

Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	30
J1DJ	12-00-00	9 1/2" NI-40x	2	8
J2	10-00-00	9 1/2" NI-40x	1	10
J3	8-00-00	9 1/2" NI-40x	1	5
J4	4-00-00	9 1/2" NI-40x	1	6
B3	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B4	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B12L	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B10L-5R	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B13L-5R	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B8L-5R	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B5	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B7	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B14L-5R	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/9.5
25	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
3	H1	IUS2.56/9.5
1	H2	HUS1.81/10
2	H3	HU310-2
2	H4C	HUC410
2	H4	HGUS410

DATE: 5/25/23

1st FLOOR FRAMING



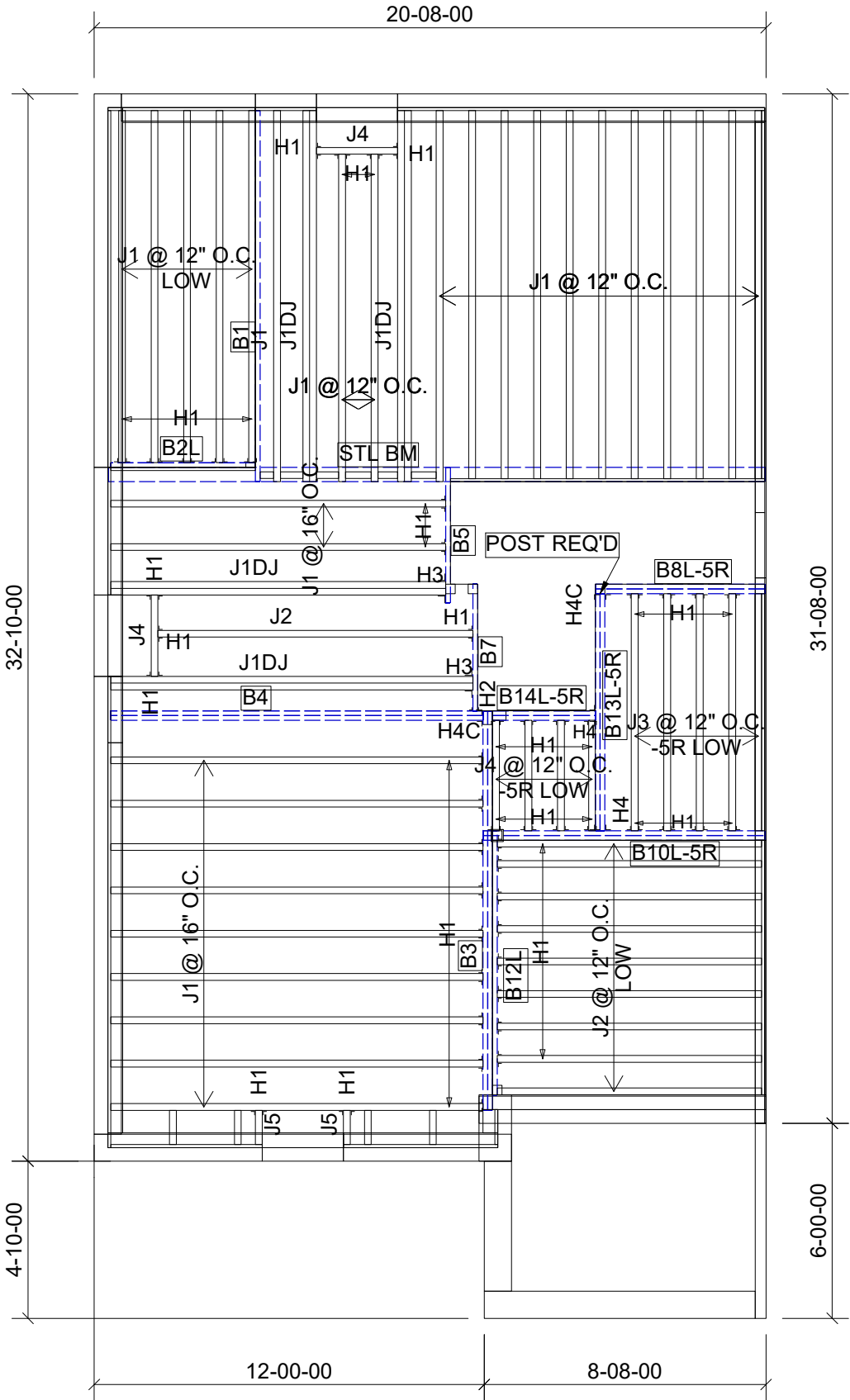
FROM PLAN DATED: JULY 2019  
BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-5E  
ELEVATION: A  
LOT:  
CITY: INNISFIL  
SALESMAN: WILL GARCIA  
DESIGNER: AJ  
REVISION: lbv

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



Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	30
J1DJ	12-00-00	9 1/2" NI-40x	2	8
J2	10-00-00	9 1/2" NI-40x	1	10
J3	8-00-00	9 1/2" NI-40x	1	5
J4	4-00-00	9 1/2" NI-40x	1	6
J5	2-00-00	9 1/2" NI-40x	1	2
B3	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	1	1
B4	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B12L	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B10L-5R	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B13L-5R	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B2L	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B5	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B8L-5R	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
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Connector Summary		
Qty	Manuf	Product
16	H1	IUS2.56/9.5
25	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
5	H1	IUS2.56/9.5
1	H2	HUS1.81/10
2	H3	HU310-2
2	H4C	HUC410
2	H4	HGUS410



FROM PLAN DATED: JULY 2019  
BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-5E  
ELEVATION: A  
LOT:  
CITY: INNISFIL  
SALESMAN: WILL GARCIA  
DESIGNER: AJ  
REVISION: lbv

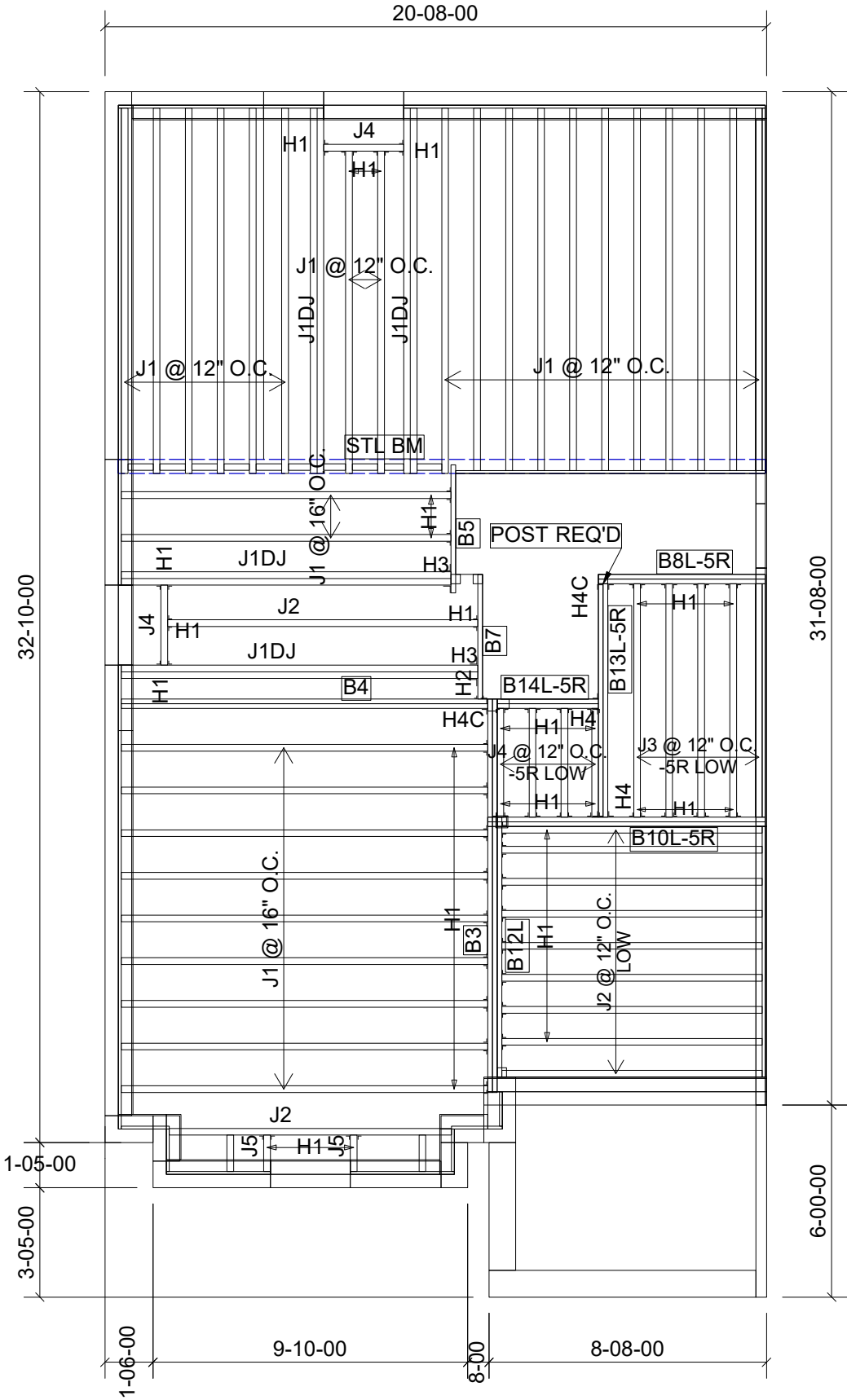
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FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 6 AND TABLES 6.1/6.2.  
**CERAMIC TILE** APPLICATION AS PER OBC 9.30.6.

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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:** 3/4" GLUED AND NAILED

DATE: 2023-05-10

1st FLOOR FRAMING  
SUNKEN MUDROOM



Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	30
J1DJ	12-00-00	9 1/2" NI-40x	2	8
J2	10-00-00	9 1/2" NI-40x	1	11
J3	8-00-00	9 1/2" NI-40x	1	5
J4	4-00-00	9 1/2" NI-40x	1	6
J5	2-00-00	9 1/2" NI-40x	1	2
B3	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B4	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
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B5	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
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B14L-5R	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/9.5
25	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
5	H1	IUS2.56/9.5
1	H2	HUS1.81/10
2	H3	HU310-2
2	H4C	HUC410
2	H4	HGUS410

DATE: 5/25/23

1st FLOOR FRAMING



FROM PLAN DATED: JULY 2019  
BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-5E  
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.  
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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.

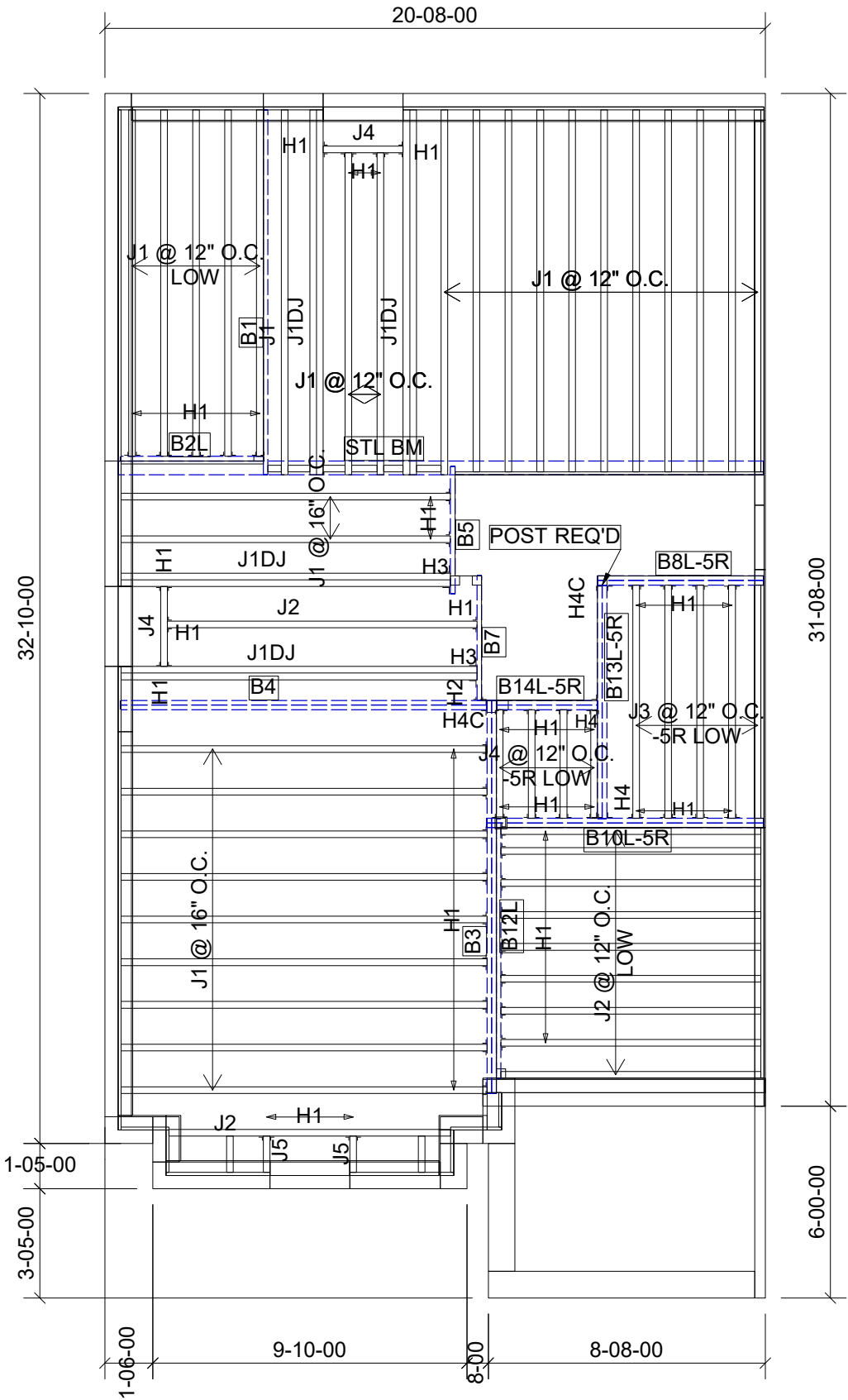
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**LOADING:**  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft<sup>2</sup>  
TILE LOAD: +5.0 lb/ft<sup>2</sup>

JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 3/4" GLUED AND NAILED





Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	30
J1DJ	12-00-00	9 1/2" NI-40x	2	8
J2	10-00-00	9 1/2" NI-40x	1	11
J3	8-00-00	9 1/2" NI-40x	1	5
J4	4-00-00	9 1/2" NI-40x	1	6
J5	2-00-00	9 1/2" NI-40x	1	2
B3	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	1	1
B4	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B12L	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
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B5	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B7	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B14L-5R	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
25	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
5	H1	IUS2.56/9.5
1	H2	HUS1.81/10
2	H3	HU310-2
2	H4C	HUC410
2	H4	HGUS410

DATE: 2023-05-10

1st FLOOR FRAMING  
SUNKEN MUDROOM



FROM PLAN DATED: JULY 2019  
BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-5E  
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.

