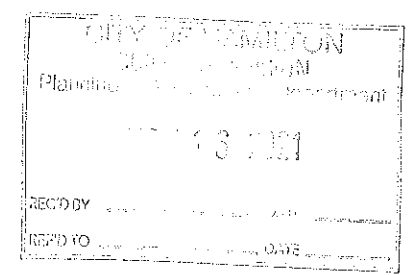


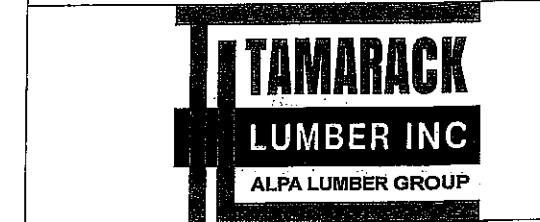
Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	17
J2	18-00-00	11 7/8" NI-40x	1	16
J1DJ	18-00-00	11 7/8" NI-40x	2	4
J3	6-00-00	11 7/8" NI-40x	1	4
J4	4-00-00	11 7/8" NI-40x	1	1
J5	2-00-00	11 7/8" NI-40x	1	2
J6	20-00-00	11 7/8" NI-80	1	36
B4S	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	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
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

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



DATE: 2021-03-19

1st FLOOR



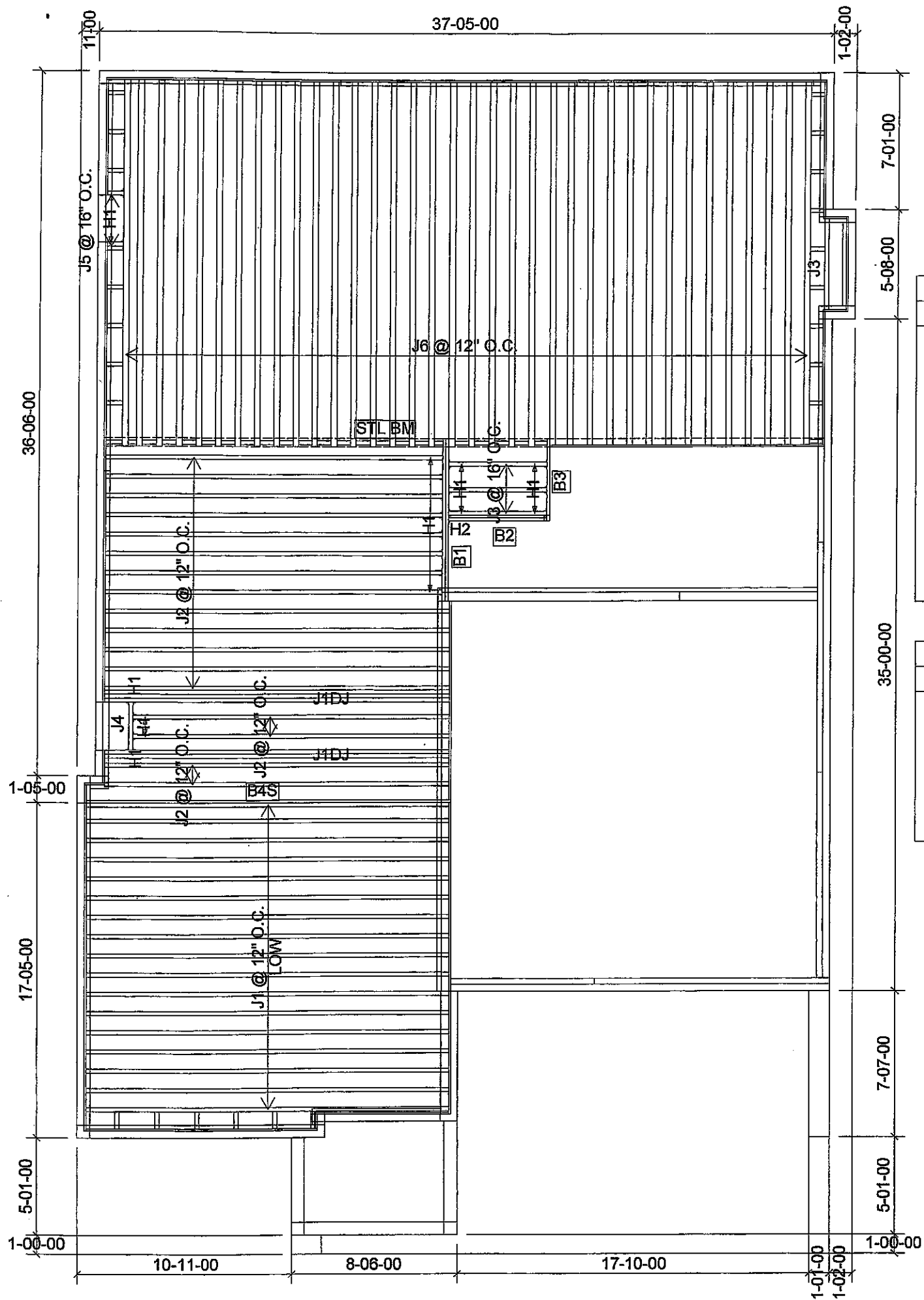
FROM PLAN DATED: 2021/2  
BUILDER: GREENPARK HOMES  
SITE: RUSSELL GARDENS PH4  
MODEL: SPRINGFIELD 3S  
ELEVATION: 3  
LOT:  
CITY: HAMILTON

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

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

SUBFLOOR: 3/4" GLUED AND NAILED

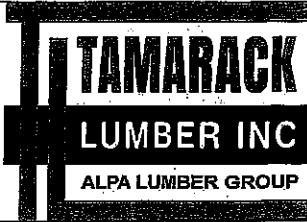


Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	17
J2	18-00-00	11 7/8" NI-40x	1	17
J1DJ	18-00-00	11 7/8" NI-40x	2	4
J3	6-00-00	11 7/8" NI-40x	1	4
J4	4-00-00	11 7/8" NI-40x	1	1
J5	2-00-00	11 7/8" NI-40x	1	2
J6	20-00-00	11 7/8" NI-80	1	36
B4S	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	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
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

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

DATE: 2021-03-19

1st FLOOR OPT GUEST  
SUITE



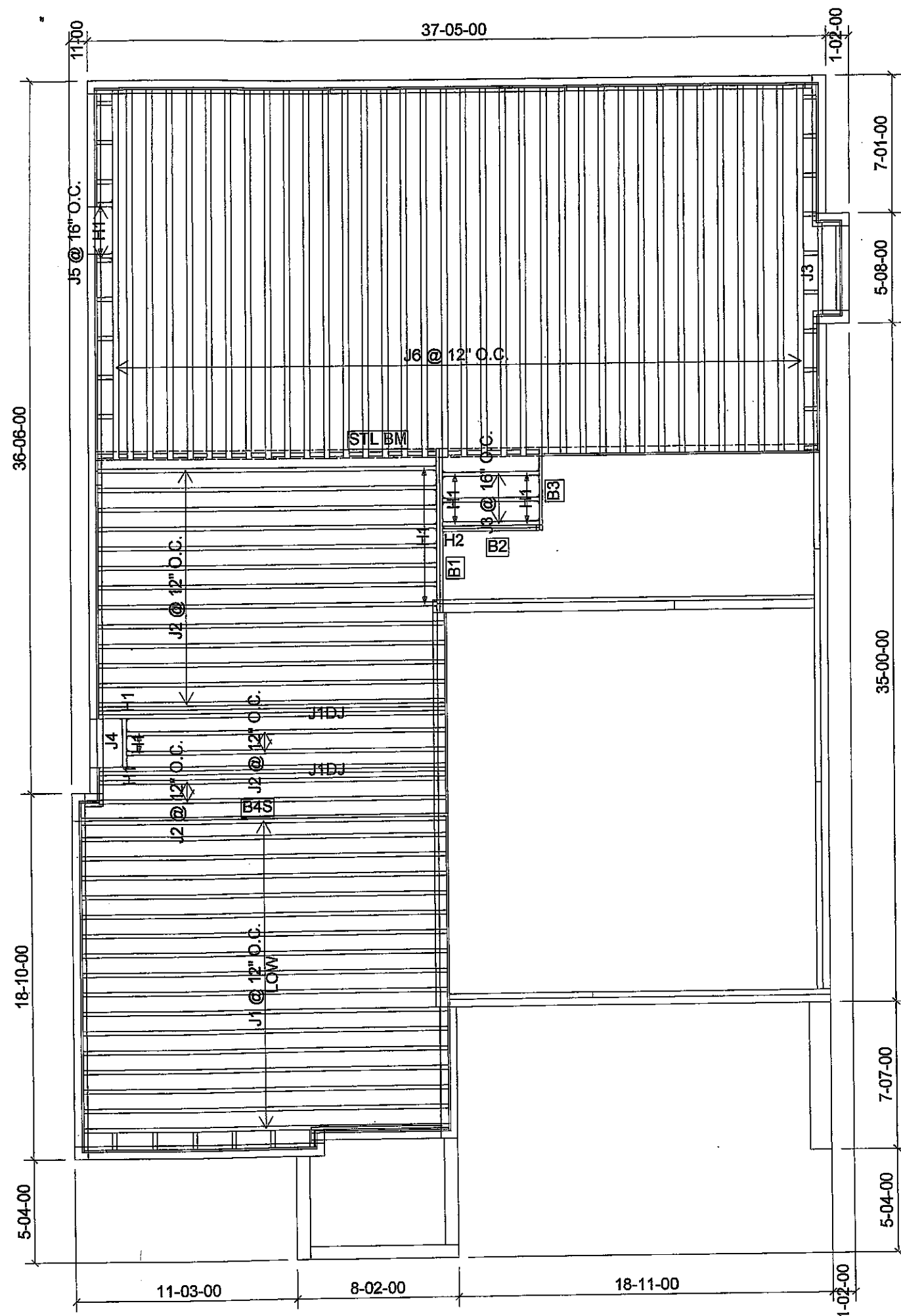
FROM PLAN DATED: 2021/2  
BUILDER: GREENPARK HOMES  
SITE: RUSSELL GARDENS PH4  
MODEL: SPRINGFIELD 3S  
ELEVATION: 3  
LOT:  
CITY: HAMILTON

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  
REQ'D UNDER INTERIOR UNIFORM LO  
BEARING WALLS. MULTIPLE SQUASH  
BLOCKS REQ'D UNDER CONCENTRATED  
LOADS. SEE FIGURE 1. CANTILEVERED  
JOISTS INCLUDING CANT' OVER BRICK  
JOIST BLOCKING ALONG BEARING WALL  
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

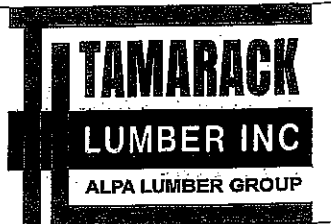


Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	17
J2	18-00-00	11 7/8" NI-40x	1	17
J1DJ	18-00-00	11 7/8" NI-40x	2	4
J3	6-00-00	11 7/8" NI-40x	1	4
J4	4-00-00	11 7/8" NI-40x	1	1
J5	2-00-00	11 7/8" NI-40x	1	2
J6	20-00-00	11 7/8" NI-80	1	36
B4S	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	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
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

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

DATE: 2021-03-19

1st FLOOR OPT GUEST  
SUITE



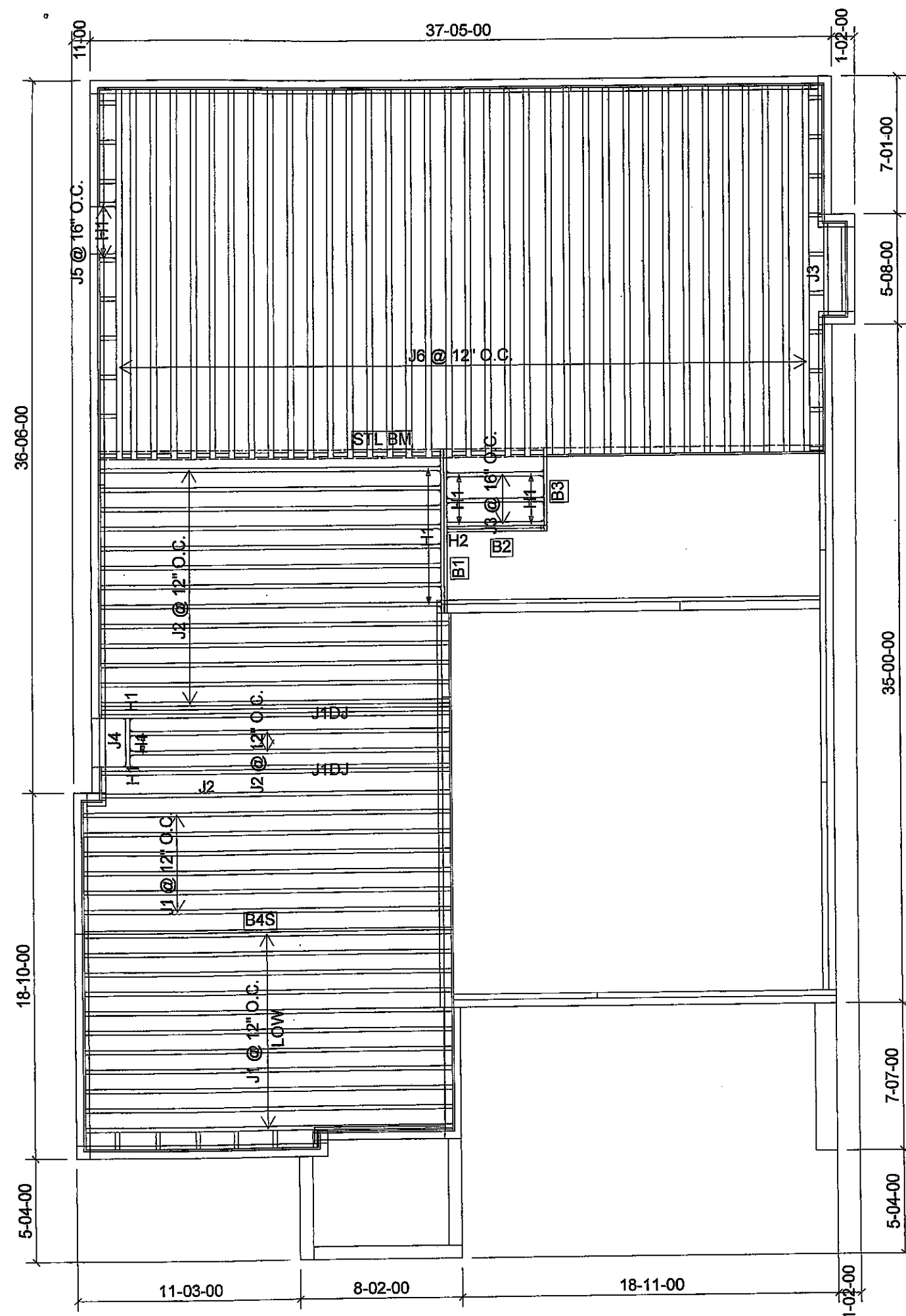
FROM PLAN DATED: 2021/2  
 BUILDER: GREENPARK HOMES  
 SITE: RUSSELL GARDENS PH4  
 MODEL: SPRINGFIELD 3S  
 ELEVATION: 2  
 LOT:  
 CITY: HAMILTON

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 LO/  
 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** INCLUDII  
**DUCT CHASE** AND **FIELD CUT OPENIN**  
 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/ft<sup>2</sup>  
 DEAD LOAD: 15.0 lb/ft<sup>2</sup>  
 TILE LOAD: 20.0 lb/ft<sup>2</sup>

SUBFLOOR: 3/4" GLUED AND NAILED

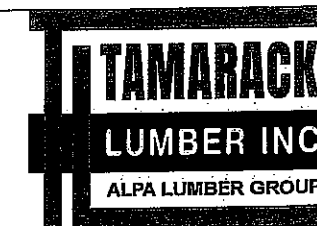


Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	17
J2	18-00-00	11 7/8" NI-40x	1	16
J1DJ	18-00-00	11 7/8" NI-40x	2	4
J3	6-00-00	11 7/8" NI-40x	1	4
J4	4-00-00	11 7/8" NI-40x	1	1
J5	2-00-00	11 7/8" NI-40x	1	2
J6	20-00-00	11 7/8" NI-80	1	36
B4S	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	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
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

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

DATE: 2021-03-19

1st FLOOR



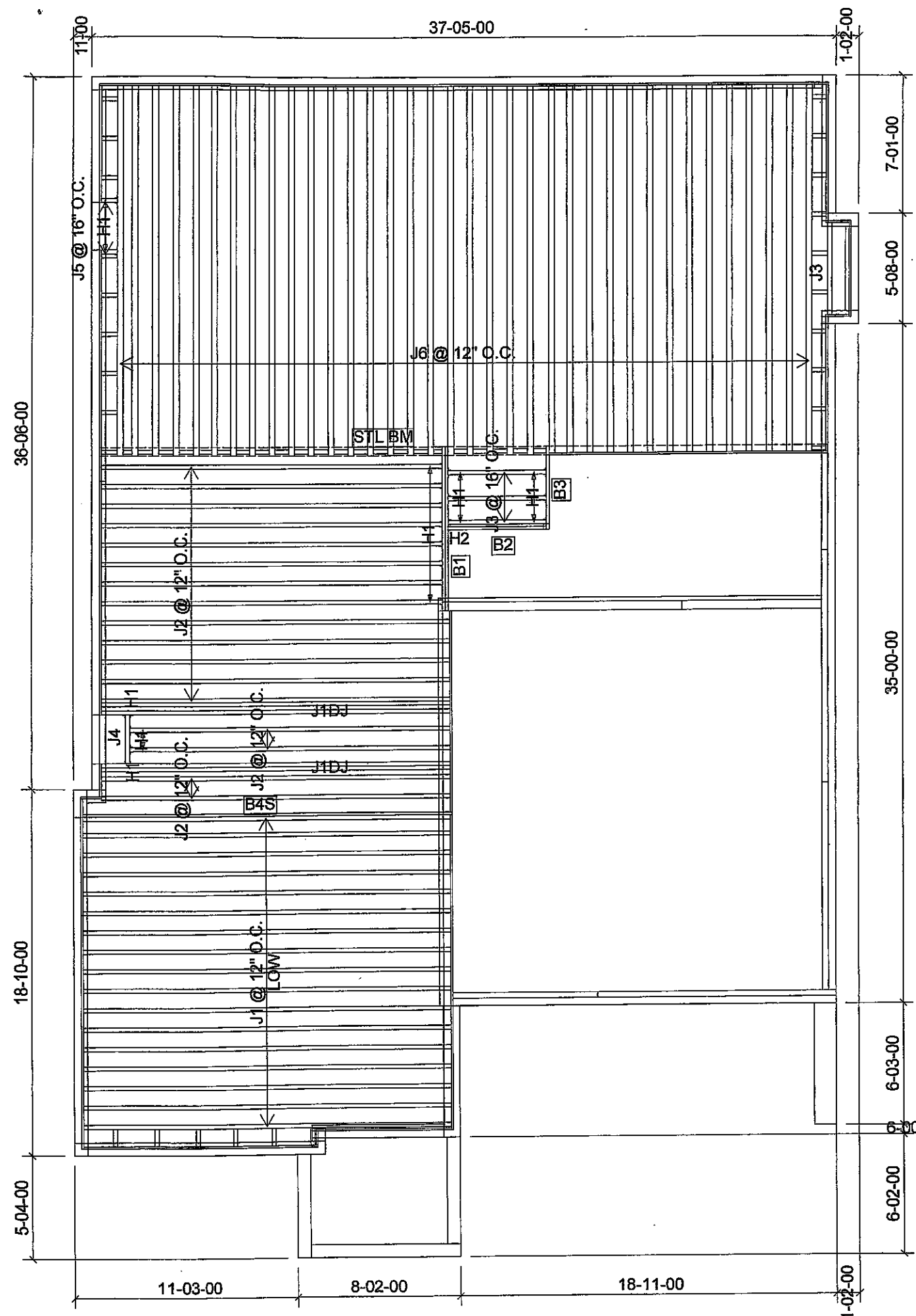
FROM PLAN DATED: 2021/2  
 BUILDER: GREENPARK HOMES  
 SITE: RUSSELL GARDENS PH4  
 MODEL: SPRINGFIELD 3S  
 ELEVATION: 2  
 LOT:  
 CITY: HAMILTON

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

LOADING:  
 DESIGN LOADS: L/480.000  
 LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
 DEAD LOAD: 15.0 lb/ft<sup>2</sup>  
 TILE LOAD: 20.0 lb/ft<sup>2</sup>

SUBFLOOR: 3/4" GLUED AND NAILED

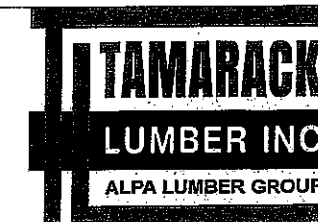


Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	17
J2	18-00-00	11 7/8" NI-40x	1	17
J1DJ	18-00-00	11 7/8" NI-40x	2	4
J3	6-00-00	11 7/8" NI-40x	1	4
J4	4-00-00	11 7/8" NI-40x	1	1
J5	2-00-00	11 7/8" NI-40x	1	2
J6	20-00-00	11 7/8" NI-80	1	36
B4S	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	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
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

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

DATE: 2021-03-19

1st FLOOR OPT GUEST  
SUITE



FROM PLAN DATED: 2021/2

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH4

MODEL: SPRINGFIELD 3S

ELEVATION: 1

LOT:

CITY: HAMILTON

SALESMAN: RICK DICIANO

DESIGNER: AJ

REVISION:

#### NOTES:

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

**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 #2  
REQ'D UNDER INTERIOR UNIFORM LO  
BEARING WALLS. **MULTIPLE SQUASH  
BLOCKS** REQ'D UNDER CONCENTRAT  
LOADS. SEE FIGURE 1. **CANTILEVERE  
JOISTS** INCLUDING **CANT' OVER BRIC**  
**I-JOIST** BLOCKING ALONG BEARING A  
RIMBOARD CLOSURE AT ENDS. SEE  
FIGURES 4 & 5 FOR REINFORCEMENT  
REQUIREMENTS. FOR **HOLES** INCLUDI  
**DUCT CHASE** AND **FIELD CUT OPENIN**  
SEE FIGURE 7, TABLES 1 & 2. **CERAM**  
APPLICATION AS PER O.B.C 9.30.6.

