

Products				
PlotID	Length	Product	Plies	Net Qty
J1	10'-00"-00	9 1/2" NI-40x	1	6
J2	8'-00"-00	9 1/2" NI-40x	1	6
J3	20'-00"-00	11 7/8" NI-40x	2	2
J4	16'-00"-00	11 7/8" NI-40x	1	4
J5	12'-00"-00	11 7/8" NI-40x	1	4
J6	10'-00"-00	11 7/8" NI-40x	1	2
J7	2'-00"-00	11 7/8" NI-40x	1	4
J8	20'-00"-00	11 7/8" NI-80	1	22
B1	20'-00"-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B3	16'-00"-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	10'-00"-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B2	8'-00"-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B4	6'-00"-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
R1	38'-00"-00	1 1/8" x 9 1/2" APA Rim Board	1	1
R2	82'-00"-00	1 1/8" x 11 7/8" APA Rim Board	1	1
Bk1	8'-00"-00	11 7/8" NI-40x	1	1

Connector Summary			
Qty	Manuf	Product	
3	H1	IUS2.56/11.88	
4	H1	IUS2.56/11.88	
4	H1	IUS2.56/11.88	
1	H2	HUS1.81/10	
1	H4C	HUC410	
1	H4	HGUS410	

DATE: 1/19/24

1st FLOOR FRAMING
SUNKEN -5R

TOWN OF BRADFORD WEST GWILLIMBURY
BUILDING DEPARTMENT
PLANS EXAMINED
ONTARIO BUILDING CODE APPLIES
DATE: 2024-04-24
INSPECTOR: SE

REVIEWED



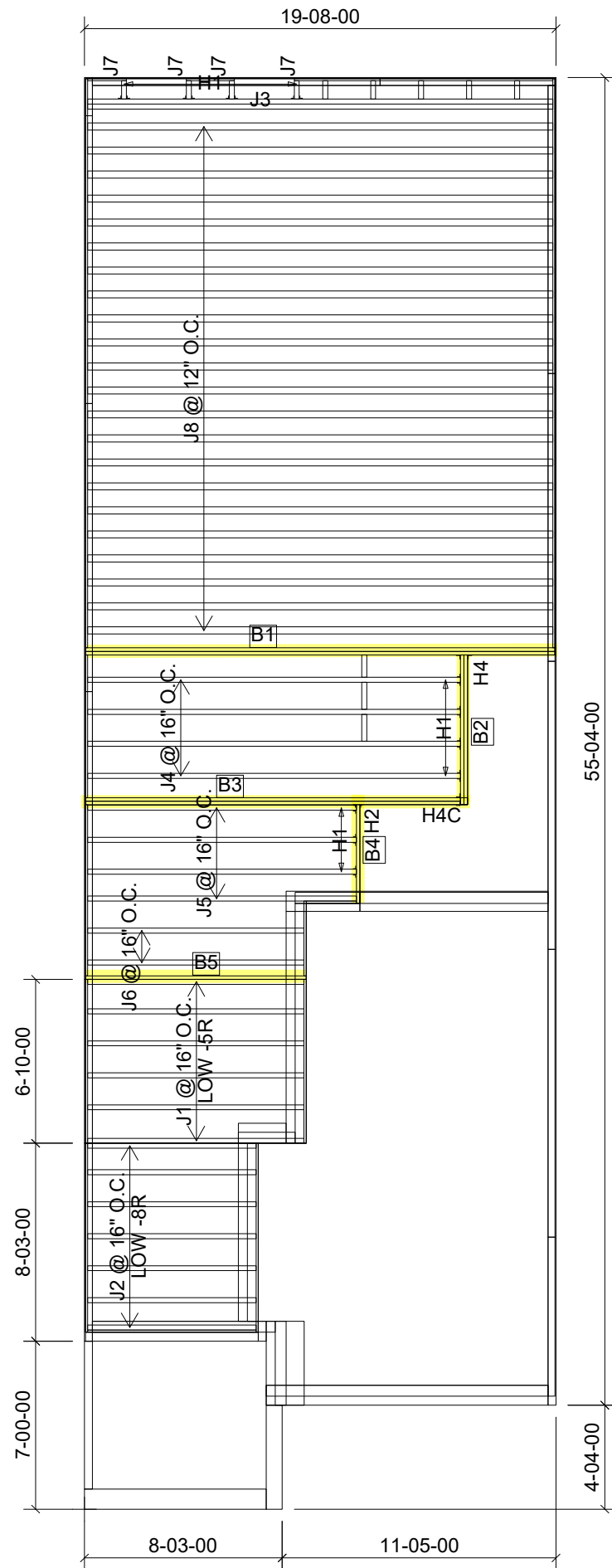
FROM PLAN DATED: 2023/11
BUILDER: BAYVIEW WELLINGTON
SITE: BRADFORD CAPITAL
MODEL: THWU-14
ELEVATION: A,B
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

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: 3/4" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	10-00-00	9 1/2" NI-40x	1	6
J2	8-00-00	9 1/2" NI-40x	1	7
J3	20-00-00	11 7/8" NI-40x	2	2
J4	16-00-00	11 7/8" NI-40x	1	4
J5	12-00-00	11 7/8" NI-40x	1	4
J6	10-00-00	11 7/8" NI-40x	1	2
J7	2-00-00	11 7/8" NI-40x	1	4
J8	20-00-00	11 7/8" NI-80	1	22
B1	20-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B3	16-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B2	8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B4	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
R1	38-00-00	1 1/8" x 9 1/2" APA Rim Board	1	1
R2	82-00-00	1 1/8" x 11 7/8" APA Rim Board	1	1
Bk1	8-00-00	11 7/8" NI-40x	1	1

Connector Summary			
Qty	Manuf	Product	
3	H1	IUS2.56/11.88	
4	H1	IUS2.56/11.88	
4	H1	IUS2.56/11.88	
1	H2	HUS1.81/10	
1	H4C	HUC410	
1	H4	HGUS410	

DATE: 1/19/24

1st FLOOR FRAMING
SUNKEN -8R

TOWN OF BRADFORD WEST GWILLIMBURY
BUILDING DEPARTMENT
PLANS EXAMINED
ONTARIO BUILDING CODE APPLIES
DATE: 2024-04-24
INSPECTOR: SE

REVIEWED



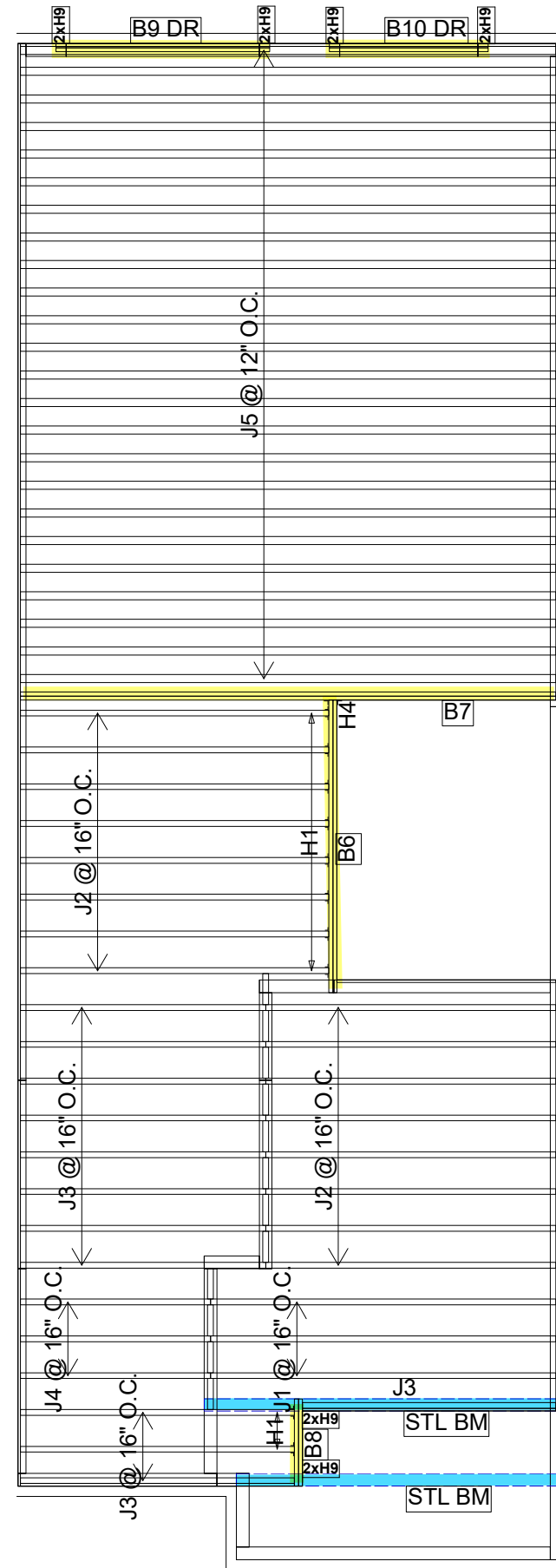
FROM PLAN DATED: 2023/11
BUILDER: BAYVIEW WELLINGTON
SITE: BRADFORD CAPITAL
MODEL: THWU-14
ELEVATION: A,B
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: AJ
REVISION:

