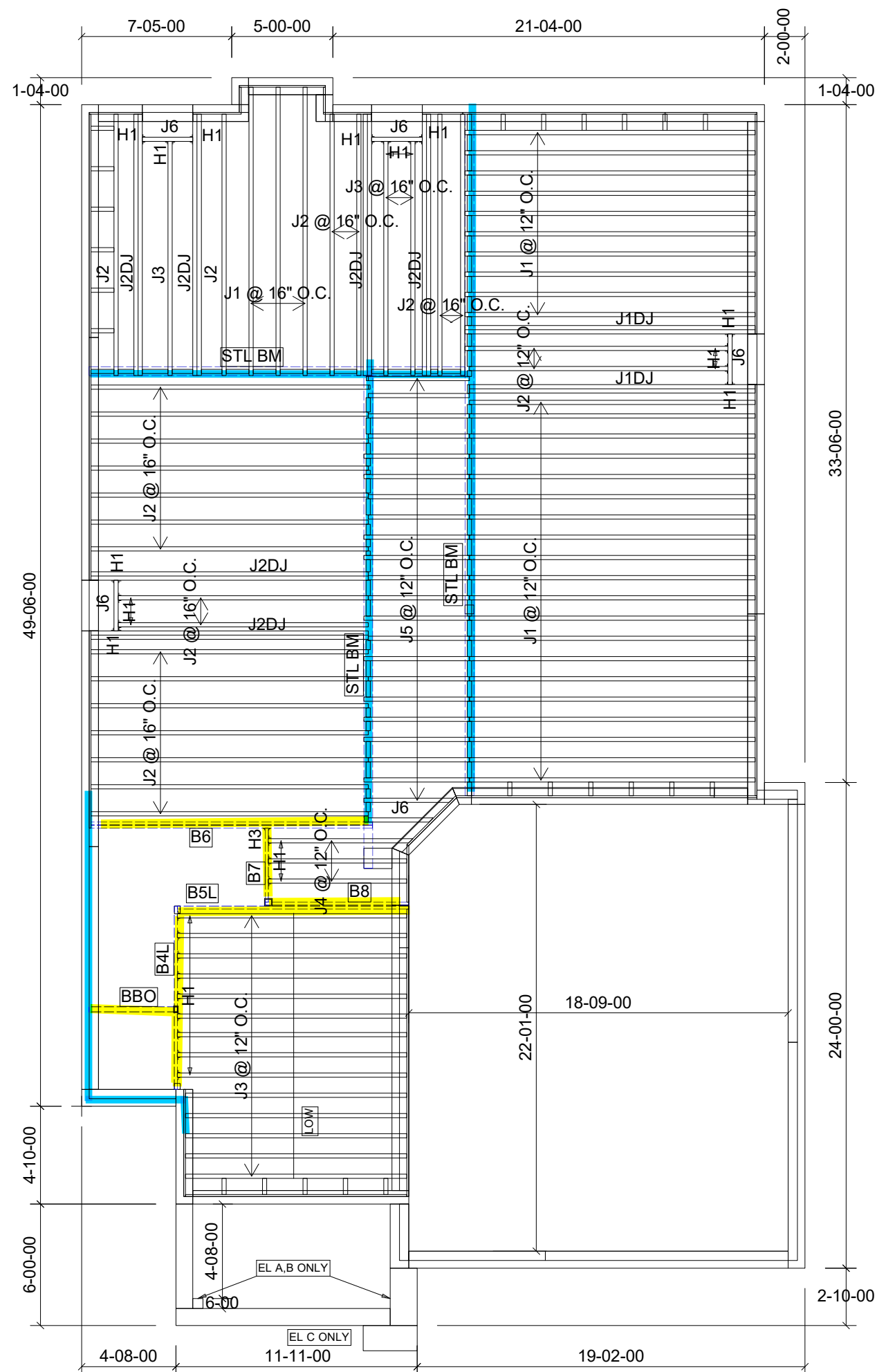


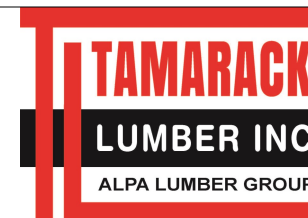
REVIEWED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	33
J1DJ	16-00-00	9 1/2" NI-40x	2	4
J2	14-00-00	9 1/2" NI-40x	1	24
J2DJ	14-00-00	9 1/2" NI-40x	2	12
J3	12-00-00	9 1/2" NI-40x	1	16
J3	12-00-00	9 1/2" NI-40x	1	1
J4	8-00-00	9 1/2" NI-40x	1	3
J5	6-00-00	9 1/2" NI-40x	1	22
J6	4-00-00	9 1/2" NI-40x	1	5
B6	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B5L	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B4L	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B8	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B7	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
1	H3	HUS1.81/10

TOWN OF BRADFORD WEST GWILLIMBURY
BUILDING DEPARTMENT
PLANS EXAMINED
ONTARIO BUILDING CODE APPLIES
DATE: 2022-07-12
INSPECTOR: SE



FROM PLAN DATED: JUNE 17 2021

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S42-17

ELEVATION: A.B.C

LOT:

CITY: BRADFORD

SALESMAN: WILLIAM GARCIA

DESIGNER: CZ

REVISION: EEO

NOTES:

REFER TO THE **NORDIC INSTALLATION** GUIDE
FOR PROPER STORAGE AND INSTALLATION.

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F
REQ'D UNDER INTERIOR UNIFORM LOAD
BEARING WALLS. **MULTIPLE SQUASH BLOCKS**
REQ'D UNDER CONCENTRATED LOADS.
SEE FIGURE 1.

CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS.

FOR HOLES INCLUDING DUCT CHASE AND FIELD CUT OPENINGS SEE FIGURE 6 AND TABLES 6.1 & 6.2.

CERAMIC TILE APPLICATION AS PER O.B.C
9.30.6.

LOADING:

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

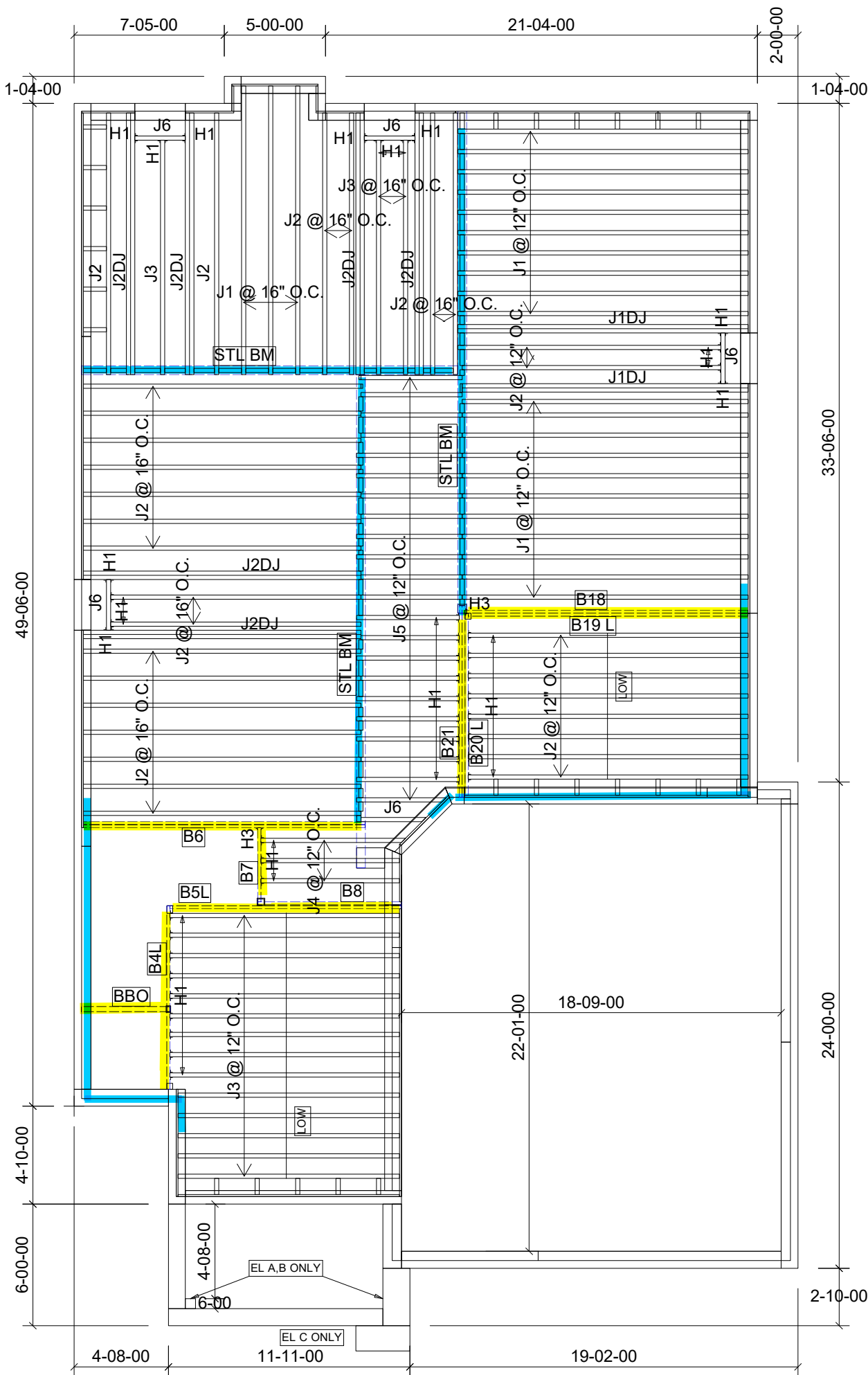
JOIST LL DEFLECTION LIMIT: $L/480$

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2022-03-04

1st FLOOR FRAMING

REVIEWED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	24
J1DJ	16-00-00	9 1/2" NI-40x	2	4
J2	14-00-00	9 1/2" NI-40x	1	32
J2DJ	14-00-00	9 1/2" NI-40x	2	12
J3	12-00-00	9 1/2" NI-40x	1	16
J3	12-00-00	9 1/2" NI-40x	1	1
J4	8-00-00	9 1/2" NI-40x	1	3
J5	6-00-00	9 1/2" NI-40x	1	22
J6	4-00-00	9 1/2" NI-40x	1	5
B18	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B19 L	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B6	14-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B5L	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B20 L	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B4L	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B21	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B8	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1
B7	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
20	H1	IUS2.56/9.5
9	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
2	H3	HUS1.81/10

DATE: 2022-03-04

1st FLOOR FRAMING
SUNKEN



FROM PLAN DATED: JUNE 17 2021
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S42-17
ELEVATION: A,B,C
LOT:
CITY: BRADFORD
SALESMAN: WILLIAM GARCIA
DESIGNER: CZ
REVISION: EEO

