qty	Manuf	Product		
11	H1	IUS2.56/9.5		
17	H1	IUS2.56/9.5		
27	H1	IUS2.56/9.5		
2	H3	HUS1.81/10		
2	H4C	HUC410		
4	H4	HGUS410		



FROM PLAN DATED: 28 MAY 2021 **BUILDER: ROYAL PINE HOMES** SITE: CENTREFIELD PH. 2

MODEL: 38-14 **ELEVATION**: A

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO **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:

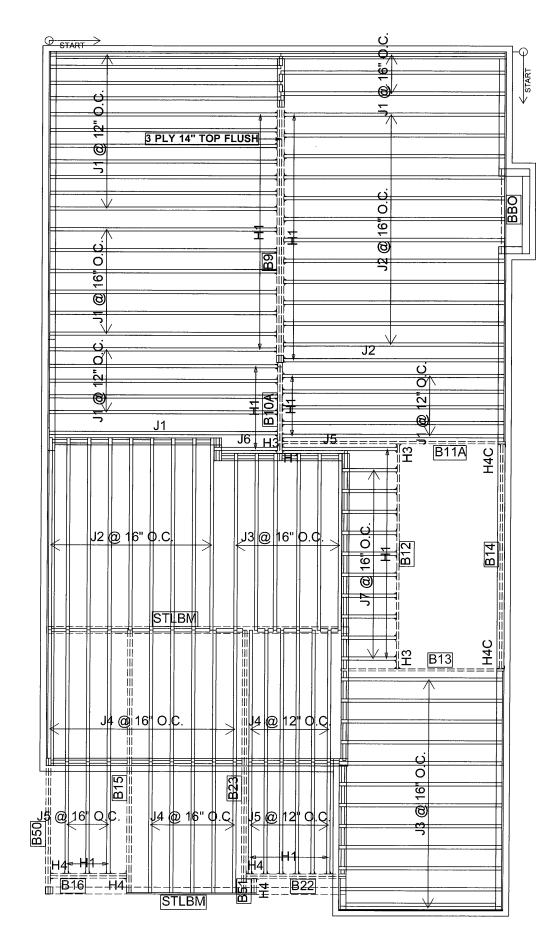
DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft² TILE LOAD: 20.0 lb/ft²

OPT. SECOND **FLOOR**

SUBFLOOR: 5/8" GLUED AND NAILED

2ND FLOOR

DATE: 2021-07-16



Products					
PlotID	Length	Product	Plies	Net Qty	
J1	16-00-00	9 1/2" NI-40x	1	31	
J2	14-00-00	9 1/2" NI-40x	1	22	
J3	12-00-00	9 1/2" NI-40x	1	18	
J4	10-00-00	9 1/2" NI-40x	1	20	
J5	8-00-00	9 1/2" NI-40x	1	10	
J6	6-00-00	9 1/2" NI-40x	1	1	
J7	4-00-00	9 1/2" NI-40x	1	10	
B15	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B23	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B11A	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B14	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	
B50	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B10A	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B22	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B16	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B51	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B9	18-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3	

Connector Summary				
Qty	Qty Manuf Product			
11	H1	IUS2.56/9.5		
21	H1	IUS2.56/9.5		
27	H1	IUS2.56/9.5		
2	H3	HUS1.81/10		
1	H3	HUS1.81/10		
2	H4C	HUC410		
4	H4	HGUS410		



FROM PLAN DATED: 28 MAY 2021 BUILDER: ROYAL PINE HOMES

SITE: CENTREFIELD PH. 2

MODEL: 38-14 ELEVATION: A

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO 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.

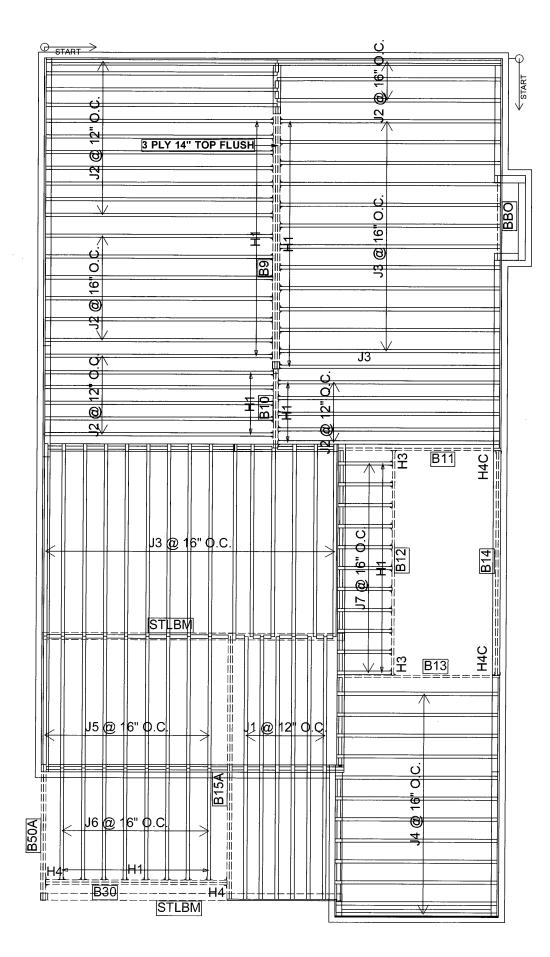
DATE: 2021-07-16

2ND FLOOR

STD W/ OPT. GROUND FLOOR LOADING:

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

SUBFLOOR: 5/8" GLUED AND NAILED



		Products	-	
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	6
J2	16-00-00	9 1/2" NI-40x	1	31
J3	14-00-00	9 1/2" NI-40x	1	28
J4	12-00-00	9 1/2" NI-40x	1	12
J5	10-00-00	9 1/2" NI-40x	1	9
J6	8-00-00	9 1/2" NI-40x	1	8
J7	4-00-00	9 1/2" NI-40x	1	11
B15A	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	16-00-00	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	1	1
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B30	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B50A	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	18-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary				
Qty	Manuf	Product		
11	H1	IUS2.56/9.5		
18	H1 -	IUS2.56/9.5		
27	H1	IUS2.56/9.5		
2	H3	HUS1.81/10		
2	H4C	HUC410		
2	H4	HGUS410		



FROM PLAN DATED: 28 MAY 2021

BUILDER: ROYAL PINE HOMES

SITE: CENTREFIELD PH. 2

MODEL: 38-14 ELEVATION: B

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO **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.

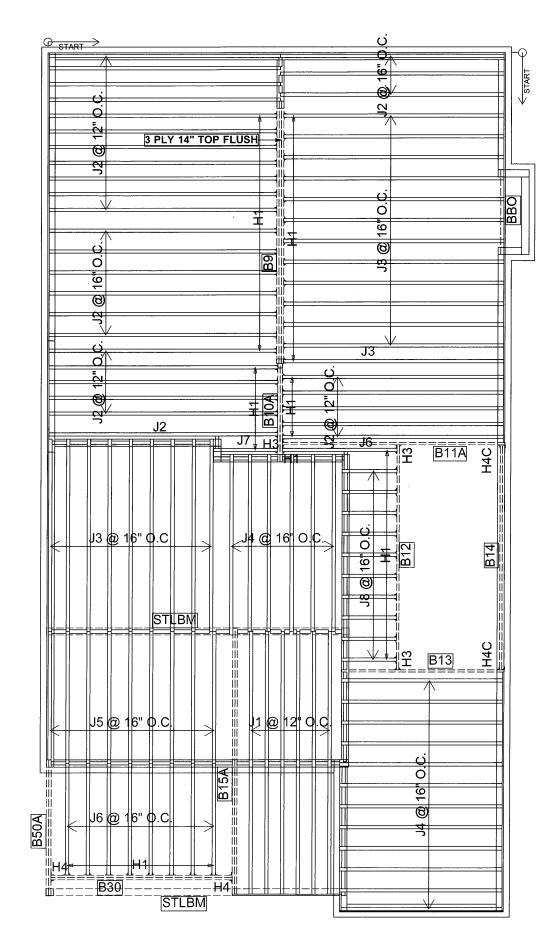
DATE: 2021-07-16

2ND FLOOR

LOADING:

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

SUBFLOOR: 5/8" GLUED AND NAILED



		Products	-	
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	6
J2 .	16-00-00	9 1/2" NI-40x	1	31
J3	14-00-00	9 1/2" NI-40x	1	22
J4	12-00-00	9 1/2" NI-40x	1	18
J5	10-00-00	9 1/2" NI-40x	1	9
J6	8-00-00	9 1/2" NI-40x	1	9
J7	6-00-00	9 1/2" NI-40x	1	1
J8	4-00-00	9 1/2" NI-40x	1	10
B15A	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11A	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B30	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B50A	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10A	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	18-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary				
Qty	Qty Manuf Product			
11	H1	IUS2.56/9.5		
20	H1	IUS2.56/9.5		
27	H1	IUS2.56/9.5		
2	H3	HUS1.81/10		
1	H3	HUS1.81/10		
2	H4C	HUC410		
2	H4	HGUS410		



FROM PLAN DATED: 28 MAY 2021

BUILDER: ROYAL PINE HOMES

SITE: CENTREFIELD PH. 2

MODEL: 38-14 **ELEVATION**: B

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO **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:

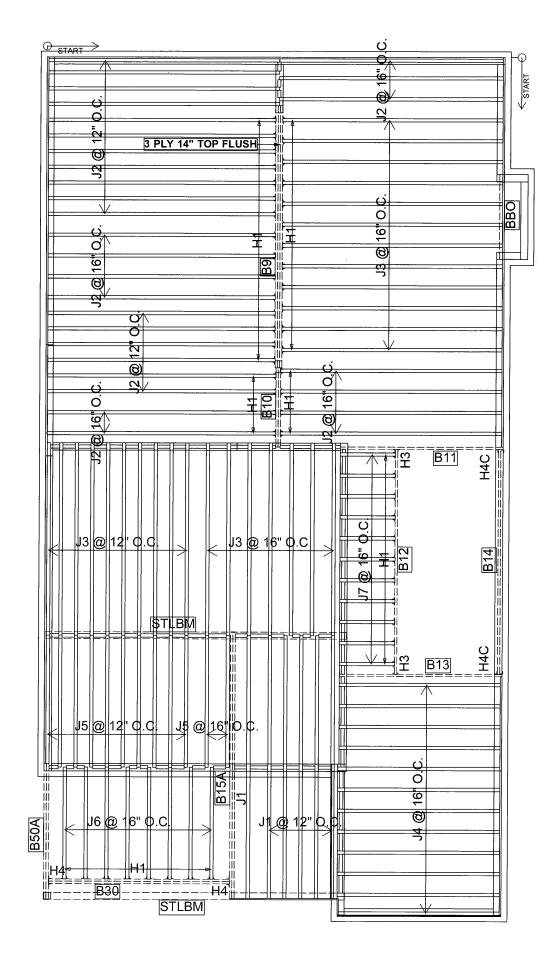
DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft² TILE LOAD: 20.0 lb/ft²

STD W/ OPT. **GROUND FLOOR**

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2021-07-16

2ND FLOOR



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	6
J2	16-00-00	9 1/2" NI-40x	1	30
J3	14-00-00	9 1/2" NI-40x	1	29
J4	12-00-00	9 1/2" NI-40x	1	12
J5	10-00-00	9 1/2" NI-40x	1	12
J6	8-00-00	9 1/2" NI-40x	1	8
J7	4-00-00	9 1/2" NI-40x	1	11
B15A	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	16-00-00	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	1	1
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B30	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B50A	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	18-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary				
Qty	Manuf	Product		
11	H1	IUS2.56/9.5		
16	H1	IUS2.56/9.5		
27	H1	IUS2.56/9.5		
2	H3	HUS1.81/10		
2	H4C	HUC410		
2	H4	HGUS410		



FROM PLAN DATED: 28 MAY 2021 **BUILDER:** ROYAL PINE HOMES

SITE: CENTREFIELD PH. 2

MODEL: 38-14 **ELEVATION**: B

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO **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

LOADING:

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

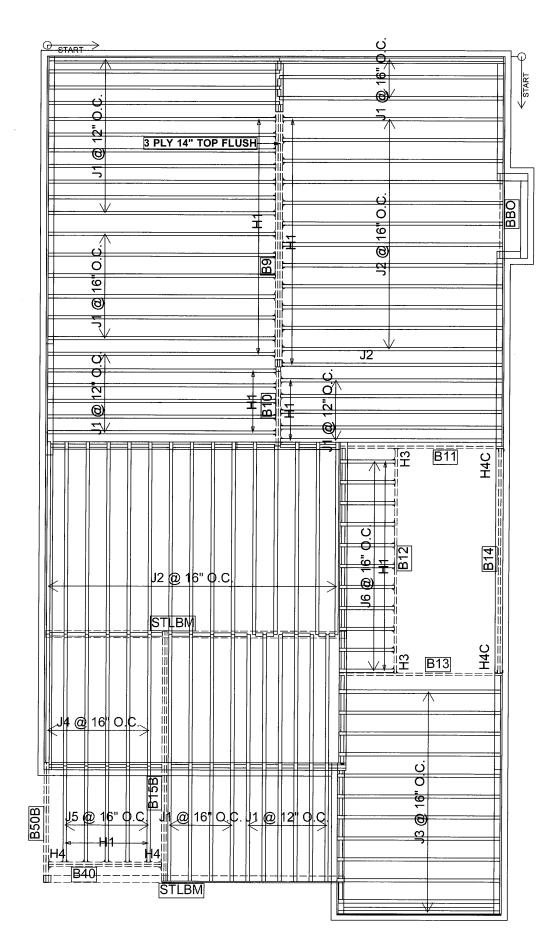
OPT. SECOND **FLOOR**

DATE: 2021-07-16

2ND FLOOR

SUBFLOOR: 5/8" GLUED AND NAILED

APPLICATION AS PER O.B.C 9.30.6.



		Products	-	
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	41
J2	14-00-00	9 1/2" NI-40x	1	28
J3	12-00-00	9 1/2" NI-40x	1	12
J4	10-00-00	9 1/2" NI-40x	1	6
J5	8-00-00	9 1/2" NI-40x	1	5
J6	4-00-00	9 1/2" NI-40x	1	11
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15B	16-00-00	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	1	1
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B40	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B50B	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
В9	18-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary				
Qty	Manuf	Product		
11	H1	IUS2.56/9.5		
15	H1	IUS2.56/9.5		
27	H1	IUS2.56/9.5		
2	H3	HUS1.81/10		
2	H4C	HUC410		
2	H4	HGUS410		



FROM PLAN DATED: 28 MAY 2021
BUILDER: ROYAL PINE HOMES
SITE: CENTREFIELD PH. 2

MODEL: 38-14 ELEVATION: C

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO REVISION:

NOTES:

REFER TO THE **NORDIC INSTALLATION**GUIDE FOR PROPER STORAGE AND
INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.

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.

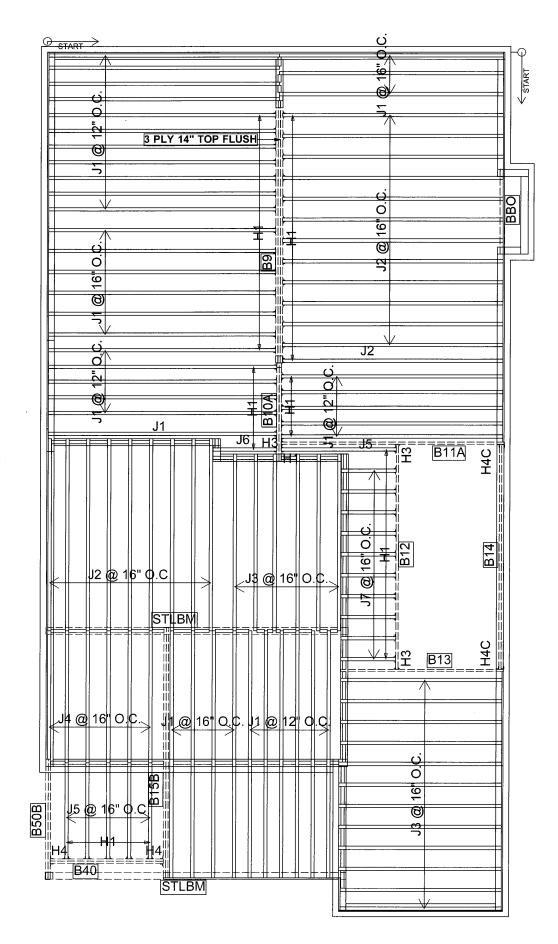
DATE: 2021-07-16

2ND FLOOR

LOADING:

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

SUBFLOOR: 5/8" GLUED AND NAILED



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	41
J2	14-00-00	9 1/2" NI-40x	1	22
J3	12-00-00	9 1/2" NI-40x	1	18
J4	10-00-00	9 1/2" NI-40x	1	6
J5	8-00-00	9 1/2" NI-40x	1	6
J6	6-00-00	9 1/2" NI-40x	1	1
J7	4-00-00	9 1/2" NI-40x	1	10
B11A	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15B	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10A	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B40	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B50B	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	18-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary				
Qty	Qty Manuf Product			
11	H1	HUS1.81/10		
17	H1	IUS2.56/9.5		
27	H1	IUS2.56/9.5		
2	H3	HUS1.81/10		
1	H3	HUS1.81/10		
2	H4C	HUC410		
2	H4	HGUS410		



FROM PLAN DATED: 28 MAY 2021 BUILDER: ROYAL PINE HOMES

SITE: CENTREFIELD PH. 2

MODEL: 38-14
ELEVATION: C

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO 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.