#### LOADING:

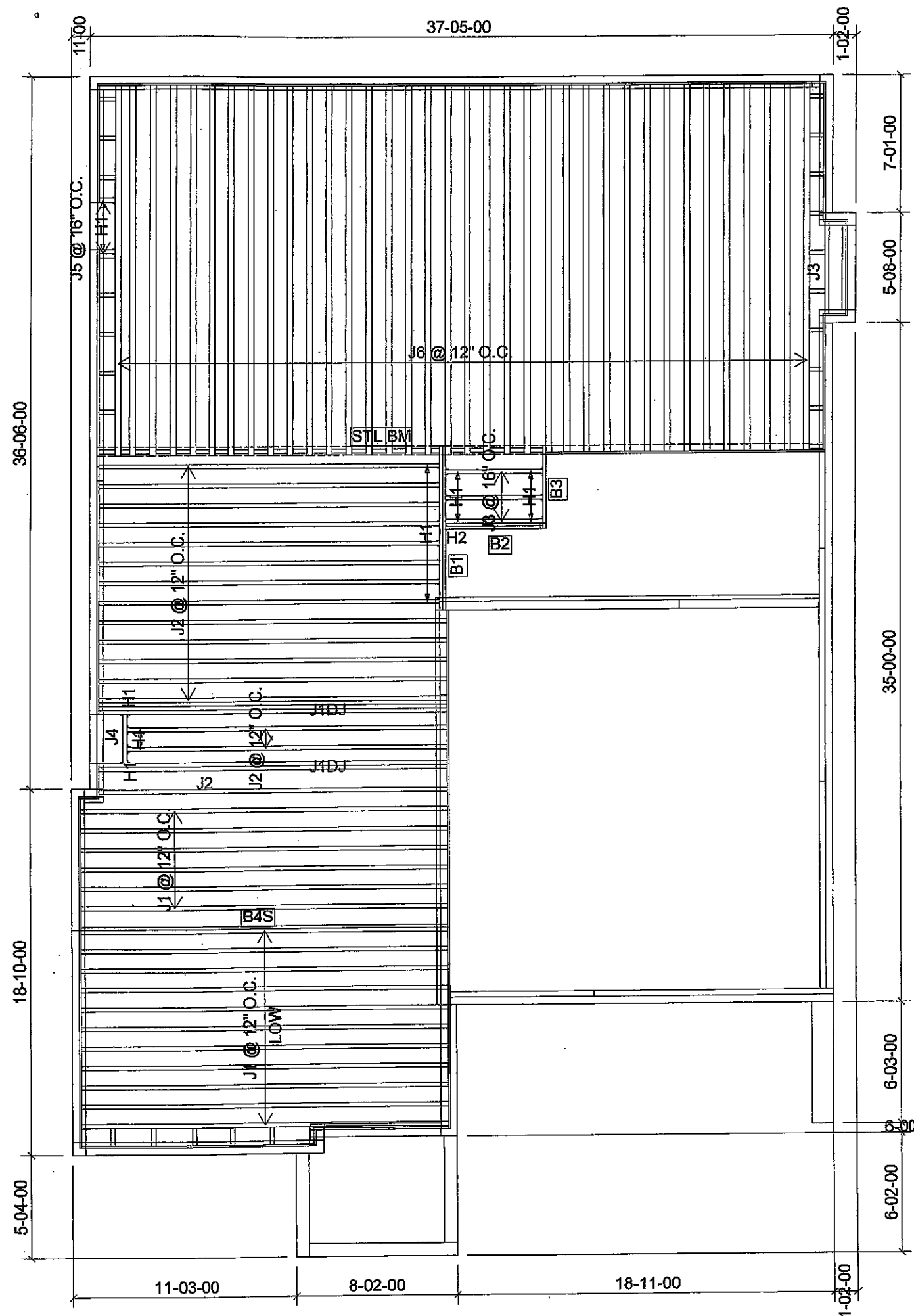
DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft<sup>2</sup>

DEAD LOAD: 15.0 lb/ft<sup>2</sup>

TILE LOAD: 20.0 lb/ft<sup>2</sup>

SUBFLOOR: 3/4" GLUED AND NAILED

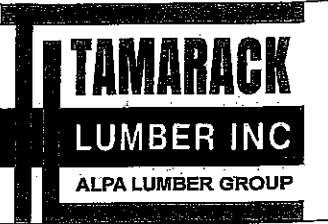


Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	17
J2	18-00-00	11 7/8" NI-40x	1	16
J1DJ	18-00-00	11 7/8" NI-40x	2	4
J3	6-00-00	11 7/8" NI-40x	1	4
J4	4-00-00	11 7/8" NI-40x	1	1
J5	2-00-00	11 7/8" NI-40x	1	2
J6	20-00-00	11 7/8" NI-80	1	36
B4S	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	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
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

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

DATE: 2021-03-19

1st FLOOR



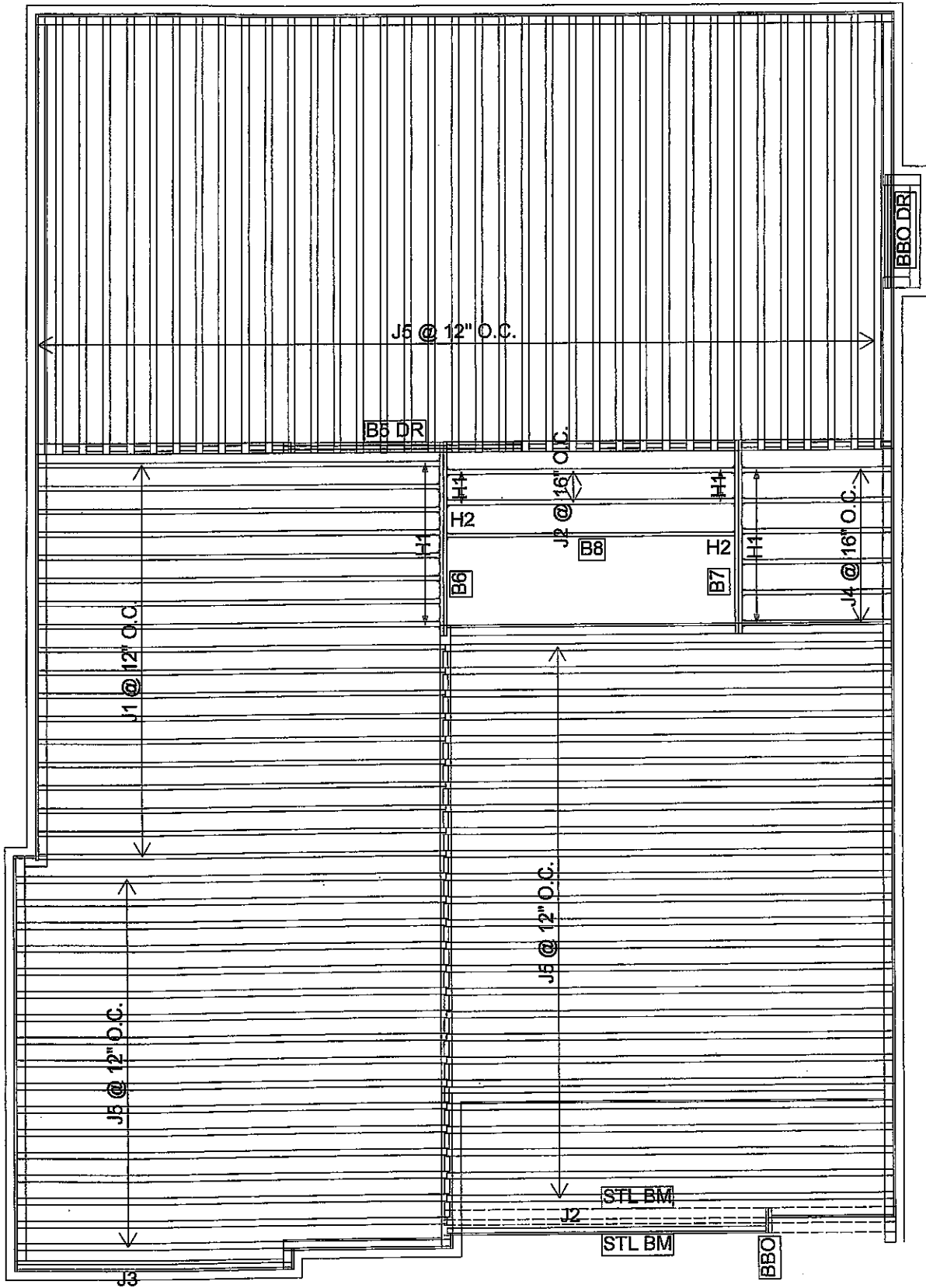
FROM PLAN DATED: 2021/2  
BUILDER: GREENPARK HOMES  
SITE: RUSSELL GARDENS PH4  
MODEL: SPRINGFIELD 3S  
ELEVATION: 1  
LOT:  
CITY: HAMILTON

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 LOADING BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK JOIST BLOCKING ALONG BEARING WALL RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIELD CUT OPENINGS SEE FIGURE 7, TABLES 1 & 2. CERAMIC TILE APPLICATION AS PER O.B.C 9.30.6.

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

SUBFLOOR: 3/4" GLUED AND NAILED

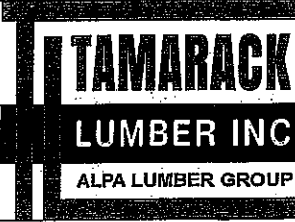


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	18
J2	14-00-00	11 7/8" NI-40x	1	3
J3	12-00-00	11 7/8" NI-40x	1	1
J4	8-00-00	11 7/8" NI-40x	1	6
J5	20-00-00	11 7/8" NI-80	1	79
B5 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B8	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B7	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

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

DATE: 2021-04-29

2ND FLOOR

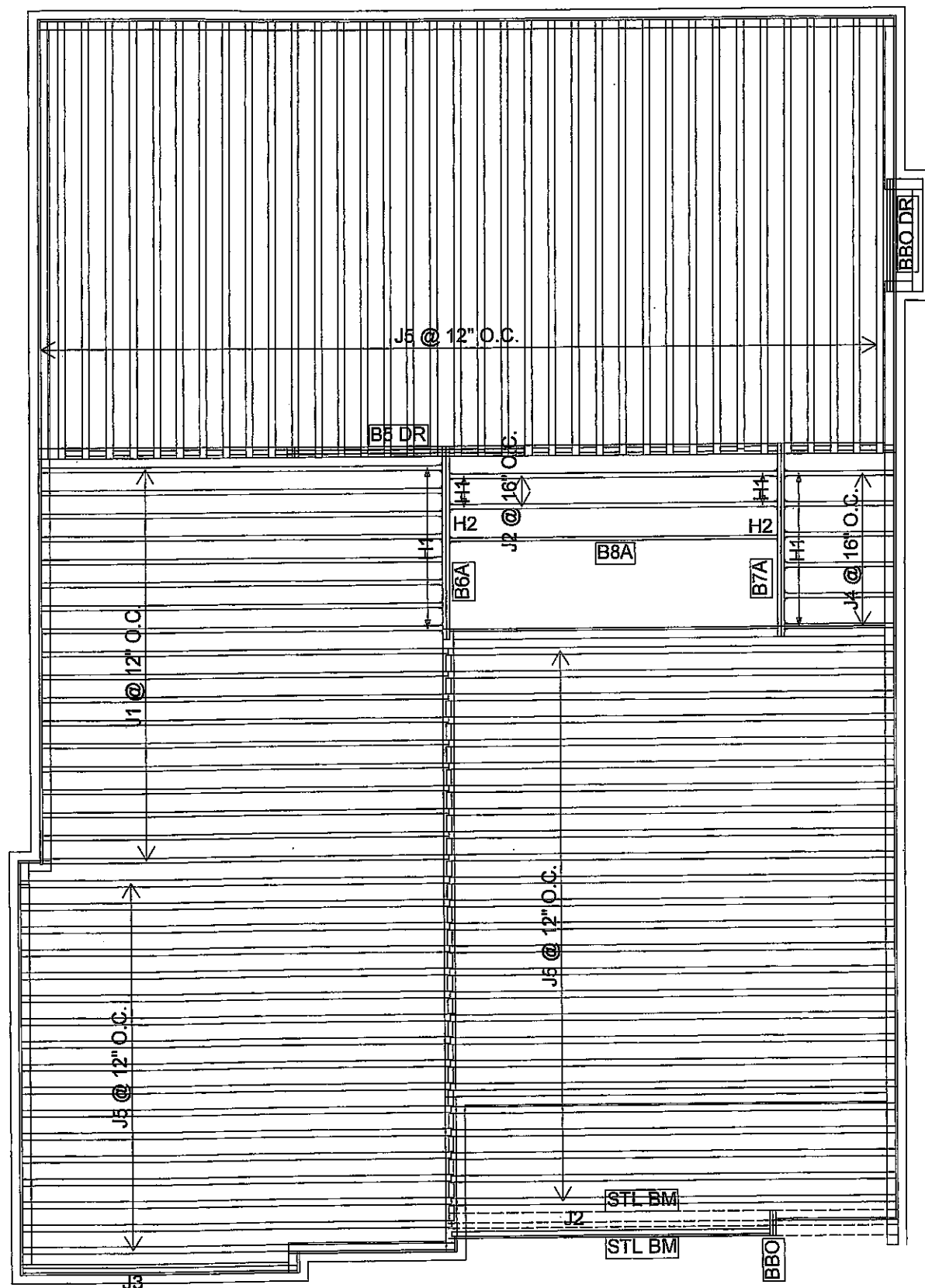


FROM PLAN DATED: 2021/2  
 BUILDER: GREENPARK HOMES  
 SITE: RUSSELL GARDENS PH4  
 MODEL: SPRINGFIELD 3S  
 ELEVATION: 1  
 LOT:  
 CITY: HAMILTON  
 SALESMAN: RICK DICIANO  
 DESIGNER: AJ  
 REVISION:

NOTES:  
 REFER TO THE NORDIC INSTALLATIO  
 GUIDE FOR PROPER STORAGE AND  
 INSTALLATION.  
 SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2  
 REQ'D UNDER INTERIOR UNIFORM LO  
 BEARING WALLS. MULTIPLE SQUASH  
 BLOCKS REQ'D UNDER CONCENTRAT  
 LOADS. SEE FIGURE 1. CANTILEVERE  
 JOISTS INCLUDING CANT' OVER BRIC  
 I-JOIST BLOCKING ALONG BEARING A  
 RIMBOARD CLOSURE AT ENDS. SEE  
 FIGURES 4 & 5 FOR REINFORCEMENT  
 REQUIREMENTS. FOR HOLES INCLUDI  
 DUCT CHASE AND FIELD CUT OPENIN  
 SEE FIGURE 7, TABLES 1 & 2. CERAM  
 APPLICATION AS PER O.B.C 9.30.6.

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

SUBFLOOR: 5/8" GLUED AND NAILED



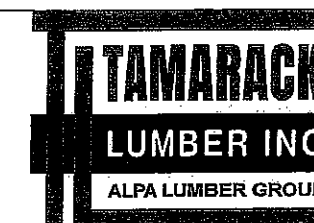
Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	18
J2	14-00-00	11 7/8" NI-40x	1	3
J3	12-00-00	11 7/8" NI-40x	1	1
J4	6-00-00	11 7/8" NI-40x	1	6
J5	20-00-00	11 7/8" NI-80	1	79
B5 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B8A	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6A	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B7A	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

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

DATE: 2021-04-29

2ND FLOOR OPT 10'

MATERIAL BLOCK



FROM PLAN DATED: 2021/2

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH4

MODEL: SPRINGFIELD 3S

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

#### LOADING:

DESIGN LOADS: L/480.000

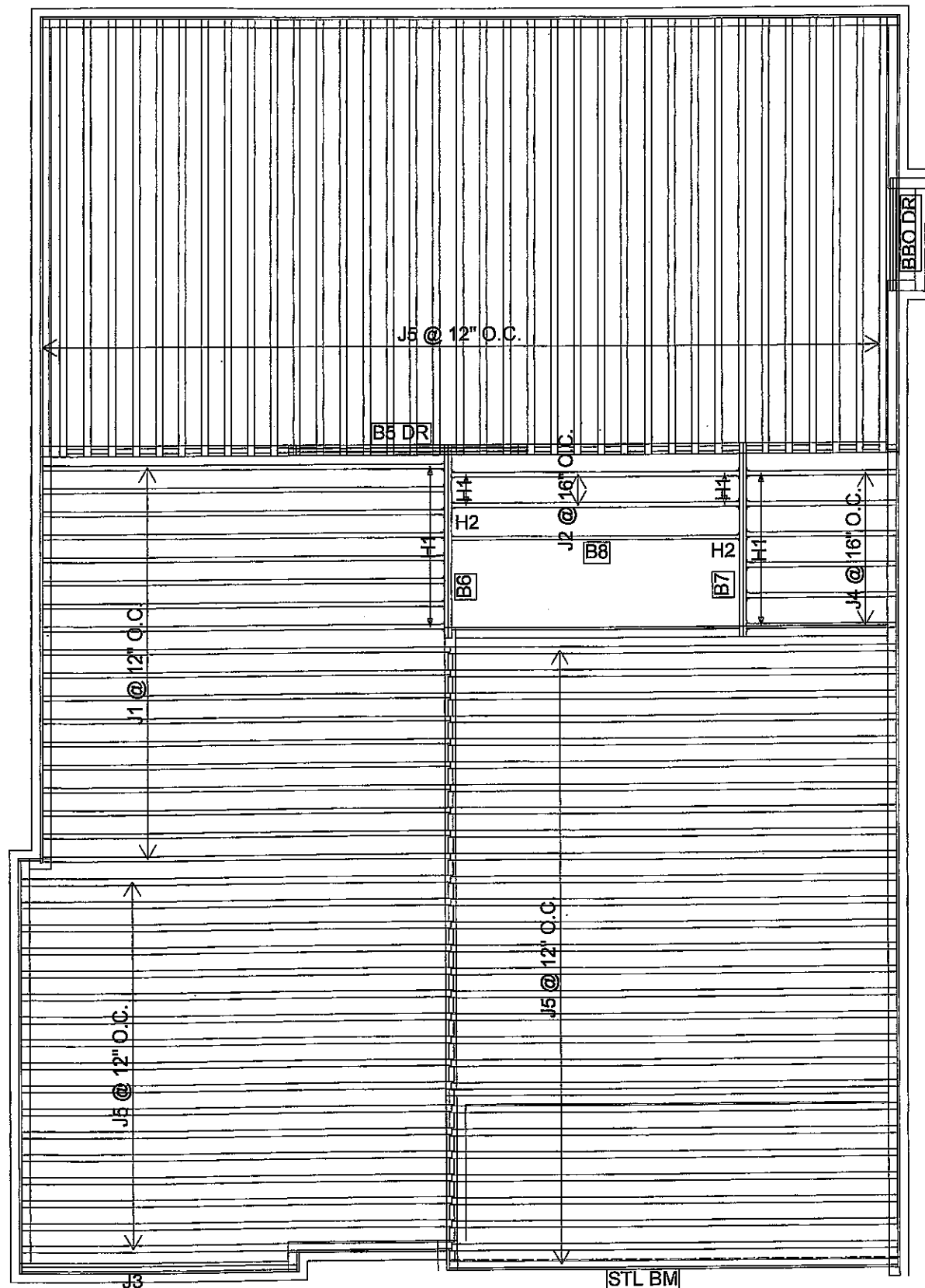
LIVE LOAD: 40.0 lb/ft<sup>2</sup>

DEAD LOAD: 15.0 lb/ft<sup>2</sup>

TILE LOAD: 20.0 lb/ft<sup>2</sup>

SUBFLOOR: 5/8" GLUED AND NAILED



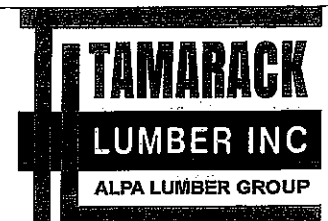


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	18
J2	14-00-00	11 7/8" NI-40x	1	2
J3	12-00-00	11 7/8" NI-40x	1	1
J4	8-00-00	11 7/8" NI-40x	1	6
J5	20-00-00	11 7/8" NI-80	1	82
B5 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B8	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B7	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

