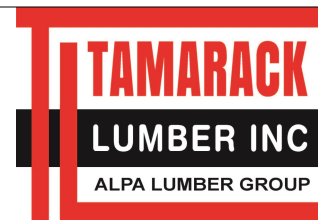


1-02-00
17-06-00
1-02-00
11-11-00



FROM PLAN DATED: OCT. 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-21
ELEVATION: A / B / C
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: CH
REVISION:

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/ft²
DEAD LOAD: 15.0 lb/ft²
TILE LOAD: +5.0 lb/ft²

JOIST LL DEFLECTION LIMIT: L/480

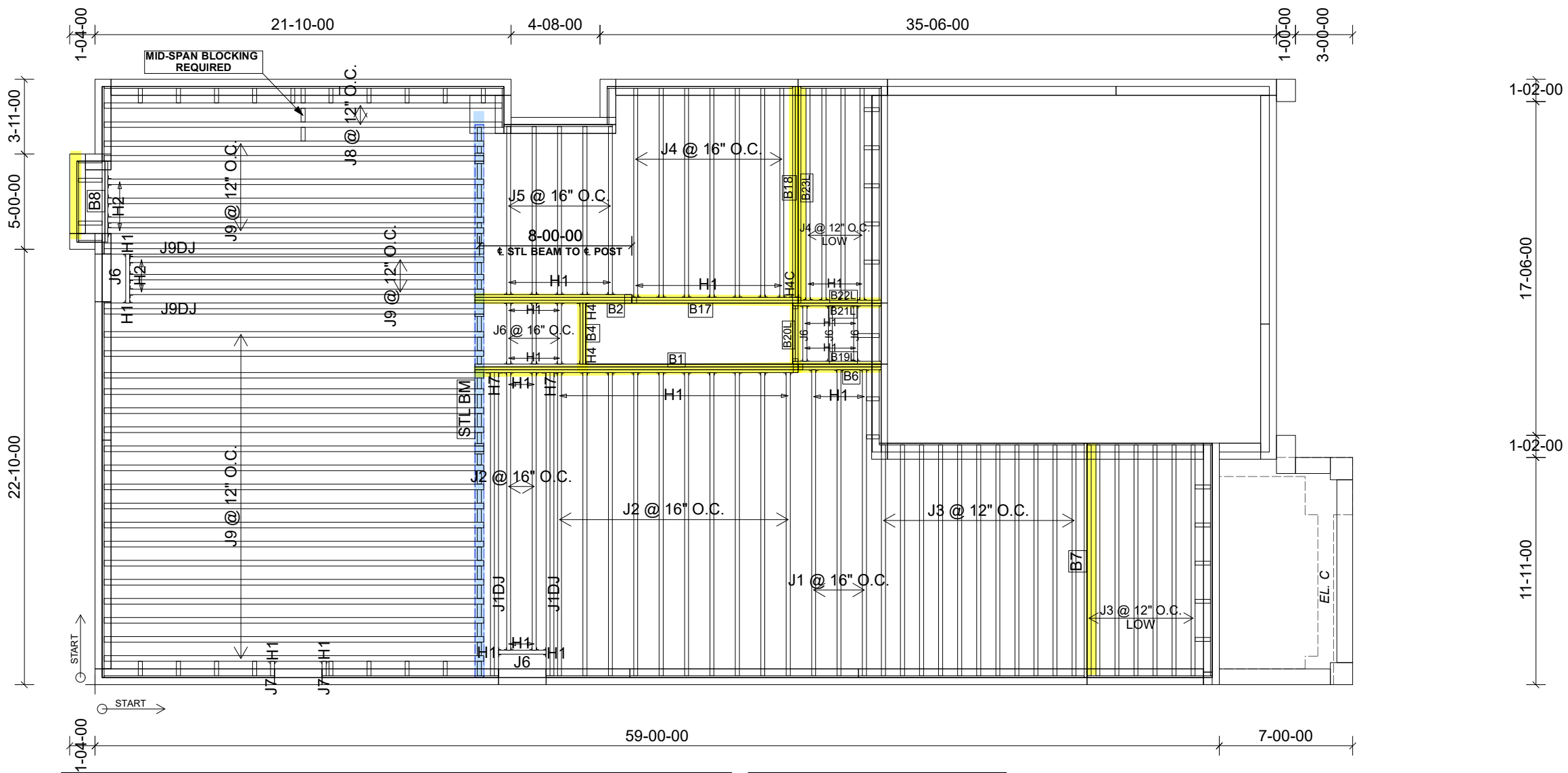
SUBFLOOR: 5/8" GLUED AND NAILED

TOWN OF BRADFORD WEST GWILLIMBURY
BUILDING DEPARTMENT
PLANS EXAMINED
ONTARIO BUILDING CODE APPLIES
DATE: 2022-08-10
INSPECTOR: BG

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	3
J2	16-00-00	11 7/8" NI-40x	1	12
J1DJ	16-00-00	11 7/8" NI-40x	2	4
J3	14-00-00	11 7/8" NI-40x	1	18
J4	12-00-00	11 7/8" NI-40x	1	11
J5	10-00-00	11 7/8" NI-40x	1	5
J6	4-00-00	11 7/8" NI-40x	1	8
J7	2-00-00	11 7/8" NI-40x	1	2
J8	22-00-00	11 7/8" NI-80	1	2
J9	20-00-00	11 7/8" NI-80	1	27
J9DJ	20-00-00	11 7/8" NI-80	2	4
B1	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B7	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B23L	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B18	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B17	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B2	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B19L	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B21L	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B22L	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B6	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B8	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B20L	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B4	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
10	H1	IUS2.56/11.88
10	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
23	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
4	H2	IUS3.56/11.88
3	H2	IUS3.56/11.88
1	H4C	HUC410
2	H4	HGUS410
2	H7	HU312-2

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING
SUNKEN OPTION



FROM PLAN DATED: OCT. 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-21
ELEVATION: A / B / C
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: CH
REVISION:

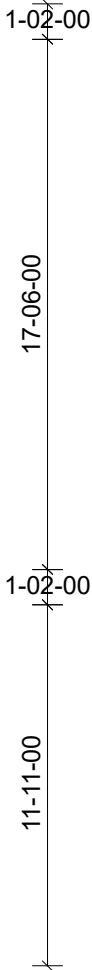
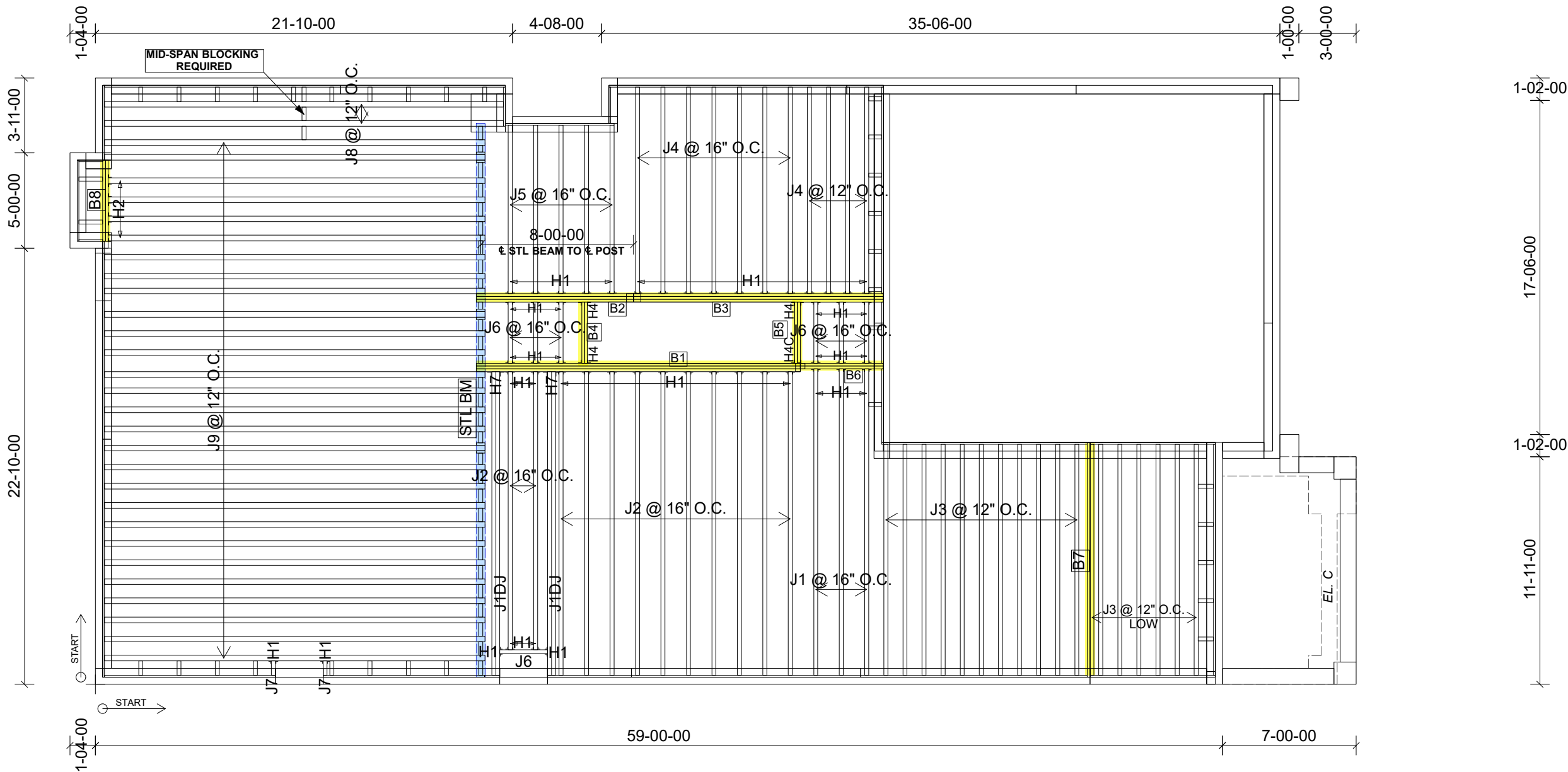
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MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.
CANTILEVERED JOISTS INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4/5 FOR REINFORCEMENT REQUIREMENTS.
FOR **HOLES** 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.

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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/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



FROM PLAN DATED: OCT. 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-21
ELEVATION: **A**
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: CH
REVISION:

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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CERAMIC TILE APPLICATION AS PER OBC 9.30.6.

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DEAD LOAD: 15.0 lb/ft²
TILE LOAD: +5.0 lb/ft²

JOIST LL DEFLECTION LIMIT: L/480
SUBFLOOR: 5/8" GLUED AND NAILED

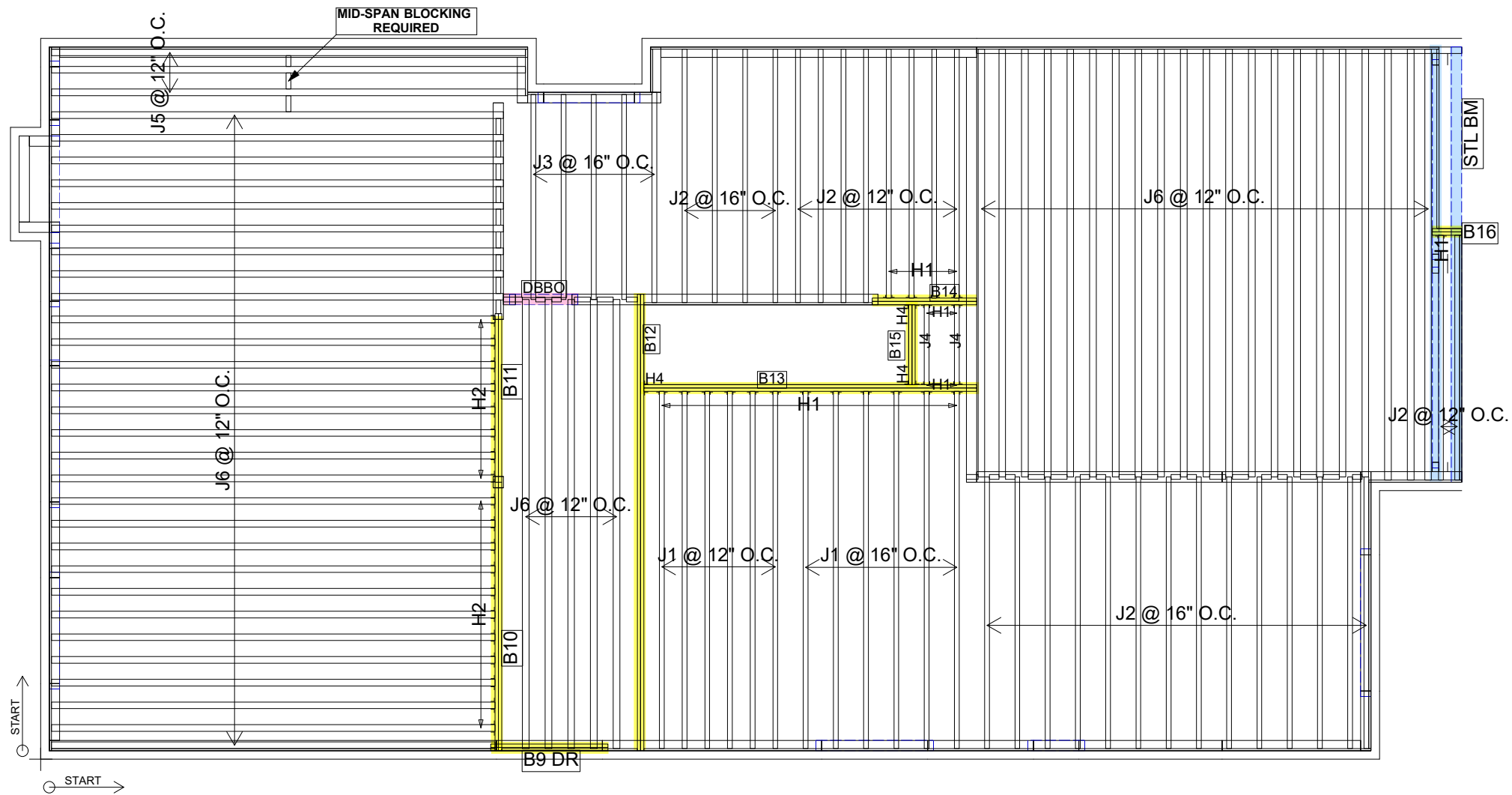
Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	3
J2	16-00-00	11 7/8" NI-40x	1	12
J1DJ	16-00-00	11 7/8" NI-40x	2	4
J3	14-00-00	11 7/8" NI-40x	1	18
J4	12-00-00	11 7/8" NI-40x	1	11
J5	10-00-00	11 7/8" NI-40x	1	5
J6	4-00-00	11 7/8" NI-40x	1	7
J7	2-00-00	11 7/8" NI-40x	1	2
J8	22-00-00	11 7/8" NI-80	1	2
J9	20-00-00	11 7/8" NI-80	1	28
B1	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B7	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B3	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B2	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B6	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B8	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B4	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
37	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
4	H2	IUS3.56/11.88
1	H4C	HUC410
3	H4	HGUS410
2	H7	HU312-2

