

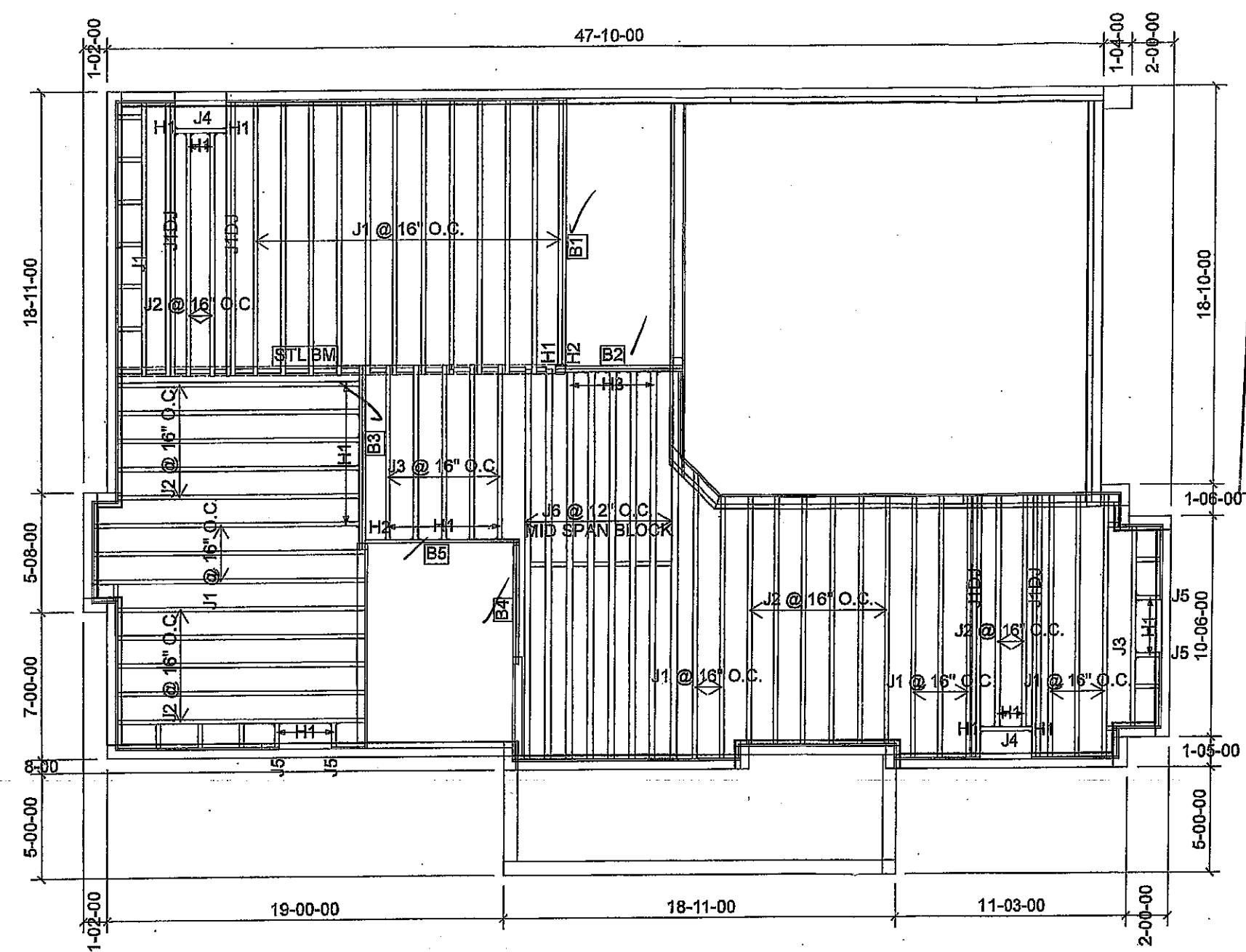
FROM PLAN DATED:
BUILDER: GREENPARK HOMES
SITE: RUSSELL GARDENS PH 3
MODEL: VALLEYCREEK 12
ELEVATION: 2
LOT:
CITY: WATERDOWN
SALESMAN: MARIO DICIANO
DESIGNER: AJ
REVISION:

NOTES:
REFER TO THE **NORDIC INSTALLATION**
GUIDE FOR PROPER STORAGE AND
INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F
REQ'D UNDER INTERIOR UNIFORM LOAD
BEARING WALLS. **MULTIPLE SQUASH**
BLOCKS REQ'D UNDER CONCENTRATED
LOADS. SEE FIGURE 1. **CANTILEVERED**
JOISTS INCLUDING CANT' OVER BRICK REQ.
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: 20.0 lb/ft²
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-02-14

1st FLOOR

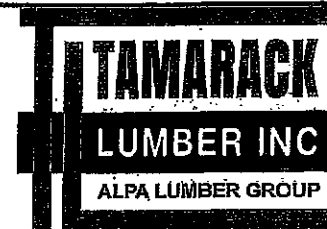


CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
OCT 06 2020
REC BY _____ DATE _____
REFD TO _____ DATE _____

Products					
ProdID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	24	MFD
J1DJ	14-00-00	9 1/2" NI-40x	2	8	MFD
J2	12-00-00	9 1/2" NI-40x	1	20	MFD
J3	10-00-00	9 1/2" NI-40x	1	6	MFD
J4	4-00-00	9 1/2" NI-40x	1	2	MFD
J5	2-00-00	9 1/2" NI-40x	1	4	MFD
J6	20-00-00	9 1/2" NI-80	1	8	MFD
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD

Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
2	H2	HUS1.81/10
5	H3	IUS3.56/9.5

CITY OF HAMILTON
Building Division
187706
Permit No. _____
THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE
THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH
THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW
These drawings and/or specifications have been reviewed by
JDL Nov 6 2020
FOR CHIEF BUILDING OFFICIAL DATE



FROM PLAN DATED:

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: VALLEYCREEK 12

ELEVATION: 3

LOT:

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

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

LOADING:

DESIGN LOADS: L/480.000

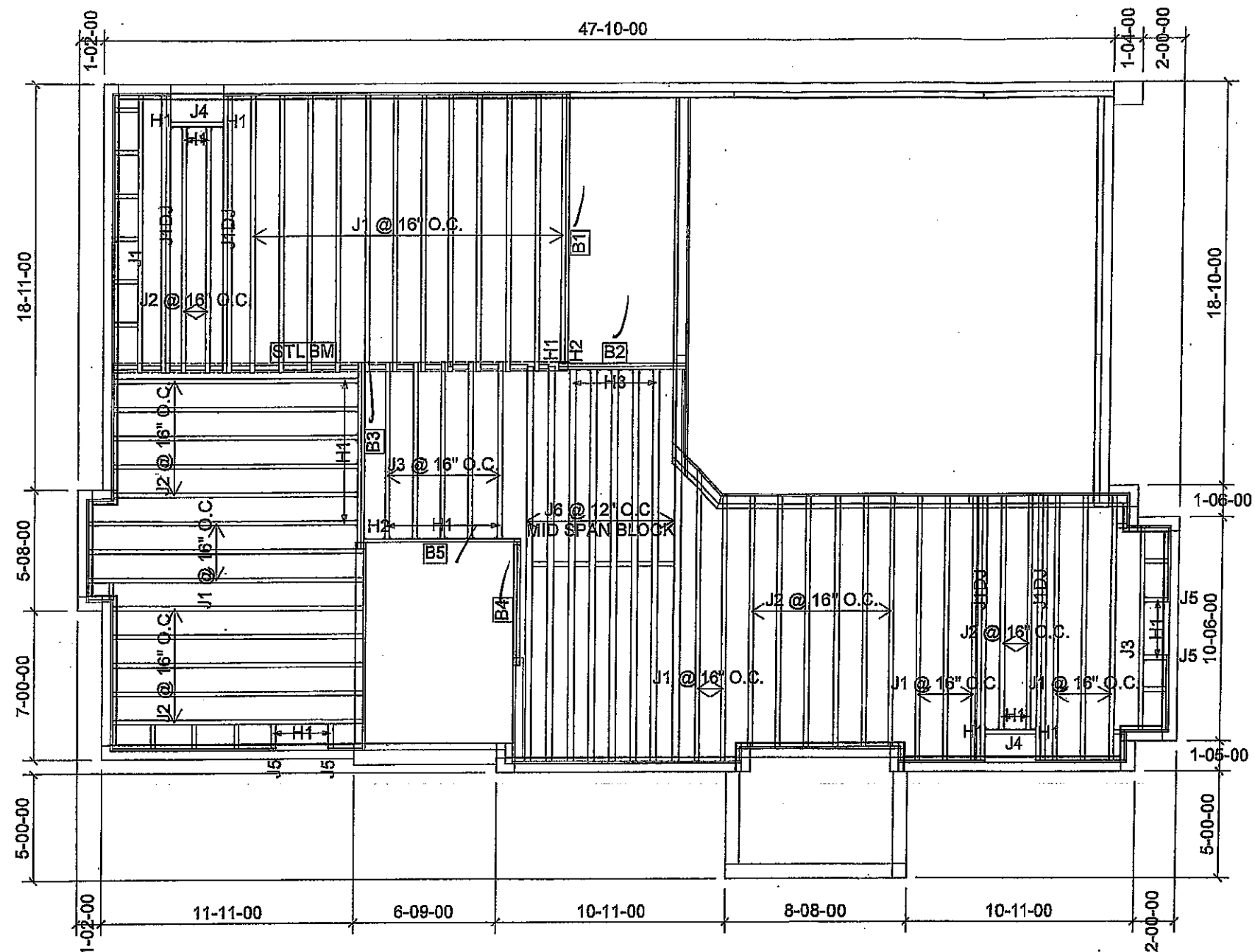
LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-02-14

1st FLOOR



CITY OF HAMILTON
Building Division
Planning & Development Department

REC BY: _____ DATE: _____
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OCT 06 2020

Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	24	MFD
J1DJ	14-00-00	9 1/2" NI-40x	2	8	MFD
J2	12-00-00	9 1/2" NI-40x	1	20	MFD
J3	10-00-00	9 1/2" NI-40x	1	6	MFD
J4	4-00-00	9 1/2" NI-40x	1	2	MFD
J5	2-00-00	9 1/2" NI-40x	1	4	MFD
J6	20-00-00	9 1/2" NI-80	1	8	MFD
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD

Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
2	H2	HUS1.81/10
5	H3	IUS3.56/9.5

CITY OF HAMILTON
Building Division

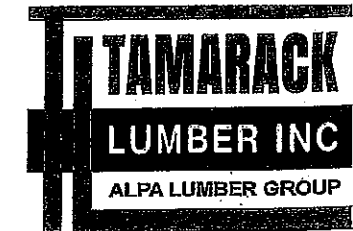
Permit No. 187706

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These drawings and/or specifications have been reviewed by
JAC *Nov 6/2020*

FOR CHIEF BUILDING OFFICIAL DATE



FROM PLAN DATED:

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: VALLEYCREEK 12

ELEVATION: 1

LOT:

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

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

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING CANT' OVER BRICK RE-
[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 TIL** APPLICATION AS PER O.B.C 9.30.6.

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

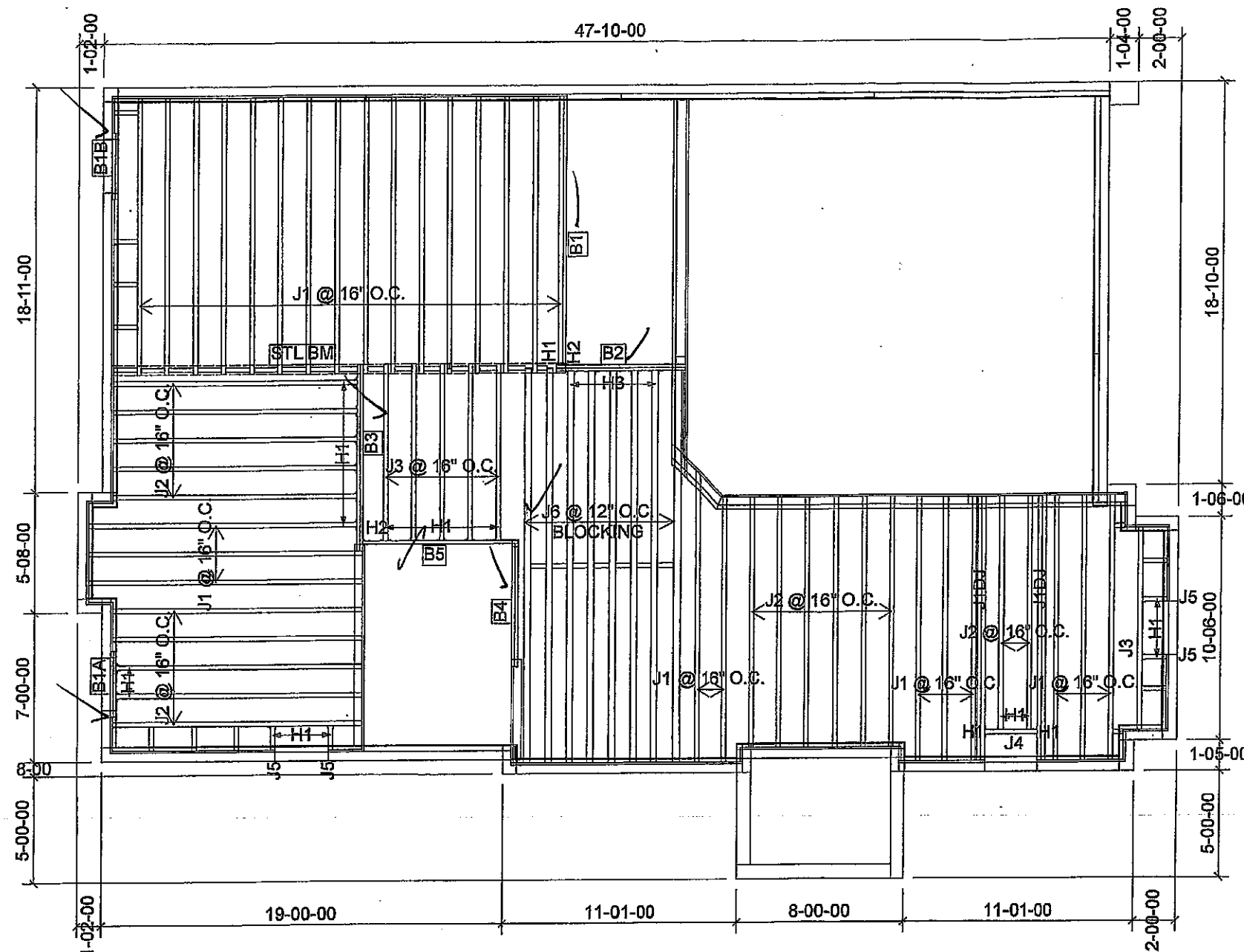
DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-04-14

1st FLOOR

DECK CONDITION



CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

REC BY: _____ DATE: _____
REFD TO: _____ DATE: _____

OCT 06 2020

Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	27	MFD
J1DJ	14-00-00	9 1/2" NI-40x	2	4	MFD
J2	12-00-00	9 1/2" NI-40x	1	18	MFD
J3	10-00-00	9 1/2" NI-40x	1	6	MFD
J4	4-00-00	9 1/2" NI-40x	1	1	MFD
J5	2-00-00	9 1/2" NI-40x	1	4	MFD
J6	20-00-00	9 1/2" NI-80	1	8	MFD
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B1A	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B1B	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD

Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/9.5
9	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
2	H2	HUS1.81/10
5	H3	IUS3.56/9.5

CITY OF HAMILTON
Building Division

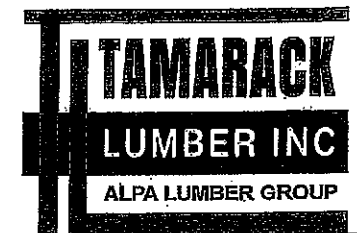
Permit No. 187706

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These drawings and/or specifications have been reviewed by

JDC Nov 6/2020
FOR CHIEF BUILDING OFFICIAL DATE



FROM PLAN DATED:

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: VALLEYCREEK 12

ELEVATION: 2

LOT:

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

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

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK REI** 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 TIL** APPLICATION AS PER O.B.C 9.30.6.

