

	· · · · · · · · · · · · · · · · · · ·	Products		
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	25
J2	18-00-00	11 7/8" NI-40x	1	15
J3	16-00-00	11 7/8" NI-40x	1	3
J4	14-00-00	11 7/8" NI-40x	1	18
J5	10-00-00	11 7/8" NI-40x	1	16
J6	4-00-00	11 7/8" NI-40x	1	2
J7	2-00-00	11 7/8" NI-40x	1	6
B10	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1A	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B 5	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B6	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2,0 3100 SP	2	2
В3А	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2A	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

	Connector Summary					
Qty	Manuf	Product				
4	H1	IUS2.56/11.88				
14	H1	IUS2.56/11.88				
6	H1	IUS2.56/11.88				
2	H2	HUS1.81/10				
4	H4	HGUS412				



BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH4

MODEL: SPRINGFIELD 1

ELEVATION: 1

LOT:

CITY: HAMILTON

SALESMAN: RICK DICIANO

DESIGNER: AJ REVISION:

NOTES:

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

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 \(\)
REQ'D UNDER INTERIOR UNIFORM LOA BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATE LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK I-JOIST BLOCKING ALONG BEARING AN RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDIN DUCT CHASE AND FIELD CUT OPENING SEE FIGURE 7, TABLES 1 & 2. CERAMIN APPLICATION AS PER O.B.C 9.30.6.

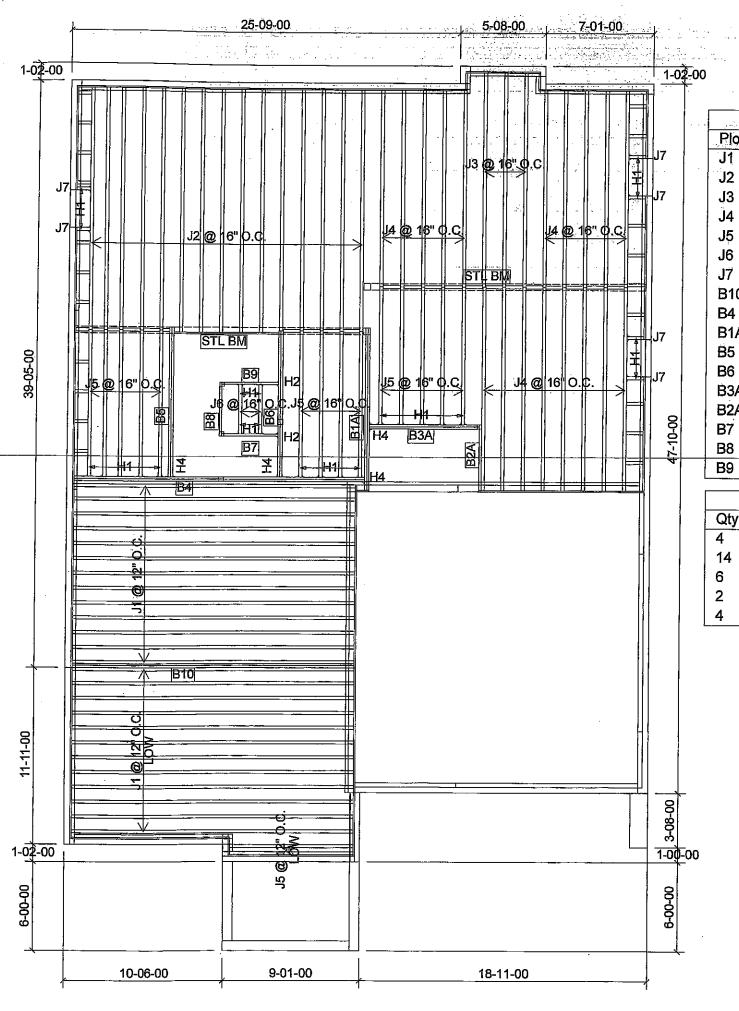
LOADING:

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

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2021-03-16

1st FLOOR OPT GUEST SUITE



,-3	in the state of the	Products	. Transfer F	and wheel the soft
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" ŅI-40×	1	25
J2	18-00-00	11 7/8" NI-40x	1	15
J3	16-00-00	11 7/8" NI-40x	1	3.
Ĵ4	14-00-00	11 7/8" NI-40x	1	18
J5	10-00-00	11 7/8" NI-40x	1 .	16
J6	4-00-00	11 7/8" NI-40x	1	2
J7	2-00-00	11 7/8" NI-40x	1	6
B10	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1A	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B 5	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	Ż
B6	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3A	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2A	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

	Connector Summary					
Qty	Qty Manuf Product					
4	H1	IUS2.56/11.88				
14	H1	IUS2.56/11.88				
6	H1	IUS2.56/11.88				
2	H2	HUS1.81/10				
4	H4	HGUS412				



BUILDER: GREENPARK HOMES **SITE:** RUSSELL GARDENS PH4

MODEL: SPRINGFIELD 1

ELEVATION: 2

LOT:

CITY: HAMILTON

SALESMAN: RICK DICIANO

DESIGNER: AJ REVISION:

NOTES:

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

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

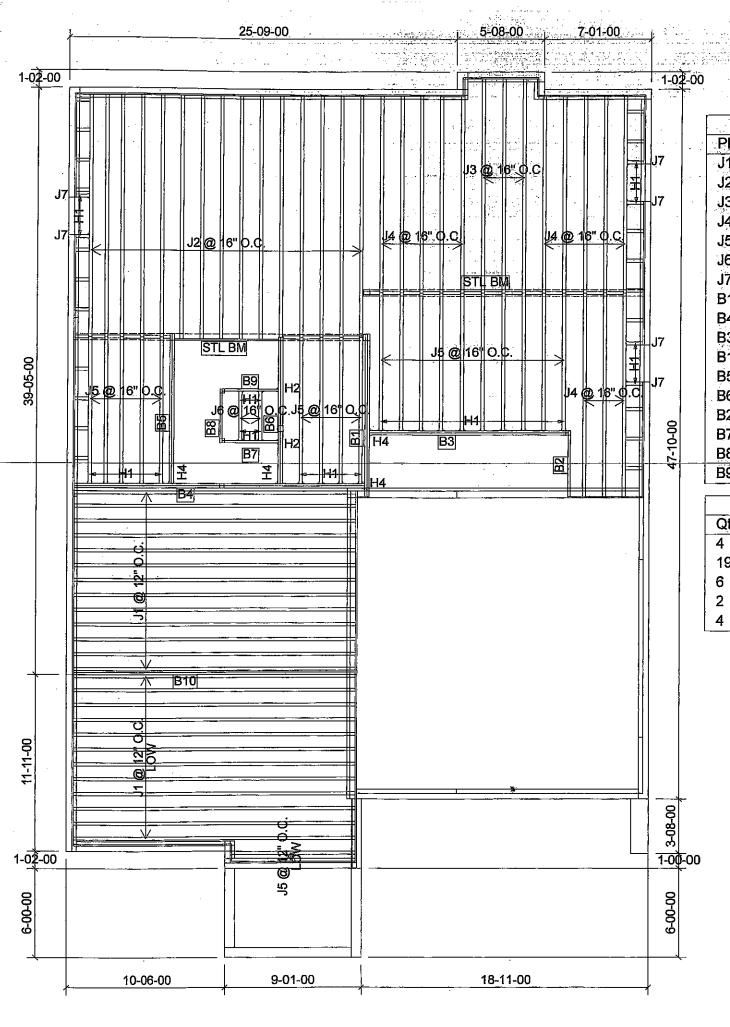
LOADING:

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

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2021-03-16

1st FLOOR OPT GUEST SUITE



and the second			Products		Sale ver ver strategen at.
PlotID -	Length	Product		Plies	Net Qty
J1	20-00-00	11-7/8" NI-40x		1	25
J2	18-00-00	11 7/8" NI-40x		<u> </u>	15
J3	16-00-00	11 7/8" NI-40x		1	3
J4	14-00-00	11 7/8" NI-40x	• • •	**	13
J5	10-00-00	11 7/8" NI-40x		1	21
J6	4-00-00	11 7/8" NI-40x		1	2
J7	2-00-00	11 7/8" NI-40x		1	6
B10	20-00-00	1-3/4" x 11-7/8"	VERSA-LAM® 2.0 3100 SP	1	1
B4	20-00-00	1-3/4" x 11-7/8"	VERSA-LAM® 2.0 3100 SP	2	2
B3	14-00-00	1-3/4" x 11-7/8"	VERSA-LAM® 2.0 3100 SP	2	2
B1	12-00-00	1-3/4" x 11-7/8"	VERSA-LAM® 2.0 3100 SP	2	Ż
B5	12-00-00	1-3/4" x 11-7/8"	VERSA-LAM® 2.0 3100 SP	2	2
B6	10-00-00	1-3/4" x 11-7/8"	VERSA-LAM® 2.0 3100 SP	2	2
B2	6-00-00	1-3/4" x 11-7/8"	VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 11-7/8"	VERSA-LAM® 2.0 3100 SP	1	1
B8	4-00-00	1-3/4" x 11-7/8"	VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 11-7/8"	VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary					
Qty	Manuf	Product			
4	H1	IUS2.56/11.88			
19	H1	IUS2.56/11.88			
6	H1	IUS2.56/11.88			
2	H2	HUS1.81/10			
4	H4	HGUS412			



BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH4

MODEL: SPRINGFIELD 1

ELEVATION: 2

LOT:

CITY: HAMILTON

SALESMAN: RICK DICIANO

DESIGNER: AJ **REVISION:**

NOTES:

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

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

LOADING:

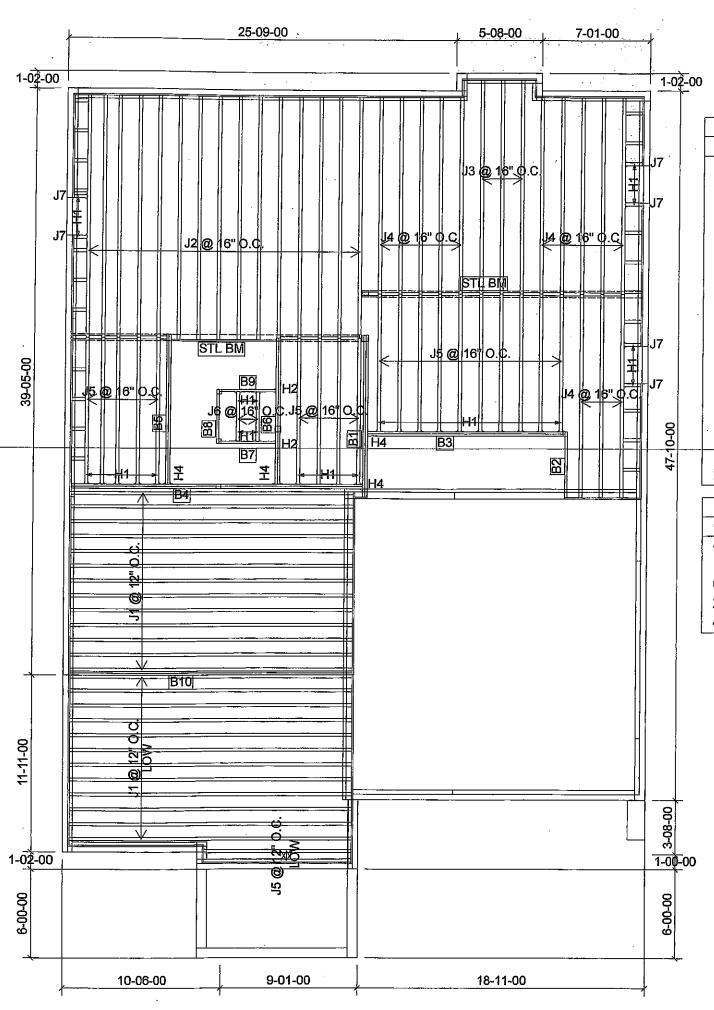
DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft2 DEAD LOAD: 15.0 lb/ft2 TILE LOAD: 20.0 lb/ft²

1st FLOOR SUNKEN MUD

ROOM

DATE: 2021-03-16

SUBFLOOR: 3/4" GLUED AND NAILED



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	25
J2	18-00-00	11 7/8" NI-40x	1	15
J3	16-00-00	11 7/8" NI-40x	1	3
J4	14-00-00	11 7/8" NI-40x	1	13
J5	10-00-00	11 7/8" NI-40x	1	21
J6	4-00-00	11 7/8" NI-40x	1	2
J7	2-00-00	11 7/8" NI-40x	1	6
B10	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B5	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B6	1.0-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

	Connector Summary					
Qty	Manuf	Product				
4	H1	IUS2.56/11.88				
19	H1	IUS2.56/11.88				
6	H1	IUS2.56/11.88				
2	H2	HUS1.81/10				
4	H4	HGUS412				



FROM PLAN DATED: 2021/02 **BUILDER: GREENPARK HOMES**

SITE: RUSSELL GARDENS PH4 MODEL: SPRINGFIELD 1

ELEVATION: 3

LOT:

CITY: HAMILTON

SALESMAN: RICK DICIANO

DESIGNER: AJ **REVISION:**

NOTES:

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

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

LOADING:

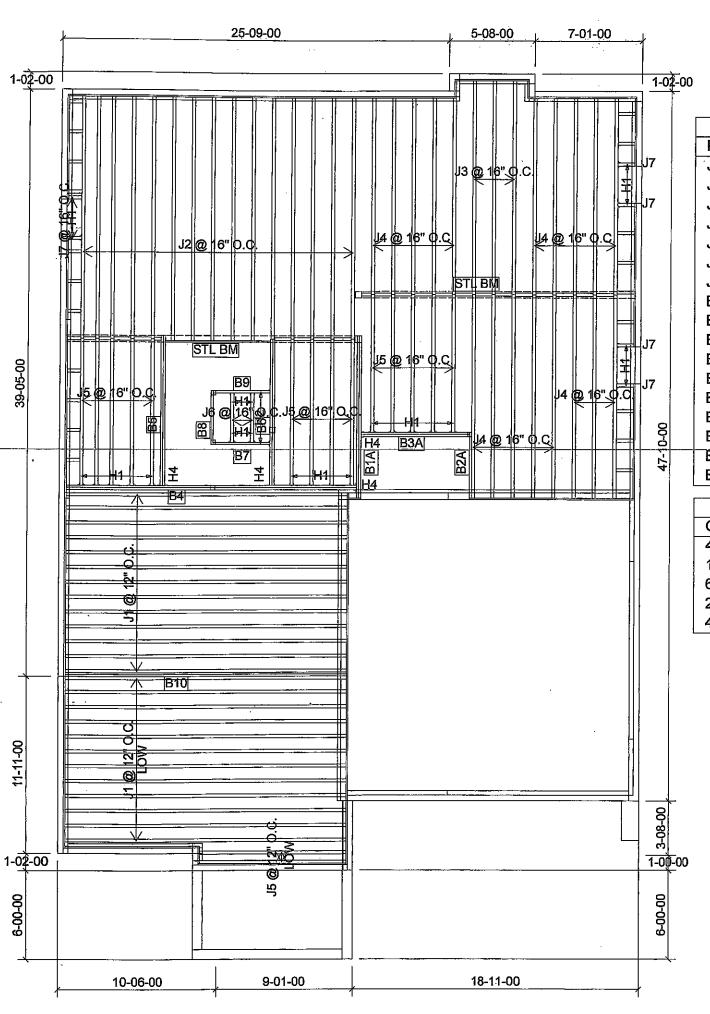
DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft2 DEAD LOAD: 15.0 lb/ft2 TILE LOAD: 20.0 lb/ft2

1st FLOOR SUNKEN MUD

DATE: 2021-03-16

ROOM

SUBFLOOR: 3/4" GLUED AND NAILED



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	25
J2	18-00-00	11 7/8" NI-40x	1	15
J3	16-00-00	11 7/8" NÍ-40x	1	3
J4	14-00-00	11 7/8" NI-40x	1	18
J5	10-00-00	11 7/8" NI-40x	1	16
J6	4-00-00	11 7/8" NI-40x	1	2
J7	2-00-00	11 7/8" NI-40x	1	6
B10	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1A	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B5	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B6	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3A	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2A	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary				
Qty	Manuf	Product		
4	H1	IUS2.56/11.88		
14	H1	IUS2.56/11.88		
6	H1	IUS2.56/11.88		
2	H2	HUS1.81/10		
4	H4	HGUS412		



BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH4
MODEL: SPRINGFIELD 1

ELEVATION: 3

LOT:

CITY: HAMILTON

SALESMAN: RICK DICIANO

DESIGNER: AJ REVISION:

NOTES:

REFER TO THE **NORDIC INSTALLATION**GUIDE FOR PROPER STORAGE AND
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SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S
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BEARING WALLS. MULTIPLE SQUASH
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FIGURES 4 & 5 FOR REINFORCEMENT
REQUIREMENTS. FOR HOLES INCLUDING
DUCT CHASE AND FIELD CUT OPENING
SEE FIGURE 7, TABLES 1 & 2. CERAMIC
APPLICATION AS PER O.B.C 9.30.6.

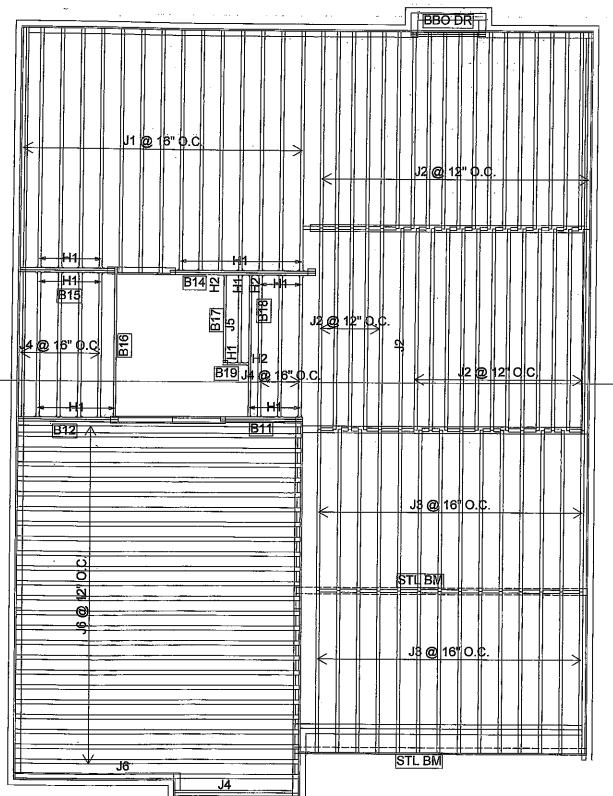
LOADING:

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

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2021-03-16

1st FLOOR OPT GUEST SUITE



	5-4	Products		
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	15
J2	14-00-00	11 7/8" NI-40x	1	37
J3	12-00-00	11 7/8" NI-40x	1	28
J4	10-00-00	11 7/8" NI-40x	1	9
J5	6-00-00	11 7/8" NI-40x	1	1
J6	20-00-00	11 7/8" NI-80	1	25
B16	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B18	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B14	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B12	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B15	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
_B17	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	_1	1
B11	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B19	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

	Connector Summary						
Qty	Qty Manuf Product						
1	H1	IUS2.56/11.88					
2	H1	IUS2.56/11.88					
26	H1	IUS2.56/11.88					
1	H2	HÚS1.81/10					
2	H2	HUS1.81/10					



BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH4

MODEL: SPRINGFIELD 1

ELEVATION: 1

LOT:

CITY: HAMILTON

SALESMAN: RICK DICIANO

DESIGNER: AJ REVISION:

NOTES:

REFER TO THE **NORDIC INSTALLATION**GUIDE FOR PROPER STORAGE AND
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SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S
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BEARING WALLS. MULTIPLE SQUASH
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FIGURES 4 & 5 FOR REINFORCEMENT
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SEE FIGURE 7, TABLES 1 & 2. CERAMIC
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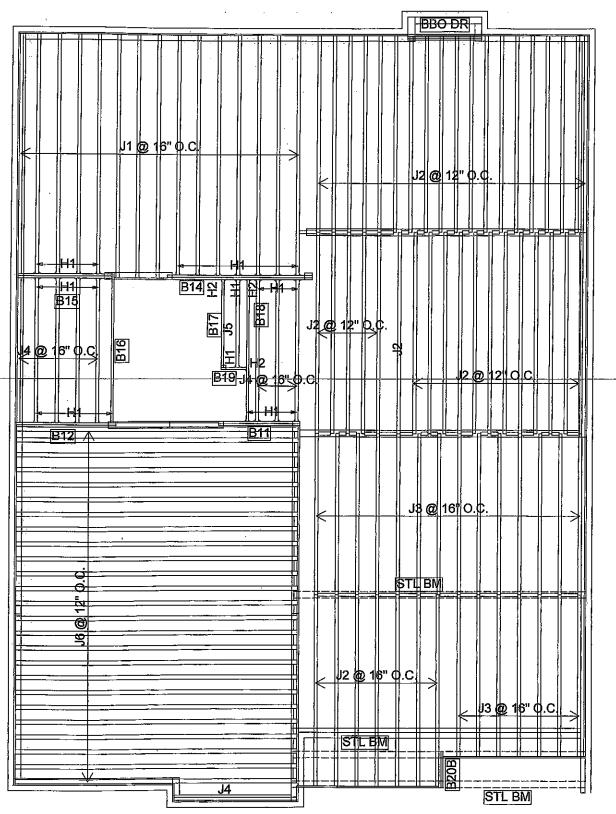
LOADING:

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

2ND FLOOR

DATE: 2021-03-16

SUBFLOOR: 5/8" GLUED AND NAILED



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	15
J2	14-00-00	11 7/8" NI-40x	1	44
⁻ J3	12-00-00	11 7/8" NI-40x	1	21
J4	10-00-00	11 7/8" NI-40x	1	9
J5	6-00-00	11 7/8" NI-40x	1	1
J6	20-00-00	11 7/8" NI-89 40	1	25
B16	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B18	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B14	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B12	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B15	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B17	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0-3100 SP	1	
B11	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B20B	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B19	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

	Connector Summary											
Qty	Manuf	Product										
1	H1	IUS2.56/11.88										
2	H1	IUS2.56/11.88										
26	H1	IUS2.56/11.88										
1	H2	HUS1.81/10										
2	H2	HUS1.81/10										



BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH4 MODEL: SPRINGFIELD 1

ELEVATION: 2

LOT:

CITY: HAMILTON

SALESMAN: RICK DICIANO

DESIGNER: AJ **REVISION:**

NOTES:

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

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

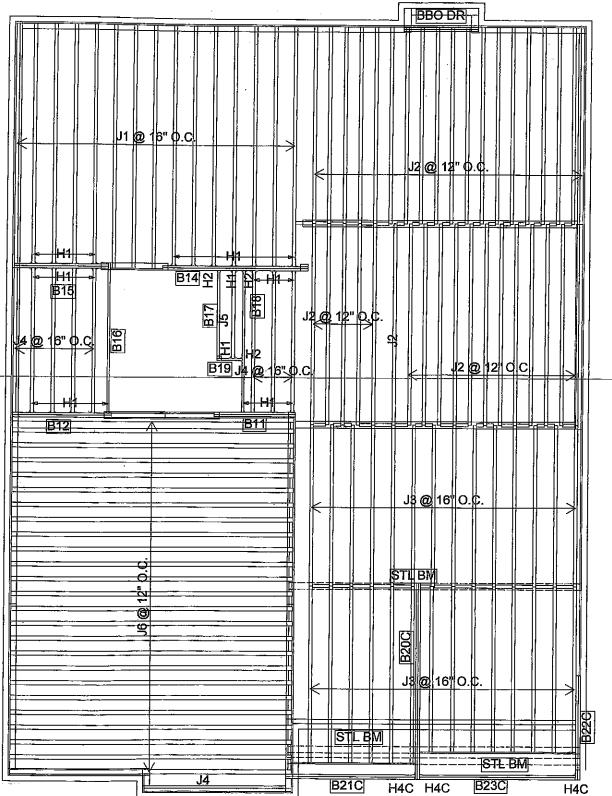
LOADING:

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

DATE: 2021-03-16

SUBFLOOR: 5/8" GLUED AND NAILED

2ND FLOOR



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	15
J <u>2</u>	14-00-00	11 7/8" NI-40x	1	37
J3	12-00-00	11 7/8" NI-40x	1	28
J4	10-00-00	11 7/8" NI-40x	1	9
J5	6-00-00	11 7/8" NI-40x	1	1
J6	20-00-00	11 7/8" NI- 80 - りつ	1	25
B20C	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B16	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B23C	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B18	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B14	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B21C	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	_2	2
B12	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B15	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B22C	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B17	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B11	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B19	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

	Connecto	r Summary
Qty	Manuf	Product
1	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
26	H1	IUS2.56/11.88
1	H2	HUS1.81/10
2	H2	HUS1.81/10
3	H4C	HUC412



BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH4

MODEL: SPRINGFIELD 1

ELEVATION: 3

LOT:

CITY: HAMILTON

SALESMAN: RICK DICIANO

DESIGNER: AJ REVISION:

NOTES:

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

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

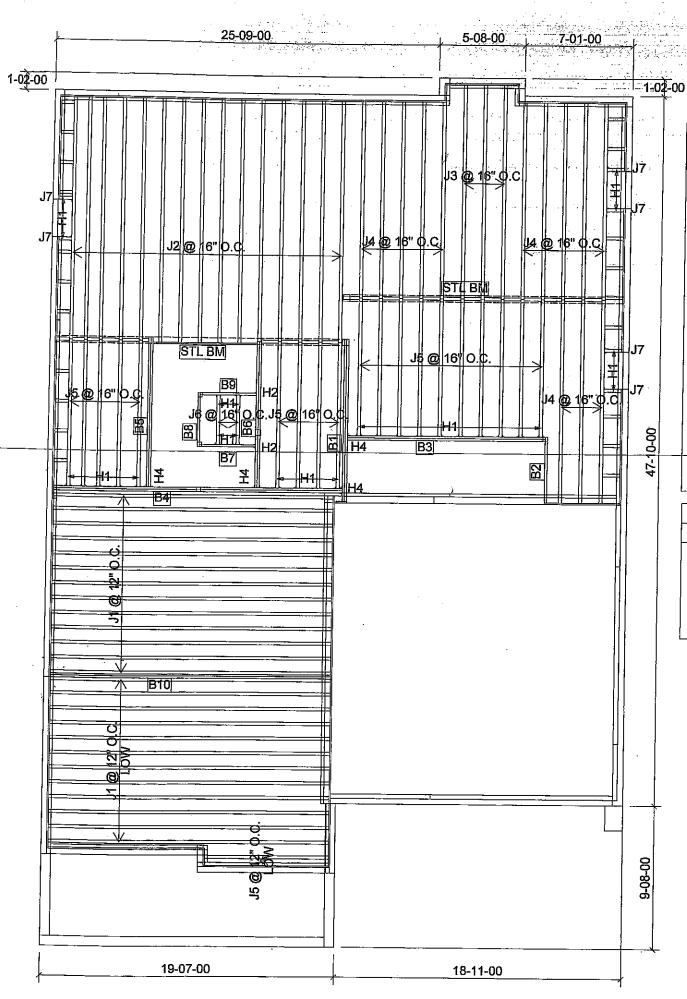
LOADING:

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

DATE: 2021-03-16

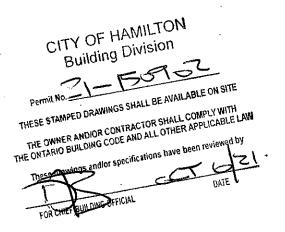
2ND FLOOR

SUBFLOOR: 5/8" GLUED AND NAILED



		Products		<u>ta tagan a ja ka ka ka ka</u>
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	25
J2	18-00-00	11 7/8" NI-40x	1	15
J3	16-00-00	11 7/8" NI-40x	1	3
J4	14-00-00	11 7/8" NI-40x	1	13
J5	10-00-00	11 7/8" NI-40x	1	21
J6	4-00-00	11 7/8" NI-40x	1	2
J7	2-00-00	11 7/8" NI-40x	1	6
B10	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B5	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B6	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	- 1 . i
B7	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary										
Qty	Manuf	Product								
4	H1	IUS2.56/11.88								
19	H1	IUS2.56/11.88								
6	H1	IUS2.56/11.88								
2	H2	HUS1.81/10								
4	H4	HGUS412								



DATE: 2021-03-16

1st FLOOR SUNKEN MUD ROOM



FROM PLAN DATED: 2021/02
BUILDER: GREENPARK HOMES
SITE: RUSSELL GARDENS PH4

MODEL: SPRINGFIELD 1

ELEVATION: 1

LOT:

CITY: HAMILTON

SALESMAN: RICK DICIANO

DESIGNER: AJ REVISION:

NOTES:

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

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.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 FIJOIST 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 APPLICATION AS PER O.B.C 9.30.6.

LOADING:

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

SUBFLOOR: 3/4" GLUED AND NAILED





PASSED

1ST FLR FRAMING\Flush Beams\B1(i2538) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773

Job name: Address:

City, Province, Postal Code: HAMILTON

Customer: Code reports:

CCMC 12472-R

File name: Description: SPRINGFIELD 1 EL 1 SUNKEN.mmdl

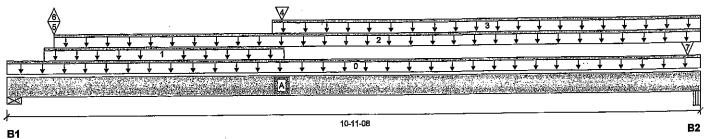
1ST FLR FRAMING\Flush Beams\B1(i2538)

Specifier:

Designer: AJ

Wind

Company:



Total Horizontal Product Length = 10-11-08

Snow

Reaction Summary (Down / Uplift) (lbs)

Live Dead Bearing 2558 / 148 1900 / 0 B1, 4-3/8" 802 / 0 B2, 5-1/4" 924/6

Los	ad Summary	•				***	Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-11-08	Тор		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-06-14	04-04-01	Тор		60			n\a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-08-10	10-11-08	Тор	9	5			n\a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-01-14	10-11-08	Тор	18	9			n\a
4	B3(i2434)	Conc. Pt. (lbs)	L	04-03-10	04-03-10	Top	1202	1067			n\a
5	B4(i2545)	Conc. Pt. (lbs)	L	00-08-10	00-08-10	Top	1779	986			n\a
6	_B4(i2545)	-Conc. Pt. (lbs)		_00-08-10-	00-08-10-	_Тор	154				n\a_
7	6(1828)	Conc. Pt. (lbs)	Ĺ	10-09-00	10-09-00		246	164			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	9817 ft-lbs	35392 ft-lbs	27.7%	1	04-03-10
End Shear	3650 lbs	14464 lbs	25.2%	1	01-04-04
Total Load Deflection	L/999 (0.116")	n\a	n\a	6	05-01-13
Live Load Deflection	L/999 (0.06")	n\a	n\a	8	05-01-13
Max Defl.	0.116"	n\a	n\a	6	05-01-13
Span / Denth	10.4				

Bearing	Supports	Dim, (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 3-1/2"	6212 lbs	65.9%	33.3%	Spruce-Pine-Fir
B2	Beam	5-1/4" x 3-1/2"	2389 lbs	24.3%	10.7%	Unspecified

Cautions

Concentrated side load(s) 4 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.



946 HD . TAM 9515 -21 STRUCTURAL COMPONENT ONLY





PASSED

1ST FLR FRAMING\Flush Beams\B1(i2538) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773

Job name: Address:

Customer:

File name: SPRINGFIELD 1 EL 1 SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B1(i2538)

Specifier:

Designer:

Code reports: CCMC 12472-R

City, Province, Postal Code: HAMILTON

Company:

Notes

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

CONFORMS TO UBC 2012

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

AMENDED 2020

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

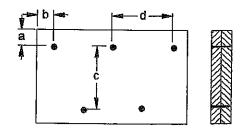
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 06-00-14.

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 7-7/8" 8d d = 🐠

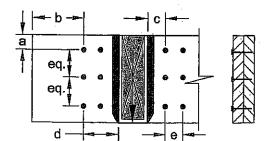
Calculated Side Load = 115.5 lb/ft

Connectors are:

Nails

Connection Diagrams: Concentrated Side Loads

Connection Tag: A-Applies to load tag(s): 8



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

e minimum = 4"

Connectors are:

Nails

ARDOX SPIRAL



COMPONENT ONLY

Disclosure

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

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





Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B10(i2581) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773

Job name: Address:

Customer:

Code reports:

City, Province, Postal Code: HAMILTON

CCMC 12472-R

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

File name: Description: 1ST FLR FRAMING\Flush Beams\B10(i2581)

Wind

COMPORMS TO OBC 2012

Specifier:

Designer: ΑJ

Company:

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													40	-08-0	4														

Total Horizontal Product Length = 18-08-04

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 2-3/8"	69 / 0	90/0
B2. 4-3/8"	71 / 0	92 / 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	18-08-04	Тор		6			00-00-00
1	FC2 Floor Decking (Plan	Unf. Lin. (lb/ft)	L	00-00-00	18-08-04	Top	8	4			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	977 ft-lbs	17696 ft-lbs	5.5%	1	09-03-02
End Shear	189 lbs	7232 lbs	2.6%	1	01-02-04
Total Load Deflection	L/999 (0.088")	n\a	n\a	4	09-03-02
Live Load Deflection	L/999 (0.038")	n\a	n\a	5	09-03-02
Max Defl.	0.088"	n\a	n\a	4	09-03-02
Chan / Donth	40 /				-

E	Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
В	31 Wall/Plate	2-3/8" x 1-3/4"	217 lbs	8.5%	4.3%	Spruce-Pine-Fir
В	32 Wall/Plate	4-3/8" x 1-3/4"	221 lbs	4.7%	2.4%	Spruce-Pine-Fir

848 NO. TAM 95/6-21 STRUCTURAL COMPONENT ONLY

Notes

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

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 18-01-08.

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®.





PASSED

1ST FLR FRAMING\Flush Beams\B2(i2482) (Flush Beam)

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Job name: Address:

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B2(i2482)

City, Province, Postal Code: HAMILTON Customer:

Specifier:

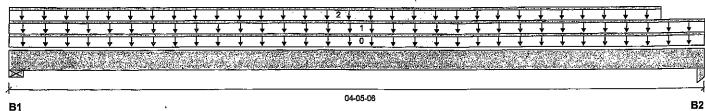
File name:

Code reports:

CCMC 12472-R

Designer: Company: ΑJ

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Total Horizontal Product Length = 04-05-06

Reaction Summary (Down / Opint) (IDS)										
Bearing	Live	Dead	SnowWind							
B1, 4-3/8"	47 / 0	173 / 0								
B2, 3-1/2"	40 / 0	164/0								

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	04-05-06	Тор		6			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	04-05-06	Top		60			n\a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	04-01-14	Тор	21	10			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	205 ft-lbs	11502 ft-lbs	1.8%	0	02-03-02
End Shear	97 lbs	4701 lbs	2.1%	0	01-04-04
Total Load Deflection	L/999 (0.001")	n\a	n\a	4	02-03-02
Live Load Deflection	L/999 (0")	n\a	n\a	5	02-03-02
Max Defl.	0.001"	n\a	n\a	4	02-03-02
Span / Depth	4 0				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 1-3/4"	242 lbs	7.9%	4.0%	Spruce-Pine-Fir
B2	Column	3-1/2" x 1-3/4"	230 lbs	7.1%	4.7%	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: 03-09-08.

POVINCE OF

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 pefore installation.

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





PASSED

1ST FLR FRAMING\Flush Beams\B3(i2434) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773

Job name: Address:

Customer:

Code reports:

City, Province, Postal Code: HAMILTON

CCMC 12472-R

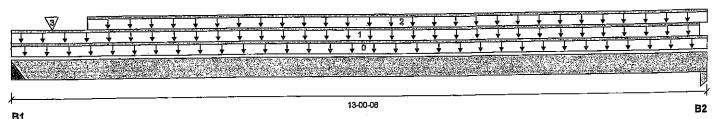
SPRINGFIELD 1 EL 1 SUNKEN.mmdl

File name: Description: 1ST FLR FRAMING\Flush Beams\B3(i2434)

Specifier:

Designer: ΑJ

Company:



Total Horizontal Product Length = 13-00-06

Reaction 5un	IIIIaty (Dosetti / Ol	Jisit) (185)		
Bearing	Live	Dead	Snow	Wi
B1. 4"	1234 / 0	1094 / 0		
B2 1-3/4"	1325 / 0	1116 / 0		

1 -	nd Cummani						Live	Dead	Snow	Wind	Tributary
	ad Summary Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
<u>0</u>	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	13-00-06	Тор		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	12-10-10	Top		60			n/a
,	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-14	13-00-06	Top	201	101			n\a
3	J5(i2407)	Conc. Pt. (lbs)	L	00-08-14	00-08-14	Тор	219	110			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	10106 ft-lbs	35392 ft-lbs	28.6%	1	06-00-14
End Shear	2824 lbs	14464 lbs	19.5%	1	01-03-14
Total Load Deflection	L/703 (0.216")	n\a	34.2%	4	06-06-14
Live Load Deflection	L/999_(0.116")	n\a	n\a	5	06-06-14
Max Defl.	0.216"	n\a	n\a	4	06-06-14
Span / Depth	12.8				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand <i>i</i> Resistance Member	Material
	Hander	4" x 3-1/2"	3218 lbs	n\a	18.8%	HGUS412
B2	Column	1-3/4" x 3-1/2"	3383 lbs	68.0%	45.3%	Unspecified

Cautions

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

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

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

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.

646 NO . TAN *9518* -21 COMPONENT ONLY





PASSED

1ST FLR FRAMING\Flush Beams\B3(i2434) (Flush Beam)

Dry [1 span | No cant.

March 16, 2021 10:58:46

Build 7773

Job name:

Address:

BC CALC® Member Report

City, Province

Customer: Code reports:

City, Province, Postal Code: HAMILTON

CCMC 12472-R

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

File name: Description:

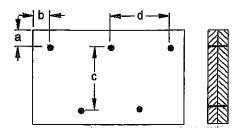
1ST FLR FRAMING\Flush Beams\B3(i2434)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8" d = 6 6

Calculated Side Load = 552.5 lb/ft
Connectors are: 16d 1 Nails
3%" ARDOX SPIRAL

S. KATSOULANDS ST.

DWG NO. TAM 95/8-21 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™, ALLUDIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®;





PASSED

March 16, 2021 10:58:46

1ST FLR FRAMING\Flush Beams\B4(i2545) (Flush Beam)

BC CALC® Member Report

Build 7773

Job name: Address:

Customer: Code reports:

City, Province, Postal Code: HAMILTON

CCMC 12472-R

Dry | 2 spans | No cant.

