

20.130104.000.00.CM

Issue Date: 02/10/21

**LAMPONE INVESTMENT INC**

ALL CONSTRUCTION SHALL COMPLY WITH THE  
ONTARIO BUILDING CODE.

**CITY OF MARKHAM**

**FLOOR JOISTS SHOP DRAWINGS**

**MODEL NAME : PEYTON 2S**

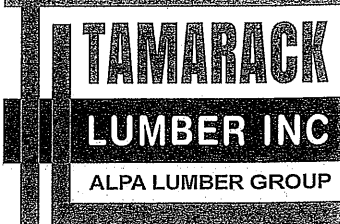
**ELEV 1, 2A, 2B & 3**

1,2A,3		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
2	H2	HUS310-2
1	H3	HUS1.81/10

1,2A,3					
PlotID	Length	Product	Piles	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	21	MFD
J1 DJ	14-00-00	9 1/2" NI-40x	2	8	MFD
J2	12-00-00	9 1/2" NI-40x	1	14	MFD
J2 DJ	12-00-00	9 1/2" NI-40x	2	2	MFD
J3	10-00-00	9 1/2" NI-40x	1	1	MFD
J4	6-00-00	9 1/2" NI-40x	1	6	MFD
J5	4-00-00	9 1/2" NI-40x	1	2	MFD
J6	2-00-00	9 1/2" NI-40x	1	2	MFD
B8 H	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B1 H	10-00-00	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	1	1	MFD
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B6	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B7 H	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD

1,2B,3					
PlotID	Length	Product	Piles	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	21	MFD
J1 DJ	14-00-00	9 1/2" NI-40x	2	8	MFD
J2	12-00-00	9 1/2" NI-40x	1	14	MFD
J2 DJ	12-00-00	9 1/2" NI-40x	2	2	MFD
J3	10-00-00	9 1/2" NI-40x	1	1	MFD
J4	6-00-00	9 1/2" NI-40x	1	6	MFD
J5	4-00-00	9 1/2" NI-40x	1	2	MFD
J6	2-00-00	9 1/2" NI-40x	1	2	MFD
B8 H	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B1 H	10-00-00	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	1	1	MFD
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B6	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B7 H	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2	MFD
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD

1,2B,3		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
2	H2	HUS310-2
1	H3	HUS1.81/10



FROM PLAN DATED: JULY 2, 2020

BUILDER: GREENPARK HOMES

SITE: LAMPONE INVESTMENTS

MODEL: PEYTON 2S

ELEVATION: 1,2,3

LOT:

CITY: MARKHAM

SALESMAN: WILL GARCIA

DESIGNER: L.D.

REVISION: L.D.

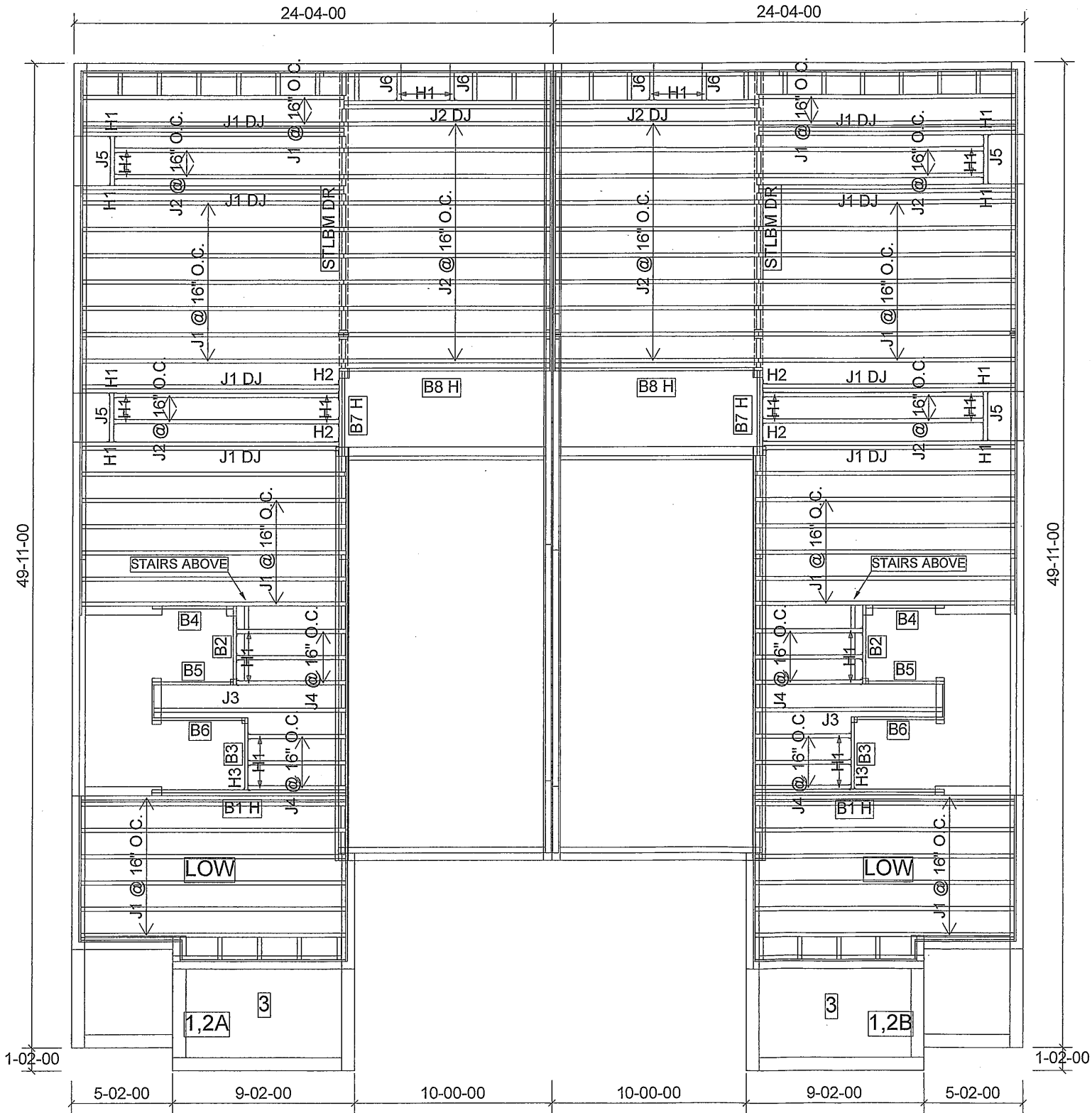
NOTES:  
REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.  
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ I-JOIST 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 TILI APPLICATION AS PER O.B.C 9.30.6.

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

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-07-29

1st FLOOR

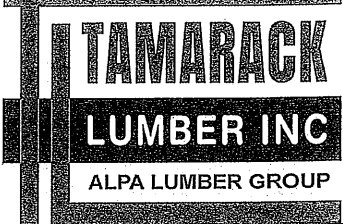


1		
Qty	Manuf	Product
7	H1	IUS2.56/9.5
2	H3	HUS1.81/10

1					
PlotID	Length	Product	Piles	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	30	MFD
J2	12-00-00	9 1/2" NI-40x	1	32	MFD
J3	10-00-00	9 1/2" NI-40x	1	1	MFD
J4	6-00-00	9 1/2" NI-40x	1	8	MFD
B12 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	4	4	MFD
B10	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD

1					
PlotID	Length	Product	Piles	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	30	MFD
J2	12-00-00	9 1/2" NI-40x	1	32	MFD
J3	10-00-00	9 1/2" NI-40x	1	1	MFD
J4	6-00-00	9 1/2" NI-40x	1	8	MFD
B12 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	4	4	MFD
B10	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD

1		
Qty	Manuf	Product
7	H1	IUS2.56/9.5
2	H3	HUS1.81/10



FROM PLAN DATED: JULY 2, 2020

BUILDER: GREENPARK HOMES

SITE: LAMPONE INVESTMENTS

MODEL: PEYTON 2S

ELEVATION: 1

LOT:

CITY: MARKHAM

SALESMAN: WILL GARCIA

DESIGNER: L.D.

REVISION: L.D.

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. **MULTIPLI SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALON BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURE 7 TABLES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELI CUT OPENINGS** SEE FIGURE 7 TABLES 1 & OF THE INSTALLATION GUIDE. **CERAMIC TII** APPLICATION AS PER O.B.C. 9.30.6

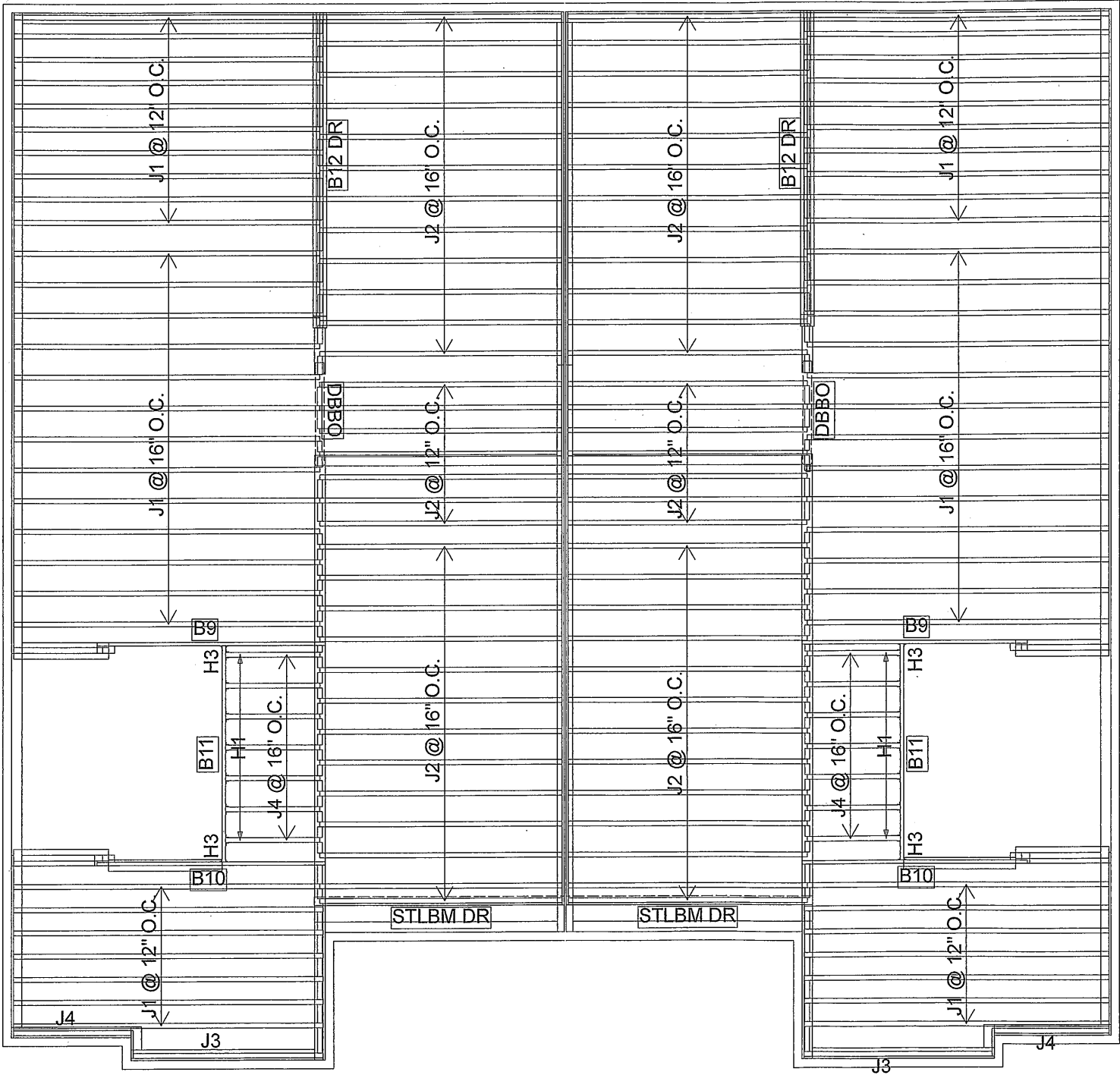
LOADING:

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2020-07-29

2nd FLOOR

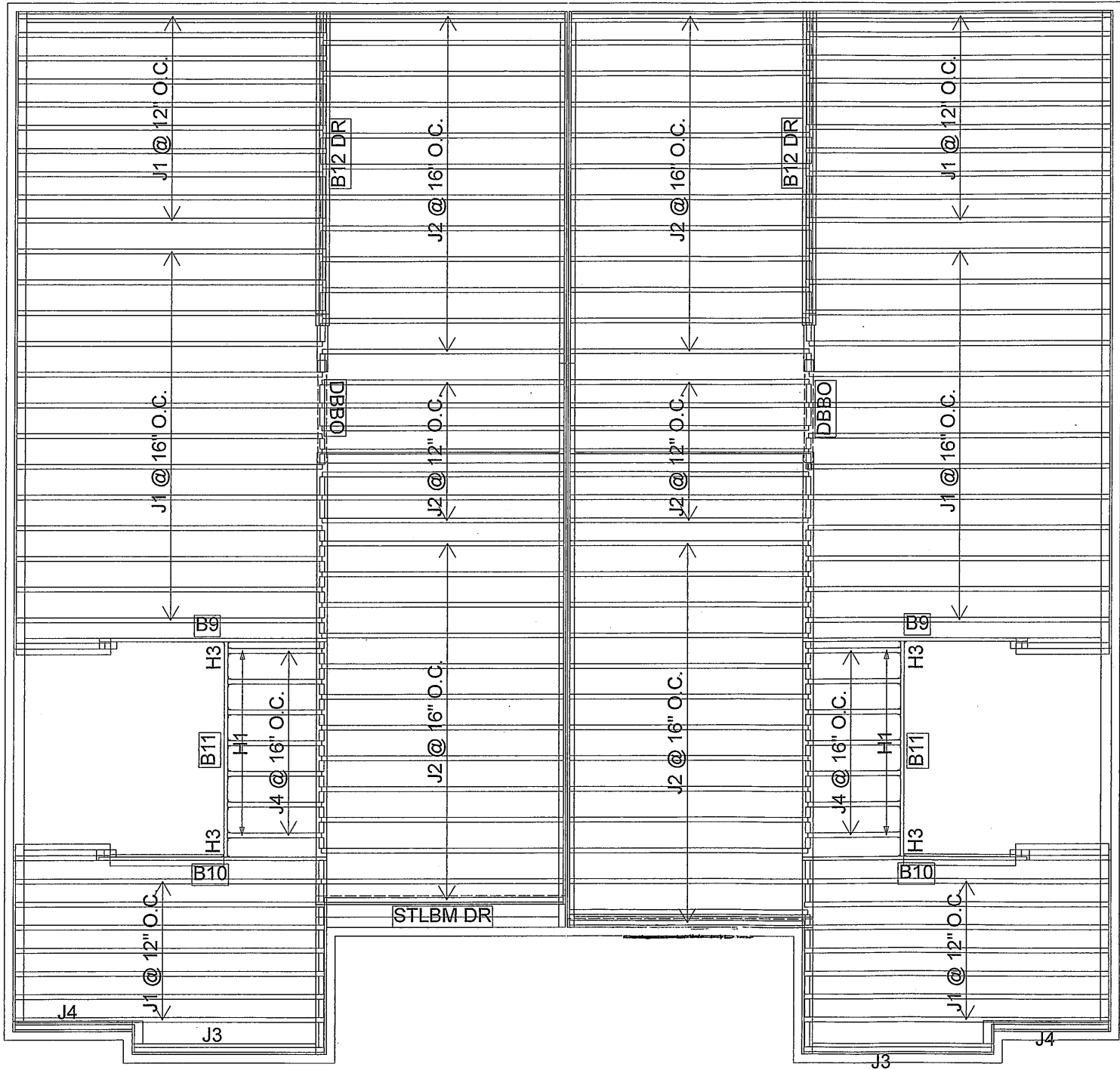


2A		
Qty	Manuf	Product
7	H1	IUS2.56/9.5
2	H3	HUS1.81/10

2A					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	30	MFD
J2	12-00-00	9 1/2" NI-40x	1	32	MFD
J3	10-00-00	9 1/2" NI-40x	1	1	MFD
J4	6-00-00	9 1/2" NI-40x	1	8	MFD
B12 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	4	4	MFD
B10	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD

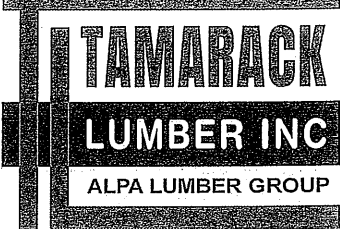
2B					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	30	MFD
J2	12-00-00	9 1/2" NI-40x	1	33	MFD
J3	10-00-00	9 1/2" NI-40x	1	1	MFD
J4	6-00-00	9 1/2" NI-40x	1	8	MFD
B12 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	4	4	MFD
B10	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1	MFD

2B		
Qty	Manuf	Product
7	H1	IUS2.56/9.5
2	H3	HUS1.81/10



2A

2B



FROM PLAN DATED: JULY 2, 2020

BUILDER: GREENPARK HOMES

SITE: LAMPONE INVESTMENTS

MODEL: PEYTON 2S

ELEVATION: 2

LOT:

CITY: MARKHAM

SALESMAN: WILL GARCIA

DESIGNER: L.D.

REVISION: L.D.

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. **MULTIPL SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALON BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURE 7 TABLES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIEL CUT OPENINGS** SEE FIGURE 7 TABLES 1 & OF THE INSTALLATION GUIDE. **CERAMIC TI** APPLICATION AS PER O.B.C. 9.30.6

LOADING:

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2020-07-29

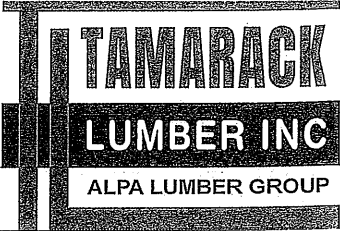
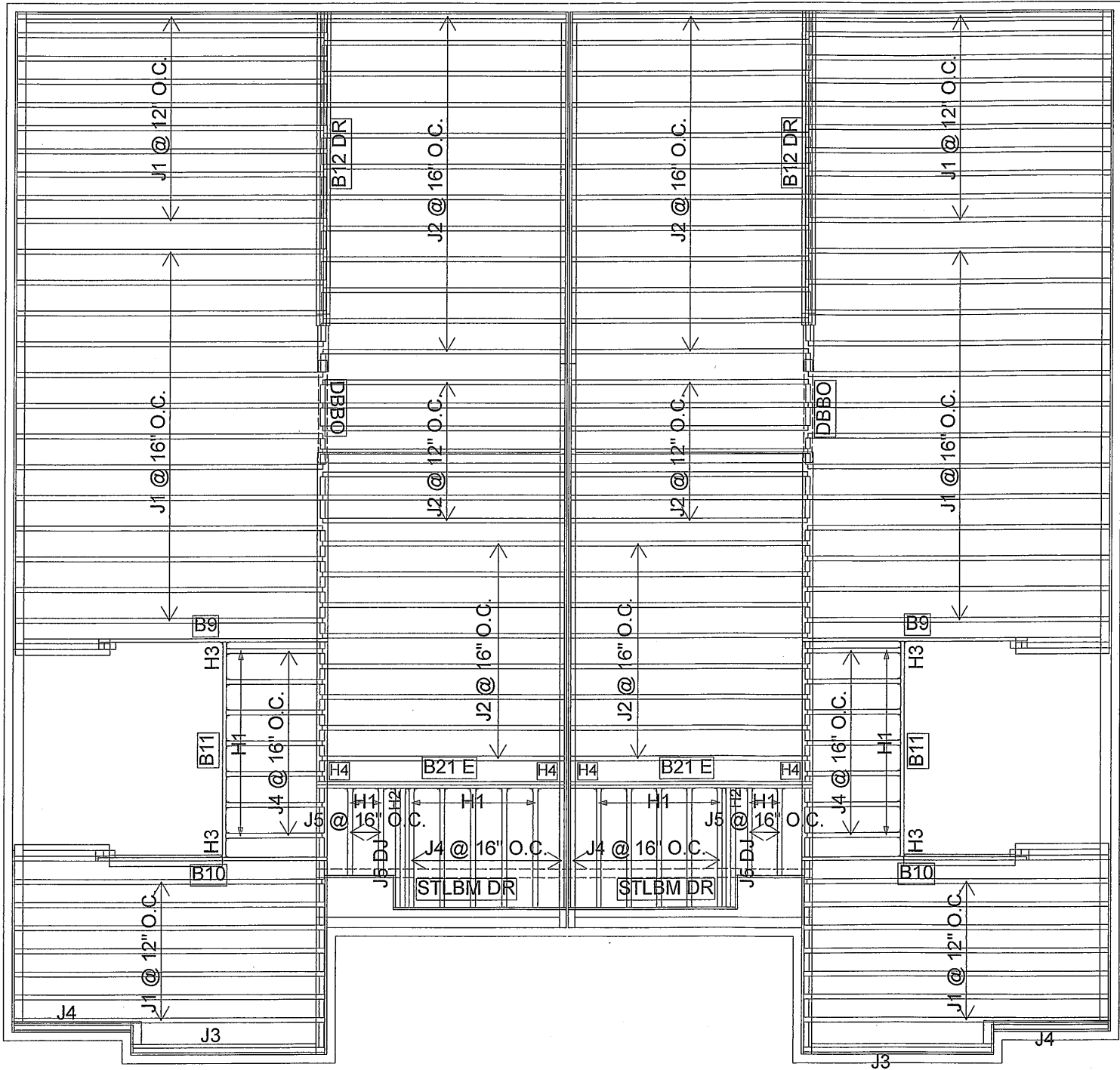
2nd FLOOR

3		
Qty	Manuf	Product
7	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
2	H3	HUS1.81/10
2	H4	H2.5A*

3					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	30	MFD
J2	12-00-00	9 1/2" NI-40x	1	27	MFD
J3	10-00-00	9 1/2" NI-40x	1	1	MFD
J4	6-00-00	9 1/2" NI-40x	1	14	MFD
J5 DJ	6-00-00	9 1/2" NI-40x	2	2	MFD
J5	4-00-00	9 1/2" NI-40x	1	2	MFD
B12 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	4	4	MFD
B21 E	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B10	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD

3					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	30	MFD
J2	12-00-00	9 1/2" NI-40x	1	27	MFD
J3	10-00-00	9 1/2" NI-40x	1	1	MFD
J4	6-00-00	9 1/2" NI-40x	1	14	MFD
J5 DJ	6-00-00	9 1/2" NI-40x	2	2	MFD
J5	4-00-00	9 1/2" NI-40x	1	2	MFD
B12 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	4	4	MFD
B21 E	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B10	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD

3		
Qty	Manuf	Product
7	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
2	H3	HUS1.81/10
2	H4	H2.5A*



FROM PLAN DATED: JULY 2, 2020

BUILDER: GREENPARK HOMES

SITE: LAMPONE INVESTMENTS

MODEL: PEYTON 2S

ELEVATION: 3

LOT:

CITY: MARKHAM

SALESMAN: WILL GARCIA

DESIGNER: L.D.

REVISION: L.D.

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. **MULTIPL SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALOI BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURE 7 TABLES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIEL CUT OPENINGS** SEE FIGURE 7 TABLES 1 & OF THE INSTALLATION GUIDE. **CERAMIC T** APPLICATION AS PER O.B.C. 9.30.6

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2020-07-29

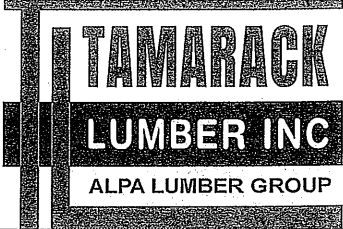
2nd FLOOR

3		
Qty	Manuf	Product
7	H1	IUS2.56/9.5
2	H3	HUS1.81/10
2	H4	H2.5A*

3					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	30	MFD
J2	12-00-00	9 1/2" NI-40x	1	27	MFD
J3	10-00-00	9 1/2" NI-40x	1	1	MFD
J4	6-00-00	9 1/2" NI-40x	1	14	MFD
J5 DJ	6-00-00	9 1/2" NI-40x	2	2	MFD
J5	4-00-00	9 1/2" NI-40x	1	2	MFD
B12 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	4	4	MFD
B21 E	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B10	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD

3					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	14-00-00	9 1/2" NI-40x	1	30	MFD
J2	12-00-00	9 1/2" NI-40x	1	27	MFD
J3	10-00-00	9 1/2" NI-40x	1	1	MFD
J4	6-00-00	9 1/2" NI-40x	1	14	MFD
J5 DJ	6-00-00	9 1/2" NI-40x	2	2	MFD
J5	4-00-00	9 1/2" NI-40x	1	2	MFD
B12 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	4	4	MFD
B21 E	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B10	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD

3		
Qty	Manuf	Product
7	H1	IUS2.56/9.5
2	H3	HUS1.81/10
2	H4	H2.5A*



FROM PLAN DATED: JULY 2, 2020

BUILDER: GREENPARK HOMES

SITE: LAMPONE INVESTMENTS

MODEL: PEYTON 2S

ELEVATION: 3

LOT:

CITY: MARKHAM

SALESMAN: WILL GARCIA

DESIGNER: L.D.

REVISION: L.D.