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

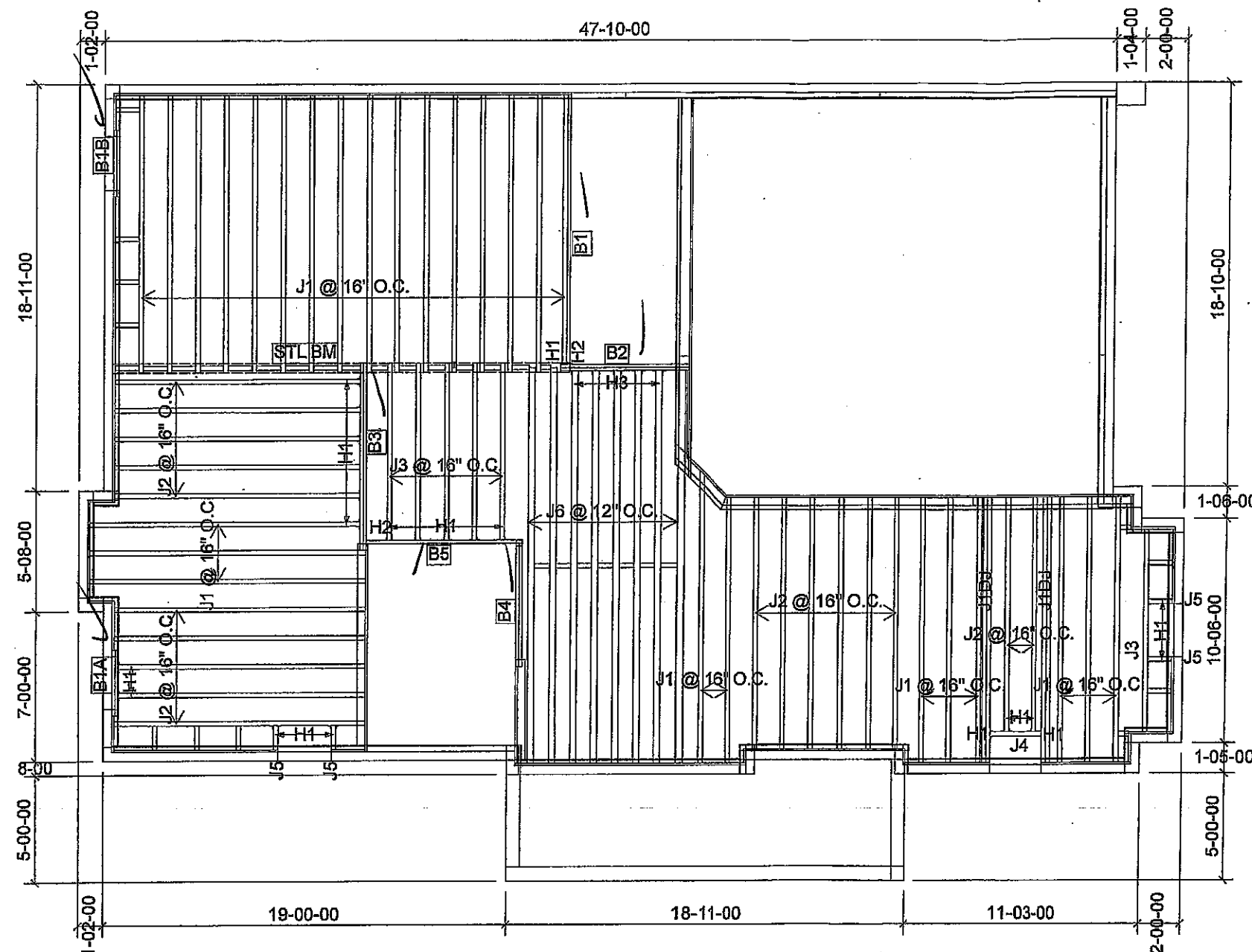
DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-04-14

1st FLOOR

DECK CONDITION



CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
OCT 06 2020
REC BY _____ DATE _____
REFD TO _____ DATE _____

Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	27	MFD
J1DJ	14-00-00	9 1/2" NI-40x	2	4	MFD
J2	12-00-00	9 1/2" NI-40x	1	18	MFD
J3	10-00-00	9 1/2" NI-40x	1	6	MFD
J4	4-00-00	9 1/2" NI-40x	1	1	MFD
J5	2-00-00	9 1/2" NI-40x	1	4	MFD
J6	20-00-00	9 1/2" NI-80	1	8	MFD
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B1A	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B1B	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD

Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/9.5
9	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
2	H2	HUS1.81/10
5	H3	IUS3.56/9.5

CITY OF HAMILTON
Building Division

187706

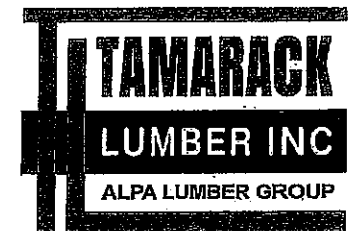
Permit No.

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These drawings and/or specifications have been reviewed by

JDC Nov 6/2020
FOR CHIEF BUILDING OFFICIAL DATE



FROM PLAN DATED:

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: VALLEYCREEK 12

ELEVATION: 3

LOT:

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

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

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

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

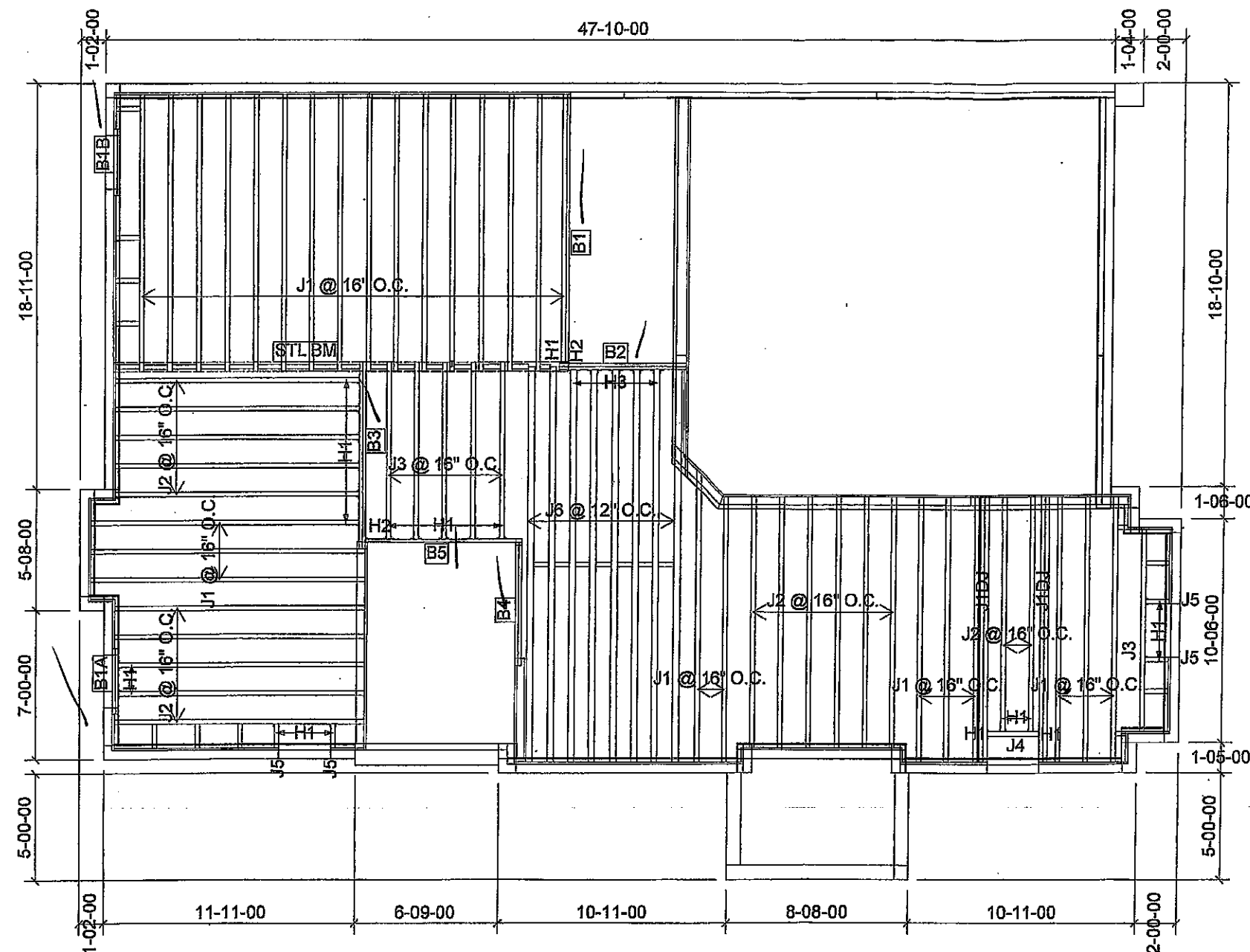
DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-04-14

1st FLOOR

DECK CONDITION



CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
REC BY _____ DATE _____
REFD TO _____
OCT 06 2020

Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	27	MFD
J1DJ	14-00-00	9 1/2" NI-40x	2	4	MFD
J2	12-00-00	9 1/2" NI-40x	1	18	MFD
J3	10-00-00	9 1/2" NI-40x	1	6	MFD
J4	4-00-00	9 1/2" NI-40x	1	1	MFD
J5	2-00-00	9 1/2" NI-40x	1	4	MFD
J6	20-00-00	9 1/2" NI-80	1	8	MFD
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
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B1B	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD

Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/9.5
9	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
2	H2	HUS1.81/10
5	H3	IUS3.56/9.5

CITY OF HAMILTON
Building Division

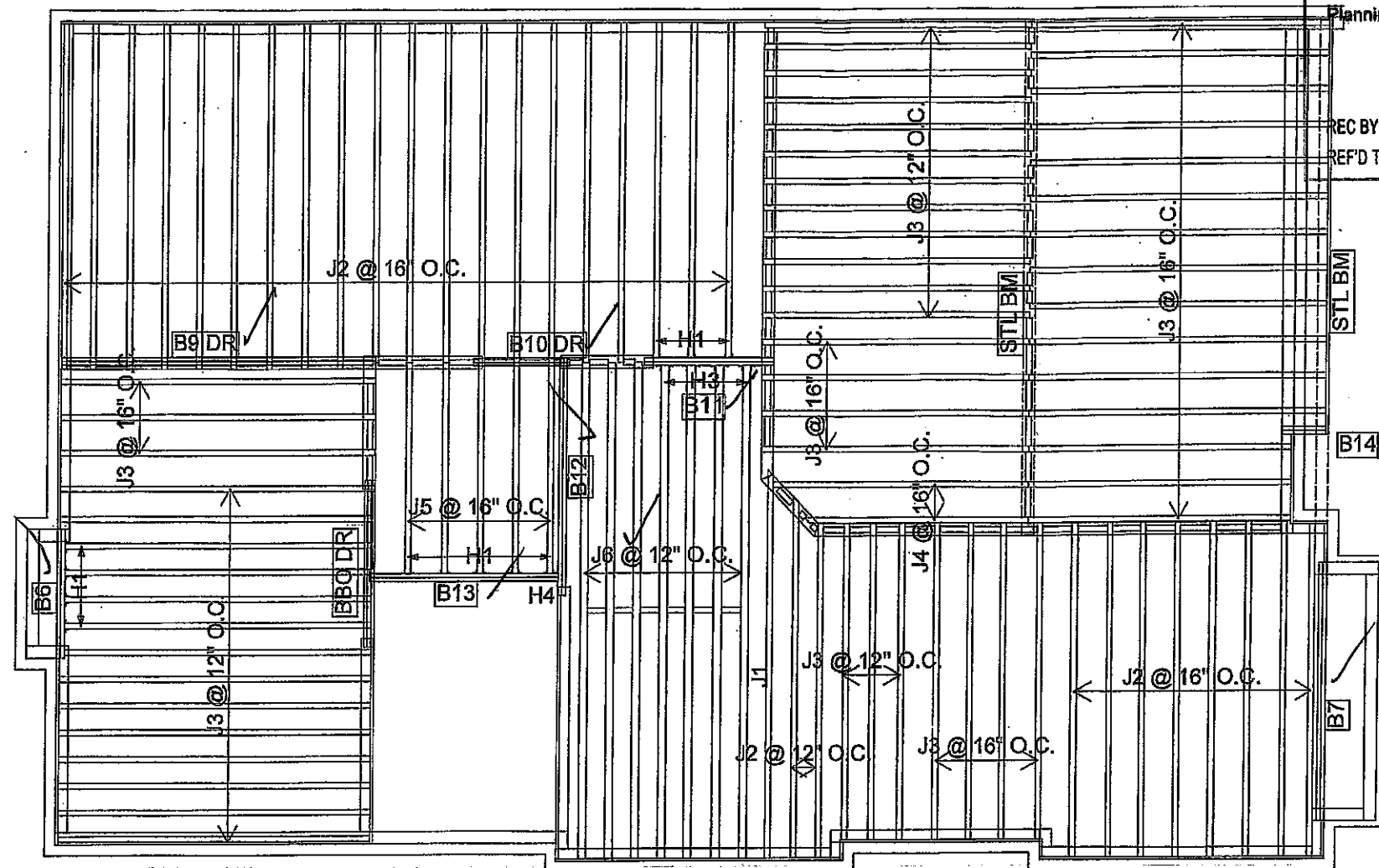
Permit No. 187706

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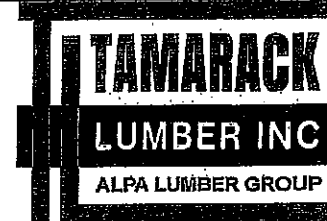
SDC Nov 6/2020
FOR CHIEF BUILDING OFFICIAL DATE



CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

OCT 06 2020

REC BY _____ DATE _____
REF'D TO _____ DATE _____



FROM PLAN DATED:

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: VALLEYCREEK 12

ELEVATION: 1

LOT:

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

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LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2020-02-14

2nd FLOOR

Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	16-00-00	9 1/2" NI-40x	1	1	MFD
J2	14-00-00	9 1/2" NI-40x	1	30	MFD
J3	12-00-00	9 1/2" NI-40x	1	55	MFD
J4	10-00-00	9 1/2" NI-40x	1	2	MFD
J5	8-00-00	9 1/2" NI-40x	1	5	MFD
J6	20-00-00	9 1/2" NI-80	1	7	MFD
B9 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3	MFD
B12	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B7	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B13	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B11	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B6	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B10 DR	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B14	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/9.5
4	H3	IUS3.56/9.5
1	H4	HGUS410

CITY OF HAMILTON
Building Division

Permit No. 187706

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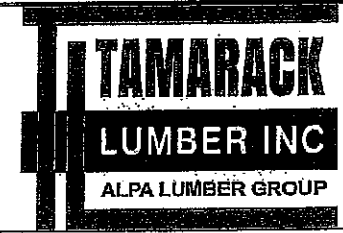
JDC

