

Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	8
J2	12-00-00	9 1/2" NI-40x	1	22
J3	10-00-00	9 1/2" NI-40x	1	10
J4	8-00-00	9 1/2" NI-40x	1	6
J5	4-00-00	9 1/2" NI-40x	1	3
J6	2-00-00	9 1/2" NI-40x	1	2
B2	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B1	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B10L	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B5L	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B3	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3
B6L	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B4	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B9L	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B8L	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B7	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B11L	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B21 DR	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
16	H1	IUS2.56/9.5
13	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
1	H2	HUS1.81/10
1	H4C	HUC410
1	H4	HGUS410
2	H4	HGUS410
1	H5C	HUC610



**FROM PLAN DATED:** MAR 2019  
**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**ELEVATION:** A / A2  
**LOT:**  
**CITY:** INNISFIL  
**SALESMAN:** WILL GARCIA  
**DESIGNER:** AJ  
**REVISION:** lbv

REFER TO THE **NORDIC INSTALLATION GUIDE**  
FOR PROPER STORAGE AND INSTALLATION.  
**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 SPF #2 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 6 AND TABLES 6.1/6.2.  
**CERAMIC TILE** APPLICATION AS PER OBC 9.30.6.

ALL **CONNECTORS** MUST BE INSTALLED AS PER THE **MANUFACTURER'S SPECIFICATIONS** USING THE **MANUFACTURER SPECIFIED FASTENERS**.  
ALL **BEAM HANGER FASTENERS** INSTALLED INTO THE **SUPPORTING MEMBER MUST** BE A MINIMUM OF **3.5"** IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD

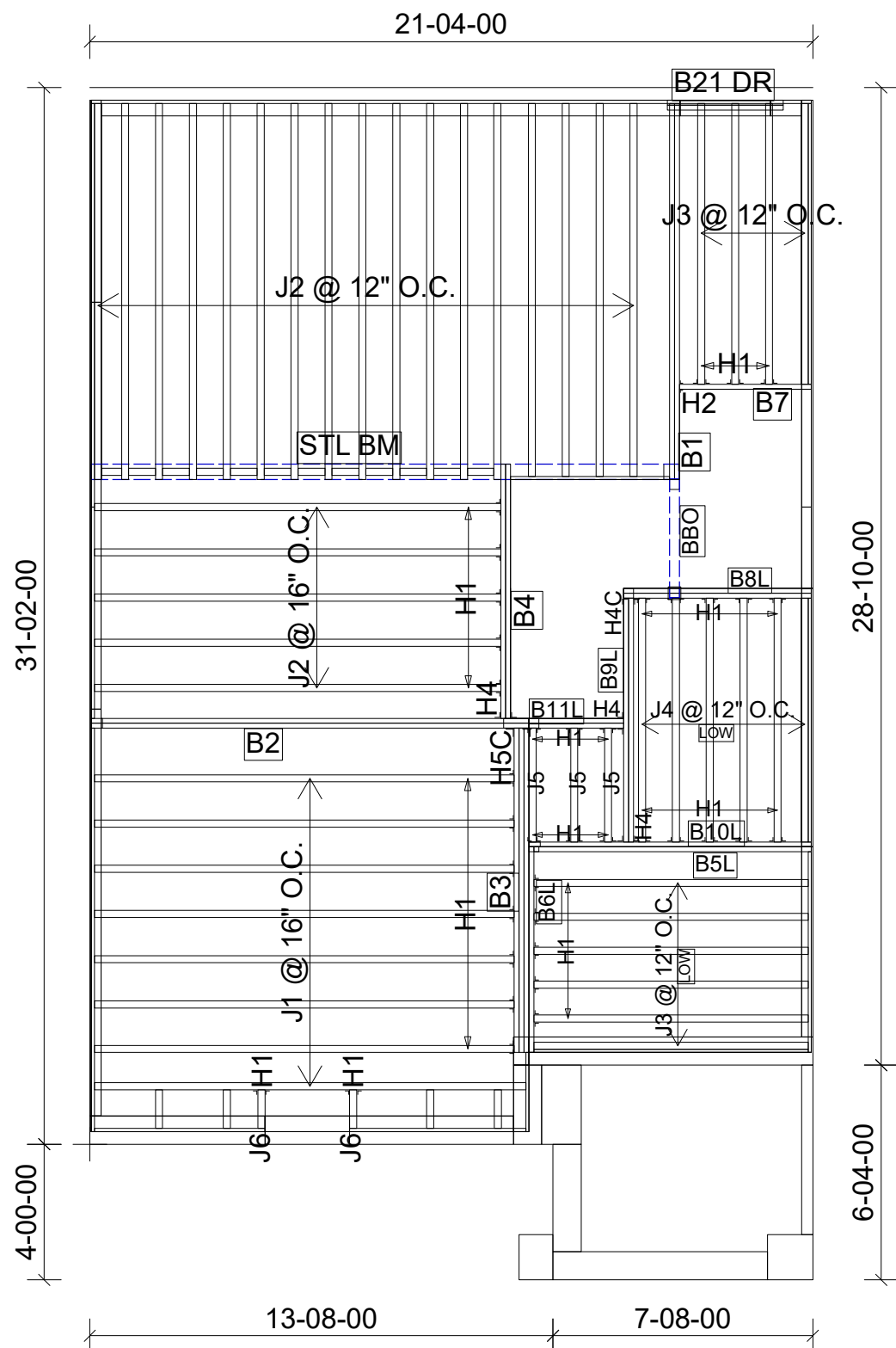
**LOADING:**  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft<sup>2</sup>  
TILE LOAD: +5.0 lb/ft<sup>2</sup>

JOIST LL DEFLECTION LIMIT: L/480

**SUBFLOOR:** 3/4" GLUED AND NAILED

**DATE:** 5/24/23

# 1st FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	8
J2	12-00-00	9 1/2" NI-40x	1	22
J3	10-00-00	9 1/2" NI-40x	1	10
J4	8-00-00	9 1/2" NI-40x	1	6
J5	4-00-00	9 1/2" NI-40x	1	3
J6	2-00-00	9 1/2" NI-40x	1	2
B2	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B1	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B10L	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B5L	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B3	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3
B6L	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B4	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B9L	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B8L	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B7	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B11L	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B21 DR	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
16	H1	IUS2.56/9.5
13	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
1	H2	HUS1.81/10
1	H4C	HUC410
1	H4	HGUS410
2	H4	HGUS410
1	H5C	HUC610



**FROM PLAN DATED:** MAR 2019  
**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**ELEVATION:** B  
**LOT:**  
**CITY:** INNISFIL  
**SALESMAN:** WILL GARCIA  
**DESIGNER:** AJ  
**REVISION:** lbv

REFER TO THE **NORDIC INSTALLATION GUIDE**  
FOR PROPER STORAGE AND INSTALLATION.  
**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 SPF #2 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 6 AND TABLES 6.1/6.2.  
**CERAMIC TILE** APPLICATION AS PER OBC 9.30.6.

ALL **CONNECTORS** MUST BE INSTALLED AS PER THE **MANUFACTURER'S SPECIFICATIONS** USING THE **MANUFACTURER SPECIFIED FASTENERS**.  
ALL **BEAM HANGER FASTENERS** INSTALLED INTO THE **SUPPORTING MEMBER** **MUST** BE A MINIMUM OF **3.5"** IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE **SUPPORTING MEMBER ENGINEER OF RECORD**.

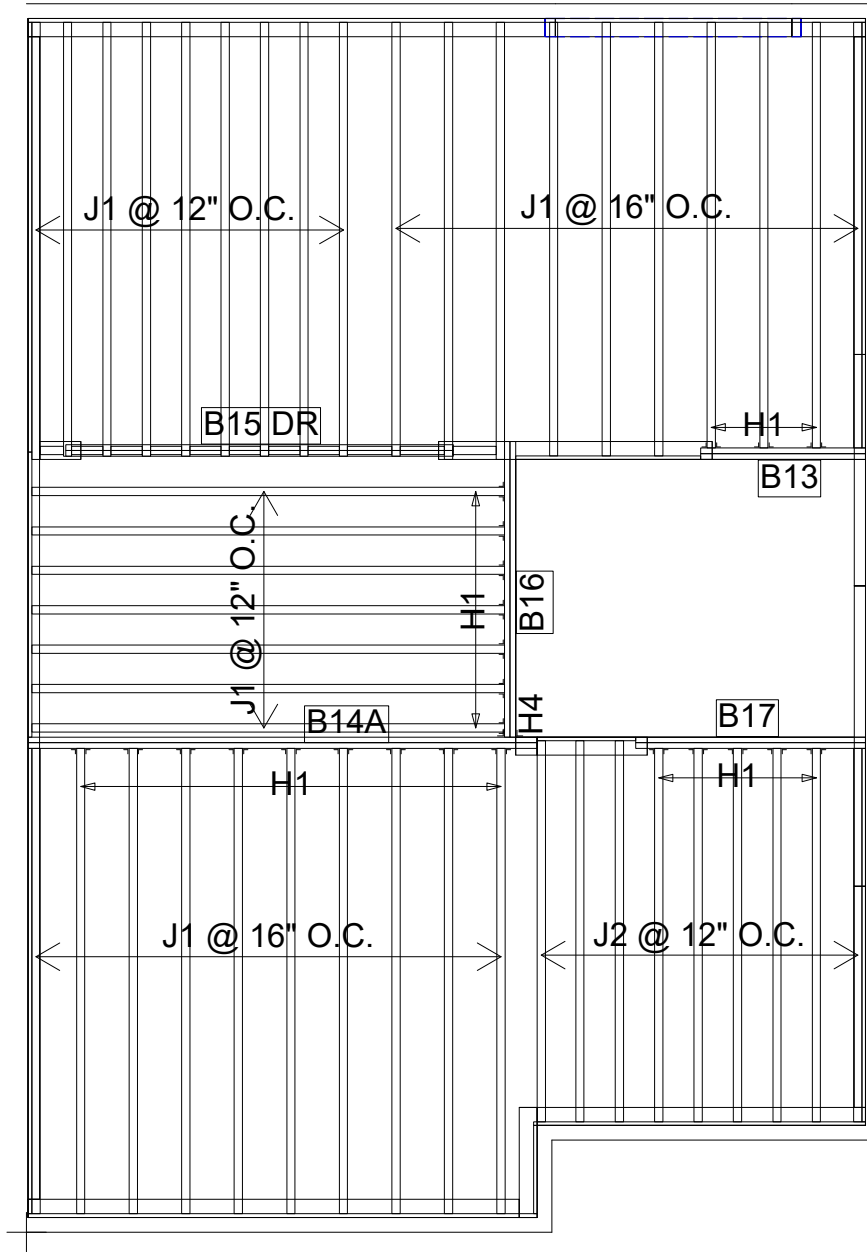
**LOADING:**  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft<sup>2</sup>  
TILE LOAD: +5.0 lb/ft<sup>2</sup>

JOIST LL DEFLECTION LIMIT:  $L/480$

**SUBFLOOR: 3/4" GLUED AND NAILED**

**DATE:** 5/24/23

# 1st FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	36
J2	10-00-00	9 1/2" NI-40x	1	9
B14A	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B15 DR	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B16	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B13	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B17	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
24	H1	IUS2.56/9.5
1	H4	HGUS410



FROM PLAN DATED: MAR 2019  
BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-1  
ELEVATION: A / A2  
LOT:  
CITY: INNISFIL  
SALESMAN: WILL GARCIA  
DESIGNER: AJ  
REVISION: lbv

REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.  
**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 SPF #2 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 6 AND TABLES 6.1/6.2.  
**CERAMIC TILE** APPLICATION AS PER OBC 9.30.6.

ALL **CONNECTORS** MUST BE INSTALLED AS PER THE **MANUFACTURER'S SPECIFICATIONS** USING THE MANUFACTURER **SPECIFIED FASTENERS**.  
ALL **BEAM HANGER FASTENERS** INSTALLED INTO THE **SUPPORTING MEMBER MUST** BE A MINIMUM OF **3.5"** IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD.

**LOADING:**  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft<sup>2</sup>  
TILE LOAD: +5.0 lb/ft<sup>2</sup>

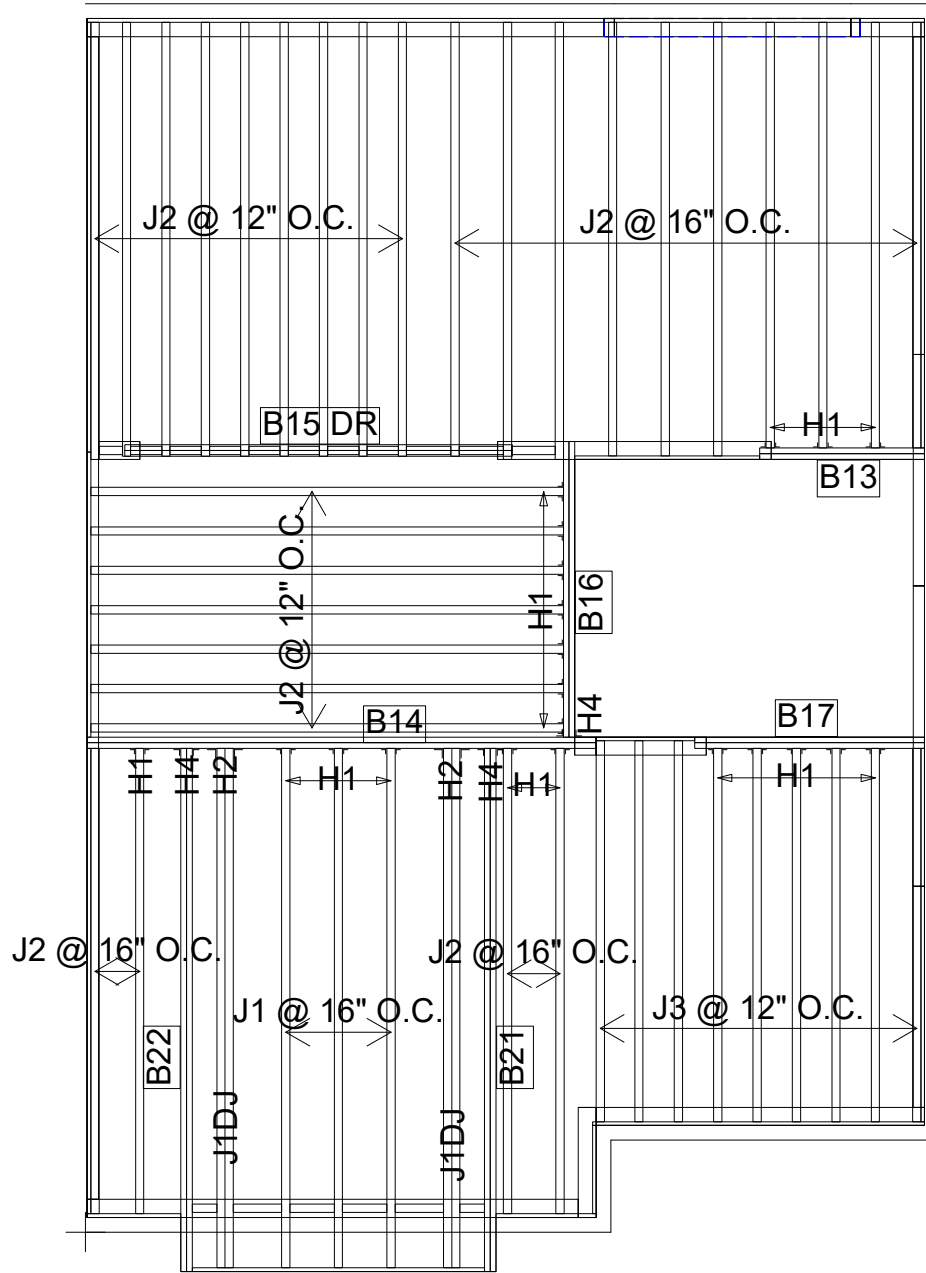
JOIST LL DEFLECTION LIMIT: L/480

**SUBFLOOR:** 5/8" GLUED AND NAILED

DATE: 5/24/23

2nd FLOOR FRAMING





Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	3
J1DJ	14-00-00	9 1/2" NI-40x	2	4
J2	12-00-00	9 1/2" NI-40x	1	30
J3	10-00-00	9 1/2" NI-40x	1	9
B14	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B21	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B22	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B15 DR	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B16	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B13	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B17	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
21	H1	IUS2.56/9.5
2	H2	HU310-2
3	H4	HGUS410



FROM PLAN DATED: MAR 2019  
BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-1  
ELEVATION: B  
LOT:  
CITY: INNISFIL  
SALESMAN: WILL GARCIA  
DESIGNER: AJ  
REVISION: lbv

REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.  
**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 SPF #2 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.  
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**LOADING:**  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft<sup>2</sup>  
TILE LOAD: +5.0 lb/ft<sup>2</sup>

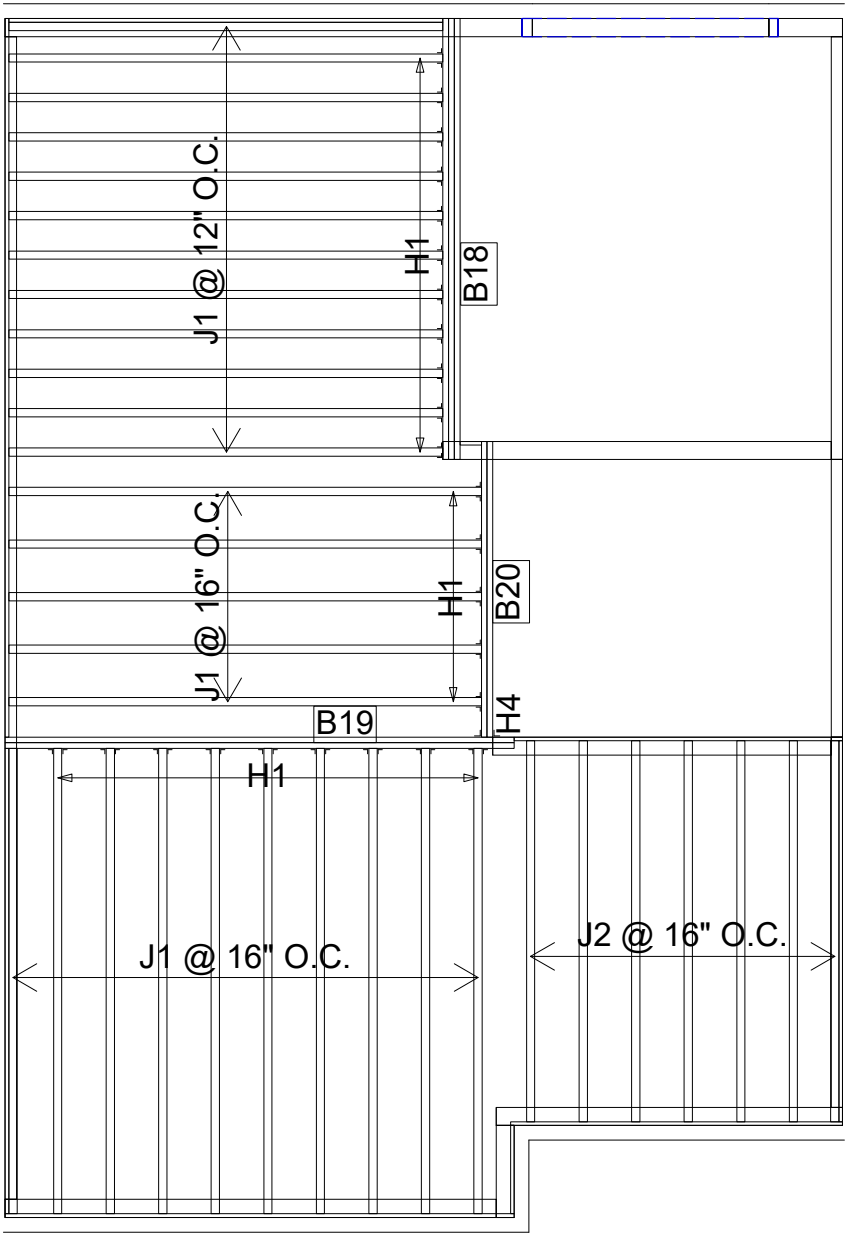
JOIST LL DEFLECTION LIMIT: L/480

**SUBFLOOR:** 5/8" GLUED AND NAILED

DATE: 5/24/23

2nd FLOOR FRAMING





Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	27
J2	10-00-00	9 1/2" NI-40x	1	7
B19	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B18	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3
B20	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/9.5
11	H1	IUS2.56/9.5
1	H4	HGUS410



FROM PLAN DATED: MAR 2019  
BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-1  
ELEVATION: A / A2  
LOT:  
CITY: INNISFIL  
SALESMAN: WILL GARCIA  
DESIGNER: AJ  
REVISION: lbv

REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.  
**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.  
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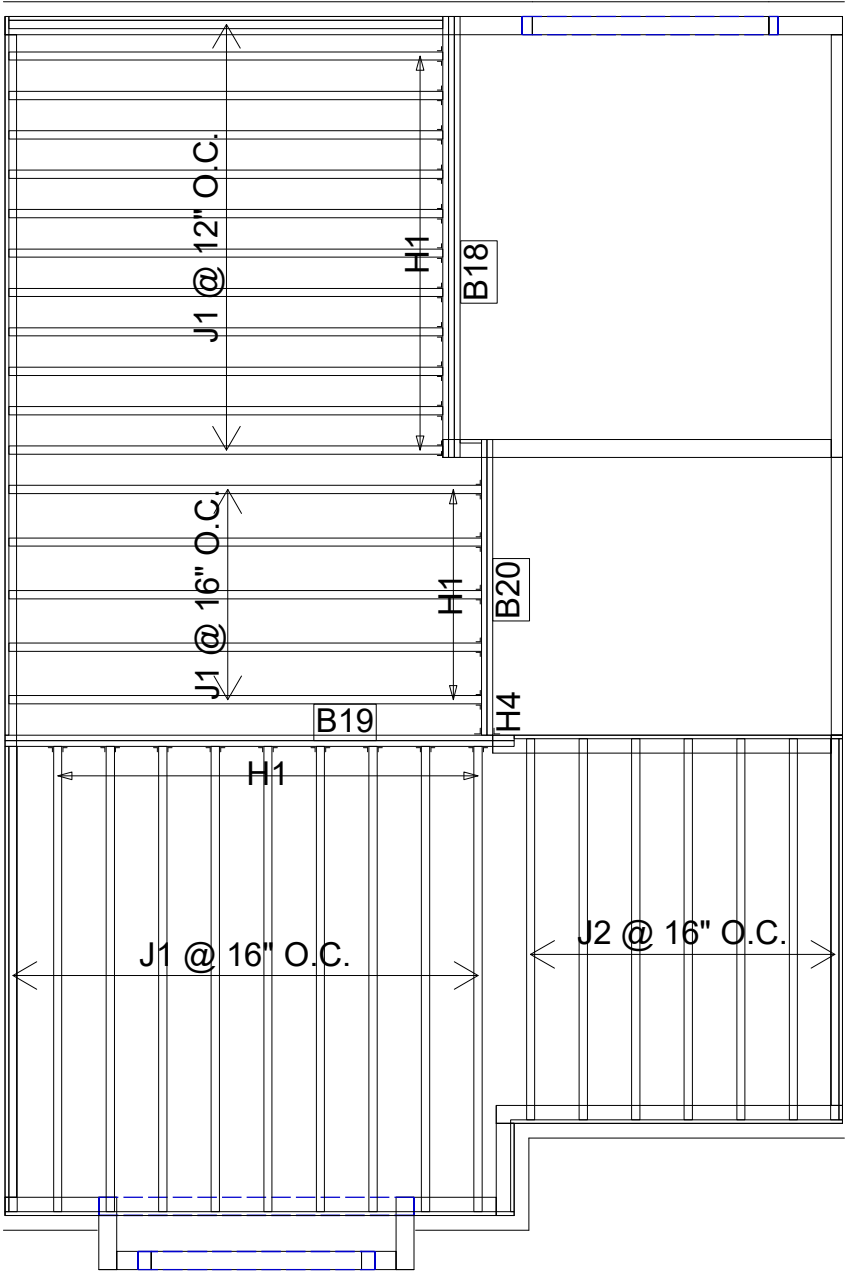
**LOADING:**  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft<sup>2</sup>  
TILE LOAD: +5.0 lb/ft<sup>2</sup>

JOIST LL DEFLECTION LIMIT: L/480

**SUBFLOOR:** 5/8" GLUED AND NAILED

DATE: 5/24/23

3rd FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	27
J2	10-00-00	9 1/2" NI-40x	1	7
B19	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B18	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3
B20	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/9.5
11	H1	IUS2.56/9.5
1	H4	HGUS410



FROM PLAN DATED: MAR 2019  
BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-1  
ELEVATION: B  
LOT:  
CITY: INNISFIL  
SALESMAN: WILL GARCIA  
DESIGNER: AJ  
REVISION: lbv

REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.  
**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 SPF #2 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.  
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LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
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JOIST LL DEFLECTION LIMIT: L/480

**SUBFLOOR:** 5/8" GLUED AND NAILED

DATE: 5/24/23

3rd FLOOR FRAMING

# NORDIC

## INSTALLATION GUIDE NORDIC JOIST

NS-G133   
ENGLISH  
VERSION  
2020-10-01

Engineered Wood Products

## BASIC INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



NORDIC  
STRUCTURES

nordic.ca

### INSTALLING NORDIC I-JOISTS

1. Installation of Nordic I-joists shall be as shown in details 1.
2. Except for cutting to length, I-joist flanges should never be cut, drilled or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. Concentrated loads should only be applied to the top surface of the top flange. Concentrated loads should not be suspended from the bottom flange with the exception of light loads, such as ceiling fans or light fixtures.
5. I-joists must be protected from the weather prior to installation.
6. I-joists must not be used in applications where they will be permanently exposed to weather, or will reach a moisture content of 15 percent or greater, such as in swimming pool or hot tub areas. They must not be installed where they will remain in direct contact with concrete or masonry.
7. End bearing length must be at least 1-3/4 inch. For multiple-span joists, intermediate bearing length must be at least 3-1/2 inches.
8. Ends of floor joists shall be restrained to prevent rollover. Use rim board or I-joist blocking panels.
9. I-joists installed beneath bearing walls perpendicular to the joists shall have full-depth blocking panels, rim board, or squash blocks (cripple blocks) to transfer gravity loads from above the floor system to the wall or foundation below.
10. For I-joists installed directly beneath bearing walls parallel to the joists or used as rim board or blocking panels, the maximum vertical load using a single I-joist is 3,300 plf, and 6,000 plf if double I-joists are used.
11. Continuous lateral support of the I-joist's compression flange is required to prevent rotation and buckling. In simple span uses, lateral support of the top flange is normally supplied by the floor sheathing. In multiple-span or cantilever applications, bracing of the I-joist's bottom flange is also required at interior supports of multiple-span joists, and at the end support next to the cantilever extension. The ends of all cantilever extensions must be laterally braced as shown in details 3, 4, or 5.
12. Nails installed in flange face or edge shall be spaced in accordance with the applicable building code requirements or approved building plans, but should not be closer than those specified on page 3.3 of the Nordic Joist Technical Guide (NS-GT3).
13. Details 1 show only I-joist-specific fastener requirements. For other fastener requirements, see the applicable building code.
14. For proper temporary bracing of wood I-joists and placement of temporary construction loads, see [APA Technical Note: Temporary Construction Loads over I-Joist Roofs and Floors, Form J735](#).

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

### SAFETY AND CONSTRUCTION PRECAUTIONS

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

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

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
  2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
    - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2-inch 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.
  3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
  4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
  5. Never install a damaged I-joist.
- Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.



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



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

### NORDIC I-JOIST SERIES

#### RESIDENTIAL SERIES

**NI-20**  
**2x3** S-P-F No. 2  
3/8 in. web  
Depths  
9-1/2 and 11-7/8 in.  
33 pieces per unit

**NI-40x**  
**2x3** 1950F MSR  
3/8 in. web  
Depths  
9-1/2, 11-7/8 and 14 in.  
33 pieces per unit

**NI-60**  
**2x3** 2100F MSR  
3/8 in. web  
Depths  
9-1/2, 11-7/8, 14 and 16 in.  
33 pieces per unit

**NI-80**  
**2x4** 2100F MSR  
3/8 in. web  
Depths  
9-1/2, 11-7/8, 14 and 16 in.  
23 pieces per unit

**NI-90**  
**2x4** 2400F MSR  
3/8 in. web  
Depths  
11-7/8, 14 and 16 in.  
23 pieces per unit

**RIM BOARDS**  
Width Length  
1-1/8 in. 16 ft  
Depths  
9-1/2 to 16 in.  
APA Rim Board Plus

### WEB STIFFENERS

**2** Concentrated Load (Load Stiffener)

End Bearing (Bearing Stiffener)

Stiffener Size Requirements

Flange width (in.)	Web stiffener size each side of web (in.)
2-1/2	1 x 2 5/16 Minimum width
3-1/2	1-1/2 x 2 5/16 Minimum width

### NAIL SPACING

Nailing into flange face

Nailing into flange edge

Nailed to Only One Flange Edge (Top View)

Nailed to Both Flange Edges (Top View)

Recommended Closest Nail Spacing for Fastening Sheathing to I-joist Flanges to Minimize Splitting

Fastener size (diameter x length)	Flange face nailing <sup>(a)</sup>			Flange edge nailing <sup>(a)</sup>		
	End distance (in.)	Nail spacing (in.)	End distance (in.)	Nail spacing (in.)	Nail spacing (in.)	
0.128" or smaller in diameter, and 3-1/4" or shorter in length	2	2	2	2	4	
Greater than 0.128" up to 0.148" in diameter, and 3-1/4" or shorter in length	2	3	2	3	6	

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

<sup>(b)</sup> Closest nail spacing measured from one flange edge. Nails on opposite flange edge must be offset one-half the minimum spacing.

**1a** Nordic I-joist blocking panel

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 floor sheathing)

Attach I-joist to top plate per detail 1b

**1b** Rim board

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

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

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

**1d** Nordic I-joist or rim board blocking panel per detail 1a

Squash block, 1/16" longer than the I-joist depth

Attach squash block to top and bottom flange with one 2-1/2" nail at each location

**1e** Transfer load from above to bearing below. Install squash blocks per detail 1d. Match bearing area of blocks below to post above. Stagger nails to avoid splitting.

**1g** Load-bearing wall above shall align vertically with the wall below. Other conditions, such as offset bearing walls, are not covered by this detail.

Blocking panel required over all interior supports under load-bearing walls or when floor joists are not continuous over support. The NBC requires blocking at load-bearing and non-load-bearing walls constructed with required braced wall panels (shearwalls).

Joist attachment per detail 1b

2-1/2" nails at 6" o.c. to top plate

Nordic I-joist blocking panel per detail 1a

**1h** Use backer block if hanger load exceeds 360 lbf. 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 block tight to top flange. Use twelve 3" nails, clinched when possible. Maximum resistance for hanger for this detail = 1,620 lbf.

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

Backer block required: - Only on the loaded side for top-mount hangers - On both sides for face-mount hangers

**1i** Install hanger per manufacturer's recommendations

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

Backer block per detail 1h

**1j** Top- or face-mount hanger installed per manufacturer's recommendations

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

Top-mount hanger installed per manufacturer's recommendations

**1l** Blocking panel

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

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

**1m** Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify header resistance to support concentrated loads.

Backer block per detail 1h

**1n** Do not bevel-cut I-joist beyond inside face of wall

Attach I-joist per detail 1b

**1a** Nordic I-joist blocking panel

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 floor sheathing)

Attach I-joist to top plate per detail 1b

**1b** Rim board

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

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

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

**1d** Nordic I-joist or rim board blocking panel per detail 1a

Squash block, 1/16" longer than the I-joist depth

Attach squash block to top and bottom flange with one 2-1/2" nail at each location

**1e** Transfer load from above to bearing below. Install squash blocks per detail 1d. Match bearing area of blocks below to post above. Stagger nails to avoid splitting.

**1g** Load-bearing wall above shall align vertically with the wall below. Other conditions, such as offset bearing walls, are not covered by this detail.

Blocking panel required over all interior supports under load-bearing walls or when floor joists are not continuous over support. The NBC requires blocking at load-bearing and non-load-bearing walls constructed with required braced wall panels (shearwalls).

Joist attachment per detail 1b

2-1/2" nails at 6" o.c. to top plate

Nordic I-joist blocking panel per detail 1a

**1h** Use backer block if hanger load exceeds 360 lbf. 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 block tight to top flange. Use twelve 3" nails, clinched when possible. Maximum resistance for hanger for this detail = 1,620 lbf.