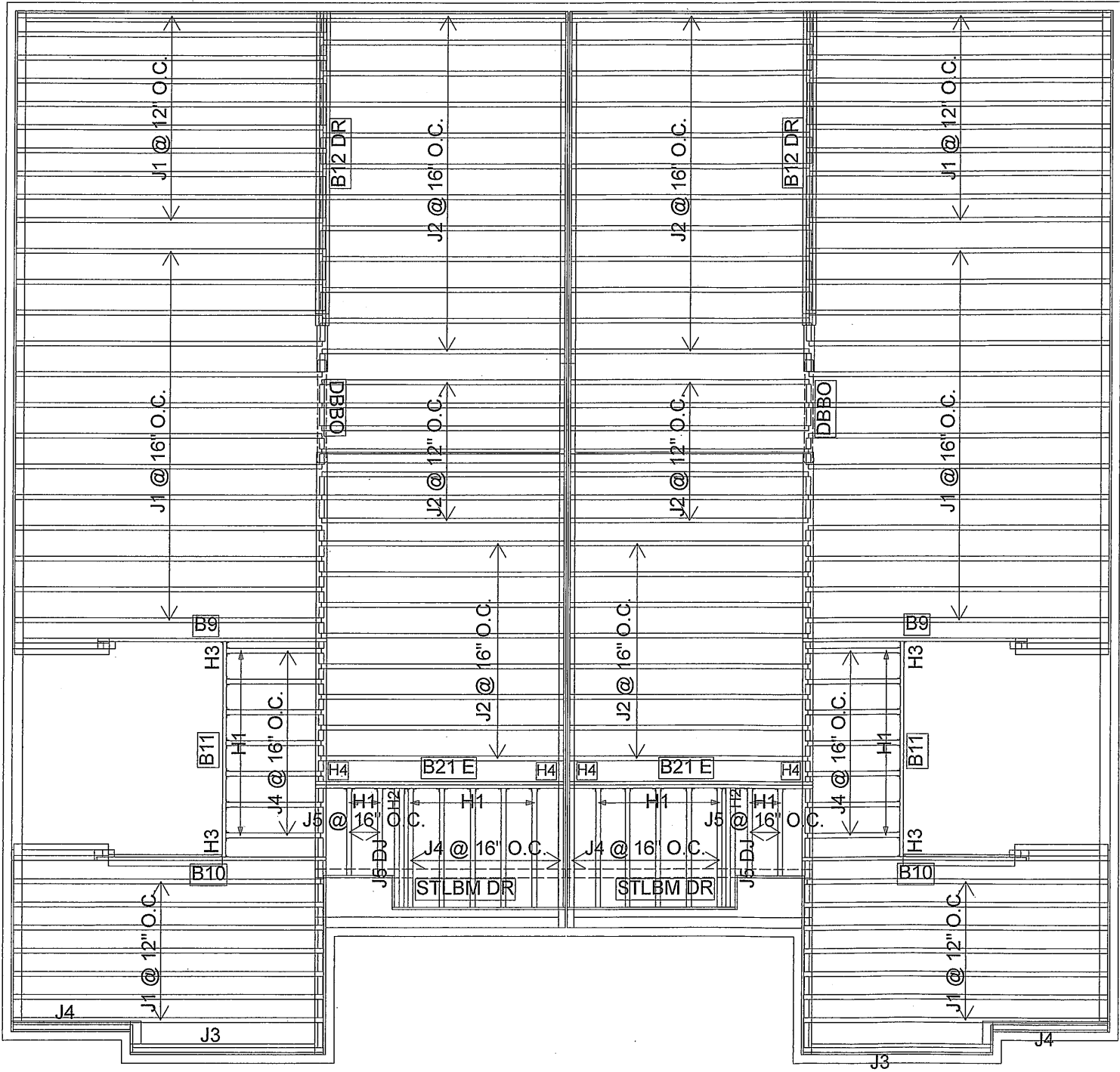
**NOTES:**  
REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION. **SQUASH BLOCKS** OF 2x4, 2x6, 2x8 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPL SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER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

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

SUBFLOOR: 5/8" GLUED AND NAILED

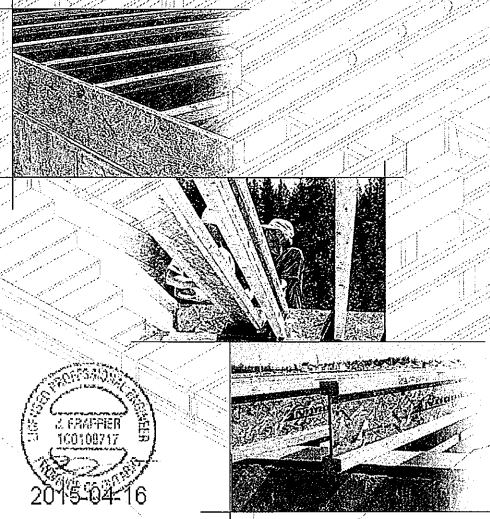
DATE: 2020-07-29

2nd FLOOR



## INSTALLATION GUIDE

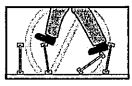
FOR RESIDENTIAL FLOORS



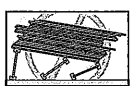
Distributed by:



### SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

#### WARNING

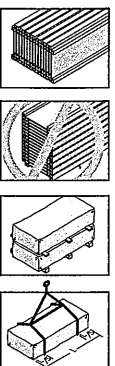
I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.

#### Avoid Accidents by Following these Important Guidelines:

- Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
  - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
  - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
- For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
- Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
- Never install a damaged I-joist.

### STORAGE AND HANDLING GUIDELINES

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



### MAXIMUM FLOOR SPANS

- Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in COBSS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
- SI units conversion: 1 inch = 25.4 mm, 1 foot = 0.305 m

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

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12'	16'	19.2'	24'	12'	16'	19.2'	24'
9-1/2"	NI-20	15'1"	14'2"	13'9"	13'5"	16'3"	15'4"	14'10"	14'7"
	NI-40x	16'1"	15'2"	14'8"	14'5"	17'5"	16'5"	15'10"	15'5"
	NI-60	16'3"	15'4"	14'10"	14'11"	17'7"	16'7"	15'0"	14'11"
	NI-70	17'1"	16'1"	15'6"	15'7"	18'7"	17'4"	16'9"	16'10"
	NI-80	17'3"	16'3"	15'8"	15'9"	18'10"	17'6"	16'11"	17'0"
11-7/8"	NI-20	16'11"	16'0"	15'5"	15'6"	18'4"	17'3"	16'8"	16'7"
	NI-40x	18'1"	17'0"	16'5"	16'6"	20'0"	18'9"	17'9"	17'7"
	NI-60	18'4"	17'3"	16'7"	16'9"	20'3"	18'9"	18'0"	18'1"
	NI-70	19'6"	18'0"	17'4"	17'5"	21'6"	19'11"	19'0"	19'1"
	NI-80	19'9"	18'3"	17'1"	17'2"	21'9"	20'8"	19'3"	19'4"
14"	NI-90x	20'2"	18'7"	17'10"	17'11"	22'3"	20'7"	19'8"	19'9"
	NI-90x	20'4"	18'9"	17'11"	18'0"	22'5"	20'9"	19'10"	19'11"
	NI-40x	20'1"	18'7"	17'10"	17'11"	22'2"	20'6"	19'8"	19'4"
	NI-60	20'5"	18'11"	18'1"	18'2"	22'7"	20'11"	20'0"	20'1"
	NI-70	21'7"	20'0"	19'1"	19'2"	23'10"	22'1"	21'1"	21'2"
16"	NI-80	21'11"	20'3"	19'4"	19'5"	24'3"	22'5"	21'5"	21'6"
	NI-90	22'5"	20'8"	19'9"	19'10"	24'9"	22'10"	21'10"	21'10"
	NI-90x	22'7"	20'11"	19'11"	20'0"	25'0"	23'1"	22'0"	22'2"
	NI-60	22'3"	20'8"	19'9"	19'10"	24'7"	22'9"	21'9"	21'10"
	NI-70	23'6"	21'9"	20'9"	20'10"	26'0"	24'0"	22'11"	23'0"

CCMC EVALUATION REPORT 13032-R

### WEB STIFFENERS

#### RECOMMENDATIONS:

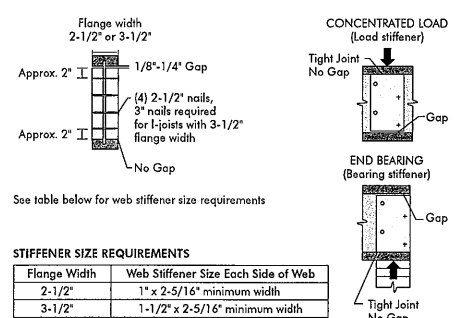
A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.

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 the flange is at the top.

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

SI units conversion: 1 inch = 25.4 mm

#### FIGURE 2 WEB STIFFENER INSTALLATION DETAILS

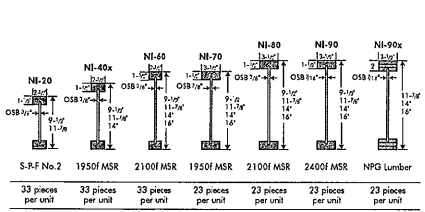


See table below for web stiffener size requirements

#### STIFFENER SIZE REQUIREMENTS

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

### NORDIC I-JOIST SERIES



Chantiers Chibougamau 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 material to the finished product, reflects our commitment to quality.

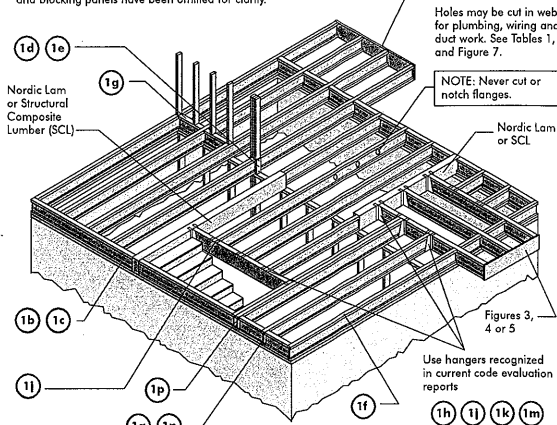
Nordic Engineered Wood I-joists use only finger-jointed lumber in their flanges, ensuring consistent quality, superior strength, and longer span carrying capacity.

### INSTALLING NORDIC I-JOISTS

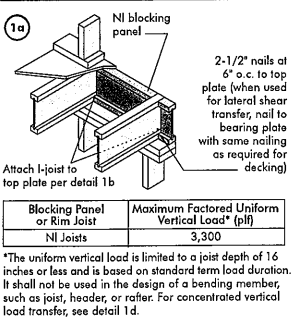
- Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
- Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
- Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical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

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

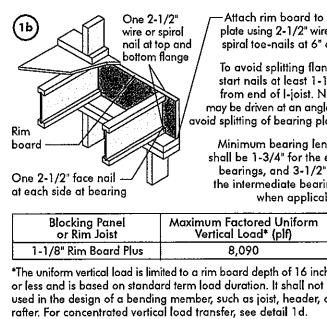
Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.



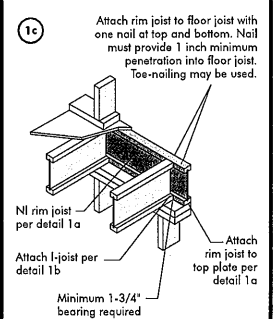
All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for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



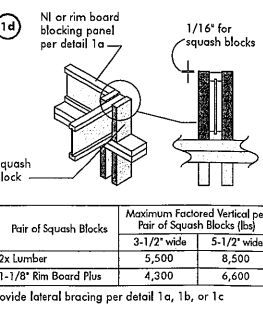
\*The uniform vertical load is limited to a joist depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



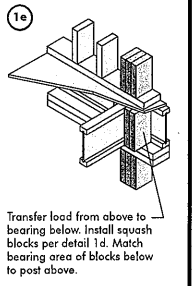
\*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



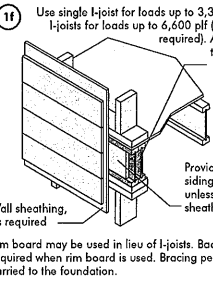
\*The uniform vertical load is limited to a rim joist depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



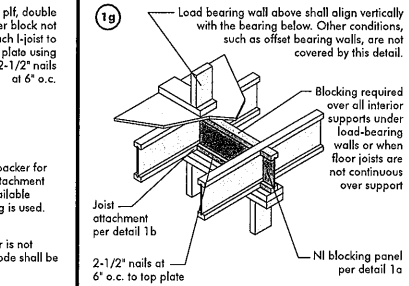
\*The uniform vertical load is limited to a blocking panel depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



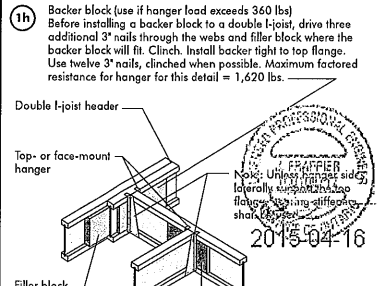
Transfer load from above to bearing below. Install squash blocks per detail 1d. Match bearing area of blocks below to post above.