DATE: 2021-07-16

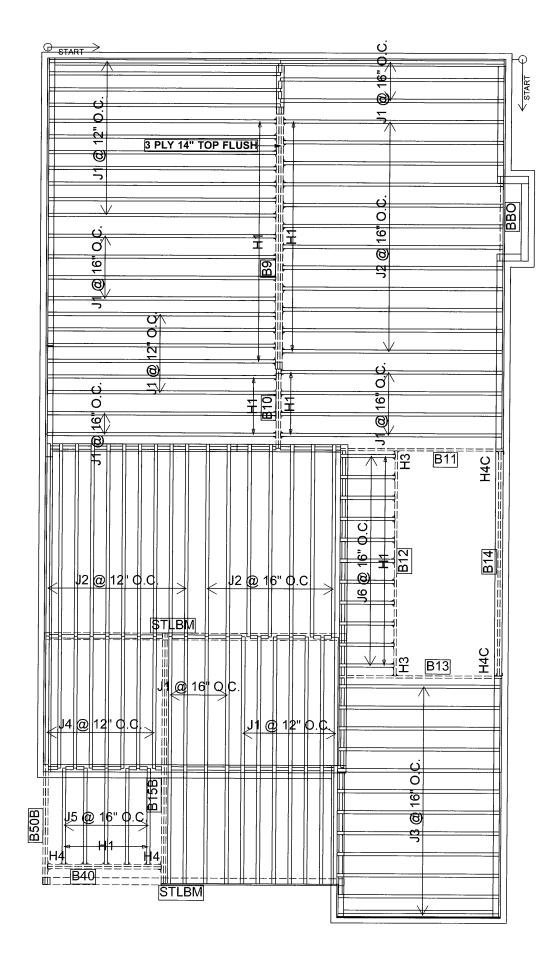
ND ELOOD

2ND FLOOR

STD W/ OPT. GROUND FLOOR LOADING:

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

SUBFLOOR: 5/8" GLUED AND NAILED



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	41
J2	14-00-00	9 1/2" NI-40x	1	29
J3	12-00-00	9 1/2" NI-40x	1	12
J4	10-00-00	9 1/2" NI-40x	1	8
J5	8-00-00	9 1/2" NI-40x	1	5
J6	4-00-00	9 1/2" NI-40x	1	11
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15B	16-00-00	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	1	1
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B40	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B50B	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	18-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary							
Qty	Manuf	Product					
11	H1	IUS2.56/9.5					
13	H1	IUS2.56/9.5					
27	H1	IUS2.56/9.5					
2	H3	HUS1.81/10					
2	H4C	HUC410					
2	H4	HGUS410					



FROM PLAN DATED: 28 MAY 2021 **BUILDER: ROYAL PINE HOMES**

SITE: CENTREFIELD PH. 2

MODEL: 38-14 **ELEVATION**: C

LOT:

CITY: RICHMOND HILL

SALESMAN: WILLIAM GARCIA

DESIGNER: EEO **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

OPT. SECOND **FLOOR**

SUBFLOOR: 5/8" GLUED AND NAILED

2ND FLOOR

DATE: 2021-07-16

MORDIC

NORDIC JOIST NS-GI33 **I**◆I ENGLISH

2020-10-01

Engineered Wood Products

BASIC INSTALLATION **GUIDE FOR** RESIDENTIAL **FLOORS**

JOIST

NORDIC STRUCTURES

Flange width (in

NAIL SPACING

nordic.ca

1

Th

INSTALLING NORDIC I-JOISTS

- Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment
- Concentrated loads should only be applied to the top surface of the top flange. Concentrated loads should not be suspended from the bottom flange with the exception of light loads, such as ceiling fans or light fixtures.
- joists must not be used in applications where they will be permanently exposed to weather, or will reach a moisture content of 15 percent or greater, such as in swimming pool or hot tub areas. They must not be installed where they will remain in direct contact with concrete or masonry.
- End bearing length must be at least 1-3/4 inch. For multiple-span joists, intermediate bearing length must be at least 3-1/2 inches. Ends of floor joists shall be restrained to prevent rollover. Use rim board or I-joist blocking panels
- I-joists installed beneath bearing walls perpendicular to the joists shall have full-depth blocking panels, rim board, or squash blocks (cripple blocks) to transfer gravity loads from above the floor system to the wall or foundation below.
- using a single I-joist is 3,300 plf, and 6,600 plf if double I-joists are used.
- Continuous lateral support of the I-joist's compression flange is required to prevent rotation and buckling. In simple span uses, lateral support of the top flange is normally supplied by the floor sheathing. In multiple-span or cantilever applications, bracing of the I-joist's bottom flange is also required at interior supports of multiple-span joists, and at the end support next to the cantilever extension. The ends of all cantilever extensions must be laterally braced as shown in details 3, 4, or 5.
- 2. Nails installed in flange face or edge shall be spaced in accordance with the applicable building code requirements or approved building plans, but should not be closer than those specified on page 3.3 of

П

- 3. Details 1 show only I-joist-specific fastener requirements. For other fastener requirements, see the applicable building code.
- 14. For proper temporary bracing of wood I-joists and placement of temporary construction loads, see APA Technical Note: Temporary Construction Loads over I-Joist Roofs and Floors, Form J735.

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.



NI-40x 2×3 1950f MSR 33 pieces per a



SAFETY AND CONSTRUCTION PRECAUTIONS

void Accidents by Following these Important Guidelines

of I-joists at the end of the bay.

rim board, or cross-bridging.

. Never install a damaged I-joist.

NI-60

3/8 in, web

111

1

l-joists are not stable until completely installed, and will not carry any load until fully brace.

. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/

or cross-bridging at joist ends. When I-joists are applied continuous over interior supports

When the building is completed, the floor sheathing will provide lateral support for the top

flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.

Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced

no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2-inch.

· Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet

For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels

. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor

proper storage or installation, failure to follow applicable building codes, failure to follow

span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure

to use web stiffeners when required can result in serious accidents. Follow these installation

end of each bay. Lap ends of adjoining bracing over at least two I-joists.

system. Then, stack building materials over beams or walls only.

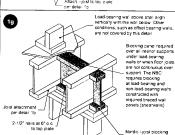
nails fastened to the top surface of each 1-joist. Nail the bracing to a lateral restraint at the

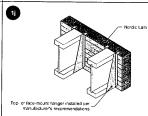
and a load-bearing wall is planned at that location, blocking will be required at the interior



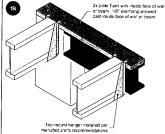
RIM BOARDS Width Length 1-1/8 in. 16 ft APA Rim Board Plu

12

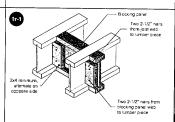




ives: Uness hanger sides laterally support the top flange, bearing stiffeners snall be used For nailing schedules for multiple Nordic Lam or SCL beams, see the manufacturer's recommendations



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



- Rim board

FOR ALL

WEB HOLES AND OPENINGS

WEB HOLES IN I-JOISTS

Rules for Cutting Holes in I-Joists

- gorst top and bottom flanges must never be cut, notched or otherwise modified Vhenever possible, field-cut noies should be centred on the middle of the web

- Holes measuring 1-1/2 inch or smaller shall be dermitted anywhere in a cantilevered section of a joist. Holes of greater size ma-be dermitted subject to verification.



- - Limit three maximum size noies per spar



ites:
Never dail, cut or notch the flange, or over-cut the web
Hales in web should be cut with a share saw.

Minimum distance from face of support to the centre of note. See Table 6:1

2x diameter of arger hole

 \odot

DUCT CHASE OPENINGS

Rules for Cutting Duct Chase Openings in Hoists

- The distance between the inside edge of the support and the centre he of a ductionase opening shall be in combinance with the requirements of Table 6.2
- ingoist top and pottom flanges must never be cut, notched or otherwise modified The max mum death of a dust chase opening that can be cut into an up of west small equal the cear of stance between the flanges of the long minus. "At more, An intum of 1.56 not stoud aways be mailland between the tot or bottom of the opening and the adjacent lips if ange."
- 5. Limit one maximum-size ductionase opening per span

6b



HOLES IN BLOCKING PANELS

Field-cut noiss must be centred in the blocking horizontally While round noies are preferred, rectangle holes may be used provided the corners are not over out. Signity rounding corners or pre-dhilling corner with a function after oil is recommended.

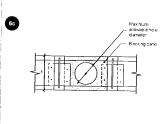
Holes cut into the blocking banes are subject to the following i mitation

ximum Allowable Hole Size in Lateral-restraint-only Blocking Panels

The maximum allowable hole size for a lateral-restraint only blocking panel is 226 of the lesser dimension of the blocking size or length. Assuming the blocking panel is longer than she got (or depth), the table as delap

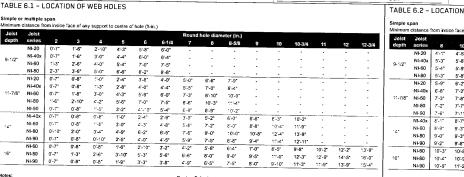
The top and pottom flanges of an Goist blocking pane, must never be cut, noticed or otherwise modified.

At noise must be cut in a workman-like manner in accordance with the limitations listed above.



i-joist or rim board blocking depth (in.)	Maximum allowable hole diameter (in.) [8]
9-1/2	6-1/4
11-7/8	7-3/4
14	9-1/4
16	10-1/2

Minimum 1/6" space between ton or bottom flange and opening



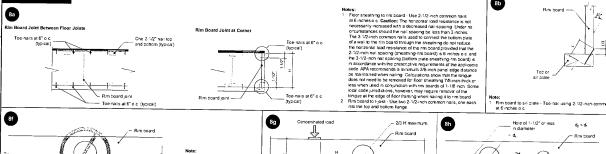
above design orders.
The above label is based on the i-joists being used at their maximum spans.
The armitment distance as given above may be reduced for shorier spans; contact your local distributor.

TABLE 6.2 - LOCATION OF DUCT CHASE OPENINGS

Joist	Joist				Duct c	hase len	gth (in.)		
depth	series	8	10	12	14	16	18	20	22
	NF20	4'-1"	4'-5"	4'-10"	-	-	-		
9-1/2"	NI-40x	5'-3"	5'-8"	60.	6'-5"	6'-10"	7-3*	7"-8"	
J- 112	NI-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7-5*	8'-0"	
	NH80	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7-3*	7-8*	8'-2"
	NI-20	5'-9"	6'-2"	6'-6"		-			
	NI-40x	6'-8"	7-2	7"-6"	8'-1"	8'-6"	9'-1"	9-6	
11-7/8*	NI-60	7-3*	7'-8"	8'-0"	8'-6"	9'-0"	9'-3"	9'-9"	
	NF-80	7-2*	T-T	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2
	N1-90	7'-6"	7'-11"	8'-4"	8'-9"	9'-2"	9'-7"	0	10'-7
	NL40x	8"-1"	8'-7"	50.	9'-6"	101-11	10'-7"	2-	
.,.	NI-60	8:-9"	9'-3"	9"-8"	10'-11"	101-61	11'-1"	···-6	
	NF80	9'-0"	9'-3"	9'-9"	10'-1"	10'-7"	11'-1"	111-61	12'-1
	NF-90	9'-2"	9'-8"	10:-0"	10'-6"	101-111	11'-5"	111-91	12'-4
	N1-60	10'-3"	10'-8"	111-21	11'-6"	12'-1"	12'-6"	13'-2"	
16"	NI-80	10'-4"	10'-9"	111-31	11'-9"	12'-1"	12'-7"	131-11	13'-8
	NI-90	10'-9"	11'-2"	111-81	12'-0"	12'-6"	13'-0"	13'-6"	14'-2

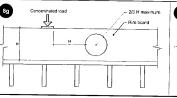
ote: Tabulated values are applicable to residential foor construction meeting the above design enterial

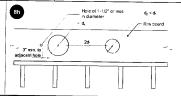
RIM BOARDS

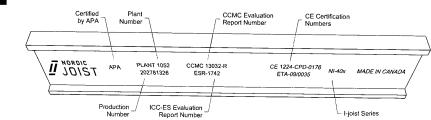












1

connection. Leave a 1/8-inch to 1/4-inch gas between top of files blook and bottom of top Hose till frage. Here topics in required between joss for full length of sonn. For frage width of 2-1/2 inches, nail-posts topether with two rows of 3-inch mais at 12 mones. Or (clinicated winn posses) on each not of 1-2/1/2 inches, use two most of 3-inch rais at 16 inches to or each side of the double Hose till respect to the side of the double the side of the double the side of the double the side of the side of the double the side of t Filler block size (in.) Example 2-1/8 to 2-1/4 x 6 2x6 + 5/8" or 3/4" sheal 2-1/8 to 2-1/4 x 8 2x8 = 5/81 or 3/41 sheathing 2-1/8 to 2-1/4 x 10 2x10 = 5/81 or 3/41 sheathing 2-1/8 to 2-1/4 x 12 2x12 = 5/81 or 3/41 sheathing 11-7/8

Support back of lijoist web during nailing to prevent damage to web/filange

 \rightarrow DC3

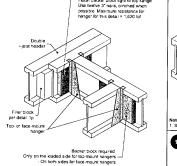
alled to Only One Flange Edge (Top View Closest nail spacing

Flange edge nailing [9]
Nail spacing (in.)

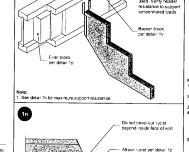
Nailed to Nailed to bot only one Fange edge:

If more than one row is required, offset rows a minimum of 1/2 inch and stagger.

Cosest havi spacing measured from one flange edge. Natis on oppose flange edge must be offset one-half the minimum spacing.



use net joist depth minus 3-1/4 inches for joists with



Note:

The neight of the filler block may be different from that specified in the table, as long as it allows having and respects the required gap.

2 x 2x12

construction details

NORDIC **STRUCTURES**

COMPANY July 5, 2021 10:15

PROJECT J1 EL B & C GARAGE

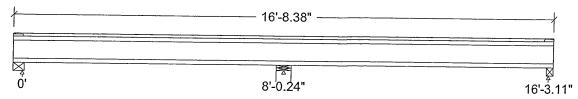
Design Check Calculation Sheet

Nordic Sizer - Canada 8.0

Loads:

Load	Type	Distribution	Pat-	Location [ft] Magnitude	Unit
			tern	Start End	l Start En	d
Load1	Dead	Full Area	No		15.00	psf
Load2	Live	Full Area	Yes		40.00	psf

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



		T	
Unfactored: Dead	46	149	4.0
Live	143	397	48 146
Factored:			140
Total	273	782	280
Bearing:			
Capacity			
Joist	1893	4150	1869
Support	-	9724	
Des ratio			
Joist	0.14	0.19	0.15
Support		0.08	
Load case	#4	#2	#5
Length	4-1/8	5-1/2	2-5/8
Min req'd	1-1/2	3-1/2	1-1/2
Stiffener	No	No	No
KD	1.00	1.00	1.00
KB support	-	-	_
fcp sup		769	
Kzcp sup			_

*Minimum bearing length for joists is 1-13/16" for exterior supports

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

Nordic 9-1/2" NI-40x Floor joist @ 12" o.c. Supports: 1,3 - Steel Beam, W; 2 - Lumber Wall, No.1/No.2; Total length: 16'-8.38"; Clear span: 7'-8.75", 7'-11.38"; 5/8" nailed and glued OSB sheathing This section PASSES the design code check.

> POWNCE OF ON OWO NO. TAM1486 STRUCTURAL COMPONENT ONLY

Nordic Sizer - Canada 8.0

Page 2

Limit States Design using CSA 086-14 and Vibration Criterion:

Analysis Value	Design Value	Unit	Analysis/Design
Vf = 394			Vf/Vr = 0.21
Mf - 400	1	1	,
	Mr = 4824	lbs-ft	Mf/Mr = 0.10
Mf = 575	Mr = 4824	lbs-ft	Mf/Mr = 0.12
$0.01 = \langle L/999 \rangle$	0.27 = T/360		0.02
0.02 = < 1/900	2,000		
		ın	0.09
	0.41 = L/240	in	0.06
$0.02 = \langle L/999 $	0.27 = T./360	in	0.08
I.may - 01-20			
	LV = 1/(-7.5)	ft	0.47
= 0.009	= 0.079	in	0.11
	Mf = 498 Mf = 575	Vf = 394 Mf = 498 Mf = 575 Mr = 4824 0.01 = < L/999 0.02 = L/360 0.02 = < L/999 0.03 = L/360 0.041 = L/240 0.05 = L/360 0.07 = L/360 0.08 = L/360 0.09 = L/360	Vf = 394

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	_	_	_	-		#2
Mr+	4824	1.00	1.00	_	1.000	_		_	# 4 5
Mr-	4824	1.00	1.00	_	1.000	_	_		# 3
ΕΙ	218.1	million	_	-	_	_	-	_	# Z # E

CRITICAL LOAD COMBINATIONS:

```
= 1.25D + 1.5L
         : LC #2
Moment(+) : LC #5
                  = 1.25D + 1.5L (pattern: _L)
```

Moment(-): LC
$$\#2$$
 = 1.25D + 1.5L
Deflection: LC $\#1$ = 1.0D (permanen

(bare joist) : Support 1 - LC #4 = $1.25D + 1.5\overline{L}$ (pattern: L) Bearing

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

Support 3 - LC #5 = 1.25D + 1.5L (pattern: L)

Load Types: D=dead L=live(use,occupancy)

Load Patterns: s=S/2 L=L+Ls =no pattern load in this span All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:

Eleff = $258.29 \text{ lb-in}^2 \text{ K} = 4.94e06 \text{ lbs} \text{ GA} = 0.62e06 \text{ lb}$ "Live" deflection is due to all non-dead loads (live, wind, snow...)