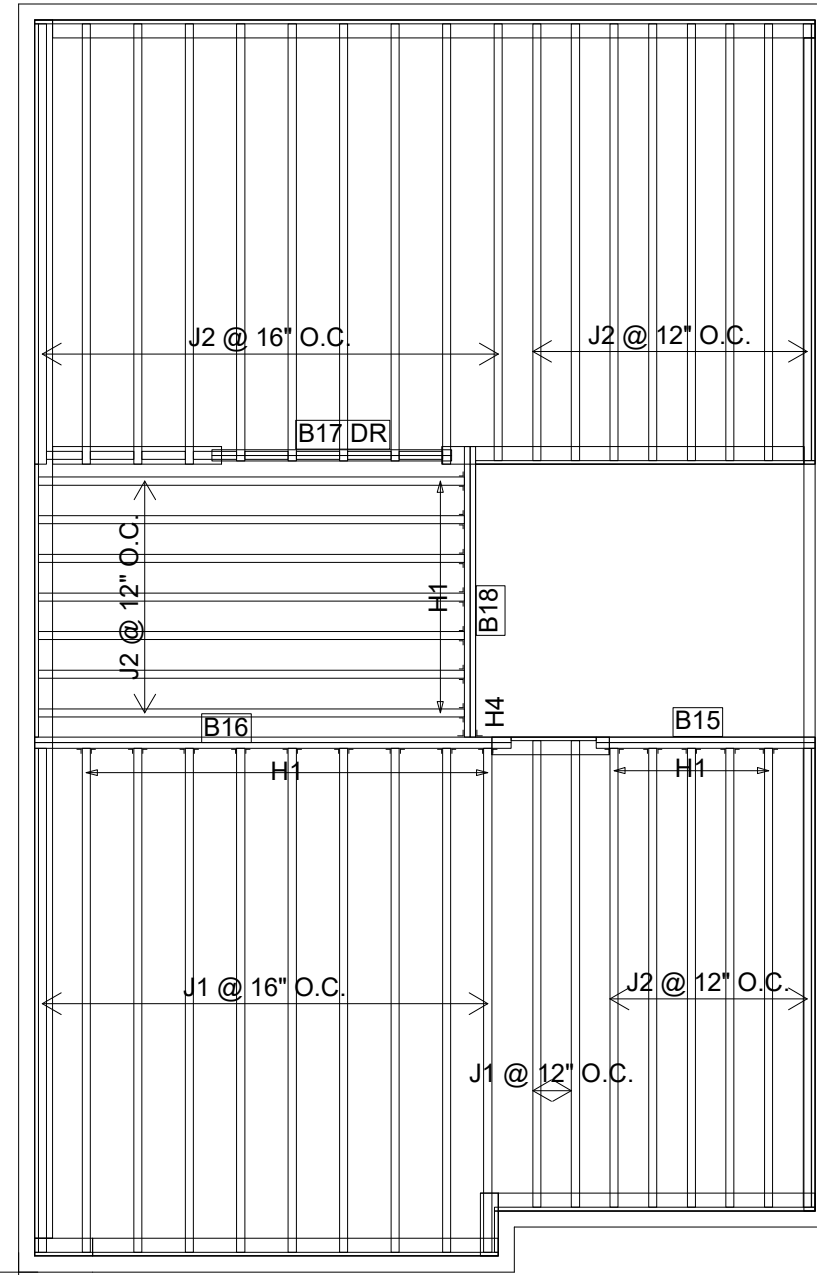
ALL **CONNECTORS** MUST BE INSTALLED AS PER THE **MANUFACTURER'S SPECIFICATIONS** USING THE MANUFACTURER **SPECIFIED FASTENERS**.  
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**LOADING:**  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft<sup>2</sup>  
TILE LOAD: +5.0 lb/ft<sup>2</sup>

JOIST LL DEFLECTION LIMIT: L/480

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





Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	12
J2	12-00-00	9 1/2" NI-40x	1	31
B16	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B17 DR	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B18	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B15	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
1	H4	HGUS410



FROM PLAN DATED: JULY 2019  
BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-5E  
ELEVATION: A  
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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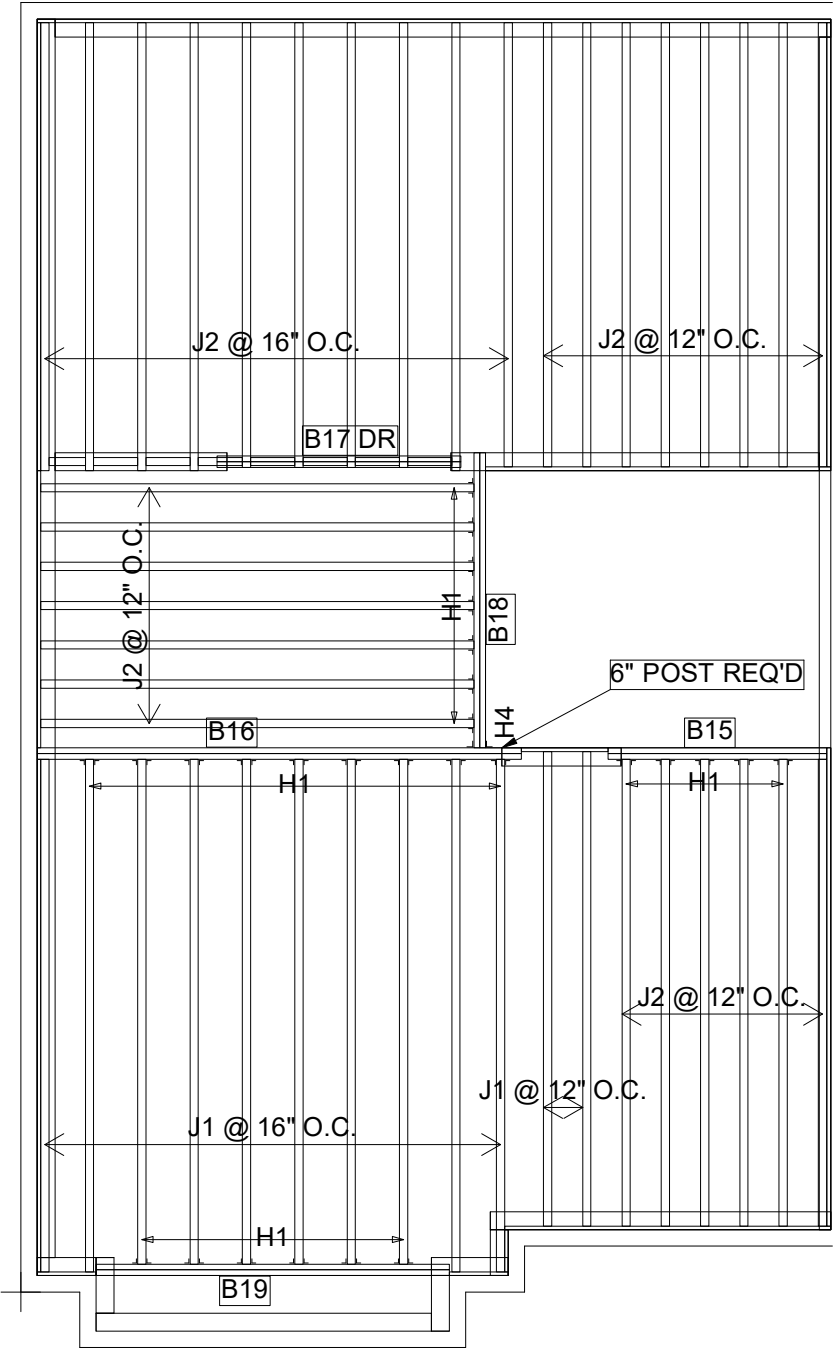
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ALL **BEAM HANGER FASTENERS** INSTALLED INTO THE **SUPPORTING MEMBER MUST** BE A MINIMUM OF **3.5"** IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD.

**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: 5/25/23

2nd FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	12
J2	12-00-00	9 1/2" NI-40x	1	31
B16	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B19	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B17 DR	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B18	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B15	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

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



FROM PLAN DATED: JULY 2019  
BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-5E  
ELEVATION: B  
LOT:  
CITY: INNISFIL  
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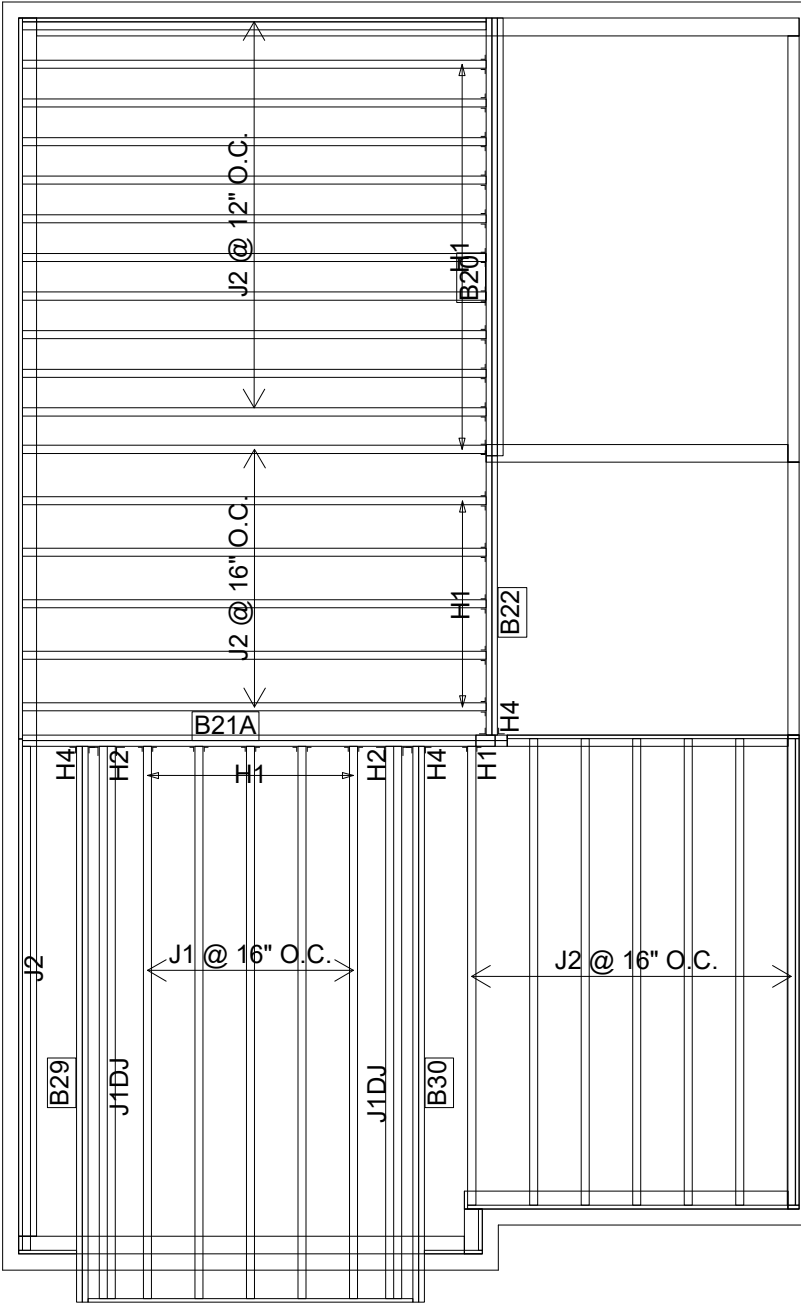
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**LOADING:**  
LIVE LOAD: 40.0 lb/ft²  
DEAD LOAD: 15.0 lb/ft²  
TILE LOAD: +5.0 lb/ft²  
  
JOIST LL DEFLECTION LIMIT: L/480  
**SUBFLOOR:** 5/8" GLUED AND NAILED

DATE: 5/25/23

2nd FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	5
J1DJ	16-00-00	9 1/2" NI-40x	2	4
J2	14-00-00	9 1/2" NI-40x	1	25
B29	16-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B30	16-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B21A	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B20	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3
B22	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2

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



FROM PLAN DATED: JULY 2019  
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MODEL: RL-5E  
ELEVATION: A  
LOT:  
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SALESMAN: WILL GARCIA  
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DEAD LOAD: 15.0 lb/ft<sup>2</sup>  
TILE LOAD: +5.0 lb/ft<sup>2</sup>