Nov 6/2020

FOR CHIEF BUILDING OFFICIAL

DATE

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department
OCT 06 2020
REC BY _____ DATE _____
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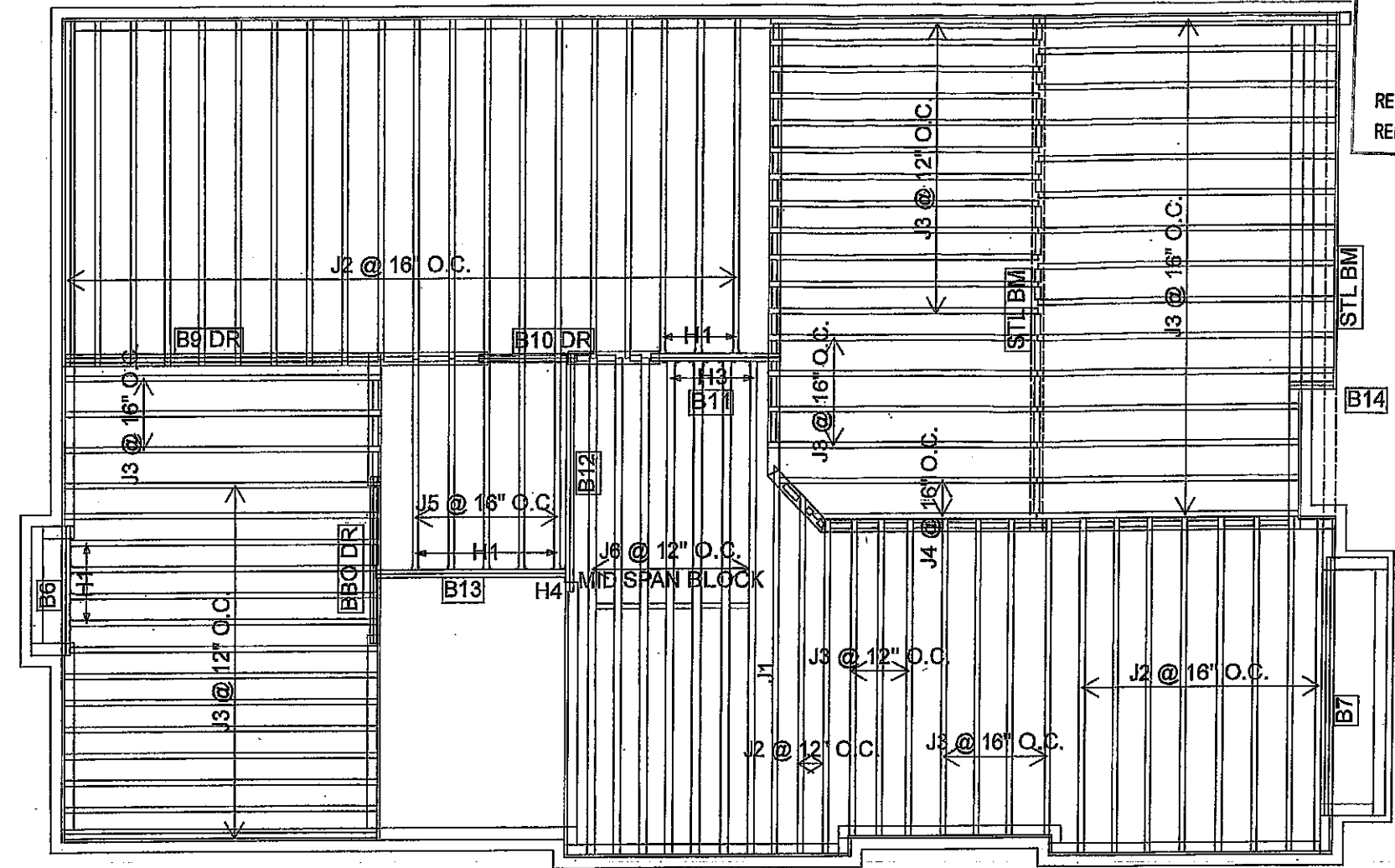


FROM PLAN DATED:
BUILDER: GREENPARK HOMES
SITE: RUSSELL GARDENS PH 3
MODEL: VALLEYCREEK 12
ELEVATION: 2
LOT:
CITY: WATERDOWN
SALESMAN: MARIO DICIANO
DESIGNER: AJ
REVISION:
NOTES:
REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION. SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURE 7 TABLES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIELD CUT OPENINGS SEE FIGURE 7 TABLES 1 & 2 OF THE INSTALLATION GUIDE. 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: 20.0 lb/ft²
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2020-02-14

2nd FLOOR



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	16-00-00	9 1/2" NI-40x	1	1	MFD
J2	14-00-00	9 1/2" NI-40x	1	30	MFD
J3	12-00-00	9 1/2" NI-40x	1	55	MFD
J4	10-00-00	9 1/2" NI-40x	1	2	MFD
J5	8-00-00	9 1/2" NI-40x	1	5	MFD
J6	20-00-00	9 1/2" NI-80	1	7	MFD
B9 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	3	3	MFD
B12	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
B7	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
B13	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
B11	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
B6	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
B10 DR	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
B14	2-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/9.5
4	H3	IUS3.56/9.5
1	H4	HGUS410

CITY OF HAMILTON
Building Division
Permit No. 187706
THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE
THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW
These drawings and/or specifications have been reviewed by
JDL Nov 6 2020
FOR CHIEF BUILDING OFFICIAL DATE



FROM PLAN DATED: JAN 2020

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: VALLEYCREEK 12

ELEVATION: 3

LOT:

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

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

LOADING:

DESIGN LOADS: L/480.000

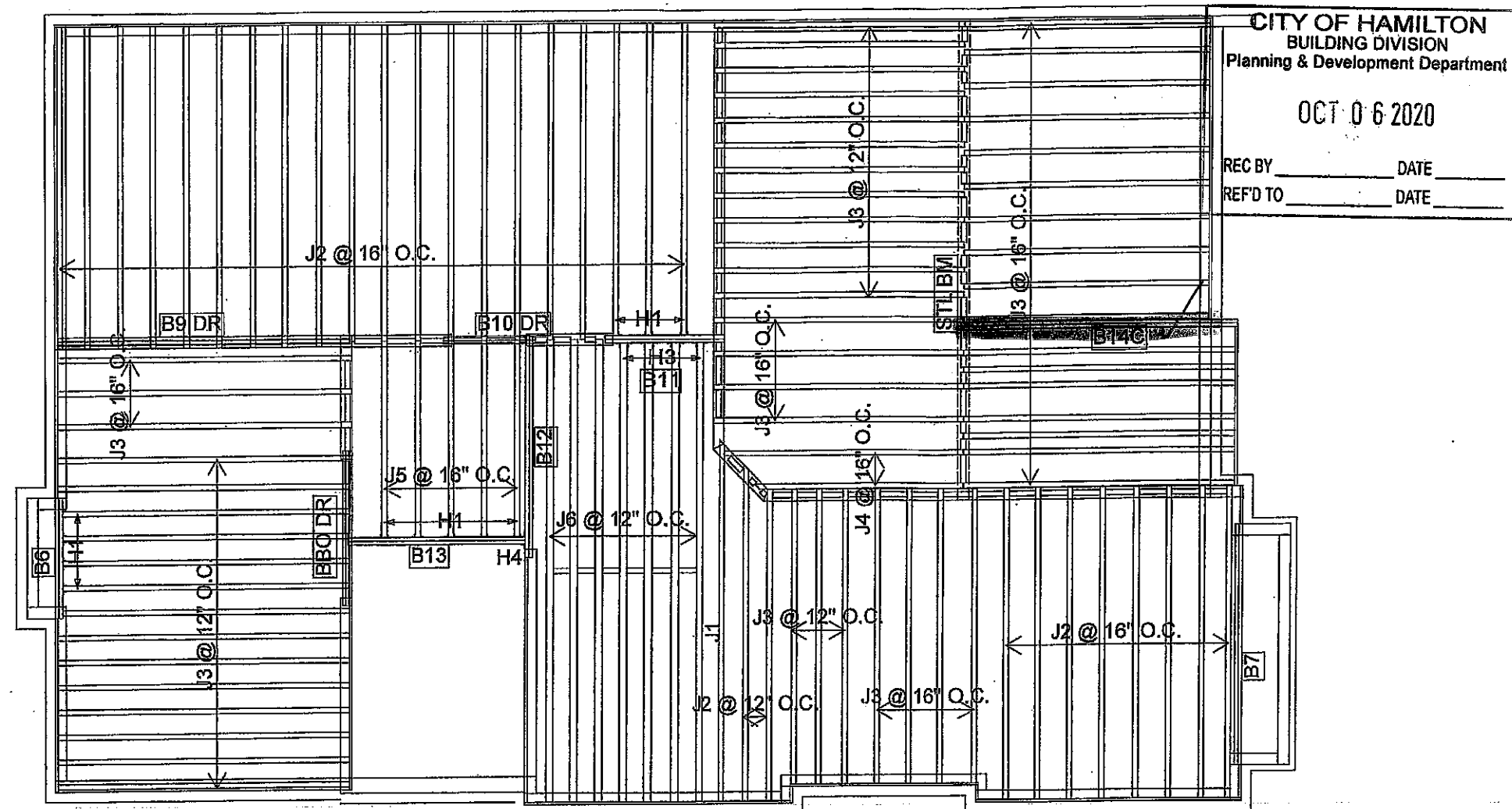
LIVE LOAD: 40.0 lb/ft²

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SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2020-02-14

2nd FLOOR



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	16-00-00	9 1/2" NI-40x	1	1	MFD
J2	14-00-00	9 1/2" NI-40x	1	30	MFD
J3	12-00-00	9 1/2" NI-40x	1	57	MFD
J4	10-00-00	9 1/2" NI-40x	1	2	MFD
J5	8-00-00	9 1/2" NI-40x	1	5	MFD
J6	20-00-00	9 1/2" NI-80	1	7	MFD
B14C	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
B9 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	3	3	MFD
B12	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
B7	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
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B6	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
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Connector Summary		
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1	H4	HGUS410

CITY OF HAMILTON
Building Division

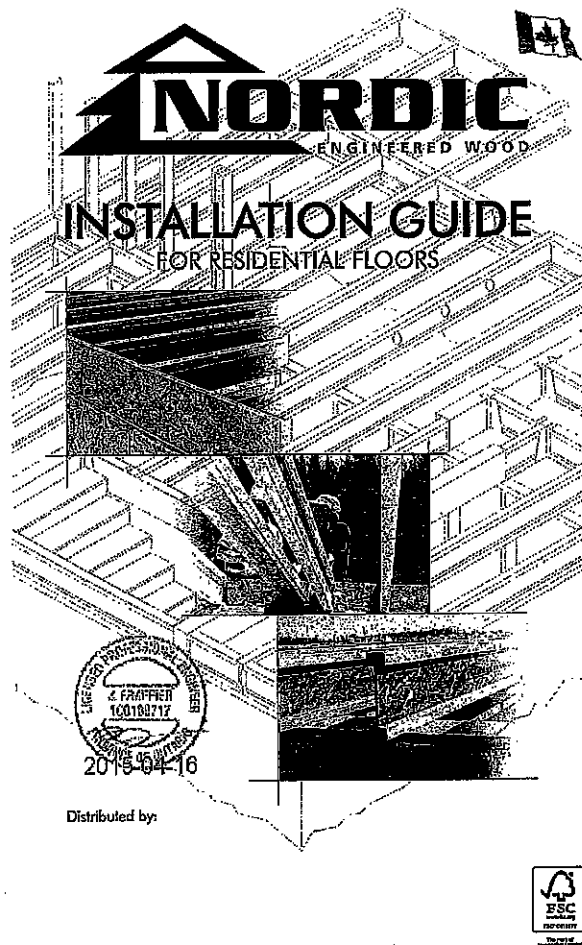
Permit No. 187706

THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE

THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH
THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW

These drawings and/or specifications have been reviewed by

JDL Nov 6/2020
FOR CHIEF BUILDING OFFICIAL DATE



SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

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. Bundles 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-joist and injury to your work crew.
 - Pick I-joists in bundles or shipped by the supplier.
 - Orient the bundles so that the webs of the I-joists are vertical.
 - Pick the bundles at the 5th point, 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 span applicable to simple-span or multiple-span residential floor construction with a design load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.5DL + 1.25L. 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 spans.
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 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 ends or a row of blocking at mid-span.
3. Minimum bearing length shall be 1-3/4 inches for the end bearing, 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 Unit States Design per CAN/CSA C08-07 Standard, and NBC 2010.
7. SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

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

Joist Depth	Joist Series	Simple spans				Multiple spans			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
1 1/2"	N1-40	15'1"	14'2"	13'9"	13'5"	16'3"	15'4"	14'10"	14'7"
	N1-40c	16'1"	15'2"	14'8"	14'4"	17'3"	16'4"	15'10"	15'5"
	N1-45	16'3"	15'4"	14'10"	14'11"	17'7"	16'7"	15'12"	15'7"
	N1-50	17'1"	16'1"	15'4"	15'4"	18'7"	17'4"	16'9"	16'10"
	N1-55	17'3"	16'3"	15'6"	15'6"	18'10"	17'6"	16'11"	17'0"
1 7/8"	N1-50	16'1"	15'0"	14'5"	14'0"	16'4"	15'3"	14'7"	14'2"
	N1-55	16'4"	15'3"	14'7"	14'2"	16'9"	15'8"	15'0"	14'5"
	N1-60	16'8"	15'6"	14'9"	14'4"	17'4"	16'3"	15'7"	15'1"
	N1-65	17'2"	16'0"	15'3"	14'8"	17'9"	16'7"	16'1"	15'6"
	N1-70	17'6"	16'4"	15'7"	15'2"	18'4"	17'2"	16'6"	16'0"
2"	N1-60	19'9"	18'3"	17'4"	17'1"	21'9"	20'2"	19'3"	19'4"
	N1-65	20'2"	19'7"	17'10"	17'11"	22'3"	20'7"	19'8"	19'9"
	N1-70	20'6"	19'9"	17'11"	18'0"	22'7"	20'9"	19'10"	19'11"
	N1-75	21'0"	20'1"	18'1"	18'1"	23'1"	21'3"	20'4"	20'5"
	N1-80	21'4"	20'3"	18'4"	18'4"	23'5"	21'7"	20'8"	20'9"
2 1/2"	N1-75	22'5"	20'8"	19'9"	19'10"	24'8"	22'9"	21'10"	21'10"
	N1-80	22'9"	21'2"	20'9"	20'10"	25'2"	23'3"	22'11"	22'11"
	N1-85	23'3"	21'6"	21'2"	21'3"	25'6"	23'7"	22'12"	22'12"
	N1-90	23'7"	22'0"	21'5"	21'6"	26'0"	24'1"	23'0"	23'1"
	N1-95	24'1"	22'4"	21'8"	21'9"	26'4"	24'5"	23'4"	23'5"

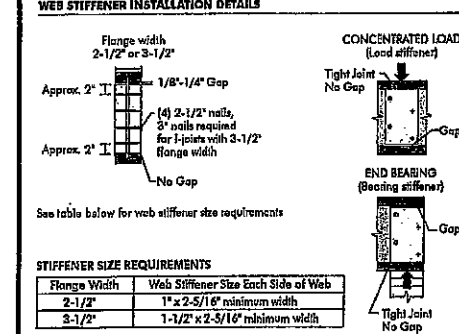
CSCE EVALUATION REPORT 13013-R

WEB STIFFENERS

RECOMMENDATIONS:

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A floor stiffener is required at locations where a factored concentrated load greater than 2,500 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



See table below for web stiffener size requirements

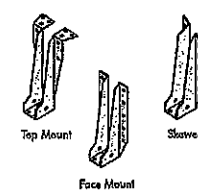
STIFFENER SIZE REQUIREMENTS

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

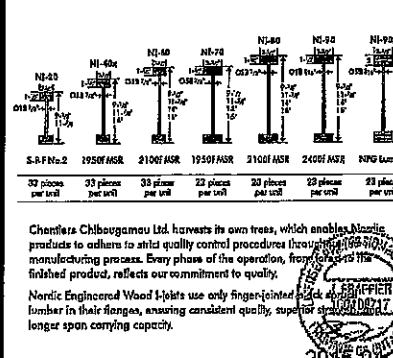
SI units conversion: 1 inch = 25.4 mm

I-JOIST HANGERS

1. Hangers shown illustrate the three most commonly used metal hangers to support I-joists.
2. All nails 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.