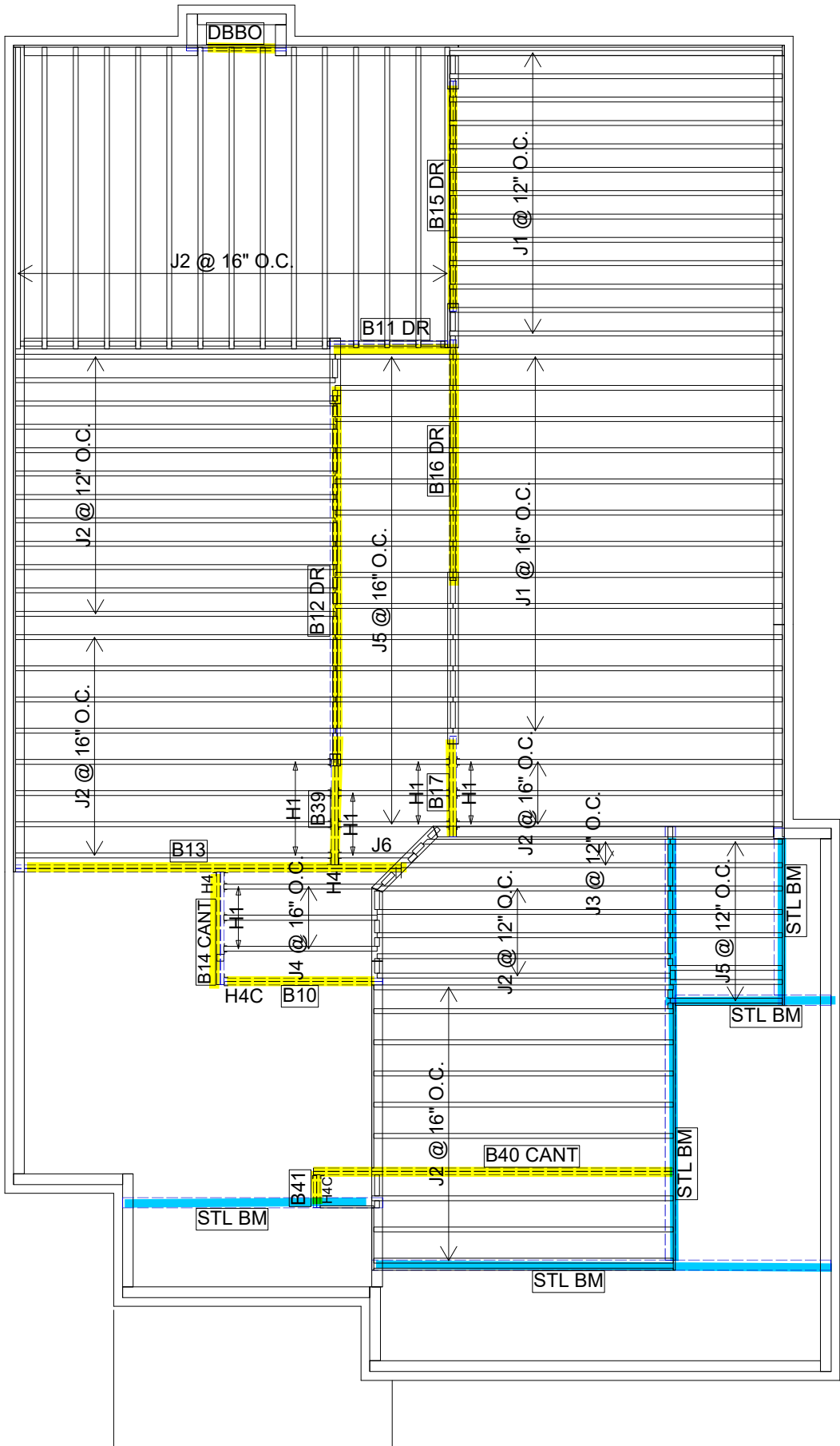
NOTES:
REFER TO THE **NORDIC INSTALLATION** GUIDE FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.
CANTILEVERED JOISTS INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS.
FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 6 AND TABLES 6.1 & 6.2.
CERAMIC TILE APPLICATION AS PER O.B.C 9.30.6.

LOADING:
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 20.0 lb/ft²

JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 5/8" GLUED AND NAILED

REVIEWED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	26
J2	14-00-00	9 1/2" NI-40x	1	52
J3	12-00-00	9 1/2" NI-40x	1	2
J4	8-00-00	9 1/2" NI-40x	1	3
J5	6-00-00	9 1/2" NI-40x	1	24
J6	4-00-00	9 1/2" NI-40x	1	1
B13	18-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B40 CANT	16-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B16 DR	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B15 DR	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B10	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B11 DR	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B14 CANT	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B17	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B39	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B41	2-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B12 DR	16-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3

Connector Summary		
Qty	Manuf	Product
16	H1	IUS2.56/9.5
2	H4C	HUC410
2	H4	HGUS410

DATE: 2022-03-09

2nd FLOOR FRAMING
10' GROUND FLOOR



FROM PLAN DATED: JUNE 17 2021

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S42-17

ELEVATION: A,B,C

LOT:

CITY: BRADFORD

SALESMAN: WILLIAM GARCIA

DESIGNER: CZ

REVISION: EEO

NOTES:

REFER TO THE **NORDIC INSTALLATION** GUIDE FOR PROPER STORAGE AND INSTALLATION.

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.

CANTILEVERED JOISTS INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS.

FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 6 AND TABLES 6.1 & 6.2.

CERAMIC TILE APPLICATION AS PER O.B.C 9.30.6.

LOADING:

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 5/8" GLUED AND NAILED

NORDIC

INSTALLATION GUIDE NORDIC JOIST

NS-G133 
ENGLISH
VERSION
2020-10-01

Engineered Wood Products

BASIC INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



NORDIC
STRUCTURES

nordic.ca

INSTALLING NORDIC I-JOISTS

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

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

SAFETY AND CONSTRUCTION PRECAUTIONS

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

Avoid Accidents by Following these Important Guidelines:

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



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



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

NORDIC I-JOIST SERIES

RESIDENTIAL SERIES

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

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

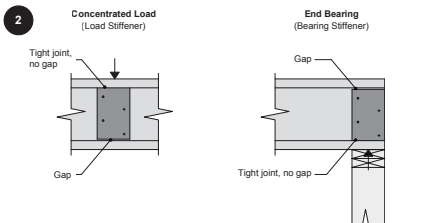
NI-60
2x3 2100F MSR
3/8 in. web
Depths
9-1/2, 11-7/8, 14 and 16 in.
33 pieces per unit

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

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

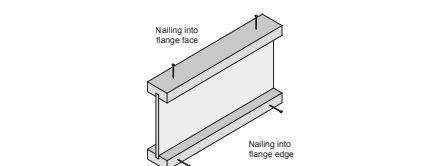
RIM BOARDS
Width Length
1-1/8 in. 16 ft
Depths
9-1/2 to 16 in.
APA Rim Board Plus

WEB STIFFENERS

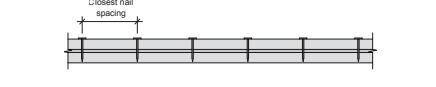


Stiffener Size Requirements	
Flange width (in.)	Web stiffener size each side of web (in.)
2-1/2	1 x 2-5/16 Minimum width
3-1/2	1-1/2 x 2-5/16 Minimum width

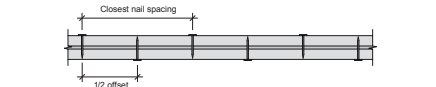
NAIL SPACING



Nailed to Only One Flange Edge (Top View)



Nailed to Both Flange Edges (Top View)

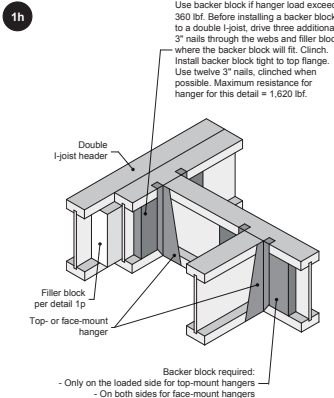


Recommended Closest Nail Spacing for Fastening Sheathing to I-joist Flanges to Minimize Splitting				
Flange face nailing ^(a)			Flange edge nailing ^(b)	
Fastener size (diameter x length)	End distance (in.)	Nail spacing (in.)	End distance (in.)	Nail spacing (in.)

Flange face nailing ^(a)	Flange edge nailing ^(b)
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

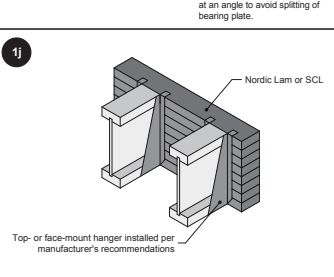
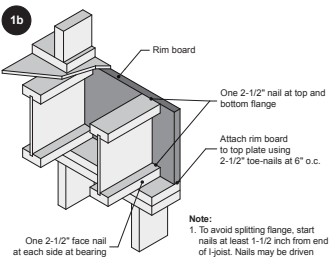
^(a) If more than one row is required, offset rows a minimum of 1/2 inch and stagger.
^(b) Closest nail spacing measured from one flange edge. Nails on opposite flange edge must be offset one-half the minimum spacing.

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

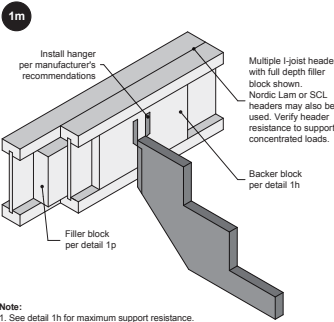


Flange width (in.)	Material thickness required (in.) ^(a)	Minimum depth (in.) ^(b)
2-1/2	1	5-1/2
3-1/2	1-1/2	7-1/4

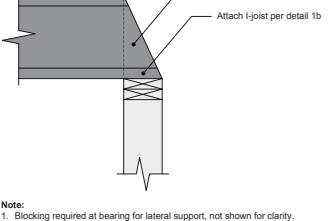
- Notes:**
1. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.
 2. For hanger resistance, see manufacturer's recommendations.
 3. Verify double I-joist resistance to support concentrated loads.
 4. Backer blocks must be long enough to permit required nailing without splitting.



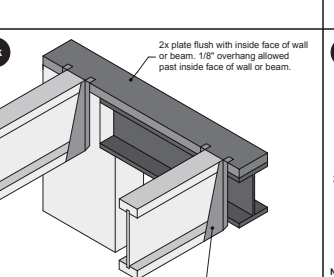
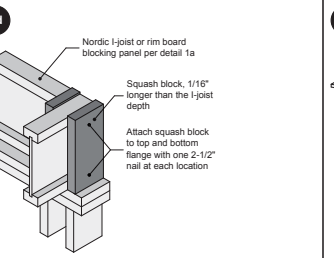
- Notes:**
1. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.
 2. For nailing schedules for Nordic NI-60 or NI-80, see the manufacturer's recommendations.



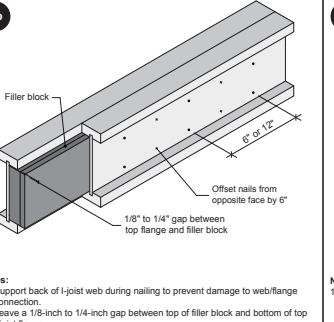
- Notes:**
1. See detail 1h for maximum support resistance.



- Notes:**
1. Blocking required at bearing for lateral support, not shown for clarity.



- Notes:**
1. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.



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

Filler Block Requirements for Double I-joist Construction			
Flange width (in.)	Net depth (in.)	Filler block size (in.)	Example

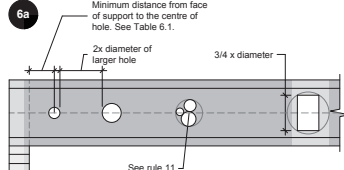
- Notes:**
1. The height of the filler block may be different from that specified in the table, as long as it allows nailing and respects the required gap.

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.

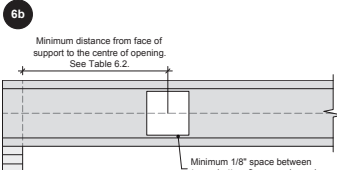


- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
 2. Holes in web should be cut with a sharp saw.
 3. For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular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

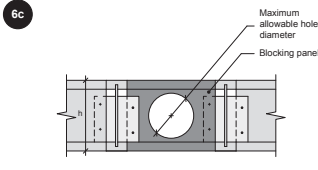


- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
 2. Holes in web should be cut with a sharp saw.
 3. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 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"	8'-10"	10'-0"	-	-	-	-	-	-	-
	NI-80	1'-6"	2'-10"	4'-2"	5'-6"	7'-0"	7'-5"	8'-6"	10'-3"	11'-4"	-	-	-	-	-	-	-
14"	NI-20	0'-7"	0'-8"	1'-5"	3'-2"	4'-10"	5'-4"	6'-9"	8'-9"	10'-2"	-	-	-	-	-	-	-
	NI-40x	0'-7"	0'-8"	1'-0"	2'-4"	2'-9"	3'-9"	5'-2"	6'-0"	6'-6"	8'-3"	10'-2"	-	-	-	-	-
	NI-60	0'-7"	0'-8"	1'-8"	3'-0"	4'-3"	4'-8"	5'-8"	7'-2"	8'-0"	8'-8"	10'-4"	11'-9"	-	-	-	-
	NI-80	0'-10"	2'-0"	3'-4"	4'-9"	6'-2"	6'-5"	7'-6"	9'-0"	10'-0"	10'-8"	12'-4"	13'-9"	-	-	-	-
16"	NI-20	0'-7"	0'-8"	0'-10"	2'-5"	4'-0"	4'-5"	5'-9"	7'-5"	8'-8"	9'-4"	11'-4"	12'-11"	-	-	-	-
	NI-40x	0'-7"	0'-8"	0'-8"	1'-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"	-	-	-	-

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

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

TABLE 6.2 - LOCATION OF DUCT CHASE OPENINGS

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

- 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/2 |



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10" GRD FLR**
Level: **1ST FLOOR FRAMING**
Label: **B4L - i10035**
Type: **Beam**