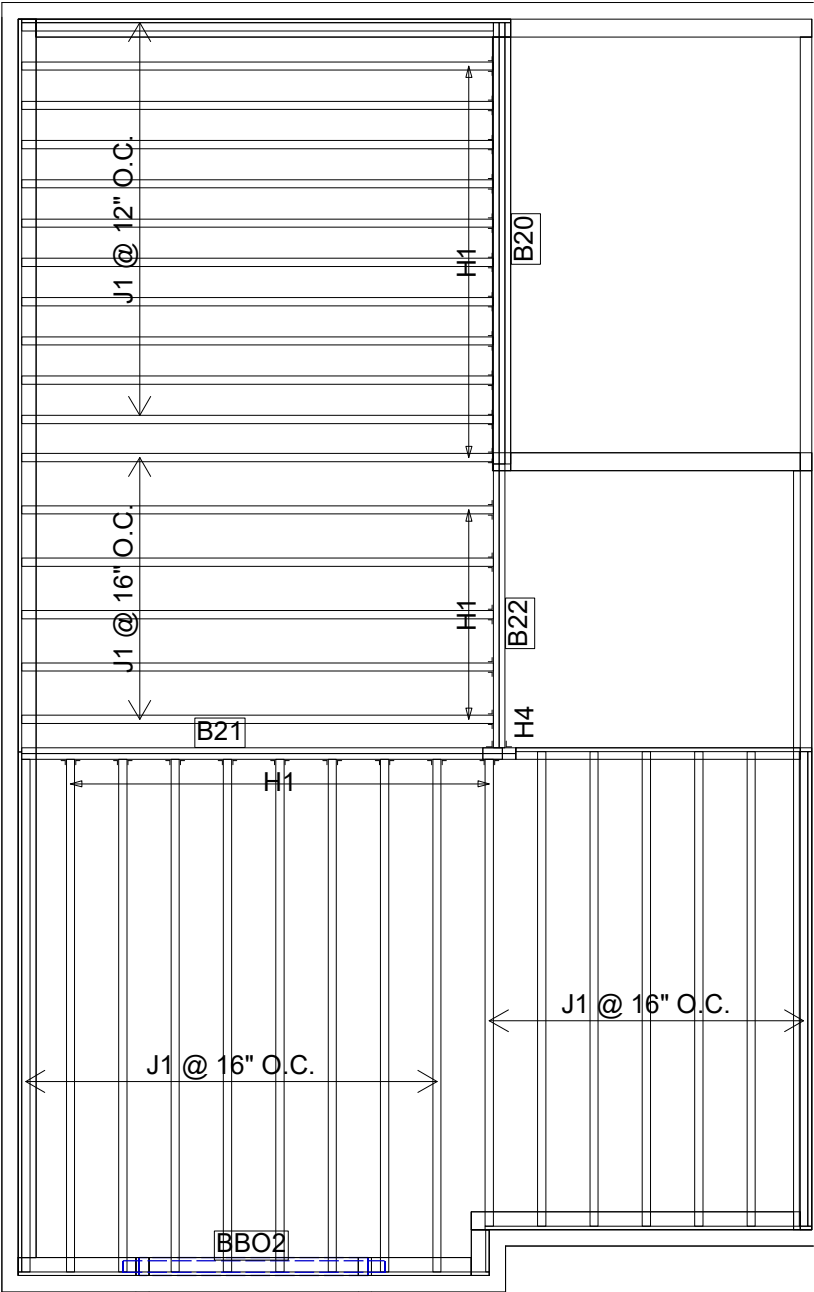
JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 5/25/23

3rd FLOOR FRAMING





Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	33
B21	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B20	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3
B22	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: JULY 2019  
BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-5E  
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: 5/8" GLUED AND NAILED**

DATE: 5/25/23

3rd FLOOR FRAMING

# NORDIC

INSTALLATION GUIDE  
NORDIC JOIST

NS-G133  **ENGLISH**  
VERSION  
2020-10-01

Engineered Wood Products

## BASIC INSTALLATION GUIDE FOR RESIDENTIAL FLOORS

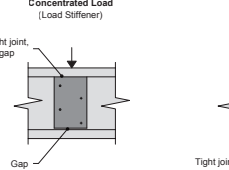
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JOIST**

**NORDIC**  
STRUCTURES

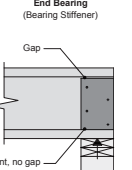
nordic.ca

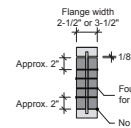
### WEB STIFFENERS

**2**  
**Concentrated Load**  
(Load Stiffener)



**End Bearing**  
(Bearing Stiffener)

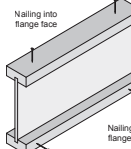




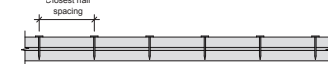
**Stiffener Size Requirements**

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

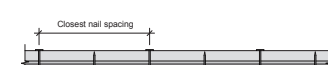
### NAIL SPACING



**Nailed to Only One Flange Edge (Top View)**



**Nailed to Both Flange Edges (Top View)**

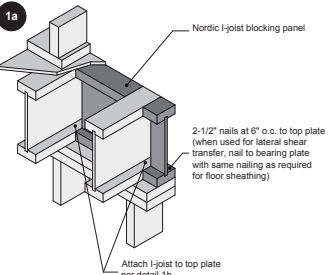


**Recommended Closest Nail Spacing for Fastening Sheathing to Joist Flanges to Minimize Splitting**

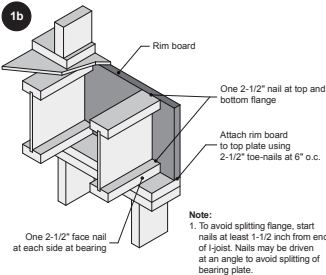
Fastener size (diameter x length)	Flange face nailing <sup>(a)</sup>			Flange edge nailing <sup>(a)</sup>		
	End distance (in.)	Nail spacing (in.)	End distance (in.)	Nailed to only one flange edge	Nailed to both flange edges	
0.125" or smaller in diameter, and 3-1/4" or shorter in length	2	2	2	2	4	
Greater than 0.125" up to 0.145" 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.

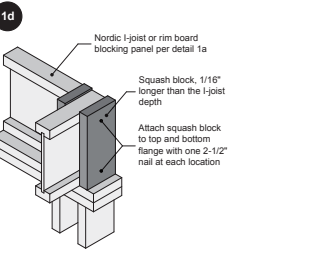
**1a**



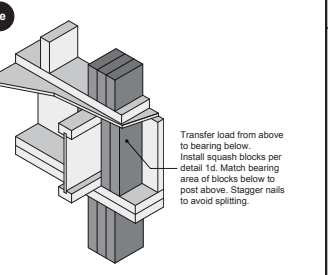
**1b**



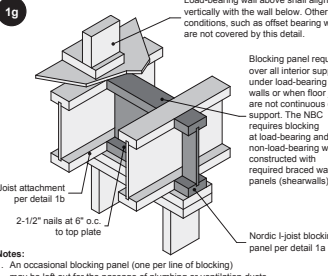
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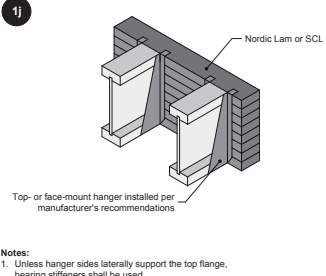
**1e**



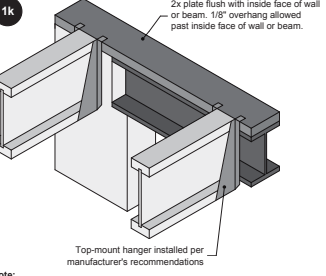
**1g**



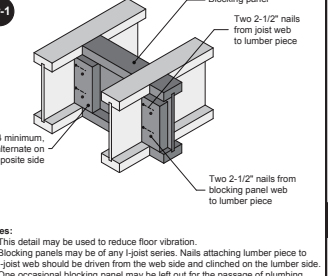
**1j**



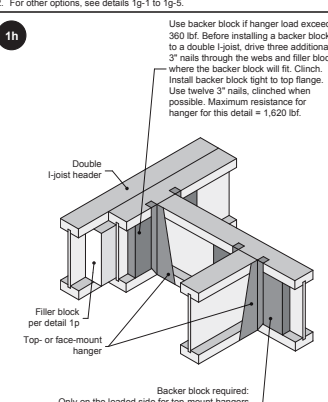
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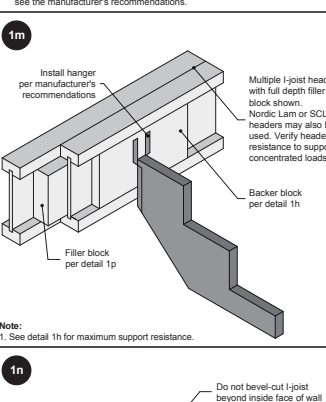
**1r-1**



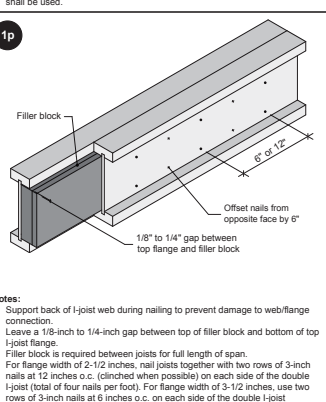
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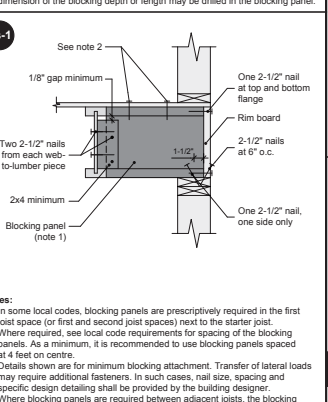
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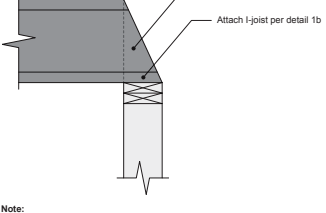
**1p**



**1s-1**



**1n**



### INSTALLING NORDIC I-JOISTS

- Installation of Nordic I-joists shall be as shown in details 1.
- Except for cutting to length, I-joist flanges should never be cut, drilled or notched.
- Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
- 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.
- I-joists must be protected from the weather prior to installation.
- 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.
- 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.
- Ends of floor joists shall be restrained to prevent rollover. Use rim board or I-joist blocking panels.
- 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.
- 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.
- 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.
- 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).
- Details 1 show only I-joist-specific fastener requirements. For other fastener requirements, see the applicable building code.
- 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.

### 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** 2400F MSR  
7/16 in. web

**Depths**  
9-1/2, 11-7/8, 14 and 16 in.

23 pieces per unit

**NI-90**  
**2x4** 2400F MSR  
7/16 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

### 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:**

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

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

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.

### WEB HOLES AND OPENINGS

#### WEB HOLES IN I-JOISTS

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

- 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.
- I-joist top and bottom flanges must never be cut, notched or otherwise modified.
- Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole 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.
- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole - or twice the length of the longest side of the longest rectangular hole - and each hole must be sized and located in compliance with the requirements of Table 6.1.
- 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.
- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
- All holes shall be cut in accordance with the restrictions listed above and as illustrated in detail 6a.
- Limit three maximum-size holes per span.
- 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.

#### DUCT CHASE OPENINGS

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

- 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.
- I-joist top and bottom flanges must never be cut, notched or otherwise modified.
- 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.
- All openings shall be cut in accordance with the restrictions listed above and as illustrated in detail 6b.
- Limit one maximum-size duct chase opening per span.

#### HOLES IN BLOCKING PANELS

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

- 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 aside applies. For other applications, contact Nordic Structures.
- 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.
  - 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 (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.

**Notes:**

- Never drill, cut or notch the flange, or over-cut the web.
- Holes in web should be cut with a sharp saw.
- For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch-diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

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"	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"	8'-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"	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-90	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'-5"	15'-4"		

**Notes:**

- Tabulated values are applicable to residential floor construction meeting the above design criteria.
- 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	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"								
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'-6"	8'-0"	8'-6"	9'-0"	9'-3"	9'-8"	-	-								
	NI-90	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-8"								
14"	NI-20	6'-1"	6'-7"	7'-0"	7'-6"	8'-0"	8'-6"	9'-1"	9'-6"	-								
	NI-40x	6'-1"	6'-7"	7'-0"	7'-6"	8'-0"	8'-6"	9'-1"	9'-6"	-								
	NI-60	6'-9"	6'-9"	6'-9"	6'-9"	6'-9"	6'-9"	6'-9"	6'-9"	-								
	NI-90	9'-2"	9'-8"	10'-0"	10'-6"	10'-11"	11'-5"	11'-9"	12'-4"	12'-11"								
16"	NI-20	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	13'-2"	-	-								
	NI-40x	10'-4"	10'-9"	11'-3"	11'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'-4"								
	NI-60	10'-4"	10'-9"	11'-3"	11'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'-4"								
	NI-90	10'-4"	10'-9"	11'-3"	11'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'-4"								


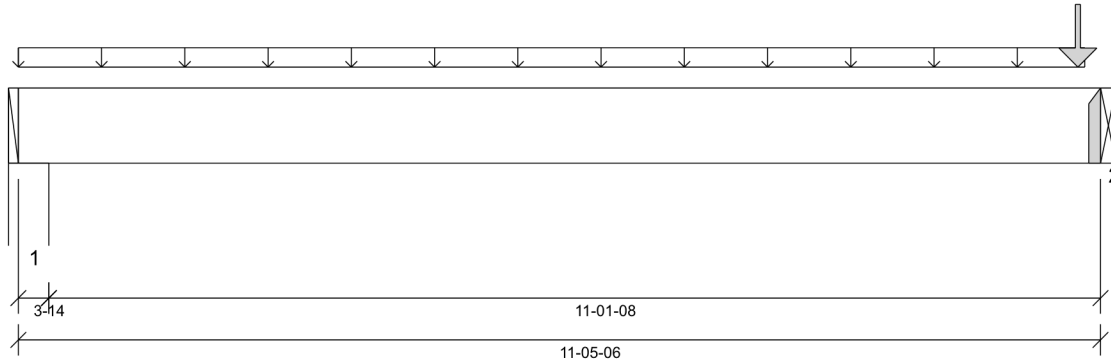
	BUILDER: BAYVIEW WELLINGTON SITES: 152:48 AM jayco MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E Level: 1ST FLR FRAMING Label: B4 - i5012 Type: Beam	2 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: <b>Design Passed</b>
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Illustration Not 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      05/25/2023 10:51



#### 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: 10'- 9 3/4"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2 7/8"
- 615 psi Beam @ 11'- 5 3/8"

**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'- 7/8"	1.25D + 1.5L	1.00	1913 lb ft	23299 lb ft	Passed - 8%
Factored Shear:	1'- 1 3/8"	1.25D + 1.5L	1.00	559 lb	11052 lb	Passed - 5%
Live Load (LL) Pos. Defl.:	5'- 11 1/16"	L		0.038"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 10 15/16"	D + L		0.065"	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	3-14	1.25D + 1.5L	1.00	694 lb		14105 lb	8344 lb	Passed - 8%
2	1-08	1.25D + 1.5L	1.00	1782 lb		5460 lb	-	Passed - 33%

#### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories		
			Top	Face	Member			
2	HUC410		-	-	-	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'	11'- 5 3/8"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	11'- 3 3/8"	FC3 Floor Decking (Plan View Fill)	Top	24 lb/ft	47 lb/ft	-	-
Point	11'- 2 1/2"	11'- 2 1/2"	B7(i5011)	Back	287 lb	556 lb	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 7/8"	W1(i9)	194 lb	278 lb	-	-
2	11'- 5 3/8"	11'- 5 3/8"	B3(i5010)	471 lb	818 lb	-	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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 # TF23051678