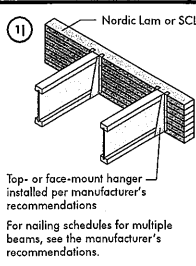
Wall sheathing, as required. Rim board may be used in lieu of I-joists. Backer is not required when rim board is used. Bracing per code shall be carried to the foundation.



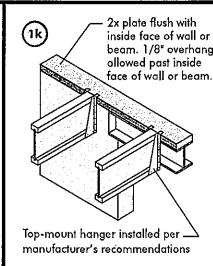
Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by this detail.



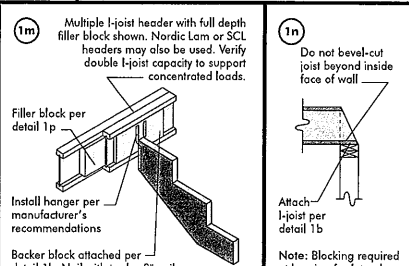
Backer block (use if hanger load exceeds 360 lbs) Before installing a backer block to a double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3" nails, clinched when possible. Maximum factored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



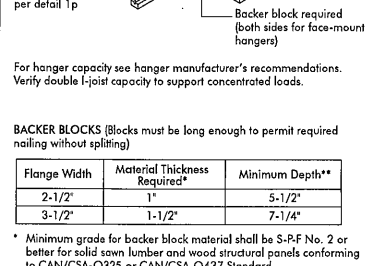
Top- or face-mount hanger installed per manufacturer's recommendations



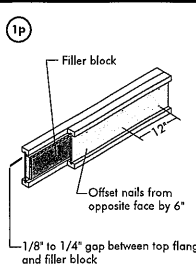
Top-mount hanger installed per manufacturer's recommendations



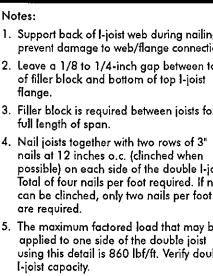
Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify double I-joist capacity to support concentrated loads.



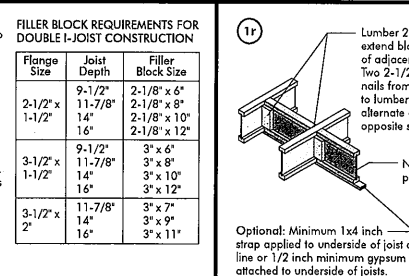
Do not bevel-cut joist beyond inside face of wall



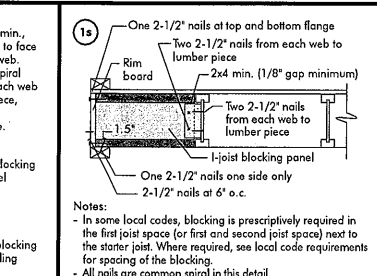
Filler block



Offset nails from opposite face by 6"



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.

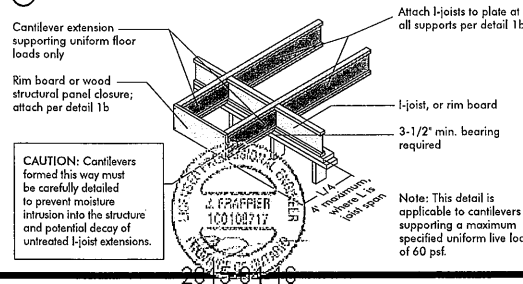


Notes: - In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking. - All nails are common spiral in this detail.

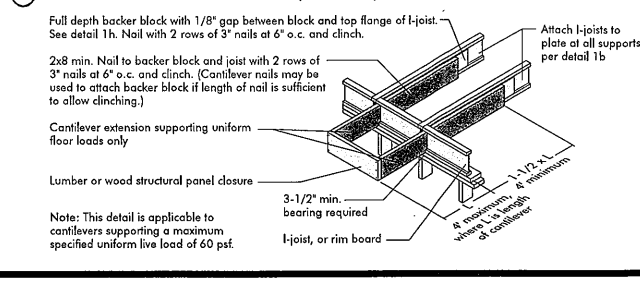


## CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

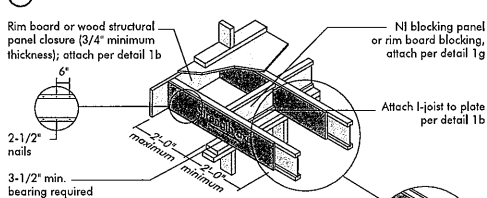


### 3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

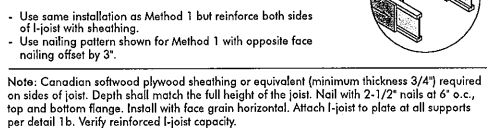


## CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

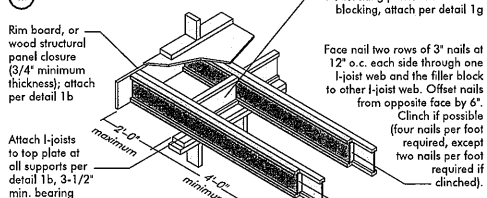
### 4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE



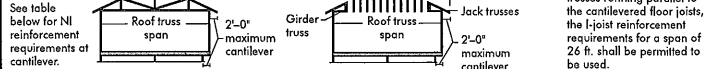
### Method 2 — SHEATHING REINFORCEMENT TWO SIDES



### 4b Alternate Method 2 — DOUBLE I-JOIST



### FIGURE 4 (continued)



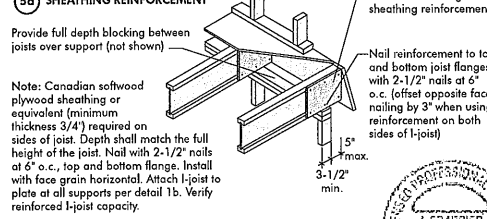
### CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft.)	ROOF LOADING (UNFACTORED)											
		LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
		JOIST SPACING (in.)				JOIST SPACING (in.)				JOIST SPACING (in.)			
9-1/2"	26	N	N	1	2	N	1	2	X	N	2	X	X
	28	N	N	1	1	N	1	2	X	N	2	X	X
	30	N	N	1	1	N	1	2	X	N	1	2	X
	32	N	N	1	2	X	N	2	X	X	1	X	X
	34	N	N	1	2	X	N	2	X	X	1	X	X
11-7/8"	26	N	N	N	1	N	N	2	N	N	N	2	X
	28	N	N	N	1	N	N	1	2	N	1	1	X
	30	N	N	N	1	N	N	1	2	N	1	2	X
	32	N	N	N	1	N	N	1	2	N	1	2	X
	34	N	N	N	1	2	N	1	X	N	1	2	X
14"	26	N	N	1	2	N	1	2	X	N	2	X	X
	28	N	N	N	N	N	N	N	1	N	N	1	1
	30	N	N	N	N	N	N	N	1	N	N	1	2
	32	N	N	N	N	N	N	1	N	N	1	2	X
	34	N	N	N	N	N	N	1	N	N	1	2	X
16"	26	N	N	N	1	N	N	1	2	N	1	2	X
	28	N	N	N	1	N	N	1	2	N	1	2	X
	30	N	N	N	1	N	N	1	2	N	1	2	X
	32	N	N	N	1	N	N	1	2	N	1	2	X
	34	N	N	N	1	N	N	1	2	N	1	2	X

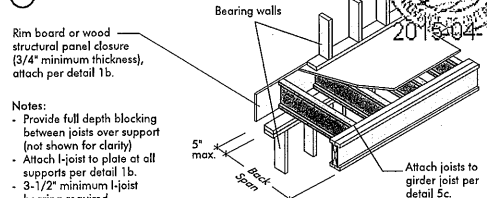
- N = No reinforcement required.
- 1 = NI reinforced with 3/4" wood structural panel on one side only.
- 2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
- X = Try a deeper joist or closer spacing.
2. Maximum design load shall be: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.
- For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
- Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
- 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 the roof is framed using a ridge beam, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
- Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

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

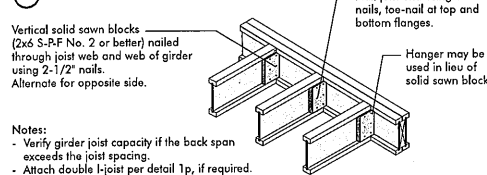
### 5a SHEATHING REINFORCEMENT



### 5b SET-BACK DETAIL



### 5c SET-BACK CONNECTION



### FIGURE 5 (continued)



### BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft.)	ROOF LOADING (UNFACTORED)											
		LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
		JOIST SPACING (in.)				JOIST SPACING (in.)				JOIST SPACING (in.)			
9-1/2"	26	1	X	X	X	2	X	X	X	2	X	X	X
	28	1	1	X	X	2	X	X	X	2	X	X	X
	30	1	1	X	X	2	X	X	X	2	X	X	X
	32	2	X	X	X	2	X	X	X	2	X	X	X
	34	2	X	X	X	2	X	X	X	2	X	X	X
11-7/8"	26	N	2	X	X	1	X	X	X	1	X	X	X
	28	N	2	X	X	1	X	X	X	2	X	X	X
	30	N	2	X	X	1	X	X	X	2	X	X	X
	32	N	2	X	X	1	X	X	X	2	X	X	X
	34	N	2	X	X	1	X	X	X	2	X	X	X
14"	26	N	1	X	X	1	2	X	X	1	X	X	X
	28	N	2	X	X	1	2	X	X	1	X	X	X
	30	N	2	X	X	1	2	X	X	1	X	X	X
	32	N	2	X	X	1	2	X	X	2	X	X	X
	34	N	2	X	X	1	2	X	X	2	X	X	X
16"	26	N	1	2	X	N	1	2	X	N	2	X	X
	28	N	1	2	X	N	1	2	X	N	2	X	X
	30	N	1	2	X	N	1	2	X	N	2	X	X
	32	N	1	2	X	N	1	2	X	N	2	X	X
	34	N	1	2	X	N	1	2	X	N	2	X	X

- N = No reinforcement required.
- 1 = NI reinforced with 3/4" wood structural panel on one side only.
- 2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
- X = Try a deeper joist or closer spacing.
2. Maximum design load shall be: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.
- For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
- Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
- 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 the roof is framed using a ridge beam, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
- Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

## WEB HOLES

### RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

### TABLE 1 LOCATION OF CIRCULAR HOLES IN JOIST WEBS

Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf														
Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (R-in.)												Span adjustment factor
		Round hole diameter (in.)												
		2	3	4	5	6	7	8	9	10	10-3/4	11	12	
9-1/2"	N-20	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	1.04
	N-40	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	1.04
	N-60	1.3	2.6	4.0	5.4	6.8	8.2	9.6	11.0	12.4	13.8	15.2	16.6	1.41
	N-70	2.0	3.4	4.8	6.2	7.6	9.0	10.4	11.8	13.2	14.6	16.0	17.4	1.57
	N-80	2.5	3.6	4.8	6.0	7.2	8.4	9.6	10.8	12.0	13.2	14.4	15.6	1.59
11-7/8"	N-20	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	1.04
	N-40	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	1.04
	N-60	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	1.04
	N-70	1.3	2.6	4.0	5.4	6.8	8.2	9.6	11.0	12.4	13.8	15.2	16.6	1.41
	N-80	1.6	2.10	3.4	4.8	6.2	7.6	9.0	10.4	11.8	13.2	14.6	16.0	1.57
14"	N-20	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	1.04
	N-40	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	1.04
	N-60	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	1.04
	N-70	1.3	2.6	4.0	5.4	6.8	8.2	9.6	11.0	12.4	13.8	15.2	16.6	1.41
	N-80	1.6	2.10	3.4	4.8	6.2	7.6	9.0	10.4	11.8	13.2	14.6	16.0	1.57
16"	N-20	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	1.04
	N-40	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	1.04
	N-60	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	1.04
	N-70	1.3	2.6	4.0	5.4	6.8	8.2	9.6	11.0	12.4	13.8	15.2	16.6	1.41
	N-80	1.6	2.10	3.4	4.8	6.2	7.6	9.0	10.4	11.8	13.2	14.6	16.0	1.57

- 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.

### OPTIONAL:

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

Reduced =  $\frac{\text{actual}}{\text{span}} \times D$

Where:  $\frac{\text{actual}}{\text{span}}$  = Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span application. The distance shall not be less than 6 inches from the face of the support to edge of the hole.

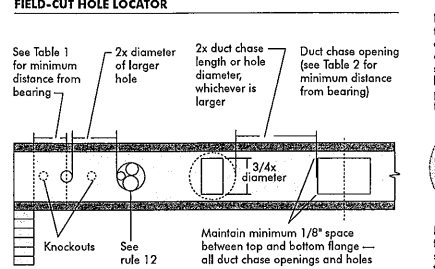
$\frac{\text{actual}}{\text{span}}$  = The actual measured span distance between the inside faces of supports (ft).