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING
WOD / WOB CONDITION



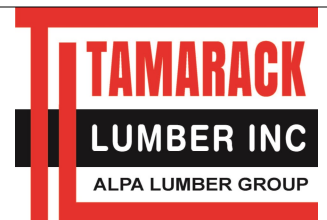
Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-40x	1	12
J2	12-00-00	11 7/8" NI-40x	1	28
J3	10-00-00	11 7/8" NI-40x	1	5
J4	4-00-00	11 7/8" NI-40x	1	2
J5	22-00-00	11 7/8" NI-80	1	3
J6	20-00-00	11 7/8" NI-80	1	55
B9 DR	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B12	22-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B13	16-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B10	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B11	8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B14	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B15	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B16	2-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
21	H1	IUS2.56/11.88
19	H2	IUS3.56/11.88
3	H4	HGUS410

REVIEWED

DATE: 6/22/22

2nd FLOOR FRAMING



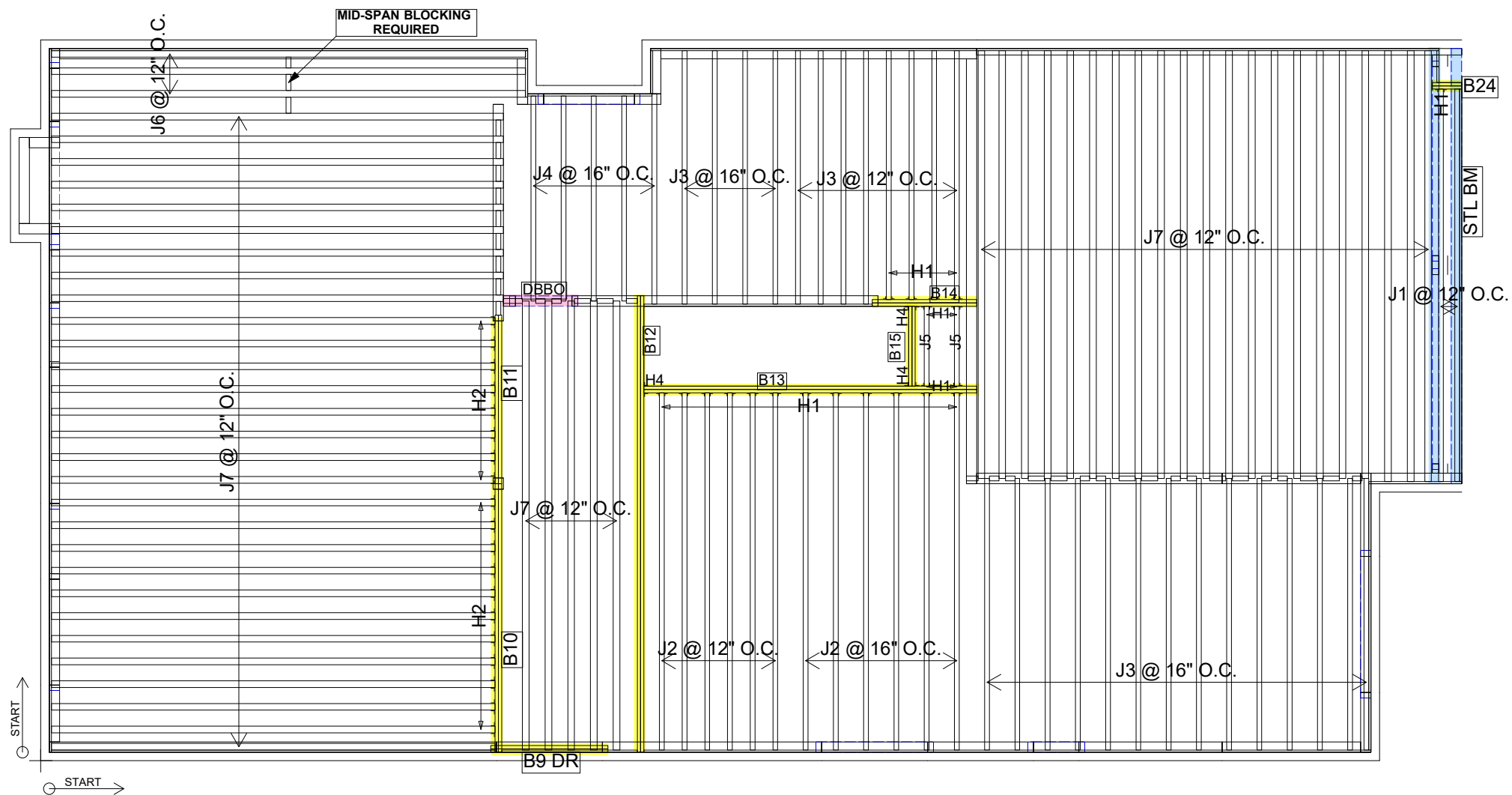
FROM PLAN DATED: OCT. 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-21
ELEVATION: A
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: CH
REVISION:

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



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	2
J2	16-00-00	11 7/8" NI-40x	1	12
J3	12-00-00	11 7/8" NI-40x	1	26
J4	10-00-00	11 7/8" NI-40x	1	5
J5	4-00-00	11 7/8" NI-40x	1	2
J6	22-00-00	11 7/8" NI-80	1	3
J7	20-00-00	11 7/8" NI-80	1	55
B9 DR	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B12	22-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B13	16-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B10	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B11	8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B14	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B15	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B24	2-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
21	H1	IUS2.56/11.88
19	H2	IUS3.56/11.88
3	H4	HGUS410

REVIEWED

DATE: 6/22/22

2nd FLOOR FRAMING



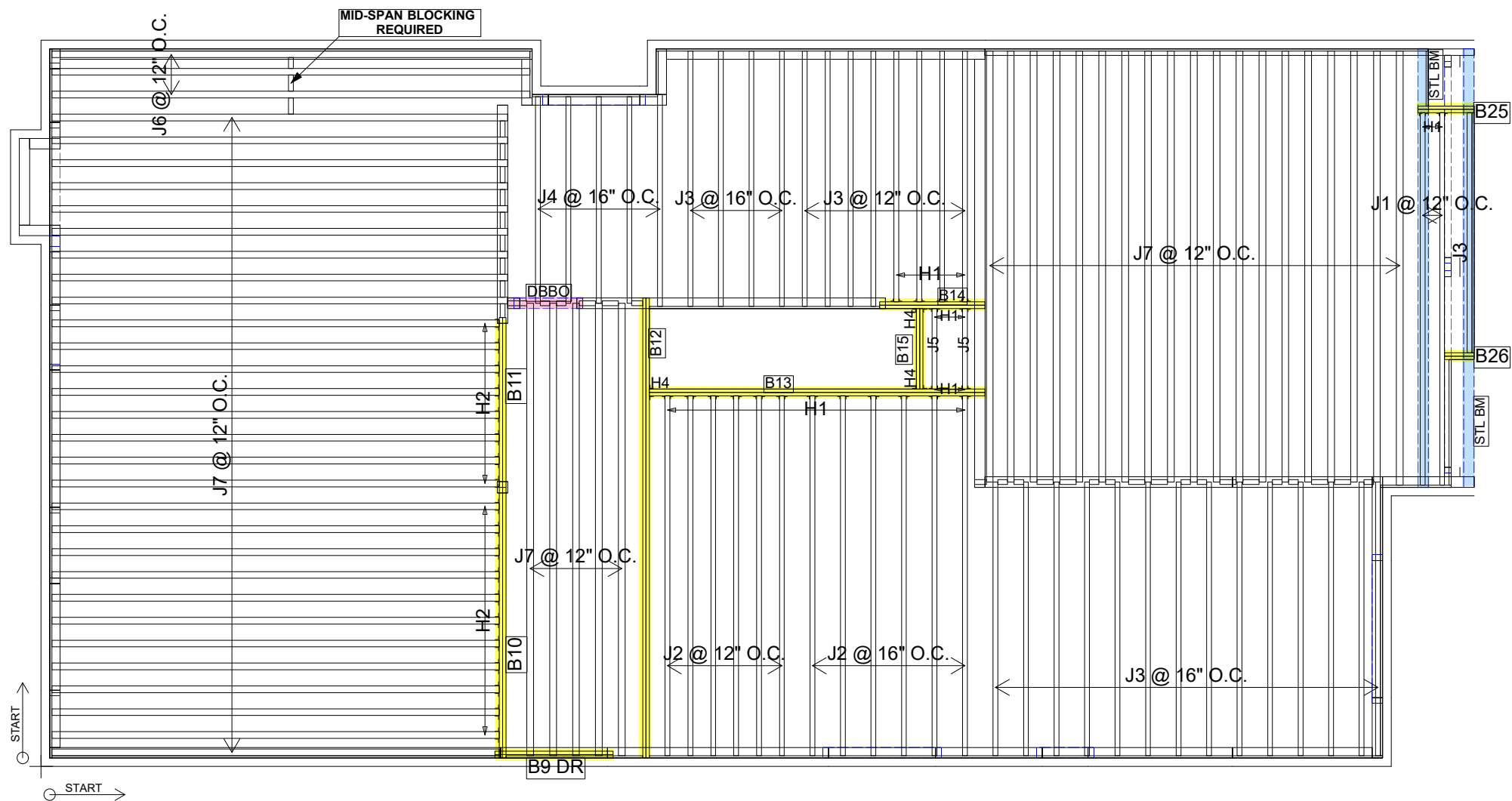
FROM PLAN DATED: OCT. 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-21
ELEVATION: B
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: CH
REVISION:

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CERAMIC TILE APPLICATION AS PER OBC 9.30.6.

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SUBFLOOR: 5/8" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	2
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J4	10-00-00	11 7/8" NI-40x	1	5
J5	4-00-00	11 7/8" NI-40x	1	2
J6	22-00-00	11 7/8" NI-80	1	3
J7	20-00-00	11 7/8" NI-80	1	53
B9 DR	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B12	22-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B13	16-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B10	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B11	8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B14	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B15	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B25	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B26	2-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
22	H1	IUS2.56/11.88
19	H2	IUS3.56/11.88
3	H4	HGUS410

REVIEWED

DATE: 6/22/22

2nd FLOOR FRAMING



FROM PLAN DATED: OCT. 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-21
ELEVATION: C
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: CH
REVISION:

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SUBFLOOR: 5/8" GLUED AND NAILED

NORDIC

INSTALLATION GUIDE NORDIC JOIST

NS-G133 
ENGLISH
VERSION
2020-10-01

Engineered Wood Products

BASIC INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



NORDIC
STRUCTURES

nordic.ca

INSTALLING NORDIC I-JOISTS

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

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

SAFETY AND CONSTRUCTION PRECAUTIONS

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

Avoid Accidents by Following these Important Guidelines:

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



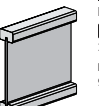
Do not walk on I-joists until fully fastened and braced, or serious injuries can result.

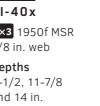


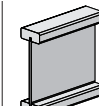
Never stack building materials over unsheathed I-joists. Once sheathed, do not overstress I-joist with concentrated loads from building materials.

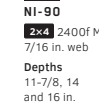
NORDIC I-JOIST SERIES

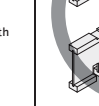
RESIDENTIAL SERIES

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

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

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

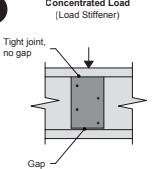
	NI-80 2x4 2100F MSR 3/8 in. web Depths 9-1/2, 11-7/8, 14 and 16 in.
23 pieces per unit	

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

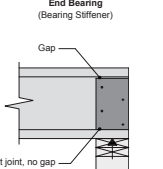
RIM BOARDS
Width 1-1/8 in.
Length 16 ft
Depths 9-1/2 to 16 in.
APA Rim Board Plus

WEB STIFFENERS

2 **Concentrated Load (Load Stiffener)**



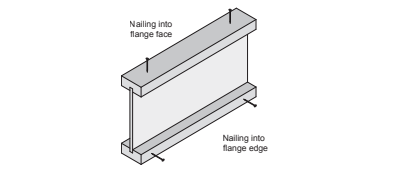
End Bearing (Bearing Stiffener)



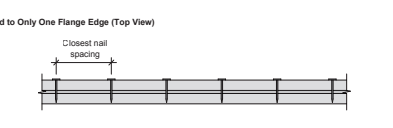
Stiffener Size Requirements

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

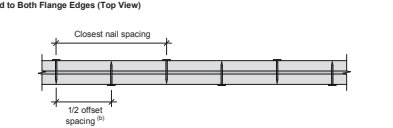
NAIL SPACING



Nailed to Only One Flange Edge (Top View)



Nailed to Both Flange Edges (Top View)



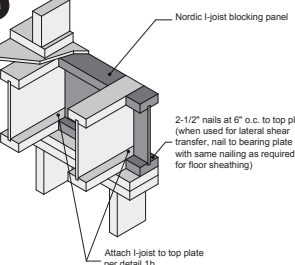
Recommended Closest Nail Spacing for Fastening Sheathing to I-joist Flanges to Minimize Splitting

Fastener size (diameter x length)	Flange face nailing ^(a)			Flange edge nailing ^(b)		
	End distance (in.)	Nail spacing (in.)	End distance (in.)	Nail spacing (in.)	Nail spacing (in.)	
0.128" or smaller in diameter, and 3-1/4" or shorter in length	2	2	2	2	4	
	2	3	2	3	6	

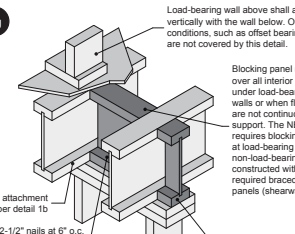
^(a) If more than one row is required, offset rows a minimum of 1/2 inch and stagger.