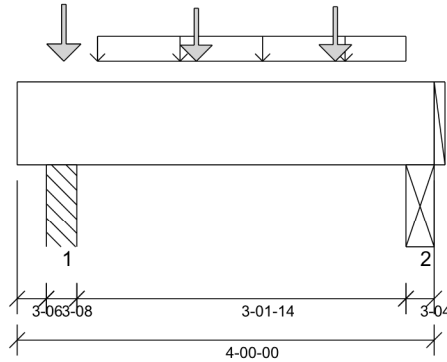
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#### DESIGN INFORMATION

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 Column @ 0'- 5 1/8"
- 534 psi Beam @ 3'- 9 3/4"

#### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 9 9/16"	1.25D + 1.5L	1.00	979 lb ft	11650 lb ft	Passed - 8%
Factored Shear:	2'- 11 1/4"	1.25D + 1.5L	1.00	889 lb	5526 lb	Passed - 16%

#### 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	1498 lb		6370 lb	3767 lb	Passed - 40%
2	3-04	1.25D + 1.5L	1.00	1098 lb		5915 lb	3037 lb	Passed - 36%

#### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'- 9 1/4"	3'- 8 3/4"	User Load	Top	60 lb/ft	120 lb/ft	-	-
Point	0'- 5 3/8"	0'- 5 3/8"	J1DJ(i4849)	Back	148 lb	295 lb	-	-
Point	1'- 8 5/8"	1'- 8 5/8"	J1(i4843)	Back	134 lb	268 lb	-	-
Point	3'- 5/8"	3'- 5/8"	J1(i4860)	Back	139 lb	278 lb	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'- 3 3/8"	0'- 6 7/8"	PBO1(i29)	360 lb	700 lb	-	-
2	3'- 8 3/4"	4'	STL BM(i19)	264 lb	510 lb	-	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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.
- The deflection at the cantilever for either live and/or total loads is less than 3/8" and therefore has been excluded from the deflection ratio considerations.
- 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 # TF23051679


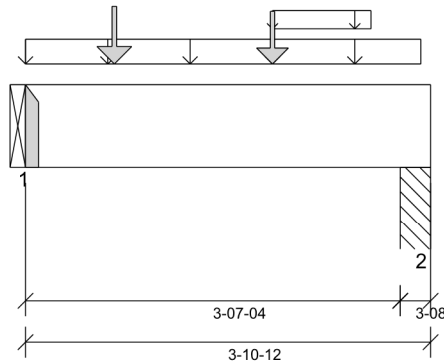
	BUILDER: BAYVIEW WELLINGTON SITE: ALCONA SHORES MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E Level: 1ST FLR FRAMING Label: B7 - i5011 Type: Beam	1 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: <b>Design Passed</b>
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Illustration Not to 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 05/25/2023 10:51



### 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'- 5"

#### Factored Resistance of Support Material:

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

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 1 5/16"	1.25D + 1.5L	1.00	1129 lb ft	11650 lb ft	Passed - 10%
Factored Shear:	0'- 9 1/2"	1.25D + 1.5L	1.00	986 lb	5526 lb	Passed - 18%

### 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	1192 lb		2730 lb	-	Passed - 44%
2	3-08	1.25D + 1.5L	1.00	1104 lb		6370 lb	3767 lb	Passed - 29%

### 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'- 9 5/8"	User Load	Top	60 lb/ft	120 lb/ft	-	-
Uniform	2'- 4 1/2"	3'- 3 7/8"	FC3 Floor Decking (Plan View Fill)	Top	18 lb/ft	36 lb/ft	-	-
Point	0'- 10 1/4"	0'- 10 1/4"	J1DJ(i4842)	Back	151 lb	302 lb	-	-
Point	2'- 4 1/2"	2'- 4 1/2"	J2(i4558)	Back	133 lb	267 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B4(i5012)	287 lb	556 lb	-	-
2	3'- 7 1/4"	3'- 10 3/4"	PBO2(i30)	266 lb	514 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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 # TF23051680


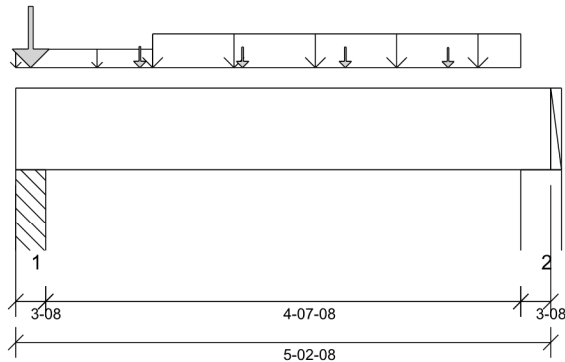
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Illustration Not to Scale. Pitch: 0/12      Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15      Report Version: 2021.03.26      05/25/2023 10:51



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

**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.



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051681

ANALYSIS RESULTS						
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 8 1/2"	1.25D + 1.5L	1.00	2209 lb ft	23299 lb ft	Passed - 9%
Factored Neg. Moment:	0'- 2 1/2"	1.25D + 1.5L + S	1.00	181 lb ft	23299 lb ft	Passed - 1%
Factored Shear:	4'- 1 1/2"	1.25D + 1.5L	1.00	1662 lb	11052 lb	Passed - 15%
Total Load (TL) Pos. Defl.:	2'- 7 11/16"	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	3-08	1.25D + 1.5L + S	1.00	4406 lb		12740 lb	7534 lb	Passed - 58%
2	3-08	1.25D + 1.5L	1.00	1794 lb		12740 lb	7536 lb	Passed - 24%

SPECIFIED LOADS								
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 2 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	1'- 4"	User Load	Top	60 lb/ft	-	-	-
Uniform	1'- 4"	4'- 11"	User Load	Back	120 lb/ft	240 lb/ft	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	B13L-5R(i4872)	Front	857 lb	1198 lb	5 lb	-
Point	1'- 2 1/2"	1'- 2 1/2"	J3(i4519)	Front	86 lb	171 lb	-	-
Point	2'- 2 1/2"	2'- 2 1/2"	J3(i4520)	Front	79 lb	158 lb	-	-
Point	3'- 2 1/2"	3'- 2 1/2"	J3(i4520)	Front	79 lb	158 lb	-	-
Point	4'- 2 1/2"	4'- 2 1/2"	J3(i4525)	Front	71 lb	142 lb	-	-

UNFACTORED REACTIONS							
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	PBO9(i68)	1312 lb	1890 lb	5 lb	-
2	4'- 11"	5'- 2 1/2"	W22(i37)	419 lb	797 lb	-	-

**DESIGN NOTES**

- The dead loads used in the design of this member were applied to the structure as sloped 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=2873 lb, Q'r=8493 lb, Result=33.83%.

**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.




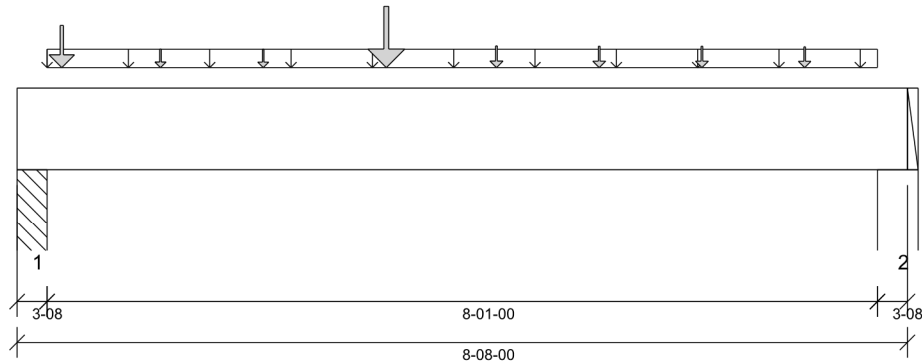
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Illustration Not to Scale. Pitch: 0/12      Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15      Report Version: 2021.03.26      05/25/2023 10:51



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,

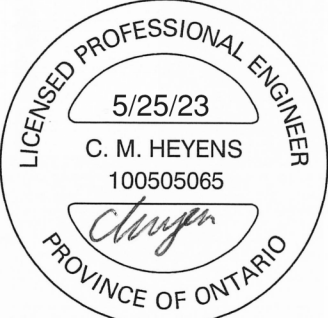
**Lateral Restraint Requirements:**  
 Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:  
 Top: 0'- 3 1/2"      Bottom: 0'- 9 3/4"

**Factored Resistance of Support Material:**

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



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051682

ANALYSIS RESULTS						
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 7 1/4"	1.25D + 1.5L + S	1.00	7464 lb ft	23299 lb ft	Passed - 32%
Factored Shear:	1'- 1"	1.25D + 1.5L + S	1.00	2701 lb	11052 lb	Passed - 24%
Live Load (LL) Pos. Defl.:	4'- 2 3/4"	L + 0.5S		0.065"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 2 3/4"	D + L + 0.5S		0.122"	L/240	Passed - L/794

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	3896 lb		12739 lb	7533 lb	Passed - 52%
2	3-08	1.25D + 1.5L + S	1.00	2429 lb		12740 lb	7536 lb	Passed - 32%

SPECIFIED LOADS								
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 8"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'- 3 1/2"	8'- 4 1/2"	User Load	Top	60 lb/ft	-	-	-
Point	0'- 5 3/16"	0'- 5 3/16"	-	Back	367 lb	674 lb	-	-
Point	1'- 4 3/4"	1'- 4 3/4"	J4(i4866)	Back	42 lb	84 lb	-	-
Point	2'- 4 3/4"	2'- 4 3/4"	J4(i4853)	Back	39 lb	78 lb	-	-
Point	3'- 7 1/8"	3'- 7 1/8"	-	Back	760 lb	1015 lb	5 lb	-
Point	4'- 8"	4'- 8"	J3(i4519)	Back	83 lb	165 lb	-	-
Point	5'- 8"	5'- 8"	J3(i4520)	Back	79 lb	158 lb	-	-
Point	6'- 8"	6'- 8"	J3(i4520)	Back	79 lb	158 lb	-	-
Point	7'- 8"	7'- 8"	J3(i4525)	Back	71 lb	142 lb	-	-

UNFACTORED REACTIONS							
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	PBO4(i39)	1251 lb	1578 lb	3 lb	-
2	8'- 4 1/2"	8'- 8"	W22(i37)	836 lb	896 lb	2 lb	-

**DESIGN NOTES**

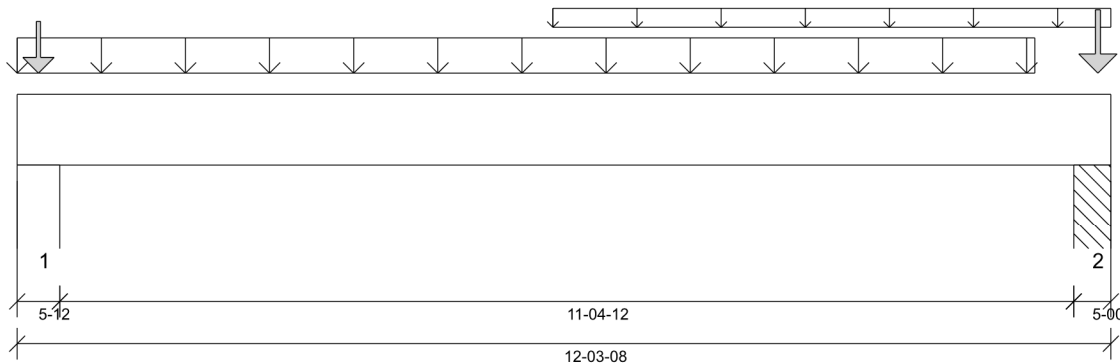
- The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been 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.

<b>MI</b> <b>Mitek</b>	BUILDER: BAYVIEW WELLINGTON SITES: 152:49 AM jayco MODEL: RL 5E CITY: INNISFIL	Job Name: RL-5E Level: 1ST FLR FRAMING Label: B3 - i5010 Type: Beam	<b>2 Ply Member</b> <b>1 3/4" x 9 1/2" (2.0E 3100)</b> <b>WestFraser LVL</b>	Status: <b>Design Passed</b>
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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 05/25/2023 10:51



#### 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'- 4 3/4"
- 615 psi Column @ 11'- 11 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'- 9 1/4"	1.25D + 1.5L	1.00	8873 lb ft	23299 lb ft	Passed - 38%
Factored Neg. Moment:	0'- 4 3/4"	1.25D + 1.5L	1.00	401 lb ft	23299 lb ft	Passed - 2%
Factored Shear:	11'- 1"	1.25D + 1.5L	1.00	2954 lb	11052 lb	Passed - 27%
Live Load (LL) Pos. Defl.:	6'- 2 3/16"	L		0.185"	L/360	Passed - L/739
Total Load (TL) Pos. Defl.:	6'- 2 5/8"	D + L		0.310"	L/240	Passed - L/440

#### 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	5-12	1.25D + 1.5L	1.00	4902 lb		20930 lb	12381 lb	Passed - 40%
2	5-00	1.25D + 1.5L	1.00	4922 lb		18200 lb	10763 lb	Passed - 46%

#### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 3 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	11'- 5 1/4"	Smoothed Load	Back	123 lb/ft	245 lb/ft	-	-
Uniform	6'- 1/4"	12'- 3 1/2"	User Load	Top	60 lb/ft	-	-	-
Point	12'- 1 3/4"	12'- 1 3/4"	B4(i5012)	Back	471 lb	818 lb	-	-
Point	0'- 2 7/8"	0'- 2 7/8"	E5(i280)	Top	365 lb	611 lb	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 3/4"	W16(i15)	1317 lb	2212 lb	-	-
2	11'- 10 1/2"	12'- 3 1/2"	PBO3(i33)	1427 lb	2049 lb	-	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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 # TF23051683