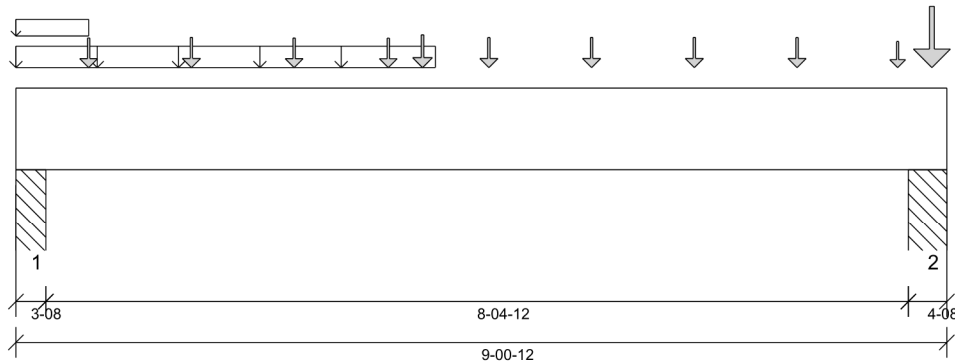
1 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Lateral Restraint Requirements:

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

Factored Resistance of Support Material:

- 615 psi Column @ 0'- 2 1/2"
- 615 psi Column @ 8'- 9 1/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 11 1/2"	1.25D + 1.5L	1.00	6184 lb ft	11650 lb ft	Passed - 53%
Factored Neg. Moment:	8'- 9 1/4"	1.25D + 1.5L	1.00	217 lb ft	11650 lb ft	Passed - 2%
Factored Shear:	1'- 1"	1.25D + 1.5L	1.00	2710 lb	5526 lb	Passed - 49%
Live Load (LL) Pos. Defl.:	4'- 4 13/16"	L		0.148"	L/360	Passed - L/679
Total Load (TL) Pos. Defl.:	4'- 4 13/16"	D + L		0.228"	L/240	Passed - L/441

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	2928 lb		6370 lb	3767 lb	Passed - 78%
2	4-08	1.25D + 1.5L	1.00	4027 lb		8190 lb	4843 lb	Passed - 83%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	9'- 3/4"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'	4'- 1"	User Load	Top	40 lb/ft	80 lb/ft	-	-
Uniform	0'	0'- 8 1/2"	FC2 Floor Decking (Plan View Fill)	Top	9 lb/ft	18 lb/ft	-	-
Point	0'- 8 1/2"	0'- 8 1/2"	J3(i10086)	Front	109 lb	218 lb	-	-
Point	1'- 8 1/2"	1'- 8 1/2"	J3(i10075)	Front	113 lb	227 lb	-	-
Point	2'- 8 1/2"	2'- 8 1/2"	J3(i10077)	Front	109 lb	217 lb	-	-
Point	3'- 7 1/2"	3'- 7 1/2"	J3(i10076)	Front	108 lb	215 lb	-	-
Point	4'- 7 1/4"	4'- 7 1/4"	J3(i10072)	Front	112 lb	225 lb	-	-
Point	5'- 7 1/4"	5'- 7 1/4"	J3(i10078)	Front	113 lb	227 lb	-	-
Point	6'- 7 1/4"	6'- 7 1/4"	J3(i10082)	Front	113 lb	227 lb	-	-
Point	7'- 7 1/4"	7'- 7 1/4"	J3(i10089)	Front	112 lb	225 lb	-	-
Point	8'- 7"	8'- 7"	J3(i10070)	Front	83 lb	165 lb	-	-
Point	3'- 11 1/2"	3'- 11 1/2"	PBO8(i5804)	Top	161 lb	238 lb	-	-
Point	8'- 11"	8'- 11"	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"	PBO2(i38)	725 lb	1360 lb	-	-
2	8'- 8 1/4"	9'- 3/4"	PBO1(i37)	971 lb	1863 lb	-	-

DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030701

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10" GRD FLR**
Level: **1ST FLOOR FRAMING**
Label: **B5L - i10034**
Type: **Beam**

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

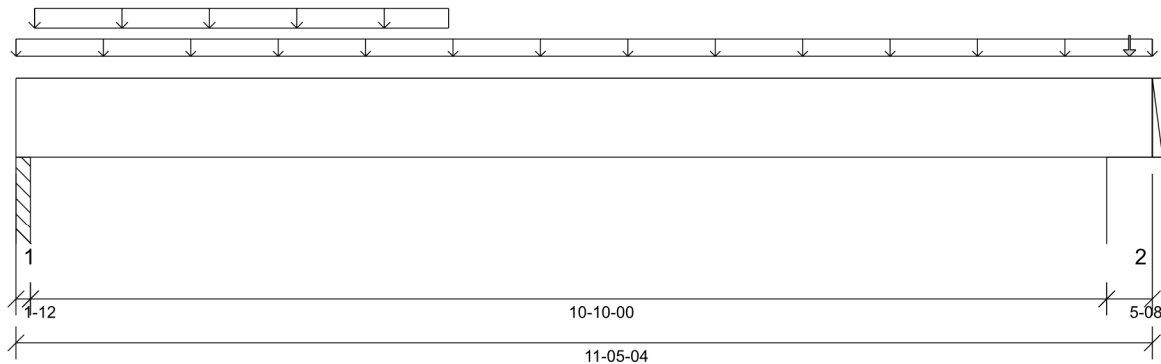
Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26

03/16/2022 12:01



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

Top: 0' Bottom: 10'- 11 3/4"

Factored Resistance of Support Material:

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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 7/16"	1.25D + 1.5L	0.77	800 lb ft	8945 lb ft	Passed - 9%
Factored Shear:	0'- 11 1/4"	1.4D	0.65	278 lb	3592 lb	Passed - 8%
Live Load (LL) Pos. Defl.:	5'- 6 5/8"	L		0.013"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 2 15/16"	D + L		0.052"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1'-12	1.4D	0.65	354 lb		2070 lb	1224 lb	Passed - 29%
2	5'-08	1.25D + 1.5L	0.77	281 lb		7686 lb	4546 lb	Passed - 6%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	11'- 5 1/4"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'	11'- 5 1/4"	FC2 Floor Decking (Plan View Fill)	Top	5 lb/ft	10 lb/ft	-	-
Uniform	0'- 2 1/4"	4'- 4 1/4"	User Load	Top	60 lb/ft	-	-	-
Point	11'- 2 1/2"	11'- 2 1/2"	1(i823)	Top	25 lb	21 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 1 3/4"	PBO1(i37)	254 lb	54 lb	-	-
2	10'- 11 3/4"	11'- 5 1/4"	W28(i50)	130 lb	78 lb	-	-

DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030702

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **1ST FLOOR FRAMING**
Label: **B6 - i10036**
Type: **Beam**

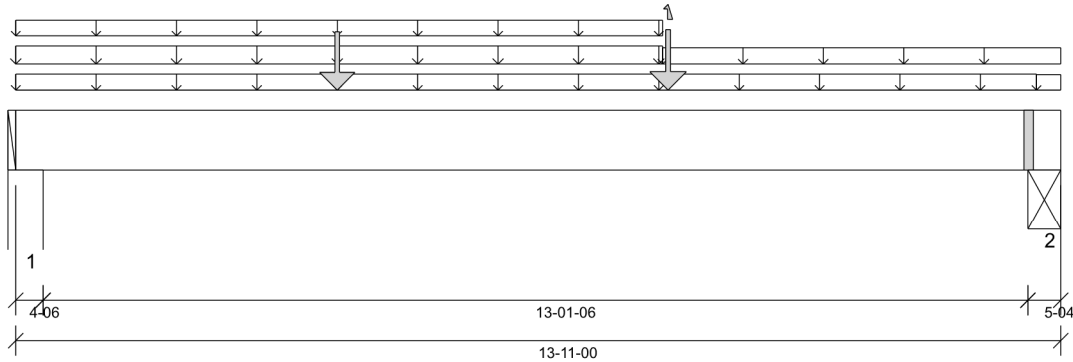
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Lateral Restraint Requirements:

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

Top: 0' Bottom: 8'- 3"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 3 3/8"
- 534 psi Beam @ 13'- 6 3/4"

PLY TO PLY CONNECTION:
3 STAGGERED ROWS OF 3.25"
PNEUMATIC GUN NAILS
(0.120"x3.25") @ 12" O/C



STRUCTURAL COMPONENT ONLY
DWG # TF22030703

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	7'- 1 1/8"	1.25D + 1.5L	0.98	6253 lb ft	22838 lb ft	Passed - 27%
Factored Shear:	1'- 1 7/8"	1.25D + 1.5L	0.98	1581 lb	10833 lb	Passed - 15%
Live Load (LL) Pos. Defl.:	6'- 11 1/16"	L		0.149"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 10 5/16"	D + L		0.299"	L/240	Passed - L/526

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-06	1.25D + 1.5L	0.98	1727 lb		15609 lb	9234 lb	Passed - 19%
2	5-04	1.25D + 1.5L	0.98	1438 lb		18731 lb	9618 lb	Passed - 15%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	13'- 11"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	13'- 7 1/8"	FC1 Floor Decking (Plan View Fill)	Top	6 lb/ft	11 lb/ft	-	-
Uniform	0'	8'- 7 3/8"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'	8'- 7 3/8"	FC1 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Uniform	8'- 7 3/8"	13'- 11"	FC1 Floor Decking (Plan View Fill)	Top	8 lb/ft	15 lb/ft	-	-
Uniform	13'- 7 1/8"	13'- 11"	FC1 Floor Decking (Plan View Fill)	Top	2 lb/ft	5 lb/ft	-	-
Point	8'- 8 1/4"	8'- 8 1/4"	B7(i10037)	Front	216 lb	415/0 lb	-	-
Point	4'- 3 3/8"	4'- 3 3/8"	User Load	Top	200 lb	400 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 3/8"	W1(i7)	710 lb	563 lb	-	-
2	13'- 5 3/4"	13'- 11"	STL BM(i24)	498 lb	540 lb	-	-

DESIGN NOTES

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

PLY TO PLY CONNECTION

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

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **1ST FLOOR FRAMING**
Label: **B7 - i10037**
Type: **Beam**

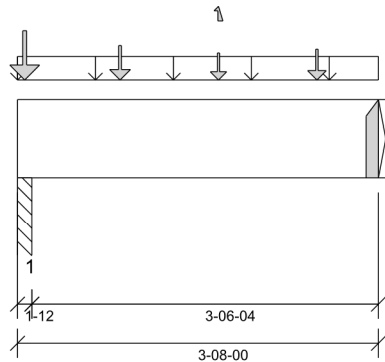
1 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 1/2"	1.25D + 1.5L	1.00	830 lb ft	11650 lb ft	Passed - 7%
Factored Shear:	0'- 11 1/4"	1.25D + 1.5L	1.00	608 lb	5526 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	1-12	1.25D + 1.5L	1.00	1400 lb		3185 lb	1883 lb	Passed - 74%
2	1-08	1.25D + 1.5L	1.00	882 lb		2730 lb	-	Passed - 32%

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'	3'- 8"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'	3'- 8"	User Load	Back	60 lb/ft	120 lb/ft	-	-
Point	1'- 1/2"	1'- 1/2"	J4(i9835)	Front	75 lb	150 lb	-	-
Point	2'- 1/2"	2'- 1/2"	J4(i9816)	Front	47 lb	94/0 lb	-	-
Point	3'- 1/2"	3'- 1/2"	J4(i10041)	Front	61 lb	122 lb	-	-
Point	0'- 7/8"	0'- 7/8"	PBO7(i3528)	Top	165 lb	228 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 1 3/4"	PBO3(i39)	369 lb	619 lb	-	-
2	3'- 8"	3'- 8"	B6(i10036)	216 lb	415 lb	-	-

DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030704

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **1ST FLOOR FRAMING**
Label: **B8 - i9879**
Type: **Beam**

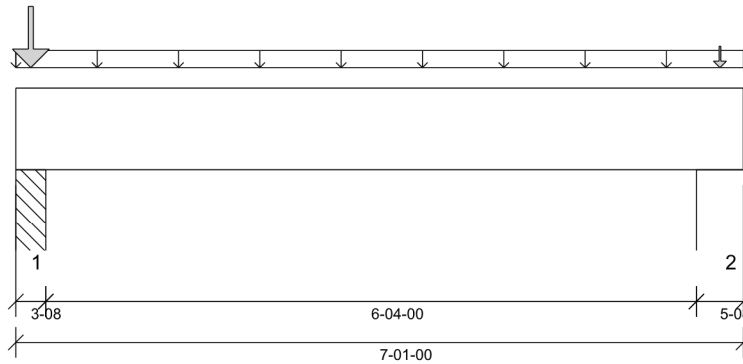
1 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