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

Backer block required: - Only on the loaded side for top-mount hangers - On both sides for face-mount hangers

**1i** Install hanger per manufacturer's recommendations

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

Backer block per detail 1h

**1j** Top- or face-mount hanger installed per manufacturer's recommendations

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

Top-mount hanger installed per manufacturer's recommendations

**1l** Blocking panel

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

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

**1m** Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify header resistance to support concentrated loads.

Backer block per detail 1h

**1n** Do not bevel-cut I-joist beyond inside face of wall

Attach I-joist per detail 1b

**1a** Nordic I-joist blocking panel

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 floor sheathing)

Attach I-joist to top plate per detail 1b

**1b** Rim board

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

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

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

**1d** Nordic I-joist or rim board blocking panel per detail 1a

Squash block, 1/16" longer than the I-joist depth

Attach squash block to top and bottom flange with one 2-1/2" nail at each location

**1e** Transfer load from above to bearing below. Install squash blocks per detail 1d. Match bearing area of blocks below to post above. Stagger nails to avoid splitting.

**1g** Load-bearing wall above shall align vertically with the wall below. Other conditions, such as offset bearing walls, are not covered by this detail.

Blocking panel required over all interior supports under load-bearing walls or when floor joists are not continuous over support. The NBC requires blocking at load-bearing and non-load-bearing walls constructed with required braced wall panels (shearwalls).

Joist attachment per detail 1b

2-1/2" nails at 6" o.c. to top plate

Nordic I-joist blocking panel per detail 1a

**1h** Use backer block if hanger load exceeds 360 lbf. 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 block tight to top flange. Use twelve 3" nails, clinched when possible. Maximum resistance for hanger for this detail = 1,620 lbf.

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

Backer block required: - Only on the loaded side for top-mount hangers - On both sides for face-mount hangers

**1i** Install hanger per manufacturer's recommendations

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

Backer block per detail 1h

**1j** Top- or face-mount hanger installed per manufacturer's recommendations

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

Top-mount hanger installed per manufacturer's recommendations

**1l** Blocking panel

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

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

**1m** Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify header resistance to support concentrated loads.

Backer block per detail 1h

**1n** Do not bevel-cut I-joist beyond inside face of wall

Attach I-joist per detail 1b

**1a** Nordic I-joist blocking panel

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 floor sheathing)

Attach I-joist to top plate per detail 1b

**1b** Rim board

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

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

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

**1d** Nordic I-joist or rim board blocking panel per detail 1a

Squash block, 1/16" longer than the I-joist depth

Attach squash block to top and bottom flange with one 2-1/2" nail at each location

**1e** Transfer load from above to bearing below. Install squash blocks per detail 1d. Match bearing area of blocks below to post above. Stagger nails to avoid splitting.

**1g** Load-bearing wall above shall align vertically with the wall below. Other conditions, such as offset bearing walls, are not covered by this detail.

Blocking panel required over all interior supports under load-bearing walls or when floor joists are not continuous over support. The NBC requires blocking at load-bearing and non-load-bearing walls constructed with required braced wall panels (shearwalls).

Joist attachment per detail 1b

2-1/2" nails at 6" o.c. to top plate

Nordic I-joist blocking panel per detail 1a

**1h** Use backer block if hanger load exceeds 360 lbf. 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 block tight to top flange. Use twelve 3" nails, clinched when possible. Maximum resistance for hanger for this detail = 1,620 lbf.

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

Backer block required: - Only on the loaded side for top-mount hangers - On both sides for face-mount hangers

**1i** Install hanger per manufacturer's recommendations

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

Backer block per detail 1h

**1j** Top- or face-mount hanger installed per manufacturer's recommendations

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

Top-mount hanger installed per manufacturer's recommendations

**1l** Blocking panel

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

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

**1m** Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify header resistance to support concentrated loads.

Backer block per detail 1h

**1n** Do not bevel-cut I-joist beyond inside face of wall

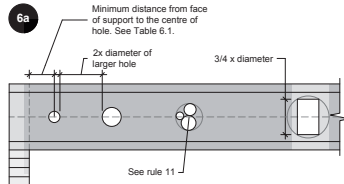
Attach I-joist per detail 1b

### WEB HOLES AND OPENINGS

#### WEB HOLES IN I-JOISTS

##### Rules for Cutting Holes in I-Joists

1. The distance between the inside edge of the support and the centreline of any hole shall be in compliance with the requirements of Table 6.1.
2. I-joist top and bottom flanges must never be cut, notched or otherwise modified.
3. Whenever possible, field-cut holes should be centred on the middle of the web.
4. The maximum size hole 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 opening and the adjacent I-joist flange.
5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole - or twice the length of the longest side of the longest rectangular hole - and each hole must be sized and located in compliance with the requirements of Table 6.1.
7. Holes measuring 1-1/2 inch or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.
8. 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.
9. All holes shall be cut in accordance with the restrictions listed above and as illustrated in detail 6a.
10. Limit three maximum-size holes per span.
11. A group of round holes at approximately the same location shall be permitted if it meets the requirements for a single round hole circumscribed around them.

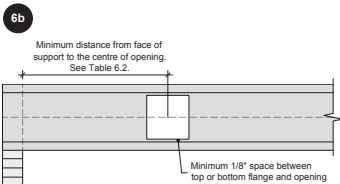


- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
  2. Holes in web should be cut with a sharp saw.
  3. For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular 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.

#### DUCT CHASE OPENINGS

##### Rules for Cutting Duct Chase Openings in I-joists

1. The distance between the inside edge of the support and the centreline of a duct chase opening shall be in compliance with the requirements of Table 6.2.
2. I-joist top and bottom flanges must never be cut, notched or otherwise modified.
3. 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 opening and the adjacent I-joist flange.
4. All openings shall be cut in accordance with the restrictions listed above and as illustrated in detail 6b.
5. Limit one maximum-size duct chase opening per span.

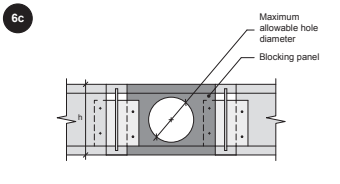


- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
  2. Holes in web should be cut with a sharp saw.
  3. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling 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.

#### HOLES IN BLOCKING PANELS

##### Maximum Allowable Hole Size in Lateral-restraint-only Blocking Panels

1. The maximum allowable hole size for a lateral-restraint-only blocking panel is 2/3 of the lesser dimension of the blocking's depth or length. Assuming the blocking panel is longer than its height (or depth), the table above applies. For other applications, contact Nordic Structures.
2. Holes cut into the blocking panels are subject to the following limitations:
  - The top and bottom flanges of an I-joist blocking panel must never be cut, notched or otherwise modified.
  - Field-cut holes must be centred in the blocking horizontally.
  - While round holes are preferred, rectangle holes may be used provided the corners are not over cut. Slightly rounding corners or pre-drilling corners with a 1-inch-diameter bit is recommended.
3. All holes must be cut in a workman-like manner in accordance with the limitations listed above.



I-joist or rim board blocking depth (in.)	Maximum allowable hole diameter or (in.) <sup>(a)</sup>
9-1/2	6-1/4
11-7/8	7-3/4
14	9-3/4
16	10-1/2

<sup>(a)</sup> Maximum allowable hole diameter in blocking panel, where the blocking panel is longer than its height.

TABLE 6.1 - LOCATION OF WEB HOLES

Simple or multiple span		Minimum distance from inside face of any support to centre of hole (ft-in.)															
Joist depth	Joist series	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	
9-1/2"	NI-20	0'-7"	1'-6"	2'-10"	4'-3"	5'-8"	6'-0"	-	-	-	-	-	-	-	-	-	-
	NI-40x	0'-7"	1'-6"	3'-0"	4'-4"	6'-0"	6'-4"	-	-	-	-	-	-	-	-	-	-
	NI-60	1'-3"	2'-6"	4'-0"	5'-4"	7'-0"	7'-5"	-	-	-	-	-	-	-	-	-	-
	NI-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'-8"	7'-9"	-	-	-	-	-	-	-
	NI-40x	0'-7"	0'-8"	1'-3"	2'-8"	4'-0"	4'-4"	5'-5"	7'-2"	8'-4"	-	-	-	-	-	-	-
	NI-60	0'-7"	1'-8"	3'-0"	4'-3"	5'-9"	6'-0"	7'-3"	6'-10"	10'-0"	-	-	-	-	-	-	-
	NI-90	1'-6"	2'-10"	4'-2"	5'-6"	7'-0"	7'-5"	8'-6"	10'-3"	11'-4"	-	-	-	-	-	-	-
14"	NI-20	0'-7"	0'-8"	1'-5"	3'-2"	4'-10"	5'-4"	6'-9"	8'-9"	10'-2"	-	-	-	-	-	-	-
	NI-40x	0'-7"	0'-8"	1'-0"	2'-4"	2'-9"	3'-9"	5'-2"	6'-0"	6'-6"	8'-3"	10'-2"	-	-	-	-	-
	NI-60	0'-7"	0'-8"	1'-8"	3'-0"	4'-3"	4'-8"	5'-8"	7'-2"	8'-0"	8'-8"	10'-4"	11'-9"	-	-	-	-
	NI-80	0'-10"	2'-0"	3'-4"	4'-9"	6'-2"	6'-5"	7'-6"	9'-0"	10'-0"	10'-8"	12'-4"	13'-9"	-	-	-	-
16"	NI-20	0'-7"	0'-8"	0'-10"	2'-5"	4'-0"	4'-5"	5'-9"	7'-5"	8'-8"	9'-4"	11'-4"	12'-11"	-	-	-	-
	NI-40x	0'-7"	0'-8"	0'-8"	1'-6"	2'-10"	3'-2"	4'-2"	5'-8"	6'-4"	7'-0"	8'-5"	9'-8"	10'-2"	12'-2"	13'-9"	-
	NI-60	0'-7"	1'-3"	2'-6"	3'-10"	5'-3"	5'-6"	6'-6"	8'-0"	9'-0"	9'-5"	11'-0"	12'-3"	12'-9"	14'-5"	16'-0"	-
	NI-90	0'-7"	0'-8"	0'-8"	1'-9"	3'-3"	3'-8"	4'-9"	6'-5"	7'-5"	8'-0"	9'-10"	11'-3"	11'-9"	13'-6"	15'-4"	-

- Notes:**
1. Tabulated values are applicable to residential floor construction meeting the above design criteria.
  2. The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

Design Criteria	
Joist spacing	Up to 24 inches
Loads	Live load = 40 psf and dead load = 15 psf
Deflection limits	L/480 under live load and L/240 under total load

TABLE 6.2 - LOCATION OF DUCT CHASE OPENINGS

Simple span		Minimum distance from inside face of any support to centre of opening (ft-in.)															
Joist depth	Joist series	Duct chase length (in.)															
		8	10	12	14	16	18	20	22	24							
9-1/2"	NI-20	4'-1"	4'-5"	4'-10"	-	-	-	-	-	-	-	-	-	-	-	-	
	NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	-	-	-	-	-	-	-	-	
	NI-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-5"	8'-0"	-	-	-	-	-	-	-	-	
	NI-80	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"	-	-	-	-	-	-	
	NI-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11-7/8"	NI-20	5'-9"	6'-2"	6'-6"	-	-	-	-	-	-	-	-	-	-	-	-	
	NI-40x	6'-8"	7'-2"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	-	-	-	-	-	-	-	-	
	NI-60	7'-3"	7'-8"	8'-0"	8'-6"	9'-0"	9'-3"	9'-9"	-	-	-	-	-	-	-	-	
	NI-80	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-8"	-	-	-	-	-	-	
	NI-90	7'-6"	7'-11"	8'-4"	8'-9"	9'-2"	9'-7"	10'-1"	10'-7"	10'-11"	-	-	-	-	-	-	
14"	NI-40x	8'-1"	8'-7"	9'-0"	9'-6"	10'-1"	10'-7"	11'-2"	-	-	-	-	-	-	-	-	
	NI-60	8'-9"	9'-3"	9'-8"	10'-11"	10'-6"	11'-1"	11'-6"	-	-	-	-	-	-	-	-	
	NI-80	9'-0"	9'-3"	9'-9"	10'-1"	10'-7"	11'-1"	11'-6"	12'-1"	12'-6"	-	-	-	-	-	-	
	NI-90	9'-2"	9'-8"	10'-0"	10'-6"	11'-1"	11'-5"	11'-9"	12'-4"	12'-11"	-	-	-	-	-	-	
	NI-100	10'-3"	10'-8"	11'-2"	11'-8"	12'-1"	12'-6"	13'-2"	-	-	-	-	-	-	-	-	
16"	NI-80	10'-4"	10'-9"	11'-3"	11'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'-0"	-	-	-	-	-	-	
	NI-90	10'-9"	11'-2"	11'-8"	12'-0"	12'-6"	13'-0"	13'-6"	14'-2"	14'-4"	-	-	-	-	-	-	
	NI-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	





**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 2ND FLR FRAMING  
**Label:** B17 - i1099  
**Type:** Beam

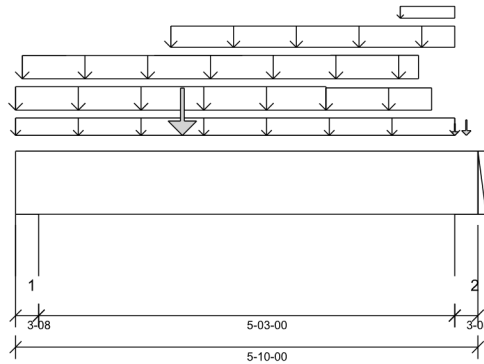
**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
**Design Methodology:** LSD  
**Service Condition:** Dry  
**LL Deflection Limit:** L/360,  
**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 0'- 10 1/8"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2 1/2"
- 615 psi Wall @ 5'- 7 1/2"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 6" O/C**

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 7"	1.25D + 1.5L	1.00	5689 lb ft	23299 lb ft	Passed - 24%
Factored Shear:	1'- 1"	1.25D + 1.5L	1.00	3348 lb	11052 lb	Passed - 30%
Live Load (LL) Pos. Defl.:	2'- 10 5/8"	L		0.025"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 10 11/16"	D + L		0.044"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.25D + 1.5L	1.00	4005 lb		12740 lb	7536 lb	Passed - 53%
2	3-08	1.25D + 1.5L	1.00	3603 lb		12740 lb	7536 lb	Passed - 48%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 10"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	5'- 6 1/2"	6(i671)	Top	141 lb/ft	-	-	-
Uniform	-0'	3'- 11"	6(i671)	Top	98 lb/ft	197 lb/ft	-	-
Uniform	1'- 11 1/2"	5'- 6 1/2"	User Load	Top	80 lb/ft	160 lb/ft	-	-
Uniform	3'- 11"	5'- 3"	6(i671)	Top	88 lb/ft	176 lb/ft	-	-
Uniform	4'- 10 1/4"	5'- 6 1/2"	6(i671)	Top	1 lb/ft	2 lb/ft	-	-
Tapered	0'- 1"	5'- 1"	Smoothed Load	Front	97 To 100 lb/ft	193 To 199 lb/ft	-	-
Point	2'- 1 1/4"	2'- 1 1/4"	User Load	Top	240 lb	480 lb	-	-
Point	5'- 6 1/2"	5'- 6 1/2"	6(i671)	Top	0 lb	1 lb	-	-
Point	5'- 8 1/4"	5'- 8 1/4"	E28(i663)	Top	68 lb	9 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	2(i400)	1254 lb	1630 lb	-	-
2	5'- 6 1/2"	5'- 10"	E15(i371)	1172 lb	1422 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051574



**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 2ND FLR FRAMING  
**Label:** B14A - i1159  
**Type:** Beam

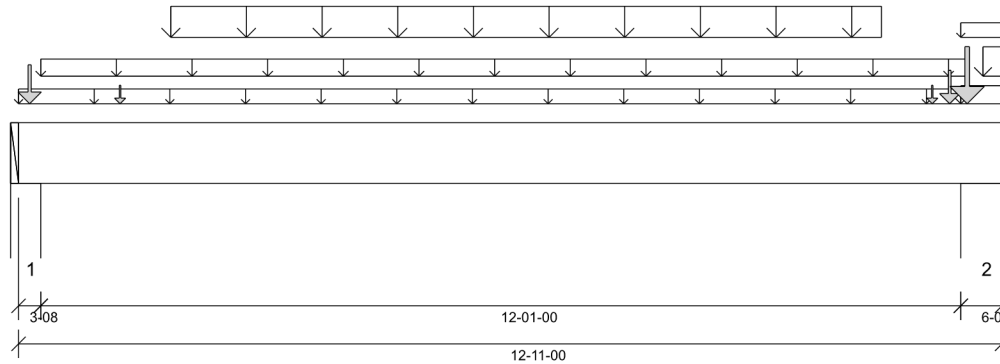
**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
**Design Methodology:** LSD  
**Service Condition:** Dry  
**LL Deflection Limit:** L/360,  
**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 1 1/2"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2 1/2"
- 615 psi Wall @ 12'- 5 1/2"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C**

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 8"	1.25D + 1.5L	1.00	11553 lb ft	23299 lb ft	Passed - 50%
Factored Neg. Moment:	0'- 2 1/2"	1.25D + 1.5L	1.00	224 lb ft	23299 lb ft	Passed - 1%
Factored Shear:	11'- 7"	1.25D + 1.5L	1.00	6405 lb	11052 lb	Passed - 58%
Live Load (LL) Pos. Defl.:	6'- 4 9/16"	L		0.260"	L/360	Passed - L/558
Total Load (TL) Pos. Defl.:	6'- 4 1/2"	D + L		0.461"	L/240	Passed - L/314
Permanent Deflection:	6'- 4 3/8"			-	L/360	Passed - L/742

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.25D + 1.5L	1.00	7062 lb		12740 lb	7536 lb	Passed - 94%
2	6-08	1.25D + 1.5L	1.00	12900 lb		23660 lb	13996 lb	Passed - 92%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 11"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	12'- 4 1/2"	FC4 Floor Decking (Plan View Fill)	Top	4 lb/ft	8 lb/ft	-	-
Uniform	0'- 3 1/2"	12'- 5 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	2'	11'- 4"	Smoothed Load	Front	118 lb/ft	236 lb/ft	-	-
Uniform	12'- 4 1/2"	12'- 11"	6(i671)	Top	81 lb/ft	-	-	-
Uniform	12'- 4 1/2"	12'- 11"	FC4 Floor Decking (Plan View Fill)	Top	3 lb/ft	7 lb/ft	-	-
Uniform	12'- 8"	12'- 11"	6(i671)	Top	106 lb/ft	211 lb/ft	-	-
Point	1'- 4"	1'- 4"	J1(i1009)	Front	146 lb	291 lb	-	-
Point	12'	12'	J1(i1095)	Front	147 lb	294 lb	-	-
Point	12'- 2 3/4"	12'- 2 3/4"	B16(i1160)	Back	685 lb	1300 lb	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	E25(i660)	Top	1064 lb	1492 lb	-	-
Point	12'- 5 1/2"	12'- 5 1/2"	6(i671)	Top	1772 lb	2674 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	E10(i365)	2210 lb	2929 lb	-	-
2	12'- 4 1/2"	12'- 11"	1(i399)	3674 lb	5476 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support.  
At support 1. Required Load Area: L=1.500", W=3.500". LDF=1.00, Pf=3568 lb, Qr=5460 lb, Result=65.35%.  
At support 2. Required Load Area: L=1.710", W=3.500". LDF=1.00, Pf=6226 lb, Qr=6226 lb, Result=100.00%.