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: 3/4" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	11 7/8" NI-40x	1	3
J2	12-00-00	11 7/8" NI-40x	1	16
J3	10-00-00	11 7/8" NI-40x	1	12
J4	8-00-00	11 7/8" NI-40x	1	3
J5	20-00-00	11 7/8" NI-80	1	24
B9 DR	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B10 DR	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B7	20-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B6	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B8	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
R1	140-00-00	1 1/8" x 11 7/8" APA Rim Board	1	1
Bk1	14-00-00	11 7/8" NI-40x	1	1

Connector Summary		
Qty	Manuf	Product
10	H1	IUS2.56/11.88
1	H4	HGUS410
12	H9	H3 (TIEDOWN)*



FROM PLAN DATED: 2023/11
BUILDER: BAYVIEW WELLINGTON
SITE: BRADFORD CAPITAL
MODEL: THWU-14
ELEVATION: A
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: AJ
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.

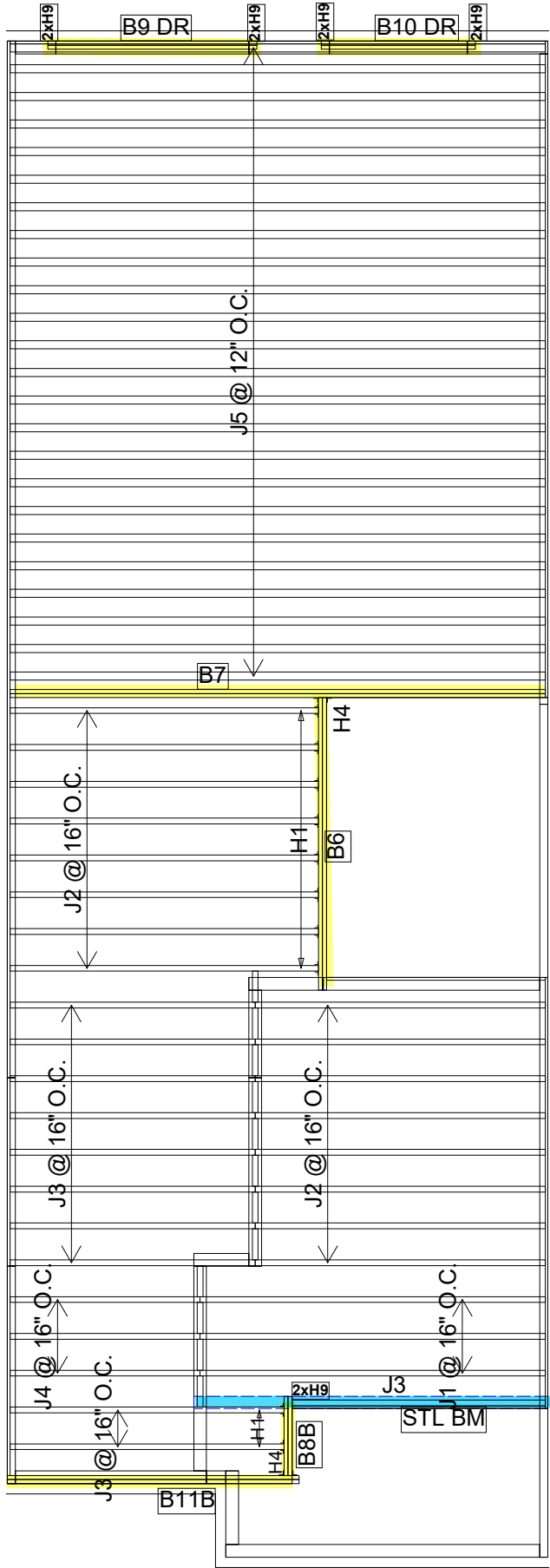
LOADING:
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILE LOAD: +5.0 lb/ft²

JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 1/19/24

2nd FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	11 7/8" NI-40x	1	3
J2	12-00-00	11 7/8" NI-40x	1	16
J3	10-00-00	11 7/8" NI-40x	1	11
J4	8-00-00	11 7/8" NI-40x	1	3
J5	20-00-00	11 7/8" NI-80	1	24
B9 DR	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B10 DR	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B7	20-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B11B	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B6	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B8B	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
R1	128-00-00	1 1/8" x 11 7/8" APA Rim Board	1	1
Bk1	14-00-00	11 7/8" NI-40x	1	1

Connector Summary		
Qty	Manuf	Product
10	H1	IUS2.56/11.88
2	H4	HGUS410
10	H9	H3 (TIEDOWN)*

DATE: 1/19/24

2nd FLOOR FRAMING



FROM PLAN DATED: 2023/11
BUILDER: BAYVIEW WELLINGTON
SITE: BRADFORD CAPITAL
MODEL: THWU-14
ELEVATION: B
LOT:
CITY: BRADFORD
SALESMAN: RICK DICIANO
DESIGNER: AJ
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: 3/4" 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 Length
1-1/8 in. 16 ft
Depths
9-1/2 to 16 in.
APA Rim Board Plus

WEB STIFFENERS

2 Concentrated Load (Load Stiffener)

End Bearing (Bearing Stiffener)

Stiffener Size Requirements

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

NAIL SPACING

Nailing into flange face

Nailing into flange edge

Nailed to Only One Flange Edge (Top View)

Nailed to Both Flange Edges (Top View)

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

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

^(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 Nordic I-joist blocking panel

2-1/2" nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing as required for floor sheathing)

Attach I-joist to top plate per detail 1b

1b Rim board

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

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

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

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

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

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

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

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

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

Joist attachment per detail 1b

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

Nordic I-joist blocking panel per detail 1a

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

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

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

1i Install hanger per manufacturer's recommendations

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

Backer block per detail 1h

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

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

Top-mount hanger installed per manufacturer's recommendations

1l-1 Blocking panel

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

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

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

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

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

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

Attach I-joist per detail 1b

1a Nordic I-joist blocking panel

2-1/2" nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing as required for floor sheathing)

Attach I-joist to top plate per detail 1b

1b Rim board

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

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

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

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

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

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

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

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

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

Joist attachment per detail 1b

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

Nordic I-joist blocking panel per detail 1a

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

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

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

1i Install hanger per manufacturer's recommendations

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

Backer block per detail 1h

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

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

Top-mount hanger installed per manufacturer's recommendations

1l-1 Blocking panel

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

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

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

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

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

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

Attach I-joist per detail 1b

1a Nordic I-joist blocking panel

2-1/2" nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing as required for floor sheathing)

Attach I-joist to top plate per detail 1b

1b Rim board

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

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

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

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

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

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

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

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

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

Joist attachment per detail 1b

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

Nordic I-joist blocking panel per detail 1a

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

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

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

1i Install hanger per manufacturer's recommendations

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

Backer block per detail 1h

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

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

Top-mount hanger installed per manufacturer's recommendations

1l-1 Blocking panel

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

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

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

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

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

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

Attach I-joist per detail 1b

1a Nordic I-joist blocking panel

2-1/2" nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing as required for floor sheathing)

