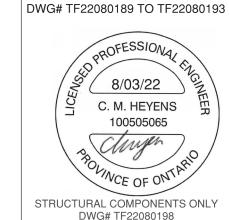


Products									
PlotID	Length	Product	Plies	Net Qty					
J1	16-00-00	9 1/2" NI-40x	1	4					
J2	14-00-00	9 1/2" NI-40x	1	33					
J2DJ	14-00-00	9 1/2" NI-40x	2	4					
J3	12-00-00	9 1/2" NI-40x	1	19					
J4	4-00-00	9 1/2" NI-40x	1	1					
J5	2-00-00	9 1/2" NI-40x	1	4					
B1	16-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3					
B2	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1					
B3	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1					
B4	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1					
B5	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2					

Connector Summary										
Qty	Manuf	Product								
5	H1	IUS2.56/9.5								
2	H1	IUS2.56/9.5								
8	H1	IUS2.56/9.5								
6	H1	IUS2.56/9.5								
1	H2	HUS1.81/10								



# THIS IS A FLOOR COMPONENT PLACEMENT PLAN ONLY.

The wood beams and joists outlined on this plan are designed as individual building components to be incorporated into the design of the building at the specification of the building designer. Please see the individual beam reports, joist reports, and/or joist span tables for each component identified on this placement plan. The supporting structure is to be specified by the building designer prior to the

The supporting structure is to be specified by the building designer prior to the installation of joist(s) and/or beam(s). The building designer is responsible for the bracing of the floor system and its integration into the bracing of the overall structure. All components labelled "by others" or "as per plan", and all steel beams, are not within the scope of work of this seal.

The building designer must review and approve this plan to acertain conformity to the overall structural plan of the building. All dimensions to be verified on site.

**DATE:** 8/03/22

1st FLOOR FRAMING

# Garden 9 Elevation 1



FROM PLAN DATED: 2022/06
BUILDER: GREENPARK HOMES
SITE: BARLASSINA CONSTRUCTION

MODEL: GARDEN 9
ELEVATION: 1

LOT:

**CITY**: CAMBRIDGE

**SALESMAN:** RICK DICIANO

DESIGNER: AJ REVISION:

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

SQUASH BLOCKS OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.

MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.

CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES

4/5 FOR REINFORCEMENT REQUIREMENTS.
FOR HOLES INCLUDING DUCT CHASE AND FIELD
CUT OPENINGS SEE FIGURE 6 AND TABLES 6.1/6.2.
CERAMIC TILE APPLICATION AS PER OBC 9.30.6.

ALL CONNECTORS MUST BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS USING THE MANUFACTURER SPECIFIED FASTENERS.

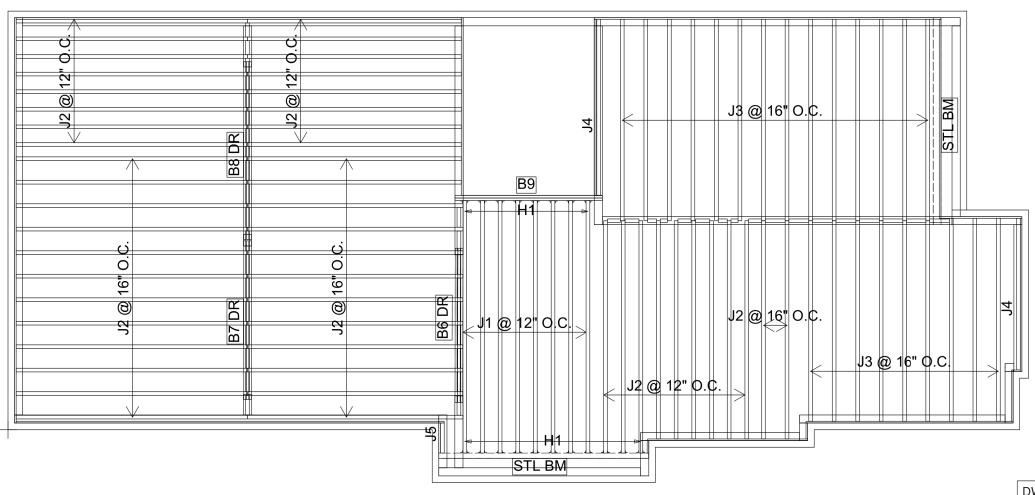
ALL BEAM HANGER FASTENERS INSTALLED INTO THE SUPPORTING MEMBER MUST BE A MINIMUM OF 3.5" IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD

#### LOADING:

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

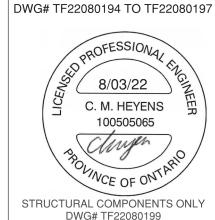
JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 3/4" GLUED AND NAILED



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	8
J2	14-00-00	9 1/2" NI-40x	1	51
J3	12-00-00	9 1/2" NI-40x	1	23
J4	10-00-00	9 1/2" NI-40x	1	2
J5	2-00-00	9 1/2" NI-40x	1	1
B8 DR	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3
B9	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2
B6 DR	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3
B7 DR	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3

C	Connector	Summary
Qty	Manuf	Product
8	H1	IUS2.56/9.5
11	H1	IUS2.56/9.5



# THIS IS A FLOOR COMPONENT PLACEMENT PLAN ONLY.

The wood beams and joists outlined on this plan are designed as individual building components to be incorporated into the design of the building at the specification of the building designer. Please see the individual beam reports, joist reports, and/or joist span tables for each component identified on this placement plan.