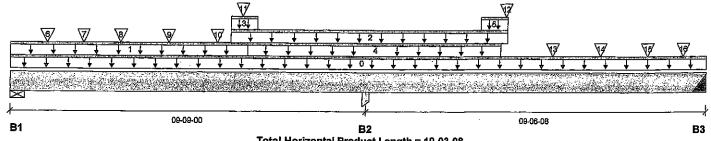
SPRINGFIELD 1 EL 1 SUNKEN.mmdl

File name: Description: 1ST FLR FRAMING\Flush Beams\B4(i2545)

Specifier:

Designer: ΑJ

Company:



Total Horizontal Product Length = 19-03-08

Reaction Summary (Down / Uplift) (lbs)

·	midi y (Domini Opi	1117 (1000)			
Bearing	Live	Dead	Snow	Wind	
B1, 2-3/8"	916 / 227	490 / 0			
B2, 3-1/2"	3113 / 0	2858 / 0			
B3, 4"	1873 / 160	1042 / 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	19-03-08	Тор		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Uńf. Lin. (lb/ft)	L	00-00-00	06-06-02	Тор	9				n\a
2	=	Unf. Lin. (lb/ft)	L	06-00-06	13-08-06	Top		81			n\a
3	3(i820)	Unf. Lin. (lb/ft)	L	06-00-06	06-09-06	Тор	862	910			n\a
4	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	06-06-02	13-06-02	Тор	12	6			n\a
 5	-4(i821)	Unf. Lin. (lb/ft)	— <u>L</u> ——	12-11- 06-	-13-08-06-	—Тор——	947_	647			n\a
6	J5(i2561)	Conc. Pt. (lbs)	L	00-11-14	00-11-14	Тор	209	104			n\a
7	J5(i2472)	Conc. Pt. (lbs)	L.	01-11-14	01-11-14	Тор	201	100			n\a
8	J5(i2527)	Conc. Pt. (lbs)	L	02-11-14	02-11-14	Тор	234	117			n\a
9	J5(i2466)	Conc. Pt. (lbs)	L	04-03-14	04-03-14	Тор	267	134			n\a
10	J5(i2540)	Conc. Pt. (lbs)	L	05-07-14	05-07-14	Тор	216	108			n\a
11	B5(i2536)	Conc. Pt. (lbs)	<u>L</u>	06-04-06	06-04-06	Тор	82	100			n\a
12	B6(i2584)	Conc. Pt. (lbs)	L	13-07-14	13-07-14	Тор	1076	672			n\a
13	J5(i2524)	Conc. Pt. (lbs)	L	14-11-14	14-11-14	Тор	285	143			n\a
14	J5(i2466)	Conc. Pt. (lbs)	L	16-03-14	16-03-14	Тор	267	134			n\a
15	J5(i2466)	Conc. Pt. (lbs)	L	17-07-14	17-07-14	Тор		134	•		n\a
16	-	Conc. Pt. (lbs)	L	18-07-12	18-07-12	Тор	783	467			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	8176 ft-lbs	35392 ft-lbs	23.1%	3	13-07-14
Neg. Moment	-9215 ft-lbs	-27184 ft-lbs	33.9%	1	09-09-00
End Shear	2900 lbs	14464 lbs	20.1%	3	17-11-10
Cont. Shear	4522 lbs	14464 lbs	31.3%	1	10-10-10
Total Load Deflection	L/999 (0.075")	n\a	n\a	10	14-08-00
Live Load Deflection	L/999 (0.052")	n\a	n\a	13	14-06-01
Total Neg. Defl.	L/999 (-0.013")	n\a	n\a	10	07-06-10
Max Defl.	0.075"	n\a	n\a	10	14-08-00
Span / Depth	9.7				



DWS NO. TAM 9519-21 COMPONENT ONLY





PASSED

March 16, 2021 10:58:46

1ST FLR FRAMING\Flush Beams\B4(i2545) (Flush Beam)

BC CALC® Member Report

Build 7773 Job name:

Address:

Customer: Code reports:

City, Province, Postal Code: HAMILTON

CCMC 12472-R

Dry | 2 spans | No cant.

SPRINGFIELD 1 EL 1 SUNKEN.mmdi

File name:

Description: 1ST FLR FRAMING\Flush Beams\B4(i2545)

Specifier:

Designer: ΑJ

Company:

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	2-3/8" x 3-1/2"	1985 lbs	38.8%	19.6%	Spruce-Pine-Fir
B2	Column	3-1/2" x 3-1/2"	8242 lbs	82.9%	55.1%	Unspecified
B3	Hanger	4" x 3-1/2"	4112 lbs	n\á	24.1%	HGUS412

Cautions

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

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

Notes

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

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

Hanger Manufacturer: Unassigned Resistance Factor phi has been applied to all presented results per CSA O86. CONFORMS TO OBG 2012 AMENDED 2020

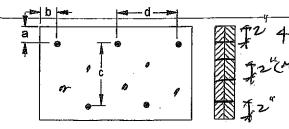
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8" d = 9 8 4

Calculated Side Load = 1530.1 lb/ft 1 Nails Connectors are: 16d .

ARDOX SPIRAL

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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PASSED

1ST FLR FRAMING\Flush Beams\B5(i2536) (Flush Beam)

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Job name: Address:

File name:

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B5(i2536)

City, Province, Postal Code: HAMILTON

Customer:

Specifier:

Designer: ΑJ

Wind

Code reports:

CCMC 12472-R

Company:

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1	T Total	3-44-4-10-10-10-10-10-10-10-10-10-10-10-10-10-	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	Verterati	2547.87E	Ţ	হাজানে	J.		Ţ.	1) Name (All India	<u> </u>		0		ENSOR.	(303232)	Ţ	Ţ	**************************************	Į	\$45X3	435000	J Gera	↓	¥ Service	↓ Model	↓ Mass	atter Billia	encerist]
X.	M.C.Y			100			in str	(198			2.00										6/3			136	esti (c	o W		10.63		W. 302		
/		-						_																		_						7
B1														10	-01-0	12															B:	2

Total Horizontal Product Length = 10-01-02

Reaction Summary (Down / Uplift) (ibs)

Bearing	Live	Dead	Snow
B1, 4"	85 / 0	103 / 0	
B2 5-1/4"	203/0	267 / 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	10-01-02	Тор		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	09-07-14	Тор	17	9			n\a
2	5(i827)	Conc. Pt. (lbs)	L	09-10-10	09-10-10	Тор	123	166			n\a

041-0	_	Factored	Demand/	_	
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	573 ft-lbs	35392 ft-lbs	1.6%	1	04-11-15
End Shear	189 lbs	14464 lbs	1.3%	1	01-03-14
Total Load Deflection	L/999 (0.007")	n\a	n\a	4	04-11-15
Live Load Deflection	L/999 (0.003")	n\a .	n\a	5	04-11-15
Max Defl.	0.007"	n\a	n\a	4	_04-11-15_
Span / Depth	9.5				

Bearing	g Supports	Dim. (LxW)	Demand	Demand <i>l</i> Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	4" x 3-1/2"	256 lbs	n\a	1.5%	HGUS412
B2	Beam	5-1/4" x 3-1/2"	638 lbs	6.5%	2.8%	Unspecified

Cautions

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

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

Notes

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

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

COMPURMS TO OBC 2012

Hanger Manufacturer: Unassigned

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

AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 09-07-14.







PASSED

1ST FLR FRAMING\Flush Beams\B5(i2536) (Flush Beam)

Dry | 1 span | No cant.

March 16, 2021 10:58:46

BC CALC® Member Report Build 7773

Job name: Address:

Customer: Code reports:

City, Province, Postal Code: HAMILTON

CCMC 12472-R

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

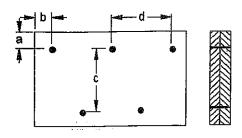
Description: 1ST FLR FRAMING\Flush Beams\B5(i2536)

Specifier:

Designer: ΑJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 7-7/8" d = 100 4

Connectors are:

~ Nails

ARDOX SPIRAL



198 NO. TAM 9510 -21 STRUCTURAL COMPONENT ONLY

Disclosure

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PASSED

1ST FLR FRAMING\Flush Beams\B6(i2584) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773

Customer:

Job name: Address:

City, Province, Postal Code: HAMILTON

File name: Description:

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

1ST FLR FRAMING\Flush Beams\B6(i2584)

Specifier:

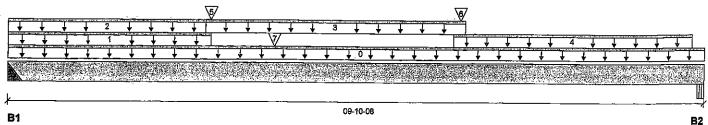
Designer:

Wind

Company:







Total Horizontal Product Length = 09-10-08

Reaction Summary (Down / Uplift) (lbs)

Snow B1, 4" 1110/0 693 / 0 B2, 2-5/8" 1005 / 0 609 / 0

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-10-08	Тор		12			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	02-10-00	Top	240	120			n\a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	02-09-02	Тор	30	15			n\a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	02-09-02	06-04-12	Тор	53	27			n\a
4	User Load	Unf. Lin. (lb/ft)	L	06-02-12	09-08-05	Top	240	120			n\a
5	B7(i2444)	Conc. Pt. (lbs)	L	02-10-00	02-10-00	Top	99	60			n\a
6	B9(i2502)	Conc. Pt. (lbs)	L	06-03-14	06-03-14	Тор	99	60			n\a
-7	-PBO6(i905)	Conc. Pt. (lbs)	<u> </u>	0 3- 08 -12	-03-08-12 -	- Т ор	111	160-			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand <i>l</i> Resistance	Case	Location
Pos. Moment	4765 ft-lbs	35392 ft-lbs	13.5%	1	04-11-12
End Shear	1754 lbs	14464 lbs	12.1%	1	01-03-14
Total Load Deflection	L/999 (0.059")	n\a	n\a	4	04-11-12
Live Load Deflection	L/999 (0.035")	n\a	n\a	5	04-11-12
Max Defl.	0.059"	n\a	n\a	4	04-11-12
Span / Depth	9.5				

È	Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
E	31 Hanger	4" x 3-1/2"	2531 lbs	n\a	14.8%	HGUS412
E	32 Beam	2-5/8" x 3-1/2"	2268 lbs	46.2%	20.2%	Unspecified

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

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







PASSED

1ST FLR FRAMING\Flush Beams\B6(i2584) (Flush Beam)

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773

Job name:

Address:

City, Province, Postal Code: HAMILTON

BC CALC® Member Report

Code reports:

Customer:

CCMC 12472-R

Description:

File name:

1ST FLR FRAMING\Flush Beams\B6(i2584)

Specifier:

Designer:

Company:

Notes

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

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

GUNYORMS TO OBC 2012

Hanger Manufacturer: Unassigned

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

AMENDED 2020

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

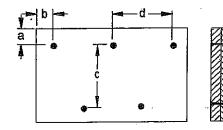
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 03-04-02.

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 7-7/8" d = 🕶 8 4

Calculated Side Load = 510.0 lb/ft

Connectors are:

स्क Nails

ARDOX SPIRAL

SONINCE OF

098 90, TAN 9521 -21 STRUCTURAL COMPONENT ONLY

Disclosure

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PASSED

1ST FLR FRAMING\Flush Beams\B7(i2444) (Flush Beam) **BC CALC® Member Report**

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773 Job name:

Address:

File name: Description:

SPRINGFIELD 1 EL 1 SUNKEN.mmdl 1ST FLR FRAMING\Flush Beams\B7(i2444)

Customer:

City, Province, Postal Code: HAMILTON

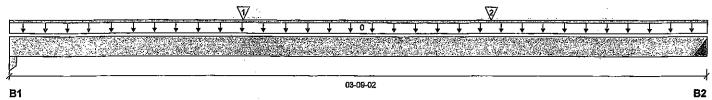
Specifier:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 03-09-02

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 1-3/4"	96 / 0	59 / 0
B2. 2"	100 / 0	61/0

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	03-09-02	Тор		6			00-00-00
1	.J6(i2484)	Conc. Pt. (lbs)	L	01-02-14	01-02-14	Top	99	49			n\a
. 2	J6(i2490)	Conc. Pt. (lbs)	L	02-06-14	02-06-14	Top	97	48			n\a

		Factored	Demand/		
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	246 ft-lbs	17696 ft-lbs	1.4%	1	01-02-14
End Shear	217 lbs	7232 lbs	3.0%	1	02-07-04
Total Load Deflection	L/999 (0.001")	n\a	n\a	4	01-10-06
Live Load Deflection	L/999 (0.001")	n\a	n\a	5	01-10-06
Max Defl.	0.001"	n\a	n\a	4	01-10-06
Span-/-Depth	3.6				

Beari	ing Supports	Dim. (LxW)	Demand	Demand <i>i</i> Resistance Support	Demand <i>i</i> Resistance Member	Material	
B1	Column	1-3/4" x 1-3/4"	218 lbs	8.8%	5.8%	Unspecified	
B2	Hanger	2" x 1-3/4"	225 lbs	n\a	5.3%	HUS1.81/10	



046 NO. TAN 9512-21 STRUCTURAL COMPONENT ONLY

Cautions

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

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

Notes

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

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

CONFORMS TO OBC 2012

Hanger Manufacturer: Unassigned

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: 01-01-10.

Disclosure

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City, Province, Postal Code: HAMILTON

Single 1-3/4" x 11-7/8" VERSA-LAM® 2,0 3100 SP

PASSED

1ST FLR FRAMING\Flush Beams\B8(i2526) (Flush Beam)

BC CALC® Member Report

Build 7773

Job name: Address:

Dry | 1 span | No cant.

March 16, 2021 10:58:46

File name:

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B8(i2526)

Specifier:

Designer: AJ

Customer: Code reports:

CCMC 12472-R

Company:

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	**************************************				.,,,,,,,,								2,(W-20VI	SCHOOL			17-461-12	31.32.02		1- 10-1			 			2010020	20.00111	

B1

Total Horizontal Product Length = 03-07-10

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 3-1/2"	50 / 0	3670
B2, 3-1/2"	50 / 0	36 / 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	03-07-10	Тор		6			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	03-07-10	Тор	28	14			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand <i>l</i> Resistance	Case	Location
Pos. Moment	84 ft-lbs	17696 ft-lbs	0.5%	1	01-09-13
End Shear	36 lbs	7232 lbs	0.5%	1	01-03-06
Total Load Deflection	L/999 (0")	n\a	n\a	4	01-09-13
Live Load Deflection	L/999 (0")	n\a	n\a	5	01-09-13
Max Defl.	0"	n\a	n\a	4	01-09-13
Span / Depth	_3.2				

Beari	ing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	<u> Waterial</u>
B1	Column	3-1/2" x 1-3/4"	121 lbs	2.4%	1.6%	Unspecified
B2	Column	3-1/2" x 1-3/4"	121 lbs	2.4%	1.6%	Unspecified

ONNICE OF O 698 HD TAM 9523-21 STRUCTURA

COMPONENT ONLY

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.

CONFORMS TO DBG 2012

Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top; 00-00-00, Bottom: 03-04-02.

AMENDED 2020

Disclosure

Use of the Bolse 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®,

-198 3,534,5,54,6,57 p.

10000



BC CALC® Member Report



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

PASSED

1ST FLR FRAMING\Flush Beams\B9(i2502) (Flush Beam)

Dry | 1 span | No cant.

March 16, 2021 10:58:46

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

1ST FLR FRAMING\Flush Beams\B9(i2502)

Build 7773

Job name: Address:

City, Province, Postal Code: HAMILTON

Description: Specifier:

File name:

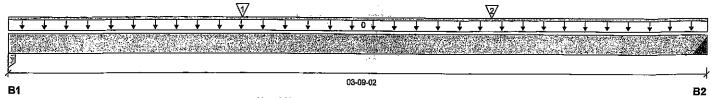
Customer: Code reports:

CCMC 12472-R

Designer: AJ

Wind

Company:



Total Horizontal Product Length = 03-09-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow
B1, 1-3/4"	96 / 0	59 / 0	
ייב איי די פיי	100 / 0	61 / 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	
Ö	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-09-02	Тор		6			00-00-00
1	J6(i2484)	Conc. Pt. (lbs)	L	01-02-14	01-02-14	Тор	99	49			n\a
2	J6(i2490)	Conc. Pt. (lbs)	L	02-06-14	02-06-14	Тор	97	48			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	246 ft-lbs	17696 ft-lbs	1.4%	1	01-02-14
End Shear	217 lbs	7232 lbs	3.0%	1	02-07-04
Total Load Deflection	L/999 (0.001")	n\a	n\a	4	01-10-06
Live Load Deflection	L/999 (0.001")	n\a	n\a	5	01-10-06
Max Defl.	0.001"	n\a	n\a	4	01-10-06
Span-/-Depth	-3-6				

Bea	ring Supports	Dlm. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Materia <u>i</u>	
B1	Column	1-3/4" x 1-3/4"	218 lbs	8.8%	5.8%	Unspecified	
B2	Hanger	2" x 1-3/4"	225 lbs	n\a	5.3%	HUS1.81/10	

ONNCE OF 日間 日間 ・ 計画網 タタング STRUCTURAL COMPONENT ONLY

Cautions

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

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

Notes

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

CONFORMS TO OBC 2012

Hanger Manufacturer: Unassigned

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: 01-01-10.

Disclosure

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PASSED

March 16, 2021 10:58:46

2ND FLR FRAMING\Flush Beams\B11(i2582) (Flush Beam)

BC CALC® Member Report **Build 7773**

Job name:

Address: City, Province, Postal Code: HAMILTON

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

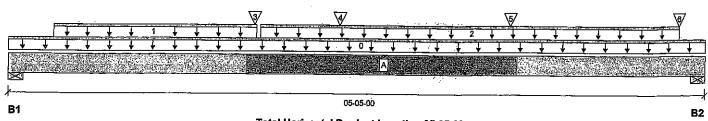
File name: SPRINGFIELD 1 EL 1 SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B11(i2582)

Specifier:

Designer.

Company:



Total Horizontal Product Length = 05-05-00

Reaction Summary (Down / Unlift) (lbs)

		Dirich (ING)		
Bearing	Live	Dead	Snow	
B1, 4"	719 / 0	489 / 0		· ·
B2, 5-1/2"	855 / 0	489 / 0		

Loa	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	_
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-05-00	Top		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-04-00	01-10-13	Тор		60			n\a
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	01-11-03	05-02-08	Тор	8	4			n\a
3	B18(i885)	Conc. Pt. (lbs)	L	01-10-10	01-10-10	Top	820	442			n\a
4	J4(i943)	Conc. Pt. (lbs)	L	02-06-08	02-06-08	Top	199	99			n\a
5	J4(i930)	Conc. Pt. (lbs)	L	03-10-08	03-10-08	Тор	263	132			n\a
6	J4(i955)	Conc. Pt. (lbs)	L	05-02-08	05-02-08	Тор	263	132			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2611 ft-lbs	35392 ft-lbs	7.4%	1	01-10-10
End Shear	1596 lbs	14464 lbs	11.0%	1	01-03-14
Total Load Deflection	L/999 (0.007")	n\a	n\a	4	02-06-08
Live Load Deflection	L/999 (0.004")	n\a	n\a	5	02-06-08
Max Defi.	0.007"	n\a	n\a	4	02-06-08
Span / Denth	48				

	Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
I	31	Wall/Plate	4" x 3-1/2"	1690 lbs	19.6%	9,9%	Spruce-Pine-Fir	
F	32	Wall/Plate	5-1/2" x 3-1/2"	1894 lbs	16.0%	8.1%	Spruce-Pine-Fir	

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

OBC 2012

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

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-09-12.







Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B11(i2582) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773 Job name:

File name:

Address:

Description: 2ND FLR FRAMING\Flush Beams\B11(i2582)

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

City, Province, Postal Code: HAMILTON Customer:

Specifier:

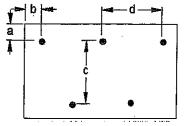
AJ ·

Code reports:

CCMC 12472-R

Designer: Company:

Connection Diagram: Full Length of Member





a minimum = 2"

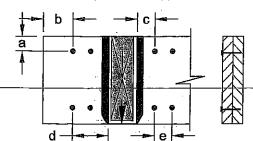
c = 7-7/8" d = 38 8 1

b minimum = 3"

Calculated Side Load = 279.8 lb/ft Connectors are: 16d / Nails ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Connection Tag: Applies to load tag(s): 3+5+6



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

e minimum = 4"

Connectors are: 16d 🧳 Nails

312" ARDOX SPIRAL



996 HO. TAN 9525 -21 COMPONENT DALY

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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BC CALC® Member Report



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

PASSED

2ND FLR FRAMING\Flush Beams\B12(i2571) (Flush Beam)

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773

Job name:

Customer:

Code reports:

Address: City, Province, Postal Code: HAMILTON

CCMC 12472-R

File name:

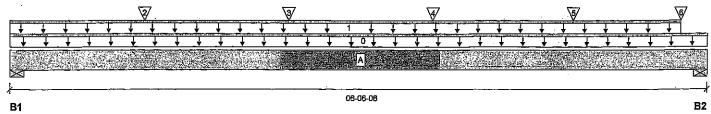
SPRINGFIELD 1 EL 1 SUNKEN.mmd!