### PLY TO PLY CONNECTION



STRUCTURAL COMPONENT ONLY  
DWG # TF23051575 PG 1/2



BUILDER:	BAYVIEW WELLINGTON	Job Name:	RL-1	2 Ply Member	Status:
SITE:	ALCONA SHORES	Level:	2ND FLR FRAMING	1 3/4" x 9 1/2" (2.0E 3100)	Design
MODEL:	RL-1	Label:	B14A - i1159	WestFraser LVL	Passed
CITY:	INNISFIL	Type:	Beam		

#### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.







**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 2ND FLR FRAMING  
**Label:** B13 - i992  
**Type:** Beam

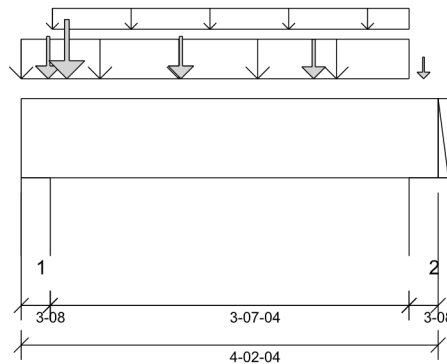
**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

**Status:**  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

**Design Methodology:** LSD

**Service Condition:** Dry

**LL Deflection Limit:** L/360,

**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 1 1/2"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2 1/2"
- 615 psi Wall @ 3'- 11 3/4"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 1/4"	1.25D + 1.5S + L	1.00	3554 lb ft	23299 lb ft	Passed - 15%
Factored Shear:	3'- 1 1/4"	1.25D + 1.5S + L	1.00	2194 lb	11052 lb	Passed - 20%
Total Load (TL) Pos. Defl.:	2'- 1"	D + S + 0.5L		0.013"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.25D + 1.5L + S	1.00	4994 lb		12740 lb	7536 lb	Passed - 66%
2	3-08	1.25D + 1.5S + L	1.00	3645 lb		12740 lb	7536 lb	Passed - 48%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 2 1/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	3'- 10 3/4"	5(i667)	Top	388 lb/ft	-	584 lb/ft	-
Uniform	0'- 3 3/4"	3'- 10 3/4"	User Load	Top	80 lb/ft	160 lb/ft	-	-
Point	0'- 3 1/4"	0'- 3 1/4"	J1(i1088)	Back	148 lb	296 lb	-	-
Point	1'- 7 1/4"	1'- 7 1/4"	J1(i1170)	Back	148 lb	296 lb	-	-
Point	2'- 11 1/4"	2'- 11 1/4"	J1(i1040)	Back	132 lb	265 lb	-	-
Point	0'- 5 1/2"	0'- 5 1/2"	User Load	Top	240 lb	480 lb	-	-
Point	4'- 1/2"	4'- 1/2"	E26(i661)	Top	58 lb	-	55 lb	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	3(i408)	1498 lb	1338 lb	1219 lb	-
2	3'- 10 3/4"	4'- 2 1/4"	E14(i370)	1065 lb	572 lb	1111 lb	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051576



**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 2ND FLR FRAMING  
**Label:** B15 DR - i1079  
**Type:** Beam

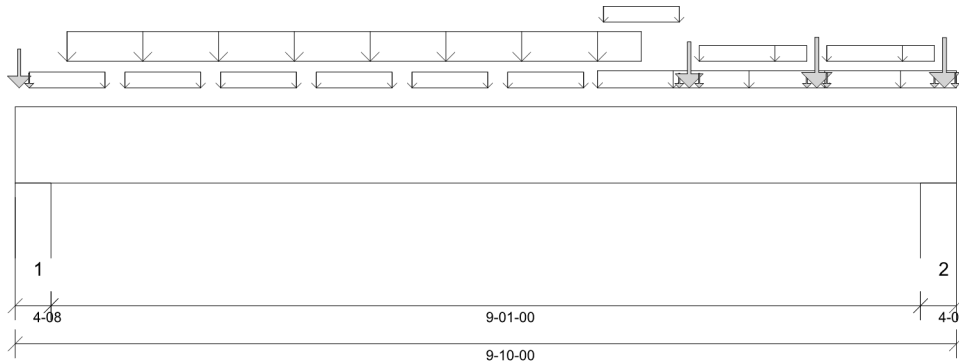
**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
**Design Methodology:** LSD  
**Service Condition:** Dry  
**LL Deflection Limit:** L/360,  
**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 1'- 1 1/2" Bottom: 9'- 10"

#### Factored Resistance of Support Material:

- 812 psi Wall @ 0'- 3 1/2"
- 812 psi Wall @ 9'- 6 1/2"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C**

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.



**STRUCTURAL COMPONENT ONLY**  
**DWG # TF23051577 PG 1/2**

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 1/2"	1.25D + 1.5L	1.00	5573 lb ft	23299 lb ft	Passed - 24%
Factored Shear:	8'- 8"	1.25D + 1.5L	1.00	2209 lb	11052 lb	Passed - 20%
Live Load (LL) Pos. Defl.:	4'- 11"	L		0.077"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 11 5/16"	D + L		0.125"	L/240	Passed - L/872

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-08	1.25D + 1.5L	1.00	2694 lb		16380 lb	12789 lb	Passed - 21%
2	4-08	1.25D + 1.5L	1.00	2956 lb		16380 lb	12789 lb	Passed - 23%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	9'- 10"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'- 1 3/4"	0'- 11 1/4"	Bk1(i488)	Top	10 lb/ft	21 lb/ft	-	-
Uniform	0'- 6 1/2"	6'- 6 1/2"	Smoothed Load	Top	108 lb/ft	216 lb/ft	-	-
Uniform	1'- 1 3/4"	1'- 11 1/4"	Bk1(i488)	Top	10 lb/ft	21 lb/ft	-	-
Uniform	2'- 1 3/4"	2'- 11 1/4"	Bk1(i488)	Top	10 lb/ft	21 lb/ft	-	-
Uniform	3'- 1 3/4"	3'- 11 1/4"	Bk1(i488)	Top	10 lb/ft	21 lb/ft	-	-
Uniform	4'- 1 3/4"	4'- 11 1/4"	Bk1(i488)	Top	10 lb/ft	21 lb/ft	-	-
Uniform	5'- 1 3/4"	5'- 11 1/4"	Bk1(i488)	Top	10 lb/ft	21 lb/ft	-	-
Uniform	6'- 1"	9'- 10"	User Load	Top	60 lb/ft	-	-	-
Uniform	6'- 1 3/4"	6'- 11 1/4"	Bk1(i488)	Top	10 lb/ft	21 lb/ft	-	-
Uniform	7'- 1 3/4"	8'- 3 1/4"	Bk1(i486)	Top	10 lb/ft	21 lb/ft	-	-
Uniform	8'- 5 3/4"	9'- 7 1/4"	Bk1(i486)	Top	10 lb/ft	21 lb/ft	-	-
Point	0'- 1/2"	0'- 1/2"	J1(i1133)	Top	95 lb	191 lb	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	Bk1(i488)	Top	1 lb	2 lb	-	-
Point	6'- 11 1/4"	6'- 11 1/4"	Bk1(i488)	Top	1 lb	2 lb	-	-
Point	7'- 1/2"	7'- 1/2"	J1(i1038)	Top	123 lb	247 lb	-	-
Point	7'- 1 3/4"	7'- 1 3/4"	Bk1(i486)	Top	1 lb	2 lb	-	-
Point	8'- 3 1/4"	8'- 3 1/4"	Bk1(i486)	Top	1 lb	2 lb	-	-
Point	8'- 4 1/2"	8'- 4 1/2"	J1(i1066)	Top	141 lb	282 lb	-	-
Point	8'- 5 3/4"	8'- 5 3/4"	Bk1(i486)	Top	1 lb	2 lb	-	-
Point	9'- 7 1/4"	9'- 7 1/4"	Bk1(i486)	Top	1 lb	2 lb	-	-
Point	9'- 8 1/2"	9'- 8 1/2"	J1(i1112)	Top	140 lb	280 lb	-	-
Point	9'- 9 7/8"	9'- 9 7/8"	Bk1(i1111)	Top	1 lb	2 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 1/2"	4(i410)	686 lb	1204 lb	-	-
2	9'- 5 1/2"	9'- 10"	3(i408)	867 lb	1269 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.



BUILDER:	<b>BAYVIEW WELLINGTON</b>	Job Name:	<b>RL-1</b>	<b>2 Ply Member</b>	Status:
SITE:	<b>ALCONA SHORES</b>	Level:	<b>2ND FLR FRAMING</b>	<b>1 3/4" x 9 1/2" (2.0E 3100)</b>	<b>Design</b>
MODEL:	<b>RL-1</b>	Label:	<b>B15 DR - i1079</b>	<b>WestFraser LVL</b>	<b>Passed</b>
CITY:	<b>INNISFIL</b>	Type:	<b>Beam</b>		

- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

#### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.







**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 2ND FLR FRAMING  
**Label:** B16 - i1160  
**Type:** Beam

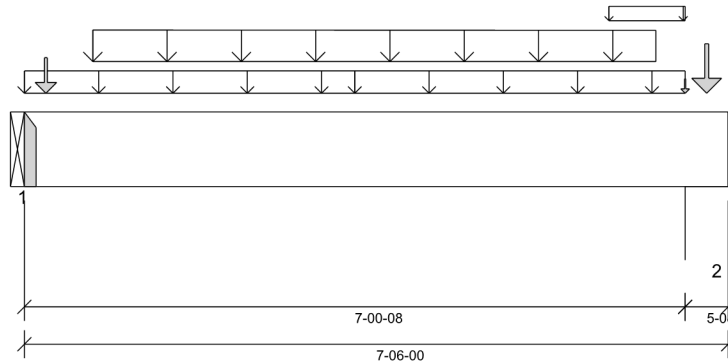
**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
**Design Methodology:** LSD  
**Service Condition:** Dry  
**LL Deflection Limit:** L/360,  
**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 0'- 9 1/2"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Wall @ 7'- 1 1/2"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C**

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.



STRUCTURAL COMPONENT ONLY  
DWG # TF23051578

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 2 3/4"	1.25D + 1.5L	1.00	4990 lb ft	23299 lb ft	Passed - 21%
Factored Shear:	0'- 9 1/2"	1.25D + 1.5L	1.00	2738 lb	11052 lb	Passed - 25%
Live Load (LL) Pos. Defl.:	3'- 6 11/16"	L		0.043"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 6 11/16"	D + L		0.066"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	2807 lb		5460 lb	-	Passed - 51%
2	5-08	1.25D + 1.5L + S	1.00	3203 lb		20020 lb	11843 lb	Passed - 27%

### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Top	Face	Member	Other Information or Requirement for Reinforcement Accessories
1	HGUS410	-	-	-	-	Connector manually specified by the user.

\* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'- 6"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	3'- 6 1/4"	User Load	Front	60 lb/ft	120 lb/ft	-	-
Uniform	3'- 6 1/4"	7'- 1/2"	User Load	Top	60 lb/ft	120 lb/ft	-	-
Uniform	6'- 2 3/4"	7'- 1/2"	FC4 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Tapered	0'- 8 3/4"	6'- 8 3/4"	Smoothed Load	Back	126 To 124 lb/ft	250 To 247 lb/ft	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	J1(i1147)	Back	86 lb	171 lb	-	-
Point	7'- 1/2"	7'- 1/2"	FC4 Floor Decking (Plan View Fill)	Top	2 lb	4 lb	-	-
Point	7'- 3 1/4"	7'- 3 1/4"	5(i667)	Top	185 lb	201 lb	37 lb	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B14A(i1159)	685 lb	1300 lb	-	-
2	7'- 1/2"	7'- 6"	3(i408)	832 lb	1417 lb	37 lb	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 3RD FLR FRAMING  
**Label:** B18 - i1092  
**Type:** Beam

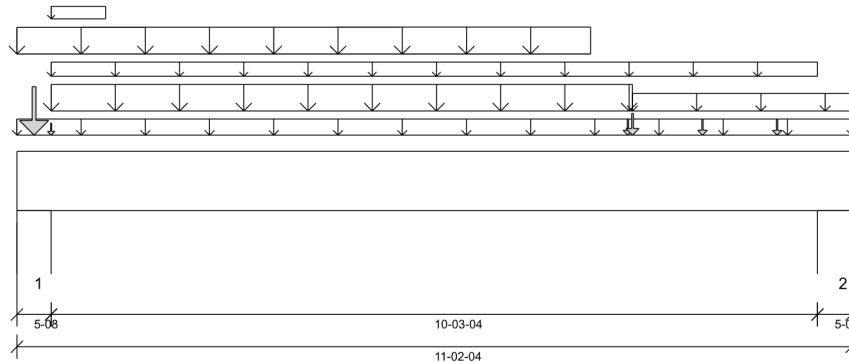
**3 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
 8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
**Design Methodology:** LSD  
**Service Condition:** Dry  
**LL Deflection Limit:** L/360,  
**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:  
 Top: 0' Bottom: 0'- 9 1/2"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Wall @ 10'- 9 3/4"

#### PLY TO PLY CONNECTION:

**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C**  
 NAIL FROM BOTH FACES (STAGGER 1/2 SPACE)

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 10 15/16"	1.25D + 1.5S + L	1.00	15946 lb ft	34949 lb ft	Passed - 46%
Factored Neg. Moment:	0'- 4 1/2"	1.25D + 1.5S + L	1.00	753 lb ft	34949 lb ft	Passed - 2%
Factored Shear:	9'- 11 1/4"	1.25D + 1.5S + L	1.00	5708 lb	16578 lb	Passed - 34%
Live Load (LL) Pos. Defl.:	5'- 8 1/16"	S + 0.5L		0.168"	L/360	Passed - L/733
Total Load (TL) Pos. Defl.:	5'- 7 7/8"	D + S + 0.5L		0.292"	L/240	Passed - L/421

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5S + L	1.00	11016 lb		30030 lb	17764 lb	Passed - 62%
2	5-08	1.25D + 1.5S + L	1.00	6026 lb		30030 lb	17764 lb	Passed - 34%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	11'- 2 1/4"	Self Weight	Top	14 lb/ft	-	-	-
Uniform	-0'	11'- 2 1/4"	E32(i981)	Top	100 lb/ft	-	-	-
Uniform	0'- 5 1/2"	10'- 8 3/4"	User Load	Front	15 lb/ft	-	40 lb/ft	-
Uniform	0'- 5 1/2"	8'- 3"	E32(i981)	Top	86 lb/ft	-	273 lb/ft	-
Uniform	0'- 5 1/2"	1'- 2 1/4"	FC5 Floor Decking (Plan View Fill)	Top	4 lb/ft	9 lb/ft	-	-
Uniform	8'- 3"	11'- 2 1/4"	E32(i981)	Top	28 lb/ft	-	108 lb/ft	-
Tapered	0'	7'- 8 1/4"	Smoothed Load	Back	120 To 124 lb/ft	241 To 246 lb/ft	-	-
Point	8'- 2 1/4"	8'- 2 1/4"	J1(i998)	Back	118 lb	235 lb	-	-
Point	9'- 2 1/4"	9'- 2 1/4"	J1(i1140)	Back	118 lb	235 lb	-	-
Point	10'- 2 1/4"	10'- 2 1/4"	J1(i1127)	Back	106 lb	212 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E32(i981)	Top	804 lb	-	2414 lb	-
Point	0'- 5 1/2"	0'- 5 1/2"	FC5 Floor Decking (Plan View Fill)	Top	2 lb	4 lb	-	-
Point	8'- 3"	8'- 3"	E32(i981)	Top	205 lb	-	648 lb	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	5(i667)	2724 lb	1396 lb	4216 lb	-
2	10'- 8 3/4"	11'- 2 1/4"	E19(i525)	1758 lb	1167 lb	1702 lb	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 1. Required Load Area: L=1.500", W=5.250". LDF=1.00, Pf=4626 lb, Qr=8190 lb, Result=56.48%.