NORDIC I-JOIST SERIES



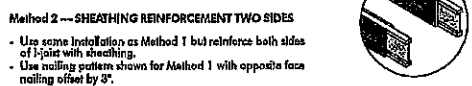
Chemnitz Chiborgsmann Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures throughout the manufacturing process. Every phase of the operation, from the raw timber to the finished product, reflects our commitment to quality.

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 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 spans 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. Narrow 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 squish blocks (see details 1a, 1b, 1c, 1d, 1e, 1f, 1g, 1h, 1i, 1j, 1k, 1l, 1m, 1n, 1o, 1p, 1q, 1r, 1s, 1t, 1u, 1v, 1w, 1x, 1y, 1z, 2a, 2b, 2c, 2d, 2e, 2f, 2g, 2h, 2i, 2j, 2k, 2l, 2m, 2n, 2o, 2p, 2q, 2r, 2s, 2t, 2u, 2v, 2w, 2x, 2y, 2z, 3a, 3b, 3c, 3d, 3e, 3f, 3g, 3h, 3i, 3j, 3k, 3l, 3m, 3n, 3o, 3p, 3q, 3r, 3s, 3t, 3u, 3v, 3w, 3x, 3y, 3z, 4a, 4b, 4c, 4d, 4e, 4f, 4g, 4h, 4i, 4j, 4k, 4l, 4m, 4n, 4o, 4p, 4q, 4r, 4s, 4t, 4u, 4v, 4w, 4x, 4y, 4z, 5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i, 5j, 5k, 5l, 5m, 5n, 5o, 5p, 5q, 5r, 5s, 5t, 5u, 5v, 5w, 5x, 5y, 5z, 6a, 6b, 6c, 6d, 6e, 6f, 6g, 6h, 6i, 6j, 6k, 6l, 6m, 6n, 6o, 6p, 6q, 6r, 6s, 6t, 6u, 6v, 6w, 6x, 6y, 6z, 7a, 7b, 7c, 7d, 7e, 7f, 7g, 7h, 7i, 7j, 7k, 7l, 7m, 7n, 7o, 7p, 7q, 7r, 7s, 7t, 7u, 7v, 7w, 7x, 7y, 7z, 8a, 8b, 8c, 8d, 8e, 8f, 8g, 8h, 8i, 8j, 8k, 8l, 8m, 8n, 8o, 8p, 8q, 8r, 8s, 8t, 8u, 8v, 8w, 8x, 8y, 8z, 9a, 9b, 9c, 9d, 9e, 9f, 9g, 9h, 9i, 9j, 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32p, 32q, 32r, 32s, 32t, 32u, 32v, 32w, 32x, 32y, 32z, 33a, 33b, 33c, 33d, 33e, 33f, 33g, 33h, 33i, 33j, 33k, 33l, 33m, 33n, 33o, 33p, 33q, 33r, 33s, 33t, 33u, 33v, 33w, 33x, 33y, 33z, 34a, 34b, 34c, 34d, 34e, 34f, 34g, 34h, 34i, 34j, 34k, 34l, 34m, 34n, 34o, 34p, 34q, 34r, 34s, 34t, 34u, 34v, 34w, 34x, 34y, 34z, 35a, 35b, 35c, 35d, 35e, 35f, 35g, 35h, 35i, 35j, 35k, 35l, 35m, 35n, 35o, 35p, 35q, 35r, 35s, 35t, 35u, 35v, 35w, 35x, 35y, 35z, 36a, 36b, 36c, 36d, 36e, 36f, 36g, 36h, 36i, 36j, 36k, 36l, 36m, 36n, 36o, 36p, 36q, 36r, 36s, 36t, 36u, 36v, 36w, 36x, 36y, 36z, 37a, 37b, 37c, 37d, 37e, 37f, 37g, 37h, 37i, 37j, 37k, 37l, 37m, 37n, 37o, 37p, 37q, 37r, 37s, 37t, 37u, 37v, 37w, 37x, 37y, 37z, 38a, 38b, 38c, 38d, 38e, 38f, 38g, 38h, 38i, 38j, 38k, 38l, 38m, 38n, 38o, 38p, 38q, 38r, 38s, 38t, 38u, 38v, 38w, 38x, 38y, 38z, 39a, 39b, 39c, 39d, 39e, 39f, 39g, 39h, 39i, 39j, 39k, 39l, 39m, 39n, 39o, 39p, 39q, 39r, 39s, 39t, 39u, 39v, 39w, 39x, 39y, 39z, 40a, 40b, 40c, 40d, 40e, 40f, 40g, 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47z, 48a, 48b, 48c, 48d, 48e, 48f, 48g, 48h, 48i, 48j, 48k, 48l, 48m, 48n, 48o, 48p, 48q, 48r, 48s, 48t, 48u, 48v, 48w, 48x, 48y, 48z, 49a, 49b, 49c, 49d, 49e, 49f, 49g, 49h, 49i, 49j, 49k, 49l, 49m, 49n, 49o, 49p, 49q, 49r, 49s, 49t, 49u, 49v, 49w, 49x, 49y, 49z, 50a, 50b, 50c, 50d, 50e, 50f, 50g, 50h, 50i, 50j, 50k, 50l, 50m, 50n, 50o, 50p, 50q, 50r, 50s, 50t, 50u, 50v, 50w, 50x, 50y, 50z, 51a, 51b, 51c, 51d, 51e, 51f, 51g, 51h, 51i, 51j, 51k, 51l, 51m, 51n, 51o, 51p, 51q, 51r, 51s, 51t, 51u, 51v, 51w, 51x, 51y, 51z, 52a, 52b, 52c, 52d, 52e, 52f, 52g, 52h, 52i, 52j, 52k, 52l, 52m, 52n, 52o, 52p, 52q, 52r, 52s, 52t, 52u, 52v, 52w, 52x, 52y, 52z, 53a, 53b, 53c, 53d, 53e, 53f, 53g, 53h, 53i, 53j, 53k, 53l, 53m, 53n, 53o, 53p, 53q, 53r, 53s, 53t, 53u, 53v, 53w, 53x, 53y, 53z, 54a, 54b, 54c, 54d, 54e, 54f, 54g, 54h, 54i, 54j, 54k, 54l, 54m, 54n, 5

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



CANTILEVER REINFORCEMENT METHODS ALLOWED

1. $N = 0$ no reinforcement required. 2. $N = 1$ N reinforced with 3/4" wood structural panel on one side only. 3. $N = 1$ reinforced with 3/4" wood structural panel on both sides, or double 1/2-in. plywood on both sides or other solid panel. 4. Minimum design load, p shall be 15 psf (roof deck load), 55 psf (floor load), and 80 psf (wall load). Wall load is based on 3'-0" vertical height.	For larger openings, or multiple 3'-0" width openings spaced less than 6'-0", additional joints beneath the opening's cripple studs may be required. 3. Table applies to joints 12" to 24" at 15 psf. For larger openings, or multiple openings, or design floor load of 40 psf and dead load of 15 psf, and a live load deflection limit of $L/40$, Use 12" or greater requirements for bearing supports.	4. For overhead load construction using a ridge beam, the least 2' from eave's 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 wall and the truss or rafter. 5. For overhead joints supporting gables (truss or rafter), use 12" support gable.
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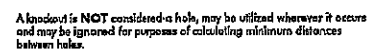
⑤ WEATHING REINFORCEMENT 12" minimum length of



1. N = No reinforcement required. 2. N1 = Reinforced with 3/4" wood structural panel on one side only. 3. N2 = Reinforced with 3/4" wood structural panel on both sides, or double N1. X = Try to taper nail or shear spacing. 4. Minimum design dead load shall be 15 psf and roof dead load, 55 psf for floor joists, and 60 psf for roof joists. Dead load to be based on maximum windward roof load, and door openings.	For heavier openings, see multiple 30" width openings spaced less than 6'0" o.c., additional loads beneath the openings's cripple studs may be required. 5. For openings to joists 12" to 24" deep 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 1/400, the 12" o.c. requirement for lesser spacing.	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. When a ridge beam is used in a gable end board, the Roof Truss Span is equivalent to the distance between the supporting walls at a truss end. 5. For openings supporting other trusses or roof beams, may require additional bracing.
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RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- FIGURE 7**



For rectangular holes in the corners, as the stress concentration in the corners is reduced, the rectangular hole diameter hole in and then molding the holes is another

1. Wipe any mud, dirt, water, or ice from l-lust flanges before aligning.

- ### FASTENERS FOR SHEATHING AND SUBFLOORING(1)

1. Fasteners of sheathing and subflooring shall conform to the above table.
2. Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to flooring.
3. Flooring screws shall not be less than 1/8-inch in diameter.
4. Special conditions may impose heavy traffic and concentrated loads that require construction in excess of the minimums shown.
5. Use only adhesives conforming to CAN/CGSB-71.25 Standard, Adhesives for Field-Gluing Plywood Underlayment for Floor System, applied in accordance with the manufacturer's recommendations. Contact with wet areas and edges are to be used, use only solvent-based glues; check with your supplier.

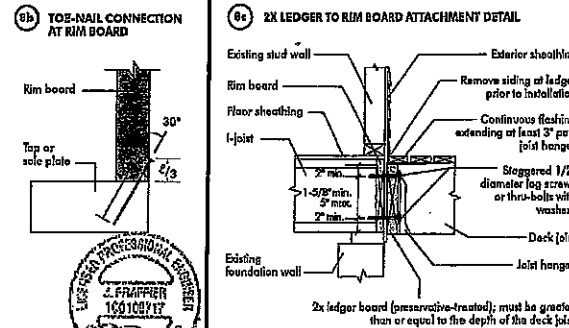
IMPORTANT NOTE:
Floor sheathing must be field glued to the I-joint flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joint spans must be verified with your local distributor.

Joint Depth	Joint Series	Minimum distance from boulders face of any support to centre of hole (ft.in.)													Span adjusted Feet
		1	2	3	4	5	6	7	8	9	10	11	12	13	
1/2"	1-2	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-3	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-4	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-5	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-6	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
1 1/8"	1-7	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-8	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-9	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-10	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-11	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
1 1/4"	1-12	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-13	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-14	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-15	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-16	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
1 3/8"	1-17	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-18	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-19	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-20	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-21	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
1 1/2"	1-22	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-23	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-24	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-25	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-26	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
1 5/8"	1-27	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-28	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-29	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-30	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-31	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
1 3/4"	1-32	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-33	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-34	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-35	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
	1-36	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2	3	4	5	6	
1 7/8"	1-37	0.2	0.2	0.3	0.4	0.5	0.6	0.7	1	2					

TABLE 2
QUICK CHEESE OPENING SITES AND LOCATIONS—Single-Serve Only

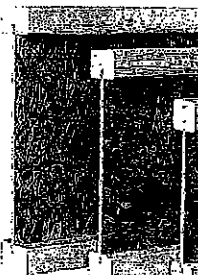
Sex	Age	Size	10	12	14	16	18	20	22	24	
♂	Juv	100	0.5	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
		200	0.6	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5
		300	0.7	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
		400	0.8	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7
		500	0.9	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
	Ad	100	1.0	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
		200	1.1	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
		300	1.2	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1
		400	1.3	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2
		500	1.4	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3
♀	Juv	100	0.4	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
		200	0.5	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4
		300	0.6	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5
		400	0.7	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
		500	0.8	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7
	Ad	100	0.9	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
		200	1.0	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
		300	1.1	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
		400	1.2	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1
		500	1.3	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2

RIM BOARD INSTALLATION DETAILS



PRODUCT WARRANTY

will have to cancel out their obligations for the lifetime of the bond.





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.
- 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 a joist web shall equal the clear distance between the flanges of the 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 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 (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 of approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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

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

- 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; consult your local distributor.

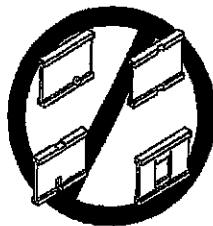
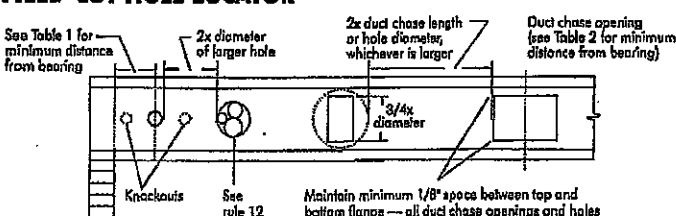
Joist Series	1950FMSR	2100FMSR	1950FMSR	2100FMSR	2400FMSR	NPG Lumber
33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit

TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS

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"	6-2"	6-7"	7-1"	7-3"	7-8"	8-2"	8-6"			
	NI-60	5-4"	5-9"	6-2"	6-7"	7-1"	7-3"	7-8"	8-2"	8-6"			
	NI-70	5-1"	5-5"	5-10"	6-3"	6-7"	7-1"	7-6"	8-1"	8-4"			
	NI-90x	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"	8-7"	9-1"			
	NI-40x	6-8"	7-2"	7-6"	8-1"	8-5"	8-9"	9-3"	9-7"	10-1"			
	NI-60	7-5"	7-8"	8-0"	8-4"	8-8"	9-0"	9-4"	9-8"	10-2"			
	NI-70	7-1"	7-4"	7-9"	8-3"	8-7"	9-1"	9-6"	10-0"	10-4"			
	NI-90	7-2"	7-7"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-6"			
14"	NI-20	7-6"	7-11"	8-4"	8-9"	9-2"	9-7"	10-1"	10-7"	10-11"			
	NI-40x	8-1"	8-7"	9-4"	9-6"	10-4"	10-7"	11-2"	12-0"	12-5"			
	NI-60	8-9"	9-3"	9-8"	10-1"	10-6"	11-1"	11-6"	12-3"	13-0"			
	NI-70	8-7"	9-1"	9-5"	9-10"	10-4"	10-8"	11-2"	11-7"	12-3"			
	NI-90	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"	11-7"	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"	11-8"	12-1"	12-7"	13-1"	13-6"	14-4"			
	NI-90x	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, consult 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; consult your local distributor.

FIGURE 7
FIELD-CUT HOLE LOCATOR



Knockouts are precast 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 unshimmed I-joists. Once shimmed, 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-bracing 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-bracing.
- 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.

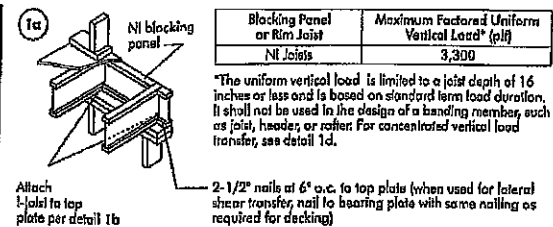
Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines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



PRODUCT WARRANTY

Chandler's Chibongman guarantees that, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.