Description: 2ND FLR FRAMING\Flush Beams\B12(i2571)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 06-06-06

Reaction Sun	ilitialy (Down of	pinit (ina)			
Bearing	Live	Dead	Snow	Wind	
B1, 4-3/8"	525 / 0	302 / 0			
B2, 6"	647 / 0	683 / 0			

Loa	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	_	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-06-06	Тор		12	-		00-00-00
1	FC3 Floor Decking (Plan View Fili)	Unf. Lin. (lb/ft)	L	00-00-00	06-03-04	Тор	6	3			n\a
2	J4(i963)	Conc. Pt. (lbs)	L	01-02-14	01-02-14	Top	247	124			n\a
3	J4(i964)	Conc. Pt. (lbs)	L	02-06-14	02-06-14	Тор	267	134			n\a
4	J4(i964)	Conc. Pt. (lbs)	L.	03-10-14	03-10-14	Тор	267	134			n\a
5	J4(i965)	Conc. Pt. (lbs)	L,	05-02-14	05-02-14	Top	239	120			n\a
6	B16(i2578)	Conc. Pt. (lbs)	L	06-03-04	06-03-04	Тор	106	371			n\a

Cont	rols Summary	Factored Demand	Factored Resistance	Demand/ <u>Resist</u> ance	Case	Location	
Pos. N	/loment	1853 ft-lbs	35392 ft-lbs	5.2%	1	02-06-14	
End S	hear	1066 lbs	14464 lbs	7.4%	1	01-04-04	
Total i	Load Deflection	L/999 (0.008")	n \a '	n\a	4	03-01-14	
Live L	oad Deflection	L/999 (0.005")	n\a	n\a	5	03-01-14	
Max D)efi.	0.008"	n\a	n\a	4	03-01-14	
Span /	/ Depth	5.9				•	

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 3-1/2"	1165 lbs	12.4%	6.2%	Spruce-Pine-Fir
B2	Wall/Plate	6" x 3-1/2"	1825 lbs	14.1%	7.1%	Spruce-Pine-Fir

Notes

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

CONFORMS TO OBG 2012

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

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

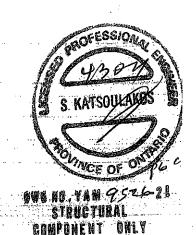
AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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





BC CALC® Member Report



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

PASSED

2ND FLR FRAMING\Flush Beams\B12(i2571) (Flush Beam)

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773

Job name: Address:

Address:
City, Province, Postal Code: HAMILTON

Customer: Code reports: OSIAI ÇOUE. HAWILTON

CCMC 12472-R

File name: SPRINGFIELD 1 EL 1 SUNKEN.mmdl

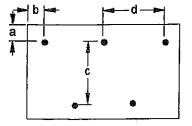
Description: 2ND FLR FRAMING\Flush Beams\B12(i2571)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



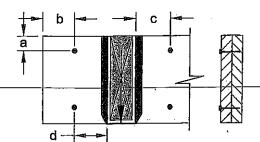


a minimum = 2" b minimum = 3" c = 7-7/8" d = 28 6

312" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Connection Tag: A Applies to load tag(s): 4+5



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

Connectors are:

Nails

3½" ARDOX SPIRAL



OWE NO. TAM 9526-21 STRUCTURAL COMPONENT ONLY

Disclosure

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Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B14(i2544) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773

Job name:

Customer:

Code reports:

Address: City, Province, Postal Code: HAMILTON

CCMC 12472-R

File name:

SPRINGFIELD 1 EL 1 SUNKEN.mmdI

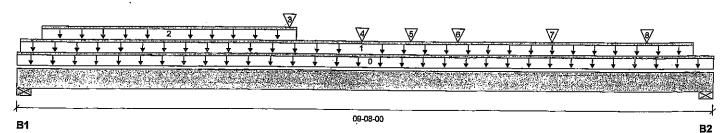
Description: 2ND FLR FRAMING\Flush Beams\B14(i2544)

Specifier:

Designer: ΑJ

Wind

Company:



Total Horizontal Product Length = 09-08-00

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 4"	1900 / 0	1199 / 0
B2, 6"	2329 / 0	1291 / 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	09-08-00	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	Ĺ	80-00-00	09-04-08	Top	325	162			n\a
2	WALL	Unf, Lin, (lb/ft)	L	00-04-00	03-09-12	Top		60			n\a
3	B17(i884)	Conc. Pt. (lbs)	Ĺ	03-08-10	03-08-10	Top	62	49			n\a
4	J5(i933)	Conc. Pt. (lbs)	L.	04-08-08	04-08-08	Тор	105	53			n\a
5	B18(i885)	Conc. Pt. (ibs)	Ĺ	05-04-10	05-04-10	Top	301	181			n\a
6	J4(i943)	Conc. Pt. (lbs)	L	06-00-08	06-00-08	Τορ	197	99			n\a
7	J4(i930)	Conc. Pt. (ibs)	Ł	07-04-08	07-04-08	Тор	263	132			n\a
8	J4(i955)	Conc. Pt. (lbs)	Ł	08-08-08	08-08-08	Тор	263	132			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	10845 ft-lbs	35392 ft-lbs	30.6%	1	04-08-08
End Shear	4294 lbs	14464 lbs	29.7%	1	08-02-02
Total Load Deflection	L/999 (0.112")	n\a	ri\a	4	04-10-09
Live Load Deflection	L/999 (0.071")	n\a	n\a	5	04-10-09
Max Defl.	0.112"	n\a	n\a	4	04-10-09
Span / Depth	9.1				

B	Searing Supports	Dim. (LxW)	Demand_	Demand/ Resistance Support	Demand/ Resistance Member	Material .
В	1 Wali/Plate	4" x 3-1/2"	4349 lbs	50.5%	25.5%	Spruce-Pine-Fir
В	2 Wall/Plate	6" x 3-1/2"	5107.lbs	39.5%	19.9%	Spruce-Pine-Fir

Notes

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

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

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.

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.





BC CALC® Member Report



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

2ND FLR FRAMING\Flush Beams\B14(i2544) (Flush Beam)

Dry | 1 span | No cant.

March 16, 2021 10:58:46

PASSED

Build 7773

Job name: Address:

City, Province, Postal Code: HAMILTON

Customer: Code reports:

CCMC 12472-R

File name:

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

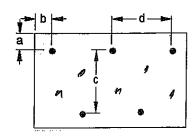
Description: 2ND FLR FRAMING\Flush Beams\B14(i2544)

Specifier:

Designer: A

Company:

Connection Diagram: Full Length of Member



\$ 2° 4 pows

a minimum = 2" b minimum = 3" c=7-7/8" d= **69 8** ^u

Calculated Side Load = 926.5 lb/ft

Connectors are:

Nails

aw" ardox spiral



Disclosure

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Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B15(i830) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Job name:

Customer:

Code reports:

Address: City, Province, Postal Code: HAMILTON

CCMC 12472-R

File name:

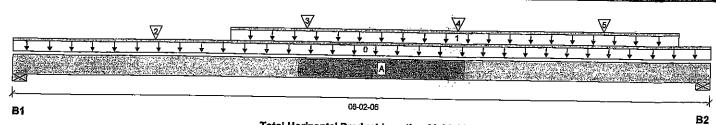
SPRINGFIELD 1 EL 1 SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B15(i830)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 06-02-06

Reaction Summary (Down / Uplift) (lbs)

Bearing Snow B1, 4-3/8" 1239 / 0 657/0 B2, 6" 1470 / 0 774/0

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	mbutary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-02-06		1100	12	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-14	05-10-14	- 4-	321	161			_
2	-	Conc. Pt. (lbs)	L	01-02-14	01-02-14	-1-	643	322			n\a n\a
3	J4(i964)	Conc. Pt. (lbs)	L	02-06-14	02-06-14	Тор	267	134			n\a
4	J4(i962)	Conc. Pt. (ibs)	1	03-10-14	03-10-14	Top					n\a
5	J4(i965)	Conc. Pt. (lbs)	ī	05-02-14	05-10-14	1-	267	134			n/a
	()	00110: 1 1: (100)	_	03-02-14	00-02-14	Top	239	120			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4209 ft-lbs	35392 ft-lbs	11.9%	1	02-06-14
End Shear	2499_lbs	14464.lbs	17.3%	1	01=04=04
Total Load Deflection	L/999 (0.016")	n\a	n\a	4	03-00-14
Live Load Deflection	L/999 (0.011")	n\a	n\a	5	03-00-14
Max Defl.	0.016"	n\a	n\a	4	03-00-14
Span / Depth	5.5			•	00-00-14

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 3-1/2"	2679 lbs	28.4%	14.3%	Spruce-Pine-Fir
B2	Wall/Plate	6" x 3-1/2"	3173 lbs	24.6%	12.4%	Spruce-Pine-Fir

Notes

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

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

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.

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,





BC CALC® Member Report



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

2ND FLR FRAMING\Flush Beams\B15(i830) (Flush Beam)

Dry | 1 span | No cant.

March 16, 2021 10:58:46

PASSED

Build 7773

Job name: Address:

City, Province, Postal Code: HAMILTON

Customer:

Code reports:

CCMC 12472-R

File name:

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

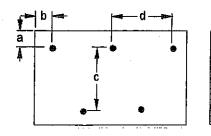
Description: 2ND FLR FRAMING\Flush Beams\B15(i830)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8" _// d = **19** *B*

b minimum = 3"

Calculated Side Load = 454.8 lb/ft

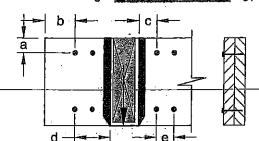
Connectors are:

, Nails

ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

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



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

e minimum = 4"

Connectors are: 1

Nails

3%" ARDDX SPIRAL

.THM 9528-21

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.

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PASSED

2ND FLR FRAMING\Flush Beams\B16(i2578) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773

Job name: Address:

Customer:

Code reports:

City, Province, Postal Code: HAMILTON

CCMC 12472-R

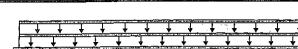
SPRINGFIELD 1 EL 1 SUNKEN.mmdi File name:

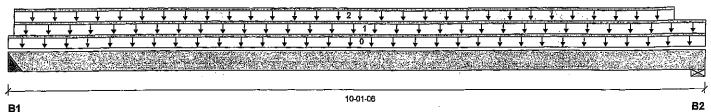
2ND FLR FRAMING\Flush Beams\B16(i2578) Description:

Specifier:

Designer: ΑJ

Company:





Total Horizontal Product Length = 10-01-06

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 2"	107 / 0	373 / 0
B2, 5-1/2"	105 / 0	396 / 0

	ad Summary Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-01-06	Тор		6			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-01-00	10-01-06	Тор		60			n\a
2	FC3 Floor Decking (Plan	Unf. Lin. (lb/ft)	L	00-01-00	09-07-14	Тор	22	11			n\a
	View Fill)										ege-ovinterilize-v

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1247 ft-lbs	11502 ft-lbs	10.8%	0	04-10-15
End Shear	405 lbs	4701 lbs	8.6%	0	01-01-14
Total Load Deflection	L/999 (0.039")	n\a	n\a	4	04-10-15
Live Load Deflection	L/999 (0.009")	n\a	n\a	5	04-10-15
Max Defl.	0.039"	n\a	n\a	4	04-10-15
Span / Depth	9.7				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	2" x 1-3/4"	522 lbs	n\a	18.8%	IUS2.56/11.88
B2	Wall/Plate	5-1/2" x 1-3/4"	554 lbs	14.4%	7.3%	Spruce-Pine-Fir

Cautions

Header for the hanger IUS2.56/11.88 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model IUS2.56/11.88 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.

CONFORMS TO OBC 2012

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 09-06-14.



644 40 . Tan 25-29 -21 STRUCTURAL COMPONENT ONLY Disclosure

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

2ND FLR FRAMING\Flush Beams\B17(i884) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773 Job name:

EL 4 CUNIZENI mamadi

Address:

Description:

SPRINGFIELD 1 EL 1 SUNKEN.mmdl
2ND FLR FRAMING\Flush Beams\B17(i884)

Customer:

City, Province, Postal Code: HAMILTON

Specifier:

File name:

ΑJ

Wind

Code reports:

CCMC 12472-R

Designer: Company:

Company:

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 	+ + + + + + + + + + +	
	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
	05-11-02	

Total Horizontal Product Length = 05-11-02

Snow

Reaction Summary (Down / Uplift) (ibs)

Bearing	Live	Dead
B1, 1-3/4"	63 / 0	49/0
B2. 2"	63 / 0	49 / 0

	ad Summary Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-11-02	Тор		6			00-00-00
1	FC3 Floor Decking (Plan	Unf. Lin. (lb/ft)	L	00-00-00	05-11-02	Тор	21	11			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	217 ft-lbs	17696 ft-lbs	1.2%	1	02-11-07
End Shear	96 lbs	7232 lbs	1.3%	1	01-01-10
Total Load Deflection	L/999 (0.002")	n\a	n\a	4	02-11-07
Live Load Deflection	L/999 (0.001")	n\a	n\a	5	02-11-07
Max Defl.	0.002"	n\a	n\a	4	02-11-07
—Span-/-Depth————	5.8				

_Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column	1-3/4" x 1-3/4"	156 lbs	6.3%	4.2%	Unspecified
B2	Hanger	2" x 1-3/4"	157 lbs	n\a	3.7%	HUS1.81/10

Cautions

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

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

Notes

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

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

CONFORMS TO OBC 2012

Hanger Manufacturer: Unassigned

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

AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 05-11-02.

OWN NO. TAN 9530-28
STRUCTURAL
COMPONENT ONLY

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PASSED

B2

2ND FLR FRAMING\Flush Beams\B18(i885) (Flush Beam)

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Job name:

File name:

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

Address:

City, Province, Postal Code: HAMILTON

Specifier:

Description: 2ND FLR FRAMING\Flush Beams\B18(i885)

Customer:

В1

Designer: ΑJ

Wind

Code reports:

CCMC 12472-R

Company:

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	於其物的類似	學為於於	1975	经规则		2.00		100	No.			交易的	diak	D. Tr			量 80		14.					

Total Horizontal Product Length = 09-06-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow
B1, 2"	825 / 0	445 / 0	
B2 2"	292 / 0	176 / 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	09-06-14	Тор		6	-		00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Тор	240	120			n\a
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	Ł	00-00-00	03-06-00	Тор	15	7			n\a
3	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	03-06-00	09-06-14	Тор	27	13			n\a
4	B19(i892)	Conc. Pt. (lbs)	L	03-06-14	03-06-14	Тор	64	37			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand <i>l</i> Resistance	Case	Location	
Pos. Moment	2748 ft-lbs	17696 ft-lbs	15.5%	1	03-02-08	
End Shear	1159 lbs	7232 lbs	16.0%	1	01-01-14	
Total Load Deflection	L/999 (0.057")	n\a	n\a	4	04-04-14	
Live Load Deflection	L/999 (0.036")	n\a	n\a	5	04-04-14	
Max Defl.	0.057"	n\a ·	n\a	4	04-04-14	
Span / Depth	9.5					

	Bearing	Supports	Ďim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
•	В1	Hanger	2" x 1-3/4"	1794 lbs	'n∖a	42.0%	IUS2.56/11.88
	B2	Hanger	2" x 1-3/4"	658 lbs	n\a	15.4%	HUS1.81/10

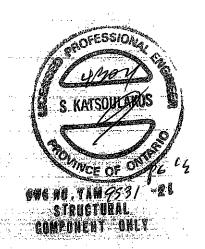
Cautions

Header for the hanger IUS2.56/11.88 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model IUS2.56/11.88 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

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

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





BC CALC® Member Report



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

2ND FLR FRAMING\Flush Beams\B18(i885) (Flush Beam)

Dry | 1 span | No cant.

March 16, 2021 10:58:46

PASSED

Build 7773

Job name:

Address: City, Province, Postal Code: HAMILTON

Customer:

Code reports:

Notes

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

CCMC 12472-R

SPRINGFIELD 1 EL 1 SUNKEN.mmdl File name:

Description: 2ND FLR FRAMING\Flush Beams\B18(i885)

Specifier:

Designer: ΑJ Company:

CONFORMS TO OBC 2012

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: 05-11-02.



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BC CALC® Member Report



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

PASSED

2ND FLR FRAMING\Flush Beams\B19(i892) (Flush Beam)

Dry | 1 span | No cant.

March 16, 2021 10:58:46

Build 7773

Job name: Address:

Customer:

Code reports:

City, Province, Postal Code: HAMILTON

CCMC 12472-R

SPRINGFIELD 1 EL 1 SUNKEN.mmdl

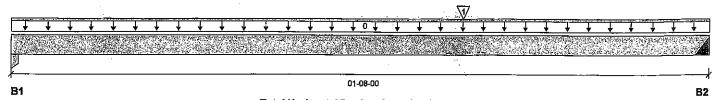
File name: Description: 2ND FLR FRAMING\Flush Beams\B19(i892)

Specifier:

Designer:

Wind

Company:



Total Horizontal Product Length = 01-08-00

Reaction Summary (Down / Uplift) (ibs)

Bearing	Live	Dead	Snow
B1, 3-1/2"	- 1 41 / 0	26/0	
B2, 2"	67 / 0	38 / 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	01-08-00	Тор		6			00-00-00
1	J5(i933)	Conc. Pt. (lbs)	L.	01-00-12	01-00-12	Тор	108	54			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	73 ft-lbs	17696 ft-lbs	0.4%	1	01-00-12
End Shear	32 lbs	7232 lbs	0.4%	1	01-03-06
Span / Depth	1.3				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material .
B1	Column	3-1/2" x 1-3/4"	93 lbs	1.9%	1.2%	Unspecified
B2	Hanger	2" x 1-3/4"	149 lbs	n\a	3.5%	HUS1.81/10

Cautions

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

CONFORMS TO OBG 2012 AMENDED 2028

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Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B1A(i2590) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 16, 2021 11:25:13

Build 7773

Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer:

Code reports: CCMC 12472-R

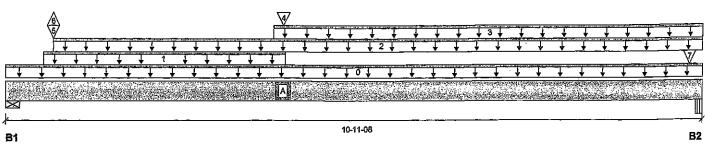
SPRINGFIELD 1 EL 1 OPT GUEST SUITE.mmdl

File name: 1ST FLR FRAMING\Flush Beams\B1A(i2590) Description:

Specifier:

Designer: ΑJ

Company:



Total Horizontal Product Length = 10-11-08

Reaction Summary (Down / Holift) (lbs)

1/cachon Ann	ililialy (Down i Opi	iiit) (ibə)			
Bearing	Live	Dead	Snow	Wind	
B1, 4-3/8"	2215 / 148	1601 / 0			
B2, 5-1/4"	706 / 6	611/0			

Loa	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-11-08	Тор	•	12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-06-14	04-04-01	Тор		60			n\a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-08-10	10-11-08	Тор	9	5			n\a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	04-01-14	10-11-08	Тор	18	9			n\a
4	B3A(i2585)	Conc. Pt. (lbs)	L	04-03-10	04-03-10	Top	640	558			n\a
5	B4(i2662)	Conc. Pt. (lbs)	L	00-08-10	00-08-10	Тор	1779	986			n\a
-6	_B4(i2662)	Conc. Pt. (lbs)		-00 - 08 - 10-	00-08-10-	—Тор——	154	·			n\a
7	6(i828)	Conc. Pt. (lbs)	L	10-09-00	10-09-00	Top	246	164			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	6259 ft-lbs	35392 ft-lbs	17.7%	1	04-03-10
End Shear	2760 lbs	14464 lbs	19.1%	1	01-04-04
Total Load Deflection	L/999 (0.076")	n\ a	n\a	6	05-01-13
Live Load Deflection	L/999 (0.039")	n\a	n\a	8	05-01-13
Max Defl.	0.076"	n\a	n\a	6	05-01-13
Span / Depth	10.4				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 3-1/2"	5323 lbs	56.5%	28.5%	Spruce-Pine-Fir
B2 .	Beam	5-1/4" x 3-1/2"	1823 lbs	18.6%	8.1%	Unspecified

Cautions

Concentrated side load(s) 4 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.







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

PASSED

March 16, 2021 11:25:13

1ST FLR FRAMING\Flush Beams\B1A(i2590) (Flush Beam)

BC CALC® Member Report Build 7773

Job name:

Address: City, Province, Postal Code: HAMILTON

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

SPRINGFIELD 1 EL 1 OPT GUEST SUITE.mmdl File name:

Description: 1ST FLR FRAMING\Flush Beams\B1A(i2590)

Specifier:

Designer: ΑJ

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.

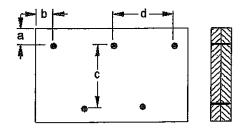
CONFORMS TO OBC 2012 AMENDED 2020

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

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

Calculations assume unbraced length of Top: 00-00-00, Bottom: 06-00-14.