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

DATE: 2021-04-29

2ND FLOOR



FROM PLAN DATED: 2021/2

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH4

MODEL: SPRINGFIELD 3S

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

#### LOADING:

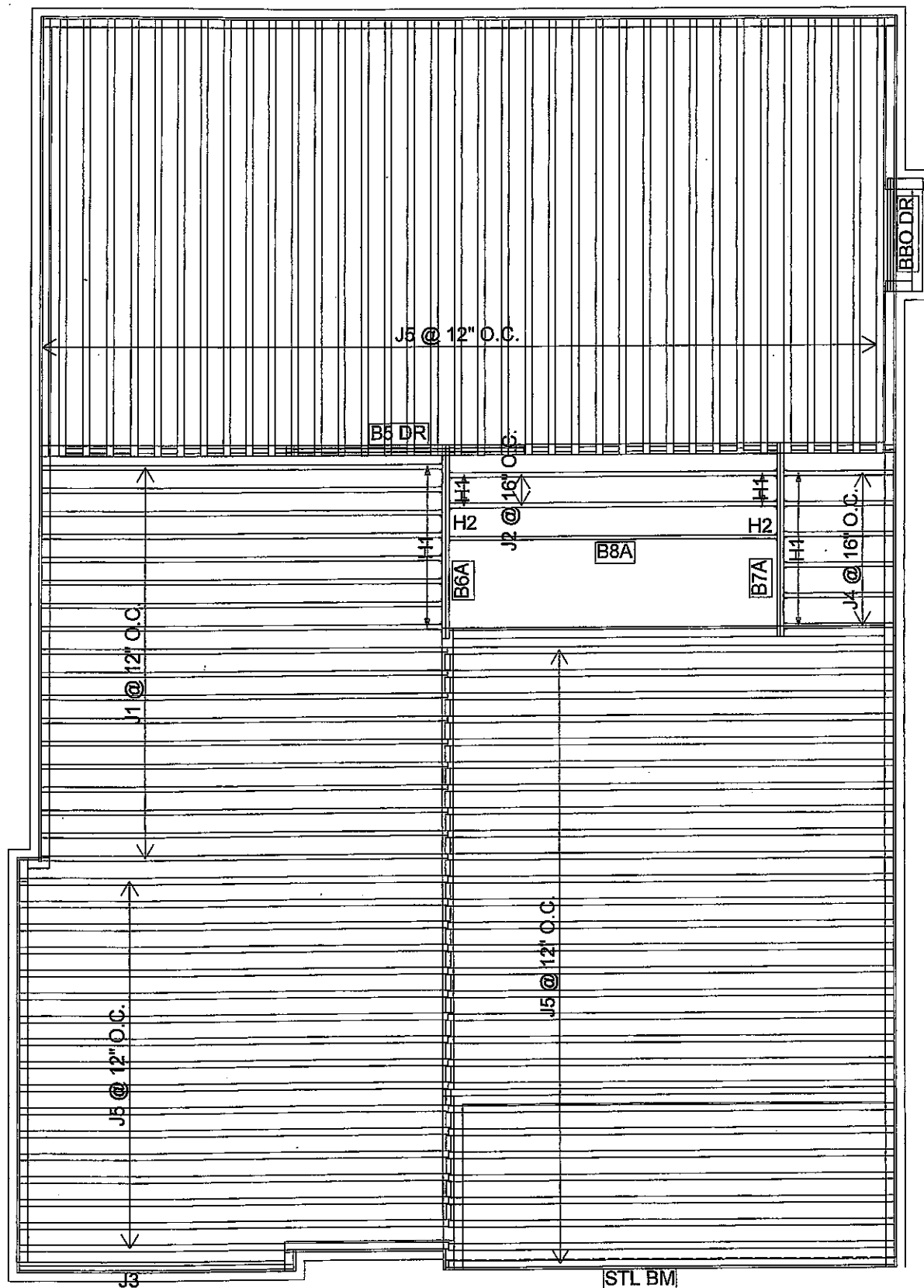
DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft<sup>2</sup>

DEAD LOAD: 15.0 lb/ft<sup>2</sup>

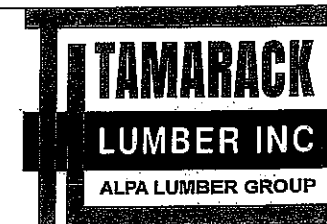
TILE LOAD: 20.0 lb/ft<sup>2</sup>

SUBFLOOR: 5/8" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	18
J2	14-00-00	11 7/8" NI-40x	1	2
J3	12-00-00	11 7/8" NI-40x	1	1
J4	6-00-00	11 7/8" NI-40x	1	6
J5	20-00-00	11 7/8" NI-80	1	82
B5 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B8A	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6A	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B7A	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

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



FROM PLAN DATED: 2021/2  
BUILDER: GREENPARK HOMES  
SITE: RUSSELL GARDENS PH4  
MODEL: SPRINGFIELD 3S  
ELEVATION: 2  
LOT:  
CITY: HAMILTON  
SALESMAN: RICK DICIANO  
DESIGNER: AJ  
REVISION:

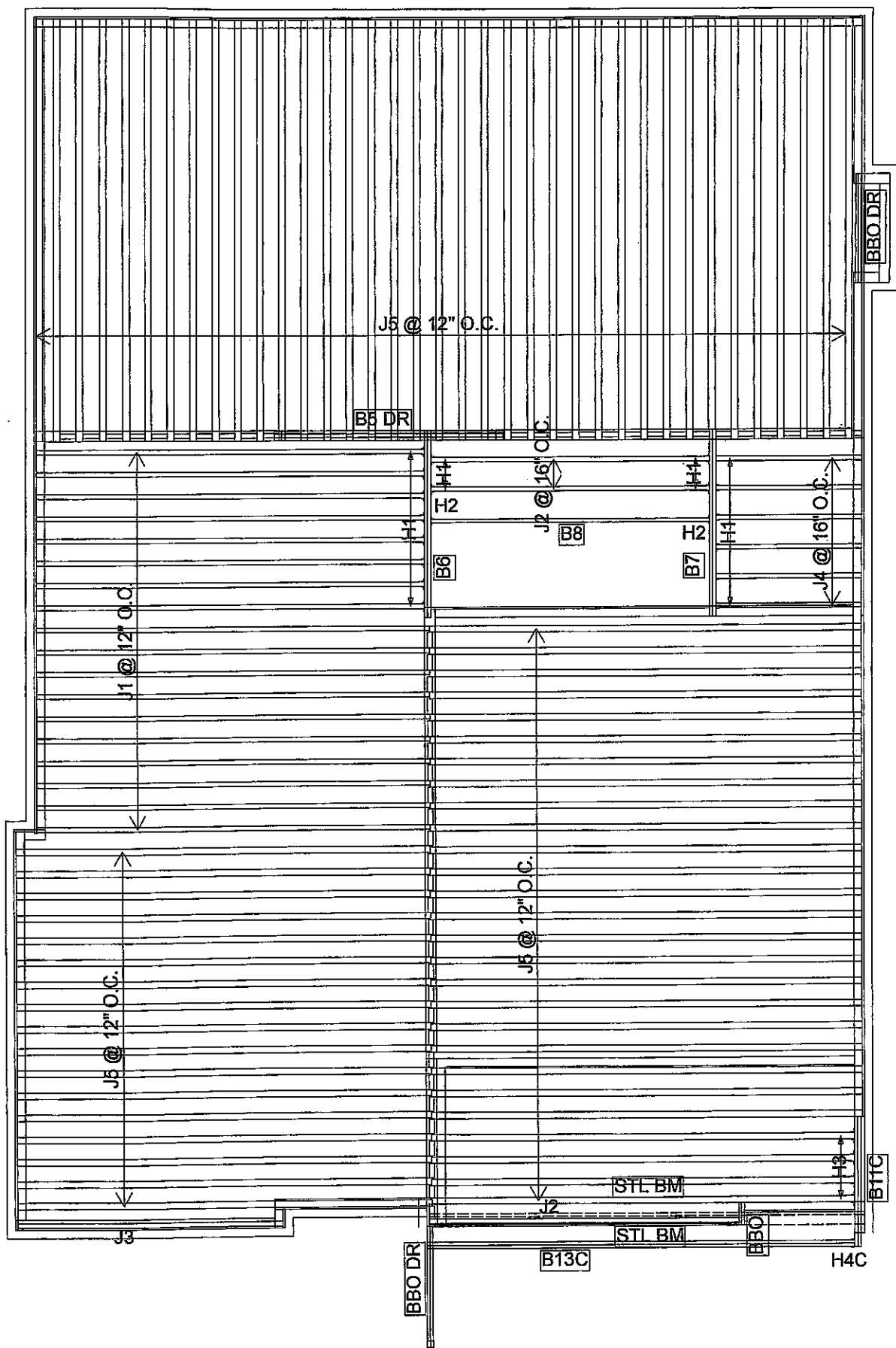
NOTES:  
REFER TO THE NORDIC INSTALLATIO  
GUIDE FOR PROPER STORAGE AND  
INSTALLATION.  
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2  
REQ'D UNDER INTERIOR UNIFORM LO  
BEARING WALLS. MULTIPLE SQUASH  
BLOCKS REQ'D UNDER CONCENTRAT  
LOADS. SEE FIGURE 1. CANTILEVERE  
JOISTS INCLUDING CANT' OVER BRIC  
I-JOIST BLOCKING ALONG BEARING A  
RIMBOARD CLOSURE AT ENDS. SEE  
FIGURES 4 & 5 FOR REINFORCEMENT  
REQUIREMENTS. FOR HOLES INCLUDI  
DUCT CHASE AND FIELD CUT OPENIN  
SEE FIGURE 7, TABLES 1 & 2. CERAM  
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: 2021-04-29

2ND FLOOR OPT 10'

SUBFLOOR: 5/8" GLUED AND NAILED

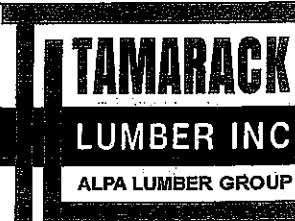


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	18
J2	14-00-00	11 7/8" NI-40x	1	3
J3	12-00-00	11 7/8" NI-40x	1	1
J4	8-00-00	11 7/8" NI-40x	1	6
J5	20-00-00	11 7/8" NI-80	1	81
B5 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B13C	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B8	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B7	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B11C	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
18	H1	IUS2.56/11.88
2	H2	HUS1.81/10
4	H3	IUS3.56/11.88
1	H4C	HUC410

DATE: 2021-04-29

2ND FLOOR



FROM PLAN DATED: 2021/2

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH4

MODEL: SPRINGFIELD 3S

ELEVATION: 3

LOT:

CITY: HAMILTON

SALESMAN: RICK DICIANO

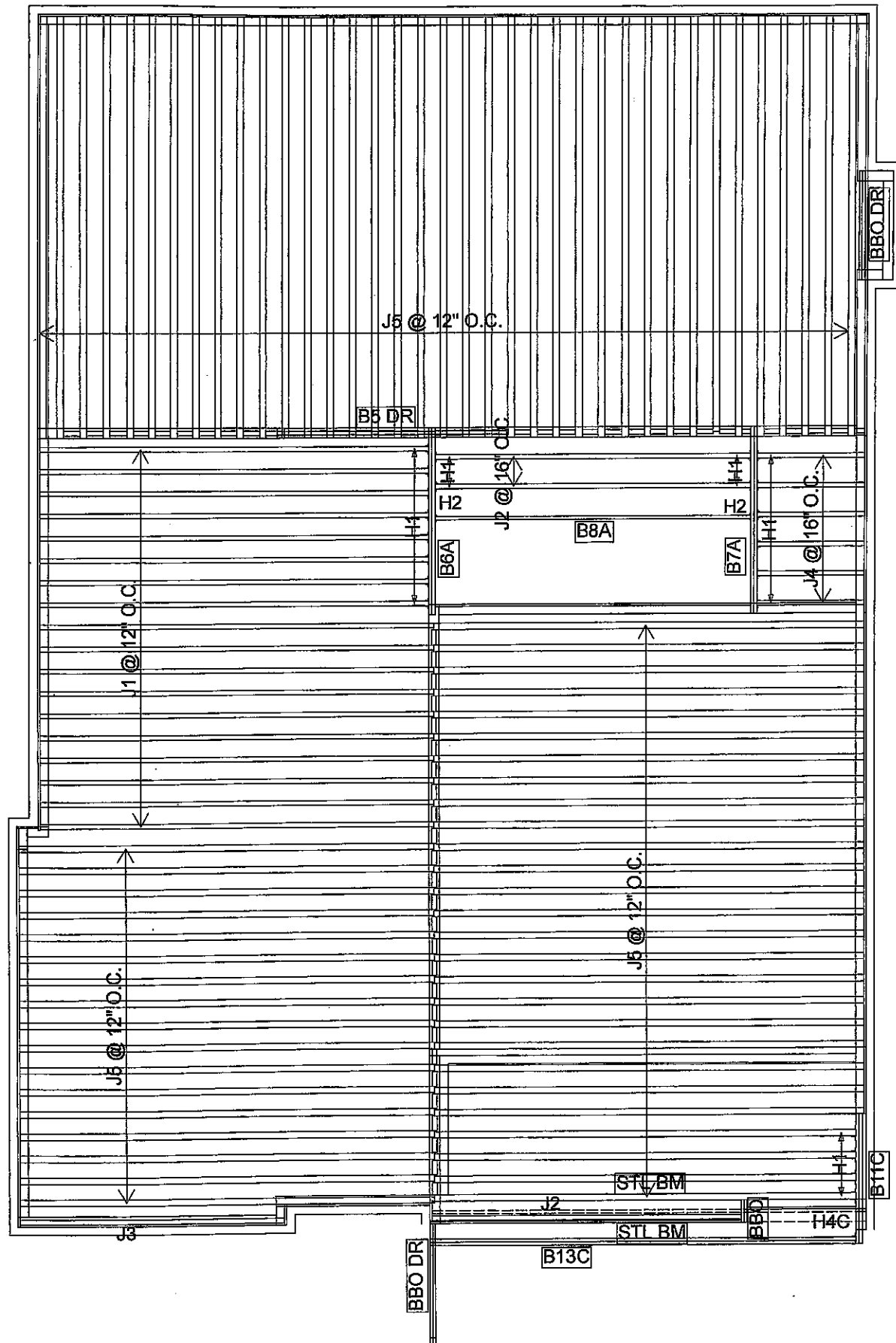
DESIGNER: AJ

REVISION:

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

**LOADING:**  
DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft<sup>2</sup>  
TILE LOAD: 20.0 lb/ft<sup>2</sup>

SUBFLOOR: 5/8" GLUED AND NAILED

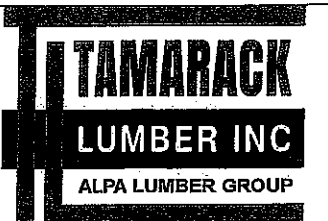


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	18
J2	14-00-00	11 7/8" NI-40x	1	3
J3	12-00-00	11 7/8" NI-40x	1	1
J4	6-00-00	11 7/8" NI-40x	1	6
J5	20-00-00	11 7/8" NI-80	1	81
B5 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B13C	20-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B8A	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6A	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B7A	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B11C	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
18	H1	IUS2.56/11.88
4	H1	IUS3.56/11.88
2	H2	HUS1.81/10
1	H4C	HUC410

DATE: 2021-04-29

2ND FLOOR OPT 10'  
MAIN FLOOR



FROM PLAN DATED: 2021/2

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH4

MODEL: SPRINGFIELD 3S

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

#### LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft<sup>2</sup>

DEAD LOAD: 15.0 lb/ft<sup>2</sup>

TILE LOAD: 20.0 lb/ft<sup>2</sup>

SUBFLOOR: 5/8" GLUED AND NAILED

**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B6(i642) (Flush Beam)**

Dry | 1 span | No cant.

March 18, 2021 07:46:14

BC CALC® Member Report  
Build 7773

Job name:

File name: SPRINGFIELD 3 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B6(i642)

City, Province, Postal Code:

Specifier:

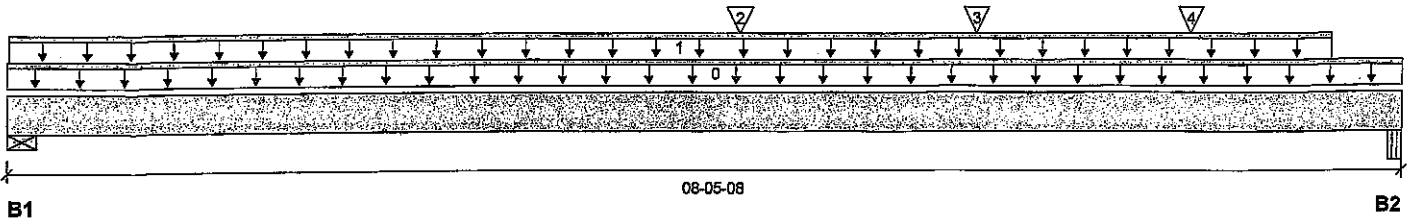
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 08-05-08

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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1843 / 0	989 / 0		
B2, 5-1/4"	2113 / 0	1126 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-05-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-02	08-00-02	Top	373	186			n/a
2	B8(i644)	Conc. Pt. (lbs)	L	04-04-06	04-04-06	Top	185	129			n/a
3	J1(i776)	Conc. Pt. (lbs)	L	05-09-10	05-09-10	Top	352	176			n/a
4	J1(i774)	Conc. Pt. (lbs)	L	07-01-10	07-01-10	Top	420	210			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8169 ft-lbs	35392 ft-lbs	23.1%	1	04-06-02
End Shear	4076 lbs	14464 lbs	28.2%	1	07-00-06
Total Load Deflection	L/999 (0.062")	n/a	n/a	4	04-03-08
Live Load Deflection	L/999 (0.04")	n/a	n/a	5	04-03-08
Max Defl.	0.062"	n/a	n/a	4	04-03-08
Span / Depth	7.8				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	4001 lbs	33.8%	17.0%	Spruce-Pine-Fir
B2	Beam 5-1/4" x 3-1/2"	4576 lbs	20.4%	20.4%	VL 2.0 3100 SP

**Notes**

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020



046 NO. 74W 9569-21  
STRUCTURAL  
COMPONENT ONLY



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

PASSED

## 2ND FLR FRAMING\Flush Beams\B6(i642) (Flush Beam)

Dry | 1 span | No cant.