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

1a



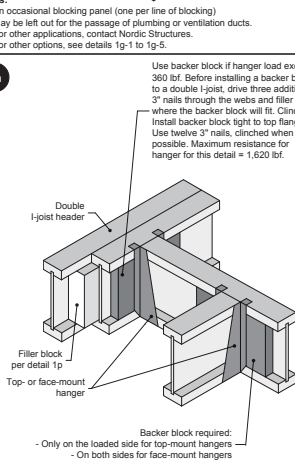
1b



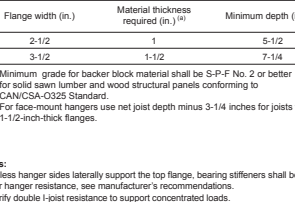
Notes:

1. An occasional blocking panel (one per line of blocking) may be left out for the passage of plumbing or ventilation ducts. For other applications, contact Nordic Structures.
2. For other options, see details 1g to 1p-5.

1h



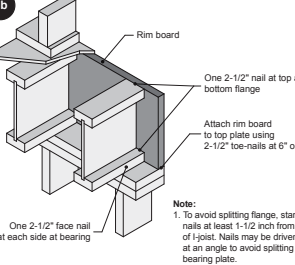
1i



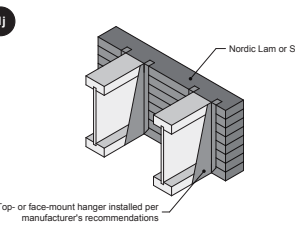
Notes:

1. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.
2. For nailing schedules for Nordic NI-40x or SCL beams, see the manufacturer's recommendations.

1d



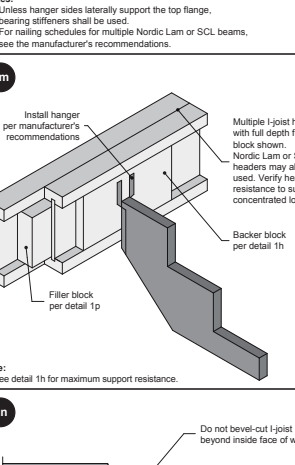
1e



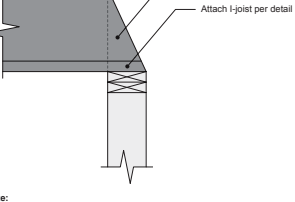
Notes:

1. This detail may be used to reduce floor vibration.
2. Blocking panels may be of any I-joist series. Nails attaching lumber piece to I-joist web should be driven from the web side and clinched on the lumber side.
3. One occasional blocking panel may be left out for the passage of plumbing or ventilation ducts. Otherwise, a hole of not more than 2/3 of the lesser dimension of the blocking depth or length may be drilled in the blocking panel.

1j



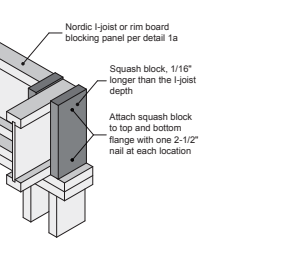
1k



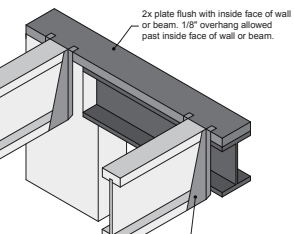
Notes:

1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8-inch to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. For flange width of 2-1/2 inches, nail joists together with two rows of 3-inch nails at 12 inches o.c. (clinched when possible) on each side of the double I-joist (total of four nails per foot). For flange width of 3-1/2 inches, use two rows of 3-inch nails at 6 inches o.c. on each side of the double I-joist (total of eight nails per foot).
5. The maximum factored load may be applied to one side of the double I-joist using this detail is 860 dBf.

1l



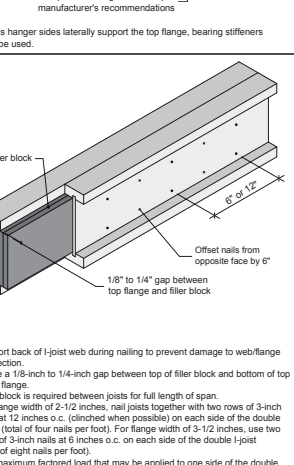
1m



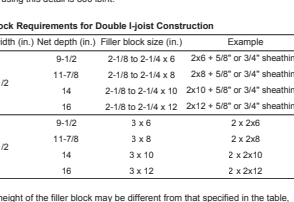
Notes:

1. See detail 1h for maximum support resistance.

1p



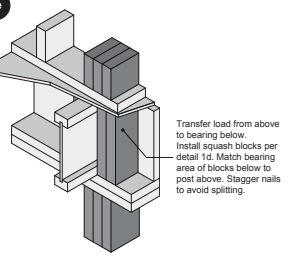
1p-1



Notes:

1. In some local codes, blocking panels are prescriptively required in the first joist space (or first and second joist spaces) next to the starter joist. Where required, see local code requirements for spacing of the blocking panels. As a minimum, it is recommended to use blocking panels spaced at 4 feet on centre.
2. Details shown are for minimum blocking attachment. Transfer of lateral loads may require additional fasteners. In such cases, nail size, spacing and specific design detailing shall be provided by the building designer.
3. Where blocking panels are required between adjacent joists, the blocking panels can be staggered by approximately 3 inches, and end-nailed as shown.
4. Nails attaching lumber piece to I-joist web should be driven from the web side and clinched on the lumber side.

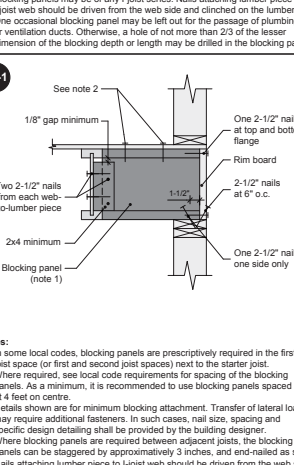
1s-1



Notes:

1. The height of the filler block may be different from that specified in the table, as long as it allows nailing and respects the required gap.

1n



Notes:

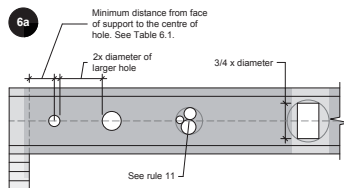
1. Blocking required at bearing for lateral support, not shown for clarity.

WEB HOLES AND OPENINGS

WEB HOLES IN I-JOISTS

Rules for Cutting Holes in I-Joists

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



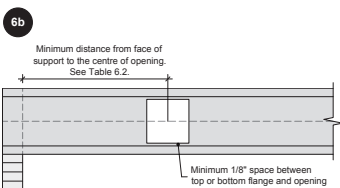
Notes:

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

DUCT CHASE OPENINGS

Rules for Cutting Duct Chase Openings in I-joists

1. The distance between the inside edge of the support and the centreline of a duct chase opening shall be in compliance with the requirements of Table 6.2.
2. I-joist top and bottom flanges must never be cut, notched or otherwise modified.
3. The maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the opening and the adjacent I-joist flange.
4. All openings shall be cut in accordance with the restrictions listed above and as illustrated in detail 6b.
5. Limit one maximum-size duct chase opening per span.



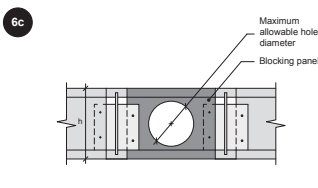
Notes:

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

HOLES IN BLOCKING PANELS

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

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



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

^(a) Maximum allowable hole diameter in blocking panel, where the blocking panel is longer than its height.

TABLE 6.1 - LOCATION OF WEB HOLES

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

Notes:

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

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

TABLE 6.2 - LOCATION OF DUCT CHASE OPENINGS

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



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **2ND FLR FRAMING**
Label: **B9 DR - i6187**
Type: **Beam**

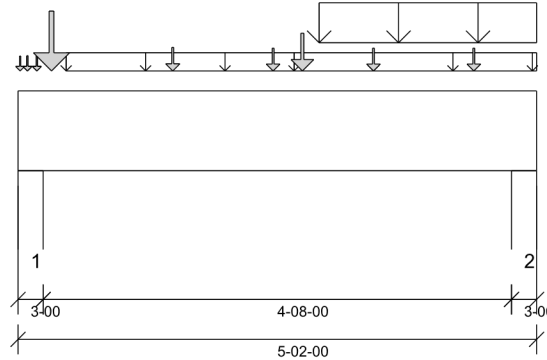
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/10/2022 17:14



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'- 11 9/16" Bottom: 5'- 2"

Factored Resistance of Support Material:

- 1334 psi Wall @ 0'- 2"
- 1334 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.

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 10"	1.25D + 1.5S + L	1.00	6598 lb ft	23299 lb ft	Passed - 28%
Factored Neg. Moment:	0'- 2"	1.25D + 1.5L + S	1.00	154 lb ft	23299 lb ft	Passed - 1%
Factored Shear:	4'- 1 1/2"	1.25D + 1.5S + L	1.00	3684 lb	11052 lb	Passed - 33%
Live Load (LL) Pos. Defl.:	2'- 8 1/16"	S + 0.5L		0.021"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 7 7/8"	D + S + 0.5L		0.035"	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 + S	1.00	8576 lb		10920 lb	14011 lb	Passed - 79%
2	3-00	1.25D + 1.5S + L	1.00	5303 lb		10920 lb	14011 lb	Passed - 49%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'- 5 3/4"	2'- 9"	R1(i6332)	Top	100 lb/ft	-	-	-
Uniform	2'- 9"	5'- 2"	R1(i6332)	Top	100 lb/ft	-	-	-
Uniform	3'	5'- 2"	R1(i6332)	Top	216 lb/ft	-	547 lb/ft	-
Point	0'- 1/4"	0'- 1/4"	J6(i6292)	Top	1 lb	1 lb	-	-
Point	0'- 1 1/8"	0'- 1 1/8"	R1(i6366)	Top	20 lb	1 lb	-	-
Point	0'- 1 1/8"	0'- 1 1/8"	J6(i6292)	Top	3 lb	4 lb	-	-
Point	0'- 2 1/4"	0'- 2 1/4"	J6(i6292)	Top	1 lb	1 lb	-	-
Point	0'- 2 1/4"	0'- 2 1/4"	R1(i6366)	Top	0 lb	1 lb	-	-
Point	0'- 4"	0'- 4"	B10(i6368)	Top	1215 lb	2227 lb	-	-
Point	1'- 6 1/2"	1'- 6 1/2"	J6(i6265)	Top	220 lb	440 lb	-	-
Point	2'- 6 1/2"	2'- 6 1/2"	J6(i6133)	Top	199 lb	399 lb	-	-
Point	2'- 10"	2'- 10"	R1(i6332)	Top	518 lb	-	1225 lb	-
Point	3'- 6 1/2"	3'- 6 1/2"	J6(i6110)	Top	199 lb	399 lb	-	-
Point	4'- 6 1/2"	4'- 6 1/2"	J6(i6331)	Top	199 lb	399 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	E36(i1524)	2437 lb	3312 lb	848 lb	-
2	4'- 11"	5'- 2"	E38(i1526)	1383 lb	947 lb	1563 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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=4859 lb, Qr=7887 lb, Result=61.61%.

PLY TO PLY CONNECTION

REVIEWED





BUILDER:	BAYVIEW WELLINGTON	Job Name:	S38-21	2 Ply Member	Status:
SITE:	GREEN VALLEY EAST	Level:	2ND FLR FRAMING	1 3/4" x 9 1/2" (2.0E 3100)	Design
MODEL:	S38-21	Label:	B9 DR - i6187	WestFraser LVL	Passed
CITY:	BRADFORD	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.



REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **2ND FLR FRAMING**
Label: **B10 - i6368**
Type: **Beam**

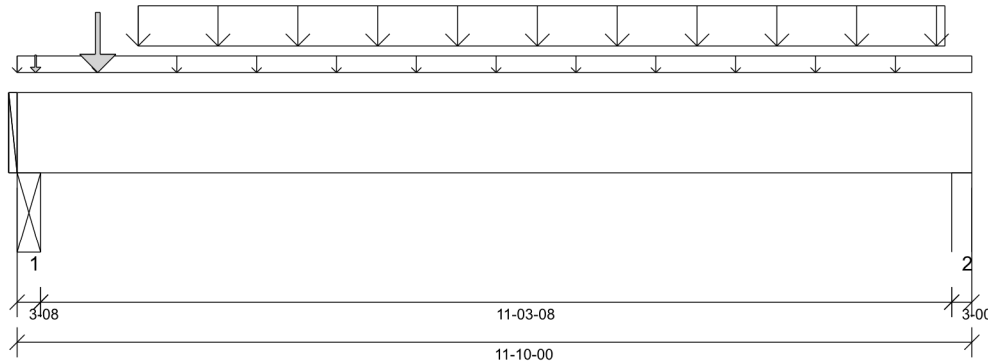
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 12

Report Version: 2020.06.20 01/10/2022 17:14



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'- 8 1/2"

Factored Resistance of Support Material:

- 1040 psi Beam @ 0'- 2 1/2"
- 615 psi Wall @ 11'- 8"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'	1.25D + 1.5L	1.00	14770 lb ft	35345 lb ft	Passed - 42%
Factored Shear:	10'- 7 1/8"	1.25D + 1.5L	1.00	4924 lb	13815 lb	Passed - 36%
Live Load (LL) Pos. Defl.:	5'- 11 5/16"	L		0.169"	L/360	Passed - L/799
Total Load (TL) Pos. Defl.:	5'- 11 5/16"	D + L		0.259"	L/240	Passed - L/522

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	4859 lb		12740 lb	12740 lb	Passed - 38%
2	3-00	1.25D + 1.5L	1.00	5006 lb		10920 lb	6460 lb	Passed - 77%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	-0'	11'- 10"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	11'- 10"	FC3 Floor Decking (Plan View Fill)	Top	12 lb/ft	24 lb/ft	-	-
Uniform	1'- 6"	11'- 6"	Smoothed Load	Back	196 lb/ft	391 lb/ft	-	-
Point	1'	1'	J6(i6289)	Back	172 lb	344 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E78(i6416)	Top	29 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	-0'	0'- 3 1/2"	B9 DR(i6187)	1215 lb	2227 lb	-	-
2	11'- 7"	11'- 10"	1(i1533)	1228 lb	2313 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061190

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **2ND FLR FRAMING**
Label: **B11 - i6131**
Type: **Beam**

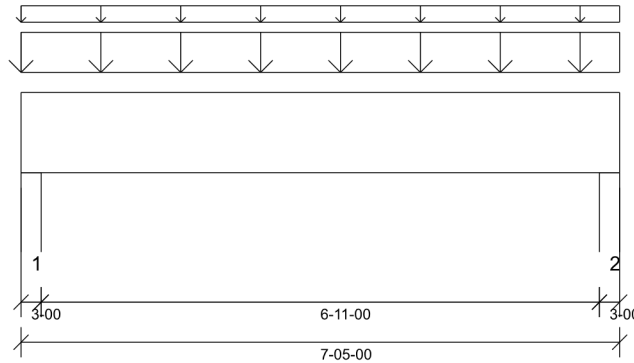
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/10/2022 17:14



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'- 8 1/2"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2"
- 615 psi Wall @ 7'- 3"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 2"	1.25D + 1.5L	1.00	5552 lb ft	35345 lb ft	Passed - 16%
Factored Shear:	6'- 2 1/8"	1.25D + 1.5L	1.00	3450 lb	13815 lb	Passed - 25%
Live Load (LL) Pos. Defl.:	3'- 8 1/2"	L		0.025"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 8 1/2"	D + L		0.037"	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	3610 lb		10920 lb	6460 lb	Passed - 56%
2	3-00	1.25D + 1.5L	1.00	3532 lb		10920 lb	6460 lb	Passed - 55%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'- 5"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	7'- 5"	Smoothed Load	Back	211 lb/ft	422 lb/ft	-	-
Uniform	0'	7'- 5"	FC3 Floor Decking (Plan View Fill)	Top	12 lb/ft	24 lb/ft	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	1(i1533)	884 lb	1677 lb	-	-
2	7'- 2"	7'- 5"	3(i1714)	861 lb	1631 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061191

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **2ND FLR FRAMING**
Label: **B12 - i6257**
Type: **Beam**

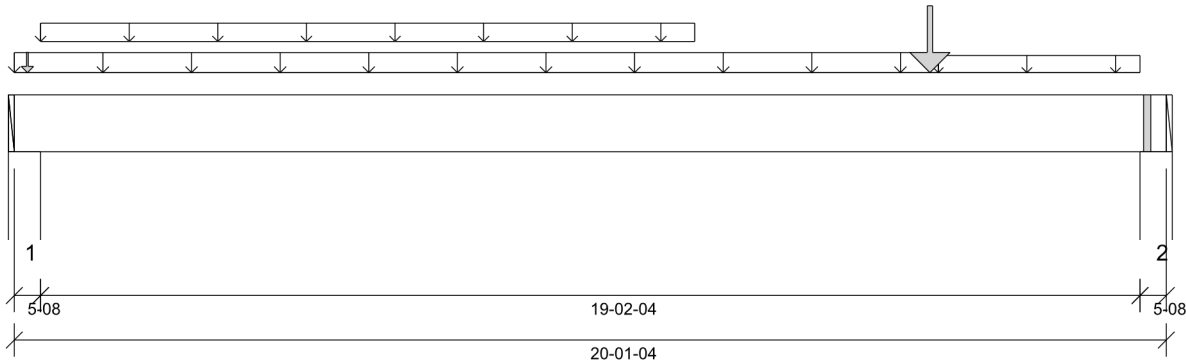
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Undated 9.13

Report Version: 2020.06.20 01/10/2022 17:14



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: 15'- 4 1/2"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Wall @ 19'- 8 3/4"

PLY TO PLY CONNECTION:
4 ROWS OF 3.25" PNEUMATIC GUN
NAILS (0.120"x3.25") @ 12" 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:	15'- 11 3/4"	1.25D + 1.5L	1.00	18039 lb ft	35345 lb ft	Passed - 51%
Factored Shear:	18'- 7 7/8"	1.25D + 1.5L	1.00	4833 lb	13815 lb	Passed - 35%
Live Load (LL) Pos. Defl.:	10'- 11 5/8"	L		0.476"	L/360	Passed - L/483
Total Load (TL) Pos. Defl.:	10'- 9 3/4"	D + L		0.829"	L/240	Passed - L/277
Permanent Deflection:	10'- 7 3/16"			-	L/360	Passed - L/671

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L + S	1.00	2519 lb		20020 lb	11843 lb	Passed - 21%
2	5-08	1.25D + 1.5L	1.00	4866 lb		20020 lb	11843 lb	Passed - 41%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	20'- 1 1/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	16'- 1 1/2"	FC3 Floor Decking (Plan View Fill)	Top	20 lb/ft	40 lb/ft	-	-
Uniform	0'- 5 1/2"	11'- 10 1/2"	User Load	Top	30 lb/ft	-	-	-
Uniform	16'- 1 1/2"	19'- 7 3/4"	FC3 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Point	15'- 11 3/4"	15'- 11 3/4"	B13(i6311)	Front	1230 lb	2288 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E77(i6415)	Top	92 lb	-	160 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	E38(i1526)	878 lb	817 lb	163 lb	-
2	19'- 7 3/4"	20'- 1 1/4"	7(i5352)	1357 lb	2137 lb	-3 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061192

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **2ND FLR FRAMING**
Label: **B13 - i6311**
Type: **Beam**

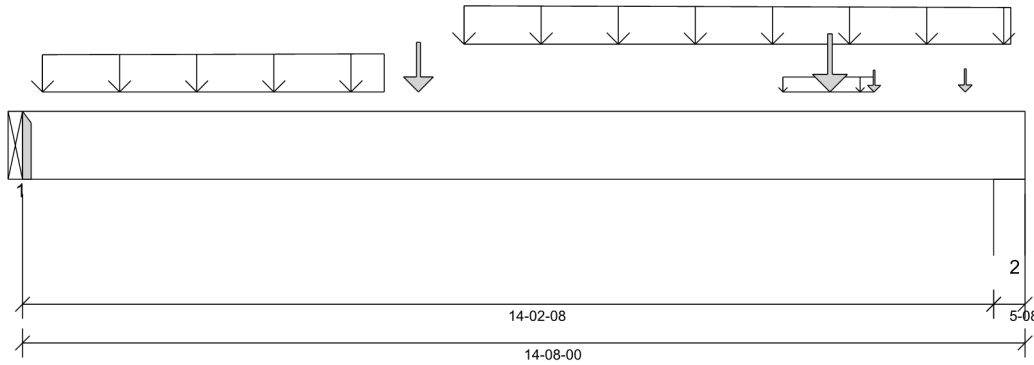
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/10/2022 17:14



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 @ 14'- 3 1/2"

PLY TO PLY CONNECTION:
4 ROWS OF 3.25" PNEUMATIC GUN
NAILS (0.120"x3.25") @ 12" 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 # TF22061193

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	7'- 1 1/2"	1.25D + 1.5L	1.00	19270 lb ft	35345 lb ft	Passed - 55%
Factored Shear:	13'- 2 5/8"	1.25D + 1.5L	1.00	6156 lb	13815 lb	Passed - 45%
Live Load (LL) Pos. Defl.:	7'- 2 11/16"	L		0.347"	L/360	Passed - L/491
Total Load (TL) Pos. Defl.:	7'- 2 11/16"	D + L		0.533"	L/240	Passed - L/320
Permanent Deflection:	7'- 2 11/16"			-	L/360	Passed - L/944

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	4959 lb		5460 lb	-	Passed - 91%
2	5-08	1.25D + 1.5L	1.00	6178 lb		20020 lb	11843 lb	Passed - 52%

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'	14'- 8"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	11'- 1 1/2"	12'- 5 1/2"	FC3 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Tapered	0'- 3 1/2"	5'- 3 1/2"	Smoothed Load	Front	156 To 162 lb/ft	313 To 325 lb/ft	-	-
Tapered	6'- 5 1/2"	14'- 5 1/2"	Smoothed Load	Front	164 To 152 lb/ft	328 To 305 lb/ft	-	-
Point	5'- 9 1/2"	5'- 9 1/2"	J1(i6272)	Front	187 lb	374 lb	-	-
Point	11'- 9 3/4"	11'- 9 3/4"	B15(i5785)	Back	246 lb	450 lb	-	-
Point	12'- 5 1/2"	12'- 5 1/2"	J4(i5749)	Back	39 lb	79 lb	-	-
Point	13'- 9 1/2"	13'- 9 1/2"	J4(i5730)	Back	46 lb	92 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B12(i6257)	1230 lb	2288 lb	-	-
2	14'- 2 1/2"	14'- 8"	E18(i1416)	1525 lb	2841 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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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- 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.

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **2ND FLR FRAMING**
Label: **B14 - i6155**
Type: **Beam**

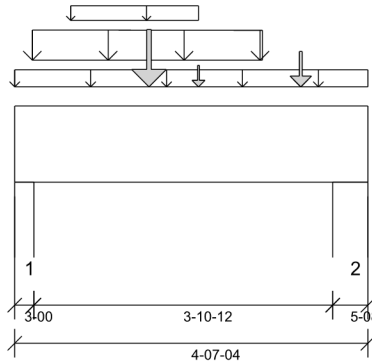
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/10/2022 17:14



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"
- 615 psi Wall @ 4'- 2 3/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 9"	1.25D + 1.5L	1.00	2268 lb ft	35345 lb ft	Passed - 6%
Factored Shear:	1'- 2 7/8"	1.25D + 1.5L	1.00	1716 lb	13815 lb	Passed - 12%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-00	1.25D + 1.5L	1.00	1834 lb		10920 lb	6460 lb	Passed - 28%
2	5-08	1.25D + 1.5L	1.00	1835 lb		20020 lb	11843 lb	Passed - 15%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 7 1/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	4'- 7 1/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'- 8 3/4"	2'- 4 3/4"	FC3 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Tapered	0'- 2 3/4"	3'- 2 3/4"	Smoothed Load	Back	111 To 110 lb/ft	222 To 218 lb/ft	-	-
Point	1'- 9"	1'- 9"	B15(i5785)	Front	246 lb	450 lb	-	-
Point	2'- 4 3/4"	2'- 4 3/4"	J4(i5749)	Front	39 lb	79 lb	-	-
Point	3'- 8 3/4"	3'- 8 3/4"	J4(i5730)	Front	46 lb	92 lb	-	-
Point	3'- 8 3/4"	3'- 8 3/4"	J2(i6084)	Back	114 lb	229 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	7(i5352)	564 lb	786 lb	-	-
2	4'- 1 3/4"	4'- 7 1/4"	E18(i1416)	548 lb	734 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061194

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **2ND FLR FRAMING**
Label: **B15 - i5785**
Type: **Beam**

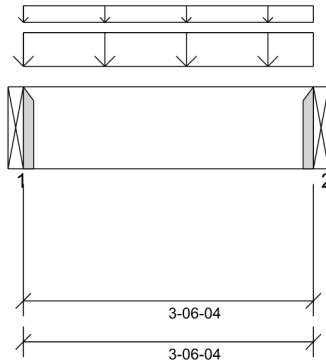
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9.13

Report Version: 2020.06.20 01/10/2022 17:14



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

Top: 0' Bottom: 3'- 6 1/4"

Factored Resistance of Support Material:

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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 9 1/8"	1.25D + 1.5L	1.00	865 lb ft	35345 lb ft	Passed - 2%
Factored Shear:	2'- 6 3/8"	1.25D + 1.5L	1.00	430 lb	13815 lb	Passed - 3%

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	983 lb		5460 lb	-	Passed - 18%
2	1-08	1.25D + 1.5L	1.00	983 lb		5460 lb	-	Passed - 18%

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	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'- 6 1/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	3'- 6 1/4"	User Load	Back	120 lb/ft	240 lb/ft	-	-
Uniform	0'	3'- 6 1/4"	FC3 Floor Decking (Plan View Fill)	Top	8 lb/ft	16 lb/ft	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B13(i6311)	246 lb	450 lb	-	-
2	3'- 6 1/4"	3'- 6 1/4"	B14(i6155)	246 lb	450 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061195

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **2ND FLR FRAMING**
Label: **B16 - i6173**
Type: **Beam**

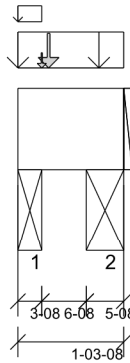
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/10/2022 17:14



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'- 4 1/4"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 2 1/2"
- 615 psi Beam @ 0'- 11"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	0'- 4 1/2"	1.25D + 1.5L	0.82	41 lb ft	29118 lb ft	Passed - 0%
Factored Shear:	1'- 3 3/8"	1.25D + 1.5S	0.98	211 lb	13490 lb	Passed - 2%

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	0.98	465 lb		12427 lb	7348 lb	Passed - 6%
2	5-08	1.25D + 1.5S + L	1.00	515 lb		20020 lb	11839 lb	Passed - 4%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	1'- 3 1/2"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	-0'	1'- 3 1/2"	E51(i6078)	Top	182 lb/ft	-	224 lb/ft	-
Uniform	0'	0'- 3 1/2"	FC3 Floor Decking (Plan View Fill)	Top	5 lb/ft	10 lb/ft	-	-
Point	0'- 4 1/2"	0'- 4 1/2"	J2(i6255)	Front	70 lb	140 lb	-	-
Point	0'- 3 1/2"	0'- 3 1/2"	FC3 Floor Decking (Plan View Fill)	Top	0 lb	1 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	DBBO(i1521)	171 lb	144 lb	114 lb	-
2	0'- 10"	1'- 3 1/2"	STL BM(i1747)	152 lb	-1 lb	176 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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.