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 7-7/8" d = 🗱 8

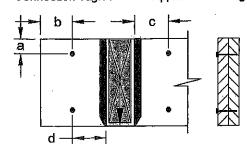
Calculated Side Load = 115.5 lb/ft

Connectors are: .

ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

-Applies to load tag(s): 8 Connection Tag: A-



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

Connectors are: 16d

ARDOX SPIRAL



Disclosure

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

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





Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B2A(i2596) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

March 16, 2021 11:25:13

Build 7773

Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer:

Code reports:

CCMC 12472-R

File name: SPRINGFIELD 1 EL 1 OPT GUEST SUITE.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B2A(i2596)

Specifier:

Designer:

Wind

BONFORMS TO OBC 2012

Company:

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<u> </u>			a de la companya de	8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
						
		04-05-06				

Total Horizontal Product Length = 04-05-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	
B1, 4-3/8"	15 / 0	157 / 0		_
B2, 3-1/2"	12 / 0	151 / 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	04-05-06	Tóp		6			00-00-00
1	WALL	Unf. Lin. (ib/ft)	L	00-00-00	04-05-06	Top		60			n\a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	Ĺ	00-00-00	04-01-14	Тор	7	3			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	186 ft-lbs	11502 ft-lbs	1.6%	0	02-03-02
End Shear	88 lbs	4701 lbs	1.9%	0	01-04-04
Total Load Deflection	L/999 (0.001")	n\a	n\a	4	02-03-02
Live Load Deflection	L/999 (0")		n\a	5	02-03-02
Max Defl.	0.001"	n\a	n\a	4	02-03-02
Span / Depth	4.0				-= 3

Bearing	y Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 1-3/4"	219 lbs	7.2%	3.6%	Spruće-Pine-Fir
B2	Column	3-1/2" x 1-3/4"	211 lbs	6.5%	4.3%	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. 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: 03-09-08.



Disclosure

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





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP. 1ST FLR FRAMING\Flush Beams\B3A(i2585) (Flush Beam)

passed

March 16, 2021 11:25:13

BC CALC® Member Report

Build 7773 Job name:

Address:

Code reports:

City, Province, Postal Code: HAMILTON Customer:

CCMC 12472-R

Dry | 1 span | No cant,

File name:

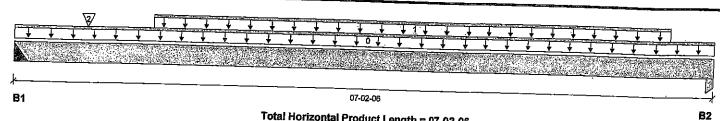
SPRINGFIELD 1 EL 1 OPT GUEST SUITE.mmdl 1ST FLR FRAMING\Flush Beams\B3A(i2585)

Description: Specifier:

Designer:

Wind

Company:



Total Horizontal Product Length = 07-02-06

Snow

Reaction Summary (Down / Uplift) (lbs) Bearing Live Dead

B1, 4" 667/0 582 / 0 B2, 1-3/4"

596 / 0

523 / 0

Loa Tag	ad Summary Description	Load Type	Ref.	Start	End	1	Live	Dead	Snow	Wind	Tributary
0 1 2	Self-Weight Smoothed Load J5(i2591)	Unf. Lin. (lb/ft) Unf. Lin. (lb/ft) Conc. Pt. (lbs)	L L L	00-00-00 01-04-14 00-08-14	07-02-06 06-08-14 00-08-14	Тор	1.00 196 219	0.65 12 158 176	1.00	1.15	00-00-00 n\a n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/	_	_
Pos. Moment	2998 ft-lbs	35392 ft-lbs	Resistance 8.5%	Case	Location
End Shear	1523 lbs	14464 lbs	10.5%	1	03-04-14
Total Load Deflection	L/999 (0.018")	n\a	n\a	1	06-00-12
Live Load Deflection	L/999 (0.01")	n\a	n\a	4	03-07-14
Max Defl.	0.018" [`]	n\a	n\a	5	03-07-14
—Span-/-Depth	-6:9			4	03-07-14

	y Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Matautat
B1	Hanger	4" x 3-1/2"	1728 lbs	n\a	10.1%	Material HGUS412 Unspecified
B2	Column	1-3/4" x 3-1/2"	1547 lbs	31.1%	20.7%	

Cautions

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

Hanger model HGUS412 and seat length were input by the user. Hanger has not been analyzed for 1009 adequate capacity.

Notes

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

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

60NF6RMS TO 086 2012

Hanger Manufacturer: Unassigned

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

AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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



COMPONENT ONLY





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B3A(i2585) (Flush Beam)

PASSED

March 16, 2021 11:25:13

BC CALC® Member Report

Build 7773 Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

SPRINGFIELD 1 EL 1 OPT GUEST SUITE.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B3A(i2585)

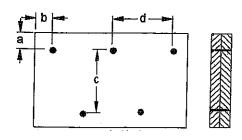
Specifier:

File name:

Designer: ΑJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8" (/ d = **6** 6

b minimum = 3"

Calculated Side Load = 652.5 lb/ft Connectors are: 16d / Nails

ARDOX SPIRAL



986 NO. TAN 9535 STRUCTURAL COMPONENT ONLY

Disclosure

Use of the Bolse 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 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B20B(i2635) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

March 16, 2021 13:34:15

Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer:

Code reports:

CCMC 12472-R

SPRINGFIELD 1 EL 2 SUNKEN.mmdl

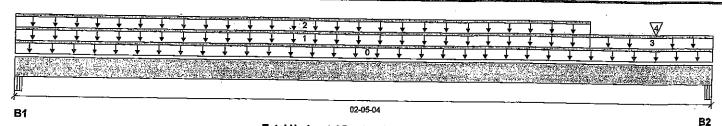
File name:

Description: 2ND FLR FRAMING\Flush Beams\B20B(i2635)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 02-05-04

- roaction car	ilinaly (DOWII / C	philith (ins)			
Bearing	Live	Dead	Snow	Wind	
B1, 5-1/4"	10 / 0	271/0	252 / 0		
B2, 5-1/4"	8/0	262 / 0	257 / 0		

Loa	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	02-05-04	Top		12	1.00	1.10	00-00-00
1	E22(i3027)	Unf. Lin. (lb/ft)	L	00-00-00	02-00-00	Top		207	207		n\a
2	FC3 Floor Decking (Plan View Fili)	Unf. Lin. (lb/ft)	L	00-00-00	02-00-00	Тор	8	4	201		n\a
3	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	02-00-00	02-05-04	Тор	5				n\a
4	E19(i3024)	Conc. Pt. (lbs)	L	02-02-12	02-02-12	Тор		81	95		nla

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	212 ft-lbs	35392 ft-lbs	0.6%	13	01-02-10
End Shear	125 lbs	14464 lbs	0.9%	13	01-05-02
Total Load Deflection	L/999 (0")	n\a	n\a	35	01-02-10
Live Load Deflection	L/999 (0")	n\a	n\a	51	01-02-10
Max Defl.	0" ` ´	n\a	n\a	35	01-02-10
Span / Depth	17			30	01-02-10

Bearing	y Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	5-1/4" x 3-1/2"	727 lbs	7.4%	3.2%	Unspecified
B2	Beam	5-1/4" x 3-1/2"	720 lbs	7.3%	3.2%	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 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: 01-06-12.



644 HD. TAM 9536 -28





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B20B(i2635) (Flush Beam)

PASSED

March 16, 2021 13:34:15

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

File name:

SPRINGFIELD 1 EL 2 SUNKEN.mmdl

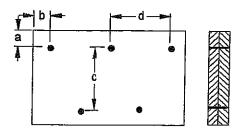
Description: 2ND FLR FRAMING\Flush Beams\B20B(i2635)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 7-7/8"

Connectors are: -

d = 100 "

Nails

ARDOX SPIRAL



THE 4536-21 STRUCTURAL COMPONENT ONLY

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

2ND FLR FRAMING\Dropped Beams\B23C(i3620) (Dropped Beam)

Dry | 1 span | No cant.

March 16, 2021 16:26:36

PASSED

Build 7773

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: HAMILTON

BC CALC® Member Report

CCMC 12472-R

File name:

SPRINGFIELD 1 EL 3 SUNKEN.mmdl

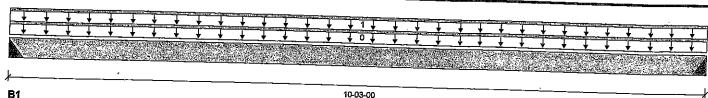
Description: 2ND FLR FRAMING\Dropped Beams\B23C(i3620)

Specifier:

Designer:

AJ Company:

Wind



B1

B2

Total Horizontal Product Length = 10-03-00 Reaction Summary (Down / Uplift) (lbs)

B1, 2" 205/0

205 / 0

Snow 236 / 0

B2, 2"

236 / 0

LO Tag	ad Summary Description	Load Type	Ref.	Ctout			Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L.	Start 00-00-00	End 10-03-00	Loc.	1.00	0.65	1.00	1.15	
1	LOW ROOF	Unf. Lin. (lb/ft)	Ĺ	00-00-00	10-03-00	Тор		12 28	46		00-00-00

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	•	
Pos. Moment	1500 ft-lbs	19418 ft-lbs	7.7%	Case	Location
End Shear	472 lbs	14464 lbs	3.3%	1	05-01-08
Total Load Deflection	L/999 (0.02")	n\a		7	01-01-14
Live Load Deflection	L/999 (0.011")	n\a	n\a	12	05-01-08
Max Defl.	0.02"		n\a	17	05-01-08
Span / Depth	10.1	n/a	n\a	12	05-01-08

	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Rine to viol
B1 B2	Hanger Hanger	2" x 3-1/2" 2" x 3-1/2"	610 lbs 610 lbs	n\a n\a	7.1% 7.1%	Material HUC412 HUC412

Cautions

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

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

Notes

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

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

CONFORMS TO OBG 2012

Hanger Manufacturer: Unassigned

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

AMENDED 2020

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86. Unbalanced snow loads determined from building geometry were used in selected product's

verification.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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



COMPONENT ONLY





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Dropped Beams\B23C(i3620) (Dropped Beam)

PASSED

March 16, 2021 16:26:36

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: HAMILTON Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

File name:

SPRINGFIELD 1 EL 3 SUNKEN.mmdl

Description: 2ND FLR FRAMING\Dropped Beams\B23C(i3620)

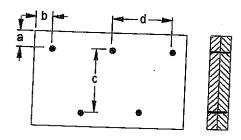
Specifier:

Designer:

Company:

AJ

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 7-7/8"

Connectors are:

Nails

COMPONENT ONLY

Disclosure

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





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B20C(i3653) (Flush Beam)

PASSED

March 16, 2021 16:26:36

BC CALC® Member Report

Build 7773

Job name: Address:

Customer:

Code reports:

City, Province, Postal Code: HAMILTON

CCMC 12472-R

Dry | 2 spans | L cant.

File name:

ΑJ

Wind

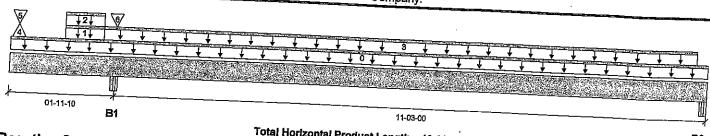
SPRINGFIELD 1 EL 3 SUNKEN.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B20C(i3653)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 13-02-10

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	The Add to	hiiir) (108)	
B1, 5-1/4"	Live	Dead	Snow
B2, 5-1/4"	152 / 0 142 / 0	732 / 0 71 / 0	565 / 0 0 / 75

Lo <u>Ta</u> 0	Dad Summary g Description Self-Weight E24(i3631)	Load Type Unf. Lin. (lb/ft)		Start 00-00-00	End 13-02-10	Loc. Top	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft) Unf. Lin. (lb/ft)		01-00-00 01-00-00	01-09-00	Тор	11	12 109	46		00-00-00 n\a
3	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	01-09-00	13-00-00	Тор	25	13			n\a
4 5 6	- LOW ROOF E21(i3628)	Conc. Pt. (lbs) Conc. Pt. (lbs) Conc. Pt. (lbs)		00-01-12	00-01-12 00-01-12 01-11-12	Тор	0	366 8 42	421 13 21		n\a n\a n\a
Cal	ménala O.		Factored	_					~ 1		n\a

		•	up	
Factored Demand	Factored	Demand/		
DOINGING			Case	Location
			45	08-08-06
		· · • •	49	01-11-10
			43	11-09-08
			50	00-09-02
2xL/1998 (0.013")			110	00-00-00
L/999 (-0.014 ⁱ ')	,		162	00-00-00
		***	122	06-00-01
11.0	na	n\a	122	06-00-01
	602 ft-lbs -2171 ft-lbs 215 lbs 1297 lbs 2xL/1998 (0.019") 2xL/1998 (0.012") L/999 (-0.014") -0.014"	602 ft-lbs 35392 ft-lbs -2171 ft-lbs -22666 ft-lbs 215 lbs 14464 lbs 1297 lbs 14464 lbs 2xL/1998 (0.019") n\a 2xL/1998 (0.012") n\a 1/999 (-0.014") n\a -0.014" n\a	602 ft-lbs 35392 ft-lbs 1.7% -2171 ft-lbs -22666 ft-lbs 9.6% 215 lbs 14464 lbs 1.5% 1297 lbs 14464 lbs 9.0% 2xL/1998 (0.019") n\a n\a n\a \a \	602 ft-lbs 35392 ft-lbs 1.7% 45 -2171 ft-lbs -22666 ft-lbs 9.6% 49 215 lbs 14464 lbs 1.5% 43 1297 lbs 14464 lbs 9.0% 50 2xL/1998 (0.019") n\a n\a 110 2xL/1998 (0.012") n\a n\a 162 L/999 (-0.014") n\a n\a 122 -0.014" n\a n\a 122

Bearing B1	Supports	Dim. (LxW) 5-1/4" x 3-1/2"	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Máterial
B2		5-1/4" x 3-1/2" 5-1/4" x 3-1/2"	1915 lbs 303 lbs	19.5% 3.1%	8.5% 1.3%	Unspecified Unspecified







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

2ND FLR FRAMING\Flush Beams\B20C(i3653) (Flush Beam) Dry | 2 spans | L cant.

PASSED

March 16, 2021 16:26:36

BC CALC® Member Report

Build 7773 Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer:

Code reports:

CCMC 12472-R

SPRINGFIELD 1 EL 3 SUNKEN.mmdl

File name: Description: 2ND FLR FRAMING\Flush Beams\B20C(i3653)

conforms to OBC 2012

Specifier:

Designer:

Company:

Notes

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

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

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

AMENDED 2020

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

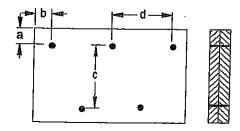
verification.

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

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

Calculations assume unbraced length of Top: 00-08-08, Bottom: 08-09-06.

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 7-7/8" d = 20 6

Calculated Side Load = 305.1 lb/ft Connectors are: 16d . A: Nails

3%" ARDOX SPIRAL

POLITIVEE OF 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 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B21C(i3618) (Flush Beam)

PASSED

March 16, 2021 16:26:36

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

SPRINGFIELD 1 EL 3 SUNKEN.mmdl

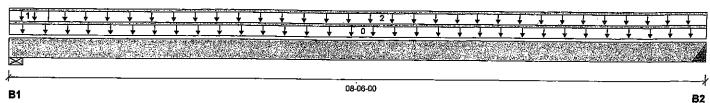
File name:

Description: 2ND FLR FRAMING\Flush Beams\B21C(i3618)

Specifier:

Designer: ΑJ





Total Horizontal Product Length = 08-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	3/0	165 / 0	181 / 0	
B2, 2"	0/0	164 / 0	189 / 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	08-06-00	Тор		12			00-00-00
1	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	00-05-08	Тор	6				n\a
2	LOW ROOF	Unf. Lin. (lb/ft)	L	00-05-08	08-06-00	Тор		28	46		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	952 ft-lbs	24560 ft-lbs	3.9%	13	04-04-12
End Shear	351 lbs	14464 lbs	2.4%	13	01-05-06
Total Load Deflection	L/999 (0.008")	n\a	n\a	35	04-04-12
Live Load Deflection	L/999 (0.004")	n\a	n\a	51	04-04-12
Max Defl,	0.008"	n\a	—-n\a	35	_04-04-12
Span / Donth	0.4				* * * * * * * *

Beari	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	5-1/2" x 3-1/2"	480 lbs	4.1%	2.0%	Spruce-Pine-Fir
B2	Hanger	2" x 3-1/2"	489 lbs	n\a	5.7%	HUC412

Cautions

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

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

Notes

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

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

CONFORMS TO OBC 2012

Hanger Manufacturer: Unassigned

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

AMENDED 2020

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 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: 08-00-08, Bottom: 08-00-08.



COMPONENT ONLY



BC CALC® Member Report



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

2ND FLR FRAMING\Flush Beams\B21C(i3618) (Flush Beam)

Dry | 1 span | No cant.

March 16, 2021 16:26:36

PASSED

Build 7773

Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer:

Code reports:

CCMC 12472-R

File name:

SPRINGFIELD 1 EL 3 SUNKEN.mmdi

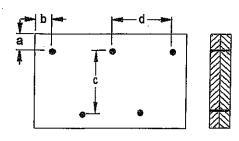
Description: 2ND FLR FRAMING\Flush Beams\B21C(i3618)

Specifier:

Designer: ΑJ

Company:

Connection Diagram: Full Length of Member

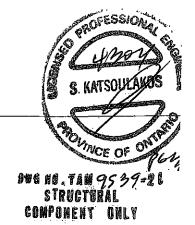


a minimum = 2" b minimum = 3"

c = 7-7/8"

Connectors are:

ւ Nails ARDOX SPIRAL



Disclosure

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





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B22C(i3619) (Flush Beam)

PASSED

March 16, 2021 16:26:36

BC CALC® Member Report

Build 7773

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: HAMILTON

CCMC 12472-R

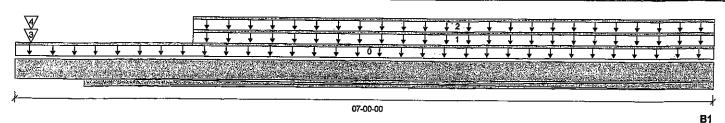
Dry | 1 span | L cant.

File name: SPRINGFIELD 1 EL 3 SUNKEN.mmdI Description: 2ND FLR FRAMING\Flush Beams\B22C(i3619)

Specifier:

Designer: ΑJ

Company:



Total Horizontal Product Length = 07-00-00

reaction a	summary (Down / Op	um; (ibs)		
Bearing	Lîve	Dead	Snow	 Wind
B1, 76"	44 / 0	744 / 0	249 / 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	07-00-00	Тор		12			00-00-00
1	E22(i3626)	Unf. Lin. (lb/ft)	L	01-09-00	07-00-00	Top		81			n\a
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	01-09-00	07-00-00	Тор	8	4			n\a
3	B23C(i3620)	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Top		205	236		n\a
4	LOWROOF	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Тор		8	13		n\a

Control	s Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Mom	ent	0 ft-lbs	35392 ft-lbs	n\a	18	00-00-00
Neg. Mom	ent	-338 ft-lbs	-31513 ft-lbs	1.1%	13	00-08-00
End Shear	<u></u>	651 lbs	14464 lbs	4.5%	13	00-08-00
Total Load	Deflection	2xL/1998 (0")	n\a	n\a	35	00-00-00
Span / De	pth	0.7				
Dist. Load	(B1)	119.09 lb/ft	37469.32 lb/ft	0.3%		

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	76" x 3-1/2"	1042 lbs	1.0%	0.5%	Spruce-Pine-Fir

Notes

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

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

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

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

Calculations assume unbraced length of Top: 01-05-08, Bottom: 04-09-12.

CONFORMS TO OBC 2012

AMENDED 2020



COMPONENT ONLY





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B22C(i3619) (Flush Beam)

PASSED

March 16, 2021 16:26:36

BC CALC® Member Report

Build 7773

Job name: Address:

City, Province, Postal Code: HAMILTON

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | L cant.