CONFORMS TO OBC 2012

Design Notes:

AMENDED 2020

- 1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
- 2. Please verify that the default deflection limits are appropriate for your application.
- 3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
- 4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
- 5. Joists shall be laterally supported at supports and continuously along the compression edge.
- 6. Allowable vibration-controlled span as per the Concluding Report, Development of Design Procedures for Vibration Controlled Spans using Engineered Wood Members, CWC et al for CCMC, 1997.
- 7. Floor vibration design from the CCMC Concluding Report (1997) on vibration controlled spans for engineered wood products.
- 8. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.

OF OWN HO. TAM 14863-21 STRUCTURAL COMPONENT ONLY





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B2(i8565) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

July 7, 2021 10:38:19

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B2(i8565)

Specifier:

Designer: **EEO**

Wind

Customer: Code reports:

CCMC 12472-R

Company:

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				_																										L
														10-	01-12															
1																														ı

Total Horizontal Product Length = 10-01-12

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 4-3/8"	322 / 0	236 / 0
B2, 4-3/8"	254 / 0	356 / 0

Loa	ad Summary						Live
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-01-12	Тор	
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	04-04-06	Тор	8
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-10	10-01-12	Тор	19
3	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-04-06	10-01-12	Тор	3
4	WALL	Unf. Lin. (lb/ft)	L	06-00-06	10-01-12	Тор	
5	B3(i8509)	Conc. Pt. (lbs)	L	04-03-08	04-03-08	Тор	336

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2534 ft-lbs	11610 ft-lbs	21.8%	1	04-03-08
End Shear	707 lbs	5785 lbs	12.2%	1	01-01-14
Total Load Deflection	L/999 (0.107")	n\a	n\a	4	04-11-14
Live Load Deflection	L/999 (0.058")	n\a	n∖a	5	04-10-10
Max Defl.	0.107"	n\a	n\a	4	04-11-14
Span / Depth	12 1				

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 1-3/4"	777 lbs	16.5%	8.3%	Spruce-Pine-Fir
B2	Wall/Plate	4-3/8" x 1-3/4"	826 lbs	17.5%	8.8%	Spruce-Pine-Fir

Notes

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

CONFORMS TO OBC 2012

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

AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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



Dead

0.65

5

4

Snow

1.00

Wind

1.15

Tributary

00-00-00

n\a

DWG NO. TAM 14864-21 STRUCTURAL COMPONENT ONLY Disclosure

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

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





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B8(i8501) (Flush Beam)

PASSED

July 7, 2021 10:38:19

BC CALC® Member Report

Build 7773

Job name: Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

Dry | 1 span | No cant.

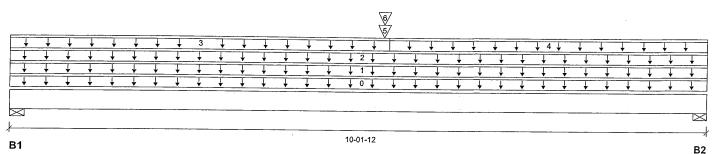
File name: 38-14 EL A SUNKEN.mmdI

Description: 1ST FLR FRAMING\Flush Beams\B8(i8501)

Specifier:

Designer: **EEO**

Company:



Total Horizontal Product Length = 10-01-12

Reaction Summary (Down / Uplift) (lbs)

_Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	282 / 0	473 / 0		
B2, 4-3/8"	270 / 0	468 / 0		

Loa	ad Summary						Live	Dead	Snow	Wind	Tribu
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	10-01-12	Тор		5			00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	10-01-12	Top		60	y *	Charles and the	er _b .
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	10-01-12	Тор	11	5 ,	19 0 m	ofessi	ON THE
3	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	05-05-08	Тор	16	8		00	Y
4	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	05-05-08	10-01-12	Тор	3	ATTITUDE CO	Car	ATSOUL	-7
5	STAIR	Conc. Pt. (lbs)	L	05-04-10	05-04-10	Top	18	g.	· Comme		THE REAL PROPERTY.
6	B7(i8579)	Conc. Pt. (lbs)	L	05-04-10	05-04-10	Тор	325	170	138		

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3171 ft-lbs	11610 ft-lbs	27.3%	1	05-04-10
End Shear	863 lbs	5785 lbs	14.9%	1	08-11-14
Total Load Deflection	L/838 (0.137")	n\a	28.6%	4	05-01-07
Live Load Deflection	L/999 (0.058")	n\a	n\a	5	05-01-07
Max Defl.	0.137"	n\a	n\a	4	05-01-07
Span / Depth	12.1				

Bearin	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material '
B1	Wall/Plate	4-3/8" x 1-3/4"	663 lbs	21.7%	10.9%	Spruce-Pine-Fir
B2	Wall/Plate	4-3/8" x 1-3/4"	655 lbs	21.4%	10.8%	Spruce-Pine-Fir

Notes

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

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

CONFORMS TO OBC 2012

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

Calculations assume unbraced length of Top: 00-00-00, Bottom: 04-11-06.

PANCE OF ONITED DWG NO. TAM 14865-21 STRUCTURAL COMPONENT Disclosure

Tributary

00-00-00

∛∖n\a

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

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





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B4(i8515) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

July 7, 2021 10:38:19

Job name:

Address:

Customer:

City, Province, Postal Code: RICHMOND HILL

File name: Description:

38-14 EL A SUNKEN.mmdl

1ST FLR FRAMING\Flush Beams\B4(i8515)

Specifier:

Designer: **EEO**

Wind

Code reports:

CCMC 12472-R

Company:

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B1															06-0	2-06																	R

Total Horizontal Product Length = 06-02-06

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 4-3/8"	208 / 0	122 / 0
B2. 1-3/4"	310 / 0	175 / 0

Loa	ad Summary						Live	Dead
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-02-06	Тор		5
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	04-04-06	Тор	33	17
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-04-06	06-02-06	Тор	22	11
3	B3(i8509)	Conc. Pt. (lbs)	L	04-03-08	04-03-08	Тор	331	174

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1148 ft-lbs	11610 ft-lbs	9.9%	1	04-03-08
End Shear	633 lbs	5785 lbs	10.9%	1	05-03-02
Total Load Deflection	L/999 (0.017")	n\a	n\a	4	03-04-15
Live Load Deflection	L/999 (0.011")	n\a	n\a	5	03-04-15
Max Defl.	0.017"	n\a	n\a	4	03-04-15
Span / Depth	7.3				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 1-3/4"	464 lbs	9.9%	5.0%	Spruce-Pine-Fir
B2	Column	1-3/4" x 1-3/4"	683 lbs	27.5%	18.3%	Unspecified

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBE 2012

Calculations assume unbraced length of Top: 00-00-00, Bottom: 03-10-04.

AMENDED 2020



Wind

1.15

Tributary

00-00-00 n\a

Snow

1.00

OWE NO. TAM/4066-21 STRUCTURAL COMPONENT ONLY

Disclosure

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

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





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

PASSED

July 7, 2021 10:38:19

1ST FLR FRAMING\Flush Beams\B5(i8569) (Flush Beam)

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

Build 7773 Job name:

Address:

City, Provir Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

Specifier:

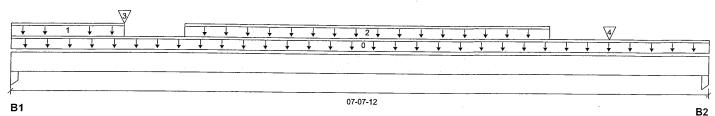
38-14 EL A SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B5(i8569)

Designer: EEO

Wind

Company:



Total Horizontal Product Length = 07-07-12

Reaction Summary (Down / Uplift) (lbs)

	(2011117		
Bearing	Live	Dead	Sno
B1, 2-5/8"	418 / 0	227 / 0	
B2 2-5/8"	401 / 0	210 / 0	

Loa	ad Summary						Live	Dead
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-07-12	Тор		5
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	01-02-06	Тор	35	18
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-06	05-10-06	Top	124	62
3	J5(i8615)	Conc. Pt. (lbs)	L	01-02-06	01-02-06	Тор	133	67
4	J5(i8717)	Conc. Pt. (lbs)	L	06-06-06	06-06-06	Тор	149	75

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1819 ft-lbs	11610 ft-lbs	15.7%	1	03-10-06
End Shear	870 lbs	5785 lbs	15.0%	1	06-07-10
Total Load Deflection	L/999 (0.049")	n\a	n\a	4	03-10-06
Live Load Deflection	L/999 (0.032")	n\a	n\a	5	03-10-06
Max Defl.	0.049"	n\a	n\a	4	03-10-06
Span / Depth	9.3				

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column	2-5/8" x 1-3/4"	911 lbs	24.4%	16.3%	Unspecified
B2	Column	2-5/8" x 1-3/4"	876 lbs	23.5%	15.6%	Unspecified

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBG 2012

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

AMENDED 2020



Snow

1.00

Wind

1.15

Queesola V

Tributary

00-00-00 n\a

n\a

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





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B6(i8556) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

July 7, 2021 10:38:19

Job name:

Address: Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

38-14 EL A SUNKEN.mmdl Description: 1ST FLR FRAMING\Flush Beams\B6(i8556)

Specifier:

Designer:

EEO

Wind

Company:

	<u> </u>		+		<u>+</u>	<u></u>		<u>+</u>	+	 <u></u>	+	1 ↓	+	+	+	+	+	+		+	+		+	Ţ	$\overline{\downarrow}$	7		
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															1 1													
										 						-	<u> </u>	-										

Total Horizontal Product Length = 06-02-06

Reaction Summary (Down / Unlift) (lbs)

reaction building (bown / opint) (ibs)									
Bearing	Live	` Dead	Snow						
B1, 4-3/8"	185 / 0	109 / 0							
B2, 1-3/4"	366 / 0	203 / 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)	Ĺ	00-00-00	06-02-06	Тор		5			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	05-05-08	Тор	47	23			n\a
2	B7(i8579)	Conc. Pt. (lbs)	L	05-04-10	05-04-10	Ton	296	155			مام

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	694 ft-lbs	11610 ft-lbs	6.0%	1	03-10-15
End Shear	696 lbs	5785 lbs	12.0%	1	05-03-02
Total Load Deflection	L/999 (0.012")	n\a	n\a	4	03-04-01
Live Load Deflection	L/999 (0.008")	n\a	n\a	5	03-04-01
Max Defl.	0.012"	n\a	n\a	4	03-04-01
Span / Depth	7.3			•	

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 1-3/4"	414 lbs	8.8%	4.4%	Spruce-Pine-Fir
B2	Column	1-3/4" x 1-3/4"	802 lbs	32.3%	21.5%	Unspecified

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Calculations assume unbraced length of Top: 00-00-00, Bottom: 04-11-06.

AMENDED 2020



DWB NO. TAM 1406821 STRUCTURAL COMPONENT ONLY

Disclosure

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





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

PASSED

July 7, 2021 10:38:19

1ST FLR FRAMING\Flush Beams\B3(i8509) (Flush Beam)

BC CALC® Member Report Build 7773

Job name:

Customer:

Code reports:

Address:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

Dry | 1 span | No cant.

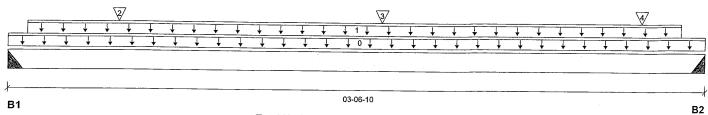
38-14 EL A SUNKEN.mmdl

File name: Description: 1ST FLR FRAMING\Flush Beams\B3(i8509)

Specifier:

Designer: **EEO**

Company:



Total Horizontal Product Length = 03-06-10

Reaction Summary (Down / Unlift) (lbs)

	(Domin, o	pinty (iba)		
Bearing	Live	Dead	Snow	Wind
B1, 3"	330 / 0	173 / 0		
B2 3"	337 / 0	177 / 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	03-06-10	Тор		5	**		00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-01-02	03-05-02	Top	120	60			n\a
2	J6(i8718)	Conc. Pt. (lbs)	L	00-06-10	00-06-10	Тор	82	41			n\a
3	J6(i8609)	Conc. Pt. (lbs)	L	01-10-10	01-10-10	Top	112	56	ar Ci	garanti merinting	os nla
4	J6(i8608)	Conc. Pt. (lbs)	L	03-02-10	03-02-10	Тор	73	36	120	fessi0	n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	557 ft-lbs	11610 ft-lbs	4.8%	1	01-10-10
End Shear	356 lbs	5785 lbs	6.2%	1	01-00-08
Total Load Deflection	L/999 (0.003")	n\a	n∖a	4	01-09-06
Live Load Deflection	L/999 (0.002")	n\a	n\a	5	01-09-06
Max Defl.	0.003"	n\a	n\a	4	01-09-06
Span / Depth	4.0				

Beari	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Hanger	3" x 1-3/4"	712 lbs	n\a	11.1%	HUS1.81/10	
B2	Hanger	3" x 1-3/4"	726 lbs	n\a	11.3%	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 user. Hanger has not been analyzed for qualified engineer or other appropriate adequate capacity.

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

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

Hanger Manufacturer: Unassigned

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

AMENDED 2020

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

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

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

CONFORMS TO DEC 2012

DIVINCE OF 946 NO. TAM 14869-91 STRUCTURAL COMPONENT ONLY

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





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

1ST FLR FRAMING\Flush Beams\B7(i8579) (Flush Beam)

Dry | 1 span | No cant.

July 7, 2021 10:38:19

Build 7773

Job name: Address:

Customer:

Code reports:

В1

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

38-14 EL A SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B7(i8579)

Specifier:

Designer: **EEO**

Company:

03-02-04 Total Horizontal Product Length = 03-02-04

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing Live Dead B1, 3" 328 / 0 171/0 B2, 3" 293 / 0 154 / 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	03-02-04	Top		5			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-01-06	qoT	120	60			n\a
2	J6(i8617)	Conc. Pt. (lbs)	L	00-08-10	00-08-10	Top	113	56			n\a
3	J6(i8616)	Conc. Pt. (lbs)	L	02-00-10	02-00-10	1-	135	67	ور.	-E88	n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	463 ft-lbs	11610 ft-lbs	4.0%	1	01-09-09
End Shear	379 lbs	5785 lbs	6.6%	1	02-01-12
Total Load Deflection	L/999 (0.002")	n\a	n\a	4	01-07-05
Live Load Deflection	L/999 (0.001")	n\a	n\a	5	01-07-05
Max Defl.	0.002"	n\a	n\a	4	01-07-05
Span / Depth	3.6				

Beari	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Hanger	3" x 1-3/4"	707 lbs	n\a	11.0%	HUS1.81/10	
B2	Hanger	3" x 1-3/4"	632 lbs	n\a	9.9%	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 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.

canvorms to OBC 2012

Hanger Manufacturer: Unassigned

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

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

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



Disclosure

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B2





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

PASSED

2ND FLR FRAMING\Flush Beams\B15(i7627) (Flush Beam)

Dry | 2 spans | No cant.

July 7, 2021 10:38:19

Build 7773

Job name:

Customer:

Address:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

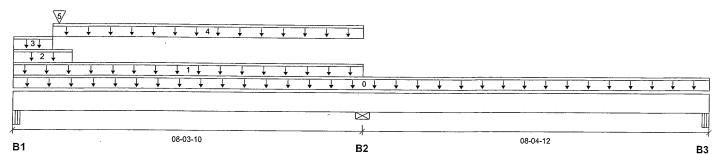
38-14 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B15(i7627)

Specifier:

Designer: **EEO**

Company:



Total Horizontal Product Length = 16-08-06

Reaction Summary (Down / Uplift) (lbs)								
Bearing	Live	Dead	Snow	Wind				
B1, 4-1/8"	442/0	665 / 0	318 / 0					
B2, 5-1/2"	307 / 0	303 / 0	38 / 0					
B3, 2-5/8"	0 / 32	7/0	0/6					

	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	16-08-06	Тор		10			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	08-03-10	Тор	27	14			. n\a
2	E29(i97)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-06	Тор		63	140		n\a
3	E29(i97)	Unf. Lin. (lb/ft)	L	00-00-00	00-10-14	Тор		81			n\a
4	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-10-14	08-03-10	Тор	26	13			n\a
5	B16(i7581)	Conc. Pt. (lbs)	L	01-00-10	01-00-10	Top	292	443	159		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1329 ft-lbs	23219 ft-lbs	5.7%	1	02-05-11
Neg. Moment	-800 ft-lbs	-18777 ft-lbs	4.3%	1	08-03-10
End Shear	1324 lbs	11571 lbs	11.4%	1	01-01-10
Cont. Shear	603 lbs	11571 lbs	5.2%	1	07-03-06
Total Load Deflection	L/999 (0.02")	n\a	n\a	35	03-09-04
Live Load Deflection	L/999 (0.012")	n\a	n\a	51	03-09-04
Total Neg. Defl.	L/999 (-0.007")	n\a	n\a	35	11-07-05
Max Defl.	0.02"	n\a	n\a	35	03-09-04
Span / Depth	10.4				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	4-1/8" x 3-1/2"	1812 lbs	23.5%	10.3%	Unspecified
B2	Wall/Plate	5-1/2" x 3-1/2"	877 lbs	7.4%	3.7%	Spruce-Pine-Fir
B3	Beam	2-5/8" x 3-1/2"	10 lbs	0.3%	0.1%	Unspecified

Cautions

Concentrated side load(s) 10 are closer than 18" from end of member. Please consult a technical DUP representative or Professional of Record.