March 18, 2021 07:46:14

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: SPRINGFIELD 3 EL 1.mmdl

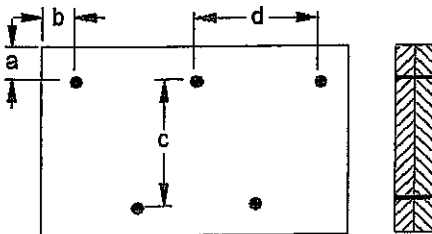
Description: 2ND FLR FRAMING\Flush Beams\B6(i642)

Specifier:

Designer:

Company:

### Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

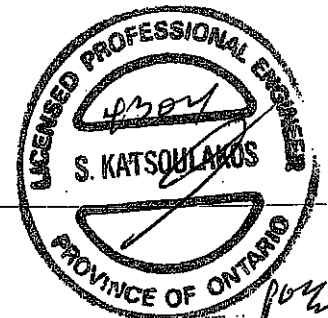
c = 7-7/8"

d = 6"

Calculated Side Load = 799.0 lb/ft

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



STRUCTURAL  
COMPONENT ONLY

### Disclosure

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

BC CALC®, BC FRAMER®, 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****PASSED****2ND FLR FRAMING\Flush Beams\B7(i643) (Flush Beam)**

Dry | 1 span | No cant.

March 18, 2021 07:46:14

BC CALC® Member Report

Build 7773

Job name:

File name: SPRINGFIELD 3 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B7(i643)

City, Province, Postal Code:

Specifier:

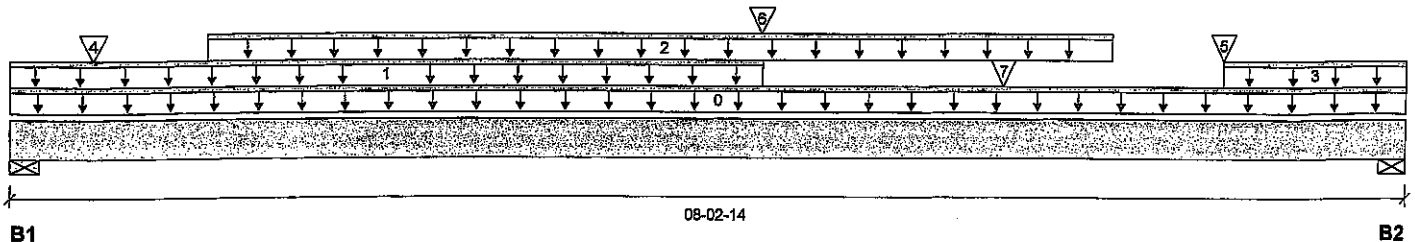
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:

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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1618 / 0	877 / 0		
B2, 2-3/4"	1434 / 0	783 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-02-14	Top		12			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	04-04-08	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-01-10	06-05-10	Top	130	65			n/a
3	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	07-01-10	08-02-14	Top	39	19			n/a
4	J2(i777)	Conc. Pt. (lbs)	L	00-05-10	00-05-10	Top	153	77			n/a
5	-	Conc. Pt. (lbs)	L	07-01-10	07-01-10	Top	556	278			n/a
6	B8(i644)	Conc. Pt. (lbs)	L	04-04-06	04-04-06	Top	185	129			n/a
7	J1(i776)	Conc. Pt. (lbs)	L	05-09-10	05-09-10	Top	352	176			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6273 ft-lbs	35392 ft-lbs	17.7%	1	04-04-06
End Shear	2956 lbs	14464 lbs	20.4%	1	07-00-04
Total Load Deflection	L/999 (0.048")	n/a	n/a	4	04-03-08
Live Load Deflection	L/999 (0.031")	n/a	n/a	5	04-03-08
Max Defl.	0.048"	n/a	n/a	4	04-03-08
Span / Depth	7.8				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	3523 lbs	29.7%	15.0%	Spruce-Pine-Fir
B2	Wall/Plate 2-3/4" x 3-1/2"	3130 lbs	52.9%	26.7%	Spruce-Pine-Fir

**Notes**

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020



ONE NO. TAW 9570-21  
STRUCTURAL  
COMPONENT ONLY



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

**PASSED**

## 2ND FLR FRAMING\Flush Beams\B7(i643) (Flush Beam)

Dry | 1 span | No cant.

March 18, 2021 07:46:14

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: SPRINGFIELD 3 EL 1.mmdl

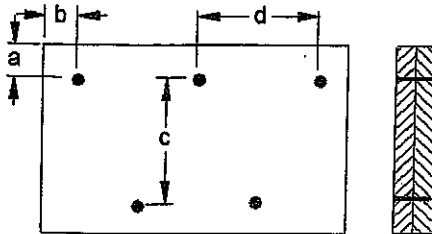
Description: 2ND FLR FRAMING\Flush Beams\B7(i643)

Specifier:

Designer:

Company:

### Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 6"

Calculated Side Load = 593.4 lb/ft

Connectors are: 16d : Nails

**3 1/2" ARDOX SPIRAL**



DWG NO. TAN 9510-21  
STRUCTURAL  
COMPONENT ONLY

### Disclosure

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

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





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

**PASSED**

## 2ND FLR FRAMING\Flush Beams\B8(i644) (Flush Beam)

Dry | 1 span | No cant.

March 18, 2021 07:46:14

BC CALC® Member Report

Build 7773

Job name:

File name: SPRINGFIELD 3 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B8(i644)

City, Province, Postal Code:

Specifier:

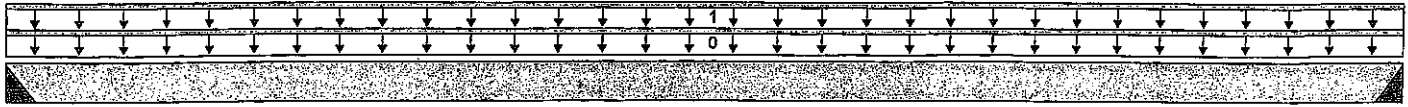
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



B1

12-03-00

B2

Total Horizontal Product Length = 12-03-00

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

Bearing	Live	Dead	Snow	Wind
B1, 2"	185 / 0	129 / 0		
B2, 2"	185 / 0	129 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-03-00	Top		6			00-00-00
1	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	12-03-00	Top	30	15			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1300 ft-lbs	17696 ft-lbs	7.3%	1	06-01-08
End Shear	356 lbs	7232 lbs	4.9%	1	01-01-14
Total Load Deflection	L/999 (0.05")	n/a	n/a	4	06-01-08
Live Load Deflection	L/999 (0.029")	n/a	n/a	5	06-01-08
Max Defl.	0.05"	n/a	n/a	4	06-01-08
Span / Depth	12.2				

### Bearing Supports

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

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: 12-03-00.

**CONFORMS TO OBC 2012**

### Disclosure

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





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

**PASSED**

## 1ST FLR FRAMING\Flush Beams\B1(i469) (Flush Beam)

Dry | 1 span | No cant.

March 18, 2021 07:46:14

BC CALC® Member Report

Build 7773

Job name:

File name: SPRINGFIELD 3 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1(i469)

City, Province, Postal Code:

Specifier:

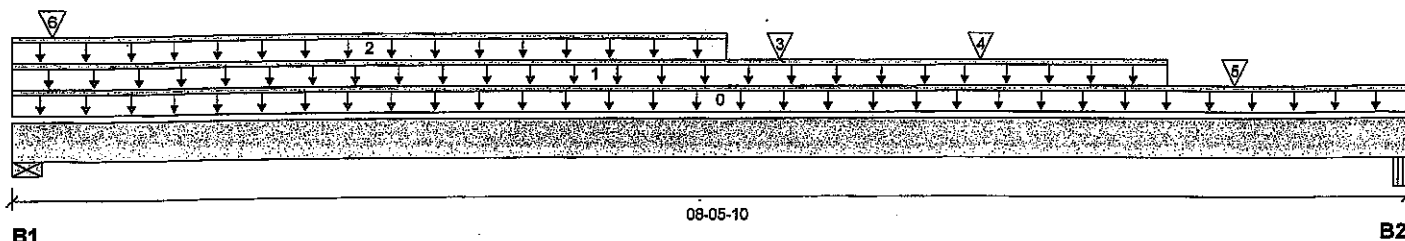
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 08-05-10

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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	4357 / 0	2345 / 0		
B2, 5-1/4"	1859 / 0	987 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-05-10	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	06-11-10	Top	378	189			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	04-03-02	Top	240	120			n/a
3	J3(i570)	Conc. Pt. (lbs)	L	04-07-00	04-07-00	Top	83	41			n/a
4	J3(i571)	Conc. Pt. (lbs)	L	05-09-10	05-09-10	Top	133	66			n/a
5	-	Conc. Pt. (lbs)	L	07-04-08	07-04-08	Top	440	219			n/a
6	1(i638)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	1845	1029			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8752 ft-lbs	35392 ft-lbs	24.7%	1	04-02-04
End Shear	3846 lbs	14464 lbs	26.6%	1	01-05-06
Total Load Deflection	L/999 (0.067")	n/a	n/a	4	04-02-04
Live Load Deflection	L/999 (0.044")	n/a	n/a	5	04-02-04
Max Defl.	0.067"	n/a	n/a	4	04-02-04
Span / Depth	7.8				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	9466 lbs	79.9%	40.3%	Spruce-Pine-Fir
B2	Beam 5-1/4" x 3-1/2"	4023 lbs	51.2%	17.9%	Unspecified

### Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020


 996 NO. TAM 9572-21  
 STRUCTURAL  
 COMPONENT ONLY



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

PASSED

## 1ST FLR FRAMING\Flush Beams\B1(i469) (Flush Beam)

Dry | 1 span | No cant.

March 18, 2021 07:46:14

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: SPRINGFIELD 3 EL 1.mmdl

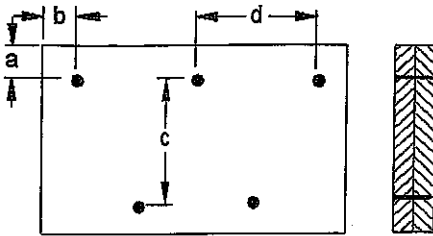
Description: 1ST FLR FRAMING\Flush Beams\B1(i469)

Specifier:

Designer:

Company:

### Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

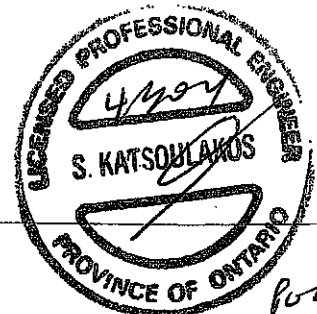
c = 7-7/8"

d = 8"

Calculated Side Load = 802.5 lb/ft

Connectors are: 16d, 1, Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 9572-21  
STRUCTURAL  
COMPONENT ONLY

### Disclosure

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

**PASSED**

## 1ST FLR FRAMING\Flush Beams\B2(i578) (Flush Beam)

Dry | 1 span | No cant.

March 18, 2021 07:46:14

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

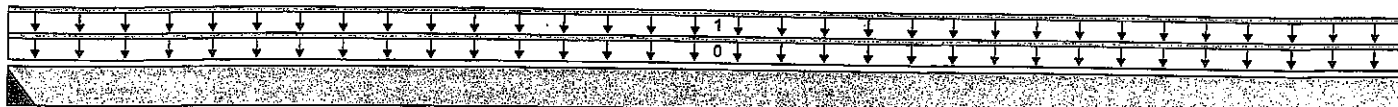
File name: SPRINGFIELD 3 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B2(i578)

Specifier:

Designer:

Company:



B1

04-11-00

B2

Total Horizontal Product Length = 04-11-00

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

Bearing	Live	Dead	Snow	Wind
B1, 2"	20 / 0	25 / 0		
B2, 1-3/4"	19 / 0	24 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-11-00	Top	1.00	0.65	1.00	1.15	
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	04-11-00	Top	8	4			00-00-00 n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	68 ft-lbs	17696 ft-lbs	0.4%	1	02-05-10
End Shear	32 lbs	7232 lbs	0.4%	1	01-01-14
Total Load Deflection	L/999 (0")	n/a	n/a	4	02-05-10
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-05-10
Max Defl.	0"	n/a	n/a	4	02-05-10
Span /-Depth	4.8				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	60 lbs	n/a	1.4%	HUS1.81/10
B2	Column 1-3/4" x 1-3/4"	60 lbs	3.0%	1.6%	Unspecified

### Cautions

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

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

### Notes

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

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

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86. 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: 04-11-00.



### Disclosure

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CONFORMS TO CBC 2012



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

**PASSED**

## 1ST FLR FRAMING\Flush Beams\B3(i478) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

March 18, 2021 07:46:14

Build 7773

Job name:

File name: SPRINGFIELD 3 EL 1.mmdi

Address:

Description: 1ST FLR FRAMING\Flush Beams\B3(i478)

City, Province, Postal Code:

Specifier:

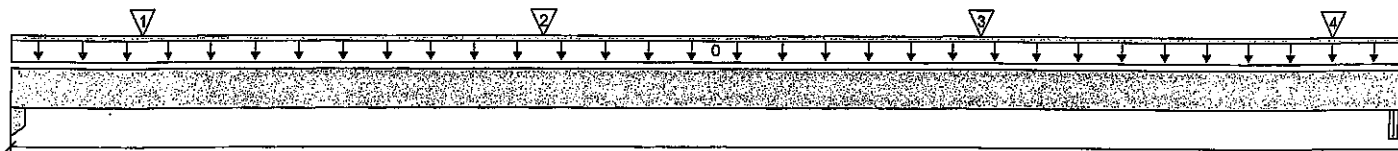
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



B1

04-03-06

B2

Total Horizontal Product Length = 04-03-06

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

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	196 / 0	110 / 0		
B2, 5-1/4"	203 / 0	126 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-03-06	Top	1.00	0.65	1.00	1.15	00-00-00
1	J3(i570)	Conc. Pt. (lbs)	L	00-04-12	00-04-12	Top	84	42			n/a
2	J3(i571)	Conc. Pt. (lbs)	L	01-07-06	01-07-06	Top	133	66			n/a
3	J3(i444)	Conc. Pt. (lbs)	L	02-11-06	02-11-06	Top	125	62			n/a
4	4(i640)	Conc. Pt. (lbs)	L	04-00-10	04-00-10	Top	54	39			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	371 ft-lbs	17696 ft-lbs	2.1%	1	01-07-06
End Shear	296 lbs	7232 lbs	4.1%	1	02-10-04
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	02-00-15
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	02-00-15
Max Defl.	0.001"	n/a	n/a	4	02-00-15
Span / Depth	3.7				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Column	3-1/2" x 1-3/4"	432 lbs	10.8%	5.8%	Unspecified
B2 Beam	5-1/4" x 1-3/4"	461 lbs	11.8%	4.1%	Unspecified

### Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

**CONFORMS TO OBC 2012**
**AMENDED 2020**

 DWG NO. TAM 9574 -21  
**STRUCTURAL COMPONENT ONLY**

### Disclosure

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

**PASSED**

## 1ST FLR FRAMING\Flush Beams\B4(i529) (Flush Beam)

Dry | 1 span | No cant.

March 18, 2021 07:46:14

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

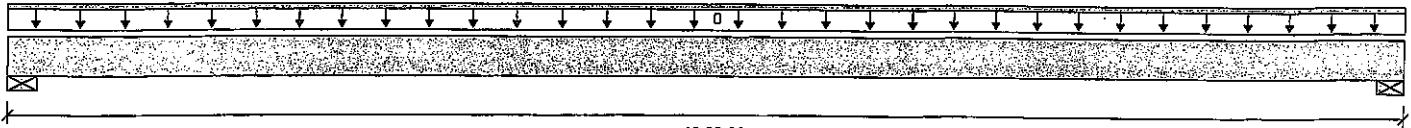
File name: SPRINGFIELD 3 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B4(i529)

Specifier:

Designer:

Company:



B1

Total Horizontal Product Length = 19-00-08

B2

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

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"		58 / 0		
B2, 8"		58 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	19-00-08	Top	1.00	0.65	1.00	1.15	00-00-00

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	349 ft-lbs	2752 ft-lbs	12.7%	0	09-04-00
End Shear	68 lbs	4701 lbs	1.4%	0	01-03-06
Total Load Deflection	L/999 (0.03")	n/a	n/a	1	09-04-00
Max Defl.	0.03"	n/a	n/a	1	09-04-00
Span / Depth	18.4				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 1-3/4"	79 lbs	1.7%	1.6%	Unspecified
B2	Wall/Plate 8" x 1-3/4"	82 lbs	0.8%	0.7%	Unspecified

### Notes

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAM 2525-21  
STRUCTURAL  
COMPONENT ONLY

### Disclosure

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



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

PASSED

## 2ND FLR FRAMING\Flush Beams\B6A(i2095) (Flush Beam)

Dry | 1 span | No cant.

March 18, 2021 07:58:45

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer:

Code reports: CCMC 12472-R

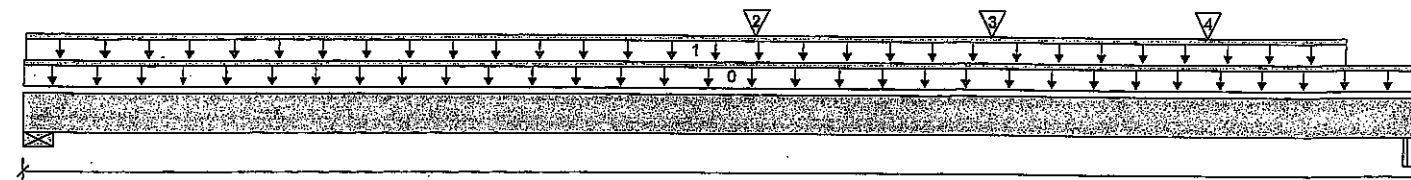
File name: SPRINGFIELD 3 EL 1 10' CEILING.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B6A(i2095)

Specifier:

Designer: A.J

Company:



B1

08-05-08

B2

Total Horizontal Product Length = 08-05-08

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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1860 / 0	1000 / 0		
B2, 5-1/4"	2106 / 0	1125 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-05-08	Top	12				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-02	08-00-02	Top	373	186			n/a
2	B8A(i2033)	Conc. Pt. (lbs)	L	04-04-06	04-04-06	Top	210	147			n/a
3	J1(i2013)	Conc. Pt. (lbs)	L	05-09-10	05-09-10	Top	400	200			n/a
4	J1(i2161)	Conc. Pt. (lbs)	L	07-01-10	07-01-10	Top	335	167			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8323 ft-lbs	35392 ft-lbs	23.5%	1	04-06-02
End Shear	4075 lbs	14464 lbs	28.2%	1	07-00-06
Total Load Deflection	L/999 (0.063")	n/a	n/a	4	04-03-08
Live Load Deflection	L/999 (0.041")	n/a	n/a	5	04-03-08
Max Defl.	0.063"	n/a	n/a	4	04-03-08
Span / Depth	7.8				

### Bearing Supports

				Demand/ Resistance Support	Demand/ Resistance Member	
Bearing Supports		Dim. (LxW)	Demand			Material
B1	Wall/Plate	5-1/2" x 3-1/2"	4041 lbs	34.1%	17.2%	Spruce-Pine-Fir
B2	Beam	5-1/4" x 3-1/2"	4565 lbs	20.4%	20.4%	VL 2.0 3100 SP

### Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020



ONE NO. YAM 9576 -21  
STRUCTURAL  
COMPONENT ONLY



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

PASSED

## 2ND FLR FRAMING\Flush Beams\B6A(i2095) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

March 18, 2021 07:58:45

Build 7773

Job name:

File name: SPRINGFIELD 3 EL 1 10' CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B6A(i2095)

City, Province, Postal Code: HAMILTON

Specifier:

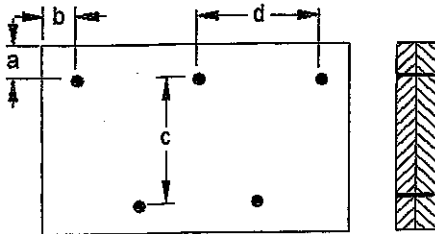
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

### Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 8"

Calculated Side Load = 799.0 lb/ft

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



ONE NO. TAM 9576-21  
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\B7A(i2047) (Flush Beam)

**PASSED**

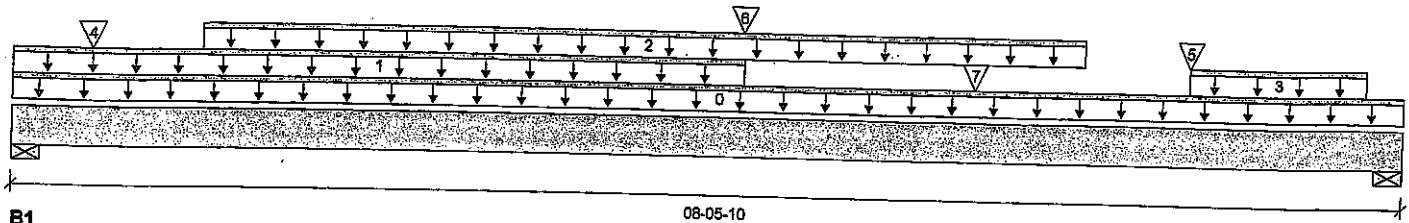
BC CALCO® Member Report  
Build 7773

Dry | 1 span | No cant.