File name: SPRINGFIELD 1 EL 3 SUNKEN.mmdl

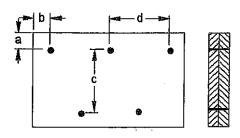
Description: 2ND FLR FRAMING\Flush Beams\B22C(i3619)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member

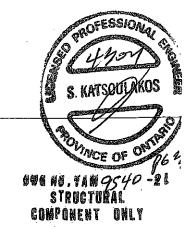


a minimum = 2" b minimum = 3"

c = 7-7/8" d= 🐼 8"

Calculated Side Load = 305.1 lb/ft Connectors are: 16d / // Nails

3K" ARDOX SPIRAL



Disclosure

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

NORDIC STRUCTURES COMPANY

Mar. 23, 2021 14:47

PROJECT
Beam1

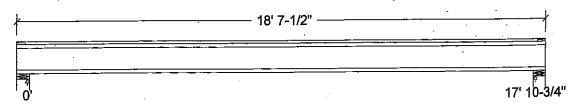
Design Check Calculation Sheet

Nordic Sizer - Canada 7.2

Loads:

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

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



Unfactored: Dead Live	179 358	;	179 358
Factored: Total	761		761
Bearing:			
Capacity			0226
Joist	2336		2336
Support	9282	4	9282
Des ratio			[
Joist	0.33		0.33
Support	0.08		0.08
Load case	#2		#2
Length	5-1/4		5-1/4
Min reg'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	_		-
fcp sup	769		769
Kzcp sup	_		

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

Nordic Joist 11-7/8" NI-40x Floor joist @ 12" o.c.

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

Total length: 18' 7-1/2"; Clear span: 17' 9"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	-Unit	Analysis/Design
Shear	Vf = 761	Vr = 2336	lbs	Vf/Vr = 0.33
Moment(+)	Mf = 3403	Mr = 6255	lbs-ft	0.54 0.54
Perm. Defl'n	0.12 = < L/999	0.60 = L/360	in 🖋	0.20
Live Defl'n	0.24 = L/901	0.45 = L/480	in 🎉	4 201 20.53
Total Defl'n	0.36 = L/601	0.89 = L/240	in in	24 70 7 .40
Bare Defl'n	0.27 = L/784	0.60 = L/360	in 🎾	S. KATSOULAROS 2.46
Vibration	Lmax = 17'-10.8	Lv = 18'-11.3	ft 💆	S. KATSOUŁAKOS 🖫 0.95
Defl'n	= 0.030	= 0.035	in l	0/87
		· · · · · · · · · · · · · · · · · · ·		

NO. PAM9512 -2 STRUCTURAL

WoodWorks® Sizer

for NORDIC STRUCTURES

Beam1

Nordic Sizer - Canada 7.2

Page 2

### Additional Data: FACTORS:	Doolan Note									usember	2020	
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L Moment(+) : LC #2 = 1.25D + 1.5L Deflection: LC #1 = 1.0D (permanent)	"Live" defl	Lection :	is due	to all no	on-dead 	loads (1	live, wi	ind, sno	w) canpo	RMS TO	OBC 2012	2
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L Moment(+): LC #2 = 1.25D + 1.5L Deflection: LC #1 = 1.0D (permanent) LC #2 = 1.0D + 1.0L (live) LC #2 = 1.0D + 1.0L (total) LC #2 = 1.0D + 1.0L (bare joist) Bearing : Support 1 - LC #2 = 1.25D + 1.5L Support 2 - LC #2 = 1.25D + 1.5L Load Types: D=dead W=wind S=snow H=earth, groundwater E=earthquake L=live(use, occupancy) Ls=live(storage, equipment) f=fire Load Patterns: s=S/2 L=L+Ls =no pattern load in this span All Load Combinations (LCs) are listed in the Analysis output	EIeff = 432	2.91 lb-	in^2 K	= 6.18e	06 lbs							
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L Moment(+): LC #2 = 1.25D + 1.5L Deflection: LC #1 = 1.0D (permanent) LC #2 = 1.0D + 1.0L (live) LC #2 = 1.0D + 1.0L (total) LC #2 = 1.0D + 1.0L (bare joist) Bearing : Support 1 - LC #2 = 1.25D + 1.5L Support 2 - LC #2 = 1.25D + 1.5L Load Types: D=dead W=wind S=snow H=earth, groundwater E=earthquake L=live(use,occupancy) Ls=live(storage,equipment) f=fire Load Patterns: s=S/2 L=L+Ls =no pattern load in this span All Load Combinations (LCs) are listed in the Analysis output	CALCULATION	S:	Ň				-	•				
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L Moment(+): LC #2 = 1.25D + 1.5L Deflection: LC #1 = 1.0D (permanent)	All Load Co	ombinati	ons (LC	s) are 1.	isted i	n the Ana	alysis	output				
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L Moment(+): LC #2 = 1.25D + 1.5L Deflection: LC #1 = 1.0D (permanent)	Load Patte:	cns: s=S	/2 L=L	+Ls =n	o patte	rn load i	in this	span				
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L Moment(+): LC #2 = 1.25D + 1.5L Deflection: LC #1 = 1.0D (permanent)	<u> </u>	L=live	(use, oc	cupancy)	Ls=li	ve(storac	re.eaui	oment)	f=fire			
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L Moment(+): LC #2 = 1.25D + 1.5L Deflection: LC #1 = 1.0D (permanent)	Load Types:	: D=dead	W=win	d S=sno	w H=ea	rth.arou	ndwater	E=eart	hanako			
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L Moment(+): LC #2 = 1.25D + 1.5L Deflection: LC #1 = 1.0D (permanent) LC #2 = 1.0D + 1.0L (live) LC #2 = 1.0D + 1.0L (total) LC #2 = 1.0D + 1.0L (bare joist)												
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L Moment(+): LC #2 = 1.25D + 1.5L Deflection: LC #1 = 1.0D (permanent) LC #2 = 1.0D + 1.0L (live) LC #2 = 1.0D + 1.0L (total)	Bearing											
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L Moment(+): LC #2 = 1.25D + 1.5L Deflection: LC #1 = 1.0D (permanent) LC #2 = 1.0D + 1.0L (live)												
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L Moment(+): LC #2 = 1.25D + 1.5L Deflection: LC #1 = 1.0D (permanent)												
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L Moment(+) : LC #2 = 1.25D + 1.5L	perrection											
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS: Shear : LC #2 = 1.25D + 1.5L	Moment(+)	: LC #2	= 1.25	D + 1.5L								
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2 CRITICAL LOAD COMBINATIONS:												
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2 EI 371.1 million #2					•							
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2 Mr+ 6255 1.00 1.00 - 1.000 #2					-	-	-	-	_	#2		
FACTORS: f/E KD KH KZ KL KT KS KN LC# Vr 2336 1.00 1.00 #2	Mr+	6255	1.00	1.00	-	1.000	_	-	-	#2		
FACTORS: f/E KD KH KZ KL KT KS KN LC#	Vr	2336	1.00	1.00		_	-	-				
							KT	KS	KN	LC#		

Design Notes:

AMENDED 2020

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).

2. Please verify that the default deflection limits are appropriate for your application.

3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.

4. Nordic I-joists are listed in CCMC evaluation report 13032-R.

5. Joists shall be laterally supported at supports and continuously along the compression edge.

6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.





COMPANY Mar. 23, 2021 14:38 PROJECT Beam1

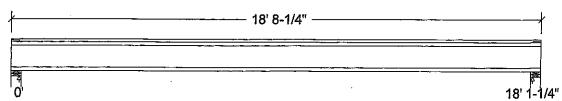
Design Check Calculation Sheet

Nordic Sizer - Canada 7.2

Loads:

I	oad	Туре	Distribution	Pat-	Location	[ft]	Magnitude		Unit
L				tern	Start	End	Start	End	
4		Dead	Full Area				20.00		psf
LI	oad2	Live	Full Area				40.00		psf

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



	 		
Unfactored: Dead Live Factored:	181 362		181 362
Total	769		769
Bearing:			
Capacity		·	1 !
Joist	2336		2336
Support	7744		7744
Des ratio]
Joist	0.33		0.33
Support	0.10		0.10
Load case	#2		#2
Length	4-3/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		769
Kzcp sup			-

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

Nordic Joist 11-7/8" NI-40x Floor joist @ 12" o.c.

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

Total length: 18' 8-1/4"; Clear span: 17' 11-1/2"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.



WA NO. TAN9513 -21 STRUCTURAL

WoodWorks® Sizer

for NORDIC STRUCTURES

Beam1

Nordic Sizer – Canada 7.2

Page 2

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 769	Vr = 2336	lbs	Vf/Vr = 0.33
Moment(+)	Mf = 3482	Mr = 6255	lbs-ft	Mf/Mr = 0.56
Perm. Defl'n	0.12 = < L/999	0.60 = L/360	in	0.21
Live Defl'n	0.25 = L/873	0.45 = L/480	in	0.55
Total Defl'n	0.37 = L/582	0.91 = L/240	in	0.41
Bare Defl'n	0.29 = L/759	0.60 = L/360	in	0.47
Vibration	Lmax = 18'-1.3	Lv = 18'-11.1	£t	0.96
Defl'n	= 0.031	= 0.034	in	0.90

Additional Data:

FACTORS:	f/E	KD	KH	KZ	\mathtt{KL}	KT	KS	KN	LC#
۷r	2336	1.00	1.00	-	_	_	-	-	#2
Mr+	6255	1.00	1.00		1.000	-	-	-	#2
ĒΙ	371.1 m	illion	_	_	_	_	_	_	#2

CRITICAL LOAD COMBINATIONS:

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

Deflection: LC #1 = 1.0D (permanent)

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

LC #2 = 1.0D + 1.0L (bare joist) : Support 1 - LC # 2 = 1.25D + 1.5L

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

Load Types: D=dead W=wind S=snow H=earth, groundwater E=earthquake

L=live(use, occupancy) Ls=live(storage, equipment) f=fire

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

CALCULATIONS:

Bearing

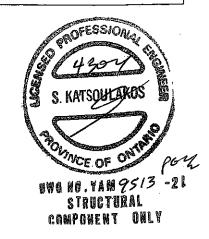
 $EIeff = 432.91 lb-in^2 K = 6.18e06 lbs$

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

Design Notes:

AMENDED 2020

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



NORDIC **STRUCTURES**

COMPANY Mar. 16, 2021 11:08

PROJECT J6 2ND FLOOR ABOVEGARAGE.wwb

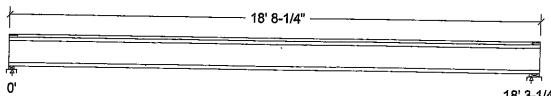
Design Check Calculation Sheet

Nordic Sizer – Canada 7.2

Loads:

Load	Туре		Distribution	Pat- tern	Location Start	[ft] End	Magnitude Start E	Unit
Load1 Load2	Dead Live	1	Full Area Full Area		Deare		20.00 40.00	psf psf

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



	U	18' 3-1/4"		
Unfactored:		1-		
Dead	183	100		
Live	365	183 365		
Factored:		363		
Total	776	776		
Bearing:				
Capacity]		
Joist	2188	2336		
Support Des ratio	5573	10841		
Joist	0.35] [
Support	-0.14	0.33		
Load case	#2	 0-07 		
Length	2-3/8	#2		
Min req'd	1-3/4	4-3/8		
Stiffener	No	1-3/4		
KD	1.00	No		
KB support	1.00	1.00		
fcp sup	769	1.00 769		
Kzcp sup	1.09	1 1 1 1 1		

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

Supports: All - Lumber Sill plate, No.1/No.2 Total length: 18' 8-1/4"; Clear span: 18' 1-1/2"; 5/8" nailed and glued OSB sheathing This section PASSES the design code check.

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

			•	
Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 776	Vr = 2336	lbs	Vf/Vr = 0.33
Moment(+)	Mf = 3547	Mr = 11609	lbs-ft	MI/Mr = 0.31
Perm. Defl'n	0.09 = < L/999	0.61 = L/360		0.16
Live Defl'n	0.19 = < L/999	0.46 = L/480	in d	0.41
Total Defl'n	0.28 = L/771	0.91 = L/240	#42	4180-2 0 31
Bare Defl'n	$0.21 = \langle L/999$	0.61 = L/360	in /	The second of th
Vibration	Lmax = 18'-3.3	Lv = 19'-11	ft 1	0 KATCOULAKOO 11.34
Defl'n	= 0.028	= 0.034	in ft in	S. KATSOULAKOS \$192
			1	0.81

J6 2ND FLOOR ABOVEGARAGE.wwb

Nordic Sizer - Canada 7.2

Page 2

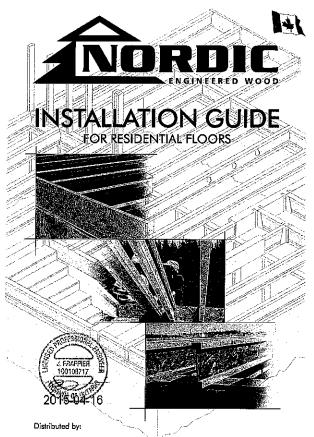
Additional	Data:							,	-	
FACTORS:	f/E	KD	KH	KZ	\mathtt{KL}	KT	KS	KN	LC#	
Vr	2336	1.00	1.00	_	_	_	_	_	#2	
Mr+	11609	1.00	1.00		1.000	_	_	_	#2	
EI	547.1 m	illion	_	-	-		_	-	#2	
CRITICAL LO	DAD COMB	INATIONS	3 :							
Shear	: LC #2	= 1.25	5D + 1.51	L						
Moment (+)			5D + 1.5I	J						
Deflection	on: LC #1	= 1.01) (perma	anent)						
	LC #2	= 1.01	+1.0L	(live))					
	LC #2	= 1.01	+ 1.0L	(tota.	L)					
	LC #2	= 1.0I) + 1.0L	(bare	joist)					
Bearing										
			C #2 = 1							
Load Type										
•					lve(stora			f=fire		
Load Patt										
All Load	Combinat:	ions (LO	cs) are l	listed i	in the An	alysis	output			
CALCULATIO	ONS:									
Eleff = 6										
"Live" de	eflection	is due	to all r	non-dead	d loads (live, w	wind, sno	ow) canp	ORMS TO OF	JC 2012

Design Notes:

AMENDED 2020

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





SAFETY AND CONSTRUCTION PRECAUTIONS

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

Avoid Accidents by Following these Important Guidelines

Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging or joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.

When the building is completed, the floor sheathing will provide lateral support for the top flonges of the I-joists. Until this sheathing is applied, temporary bracing, aften called struts, or temporary sheathing must be applied to prevent I-joist rollower or budding.

Temporary bracing or struts must be 1x4 inch minimum, or least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1127 nails fastened to the top surface of each I-plast. Notil the bracing to a lateral restraint at the end of each boy. Lap ends of adjoining bracing over at least two I-plasts.

Or, sheathing (temporary or permonent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.

3. For confilewered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.

Install and fully not permanent shoothing to each 1-joist before placing loads on the floor system. Then, stack building materials over beams at walls only.

5. Never install a damaged I-joist.

Improper storage or installation, failure to follow applicable building codes, failure to follow appn ratings for Nordic i-joists, failure to follow ollowable hale sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guideline carefully.

MAXIMUM FLOOR SPANS

- 1. Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The servicability limit states include the consideration for floor vibration and a tive load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- 2. Spans are based an a composite floor with glued-nailed oriented strand board (CSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19/2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirement given in CGBS-712.6 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the used of gyssum and/or a row of blocking at mid-span.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-jaists are used with the spans and spacings given in this table, except as required for hangers.
- 5. This span chart is based an uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
- 7. SI units conversion: 1 inch = 25.4 mm 1 foot = 0.305 m

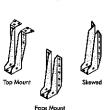
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

Joist	Joist	Simple spans					Multiple spans				
Deplh	Joist Series		On centr	e spacing			On centre	e spacing			
		12"	16"	19.2	24	12"	16"	19.2	24"		
100	. NI-20:	15-1	14-2	13-9	13'5'	16'-3'	15'-4'	14'-10'	14.7		
100 TV-100	N-40x	16-1	15'-2"	14'-8'	14'-9'	17-5	16'-5"	15'-10'	15-5		
9,1/2	NI-60	16'-3'	15'-4'	14-10"	14'11'	17-7	16-7	16'-0"	16-1		
40° 584	NI-70	17'-1"	16'-1"	15'-6"	15-7	16'-7"	17'-4'	16'-9'	16'-10'		
2.121.23	NI-80	17'-3'	16'-3"	15-8	15'-9'	16-10	17-6*	16-11	17.0		
1.0000	NI-20	16-11	16'-0"	15-5	15'-6'	16-4'	17-3	16'-8'	16.7		
138968	NI-40x	18'-1"	17-0	16'-5"	16-6	20'-0'	18-6"	17-9	17-7		
. 7 . 9	NI-60	18'-4"	1 7'-3'	16-7	16'-9"	20-3	16'-9"	18-0	18-1"		
11.7/6	NJ-70	19'-6"	16.0	17'-4"	17-5	21'-6'	19-11*	19-0	19-1		
11.79	NI-80	19'-9"	18'-3"	17'-6"	17-7	21-9	20-2	19-3	19-4		
35-45 954 37 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	NI-90	.20-2	18-7°	17'-10'	17-11'	22-3	20'-7"	19-8	19-9		
18 M 102 PK	NI-90x	20'-4"	18'-9"	17:11"	38-0"	22'-5'	20'-9'	19-10"	19-11		
\$ P. P.	NL40x	20-1*	18'-7"	17:-10	17:11	22-2	20'-6"	19-8	19'-4"		
· 500 980 高角	NI-60	20-5	18-11	18'-1'	18'-2'	22.7	20-11	20-0	20-1		
14	NI-70	21'-7"	20'-0"	19'-1"	19-2	23-10	22-1	21'-1'	21'-2'		
10000	NI-BO	21-11	20-3	19'-4"	19-5	24-3	22-5	21'-5'	21-6		
	NI-90	22-5	20'-8"	19-9	19-10	24-9	22-10°	21510	21'-10'		
30,000 (34,00)	NI-90x	22-7	20-11	19'-11'	20.0	25 0	23-1"	22'-0'	22-2		
100	NI-60	22'-3'	20'-8"	19-9	19'-10'	24-7	22-9	21'-9'	21'-10'		
100	NI-70	23'-6"	21'-9'	20-9"	20-10	26'-0"	24-0	22-11"	23-0"		
16	NI-80	23-11	22-11	21'-1"	21'-2'	26-5	24-5	23'-3'	23-4		
	NI-90	24-5	22-6	21'-5"	21'-6'	26-11	24'-10"	23-9	23-9		
	NI-90x	24'-B'	22-9'	21'-9"	211-101	27:-3*	25'-2'	24-0	24-1		

 Hongers shown illustrate the three most commonly used metal hangers to support I-joists.

I-JOIST HANGERS

- 2. All nothing must meet the hanger manufacturer's recommendations
- Hangers should be selected based on the joist depth, flange width and load capacity based on the maximum spans.
- 1. Web stiffeners are required when the



STORAGE AND HANDLING GUIDELINES

- 1. Bundle wrap can be slippery when wet. Avoid walking on wrapped
- 2. Store, stack, and handle I-joists vertically and level only.
- 3. Always stack and handle I-joists in the upright position only.
- 4. Do not store I-joists in direct contact with the ground and/or flatwise. 5. Protect I-joists from weather, and use spacers to separate bundles. -
- 6. Bundled units should be kept intact until time of installation.
- When handling I-joists with a crone on the job site, take a few simple precardions to prevent damage to the I-joists and injury to your work crew.
- Pick I-joists in bundles as shipped by the supplier.
- Orient the bundles so that the webs of the I-joists are vertical.
- Pick the bundles at the 5th points, using a spreader bar if necessary.
- 8. Do not handle Ligists in a bazizantal orientation
- 9. NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST.

FSC FSC

J. FRAPPIER



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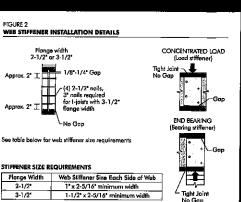


A land stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a confilever, anywhere between the co tip and the support. These values are far standard term load duration, and may be adjusted for other load durations as permit by the code. The gap between the stiffener and the flange is at the bottom.

■ A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.