$\frac{\text{span}}{\text{span}}$  = Span Adjustment Factor given in this table.

$\frac{\text{span}}{\text{span}}$  = The minimum distance from the inside face of any support to centre of hole from this table.

If  $\frac{\text{actual}}{\text{span}}$  is greater than 1, use 1 in the above calculation for  $\frac{\text{actual}}{\text{span}}$ .

### FIGURE 7 FIELD-CUT HOLE LOCATOR



Knockouts are predrilled 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 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.

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

## INSTALLING THE GLUED





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

WEB HOLE SPECIFICATIONS  
RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

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

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

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

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

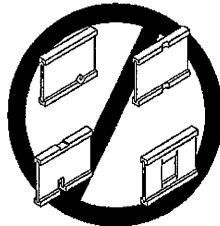
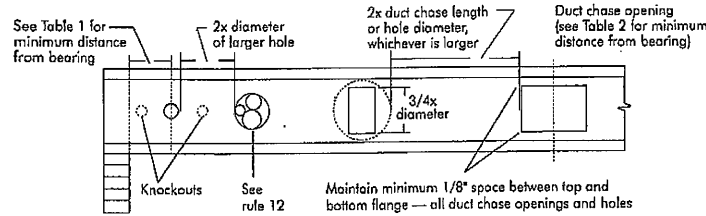
- Above table may be used for I-joint spacing of 24 inches on centre or less.
- Hole location distance is measured from inside face of supports to centre of hole.
- Distances in this chart are based on uniformly loaded joists.
- The above table is based on the I-joints being used at their maximum spans.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

TABLE 2  
DUCT CHASE OPENING SIZES AND LOCATIONS  
Simple Span Only

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

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

FIGURE 7  
FIELD-CUT HOLE LOCATOR



Knockouts are prescored holes provided for the contractor's convenience to install electrical or small plumbing lines. They are 1-1/2 inches in diameter, and are spaced 15 inches on centre along the length of the I-joint. 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.

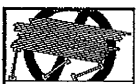
Holes in webs should be cut with a sharp saw.

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-joint.

SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

WARNING: I-joints 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-joint as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joints 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-joints. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joint 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-joint. Nail the bracing to a lateral restraint at the end of each bay. Top ends of adjoining bracing over at least two I-joints.
  - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joints at the end of the bay.
- For cantilevered I-joints, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
- Install and fully nail permanent sheathing to each I-joint before placing loads on the floor system. Then, stack building materials over beams or walls only.
- Never install a damaged I-joint.

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



PRODUCT WARRANTY

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

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

1a

NI blocking panel

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)

Attach I-joint to top plate per detail 1b

1b

Rim board

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-joint. 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.

1d

NI or rim board blocking panel per detail 1a

Pair of Squash Blocks

Maximum Factored Vertical Load per Pair of Squash Blocks (lbs)

2x Lumber

5,500

8,500

1-1/8" Rim Board Plus

4,300

6,600

Provide lateral bracing per detail 1a or 1b

1e

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

1g

Joist attachment per detail 1b

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

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

NI blocking panel per detail 1a

1h

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

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

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

\* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-C325 or CAN/CSA-O437 Standard.  
\*\* For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

1i

Top- or face-mount hanger

Double I-joint header

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

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

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

1j

Nordic Lam or Structural Composite Lumber (SCL)

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

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

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

1k

2x plate flush with inside face of wall or beam. 1/8" overhang allowed past inside face of wall or beam.

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

Top-mount hanger installed per manufacturer's recommendations

1m

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

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

Install hanger per manufacturer's recommendations

Maximum support capacity = 1,620 lbs.

1n

Do not bevel-cut joist beyond inside face of wall

Attach I-joint per detail 1b

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

1r

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

NI blocking panel

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

1p

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

Filler block

Offset nails from opposite face by 6"

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

NOTES:

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

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

1s

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

2x4 min. (1/8" gap minimum)

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

I-joint blocking panel

One 2-1/2" nail one side only

NOTES:

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

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

WEB STIFFENERS

RECOMMENDATIONS:

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

FIGURE 2  
WEB STIFFENER INSTALLATION DETAILS

CONCENTRATED LOAD (Load stiffener)

END BEARING (Bearing stiffener)

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

See the adjacent table for web stiffener size requirements

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

4a

Method 1 — SHEATHING REINFORCEMENT ONE SIDE

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

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

Attach I-joint to plate per detail 1b

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

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

2-1/2" min. bearing required

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

RIM BOARD INSTALLATION DETAILS

8a

ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim Board Joint Between Floor Joists

Rim board joint

Rim Board Joint at Corner

Rim board joint

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

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

1-1/2"

8b

TOE-NAIL CONNECTION AT RIM BOARD

Rim board

Top or sole plate

30°

2-1/2" nails

1-1/2"



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

PASSED

## 1ST FLR FRAMING\Flush Beams\B8 H(i8872) (Flush Beam)

Dry | 1 span | No cant.

July 29, 2020 15:12:55

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: MARKHAM

Customer:

Code reports: CCMC 12472-R

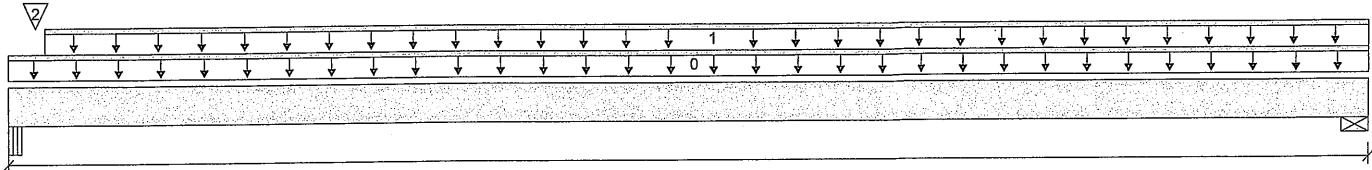
File name: PEYTON 2S - EL 1,2,3.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B8 H(i8872)

Specifier:

Designer: L.D.

Company:



B1

Total Horizontal Product Length = 10-08-06

B2

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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	85 / 0	80 / 0		
B2, 2-3/8"	54 / 0	52 / 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	10-08-06	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-03-08	10-08-06	Top	10	5			n/a
2	16(i382)	Conc. Pt. (lbs)	L	00-02-10	00-02-10	Top	31	27			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	365 ft-lbs	11610 ft-lbs	3.1%	1	05-05-10
End Shear	119 lbs	5785 lbs	2.1%	1	01-02-12
Total Load Deflection	L/999 (0.02")	n/a	n/a	4	05-05-10
Live Load Deflection	L/999 (0.01")	n/a	n/a	5	05-05-10
Max Defl.	0.02"	n/a	n/a	4	05-05-10
Span / Depth	12.9				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5-1/4" x 1-3/4"	228 lbs	5.8%	2.0%	Unspecified
B2	Wall/Plate 2-3/8" x 1-3/4"	147 lbs	5.8%	2.9%	Spruce-Pine-Fir

### Notes

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

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

Calculations assume member is fully braced.

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

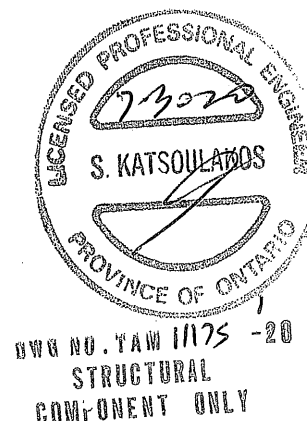
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



### 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®,

BC CALC® Member Report

Build 7493

Job name:

File name: PEYTON 2S - EL 1,2,3.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1 H(i9268)

City, Province, Postal Code: MARKHAM

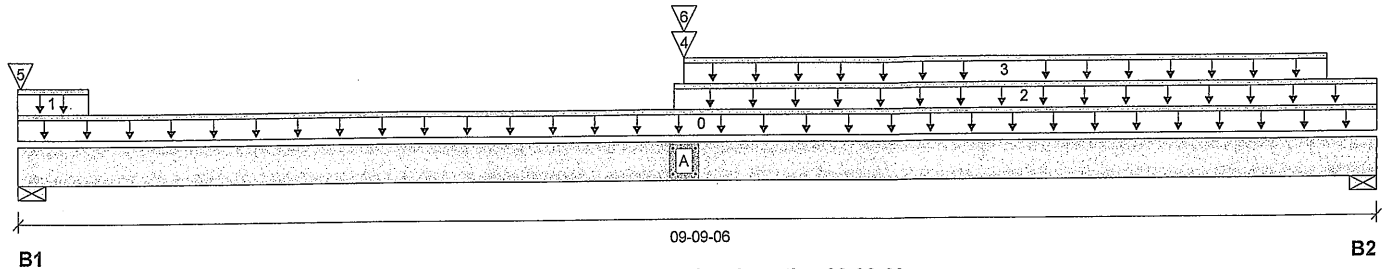
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 09-09-06

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

Bearing	Live	Dead	Snow	Wind
B1, 6"	1230 / 0	749 / 0		
B2, 4-3/8"	1157 / 0	629 / 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	09-09-06	Top		10			00-00-00
1	17(i1064)	Unf. Lin. (lb/ft)	L	00-00-00	00-06-00	Top	983	628			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	04-08-04	09-09-06	Top	8	4			n/a
3	STAIRS	Unf. Lin. (lb/ft)	L	04-09-02	09-05-00	Top	240	120			n/a
4	B3(i8885)	Conc. Pt. (lbs)	L	04-09-02	04-09-02	Top	601	309			n/a
5	17(i1064)	Conc. Pt. (lbs)	L	00-00-04	00-00-04	Top	102	65			n/a
6	STAIRS	Conc. Pt. (lbs)	L	04-09-02	04-09-02	Top	35	18			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6004 ft-lbs	21674 ft-lbs	27.7%	1	04-09-02
End Shear	2084 lbs	11571 lbs	18.0%	1	08-07-08
Total Load Deflection	L/999 (0.114")	n/a	n/a	4	05-01-08
Live Load Deflection	L/999 (0.074")	n/a	n/a	5	05-01-08
Max Defl.	0.114"	n/a	n/a	4	05-01-08
Span / Depth	11.4				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6" x 3-1/2"	2782 lbs	21.5%	10.9%	Spruce-Pine-Fir
B2	Wall/Plate 4-3/8" x 3-1/2"	2521 lbs	26.8%	13.5%	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: 04-08-04, Bottom: 04-08-04.  
 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



DRG NO. TAM 11176-20  
 STRUCTURAL  
 COMPONENT ONLY

BC CALC® Member Report

Build 7493

Job name:

File name: PEYTON 2S - EL 1,2,3.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1 H(i9268)

City, Province, Postal Code: MARKHAM

Specifier:

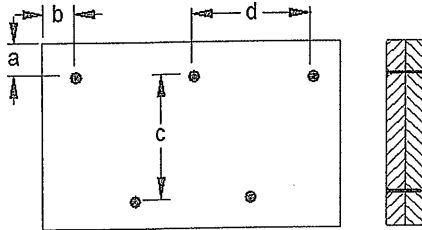
Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:

## Connection Diagram: Full Length of Member



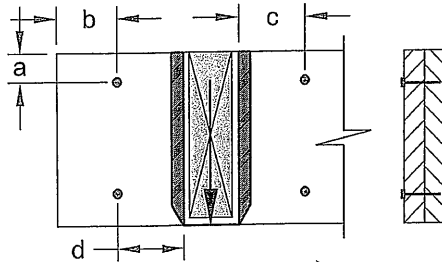
a minimum = 2"  
b minimum = 3"

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

Connectors are: 3 1/2" ARDOX SPIRAL Nails

## Connection Diagrams: Concentrated Side Loads

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



a minimum = 2"  
b minimum = 4"  
c minimum = 4"  
d maximum = 12"

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



ENG NO. TAM 11176-20  
STRUCTURAL  
COMPONENT ONLY

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BC CALC® Member Report

Build 7493

Job name:

File name: PEYTON 2S - EL 1,2,3.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B4(i8933)

City, Province, Postal Code: MARKHAM

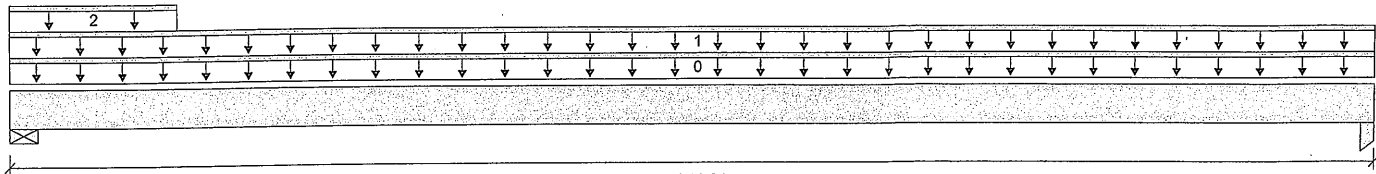
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