March 18, 2021 07:58:45

Job name:  
Address:  
City, Province, Postal Code: HAMILTON  
Customer:  
Code reports: CCMC 12472-R

File name: SPRINGFIELD 3 EL 1 10' CEILING.mmdl  
Description: 2ND FLR FRAMING\Flush Beams\B7A(i2047)  
Specifier:  
Designer: AJ  
Company:



Total Horizontal Product Length = 08-05-10

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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1491 / 0	817 / 0		
B2, 5-1/2"	1300 / 0	724 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-05-10	Top	1.00	0.65	1.00	1.15	
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	04-04-08	Top		12			00-00-00
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-01-10	06-05-10	Top	240	120			n/a
3	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	07-01-10	08-02-14	Top	97	48			n/a
						Top	40	20			n/a
4	J2(i1973)	Conc. Pt. (lbs)	L	00-05-10	00-05-10	Top					
5	-	Conc. Pt. (lbs)	L	07-01-10	07-01-10	Top	114	57			n/a
6	B8A(i2033)	Conc. Pt. (lbs)	L	04-04-06	04-04-06	Top	440	221			n/a
7	J1(i2013)	Conc. Pt. (lbs)	L	05-09-10	05-09-10	Top	210	147			n/a
						Top	400	200			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5910 ft-lbs	35392 ft-lbs	16.7%	1	04-04-06
End Shear	2706 lbs	14464 lbs	18.7%	1	07-00-04
Total Load Deflection	L/999 (0.045")	n/a	n/a	4	04-03-08
Live Load Deflection	L/999 (0.029")	n/a	n/a	5	04-03-08
Max Defl.	0.045"	n/a	n/a	4	04-03-08
Span / Depth	7.8				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	3257 lbs	27.5%	13.9%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	2855 lbs	24.1%	12.2%	Spruce-Pine-Fir

### Notes

Design meets Code minimum (L/240) Total load deflection criteria.  
Design meets Code minimum (L/360) Live load deflection criteria.  
Resistance Factor phi has been applied to all presented results per CSA O86.  
BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.  
Design based on Dry Service Condition.  
Importance Factor : Normal Part code : Part 9  
Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-01-08.

CONFORMS TO OBC 2012

AMENDED 2020



ONE NO. TAM 9577 -21  
STRUCTURAL  
COMPONENT ONLY



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

PASSED

## 2ND FLR FRAMING\Flush Beams\B7A(i2047) (Flush Beam)

Dry | 1 span | No cant.

March 18, 2021 07:58:45

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: HAMILTON

Customer:

Code reports: CCMC 12472-R

File name: SPRINGFIELD 3 EL 1 10' CEILING.mmdl

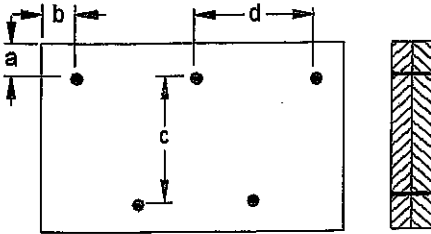
Description: 2ND FLR FRAMING\Flush Beams\B7A(i2047)

Specifier:

Designer: AJ

Company:

### Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 8"

Calculated Side Load = 674.4 lb/ft

Connectors are: 16d Nails

3/4" ARDOX SPIRAL



ENG NO. TAM 9577-21  
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.

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

## 2ND FLR FRAMING\Flush Beams\B8A(i2033) (Flush Beam)

**PASSED**

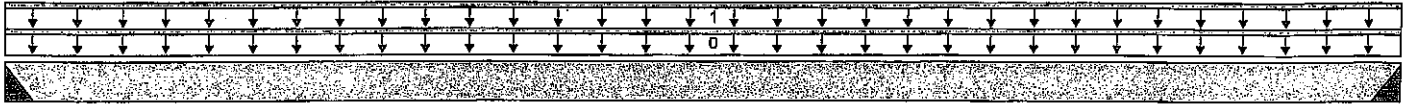
BC CALC® Member Report  
Build 7773

Dry | 1 span | No cant.

March 18, 2021 07:58:45

Job name:  
Address:  
City, Province, Postal Code: HAMILTON  
Customer:  
Code reports: CCMC 12472-R

File name: SPRINGFIELD 3 EL 1 10' CEILING.mmdl  
Description: 2ND FLR FRAMING\Flush Beams\B8A(i2033)  
Specifier:  
Designer: AJ  
Company:



B1

13-11-00

B2

Total Horizontal Product Length = 13-11-00

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

Bearing	Live	Dead	Snow	Wind
B1, 2"	210 / 0	147 / 0		
B2, 2"	210 / 0	147 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	13-11-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	13-11-00	Top	30	15			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1685 ft-lbs	17696 ft-lbs	9.5%	1	06-11-08
End Shear	416 lbs	7232 lbs	5.8%	1	01-01-14
Total Load Deflection	L/999 (0.084")	n/a	n/a	4	06-11-08
Live Load Deflection	L/999 (0.049")	n/a	n/a	5	06-11-08
Max Defl.	0.084"	n/a	n/a	4	06-11-08
Span / Depth	13.9				



### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	499 lbs	n/a	11.7%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	499 lbs	n/a	11.7%	HUS1.81/10

QWC NO. YAM 9578-21  
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.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020

### Disclosure

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

## 2ND FLR FRAMING\Dropped Beams\B13C(i2553) (Dropped Beam)

**PASSED**

BC CALC® Member Report

Dry | 1 span | No cant.

March 18, 2021 09:00:09

Build 7773

Job name:

File name: SPRINGFIELD 3 EL 3 10' CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B13C(i2553)

City, Province, Postal Code: HAMILTON

Specifier:

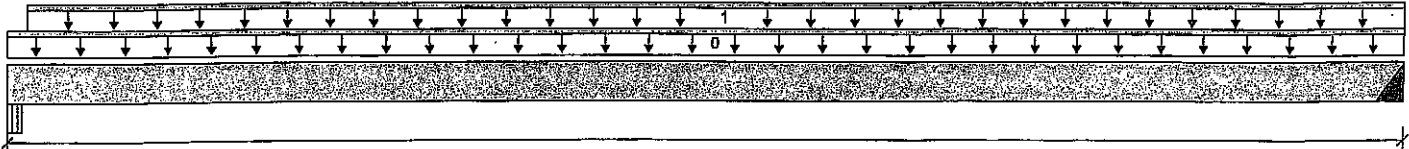
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



B1

18-10-08

B2

Total Horizontal Product Length = 18-10-08

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

Bearing	Live	Dead	Snow	Wind
B1, 3"		373 / 0	452 / 0	
B2, 2"		376 / 0	460 / 0	

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	18-10-08	Top		12			00-00-00
1	LOW ROOF	Unf. Lin. (lb/ft)	L	00-03-00	18-10-08	Top		28	49		n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5333 ft-lbs	10545 ft-lbs	50.6%	1	09-05-12
End Shear	1018 lbs	14464 lbs	7.0%	1	01-02-14
Total Load Deflection	L/912 (0.245")	n/a	26.3%	12	09-05-12
Live Load Deflection	L/1657 (0.135")	n/a	21.7%	17	09-05-12
Max Defl.	0.245"	n/a	n/a	12	09-05-12
Span / Depth	18.8				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	3" x 3-1/2"	1144 lbs	17.7%	8.9%	Spruce-Pine-Fir
B2 Hanger	2" x 3-1/2"	1161 lbs	n/a	13.6%	HUC410

### Cautions

Header for the hanger HUC410 is a Double 1-3/4" x 11-7/8" LVL Beam.

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

### Notes

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

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

Hanger Manufacturer: Unassigned

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 18-10-08, Bottom: 18-07-08.

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. YAW 9579-21  
STRUCTURAL  
COMPONENT ONLY



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

**PASSED**

## 2ND FLR FRAMING\Dropped Beams\B13C(i2553) (Dropped Beam)

Dry | 1 span | No cant.

March 18, 2021 09:00:09

BC CALC® Member Report

Build 7773

Job name:

File name: SPRINGFIELD 3 EL 3 10' CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B13C(i2553)

City, Province, Postal Code: HAMILTON

Specifier:

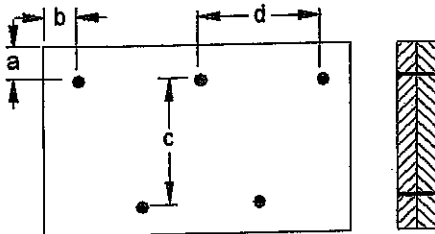
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

### Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 6"

Connectors are:

1 Nails

3 1/2" ARDOX SPIRAL



REG. NO. T-9589-21  
STRUCTURAL  
COMPONENT ONLY

### Disclosure

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**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP**  
**1ST FLR FRAMING\Flush Beams\B4S(i2038) (Flush Beam)**

**PASSED**

BC CALC® Member Report

Dry | 1 span | No cant.

March 19, 2021 08:17:02

Build 7773

Job name:

File name: SPRINGFIELD 3S EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B4S(i2038)

City, Province, Postal Code: HAMILTON

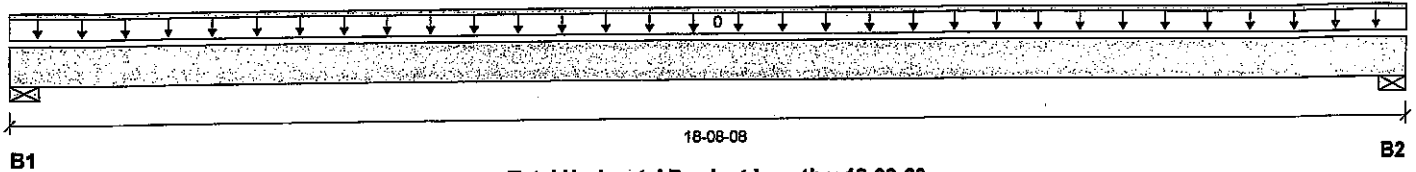
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



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

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"		55 / 0		
B2, 8"		57 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	18-08-08	Top	6	0.65	1.00	1.15	00-00-00

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	336 ft-lbs	2803 ft-lbs	12.0%	0	09-02-00
End Shear	66 lbs	4701 lbs	1.4%	0	01-03-06
Total Load Deflection	L/999 (0.028")	n/a	n/a	1	09-02-00
Max Defl.	0.028"	n/a	n/a	1	09-02-00
Span / Depth	18.1				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 1-3/4"	77 lbs	1.4%	1.6%	Unspecified
B2	Wall/Plate 8" x 1-3/4"	80 lbs	0.6%	0.7%	Unspecified

**Notes**

Design meets Code minimum (L/240) Total load deflection criteria.  
 Resistance Factor phi has been applied to all presented results per CSA O86.  
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.  
 Design based on Dry Service Condition.  
 Importance Factor : Normal Part code : Part 9  
 Calculations assume unbraced length of Top: 17-09-00, Bottom: 17-09-00.

CONFORMS TO CBC 2012

AMENDED 2020



DWG NO. TAM 9500-21  
**STRUCTURAL**  
**COMPONENT ONLY**

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

## 2ND FLR FRAMING\Flush Beams\B11C(i2549) (Flush Beam)

**PASSED**

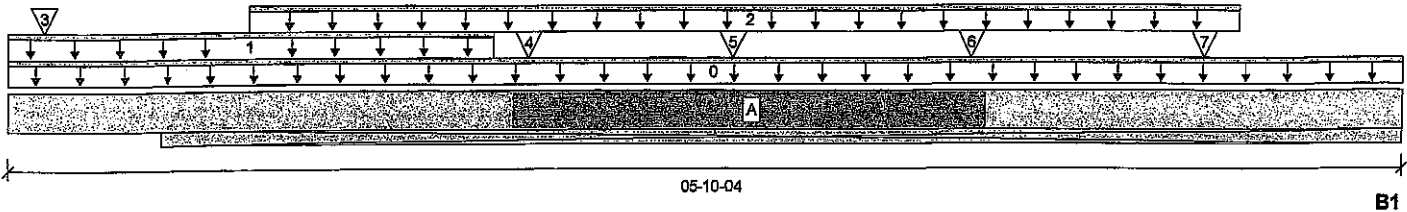
BC CALC® Member Report  
Build 7773

Dry | 1 span | L cant.

March 18, 2021 09:00:09

Job name:  
Address:  
City, Province, Postal Code: HAMILTON  
Customer:  
Code reports: CCMC 12472-R

File name: SPRINGFIELD 3 EL 3 10' CEILING.mmdl  
Description: 2ND FLR FRAMING\Flush Beams\B11C(i2549)  
Specifier:  
Designer: AJ  
Company:



Total Horizontal Product Length = 05-10-04

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

Bearing	Live	Dead	Snow	Wind
B1, 62-3/4"	1459 / 0	1230 / 0	555 / 0	

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-10-04	Top	12				00-00-00
1	LOW ROOF	Unf. Lin. (lb/ft)	L	00-00-00	02-00-02	Top		28	49		n/a
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	01-00-00	05-01-12	Top	13	6			n/a
3	B13C(i2553)	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Top		373	456		n/a
4	J3(i2480)	Conc. Pt. (lbs)	L	02-01-14	02-01-14	Top	305	153			n/a
5	J3(i2479)	Conc. Pt. (lbs)	L	03-00-00	03-00-00	Top	346	173			n/a
6	J3(i2235)	Conc. Pt. (lbs)	L	04-00-00	04-00-00	Top	376	188			n/a
7	J3(i2416)	Conc. Pt. (lbs)	L	05-00-00	05-00-00	Top	376	188			n/a

### Controls Summary

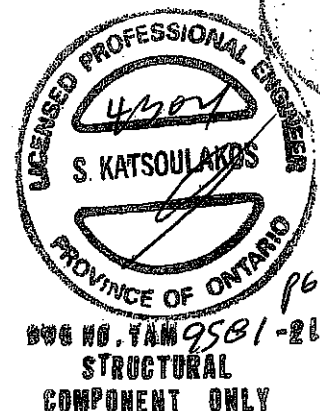
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Neg. Moment	-577 ft-lbs	-35392 ft-lbs	1.6%	13	00-07-08
End Shear	1227 lbs	14464 lbs	8.5%	13	00-07-08
Total Load Deflection	2xL/1998 (0")	n/a	n/a	35	00-00-00
Live Load Deflection	2xL/1998 (0")	n/a	n/a	51	00-00-00
Span / Depth	0.6				
Dist. Load (B1)	128.81 lb/ft	57645.1 lb/ft	0.2%		
Conc. Load (B1)	799 lbs	16813 lbs	4.8%		

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 62-3/4" x 3-1/2"	4281 lbs	3.2%	1.6%	Spruce-Pine-Fir

### Cautions

Concentrated side load(s) 6 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

## 2ND FLR FRAMING\Flush Beams\B11C(i2549) (Flush Beam)

PASSED

BC CALC® Member Report  
Build 7773

Dry | 1 span | L cant.

March 18, 2021 09:00:09

Job name:

File name: SPRINGFIELD 3 EL 3 10' CEILING.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B11C(i2549)

City, Province, Postal Code: HAMILTON

Specifier:

Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:

### Notes

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

CONFORMS TO OBC 2012

Design meets User specified (2xL/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.

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

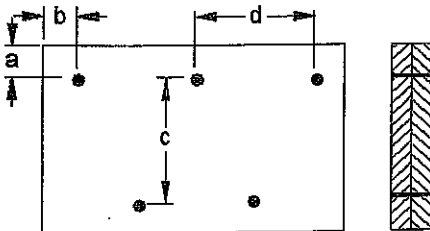
Design based on Dry Service Condition.

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: 00-08-08.

### Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 8"

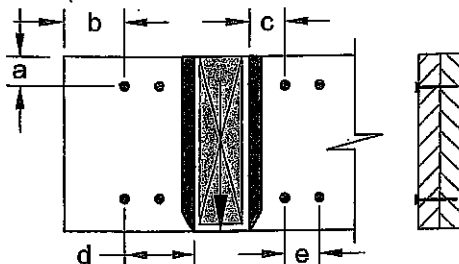
Calculated Side Load = 399.5 lb/ft

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

### Connection Diagrams: Concentrated Side Loads

Connection Tag: A Applies to load tag(s): 12+13+14



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

e minimum = 4"

Connectors are:  
Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 9581-21  
STRUCTURAL  
COMPONENT ONLY

### Disclosure

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

## 2ND FLR FRAMING\Dropped Beams\B5 DR(i2016) (Dropped Beam)

**PASSED**

BC CALC® Member Report

Dry | 1 span | No cant.

April 29, 2021 07:43:58

Build 7773

Job name:

File name: SPRINGFIELD 3 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B5 DR(i2016)

City, Province, Postal Code: HAMILTON

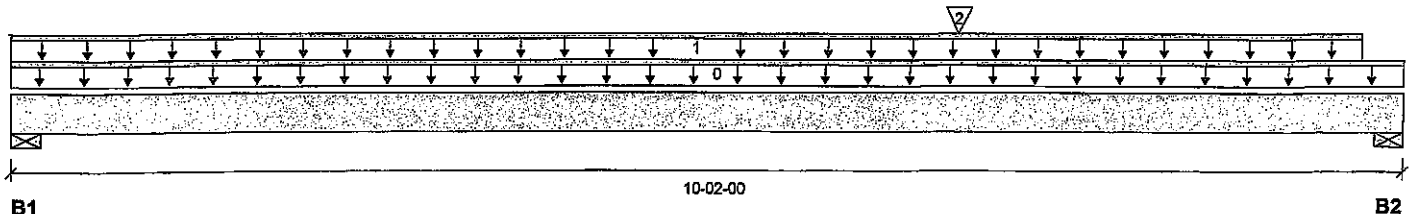
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 10-02-00

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

Bearing	Live	Dead	Snow	Wind
B1, 4"	2594 / 0	1392 / 0		
B2, 4"	3198 / 0	1719 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-02-00	Top		14			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	09-10-06	Top	373	187			n/a
2	B6(i2009)	Conc. Pt. (lbs)	L	06-10-04	06-10-04	Top	2112	1125			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	17479 ft-lbs	36222 ft-lbs	48.3%	1	06-10-04
End Shear	6606 lbs	17356 lbs	38.1%	1	09-00-08
Total Load Deflection	L/445 (0.259")	n/a	53.9%	4	05-02-14
Live Load Deflection	L/684 (0.169")	n/a	52.6%	5	05-02-14
Max Defl.	0.259"	n/a	n/a	4	05-02-14
Span / Depth	12.2				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 5-1/4"	5632 lbs	20.1%	22.0%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 5-1/4"	6946 lbs	24.8%	27.1%	Spruce-Pine-Fir

### Notes

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020



10% NO. TANGS2-21  
STRUCTURAL  
COMPONENT ONLY



**Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP**  
**2ND FLR FRAMING\Dropped Beams\B5 DR(i2016) (Dropped Beam)**

**PASSED**

BC CALC® Member Report  
 Build 7773

Dry | 1 span | No cant.