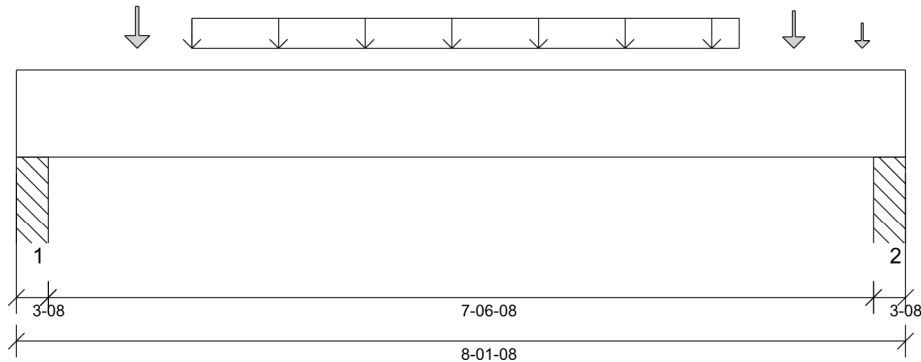
	BUILDER: BAYVIEW WELLINGTON SITE: ALCONA SHORES MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E Level: 1ST FLR FRAMING Label: B12L - i2425 Type: Beam	1 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: <b>Design Passed</b>
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Illustration Not 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      05/25/2023 10:51



#### 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'- 3 1/2"      Bottom: 0'- 9 1/2"

#### Factored Resistance of Support Material:

- 615 psi Column @ 0'- 2 1/2"
- 615 psi Column @ 7'- 11"

#### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 1 1/4"	1.25D + 1.5L	1.00	2686 lb ft	11650 lb ft	Passed - 23%
Factored Shear:	7'- 1/2"	1.25D + 1.5L	1.00	1352 lb	5526 lb	Passed - 24%
Live Load (LL) Pos. Defl.:	4'- 3/4"	L		0.054"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 3/4"	D + L		0.083"	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	1260 lb		6370 lb	3767 lb	Passed - 33%
2	3-08	1.25D + 1.5L	1.00	1358 lb		6370 lb	3767 lb	Passed - 36%

#### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 1 1/2"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	1'- 7 1/4"	6'- 7 1/4"	Smoothed Load	Front	83 lb/ft	166 lb/ft	-	-
Point	1'- 1 1/4"	1'- 1 1/4"	J2(i2698)	Front	87 lb	175 lb	-	-
Point	7'- 1 1/4"	7'- 1 1/4"	J2(i2598)	Front	72 lb	144 lb	-	-
Point	7'- 8 3/4"	7'- 8 3/4"	J2(i2600)	Front	30 lb	61 lb	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	PBO6(i42)	309 lb	580 lb	-	-
2	7'- 10"	8'- 1 1/2"	PBO7(i43)	333 lb	630 lb	-	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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 # TF23051684




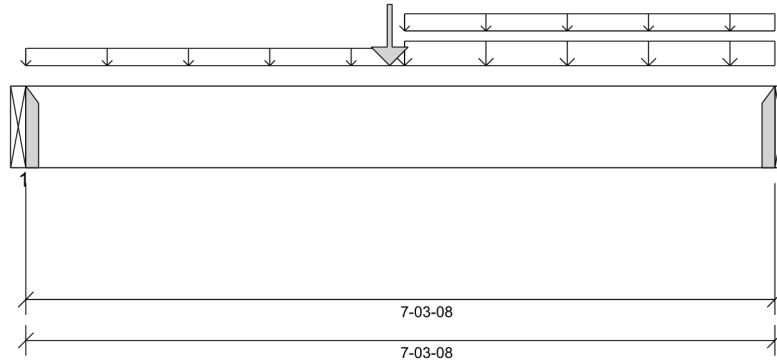
	BUILDER: BAYVIEW WELLINGTON SITE: ALCONA SHORES MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E Level: 1ST FLR FRAMING Label: B13L-5R - i4872 Type: Beam	2 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: <b>Design Passed</b>
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Illustration Not 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      05/25/2023 10:51



#### 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'- 7 1/4"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Beam @ 7'- 3 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:	3'- 6 1/2"	1.25D + 1.5L + S	1.00	8201 lb ft	23299 lb ft	Passed - 35%
Factored Shear:	6'- 6"	1.25D + 1.5L + S	1.00	2531 lb	11052 lb	Passed - 23%
Live Load (LL) Pos. Defl.:	3'- 7 7/8"	L + 0.5S		0.055"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 7 3/4"	D + L + 0.5S		0.097"	L/240	Passed - L/905

#### 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 + S	1.00	2452 lb		5460 lb	-	Passed - 45%
2	1-08	1.25D + 1.5L + S	1.00	2798 lb		5460 lb	-	Passed - 51%

#### 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'- 3 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	3'- 8 1/4"	FC2 Floor Decking (Plan View Fill)	Top	13 lb/ft	26 lb/ft	-	-
Uniform	3'- 8 1/4"	7'- 3 1/2"	User Load	Top	60 lb/ft	120 lb/ft	-	-
Uniform	3'- 8 1/4"	7'- 3 1/2"	FC2 Floor Decking (Plan View Fill)	Top	12 lb/ft	24 lb/ft	-	-
Point	3'- 6 1/2"	3'- 6 1/2"	B14L-5R(i4835)	Back	1209 lb	1534 lb	10 lb	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B10L-5R(i4833)	736 lb	967 lb	5 lb	-
2	7'- 3 1/2"	7'- 3 1/2"	B8L-5R(i4873)	857 lb	1198 lb	5 lb	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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 # TF23051685


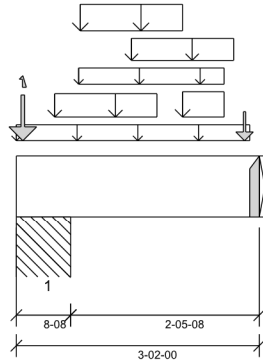
	BUILDER: BAYVIEW WELLINGTON SITE: ALCONA SHORES MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E Level: 1ST FLR FRAMING Label: B14L-5R - i4835 Type: Beam	2 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: <b>Design Passed</b>
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Illustration Not 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      05/25/2023 10:51



#### 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'- 7 1/2"
- 615 psi Beam @ 3'- 2"

**PLY TO PLY CONNECTION:**  
 3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 4" 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'- 11 1/2"	1.25D + 1.5L + S	1.00	842 lb ft	23299 lb ft	Passed - 4%
Factored Neg. Moment:	0'- 7 1/2"	1.25D + 1.5L	1.00	6762 lb ft	23299 lb ft	Passed - 29%
Factored Shear:	1'- 6"	1.25D + 1.5L	1.00	3713 lb	11052 lb	Passed - 34%

#### 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	8-08	1.25D + 1.5L	1.00	17509 lb		30939 lb	18296 lb	Passed - 96%
2	1-08	1.25D + 1.5L + S	1.00	4601 lb		5460 lb	-	Passed - 84%

#### 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'	3'- 2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	3'- 1/2"	7(i576)	Top	121 lb/ft	-	-	-
Uniform	0'- 6"	1'- 10"	7(i576)	Top	104 lb/ft	209 lb/ft	-	-
Uniform	0'- 9 3/4"	2'- 8 1/2"	7(i576)	Top	125 lb/ft	-	-	-
Uniform	0'- 10"	2'- 2"	7(i576)	Top	131 lb/ft	263 lb/ft	-	-
Uniform	1'- 6"	2'- 10"	7(i576)	Top	92 lb/ft	184 lb/ft	-	-
Uniform	2'- 2"	2'- 8 1/2"	7(i576)	Top	121 lb/ft	242 lb/ft	-	-
Point	0'- 1"	0'- 1"	7(i576)	Top	3237 lb	5532/-13 lb	-42 lb	-
Point	2'- 11 11/16"	2'- 11 11/16"	-	Top	1747 lb	2729 lb	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 8 1/2"	PBO8(i67)	5041 lb	7995/-16 lb	-52 lb	-
2	3'- 2"	3'- 2"	B13L-5R(i4872)	1209 lb	1534 lb	10 lb	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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=3.386", W=3.500". LDF=1.00, Pf=12325 lb, Qr=12325 lb, Result=100.00%.

#### PLY TO PLY CONNECTION



Town of Innisfil Certified Model



2023-08-02 11:52:49 AM jpl000

BUILDER:	BAYVIEW WELLINGTON	Job Name:	RL-5E	2 Ply Member	Status:
SITE:	ALCONA SHORES	Level:	1ST FLR FRAMING	1 3/4" x 9 1/2" (2.0E 3100)	Design
MODEL:	RL-5E	Label:	B14L-5R - i4835	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.





Town of Innisfil Certified Model



BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-5E  
CITY: INNISFIL

Job Name: RL-5E  
Level: 2ND FLR FRAMING  
Label: B15 - i4883  
Type: Beam

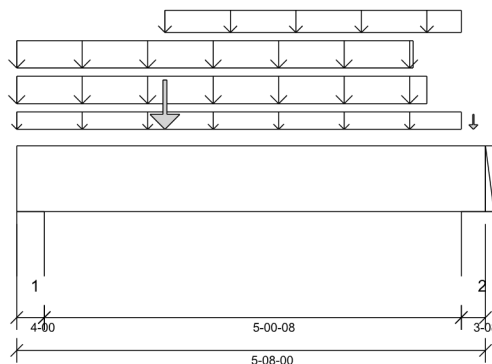
2 Ply Member  
1 3/4" x 9 1/2" (2.0E 3100)  
WestFraser LVL

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 05/25/2023 10:51



### 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'- 3"
- 615 psi Wall @ 5'- 5 1/2"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 6 11/16"	1.25D + 1.5L	1.00	5739 lb ft	23299 lb ft	Passed - 25%
Factored Shear:	1'- 1 1/2"	1.25D + 1.5L	1.00	3809 lb	11052 lb	Passed - 34%
Live Load (LL) Pos. Defl.:	2'- 9 13/16"	L		0.024"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 9 7/8"	D + L		0.041"	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	4-00	1.25D + 1.5L	1.00	4575 lb		14560 lb	8613 lb	Passed - 53%
2	3-08	1.25D + 1.5L	1.00	3707 lb		12740 lb	7536 lb	Passed - 49%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 8"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	5'- 4 1/2"	14(i4610)	Top	125 lb/ft	-	-	-
Uniform	0'	4'- 11 1/2"	Smoothed Load	Front	123 lb/ft	246 lb/ft	-	-
Uniform	-0'	4'- 9 1/2"	14(i4610)	Top	121 lb/ft	242 lb/ft	-	-
Uniform	1'- 9 1/2"	5'- 4 1/2"	User Load	Top	80 lb/ft	160 lb/ft	-	-
Point	1'- 9 1/2"	1'- 9 1/2"	User Load	Top	240 lb	480 lb	-	-
Point	5'- 6 1/4"	5'- 6 1/4"	E46(i3616)	Top	53 lb	-	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4"	7(i576)	1347 lb	1929 lb	-	-
2	5'- 4 1/2"	5'- 8"	E11(i282)	1146 lb	1515 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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 # TF23051687


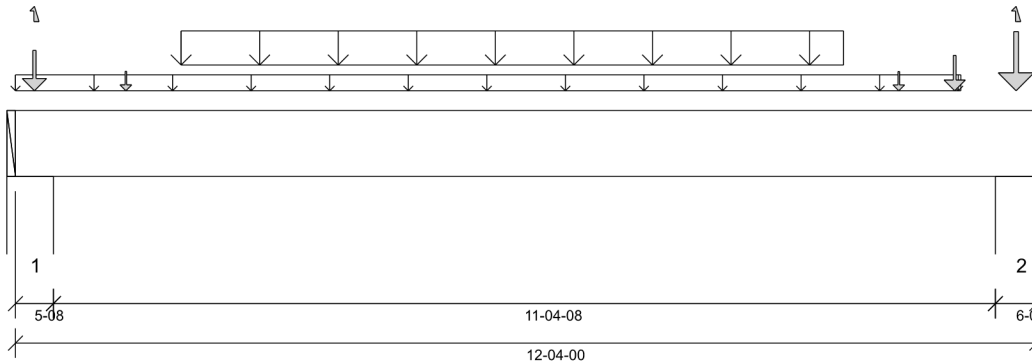
	BUILDER: BAYVIEW WELLINGTON SITE: ALCONA SHORES MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E Level: 2ND FLR FRAMING Label: B16 - i4862 Type: Beam	2 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: <b>Design Passed</b>
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Illustration Not to 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      05/25/2023 10:51



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

**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 + S	1.00	9993 lb ft	23299 lb ft	Passed - 43%	
Factored Neg. Moment:	11'- 11"	1.25D + 1.5L	1.00	1091 lb ft	23299 lb ft	Passed - 5%	
Factored Shear:	11'- 1/2"	1.25D + 1.5L	1.00	5952 lb	11052 lb	Passed - 54%	
Live Load (LL) Pos. Defl.:	6'- 2 3/8"	L + 0.5S		0.228"	L/360	Passed - L/598	
Total Load (TL) Pos. Defl.:	6'- 2 3/8"	D + L + 0.5S		0.347"	L/240	Passed - L/393	

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	7060 lb		20020 lb	11843 lb	Passed - 60%
2	6-00	1.25D + 1.5L	1.00	12518 lb		21841 lb	12920 lb	Passed - 97%

SPECIFIED LOADS								
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	11'- 5"	FC5 Floor Decking (Plan View Fill)	Top	8 lb/ft	15 lb/ft	-	-
Uniform	2'	10'	Smoothed Load	Front	131 lb/ft	261 lb/ft	-	-
Point	1'- 4"	1'- 4"	J1(i4896)	Front	161 lb	322 lb	-	-
Point	10'- 8"	10'- 8"	J1(i4916)	Front	156 lb	313 lb	-	-
Point	11'- 4 1/8"	11'- 4 1/8"	-	Front	735 lb	1404 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E12(i449)	Top	1141 lb	1522/-15 lb	-42 lb	-
Point	12'- 1"	12'- 1"	15(i5009)	Top	1783 lb	2844/-13 lb	-43 lb	-

UNFACTORED REACTIONS								
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)	
1	0'	0'- 5 1/2"	E1(i274)	2021 lb	3139/-15 lb	-43 lb	-	-
2	11'- 10"	12'- 4"	7(i576)	3237 lb	5532/-13 lb	-42 lb	-	-

**DESIGN NOTES**

- The dead loads used in the design of this member were applied to the structure as sloped 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=3687 lb, Q'r=5460 lb, Result=67.52%. At support 2. Required Load Area: L=1.779", W=3.500". LDF=1.00, Pf=6475 lb, Q'r=6475 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 # TF23051688


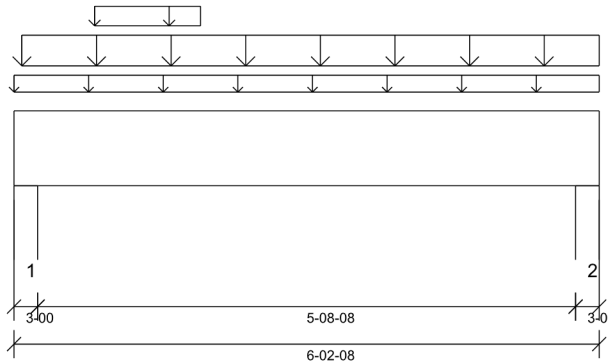
	BUILDER: BAYVIEW WELLINGTON SITE: ALCONA SHORES MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E Level: 2ND FLR FRAMING Label: B17 DR - i4982 Type: Beam	2 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: <b>Design Passed</b>
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Illustration Not 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      05/25/2023 10:51



#### 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: 6'- 2 1/2"

#### Factored Resistance of Support Material:

- 1334 psi Wall @ 0'- 2"
- 1334 psi Wall @ 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 # TF23051689

#### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 5"	1.25D + 1.5L	1.00	2501 lb ft	23299 lb ft	Passed - 11%
Factored Shear:	1'- 1/2"	1.25D + 1.5L	1.00	1466 lb	11052 lb	Passed - 13%
Live Load (LL) Pos. Defl.:	3'- 13/16"	L		0.013"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 15/16"	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	3'-00"	1.25D + 1.5L	1.00	1819 lb		10920 lb	14011 lb	Passed - 17%
2	3'-00"	1.25D + 1.5L	1.00	2021 lb		10920 lb	14011 lb	Passed - 19%

#### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	6'- 2 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	6'- 2 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'- 1"	6'- 2 1/2"	Smoothed Load	Top	118 lb/ft	237 lb/ft	-	-
Uniform	0'- 10 1/4"	1'- 11 3/4"	Bk1(i5001)	Top	39 lb/ft	78 lb/ft	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	2(i286)	578 lb	725 lb	-	-
2	5'- 11 1/2"	6'- 2 1/2"	1(i284)	629 lb	828 lb	-	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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.