Top: 0' Bottom: 6'- 5 3/4"

Factored Resistance of Support Material:

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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 6 15/16"	1.25D + 1.5L	1.00	251 lb ft	11650 lb ft	Passed - 2%
Factored Neg. Moment:	0'- 2 1/2"	1.25D + 1.5L	1.00	70 lb ft	5709 lb ft	Passed - 1%
Factored Shear:	1'- 1"	1.25D + 1.5L	1.00	141 lb	5526 lb	Passed - 3%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3'-08	1.25D + 1.5L	1.00	1300 lb		6370 lb	3767 lb	Passed - 35%
2	5'-08	1.25D + 1.5L	1.00	344 lb		10010 lb	5921 lb	Passed - 6%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'- 1"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	-0'	7'- 1"	FC1 Floor Decking (Plan View Fill)	Top	12 lb/ft	24 lb/ft	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	PBO7(i3528)	Top	330 lb	457 lb	-	-
Point	6'- 10 1/4"	6'- 10 1/4"	2(i824)	Top	43 lb	62 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	PBO3(i39)	398 lb	554 lb	-	-
2	6'- 7 1/2"	7'- 1"	W27(i49)	93 lb	134 lb	-	-

DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030705

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B10 - i9397**
Type: **Beam**

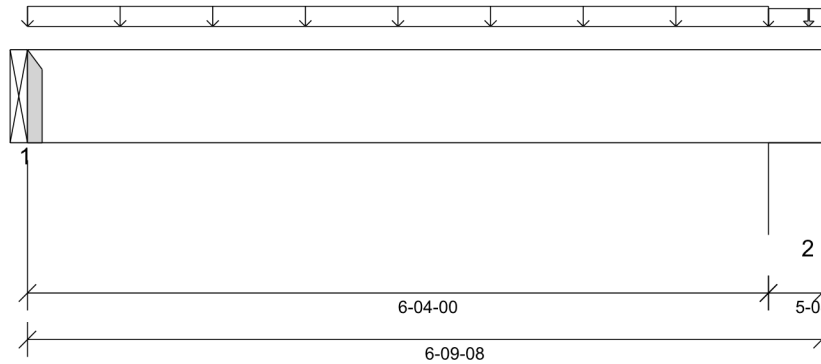
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

Top: 0' Bottom: 6'- 4"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Wall @ 6'- 5"

PLY TO PLY CONNECTION:
3 STAGGERED ROWS OF 3.25"
PNEUMATIC GUN NAILS
(0.120"x3.25") @ 12" O/C



STRUCTURAL COMPONENT ONLY
DWG # TF22030706

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 2 7/16"	1.25D + 1.5L	1.00	397 lb ft	23299 lb ft	Passed - 2%
Factored Shear:	0'- 9 1/2"	1.25D + 1.5L	1.00	187 lb	11052 lb	Passed - 2%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	267 lb		5460 lb	-	Passed - 5%
2	5-08	1.25D + 1.5L	1.00	255 lb		20020 lb	11843 lb	Passed - 2%

CONNECTOR INFORMATION

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

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

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	6'- 9 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	6'- 4"	FC3 Floor Decking (Plan View Fill)	Top	15 lb/ft	31 lb/ft	-	-
Uniform	6'- 4"	6'- 9 1/2"	FC3 Floor Decking (Plan View Fill)	Top	2 lb/ft	5 lb/ft	-	-
Point	6'- 8 1/8"	6'- 8 1/8"	FC3 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'	B14 CANT(i9416)	84 lb	107 lb	-	-
2	6'- 4"	6'- 9 1/2"	1(i823)	85 lb	101 lb	-	-

DESIGN NOTES

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

PLY TO PLY CONNECTION

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

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B11 DR - i9311**
Type: **Beam**

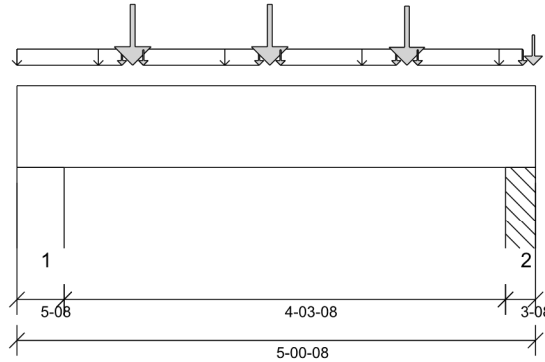
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

Top: 1'- 1 1/2" Bottom: 4'- 7"

Factored Resistance of Support Material:

- 1334 psi Wall @ 0'- 4 1/2"
- 615 psi Column @ 4'- 10"

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030707

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 5 1/2"	1.25D + 1.5L	1.00	1452 lb ft	23299 lb ft	Passed - 6%
Factored Shear:	1'- 3"	1.25D + 1.5L	1.00	1046 lb	11052 lb	Passed - 9%

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	1197 lb		20020 lb	25687 lb	Passed - 6%
2	3'-08"	1.25D + 1.5L	1.00	1288 lb		12740 lb	7534 lb	Passed - 17%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	1'- 1/4"	Bk1(i9470)	Top	6 lb/ft	11 lb/ft	-	-
Uniform	1'- 2 3/4"	2'- 4 1/4"	Bk1(i9178)	Top	6 lb/ft	11 lb/ft	-	-
Uniform	2'- 6 3/4"	3'- 8 1/4"	Bk1(i9257)	Top	6 lb/ft	11 lb/ft	-	-
Uniform	3'- 10 3/4"	4'- 11"	Bk1(i9297)	Top	6 lb/ft	11 lb/ft	-	-
Point	1'- 1/4"	1'- 1/4"	Bk1(i9470)	Top	1 lb	1 lb	-	-
Point	1'- 1 1/2"	1'- 1 1/2"	J2(i9203)	Top	165 lb	330 lb	-	-
Point	1'- 2 3/4"	1'- 2 3/4"	Bk1(i9178)	Top	1 lb	1 lb	-	-
Point	2'- 4 1/4"	2'- 4 1/4"	Bk1(i9178)	Top	1 lb	1 lb	-	-
Point	2'- 5 1/2"	2'- 5 1/2"	J2(i9308)	Top	165 lb	330 lb	-	-
Point	2'- 6 3/4"	2'- 6 3/4"	Bk1(i9257)	Top	1 lb	1 lb	-	-
Point	3'- 8 1/4"	3'- 8 1/4"	Bk1(i9257)	Top	1 lb	1 lb	-	-
Point	3'- 9 1/2"	3'- 9 1/2"	J2(i9386)	Top	159 lb	317 lb	-	-
Point	3'- 10 3/4"	3'- 10 3/4"	Bk1(i9297)	Top	1 lb	1 lb	-	-
Point	4'- 11"	4'- 11"	Bk1(i9297)	Top	1 lb	1 lb	-	-
Point	5'- 1/4"	5'- 1/4"	J2(i9350)	Top	54 lb	109 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	11(i918)	290 lb	529 lb	-	-
2	4'- 9"	5'- 1/2"	PBO4(i1552)	329 lb	612 lb	-	-

DESIGN NOTES

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

PLY TO PLY CONNECTION

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

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B12 DR - i9482**
Type: **Beam**

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

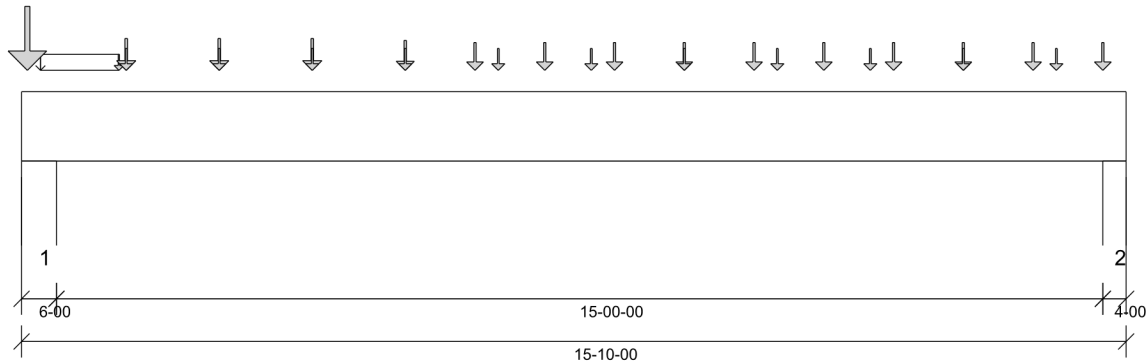
Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26

03/16/2022 12:01



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

Top: 1'- 3 1/8" Bottom: 15'- 10"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 5"
- 1334 psi Wall @ 15'- 7"

PLY TO PLY CONNECTION:

3 STAGGERED ROWS OF 3.25"

PNEUMATIC GUN NAILS

(0.120"x3.25") @ 12" O/C

NAIL FROM BOTH FACES (STAGGER 1/2 SPACE)



STRUCTURAL COMPONENT ONLY

DWG # TF22030708 PG 1/2

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	8'- 2"	1.25D + 1.5L	1.00	22973 lb ft	53017 lb ft	Passed - 43%
Factored Neg. Moment:	0'- 5"	1.25D + 1.5L	1.00	774 lb ft	53017 lb ft	Passed - 1%
Factored Shear:	1'- 5 7/8"	1.25D + 1.5L	1.00	5846 lb	20723 lb	Passed - 28%
Live Load (LL) Pos. Defl.:	8'- 1/4"	L		0.305"	L/360	Passed - L/590
Total Load (TL) Pos. Defl.:	8'- 1/4"	D + L		0.472"	L/240	Passed - L/381

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	6-00	1.25D + 1.5L	1.00	8194 lb		32760 lb	19372 lb	Passed - 42%
2	4-00	1.25D + 1.5L	1.00	6337 lb		21840 lb	28022 lb	Passed - 29%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	15'- 10"	Self Weight	Top	18 lb/ft	-	-	-
Uniform	0'- 3 1/4"	1'- 4 3/4"	Bk1(i9420)	Top	1 lb/ft	1 lb/ft	-	-
Point	0'- 1"	0'- 1"	B39(i9528)	Top	560 lb	1075 lb	-	-
Point	1'- 4 3/4"	1'- 4 3/4"	Bk1(i9420)	Top	-	0 lb	-	-
Point	1'- 6"	1'- 6"	J2(i9514)	Top	180 lb	360 lb	-	-
Point	1'- 6"	1'- 6"	J5(i9390)	Top	67 lb	134 lb	-	-
Point	2'- 10"	2'- 10"	J2(i9479)	Top	180 lb	361 lb	-	-
Point	2'- 10"	2'- 10"	J5(i9473)	Top	67 lb	134 lb	-	-
Point	4'- 2"	4'- 2"	J2(i9505)	Top	180 lb	361 lb	-	-
Point	4'- 2"	4'- 2"	J5(i9187)	Top	67 lb	134 lb	-	-
Point	5'- 6"	5'- 6"	J2(i9213)	Top	158 lb	316 lb	-	-
Point	5'- 6"	5'- 6"	J5(i9475)	Top	67 lb	134 lb	-	-
Point	6'- 6"	6'- 6"	J2(i9264)	Top	135 lb	270 lb	-	-
Point	6'- 10"	6'- 10"	J5(i9517)	Top	67 lb	134 lb	-	-
Point	7'- 6"	7'- 6"	J2(i9254)	Top	135 lb	270 lb	-	-
Point	8'- 2"	8'- 2"	J5(i9314)	Top	68 lb	136 lb	-	-
Point	8'- 6"	8'- 6"	J2(i9367)	Top	135 lb	270 lb	-	-
Point	9'- 6"	9'- 6"	J2(i9384)	Top	135 lb	270 lb	-	-
Point	9'- 6"	9'- 6"	J5(i9465)	Top	68 lb	136 lb	-	-
Point	10'- 6"	10'- 6"	J2(i9376)	Top	135 lb	270 lb	-	-
Point	10'- 10"	10'- 10"	J5(i9444)	Top	68 lb	136 lb	-	-
Point	11'- 6"	11'- 6"	J2(i9169)	Top	135 lb	270 lb	-	-
Point	12'- 2"	12'- 2"	J5(i9162)	Top	68 lb	136 lb	-	-
Point	12'- 6"	12'- 6"	J2(i9336)	Top	135 lb	270 lb	-	-
Point	13'- 6"	13'- 6"	J2(i9382)	Top	135 lb	270 lb	-	-
Point	13'- 6"	13'- 6"	J5(i9226)	Top	68 lb	136 lb	-	-
Point	14'- 6"	14'- 6"	J2(i9250)	Top	135 lb	270 lb	-	-
Point	14'- 10"	14'- 10"	J5(i9456)	Top	68 lb	136 lb	-	-
Point	15'- 6"	15'- 6"	J2(i9412)	Top	135 lb	270 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 6"	12(i923)	2046 lb	3764 lb	-	-
2	15'- 6"	15'- 10"	11(i918)	1586 lb	2896 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B12 DR - i9482**
Type: **Beam**