April 29, 2021 07:43:58

Job name:

File name: SPRINGFIELD 3 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B5 DR(i2016)

City, Province, Postal Code: HAMILTON

Specifier:

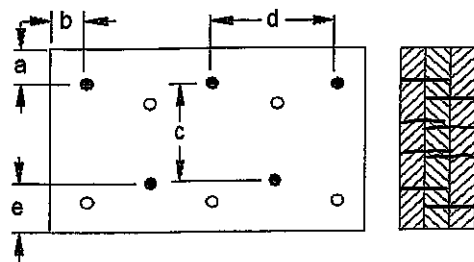
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

**Connection Diagram: Full Length of Member**



a minimum = 2"  
 b minimum = 3"

c = 6 1/2"  
 d = 8"  
 e minimum = 2"

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

**3 1/2" ARDOX SPIRAL**



SWG NO. TAM 9581-21  
**STRUCTURAL**  
**COMPONENT ONLY**

**Disclosure**

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

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

# NORDIC STRUCTURES

**COMPANY**  
Mar. 18, 2021 09:06

**PROJECT**  
J1 1ST FLOOR.wwb

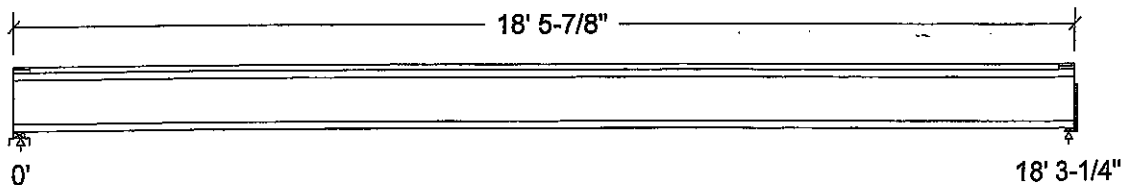
## Design Check Calculation Sheet

Nordic Sizer – Canada 7.2

### Loads:

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

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



Unfactored:			
Dead	183		183
Live	365		365
Factored:			
Total	777		777
Bearing:			
Capacity			
Joist	2101		2048
Support	3971		-
Des ratio			
Joist	0.37		0.38
Support	0.20		-
Load case	#2		#2
Length	2-3/8		2
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcp sup	769		-
Kzcp sup	1.09		-

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

Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Hanger;

Total length: 18' 5-7/8"; Clear span: 18' 1-1/2"; 3/4" nailed and glued OSB sheathing

**This section PASSES the design code check.**



NO. 4AM9565-21  
STRUCTURAL

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 777$	$V_r = 2336$	lbs	$V_f/V_r = 0.33$
Moment (+)	$M_f = 3547$	$M_r = 6255$	lbs-ft	$M_f/M_r = 0.57$
Perm. Defl'n	$0.13 = < L/999$	$0.61 = L/360$	in	0.21
Live Defl'n	$0.25 = L/869$	$0.46 = L/480$	in	0.55
Total Defl'n	$0.38 = L/579$	$0.91 = L/240$	in	0.41
Bare Defl'n	$0.30 = L/740$	$0.61 = L/360$	in	0.49
Vibration	$L_{max} = 18'-3.3$	$L_v = 19'-6.3$	ft	0.94
Defl'n	$= 0.029$	$= 0.034$	in	0.85

**Additional Data:**

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
$V_r$	2336	1.00	1.00	-	-	-	-	-	#2
$M_r$	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

**CALCULATIONS:**

$EI_{eff} = 443.45 \text{ lb-in}^2$   $K = 6.18e06 \text{ lbs}$

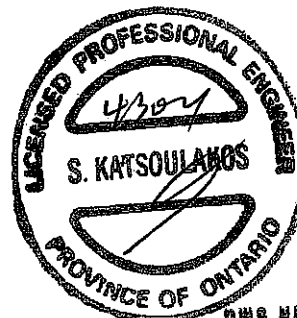
"Live" deflection is due to all non-dead loads (live, wind, snow...)

CONFORMS TO OBC 2012

**Design Notes:**

AMENDED 2020

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



DWG NO. TAM 9565-21

STRUCTURAL

CONFORMS TO OBC 2012

# NORDIC STRUCTURES

**COMPANY**  
Mar. 18, 2021 09:06

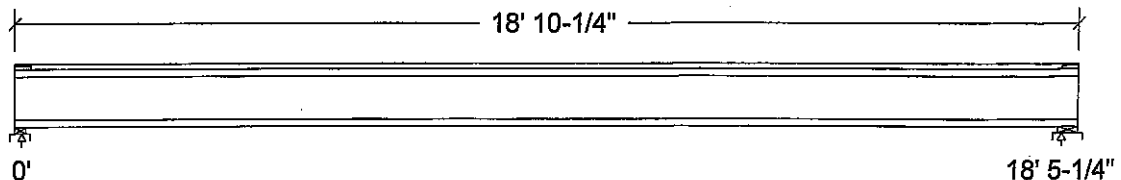
**PROJECT**  
J6 1ST FLOOR.wwb

## Design Check Calculation Sheet Nordic Sizer – Canada 7.2

### Loads:

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

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



Unfactored:			
Dead	184		184
Live	369		369
Factored:			
Total	784		784
Bearing:			
Capacity			
Joist	2188		2336
Support	5573		10841
Des ratio			
Joist	0.36		0.34
Support	0.14		0.07
Load case	#2		#2
Length	2-3/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		1.00
fcp sup	769		769
Kzcp sup	1.09		1.15

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

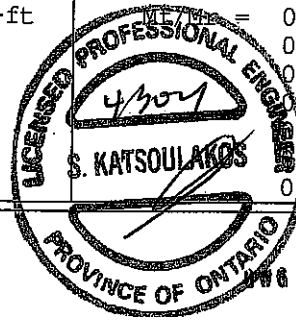
Supports: All - Lumber Sill plate, No.1/No.2

Total length: 18' 10-1/4"; Clear span: 18' 3-1/2"; 3/4" nailed and glued OSB sheathing

**This section PASSES the design code check.**

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 784	Vr = 2336	lbs	Vf/Vr = 0.34
Moment(+)	Mf = 3612	Mr = 11609	lbs-ft	Mf/Mr = 0.31
Perm. Defl'n	0.10 = < L/999	0.61 = L/360	in	0.16
Live Defl'n	0.19 = < L/999	0.46 = L/480	in	0.42
Total Defl'n	0.29 = L/765	0.92 = L/240	in	0.31
Bare Defl'n	0.22 = < L/999	0.61 = L/360	in	0.35
Vibration	Lmax = 18'-5.3	Lv = 21'-2.7	ft	0.87
Defl'n	= 0.024	= 0.034	in	0.71



P614  
NO. 9566-21  
STRUCTURAL

**Additional Data:**

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

**CRITICAL LOAD COMBINATIONS:**

Shear : LC #2 = 1.25D + 1.5L  
 Moment(+) : LC #2 = 1.25D + 1.5L  
 Deflection: LC #1 = 1.0D (permanent)  
               LC #2 = 1.0D + 1.0L (live)  
               LC #2 = 1.0D + 1.0L (total)  
               LC #2 = 1.0D + 1.0L (bare joist)

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

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake  
               L=live(use,occupancy) Ls=live(storage,equipment) f=fire

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

**CALCULATIONS:**

EI<sub>eff</sub> = 625.37 lb-in<sup>2</sup> K= 6.18e06 lbs

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

**Design Notes:****AMENDED 2020**

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



ENG NO. TAM 9566-21  
 STRUCTURAL  
 COMPONENT ONLY

# NORDIC STRUCTURES

**COMPANY**  
Mar. 18, 2021 09:07

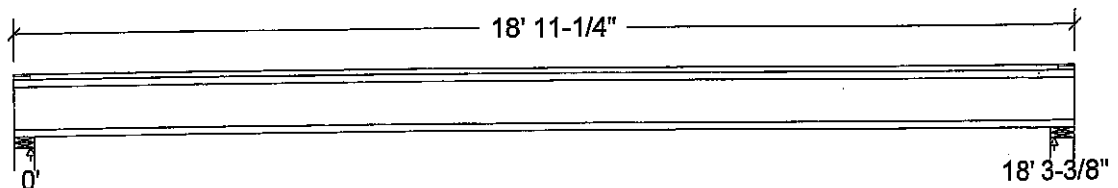
**PROJECT**  
J3 2ND FLOOR.wwb

## Design Check Calculation Sheet Nordic Sizer – Canada 7.2

### Loads:

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

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



Unfactored:			
Dead	183		183
Live	366		366
Factored:			
Total	777		777
Bearing:			
Capacity			
Joist	2336		2336
Support	10829		12995
Des ratio			
Joist	0.33		0.33
Support	0.07		0.06
Load case	#2		#2
Length	4-3/8		5-1/4
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		769
Kzcp sup	-		-

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

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

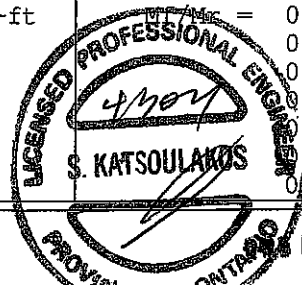
Supports: All - Lumber Wall, No.1/No.2

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

**This section PASSES the design code check.**

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 777	Vr = 2336	lbs	Vf/Vr = 0.33
Moment(+)	Mf = 3551	Mr = 11609	lbs-ft	Mf/Mr = 0.31
Perm. Defl'n	0.09 = < L/999	0.61 = L/360	in	0.16
Live Defl'n	0.19 = < L/999	0.46 = L/480	in	0.42
Total Defl'n	0.28 = L/770	0.91 = L/240	in	0.31
Bare Defl'n	0.21 = < L/999	0.61 = L/360	in	0.34
Vibration	Lmax = 18'-3.4	Lv = 20'-5.8	ft	0.89
Defl'n	= 0.026	= 0.034	in	0.76



NO. TAN 9567-21  
STRUCTURAL

**Additional Data:**

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

**CRITICAL LOAD COMBINATIONS:**

Shear : LC #2 = 1.25D + 1.5L

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

Deflection: LC #1 = 1.0D (permanent)

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

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

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

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

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

Load Types: D=dead W=wind S=snow H=earth, groundwater E=earthquake  
L=live (use, occupancy) Ls=live (storage, equipment) f=fire

Load Patterns: s=S/2 L=L+Ls \_=no pattern load in this span

All Load Combinations (LCs) are listed in the Analysis output

**CALCULATIONS:**E<sub>I</sub>eff = 613.27 lb-in<sup>2</sup> K= 6.18e06 lbs

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

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

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



OWN NO. 1AM 9567-21  
STRUCTURAL  
COMPONENT ONLY



# NORDIC STRUCTURES

**COMPANY**  
Mar. 18, 2021 09:08

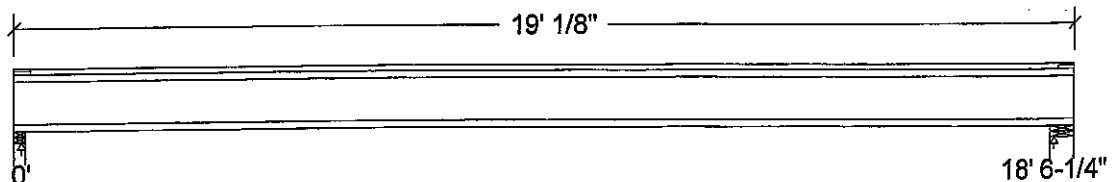
**PROJECT**  
J3 2ND FLOOR ABOVE GARAGE.wwb

## Design Check Calculation Sheet Nordic Sizer – Canada 7.2

### Loads:

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

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



Unfactored:			
Dead	185		185
Live	370		370
Factored:			
Total	787		787
Bearing:			
Capacity			
Joist	2188		2336
Support	5573		12995
Des ratio			
Joist	0.36		0.34
Support	0.14		0.06
Load case	#2		#2
Length	2-3/8		5-1/4
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		769
Kzcp sup	-		-

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

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

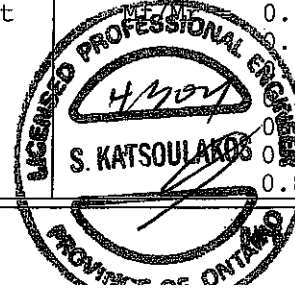
Supports: All - Lumber Wall, No.1/No.2

Total length: 19' 1/8"; Clear span: 18' 4-1/2"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 787	Vr = 2336	lbs	Vf/Vr = 0.34
Moment(+)	Mf = 3645	Mr = 11609	lbs-ft	Vf/Mf = 0.31
Perm. Defl'n	0.10 = < L/999	0.62 = L/360	in	0.16
Live Defl'n	0.20 = < L/999	0.46 = L/480	in	0.43
Total Defl'n	0.30 = L/743	0.93 = L/240	in	0.32
Bare Defl'n	0.22 = < L/999	0.62 = L/360	in	0.36
Vibration	Lmax = 18'-6.3	Lv = 19'-11	ft	0.33
Defl'n	= 0.028	= 0.034	in	0.84



NO. TAN 9568-21  
STRUCTURAL

**Additional Data:**

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

**CRITICAL LOAD COMBINATIONS:**

Shear : LC #2 = 1.25D + 1.5L  
 Moment(+) : LC #2 = 1.25D + 1.5L  
 Deflection: LC #1 = 1.0D (permanent)  
               LC #2 = 1.0D + 1.0L (live)  
               LC #2 = 1.0D + 1.0L (total)  
               LC #2 = 1.0D + 1.0L (bare joist)

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

Load Types: D=dead W=wind S=snow H=earth, groundwater E=earthquake  
               L=live (use, occupancy) Ls=live (storage, equipment) f=fire

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

**CALCULATIONS:**

EI<sub>eff</sub> = 613.27 lb-in<sup>2</sup> K= 6.18e06 lbs

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

**Design Notes:****AMENDED 2020**

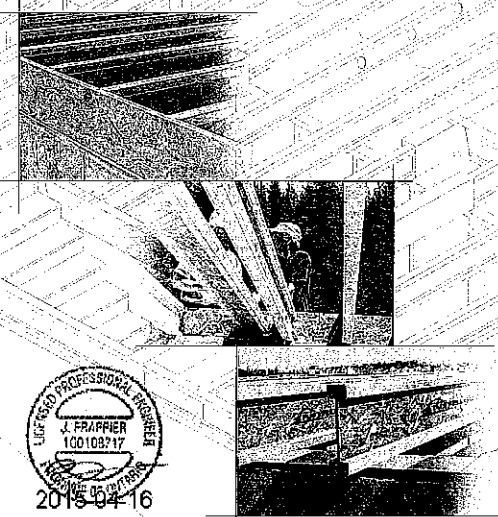
1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer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



ENG NO. TAN 9368-21  
 STRUCTURAL  
 COMPONENT ONLY



# INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



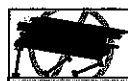
Distributed by:

NC001 / November 2014

## SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

### WARNING

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

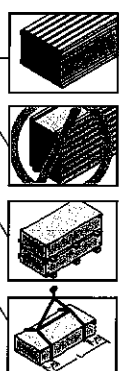
### Avoid Accidents by Following these Important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
  - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Top 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.

## STORAGE AND HANDLING GUIDELINES

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



## 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 serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
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, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate 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 uniform loads, an engineering analysis may be required based on the use of the design properties.
6. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NEC 2010.
7. SI units conversion: 1 inch = 25.4 mm  
1 foot = 0.305 m

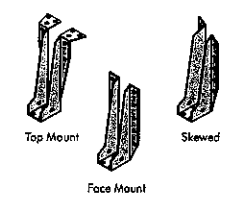
## MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
18"	NI-18	15'-1"	14'-2"	13'-9"	13'-5"	16'-3"	15'-4"	14'-10"	14'-7"
20"	NI-20	16'-1"	15'-2"	14'-8"	14'-9"	17'-5"	16'-5"	15'-10"	15'-5"
22"	NI-22	16'-3"	15'-4"	14'-10"	14'-11"	17'-7"	16'-7"	16'-0"	16'-1"
24"	NI-24	17'-1"	16'-1"	15'-4"	15'-7"	18'-7"	17'-4"	16'-9"	16'-10"
26"	NI-26	17'-3"	16'-3"	15'-8"	16'-9"	18'-10"	17'-6"	16'-11"	17'-0"
28"	NI-28	18'-11"	16'-0"	15'-5"	16'-4"	18'-4"	17'-3"	16'-8"	16'-7"
30"	NI-30	18'-1"	17'-0"	16'-4"	16'-4"	20'-0"	18'-4"	17'-9"	17'-7"
32"	NI-32	18'-4"	17'-3"	16'-7"	16'-9"	20'-3"	18'-9"	18'-0"	18'-1"
34"	NI-34	19'-6"	18'-0"	17'-4"	17'-5"	21'-6"	19'-11"	19'-0"	19'-1"
36"	NI-36	19'-9"	18'-3"	17'-6"	17'-7"	21'-9"	20'-2"	19'-5"	19'-4"
38"	NI-38	20'-2"	18'-7"	17'-10"	17'-11"	22'-3"	20'-7"	19'-8"	19'-9"
40"	NI-40	20'-4"	18'-9"	17'-11"	18'-0"	22'-5"	20'-9"	19'-10"	19'-11"
42"	NI-42	20'-1"	18'-7"	17'-10"	17'-11"	22'-2"	20'-6"	19'-8"	19'-4"
44"	NI-44	20'-3"	18'-11"	18'-1"	18'-2"	22'-7"	20'-11"	20'-0"	20'-1"
46"	NI-46	21'-7"	20'-0"	19'-11"	19'-2"	23'-10"	21'-11"	21'-2"	21'-3"
48"	NI-48	21'-11"	20'-3"	19'-4"	19'-5"	24'-3"	22'-5"	21'-5"	21'-6"
50"	NI-50	22'-5"	20'-8"	19'-9"	19'-10"	24'-9"	22'-10"	21'-10"	21'-10"
52"	NI-52	22'-7"	20'-11"	19'-11"	20'-0"	25'-0"	23'-1"	22'-9"	22'-9"
54"	NI-54	22'-3"	20'-8"	19'-9"	19'-10"	24'-7"	22'-9"	21'-9"	21'-10"
56"	NI-56	23'-4"	21'-9"	20'-9"	20'-10"	26'-0"	24'-0"	22'-11"	23'-0"
58"	NI-58	23'-11"	22'-1"	21'-1"	21'-2"	26'-5"	24'-5"	23'-3"	23'-4"
60"	NI-60	24'-2"	22'-4"	21'-4"	21'-5"	26'-11"	24'-10"	23'-9"	23'-9"
62"	NI-62	24'-3"	22'-9"	21'-9"	21'-10"	27'-3"	25'-2"	24'-0"	24'-11"

CCMC EVALUATION REPORT 13012-R

## I-JOIST HANGERS

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



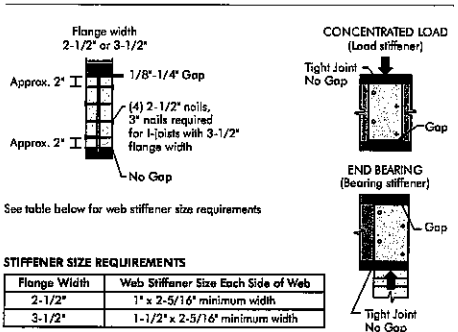
## WEB STIFFENERS

### RECOMMENDATIONS:

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

SI units conversion: 1 inch = 25.4 mm

FIGURE 2  
WEB STIFFENER INSTALLATION DETAILS

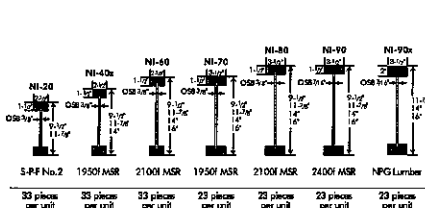


See table below for web stiffener size requirements

### STIFFENER SIZE REQUIREMENTS

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

## NORDIC I-JOIST SERIES



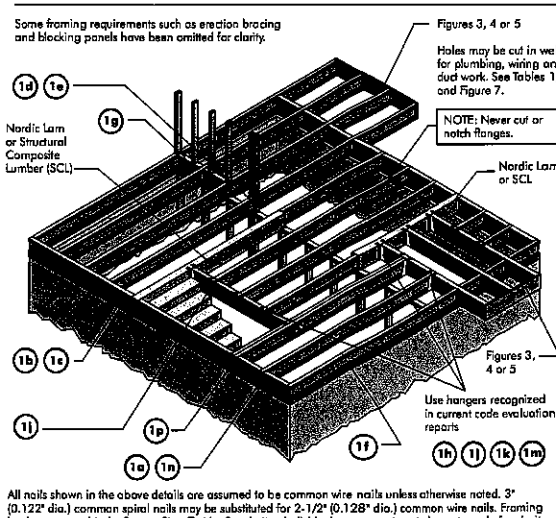
Chantiers Chibouganou Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures through the entire manufacturing process. Every phase of the operation, from the raw log to the finished product, reflects our commitment to quality.