B1

Total Horizontal Product Length = 04-01-04

B2

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

Bearing	Live	Dead	Snow	Wind
B1, 6"	418 / 0	294 / 0		
B2, 4-1/4"	10 / 0	15 / 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	04-01-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-01-04	Top	5	2			n/a
2	14(i315)	Unf. Lin. (lb/ft)	L	00-00-00	00-06-00	Top	816	557			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	26 ft-lbs	11610 ft-lbs	0.2%	1	02-00-09
End Shear	15 lbs	5785 lbs	0.3%	1	02-11-08
Total Load Deflection	L/999 (0")	n/a	n/a	4	02-01-03
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-01-03
Max Defl.	0"	n/a	n/a	4	02-01-03
Span / Depth	4.3				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6" x 1-3/4"	994 lbs	15.4%	7.8%	Spruce-Pine-Fir
B2	Column 4-1/4" x 1-3/4"	34 lbs	0.7%	0.4%	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 UBC 2012



NO. 73020

STRUCTURAL

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Build 7493

Job name:

File name: PEYTON 2S - EL 1,2,3.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B5(i8585)

City, Province, Postal Code: MARKHAM

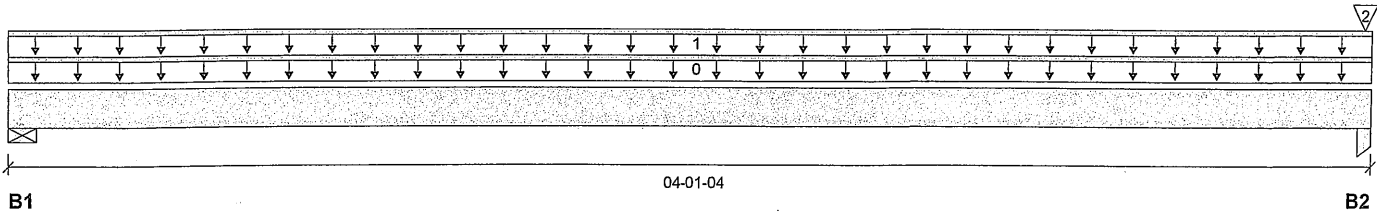
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	63 / 0	42 / 0		
B2, 1-3/4"	58 / 0	38 / 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	04-01-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-01-04	Top	29	14			n/a
2	FC1 Floor Material	Conc. Pt. (lbs)	L	04-01-00	04-01-00	Top	4	2			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	110 ft-lbs	11610 ft-lbs	0.9%	1	02-02-08
End Shear	64 lbs	5785 lbs	1.1%	1	01-03-00
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	02-02-08
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-02-08
Max Defl.	0.001"	n/a	n/a	4	02-02-08
Span / Depth	4.6				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	148 lbs	2.5%	1.3%	Spruce-Pine-Fir
B2	Column 1-3/4" x 1-3/4"	135 lbs	6.8%	3.6%	Unspecified

### Notes

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

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

Calculations assume member is fully braced.

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

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. FAM 11178-20  
STRUCTURAL

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BC CALC® Member Report

Build 7493

Job name:

File name: PEYTON 2S - EL 1,2,3.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B6(i8986)

City, Province, Postal Code: MARKHAM

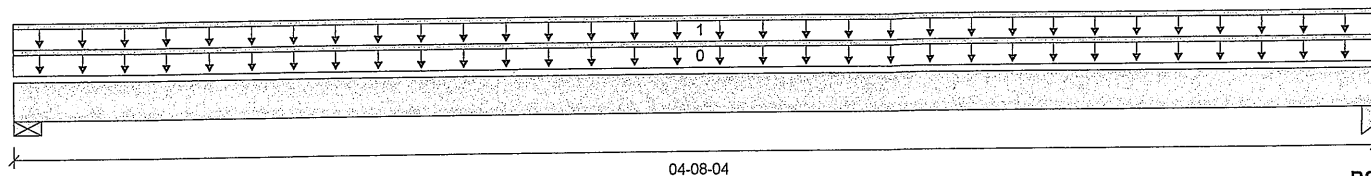
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



B1

B2

Total Horizontal Product Length = 04-08-04

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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	26 / 0	25 / 0		
B2, 1-3/4"	23 / 0	22 / 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	04-08-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-08-04	Top	10	5			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	62 ft-lbs	11610 ft-lbs	0.5%	1	02-06-00
End Shear	35 lbs	5785 lbs	0.6%	1	01-03-00
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	02-06-00
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-06-00
Max Defl.	0.001"	n/a	n/a	4	02-06-00
Span / Depth	5.3				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	70 lbs	1.2%	0.6%	Spruce-Pine-Fir
B2	Column 1-3/4" x 1-3/4"	62 lbs	3.1%	1.6%	Unspecified

**Notes**

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

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

Calculations assume member is fully braced.

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

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. FPM 11179-20  
**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\B7 H(i8970) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

July 29, 2020 15:12:55

Build 7493

Job name:

File name: PEYTON 2S - EL 1,2,3.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B7 H(i8970)

City, Province, Postal Code: MARKHAM

Specifier:

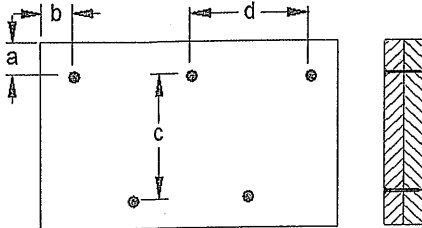
Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:

## Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/2"

b minimum = 3"

d = 6"

Calculated Side Load = 403.8 lb/ft

Connectors are: 16d  $\times$  1 Nails

3 1/2" ARDOX SPIRAL



OWN NO. YAM 11/80-20  
STRUCTURAL  
COMPONENT ONLY

## Disclosure

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BC CALC® Member Report  
Build 7493

Job name:

File name: PEYTON 2S - EL 1,2,3.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B2(i8768)

City, Province, Postal Code: MARKHAM

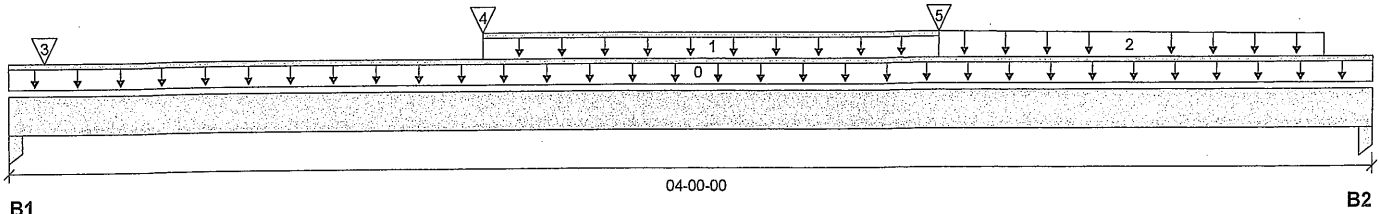
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 04-00-00

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

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	668 / 0	343 / 0		
B2, 6"	489 / 0	254 / 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	04-00-00	Top		5			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	01-04-08	02-08-08	Top	13	7			n/a
2	FC1 Floor Material	Trapezoidal (lb/ft)	L	02-08-08	03-10-04	Top	16	8			n/a
							14	7			
3	J4(i8770)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	Top	272	136			n/a
4	J4(i8765)	Conc. Pt. (lbs)	L	01-04-08	01-04-08	Top	418	208			n/a
5	J4(i8862)	Conc. Pt. (lbs)	L	02-08-08	02-08-08	Top	429	214			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	971 ft-lbs	11610 ft-lbs	8.4%	1	01-04-08
End Shear	1033 lbs	5785 lbs	17.9%	1	02-08-08
Total Load Deflection	L/999 (0.006")	n/a	n/a	4	01-11-00
Live Load Deflection	L/999 (0.004")	n/a	n/a	5	01-11-00
Max Defl.	0.006"	n/a	n/a	4	01-11-00
Span / Depth	4.2				

### Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	1431 lbs	36.0%	19.1%	Unspecified
B2	Column 6" x 1-3/4"	1051 lbs	15.4%	8.2%	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.

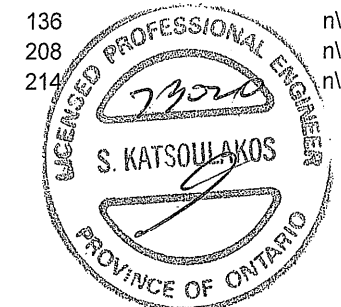
Resistance Factor phi has been applied to all presented results per CSA O86. AMENDED 2020

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



OWN NO. 11181-20

STRUCTURAL

COMPONENT ONLY

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

**PASSED**

## 1ST FLR FRAMING\Flush Beams\B3(i8885) (Flush Beam)

Dry | 1 span | No cant.

July 29, 2020 15:12:55

BC CALC® Member Report

Build 7493

Job name:

File name: PEYTON 2S - EL 1,2,3.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B3(i8885)

City, Province, Postal Code: MARKHAM

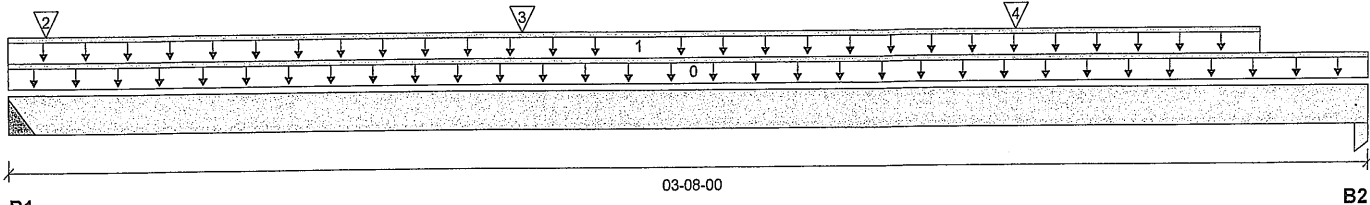
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



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

Bearing	Live	Dead	Snow	Wind
B1, 3"	628 / 0	323 / 0		
B2, 3-1/2"	525 / 0	271 / 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	03-08-00	Top		5			00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-00-00	03-04-08	Top	240	120			n/a
2	J4(i9319)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	Top	82	41			n/a
3	J4(i8884)	Conc. Pt. (lbs)	L	01-04-08	01-04-08	Top	129	64			n/a
4	J4(i8864)	Conc. Pt. (lbs)	L	02-08-08	02-08-08	Top	132	66			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	947 ft-lbs	11610 ft-lbs	8.2%	1	01-09-01
End Shear	671 lbs	5785 lbs	11.6%	1	02-07-00
Total Load Deflection	L/999 (0.005")	n/a	n/a	4	01-09-15
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	01-09-15
Max Defl.	0.005"	n/a	n/a	4	01-09-15
Span / Depth	4.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	3" x 1-3/4"	1346 lbs	n/a	21.0%	HUS1.81/10
B2 Column	3-1/2" x 1-3/4"	1126 lbs	28.3%	15.1%	Unspecified

### Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 9-1/2" LVL Beam.  
Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

### 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



OWN NO. 1AM 1118220  
STRUCTURAL  
COMPONENT ONLY

### Disclosure

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Boise Cascade



# Quadruple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Dropped Beams\B12 DR(i9305) (Dropped Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

July 29, 2020 15:12:55

Build 7493

Job name:

File name: PEYTON 2S - EL 1,2,3.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B12 DR(i9305)

City, Province, Postal Code: MARKHAM

Specifier:

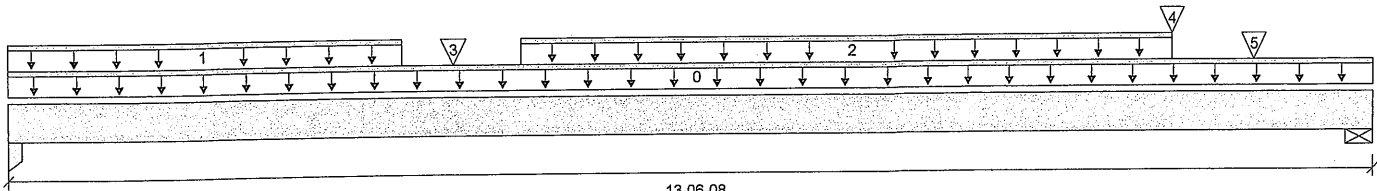
Customer:

Designer: L.D.