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

Status:
**Design
Passed**

DESIGN NOTES

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

PLY TO PLY CONNECTION

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



REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B13 - i10044**
Type: **Beam**

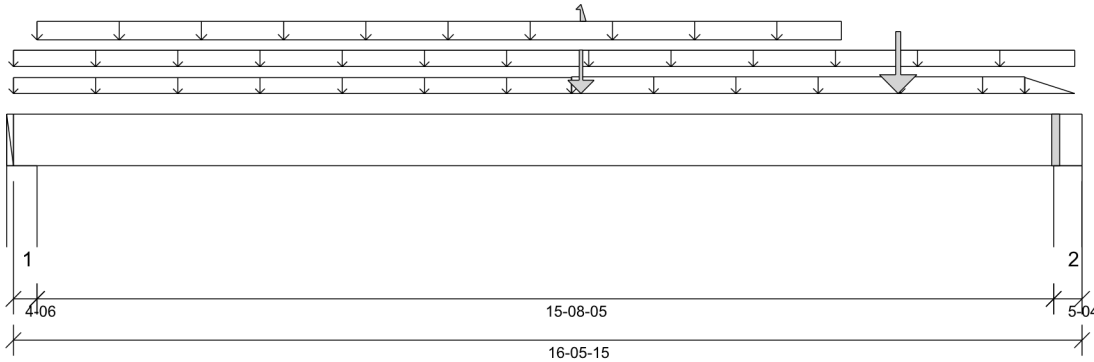
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:
Top: 0' Bottom: 8'- 3"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 3 3/8"
- 615 psi Wall @ 16'- 1 11/16"

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030709

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	8'- 9 1/8"	1.25D + 1.5L	0.98	9737 lb ft	22825 lb ft	Passed - 43%
Factored Shear:	15'- 3 3/16"	1.25D + 1.5L	0.98	2629 lb	10827 lb	Passed - 24%
Live Load (LL) Pos. Defl.:	8'- 7 13/16"	L		0.294"	L/360	Passed - L/641
Total Load (TL) Pos. Defl.:	8'- 6"	D + L		0.625"	L/240	Passed - L/301
Permanent Deflection:	8'- 4 3/8"			-	L/360	Passed - L/586

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-06	1.25D + 1.5L	0.98	1681 lb		15601 lb	9228 lb	Passed - 18%
2	5-04	1.25D + 1.5L	0.98	2688 lb		18725 lb	11077 lb	Passed - 24%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	16'- 5 15/16"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	16'- 4 9/16"	FC3 Floor Decking (Plan View Fill)	Top	6 lb/ft	11 lb/ft	-	-
Uniform	0'	8'- 7 3/8"	FC3 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Uniform	0'- 4 3/8"	12'- 9 3/8"	User Load	Top	60 lb/ft	-	-	-
Uniform	8'- 7 3/8"	15'- 7 5/16"	FC3 Floor Decking (Plan View Fill)	Top	8 lb/ft	15 lb/ft	-	-
Tapered	15'- 7 5/16"	16'- 4 9/16"	FC3 Floor Decking (Plan View Fill)	Top	4 To 0 lb/ft	8 To 0 lb/ft	-	-
Point	8'- 9 1/8"	8'- 9 1/8"	B14 CANT(i9416)	Front	215 lb	452/-34 lb	-	-
Point	13'- 7 7/8"	13'- 7 7/8"	B39(i9528)	Back	381 lb	722 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 3/8"	E2(i732)	770 lb	487/-16 lb	-	-
2	16'- 11/16"	16'- 5 15/16"	3(i822)	901 lb	1034/-18 lb	-	-

DESIGN NOTES

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

PLY TO PLY CONNECTION

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

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B14 CANT - i9416**
Type: **Beam**

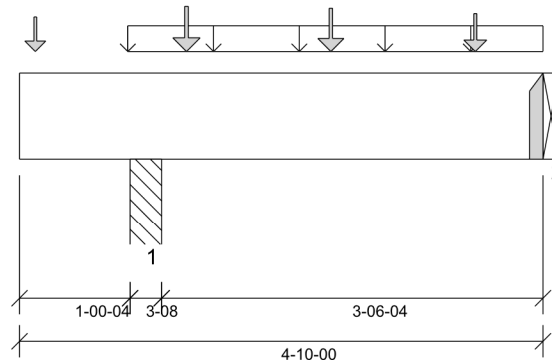
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/180,
TL Deflection Limit: L/120,

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

- 615 psi Column @ 1'- 2"
- 615 psi Beam @ 4'- 10"

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030710

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 10 1/2"	1.25D + 1.5L	1.00	924 lb ft	23299 lb ft	Passed - 4%
Factored Neg. Moment:	1'- 2"	1.25D + 1.5L	0.65	283 lb ft	15215 lb ft	Passed - 2%
Factored Shear:	2'- 1 1/4"	1.25D + 1.5L	1.00	539 lb	11052 lb	Passed - 5%

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	1536 lb		12740 lb	7534 lb	Passed - 20%
2	1-08	1.25D + 1.5L	1.00	950 lb		5460 lb	-	Passed - 17%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Top	Face	Member	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'	4'- 10"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	1'	4'- 10"	User Load	Back	60 lb/ft	120 lb/ft	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	B10(i9397)	Front	84 lb	107 lb	-	-
Point	1'- 6 1/2"	1'- 6 1/2"	J4(i9468)	Front	100 lb	200 lb	-	-
Point	2'- 10 1/2"	2'- 10 1/2"	J4(i9525)	Front	93 lb	187 lb	-	-
Point	4'- 2 1/2"	4'- 2 1/2"	J4(i9529)	Front	75 lb	150 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	1'- 1/4"	1'- 3 3/4"	PBO7(i3528)	413 lb	685 lb	-	-
2	4'- 10"	4'- 10"	B13(i10044)	215 lb	452/34 lb	-	-

DESIGN NOTES

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

PLY TO PLY CONNECTION

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

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B15 DR - i9341**
Type: **Beam**

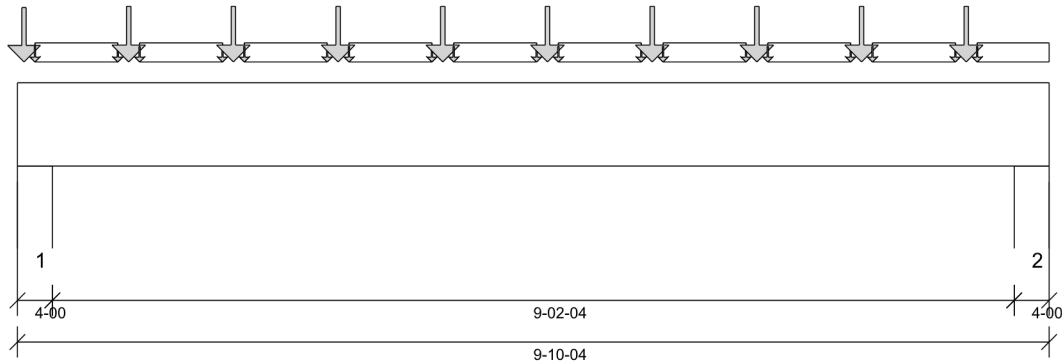
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

Top: 0'- 9 1/2" Bottom: 9'- 10 1/4"

Factored Resistance of Support Material:

- 1334 psi Wall @ 0'- 3"
- 1334 psi Wall @ 9'- 7 1/4"

PLY TO PLY CONNECTION:
3 STAGGERED ROWS OF 3.25"
PNEUMATIC GUN NAILS
(0.120"x3.25") @ 12" O/C



STRUCTURAL COMPONENT ONLY

DWG # TF22030711 PG 1/2

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 3/4"	1.25D + 1.5L	1.00	7486 lb ft	23299 lb ft	Passed - 32%
Factored Neg. Moment:	0'- 3"	1.25D + 1.5L	1.00	111 lb ft	21200 lb ft	Passed - 1%
Factored Shear:	1'- 1 1/2"	1.25D + 1.5L	1.00	2914 lb	11052 lb	Passed - 26%
Live Load (LL) Pos. Defl.:	4'- 11 1/4"	L		0.099"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 11 3/16"	D + L		0.173"	L/240	Passed - L/636

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-00	1.25D + 1.5L	1.00	3631 lb		14560 lb	18682 lb	Passed - 25%
2	4-00	1.25D + 1.5L	1.00	3187 lb		14560 lb	18682 lb	Passed - 22%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	9'- 10 1/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'- 2"	0'- 11 1/2"	Bk1(i9191)	Top	63 lb/ft	5 lb/ft	-	-
Uniform	1'- 2"	1'- 11 1/2"	Bk1(i9559)	Top	63 lb/ft	5 lb/ft	-	-
Uniform	2'- 2"	2'- 11 1/2"	Bk1(i9262)	Top	63 lb/ft	5 lb/ft	-	-
Uniform	3'- 2"	3'- 11 1/2"	Bk1(i9251)	Top	63 lb/ft	5 lb/ft	-	-
Uniform	4'- 2"	4'- 11 1/2"	Bk1(i9307)	Top	63 lb/ft	5 lb/ft	-	-
Uniform	5'- 2"	5'- 11 1/2"	Bk1(i9374)	Top	63 lb/ft	5 lb/ft	-	-
Uniform	6'- 2"	6'- 11 1/2"	Bk1(i9258)	Top	63 lb/ft	5 lb/ft	-	-
Uniform	7'- 2"	7'- 11 1/2"	Bk1(i9431)	Top	63 lb/ft	5 lb/ft	-	-
Uniform	8'- 2"	8'- 11 1/2"	Bk1(i9493)	Top	63 lb/ft	5 lb/ft	-	-
Uniform	9'- 2"	9'- 10 1/4"	Bk1(i9545)	Top	63 lb/ft	5 lb/ft	-	-
Point	0'- 3/4"	0'- 3/4"	J1(i9310)	Top	138 lb	276 lb	-	-
Point	0'- 2"	0'- 2"	Bk1(i9191)	Top	0 lb	1 lb	-	-
Point	0'- 11 1/2"	0'- 11 1/2"	Bk1(i9191)	Top	0 lb	1 lb	-	-
Point	1'- 3/4"	1'- 3/4"	J1(i9300)	Top	151 lb	276 lb	-	-
Point	1'- 2"	1'- 2"	Bk1(i9559)	Top	0 lb	1 lb	-	-
Point	1'- 11 1/2"	1'- 11 1/2"	Bk1(i9559)	Top	0 lb	1 lb	-	-
Point	2'- 3/4"	2'- 3/4"	J1(i9558)	Top	151 lb	276 lb	-	-
Point	2'- 2"	2'- 2"	Bk1(i9262)	Top	0 lb	1 lb	-	-
Point	2'- 11 1/2"	2'- 11 1/2"	Bk1(i9262)	Top	0 lb	1 lb	-	-
Point	3'- 3/4"	3'- 3/4"	J1(i9202)	Top	151 lb	276 lb	-	-
Point	3'- 2"	3'- 2"	Bk1(i9251)	Top	0 lb	1 lb	-	-
Point	3'- 11 1/2"	3'- 11 1/2"	Bk1(i9251)	Top	0 lb	1 lb	-	-
Point	4'- 3/4"	4'- 3/4"	J1(i9515)	Top	151 lb	276 lb	-	-
Point	4'- 2"	4'- 2"	Bk1(i9307)	Top	0 lb	1 lb	-	-
Point	4'- 11 1/2"	4'- 11 1/2"	Bk1(i9307)	Top	0 lb	1 lb	-	-
Point	5'- 3/4"	5'- 3/4"	J1(i9252)	Top	151 lb	276 lb	-	-
Point	5'- 2"	5'- 2"	Bk1(i9374)	Top	0 lb	1 lb	-	-
Point	5'- 11 1/2"	5'- 11 1/2"	Bk1(i9374)	Top	0 lb	1 lb	-	-
Point	6'- 3/4"	6'- 3/4"	J1(i9351)	Top	151 lb	276 lb	-	-
Point	6'- 2"	6'- 2"	Bk1(i9258)	Top	0 lb	1 lb	-	-
Point	6'- 11 1/2"	6'- 11 1/2"	Bk1(i9258)	Top	0 lb	1 lb	-	-
Point	7'- 3/4"	7'- 3/4"	J1(i9298)	Top	151 lb	276 lb	-	-
Point	7'- 2"	7'- 2"	Bk1(i9431)	Top	0 lb	1 lb	-	-
Point	7'- 11 1/2"	7'- 11 1/2"	Bk1(i9431)	Top	0 lb	1 lb	-	-
Point	8'- 3/4"	8'- 3/4"	J1(i9183)	Top	151 lb	276 lb	-	-
Point	8'- 2"	8'- 2"	Bk1(i9493)	Top	0 lb	1 lb	-	-
Point	8'- 11 1/2"	8'- 11 1/2"	Bk1(i9493)	Top	0 lb	1 lb	-	-
Point	9'- 3/4"	9'- 3/4"	J1(i9277)	Top	151 lb	276 lb	-	-
Point	9'- 2"	9'- 2"	Bk1(i9545)	Top	0 lb	1 lb	-	-