### PLY TO PLY CONNECTION



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051579 PG 1/2



BUILDER:	<b>BAYVIEW WELLINGTON</b>	Job Name:	<b>RL-1</b>	<b>3 Ply Member</b>	Status:
SITE:	<b>ALCONA SHORES</b>	Level:	<b>3RD FLR FRAMING</b>	<b>1 3/4" x 9 1/2" (2.0E 3100)</b>	<b>Design</b>
MODEL:	<b>RL-1</b>	Label:	<b>B18 - i1092</b>	<b>WestFraser LVL</b>	<b>Passed</b>
CITY:	<b>INNISFIL</b>	Type:	<b>Beam</b>		

**PLY TO PLY CONNECTION**

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.







BUILDER: **BAYVIEW WELLINGTON**  
SITE: **ALCONA SHORES**  
MODEL: **RL-1**  
CITY: **INNISFIL**

Job Name: **RL-1**  
Level: **3RD FLR FRAMING**  
Label: **B19 - i1082**  
Type: **Beam**

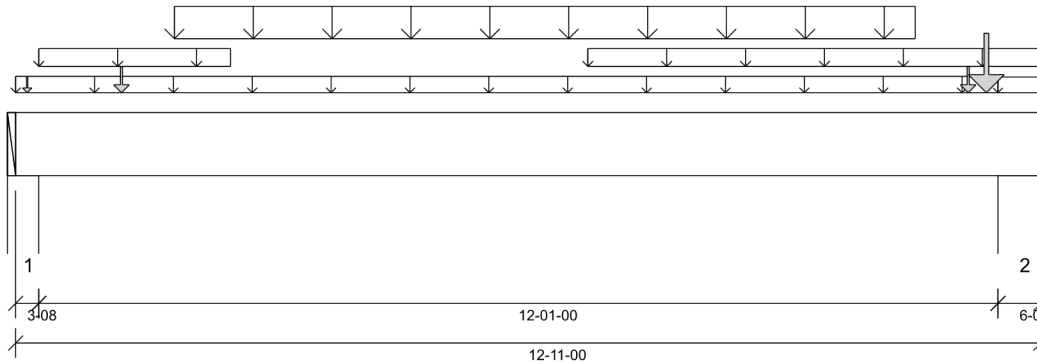
**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
Design Methodology: LSD  
Service Condition: Dry  
LL Deflection Limit: L/360,  
TL Deflection Limit: L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:  
Top: 0' Bottom: 1'- 1 1/2"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2 1/2"
- 615 psi Wall @ 12'- 5 1/2"

#### PLY TO PLY CONNECTION:

3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 8"	1.25D + 1.5L	1.00	11420 lb ft	23299 lb ft	Passed - 49%
Factored Shear:	11'- 7"	1.25D + 1.5L	1.00	6111 lb	11052 lb	Passed - 55%
Live Load (LL) Pos. Defl.:	6'- 4 3/8"	L		0.276"	L/360	Passed - L/525
Total Load (TL) Pos. Defl.:	6'- 4 5/8"	D + L		0.454"	L/240	Passed - L/319
Permanent Deflection:	6'- 5"			-	L/360	Passed - L/839

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.25D + 1.5L	1.00	3482 lb		12740 lb	7536 lb	Passed - 46%
2	6-08	1.25D + 1.5L	1.00	6274 lb		23660 lb	13996 lb	Passed - 45%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 11"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	12'- 4 1/2"	FC5 Floor Decking (Plan View Fill)	Top	10 lb/ft	21 lb/ft	-	-
Uniform	0'- 3 1/2"	2'- 8 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	2'	11'- 4"	Smoothed Load	Front	118 lb/ft	236 lb/ft	-	-
Uniform	7'- 2 1/2"	12'- 11"	User Load	Top	60 lb/ft	-	-	-
Uniform	12'- 4 1/2"	12'- 11"	FC5 Floor Decking (Plan View Fill)	Top	5 lb/ft	10 lb/ft	-	-
Point	1'- 4"	1'- 4"	J1(i1029)	Front	146 lb	291 lb	-	-
Point	12'	12'	J1(i1145)	Front	147 lb	294 lb	-	-
Point	12'- 2 3/4"	12'- 2 3/4"	B20(i1117)	Back	644 lb	1112 lb	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	E39(i1172)	Top	29 lb	-	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	E25(i660)	1034 lb	1491 lb	-	-
2	12'- 4 1/2"	12'- 11"	6(i671)	1772 lb	2674 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 2. Required Load Area: L=3.500", W=3.500". LDF=1.00, Pf=2473 lb, Q'r=12133 lb, Result=20.38%.

### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY  
DWG # TF23051580



**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 3RD FLR FRAMING  
**Label:** B20 - i1117  
**Type:** Beam

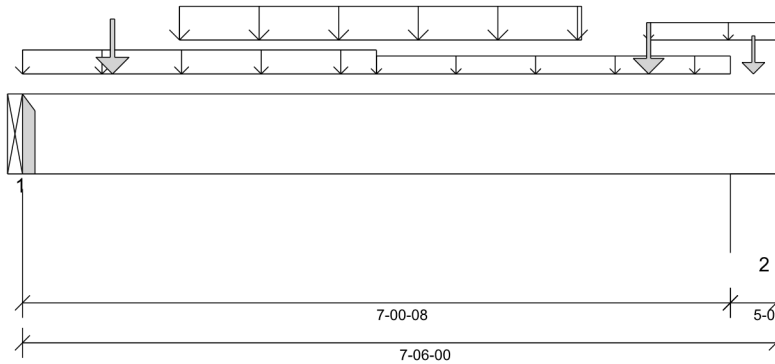
**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
**Design Methodology:** LSD  
**Service Condition:** Dry  
**LL Deflection Limit:** L/360,  
**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 1 1/2"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Wall @ 7'- 1 1/2"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C**

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 6 3/4"	1.25D + 1.5L	1.00	4480 lb ft	23299 lb ft	Passed - 19%
Factored Shear:	0'- 9 1/2"	1.25D + 1.5L	1.00	2399 lb	11052 lb	Passed - 22%
Live Load (LL) Pos. Defl.:	3'- 6 1/16"	L		0.036"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 6 5/16"	D + L		0.059"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	2468 lb		5460 lb	-	Passed - 45%
2	5-08	1.25D + 1.5L + S	1.00	2473 lb		20020 lb	11843 lb	Passed - 21%

### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Top	Face	Member	Other Information or Requirement for Reinforcement Accessories
1	HGUS410		-	-	-	Connector manually specified by the user.

\* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'- 6"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	3'- 6 1/4"	User Load	Front	60 lb/ft	120 lb/ft	-	-
Uniform	1'- 6 3/4"	5'- 6 3/4"	Smoothed Load	Back	125 lb/ft	249 lb/ft	-	-
Uniform	3'- 6 1/4"	7'- 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	6'- 2 3/4"	7'- 6"	FC5 Floor Decking (Plan View Fill)	Top	17 lb/ft	33 lb/ft	-	-
Point	0'- 10 3/4"	0'- 10 3/4"	J1(i1124)	Back	148 lb	296 lb	-	-
Point	6'- 2 3/4"	6'- 2 3/4"	J1(i1102)	Back	135 lb	270 lb	-	-
Point	7'- 3 1/4"	7'- 3 1/4"	E33(i986)	Top	86 lb	-	170 lb	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B19(i1082)	644 lb	1112 lb	-	-
2	7'- 1/2"	7'- 6"	5(i667)	737 lb	915 lb	170 lb	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY  
DWG # TF23051581



BUILDER: **BAYVIEW WELLINGTON**  
 SITE: **ALCONA SHORES**  
 MODEL: **RL-1**  
 CITY: **INNISFIL**

Job Name: **RL-1**  
 Level: **1ST FLR FRAMING**  
 Label: **B21 DR - i1161**  
 Type: **Beam**

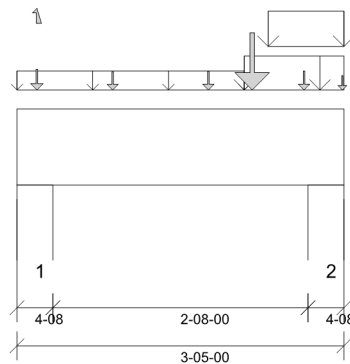
**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0'- 10 5/16" Bottom: 3'- 5"

#### Factored Resistance of Support Material:

- 812 psi Wall @ 0'- 3 1/2"
- 812 psi Wall @ 3'- 1 1/2"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 5 1/2"	1.25D + 1.5S + L	0.97	1962 lb ft	22571 lb ft	Passed - 9%
Factored Shear:	2'- 3"	1.25D + 1.5S + L	0.97	1821 lb	10707 lb	Passed - 17%

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-08	1.25D + 1.5L + S	1.00	1881 lb		16380 lb	12789 lb	Passed - 15%
2	4-08	1.25D + 1.5S + L	0.97	3916 lb		15868 lb	12389 lb	Passed - 32%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	3'- 5"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	2'- 4 1/2"	R1(i1080)	Top	100 lb/ft	-	-	-
Uniform	2'- 4 1/2"	3'- 5"	R1(i1080)	Top	205 lb/ft	208 lb/ft	-	-
Uniform	2'- 7 1/2"	3'- 5"	R1(i1080)	Top	181 lb/ft	-	260 lb/ft	-
Point	0'- 2 1/2"	0'- 2 1/2"	B1(i1116)	Top	163 lb	199 lb	-43 lb	-
Point	1'	1'	J3(i353)	Top	77 lb	154 lb	-	-
Point	2'	2'	J3(i347)	Top	86 lb	172 lb	-	-
Point	2'- 5 1/2"	2'- 5 1/2"	R1(i1080)	Top	999 lb	649 lb	820 lb	-
Point	3'	3'	J3(i1123)	Top	88 lb	176 lb	-	-
Point	3'- 4 13/16"	3'- 4 13/16"	R1(i1080)	Top	0 lb	0 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 1/2"	E1(i7)	641 lb	529 lb	105 lb	-
2	3'- 1/2"	3'- 5"	E2(i16)	1400 lb	1039 lb	878 lb	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- User loads assume a bearing length of 3.5" in determining member capacity for loads near supports.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 2. Required Load Area: L=3.500", W=3.500". LDF=0.97, Pf=3229 lb, Q'r=9707 lb, Result=33.26%.

### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051582



**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 1ST FLR FRAMING  
**Label:** B6L - i1081  
**Type:** Beam

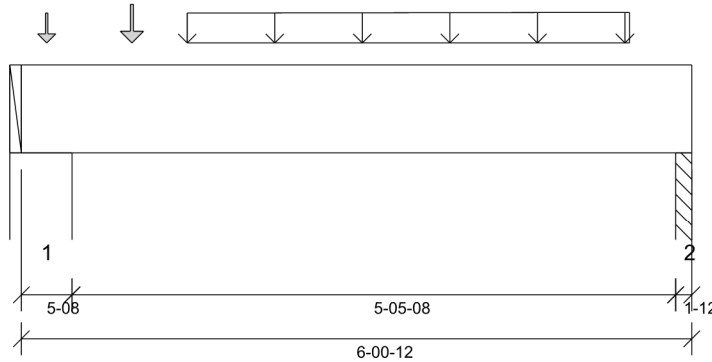
**1 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
**Design Methodology:** LSD  
**Service Condition:** Dry  
**LL Deflection Limit:** L/360,  
**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 0'- 9 3/4"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Column @ 6'

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'	1.25D + 1.5L	1.00	1408 lb ft	11650 lb ft	Passed - 12%
Factored Shear:	1'- 3"	1.25D + 1.5L	1.00	925 lb	5526 lb	Passed - 17%
Live Load (LL) Pos. Defl.:	3'- 2 1/4"	L		0.015"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 2 1/4"	D + L		0.023"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L	1.00	1117 lb		10010 lb	5921 lb	Passed - 19%
2	1-12	1.25D + 1.5L	1.00	837 lb		3185 lb	1883 lb	Passed - 44%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	6'- 3/4"	Self Weight	Top	5 lb/ft	-	-	-
Tapered	1'- 6"	5'- 6"	Smoothed Load	Front	82 To 85 lb/ft	163 To 170 lb/ft	-	-
Point	1'	1'	J3(i1131)	Front	75 lb	149 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E6(i309)	Top	81 lb	56 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	W4(i1)	315 lb	484 lb	-	-
2	5'- 11"	6'- 3/4"	PBO1(i21)	204 lb	387 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



STRUCTURAL COMPONENT ONLY  
DWG # TF23051583





**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 1ST FLR FRAMING  
**Label:** B5L - i1143  
**Type:** Beam

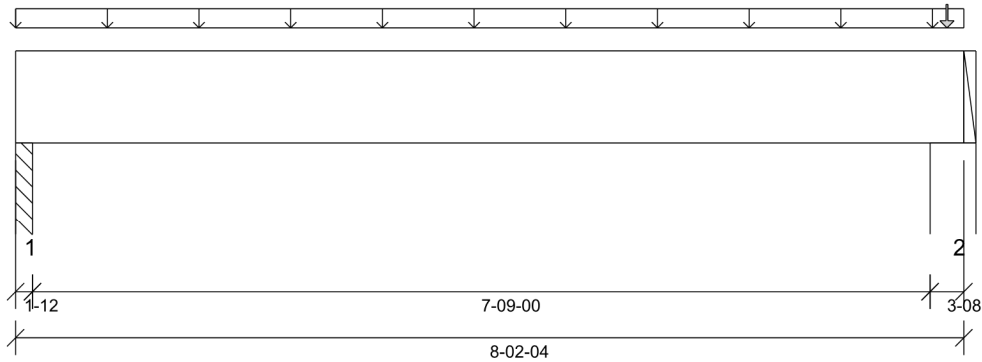
**1 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

**Design Methodology:** LSD

**Service Condition:** Dry

**LL Deflection Limit:** L/360,

**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 7'- 10 3/4"

#### Factored Resistance of Support Material:

- 615 psi Column @ 0'- 3/4"
- 615 psi Wall @ 7'- 11 3/4"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 1/16"	1.25D + 1.5L	1.00	397 lb ft	11650 lb ft	Passed - 3%
Factored Shear:	7'- 1 1/4"	1.25D + 1.5L	1.00	158 lb	5526 lb	Passed - 3%
Total Load (TL) Pos. Defl.:	4'- 3/16"	D + L		0.013"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-12	1.25D + 1.5L	1.00	211 lb		3185 lb	1883 lb	Passed - 11%
2	3-08	1.25D + 1.5L	1.00	292 lb		6370 lb	3768 lb	Passed - 8%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 2 1/4"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'	8'- 2 1/4"	FC1 Floor Decking (Plan View Fill)	Top	11 lb/ft	21 lb/ft	-	-
Point	8'- 1/2"	8'- 1/2"	E16(i372)	Top	53 lb	8 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 1 3/4"	PBO1(i21)	63 lb	88 lb	-	-
2	7'- 10 3/4"	8'- 2 1/4"	W19(i20)	117 lb	97 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