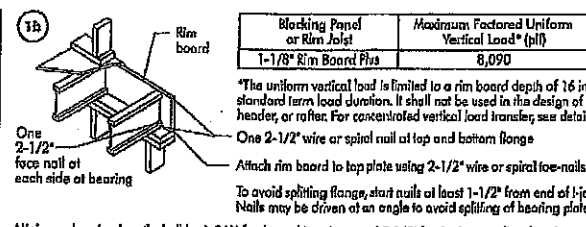
Furthermore, Chandler's Chibongman warrants that our products, when utilized in accordance with our handling and installation instructions, will meet or exceed our specifications for the lifetime of the structure.



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

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

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

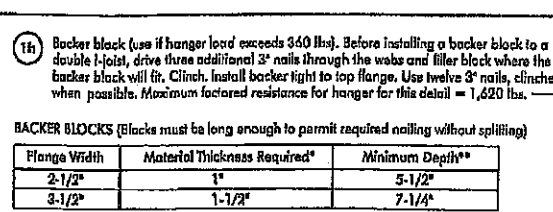
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

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

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

To avoid splitting 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.

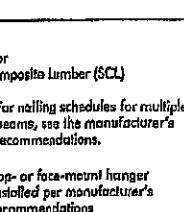
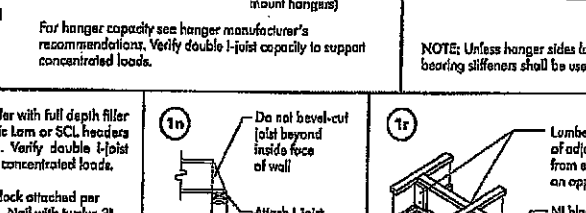
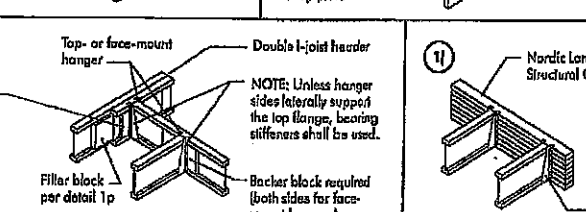
Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.



Pair of Squish Blocks	Maximum Factored Vertical Load per Pair of Squish Blocks (lbs)
3-1/2" wide	5,500
5-1/2" wide	8,500

2x Lumber
1-1/8" Rim Board Plus

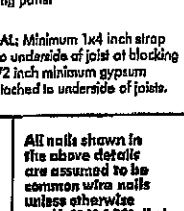
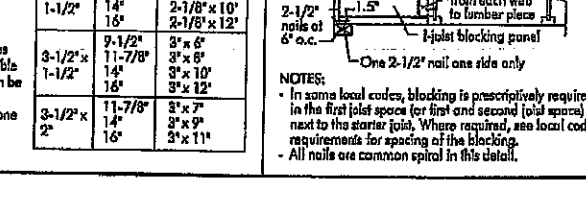
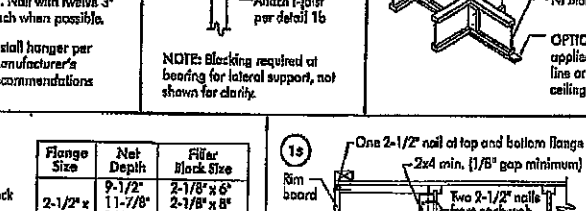
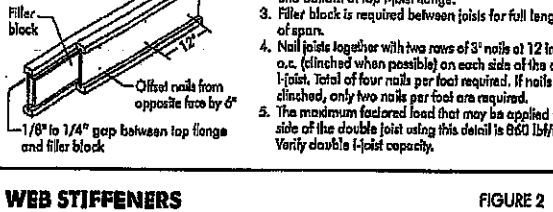
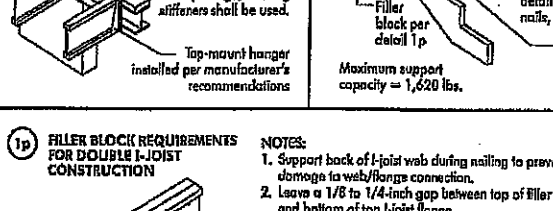
Provide lateral bracing per detail 1a or 1b



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

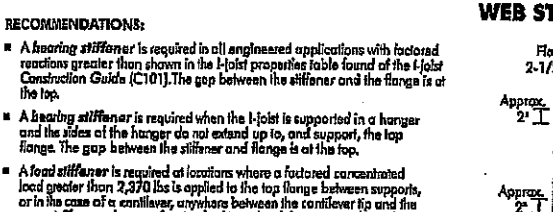
Top- or face-mount hanger installed per manufacturer's recommendations.

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



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

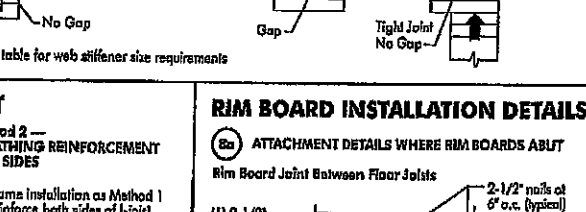
OPTIONAL: Minimum 1x4 inch strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.



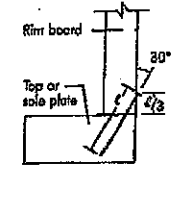
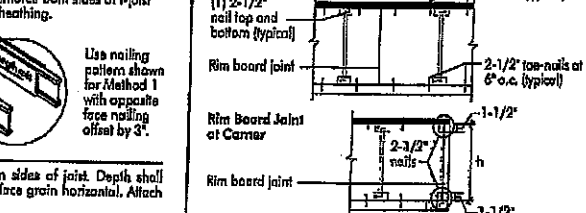
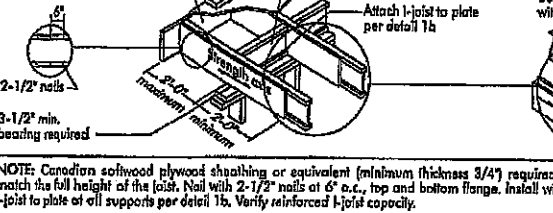
NOTES:

- 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. (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.
- The maximum factored load that may be applied to one side of the double joist using this detail is 660 lbs/ft. Verify double I-joist capacity.

Flange Size	Net Depth	Block Size
2-1/2" x 1-1/2"	9-1/8"	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"	9-1/8"	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"



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 STRUCTURES

COMPANY
Apr. 9, 2020 12:06

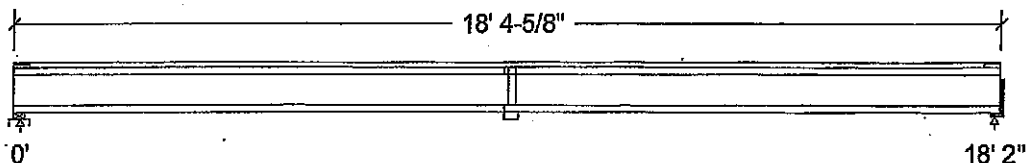
PROJECT
J6 1ST FLOOR.wwb

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):



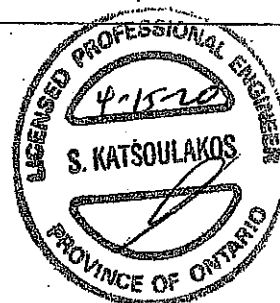
Unfactored:			
Dead	182		182
Live	363		363
Factored:			
Total	772		772
Bearing:			
Capacity			
Joist	1893		1893
Support	5559		-
Des ratio			
Joist	0.41		0.41
Support	0.14		-
Load case	#2		#2
Length	2-3/8		2
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcp sup	769		-
Kzcp sup	1.09		-

Nordic 9-1/2" NI-80 Floor joist @ 12" o.c.

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

Total length: 18' 4-5/8"; Clear span: 18' 1/4"; 3/4" nailed and glued OSB sheathing with 1 row of blocking and strapping at blocking locations

This section PASSES the design code check.



DWG NO. TAN5871-20
STRUCTURAL
COMPONENT AMIV

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 772$	$V_r = 1895$	lbs	$V_f/V_r = 0.41$
Moment (+)	$M_f = 3507$	$M_r = 8958$	lbs-ft	$M_f/M_r = 0.39$
Perm. Defl'n	$0.15 = < L/999$	$0.61 = L/360$	in	0.24
Live Defl'n	$0.29 = L/743$	$0.45 = L/480$	in	0.65
Total Defl'n	$0.44 = L/495$	$0.91 = L/240$	in	0.48
Bare Defl'n	$0.33 = L/651$	$0.61 = L/360$	in	0.55
Vibration	$L_{max} = 18'-2$	$L_v = 20'-4.9$	ft	0.89
Defl'n	$= 0.026$	$= 0.034$	in	0.77

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
V_r	1895	1.00	1.00	-	-	-	-	-	#2
M_r	8958	1.00	1.00	-	1.000	-	-	-	#2
EI	324.1 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

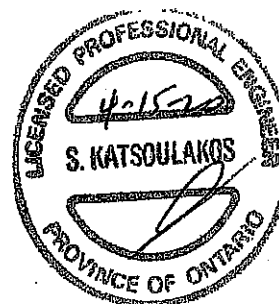
All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS: $EI_{eff} = 375.38 \text{ lb-in}^2$ $K = 4.94e06 \text{ lbs}$

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

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

- 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).
- Please verify that the default deflection limits are appropriate for your application.
- Refer to Nordic Structures technical documentation for installation guidelines and construction details.
- Nordic I-joists are listed in CCMC evaluation report 13032-R.
- Joists shall be laterally supported at supports and continuously along the compression edge.
- 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. JAM5871 -20
STRUCTURAL



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

PASSED

1ST FLR FRAMING\Flush Beams\B1(1135) (Flush Beam)

Dry | 1 span | No cant.

February 14, 2020 17:03:20

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

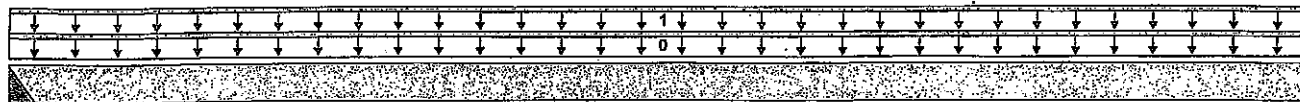
File name: VALLYCREEK 12 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B1(1135)

Specifier:

Designer:

Company:



B1

12-06-10

B2

Total Horizontal Product Length = 12-06-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	31 / 0	46 / 0		
B2, 1-7/8"	31 / 0	46 / 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	12-06-10	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-06-10	Top	5	2			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	318 ft-lbs	11610 ft-lbs	2.7%	1	06-03-06
End Shear	89 lbs	5785 lbs	1.5%	1	00-11-08
Total Load Deflection	L/999 (0.026")	n/a	n/a	4	06-03-06
Live Load Deflection	L/999 (0.01")	n/a	n/a	5	06-03-06
Max Defl.	0.026"	n/a	n/a	4	06-03-06
Span / Depth	15.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	105 lbs	n/a	2.4%	HUS1.81/10
B2	Wall/Plate 1-7/8" x 1-3/4"	104 lbs	5.2%	2.6%	Spruce-Pine-Fir

Cautions

Header for the hanger HUS1.81/10 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. 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.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAM 5000-20

STRUCTURAL

COMPONENT ONLY

Disclosure

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



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

1ST FLR FRAMING\Flush Beams\B2(i1128) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 14, 2020 17:03:20

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmd

Address:

Description: 1ST FLR FRAMING\Flush Beams\B2(i1128)

City, Province, Postal Code:

Specifier:

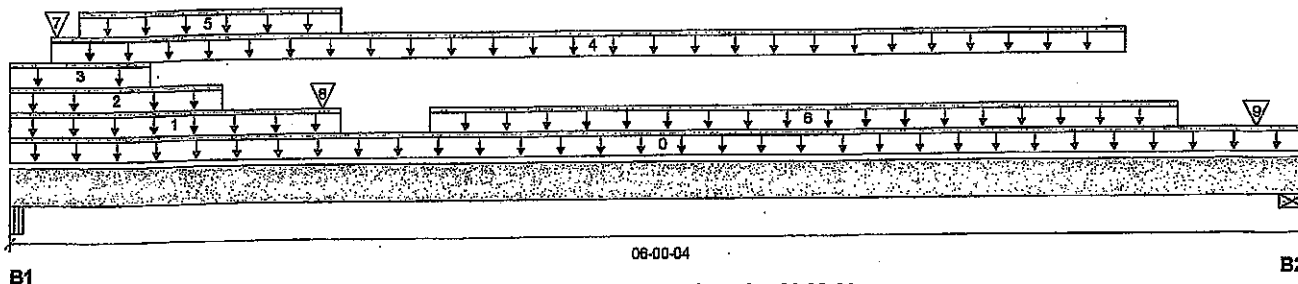
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	3384 / 0	1891 / 0		
B2, 5-1/2"	2511 / 0	2324 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-00-04	Top	10				00-00-00
1	7(i448)	Unf. Lin. (lb/ft)	L	00-00-00	01-06-04	Top		81			n/a
2	7(i448)	Unf. Lin. (lb/ft)	L	00-00-00	00-11-12	Top	250	125			n/a
3	7(i448)	Unf. Lin. (lb/ft)	L	00-00-00	00-07-12	Top	277	139			n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	00-02-04	05-02-04	Top	378	188			n/a
5	7(i448)	Unf. Lin. (lb/ft)	L	00-03-12	01-08-04	Top	305	153			n/a
6	STAIR	Unf. Lin. (lb/ft)	L	01-11-04	05-05-04	Top	120	60			n/a
7	-	Conc. Pt. (lbs)	L	00-02-09	00-02-09	Top	188	139			n/a
8	7(i448)	Conc. Pt. (lbs)	L	01-05-04	01-05-04	Top	1460	754			n/a
9	3(i444)	Conc. Pt. (lbs)	L	05-09-08	05-09-08	Top	1067	1559			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5727 ft-lbs	23220 ft-lbs	24.7%	1	02-08-04
End Shear	5083 lbs	11571 lbs	43.8%	1	01-02-12
Total Load Deflection	L/999 (0.04")	n/a	n/a	4	02-10-08
Live Load Deflection	L/999 (0.026")	n/a	n/a	5	02-10-08
Max Defl.	0.04"	n/a	n/a	4	02-10-08
Span / Depth	6.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/4" x 3-1/2"	7440 lbs	75.8%	33.2%	Unspecified
B2 Wall/Plate	5-1/2" x 3-1/2"	6671 lbs	56.3%	28.4%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

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

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

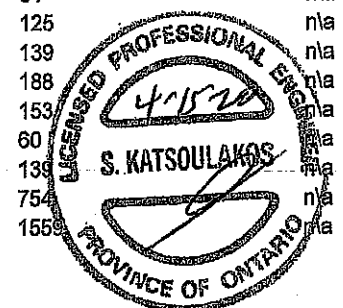
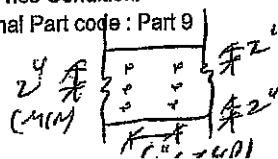
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020

PROVIDE 3 ROWS OF 3 1/2" ARDOX SPIRAL NAILS @ 6" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



ENG. NO. 41520-20
STRUCTURAL

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



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

1ST FLR FRAMING\Flush Beams\B3(11189) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