998 NO. TAM 14871-21 STRUCTURAL COMPONENT ONLY





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

PASSED

2ND FLR FRAMING\Flush Beams\B15(i7627) (Flush Beam)

Dry | 2 spans | No cant.

July 7, 2021 10:38:19

Build 7773

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

Description: 2ND FLR FRAMING\Flush Beams\B15(i7627)

38-14 EL A SUNKEN.mmdl

Specifier:

Designer: **EEO**

Company:

Notes

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

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

Resistance Factor phi has been applied to all presented results per CSA 086.

CONFORMS TO OBC 2012

AMENDED 2020

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

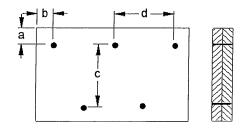
Unbalanced snow loads determined from building geometry were used in selected product's

verification.

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

Calculations assume unbraced length of Top: 00-00-00, Bottom: 07-11-06.

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 5-1/2" d = 🕶 8 '1

Connectors are: :-

ARDOX SPIRAL

ON NOE OF ON BWG NO. TAM

STRUCTURAL COMPONENT ONLY **Disclosure**

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





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

PASSED

2ND FLR FRAMING\Flush Beams\B21(i8140) (Flush Beam)

BC CALC® Member Report

Dry | 2 spans | No cant.

July 7, 2021 10:38:19

Build 7773

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

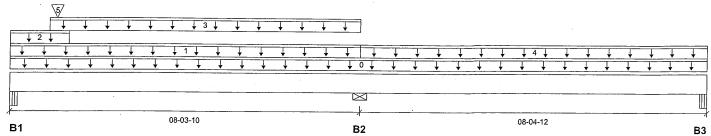
38-14 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B21(i8140)

Specifier:

Designer: EEO

Company:



Total Horizontal Product Length = 16-08-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-1/8"	473 / 25	974 / 0	930 / 0	
B2, 5-1/2"	524 / 0	466 / 0	146 / 0	
B3, 2-5/8"	175 / 30	87 / 0	0 / 23	

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	16-08-06	Тор		10			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	08-03-10	Тор	25	13			n\a
2	E41(i4902)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-06	Top		144	140		n\a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-10-14	08-03-10	Тор	21	11			n\a
4	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	08-03-10	16-08-06	Тор	47	23			n\a
5	-	Conc. Pt. (lbs)	L	01-01-00	01-01-00	Тор	351	788	862		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2235 ft-lbs	23219 ft-lbs	9.6%	38	01-01-10
Neg. Moment	-1427 ft-lbs	-18777 ft-lbs	7.6%	1	08-03-10
End Shear	2420 lbs	11571 lbs	20.9%	38	01-01-10
Cont. Shear	770 lbs	11571 lbs	6.7%	1	07-03-06
Total Load Deflection	L/999 (0.028")	n\a	n\a	82	03-07-00
Live Load Deflection	L/999 (0.018")	n\a	n\a	120	03-08-02
Total Neg. Defl.	L/999 (-0.007")	n\a	n\a	82	11-01-06
Max Defl.	0.028"	n\a	n\a	82	03-07-00
Span / Depth	10.4				

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	4-1/8" x 3-1/2"	3086 lbs	40.0%	17.5%	Unspecified
B2	Wall/Plate	5-1/2" x 3-1/2"	1515 lbs	12.8%	6.4%	Spruce-Pine-Fir
B3	Beam	2-5/8" x 3-1/2"	371 lbs	7.6%	3.3%	Unspecified

Cautions

Concentrated side load(s) 9 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.





046 40. TAN 148722 STRUCTURÁL COMPONENT ONLY





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

PASSED

2ND FLR FRAMING\Flush Beams\B21(i8140) (Flush Beam) BC CALC® Member Report

Dry | 2 spans | No cant.

July 7, 2021 10:38:19

Build 7773

Job name: Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

38-14 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B21(i8140)

Specifier:

Designer: EEO

Company:

Notes

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

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

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

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

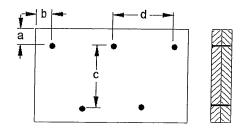
Unbalanced snow loads determined from building geometry were used in selected product's

verification.

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

Calculations assume unbraced length of Top: 00-00-00, Bottom: 07-11-06.

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 5-1/2" d = 688 61

Connectors are:

- Nails

ARDOX SPIRAL



DWB NO. TAM 14872 STRUCTURAL COMPONENT ONLY

Disclosure

CUNFORMS TO OBC 2012

AMENDED 2020

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

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





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B12(i8443) (Flush Beam)

PASSED

Tributary

00-00-00 n\a n\a n\a

July 7, 2021 10:38:19

BC CALC® Member Report

Build 7773 Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

Dry | 1 span | No cant.

File name:

38-14 EL A SUNKEN.mmdl

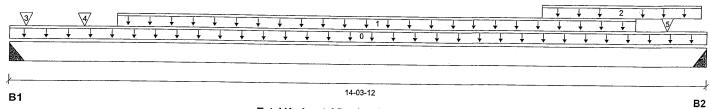
Description: 2ND FLR FRAMING\Flush Beams\B12(i8443)

Wind

Specifier:

Designer: **EEO**

Company:



Total Horizontal Product Length = 14-03-12

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead		
B1, 3"	544 / 0	305 / 0		
B2, 3"	832 / 0	451 / 0		

Loa	ad Summary						Live	Dead	Snow	Wind
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	14-03-12	Top		5	1.00	
1	Smoothed Load	Unf. Lin. (lb/ft)	L	02-01-12	12-09-12	Top	71	35		
2	STAIR	Unf. Lin. (lb/ft)	L	10-10-04	14-02-04	1-	120	60		and the second of the second
3	J6(i8437)	Conc. Pt. (lbs)	L	00-03-12	00-03-12		55	27		ression
4	J6(i8149)	Conc. Pt. (lbs)	L	01-05-12	01-05-12	1-	89	44	JOHN.	
5	J6(i8466)	Conc. Pt. (lbs)	Ĺ	13-05-12			79	40	10/	ngi
						•			30 A	

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4496 ft-lbs	11610 ft-lbs	38.7%	1	08-01-12
End Shear	1526 lbs	5785 lbs	26.4%	1	13-03-04
Total Load Deflection	L/370 (0.452")	n\a	64.8%	4	07-05-12
Live Load Deflection	L/576 (0.29")	n\a	62.5%	5	07-05-12
Max Defl.	0.452"	n\a	n\a	4	07-05-12
Span / Depth	17.6			,	0. 00 12

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	3" x 1-3/4"	1197 lbs	n\a	18.7%	HUS1.81/10
B2	Hanger	3" x 1-3/4"	1811 lbs	n\a	28.3%	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 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.

CONVERMS 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 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

DWG NO. TAM 14137321 STRUCTURAL COMPONENT ONLY

OVINCE OF OUT

Disclosure

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

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





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

PASSED

2ND FLR FRAMING\Flush Beams\B14(i8452) (Flush Beam)

Dry | 1 span | No cant.

July 7, 2021 10:38:19

Build 0

Job name:

Address:

Customer:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B14(i8452)

Specifier:

Designer: **EEO**

Code reports: CCMC 12472-R

Company:



16E Aceいら Pでに いりては Total Horizontal Product Length = 14-03-12

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	14-03-12	Тор		10			00-00-00
1	E49(i6592)	Unf. Lin. (lb/ft)	L	00-00-00	05-01-04	Top		82			n\a
2	E49(i6592)	Unf. Lin. (lb/ft)	L	00-00-00	04-09-12	Top		203	406		n\a
3	E48(i6496)	Unf. Lin. (lb/ft)	L	05-01-04	09-01-04	Тор		42			n\a
4	E51(i6595)	Unf. Lin. (lb/ft)	L	09-01-04	14-03-12	Тор		82			n\a
5	E51(i6595)	Unf. Lin. (lb/ft)	L	09-04-12	14-03-12	Top		203	406		n\a
6	E49(i6592)	Conc. Pt. (lbs)	L	05-00-04	05-00-04	Тор		503	936		n\a
7	E51(i6595)	Conc. Pt. (lbs)	L	09-02-04	09-02-04	Тор		497	925		n\a

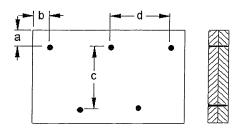
Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Loc	atic	n
Dist. Load	964.63 lb/ft	57645.1 lb/ft	1.7%				
Conc. Load	2033 lbs	16813 lbs	12.1%	causas	ME	rn	OBI

CONFORMS TO OBC 2012

AMENDED 2020

Calculations assume member is fully braced.

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 5-1/2" d = 12"

Connectors are:

: Nails

312" ARDOX SPIKAL

OVINCE OF

DWG NO. TAM/4 STRUCTURAL COMPONENT ONLY

Disclosure

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

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





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

PASSED

July 7, 2021 10:38:19

2ND FLR FRAMING\Flush Beams\B11(i8440) (Flush Beam)

Dry | 1 span | No cant.

Build 7773

Job name: Address:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B11(i8440)

Specifier:

Customer: Code reports:

CCMC 12472-R

Designer: EEO Company:

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,																															
R1															10-04	-00															D 1

Total Horizontal Product Length = 10-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	619 / 0	358 / 0		
B2, 5-1/2"	301 / 0	228 / 0	59 / 0	

Loa	ad Summary						Live	Dead
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-04-00	Тор		5
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-12	03-07-08	Тор	18	9
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	03-07-08	10-04-00	Тор	3	2
3	-	Conc. Pt. (lbs)	L	03-06-10	03-06-10	Top	838	449
4	E25(i98)	Conc. Pt. (lbs)	L	10-01-04	10-01-04	Тор		449 41

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4090 ft-lbs	11610 ft-lbs	35.2%	1	03-06-10
End Shear	1328 lbs	5785 lbs	23.0%	1	01-03-00
Total Load Deflection	L/766 (0.15")	n\a	31.3%	35	04-08-13
Live Load Deflection	L/999 (0.095")	n\a	n\a	51	04-08-13
Max Defl.	0.15"	n\a	n\a	35	04-08-13
Span / Depth	12.1				

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	5-1/2" x 1-3/4"	1375 lbs	23.2%	11.7%	Spruce-Pine-Fir
B2	Wall/Plate	5-1/2" x 1-3/4"	795 lbs	13.4%	6.8%	Spruce-Pine-Fir

Notes

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

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

CONFORMS TO OBC 2012

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 06-03-00.



Wind

1.15

Tributary

00-00-00 n\a

n\a

Snow

1.00

OWG HO. TAM 14875-21 STRUCTURAL COMPONENT ONLY

Disclosure

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

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





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

2ND FLR FRAMING\Flush Beams\B13(i8454) (Flush Beam)

Dry | 1 span | No cant.

July 7, 2021 10:38:19

PASSED

Tributary

00-00-00 n\a

Build 7773

Job name:

Address:

Customer:

Code reports:

BC CALC® Member Report

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN.mmdl

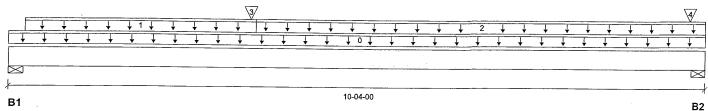
Description: 2ND FLR FRAMING\Flush Beams\B13(i8454)

Specifier:

Designer:

EEO

CCMC 12472-R Company:



Total Horizontal Product Length = 10-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	W
B1, 5-1/2"	518 / 0	306 / 0		
B2, 5-1/2"	324 / 0	239 / 0	59 / 0	

Loa	nd Summary						Live	Dead	Snow	٧
		Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-04-00	Тор		5		_
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-12	03-07-08	Тор	33	17		
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	03-07-08	10-04-00	Тор	27	14		-425
3	B12(i8443)	Conc. Pt. (lbs)	L	03-06-10	03-06-10	Top	547	307		F. E
4	E50(i6594)	Conc. Pt. (lbs)	L	10-01-04	10-01-04	Тор		41	/59 ³	

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3231 ft-lbs	11610 ft-lbs	27.8%	1	03-06-10
End Shear	1079 lbs	5785 i bs	18.7%	1	01-03-00
Total Load Deflection	L/903 (0.127")	n\a	26.6%	35	04-09-13
Live Load Deflection	L/999 (0.08")	n\a	n\a	51	04-09-13
Max Defl.	0.127"	n\a	n\a	35	04-09-13
Span / Depth	12 1				

Bear	ing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	5-1/2" x 1-3/4"	1159 lbs	19.6%	9.9%	Spruce-Pine-Fir
B2	Wall/Plate	5-1/2" x 1-3/4"	844 lbs	14.3%	7.2%	Spruce-Pine-Fir

Notes

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

CONFORMS TO 0BC 2012

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

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

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

Calculations assume unbraced length of Top: 00-00-00, Bottom: 06-03-00.

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.

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

Installation of Boise Cascade engineered wood products must be in

before installation.

BC CALC®, BC FRAMER® , AJS $^{\text{TM}}$ ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,



Wind 1.15

DWG NO. TAM/4876-21 STRUCTURAL COMPONENT ONLY Disclosure





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B10(i8486) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

July 7, 2021 10:38:19

Job name:

Address: Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

38-14 EL A SUNKEN.mmdl

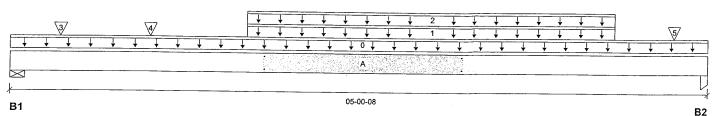
Description: 2ND FLR FRAMING\Flush Beams\B10(i8486)

Specifier:

Designer: **EEO**

Wind

Company:



Total Horizontal Product Length = 05-00-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	
B1, 2-3/4"	1393 / 0	722 / 0		
B2, 3-1/2"	1459 / 0	756 / 0		

	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	05-00-08	Тор		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-08-04	04-04-04	Top	324	162			n\a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-08-04	04-04-04	Top	316	159			n\a
3	J1(i8473)	Conc. Pt. (lbs)	L	00-04-04	00-04-04	Тор	217	108			n\a
4	-	Conc. Pt. (lbs)	L	00-11-14	00-11-14	Тор	637	319			n\a
5	J1(i7505)	Conc. Pt. (lbs)	L	04-09-08	04-09-08	Тор	291	146			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3344 ft-lbs	23219 ft-lbs	14.4%	1	02-02-04
End Shear	2422 lbs	11571 lbs	20.9%	1	01-00-04
Total Load Deflection	L/999 (0.018")	n\a	n\a	4	02-05-12
Live Load Deflection	L/999 (0.012")	n\a	n\a	5	02-05-12
Max Defl.	0.018"	n\a	n\a	4	02-05-12
Span / Depth	5.9				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	2-3/4" x 3-1/2"	2992 lbs	50.5%	25.5%	Spruce-Pine-Fir
B2	Column	3-1/2" x 3-1/2"	3133 lbs	31.5%	21.0%	Unspecified

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

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.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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



196 NO. TAN 14877-21 STRUCTURAL COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B10(i8486) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

July 7, 2021 10:38:19

Job name: Address:

City, Province, Postal Code: RICHMOND HILL

Customer: Code reports:

CCMC 12472-R

File name:

38-14 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B10(i8486)

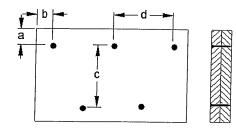
Specifier:

Designer:

Company:

EEO

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

Connection Tag: A

1 1 1

c = 5-1/2" d = 🍪 🖁

Calculated Side Load = 403.0 lb/ft Connectors are: 16d

312" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Applies to load tag(s): 4+5+6+7

a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

Connectors are: 16d 7: Nails

312" ARDOX SPIRAL



OWE NO. TAM 1487221 STRUCTURÁL COMPONENT ONLY

Disclosure

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

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





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

PASSED

2ND FLR FRAMING\Flush Beams\B16(i7581) (Flush Beam)

Dry | 1 span | No cant.