Code reports:

CCMC 12472-R

Company:



B1

Total Horizontal Product Length = 13-06-08

B2

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

Bearing	Live	Dead	Snow	Wind
B1, 6"	3356 / 0	1812 / 0		
B2, 5-1/2"	2897 / 0	1582 / 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	13-06-08	Top		19			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	03-10-08	Top	490	245			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	05-00-08	11-06-08	Top	460	230			n/a
3	-	Conc. Pt. (lbs)	L	04-04-09	04-04-09	Top	589	295			n/a
4	J1(i9162)	Conc. Pt. (lbs)	L	11-06-08	11-06-08	Top	264	132			n/a
5	-	Conc. Pt. (lbs)	L	12-04-07	12-04-07	Top	499	249			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	20843 ft-lbs	48297 ft-lbs	43.2%	1	06-10-08
End Shear	6103 lbs	23142 lbs	26.4%	1	12-03-08
Total Load Deflection	L/357 (0.427")	n/a	67.3%	4	06-10-08
Live Load Deflection	L/550 (0.277")	n/a	65.4%	5	06-10-08
Max Defl.	0.427"	n/a	n/a	4	06-10-08
Span / Depth	16.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Column	6" x 7"	7299 lbs	26.8%	14.2%	Unspecified
B2 Wall/Plate	5-1/2" x 7"	6324 lbs	12.3%	13.5%	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: 00-10-12, Bottom: 00-10-12.

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

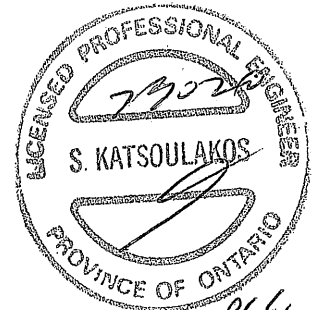
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AWENDED 2020



DWG NO. TAM 11183-20  
STRUCTURAL  
COMPONENT ONLY





Boise Cascade

**Quadruple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Dropped Beams\B12 DR(i9305) (Dropped Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

July 29, 2020 15:12:55

Build 7493

Job name:

File name: PEYTON 2S - EL 1,2,3.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B12 DR(i9305)

City, Province, Postal Code: MARKHAM

Specifier:

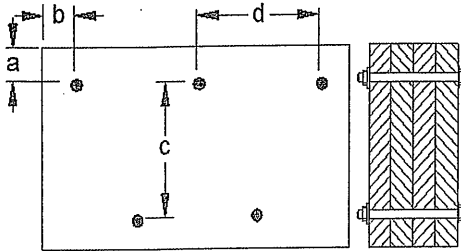
Customer:

Designer: L.D.

Code reports:

CCMC 12472-R

Company:

**Connection Diagram: Full Length of Member**

a minimum =  $2\frac{1}{2}"$       c =  $4\frac{1}{2}"$   
 b minimum =  $2\frac{1}{2}"$       d =  $12"$

Bolts are assumed to be Grade A307 or Grade 2 or higher.

Connectors are: 1/2 in. Staggered Through Bolt



OWN NO. TAM 1118320

STRUCTURAL

COMPONENT ONLY

**Disclosure**

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BC CALC® Member Report

Dry | 1 span | No cant.

July 29, 2020 15:12:55

Build 7493

Job name:

File name: PEYTON 2S - EL 1,2,3.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B10(i8625)

City, Province, Postal Code: MARKHAM

Specifier:

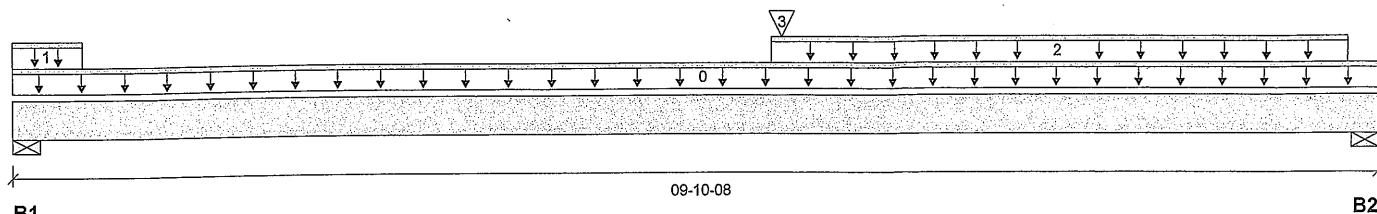
Customer:

Designer: L.D.

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 09-10-08

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

Bearing	Live	Dead	Snow	Wind
B1, 6"	581 / 0	324 / 0		
B2, 5-1/2"	800 / 0	435 / 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	09-10-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-06-00	Top	35	18			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	05-05-00	09-07-12	Top	40	20			n/a
3	B11(i8778)	Conc. Pt. (lbs)	L	05-05-14	05-05-14	Top	1195	618			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6170 ft-lbs	8209 ft-lbs	75.2%	1	05-05-14
End Shear	1650 lbs	5785 lbs	28.5%	1	08-07-08
Total Load Deflection	L/523 (0.208")	n/a	45.9%	4	05-01-14
Live Load Deflection	L/804 (0.135")	n/a	44.8%	5	05-01-14
Max Defl.	0.208"	n/a	n/a	4	05-01-14
Span / Depth	11.4				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6" x 1-3/4"	1276 lbs	19.8%	10.0%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 1-3/4"	1745 lbs	29.5%	14.9%	Spruce-Pine-Fir

### Notes

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

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

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

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



OWN NO. TAM 1118420  
**STRUCTURAL COMPONENT ONLY**

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

BC CALC® Member Report

Build 7493

Job name:

File name: PEYTON 2S - EL 1,2,3.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B11(i8778)

City, Province, Postal Code: MARKHAM

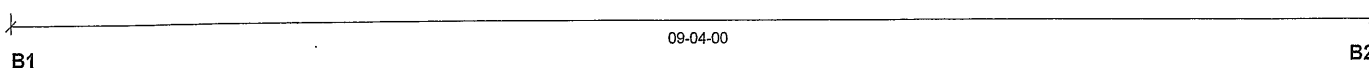
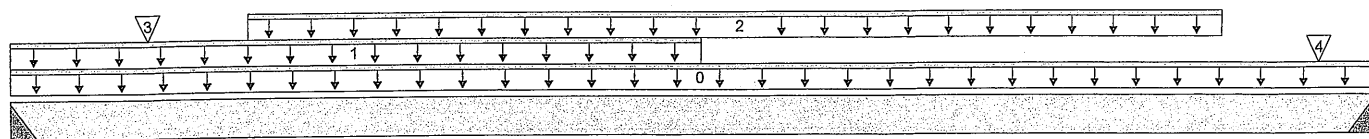
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 09-04-00

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

Bearing	Live	Dead	Snow	Wind
B1, 3"	1209 / 0	625 / 0		
B2, 3"	651 / 0	346 / 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	09-04-00	Top		5			00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-00-00	04-08-00	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-07-04	08-03-04	Top	85	42			n/a
3	J4(i9012)	Conc. Pt. (lbs)	L	00-11-04	00-11-04	Top	99	49			n/a
4	J4(i9300)	Conc. Pt. (lbs)	L	08-11-04	08-11-04	Top	76	38			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4648 ft-lbs	11610 ft-lbs	40.0%	1	03-08-14
End Shear	2030 lbs	5785 lbs	35.1%	1	01-00-08
Total Load Deflection	L/596 (0.18")	n/a	40.2%	4	04-04-13
Live Load Deflection	L/999 (0.118")	n/a	n/a	5	04-04-13
Max Defl.	0.18"	n/a	n/a	4	04-04-13
Span / Depth	11.3				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Hanger	3" x 1-3/4"	2595 lbs	n/a	40.5%	HUS1.81/10
B2 Hanger	3" x 1-3/4"	1409 lbs	n/a	22.0%	HUS1.81/10

### Cautions

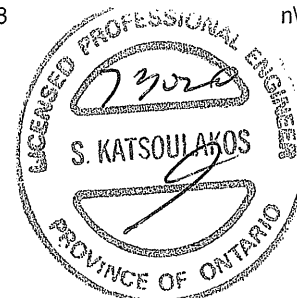
Header for the hanger HUS1.81/10 is a Single 1-3/4" x 9-1/2" LVL Beam.  
Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

### Notes

Design meets Code minimum (L/240) Total load deflection criteria.  
Design meets Code minimum (L/360) Live load deflection criteria.  
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 11/BS-20  
STRUCTURAL

### Disclosure

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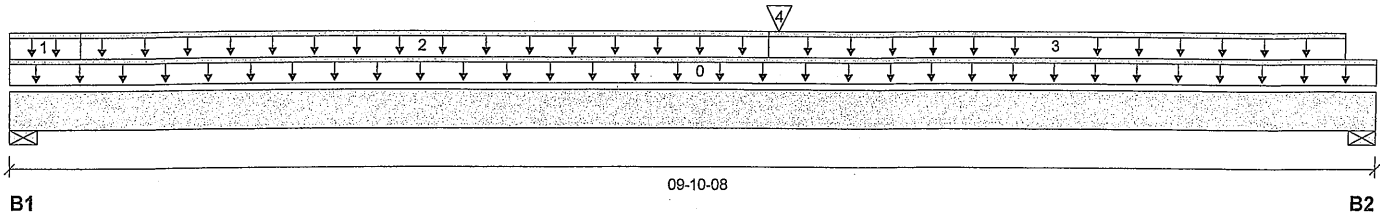
BC CALC® Member Report  
 Build 7493

Dry | 1 span | No cant.

July 29, 2020 15:12:55

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

File name: PEYTON 2S - EL 1,2,3.mmdl  
 Description: 2ND FLR FRAMING\Flush Beams\B9(i8945)  
 Specifier:  
 Designer: L.D.  
 Company:



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

Bearing	Live	Dead	Snow	Wind
B1, 6"	401 / 0	234 / 0		
B2, 5-1/2"	486 / 0	279 / 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	09-10-08	Top		5			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-06-00	Top	33	16			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-06-00	05-05-00	Top	19	9			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	05-05-00	09-07-12	Top	27	13			n/a
4	B11(i8778)	Conc. Pt. (lbs)	L	05-05-14	05-05-14	Top	665	354			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3749 ft-lbs	11610 ft-lbs	32.3%	1	05-05-14
End Shear	1011 lbs	5785 lbs	17.5%	1	08-07-08
Total Load Deflection	L/840 (0.129")	n/a	28.6%	4	05-01-14
Live Load Deflection	L/999 (0.083")	n/a	n/a	5	05-01-14
Max Defl.	0.129"	n/a	n/a	4	05-01-14
Span / Depth	11.4				



Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6" x 1-3/4"	893 lbs	13.8%	7.0%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 1-3/4"	1077 lbs	18.2%	9.2%	Spruce-Pine-Fir

**Notes**

Design meets Code minimum (L/240) Total load deflection criteria.  
 Design meets Code minimum (L/360) Live load deflection criteria.  
 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 UBC 2012**

**AMENDED 2020**

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

BC CALC® Member Report

Dry | 1 span | No cant.

July 29, 2020 15:10:47

Build 7493

Job name:

File name: PEYTON 2S - EL 3 - 2ND FLOOR.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B21 E(i14051)

City, Province, Postal Code: MARKHAM

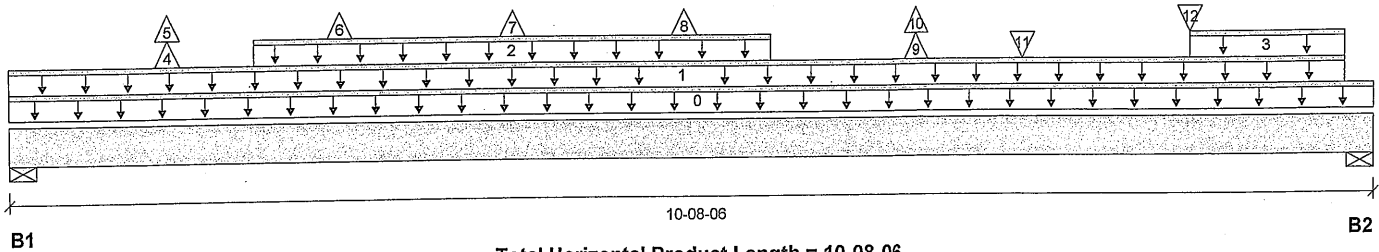
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



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

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	481 / 55	24 / 0	0 / 215	
B2, 5-1/2"	506 / 34	129 / 0	0 / 141	