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B15 DR - i9341**
Type: **Beam**

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

Status:
**Design
Passed**

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4"	7(i847)	1071 lb	1485 lb	-	-
2	9'- 6 1/4"	9'- 10 1/4"	5(i844)	1013 lb	1323 lb	-	-

DESIGN NOTES

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

PLY TO PLY CONNECTION

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



REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B16 DR - i9438**
Type: **Beam**

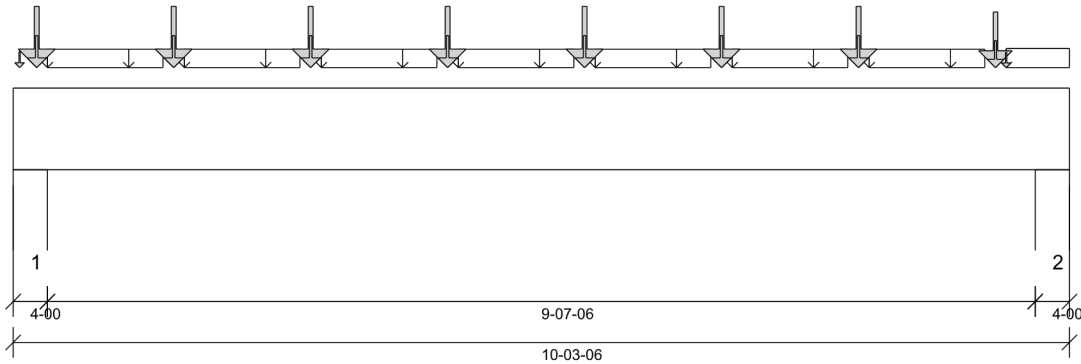
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Lateral Restraint Requirements:

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

Top: 1'- 2 3/4" Bottom: 10'- 3 3/8"

Factored Resistance of Support Material:

- 1334 psi Wall @ 0'- 3"
- 1334 psi Wall @ 10'- 3/8"

PLY TO PLY CONNECTION:
3 STAGGERED ROWS OF 3.25"
PNEUMATIC GUN NAILS
(0.120"x3.25") @ 12" O/C



STRUCTURAL COMPONENT ONLY
DWG # TF22030712 PG 1/2

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 6 3/4"	1.25D + 1.5L	1.00	10560 lb ft	23299 lb ft	Passed - 45%
Factored Shear:	9'- 1 7/8"	1.25D + 1.5L	1.00	3782 lb	11052 lb	Passed - 34%
Live Load (LL) Pos. Defl.:	5'- 1 3/4"	L		0.158"	L/360	Passed - L/730
Total Load (TL) Pos. Defl.:	5'- 1 3/4"	D + L		0.266"	L/240	Passed - L/433

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-00	1.25D + 1.5L	1.00	4916 lb		14560 lb	18682 lb	Passed - 34%
2	4-00	1.25D + 1.5L	1.00	4338 lb		14560 lb	18682 lb	Passed - 30%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	10'- 3 3/8"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'- 4"	1'- 5 1/2"	Bk1(i9492)	Top	60 lb/ft	-	-	-
Uniform	1'- 8"	2'- 9 1/2"	Bk1(i9572)	Top	60 lb/ft	-	-	-
Uniform	3'	4'- 1 1/2"	Bk1(i9544)	Top	60 lb/ft	-	-	-
Uniform	4'- 4"	5'- 5 1/2"	Bk1(i9366)	Top	60 lb/ft	-	-	-
Uniform	5'- 8"	6'- 9 1/2"	Bk1(i9521)	Top	60 lb/ft	-	-	-
Uniform	7'	8'- 1 1/2"	Bk1(i9233)	Top	60 lb/ft	-	-	-
Uniform	8'- 4"	9'- 5 1/2"	Bk1(i9343)	Top	60 lb/ft	-	-	-
Uniform	9'- 8"	10'- 3 3/8"	Bk1(i9388)	Top	65 lb/ft	10 lb/ft	-	-
Point	0'- 3/4"	0'- 3/4"	Bk1(i9458)	Top	8 lb	-	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	J1(i9362)	Top	191 lb	370 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	J5(i9314)	Top	72 lb	132 lb	-	-
Point	1'- 6 3/4"	1'- 6 3/4"	J1(i9163)	Top	191 lb	370 lb	-	-
Point	1'- 6 3/4"	1'- 6 3/4"	J5(i9465)	Top	72 lb	132 lb	-	-
Point	2'- 10 3/4"	2'- 10 3/4"	J1(i9440)	Top	191 lb	370 lb	-	-
Point	2'- 10 3/4"	2'- 10 3/4"	J5(i9444)	Top	72 lb	132 lb	-	-
Point	4'- 2 3/4"	4'- 2 3/4"	J1(i9561)	Top	191 lb	370 lb	-	-
Point	4'- 2 3/4"	4'- 2 3/4"	J5(i9162)	Top	72 lb	132 lb	-	-
Point	5'- 6 3/4"	5'- 6 3/4"	J1(i9173)	Top	191 lb	370 lb	-	-
Point	5'- 6 3/4"	5'- 6 3/4"	J5(i9226)	Top	72 lb	132 lb	-	-
Point	6'- 10 3/4"	6'- 10 3/4"	J1(i9352)	Top	191 lb	370 lb	-	-
Point	6'- 10 3/4"	6'- 10 3/4"	J5(i9456)	Top	72 lb	132 lb	-	-
Point	8'- 2 3/4"	8'- 2 3/4"	J1(i9380)	Top	191 lb	370 lb	-	-
Point	8'- 2 3/4"	8'- 2 3/4"	J5(i9483)	Top	72 lb	132 lb	-	-
Point	9'- 6 3/4"	9'- 6 3/4"	J1(i9326)	Top	168 lb	324 lb	-	-
Point	9'- 6 3/4"	9'- 6 3/4"	J5(i9161)	Top	52 lb	92 lb	-	-
Point	9'- 8"	9'- 8"	Bk1(i9388)	Top	1 lb	1 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4"	9(i846)	1390 lb	2080 lb	-	-
2	9'- 11 3/8"	10'- 3 3/8"	7(i847)	1289 lb	1857 lb	-	-

DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as sloped dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B16 DR - i9438**
Type: **Beam**

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

Status:
**Design
Passed**

DESIGN NOTES

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

PLY TO PLY CONNECTION

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





BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B17 - i9168**
Type: **Beam**

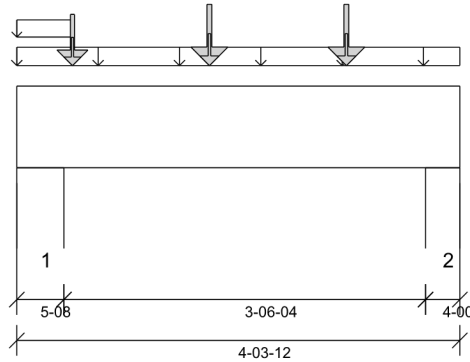
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

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

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 10 1/2"	1.25D + 1.5L	1.00	1553 lb ft	23299 lb ft	Passed - 7%
Factored Shear:	1'- 3"	1.25D + 1.5L	1.00	1779 lb	11052 lb	Passed - 16%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L	1.00	1915 lb		20020 lb	11843 lb	Passed - 16%
2	4-00	1.25D + 1.5L	1.00	1485 lb		14560 lb	8613 lb	Passed - 17%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 3 3/4"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'	4'- 3 3/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'	0'- 6 1/2"	FC3 Floor Decking (Plan View Fill)	Top	12 lb/ft	25 lb/ft	-	-
Point	0'- 6 1/2"	0'- 6 1/2"	J2(i9463)	Front	145 lb	291 lb	-	-
Point	1'- 10 1/2"	1'- 10 1/2"	J2(i9555)	Front	186 lb	372 lb	-	-
Point	3'- 2 1/2"	3'- 2 1/2"	J2(i9393)	Front	186 lb	372 lb	-	-
Point	0'- 6 1/2"	0'- 6 1/2"	J5(i9325)	Back	53 lb	105 lb	-	-
Point	1'- 10 1/2"	1'- 10 1/2"	J5(i9316)	Back	68 lb	135 lb	-	-
Point	3'- 2 1/2"	3'- 2 1/2"	J5(i9306)	Back	68 lb	135 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	15(i2590)	569 lb	828 lb	-	-
2	3'- 11 3/4"	4'- 3 3/4"	9(i846)	443 lb	595 lb	-	-

DESIGN NOTES

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

PLY TO PLY CONNECTION

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030713

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B39 - i9528**
Type: **Beam**

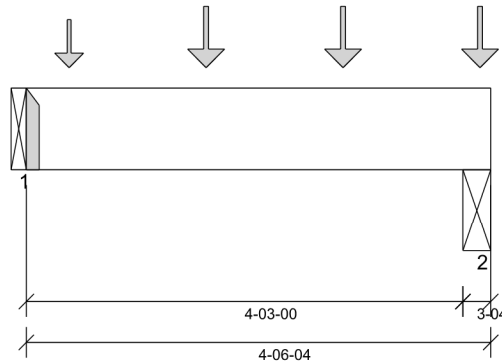
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 1040 psi Beam @ 4'- 4"

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030714

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 9"	1.25D + 1.5L	1.00	1779 lb ft	23299 lb ft	Passed - 8%
Factored Shear:	0'- 9 1/2"	1.25D + 1.5L	1.00	1530 lb	11052 lb	Passed - 14%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	1540 lb		5460 lb	-	Passed - 28%
2	3-04	1.25D + 1.5L	1.00	2333 lb		11830 lb	11830 lb	Passed - 20%

CONNECTOR INFORMATION

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

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

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 6 1/4"	Self Weight	Top	9 lb/ft	-	-	-
Point	0'- 5"	0'- 5"	J6(i9534)	Front	30 lb	61 lb	-	-
Point	1'- 9"	1'- 9"	J5(i9325)	Front	66 lb	131 lb	-	-
Point	3'- 1"	3'- 1"	J5(i9316)	Front	68 lb	135 lb	-	-
Point	4'- 5"	4'- 5"	J5(i9306)	Front	67 lb	134 lb	-	-
Point	0'- 5"	0'- 5"	J2(i9421)	Back	128 lb	256 lb	-	-
Point	1'- 9"	1'- 9"	J2(i9199)	Back	180 lb	360 lb	-	-
Point	3'- 1"	3'- 1"	J2(i9489)	Back	180 lb	360 lb	-	-
Point	4'- 5"	4'- 5"	J2(i9423)	Back	180 lb	360 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B13(i10044)	381 lb	722 lb	-	-
2	4'- 3"	4'- 6 1/4"	B12 DR(i9482)	560 lb	1075 lb	-	-

DESIGN NOTES

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

PLY TO PLY CONNECTION

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

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B40 CANT - i10092**
Type: **Beam**