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

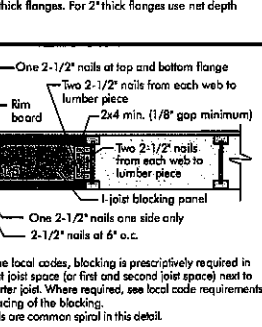
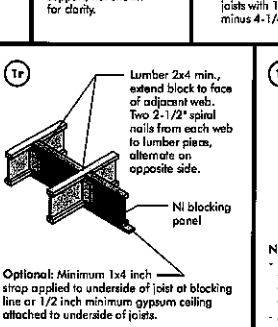
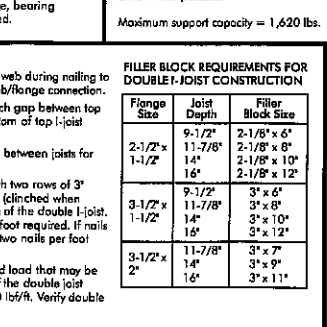
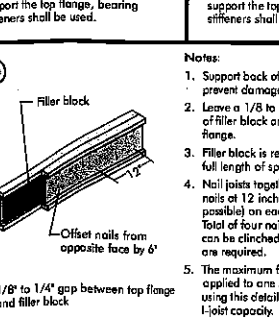
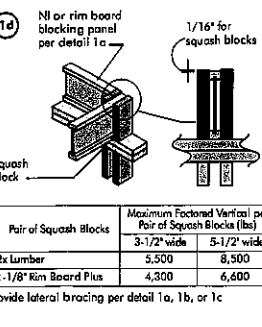
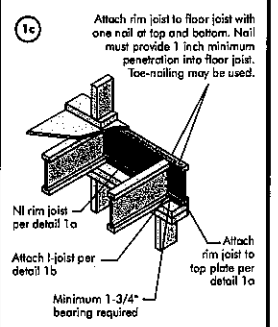
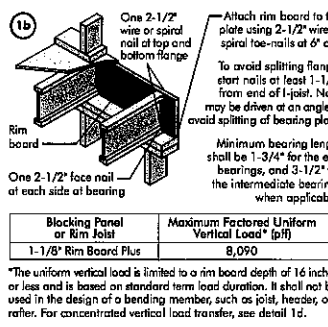
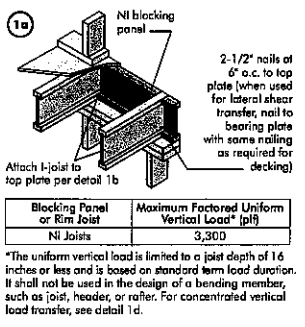
## INSTALLING NORDIC I-JOISTS

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

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



All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (10.22" dia.) common spiral nails may be substituted for 2-1/2" (6.35" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.



### Notes:

1. Support back of I-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 I-joist flange.
3. Filler block is required between joists for full length of span.
4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clinch when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
5. The maximum factored load that may be applied to one side of the double I-joist using this detail is 860 lb/ft. Verify double I-joist capacity.

### FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

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

### Notes:

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

Cantilever extension supporting uniform floor loads only

Rim board or wood structural panel closure; attach per detail 1b

Attach I-joists to plate at all supports per detail 1b

I-joist, or rim board

3-1/2" min. bearing required

**CAUTION:** Cantilevers formed this way must be carefully detailed to prevent moisture intrusion into the structure and potential decay of unretreated I-joist extensions.

Note: This detail is applicable to cantilevers supporting a maximum specified uniform live load of 60 psf.

[illegible]

**Method 2 — SHEATHING REINFORCEMENT TWO SIDES**

- Use same installation as Method 1 but reinforce both sides of I-Joist with sheathing.
- Use nailing pattern shown for Method 1 with opposite face nailing offset by 3".

**(4b) Alternate Method 2 — DOUBLE I-JOIST**

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

Attach I-joists to top plate of all supports per detail 1b, 3- $1/2$ " min. bearing required

2'-0" maximum

4'-0" minimum

N blocking panel or rim board blocking; attach per detail 1a

Face nail two rows of 3" nails at 12" o.c. each side through one I-joist web and the filler block to other I-joist web. Offset nails from opposite faces by 6".

Clinch if possible (four nails per foot required, except two nails per foot required if clinched).

Block I-joists together with filler blocks for the full length of the reinforcement.

For I-joist flange widths greater than 8 inches place an additional row of 3" nails along the centerline of the reinforcing panel from each side. Clinch when possible.

See table below for NI reinforcement requirements of cantilever.

Diagram illustrating the reinforcement requirements for cantilevered roof trusses. The diagram shows two cross-sections of a roof truss. The left section shows a single truss with a 'Roof truss span' and a '2'-0" maximum cantilever'. The right section shows a truss with 'Jack trusses' running parallel to the main 'Roof truss span', also with a '2'-0" maximum cantilever'.

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)																	
		LL = 30 psf, DL = 15 psf JOIST SPACING (in.)						LL = 40 psf, DL = 15 psf JOIST SPACING (in.)						LL = 50 psf, DL = 15 psf JOIST SPACING (in.)					
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24						
12	12	N	N	1	2	N	1	2	X	N	2	X	X						
12	16	N	N	1	X	N	1	2	X	N	2	X	X						
12	20	N	N	1	1	N	1	2	X	N	1	2	X						
12	24	N	N	1	2	X	2	X	X	N	1	X	X						
12	28	N	N	1	2	X	N	2	X	X	1	X	X						
12	32	N	N	1	2	X	1	2	X	N	1	X	X						
12	36	N	N	N	1	N	N	1	2	N	N	1	2						
12	40	N	N	N	1	N	N	1	2	N	1	1	X						
12	44	N	N	N	1	N	N	1	2	N	1	2	X						
12	48	N	N	N	1	2	N	1	2	X	N	2	X						
12	52	N	N	N	1	2	N	1	2	X	N	2	X						
12	56	N	N	N	N	N	N	1	2	N	N	N	1						
12	60	N	N	N	N	N	N	1	1	N	N	1	2						
12	64	N	N	N	N	N	N	1	1	N	N	1	2						
12	68	N	N	N	N	N	N	1	2	N	1	1	X						
12	72	N	N	N	N	N	N	1	2	N	1	2	X						
12	76	N	N	N	N	N	N	1	2	N	1	2	X						
12	80	N	N	N	N	N	N	1	2	N	1	2	X						
12	84	N	N	N	N	N	N	1	2	N	1	2	X						
12	88	N	N	N	N	N	N	1	2	N	1	2	X						
12	92	N	N	N	N	N	N	1	2	N	1	2	X						
12	96	N	N	N	N	N	N	1	2	N	1	2	X						
12	100	N	N	N	N	N	N	1	2	N	1	2	X						
12	104	N	N	N	N	N	N	1	2	N	1	2	X						
12	108	N	N	N	N	N	N	1	2	N	1	2	X						
12	112	N	N	N	N	N	N	1	2	N	1	2	X						
12	116	N	N	N	N	N	N	1	2	N	1	2	X						
12	120	N	N	N	N	N	N	1	2	N	1	2	X						
12	124	N	N	N	N	N	N	1	2	N	1	2	X						
12	128	N	N	N	N	N	N	1	2	N	1	2	X						
12	132	N	N	N	N	N	N	1	2	N	1	2	X						
12	136	N	N	N	N	N	N	1	2	N	1	2	X						
12	140	N	N	N	N	N	N	1	2	N	1	2	X						
12	144	N	N	N	N	N	N	1	2	N	1	2	X						
12	148	N	N	N	N	N	N	1	2	N	1	2	X						
12	152	N	N	N	N	N	N	1	2	N	1	2	X						
12	156	N	N	N	N	N	N	1	2	N	1	2	X						
12	160	N	N	N	N	N	N	1	2	N	1	2	X						
12	164	N	N	N	N	N	N	1	2	N	1	2	X						
12	168	N	N	N	N	N	N	1	2	N	1	2	X						
12	172	N	N	N	N	N	N	1	2	N	1	2	X						
12	176	N	N	N	N	N	N	1	2	N	1	2	X						
12	180	N	N	N	N	N	N	1	2	N	1	2	X						
12	184	N	N	N	N	N	N	1	2	N	1	2	X						
12	188	N	N	N	N	N	N	1	2	N	1	2	X						
12	192	N	N	N	N	N	N	1											

- |   |  |
|---|--|
| <p>1. N = No reinforcement required.</p> <p>2. = NI reinforced with 3/4" wood structural panel on one side only.</p> <p>3. = NI reinforced with 3/4" wood structural panel on both sides, or double 1/2" panel.</p> <p>X = Try a tieper joint or closer spacing.</p> <p>2. Maximum design load shall be 15 psf roof dead load plus 15 psf live load plus 15 psf wind wall. Wind load is based on 3'-0" maximum width window or door openings.</p> | <p>For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joints (also joints on the opposite's cripple edge) are required.</p> <p>3. Table applies to joists "2" to "24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/460. Use 12" o.c. requirements for lesser spacing.</p> <p>4. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. The 12" o.c. of trusses with a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls or to the ridge beam.</p> <p>5. Girted joists (also supporting girts or trusses or roof beams) may require additional girts.</p> |
|---|--|

**5a SHEATHING REINFORCEMENT**

Provide full depth blocking between joists over support (not shown)

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

12" minimum length of sheathing reinforcement

Nail reinforcement to top and bottom joist flange with 2 1/2" nails at 6" o.c. (if not opposite face nailing by 2" when using reinforcement on both sides of joist)

1 1/2" max.

1/2" min.

PROFESSIONAL

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

Bearing walls

5" max.

30" max.

Attach joists to girder joist per detail 5c.

2015-04

Notes:

- Provide full depth blocking between joists over support (not shown for clarity)
- Attach 1/2" plate to plate at all supports per detail 1b.
- 3-1/2" minimum 1-lb bearing required.

**Notes:**

- Varily girder joist capacity if the back span exceeds the joist spacing.
- Attach double L-joist per detail 1p, if required.

DECK CAN NEVER REINFORCEMENT MET HOURS ALLOWED																		
JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)																
		LL = 30 psf, DL = 15 psf								LL = 40 psf, DL = 15 psf								
		JOIST SPACING (in.)				JOIST SPACING (in.)				JOIST SPACING (in.)				JOIST SPACING (in.)				
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24	
24	20	1	X	X	X	2	2	X	X	2	2	X	X	2	2	X	X	X
24	22	1	1	X	X	X	2	2	X	1	1	X	X	2	2	X	X	X
24	24	1	1	1	X	X	2	2	X	1	1	1	X	2	2	X	X	X
24	26	2	2	X	X	X	2	2	X	1	1	X	X	2	2	X	X	X
24	28	2	2	X	X	X	X	X	X	1	1	X	X	2	2	X	X	X
24	30	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	32	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	34	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	36	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	38	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	40	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	42	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	44	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	46	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	48	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	50	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	52	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	54	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	56	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	58	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	60	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	62	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	64	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	66	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	68	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	70	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	72	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24	74	N	N	2	X	X	1	1	X	2	2	X	X	2	2	X	X	X
24																		

- |   |   |   |
|---|---|---|
| <p>1. N = No reinforcement required</p> <p>2. N = NI reinforced with 3/4" wood structural panel on one side only</p> <p>3. N = NI reinforced with 3/4" wood structural panel on both sides, or double batten</p> <p>4. X = Not permitted for closer spacing</p> <p>5. Maximum design load shall be: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wind load is based on a design wind speed of 140 mph, design gust speed of 160 mph.</p> | <p>For gable openings, or multiple 30" wide openings spaced less than 40' apart, additional joints between the opening's cripple studs may be required.</p> <p>6. Table applies to dead loads 12" to 24" or less. For roof loads greater than 24" or less than 12", see Table 1 for additional requirements for design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" or less, or requirements for lesser spacing.</p> | <p>7. For conventional rafter construction using a ridge beam, the roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the distance between the supporting wall and the ridge board is equivalent to the distance between the supporting walls as if a truss is used.</p> <p>8. All gable end joints supporting gable trusses or roof beams may require additional bracing.</p> |
|---|---|---|

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

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

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

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

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

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

Joist Series		Minimum distance from inside face of any support to centre of hole (ft.-in.)													Span adjuster Factor		
Joist Depth	Series	Round hole diameter (in.)															
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11		12	12-3/4
2IN	N-20	0-7/8	1-0	1-0	2-10	4-5	5-5	6-4	---	---	---	---	---	---	---	---	---
	N-40	0-7/8	1-0	3-0	4-4	6-5	6-4	---	---	---	---	---	---	---	---	---	---
	N-60	0-7/8	2-0	3-0	4-0	6-5	7-0	8-4	---	---	---	---	---	---	---	---	---
	N-80	0-7/8	2-0	3-0	4-0	6-5	7-0	8-4	---	---	---	---	---	---	---	---	---
	N-100	0-7/8	2-0	3-0	4-0	6-5	7-0	8-4	---	---	---	---	---	---	---	---	---
	N-120	0-7/8	2-0	3-0	4-0	6-5	7-0	8-4	---	---	---	---	---	---	---	---	---
	N-140	0-7/8	2-0	3-0	4-0	6-5	7-0	8-4	---	---	---	---	---	---	---	---	---
	N-160	0-7/8	2-0	3-0	4-0	6-5	7-0	8-4	---	---	---	---	---	---	---	---	---
	N-180	0-7/8	2-0	3-0	4-0	6-5	7-0	8-4	---	---	---	---	---	---	---	---	---
	N-200	0-7/8	2-0	3-0	4-0	6-5	7-0	8-4	---	---	---	---	---	---	---	---	---
2 1/2 IN	N-20	0-7/8	0-9	1-3	2-5	4-0	4-4	5-5	5-4	6-5	7-9	---	---	---	---	---	---
	N-40	0-7/8	0-9	1-3	2-5	4-0	4-4	5-5	5-4	6-5	7-9	---	---	---	---	---	---
	N-60	0-7/8	1-0	3-0	4-3	5-9	7-2	7-0	7-0	8-10	10-4	---	---	---	---	---	---
	N-80	0-7/8	1-3	2-0	4-2	5-7	7-0	7-5	8-6	10-7	11-4	---	---	---	---	---	---
	N-100	0-7/8	1-3	2-0	4-2	5-7	7-0	7-5	8-6	10-7	11-4	---	---	---	---	---	---
	N-120	0-7/8	1-3	2-0	4-2	5-7	7-0	7-5	8-6	10-7	11-4	---	---	---	---	---	---
	N-140	0-7/8	1-3	2-0	4-2	5-7	7-0	7-5	8-6	10-7	11-4	---	---	---	---	---	---
	N-160	0-7/8	1-3	2-0	4-2	5-7	7-0	7-5	8-6	10-7	11-4	---	---	---	---	---	---
	N-180	0-7/8	1-3	2-0	4-2	5-7	7-0	7-5	8-6	10-7	11-4	---	---	---	---	---	---
	N-200	0-7/8	1-3	2-0	4-2	5-7	7-0	7-5	8-6	10-7	11-4	---	---	---	---	---	---
3 IN	N-20	0-7/8	0-8	0-8	1-0	2-4	2-9	3-8	3-8	4-9	5-8	5-8	6-9	7-9	---	---	---
	N-40	0-7/8	0-8	0-8	1-0	2-4	2-9	3-8	3-8	4-9	5-8	5-8	6-9	7-9	---	---	---
	N-60	0-7/8	0-8	0-8	1-0	2-4	2-9	3-8	3-8	4-9	5-8	5-8	6-9	7-9	---	---	---
	N-80	0-7/8	0-8	0-8	1-0	2-4	2-9	3-8	3-8	4-9	5-8	5-8	6-9	7-9	---	---	---
	N-100	0-7/8	0-8	0-8	1-0	2-4	2-9	3-8	3-8	4-9	5-8	5-8	6-9	7-9	---	---	---
	N-120	0-7/8	0-8	0-8	1-0	2-4	2-9	3-8	3-8	4-9	5-8	5-8	6-9	7-9	---	---	---
	N-140	0-7/8	0-8	0-8	1-0	2-4											

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

The above table is based on the 1-joints used at their maximum span. If the 1-joints are placed at less than their full maximum span (see Maximum Span Table) the minimum distances from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

$$\text{Reduced } D = \frac{\text{Reduction}}{\text{S.F.}} \times D$$

Where:

- $\frac{\text{Reduction}}{\text{S.F.}}$  = Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span applications as follows:
  - a) If the span is less than 6 inches from the face of the support to edge of the hole.
  - b) The actual measured span distance between the inside faces of supports [9].
- $\frac{\text{S.F.}}{\text{S.F.}}$  = Span Adjustment Factor given in this table.
- $D$  = The minimum distance from the inside face of any support to centre of hole from this table.

If  $\frac{\text{Reduction}}{\text{S.F.}}$  is greater than 1, use 1 in the above calculation for  $\frac{\text{Reduction}}{\text{S.F.}}$ .

Minimum distance from inside face of any support to centre of opening (inches)											
Joist Depth	Joist Series	Duct chase length (in.)									
		8	10	12	14	16	18	20	22	24	
12	N-10	4.1	4.3	4.10	5.4	5.6	5.3	5.6	7.1	7.2	
	N-20	5.3	5.5	6.0	6.5	6.10	7.5	8.0	8.5	8.6	
	N-30	5.4	5.9	6.2	6.7	7.1	7.5	8.0	8.3	8.6	
	N-40	5.5	6.0	6.3	6.7	7.1	7.5	8.0	8.3	8.6	
	N-50	5.7	6.2	6.5	6.9	7.3	7.8	8.2	8.5	8.9	
14	N-10	4.3	4.5	4.3	5.7	5.9	5.6	5.9	7.4	7.5	
	N-20	5.5	5.7	6.2	6.7	6.10	7.5	8.0	8.5	8.6	
	N-30	5.6	6.1	6.4	6.9	7.3	7.8	8.2	8.5	8.9	
	N-40	5.7	6.2	6.5	7.0	7.4	7.9	8.3	8.6	9.0	
	N-50	5.9	6.4	6.7	7.2	7.6	8.1	8.5	8.9	9.3	
16	N-10	4.5	4.7	4.5	6.0	6.2	5.9	6.2	7.7	7.8	
	N-20	5.7	5.9	6.4	6.9	7.3	7.8	8.2	8.7	8.8	
	N-30	5.8	6.3	6.6	7.1	7.5	8.0	8.4	8.7	9.1	
	N-40	5.9	6.4	6.7	7.2	7.6	8.1	8.5	8.9	9.3	
	N-50	6.1	6.6	6.9	7.4	7.8	8.3	8.7	9.1	9.5	
18	N-10	4.7	4.9	4.7	6.2	6.4	6.1	6.4	7.9	8.0	
	N-20	5.9	6.1	6.6	7.1	7.5	8.0	8.4	8.9	9.0	
	N-30	6.0	6.5	6.8	7.3	7.7	8.2	8.6	8.9	9.3	
	N-40	6.1	6.6	6.9	7.4	7.8	8.3	8.7	9.1	9.5	
	N-50	6.3	6.8	7.1	7.6	8.0	8.5	8.9	9.3	9.7	
20	N-10	4.9	5.1	4.9	6.4	6.6	6.3	6.6	8.1	8.2	
	N-20	6.1	6.3	6.8	7.3	7.7	8.2	8.6	9.1	9.2	
	N-30	6.2	6.7	7.0	7.5	7.9	8.4	8.8	9.1	9.5	
	N-40	6.3	6.8	7.1	7.6	8.0	8.5	8.9	9.3	9.7	
	N-50	6.5	7.0	7.3	7.8	8.2	8.7	9.1	9.5	9.9	
22	N-10	5.1	5.3	5.1	6.6	6.8	6.5	6.8	8.3	8.4	
	N-20	6.3	6.5	7.0	7.5	7.9	8.4	8.8	9.3	9.4	
	N-30	6.4	6.9	7.2	7.7	8.1	8.6	9.0	9.3	9.7	
	N-40	6.5	7.0	7.3	7.8	8.2	8.7	9.1	9.5	9.9	
	N-50	6.7	7.2	7.5	8.0	8.4	8.9	9.3	9.7	10.1	
24	N-10	5.3	5.5	5.3	6.8	7.0	6.7	7.0	8.5	8.6	
	N-20	6.5	6.7	7.2	7.7	8.1	8.6	9.0	9.5	9.6	
	N-30	6.6	7.1	7.4	7.9	8.3	8.8	9.2	9.5	9.9	
	N-40	6.7	7.2	7.5	8.0	8.4	8.9	9.3	9.7	10.1	
	N-50	6.9	7.4	7.7	8.2	8.6	9.1	9.5	9.9	10.3	

1. Above table may be used for joist spacing of 24 inches on centre or less.
2. Duct chase opening location distance is measured from inside face of supports to centre of opening.
3. The above table is based on simple-span joists only. For other applications, contact your local distributor.
4. Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. For other applications, contact your local distributor.