PLY TO PLY CONNECTION:

4 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.



STRUCTURAL COMPONENT ONLY
DWG # TF22061196

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **1ST FLR FRAMING**
Label: **B2 - i6683**
Type: **Beam**

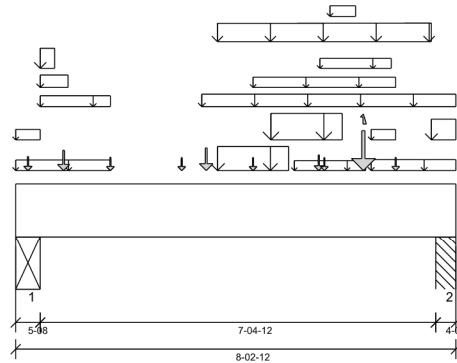
3 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/10/2022 17:14



DESIGN INFORMATION

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

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 4 1/2"
- 615 psi Column @ 7'- 11 1/4"

PLY TO PLY CONNECTION:
4 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.



STRUCTURAL COMPONENT ONLY
DWG # TF22061197 PG 1/2

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 7"	1.25D + 1.5L	1.00	17204 lb ft	53017 lb ft	Passed - 32%
Factored Shear:	6'- 10 3/8"	1.25D + 1.5L	1.00	9418 lb	20723 lb	Passed - 45%
Live Load (LL) Pos. Defl.:	4'- 3 1/2"	L		0.055"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 3 9/16"	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	1.00	7992 lb		30030 lb	17758 lb	Passed - 45%
2	4-08	1.25D + 1.5L	1.00	10221 lb		24570 lb	14529 lb	Passed - 70%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 2 3/4"	Self Weight	Top	18 lb/ft	-	-	-
Uniform	0'	1'- 9 1/4"	FC1 Floor Decking (Plan View Fill)	Top	7 lb/ft	15 lb/ft	-	-
Uniform	0'	0'- 5 1/2"	FC1 Floor Decking (Plan View Fill)	Top	5 lb/ft	10 lb/ft	-	-
Uniform	0'- 5 1/2"	1'- 9 1/4"	FC1 Floor Decking (Plan View Fill)	Top	10 lb/ft	20 lb/ft	-	-
Uniform	0'- 5 1/2"	0'- 11 3/4"	8(i5354)	Top	81 lb/ft	-	-	-
Uniform	0'- 5 1/2"	0'- 8 3/4"	8(i5354)	Top	107 lb/ft	213 lb/ft	-	-
Uniform	3'- 5 3/4"	8'- 2 3/4"	7(i5352)	Top	81 lb/ft	-	-	-
Uniform	3'- 9 1/4"	5'- 1 1/4"	7(i5352)	Top	149 lb/ft	297 lb/ft	-	-
Uniform	4'- 5 1/4"	7'- 1 1/4"	FC1 Floor Decking (Plan View Fill)	Top	4 lb/ft	9 lb/ft	-	-
Uniform	4'- 9 1/4"	6'- 1 1/4"	7(i5352)	Top	176 lb/ft	351 lb/ft	-	-
Uniform	5'- 2 1/2"	6'- 6 1/2"	7(i5352)	Top	1 lb/ft	1 lb/ft	-	-
Uniform	5'- 8 1/4"	7'- 1/4"	7(i5352)	Top	1 lb/ft	2 lb/ft	-	-
Uniform	5'- 10 1/2"	6'- 4 1/4"	7(i5352)	Top	7 lb/ft	13 lb/ft	-	-
Uniform	6'- 7 3/4"	8'- 2 3/4"	7(i5352)	Top	30 lb/ft	-	-	-
Uniform	6'- 7 3/4"	7'- 1 1/4"	7(i5352)	Top	6 lb/ft	12 lb/ft	-	-
Tapered	3'- 9 1/4"	7'- 9 1/4"	7(i5352)	Top	88 To 92 lb/ft	176 To 183 lb/ft	-	-
Tapered	7'- 9 1/4"	8'- 2 3/4"	7(i5352)	Top	114 To 114 lb/ft	227 lb/ft	-	-
Point	1'- 9 1/4"	1'- 9 1/4"	J6(i6630)	Front	50 lb	100 lb	-	-
Point	3'- 1 1/4"	3'- 1 1/4"	J6(i6695)	Front	49 lb	97 lb	-	-
Point	4'- 5 1/4"	4'- 5 1/4"	J6(i6651)	Front	46 lb	93 lb	-	-
Point	5'- 8"	5'- 8"	B4(i6635)	Front	233 lb	429 lb	-	-
Point	1'- 9 1/4"	1'- 9 1/4"	J5(i6713)	Back	131 lb	263 lb	-	-
Point	3'- 1 1/4"	3'- 1 1/4"	J5(i6659)	Back	120 lb	239 lb	-	-
Point	4'- 5 1/4"	4'- 5 1/4"	J5(i6607)	Back	120 lb	239 lb	-	-
Point	5'- 9 1/4"	5'- 9 1/4"	J5(i6579)	Back	120 lb	239 lb	-	-
Point	7'- 1 1/4"	7'- 1 1/4"	J5(i6564)	Back	123 lb	245 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	3(i1714)	Top	199 lb	277 lb	-	-
Point	0'- 10 3/4"	0'- 10 3/4"	8(i5354)	Top	417 lb	792 lb	-	-
Point	3'- 6 3/4"	3'- 6 3/4"	7(i5352)	Top	510 lb	974 lb	-	-
Point	6'- 6"	6'- 6"	7(i5352)	Top	1357 lb	2137 lb	-3 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i31)	2132 lb	3513 lb	-	-
2	7'- 10 1/4"	8'- 2 3/4"	PBO5(i4654)	2884 lb	4449 lb	-2 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.

REVIEWED



BUILDER:	BAYVIEW WELLINGTON	Job Name:	S38-21	3 Ply Member	Status:
SITE:	GREEN VALLEY EAST	Level:	1ST FLR FRAMING	1 3/4" x 11 7/8" (2.0E 3100)	Design
MODEL:	S38-21	Label:	B2 - i6683	WestFraser LVL	Passed
CITY:	BRADFORD	Type:	Beam		

DESIGN NOTES

- 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: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **1ST FLR FRAMING**
Label: **B1 - i6740**
Type: **Beam**

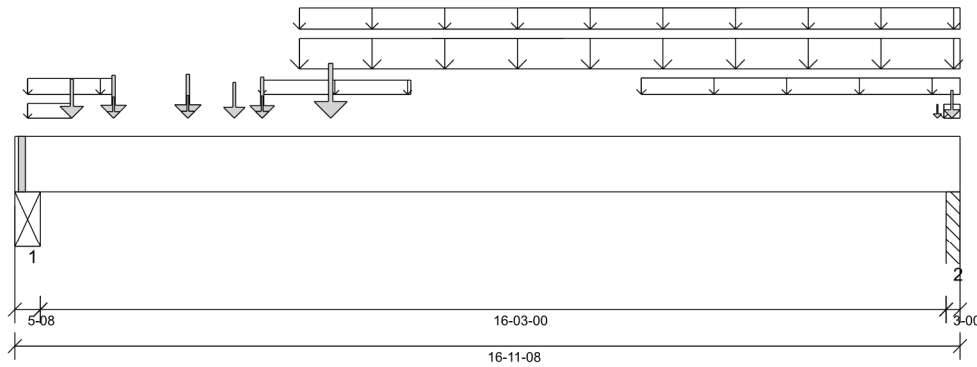
3 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/10/2022 17:14



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'- 4 1/2"
- 615 psi Column @ 16'- 9 1/2"

PLY TO PLY CONNECTION:
4 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.



STRUCTURAL COMPONENT ONLY
DWG # TF22061198 PG 1/2

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	8'- 5 1/4"	1.25D + 1.5L	1.00	28287 lb ft	53017 lb ft	Passed - 53%
Factored Shear:	1'- 5 3/8"	1.25D + 1.5L	1.00	6887 lb	20723 lb	Passed - 33%
Live Load (LL) Pos. Defl.:	8'- 5 3/4"	L		0.432"	L/360	Passed - L/450
Total Load (TL) Pos. Defl.:	8'- 6 1/16"	D + L		0.688"	L/240	Passed - L/283
Permanent Deflection:	8'- 6 11/16"			-	L/360	Passed - L/786

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	7024 lb		30030 lb	17758 lb	Passed - 40%
2	3-00	1.25D + 1.5L	1.00	7819 lb		16380 lb	9686 lb	Passed - 81%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	16'- 11 1/2"	Self Weight	Top	18 lb/ft	-	-	-
Uniform	0'- 2 3/4"	1'- 9 1/4"	FC1 Floor Decking (Plan View Fill)	Top	16 lb/ft	31 lb/ft	-	-
Uniform	0'- 2 3/4"	1'- 1/4"	FC1 Floor Decking (Plan View Fill)	Top	7 lb/ft	15 lb/ft	-	-
Uniform	4'- 5 1/4"	7'- 1 1/4"	FC1 Floor Decking (Plan View Fill)	Top	4 lb/ft	9 lb/ft	-	-
Uniform	11'- 2 7/8"	16'- 11 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	16'- 8"	16'- 11 1/2"	FC1 Floor Decking (Plan View Fill)	Top	2 lb/ft	3 lb/ft	-	-
Tapered	5'- 1 1/4"	16'- 11 1/2"	Smoothed Load	Top	-	365 To 370 lb/ft	-	-
Tapered	5'- 1 1/4"	16'- 11 1/2"	Smoothed Load	Front	165 To 167 lb/ft	-	-	-
Point	1'- 1/4"	1'- 1/4"	J1DJ(i6557)	Front	136 lb	272 lb	-	-
Point	1'- 9 1/4"	1'- 9 1/4"	J2(i6597)	Front	156 lb	313 lb	-	-
Point	3'- 1 1/4"	3'- 1 1/4"	J2(i6592)	Front	163 lb	325 lb	-	-
Point	3'- 11 1/4"	3'- 11 1/4"	J1DJ(i6569)	Front	118 lb	237 lb	-	-
Point	4'- 5 1/4"	4'- 5 1/4"	J2(i6699)	Front	147 lb	294 lb	-	-
Point	1'- 9 1/4"	1'- 9 1/4"	J6(i6630)	Back	41 lb	83 lb	-	-
Point	3'- 1 1/4"	3'- 1 1/4"	J6(i6695)	Back	49 lb	97 lb	-	-
Point	4'- 5 1/4"	4'- 5 1/4"	J6(i6651)	Back	46 lb	93 lb	-	-
Point	5'- 8"	5'- 8"	B4(i6635)	Back	233 lb	429 lb	-	-
Point	16'- 9 3/4"	16'- 9 3/4"	B5(i6618)	Back	229 lb	-	-	-
Point	16'- 6 5/8"	16'- 6 5/8"	FC1 Floor Decking (Plan View Fill)	Top	1 lb	2 lb	-	-


UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i31)	1804 lb	3168 lb	-	-
2	16'- 8 1/2"	16'- 11 1/2"	PBO4(i4007)	2169 lb	3417 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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.