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-08-06	Top		10			00-00-00
1	FC6 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-05-10	Top	23	11			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-14	05-10-14	Top	79				n/a
3	FC6 Floor Material	Unf. Lin. (lb/ft)	L	09-02-14	10-05-10	Top	34	17			n/a
4	J4(i15004)	Conc. Pt. (lbs)	L	01-02-14	01-02-14	Top	98	-28	-63		n/a
5	J4(i15004)	Conc. Pt. (lbs)	L	01-02-14	01-02-14	Top	-16				n/a
6	J4(i15005)	Conc. Pt. (lbs)	L	02-06-14	02-06-14	Top	-18	-31	-68		n/a
7	J4(i15006)	Conc. Pt. (lbs)	L	03-10-14	03-10-14	Top	-18	-31	-68		n/a
8	J4(i15007)	Conc. Pt. (lbs)	L	05-02-14	05-02-14	Top	-18	-31	-68		n/a
9	-	Conc. Pt. (lbs)	L	07-00-09	07-00-09	Top	126	-51	-89		n/a
10	-	Conc. Pt. (lbs)	L	07-00-09	07-00-09	Top	-19				n/a
11	J5(i15009)	Conc. Pt. (lbs)	L	07-10-14	07-10-14	Top	84	42			n/a
12	J5(i15010)	Conc. Pt. (lbs)	L	09-02-14	09-02-14	Top	79	39			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2073 ft-lbs	23220 ft-lbs	8.9%	21	05-02-14
Neg. Moment	-940 ft-lbs	-23220 ft-lbs	4.0%	36	05-02-14
End Shear	781 lbs	11571 lbs	6.8%	21	09-05-06
Total Load Deflection	L/999 (0.052")	n/a	n/a	56	05-02-14
Live Load Deflection	L/999 (0.049")	n/a	n/a	83	05-02-14
Total Neg. Defl.	L/999 (-0.022")	n/a	n/a	59	04-10-14
Max Defl.	0.052"	n/a	n/a	56	05-02-14
Span / Depth	12.8				

### Bearing Supports

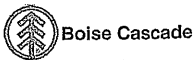
	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Wall/Plate	2-3/8" x 3-1/2"	751 lbs	14.7%	7.4%	Spruce-Pine-Fir
B1 Uplift		355 lbs			
B2 Wall/Plate	5-1/2" x 3-1/2"	920 lbs	7.8%	3.9%	Spruce-Pine-Fir
B2 Uplift		130 lbs			

### Cautions

Uplift of 355 lbs found at bearing B1. (Simpson 2-H2-54 @ 87.31)



OWN NO. YAM 11/87-20  
STRUCTURAL  
COMPONENT ONLY



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

## 2ND FLR FRAMING\Flush Beams\B21 E(i14051) (Flush Beam)

**PASSED**

BC CALC® Member Report  
Build 7493

Dry | 1 span | No cant.

July 29, 2020 15:10:47

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

File name: PEYTON 2S - EL 3 - 2ND FLOOR.mmdl  
Description: 2ND FLR FRAMING\Flush Beams\B21 E(i14051)  
Specifier:  
Designer: L.D.  
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.

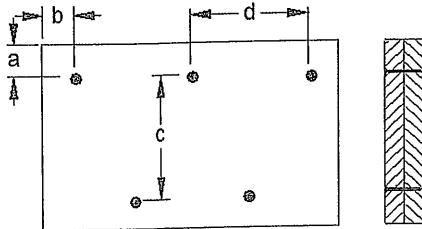
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

REVISED 2020

### Connection Diagram: Full Length of Member



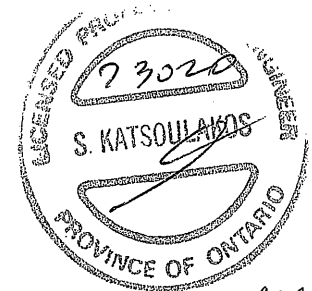
a minimum = 2"  
b minimum = 3"

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

Calculated Side Load = 187.5 lb/ft

Connectors are: : Nails

3 1/2" ARDOX SPIRAL



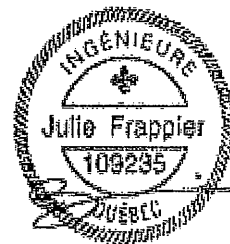
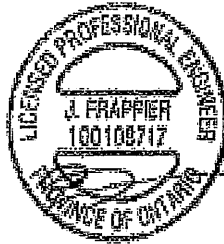
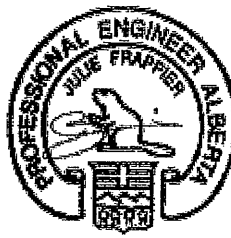
DWG NO. TAM 11187-20  
STRUCTURAL  
COMPONENT ONLY

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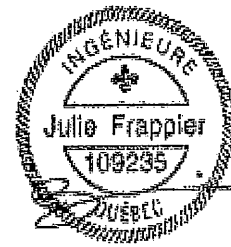
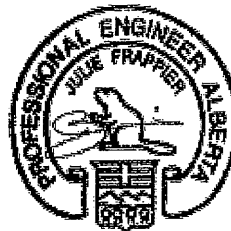
## Maximum Floor Spans

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'-1"	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 OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



## Maximum Floor Spans

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

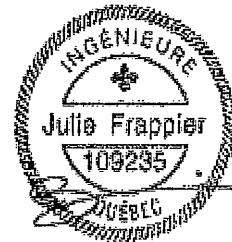
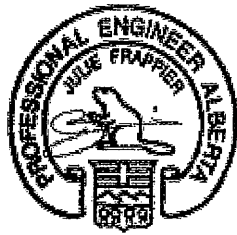
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	16'-7"	15'-11"	15'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-7"	18'-5"	17'-3"	16'-7"	15'-11"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"
11-7/8"	NI-20	17'-10"	16'-10"	16'-2"	15'-6"	18'-6"	17'-4"	16'-9"	16'-1"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	18'-6"	17'-9"	17'-0"
	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"
	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
14"	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"
	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
16"	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"
	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"
14"	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"
	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"
16"	NI-60	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"
	NI-80	29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90x	29'-11"	27'-10"	26'-6"	25'-0"	30'-6"	28'-5"	27'-2"	25'-8"

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

## Maximum Floor Spans

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



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

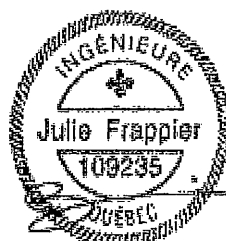
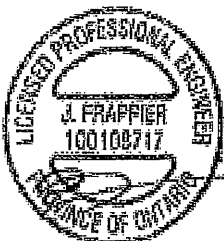
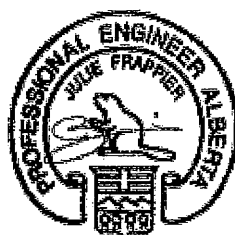
  

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	17'-9"	16'-1"	15'-1"	N/A	17'-9"	16'-1"	15'-1"	N/A
	NI-60	18'-1"	16'-4"	15'-4"	N/A	18'-1"	16'-4"	15'-4"	N/A
	NI-70	19'-2"	17'-10"	16'-9"	N/A	19'-7"	17'-10"	16'-9"	N/A
	NI-80	19'-5"	18'-0"	17'-1"	N/A	19'-10"	18'-3"	17'-1"	N/A
11-7/8"	NI-20	18'-9"	17'-0"	16'-0"	N/A	18'-9"	17'-0"	16'-0"	N/A
	NI-40x	21'-0"	19'-3"	17'-9"	N/A	21'-3"	19'-3"	17'-9"	N/A
	NI-60	21'-4"	19'-8"	18'-5"	N/A	21'-8"	19'-8"	18'-5"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-4"	20'-0"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-5"	N/A
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  $1.50L + 1.25D$ . The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

## Maximum Floor Spans

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



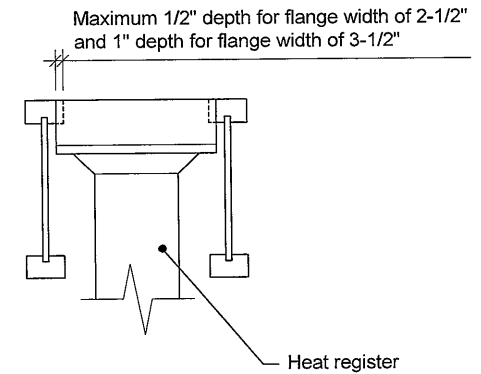
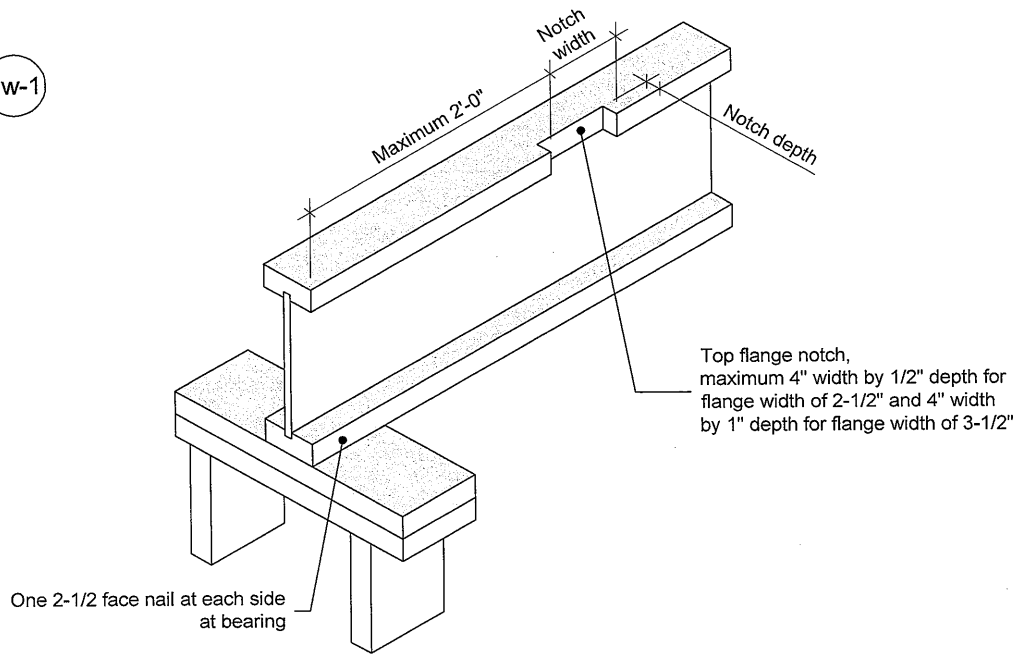
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"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

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

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

1w-1



**Notes:**

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

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

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

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**TITLE**

Notch in I-joist for Heat Register

**CATEGORY**

I-joist - Typical Floor Framing and Construction Details

**DOCUMENT**

-

**DATE**

2018-04-10

**NUMBER**

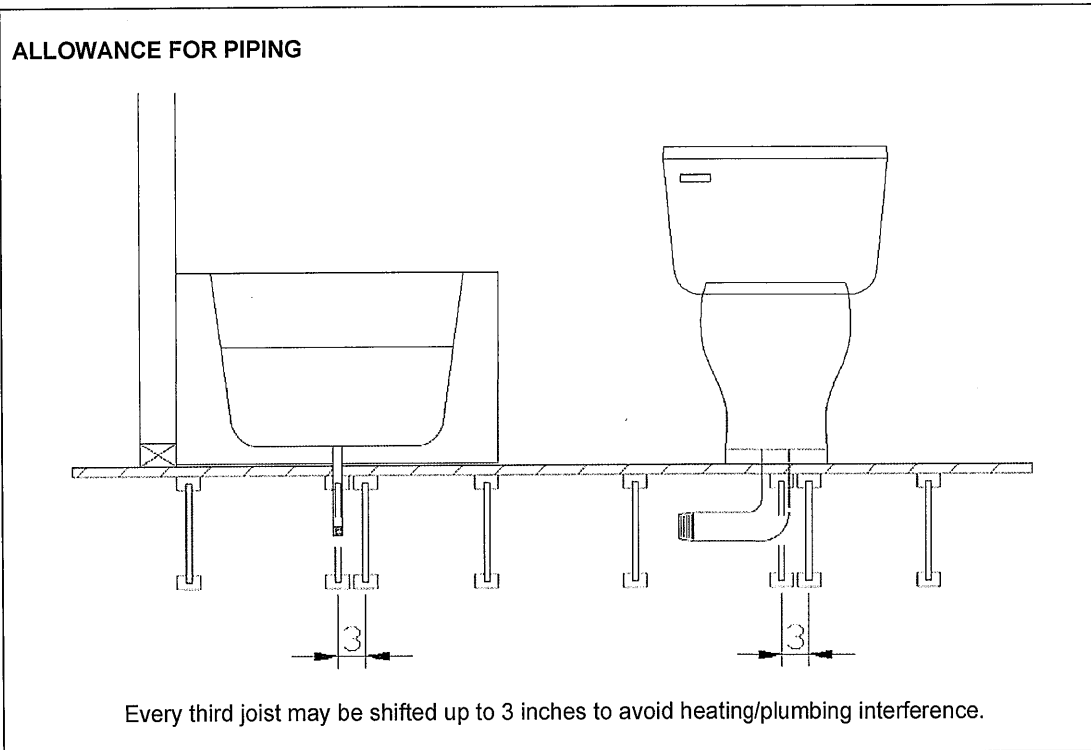
1w-1

## 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