Attach I-joist to top plate per detail 1b

1b Rim board

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

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

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

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

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

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

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

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

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

Joist attachment per detail 1b

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

Nordic I-joist blocking panel per detail 1a

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

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

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

1i Install hanger per manufacturer's recommendations

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

Backer block per detail 1h

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

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

Top-mount hanger installed per manufacturer's recommendations

1l-1 Blocking panel

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

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

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

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

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

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

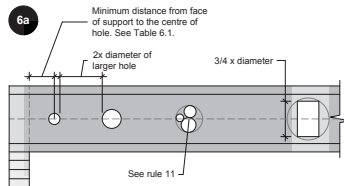
Attach I-joist per detail 1b

WEB HOLES AND OPENINGS

WEB HOLES IN I-JOISTS

Rules for Cutting Holes in I-Joists

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

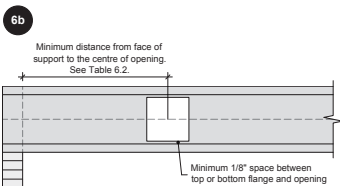


- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
 2. Holes in web should be cut with a sharp saw.
 3. For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular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

DUCT CHASE OPENINGS

Rules for Cutting Duct Chase Openings in I-joists

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

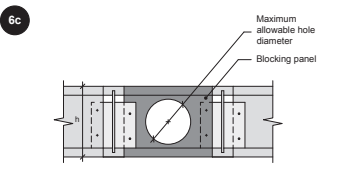


- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
 2. Holes in web should be cut with a sharp saw.
 3. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a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

HOLES IN BLOCKING PANELS

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

1. The maximum allowable hole size for a lateral-restraint-only blocking panel is 2/3 of the lesser dimension of the blocking's depth or length. Assuming the blocking panel is longer than its height (or depth), the table aside 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.
 - All holes must be cut in a workman-like manner in accordance with the limitations listed above.



I-joist or rim board blocking depth (in.)	Maximum allowable hole diameter or (in.) ^(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"	6'-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"	1'-3"	2'-6"	3'-10"	5'-3"	5'-6"	6'-6"	8'-0"	9'-0"	9'-5"	11'-0"	12'-3"	12'-9"	14'-5"	16'-0"	-
	NI-80	0'-7"	0'-8"	0'-8"	1'-9"	3'-3"	3'-8"	4'-9"	6'-5"	7'-5"	8'-0"	9'-10"	11'-3"	11'-9"	13'-6"	15'-4"	-

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

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



BUILDER: **BAYVIEW WELLINGTON**
SITE: **BRADFORD CAPITAL**
MODEL: **THWU-14**
CITY: **BRADFORD**

Job Name: **THWU-14**
Level: **1ST FLR FRAMING**
Label: **B1 - i1011**
Type: **Beam**

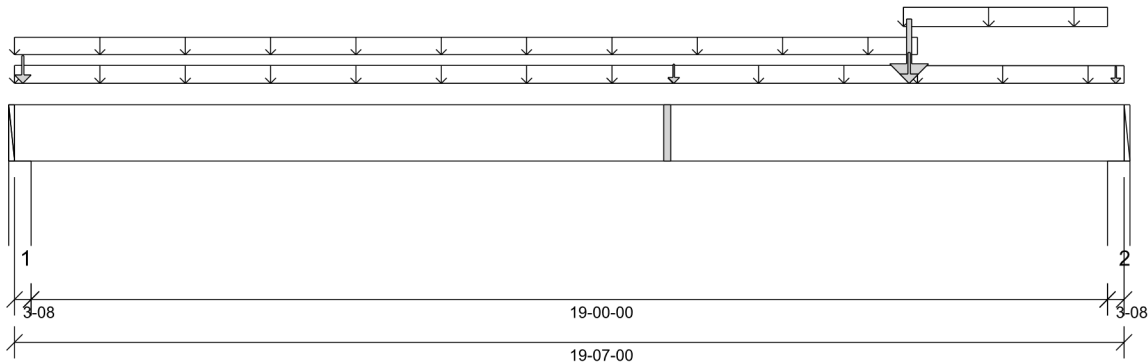
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.6.3.353.Update16.11

Report Version: 2021.03.26 01/19/2024 08:37



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'- 2 3/4"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2 1/2"
- 615 psi Wall @ 19'- 4 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 # TF24010935

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	15'- 6 1/16"	1.25D + 1.5L	1.00	14060 lb ft	35345 lb ft	Passed - 40%
Factored Shear:	18'- 3 5/8"	1.25D + 1.5L	1.00	4017 lb	13815 lb	Passed - 29%
Live Load (LL) Pos. Defl.:	10'- 7 1/16"	L		0.392"	L/360	Passed - L/582
Total Load (TL) Pos. Defl.:	10'- 6 3/4"	D + L		0.650"	L/240	Passed - L/350
Permanent Deflection:	10'- 6 5/16"			-	L/360	Passed - L/909

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	2420 lb		12740 lb	7536 lb	Passed - 32%
2	3-08	1.25D + 1.5L	1.00	4215 lb		12740 lb	7536 lb	Passed - 56%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	19'- 7"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	15'- 11 1/4"	FC3 Floor Decking (Plan View Fill)	Top	9 lb/ft	18 lb/ft	-	-
Uniform	-0'	11'- 7 1/2"	FC3 Floor Decking (Plan View Fill)	Top	12 lb/ft	24 lb/ft	-	-
Uniform	11'- 7 1/2"	15'- 11 1/4"	FC3 Floor Decking (Plan View Fill)	Top	12 lb/ft	24 lb/ft	-	-
Uniform	15'- 8 1/4"	19'- 3 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	15'- 11 1/4"	19'- 7"	FC3 Floor Decking (Plan View Fill)	Top	10 lb/ft	20 lb/ft	-	-
Point	15'- 9 1/2"	15'- 9 1/2"	B2(i1001)	Front	697 lb	1279 lb	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	E14(i233)	Top	257 lb	217 lb	-	-
Point	11'- 7 5/8"	11'- 7 5/8"	FC3 Floor Decking (Plan View Fill)	Top	44 lb	87 lb	-	-
Point	15'- 9 1/2"	15'- 9 1/2"	User Load	Top	200 lb	400 lb	-	-
Point	19'- 5 1/4"	19'- 5 1/4"	E13(i230)	Top	39 lb	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	W20(i26)	772 lb	953 lb	-	-
2	19'- 3 1/2"	19'- 7"	W4(i4)	1278 lb	1761 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- 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: **BRADFORD CAPITAL**
MODEL: **THWU-14**
CITY: **BRADFORD**

Job Name: **THWU-14**
Level: **1ST FLR FRAMING**
Label: **B2 - i1001**
Type: **Beam**

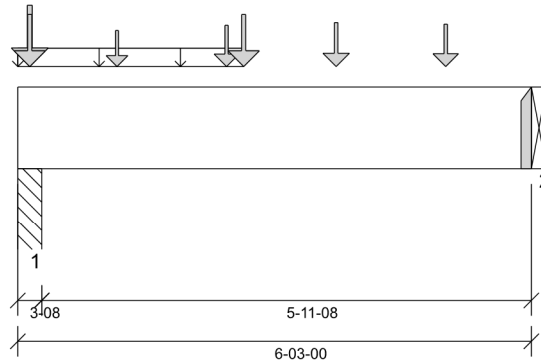
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.6.3.353.Update16.11

Report Version: 2021.03.26 01/19/2024 08:37



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 Beam @ 6'- 3"

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.