July 7, 2021 10:38:19

Build 7773

Job name: Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

BC CALC® Member Report

CCMC 12472-R

File name:

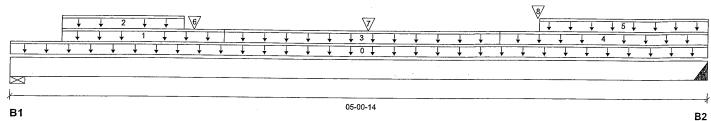
38-14 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B16(i7581)

Specifier:

EEO

Designer: Company:



Total Horizontal Product Length = 05-00-14

Reaction Summary (Down / Unlift) (lbs)

. toaotion oai	a.	pinty (183)			
Bearing	Live	Dead	Snow	Wind	
B1, 4-3/8"	286 / 0	408 / 0	141 / 0		
B2, 4"	300 / 0	453 / 0	160 / 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	05-00-14	Тор		10			00-00-00
1	E40(i3962)	Unf. Lin. (lb/ft)	L	00-04-06	01-06-06	Тор		81			n\a
2	E40(i3962)	Unf. Lin. (lb/ft)	L	00-04-06	01-02-14	Тор		38	64		n\a
3	E41(i4005)	Unf. Lin. (lb/ft)	L	01-06-06	03-06-06	Top		41			n\a
4	E30(i96)	Unf. Lin. (lb/ft)	L	03-06-06	05-00-14	Top		81			n\a
5	E30(i96)	Unf. Lin. (lb/ft)	L	03-09-14	05-00-14	Тор		38	64		n\a
6	-	Conc. Pt. (lbs)	L	01-03-12	01-03-12	Top	186	163	84		n\a
7	J5(i7631)	Conc. Pt. (lbs)	L	02-06-14	02-06-14	Тор	201	101	•		n\a
8	-	Conc. Pt. (lbs)	L	03-09-11	03-09-11	Тор	199	167	81		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1302 ft-lbs	23219 ft-lbs	5.6%	1	02-06-14
End Shear	924 lbs	11571 lbs	8.0%	1	03-11-06
Total Load Deflection	L/999 (0.007")	n\a	n\a	35	02-06-14
Live Load Deflection	L/999 (0.004")	n\a	n\a	51	02-06-14
Max Defl.	0.007"	n\a	n\a	35	02-06-14
Span / Depth	5.7				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 3-1/2"	1081 lbs	11.5%	5.8%	Spruce-Pine-Fir
B2	Hanger	4" x 3-1/2"	1177 lbs	n\a	6.9%	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) 0 19 adequate capacity.



STRUCTURAL COMPONENT ONLY





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

PASSED

2ND FLR FRAMING\Flush Beams\B16(i7581) (Flush Beam)

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

July 7, 2021 10:38:19

Build 7773 Job name:

Address:

Customer:

City, Province, Postal Code: RICHMOND HILL

File name: Description: 2ND FLR FRAMING\Flush Beams\B16(i7581)

38-14 EL A SUNKEN.mmdl

Specifier:

Designer:

EEO

Code reports:

CCMC 12472-R

Company:

Notes

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

Hanger Manufacturer: Unassigned

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

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

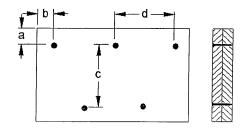
Unbalanced snow loads determined from building geometry were used in selected product's

verification.

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

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

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 5-1/2" $d = \mathcal{C}$

Calculated Side Load = 213.9 lb/ft

Connectors are:

Nails

ARDOX SPIRAL

POLYNCE OF OTH OWS NO. FAM / 4876

STRUCTURAL COMPONENT ONLY

Disclosure

CONFORMS TO OBC 2012

AMENDED 2020

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

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





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B22(i8155) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

July 7, 2021 10:38:19

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B22(i8155)

Specifier:

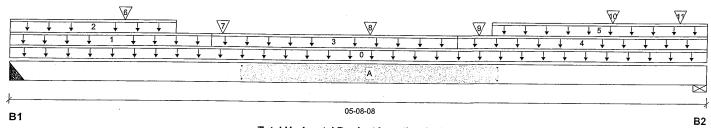
Designer:

EEO

Customer: Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 05-08-08

Reaction Summary (Down / Uplift) (lbs)

		. , , ,	_		
Bearing	Live	Dead	Snow	Wind	
B1, 4"	360 / 0	567 / 0	362 / 0		
B2, 5-1/2"	369 / 0	804 / 0	846 / 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	05-08-08	Тор		10			00-00-00
1	E44(i4906)	Unf. Lin. (lb/ft)	L	00-00-00	01-07-08	Тор		81			n\a
2	E44(i4906)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-00	Top		56	129		n\a
3	E45(i4907)	Unf. Lin. (lb/ft)	L	01-07-08	03-07-08	Top		41			n\a
4	E28(i94)	Unf. Lin. (lb/ft)	L	03-07-08	05-08-08	Top		81			n\a
5	E28(i94)	Unf. Lin. (lb/ft)	L	03-11-00	05-08-08	Тор		56	129		n\a
6	J5(i7598)	Conc. Pt. (lbs)	L	00-11-00	00-11-00	Top	155	78			n\a
7	-	Conc. Pt. (lbs)	L	01-08-09	01-08-09	Top	151	168	170		n\a
8	J5(i7540)	Conc. Pt. (lbs)	L	02-11-00	02-11-00	Top	151	75			n\a
9	-	Conc. Pt. (lbs)	L	03-09-11	03-09-11	Тор	151	165	163		n\a
10	J5(i8162)	Conc. Pt. (lbs)	L	04-11-00	04-11-00	Тор	116	58	100		n\a
11	E28(i94)	Conc. Pt. (lbs)	L	05-05-12	05-05-12	Тор		213	471		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1860 ft-lbs	23219 ft-lbs	8.0%	1	02-11-00
End Shear	1172 lbs	11571 lbs	10.1%	1	01-01-08
Total Load Deflection	L/999 (0.014")	n\a	n\a	35	02-09-08
Live Load Deflection	L/999 (0.008")	n\a	n\a	51	02-09-08
Max Defl.	0.014"	n\a	n\a	35	02-09-08
Span / Depth	6.4				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	4" x 3-1/2"	1611 lbs	n\a	9.4%	HGUS410
B2	Wall/Plate	5-1/2" x 3-1/2"	2642 lbs	22.3%	11.2%	Spruce-Pine-Fir

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.



TWO NO. TAM 1987-21
STRUCTURAL
COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B22(i8155) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

July 7, 2021 10:38:19

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

Specifier:

Designer:

File name:

38-14 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B22(i8155)

Company:

EEO

Notes

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

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

Hanger Manufacturer: Unassigned

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

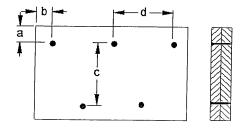
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086. CONFORMS TO 0BC 2012

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

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

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

Connection Diagram: Full Length of Member



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

Calculated Side Load = 165.0 lb/ft

Connectors are:

*** Nails

Applies to load tag(s): 14+15+22

Connection Diagrams: Concentrated Side Loads

Connection Tag: A

a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

Connectors are:

Nails

312" ARDOX SPIRAL

ON OF OR

040 HD. TAM 1487 STRUCTURAL COMPONENT ONLY

Disclosure

AMENDED 2020

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

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





Triple 1-3/4" x 16" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B9(i8463) (Flush Beam)

PASSED

July 7, 2021 10:38:19

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

Job name:

Address:

Customer:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B9(i8463)

Wind

Specifier:

Designer: **EEO**

Code reports:

CCMC 12472-R

Company:

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												_			_			_																		B2

Total Horizontal Product Length = 18-08-12

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 3-1/2"	5366 / 0	2907 / 0
B2, 5-1/2"	5417 / 0	2934 / 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	18-08-12	Тор		24			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	02-05-12	09-01-12	Тор	293	146			n\a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	02-05-12	09-01-12	Тор	283	141			n\a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	10-03-12	17-09-12	Top	313	156			n\a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	10-03 - 12	17-09-12	Top	303	151			n\a
5	J2(i8471)	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Top	283	141			n\a
6	-	Conc. Pt. (lbs)	L	00-11-13	00-11-13	Top	632	316			n\a
7	J2(i8491)	Conc. Pt. (lbs)	L	09-01-12	09-01-12	Top	381	191			n\a
8	J2(i8467)	Conc. Pt. (lbs)	L	18-05-12	18-05-12	Top	349	174			n\a
9	J1(i7511)	Conc. Pt. (lbs)	L	01-09-12	01-09-12	Top	341	171			n\a
10	J1(i7512)	Conc. Pt. (lbs)	L	09-09-12	09-09-12	Top	341	171			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	51435 ft-lbs	96965 ft-lbs	53.0%	1	09-01-12
End Shear	10459 lbs	29232 lbs	35.8%	1	16-11-04
Total Load Deflection	L/363 (0.599")	n\a	66.2%	4	09-01-12
Live Load Deflection	L/559 (0.389")	n\a	64.4%	5	09-01-12
Max Defl.	0.599"	n\a	n\a	4	09-01-12
Span / Depth	13.6				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column	3-1/2" x 5-1/4"	11683 lbs	78.3%	52.1%	Unspecified
B2	Wall/Plate	5-1/2" x 5-1/4"	11792 lbs	30.6%	33.5%	Spruce-Pine-Fir

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

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

CONFORMS TO OBC 2012

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.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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



171 HD . FAM 148021 COMPONENT ONLY





Triple 1-3/4" x 16" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B9(i8463) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

July 7, 2021 10:38:19

Job name:

Address:

Customer:

City, Province, Postal Code: RICHMOND HILL

Code reports:

CCMC 12472-R

File name:

38-14 EL A SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B9(i8463)

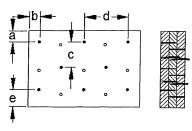
Specifier:

Designer:

EEO

Company:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 6"

d = 12"

e minimum = 3"

Calculated Side Load = 828.8 lb/ft Nailing applies to both sides of the member Connectors are: 16d ' / Nails

312" ARDOX SPIRAL

replantative consequents for them. I come to see a

POPULACE OF ONLY 148 NO. TAN 1486

STRUCTURAL COMPONENT ONLY

Disclosure

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





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

1ST FLR FRAMING\Flush Beams\B1(i8422) (Flush Beam)

Dry | 1 span | No cant.

July 7, 2021 10:38:19

PASSED

Build 7773

Job name:

Customer:

Address:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B1(i8422)

Specifier:

Designer:

EEO

Wind

Code reports:

BC CALC® Member Report

CCMC 12472-R

Company:

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Total Horizontal Product Length = 10-01-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	
B1, 4-3/8"	150 / 0	434 / 0		
B2 4-3/8"	146 / 0	402 / 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	10-01-12	Top		5			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	10-01-12	Top		60			n\a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	10-01-12	Тор	29	14	ۇم. ئەر	SE OFE	SSION,
3	9(i6325)	Conc. Pt. (lbs)	L	00-02-03	00-02-03	Тор	4	32	J.		nya

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1262 ft-lbs	7546 ft-lbs	16.7%	0	05-00-14
End Shear	434 lbs	3761 lbs	11.5%	0	01-01-14
Total Load Deflection	L/999 (0.081")	n\a	n\a	4	05-00-14
Live Load Deflection	L/999 (0.021")	n\a	n\a	5	05-00-14
Max Defl.	0.081"	n\a	n\a	4	05-00-14
Span / Depth	12.1				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 1-3/4"	607 lbs	19.8%	10.0%	Spruce-Pine-Fir
B2	Wall/Plate	4-3/8" x 1-3/4"	562 lbs	18.4%	9.3%	Spruce-Pine-Fir

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

BANFORMS TO OBC 2012

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

AMENDED 2020



DWG NO. TAM14831-91 STRUCTURAL COMPONENT ONLY

Disclosure

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



BC CALC® Member Report



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

PASSED

1ST FLR FRAMING\Flush Beams\B19(i8208) (Flush Beam)

Dry | 2 spans | No cant.

July 7, 2021 10:38:19

Build 7773 Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B19(i8208)

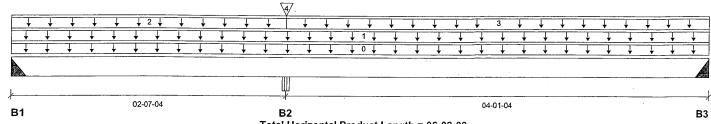
Specifier:

Designer: **EEO**

Customer: Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 06-08-08

Reaction Summary (Down / Unlift) (lbs)

illiai y (Domii i Op				
Live	Dead	Snow	Wind	
36 / 12	65 / 0			
1562 / 0	1182 / 0			
49/2	145 / 0			
	Live 36 / 12 1562 / 0	36 / 12 65 / 0 1562 / 0 1182 / 0	Live Dead Snow 36 / 12 65 / 0 1562 / 0 1182 / 0	Live Dead Snow Wind 36 / 12 65 / 0 1562 / 0 1182 / 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	06-08-08	Top		10			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	06-08-08	Top		60			n\a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	02-07-04	Тор	29	14			n\a
3	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	02-07-04	06-08-08	Тор	25	13			n\a
4	PBO8(i5627)	Conc. Pt. (lbs)	L	02-07-04	02-07-04	Top	1450	834			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	147 ft-lbs	15093 ft-lbs	1.0%	0	04-11-14
Neg. Moment	-173 ft-lbs	-14801 ft-lbs	1.2%	0	02-07-04
End Shear	86 lbs	7521 lbs	1.1%	0	05-08-08
Cont. Shear	155 lbs	7521 lbs	2.1%	0	03-07-06
Total Load Deflection	L/999 (0.001")	n\a	n\a	10	04-09-08
Live Load Deflection	L/999 (0")	n\a	n\a	13	04-08-12
Total Neg. Defl.	L/999 (0")	n\a	n\a	10	01-10-06
Max Defl.	0.001"	n\a	n\a	10	04-09-08
Span / Depth	5.0				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	2-1/2" x 3-1/2"	91 lbs	n\a	1.3%	HUC410
B2	Beam	5-1/4" x 3-1/2"	3820 lbs	38.9%	17.0%	Unspecified
B3	Hanger	2-1/2" x 3-1/2"	203 lbs	n\a	2.9%	HUC410

Cautions

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

Hanger model HUC410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.



UVA NO. TAM 1 488221 STRUCTURAL COMPONENT ONLY





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

PASSED

July 7, 2021 10:38:19

1ST FLR FRAMING\Flush Beams\B19(i8208) (Flush Beam) Dry | 2 spans | No cant.

BC CALC® Member Report Build 7773

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

38-14 EL A SUNKEN.mmdl

Description:

1ST FLR FRAMING\Flush Beams\B19(i8208)

Specifier:

Designer: **EEO**

Company:

Notes

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

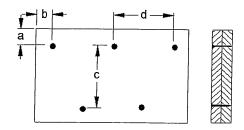
Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 03-10-10.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/2" d = 8 4 b minimum = 3"

Connectors are:

.ı Nails ARDOX SPIRAL

POLITICE OF ONE

048 NO. TAMI 4882 STRUCTURAL COMPONENT ONLY

Disclosure

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

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





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



July 7, 2021 10:38:19

1ST FLR FRAMING\Flush Beams\B18(i8557) (Flush Beam) Dry | 1 span | No cant.

BC CALC® Member Report **Build 7773**

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B18(i8557)

Specifier: Company:

Designer: **EEO**

CCMC 12472-R

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														06	-02-0	12																
														05.	-UZ-L	12																D2

Total Horizontal Product Length = 05-02-02

Reaction Summary (Down / Unlift) (lbs)

rtouotion our	todonon odninary (bown r opini) (183)								
Bearing	Live	Dead	Snow	Wind					
B1, 4-3/8"	515 / 0	427 / 0							
B2, 3-1/2"	760 / 13	585 / 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	05-02-02	Тор		5		**	00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	05-02-02	Тор	•	60			n\a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-07-14	05-02-02	Top	278	150			n∖a
3	B19(i8208)	Conc. Pt. (lbs)	L	05-00-06	05-00-06	Тор	-13				n\a
4	J3(i8659)	Conc. Pt. (lbs)	L	00-11-14	00-11-14	Тор	289	144		507586	ilOA _{la} , n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1608 ft-lbs	11610 ft-lbs	13.8%	1	02-03-14
End Shear	1083 lbs	5785 lbs	18.7%	1	01-01-14
Total Load Deflection	L/999 (0.017")	n\a	n\a	6	02-07-06
Live Load Deflection	L/999 (0.01")	n\a	n\a	8	02-07-06
Max Defl.	0.017"	n\a	n\a	6	02-07-06
Span / Depth	5.9				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 1-3/4"	1306 lbs	27.7%	14.0%	Spruce-Pine-Fir
B2	Column	3-1/2" x 1-3/4"	1872 lbs	37.6%	25.0%	Unspecified

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

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

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

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

AMENDED 2020



STRUCTURAL Disclosure ONLY

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

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





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

PASSED

July 7, 2021 10:38:19

1ST FLR FRAMING\Flush Beams\B20(i8513) (Flush Beam) Dry | 1 span | No cant.