**Rim board joint Between Floor Joists** 2-1/2" nails at 6" o.c. (typical)

(1) 2-1/2" nail top and bottom (typical)

2-1/2" toe-nails at 6" o.c. (typical)

Rim board joint

**Rim board joint at Corner**

1-1/2"

h

1-1/2"

Rim board joint

**8b) TOE-NAIL CONNECTION AT RIM BOARD**

This diagram shows a cross-section of a rim board being toe-nailed to a joist. The rim board is positioned at a 30° angle to the joist. A top or sole plate is shown on the exterior side of the rim board. The connection is made with a nail driven through the rim board into the joist. The drawing is labeled with 'Rim board', '30°', 'Top or sole plate', and a circular detail callout 'C/3'.

**8c) 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL**

This diagram shows a cross-section of a 2x ledger board attached to a rim board. The ledger board is positioned parallel to the rim board. The attachment detail shows the ledger board being secured to the rim board with a continuous flashing extending at least 2" past the joint hang. The ledger board is also shown being attached to the joist with a staggered 1/4" diameter lag screw or thru-bolt with washers. The drawing is labeled with 'Existing stud wall', 'Rim board', 'Exterior sheathing', 'Remove siding or sheathing prior to installation', 'Continuous flashing extending at least 2" past joint hang', '2" min.', '1-5/8" min.', '5" max.', '2" min.', 'Staggered 1/4" diameter lag screw or thru-bolt with washers', 'Deck joist', 'Joist hang', 'Existing foundation wall', and '2x ledger board (preservative-treated); must be greater than or equal to the depth of the deck joist'.

*Chemies Chongwen guarantees this, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.*

Furthermore, Chemtreat's Challenge guarantee states our products, utilized in accordance with our handling and installation instructions, will meet or exceed any specifications for the lifetime of the structure.





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

## WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- 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.

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

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

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

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

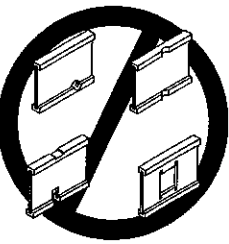
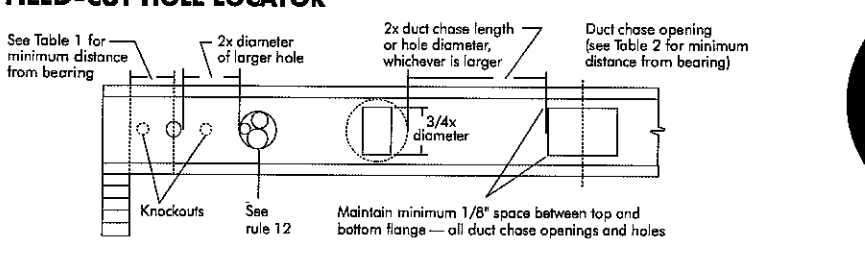
- Above table may be used for I-joist spacing of 24 inches on centre or less.
- Hole location distance is measured from inside face of supports to centre of hole.
- Distances in this chart are based on uniformly loaded joists.
- The above table is based on the I-joists being used of their maximum spans.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

TABLE 2  
DUCT CHASE OPENING SIZES AND LOCATIONS  
Simple Span Only

Joist Depth	Joist Series	Minimum distance from inside face of supports to centre of opening (ft - in.)												
		Duct Chase Length (in.)												
		8	10	12	14	16	18	20	22	24				
9-1/2"	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"				
	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"				
11-7/8"	NI-20	5-9"	6-2"	6-6"	7-1"	7-5"	7-9"	8-3"	8-9"	9-4"				
	NI-40x	6-8"	7-2"	7-6"	8-1"	8-6"	9-1"	9-6"	10-1"	10-9"				
	NI-60	7-3"	7-8"	8-0"	8-6"	9-0"	9-3"	9-9"	10-3"	11-0"				
	NI-70	7-1"	7-4"	7-9"	8-3"	8-7"	9-1"	9-6"	10-1"	10-4"				
	NI-80	7-2"	7-7"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-8"				
14"	NI-20	8-1"	8-7"	9-0"	9-6"	10-1"	10-7"	11-2"	12-0"	12-8"				
	NI-40x	8-9"	9-3"	9-8"	10-1"	11-1"	11-6"	12-3"	13-0"	13-8"				
	NI-60	8-7"	9-1"	9-5"	9-10"	10-4"	10-8"	11-2"	11-7"	12-3"				
	NI-70	9-0"	9-3"	9-9"	10-1"	10-7"	11-1"	11-6"	12-1"	12-6"				
	NI-80	9-2"	9-8"	10-0"	10-6"	10-11"	11-5"	11-9"	12-4"	12-11"				
16"	NI-20	9-4"	9-9"	10-3"	10-7"	11-1"	11-5"	12-1"	12-7"	13-2"				
	NI-40x	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-2"	14-1"	14-10"				
	NI-60	10-1"	10-5"	11-0"	11-4"	11-10"	12-3"	12-8"	13-3"	14-0"				
	NI-70	10-4"	10-9"	11-3"	11-9"	12-1"	12-7"	13-1"	13-8"	14-4"				
	NI-80	10-9"	11-2"	11-8"	12-0"	12-6"	13-0"	13-6"	14-2"	14-10"				

- 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.
- 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 psf 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 of their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

FIGURE 7  
FIELD-CUT HOLE LOCATOR



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

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

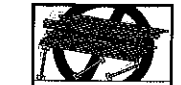
Holes in webs should be cut with a sharp saw.

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

## SAFETY AND CONSTRUCTION PRECAUTIONS




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



Never stack building materials over unshathed I-joists. Once shathed, do not over-stress I-joists with concentrated loads from building materials.

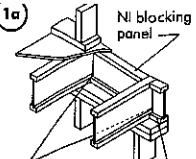
- WARNING:** I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.
- AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:**
- Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
  - When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
    - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
    - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
  - For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
  - Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
  - Never install a damaged I-joist.
- Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.



### PRODUCT WARRANTY

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

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



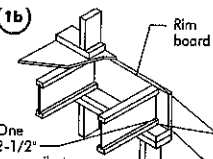
**Blocking Panel or Rim Joist**  
NI Joists

Maximum Factored Uniform Vertical Load\* (plf)  
3,300

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

Attach I-joist to top plate per detail 1b

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



**Blocking Panel or Rim Joist**  
1-1/8" Rim Board Plus

Maximum Factored Uniform Vertical Load\* (plf)  
8,090

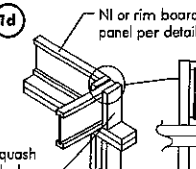
\*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

One 2-1/2" face nail at each side at bearing

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

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

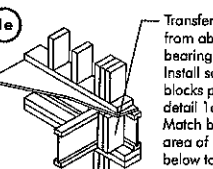
Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.



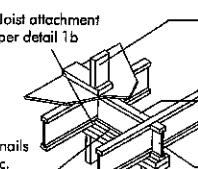
**Pair of Squash Blocks**  
2x Lumber  
1-1/8" Rim Board Plus

Maximum Factored Vertical Load per Pair of Squash Blocks (lbs)  
3-1/2" wide: 5,500  
5-1/2" wide: 8,500  
3-1/2" wide: 4,300  
5-1/2" wide: 6,600

Provide lateral bracing per detail 1a or 1b



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

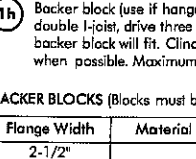


Joist attachment per detail 1b

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

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

NI blocking panel per detail 1a

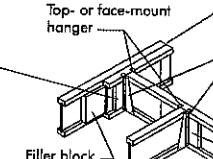


Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer right to top flange. Use twelve 3" nails, clinched when possible. Maximum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

**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"

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



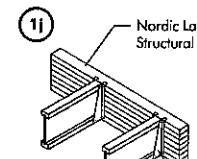
Top- or face-mount hanger

Double I-joist header

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

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

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

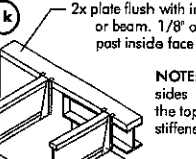


Nordic Lam or Structural Composite Lumber (SCL)

For nailing schedules for multiple beams, see the manufacturer's recommendations.

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

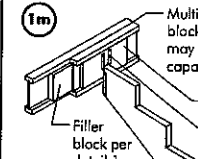
NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.



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 the top flange, bearing stiffeners shall be used.

Top-mount hanger installed per manufacturer's recommendations



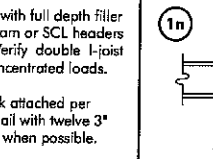
Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify double I-joist capacity to support concentrated loads.

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

Filler block per detail 1p

Maximum support capacity = 1,620 lbs.

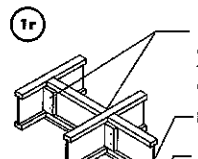
Install hanger per manufacturer's recommendations



Do not bevel-cut joist beyond inside face of wall

Attach I-joist per detail 1b

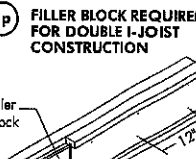
NOTE: Blocking required at bearing for lateral support, not shown for clarity.



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

NI blocking panel

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



**FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION**

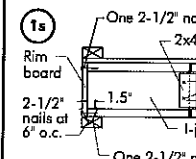
Offset nails from opposite face by 6"

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

**NOTES:**

- Support back of I-joist web during nailing to prevent damage to web/flange connection.
- Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
- Filler block is required between joists for full length of span.
- Nail joists together with two rows of 3" nails at 12 inches o.c. (clinched when possible) on each side of the double I-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 lb/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)

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

One 2-1/2" nail one side only

**NOTES:**

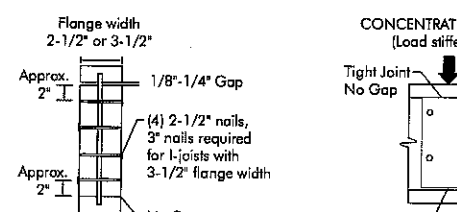
- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.

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

## WEB STIFFENERS

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

FIGURE 2  
WEB STIFFENER INSTALLATION DETAILS



Flange width 2-1/2" or 3-1/2"

Approx. 2" I

1/8"-1/4" Gap

(4) 2-1/2" nails, 3" nails required for I-joists with 3-1/2" flange width

No Gap

CONCENTRATED LOAD (Load stiffener)

END BEARING (Bearing stiffener)

Tight Joint No Gap

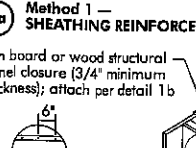
Gap

Tight Joint No Gap

See the adjacent table for web stiffener size requirements

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

## CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET



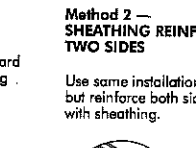
**Method 1 — SHEATHING REINFORCEMENT ONE SIDE**

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

NI blocking panel or rim board blocking, attach per detail 1g

Attach I-joist to plate per detail 1b

2-1/2" min. bearing required



**Method 2 — SHEATHING REINFORCEMENT TWO SIDES**

Use same installation as Method 1 but reinforce both sides of I-joist with sheathing.

Use nailing pattern shown for Method 1 with opposite face nailing offset by 3".

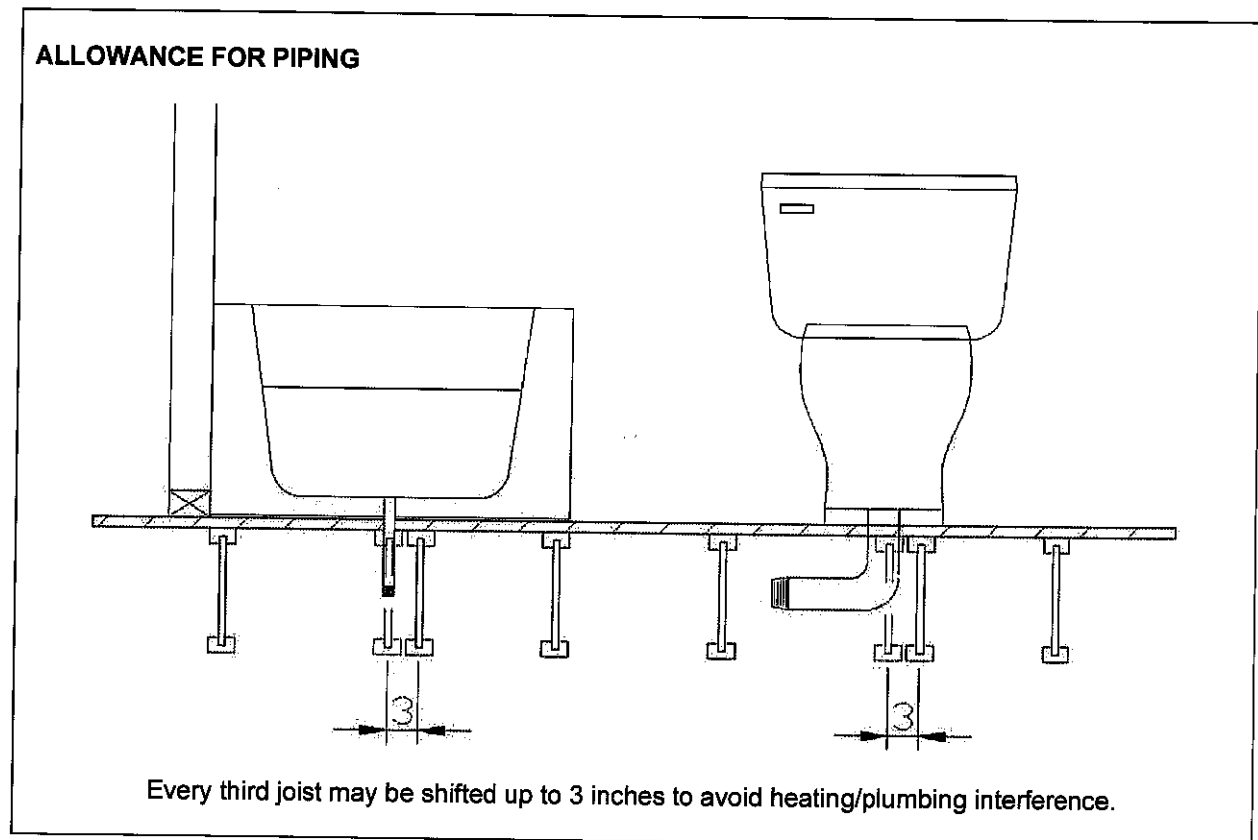
**NOTE:** Canadian softwood plywood sheathing or equivalent (minimum thickness 3

## 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.

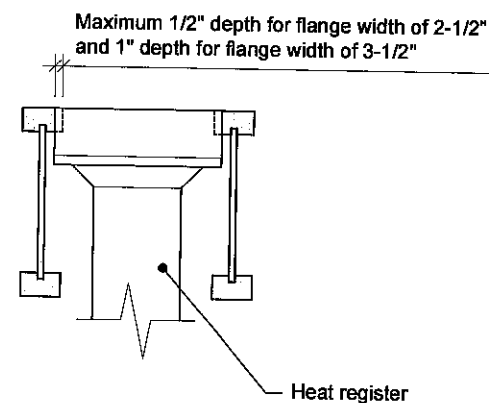
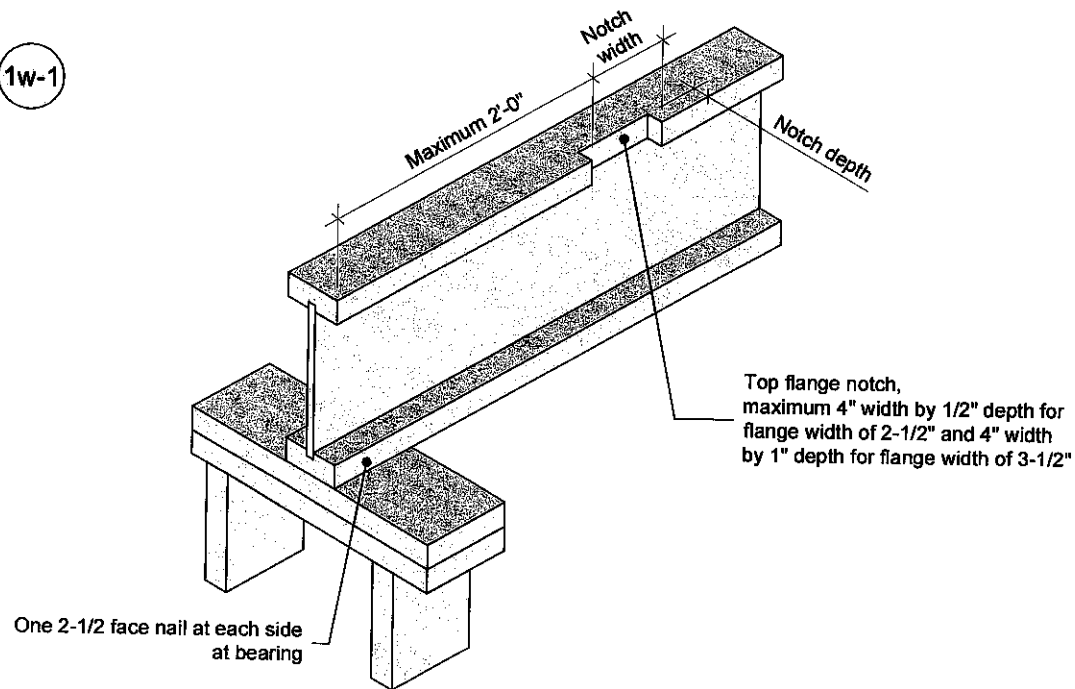
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced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

1w-1



**Notes:**

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

This document supersedes all previous versions. If the document has been in effect for more than one year, consult [nordic.ca](http://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](http://nordic.ca)

**TITLE**

Notch in I-joist for Heat Register

**CATEGORY**

I-joist - Typical Floor Framing and Construction Details

**DOCUMENT**

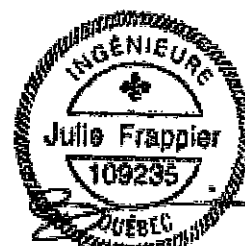
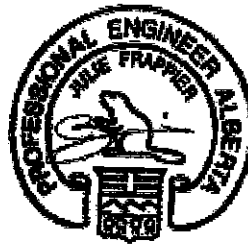
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**DATE**

2018-04-10

**NUMBER**

1w-1



## Maximum Floor Spans

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

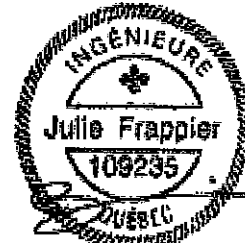
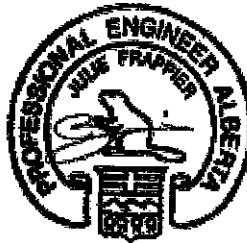
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"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

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	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"
	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"
11-7/8"	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"
	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"
14"	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"
	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"
16"	NI-90x	27'-3"	25'-4"	24'-1"	22'-4"	27'-9"	25'-10"	24'-3"	22'-4"
	NI-60	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"
	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'-11"	27'-10"	26'-6"	24'-10"	30'-6"	28'-5"	26'-11"	24'-10"

- 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.
- 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.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than 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.
- 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.





## Maximum Floor Spans

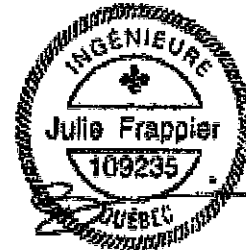
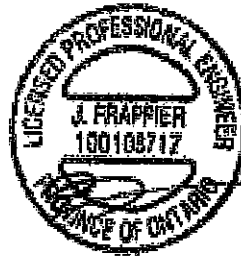
Live Load = 40 psf, Dead Load = 15 psf  
Simple Spans, L/480 Deflection Limit  
5/8" OSB G&N Sheathing

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

- 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.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than 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.
- 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.



## Maximum Floor Spans

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

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

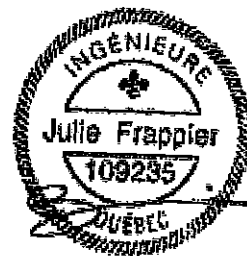
  

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-60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

- 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 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.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than 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.
- 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.

### Maximum Floor Spans

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



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

- 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.
- 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.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than 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.
- 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.