STRUCTURAL COMPONENT ONLY
DWG # TF24010936 PG 1/2

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 9"	1.25D + 1.5L	1.00	5823 lb ft	35345 lb ft	Passed - 16%
Factored Neg. Moment:	0'- 2 1/2"	1.25D + 1.5L	1.00	208 lb ft	35345 lb ft	Passed - 1%
Factored Shear:	5'- 3 1/8"	1.25D + 1.5L	1.00	2818 lb	13815 lb	Passed - 20%
Live Load (LL) Pos. Defl.:	3'- 2 3/8"	L		0.017"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 2 5/16"	D + L		0.027"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.25D + 1.5L	1.00	6398 lb		12740 lb	7534 lb	Passed - 85%
2	1-08	1.25D + 1.5L	1.00	2833 lb		5460 lb	-	Passed - 52%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Top	Face	Member	Nailing Requirements	Other Information or Requirement for Reinforcement Accessories
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'	6'- 3"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	-0'	2'- 9"	User Load	Top	60 lb/ft	-	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	B3(i1981)	Back	647 lb	666 lb	-	-
Point	1'- 2 1/2"	1'- 2 1/2"	J4(i1045)	Back	198 lb	395 lb	-	-
Point	2'- 6 1/2"	2'- 6 1/2"	J4(i1068)	Back	248 lb	495 lb	-	-
Point	3'- 10 1/2"	3'- 10 1/2"	J4(i1043)	Back	273 lb	546 lb	-	-
Point	5'- 2 1/2"	5'- 2 1/2"	J4(i1042)	Back	258 lb	516 lb	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	User Load	Top	350 lb	700 lb	-	-
Point	2'- 9"	2'- 9"	User Load	Top	350 lb	700 lb	-	-


UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	PBO1(i23)	1866 lb	2739 lb	-	-
2	6'- 3"	6'- 3"	B1(i1011)	697 lb	1279 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- 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

	BUILDER:	BAYVIEW WELLINGTON	Job Name:	THWU-14	2 Ply Member 1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	Status: Design Passed
	SITE:	BRADFORD CAPITAL	Level:	1ST FLR FRAMING		
	MODEL:	THWU-14	Label:	B2 - i1001		
	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.





BUILDER: **BAYVIEW WELLINGTON**
SITE: **BRADFORD CAPITAL**
MODEL: **THWU-14**
CITY: **BRADFORD**

Job Name: **THWU-14**
Level: **1ST FLR FRAMING**
Label: **B3 - i981**
Type: **Beam**

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

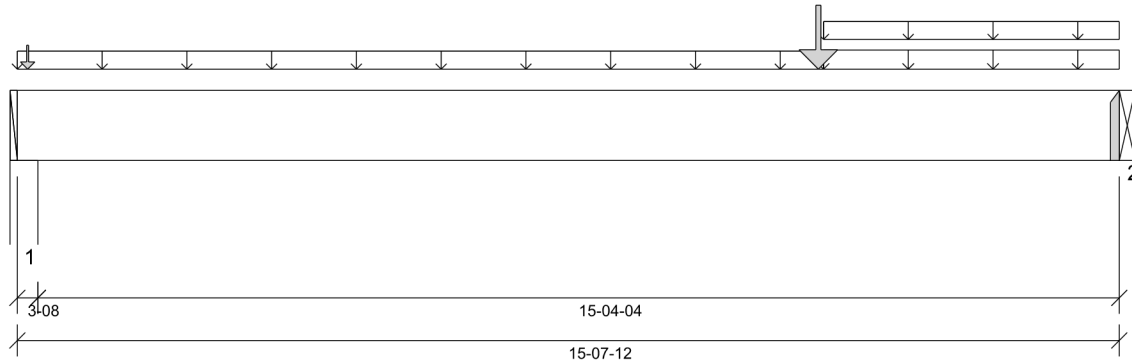
Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.6.3.353.Update16.11

Report Version: 2021.03.26

01/19/2024 08:37



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'- 1/16"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2 1/2"
- 615 psi Beam @ 15'- 7 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:	11'- 4 7/16"	1.25D + 1.5L	1.00	6350 lb ft	35345 lb ft	Passed - 18%
Factored Shear:	14'- 7 7/8"	1.25D + 1.5L	1.00	1648 lb	13815 lb	Passed - 12%
Live Load (LL) Pos. Defl.:	8'- 5 11/16"	L		0.102"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	8'- 5 9/16"	D + L		0.183"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.25D + 1.5L	1.00	1199 lb		12740 lb	7536 lb	Passed - 16%
2	1-08	1.25D + 1.5L	1.00	1803 lb		5460 lb	-	Passed - 33%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Top	Face	Member	Other Information or Requirement for Reinforcement Accessories
2	HUC410		-	-	-	Connector manually specified by the user.

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

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	15'- 7 3/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	-0'	11'- 5 5/16"	FC3 Floor Decking (Plan View Fill)	Top	13 lb/ft	27 lb/ft	-	-
Uniform	11'- 5 5/16"	15'- 7 3/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	11'- 5 5/16"	15'- 7 3/4"	FC3 Floor Decking (Plan View Fill)	Top	12 lb/ft	24 lb/ft	-	-
Point	11'- 4 7/16"	11'- 4 7/16"	B4(i996)	Front	326 lb	636 lb	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	E14(i233)	Top	92 lb	67 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	W20(i26)	415 lb	451 lb	-	-
2	15'- 7 3/4"	15'- 7 3/4"	B2(i1001)	647 lb	666 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- 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 # TF24010937



BUILDER: **BAYVIEW WELLINGTON**
SITE: **BRADFORD CAPITAL**
MODEL: **THWU-14**
CITY: **BRADFORD**

Job Name: **THWU-14**
Level: **1ST FLR FRAMING**
Label: **B4 - i996**
Type: **Beam**

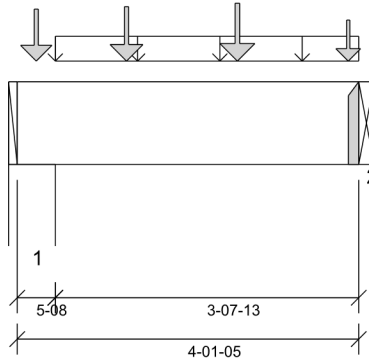
1 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.6.3.353.Update16.11

Report Version: 2021.03.26 01/19/2024 08:37



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Beam @ 4'- 1 5/16"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 7 3/4"	1.25D + 1.5L	1.00	1223 lb ft	17672 lb ft	Passed - 7%
Factored Shear:	3'- 1 7/16"	1.25D + 1.5L	1.00	737 lb	6908 lb	Passed - 11%

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	1753 lb		10010 lb	5921 lb	Passed - 30%
2	1-08	1.25D + 1.5L	1.00	1384 lb		2730 lb	-	Passed - 51%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	HUS1.81/10		-	-	-	Connector manually specified by the user.
* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.						

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 1 5/16"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'- 5 1/2"	4'- 1 5/16"	User Load	Front	60 lb/ft	120 lb/ft	-	-
Point	1'- 3 3/4"	1'- 3 3/4"	J5(i1070)	Back	139 lb	279 lb	-	-
Point	2'- 7 3/4"	2'- 7 3/4"	J5(i1037)	Back	152 lb	303 lb	-	-
Point	3'- 11 3/4"	3'- 11 3/4"	J5(i1036)	Back	91 lb	183 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	2(i223)	Top	144 lb	248 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	W19(i24)	443 lb	815 lb	-	-
2	4'- 1 5/16"	4'- 1 5/16"	B3(i981)	326 lb	636 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.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- 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 length at support 1 was calculated based on the actual bearing area divided by the supported member width and may not match expected value when bearing is not rectangular or when the supported member is not supported by its full width.