BC CALC® Member Report

Build 7773 Job name:

Address:

Customer:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN.mmdl

Description:

EEO

Wind

1ST FLR FRAMING\Flush Beams\B20(i8513)

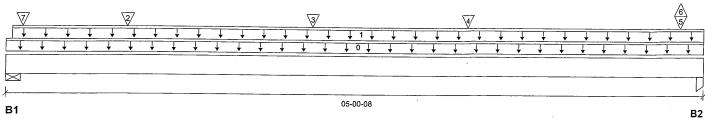
Specifier:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 05-00-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow
B1, 2-3/4"	569 / 0	473 / 0	
B2 3-1/2"	613 / 2	586 / 0	

Loa	ad Summary						Live	Dead	Snow	Wind
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	05-00-08	Top		5		
1	WALL	Unf. Lin. (lb/ft)	L	00-00-08	05-00-08	Тор		60		
2	J4(i8720)	Conc. Pt. (lbs)	L	00-10-04	00-10-04	Top	225	112		
3	J4(i8702)	Conc. Pt. (lbs)	L	02-02-04	02-02-04	Тор	224	112		
4	-	Conc. Pt. (lbs)	L	03-03-11	03-03-11	Тор	318	158	ats	ور والعن والعن ماي به والعن والعن ماي به
5	-	Conc. Pt. (lbs)	L	04-10-07	04-10-07	Тор	265	247	/ 4°C	₅ 4538
6	-	Conc. Pt. (lbs)	L	04-10-07	04-10-07	Top	-2		100 6	
7	-	Conc. Pt. (lbs)	L	00-01-06	00-01-06	Тор	146	104		06

Controls Summary	Footomed Boncond	Factored	Demand/	_	
	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	1390 ft-lbs	11610 ft-lbs	12.0%	1	02-02-04
End Shear	915 lbs	5785 lbs	15.8%	1	01-00-04
Total Load Deflection	L/999 (0.015")	n\a	n\a	6	02-05-11
Live Load Deflection	L/999 (0.008")	n\a	n\a	8	02-05-11
Max Defl.	0.015"	n\a	n\a	6	02-05-11
Span / Depth	5.9				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	2-3/4" x 1-3/4"	1445 lbs	48.8%	24.6%	Spruce-Pine-Fir
B2	Column	3-1/2" x 1-3/4"	1651 lbs	33.2%	22.1%	Unspecified

Notes

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

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

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

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

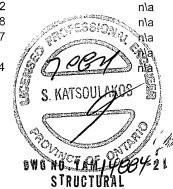
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

canforms to obs 2012

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

AMENDED 2020



Tributary

00-00-00 n\a n\a

COMPONENT ONLY **Disclosure**

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





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

PASSED

1ST FLR FRAMING\Flush Beams\B19A(i8719) (Flush Beam)

BC CALC® Member Report Build 7773

Job name:

Customer:

Address:

City, Province, Postal Code: RICHMOND HILL

Dry | 2 spans | No cant.

July 7, 2021 10:43:27

File name:

38-14 EL A SUNKEN WI...T. GROUND FLOOR.mmdl

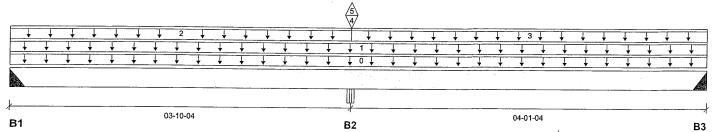
Description: 1ST FLR FRAMING\Flush Beams\B19A(i8719)

Specifier:

Designer: **EEO**

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 07-11-08

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 2-1/2"	55 / 7	120 / 0
B2, 5-1/4"	1896 / 1	1371 / 0
B3, 2-1/2"	49/6	125 / 0

Loa	ad Summary							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	07-11-08	Тор	· · · · · · · · · · · · · · · · · · ·	10			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	07-11-08	Top		53			n\a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	03-10-04	Тор	29	14			n\a
3	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	03-10-04	07-11-08	Тор	25	13			nla
4	PBO8(i5627)	Conc. Pt. (lbs)	L	03-10-04	03-10-04	Top	1766	1003			n\a
5	PBO8(i5627)	Conc. Pt. (lbs)	L	03-10-04	03-10-04	Тор	-1				n\a

0 (1 0		Factored	Demand/		
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	120 ft-lbs	15093 ft-lbs	0.8%	0	06-03-10
Neg. Moment	-197 ft-lbs	-14801 ft-lbs	1.3%	0	03-10-04
End Shear	142 lbs	7521 lbs	1.9%	0	06-11-08
Cont. Shear	225 lbs	7521 lbs	3.0%	0	04-10-06
Total Load Deflection	L/999 (0.001")	n\a	n\a	13	06-00-14
Live Load Deflection	L/999 (0")	n\a	n\a	17	05-11-12
Max Defl.	0.001"	n\a	n\a	13	06-00-14
Span / Depth	5.0				

Bearing	g Supports	_Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	2-1/2" x 3-1/2"	168 lbs	n∖a	2.4%	HUC410
B2	Beam	5-1/4" x 3-1/2"	4558 lbs	46.4%	20.3%	Unspecified
B3	Hanger	2-1/2" x 3-1/2"	175 lbs	n\a	2.5%	HUC410

Cautions

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

Hanger model HUC410 and seat length were input by the user. Hanger has not been analyzed for) older adequate capacity.



ova no. Tam 1488521 STRUCTURAL COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B19A(i8719) (Flush Beam)

Dry | 2 spans | No cant.

PASSED

July 7, 2021 10:43:27

BC CALC® Member Report

Build 7773

Job name:

Address:

Customer: Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

38-14 EL A SUNKEN WI...T. GROUND FLOOR.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B19A(i8719)

Specifier:

Designer:

EEO

Company:

Notes

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

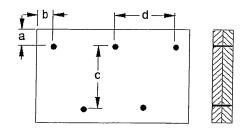
Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 03-10-10.

CONFORMS TO 08C 2012

AMENDED 2020

Connection Diagram: Full Length of Member



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

Connectors are:

A tall ₁ Nails

312" ARDOX SPIKAL

PANCE OF ONLY

DWB NO. TAM 14003 STRUCTURAL COMPONENT ONLY

Disclosure

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

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





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B20A(i8745) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Job name: Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Dry | 1 span | No cant.

July 7, 2021 10:43:27

Dead

0.65

269

5 60 Snow

1.00

Wind

1.15

Tributary

00-00-00

n\a

n\a

File name: Description:

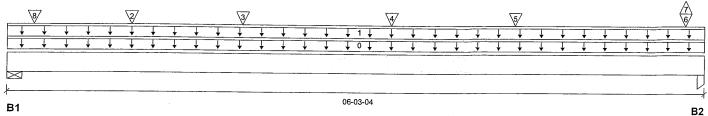
38-14 EL A SUNKEN WI...T. GROUND FLOOR.mmdl 1ST FLR FRAMING\Flush Beams\B20A(i8745)

Specifier: Designer:

EEO

Wind

Code reports: CCMC 12472-R Company:



Total Horizontal Product Length = 06-03-04

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	
B1, 5-1/2"	741 / 0	680 / 0	
B2, 3-1/2"	738 / 6	671 / 0	

Loa	ad Summary						Live
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-03-04	Top	
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	06-03-04	Тор	
2	-	Conc. Pt. (lbs)	L	01-01-01	01-01-01	Top	390
3	J4(i8718)	Conc. Pt. (lbs)	L	02-01-00	02-01-00	Тор	225
4	J4(i8721)	Conc. Pt. (lbs)	L	03-05-00	03-05-00	Top	224
5	-	Conc. Pt. (lbs)	L	04-06-07	04-06-07	Top	317
6	-	Conc. Pt. (lbs)	L	06-01-03	06-01-03	Top	267
7	-	Conc. Pt. (lbs)	L	06-01-03	06-01-03	Top	-6
8	3(i50)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	49

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2206 ft-lbs	11610 ft-lbs	19.0%	1	03-05-00
End Shear	1517 lbs	5785 lbs	26.2%	1	01-03-00
Total Load Deflection	L/999 (0.037")	n\a	n∖a	6	03-02-00
Live Load Deflection	L/999 (0.02")	n\a	n\a	8	03-02-00
Max Defl.	0.037"	n\a	n\a	6	03-02-00
Span / Depth	7.1				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	5-1/2" x 1-3/4"	1963 lbs	33.1%	16.7%	Spruce-Pine-Fir
B2	Column	3-1/2" x 1-3/4"	1946 lbs	39.1%	26.0%	Unspecified

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

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

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

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

Design based on Dry Service Condition.

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

AMENDED 2020



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





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B2A(i8740) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

Dry | 1 span | No cant.

July 7, 2021 10:43:27

File name:

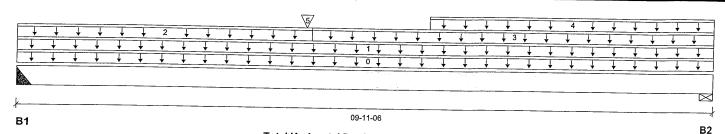
38-14 EL A SUNKEN WI...T. GROUND FLOOR.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B2A(i8740)

Specifier:

Designer: **EEO**

Company:



Total Horizontal Product Length = 09-11-06

Reaction Summary (Down / Unlift) (lbs)

	a. (Doili)	pinty (iba)			
Bearing	Live	Dead	Snow	Wind	
B1, 3"	321/0	236 / 0		TTIIG	
B2, 4-3/8"	252 / 0	355 / 0			

Lo	oad Summary						Live	Dead	Snow	Wind	Tributary
Ta	g Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	inbutary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-11-06		1.00	5	1.00	1.15	00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	09-11-06	1-	19	9			n\a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	04-02-00	Тор	8	4			n\a
3	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-02-00	09-11-06	Тор	3	2			n\a
4 5	WALL B3(i8710)	Unf. Lin. (lb/ft) Conc. Pt. (lbs)	L L	05-10-00 04-01-02	09-11-06 04-01-02	Тор Тор	338	60 178			n\a n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2509 ft-lbs	11610 ft-lbs	21.6%	1	04-01-02
End Shear	711 lbs	5785 lbs	12.3%	1	01-00-08
Total Load Deflection	L/999 (0.104")	n\a	n\a	4	04-09-08
Live Load Deflection	L/999 (0.056")	n\a	n\a	5	04-08-04
Max Defl.	0.104"	n\a	n\a	4	04-09-08
Span / Depth	11.9		1110	7	04-03-00

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	3" x 1-3/4"	776 lbs	n\a	12.1%	HUS1.81/10
B2	Wall/Plate	4-3/8" x 1-3/4"	821 lbs	17.4%	8.8%	Spruce-Pine-Fir

Cautions

12825-16

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 user. Hanger has not been analyzed for adequate capacity.



DWG NO. TAM 1408721 STRUCTURAL COMPONENT ONLY





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B2A(i8740) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

July 7, 2021 10:43:27

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN WI...T. GROUND FLOOR.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B2A(i8740)

Specifier:

Designer:

EEO

CCMC 12472-R

Company:

Notes

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

CONVORMS TO OBC 2012

AMENDED 2020



ONG NO. TAM 148629 1 STRUCTURAL COMPONENT ONLY

Disclosure

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

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





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B10A(i8955) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

July 7, 2021 10:43:27

Job name: Address:

Customer:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN WI...T. GROUND FLOOR.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B10A(i8955)

Specifier:

Designer:

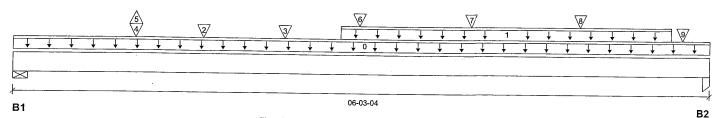
EEO

Wind

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 06-03-04

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead		
B1, 5-1/2"	1698 / 10	918 / 0		
B2, 3-1/2"	1760 / 1	918 / 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	06-03-04	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	02-11-00	05-11-00	Top	281	141			n\a
2	-	Conc. Pt. (lbs)	L	01-08-04	01-08-04	•	487	244			n\a
3	J1(i8939)	Conc. Pt. (lbs)	L	02-05-00	02-05-00	Top	258	129			n\a
4	-	Conc. Pt. (lbs)	L	01-00-15			657	372			n\a
5	-	Conc. Pt. (lbs)	L	01-00-15		1-	-11	0,2			
6	J1(i8982)	Conc. Pt. (lbs)	Ĺ	03-01-00	03-01-00	Тор	340	170			n\a ~\-
7	J1(i8993)	Conc. Pt. (lbs)	L	04-01-00	04-01-00	Тор	291	146			n\a
8	J1(i8900)	Conc. Pt. (lbs)		05-01-00	05-01-00	4-					n\a `
9	J1(i8987)	Conc. Pt. (lbs)	L	06-00-04		Тор	282	141			n\a
U	0 1 (10007)	Conc. Pt. (IDS)	L	00-00-04	06-00-04	Тор	291	146			n∖a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	5103 ft-lbs	23219 ft-lbs	22.0%	1	03-01-00
End Shear	3353 lbs	11571 lbs	29.0%	1	01-03-00
Total Load Deflection	L/999 (0.041")	n\a	n\a	6	03-02-00
Live Load Deflection	L/999 (0.027")	n\a	n\a	8	03-02-00
Max Defl.	0.041"	n\a	n\a	6	03-02-00
Span / Depth	7.1			•	00 02 00

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	5-1/2" x 3-1/2"	3695 lbs	31.2%	15.7%	Spruce-Pine-Fir
B2	Column	3-1/2" x 3-1/2"	3788 lbs	38.1%	25.3%	Unspecified

Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

conforms to obc 2012

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

AMENDED 2020



OVE NO. TAM 148821 STRUCTURAL COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B10A(i8955) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

July 7, 2021 10:43:27

File name: 38-14 EL A SUNKEN WI...T. GROUND FLOOR.mmdl

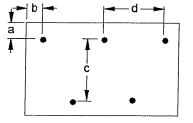
Description: 2ND FLR FRAMING\Flush Beams\B10A(i8955)

Specifier:

Designer: EEO

Company:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 5-1/2" d = 1888"

Calculated Side Load = 763.5 lb/ft Connectors are: 16d / Nails

312" ARDOX SPIKAL



DWB NO. TAM 148021 STRUCTURAL COMPONENT ONLY

Disclosure

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Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B11A(i8964) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

July 7, 2021 10:43:27

Job name: Address:

Customer:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL A SUNKEN WI...T. GROUND FLOOR.mmdl

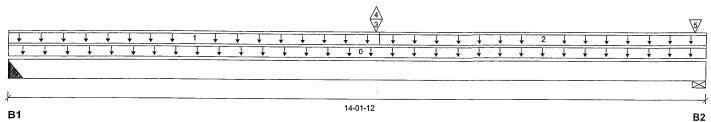
Description: 2ND FLR FRAMING\Flush Beams\B11A(i8964)

Specifier:

Designer:

Code reports: CCMC 12472-R Company:

EEO



Total Horizontal Product Length = 14-01-12

Reaction Summary (Down / Unlift) (lbs)

reaction our	a.	pinty (ibo)			
Bearing	Live	` Dead	Snow	Wind	
B1, 3"	528 / 4	312 / 0			
B2, 5-1/2"	559 / 5	371 / 0	59 / 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	14-01-12	Тор		5			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	07-05-04	Тор	17	8			n\a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	07-05-04	14-01-12	Тор	10	5			n\a
3	B12(i8876)	Conc. Pt. (lbs)	L	07-04-06	07-04-06	Тор	896	478			n\a
4	B12(i8876)	Conc. Pt. (lbs)	L	07-04-06	07-04-06	Тор	- 9				n\a
5	E25(i98)	Conc. Pt. (lbs)	L	13-11-00	13-11-00	Тор		41	59		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	7360 ft-lbs	11610 ft-lbs	63.4%	1	07-04-06
End Shear	1217 lbs	5785 lbs	21.0%	1	12-10-12
Total Load Deflection	L/286 (0.568")	n\a	83.8%	58	07-02-00
Live Load Deflection	L/450 (0.362")	n\a	80.0%	85	07-02-00
Max Defl.	0.568"	n\a	n\a	58	07-02-00
Span / Depth	17.1		-		

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	3" x 1-3/4"	1182 lbs	n\a	18.5%	HUS1.81/10
B2	Wall/Plate	5-1/2" x 1-3/4"	1361 lbs	23.0%	11.6%	Spruce-Pine-Fir

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 adequate capacity.



one no. Tahl /9 COMPONENT ONLY





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B11A(i8964) (Flush Beam)

PASSED

July 7, 2021 10:43:27

BC CALC® Member Report

Build 7773

Job name: Address:

Code reports:

City, Province, Postal Code: RICHMOND HILL

Customer:

CCMC 12472-R

Dry | 1 span | No cant.

File name: 38-14 EL A SUNKEN WI...T. GROUND FLOOR.mmdl Description: 2ND FLR FRAMING\Flush Beams\B11A(i8964)

Specifier:

Designer: **EEO**

Company:

Notes

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

Hanger Manufacturer: Unassigned

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

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

Calculations assume unbraced length of Top: 00-00-00, Bottom: 07-03-08.

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAM/4009-21 STRUCTURAL COMPONENT ONLY

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Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B15A(i9210) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 2 spans | No cant.

July 5, 2021 11:21:46

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

38-14 EL B STD.mmdl

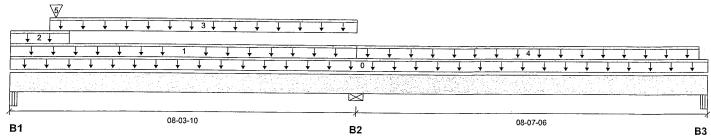
Description: 2ND FLR FRAMING\Flush Beams\B15A(i9210)

Specifier:

Designer:

EEO

Company:



Total Horizontal Product Length = 16-11-00

Reaction Summary (Down / Uplift) (Ibs)

Bearing	Live	Dead	Snow
B1, 4-1/8"	848 / 25	1252 / 0	694 / 0
B2, 5-1/2"	585 / 0	512 / 0	110 / 0
B3, 5-1/4"	175 / 40	82 / 0	0 / 18

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	16-11-00	Тор		10			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	08-03-10	Тор	20	10			n\a
2	E51(i8554)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-06	Top		96	26		n\a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-10-14	08-03-10	Тор	26	13			n\a
4	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	08-03-10	16-08-06	Тор	47	23			n\a
5	B30(i9198)	Conc. Pt. (lbs)	L	01-00-10	01-00-10	Тор	782	1171	751		n\a

Cantrala Commune	_	Factored	Demand/		
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	2611 ft-lbs	23219 ft-lbs	11.2%	2	01-00-10
Neg. Moment	-1576 ft-lbs	-18777 ft-lbs	8.4%	1	08-03-10
End Shear	2941 lbs	11571 lbs	25.4%	2	01-01-10
Cont. Shear	864 lbs	11571 lbs	7.5%	1	07-03-06
Total Load Deflection	L/999 (0.032")	n\a	n\a	82	03-07-00
Live Load Deflection	L/999 (0.019")	n\a	n\a	120	03-07-00
Total Neg. Defl.	L/999 (-0.008")	n\a	n\a	82	11-02-09
Max Defl.	0.032"	n\a	n\a	82	03-07-00
Span / Depth	10.4				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	4-1/8" x 3-1/2"	3530 lbs	45.8%	20.0%	Unspecified
B2	Wall/Plate	5-1/2" x 3-1/2"	1627 lbs	13.7%	6.9%	Spruce-Pine-Fir
B3	Beam	5-1/4" x 3-1/2"	365 lbs	3.7%	1.6%	Unspecified

Cautions

Concentrated side load(s) 9 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.



COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B15A(i9210) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 2 spans | No cant.

July 5, 2021 11:21:46

Build 7773

Job name: Address:

Code reports:

City, Province, Postal Code: RICHMOND HILL

Customer:

CCMC 12472-R

File name:

38-14 EL B STD.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B15A(i9210)

Specifier:

Designer: **EEO**

Company:

Notes

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

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

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

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

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

verification.

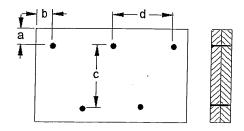
Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 07-11-06.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 5-1/2"

Connectors are: -

. Nails ARDOX SPIKAL



STRUCTURAL COMPONENT ONLY

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

PASSED

July 5, 2021 11:21:46

2ND FLR FRAMING\Flush Beams\B30(i9198) (Flush Beam)

BC CALC® Member Report

Build 7773

Job name:

Customer:

Code reports:

Address:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

Dry | 1 span | No cant.

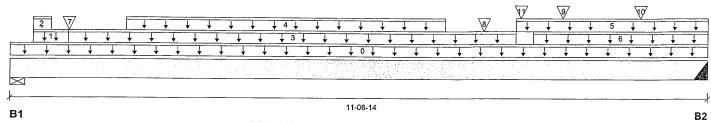
File name: 38-14 EL B STD.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B30(i9198)

Specifier:

EEO

Designer: Company:



Total Horizontal Product Length = 11-08-14

Reaction Summary (Down / Unlift) (lbs)

reaction our	Reaction outlinary (bowli / opinit) (lbs)								
Bearing	Live	Dead	Snow	Wind					
B1, 4-3/8"	7 87 / 0	1099 / 0	713 / 0						
B2. 4"	804 / 0	1191 / 0	754 / 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	11-08-14	Тор		10			00-00-00
1	E40(i3962)	Unf. Lin. (lb/ft)	L	00-04-06	00-11-06	Тор		81			n\a
2	E40(i3962)	Unf. Lin. (lb/ft)	L	00-04-06	00-07-14	Тор			129		n\a
3	E41(i4005)	Unf. Lin. (lb/ft)	L	00-11-06	08-05-06	Тор		41			n\a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-14	07-02-14	Тор	151	76			n\a
5	E30(i96)	Unf. Lin. (lb/ft)	L	08-05-06	11-08-14	Тор		81			n\a
6	E30(i96)	Unf. Lin. (lb/ft)	L	08-08-14	11-08-14	Тор		56	129		n\a
7	-	Conc. Pt. (lbs)	L	00-11-08	00-11-08	Top	186	380	522		n\a
8	J6(i9202)	Conc. Pt. (lbs)	L	07-10-14	07-10-14	Тор	201	101			n\a
9	J6(i9194)	Conc. Pt. (lbs)	L	09-02-14	09-02-14	Тор	201	101			n\a
10	J6(i9207)	Conc. Pt. (lbs)	L	10-06-14	10-06-14	Тор	199	100			n\a
11	E30(i96)	Conc. Pt. (lbs)	L	08-06-06	08-06-06	Тор		287	520		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	8160 ft-lbs	23219 ft-lbs	35.1%	1	06-06-14
End Shear	3098 lbs	11571 lbs	26.8%	1	10-07-06
Total Load Deflection	L/467 (0.287")	n\a	51.4%	35	06-00-14
Live Load Deflection	L/820 (0.163")	n\a	43.9%	51	06-00-14
Max Defl.	0.287"	n\a	n\a	35	06-00-14
Span / Depth	14.1				

Bearing	J Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 3-1/2"	3267 lbs	34.7%	17.5%	Spruce-Pine-Fir
B2	Hanger	4" x 3-1/2"	3449 lbs	n\a	20.2%	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.



COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B30(i9198) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

July 5, 2021 11:21:46

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

38-14 EL B STD.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B30(i9198)

Specifier: Designer:

EEO

Company:

Notes

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

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

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA 086.

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.

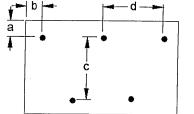
Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member





a minimum = 2" b minimum = 3"

c = 5-1/2"

Calculated Side Load = 427.8 lb/ft Connectors are: 16d And Nails

ARDOX SPIRAL

Ormice S BWB NO. TAM !! 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.

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Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B15B(i9690) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 2 spans | No cant.

July 5, 2021 11:22:24

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name:

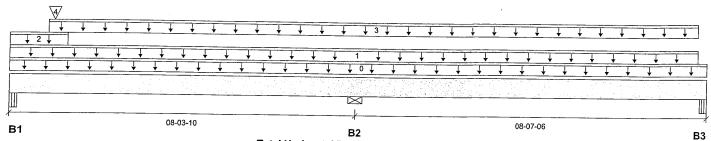
38-14 EL C STD.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B15B(i9690) Specifier:

Designer: **EEO**

Wind

Company:



Total Horizontal Product Length = 16-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow
B1, 4-1/8"	507 / 14	809 / 0	437 / 0
B2, 5-1/2"	338 / 0	344 / 0	68 / 0
B3, 5-1/4"	100 / 24	60 / 0	0 / 11

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	16-11-00	Тор		10			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	16-08-06	Тор	7	4			n\a
2	E51(i8554)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-06	Top		96	26		nla
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-10-14	16-08-06	Тор	20	10	20		n\a
4	B40(i9711)	Conc. Pt. (lbs)	L	01-00-10	01-00-10	Тор	475	702	459		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1608 ft-lbs	23219 ft-lbs	6.9%	2	01-00-10
Neg. Moment	-973 ft-lbs	-18777 ft-lbs	5.2%	1	08-03-10
End Shear	1793 lbs	11571 lbs	15.5%	2	01-01-10
Cont. Shear	534 lbs	11571 lbs	4.6%	1	07-03-06
Total Load Deflection	L/999 (0.02")	n\a	n\a	82	03-05-14
Live Load Deflection	L/999 (0.011")	n\a	n\a	120	03-07-00
Total Neg. Defl.	L/999 (-0.005")	n\a	n\a	82	11-01-06
Max Defl.	0.02"	n\a	n\a	82	03-05-14
Span / Depth	10.4				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	4-1/8" x 3-1/2"	2209 lbs	28.7%	12.5%	Unspecified
B2	Wall/Plate	5-1/2" x 3-1/2"	1005 lbs	8.5%	4.3%	Spruce-Pine-Fir
B3	Beam	5-1/4" x 3-1/2"	225 lbs	2.3%	1.0%	Unspecified

Cautions

Concentrated side load(s) 9 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.



STRUCTURAL COMPONENT ONLY





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

PASSED

2ND FLR FRAMING\Flush Beams\B15B(i9690) (Flush Beam)

BC CALC® Member Report

Build 7773

Dry | 2 spans | No cant.

July 5, 2021 11:22:24

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

Designer:

CCMC 12472-R

38-14 EL C STD.mmdl Description: 2ND FLR FRAMING\Flush Beams\B15B(i9690)

EEO

Company:

File name:

Specifier:

Notes

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

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

Resistance Factor phi has been applied to all presented results per CSA 086.

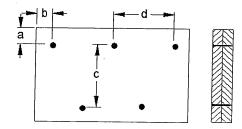
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

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

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

Calculations assume unbraced length of Top: 00-00-00, Bottom: 07-11-06.

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 5-1/2" d = 6 6

Connectors are: 3 10 44 7 1

Nails

31/2" ARDOX SPIRAL

POLYVOE OF ON ONG NO. TAM LY

STRUCTURÁL COMPONENT ONLY

Disclosure

CONFORMS TO OBC 2012

AMENDED 2020

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

BC CALC®, BC FRAMER® , AJS $^{\text{\tiny{M}}}$ 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

July 5, 2021 11:22:24

2ND FLR FRAMING\Flush Beams\B40(i9711) (Flush Beam) Dry | 1 span | No cant.

BC CALC® Member Report

Build 7773 Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

File name:

38-14 EL C STD.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B40(i9711)

Specifier:

Designer:

EEO

Customer: Code reports:

CCMC 12472-R

Company:

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는 그리는 그는 그는 일이라고 그들은 모리하다면 일을 바라로 살았다. 유학을 조각하를 통해하고 말하다고는 때 이번 모든 다른 하이라면 하는데	그리아 그림, 그는 얼마리아 그리는 요리하면 일 때문요를 갖춘 호흡을 조흡을 통했다. 끝이라는 전에 가는 함께 하였다.	ţ	<u> </u>	ŢŢ	+	Ţ	<u> </u>	Ţ	*	Ţ		†	*	†	Ţ	Ţ	1	, 0	V	↓	+	†	†	†	+	+	↓	+	· ↓	+	1 +	 	5 ↓	<u>↓</u>
					<u> </u>					41.4	N														1959 1 1959									

Total Horizontal Product Length = 07-04-14

Reaction Summary (Down / Uplift) (lbs)

	\—	1		
Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	460 / 0	661 / 0	433 / 0	
B2, 4"	503 / 0	733 / 0	475 / 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	07-04-14	Тор		10			00-00-00
1	E40(i3962)	Unf. Lin. (lb/ft)	L	00-04-06	00-11-06	Top		81			n\a
2	E40(i3962)	Unf. Lin. (lb/ft)	L	00-04-06	00-07-14	Top		56	129		n\a
3	E41(i4005)	Unf. Lin. (lb/ft)	L	00-11-06	06-05-06	Top		41			n\a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-14	05-10-14	Top	151	76			n\a
5	E30(i96)	Unf. Lin. (lb/ft)	L	06-05-06	07-04-14	Тор		81			n\a
6	E30(i96)	Unf. Lin. (lb/ft)	L	07-00-06	07-04-14	Top		56	129		n\a
7	-	Conc. Pt. (lbs)	L	00-11-13	00-11-13	Тор	186	308	390		n\a
8	-	Conc. Pt. (lbs)	L	06-06-08	06-06-08	Тор	174	325	432		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2692 ft-lbs	23219 ft-lbs	11.6%	<u> </u>	03-10-14
End Shear	1692 lbs	11571 lbs	14.6%	1	01-01-14
Total Load Deflection	L/999 (0.035")	n\a	n\a	35	03-08-14
Live Load Deflection	L/999 (0.02")	n\a	n\a	51	03-08-14
Max Defl.	0.035"	n\a	n\a	35	03-08-14
Span / Depth	8.6				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 3-1/2"	1949 lbs	20.7%	10.4%	Spruce-Pine-Fir
B2	Hanger	4" x 3-1/2"	2147 lbs	n\a	12.6%	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.





COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B40(i9711) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

July 5, 2021 11:22:24

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: RICHMOND HILL

CCMC 12472-R

File name: 38-14 EL C STD.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B40(i9711)

Specifier:

Designer: **EEO**

Company:

Notes

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

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

Hanger Manufacturer: Unassigned

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

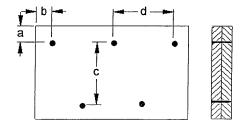
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

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

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

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

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 5-1/2" d = 🕶 8 "

Calculated Side Load = 427.8 lb/ft

ARDOX SPIRAL

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DWG NO. TAM 1487 STRUCTURAL COMPONENT ONLY

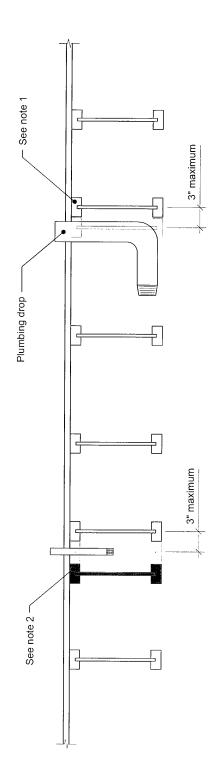
Disclosure

CONFORMS TO UBC 2012

AMENDED 2020

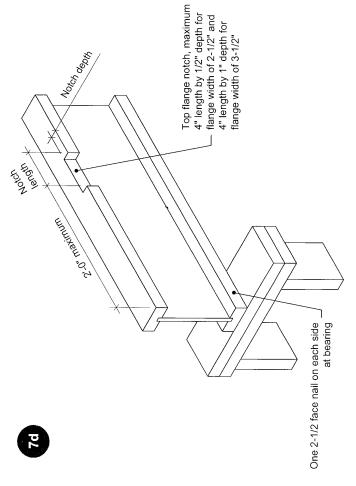
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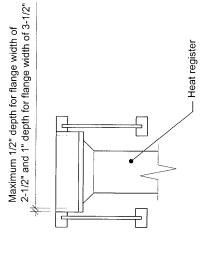
BC CALC®, BC FRAMER® , AJS™. ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,



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

		TITLE		DRAWING	
NORDIC	4	Allowance for Piping		7c	
STRUCTURES	NS-DUS B#	CATEGORY	SCALE	DATE	PAGE
nordic.ca	NORDIC JOIST	Openings for Vertical Elements	•	2020-10-01	3.10





- Blocking required at bearing for lateral support, not shown for clarity.
 The maximum dimensions for a notch on the side of the top flange are 4-inch length by 1/2-inch depth for flange width of 2-1/2 inches, and 4-inch length by 1-inch depth for flange width of 3-1/2 inches.
 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.

		TITLE		DRAWING	
NORDIC	4	Notch in I-joist for Heat Register		p2	
STRUCTURES	NS-DU3 FF	CATEGORY	SCALE	DATE	PAGE
nordic.ca	NORDIC JOIST	Openings for Vertical Elements	•	2020-10-01 3.11	3.11



Maximum Floor Spans - S2.1

Design Criteria

Spans:

Simple span

Loads:

Live load = 40 psf and dead load = 15 psf

Deflection limits: L/480 under live load and L/240 under total load

Sheathing:

5/8 in. nailed-glued oriented strand board (OSB) sheathing

Maximum Floor Spans

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

		Mi	d-span blocking	with 1x4 inch s	trap	Mid-sp	an blocking an	d 1/2 in. gypsum	ceiling
Joist depth	Joist series		On cent	re spacing			On cent	e spacing 19.2" 14'-5" 16'-1" 16'-4" 17'-8" 17'-3" 19'-2" 19'-6" 20'-8" 21'-0" 21'-8" 21'-11" 23'-3" 23'-7" 24'-2" 25'-6"	
		12"	16"	19.2"	24"	12"	16"		24"
11.112	NI-20	16'-8"	15'-3"	14'-5"	-	16'-8"	15'-3"	14'-5"	-
9-1/2"	NI-40x	17'-11"	17'-0"	16'-1"	-	18'-5"	17'-1"	16'-1"	-
9-1/2	NI-60	18'-2"	17'-1"	16'-4"	-	18'-8"	17'-4"	16'-4"	-
	NI-80	19'-5"	18'-0"	17'-5"	-	19'-10"	18'-5"	17'-8"	-
	NI-20	19'-7"	18'-2"	17'-3"	-	19'-11"	18'-3"	17'-3"	-
	NI-40x	21'-1"	19'-7"	18'-8"	-	21'-8"	20'-2"	19'-2"	-
11-7/8"	NI-60	21'-4"	19'-9"	18'-11"	-	21'-11"	20'-5"	re spacing 19.2" 14'-5" 16'-1" 16'-4" 17'-8" 17'-3" 19'-2" 19'-6" 20'-8" 21'-0" 21'-8" 21'-11" 23'-3" 23'-7" 24'-2"	-
	NI-80	22'-9"	21'-1"	20'-2"	-	23'-3"	21'-8"	20'-8"	-
	NI-90	23'-3"	21'-6"	20'-6"	-	23'-9"	22'-0"	re spacing 19.2" 14'-5" 16'-1" 16'-4" 17'-8" 17'-3" 19'-2" 19'-6" 20'-8" 21'-0" 21'-8" 21'-11" 23'-3" 23'-7" 24'-2" 25'-6"	-
	NI-40x	23'-8"	21'-11"	20'-11"	-	24'-4"	22'-8"	21'-8"	-
14"	NI-60	24'-0"	22'-3"	21'-3"	-	24'-8"	22'-11"	21'-11"	-
14	NI-80	25'-7"	23'-9"	22'-7"	-	26'-2"	24'-4"	23'-3"	-
	NI-90	26'-1"	24'-2"	23'-0"	•	26'-8"	24'-9"	23'-7"	-
	NI-60	26'-5"	24'-6"	23'-5"	-	27'-2"	25'-3"	24'-2"	-
16"	NI-80	28'-2"	26'-1"	24'-10"	-	28'-10"	26'-9"	25'-6"	-
	N1-90	28'-8"	26'-6"	25'-3"	-	29'-3"	27'-2"	25'-11"	_