REVIEWED

	BUILDER:	BAYVIEW WELLINGTON	Job Name:	S38-21	3 Ply Member 1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	Status: Design Passed
	SITE:	GREEN VALLEY EAST	Level:	1ST FLR FRAMING		
	MODEL:	S38-21	Label:	B1 - i6740		
	CITY:	BRADFORD	Type:	Beam		

- 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: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **1ST FLR FRAMING**
Label: **B4 - i6635**
Type: **Beam**

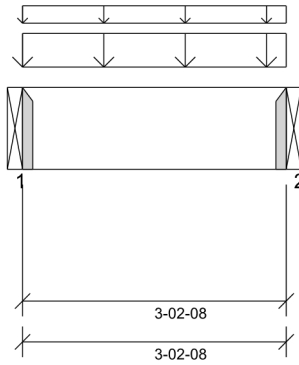
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9.13

Report Version: 2020.06.20 01/10/2022 17:14



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'- 2 1/2"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Beam @ 3'- 2 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 7 1/4"	1.25D + 1.5L	1.00	750 lb ft	35345 lb ft	Passed - 2%
Factored Shear:	0'- 11 7/8"	1.25D + 1.5L	1.00	358 lb	13815 lb	Passed - 3%

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	936 lb		5460 lb	-	Passed - 17%
2	1-08	1.25D + 1.5L	1.00	936 lb		5460 lb	-	Passed - 17%

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	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 1/2"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	3'- 2 1/2"	User Load	Top	120 lb/ft	240 lb/ft	-	-
Uniform	0'	3'- 2 1/2"	FC1 Floor Decking (Plan View Fill)	Top	14 lb/ft	28 lb/ft	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B1(i6740)	233 lb	429 lb	-	-
2	3'- 2 1/2"	3'- 2 1/2"	B2(i6683)	233 lb	429 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061199

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **1ST FLR FRAMING**
Label: **B5 - i6618**
Type: **Beam**

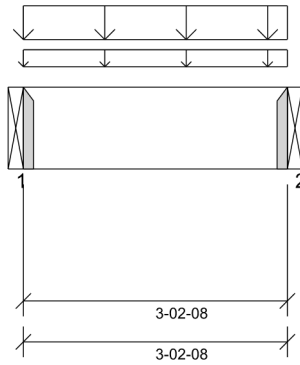
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9.13

Report Version: 2020.06.20 01/10/2022 17:14



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'- 2 1/2"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Beam @ 3'- 2 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 7 1/4"	1.25D + 1.5L	1.00	736 lb ft	35345 lb ft	Passed - 2%
Factored Shear:	0'- 11 7/8"	1.25D + 1.5L	1.00	351 lb	13815 lb	Passed - 3%

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	917 lb		5460 lb	-	Passed - 17%
2	1-08	1.25D + 1.5L	1.00	917 lb		5460 lb	-	Passed - 17%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	HUC410		-	-	-	Connector manually specified by the user.
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 1/2"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	3'- 2 1/2"	User Load	Back	120 lb/ft	240 lb/ft	-	-
Uniform	0'	3'- 2 1/2"	FC1 Floor Decking (Plan View Fill)	Top	11 lb/ft	22 lb/ft	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B1(i6740)	229 lb	420 lb	-	-
2	3'- 2 1/2"	3'- 2 1/2"	B3(i6577)	229 lb	420 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061200

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **1ST FLR FRAMING**
Label: **B7 - i6689**
Type: **Beam**

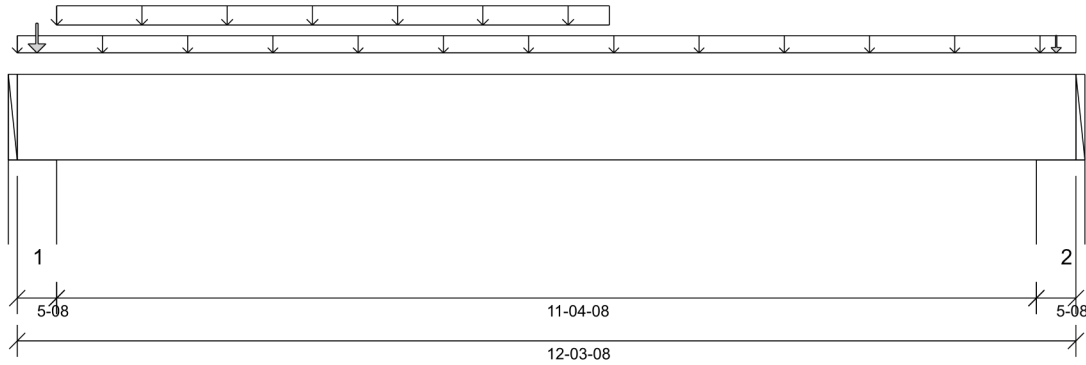
1 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 12

Report Version: 2020.06.20 01/10/2022 17:14



DESIGN INFORMATION

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

Lateral Restraint Requirements:

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

Top: 0' Bottom: 11'- 4 1/2"

Factored Resistance of Support Material:

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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 4 15/16"	1.25D + 1.5L	0.72	1402 lb ft	12696 lb ft	Passed - 11%
Factored Neg. Moment:	0'- 4 1/2"	1.25D + 1.5S + L	0.71	31 lb ft	3946 lb ft	Passed - 1%
Factored Shear:	1'- 5 3/8"	1.25D + 1.5L	0.72	442 lb	4963 lb	Passed - 9%
Live Load (LL) Pos. Defl.:	6'- 1 3/4"	L		0.012"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 11 3/16"	D + L		0.052"	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 + 1.5S + L	0.71	725 lb		7132 lb	4219 lb	Passed - 17%
2	5-08	1.25D + 1.5L	0.72	380 lb		7191 lb	4254 lb	Passed - 9%

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	6 lb/ft	-	-	-
Uniform	0'	12'- 3 1/2"	FC1 Floor Decking (Plan View Fill)	Top	7 lb/ft	14 lb/ft	-	-
Uniform	0'- 5 1/2"	6'- 10 1/2"	User Load	Top	60 lb/ft	-	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E21(i1431)	Top	61 lb	-	80 lb	-
Point	12'- 3/4"	12'- 3/4"	E19(i1417)	Top	15 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	W32(i38)	418 lb	85 lb	83 lb	-
2	11'- 10"	12'- 3 1/2"	W24(i24)	200 lb	85 lb	-3 lb	-

DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY
DWG # TF22061201

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **1ST FLR FRAMING**
Label: **B8 - i6732**
Type: **Beam**

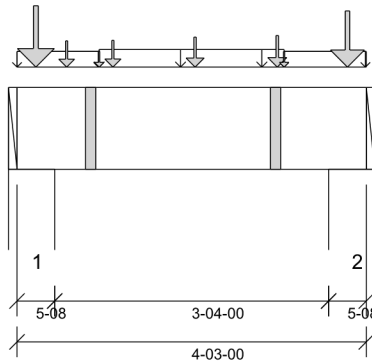
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/10/2022 17:14



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'- 8 1/2"

Factored Resistance of Support Material:

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

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

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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 2"	1.25D + 1.5L	1.00	1159 lb ft	35345 lb ft	Passed - 3%
Factored Neg. Moment:	0'- 4 1/2"	1.25D + 1.5L	1.00	377 lb ft	35345 lb ft	Passed - 1%
Factored Shear:	1'- 5 3/8"	1.25D + 1.5L	1.00	1775 lb	13815 lb	Passed - 13%

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	4420 lb		20020 lb	11843 lb	Passed - 37%
2	5'-08	1.25D + 1.5L	1.00	3776 lb		20020 lb	11843 lb	Passed - 32%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 3"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	1'	FC1 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Uniform	1'	3'- 3"	FC1 Floor Decking (Plan View Fill)	Top	15 lb/ft	30 lb/ft	-	-
Uniform	3'- 3"	4'- 3"	FC1 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Point	0'- 7 1/4"	0'- 7 1/4"	J9(i6731)	Front	148 lb	296 lb	-	-
Point	1'- 2"	1'- 2"	J9(i6727)	Front	154 lb	308 lb	-	-
Point	2'- 2"	2'- 2"	J9(i6728)	Front	197 lb	394 lb	-	-
Point	3'- 2"	3'- 2"	J9(i6726)	Front	220 lb	440 lb	-	-
Point	1'	1'	Bk1(i6737)	Back	4 lb	9 lb	-	-
Point	3'- 3"	3'- 3"	Bk1(i6736)	Back	4 lb	9 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E24(i1450)	Top	823 lb	1036 lb	-	-
Point	4'- 1/4"	4'- 1/4"	E4(i1295)	Top	760 lb	893 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	W25(i25)	1370 lb	2015 lb	-	-
2	3'- 9 1/2"	4'- 3"	W4(i9)	1030 lb	1449 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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=2583 lb, Qr=5460 lb, Result=47.30%.

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 # TF22061202

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **1ST FLR FRAMING**
Label: **B6 - i6559**
Type: **Beam**

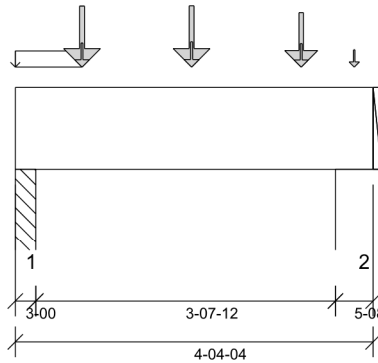
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9.13

Report Version: 2020.06.20 01/10/2022 17:14



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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 1 3/4"	1.25D + 1.5L	1.00	1660 lb ft	35345 lb ft	Passed - 5%
Factored Shear:	2'- 10 7/8"	1.25D + 1.5L	1.00	1591 lb	13815 lb	Passed - 12%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-00	1.25D + 1.5L	1.00	1599 lb		10916 lb	6455 lb	Passed - 25%
2	5-08	1.25D + 1.5L	1.00	1649 lb		20020 lb	11843 lb	Passed - 14%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 4 1/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	0'- 9 3/4"	FC1 Floor Decking (Plan View Fill)	Top	5 lb/ft	11 lb/ft	-	-
Point	0'- 9 3/4"	0'- 9 3/4"	J1(i6610)	Front	213 lb	426 lb	-	-
Point	2'- 1 3/4"	2'- 1 3/4"	J1(i6705)	Front	214 lb	428 lb	-	-
Point	3'- 5 3/4"	3'- 5 3/4"	J1(i6575)	Front	183 lb	366 lb	-	-
Point	0'- 9 3/4"	0'- 9 3/4"	J6(i6652)	Back	41 lb	82 lb	-	-
Point	2'- 1 3/4"	2'- 1 3/4"	J6(i6626)	Back	47 lb	93 lb	-	-
Point	3'- 5 3/4"	3'- 5 3/4"	J6(i6562)	Back	39 lb	77 lb	-	-
Point	4'- 1 1/2"	4'- 1 1/2"	E18(i1416)	Top	29 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	PBO3(i3975)	394 lb	739 lb	-	-
2	3'- 10 3/4"	4'- 4 1/4"	W23(i23)	428 lb	742 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061203

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21**
Level: **1ST FLR FRAMING**
Label: **B3 - i6577**
Type: **Beam**

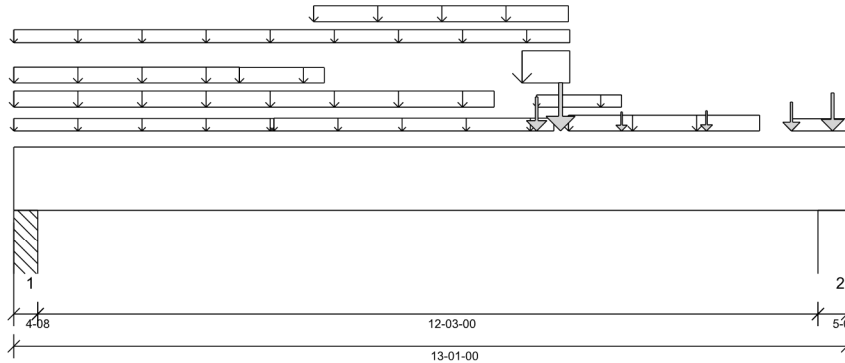
3 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/10/2022 17:14



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'- 3 1/2"
- 615 psi Wall @ 12'- 8 1/2"

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

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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 10 1/2"	1.25D + 1.5L	1.00	26249 lb ft	53017 lb ft	Passed - 50%
Factored Shear:	11'- 7 5/8"	1.25D + 1.5L	1.00	7193 lb	20723 lb	Passed - 35%
Live Load (LL) Pos. Defl.:	6'- 7"	L		0.206"	L/360	Passed - L/713
Total Load (TL) Pos. Defl.:	6'- 6 11/16"	D + L		0.361"	L/240	Passed - L/406
Permanent Deflection:	6'- 6 3/8"			-	L/360	Passed - L/974

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-08	1.25D + 1.5L	1.00	8275 lb		24570 lb	14529 lb	Passed - 57%
2	5-08	1.25D + 1.5L	1.00	7883 lb		30029 lb	17763 lb	Passed - 44%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	13'- 1"	Self Weight	Top	18 lb/ft	-	-	-
Uniform	0'	8'- 8 3/4"	7(i5352)	Top	81 lb/ft	-	-	-
Uniform	0'	7'- 6 1/2"	Smoothed Load	Back	121 lb/ft	242 lb/ft	-	-
Uniform	0'	4'- 1"	7(i5352)	Top	30 lb/ft	-	-	-
Uniform	3'- 6 1/2"	4'- 10 1/2"	7(i5352)	Top	100 lb/ft	199 lb/ft	-	-
Uniform	4'- 1"	8'- 5 3/4"	7(i5352)	Top	60 lb/ft	-	-	-
Uniform	4'- 8 1/2"	8'- 8 1/2"	7(i5352)	Top	114 lb/ft	227 lb/ft	-	-
Uniform	7'- 11 3/4"	8'- 8 3/4"	7(i5352)	Top	752 lb/ft	1049 lb/ft	-	-
Uniform	8'- 2 1/2"	9'- 6 1/2"	FC1 Floor Decking (Plan View Fill)	Top	4 lb/ft	9 lb/ft	-	-
Uniform	8'- 8 1/2"	11'- 8 1/2"	Smoothed Load	Back	110 lb/ft	219 lb/ft	-	-
Uniform	12'- 2 1/2"	13'- 1"	FC1 Floor Decking (Plan View Fill)	Top	4 lb/ft	8 lb/ft	-	-
Tapered	0'	3'- 6 1/2"	7(i5352)	Top	114 To 113 lb/ft	227 lb/ft	-	-
Point	8'- 7"	8'- 7"	B5(i6618)	Front	229 lb	420 lb	-	-
Point	9'- 6 1/2"	9'- 6 1/2"	J6(i6652)	Front	42 lb	84 lb	-	-
Point	10'- 10 1/2"	10'- 10 1/2"	J6(i6626)	Front	49 lb	97 lb	-	-
Point	12'- 2 1/2"	12'- 2 1/2"	J6(i6562)	Front	40 lb	81 lb	-	-
Point	8'- 2 1/2"	8'- 2 1/2"	J4(i6588)	Back	131 lb	262 lb	-	-
Point	12'- 2 1/2"	12'- 2 1/2"	J4(i6688)	Back	100 lb	201 lb	-	-
Point	12'- 10 1/4"	12'- 10 1/4"	E18(i1416)	Top	224 lb	241 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 1/2"	PBO6(i4952)	2601 lb	3399 lb	-	-
2	12'- 7 1/2"	13'- 1"	W23(i23)	2344 lb	3251 lb	-	-


DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061204 PG 1/2

REVIEWED

	BUILDER: BAYVIEW WELLINGTON SITE: GREEN VALLEY EAST MODEL: S38-21 CITY: BRADFORD	Job Name: S38-21 Level: 1ST FLR FRAMING Label: B3 - i6577 Type: Beam	3 Ply Member 1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	Status: Design Passed
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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.



REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21 SUNKEN**
Level: **1ST FLR FRAMING**
Label: **B17 - I7432**
Type: **Beam**

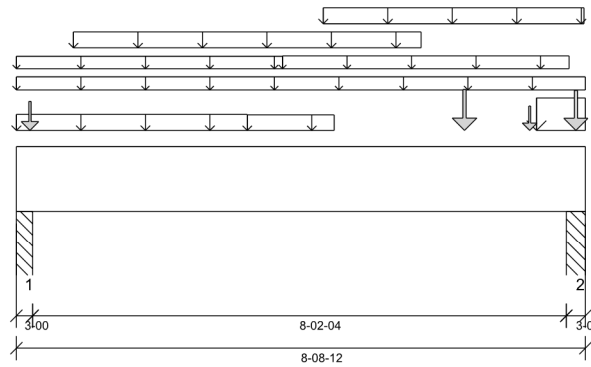
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9.13

Report Version: 2020.06.20 01/10/2022 17:24



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'- 2"
- 615 psi Column @ 8'- 6 1/4"

PLY TO PLY CONNECTION:
4 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'- 2 1/2"	1.25D + 1.5L	1.00	9961 lb ft	35345 lb ft	Passed - 28%
Factored Shear:	7'- 5 3/8"	1.25D + 1.5L	1.00	3730 lb	13815 lb	Passed - 27%
Live Load (LL) Pos. Defl.:	4'- 4 1/4"	L		0.052"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 4 5/16"	D + L		0.095"	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	4811 lb		10920 lb	6458 lb	Passed - 75%
2	3-08	1.25D + 1.5L	1.00	6926 lb		12740 lb	7534 lb	Passed - 92%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 8 3/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	8'- 8 3/4"	7(i5352)	Top	81 lb/ft	-	-	-
Uniform	0'	4'- 1"	7(i5352)	Top	30 lb/ft	-	-	-
Uniform	0'- 10 1/2"	6'- 2 1/2"	Smoothed Load	Back	113 lb/ft	225 lb/ft	-	-
Uniform	3'- 6 1/2"	4'- 10 1/2"	7(i5352)	Top	100 lb/ft	199 lb/ft	-	-
Uniform	4'- 1"	8'- 5 3/4"	7(i5352)	Top	60 lb/ft	-	-	-
Uniform	4'- 8 1/2"	8'- 8 1/2"	7(i5352)	Top	114 lb/ft	227 lb/ft	-	-
Uniform	7'- 11 3/4"	8'- 8 3/4"	7(i5352)	Top	752 lb/ft	1049 lb/ft	-	-
Tapered	0'	3'- 6 1/2"	7(i5352)	Top	114 To 113 lb/ft	227 lb/ft	-	-
Point	0'- 2 1/2"	0'- 2 1/2"	J4(i7431)	Back	77 lb	155 lb	-	-
Point	6'- 10 1/2"	6'- 10 1/2"	J4(i6995)	Back	131 lb	263 lb	-	-
Point	7'- 10 1/2"	7'- 10 1/2"	J4(i7153)	Back	56 lb	113 lb	-	-
Point	8'- 7"	8'- 7"	B18(i7429)	Back	381 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	PBO6(i4952)	1541 lb	1938 lb	-	-
2	8'- 5 1/4"	8'- 8 3/4"	PBO7(i6740)	2455 lb	2557 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061205

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21 SUNKEN**
Level: **1ST FLR FRAMING**
Label: **B18 - i7429**
Type: **Beam**

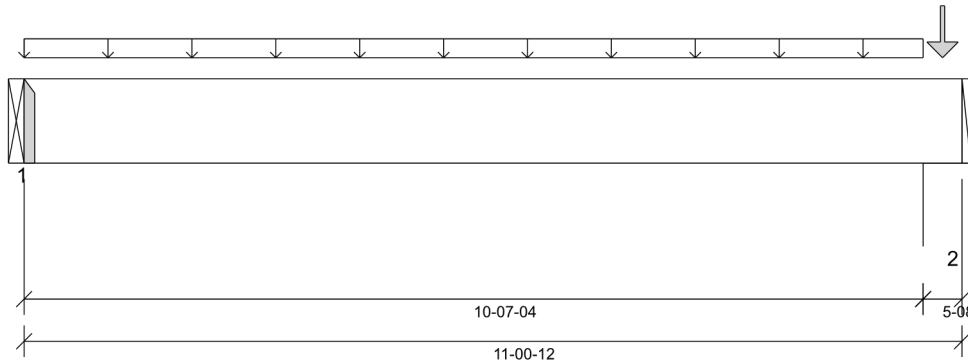
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/10/2022 17:24



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'- 7 1/4"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Wall @ 10'- 8 1/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 3 3/4"	1.4D	0.65	1419 lb ft	22974 lb ft	Passed - 6%
Factored Shear:	0'- 11 7/8"	1.4D	0.65	435 lb	8980 lb	Passed - 5%
Total Load (TL) Pos. Defl.:	5'- 4"	D		0.022"	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	1.4D	0.65	534 lb		3549 lb	-	Passed - 15%
2	5-08	1.25D + 1.5S + L	0.66	986 lb		13221 lb	7821 lb	Passed - 13%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	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'- 3/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	10'- 7 1/4"	User Load	Top	60 lb/ft	-	-	-
Point	10'- 10"	10'- 10"	E10(i1290)	Top	155 lb	66 lb	160 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B17(i7432)	381 lb	-	-	-
2	10'- 7 1/4"	11'- 3/4"	W10(i8)	541 lb	66 lb	160 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061206

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21 SUNKEN**
Level: **1ST FLR FRAMING**
Label: **B19L - i7292**
Type: **Beam**

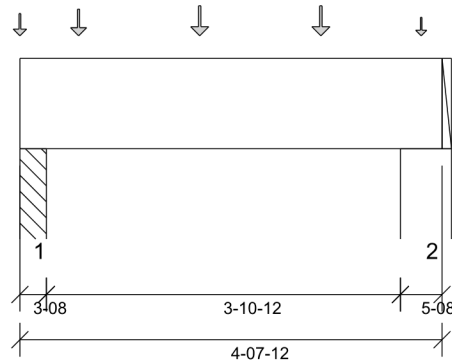
1 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/10/2022 17:24



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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 11 3/4"	1.25D + 1.5L	1.00	297 lb ft	17672 lb ft	Passed - 2%
Factored Shear:	1'- 3 3/8"	1.25D + 1.5L	1.00	278 lb	6908 lb	Passed - 4%

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	361 lb		6370 lb	3767 lb	Passed - 10%
2	5-08	1.25D + 1.5L	1.00	269 lb		10010 lb	5921 lb	Passed - 5%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 7 3/4"	Self Weight	Top	6 lb/ft	-	-	-
Point	0'- 7 3/4"	0'- 7 3/4"	J6(i7297)	Back	32 lb	64 lb	-	-
Point	1'- 11 3/4"	1'- 11 3/4"	J6(i7296)	Back	43 lb	86 lb	-	-
Point	3'- 3 3/4"	3'- 3 3/4"	J6(i7295)	Back	43 lb	86 lb	-	-
Point	0'	0'	User Load	Top	18 lb	35 lb	-	-
Point	4'- 5"	4'- 5"	E87(i7348)	Top	16 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	PBO8(i7289)	95 lb	163 lb	-	-
2	4'- 2 1/4"	4'- 7 3/4"	W87(i7291)	84 lb	108 lb	-	-

DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY
DWG # TF22061207

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21 SUNKEN**
Level: **1ST FLR FRAMING**
Label: **B20L - i7293**
Type: **Beam**

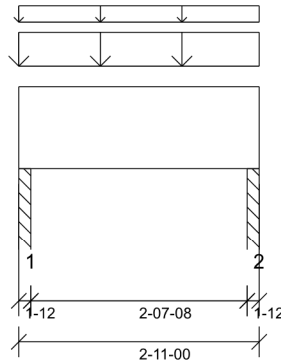
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/10/2022 17:24



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: 2'- 11"

Factored Resistance of Support Material:

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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 5 1/2"	1.25D + 1.5L	1.00	537 lb ft	35345 lb ft	Passed - 2%
Factored Shear:	1'- 9 3/8"	1.25D + 1.5L	1.00	178 lb	13815 lb	Passed - 1%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-12	1.25D + 1.5L	1.00	809 lb		6370 lb	3767 lb	Passed - 21%
2	1-12	1.25D + 1.5L	1.00	809 lb		6370 lb	3767 lb	Passed - 21%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	2'- 11"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	2'- 11"	User Load	Top	120 lb/ft	240 lb/ft	-	-
Uniform	0'	2'- 11"	FC4 Floor Decking (Plan View Fill)	Top	7 lb/ft	13 lb/ft	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 1 3/4"	PBO8(i7289)	203 lb	371 lb	-	-
2	2'- 9 1/4"	2'- 11"	PBO9(i7290)	203 lb	371 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061208

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21 SUNKEN**
Level: **1ST FLR FRAMING**
Label: **B21L - i7427**
Type: **Beam**

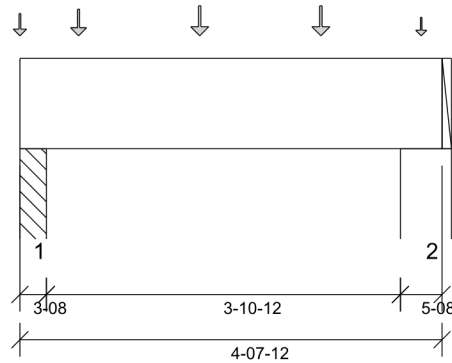
1 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/10/2022 17:24



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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 11 3/4"	1.25D + 1.5L	1.00	297 lb ft	17672 lb ft	Passed - 2%
Factored Shear:	1'- 3 3/8"	1.25D + 1.5L	1.00	278 lb	6908 lb	Passed - 4%

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	361 lb		6370 lb	3767 lb	Passed - 10%
2	5-08	1.25D + 1.5L	1.00	269 lb		10010 lb	5921 lb	Passed - 5%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 7 3/4"	Self Weight	Top	6 lb/ft	-	-	-
Point	0'- 7 3/4"	0'- 7 3/4"	J6(i7297)	Front	32 lb	64 lb	-	-
Point	1'- 11 3/4"	1'- 11 3/4"	J6(i7296)	Front	43 lb	86 lb	-	-
Point	3'- 3 3/4"	3'- 3 3/4"	J6(i7295)	Front	43 lb	86 lb	-	-
Point	0'	0'	User Load	Top	18 lb	35 lb	-	-
Point	4'- 5"	4'- 5"	E87(i7348)	Top	16 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	PBO9(i7290)	95 lb	163 lb	-	-
2	4'- 2 1/4"	4'- 7 3/4"	W87(i7291)	84 lb	108 lb	-	-

DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY
DWG # TF22061209

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21 SUNKEN**
Level: **1ST FLR FRAMING**
Label: **B22L - i7426**
Type: **Beam**

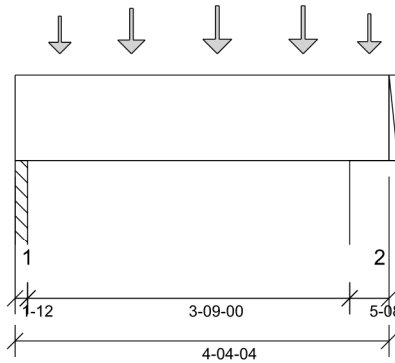
1 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/10/2022 17:24



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'- 3/4"
- 615 psi Wall @ 3'- 11 3/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 4 1/4"	1.25D + 1.5L	1.00	898 lb ft	17672 lb ft	Passed - 5%
Factored Shear:	2'- 10 7/8"	1.25D + 1.5L	1.00	872 lb	6908 lb	Passed - 13%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-12	1.25D + 1.5L	1.00	846 lb		3185 lb	1883 lb	Passed - 45%
2	5-08	1.25D + 1.5L	1.00	1229 lb		10010 lb	5921 lb	Passed - 21%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 4 1/4"	Self Weight	Top	6 lb/ft	-	-	-
Point	0'- 6 1/4"	0'- 6 1/4"	J4(i7307)	Back	75 lb	151 lb	-	-
Point	1'- 4 1/4"	1'- 4 1/4"	J4(i7303)	Back	102 lb	204 lb	-	-
Point	2'- 4 1/4"	2'- 4 1/4"	J4(i7304)	Back	111 lb	222 lb	-	-
Point	3'- 4 1/4"	3'- 4 1/4"	J4(i7305)	Back	111 lb	222 lb	-	-
Point	4'- 1 1/2"	4'- 1 1/2"	E18(i1416)	Top	118 lb	132 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 1 3/4"	PBO10(i7300)	207 lb	391 lb	-	-
2	3'- 10 3/4"	4'- 4 1/4"	W23(i23)	336 lb	540 lb	-	-

DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY
DWG # TF22061210

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21 SUNKEN**
Level: **1ST FLR FRAMING**
Label: **B23L - i7428**
Type: **Beam**

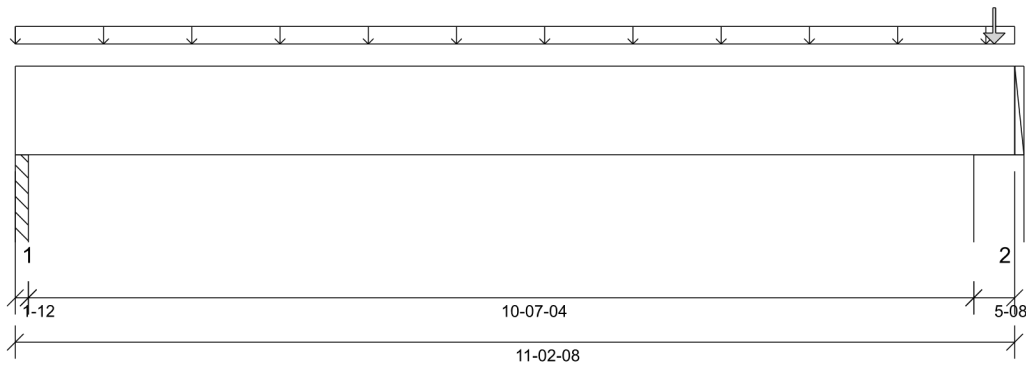
1 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/10/2022 17:24