STRUCTURAL COMPONENT ONLY  
DWG # TF23051584



**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 1ST FLR FRAMING  
**Label:** B2 - i993  
**Type:** Beam

**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

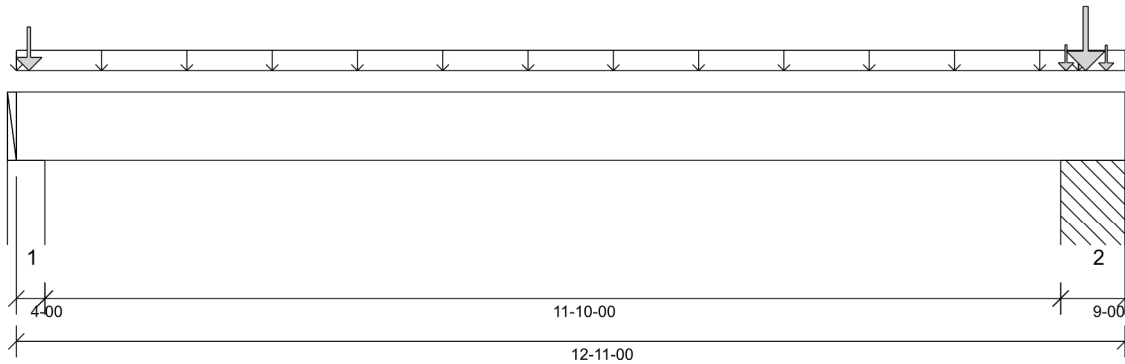
**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
8.5.3.233.Update5.15

Report Version: 2021.03.26

05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

**Design Methodology:** LSD

**Service Condition:** Dry

**LL Deflection Limit:** L/360,

**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 11'- 9 1/2"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 3"
- 615 psi Column @ 12'- 3"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C**

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 3 1/8"	1.25D + 1.5L	1.00	244 lb ft	23299 lb ft	Passed - 1%
Factored Neg. Moment:	12'- 3"	1.25D + 1.5L	1.00	3808 lb ft	20293 lb ft	Passed - 19%
Factored Shear:	11'- 4 1/2"	1.25D + 1.5L	1.00	891 lb	11052 lb	Passed - 8%

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-00	1.25D + 1.5L	1.00	7806 lb		14560 lb	8610 lb	Passed - 91%
2	9-00	1.25D + 1.5L	1.00	18989 lb		32760 lb	19372 lb	Passed - 98%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 11"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	12'- 4 1/2"	FC3 Floor Decking (Plan View Fill)	Top	27 lb/ft	53 lb/ft	-	-
Uniform	12'- 4 1/2"	12'- 11"	1(i399)	Top	81 lb/ft	-	-	-
Point	12'- 8 3/8"	12'- 8 3/8"	B3(i1074)	Front	750 lb	1040 lb	-	-
Point	12'- 2 3/4"	12'- 2 3/4"	B4(i996)	Back	637 lb	1208 lb	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	E10(i365)	Top	2258 lb	2967 lb	-	-
Point	12'- 5 1/2"	12'- 5 1/2"	1(i399)	Top	3674 lb	5476 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4"	-	2489 lb	3307 lb	-	-
++>	0'- 1 3/4"	0'- 1 3/4"	W1(i4)	2178 lb	2894 lb	-	-
++>	0'- 3 3/4"	0'- 3 3/4"	PBO10(i967)	311 lb	413 lb	-	-
2	12'- 2"	12'- 11"	PBO2(i24)	5325 lb	8043 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support.  
At support 1. Required Load Area: L=1.998", W=3.500". LDF=1.00, Pf=7273 lb, Q'r=7273 lb, Result=100.00%.  
At support 2. Required Load Area: L=3.518", W=3.500". LDF=1.00, Pf=12807 lb, Q'r=12807 lb, Result=100.00%.

### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY  
DWG # TF23051585



BUILDER: **BAYVIEW WELLINGTON**  
 SITE: **ALCONA SHORES**  
 MODEL: **RL-1**  
 CITY: **INNISFIL**

Job Name: **RL-1**  
 Level: **1ST FLR FRAMING**  
 Label: **B3 - i1074**  
 Type: **Beam**

**3 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

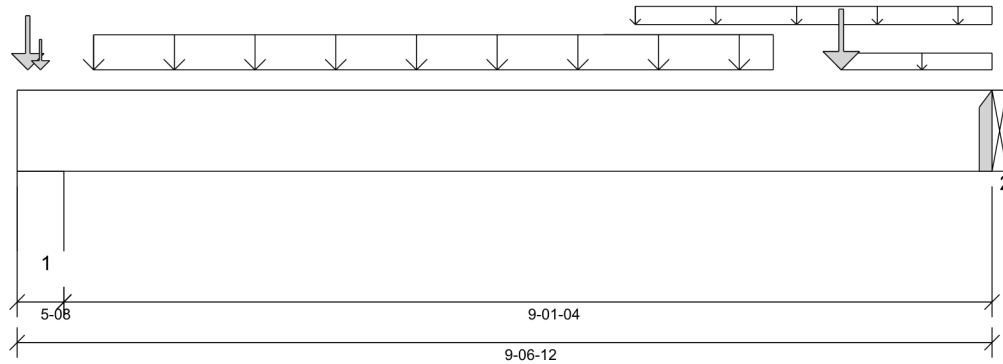
Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
 8.5.3.233.Update5.15

Report Version: 2021.03.26

05/24/2023 10:02



### DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
 Design Methodology: LSD  
 Service Condition: Dry  
 LL Deflection Limit: L/360,  
 TL Deflection Limit: L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 4 1/2"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Beam @ 9'- 6 3/4"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN**  
**NAILS (0.120"x3.25") @ 8" O/C**  
 NAIL FROM BOTH FACES (STAGGER 1/2 SPACE)

PLY TO PLY CONNECTION ASSUMES ANY  
 SUPPORTED BEAM HANGERS ARE FASTENED  
 TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 5"	1.25D + 1.5L	1.00	6238 lb ft	34949 lb ft	Passed - 18%
Factored Neg. Moment:	0'- 4 1/2"	1.25D + 1.5L	1.00	220 lb ft	34949 lb ft	Passed - 1%
Factored Shear:	1'- 3"	1.25D + 1.5L	1.00	2487 lb	16578 lb	Passed - 15%
Live Load (LL) Pos. Defl.:	4'- 11 3/4"	L		0.056"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 1/16"	D + L		0.092"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L	1.00	3430 lb		30030 lb	17764 lb	Passed - 19%
2	1-08	1.25D + 1.5L	1.00	2511 lb		8190 lb	-	Passed - 31%

### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories		
			Top	Face	Member			
2	HUC610		-	-	-	Connector manually specified by the user.		

\* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	9'- 6 3/4"	Self Weight	Top	14 lb/ft	-	-	-
Uniform	6'- 3/4"	9'- 6 3/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	8'- 1"	9'- 6 3/4"	FC3 Floor Decking (Plan View Fill)	Top	11 lb/ft	22 lb/ft	-	-
Tapered	0'- 9"	7'- 5"	Smoothed Load	Back	131 To 132 lb/ft	261 To 263 lb/ft	-	-
Point	0'- 1 1/4"	0'- 1 1/4"	J1(i1054)	Back	159 lb	318 lb	-	-
Point	8'- 1"	8'- 1"	J1(i1022)	Back	186 lb	373 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E7(i307)	Top	141 lb	46 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	W5(i6)	975 lb	1483 lb	-	-
2	9'- 6 3/4"	9'- 6 3/4"	B2(i993)	750 lb	1040 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051586



BUILDER: **BAYVIEW WELLINGTON**  
 SITE: **ALCONA SHORES**  
 MODEL: **RL-1**  
 CITY: **INNISFIL**

Job Name: **RL-1**  
 Level: **1ST FLR FRAMING**  
 Label: **B10L - i1154**  
 Type: **Beam**

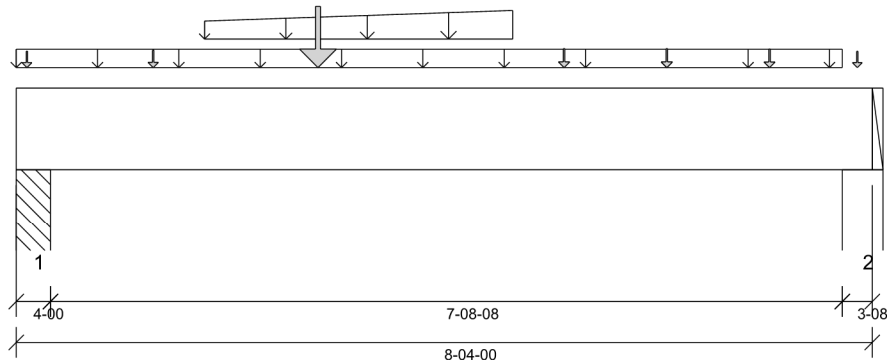
**1 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
 8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018,  
 ABC 2019, OBC 2012 (2019  
 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports  
 must be laterally restrained. Top and bottom edges  
 of the member must be fully restrained or have the  
 following maximum unbraced length:

Top: 0' Bottom: 1'- 1/4"

#### Factored Resistance of Support Material:

- 615 psi Column @ 0'- 3"
- 615 psi Wall @ 8'- 1 1/2"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 11 1/4"	1.25D + 1.5L	1.00	9289 lb ft	11650 lb ft	Passed - 80%
Factored Shear:	1'- 1 1/2"	1.25D + 1.5L	1.00	3637 lb	5526 lb	Passed - 66%
Live Load (LL) Pos. Defl.:	3'- 11 11/16"	L		0.145"	L/360	Passed - L/637
Total Load (TL) Pos. Defl.:	3'- 11 3/4"	D + L		0.268"	L/240	Passed - L/345
Permanent Deflection:	3'- 11 13/16"			-	L/360	Passed - L/774

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-00	1.25D + 1.5L	1.00	3831 lb		7280 lb	4305 lb	Passed - 89%
2	3-08	1.25D + 1.5L	1.00	2781 lb		6370 lb	3768 lb	Passed - 74%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 4"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'	8'- 1/2"	User Load	Top	60 lb/ft	-	-	-
Tapered	1'- 10"	4'- 10"	Smoothed Load	Back	18 To 87 lb/ft	36 To 174 lb/ft	-	-
Point	0'- 1 1/4"	0'- 1 1/4"	J5(i1006)	Back	24 lb	49 lb	-	-
Point	1'- 4"	1'- 4"	J5(i1104)	Back	43 lb	85 lb	-	-
Point	2'- 11 1/4"	2'- 11 1/4"	B9L(i1122)	Back	1251 lb	1624 lb	-	-
Point	5'- 4"	5'- 4"	J4(i208)	Back	75 lb	150 lb	-	-
Point	6'- 4"	6'- 4"	J4(i208)	Back	75 lb	150 lb	-	-
Point	7'- 4"	7'- 4"	J4(i186)	Back	67 lb	135 lb	-	-
Point	8'- 2 1/4"	8'- 2 1/4"	E15(i371)	Top	57 lb	8 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4"	PBO6(i31)	1297 lb	1474 lb	-	-
2	8'- 1/2"	8'- 4"	W20(i27)	974 lb	1042 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051587





**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 1ST FLR FRAMING  
**Label:** B8L - i1045  
**Type:** Beam

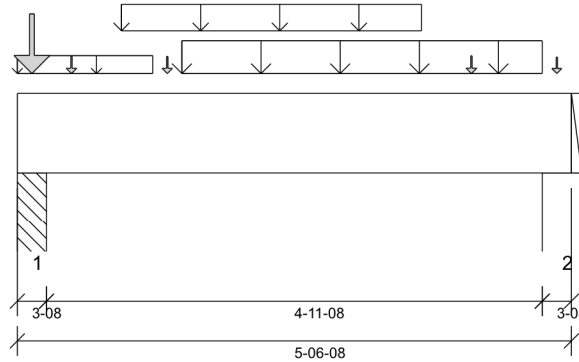
**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
**Design Methodology:** LSD  
**Service Condition:** Dry  
**LL Deflection Limit:** L/360,  
**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:  
Top: 0' Bottom: 0'- 9 1/2"

#### Factored Resistance of Support Material:

- 615 psi Column @ 0'- 2 1/2"
- 615 psi Wall @ 5'- 4"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 6" O/C**

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 9 3/8"	1.25D + 1.5L	1.00	2518 lb ft	23299 lb ft	Passed - 11%
Factored Neg. Moment:	0'- 2 1/2"	1.25D + 1.5L	1.00	285 lb ft	23299 lb ft	Passed - 1%
Factored Shear:	4'- 5 1/2"	1.25D + 1.5L	1.00	1789 lb	11052 lb	Passed - 16%
Live Load (LL) Pos. Defl.:	2'- 10"	L		0.010"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 9 11/16"	D + L		0.017"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.25D + 1.5L	1.00	6353 lb		12740 lb	7534 lb	Passed - 84%
2	3-08	1.25D + 1.5L	1.00	2055 lb		12740 lb	7536 lb	Passed - 27%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 6 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	1'- 4 1/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	1'- 1/2"	4'- 1/2"	Smoothed Load	Front	78 lb/ft	155 lb/ft	-	-
Uniform	1'- 7 3/4"	5'- 3"	User Load	Back	120 lb/ft	240 lb/ft	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	B9L(i1122)	Front	1383 lb	1866 lb	-	-
Point	0'- 6 1/2"	0'- 6 1/2"	J4(i190)	Front	59 lb	117 lb	-	-
Point	4'- 6 1/2"	4'- 6 1/2"	J4(i186)	Front	70 lb	140 lb	-	-
Point	1'- 6"	1'- 6"	PBO8(i127)	Top	163 lb	-	-	-
Point	5'- 4 3/4"	5'- 4 3/4"	E15(i371)	Top	108 lb	-	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	PBO5(i30)	2005 lb	2640 lb	-	-
2	5'- 3"	5'- 6 1/2"	W20(i27)	578 lb	813 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 1. Required Load Area: L=3.500", W=3.500". LDF=1.00, Pf=4528 lb, Q'r=8493 lb, Result=53.31%.

### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY  
DWG # TF23051588



**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 1ST FLR FRAMING  
**Label:** B9L - i1122  
**Type:** Beam

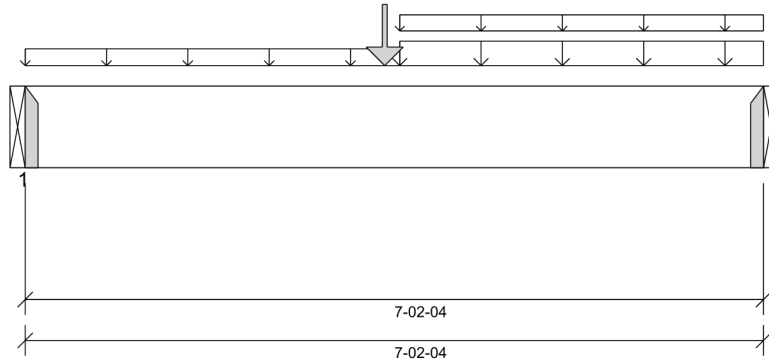
**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
**Design Methodology:** LSD  
**Service Condition:** Dry  
**LL Deflection Limit:** L/360,  
**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 3'- 6 1/2"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Beam @ 7'- 2 1/4"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C**

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 6"	1.25D + 1.5L	1.00	14162 lb ft	23299 lb ft	Passed - 61%
Factored Shear:	6'- 4 3/4"	1.25D + 1.5L	1.00	4145 lb	11052 lb	Passed - 38%
Live Load (LL) Pos. Defl.:	3'- 7"	L		0.090"	L/360	Passed - L/955
Total Load (TL) Pos. Defl.:	3'- 7"	D + L		0.159"	L/240	Passed - L/542

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	4147 lb		5460 lb	-	Passed - 76%
2	1-08	1.25D + 1.5L	1.00	4381 lb		5460 lb	-	Passed - 80%

### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories		
			Top	Face	Member			
1	HGUS410		-	-	-	Connector manually specified by the user.		
2	HUC410 (MAX)		-	-	-	Connector manually specified by the user.		

\* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'- 2 1/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	3'- 7 3/4"	FC2 Floor Decking (Plan View Fill)	Top	10 lb/ft	20 lb/ft	-	-
Uniform	3'- 7 3/4"	7'- 2 1/4"	User Load	Top	60 lb/ft	120 lb/ft	-	-
Uniform	3'- 7 3/4"	7'- 2 1/4"	FC2 Floor Decking (Plan View Fill)	Top	5 lb/ft	11 lb/ft	-	-
Point	3'- 6"	3'- 6"	B11L(i1078)	Back	2295 lb	2948 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B10L(i1154)	1251 lb	1624 lb	-	-
2	7'- 2 1/4"	7'- 2 1/4"	B8L(i1045)	1383 lb	1866 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051589

STRUCTURAL COMPONENT ONLY  
DWG # TF23051590 PG 1/2



BUILDER:	BAYVIEW WELLINGTON	Job Name:	RL-1	2 Ply Member	Status:
SITE:	ALCONA SHORES	Level:	1ST FLR FRAMING	1 3/4" x 9 1/2" (2.0E 3100)	Design
MODEL:	RL-1	Label:	B11L - i1078	WestFraser LVL	Passed
CITY:	INNISFIL	Type:	Beam		

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.







**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 1ST FLR FRAMING  
**Label:** B4 - i996  
**Type:** Beam

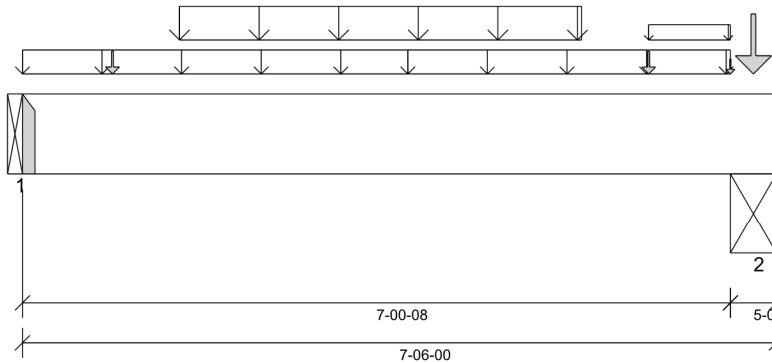
**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
**Design Methodology:** LSD  
**Service Condition:** Dry  
**LL Deflection Limit:** L/360,  
**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 1 1/2"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Beam @ 7'- 1 1/2"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C**

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 6 3/4"	1.25D + 1.5L	1.00	4830 lb ft	23299 lb ft	Passed - 21%
Factored Neg. Moment:	7'- 1 1/2"	1.25D + 1.5L + S	1.00	512 lb ft	23299 lb ft	Passed - 2%
Factored Shear:	0'- 9 1/2"	1.25D + 1.5L	1.00	2497 lb	11052 lb	Passed - 23%
Live Load (LL) Pos. Defl.:	3'- 6 3/8"	L		0.041"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 6 3/8"	D + L		0.062"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	2566 lb		5460 lb	-	Passed - 47%
2	5-08	1.25D + 1.5L + S	1.00	6201 lb		20020 lb	11839 lb	Passed - 52%

### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Top	Face	Member	Nailing Requirements	Other Information or Requirement for Reinforcement Accessories
1	HGUS410		-	-	-		Connector manually specified by the user.
* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.							

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'- 6"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	3'- 10"	User Load	Front	60 lb/ft	120 lb/ft	-	-
Uniform	1'- 6 3/4"	5'- 6 3/4"	Smoothed Load	Back	125 lb/ft	249 lb/ft	-	-
Uniform	3'- 10"	7'- 1/2"	User Load	Top	60 lb/ft	120 lb/ft	-	-
Uniform	6'- 2 3/4"	7'- 1/2"	FC3 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Point	0'- 10 3/4"	0'- 10 3/4"	J2(1051)	Back	148 lb	296 lb	-	-
Point	6'- 2 3/4"	6'- 2 3/4"	J2(1089)	Back	144 lb	288 lb	-	-
Point	7'- 1/2"	7'- 1/2"	FC3 Floor Decking (Plan View Fill)	Top	2 lb	4 lb	-	-
Point	7'- 3 1/4"	7'- 3 1/4"	3(408)	Top	932 lb	1513 lb	70 lb	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B2(i993)	637 lb	1208 lb	-	-
2	7'- 1/2"	7'- 6"	STL BM(i36)	1583 lb	2739 lb	70 lb	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 2. Required Load Area: L=1.500", W=3.500". LDF=1.00, Pf=3505 lb, Q'r=5460 lb, Result=64.19%.



STRUCTURAL COMPONENT ONLY  
DWG # TF23051591 PG 1/2



BUILDER:	<b>BAYVIEW WELLINGTON</b>	Job Name:	<b>RL-1</b>	<b>2 Ply Member</b>	Status:
SITE:	<b>ALCONA SHORES</b>	Level:	<b>1ST FLR FRAMING</b>	<b>1 3/4" x 9 1/2" (2.0E 3100)</b>	<b>Design</b>
MODEL:	<b>RL-1</b>	Label:	<b>B4 - i996</b>	<b>WestFraser LVL</b>	<b>Passed</b>
CITY:	<b>INNISFIL</b>	Type:	<b>Beam</b>		

**PLY TO PLY CONNECTION**

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.





**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1  
**Level:** 1ST FLR FRAMING  
**Label:** B1 - i1116  
**Type:** Beam

**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

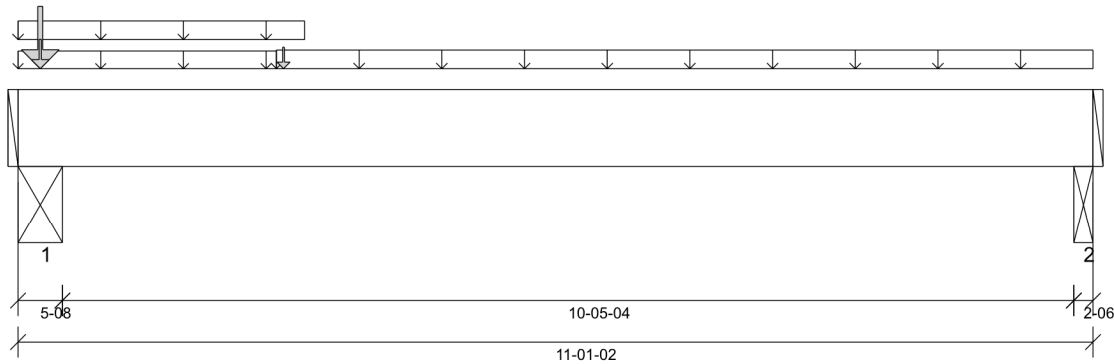
**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
8.5.3.233.Update5.15

Report Version: 2021.03.26

05/24/2023 10:02



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
**Design Methodology:** LSD  
**Service Condition:** Dry  
**LL Deflection Limit:** L/360,  
**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:  
Top: 0' Bottom: 7'- 11"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 4 1/2"
- 1040 psi Beam @ 10'- 11 3/4"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C**

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 7 7/8"	1.25D + 1.5L	1.00	1935 lb ft	23299 lb ft	Passed - 8%
Factored Neg. Moment:	0'- 4 1/2"	1.25D + 1.5L + S	1.00	1006 lb ft	21944 lb ft	Passed - 5%
Factored Shear:	1'- 3"	1.25D + 1.5L + S	1.00	1154 lb	11052 lb	Passed - 10%
Live Load (LL) Pos. Defl.:	5'- 6 7/8"	L		0.030"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 6 1/8"	D + L		0.058"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L + S	1.00	8163 lb		20020 lb	11839 lb	Passed - 69%
2	2-06	1.25D + 1.5L	1.00	631 lb		8645 lb	8645 lb	Passed - 7%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	11'- 1 1/8"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	2'- 11 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	-0'	2'- 8"	FC3 Floor Decking (Plan View Fill)	Top	14 lb/ft	27 lb/ft	-	-
Uniform	2'- 8"	11'- 1 1/8"	FC3 Floor Decking (Plan View Fill)	Top	20 lb/ft	40 lb/ft	-	-
Point	2'- 8 7/8"	2'- 8 7/8"	B7(i1026)	Front	253 lb	268 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	3(i408)	Top	1522 lb	1338 lb	1219 lb	-
Point	0'- 2 3/4"	0'- 2 3/4"	User Load	Top	400 lb	800 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i36)	2501 lb	2620 lb	1262 lb	-
2	10'- 10 3/4"	11'- 1 1/8"	B21 DR(i1161)	163 lb	199 lb	-43 lb	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 1. Required Load Area: L=1.500", W=3.500". LDF=1.00, Pf=5129 lb, Q'r=5460 lb, Result=93.93%.

### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



STRUCTURAL COMPONENT ONLY  
DWG # TF23051592



BUILDER: **BAYVIEW WELLINGTON**  
 SITE: **ALCONA SHORES**  
 MODEL: **RL-1**  
 CITY: **INNISFIL**

Job Name: **RL-1**  
 Level: **1ST FLR FRAMING**  
 Label: **B7 - i1026**  
 Type: **Beam**

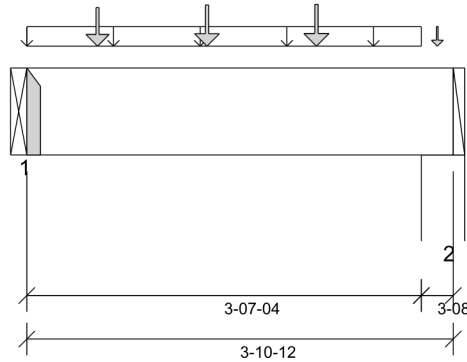
**1 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
 8.5.3.233.Update5.15

Report Version: 2021.03.26 05/24/2023 10:02



### DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018,  
 ABC 2019, OBC 2012 (2019  
 Amendment)

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports  
 must be laterally restrained. Top and bottom edges  
 of the member must be fully restrained or have the  
 following maximum unbraced length:

Top: 0' Bottom: 0'- 10 1/8"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Wall @ 3'- 8 1/4"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 7 3/4"	1.25D + 1.5L	0.99	750 lb ft	11571 lb ft	Passed - 6%
Factored Shear:	0'- 9 1/2"	1.25D + 1.5L	0.99	654 lb	5489 lb	Passed - 12%

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	0.99	718 lb		2712 lb	-	Passed - 26%
2	3-08	1.25D + 1.5L	0.99	673 lb		6327 lb	3743 lb	Passed - 18%

### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	HUS1.81/10		-	-	-	Connector manually specified by the user.

\* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	3'- 10 3/4"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'	3'- 7 1/4"	User Load	Top	60 lb/ft	-	-	-
Point	0'- 7 3/4"	0'- 7 3/4"	J3(i353)	Back	76 lb	152 lb	-	-
Point	1'- 7 3/4"	1'- 7 3/4"	J3(i347)	Back	85 lb	169 lb	-	-
Point	2'- 7 3/4"	2'- 7 3/4"	J3(i1123)	Back	87 lb	174 lb	-	-
Point	3'- 9"	3'- 9"	E11(i366)	Top	32 lb	4 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B1(i1116)	253 lb	268 lb	-	-
2	3'- 7 1/4"	3'- 10 3/4"	W3(i3)	262 lb	231 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051593





**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1 EL B  
**Level:** 2ND FLR FRAMING  
**Label:** B14 - i1220  
**Type:** Beam

**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

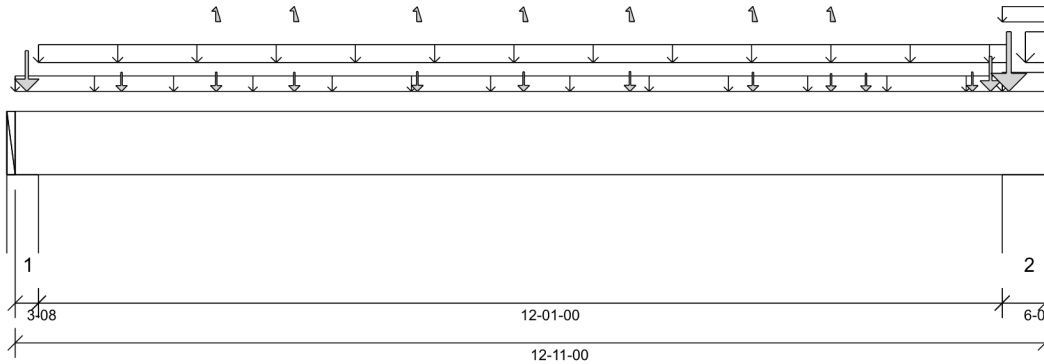
**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
8.5.3.233.Update5.15

Report Version: 2021.03.26

05/24/2023 10:19



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)  
**Design Methodology:** LSD  
**Service Condition:** Dry  
**LL Deflection Limit:** L/360,  
**TL Deflection Limit:** L/240,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 2 3/4"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2 1/2"
- 615 psi Wall @ 12'- 5 1/2"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C**

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 4 1/2"	1.25D + 1.5L	1.00	11403 lb ft	23299 lb ft	Passed - 49%
Factored Neg. Moment:	0'- 2 1/2"	1.25D + 1.5L + S	1.00	224 lb ft	23299 lb ft	Passed - 1%
Factored Shear:	11'- 7"	1.25D + 1.5L	1.00	6388 lb	11052 lb	Passed - 58%
Live Load (LL) Pos. Defl.:	6'- 4 1/2"	L		0.262"	L/360	Passed - L/552
Total Load (TL) Pos. Defl.:	6'- 4 7/16"	D + L		0.454"	L/240	Passed - L/319
Permanent Deflection:	6'- 4 3/8"			-	L/360	Passed - L/779

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.25D + 1.5L	1.00	7051 lb		12740 lb	7536 lb	Passed - 94%
2	6-08	1.25D + 1.5L	1.00	12883 lb		23660 lb	13996 lb	Passed - 92%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 11"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	12'- 4 1/2"	FC4 Floor Decking (Plan View Fill)	Top	4 lb/ft	8 lb/ft	-	-
Uniform	0'- 3 1/2"	12'- 5 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	12'- 4 1/2"	12'- 11"	6(i671)	Top	81 lb/ft	-	-	-
Uniform	12'- 4 1/2"	12'- 11"	FC4 Floor Decking (Plan View Fill)	Top	3 lb/ft	7 lb/ft	-	-
Uniform	12'- 8"	12'- 11"	6(i671)	Top	106 lb/ft	211 lb/ft	-	-
Point	1'- 4"	1'- 4"	J2(i1212)	Front	137 lb	274 lb	-	-
Point	2'- 6 1/4"	2'- 6 1/4"	B22(i1325)	Front	168 lb	260/-2 lb	-10 lb	-
Point	3'- 6"	3'- 6"	J1DJ(i1336)	Front	119 lb	301/-6 lb	-38 lb	-
Point	5'- 1/2"	5'- 1/2"	J1(i1355)	Front	143 lb	344/-6 lb	-	-
Point	6'- 4 1/2"	6'- 4 1/2"	J1(i1361)	Front	139 lb	319/-6 lb	-	-
Point	7'- 8 1/2"	7'- 8 1/2"	J1(i1363)	Front	143 lb	344/-6 lb	-	-
Point	9'- 3"	9'- 3"	J1DJ(i1343)	Front	119 lb	301/-6 lb	-38 lb	-
Point	10'- 2 3/4"	10'- 2 3/4"	B21(i1176)	Front	120 lb	169/-2 lb	-10 lb	-
Point	10'- 8"	10'- 8"	J2(i1213)	Front	104 lb	209 lb	-	-
Point	12'	12'	J2(i1214)	Front	147 lb	294 lb	-	-
Point	12'- 2 3/4"	12'- 2 3/4"	B16(i1274)	Back	685 lb	1300 lb	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	E25(i660)	Top	1064 lb	1492 lb	-	-
Point	12'- 5 1/2"	12'- 5 1/2"	6(i671)	Top	1772 lb	2674 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	E10(i365)	2185 lb	2942/-17 lb	-48 lb	-
2	12'- 4 1/2"	12'- 11"	1(i399)	3646 lb	5488/-17 lb	-48 lb	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.



STRUCTURAL COMPONENT ONLY  
DWG # TF23051594 PG 1/2



BUILDER:	<b>BAYVIEW WELLINGTON</b>	Job Name:	<b>RL-1 EL B</b>	<b>2 Ply Member</b>	Status:
SITE:	<b>ALCONA SHORES</b>	Level:	<b>2ND FLR FRAMING</b>	<b>1 3/4" x 9 1/2" (2.0E 3100)</b>	<b>Design</b>
MODEL:	<b>RL-1</b>	Label:	<b>B14 - i1220</b>	<b>WestFraser LVL</b>	<b>Passed</b>
CITY:	<b>INNISFIL</b>	Type:	<b>Beam</b>		

- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support.  
At support 1. Required Load Area: L=1.500", W=3.500". LDF=1.00, Pf=3568 lb, Q'r=5460 lb, Result=65.35%.  
At support 2. Required Load Area: L=1.710", W=3.500". LDF=1.00, Pf=6226 lb, Q'r=6226 lb, Result=100.00%.

#### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.