STRUCTURAL COMPONENT ONLY
DWG # TF24010938



BUILDER: **BAYVIEW WELLINGTON**
SITE: **BRADFORD CAPITAL**
MODEL: **THWU-14**
CITY: **BRADFORD**

Job Name: **THWU-14**
Level: **1ST FLR FRAMING**
Label: **B5 - i1071**
Type: **Beam**

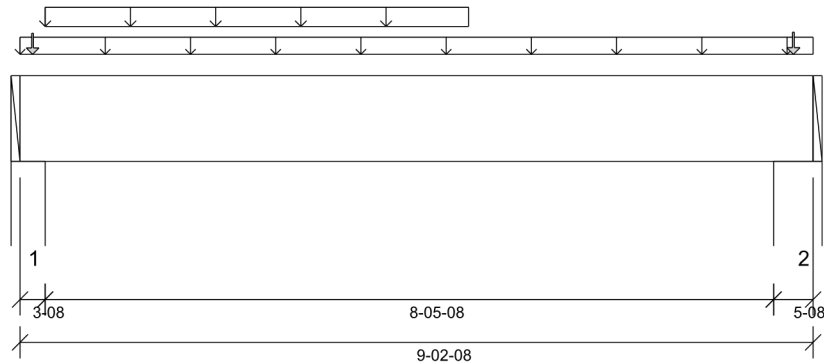
1 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.6.3.353.Update16.11

Report Version: 2021.03.26 01/19/2024 08:37



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: 8'- 5 1/2"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2 1/2"
- 615 psi Wall @ 8'- 10"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 10 11/16"	1.4D	0.65	688 lb ft	11487 lb ft	Passed - 6%
Factored Shear:	1'- 3 3/8"	1.4D	0.65	266 lb	4490 lb	Passed - 6%
Total Load (TL) Pos. Defl.:	4'- 4 3/8"	D + L		0.017"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.4D	0.65	424 lb		4141 lb	2449 lb	Passed - 17%
2	5-08	1.25D + 1.5L	0.79	373 lb		7878 lb	4660 lb	Passed - 8%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	9'- 2 1/2"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	-0'	9'- 2 1/2"	FC3 Floor Decking (Plan View Fill)	Top	7 lb/ft	14 lb/ft	-	-
Uniform	0'- 3 1/2"	5'- 2 1/2"	User Load	Top	60 lb/ft	-	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	E14(i233)	Top	37 lb	16 lb	-	-
Point	8'- 11 3/4"	8'- 11 3/4"	3(i222)	Top	29 lb	35 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	W20(i26)	306 lb	80 lb	-	-
2	8'- 9"	9'- 2 1/2"	W16(i18)	174 lb	100 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.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- 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 length at support 2 was calculated based on the actual bearing area divided by the supported member width and may not match expected value when bearing is not rectangular or when the supported member is not supported by its full width.



STRUCTURAL COMPONENT ONLY
DWG # TF24010939



BUILDER: **BAYVIEW WELLINGTON**
SITE: **BRADFORD CAPITAL**
MODEL: **THWU-14**
CITY: **BRADFORD**

Job Name: **THWU-14**
Level: **2ND FLR FRAMING**
Label: **B6 - i907**
Type: **Beam**

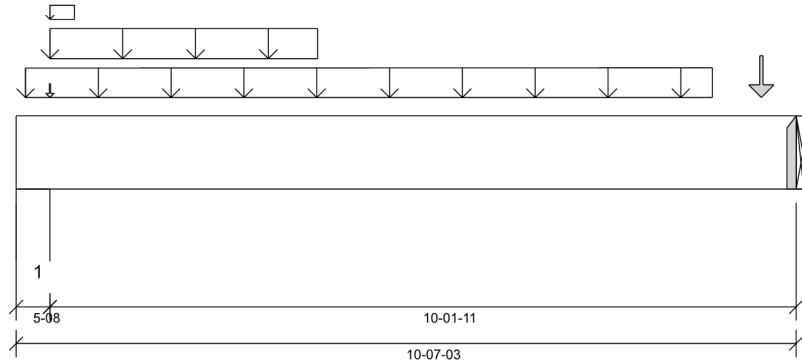
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.6.3.353.Update16.11

Report Version: 2021.03.26 01/19/2024 08:37



DESIGN INFORMATION

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

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Beam @ 10'- 7 3/16"

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 # TF24010940 PG 1/2

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 9 1/2"	1.25D + 1.5L	1.00	8590 lb ft	35345 lb ft	Passed - 24%
Factored Shear:	1'- 5 3/8"	1.25D + 1.5L	1.00	3048 lb	13815 lb	Passed - 22%
Live Load (LL) Pos. Defl.:	5'- 4 3/16"	L		0.078"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 4 1/4"	D + L		0.120"	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	4232 lb		20020 lb	11842 lb	Passed - 36%
2	1'-08	1.25D + 1.5L	1.00	2874 lb		5460 lb	-	Passed - 53%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Top	Face	Member	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
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'	10'- 7 3/16"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'- 5 1/2"	4'- 1 3/16"	User Load	Front	120 lb/ft	240 lb/ft	-	-
Uniform	0'- 5 1/2"	0'- 9 1/2"	FC4 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Tapered	0'- 1 1/2"	9'- 5 1/2"	Smoothed Load	Back	115 To 117 lb/ft	230 To 234 lb/ft	-	-
Point	10'- 1 1/2"	10'- 1 1/2"	J2(i885)	Back	114 lb	227 lb	-	-
Point	0'- 5 1/2"	0'- 5 1/2"	FC4 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"	-	1042 lb	1954 lb	-	-
+++	0'- 1 1/16"	0'- 1 1/16"	1(i218)	409 lb	768 lb	-	-
+++	0'- 1 11/16"	0'- 1 11/16"	2(i223)	633 lb	1186 lb	-	-
2	10'- 7 3/16"	10'- 7 3/16"	B7(i945)	719 lb	1316 lb	-	-

DESIGN NOTES

- CAUTION: One or more plies are not supported properly at 2-12. At least 75% of every ply must be contacting support.
- CAUTION: One or more plies are not supported properly at 2-12. At least 75% of every ply must be contacting support.
- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- 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.

	BUILDER: BAYVIEW WELLINGTON SITE: BRADFORD CAPITAL MODEL: THWU-14 CITY: BRADFORD	Job Name: THWU-14 Level: 2ND FLR FRAMING Label: B6 - i907 Type: Beam	2 Ply Member 1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	Status: Design Passed
---	---	---	---	---------------------------------

- Bearing length at support 1 was calculated based on the actual bearing area divided by the supported member width and may not match expected value when bearing is not rectangular or when the supported member is not supported by its full width.
- One or more plies are not properly supported at 1. Verify with structural engineer or EWP manufacturer if this condition is acceptable.

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: **BRADFORD CAPITAL**
MODEL: **THWU-14**
CITY: **BRADFORD**

Job Name: **THWU-14**
Level: **2ND FLR FRAMING**
Label: **B7 - i945**
Type: **Beam**

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

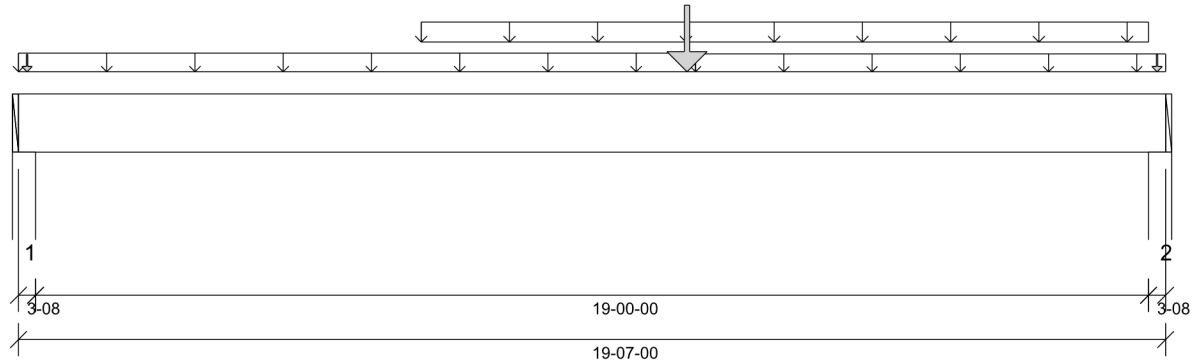
Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.6.3.353.Update16.11

Report Version: 2021.03.26

01/19/2024 08:37



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'- 11 11/16"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2 1/2"
- 615 psi Wall @ 19'- 4 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 # TF24010941

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	11'- 4 15/16"	1.25D + 1.5L	0.97	18691 lb ft	34384 lb ft	Passed - 54%
Factored Shear:	18'- 3 5/8"	1.25D + 1.5L	0.97	2705 lb	13440 lb	Passed - 20%
Live Load (LL) Pos. Defl.:	10'- 2 1/8"	L		0.408"	L/360	Passed - L/559
Total Load (TL) Pos. Defl.:	10'- 1 15/16"	D + L		0.806"	L/240	Passed - L/282
Permanent Deflection:	10'- 1 3/4"			-	L/360	Passed - L/590