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"

Factored Resistance of Support Material:

- 615 psi Column @ 0'- 3/4"
- 615 psi Wall @ 10'- 10"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 4 7/16"	1.25D + 1.5L	0.93	416 lb ft	16443 lb ft	Passed - 3%
Factored Neg. Moment:	10'- 10"	1.25D + 1.5S + L	0.94	39 lb ft	4176 lb ft	Passed - 1%
Factored Shear:	9'- 9 1/8"	1.25D + 1.5L	0.93	130 lb	6427 lb	Passed - 2%
Total Load (TL) Pos. Defl.:	5'- 5 1/16"	D + L		0.013"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-12	1.25D + 1.5L	0.93	162 lb		2963 lb	1752 lb	Passed - 9%
2	5-08	1.25D + 1.5S + L	0.94	400 lb		9376 lb	5546 lb	Passed - 7%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	11'- 2 1/2"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	11'- 2 1/2"	FC5 Floor Decking (Plan View Fill)	Top	5 lb/ft	10 lb/ft	-	-
Point	10'- 11 3/4"	10'- 11 3/4"	E86(i7314)	Top	83 lb	33 lb	80 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 1 3/4"	PBO10(i7300)	61 lb	58 lb	-	-
2	10'- 9"	11'- 2 1/2"	W84(i7282)	147 lb	93 lb	80 lb	-

DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY
DWG # TF22061211

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21 EL B**
Level: **2ND FLR FRAMING**
Label: **B24 - i6741**
Type: **Beam**

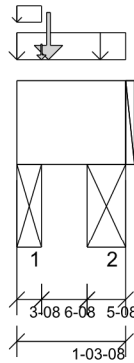
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/11/2022 07:47



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'- 4 1/4"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 2 1/2"
- 615 psi Beam @ 0'- 11"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	0'- 4 1/2"	1.25D + 1.5L	0.95	62 lb ft	33452 lb ft	Passed - 0%
Factored Shear:	1'- 3 3/8"	1.25D + 1.5L	0.95	320 lb	13075 lb	Passed - 2%

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	500 lb		12703 lb	7512 lb	Passed - 7%
2	5-08	1.25D + 1.5S + L	0.95	331 lb		19056 lb	11268 lb	Passed - 3%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	1'- 3 1/2"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	-0'	1'- 3 1/2"	E51(i6078)	Top	124 lb/ft	-	92 lb/ft	-
Uniform	0'	0'- 3 1/2"	FC3 Floor Decking (Plan View Fill)	Top	5 lb/ft	10 lb/ft	-	-
Point	0'- 4 1/2"	0'- 4 1/2"	J1(i6743)	Front	112 lb	223 lb	-	-
Point	0'- 3 1/2"	0'- 3 1/2"	FC3 Floor Decking (Plan View Fill)	Top	0 lb	1 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	DBBO(i1521)	183 lb	227 lb	47 lb	-
2	0'- 10"	1'- 3 1/2"	STL BM(i1747)	107 lb	-1 lb	72 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061212

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21 EL C**
Level: **2ND FLR FRAMING**
Label: **B25 - i7030**
Type: **Beam**

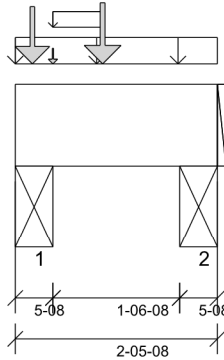
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.286 Updated 13

Report Version: 2020.06.20 01/11/2022 08:02



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

Top: 0' Bottom: 0'- 10"

Factored Resistance of Support Material:

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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 3/4"	1.25D + 1.5L + S	1.00	299 lb ft	35345 lb ft	Passed - 1%
Factored Shear:	1'- 1/8"	1.25D + 1.5L + S	1.00	538 lb	13815 lb	Passed - 4%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L + S	1.00	1461 lb		20020 lb	11839 lb	Passed - 12%
2	5-08	1.25D + 1.5S	0.77	449 lb		15467 lb	9146 lb	Passed - 5%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	2'- 5 1/2"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	2'- 5 1/2"	E83(i7047)	Top	124 lb/ft	-	92 lb/ft	-
Uniform	0'- 5 1/2"	1'- 3/4"	FC3 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Point	0'- 2 1/2"	0'- 2 1/2"	J1(i7038)	Front	152 lb	304 lb	-	-
Point	1'- 3/4"	1'- 3/4"	J1(i7040)	Front	169 lb	323 lb	5 lb	-
Point	0'- 5 1/2"	0'- 5 1/2"	FC3 Floor Decking (Plan View Fill)	Top	1 lb	2 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i6744)	456 lb	569 lb	116 lb	-
2	2'	2'- 5 1/2"	STL BM(i1747)	202 lb	64 lb	115 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061213

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S38-21**
CITY: **BRADFORD**

Job Name: **S38-21 EL C**
Level: **2ND FLR FRAMING**
Label: **B26 - i7037**
Type: **Beam**

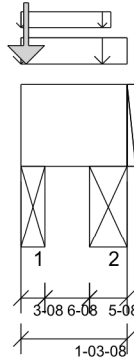
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version
8.4.2.2861 Updated 13

Report Version: 2020.06.20 01/11/2022 08:02



DESIGN INFORMATION

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

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 2 1/2"
- 615 psi Beam @ 0'- 11"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Moment:	0'- 2 1/2"	1.25D + 1.5S + L	1.00	146 lb ft	35345 lb ft	Passed - 0%
Factored Moment:				0 lb ft	0 lb ft	
Factored Moment:				0 lb ft	0 lb ft	
Factored Shear:	1'- 3 3/8"	1.4D	0.65	60 lb	8980 lb	Passed - 1%
Live Load (LL) Deflection:	0'- 6 1/8"	S		0.000"	L/360	Passed - L/999
Total Load (TL) Deflection:	0'- 6 1/8"	D + S		0.000"	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 + 1.5S + L	1.00	1310 lb		12740 lb	7534 lb	Passed - 17%
2	5-08	1.4D	0.65	98 lb		13013 lb	7695 lb	Passed - 1%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	1'- 3 1/2"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	-0'	1'- 3 1/2"	E85(i7046)	Top	124 lb/ft	-	92 lb/ft	-
Uniform	0'	1'- 1 1/8"	FC3 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Point	0'- 3/4"	0'- 3/4"	E85(i7046)	Top	195 lb	-	474 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	DBBO(i1521)	311 lb	5 lb	627 lb	-
2	0'- 10"	1'- 3 1/2"	STL BM(i1747)	64 lb	2 lb	-35 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- 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 # TF22061214

REVIEWED

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.

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.

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:

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

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:

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

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:

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

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:

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

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:

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

Maximum Floor Spans – M7.1

Design Criteria

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

Maximum Floor Spans

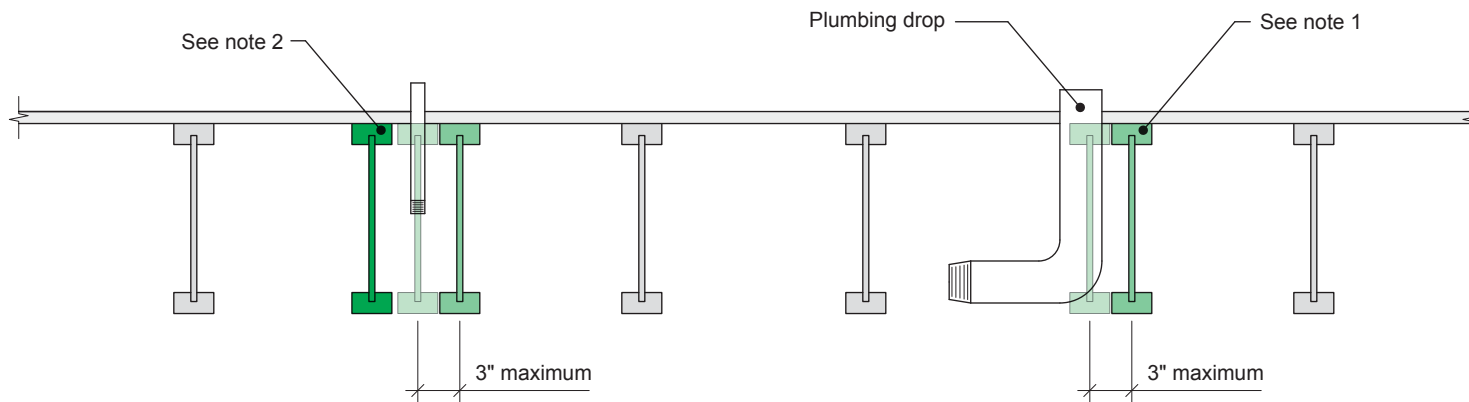
Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	14'-11"
	NI-60	17'-1"	16'-1"	15'-6"	14'-10"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

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-7"	17'-2"	16'-3"	14'-11"	18'-10"	17'-2"	16'-3"	14'-11"
	NI-60	18'-10"	17'-6"	16'-6"	15'-5"	19'-1"	17'-6"	16'-6"	15'-5"
	NI-80	20'-2"	18'-9"	17'-11"	16'-10"	20'-7"	19'-2"	18'-2"	16'-10"
11-7/8"	NI-20	20'-1"	18'-5"	17'-5"	16'-1"	20'-1"	18'-5"	17'-5"	16'-1"
	NI-40x	21'-9"	20'-3"	19'-0"	17'-0"	22'-4"	20'-5"	19'-0"	17'-0"
	NI-60	22'-0"	20'-6"	19'-7"	18'-4"	22'-7"	20'-10"	19'-8"	18'-4"
	NI-80	23'-6"	21'-10"	20'-10"	19'-9"	24'-0"	22'-5"	21'-4"	20'-0"
	NI-90	24'-0"	22'-4"	21'-3"	20'-1"	24'-6"	22'-10"	21'-9"	20'-7"
14"	NI-40x	24'-4"	22'-8"	20'-11"	18'-8"	25'-0"	22'-11"	20'-11"	18'-8"
	NI-60	24'-9"	23'-0"	22'-0"	20'-9"	25'-5"	23'-8"	22'-4"	20'-10"
	NI-80	26'-5"	24'-6"	23'-4"	22'-1"	27'-0"	25'-2"	24'-0"	22'-8"
	NI-90	26'-11"	25'-0"	23'-10"	22'-6"	27'-5"	25'-7"	24'-5"	23'-1"
16"	NI-60	27'-2"	25'-4"	24'-2"	22'-10"	27'-11"	26'-1"	24'-9"	23'-1"
	NI-80	29'-0"	26'-11"	25'-8"	24'-3"	29'-7"	27'-7"	26'-4"	24'-11"
	NI-90	29'-6"	27'-5"	26'-1"	24'-8"	30'-1"	28'-1"	26'-9"	25'-4"

Notes:

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

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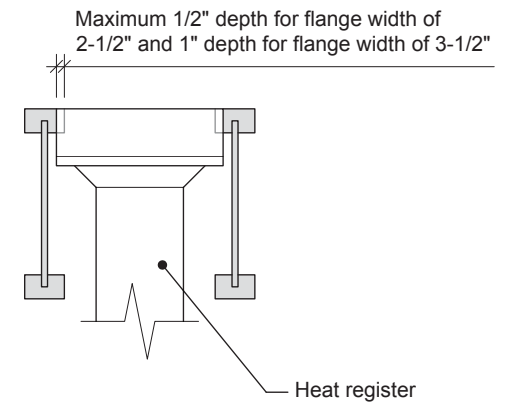
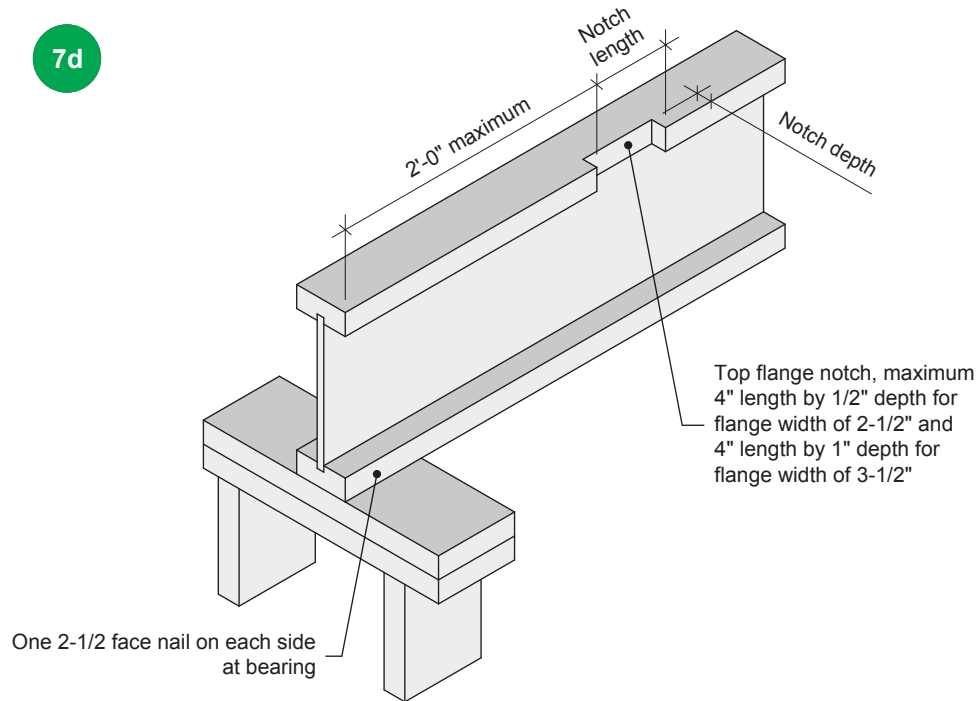
**Notes:**

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.

REVIEWED

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

7d



Notes:

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

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

REVIEWED