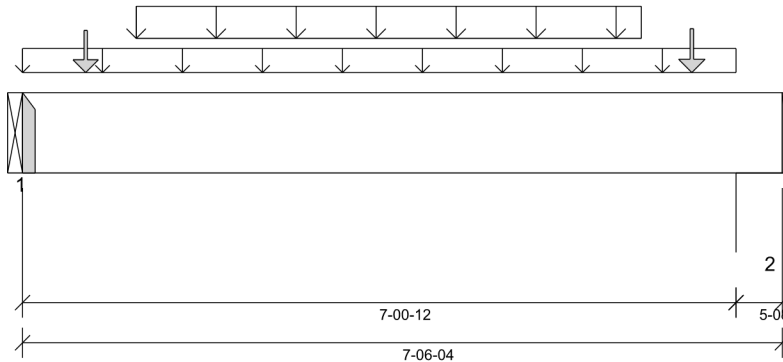
	BUILDER: BAYVIEW WELLINGTON SITE: ALCONA SHORES MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E Level: 2ND FLR FRAMING Label: B18 - i4912 Type: Beam	2 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: <b>Design Passed</b>
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Illustration Not to 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      05/25/2023 10:51



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 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.



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051690

ANALYSIS RESULTS							
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result	
Factored Pos. Moment:	3'- 7 1/2"	1.25D + 1.5L	1.00	4799 lb ft	23299 lb ft	Passed - 21%	
Factored Shear:	6'- 3 1/4"	1.25D + 1.5L	1.00	2393 lb	11052 lb	Passed - 22%	
Live Load (LL) Pos. Defl.:	3'- 6 7/8"	L		0.042"	L/360	Passed - L/999	
Total Load (TL) Pos. Defl.:	3'- 6 7/8"	D + L		0.064"	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	2557 lb		5460 lb	-	Passed - 47%
2	5-08	1.25D + 1.5L	1.00	2616 lb		20020 lb	11843 lb	Passed - 22%

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.
* 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 1/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	7'- 3/4"	User Load	Top	60 lb/ft	120 lb/ft	-	-
Uniform	1'- 1 1/2"	6'- 1 1/2"	Smoothed Load	Back	113 lb/ft	226 lb/ft	-	-
Point	0'- 7 1/2"	0'- 7 1/2"	J2(i4910)	Back	100 lb	200 lb	-	-
Point	6'- 7 1/2"	6'- 7 1/2"	J2(i4899)	Back	106 lb	212 lb	-	-

UNFACTORED REACTIONS								
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)	
1	0'	0'	B16(i4862)	625 lb	1183 lb	-	-	
2	7'- 3/4"	7'- 6 1/4"	1(i284)	642 lb	1209 lb	-	-	

**DESIGN NOTES**

- The dead loads used in the design of this member were applied to the structure as sloped 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.




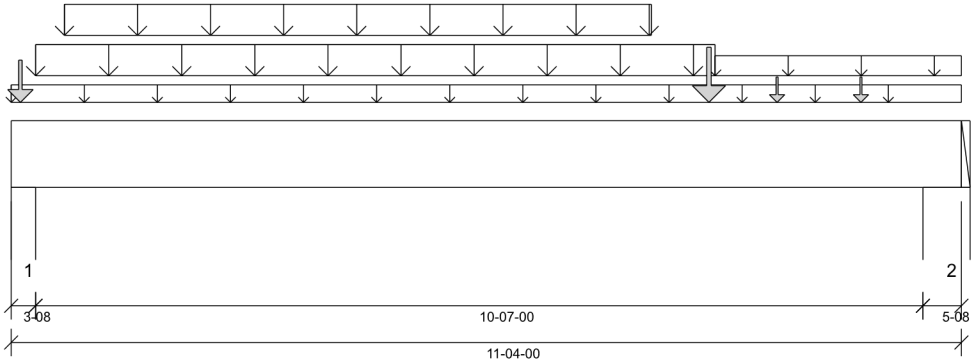
	BUILDER: BAYVIEW WELLINGTON SITE: ALCONA SHORES MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E Level: 3RD FLR FRAMING Label: B20 - i4987 Type: Beam	3 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: <b>Design Passed</b>
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Illustration Not to 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      05/25/2023 10:51



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'- 2 1/2"
- 615 psi Wall @ 10'- 11 1/2"

**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.



5/25/23  
 C. M. HEYENS  
 100505065  
 PROVINCE OF ONTARIO

STRUCTURAL COMPONENT ONLY  
 DWG # TF23051691

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	16663 lb ft	34949 lb ft	Passed - 48%	
Factored Shear:	10'- 1"	1.25D + 1.5S + L	1.00	5630 lb	16578 lb	Passed - 34%	
Live Load (LL) Pos. Defl.:	5'- 7 13/16"	S + 0.5L		0.190"	L/360	Passed - L/669	
Total Load (TL) Pos. Defl.:	5'- 7 5/8"	D + S + 0.5L		0.324"	L/240	Passed - L/392	
Permanent Deflection:	5'- 7 3/8"			-	L/360	Passed - L/976	

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 + 1.5S + L	1.00	6997 lb		19110 lb	11304 lb	Passed - 62%
2	5-08	1.25D + 1.5S + L	1.00	6025 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'- 4"	Self Weight	Top	14 lb/ft	-	-	-
Uniform	0'	11'- 4"	E28(i572)	Top	81 lb/ft	-	-	-
Uniform	0'- 3 1/2"	8'- 4 3/4"	E28(i572)	Top	91 lb/ft	-	288 lb/ft	-
Uniform	0'- 7 5/8"	7'- 7 5/8"	Smoothed Load	Back	126 lb/ft	251 lb/ft	-	-
Uniform	8'- 4 3/4"	11'- 4"	E28(i572)	Top	28 lb/ft	-	108 lb/ft	-
Point	0'- 1 5/16"	0'- 1 5/16"	-	Back	267 lb	286 lb	376 lb	-
Point	8'- 3 7/8"	8'- 3 7/8"	-	Back	359 lb	252 lb	738 lb	-
Point	9'- 1 5/8"	9'- 1 5/8"	J2(i4967)	Back	126 lb	252 lb	-	-
Point	10'- 1 5/8"	10'- 1 5/8"	J2(i4966)	Back	126 lb	252 lb	-	-

UNFACTORED REACTIONS							
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	5(i452)	1941 lb	1531 lb	2029 lb	-
2	10'- 10 1/2"	11'- 4"	E13(i445)	1716 lb	1272 lb	1737 lb	-

**DESIGN NOTES**

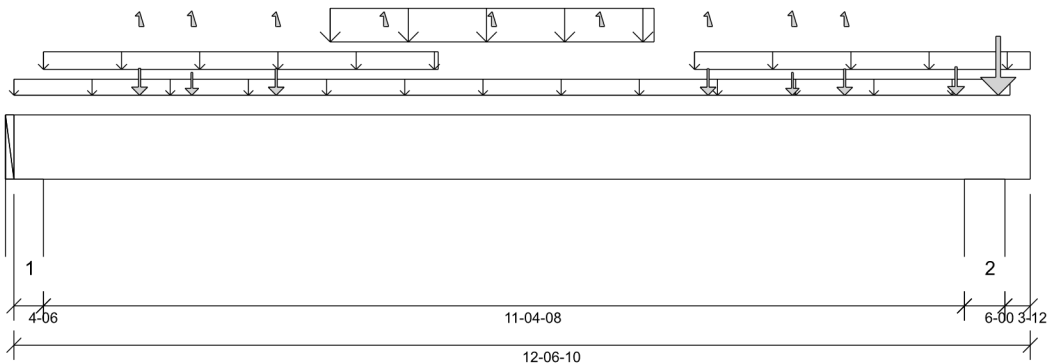
- The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been 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.

<b>Builder:</b> BAYVIEW WELLINGTON <b>Job Name:</b> RL-5E <b>Level:</b> 3RD FLR FRAMING <b>Label:</b> B21A - i4944 <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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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      05/25/2023 10:51



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'- 3 3/8"
- 615 psi Wall @ 11'- 11 7/8"

**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:	5'- 10 7/8"	1.25D + 1.5L	1.00	10866 lb ft	23299 lb ft	Passed - 47%	
Factored Neg. Moment:	11'- 11 7/8"	1.25D + 1.5L + S	1.00	418 lb ft	23299 lb ft	Passed - 2%	
Factored Shear:	10'- 11 3/8"	1.25D + 1.5L	1.00	3934 lb	11052 lb	Passed - 36%	
Live Load (LL) Pos. Defl.:	6'- 1 3/8"	L		0.240"	L/360	Passed - L/569	
Total Load (TL) Pos. Defl.:	6'- 1 5/16"	D + L		0.392"	L/240	Passed - L/348	
Permanent Deflection:	6'- 1 1/8"			-	L/360	Passed - L/923	

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
1	4-06	1.25D + 1.5L	1.00	3571 lb		15925 lb	9420 lb
2	6-00	1.25D + 1.5L	1.00	6539 lb		21840 lb	12919 lb

SPECIFIED LOADS								
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 6 5/8"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	12'- 3 5/8"	FC6 Floor Decking (Plan View Fill)	Top	9 lb/ft	18 lb/ft	-	-
Uniform	0'- 4 3/8"	5'- 2 7/8"	User Load	Top	60 lb/ft	-	-	-
Uniform	3'- 10 7/8"	7'- 10 7/8"	Smoothed Load	Front	122 lb/ft	264 lb/ft	-	-
Uniform	8'- 4 7/8"	12'- 6 5/8"	User Load	Top	60 lb/ft	-	-	-
Point	1'- 6 5/8"	1'- 6 5/8"	B29(i4995)	Front	190 lb	280/-1 lb	-6 lb	-
Point	2'- 2 3/8"	2'- 2 3/8"	J1DJ(i4965)	Front	87 lb	223/-3 lb	-34 lb	-
Point	3'- 2 7/8"	3'- 2 7/8"	J1(i4959)	Front	142 lb	314/-4 lb	-	-
Point	4'- 6 7/8"	4'- 6 7/8"	J1(i4980)	Front	-	-4 lb	-	-
Point	5'- 10 7/8"	5'- 10 7/8"	J1(i4993)	Front	-	-4 lb	-	-
Point	7'- 2 7/8"	7'- 2 7/8"	J1(i4963)	Front	-	-4 lb	-	-
Point	8'- 6 7/8"	8'- 6 7/8"	J1(i4962)	Front	142 lb	314/-4 lb	-	-
Point	9'- 7 3/8"	9'- 7 3/8"	J1DJ(i4974)	Front	86 lb	223/-3 lb	-37 lb	-
Point	10'- 3 1/8"	10'- 3 1/8"	B30(i4971)	Front	181 lb	266/-1 lb	-8 lb	-
Point	11'- 7 5/8"	11'- 7 5/8"	J2(i4937)	Front	177 lb	354 lb	-	-
Point	12'- 1 7/8"	12'- 1 7/8"	B22(i4939)	Back	592 lb	1117 lb	-	-


UNFACTORED REACTIONS							
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 3/8"	E12(i449)	1068 lb	1520/-15 lb	-42 lb	-
2	11'- 8 7/8"	12'- 2 7/8"	15(i5009)	1783 lb	2844/-13 lb	-43 lb	-

**DESIGN NOTES**

- The dead loads used in the design of this member were applied to the structure as sloped 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.
- The deflection at the cantilever for either live and/or total loads is less than 3/8" and therefore has been excluded from the deflection ratio considerations.
- 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.



**Town of Innisfil Certified Model**

	BUILDER:	BAYVIEW WELLINGTON	Job Name:	RL-5E	<b>2 Ply Member</b> <b>1 3/4" x 9 1/2" (2.0E 3100)</b> <b>WestFraser LVL</b>	Status: <b>Design Passed</b>
	SITE:	ALCONA SHORES	Level:	3RD FLR FRAMING		
	MODEL:	RL-5E	Label:	B21A - i4944		
	CITY:	INNISFIL	Type:	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=2416 lb, Q'r=11527 lb, Result=20.96%.