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	0.97	2168 lb		12394 lb	7331 lb	Passed - 30%
2	3-08	1.25D + 1.5L	0.97	2877 lb		12394 lb	7331 lb	Passed - 39%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	19'- 7"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	11'- 6 11/16"	FC4 Floor Decking (Plan View Fill)	Top	12 lb/ft	25 lb/ft	-	-
Uniform	6'- 10 1/2"	19'- 3 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	11'- 6 11/16"	19'- 7"	FC4 Floor Decking (Plan View Fill)	Top	8 lb/ft	16 lb/ft	-	-
Point	11'- 4 15/16"	11'- 4 15/16"	B6(i907)	Front	719 lb	1316 lb	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	E29(i375)	Top	29 lb	-	-	-
Point	19'- 5 1/4"	19'- 5 1/4"	E31(i376)	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"	E14(i233)	797 lb	766 lb	-	-
2	19'- 3 1/2"	19'- 7"	E13(i230)	1164 lb	963 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- 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: **BRADFORD CAPITAL**
MODEL: **THWU-14**
CITY: **BRADFORD**

Job Name: **THWU-14**
Level: **2ND FLR FRAMING**
Label: **B8 - i938**
Type: **Beam**

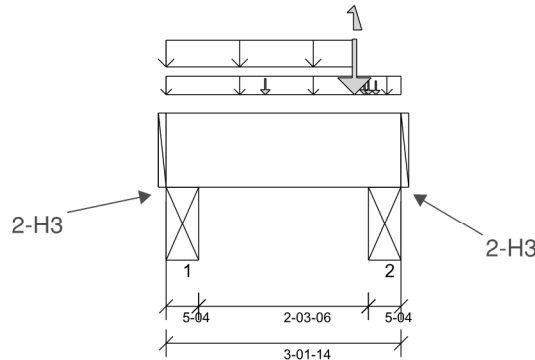
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.3.353.Update16.11

Report Version: 2021.03.26 01/19/2024 08:37



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 1/4"
- 615 psi Beam @ 2'- 9 5/8"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 6 3/8"	1.25D + 1.5S + L	1.00	2528 lb ft	35345 lb ft	Passed - 7%
Factored Neg. Moment:	2'- 6 3/8"	0.9D + 1.4W	1.15	251 lb ft	40647 lb ft	Passed - 1%
Factored Shear:	1'- 8 3/4"	1.25D + 1.5L + S	1.00	1441 lb	13815 lb	Passed - 10%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5'-04	1.25D + 1.5S + L	1.00	2181 lb		19110 lb	11301 lb	Passed - 19%
2	5'-04	1.25D + 1.5S + L	1.00	9647 lb		19110 lb	11301 lb	Passed - 85%
2	5'-04	0.9D + 1.4W	1.15		-785 lb	-	-	

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	3'- 1 7/8"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	-0'	3'- 1 7/8"	E27(i366)	Top	100 lb/ft	-	-	-
Uniform	-0'	2'- 6 3/8"	E27(i366)	Top	74 lb/ft	-	203 lb/ft	-
Point	1'- 4"	1'- 4"	J3(i889)	Back	128 lb	257 lb	-	-
Point	2'- 8"	2'- 8"	J3(i896)	Back	137 lb	273 lb	-	-
Point	2'- 6 3/8"	2'- 6 3/8"	E27(i366)	Top	1321 lb	994 lb	4579 lb	-1791 lb
Point	2'- 8 5/8"	2'- 8 5/8"	FC4 Floor Decking (Plan View Fill)	Top	0 lb	0 lb	-	-
Point	2'- 9 13/16"	2'- 9 13/16"	FC4 Floor Decking (Plan View Fill)	Top	1 lb	1 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/4"	STL BM(i228)	366 lb	154 lb	309 lb	-
2	2'- 8 5/8"	3'- 1 7/8"	STL BM(i227)	1764 lb	1371 lb	4784 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- User loads assume a bearing length of 3.5" in determining member capacity for loads near supports.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 2. Required Load Area: L=2.614", W=3.500". LDF=1.00, Pf=9514 lb, Q'r=9514 lb, Result=100.00%.

PLY TO PLY CONNECTION

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



STRUCTURAL COMPONENT ONLY
DWG # TF24010942



BUILDER: **BAYVIEW WELLINGTON**
SITE: **BRADFORD CAPITAL**
MODEL: **THWU-14**
CITY: **BRADFORD**

Job Name: **THWU-14**
Level: **2ND FLR FRAMING**
Label: **B9 DR - i931**
Type: **Beam**

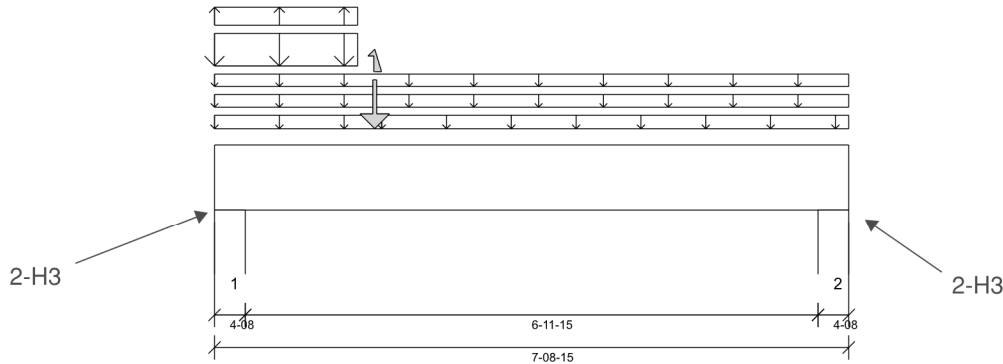
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.6.3.353.Update16.11

Report Version: 2021.03.26 01/19/2024 08:37



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: 7'- 8 15/16" Bottom: 7'- 8 15/16"

Factored Resistance of Support Material:

- 812 psi Wall @ 0'- 3 1/2"
- 812 psi Wall @ 7'- 5 7/16"

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

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



STRUCTURAL COMPONENT ONLY
DWG # TF24010943

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 11 1/2"	1.25D + 1.5S + L	1.00	12825 lb ft	22002 lb ft	Passed - 58%
Factored Neg. Moment:	1'- 11 1/2"	0.9D + 1.4W	1.15	1331 lb ft	24821 lb ft	Passed - 5%
Factored Shear:	1'- 2"	1.25D + 1.5S + L	1.00	7628 lb	11052 lb	Passed - 69%
Live Load (LL) Pos. Defl.:	3'- 5 1/8"	S + 0.5L		0.091"	L/360	Passed - L/925
Total Load (TL) Pos. Defl.:	3'- 5 3/4"	D + S + 0.5L		0.131"	L/240	Passed - L/641

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 + 1.5S + L	1.00	10622 lb		16380 lb	12789 lb	Passed - 83%
1	4-08	0.9D + 1.4W	1.15		-1101 lb	-	-	
2	4-08	1.25D + 1.5S + L	1.00	2897 lb		16380 lb	12789 lb	Passed - 23%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'- 8 15/16"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	7'- 8 15/16"	J5(i928)	Top	13 lb/ft	20 lb/ft	-	-
Uniform	-0'	7'- 8 15/16"	R1(i917)	Top	5 lb/ft	5 lb/ft	-	-
Uniform	-0'	2'- 1/2"	R1(i917)	Top	100 lb/ft	-	-	-
Uniform	-0'	1'- 9"	R1(i917)	Top	339 lb/ft	259 lb/ft	1132 lb/ft	-491 lb/ft
Uniform	2'- 1/2"	7'- 8 15/16"	R1(i917)	Top	100 lb/ft	-	-	-
Point	1'- 11 1/2"	1'- 11 1/2"	R1(i917)	Top	1169 lb	855 lb	3737 lb	-1621 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 1/2"	E11(i224)	1915 lb	1151 lb	4610 lb	0 lb/ -2000 lb
2	7'- 4 7/16"	7'- 8 15/16"	E18(i236)	840 lb	349 lb	1107 lb	0 lb/ -2000 lb