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

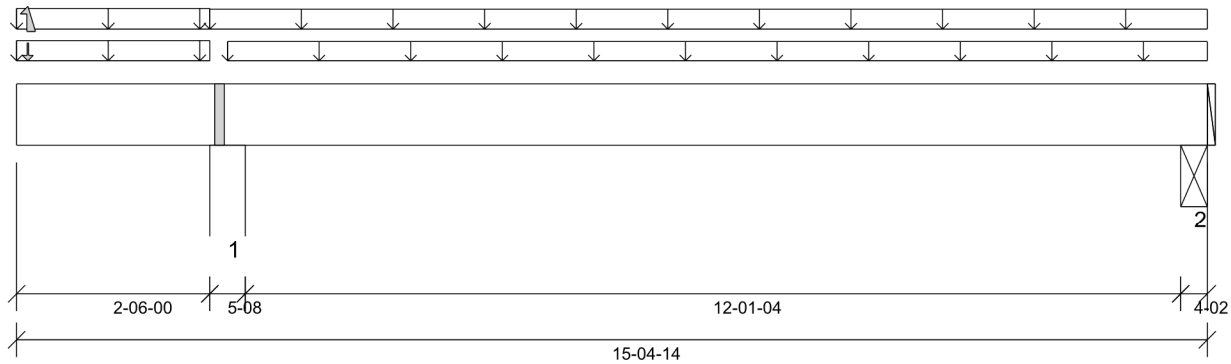
Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26

03/16/2022 12:01



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/180,

TL Deflection Limit: L/120,

Lateral Restraint Requirements:

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

Top: 0' Bottom: 12'- 1 1/4"

Factored Resistance of Support Material:

- 615 psi Wall @ 2'- 8 3/4"
- 534 psi Beam @ 15'- 1 3/4"

PLY TO PLY CONNECTION:
3 STAGGERED ROWS OF 3.25"
PNEUMATIC GUN NAILS
(0.120"x3.25") @ 12" O/C



STRUCTURAL COMPONENT ONLY
DWG # TF22030715

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	9'- 1 3/16"	1.25D + 1.5L + S	0.99	2281 lb ft	23006 lb ft	Passed - 10%
Factored Neg. Moment:	2'- 8 3/4"	1.25D + 1.5L	0.65	611 lb ft	14275 lb ft	Passed - 4%
Factored Shear:	3'- 9"	1.25D + 1.5L	1.00	698 lb	11052 lb	Passed - 6%
Live Load (LL) Pos. Defl.:	8'- 10 3/4"	L + 0.5S		0.061"	L/360	Passed - L/999
Live Load (LL) Neg. Defl.:	0'	L + 0.5S		0.045"	L/180	Passed - L/663
Total Load (TL) Pos. Defl.:	9'- 1/4"	D + L + 0.5S		0.090"	L/240	Passed - L/999
Total Load (TL) Neg. Defl.:	0'	D + L + 0.5S		0.057"	L/120	Passed - L/522

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L	1.00	1249 lb		20020 lb	11843 lb	Passed - 11%
2	4-02	1.25D + 1.5L + S	0.99	800 lb		14826 lb	7612 lb	Passed - 11%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	15'- 4 7/8"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	2'- 6"	User Load	Top	60 lb/ft	-	-	-
Uniform	-0'	2'- 6"	FC3 Floor Decking (Plan View Fill)	Top	17 lb/ft	34 lb/ft	-	-
Uniform	2'- 6"	15'- 4 7/8"	FC3 Floor Decking (Plan View Fill)	Top	15 lb/ft	30 lb/ft	-	-
Uniform	2'- 8 3/4"	15'- 4 7/8"	FC3 Floor Decking (Plan View Fill)	Top	11 lb/ft	23 lb/ft	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	B41(i10095)	Front	6 lb	-14 lb	-63 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	2'- 6"	2'- 11 1/2"	1(i823)	476 lb	429/-17 lb	-77 lb	-
2	15'- 3/4"	15'- 4 7/8"	STL BM(i927)	213 lb	350/-9 lb	14 lb	-

DESIGN NOTES

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

PLY TO PLY CONNECTION

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

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10" GRD FLR**
Level: **2ND FLOOR FRAMING**
Label: **B41 - i10095**
Type: **Beam**

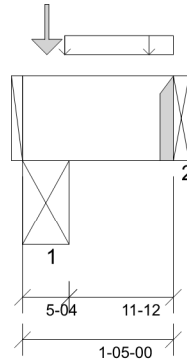
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 03/16/2022 12:01



DESIGN INFORMATION

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

Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360,
TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

Top: 0' Bottom: 0'- 11 3/4"

Factored Resistance of Support Material:

- 534 psi Beam @ 0'- 4 1/4"
- 615 psi Beam @ 1'- 5"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 3/4"	1.4D	0.65	6 lb ft	15145 lb ft	Passed - 0%
Factored Shear:	0'- 7 1/2"	1.25D + 1.5S + L	1.00	81 lb	11052 lb	Passed - 1%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-04	1.25D + 1.5S + L	1.00	600 lb		19110 lb	9812 lb	Passed - 6%
2	1-08	1.4D	0.65	34 lb		3549 lb	-	Passed - 1%
2	1-08	0.9D + 1.5S + L	1.00		-21 lb	-	-	

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'	1'- 5"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	0'- 4 3/4"	1'- 5"	User Load	Top	60 lb/ft	-	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E24(i7496)	Top	100 lb	48 lb	214 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(i929)	169 lb	62 lb	277 lb	-
2	1'- 5"	1'- 5"	B40 CANT(i10092)	6 lb	-14 lb	-63 lb	-

DESIGN NOTES

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

PLY TO PLY CONNECTION

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

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030716

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR SUNKEN**
Level: **1ST FLOOR FRAMING**
Label: **B18 - i9535**
Type: **Beam**

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

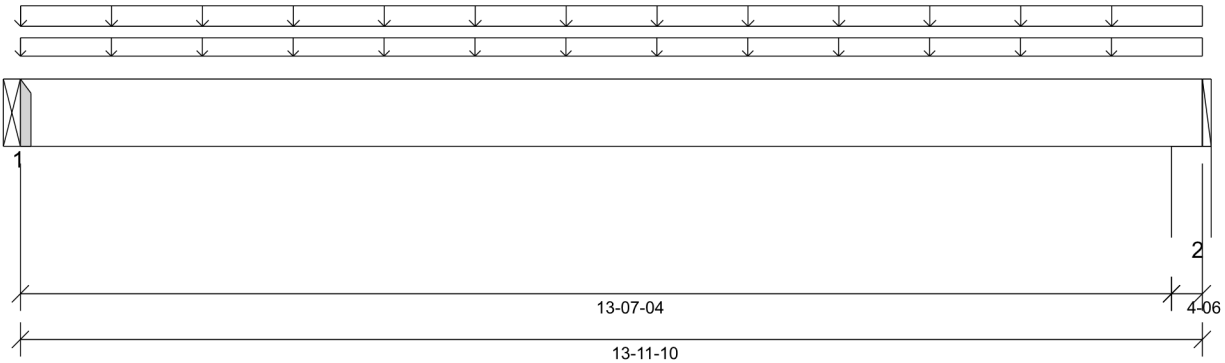
Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20

03-04-2022 10:07



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: 13'- 6 3/8"

Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Wall @ 13'- 8 1/4"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 10 1/16"	1.25D + 1.5L	0.67	2680 lb ft	7811 lb ft	Passed - 34%
Factored Shear:	0'- 9 1/2"	1.25D + 1.5L	0.67	693 lb	3705 lb	Passed - 19%
Live Load (LL) Pos. Defl.:	6'- 10 1/8"	L		0.051"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 10 1/8"	D + L		0.287"	L/240	Passed - L/567
Permanent Deflection:	6'- 10 1/8"			-	L/360	Passed - L/712

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	0.67	783 lb		1830 lb	-	Passed - 43%
2	4-06	1.25D + 1.5L	0.67	820 lb		5339 lb	3158 lb	Passed - 26%

CONNECTOR INFORMATION

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

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

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	13'- 11 5/8"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'	13'- 11 5/8"	FC1 Floor Decking (Plan View Fill)	Top	8 lb/ft	16 lb/ft	-	-
Uniform	0'- 1/16"	13'- 11 5/8"	User Load	Top	60 lb/ft	-	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B21(i9381)	497 lb	108 lb	-	-
2	13'- 7 1/4"	13'- 11 5/8"	W23(i26)	518 lb	114 lb	-	-

DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030717

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR SUNKEN**
Level: **1ST FLOOR FRAMING**
Label: **B19 L - i9587**
Type: **Beam**

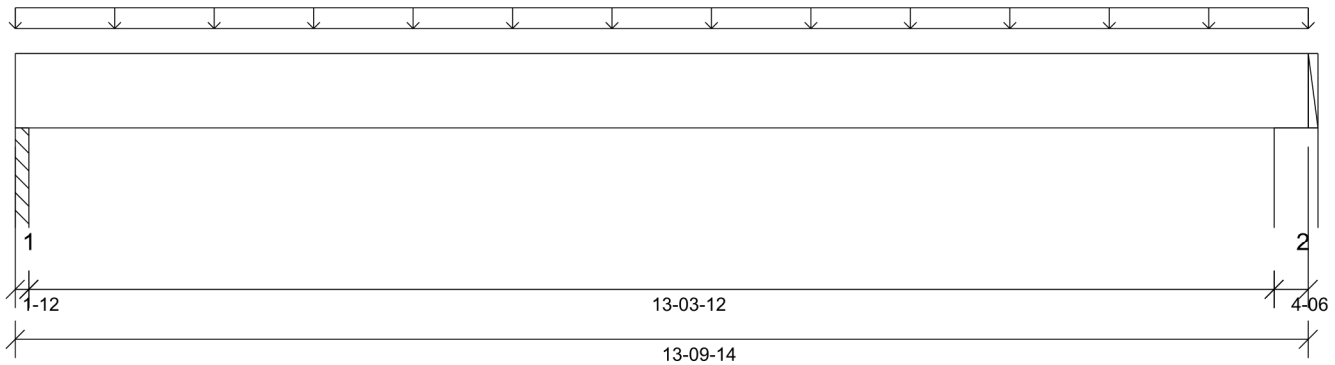
1 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20 03-04-2022 10:07



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: 13'- 5 1/2"

Factored Resistance of Support Material:

- 615 psi Column @ 0'- 3/4"
- 615 psi Wall @ 13'- 6 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 9 9/16"	1.25D + 1.5L	1.00	1178 lb ft	11650 lb ft	Passed - 10%
Factored Shear:	12'- 8"	1.25D + 1.5L	1.00	305 lb	5526 lb	Passed - 6%
Live Load (LL) Pos. Defl.:	6'- 9 5/8"	L		0.066"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 9 5/8"	D + L		0.114"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-12	1.25D + 1.5L	1.00	360 lb		3185 lb	1883 lb	Passed - 19%
2	4-06	1.25D + 1.5L	1.00	369 lb		7962 lb	4710 lb	Passed - 8%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	13'- 9 7/8"	Self Weight	Top	5 lb/ft	-	-	-
Uniform	0'	13'- 9 7/8"	FC4 Floor Decking (Plan View Fill)	Top	11 lb/ft	22 lb/ft	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 1 3/4"	PBO5(i2512)	107 lb	150 lb	-	-
2	13'- 5 1/2"	13'- 9 7/8"	W36(i2511)	110 lb	154 lb	-	-

DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030718

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR SUNKEN**
Level: **1ST FLOOR FRAMING**
Label: **B20 L - i9578**
Type: **Beam**

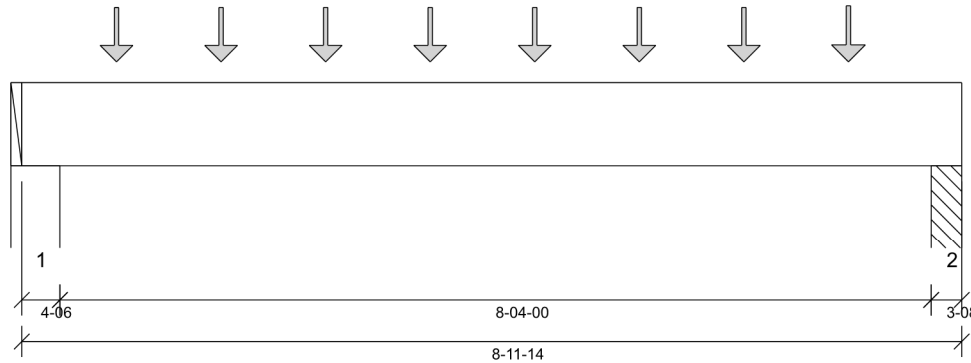
1 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20 03-04-2022 10:07



DESIGN INFORMATION

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

Lateral Restraint Requirements:

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

Top: 0' Bottom: 0'- 10"

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 3 3/8"
- 615 psi Column @ 8'- 9 3/8"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 10 7/8"	1.25D + 1.5L	1.00	5382 lb ft	11650 lb ft	Passed - 46%
Factored Shear:	1'- 1 7/8"	1.25D + 1.5L	1.00	2442 lb	5526 lb	Passed - 44%
Live Load (LL) Pos. Defl.:	4'- 6 3/8"	L		0.134"	L/360	Passed - L/744
Total Load (TL) Pos. Defl.:	4'- 6 3/8"	D + L		0.204"	L/240	Passed - L/491

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-06	1.25D + 1.5L	1.00	2449 lb		7962 lb	4710 lb	Passed - 52%
2	3-08	1.25D + 1.5L	1.00	2331 lb		6370 lb	3767 lb	Passed - 62%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 11 7/8"	Self Weight	Top	5 lb/ft	-	-	-
Point	0'- 10 7/8"	0'- 10 7/8"	J2(i9576)	Front	138 lb	276 lb	-	-
Point	1'- 10 7/8"	1'- 10 7/8"	J2(i9584)	Front	138 lb	277 lb	-	-
Point	2'- 10 7/8"	2'- 10 7/8"	J2(i9581)	Front	138 lb	277 lb	-	-
Point	3'- 10 7/8"	3'- 10 7/8"	J2(i9575)	Front	138 lb	277 lb	-	-
Point	4'- 10 7/8"	4'- 10 7/8"	J2(i9580)	Front	138 lb	277 lb	-	-
Point	5'- 10 7/8"	5'- 10 7/8"	J2(i9582)	Front	138 lb	277 lb	-	-
Point	6'- 10 7/8"	6'- 10 7/8"	J2(i9583)	Front	138 lb	277 lb	-	-
Point	7'- 10 7/8"	7'- 10 7/8"	J2(i9585)	Front	144 lb	288 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 3/8"	W35(i2510)	590 lb	1141 lb	-	-
2	8'- 8 3/8"	8'- 11 7/8"	PBO5(i2512)	562 lb	1085 lb	-	-

DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY
DWG # TF22030719

REVIEWED



BUILDER: **BAYVIEW WELLINGTON**
SITE: **GREEN VALLEY EAST**
MODEL: **S42-17**
CITY: **BRADFORD**

Job Name: **S42-17 - 10' GRD FLR SUNKEN**
Level: **1ST FLOOR FRAMING**
Label: **B21 - i9381**
Type: **Beam**

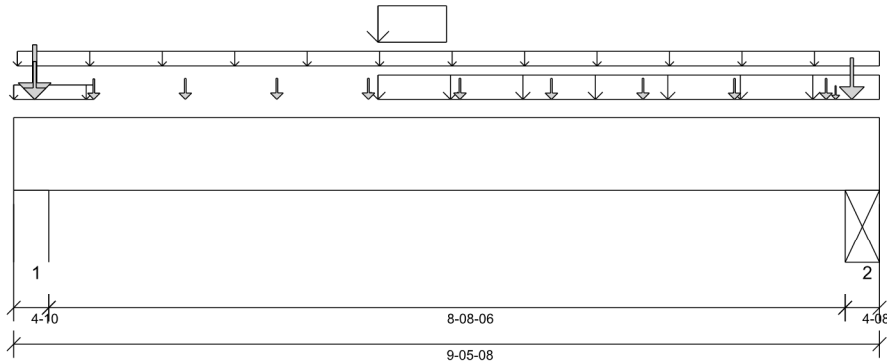
2 Ply Member
1 3/4" x 9 1/2" (2.0E 3100)
WestFraser LVL

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20 03-04-2022 10:07



DESIGN INFORMATION

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

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 3 5/8"
- 534 psi Beam @ 9'- 2"

PLY TO PLY CONNECTION:
3 STAGGERED ROWS OF 3.25"
PNEUMATIC GUN NAILS
(0.120"x3.25") @ 12" O/C



STRUCTURAL COMPONENT ONLY
DWG # TF22030720 PG 1/2

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 10 5/16"	1.25D + 1.5L	1.00	11817 lb ft	23299 lb ft	Passed - 51%
Factored Neg. Moment:	0'- 3 5/8"	1.25D + 1.5L	1.00	146 lb ft	23299 lb ft	Passed - 1%
Factored Shear:	8'- 3 1/2"	1.25D + 1.5L	1.00	4554 lb	11052 lb	Passed - 41%
Live Load (LL) Pos. Defl.:	4'- 10 1/16"	L		0.129"	L/360	Passed - L/808
Total Load (TL) Pos. Defl.:	4'- 10"	D + L		0.235"	L/240	Passed - L/443

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	4-10	1.25D + 1.5L	1.00	5593 lb		16758 lb	9913 lb	Passed - 56%
2	4-08	1.25D + 1.5L	1.00	6501 lb		16380 lb	8411 lb	Passed - 77%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	9'- 5 1/2"	Self Weight	Top	9 lb/ft	-	-	-
Uniform	-0'	0'- 10 1/2"	FC1 Floor Decking (Plan View Fill)	Top	16 lb/ft	31 lb/ft	-	-
Uniform	0'- 1/2"	9'- 5 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	3'- 11 3/4"	9'- 5 1/2"	9(i846)	Top	271 lb/ft	380 lb/ft	-	-
Uniform	3'- 11 3/4"	4'- 8 3/4"	9(i846)	Top	591 lb/ft	794 lb/ft	-	-
Point	9'- 1 7/8"	9'- 1 7/8"	B18(i9535)	Front	497 lb	108 lb	-	-
Point	0'- 10 1/2"	0'- 10 1/2"	J5(i9208)	Back	53 lb	97 lb	-	-
Point	1'- 10 1/2"	1'- 10 1/2"	J5(i9553)	Back	53 lb	106 lb	-	-
Point	2'- 10 1/2"	2'- 10 1/2"	J5(i9484)	Back	54 lb	109 lb	-	-
Point	3'- 10 1/2"	3'- 10 1/2"	J5(i9357)	Back	54 lb	109 lb	-	-
Point	4'- 10 1/2"	4'- 10 1/2"	J5(i9540)	Back	54 lb	109 lb	-	-
Point	5'- 10 1/2"	5'- 10 1/2"	J5(i9282)	Back	53 lb	106 lb	-	-
Point	6'- 10 1/2"	6'- 10 1/2"	J5(i9389)	Back	54 lb	109 lb	-	-
Point	7'- 10 1/2"	7'- 10 1/2"	J5(i9302)	Back	53 lb	106 lb	-	-
Point	8'- 10 1/2"	8'- 10 1/2"	J5(i9406)	Back	53 lb	106 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	FC1 Floor Decking (Plan View Fill)	Top	386 lb	504 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	15(i2590)	Top	228 lb	299 lb	-	-
Point	8'- 11 3/4"	8'- 11 3/4"	FC1 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'- 4 5/8"	W20(i18)	1851 lb	2205 lb	-	-
2	9'- 1"	9'- 5 1/2"	STL BM(i22)	2335 lb	2369 lb	-	-

DESIGN NOTES

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

REVIEWED

	BUILDER: BAYVIEW WELLINGTON SITE: GREEN VALLEY EAST MODEL: S42-17 CITY: BRADFORD	Job Name: S42-17 - 10' GRD FLR SUNKEN Level: 1ST FLOOR FRAMING Label: B21 - i9381 Type: Beam	2 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	Status: Design Passed
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- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

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



REVIEWED

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

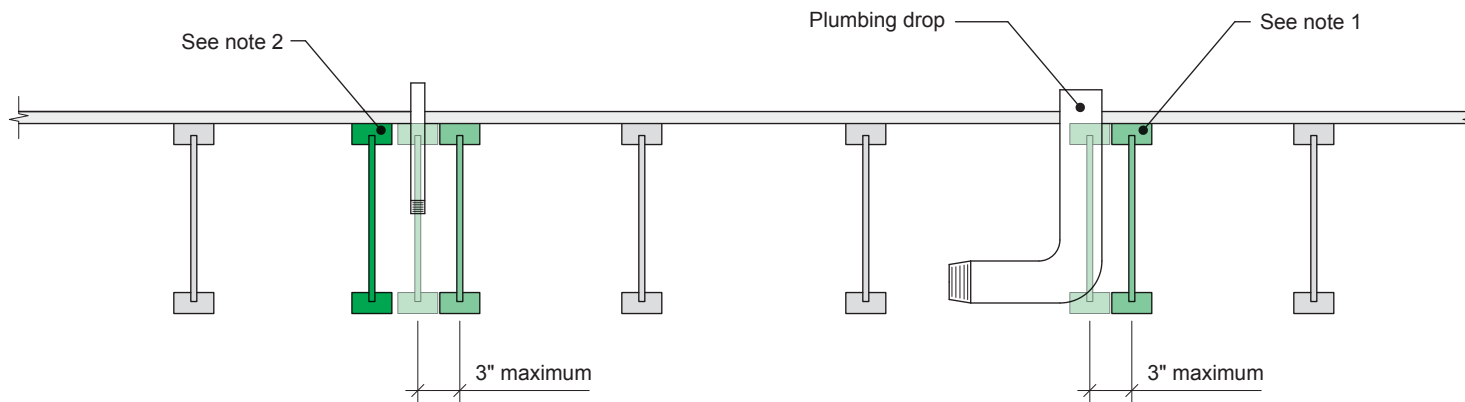
Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	14'-11"
	NI-60	17'-1"	16'-1"	15'-6"	14'-10"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

7c

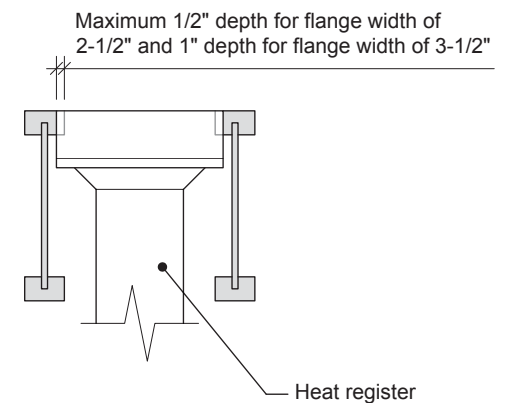
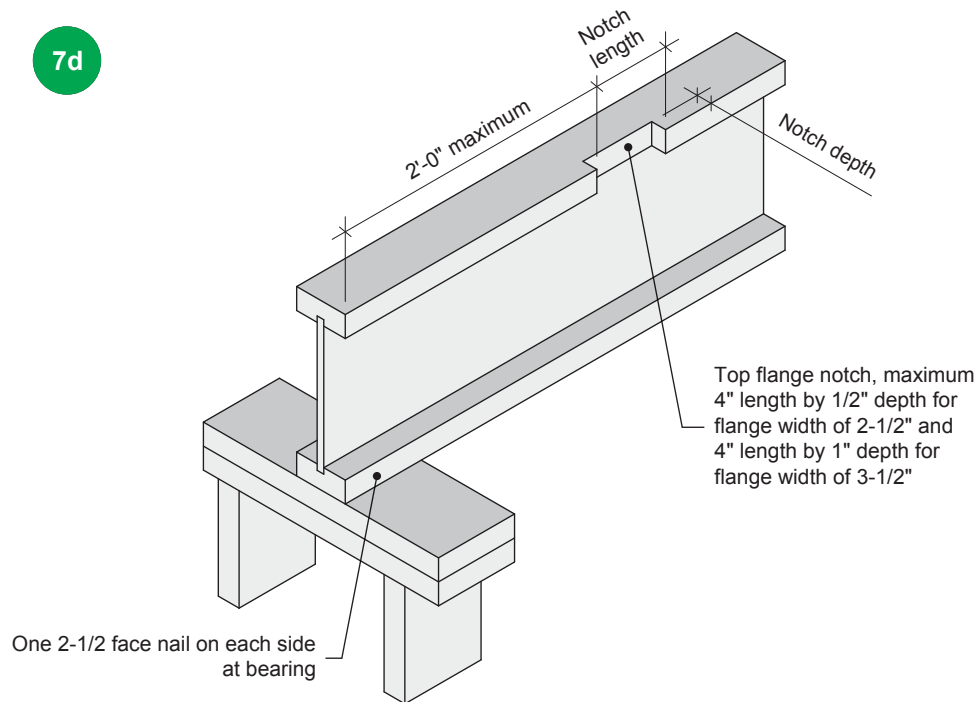


Notes:

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.