February 14, 2020 17:03:20

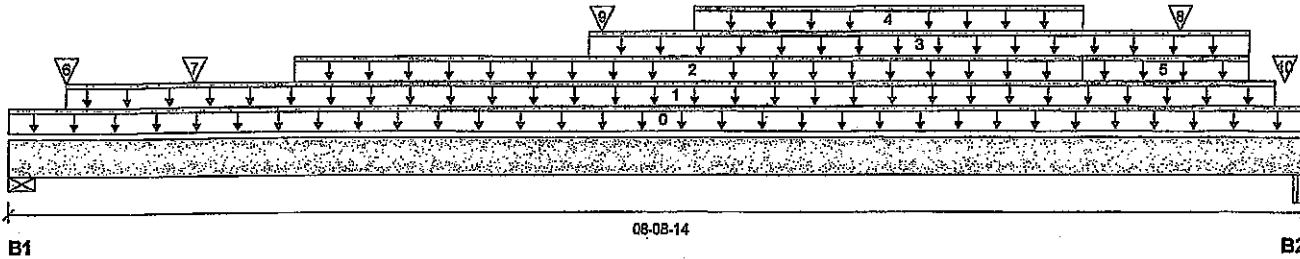
File name: VALLYCREEK 12 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B3(11189)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 08-08-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-3/4"	3261 / 0	1816 / 0		
B2, 5-1/4"	3065 / 0	1929 / 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	08-08-14	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-04-10	08-06-04	Top	25	12			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-12	07-02-12	Top	235	118			n/a
3	10(i453)	Unf. Lin. (lb/ft)	L	03-10-04	08-04-04	Top		81			n/a
4	10(i453)	Unf. Lin. (lb/ft)	L	04-06-12	07-02-12	Top	232	116			n/a
5	10(i453)	Unf. Lin. (lb/ft)	L	07-02-12	08-04-04	Top	247	124			n/a
6	B5(i1241)	Conc. Pt. (lbs)	L	00-04-10	00-04-10	Top	1384	709			n/a
7	J1(i1253)	Conc. Pt. (lbs)	L	01-02-12	01-02-12	Top	345	178			n/a
8	J2(i1188)	Conc. Pt. (lbs)	L	07-10-12	07-10-12	Top	231	116			n/a
9	10(i453)	Conc. Pt. (lbs)	L	03-11-04	03-11-04	Top	1161	625			n/a
10	6(i447)	Conc. Pt. (lbs)	L	08-07-00	08-07-00	Top	740	438			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	12109 ft-lbs	23220 ft-lbs	52.1%	1	03-11-04
End Shear	4513 lbs	11571 lbs	39.0%	1	07-06-02
Total Load Deflection	L/511 (0.19")	n/a	46.9%	4	04-05-08
Live Load Deflection	L/999 (0.118")	n/a	n/a	5	04-05-08
Max Defl.	0.19"	n/a	n/a	4	04-05-08
Span / Depth	10.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-3/4" x 3-1/2"	7162 lbs	88.7%	44.7%	Spruce-Pine-Fir
B2	Beam 5-1/4" x 3-1/2"	7010 lbs	71.4%	31.3%	Unspecified

Notes

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

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

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

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

AMENDED 2020

PROVIDE 3 ROWS OF 3/8" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



DWG NO. TAM 5882-20

STRUCTURAL

COMPONENT ONLY

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



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

PASSED

1ST FLR FRAMING\Flush Beams\B4(1260) (Flush Beam)

Dry | 1 span | No cant.

February 14, 2020 17:03:20

BC CALC® Member Report

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B4(1260)

City, Province, Postal Code:

Specifier:

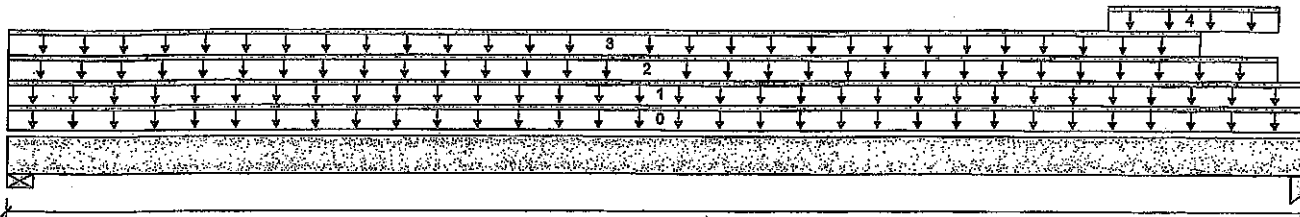
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



B1

05-09-08

B2

Total Horizontal Product Length = 05-09-08

Reaction Summary (Down / Uplift) (lbs)

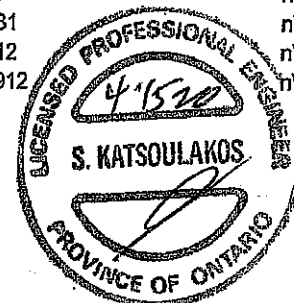
Bearing	Live	Dead	Snow	Wind
B1, 4"	195 / 0	381 / 0		
B2, 1-3/4"	1215 / 0	926 / 0		

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	05-09-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-09-08	Top	14	7			n/a
2	9(i450)	Unf. Lin. (lb/ft)	L	00-00-00	05-08-00	Top		81			n/a
3	9(i450)	Unf. Lin. (lb/ft)	L	00-00-00	05-04-00	Top	20	12			n/a
4	9(i450)	Unf. Lin. (lb/ft)	L	04-11-00	05-08-00	Top	1625	912			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1366 ft-lbs	23220 ft-lbs	5.9%	1	04-01-02
End Shear	2778 lbs	11571 lbs	24.0%	1	04-10-04
Total Load Deflection	L/999 (0.011")	n/a	n/a	4	03-02-00
Live Load Deflection	L/999 (0.005")	n/a	n/a	5	03-03-06
Max Defl.	0.011"	n/a	n/a	4	03-02-00
Span / Depth	6.9				



DWG NO. TAW5883-20
STRUCTURAL

COMPONENT ONLY

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

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	533 lbs	9.5%	4.8%	Spruce-Pine-Fir
B2	Column 1-3/4" x 3-1/2"	2980 lbs	59.9%	39.9%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

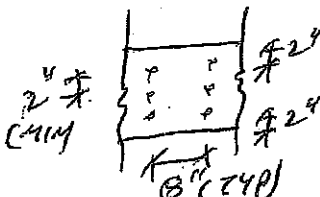
AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012



PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING, MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
1ST FLR FRAMING\Flush Beams\B5(i1241) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 14, 2020 17:03:20

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B5(i1241)

City, Province, Postal Code:

Specifier:

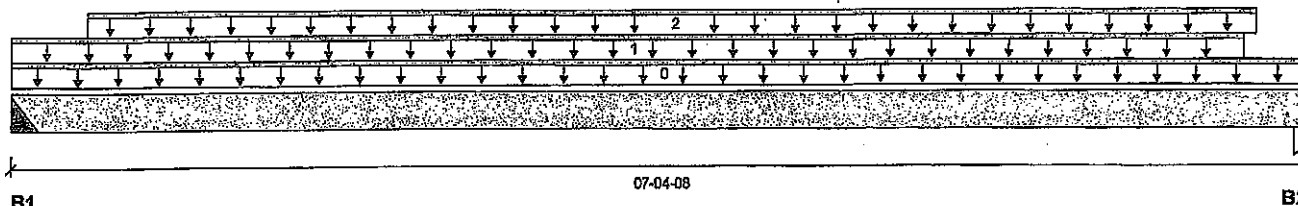
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-04-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	1401 / 0	717 / 0		
B2, 3-1/2"	1394 / 0	715 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-04-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	07-00-04	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-05-00	07-01-00	Top	166	82			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5452 ft-lbs	11610 ft-lbs	47.0%	1	03-09-00
End Shear	2902 lbs	5785 lbs	50.2%	1	06-03-08
Total Load Deflection	L/620 (0.136")	n/a	38.7%	4	03-08-00
Live Load Deflection	L/999 (0.09")	n/a	n/a	5	03-08-00
Max Defl.	0.136"	n/a	n/a	4	03-08-00
Span / Depth	8.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	2998 lbs	n/a	70.2%	HUS1.81/10
B2	Column 3-1/2" x 1-3/4"	2985 lbs	60.0%	39.9%	Unspecified

Cautions

Header for the hanger HUS1.81/10 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. 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.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA Q86. **AMENDED 2020**

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012



HWG NO. TAN 5884-20
STRUCTURAL
COMPONENT ONLY

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Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B1A(i1751) (Flush Beam)

PASSED

April 14, 2020 15:55:54

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cap

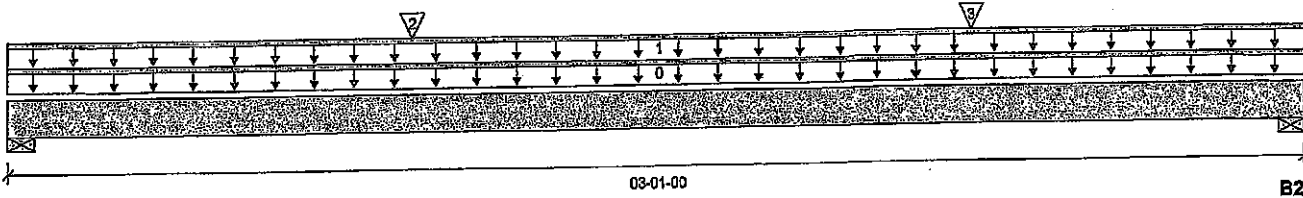
File name: VALLYCREEK 12 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B1A(i1751)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 03-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	669 / 0	474 / 0		
B2, 3"	707 / 0	493 / 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	03-01-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	E1(i298)	Unf. Lin. (lb/ft)	L	00-00-00	03-01-00	Top	240	201			n/a
2	J2(i1452)	Conc. Pt. (lbs)	L	00-11-08	00-11-08	Top	318	159			n/a
3	J2(i1362)	Conc. Pt. (lbs)	L	02-03-08	02-03-08	Top	318	159			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1038 ft-lbs	23220 ft-lbs	4.5%	1	01-05-12
End Shear	876 lbs	11571 lbs	7.6%	1	01-00-08
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	01-06-08
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	01-06-08
Max Defl.	0.002"	n/a	n/a	4	01-06-08
Span / Depth	3.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3" x 3-1/2"	1595 lbs	24.7%	12.5%	Spruce-Pine-Fir
B2	Wall/Plate 3" x 3-1/2"	1678 lbs	26.0%	13.1%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

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

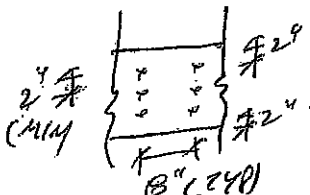
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3x ARDOX
SPIRAL NAILS @ 8" O/C FOR
MULTI-PLY NAILING. MAINTAIN
A MIN. 2" LUMBER EDGE/END
DISTANCE. DO NOT USE AIR NAILS



DWG NO. TAM 5006-20
STRUCTURAL
COMPONENT ONLY

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NORDIC STRUCTURES

COMPANY
Apr. 9, 2020 12:05

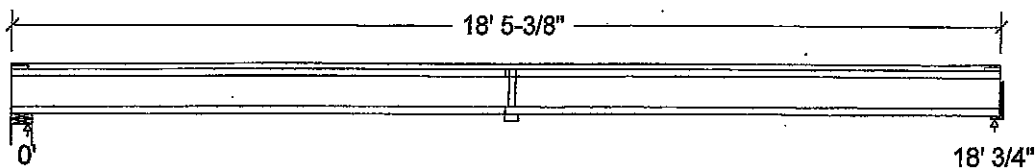
PROJECT
J6 2ND FLOOR.wwb

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	181		181
Live	361		361
Factored:			
Total	768		768
Bearing:			
Capacity			
Joist	1893		1893
Support	10829		-
Des ratio			
Joist	0.41		0.41
Support	0.07		-
Load case	#2		#2
Length	4-3/8		2
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		-
Kzcp sup	-		-

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

Nordic 9-1/2" NI-80 Floor joist @ 12" o.c.

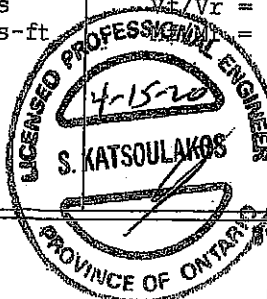
Supports: 1 - Lumber Wall, No.1/No.2; 2 - Hanger;

Total length: 18' 5-3/8"; Clear span: 17' 11"; 5/8" nailed and glued OSB sheathing with 1 row of blocking; strapping at blocking locations and 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 = 768	Vr = 1895	lbs	Vf/Vr = 0.41
Moment (+)	Mf = 3467	Mr = 8958	lbs-ft	Mf/Mr = 0.39
Perm. Defl'n	0.15 = < L/999	0.60 = L/360	in	0.24
Live Defl'n	0.29 = L/740	0.45 = L/480	in	0.65
Total Defl'n	0.44 = L/493	0.90 = L/240	in	0.49
Bare Defl'n	0.33 = L/662	0.60 = L/360	in	0.54
Vibration	lmax = 18'-0.8	Lv = 20'-0.5	ft	0.90
Defl'n	= 0.027	= 0.034	in	0.79



NO. YAM5870 -20
STRUCTURAL
COMPONENT AND

Additional Data:

FACTORS:	F/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#2
EI	324.1 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} = 367.27 lb-in² K= 4.94e06 lbs

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

CONFORMS TO OBC 2012

AMENDED 2020

Design Notes:

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. YAN 5070 -20
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLR FRAMING\Dropped Beams\B10 DR(i456) (Dropped Beam)

Dry | 1 span | No cant.

February 14, 2020 17:03:20

BC CALC® Member Report

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B10 DR(i456)

City, Province, Postal Code:

Specifier:

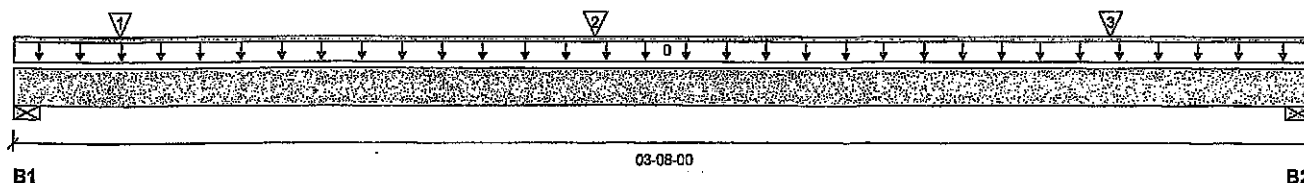
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	917 / 0	475 / 0		
B2, 4"	819 / 0	471 / 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	03-08-00	Top	10	0.65	1.00	1.15	00-00-00
1	-	Conc. Pt. (lbs)	L	00-03-08	00-03-08	Top	543	271			n/a
2	-	Conc. Pt. (lbs)	L	01-07-08	01-07-08	Top	543	271			n/a
3	-	Conc. Pt. (lbs)	L	03-01-04	03-01-04	Top	650	369			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1091 ft-lbs	23220 ft-lbs	4.7%	1	01-07-08
End Shear	845 lbs	11571 lbs	7.3%	1	02-06-08
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	01-09-15
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-09-15
Max Defl.	0.002"	n/a	n/a	4	01-09-15
Span / Depth	3.9				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	1970 lbs	10.5%	11.5%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	1817 lbs	9.7%	10.6%	Spruce-Pine-Fir

Notes

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

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

Calculations assume unbraced length of Top: 00-02-09; Bottom: 00-02-09.

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

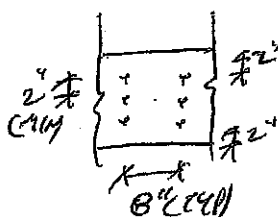
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

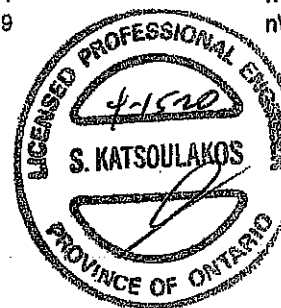
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/8" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



BOE NO. YAM 5872-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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

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

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



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Dropped Beams\B9 DR(i455) (Dropped Beam)

PASSED

BC CALC® Member Report
 Build 7239

Dry | 1 span | No cant.