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 0.94
- 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: **BRADFORD CAPITAL**
MODEL: **THWU-14**
CITY: **BRADFORD**

Job Name: **THWU-14**
Level: **2ND FLR FRAMING**
Label: **B10 DR - i914**
Type: **Beam**

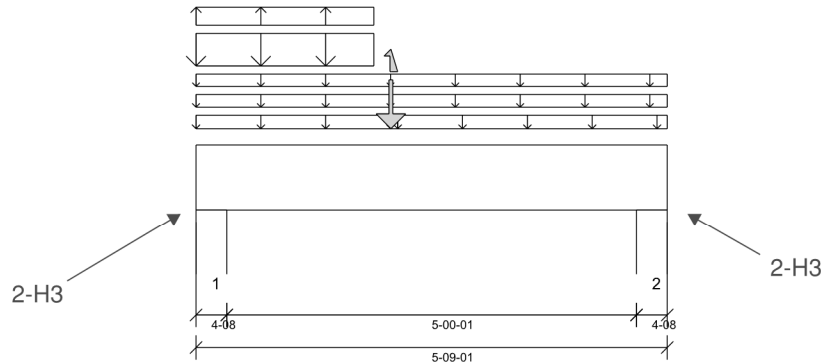
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.6.3.353.Update16.11

Report Version: 2021.03.26 01/19/2024 08:37



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: 5'- 9 1/16" Bottom: 5'- 9 1/16"

Factored Resistance of Support Material:

- 812 psi Wall @ 0'- 3 1/2"
- 812 psi Wall @ 5'- 5 9/16"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 4 9/16"	1.25D + 1.5S + L	1.00	9925 lb ft	22583 lb ft	Passed - 44%
Factored Neg. Moment:	2'- 4 9/16"	0.9D + 1.4W	1.15	1085 lb ft	25705 lb ft	Passed - 4%
Factored Shear:	1'- 2"	1.25D + 1.5S + L	1.00	5215 lb	11052 lb	Passed - 47%
Live Load (LL) Pos. Defl.:	2'- 8 5/16"	S + 0.5L		0.041"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 8 7/16"	D + S + 0.5L		0.056"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4'-08	1.25D + 1.5S + L	1.00	8209 lb		16380 lb	12789 lb	Passed - 64%
1	4'-08	0.9D + 1.4W	1.15		-877 lb	-	-	
2	4'-08	1.25D + 1.5S + L	1.00	3561 lb		16380 lb	12789 lb	Passed - 28%
2	4'-08	0.9D + 1.4W	1.15		-139 lb	-	-	

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 9 1/16"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	5'- 9 1/16"	J5(i928)	Top	13 lb/ft	20 lb/ft	-	-
Uniform	-0'	5'- 9 1/16"	R1(i917)	Top	5 lb/ft	5 lb/ft	-	-
Uniform	-0'	2'- 5 9/16"	R1(i917)	Top	100 lb/ft	-	-	-
Uniform	-0'	2'- 2 1/16"	R1(i917)	Top	339 lb/ft	259 lb/ft	1132 lb/ft	-491 lb/ft
Uniform	2'- 5 9/16"	5'- 9 1/16"	R1(i917)	Top	100 lb/ft	-	-	-
Point	2'- 4 9/16"	2'- 4 9/16"	R1(i917)	Top	816 lb	597 lb	2611 lb	-1132 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 1/2"	E18(i236)	1448 lb	880 lb	3536 lb	0 lb/ -1534 lb
2	5'- 4 9/16"	5'- 9 1/16"	E20(i238)	842 lb	422 lb	1533 lb	0 lb/ -1534 lb

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 0.97
- 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 # TF24010944



BUILDER: **BAYVIEW WELLINGTON**
SITE: **BRADFORD CAPITAL**
MODEL: **THWU-14**
CITY: **BRADFORD**

Job Name: **THWU-14**
Level: **2ND FLR FRAMING**
Label: **B8B - i831**
Type: **Beam**

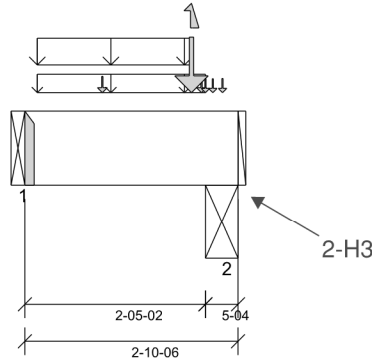
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.3.353.Update16.11

Report Version: 2021.03.26 01/19/2024 08:29



DESIGN INFORMATION

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

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Beam @ 2'- 6 1/8"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 2 7/8"	1.25D + 1.5S + L	1.00	2548 lb ft	35345 lb ft	Passed - 7%
Factored Neg. Moment:	2'- 2 7/8"	0.9D + 1.4W	1.15	248 lb ft	40647 lb ft	Passed - 1%
Factored Shear:	1'- 5 1/4"	1.25D + 1.5L + S	1.00	1512 lb	13815 lb	Passed - 11%

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 + 1.5S + L	1.00	1896 lb		5460 lb	-	Passed - 35%
2	5'-04	1.25D + 1.5S + L	1.00	9721 lb		19110 lb	11301 lb	Passed - 86%
2	5'-04	0.9D + 1.4W	1.15		-774 lb	-	-	

CONNECTOR INFORMATION

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

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

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	2'- 10 3/8"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'- 2"	2'- 5 1/8"	E37(i518)	Top	100 lb/ft	-	-	-
Uniform	0'- 2"	2'- 2 7/8"	E37(i518)	Top	74 lb/ft	-	203 lb/ft	-
Point	1'- 1/2"	1'- 1/2"	J3(i921)	Back	139 lb	277 lb	-	-
Point	2'- 4 1/2"	2'- 4 1/2"	J3(i931)	Back	137 lb	273 lb	-	-
Point	2'- 2 7/8"	2'- 2 7/8"	E37(i518)	Top	1321 lb	994 lb	4579 lb	-1791 lb
Point	2'- 5 1/8"	2'- 5 1/8"	FC4 Floor Decking (Plan View Fill)	Top	0 lb	0 lb	-	-
Point	2'- 6 5/16"	2'- 6 5/16"	FC4 Floor Decking (Plan View Fill)	Top	1 lb	1 lb	-	-
Point	2'- 7 7/8"	2'- 7 7/8"	E38(i517)	Top	46 lb	-	-	-

UNFACTORED REACTIONS


ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B11B(i869)	283 lb	162 lb	212 lb	-
2	2'- 5 1/8"	2'- 10 3/8"	STL BM(i227)	1775 lb	1383 lb	4788 lb	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- User loads assume a bearing length of 3.5" in determining member capacity for loads near supports.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 2. Required Load Area: L=2.614", W=3.500". LDF=1.00, Pf=9514 lb, Qr=9514 lb, Result=100.00%.



STRUCTURAL COMPONENT ONLY
DWG # TF24010945 PG 1/2

	BUILDER:	BAYVIEW WELLINGTON	Job Name:	THWU-14	2 Ply Member	Status:
	SITE:	BRADFORD CAPITAL	Level:	2ND FLR FRAMING	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	Design Passed
	MODEL:	THWU-14	Label:	B8B - i831		
	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.