**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1 EL B  
**Level:** 2ND FLR FRAMING  
**Label:** B21 - i1176  
**Type:** Beam

**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

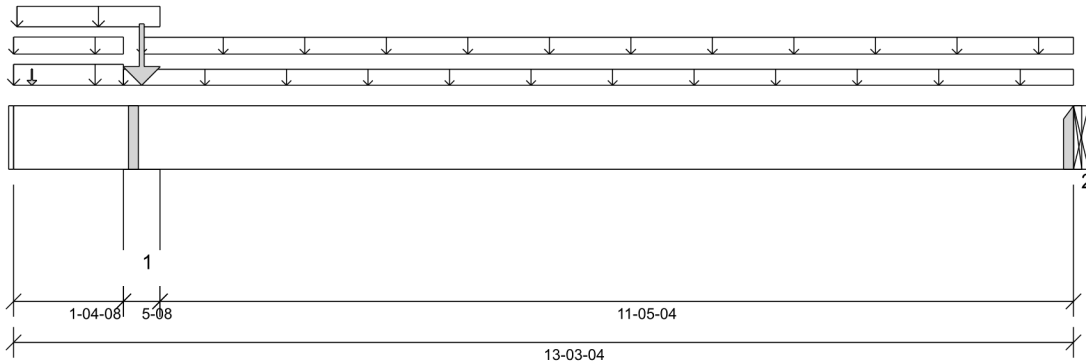
**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
 8.5.3.233.Update5.15

Report Version: 2021.03.26

05/24/2023 10:19



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

**Design Methodology:** LSD

**Service Condition:** Dry

**LL Deflection Limit:** L/180,

**TL Deflection Limit:** L/120,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 11'- 5 1/4"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 1'- 7 1/4"
- 615 psi Beam @ 13'- 3 1/4"

**PLY TO PLY CONNECTION:**  
 3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	7'- 9 1/8"	1.25D + 1.5L	0.68	1094 lb ft	15883 lb ft	Passed - 7%
Factored Neg. Moment:	1'- 7 1/4"	1.25D + 1.5S	0.65	454 lb ft	14368 lb ft	Passed - 3%
Factored Shear:	2'- 7 1/2"	1.25D + 1.5L	0.68	370 lb	7534 lb	Passed - 5%
Live Load (LL) Pos. Defl.:	7'- 5 1/4"	L		0.024"	L/360	Passed - L/999
Live Load (LL) Neg. Defl.:	0'	L		0.011"	L/180	Passed - L/999
Total Load (TL) Pos. Defl.:	7'- 6 7/8"	D + L		0.038"	L/240	Passed - L/999
Total Load (TL) Neg. Defl.:	0'	D + L		0.014"	L/120	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L + S	0.98	3400 lb		19542 lb	11560 lb	Passed - 29%
2	1-08	1.25D + 1.5L	0.68	406 lb		3722 lb	-	Passed - 11%

### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	HGUS410		-	-	-	Connector manually specified by the user.

\* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	13'- 3 1/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	1'- 4 1/2"	E43(i1378)	Top	30 lb/ft	-	80 lb/ft	-
Uniform	-0'	1'- 4 1/2"	FC4 Floor Decking (Plan View Fill)	Top	11 lb/ft	23 lb/ft	-	-
Uniform	0'- 1/2"	1'- 10"	E43(i1378)	Top	100 lb/ft	-	-	-
Uniform	1'- 4 1/2"	13'- 3 1/4"	FC4 Floor Decking (Plan View Fill)	Top	4 lb/ft	9 lb/ft	-	-
Uniform	1'- 7 1/4"	13'- 3 1/4"	FC4 Floor Decking (Plan View Fill)	Top	10 lb/ft	20 lb/ft	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	FC4 Floor Decking (Plan View Fill)	Top	23 lb	-	14 lb	-
Point	1'- 7 1/4"	1'- 7 1/4"	E43(i1378)	Top	896 lb	869 lb	-	-

### UNFACTORED REACTIONS


ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	1'- 4 1/2"	1'- 10"	E8(i310)	1330 lb	1068 lb	134 lb	-
2	13'- 3 1/4"	13'- 3 1/4"	B14(i1220)	120 lb	169/-2 lb	-10 lb	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051595 PG 1/2

	<b>BUILDER:</b> BAYVIEW WELLINGTON <b>SITE:</b> ALCONA SHORES <b>MODEL:</b> RL-1 <b>CITY:</b> INNISFIL	<b>Job Name:</b> RL-1 EL B <b>Level:</b> 2ND FLR FRAMING <b>Label:</b> B21 - i1176 <b>Type:</b> Beam	<b>2 Ply Member</b> <b>1 3/4" x 9 1/2" (2.0E 3100)</b> <b>WestFraser LVL</b>	<b>Status:</b> <b>Design Passed</b>
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- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 1. Required Load Area: L=1.500", W=3.500". LDF=0.98, Pf=2510 lb, Q'r=5460 lb, Result=45.97%.

#### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.







**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** ALCONA SHORES  
**MODEL:** RL-1  
**CITY:** INNISFIL

**Job Name:** RL-1 EL B  
**Level:** 2ND FLR FRAMING  
**Label:** B22 - I1325  
**Type:** Beam

**2 Ply Member**  
**1 3/4" x 9 1/2" (2.0E 3100)**  
**WestFraser LVL**

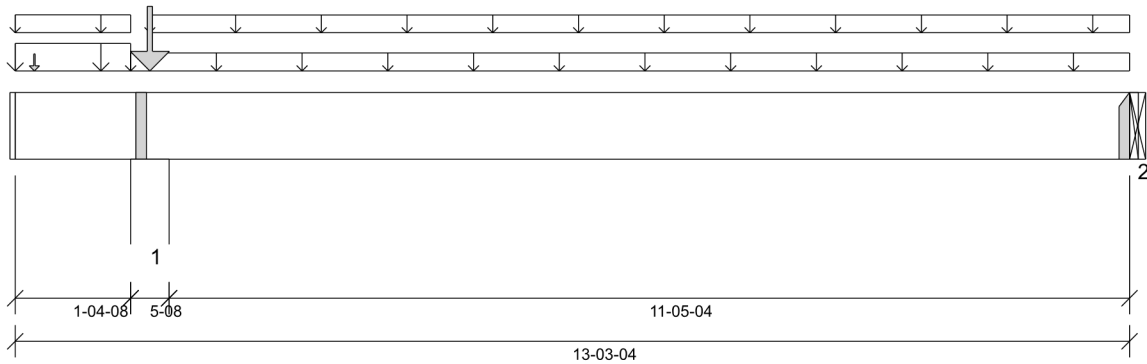
**Status:**  
**Design**  
**Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version  
8.5.3.233.Update5.15

Report Version: 2021.03.26

05/24/2023 10:19



### DESIGN INFORMATION

**Building Code:** NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)

**Design Methodology:** LSD

**Service Condition:** Dry

**LL Deflection Limit:** L/180,

**TL Deflection Limit:** L/120,

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 11'- 5 1/4"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 1'- 7 1/4"
- 615 psi Beam @ 13'- 3 1/4"

**PLY TO PLY CONNECTION:**  
**3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C**

PLY TO PLY CONNECTION ASSUMES ANY SUPPORTED BEAM HANGERS ARE FASTENED TO THIS BEAM WITH MIN. 3.5" FASTENERS.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	7'- 8"	1.25D + 1.5L	0.75	1631 lb ft	17492 lb ft	Passed - 9%
Factored Neg. Moment:	1'- 7 1/4"	1.25D + 1.5S	0.65	460 lb ft	14368 lb ft	Passed - 3%
Factored Shear:	2'- 7 1/2"	1.25D + 1.5L	0.75	524 lb	8297 lb	Passed - 6%
Live Load (LL) Pos. Defl.:	7'- 5 1/4"	L		0.037"	L/360	Passed - L/999
Live Load (LL) Neg. Defl.:	0'	L		0.016"	L/180	Passed - L/999
Total Load (TL) Pos. Defl.:	7'- 6 3/8"	D + L		0.057"	L/240	Passed - L/999
Total Load (TL) Neg. Defl.:	0'	D + L		0.023"	L/120	Passed - L/728

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L + S	1.00	4030 lb		20020 lb	11843 lb	Passed - 34%
2	1-08	1.25D + 1.5L	0.75	596 lb		4099 lb	-	Passed - 15%

### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	HGUS410		-	-	-	Connector manually specified by the user.
* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.						

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	13'- 3 1/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	1'- 4 1/2"	E45(i1376)	Top	130 lb/ft	-	80 lb/ft	-
Uniform	-0'	1'- 4 1/2"	FC4 Floor Decking (Plan View Fill)	Top	11 lb/ft	23 lb/ft	-	-
Uniform	1'- 4 1/2"	13'- 3 1/4"	FC4 Floor Decking (Plan View Fill)	Top	12 lb/ft	24 lb/ft	-	-
Uniform	1'- 7 1/4"	13'- 3 1/4"	FC4 Floor Decking (Plan View Fill)	Top	10 lb/ft	20 lb/ft	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	FC4 Floor Decking (Plan View Fill)	Top	23 lb	-	14 lb	-
Point	1'- 7 1/4"	1'- 7 1/4"	E45(i1376)	Top	1011 lb	1099 lb	-	-

### UNFACTORED REACTIONS


ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	1'- 4 1/2"	1'- 10"	E8(i310)	1445 lb	1388 lb	134 lb	-
2	13'- 3 1/4"	13'- 3 1/4"	B14(i1220)	168 lb	260/-2 lb	-10 lb	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.



STRUCTURAL COMPONENT ONLY  
DWG # TF23051596 PG 1/2

	<b>BUILDER:</b> BAYVIEW WELLINGTON <b>SITE:</b> ALCONA SHORES <b>MODEL:</b> RL-1 <b>CITY:</b> INNISFIL	<b>Job Name:</b> RL-1 EL B <b>Level:</b> 2ND FLR FRAMING <b>Label:</b> B22 - i1325 <b>Type:</b> Beam	<b>2 Ply Member</b> <b>1 3/4" x 9 1/2" (2.0E 3100)</b> <b>WestFraser LVL</b>	<b>Status:</b> <b>Design Passed</b>
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- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 1. Required Load Area: L=1.500", W=5.500". LDF=1.00, Pf=2912 lb, Q'r=8581 lb, Result=33.94%.

#### PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.



# NORDIC

## STRUCTURES

### Maximum Floor Spans – S2.1

#### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued oriented strand board (OSB) sheathing

#### Maximum Floor Spans

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

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

#### Notes:

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

# NORDIC STRUCTURES

## Maximum Floor Spans – S4.1

### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued oriented strand board (OSB) sheathing

### Maximum Floor Spans

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

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

### Notes:

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



# NORDIC STRUCTURES

## Maximum Floor Spans – S6.1

### Design Criteria

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

### Maximum Floor Spans

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

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

### Notes:

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

# NORDIC STRUCTURES

## Maximum Floor Spans – S7.1

### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued Canadian softwood plywood

### Maximum Floor Spans

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

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

### Notes:

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

# NORDIC STRUCTURES

## Maximum Floor Spans – M2.1

### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued oriented strand board (OSB) sheathing

### Maximum Floor Spans

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

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

### Notes:

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

# NORDIC STRUCTURES

## Maximum Floor Spans – M4.1

### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued oriented strand board (OSB) sheathing

### Maximum Floor Spans

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

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

### Notes:

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



# NORDIC STRUCTURES

## Maximum Floor Spans – M6.1

### Design Criteria

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

### Maximum Floor Spans

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

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

### Notes:

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

# NORDIC STRUCTURES

## Maximum Floor Spans – M7.1

### Design Criteria

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

### Maximum Floor Spans

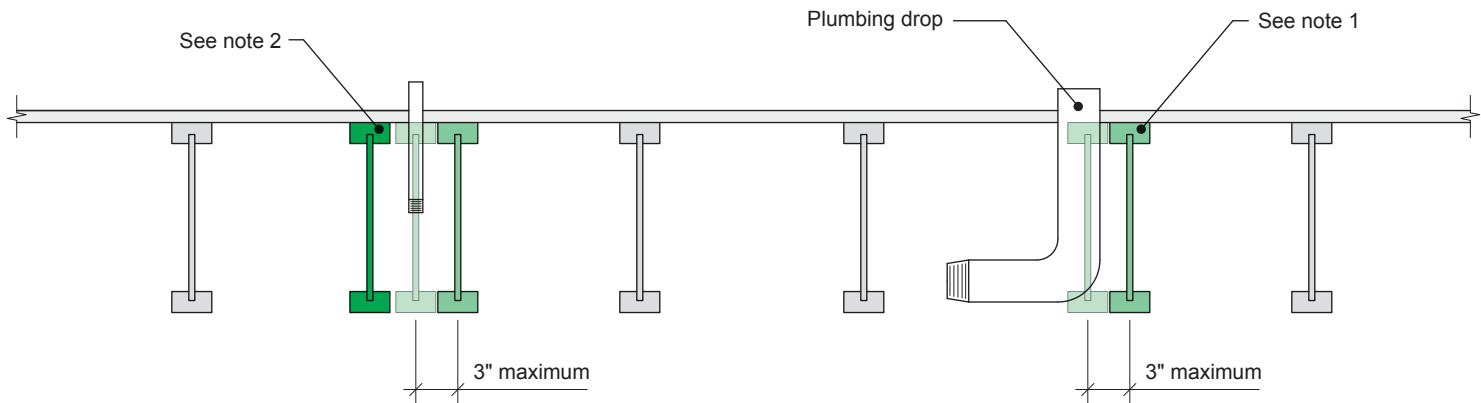
Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	14'-11"
	NI-60	17'-1"	16'-1"	15'-6"	14'-10"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

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

### Notes:

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

7c

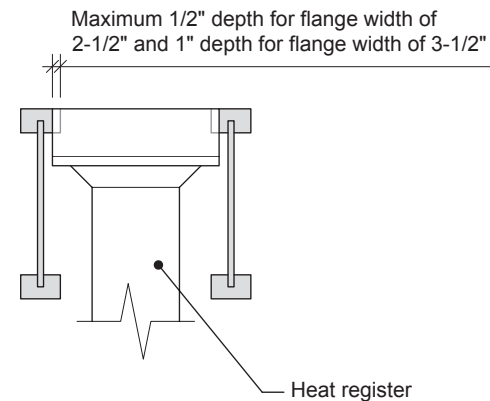
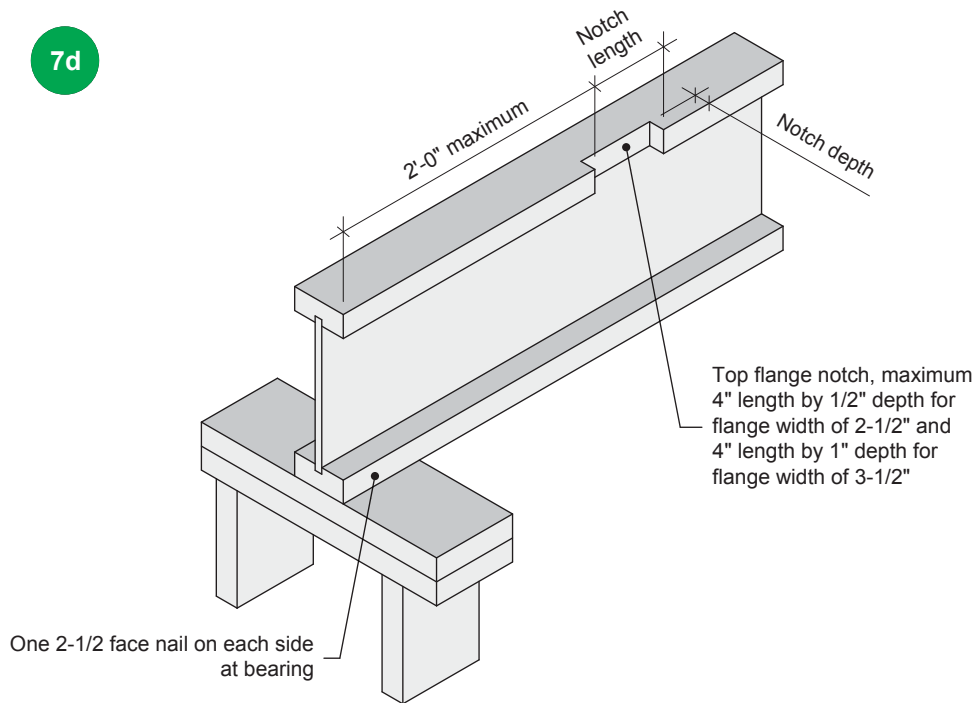


Notes:

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

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.

7d



- 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 length by 1/2-inch depth for flange width of 2-1/2 inches, and 4-inch length by 1-inch depth for flange width of 3-1/2 inches.
  - 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.

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.