#### 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.






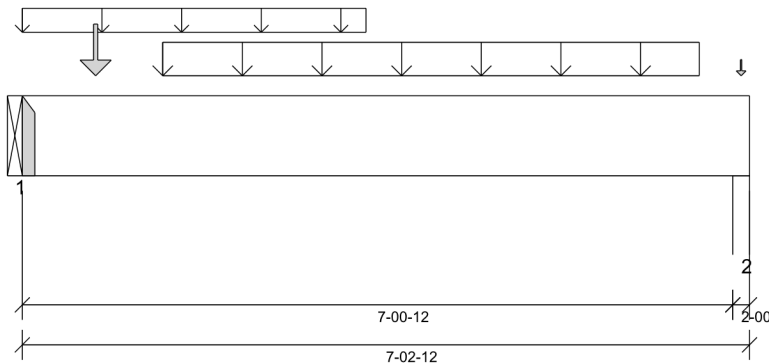
	BUILDER: BAYVIEW WELLINGTON SITE: ALCONA SHORES MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E Level: 3RD FLR FRAMING Label: B22 - i4939 Type: Beam	2 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: <b>Design Passed</b>
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Illustration Not to 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      05/25/2023 10:51



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 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:	3'- 4 3/4"	1.25D + 1.5L	1.00	4233 lb ft	23299 lb ft	Passed - 18%	
Factored Shear:	0'- 9 1/2"	1.25D + 1.5L	1.00	2358 lb	11052 lb	Passed - 21%	
Live Load (LL) Pos. Defl.:	3'- 6 3/16"	L		0.036"	L/360	Passed - L/999	
Total Load (TL) Pos. Defl.:	3'- 6 3/16"	D + L		0.055"	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	2427 lb		5460 lb	-	Passed - 44%
2	2-00	1.25D + 1.5L	1.00	1912 lb		7280 lb	4306 lb	Passed - 44%

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.
* 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 3/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	3'- 5"	User Load	Front	60 lb/ft	120 lb/ft	-	-
Uniform	1'- 4 3/4"	6'- 8 3/4"	Smoothed Load	Back	123 lb/ft	246 lb/ft	-	-
Point	0'- 8 3/4"	0'- 8 3/4"	J2(i4968)	Back	136 lb	272 lb	-	-
Point	7'- 1 3/4"	7'- 1 3/4"	E28(i572)	Top	13 lb	-	-	-

UNFACTORED REACTIONS								
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)	
1	0'	0'	B21A(i4944)	592 lb	1117 lb	-	-	
2	7'- 3/4"	7'- 2 3/4"	5(i452)	486 lb	877 lb	-	-	

**DESIGN NOTES**

- The dead loads used in the design of this member were applied to the structure as sloped 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**

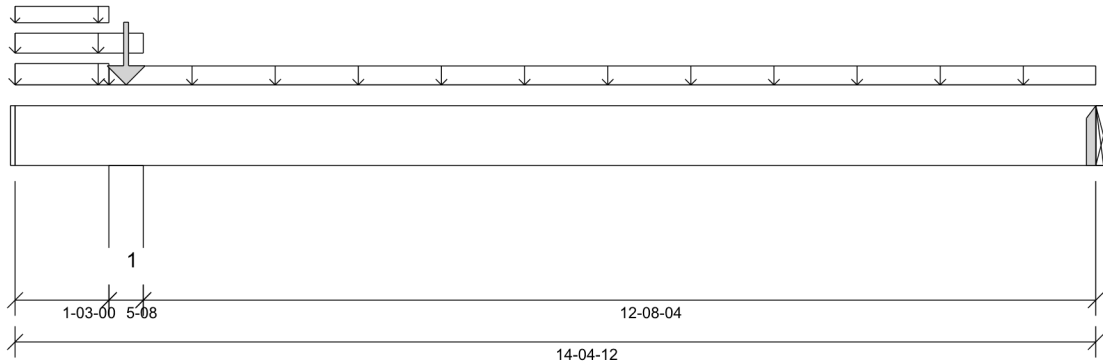
- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally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



STRUCTURAL COMPONENT ONLY  
 DWG # TF23051693

<b>MI</b> <b>Mitek</b>	<b>BUILDER:</b> BAYVIEW WELLINGTON <b>SITE:</b> ALCONA SHORES <b>MODEL:</b> RL-5E <b>CITY:</b> INNISFIL	<b>Job Name:</b> RL-5E <b>Level:</b> 3RD FLR FRAMING <b>Label:</b> B29 - i4995 <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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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      05/25/2023 10:51



#### 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: 12'- 8 1/4"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 1'- 5 3/4"
- 615 psi Beam @ 14'- 4 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:	8'- 15/16"	1.25D + 1.5L	0.81	2013 lb ft	18813 lb ft	Passed - 11%
Factored Neg. Moment:	1'- 5 3/4"	1.25D + 1.5L + S	0.71	299 lb ft	15329 lb ft	Passed - 2%
Factored Shear:	2'- 6"	1.25D + 1.5L	0.81	562 lb	8924 lb	Passed - 6%
Live Load (LL) Pos. Defl.:	7'- 11 1/4"	L		0.054"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	7'- 11 7/8"	D + L		0.088"	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	0.71	2123 lb		14250 lb	8429 lb	Passed - 25%
2	1-08	1.25D + 1.5L	0.81	650 lb		4409 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'	14'- 4 3/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	1'- 8 1/2"	E43(i3463)	Top	81 lb/ft	-	-	-
Uniform	-0'	1'- 3"	E43(i3463)	Top	30 lb/ft	-	80 lb/ft	-
Uniform	-0'	1'- 3"	FC6 Floor Decking (Plan View Fill)	Top	-	16 lb/ft	-	-
Uniform	1'- 3"	14'- 4 3/4"	FC6 Floor Decking (Plan View Fill)	Top	21 lb/ft	42 lb/ft	-	-
Point	1'- 5 3/4"	1'- 5 3/4"	E43(i3463)	Top	723 lb	-	542 lb	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	1'- 3"	1'- 8 1/2"	E17(i448)	1138 lb	296 lb	652 lb	-
2	14'- 4 3/4"	14'- 4 3/4"	B21A(i4944)	190 lb	280/-1 lb	-6 lb	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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.
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- The deflection at the cantilever for either live and/or total loads is less than 3/8" and therefore has been excluded from the deflection ratio considerations.
- 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



Town of Innisfil Certified Model



2023-08-02 11:52:51 AM jcl000

BUILDER:	BAYVIEW WELLINGTON	Job Name:	RL-5E	2 Ply Member	Status:
SITE:	ALCONA SHORES	Level:	3RD FLR FRAMING	1 3/4" x 9 1/2" (2.0E 3100)	Design
MODEL:	RL-5E	Label:	B29 - i4995	WestFraser LVL	Passed
CITY:	INNISFIL	Type:	Beam		

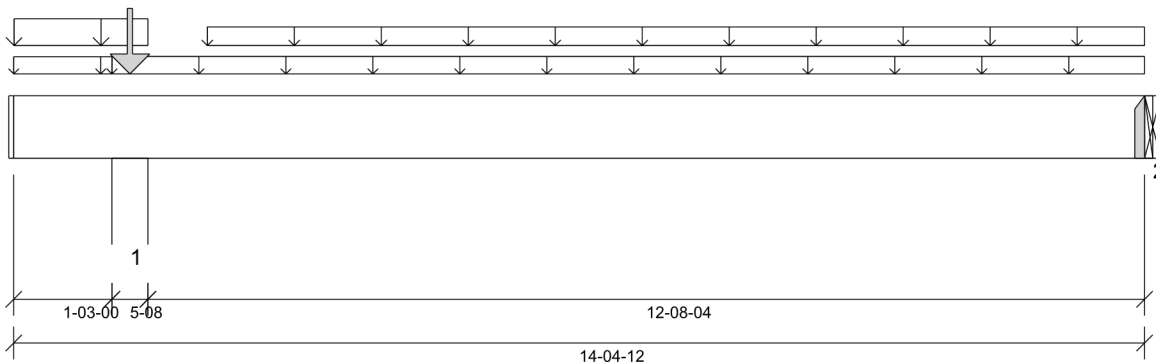
PLY TO PLY CONNECTION

- 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.



<b>MI</b> <b>itek</b>	<b>BUILDER:</b> BAYVIEW WELLINGTON <b>SITE:</b> ALCONA SHORES <b>MODEL:</b> RL-5E <b>CITY:</b> INNISFIL	<b>Job Name:</b> RL-5E <b>Level:</b> 3RD FLR FRAMING <b>Label:</b> B30 - i4971 <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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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      05/25/2023 10:51



#### 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: 12'- 8 1/4"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 1'- 5 3/4"
- 615 psi Beam @ 14'- 4 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:	8'- 1 1/4"	1.25D + 1.5L	0.79	1935 lb ft	18439 lb ft	Passed - 10%
Factored Neg. Moment:	1'- 5 3/4"	1.25D + 1.5L + S	0.72	300 lb ft	15483 lb ft	Passed - 2%
Factored Shear:	2'- 6"	1.25D + 1.5L	0.79	547 lb	8747 lb	Passed - 6%
Live Load (LL) Pos. Defl.:	7'- 11 3/8"	L		0.052"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	8'	D + L		0.084"	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	0.72	2127 lb		14421 lb	8531 lb	Passed - 25%
2	1-08	1.25D + 1.5L	0.79	627 lb		4321 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'	14'- 4 3/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	1'- 3"	FC6 Floor Decking (Plan View Fill)	Top	-	16 lb/ft	-	-
Uniform	0'- 1/16"	1'- 8 1/2"	E41(i3464)	Top	111 lb/ft	-	80 lb/ft	-
Uniform	1'- 3"	14'- 4 3/4"	FC6 Floor Decking (Plan View Fill)	Top	7 lb/ft	13 lb/ft	-	-
Uniform	2'- 5 9/16"	14'- 4 3/4"	FC6 Floor Decking (Plan View Fill)	Top	14 lb/ft	28 lb/ft	-	-
Point	1'- 5 3/4"	1'- 5 3/4"	E41(i3464)	Top	717 lb	-	537 lb	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	1'- 3"	1'- 8 1/2"	E17(i448)	1128 lb	259 lb	685 lb	-
2	14'- 4 3/4"	14'- 4 3/4"	B21A(i4944)	181 lb	266/-1 lb	-8 lb	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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.
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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.

#### PLY TO PLY CONNECTION





Town of Innisfil Certified Model



2023-08-02 11:52:51 AM jpl000

BUILDER: BAYVIEW WELLINGTON  
SITE: ALCONA SHORES  
MODEL: RL-5E  
CITY: INNISFIL

Job Name: RL-5E  
Level: 3RD FLR FRAMING  
Label: B30 - i4971  
Type: Beam

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

Status:  
Design  
Passed

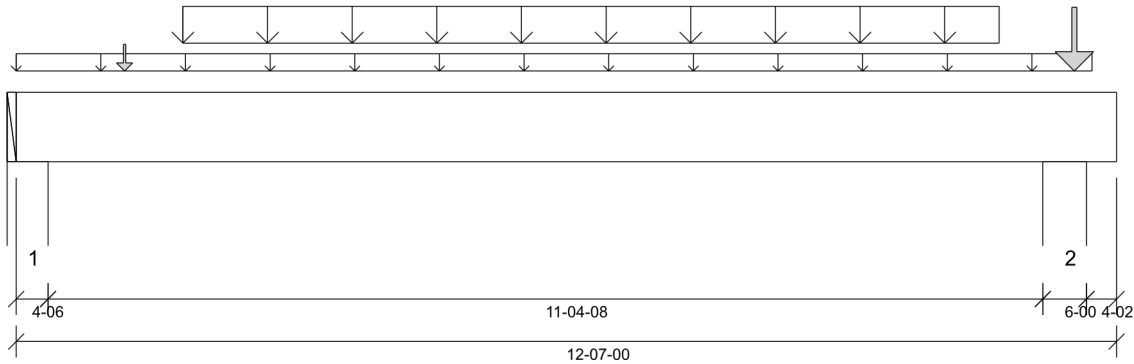
#### PLY TO PLY CONNECTION

- 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.



<b>MI</b> <b>itek</b>	BUILDER: BAYVIEW WELLINGTON SITE: ALCONA SHORES MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E EL B Level: 3RD FLR FRAMING Label: B21 - i2873 Type: Beam	<b>2 Ply Member</b> <b>1 3/4" x 9 1/2" (2.0E 3100)</b> <b>WestFraser LVL</b>	Status: <b>Design Passed</b>
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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      05/25/2023 11:01



#### 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'- 3 3/8"
- 615 psi Wall @ 11'- 11 7/8"

#### 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'- 6 7/8"	1.25D + 1.5L	1.00	10100 lb ft	23299 lb ft	Passed - 43%
Factored Neg. Moment:	11'- 11 7/8"	1.25D + 1.5L	1.00	406 lb ft	23299 lb ft	Passed - 2%
Factored Shear:	1'- 1 7/8"	1.25D + 1.5L	1.00	3237 lb	11052 lb	Passed - 29%
Live Load (LL) Pos. Defl.:	6'- 1 3/8"	L		0.235"	L/360	Passed - L/579
Total Load (TL) Pos. Defl.:	6'- 1 3/8"	D + L		0.361"	L/240	Passed - L/377

#### 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	4-06	1.25D + 1.5L	1.00	3298 lb		15925 lb	9420 lb	Passed - 35%
2	6-00	1.25D + 1.5L	1.00	6260 lb		21840 lb	12919 lb	Passed - 48%

#### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 7"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	12'- 3 5/8"	FC6 Floor Decking (Plan View Fill)	Top	9 lb/ft	18 lb/ft	-	-
Uniform	1'- 10 7/8"	11'- 2 7/8"	Smoothed Load	Front	131 lb/ft	261 lb/ft	-	-
Point	1'- 2 7/8"	1'- 2 7/8"	J1(i2949)	Front	161 lb	322 lb	-	-
Point	12'- 1 3/16"	12'- 1 3/16"	-	Front	731 lb	1397 lb	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 3/8"	E12(i449)	824 lb	1532 lb	-	-
2	11'- 8 7/8"	12'- 2 7/8"	13(i2831)	1532 lb	2877 lb	-	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of one ply.
- 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.
- The deflection at the cantilever for either live and/or total loads is less than 3/8" and therefore has been excluded from the deflection ratio considerations.
- 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 # TF23051696