February 14, 2020 17:03:20

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B9 DR(i455)

City, Province, Postal Code:

Specifier:

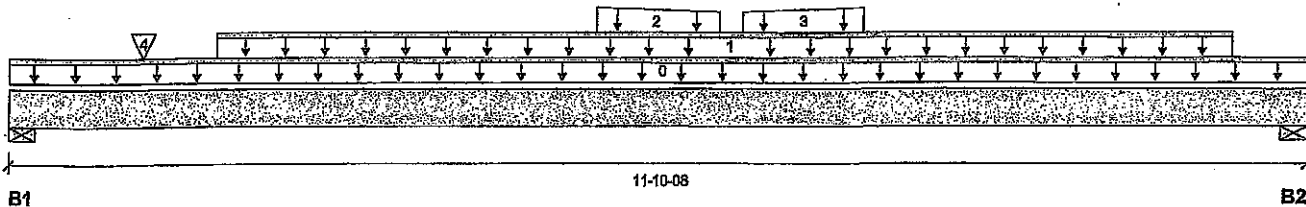
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 11-10-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1349 / 0	761 / 0		
B2, 5-1/2"	1379 / 0	778 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-10-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-08	11-02-08	Top	247	124			n/a
2	Bk1(1935)	Trapezoidal (lb/ft)	L	05-03-12	06-05-04	Top	48	24			n/a
3	Bk1(1931)	Trapezoidal (lb/ft)	L	06-07-12	07-09-04	Top	40	20			n/a
4	J2(I501)	Conc. Pt. (lbs)	L	01-02-08	01-02-08	Top	305	152			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	9078 ft-lbs	36222 ft-lbs	25.1%	1	06-03-09
End Shear	3018 lbs	17356 lbs	17.4%	1	10-07-08
Total Load Deflection	L/696 (0.193")	n/a	34.5%	4	05-10-08
Live Load Deflection	L/999 (0.124")	n/a	n/a	5	05-10-08
Max Defl.	0.193"	n/a	n/a	4	05-10-08
Span / Depth	14.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 5-1/4"	2975 lbs	10.6%	11.6%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 5-1/4"	3041 lbs	7.9%	8.6%	Spruce-Pine-Fir

Notes

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

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

Calculations assume unbraced length of Top: 00-03-09, Bottom: 00-03-09.

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

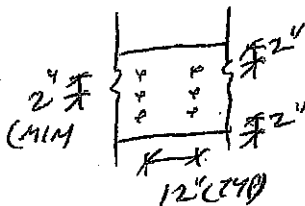
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

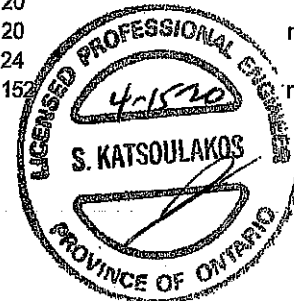
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/4" ARDOX
 SPIRAL NAILS @ 12" O/C FOR
 MULTI-PLY NAILING. MAINTAIN
 A MIN. 2" LUMBER EDGE/END
 DISTANCE. DO NOT USE AIR NAILS
 STAGGER NAILS 6" BETWEEN PLYS



DWG NO. YAM 5873-20
STRUCTURAL

COMPONENT ONLY Disclosure

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

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

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B11(i953) (Flush Beam)

PASSED

BC CALC® Member Report
 Build 7239

Dry | 1 span | No cant.

February 14, 2020 17:03:20

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B11(i953)

City, Province, Postal Code:

Specifier:

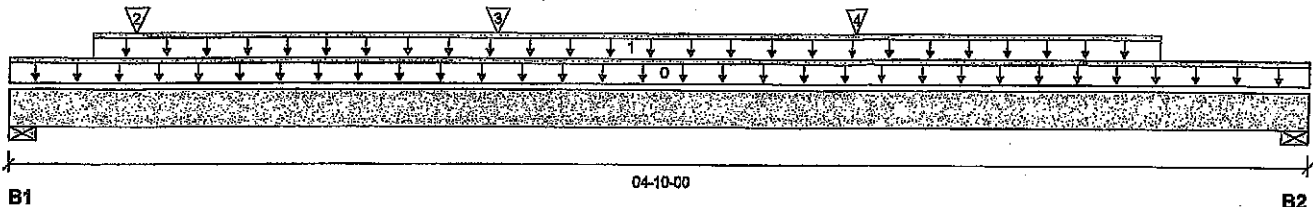
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1445 / 0	747 / 0		
B2, 5-1/2"	1199 / 0	624 / 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	04-10-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-03-08	04-03-08	Top	366	184			n/a
2	J2(i492)	Conc. Pt. (lbs)	L	00-05-08	00-05-08	Top	333	167			n/a
3	J2(i492)	Conc. Pt. (lbs)	L	01-09-08	01-09-08	Top	333	167			n/a
4	J2(i508)	Conc. Pt. (lbs)	L	03-01-08	03-01-08	Top	495	247			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3055 ft-lbs	23220 ft-lbs	13.2%	1	02-09-08
End Shear	2352 lbs	11571 lbs	20.3%	1	03-07-00
Total Load Deflection	L/999 (0.014")	n/a	n/a	4	02-04-04
Live Load Deflection	L/999 (0.009")	n/a	n/a	5	02-04-04
Max Defl.	0.014"	n/a	n/a	4	02-04-04
Span / Depth	5.3				



DWG NO. TAM 5874-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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

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

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	3100 lbs	36.0%	18.2%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	2578 lbs	21.8%	11.0%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

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

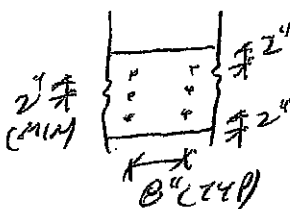
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/4" ARDXX SPIRAL NAILS @ 3" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



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

PASSED

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

February 14, 2020 17:03:20

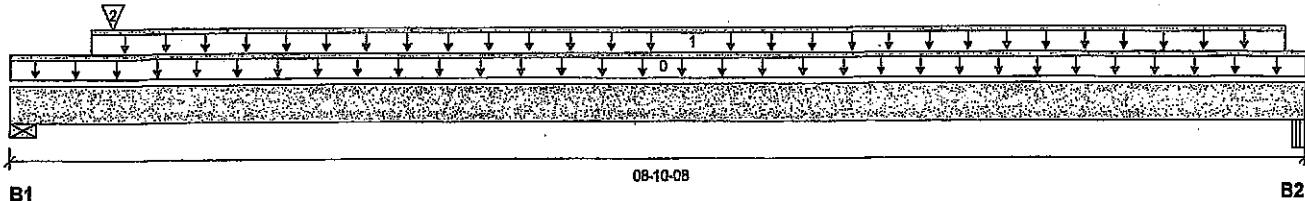
File name: VALLYCREEK 12 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B12(I460) (Flush Beam)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 08-10-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1222 / 0	686 / 0		
B2, 3-1/2"	172 / 0	130 / 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	08-10-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-06-08	08-08-12	Top	27	13			n/a
2	B13(I461)	Conc. Pt. (lbs)	L	00-08-04	00-08-04	Top	1165	616			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1241 ft-lbs	23220 ft-lbs	5.3%	1	02-08-04
End Shear	1272 lbs	11571 lbs	11.0%	1	01-01-08
Total Load Deflection	L/999 (0.022")	n/a	n/a	4	04-01-12
Live Load Deflection	L/999 (0.013")	n/a	n/a	5	04-01-12
Max Defl.	0.022"	n/a	n/a	4	04-01-12
Span / Depth	10.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	2691 lbs	31.2%	15.8%	Spruce-Pine-Fir
B2	Beam 3-1/2" x 3-1/2"	420 lbs	2.8%	2.8%	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.

Calculations assume member is fully braced.

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

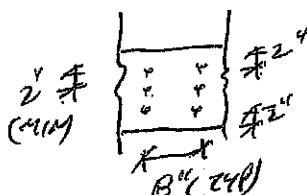
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



DWG NO. YAN 5875-20
STRUCTURAL
COMPONENT ONLY

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 9-1/2" VERSA-LAM® 2.0 3100 SP

PASSED

2ND FLR FRAMING\Flush Beams\B13(1461) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

February 14, 2020 17:03:20

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B13(1461)

City, Province, Postal Code:

Specifier:

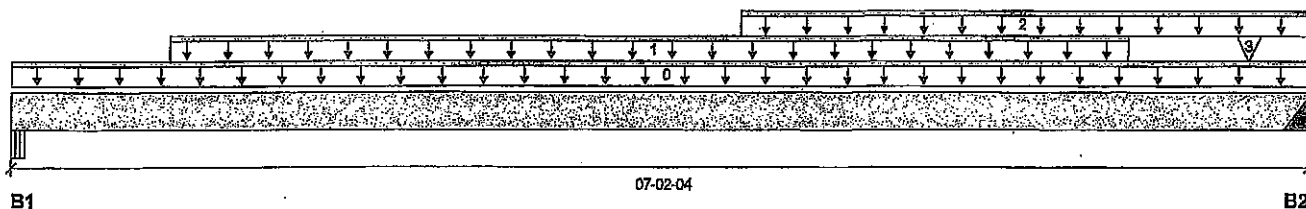
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-02-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-1/4"	599 / 0	333 / 0		
B2, 4"	1216 / 0	643 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-02-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-04	06-02-04	Top	168	84			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	03-11-16	07-02-04	Top	240	120			n/a
3	J5()	Conc. Pt. (lbs)	L	06-10-04	06-10-04	Top	153	76			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3319 ft-lbs	23220 ft-lbs	14.3%	1	04-02-04
End Shear	1715 lbs	11571 lbs	14.8%	1	06-00-12
Total Load Deflection	L/999 (0.038")	n/a	n/a	4	03-07-11
Live Load Deflection	L/999 (0.024")	n/a	n/a	5	03-07-11
Max Defl.	0.038"	n/a	n/a	4	03-07-11
Span / Depth	8.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 2-1/4" x 3-1/2"	1315 lbs	27.2%	13.7%	Spruce-Pine-Fir
B2	Hanger 4" x 3-1/2"	2627 lbs	n/a	15.4%	HGUS410

Cautions

Header for the hanger HGUS410 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

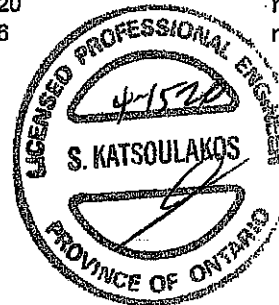
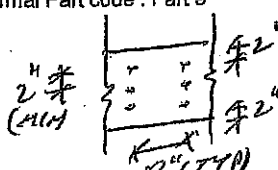
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

AMENDED 2020

PROVIDE 3 ROWS OF 3/2" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



DWG NO. TAM5876-20

STRUCTURAL

COMPONENT ONLY

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 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING Flush Beams B14(1462) (Flush Beam)**

Dry | 1 span | No cant.

February 14, 2020 17:03:20

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

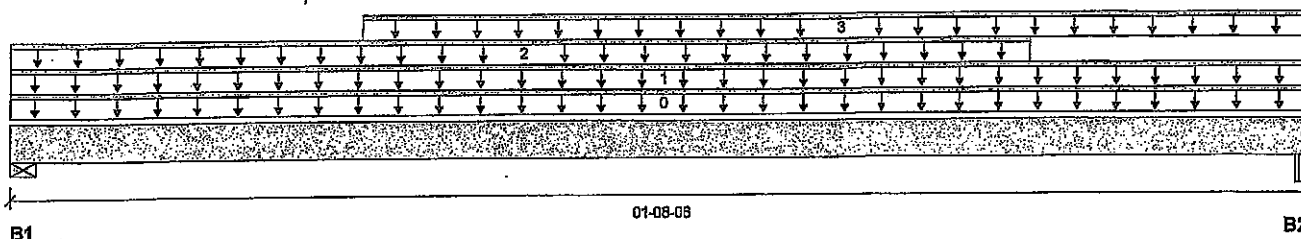
File name: VALLYCREEK 12 EL 1.mmdl

Description: 2ND FLR FRAMING Flush Beams B14(1462)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 01-08-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	43 / 0	115 / 0	57 / 0	
B2, 4-1/8"	28 / 0	62 / 0	27 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-08-06	Top		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-08-06	Top	11	6			n/a
2	E22(1914)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-00	Top	33	111	63		n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-06-08	01-08-06	Top	6	3			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	39 ft-lbs	23220 ft-lbs	0.2%	13	00-10-14
End Shear	106 lbs	11571 lbs	0.9%	13	01-03-00
Span / Depth	1.3				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	272 lbs	2.3%	1.2%	Spruce-Pine-Fir
B2	Beam 4-1/8" x 3-1/2"	147 lbs	1.9%	0.8%	Unspecified

Notes

Calculations assume member is fully braced.

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

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

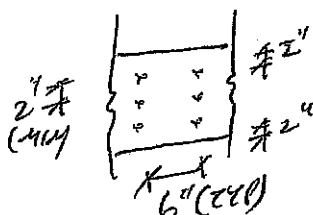
Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

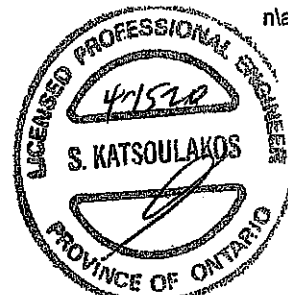
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 6" O/C FOR MULTI-PLY NAILING, MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



DWG NO. TAM 5877-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B6(i451) (Flush Beam)**

Dry | 1 span | No cant.

February 14, 2020 17:03:20

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

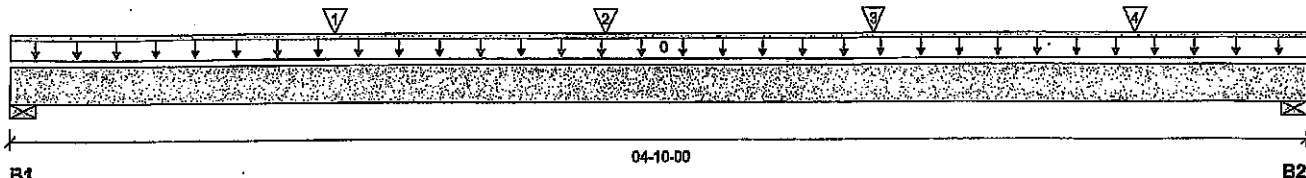
File name: VALLYCREEK 12 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B6(i451)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 04-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	425 / 0	235 / 0		
B2, 5-1/2"	546 / 0	296 / 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	04-10-00	Top		10			00-00-00
1	J3(i678)	Conc. Pt. (lbs)	L	01-02-06	01-02-06	Top	240	120			n/a
2	J3(i679)	Conc. Pt. (lbs)	L	02-02-06	02-02-06	Top	272	136			n/a
3	J3(i680)	Conc. Pt. (lbs)	L	03-02-06	03-02-06	Top	219	109			n/a
4	J3(i681)	Conc. Pt. (lbs)	L	04-02-06	04-02-06	Top	240	120			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1139 ft-lbs	23220 ft-lbs	4.9%	1	02-02-06
End Shear	883 lbs	11571 lbs	7.6%	1	01-03-00
Total Load Deflection	L/999 (0.005")	n/a	n/a	4	02-05-00
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	02-05-00
Max Defl.	0.005"	n/a	n/a	4	02-05-00
Span / Depth	5.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	931 lbs	7.9%	4.0%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	1190 lbs	10.0%	5.1%	Spruce-Pine-Fir

Notes

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

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

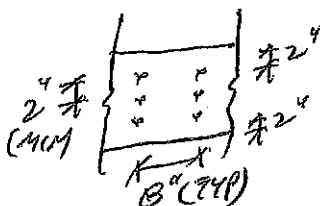
Calculations assume member is fully braced.