BUILDER: **BAYVIEW WELLINGTON**
SITE: **BRADFORD CAPITAL**
MODEL: **THWU-14**
CITY: **BRADFORD**

Job Name: **THWU-14**
Level: **2ND FLR FRAMING**
Label: **B11B - i869**
Type: **Beam**

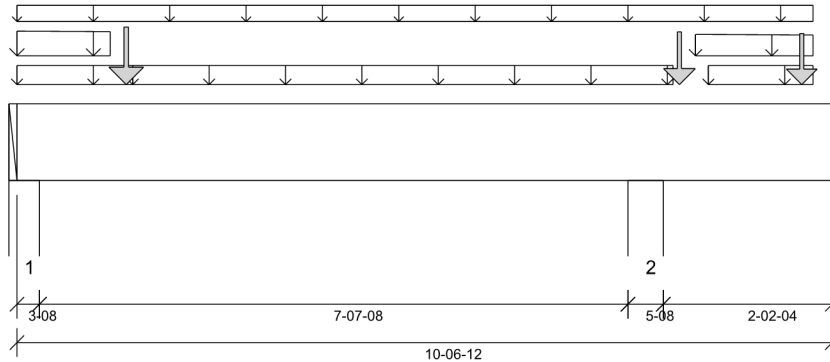
2 Ply Member
1 3/4" x 11 7/8" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.6.3.353.Update16.11

Report Version: 2021.03.26 01/19/2024 08:29



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/180,
TL Deflection Limit: L/120,

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:
Top: 0'- 3" Bottom: 7'- 7 1/2"

Factored Resistance of Support Material:

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



STRUCTURAL COMPONENT ONLY
DWG # TF24010946

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 9 1/4"	1.25D + 1.5L	0.65	1412 lb ft	22974 lb ft	Passed - 6%
Factored Neg. Moment:	8'- 1 3/4"	1.25D + 1.5L + S	0.73	2749 lb ft	24594 lb ft	Passed - 11%
Factored Shear:	9'- 4 3/8"	1.25D + 1.5L + S	0.73	1146 lb	10063 lb	Passed - 11%
Live Load (LL) Pos. Defl.:	10'- 6 3/4"	S + 0.5L		0.011"	L/180	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 7 5/16"	D + L		0.011"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3'-08"	1.25D + 1.5L + S	0.73	1581 lb		9270 lb	5484 lb	Passed - 29%
2	5'-08"	1.25D + 1.5L + S	0.73	3317 lb		14583 lb	8626 lb	Passed - 38%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	10'- 6 3/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	-0'	10'- 3 3/4"	FC4 Floor Decking (Plan View Fill)	Top	13 lb/ft	27 lb/ft	-	-
Uniform	-0'	1'- 6"	E39(i672)	Top	100 lb/ft	-	-	-
Uniform	1'- 6"	8'- 6"	E40(i673)	Top	100 lb/ft	-	-	-
Uniform	8'- 11 1/2"	10'- 3 3/4"	E28(i367)	Top	100 lb/ft	-	-	-
Tapered	-0'	1'- 2 1/2"	E39(i672)	Top	134 To 125 lb/ft	-	82 lb/ft	-
Tapered	8'- 9 1/2"	10'- 3 3/4"	E28(i367)	Top	66 To 54 lb/ft	-	82 lb/ft	-
Point	10'- 2"	10'- 2"	B8B(i831)	Back	283 lb	162 lb	212 lb	-
Point	1'- 5"	1'- 5"	E39(i672)	Top	460 lb	-	312 lb	-
Point	8'- 7"	8'- 7"	E28(i367)	Top	376 lb	-	310 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	E16(i229)	912 lb	111/-49 lb	260 lb	-
2	7'- 11"	8'- 4 1/2"	E8(i125)	1703 lb	374 lb	798 lb	-

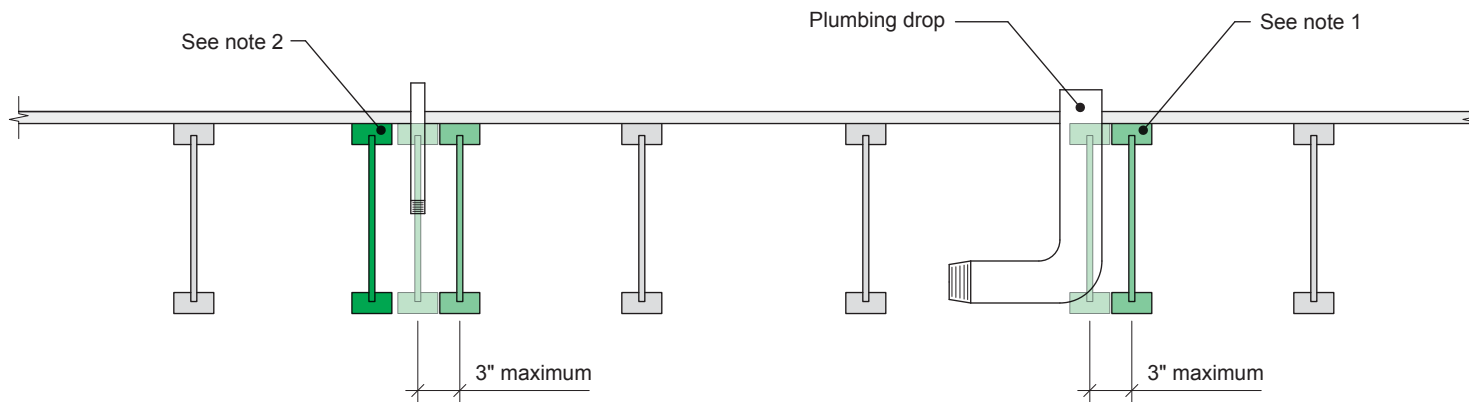
DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- 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.

7c

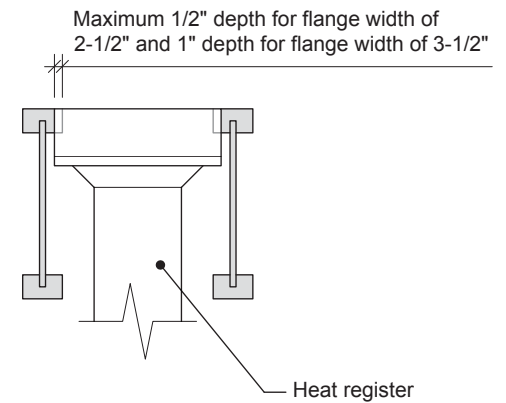
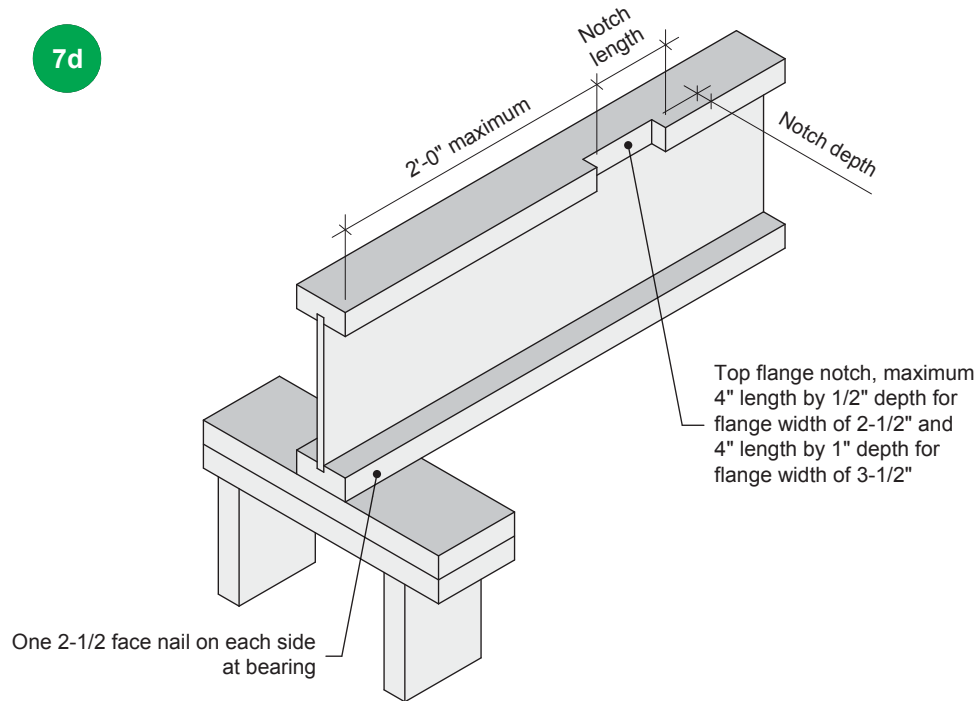


Notes:

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

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

7d



Notes:

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

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

Maximum Floor Spans – S2.1

Design Criteria

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

Maximum Floor Spans

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

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

Notes:

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

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:

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 – 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.