SI units conversion: 1 inch = 25.4 mm

Nordic Lam or SCL



NORDIC I-JOIST SERIES 9.W 11.7g 14' 16' 9.10° 11.76° 14° S-RF No.2 1950FASR 2100FASR 1950FASR 2100FASR 2400FASR NPG lumbe 33 pieces 33 pieces 23 pieces 23 pieces 23 pieces per unit per unit per unit per unit products to adhere to strict quality control procedures through the state manufacturing process. Every phase of the operation, trong force to fine finished product, reflects our commitment to quality. Nordic Engineered Wood Lipids use only finger-jointed plack system in their flanges, ensuring consistent quality, superior straight flanges, ensuring consistent quality, superior straight flanges, page 16 and 17 and 18 and 18

Blocker block (use if hanger load exceeds 360 lbs)
Before installing a backer block to a double I-joist, drive three
additional 3* noist strough the webs and filler block where the
backer block will fit. Clinch. Install backer light to top flonge.
Use twelve 3* noils, clinched when possible. Maximum factored
existence for hanger for this detail = 1,620 lbs.

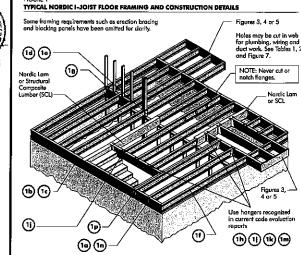
INSTALLING NORDIC I-JOISTS

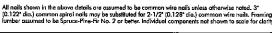
- 1. Before laying out floor system components, verify that I-joist flonge widths match hanger widths. If not, contraction
- 2. Except for cutting to length, I-joist floriges should never be cut, drilled, or notched.
- 3. Install 1-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
- 4. I joists must be anchored securely to supports before floor sheathing is attached, and supports
- 5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for interior
- 6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
- 7. Leave a 1/16-inch gap between the I-(pist end and a header.

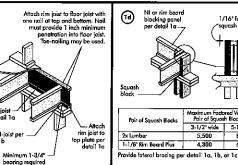
(B)

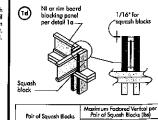
- 8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the light's bottom flange. Whenever possible, suspend or concentrated loads from the top of the I-joist. Or, ottach the load to blocking that has been securely fastened to the I-joist velos.
- Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonny.
- 10. Restrain ands of floor joists to prevent rollover. Use rim bound, rim joists or I-joist blocking panels
- 11. For t-joists installed over and beneath bearing walls, use full depth blacking panels, rim board, or squash blacks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
- 12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or nim boards. Lipist blocking panels or other engineered wood products such as nim board must be cut to fit between the Lipists, and an Lipists.compatible depth saleded.
- 13. Provide permanent lateral support of the bottom flange of all I-joist of interior supports of multiple-span joists. Similarly, support the bottom flange of all cantilevered I-joists at the end support next to the cartilever extension. In the completed structure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or struts must be used.
- 14. If square-edge ponels are used, edges must be supported between 1-joists with 2x4 blocking. Often ponels to blocking to minimize squexis. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate underlayment layer is installed.
- 15. Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

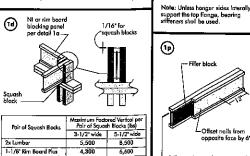
—Attach rim board to top plate using 2-1/2' wire o spiral toe-nails at 6' o.c ⑯ (B) op plate per detail 1b Blocking Ranel or Rim Joist Wertical Load* (pit) Ni Joists 3,300 Maximum Factored Uniform Vertical Load* (plf) 8,090 The uniform vertical load is limited to a joist depth of 16 inches or less and is based on standard term load duration it shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d. 1-1/8" Rim Board Plus Attach I-joist per -detail 1b The uniform vertical load is limited to a rim board depth of 16 inches

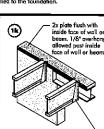










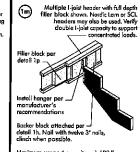


Use single i-joist for loads up to 3,300 pH, double i-joists for loads up to 6,600 pH (filler block no required). Affacts I-joist to

m board may be used in lieu of I-joists, Backer is no



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



(III)

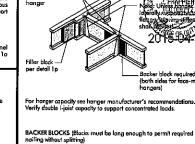
attachment per detail 1b

3' x 6' 3' x 8' 3' x 10' 3' x 12'

eximum support capacity = 1,620 lbs.



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



BACKER BLOCKS (Blocks must be long enough to permit required

Flance Width Material Thickness

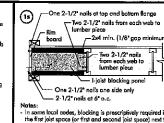
riunge wiarn	Required*	William Debu.
2-1/2*	1"	5-1/2*
3-1/21	1-1/2	7-1/4"

better for solid sown lumber and wood structural panels conforming to CAN/CSA-0325 or CAN/CSA-0437 Standard.
For foce-mount hongers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flonges. For 2" thick flonges use net depth entire 4.14".



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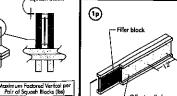
nal: Minimum 1x4 inch strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.



Notes:

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

All nails are common spiral in this detail.



LOffset noils from

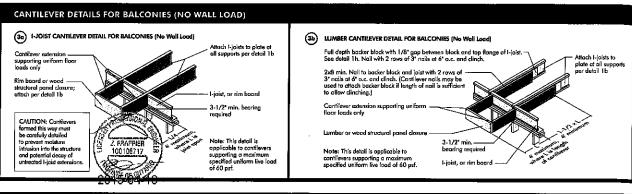
lop- or face-mount hanger nstalled per manufacturer's

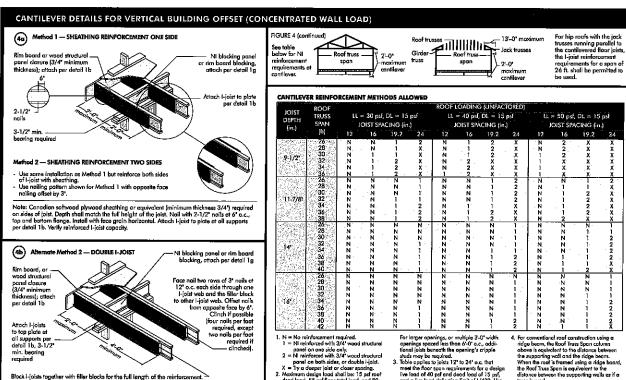
for nailing schedules for multiple seams, see the manufacturer's ecommendations.

Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist

 Filler block is required between joists for full length of span. on renger or span.

A Nail joist pagether with two rows of 3' nails at 12 inches o.c. (clinched when possible) on each side of the double l-joist. lotal of four noils per foot required. If nails can be clinched, only two nails per foot are required. 3-1/2' x 9-1/2' 1-1/2' 11-7/8' 1-1/2' 14' 16' 3-1/2 x 11-7/8 14 16 The maximum factored load that may be applied to one side of the double joist using this detail is 860 lbf/ft. Verify double -1/8" to 1/4" gap between top flange and filler black





Ni reinforced with 3/4" wood structural panel on one side only. e Ni reinforced with 3/4" wood structural panel on both sides, or double 1-joist. X = Ty a deeper joist or closer spacing. Mooimum design load shall be: 15 pair not dead load, 35 psf floor testal load, and 80 pif wall load. Wall load is based on 3-0" maximum width window or door openings. tional joist beneficial the opening 2 cripple studs may be required. 3. Toble applies to joist 12" to 24" o.c. that meet the floor spon requirements for a design live load of 40 pst and deed load of 15 pst, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing. Block i-joist together with filler blocks for the full length of the reinforcement. For I-joist flonge widths greater than 3 inches place on additional now of 3" nails along the controlline of the reinforcing panel from each side. Clinch when possible. truss is used. 5. Contilevered joists supporting girder trusses or roof beams may require additional reinforcing. BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD) 2_0* Girder Roof trusses maximum truss Roof truss Roof truss Spon Confilever For hip roofs with the jack trusses running parallel to the contilevered floor joists, the 1-joist reinforcement __ Roof truss _______ 7 2'-0" requirements for a span of 26 ft. shall be permitted to Nail reinforcement to top and bottom joist flanges with 2-1/2 nails at 6' a.c. (offset opposite face nailing by 3' when using reinforcement on both sides of I-joist) Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Notil with 2-1/2" nails at 6" o.c., top and bottom flonge. Install BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED LL = 50 psf, DL = 15 psf LL = 40 psf, DL = 15 psf A TROFESSION SPAN (fi) JOIST SPACING (in.) JOIST SPACING (in.) JOIST SPACING (in.) with face grain horizontal. Attach I-joist t plate at all supports per detail 1b. Verify (in.) 16 19.2 16 19.2 24 5b) SET-BACK DETAIL 201604 Rim board or wood — structural panel closure (3/4" minimum thickness), Provide full depth blocking Provide full depth blocking between joists over support (not shown for clarity) Affach I-joist to plate at all supports per detail 16. 3-1/2" minimum I-joist bearing required. (5c) SET-BACK CONNECTION - Nail joist end using 3° nails, toe-nail at top and bottom flanges. through joist web and web of girder using 2-1/2" noils. Alternate for opposite side. For larger openings, or multiple 3-0' width openings spaced feet from 6-0' o.c., additional justs beneath the opening's applies study may be required. 1 Table applies to joids 12*10 24* o.c. that meet the floor span requirements for a design live load of 40 pf and deed load of 15 pft, and a five load differion limit of L/480. Use 12*o.c. requirements for leaser spacing. 1 Confilement of construction using a ridge beam, the supporting wall and the ridge beam. When the roof is formed using a ridge beam, when the supporting walls can be the supporting walls can be the supporting walls can be supported by the state of trues is used. 5. Confilement of price of construction using a ridge beam, the propring and in other large beam. When the roof is formed using a ridge beam, the supporting and is other large beam. The ridge beam. The ridge beam. The ridge beam. The ridge beam is the supporting walls can be a supporting walls can be a supporting walls can be a supporting wall and the ridge beam. N = No reinforcement required. T = NI reinforced with 3/4" wood structural panel on one side only. T = NI reinforced with 3/4" wood structural.

Notes:

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

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

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centreline of any hale or duct chose opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- 2. I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified. Whenever possible, field cut holes should be centred on the middle of the web.
- The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained. between the top or bottom of the hale or opening and the adjacent I-joist flang
- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hale or twice the size of the largest square hole for twice the length of the langest rectangular hole or duct chase opening) and each hole and duct che opening shall be sized and located in compliance with the requirements of Tobies 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of colculating minimum distances between holes and/ar duct chase openings.
- Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a contilevered section of a joist. Holes of greater size may be permitted subject to
- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it
 meets the requirements of rule number 6 above.
- 10. All holes and dud chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- $11. \ \mbox{Limit}$ three maximum size holes per span, of which one may be a duct chase
- A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed ground them.

FIELD-CUT HOLE LOCATOR

8

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

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

Where:



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

For redangular holes, avoid over-cutting the corners, as this can cause unnecessor stress concentrations. Blighty rounding the corners is recommended. Starting the corners is recommended. Starting the redangular hole by drilling a 1-inch diameter hole in each of the four corners and then melking the cuts between the holes is another good method to minimize damage to the 1-jobs.

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

Joist	Joist		1.11	шии	n aisia	lice ii	om ins	ide ta	ce or a	ay sulpi	жит го	13	e or no	ार धाना	17		Spen
Depth	Series						Ros	and he	de dia	neler (in.)						adjustmen!
e E pini		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	
110 N. S. S.	NJ-20	0'-7"	1,9,	2'-10'	4.3	5-8	6.0					-	_	-	-	-	13'-6'
223.453	NI-40x	0.7	1'-6"	3-0	44	6-0	6-1				_	_		***		_	14.9
9-1/2'.	NI-60	1'-3'	2'-6"	4-0	5-4	7-0	7-5		***								14-11
	NI-70 NI-80	2.0	3-4	4-9	6-3	8-0	5-4			-	_		_	-	-	-	15'7'
-	NI-20	67	3'-6"	5-0	6.6	8-2	6-8										15-9
	NI-20 NI-40x	0.7	0.8	1.0	2-4 7-8	3 8	4.0	2.0	6-6	7.9		_	_	_	-		15'6' 16'6'
	NI-60	0.7	0.8 1.8	3.0	4.3	4.0°	444 640	5.5° 7-3°	7:0' 6:10'	8'-4' 10'-0'							16'0
11-7/8	NI-70	173	2-6	4-0	5-4	6.9	7-2	8-4	10-0*	111-21	_		_			_	17-5
11.00	NI-80	li-a-	2 10'	4.2	5.6	7-0	7.5	8.6	10-3*	114	-	_					12.7
	NI-90	0.7	Q B	15	3-2	4-10	5-4	6-9	B-9	10-2	_		_	_	_		17.11
4.1	NI-90x	0.7	0.8	0.9	2.5	4-4	4.9	6-3	0-7	10-2	=						18:0
34.50	NI-40x	7.7	0.8	0.8	1.0	23.	2.9	3.04	5.2	6'-0'	66	6-3	1D-2"		_=		17-11
35 10 5 6	NI-60	0.7	0-8	1-8	á-ú	4.3	4-8	5-8	7.2	8-0	8.6	10-4	1119				18-2
14"	N-70	0'-8'	1'-10"	3.0	4.5	5-10		7-3	8.9	7.9	10-4	12-0	13:5				19.2
19	NI-80	0.10	2-0	3-4	4.9	6.2	6-5	7-6"	9.0	10.0	10:8"	12-4	13.9		***	_	19.5
Spring Telephone	N-90	0.7	Õ-ĕ'	0-10	2.5	4.0	4-5	7.9	7.5	8-8	9.4	114	12-11	_			19.9
A1179 1	N1-90x	0.7	Ď-Ř,	0.8	2-0	3.9	4-2	5.5	7.3	B-5"	7-2						20'0'
385 C. C. C.	NI-60	ぴア	0.8	0.8	1.6	2-10		4.2	5'-6"	6-4	7-0	8.5	9-8	10-2	12.2	13.0	19-10
	NI-70	0.7	11-0	2-3	3-6	4'-10'		6.3	7-8	8-6	7.2	10.8	2'0'	12-4	14'-0'	15'-6"	20'10'
io.	NI-80	0.7	1131	2-6*	3-10	5-3	5-6'	6-6	8.0	9-0	9-5	11'-0"	1243	12'-9'	14-5	16'-0'	2112
0.000	NI-90	0-7	0.8	0.8	1.9	3'-3"	3.8	4.9	6-5	7-5	8'-0'	9-10°	11:3'	11.5	13-9	15-4	21:6
100 100	NI-90x	0.7	0.8	0.9	2-0"	3-6	4.0	5-0	6-9	7-9	8'-4'	10'-2"	11'-6"	12'-0"	_		21-10

Above table may be used for Light spacing of 24 inches on centre or less.
 Hole location distance is measured from inside face of supports to centre.
 Distances in this chart are based on uniformly loaded injets.

The above table is based on the I-joists used at their maximum span. If the I-joists are placed at less than their full maximum span (s the minimum distance from the centraline of the hole to the face of any support (0) as given above may be reduced as follows: $D_{reduced} = \frac{L_{octuel}}{SAF} \times D$

SAF

Distance from the initide face of any support to centre of hole, reduced for less than-maximum distance shall not be less than 6 inches from the face of the support to adap of the hole.

Vectual SAF Spon Adjustment Factor given in this table.

D The minimum distance from the initide face of eny support to centre of hale from this table.

If because it greater than 1, use 1 in the obove calculation for because.

SAF

TABLE 2 DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only Minimum distance from inside face of any support to centre of opening (fi-in Joist Series Duct chase length (in.) 14 16 18 6.1° 7.5° 7.1° 7.3° 7.1° 9.1° 9.1° 9.1° 9.1° 7.5° 8.6' 8.4' 8.4' 10.5' 11.0' 10.4' 10.4' 9-7* 9-8* 10-7* 11-1* 10-8* 11-1* 11-5* 11-5* 12-6* 12-7*

2015-02-16

Above table may be used for i-joint spacing of 24 inches on centre or less.

Duet chase opening location distance is measured from inside feace of supports to centre of opening.

The obove table is toused on simple, parti point point, for other applications, contrad your local distributor.

Distances are based on uniformly located from joint find meet the span resolutions for a design five local of 40 pat and dead lacted in 18 pt; of not to be read deficiently and video.

INSTALLING THE GLUED FLOOR SYSTEM

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

- 1. Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
- Snap a chalk line across the I-joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
- Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.

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

- 4. Lay the first panel with tangue side to the wall, and not in place. This protects the tangue of the next panel from damage when tapped into place with a block and sledgehammer.
- 5. Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists. 6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
- 7. After the first row of panels is in place, spread glue in the groove of one or two ponels at a time before laying the nest row. Glue line may be confinuous or spaced, but avoid squeeze-out by applying a thinner line (178 linc) than used on 1-joid flanges.
- 8. Top the second row of punels into place, using a block to protect proove edges.
- Stagger and joints in each succeeding row of panels. A 1/8-inch space between all and joints and 1/8-inch at all edges, including T&G edges, is recommended. (Use a spacer tool or an 2-1/2" common
- 10. Complete all mailting of each panel before give sets. Check the manufacturer's recommendation for oursetime. (Warm weather accelerates give setting.) Use 2* ring- or screw-shank noils for ponels 3/4-inch thick or less, and 2-1/2* ring- or screw-shank noils for thicker ponels. Space noils per the table below. Closer noil spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will corry construction loads without damage to the abuse hand.

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

Maximum	Minimum	, N	Maximum Spacing				
Joist	Ponel	Common	Ring Thread		of Fasteners		
Spacing (in.)	Thickness (in.)	Wire or Spiral Nails	Nails or Screws	Staples	Edges	Interm. Supports	
16'	5/8	2'	1-3/4'	2'	6"	12*	
1.20	5/8	2'	1-3/4"	2"	6"	12*	
24	3/4	2'	1-3/4"	21	6"	12'	

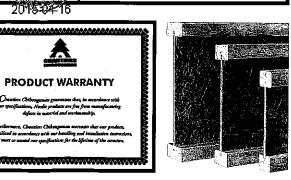
- 1. Fasteners of sheathing and subflooring shall conform to the above table.
- Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/6-inch crown driven with the crown parallel to framing.
- 3. Flooring screws shall not be less than 1/8-inch in diameter.
- Special conditions may impose heavy traffic and concentrated loads that require construction in excess
 of the minimums shown.
- 5. Use only adhesives conforming to CAN/CGS8-71.26 Standard, Adhesives for Field-Gluing Plywood to Lumber Framing for Floor System, applied in accordance with the manufacturer's recommendations. If CS9 panels with seated surfaces and edges are to be used, use only solvent based glues; check with
- Ref.: NRC-CNRC, National Building Code of Canada 2010, Toble 9.23.3.5.

IMPORTANT NOTE:

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

RIM BOARD INSTALLATION DETAILS (8a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT Rim board Joint Between Floor Joists 2-1/2" noils at 6" o.c. (typical) Rim board Joint at Corner 2-1/2" toe-nails at 6" o.c. (typical) Rim board joint -(8b) TOE-NAIL CONNECTION AT RIM BOARD (8c) 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL Existing stud wall Remove siding at ledger prior to installation $\ell/_3$ Staggered 1/2* diameter lag screws or thru-bolts with 2 min. 1 2 1-5/8" min. 5" mex. 2" min.-CHESSIO. Z FRÁPPÆR

100100717



2x ledger board (pre

oard (preservative-treated); must be greater than ar equal to the depth of the deck joist





NI-60 1-1/2" n 4 OSE 716"→ N!-20 OSB3/8' > S-P-F No.2 1950LMSR 2100f MSR 1950f MSR 2100f MSR 2400f MSR NPG Lumber 33 pieces per unif

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

WEB HOLE SPECIFICATIONS

9-1/2°

11-7/8

NI-70

NI-60 NI-70 NI-80

FIELD-CUT HOLE LOCATOR

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

1'-6" 2'-10" 4'-3" 1'-6" 3'-0" 4'-4" 2'-6" 4'-0" 5'-4" 3'-4" 4'-9" 6'-3"

. Above table may be used for I-joist spacing of 24 inches on centre or less. . Hole location distance is measured from inside face of supports to centre of hole.

of larger hole

3'-4' 4'-9'
3'-6' 5'-0'
0'-8' 1'-0'
0'-8' 1'-3'
1'-8' 3'-0'
2'-6' 4'-0'
2'-10' 4'-2'
0'-8' 1'-5'
0'-8' 0'-9'

LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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

8'-2" 3'-8" 4'-0" 5'-9" 6'-9" 7'-0" 4'-10" 4'-4" 2'-4" 2'-8" 4'-3" 5'-4" 5'-6"

4-0° 4-4" 6-0° 7-2° 7-5° 5-4° 4-9° 5-0° 5-5 7-3° 8-4° 8-6°

Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.)