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

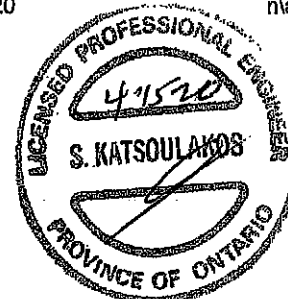
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

PROVIDE 3 ROWS OF 3/4" ARDOX
SPIRAL NAILS @ 8" O/C FOR
MULTI-PLY NAILING, MAINTAIN
A MIN. 2" LUMBER EDGE/END
DISTANCE. DO NOT USE AIR NAILS



DWG NO. TAW 5818-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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



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

2ND FLR FRAMING\Flush Beams\B7(I452) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 14, 2020 17:03:20

Build 7239

Job name:

File name: VALLYCREEK 12 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B7(I452)

City, Province, Postal Code:

Specifier:

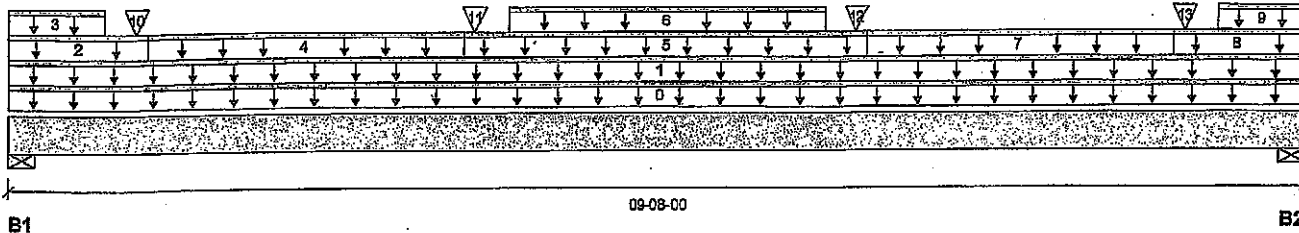
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 09-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	215 / 0	609 / 0	306 / 0	
B2, 5-1/2"	213 / 0	608 / 0	303 / 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	09-08-00	Top		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-08-00	Top	11	6			n/a
2	E30(I922)	Unf. Lin. (lb/ft)	L	00-00-00	01-00-08	Top		81			n/a
3	E30(I922)	Unf. Lin. (lb/ft)	L	00-00-00	00-08-08	Top	33	30	63		n/a
4	E29(I921)	Unf. Lin. (lb/ft)	L	01-00-08	03-04-08	Top		61			n/a
5	E28(I920)	Unf. Lin. (lb/ft)	L	03-04-08	06-04-08	Top		81			n/a
6	E28(I920)	Unf. Lin. (lb/ft)	L	03-08-08	06-00-08	Top	33	30	63		n/a
7	E27(I919)	Unf. Lin. (lb/ft)	L	06-04-08	08-08-08	Top		61			n/a
8	E25(I918)	Unf. Lin. (lb/ft)	L	08-08-08	09-08-00	Top		81			n/a
9	E25(I918)	Unf. Lin. (lb/ft)	L	09-00-08	09-08-00	Top	33	30	63		n/a
10	E30(I922)	Conc. Pt. (lbs)	L	00-11-08	00-11-08	Top	51	69	97		n/a
11	E28(I920)	Conc. Pt. (lbs)	L	03-05-08	03-05-08	Top	48	66	92		n/a
12	E28(I920)	Conc. Pt. (lbs)	L	06-03-08	06-03-08	Top	51	69	97		n/a
13	E25(I918)	Conc. Pt. (lbs)	L	08-09-08	08-09-08	Top	48	67	92		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2915 ft-lbs	23220 ft-lbs	12.6%	13	04-10-08
End Shear	1180 lbs	11571 lbs	10.2%	13	01-03-00
Total Load Deflection	L/999 (0.064")	n/a	n/a	35	04-10-08
Live Load Deflection	L/999 (0.029")	n/a	n/a	51	04-10-08
Max Defl.	0.064"	n/a	n/a	35	04-10-08
Span / Depth	.11.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	1435 lbs	12.1%	6.1%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	1428 lbs	12.1%	6.1%	Spruce-Pine-Fir



DWG NO. TAW 5879-20
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B7(1452) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 14, 2020 17:03:20

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: VALLYCREEK 12 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B7(1452)

Specifier:

Designer:

Company:

Notes

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

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

Calculations assume member is fully braced.

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.

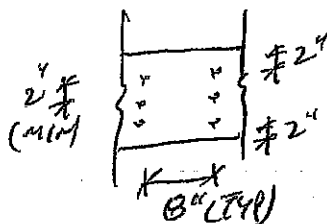
Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

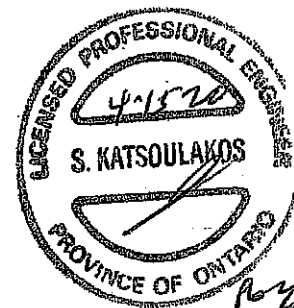
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



**PROVIDE 3 ROWS OF 3 1/2" ARDOX
SPIRAL NAILS @ 6" O/C FOR
MULTI-PLY NAILING. MAINTAIN
A MIN. 2" LUMBER EDGE/END
DISTANCE. DO NOT USE AIR NAILS**



BWG NO. YAM 5079-20
STRUCTURAL
COMPONENT ONLY

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

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B14C(i1358) (Flush Beam)**

Dry | 2 spans | R cant.

February 14, 2020 17:30:21

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

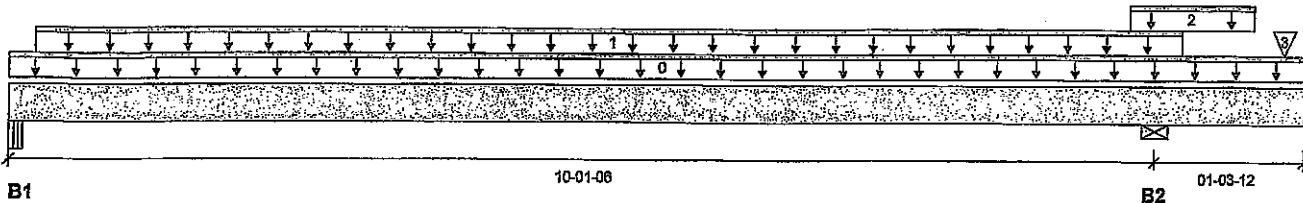
File name: VALLYCREEK 12 EL 3.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B14C(i1358)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 11-05-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	134 / 6	104 / 0	0 / 5	
B2, 5-1/2"	191 / 0	319 / 0	49 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-05-02	Top		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	10-04-02	Top	27	13			n/a
2	E35(i1674)	Unf. Lin. (lb/ft)	L	09-10-10	10-11-10	Top		81			n/a
3	-	Conc. Pt. (lbs)	L	11-02-15	11-02-15	Top	49	90	44		n/a

Controls Summary	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	732 ft-lbs	23220 ft-lbs	3.2%	32	05-00-07
Neg. Moment	-310 ft-lbs	-23220 ft-lbs	1.3%	1	10-01-06
End Shear	258 lbs	11571 lbs	2.2%	32	01-02-12
Cont. Shear	201 lbs	7521 lbs	2.7%	0	11-01-10
Total Load Deflection	L/999 (0.017")	n/a	n/a	79	05-01-15
Live Load Deflection	L/999 (0.011")	n/a	n/a	117	05-02-11
Total Neg. Defl.	2xL/1998 (-0.006")	n/a	n/a	79	11-05-02
Max Defl.	0.017"	n/a	n/a	79	05-01-15
Span / Depth	12.3				



HWB NO. TAN5005-20

STRUCTURAL**Disclosure COMPONENT ONLY**

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Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/4" x 3-1/2"	330 lbs	4.2%	1.5%	Unspecified
B2 Wall/Plate	5-1/2" x 3-1/2"	735 lbs	6.2%	3.1%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

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

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

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

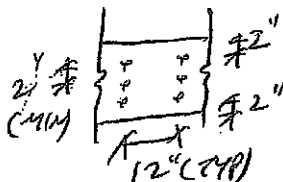
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

AMENDED 2020

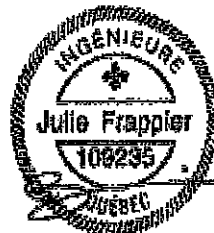
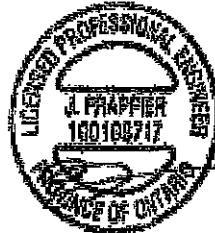
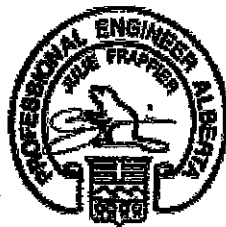


PROVIDE 3 ROWS OF 3 1/2" ARDOX SPIRAL NAILS @ 12" O/C FOR MULTI-PLY NAILING, MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS

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

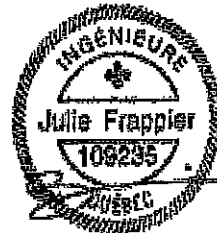
Maximum Floor Spans

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'-4"	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'-5"	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.

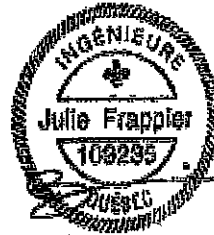


Maximum Floor Spans

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
14"	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	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
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	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'-4"	20'-1"	N/A	23'-3"	21'-7"	20'-8"	N/A
14"	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-11"	20'-11"	N/A	24'-3"	22'-7"	21'-7"	N/A
	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
16"	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	25'-3"	24'-2"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
	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 CBC 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.



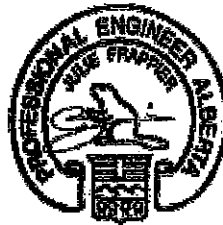
Maximum Floor Spans

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"	17'-5"	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-1274C.



Maximum Floor Spans

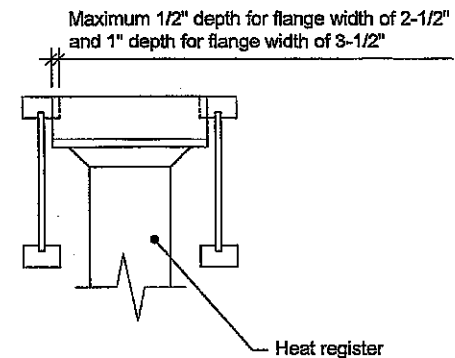
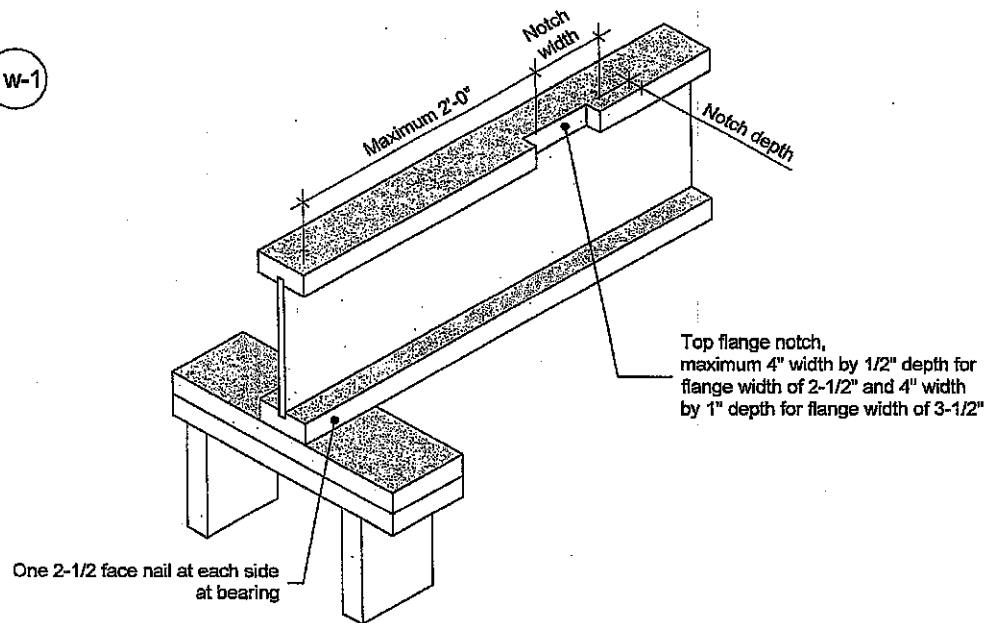
Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing

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'-4"	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
14"	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	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
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	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'-4"	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
14"	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-5"	19'-6"	N/A	24'-1"	21'-5"	19'-6"	N/A
	NI-60	24'-0"	22'-3"	21'-0"	N/A	24'-8"	22'-5"	21'-0"	N/A
	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
16"	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	24'-10"	23'-4"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
	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 1.5DL + 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.

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 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.

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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



Construction Detail

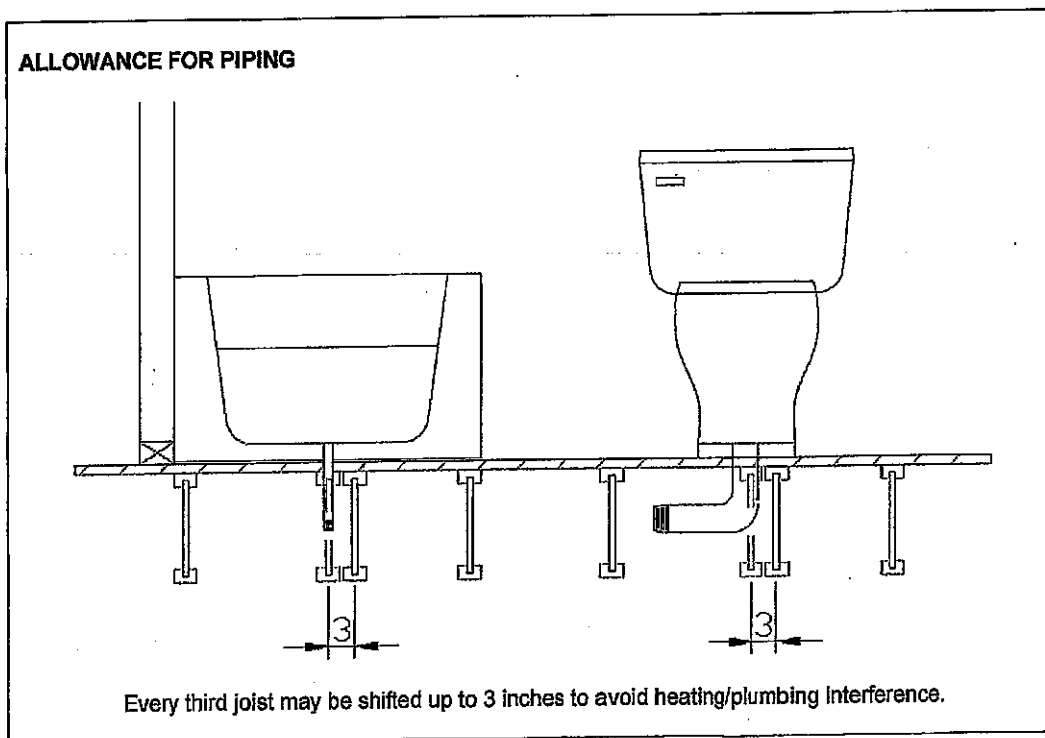
Limit States Design

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