- 1. The tabulated clear spans are based on CSA 086-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- 2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- 3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- 4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- 5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans - S4.1

Design Criteria

Spans:

Simple span

Loads:

Live load = 40 psf and dead load = 15 psf

Deflection limits: L/4
Sheathing: 3/4

L/480 under live load and L/240 under total load 3/4 in. nailed-glued oriented strand board (OSB) sheathing

Maximum Floor Spans

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

		Mi	d-span blocking	with 1x4 inch	strap	Mid-s	oan blocking an	d 1/2 in. gypsu	n ceiling
Joist depth	Joist series		On cent	re spacing			On cent	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"
9-1/2"	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-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"
11-7/8"	NI-60	22'-1"	20'-7"	19'-8"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"
	NI-80	23'-8"	22'-0"	20'-11"	19'-10"	24'-1"	22'-6"	21'-6"	20'-0"
	NI-90	24'-1"	22'-5"	21'-4"	20'-2"	24'-7"	22'-11"	21'-10"	20'-7"
**	NI-40x	24'-5"	22'-9"	21'-9"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
14"	NI-60	24'-10"	23'-2"	22'-1"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
1-4	NI-80	26'-6"	24'-8"	23'-6"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
	NI-90	27'-0"	25'-1"	23'-11"	22'-7"	27'-6"	25'-8"	24'-6"	23'-2"
	NI-60	27'-3"	25'-5"	24'-3"	22'-11"	28'-0"	26'-2"	24'-9"	23'-1"
16"	NI-80	29'-1"	27'-1"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90	29'-7"	27'-6"	26'-2"	24'-9"	30'-2"	28'-2"	26'-10"	25'-5"

- 1. The tabulated clear spans are based on CSA 086-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- 2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- 3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- 4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- 5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans - S6.1

Design Criteria

Spans:

Simple span

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

Maximum Floor Spans

			В	are			1/2 in. gy	osum ceiling	
Joist depth	Joist series		On cent	re spacing			On cent	re spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	14'-11"	14'-1"	13'-7"	-	15'-4"	14'-6"	14'-1"	-
9-1/2"	NI-40x	15'-11"	15'-0"	14'-6"	-	16'-4"	15'-5"	14'-11"	-
9-1/2	NI-60	16'-1"	15'-2"	14'-8"	-	16'-6"	15'-7"	15'-1"	-
	NI-80	17'-1"	16'-1"	15'-6"	-	17'-5"	16'-5"	15'-10"	-
	NI-20	16'-9"	15'-10"	15'-4"	-	17'-4"	16'-4"	15'-10"	-
	NI-40x	17'-10"	16'-10"	16'-3"	-	18'-6"	17'-4"	16'-9"	-
11-7/8"	NI-60	18'-1"	17'-0"	16'-5"	-	18'-9"	17'-6"	16'-11"	-
	NI-80	19'-6"	18'-0"	17'-4"	-	20'-1"	18'-7"	17'-9"	-
	NI-90	19'-11"	18'-4"	17'-8"	-	20'-5"	18'-11"	18'-1"	-
	NI-40x	19'-10"	18'-4"	17'-8"	_	20'-6"	19'-1"	18'-3"	-
14"	NI-60	20'-2"	18'-8"	17'-11"	-	20'-10"	19'-4"	18'-6"	-
14	N1-80	21'-8"	20'-0"	19'-1"	-	22'-4"	20'-8"	19'-9"	_
	NI-90	22'-1"	20'-5"	19'-6"	-	22'-9"	21'-0"	20'-1"	-
	NI-60	22'-0"	20'-4"	19'-6"	-	22'-9"	21'-1"	20'-2"	-
16"	NI-80	23'-7"	21'-10"	20'-10"	-	24'-4"	22'-6"	21'-6"	-
	NI-90	24'-1"	22'-2"	21'-2"	_	24'-9"	22'-11"	21'-10"	_

		Mi	d-span blocking	with 1x4 inch s	trap	Mid-s	an blocking an	d 1/2 in. gypsum	ceiling
Joist depth	Joist series		On cent	re spacing			On cent	e spacing	
		12"	16"	19.2"	24"	12"	16"	re spacing 19.2" 14'-3" 15'-11" 16'-2" 17'-7" 17'-1" 19'-0" 19'-3" 20'-5" 20'-10" 21'-5" 21'-8" 23'-0" 23'-4" 23'-11" 25'-3"	24"
	NI-20	16'-6"	15'-1"	14'-3"	-	16'-6"	15'-1"	14'-3"	-
9-1/2"	NI-40x	17'-9"	16'-10"	15'-11"	-	18'-2"	16'-11"	15'-11"	-
9-1/2	NI-60	17'-11"	16'-11"	16'-2"	-	18'-5"	17'-2"	16'-2"	-
	NI-80	19'-3"	17'-10"	17'-3"	•	19'-8"	18'-3"	17'-7"	-
	NI-20	19'-4"	18'-0"	17'-1"	-	19'-9"	18'-1"	17'-1"	-
	NI-40x	20'-10"	19'-4"	18'-6"	-	21'-5"	19'-11"	re spacing 19.2" 14'-3" 15'-11" 16'-2" 17'-7" 17'-1" 19'-0" 19'-3" 20'-5" 20'-10" 21'-5" 21'-8" 23'-0" 23'-4"	-
11-7/8"	NI-60	21'-1"	19'-7"	18'-8"	-	21'-8"	20'-2"		-
	N1-80	22'-6"	20'-10"	19'-11"	-	23'-1"	21'-5"		-
	NI-90	23'-0"	21'-3"	20'-4"	-	23'-6"	21'-10"		-
	NI-40x	23'-5"	21'-8"	20'-9"	-	24'-0"	22'-5"	21'-5"	-
14"	NI-60	23'-9"	22'-0"	21'-0"	-	24'-5"	22'-8"	21'-8"	-
14	NI-80	25'-4"	23'-6"	22'-5"	-	25'-11"	24'-1"	23'-0"	-
	NI-90	25'-10"	23'-11"	22'-9"	-	26'-5"	24'-6"	23'-4"	-
	NI-60	26'-2"	24'-3"	23'-2"	-	26'-11"	25'-0"	23'-11"	-
16"	NI-80	27'~11"	25'-10"	24'-7"	-	28'-7"	26'-6"	25'-3"	-
	NI-90	28'-5"	26'-3"	25'-0"	-	29'-0"	26'-11"	19.2" 14'-3" 15'-11" 16'-2" 17'-7" 17'-1" 19'-0" 19'-3" 20'-5" 20'-10" 21'-5" 21'-8" 23'-0" 23'-4" 23'-11" 25'-3"	_

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

NORDIC **STRUCTURES**

Maximum Floor Spans - S7.1

Design Criteria

Spans:

Simple span

Loads: Live load = 40 psf and dead load = 15 psf Deflection limits: Sheathing:

L/480 under live load and L/240 under total load 3/4 in. nailed-glued Canadian softwood plywood

Maximum Floor Spans

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

		Mi	d-span blocking	g with 1x4 inch	strap	Mid-sp	oan blocking an	d 1/2 in. gypsu	m ceiling
Joist depth	Joist series		On cent	re spacing			On cent	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"
9-1/2"	NI-40x	18'-7"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
9-1/2	NI-60	18'-10"	17'-6"	16'-6"	15'-5"	19'-1"	17'-6"	16'-6"	15'-5"
	NI-80	20'-2"	18'-9"	17'-11"	16'-10"	20'-7"	19'-2"	18'-2"	16'-10'
	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"
	NI-40x	21'-9"	20'-3"	19'-4"	17'-8"	22'-4"	20'-5"	19.2" 14'-6" 16'-3" 16'-6" 18'-2"	17'-8"
11-7/8"	NI-60	22'-0"	20'-6"	19'-7"	18'-4"	22'-7"	20'-10"	19'-8"	18'-4"
	NI-80	23'-6"	21'-10"	20'-10"	19'-9"	24'-0"	22'-5"	21'-4"	20'-0"
	NI-90	24'-0"	22'-4"	21'-3"	20'-1"	24'-6"	22'-10"	21'-9"	20'-7"
	NI-40x	24'-4"	22'-8"	21'-8"	19'-5"	25'-0"	23'-2"	21'-9"	19'-5"
14"	NI-60	24'-9"	23'-0"	22'-0"	20'-9"	25'-5"	23'-8"	22'-4"	20'-10'
14	NI-80	26'-5"	24'-6"	23'-4"	22'-1"	27'-0"	25'-2"	24'-0"	22'-8"
	NI-90	26'-11"	25'-0"	23'-10"	22'-6"	27'-5"	25'-7"	24'-5"	23'-1"
	NI-60	27'-2"	25'-4"	24'-2"	22'-10"	27'-11"	26'-1"	24'-9"	23'-1"
16"	NI-80	29'-0"	26'-11"	25'-8"	24'-3"	29'-7"	27'-7"	26'-4"	24'-11'
	NI-90	29'-6"	27'-5"	26'-1"	24'-8"	30'-1"	28'-1"	26'-9"	25'-4"

- 1. The tabulated clear spans are based on CSA 086-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- 2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- 3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- 4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- 5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans - M2.1

Design Criteria

Spans: Simple span

Loads: Live load = 40 psf and dead load = 20 psf
Deflection limits: L/480 under live load and L/240 under total load

Sheathing: 5/8 in. nailed-glued oriented strand board (OSB) sheathing

Maximum Floor Spans

			E	Bare			1/2 in. gy	sum ceiling	
Joist depth	Joist series		On cent	re spacing			On cent	re spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	15'-1"	14'-3"	13'-10"	-	15'-7"	14'-9"	14'-3"	-
9-1/2"	NI-40x	16'-2"	15'-3"	14'-8"	-	16'-7"	15'-8"	15'-1"	-
9-1/2	NI-60	16'-4"	15'-4"	14'-10"	_	16'-9"	15'-9"	15'-3"	_
	NI-80	17'-3"	16'-3"	15'-8"	-	17'-8"	16'-7"	16'-0"	_
	NI-20	17'-0"	16'-0"	15'-6"	-	17'-6"	16'-7"	16'-0"	-
	NI-40x	18'-2"	17'-1"	16'-6"	-	18'-9"	17'-6"	16'-11"	_
11-7/8"	NI-60	18'-5"	17'-3"	16'-8"	-	19'-0"	17'-8"	17'-1"	_
	NI-80	19'-9"	18'-3"	17'-7"	-	20'-4"	18'-10"	18'-0"	_
	NI-90	20'-2"	18'-8"	17'-10"	-	20'-9"	19'-2"	18'-4"	_
	NI-40x	20'-1"	18'-8"	17'-10"	-	20'-10"	19'-4"	18'-6"	-
14"	N1-60	20'-6"	18'-11"	18'-2"	_	21'-2"	19'-8"	18'-9"	_
14	NI-80	21'-11"	20'-3"	19'-4"	-	22'-7"	20'-11"	20'-0"	_
	NI-90	22'-5"	20'-8"	19'-9"	-	23'-0"	21'-4"	20'-4"	-
	NI-60	22'-4"	20'-8"	19'-9"		23'-1"	21'-5"	20'-6"	-
16"	NI-80	23'-11"	22'-1"	21'-1"	-	24'-8"	22'-10"	21'-9"	-
	NI-90	24'-5"	22'-6"	21'-6"	_	25'-1"	23'-2"	22'-2"	_

		Mi	d-span blocking	g with 1x4 inch s	trap	Mid-sp	oan blocking an	d 1/2 in. gypsum	ceiling
Joist depth	Joist series		On cent	re spacing			On cent	re spacing 19.2" 14'-5" 16'-1" 16'-4" 17'-8" 17'-3" 19'-0" 19'-6" 20'-8" 21'-0" 20'-11" 21'-11" 23'-3" 23'-7" 24'-2" 25'-6"	
		12"	16"	19.2"	24"	12"	16"		24"
	NI-20	16'-8"	15'-3"	14'-5"	-	16'-8"	15'-3"	14'-5"	-
9-1/2"	NI-40x	17'-11"	17'-0"	16'-1"	-	18'-5"	17'-1"	16'-1"	-
5-1/2	NI-60	18'-2"	17'-1"	16'-4"	-	18'-8"	17'-4"	16'-4"	-
	NI-80	19'-5"	18'-0"	17'-5"	-	19'-10"	18'-5"	re spacing 19.2" 14'-5" 16'-1" 16'-4" 17'-8" 17'-3" 19'-0" 19'-6" 20'-8" 21'-0" 20'-11" 21'-11" 23'-3" 23'-7" 24'-2"	-
	NI-20	19'-7"	18'-2"	17'-3"	-	19'-11"	18'-3"	17'-3"	-
	NI-40x	21'-1"	19'-7"	18'-8"	-	21'-8"	20'-2"	19'-0"	-
11-7/8"	NI-60	21'-4"	19'-9"	18'-11"	-	21'-11"	20'-5"	19.2" 14'-5" 16'-1" 16'-4" 17'-8" 17'-3" 19'-0" 19'-6" 20'-8" 21'-0" 20'-11" 21'-11" 23'-3" 23'-7" 24'-2" 25'-6"	-
	NI-80	22'-9"	21'-1"	20'-2"	-	23'-3"	21'-8"	20'-8"	-
	NI-90	23'-3"	21'-6"	20'-6"	-	23'-9"	22'-0"	e spacing 19.2" 14'-5" 16'-1" 16'-4" 17'-8" 17'-3" 19'-0" 19'-6" 20'-8" 21'-0" 20'-11" 21'-11" 23'-3" 23'-7" 24'-2" 25'-6"	-
	NI-40x	23'-8"	21'-11"	20'-11"	-	24'-4"	22'-8"	20'-11"	-
14"	NI-60	24'-0"	22'-3"	21'-3"	-	24'-8"	22'-11"	21'-11"	-
1-4	NI-80	25'-7"	23'-9"	22'-7"	-	26'-2"	24'-4"	23'-3"	-
	NI-90	26'-1"	24'-2"	23'-0"	-	26'-8"	24'-9"	23'-7"	-
	NI-60	26'-5"	24'-6"	23'-5"	-	27'-2"	25'-3"	24'-2"	-
16"	NI-80	28'-2"	26'-1"	24'-10"	-	28'-10"	26'-9"	25'-6"	-
	NI-90	28'-8"	26'-6"	25'-3"	_	29'-3"	27'-2"	19.2" 14'-5" 16'-1" 16'-4" 17'-8" 17'-3" 19'-0" 19'-6" 20'-8" 21'-0" 20'-11" 23'-3" 23'-7" 24'-2" 25'-6"	_

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



Maximum Floor Spans - M4.1

Design Criteria

Spans:

Simple span

Loads: Live load = 40 psf and dead load = 20 psf
Deflection limits: L/480 under live load and L/240 under total

Deflection limits: L/480 under live load and L/240 under total load

Sheathing: 3/4 in. nailed-glued oriented strand board (OSB) sheathing

Maximum Floor Spans

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

		Mi	d-span blocking	g with 1x4 inch	strap	Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing				
Joist depth	Joist series		On cent	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"	
9-1/2"	NI-40x	18'-8"	17'-2"	16'-3"	14'-11"	18'-10"	17'-2"	16'-3"	14'-11'	
9-1/2	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"	
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10'	
	NI-20	20'-1"	18'-5"	17'-5"	16'-1"	20'-1"	18'-5"	17'-5"	16'-1"	
	NI-40x	21'-10"	20'-4"	19'-0"	17'-0"	22'-5"	20'-6"	19'-0"	17'-0"	
11-7/8"	NI-60	22'-1"	20'-7"	19'-8"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"	
	NI-80	23'-8"	22'-0"	20'-11"	19'-10"	24'-1"	22'-6"	21'-6"	20'-0"	
	NI-90	24'-1"	22'-5"	21'-4"	20'-2"	24'-7"	22'-11"	21'-10"	20'-7"	
	NI-40x	24'-5"	22'-9"	20'-11"	18'-8"	25'-1"	22'-11"	20'-11"	18'-8"	
14"	NI-60	24'-10"	23'-2"	22'-1"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10'	
14	N1-80	26'-6"	24'-8"	23'-6"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"	
	N1-90	27'-0"	25'-1"	23'-11"	22'-7"	27'-6"	25'-8"	24'-6"	23'-2"	
	NI-60	27'-3"	25'-5"	24'-3"	22'-11"	28'-0"	26'-2"	24'-9"	23'-1"	
16"	NI-80	29'-1"	27'-1"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"	
	NI-90	29'-7"	27'-6"	26'-2"	24'-9"	30'-2"	28'-2"	26'-10"	25'-5"	

- 1. The tabulated clear spans are based on CSA 086-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- 2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- 3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- 4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- 5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans - M6.1

Design Criteria

Spans: Simple span

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

Maximum Floor Spans

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

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

- 1. The tabulated clear spans are based on CSA 086-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- 2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- 3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- 4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- 5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans - M7.1

Design Criteria

Spans:

Simple span

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

Sheathing:

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

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

- 1. The tabulated clear spans are based on CSA 086-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- 2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- 3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
- 4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
- 5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.