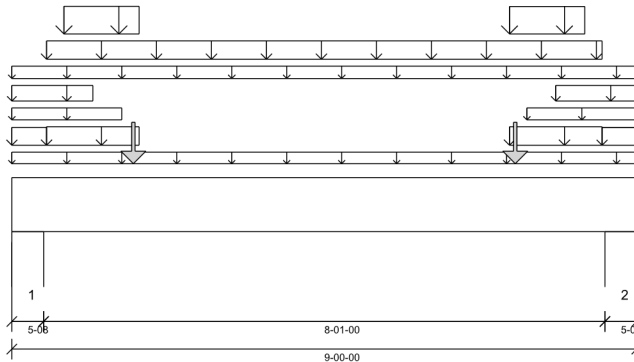
	BUILDER: BAYVIEW WELLINGTON SITE: ALCONA SHORES MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E EL B Level: 2ND FLR FRAMING Label: B19 - i2940 Type: Beam	2 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: <b>Design Passed</b>
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Illustration 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      05/25/2023 11:01



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'- 4 1/2"
- 615 psi Wall @ 8'- 7 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:	4'- 5 15/16"	1.25D + 1.5L + S	0.98	10833 lb ft	22946 lb ft	Passed - 47%	
Factored Shear:	1'- 3"	1.25D + 1.5L + S	0.98	5940 lb	10885 lb	Passed - 55%	
Live Load (LL) Pos. Defl.:	4'- 6"	L + 0.5S		0.105"	L/360	Passed - L/921	
Total Load (TL) Pos. Defl.:	4'- 6"	D + L + 0.5S		0.209"	L/240	Passed - L/464	
Permanent Deflection:	4'- 6"			-	L/360	Passed - L/967	

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	7688 lb		19716 lb	11663 lb	Passed - 66%
2	5-08	1.25D + 1.5L + S	0.98	7678 lb		19716 lb	11663 lb	Passed - 66%

SPECIFIED LOADS								
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	9'	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	9'	-	Top	100 lb/ft	-	-	-
Uniform	-0'	9'	User Load	Front	20 lb/ft	-	40 lb/ft	-
Uniform	0'	1'- 7"	E41(i2686)	Top	81 lb/ft	-	-	-
Uniform	0'	1'- 2"	E41(i2686)	Top	145 lb/ft	-	120 lb/ft	-
Uniform	0'	0'- 6"	E41(i2686)	Top	125 lb/ft	251 lb/ft	-	-
Uniform	0'- 6"	8'- 6"	Smoothed Load	Back	134 lb/ft	269 lb/ft	-	-
Uniform	0'- 6"	1'- 10"	E41(i2686)	Top	135 lb/ft	271 lb/ft	-	-
Uniform	0'- 9"	1'- 10"	E41(i2686)	Top	494 lb/ft	-	371 lb/ft	-
Uniform	7'- 2"	8'- 6"	E17(i448)	Top	135 lb/ft	271 lb/ft	-	-
Uniform	7'- 2"	8'- 3"	E17(i448)	Top	490 lb/ft	-	367 lb/ft	-
Uniform	7'- 5"	9'	E17(i448)	Top	81 lb/ft	-	-	-
Uniform	7'- 10"	9'	E17(i448)	Top	145 lb/ft	-	120 lb/ft	-
Uniform	8'- 6"	9'	E17(i448)	Top	124 lb/ft	248 lb/ft	-	-
Point	1'- 9"	1'- 9"	E41(i2686)	Top	640 lb	722 lb	-	-
Point	7'- 3"	7'- 3"	E17(i448)	Top	640 lb	722 lb	-	-

UNFACTORED REACTIONS							
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	E9(i281)	2861 lb	2311 lb	722 lb	-
2	8'- 6 1/2"	9'	E6(i277)	2805 lb	2252 lb	719 lb	-

**DESIGN NOTES**

- The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of one ply.
- 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**



Town of Innisfil Certified Model



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BUILDER:	BAYVIEW WELLINGTON	Job Name:	RL-5E EL B	2 Ply Member	Status:
SITE:	ALCONA SHORES	Level:	2ND FLR FRAMING	1 3/4" x 9 1/2" (2.0E 3100)	Design
MODEL:	RL-5E	Label:	B19 - i2940	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.






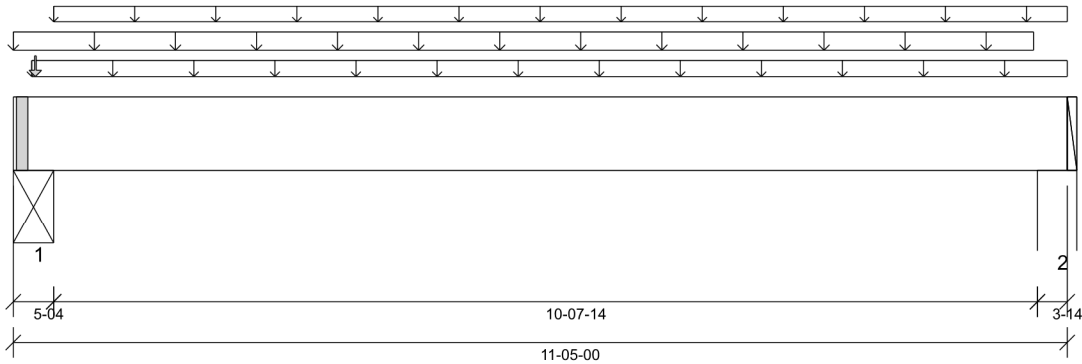
	BUILDER: BAYVIEW WELLINGTON SITE: ALCONA SHORES MODEL: RL-5E CITY: INNISFIL	Job Name: RL-5E SUNKEN Level: 1ST FLR FRAMING Label: B1 - i2995 Type: Beam	1 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: <b>Design Passed</b>
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Illustration 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      05/25/2023 11:05



#### 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: 10'- 6 1/8"

#### Factored Resistance of Support Material:

- 534 psi Beam @ 0'- 4 1/4"
- 615 psi Wall @ 11'- 2 1/8"

#### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 9 5/16"	1.25D + 1.5L	0.69	1636 lb ft	8049 lb ft	Passed - 20%
Factored Shear:	1'- 2 3/4"	1.25D + 1.5L	0.69	511 lb	3818 lb	Passed - 13%
Live Load (LL) Pos. Defl.:	5'- 9 1/4"	L		0.019"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 9 1/4"	D + L		0.110"	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	5-04	1.25D + 1.5L	0.69	726 lb		6602 lb	3390 lb	Passed - 21%
2	3-14	1.25D + 1.5L	0.69	609 lb		4873 lb	2882 lb	Passed - 21%

#### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	11'- 5"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'	11'- 5/8"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'- 2 3/8"	11'- 5"	FC3 Floor Decking (Plan View Fill)	Top	6 lb/ft	12 lb/ft	-	-
Uniform	0'- 5 1/4"	11'- 5"	FC3 Floor Decking (Plan View Fill)	Top	2 lb/ft	3 lb/ft	-	-
Point	0'- 2 7/8"	0'- 2 7/8"	2(i286)	Top	28 lb	32 lb	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/4"	STL BM(i19)	440 lb	115 lb	-	-
2	11'- 1 1/8"	11'- 5"	W20(i23)	389 lb	85 lb	-	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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 # TF23051698


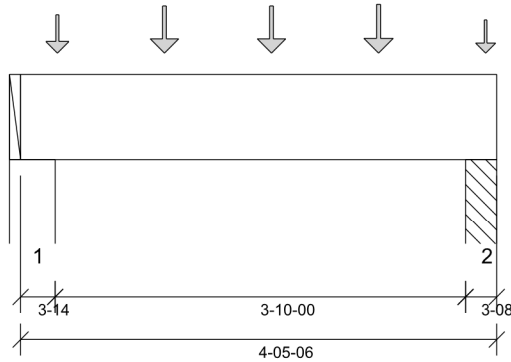
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Illustration Not to Scale. Pitch: 0/12      Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15      Report Version: 2021.03.26      05/25/2023 11:05



#### 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'- 2 7/8"
- 615 psi Column @ 4'- 2 7/8"

#### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 4 1/8"	1.25D + 1.5L	1.00	947 lb ft	11650 lb ft	Passed - 8%
Factored Shear:	1'- 1 3/8"	1.25D + 1.5L	1.00	987 lb	5526 lb	Passed - 18%

#### 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	3-14	1.25D + 1.5L	1.00	993 lb		7053 lb	4172 lb	Passed - 24%
2	3-08	1.25D + 1.5L	1.00	1032 lb		6370 lb	3767 lb	Passed - 27%

#### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 5 3/8"	Self Weight	Top	5 lb/ft	-	-	-
Point	0'- 4 1/8"	0'- 4 1/8"	J1(i2909)	Back	78 lb	156 lb	-	-
Point	1'- 4 1/8"	1'- 4 1/8"	J1(i2883)	Back	109 lb	218 lb	-	-
Point	2'- 4 1/8"	2'- 4 1/8"	J1(i2894)	Back	109 lb	218 lb	-	-
Point	3'- 4 1/8"	3'- 4 1/8"	J1(i2828)	Back	114 lb	229 lb	-	-
Point	4'- 4 1/8"	4'- 4 1/8"	J1(i2919)	Back	60 lb	120 lb	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 7/8"	W19(i22)	245 lb	469 lb	-	-
2	4'- 1 7/8"	4'- 5 3/8"	PBO10(i122)	246 lb	472 lb	-	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped 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 # TF23051699

# 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:

- 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 – 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

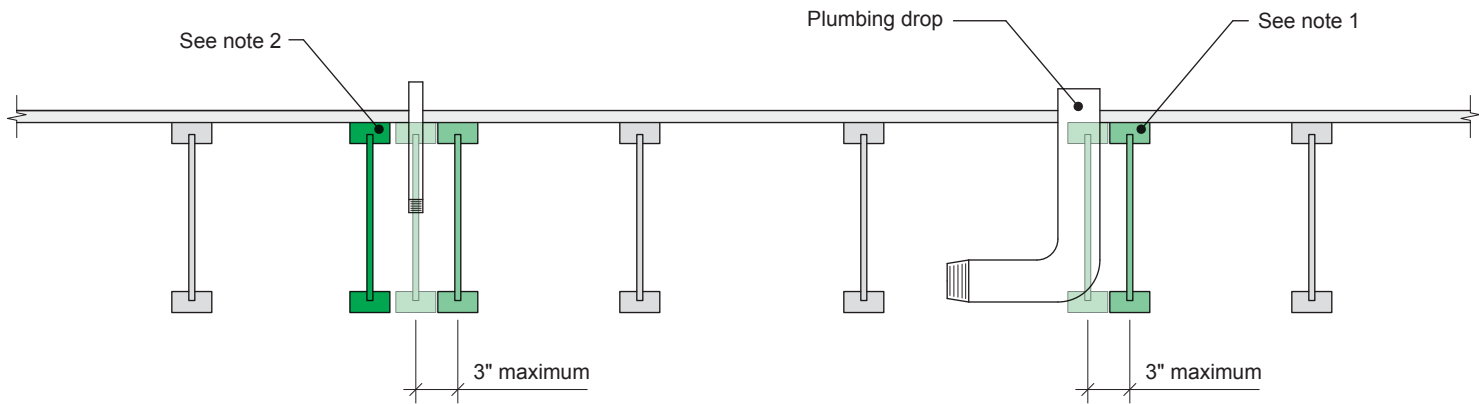
Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9'-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	14'-11"
	NI-60	17'-1"	16'-1"	15'-6"	14'-10"	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:

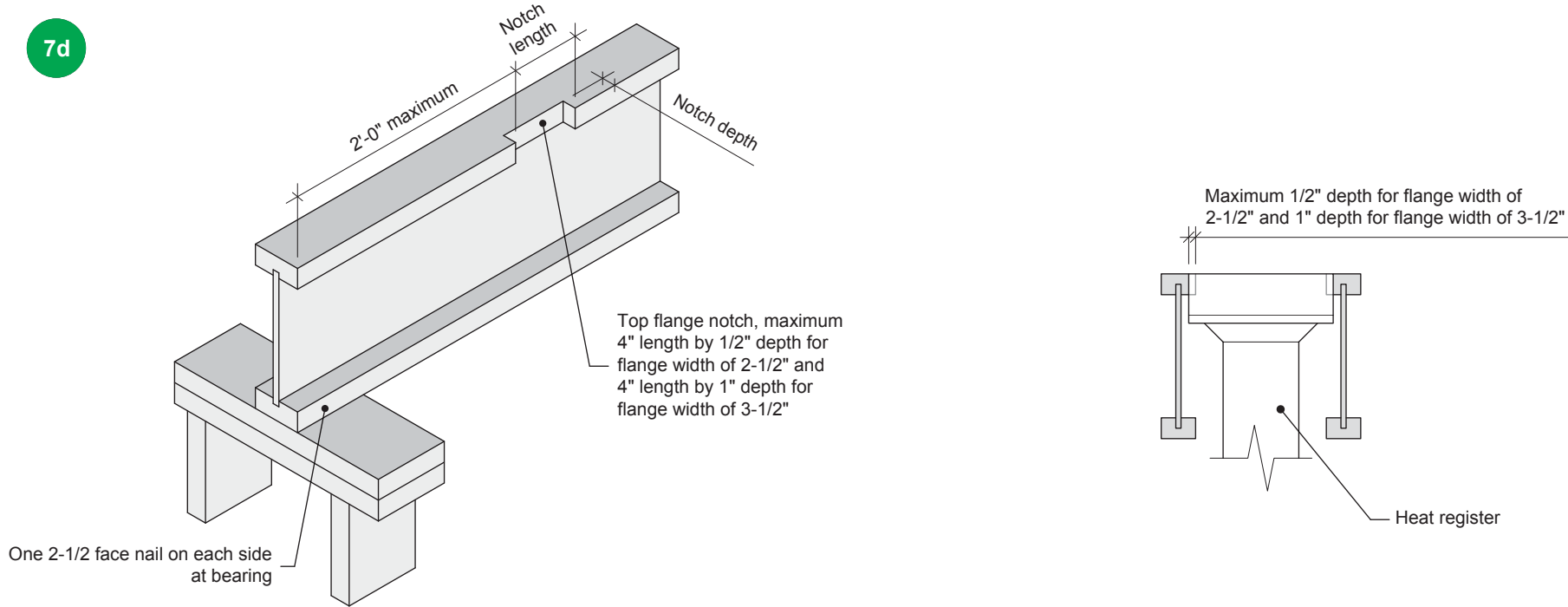
- The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Minimum bearing length shall be 1-3/4 inch for end bearings, 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.

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- 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.



- 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.