Round Hale Diameter (in.)

6'-6" 7'-9" --7'-0" 8'-4" --8'-10" 10'-0" --10'-0" 11'-2" --10'-3" 11'-4" --8'-9" 10'-2" ---

Distances in this chart are based on uniformly loaded joists.

The above table is based on the iJoists being used at their maximum spans. The minimum distance as given above may be reduced for sharter spans; contact your local distributor.

or hale diameter

3/4x diameter

Aaintain minimum 1/8° space between top and

bottom flange — all duct chase openings and holes

6-1/4 7 8 8-5/8 9 10 10-3/4 11 12 12-3/4

- 5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hale permitted at that location.
- . Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hale or twice the size of the largest square hole (or twice the length of the langest side of the langest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located
- in compliance with the requirements of Tables 1 and 2, respectively.

 7. A knockout is **not** considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct ase openings. 8. Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered
- 9. A 1-1/2 inch hole or smaller can be placed anywhere in the web
- provided that it meets the requirements of rule number 6 above.

 10. All holes and duct chase openings shall be cut in a workman-like llustrated in Figure 7.
- 11. Limit three maximum size holes per span, of which one may be
- a duct chase opening.

 12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them

DUCT CHASE OPENING SIZES AND LOCATIONS

Simple Span Only

1.2.1		Minim	um distar	ice from in	side face	of suppo	orts to co	entre of o	opening	(ft - in.
Joist Depth	Joist Series				Duct Ch	ase Leng	jth (in.)			
- op	551755	8	10	12	14	16	18	20	22	24
	NI-20	4'-1"	4'-5"	4'-10"	5'-4"	5'-8"	6'-1"	6'-6"	7'-1"	7'-5
	NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6
9-1/2°	NI-60	5'-4"	5-9	6-2	6-7	7:-1"	7'-5"	8'-0°	8'-3"	8-9
	NI-70	5'-1"	5 5	5'-10"	6'-3"	6'-7"	7'-1"	7'-6"	8'-1"	8'-4
	NI-80	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8-2"	8'-6
	NI-20	5'-9"	6'-2"	6'-6"	7:-1"	7'-5°	7'-9"	8'-3"	8'-9"	9.4
	NI-40x	6'-8"	7-2	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	10'-1"	10-
	NI-60	7'-3"	7'-8"	8'-0"	8'-6"	9'-0'	9'-3"	9'-9"	10'-3"	111-
11-7/8'	NI-70	7'-1"	7-4"	7'-9"	8'-3"	8'-7"	9'-1°	9-6	10'-1°	104
	NI-80	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10-2	10'-
	NI-90	7'-6°	7'-11"	8'-4	8'-9"	9'-2"	9'-7"	10'-1"	10'-7"	10
	NI-90x	7'-7°	8'-1"	8'-5"	8'-10"	9'-4"	9'-8"	10'-2"	10'-8"	11'-
	NI-40x	8'-1"	8'-7"	9'-0"	9'-6"	10'-1"	10'-7"	11'-2"	12'-0"	12'-
	NI-60	8'-9"	9'-3"	9'-8"	10'-1"	10'-6"	11'-1"	11'-6"	13'-3"	13'-
14"	NI-70	8'-7"	9'-1"	9'-5"	9'-10"	10'-4"	10,-8	11'-2"	11'-7"	12'-
14"	NI-80	9'-0"	9'-3"	9'-9"	10'-1"	10'-7"	11'-1"	11'-6"	12'-1"	12'-
	NI-90	9'-2"	9'-8"	10'-0"	10'-6"	10'-11"		11'-9"	12-4	12'-
	NJ-90x	9'-4"	9-9	10'-3"	10-7	11'-1"	11'-7"	12'-1"	12'-7'	13'-
	NI-60	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	13'-2"	14'-1"	14'-
i	NI-70	10'-1"	10'-5"	11'-0"	11'-4"	11'-10"		12'-8"	13-3	14'-
16"	NI-80	10'-4°	10'- 9 "	11'-3"	11'- 9'	12'-1"	12'-7"	13'-1"	13'-8"	14'-
	NI-90	10'-9"	11-2	11'-8"	12'-0"	12'-6"	13'-0"	13'-6"	14-2	14'-
	NI-90x	11'-1"	11-5	11'-10"	12-4	12'-10"	13'-2"	13-9"	14'-4"	15'-

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

install electrical or small plumbing lines. They are 1-1/2 inches in diameter,

and are spaced 15 inches on centre along the length of the I-joist. Where ossible, it is preferable to use knockouts instead of field-cut holes.

Holes in webs should be cut with a sharp saw.

another good method to minimize damage to the 1-joist.

rer drill, cut or notch the flange, or over-cut the web.

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

Knackauts are prescared holes provided for the contractor's convenience to

SAFETY AND CONSTRUCTION PRECAUTIONS

rule 12

ninimum distance



lever stack building mate over unsheathed I-toists. Once sheathed, do not over-stress !-joists with concentrated loads WARNING: I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends.
When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.

Duct chase opening (see Table 2 for minimus

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

Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2* nails fastened to the top surface of each I-joist. Nail the bracing to a loteral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.

Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.

3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging. 4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.

5. Never install a damaged I-joist.

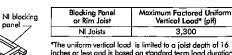
Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines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

CHANTIERS

PRODUCT WARRANTY

Chantiers Chibougamau guarantees that, in accordance with rifications, Nordic products are free from manufacturing defects in material and workmanship.

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



inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load

2-1/2" nails at 6" o.c. to top plate (when used for lateral

-1/8" Rim Board Plus

Maximum Factored Vertical Load per Pair

of Savash Blocks (II

3-1/2" 5-1/2 wide wide

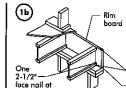
8,500

6.600

5,500

4.300

Provide lateral bracina per detail 1a or 1b



Vertical Load* (plf) 8.090 1-1/8" Rim Board Plus

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

One 2-1/2° wire or spiral nail at top and bottom flange

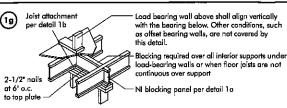
- Attach rim board to top plate using 2-1/2" wire or spiral toe-nails at 6" o.c.

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

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



from above to bearing belo blocks per Match bearing area of blocks below to post



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

load-bearing walls or when floor joists are not continuous over support

The Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double I-loist, drive time additional 25 mile 4 miles to the second state of the second state double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3" nails, clinched

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

Flange Width	Material Thickness Required*	Minimum Depth**	
2-1/2*	1.	5-1/2*	
3-1/2"	1-1/2"	7-1/4"	
1 At a 2		ENIX O an harmonia a collid con-	_ 1

wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Sta *For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges

(1m)

For 2" thick flanges use net depth minus 4-1/4"

- 2x plate flush with inside face of wall

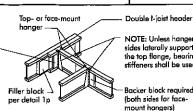
or beam. 1/8" overhang allowed past inside face of wall or beam.

NOTE: Unless hanger

sides laterally support

stiffeners shall be used

installed per manufacturer's



the top flange, bea Backer block required mount hangers)

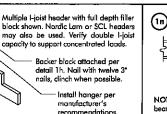
Do not hevel-cut

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

Nordic Lam or Structural Composite Lumber (SCL) beams, see the manufacturer's

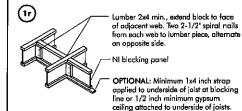
Top- or face-mount hanger nstalled per manufacturer's

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



inside face per detail 1b

NOTE: Blocking required at begring for lateral support, not





l-joist to top plate per detail 1 b

NI or rim board blocking

panel per detail 1a

(14)



NOTES:

 Support back of t-joist web during nailing to prevent damage to web/flange connection.

2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top 1-joist flange.

capacity = 1,620 lbs.

3. Filler block is required between joists for full length

– Filler

- 4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clinched when possible) on each side of the double t-joist. Total of four nails per foot required. If nails can be
- clinched, only two nails per foot are required The maximum factored load that may be applied to one side of the double joist using this detail is 860 lbf/ft. Verify double I-joist capacity.

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

One 2-1/2" nail at top and bottom flange ←2x4 min. (1/8" gap minimum) board Two 2-1/2" nails from each web to lumber piece Two 2-1/2" nails _1.5" \ 2-1/2 ─ I-ioist blocking pane One 2-1/2" nail one side only NOTES In some local codes, blocking is prescriptively require in the first joist space (or first and second joist space) next to the starter joint. Where required, see local code

the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia. common spiral nails may be substituted for 2-1/2" (0.128" dia.) ommon wire nails. raming lumber issumed to be ipruce-Pine-Fir No. 2 er better, individual components not sh to scale for darity.

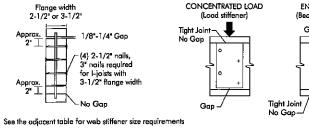
All nails shown in

WEB STIFFENERS

PECOMMENDATIONS:

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

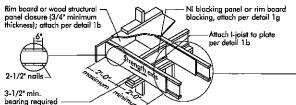
WEB STIFFENER INSTALLATION DETAILS



2-1/2" 3-1/2"

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

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

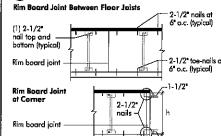


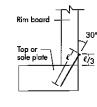
Method 2 — SHEATHING REINFORCEMENT



pattern show for Method 1

Use same installation as Method 1





1-1/2" x 2-5/16"

RIM BOARD INSTALLATION DETAILS 8b TOE-NAIL $\left(8\alpha \right)$ ATTACHMENT DETAILS WHERE RIM BOARDS ABUT CONNECTION

requirements for spacing of the blacking.
All nails are cammon spiral in this detail. END BEARING STIFFENER SIZE REQUIREMENTS (Bearing stiffener) Each Side of Web 1 x 2 5/16

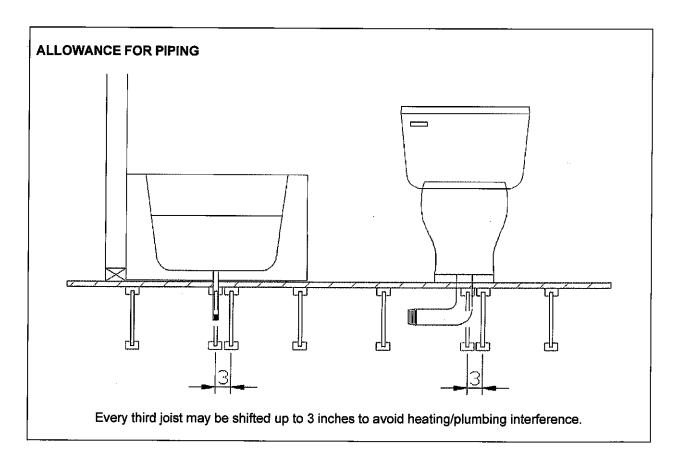


Allowance for Piping (Installation Notes)

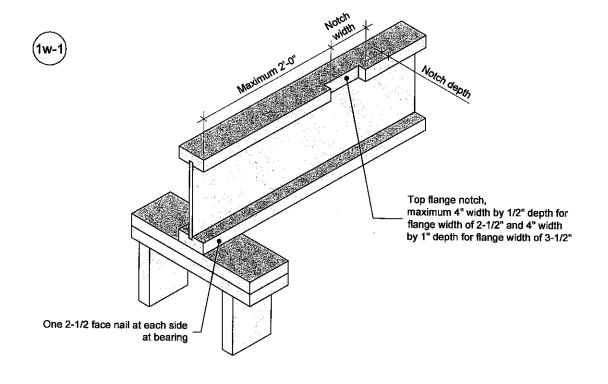
The floor layouts have usually not been checked for heating and/or plumbing interference. On-site adjustment of joists of up to 3 inches is permitted to avoid interferences. When moving a joist, the subfloor thickness shall be checked with code requirements when the joist spacing exceeds 19.2 inches.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

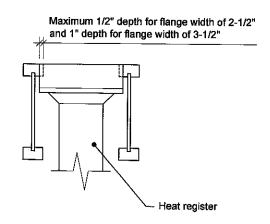
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced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

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



Revised April 12, 2012





Notes

- 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 width by 1/2-inch depth for flange width of 2-1/2 inches, and 4-inch width by 1-inch depth for flange width of 3-1/2 inches.
- 3. This detail applies to simple-span joists and multiple-span joists where the notch is located at the end half-span.
- For other applications, contact Nordic Structures.

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

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

NORDIC STRUCTURES

T 514-871-8526 1 866 817-3418

nordic.ca

Notch in I-joist for Heat Register

2177227

I-joist - Typical Floor Framing and Construction Details

DOCUMENT

DATE NUMBER

2018-04-10 1w-1



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







	anth Carios			Bare		1	1/2" Gvt	sum Ceiling	
Depth	Series			re Spacing				tre Spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
9-1/2"	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	16'-5"	15'-5"	14'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-6"	18'-5"	17'-3"	16'-7"	15'-6"
	NI-80_	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	15'-10"
	NI-20	17'-10"	16'-10"	16'-0"	14'-10"	18'-6"	17'-1"	16'-0"	14'-10"
	NI-40x	19'-4"	17'-11"	17'-3"	15'-10"	19'-11"	18'-6"	17'-9"	15'-10"
11-7/8"	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-1"
11-770	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-1 17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	17-10 18'-0"
	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-5"	22'-1"	20'-6"	19'-6"	17'-5"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"
14"	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
	NI-90x	<u>2</u> 4'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"
16"	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"
10	08-1N	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	21'-10 22'-5"

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

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



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







•	Carina		E	Bare		1	1/2" Gvp	sum Ceiling	
Depth	Series		On Cent	re Spacing				re Spacing	
	<u>.</u>	12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	14'-2"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
9-1/2"	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A
	NI-80	<u>17</u> '-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
11-7/8"	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
11-//0	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	N1-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
14"	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
16"	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
10	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

				n Blocking		Mid-	Span Blocking a	nd 1/2" Gypsun	Ceiling
Depth	Series			re Spacing				On Centre Spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	16'-8"	15'-3"	14'-5"	N/A	16'-8"	15'-3"	14'-5"	N/A
	NI-40x	17'-11"	· 16'-11"	16'-1"	N/A	18'-5"	17'-1"	16'-1"	N/A
9-1/2"	NI-60	18'-2"	17'-1"	16'-4"	N/A	18'-7"	17'-4"	16'-4"	N/A
	NI-70	19'-2"	17'-10"	17'-2"	N/A	19'-7"	18'-3"	17'-7"	N/A
	NI-80	19'-5"	18'-0"	17'-4"	N/A	19'-10"	18'-5"	17'-8"	N/A
	NI-20	19'-6"	18'-1"	17'-3"	N/A	19'-11"	18'-3"	17'-3"	N/A
	NI-40x	21'-0"	19'-6"	18'-8"	N/A	21'-7"	20'-2"	19'-2"	N/A
1 1 -7/8"	NI-60	21'-4"	19'-9"	18'-11"	N/A	21'-11"	20'-4"	19'-6"	N/A
11-//0	NI-70	221-6"	20'-10"	19'-11"	N/A	23'-0"	21'-5"	20'-5"	
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-8"	N/A
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	20 -8 21'-2"	N/A
	NI-40x	23'-7"	21'-11"	20'-11"	N/A	24'-3"	22'-7"	21'-7"	N/A
	NI-60	24'-0"	22'-3"	21'-3"	N/A	24'-8"	22"/ 22'-11"	21 -7 21'-11"	N/A
14"	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"		N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	22'-11"	N/A
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24 <i>-</i> 4 24'-11"	23'-2"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	25'-3"	23'-9"	N/A
	Nt-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"		24'-2"	N/A
16"	NI-80	28'-2"	26'-1"	24'-10"	N/A		26'-5"	25'-2"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"		28'-10"	26'-9"	25'-6"	N/A
	55%		20 20		N/A	29'-7"	27'-5"	26'-2"	N/A

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

Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
 Minimum bearing length shall be 1-3/4 inches for the end bearings.

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

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

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



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







			В	are		1/2" Gypsum Ceiling					
Depth	Series		On Cent	re Spacing			On Centre Spacing				
		12"	16"	19.2"	24"	12"	16"	19.2"	24"		
	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"		
	N1-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"		
9-1/2"	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	16'-7"	15'-11"	15'-3"		
	NI-70	18'-0"	16'-11"	16'-3"	15'-7"	18'-5"	17'-3"	16'-7"	15'-11"		
	พ-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"		
	NI-20	17'-10"	16'-10"	16'-2"	15'-6"	18'-6"	17'-4"	16'-9"	16'-1"		
	NI-40x	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	18'-6"	17'-9"	17'-0"		
11-7/8"	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"		
11-7/0	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"		
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"		
	x0 2 -1N	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"		
	NI-40x	21'-5"	19'-10"	18'-11"	17'-11"	22'-1"	20'-6"	19'-7"	18'-7"		
	N1-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"		
14"	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"		
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"		
	N1-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"		
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"		
16"	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"		
10	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"		
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"		

			Mid-Spa	n Blocking		Mid-S	pan Blocking ar	nd 1/2" Gypsum	Ceiling		
Depth	Series			re Spacing	_		On Centre Spacing				
		12"	16"	19.2"	24"	12"	16"	19.2"	24"		
	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-S"	14'-6"	13'-5"		
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"		
9-1/2"	N1-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"		
	NI-70	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17'-10"	16'-7"		
	Ni-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"		
	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"		
	N1-40x	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'-7"	18-4"	22'-8"	20'-10"	19'-8"	18'-4"		
	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"	21'-2"	19'-9"		
	N1-80	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"	21'-5"	20'-0"		
	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"		
	NI-40x	24'-5"	22'- 9 "	21'-8"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"		
	NI-60	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"		
14"	NI-70	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"	23'-9"	22'-4"		
	NI-80	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"		
	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"		
	NI-60	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"		
16"	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"		
	NI-80	29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"		
	NI-90x	29'-11"	27'-10"	26'-6"	25'-0"	30'-6"	28'-5"	27'-2"	25'-8"		

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

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

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

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

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

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



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







Depth	Series	Bare On Centre Spacing				1/2" Gypsum Ceiling On Centre Spacing			
		9-1/2"	NI-20	15'-1"	14'-1"	13'-3"	N/A	15'-7"	14'-1"
N1-40x	16'-1"		15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
NI-60	16'-3"		15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
NI-70	17'-1"		16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-1 0"	N/A
NI-80	17'-3"		16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
11-7/8"	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
	N1-90x	20'-4"	18'-9"	<u> 17</u> '-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
14"	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
16"	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20 '-9 "	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'- 9 "	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

Depth	Series	Mid-Span Blocking On Centre Spacing				Mid-Span Blocking and 1/2" Gypsum Ceiling On Centre Spacing			
		9-1/2"	NI-20	15'-7"	14'-1"	13'-3"	N/A	15'-7"	14'-1"
NI-40x	17'-9"		16'-1"	15'-1"	N/A	17'-9"	16'-1"	15'-1"	N/A
NI-60	18'-1"		16'-4"	15'-4"	N/A	18'-1"	16'-4"	15'-4"	N/A
NI-70	19'-2"		17'-10"	16'- 9 "	N/A	19'-7"	17'-10"	16'-9"	N/A
NI-80	19'-5"		18'-0"	17'-1"	N/A	19'-10"	18'-3"	17'-1"	N/A
11-7/8"	N1-20	18'-9"	17'-0"	16'-0"	N/A	18'-9"	17'-0"	16'-0"	N/A
	NI-40x	21'-0"	19'-3"	17'-9"	N/A	21'-3"	19'-3"	17'-9"	N/A
	NI-60	21'-4"	19'-8"	18'-5"	N/A	21'-8"	19'-8"	18'-5"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-4"	20'-0"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-5"	N/A
	NJ-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
14"	NI-40x	23'-7"	21'-5"	19'-6"	N/A	24'-1"	21'-5"	19'-6"	N/A
	NI-60	24'-0"	22'-3"	21'-0"	N/A	24'-8"	22'-5"	21'-0"	N/A
	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-9"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
16"	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	24'-10"	23'-4"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	2 6 '-9"	25'-6"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A

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