The supporting structure is to be specified by the building designer prior to the installation of joist(s) and/or beam(s). The building designer is responsible for the

The supporting structure is to be specified by the building designer prior to the installation of joist(s) and/or beam(s). The building designer is responsible for the bracing of the floor system and its integration into the bracing of the overall structure. All components labelled "by others" or "as per plan", and all steel beams, are not within the scope of work of this seal.

The building designer must review and approve this plan to acertain conformity to the overall structural plan of the building. All dimensions to be verified on site.

**DATE:** 8/03/22

2nd FLOOR FRAMING

# Garden 9 Elevation 1



FROM PLAN DATED: 2022/06
BUILDER: GREENPARK HOMES
SITE: BARLASSINA CONSTRUCTION

MODEL: GARDEN 9
ELEVATION: 1

LOT:

**CITY**: CAMBRIDGE

**SALESMAN:** RICK DICIANO

DESIGNER: AJ REVISION:

REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION. SQUASH BLOCKS OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING ALONG BEARING

AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES
4/5 FOR REINFORCEMENT REQUIREMENTS.
FOR HOLES INCLUDING DUCT CHASE AND FIELD
CUT OPENINGS SEE FIGURE 6 AND TABLES 6.1/6.2.
CERAMIC TILE APPLICATION AS PER OBC 9.30.6.

ALL CONNECTORS MUST BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS USING THE MANUFACTURER SPECIFIED FASTENERS.

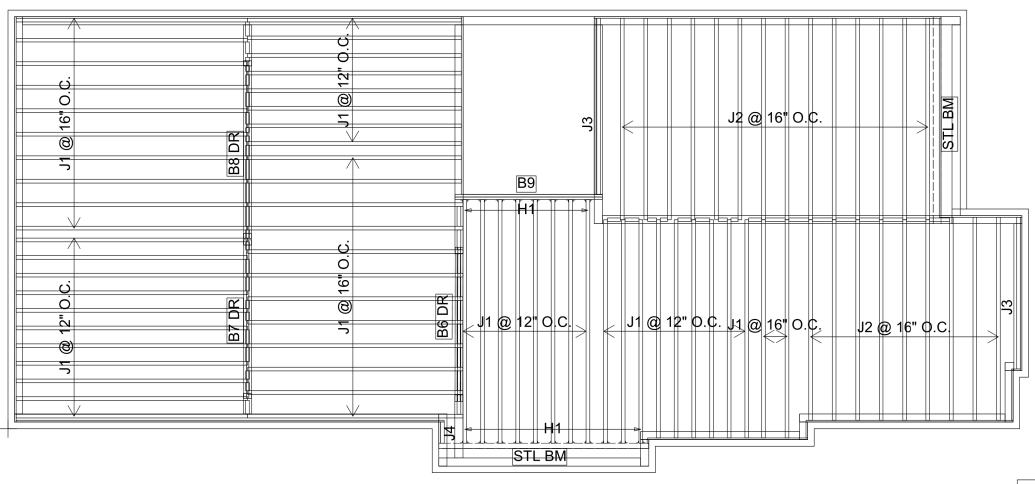
ALL BEAM HANGER FASTENERS INSTALLED INTO THE SUPPORTING MEMBER MUST BE A MINIMUM OF 3.5" IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD

#### LOADING:

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

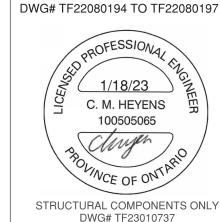
JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 5/8" GLUED AND NAILED



Products									
PlotID	Length	Product	Plies	Net Qty					
J1	14-00-00	9 1/2" NI-40x	1	60					
J2	12-00-00	9 1/2" NI-40x	1	23					
J3	10-00-00	9 1/2" NI-40x	1	2					
J4	2-00-00	9 1/2" NI-40x	1	1					
B8 DR	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3					
B9	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2					
B6 DR	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3					
B7 DR	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3					

C	Summary	
Qty	Manuf	Product
8	H1	IUS2.56/9.5
11	H1	IUS2.56/9.5



# THIS IS A FLOOR COMPONENT PLACEMENT PLAN ONLY.

The wood beams and joists outlined on this plan are designed as individual building components to be incorporated into the design of the building at the specification of the building designer. Please see the individual beam reports, joist reports, and/or joist span tables for each component identified on this placement plan.

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The supporting structure is to be specified by the building designer prior to the installation of joist(s) and/or beam(s). The building designer is responsible for the bracing of the floor system and its integration into the bracing of the overall structure. All components labelled "by others" or "as per plan", and all steel beams, are not within the scope of work of this seal.

The building designer must review and approve this plan to acertain conformity to the overall structural plan of the building. All dimensions to be verified on site.

**DATE:** 1/18/23

2nd FLOOR FRAMING OPTION 4 BEDROOM

# Garden 9 Elevation 1



FROM PLAN DATED: 2022/06
BUILDER: GREENPARK HOMES
SITE: BARLASSINA CONSTRUCTION

MODEL: GARDEN 9
ELEVATION: 1

LOT:

**CITY**: CAMBRIDGE

**SALESMAN:** RICK DICIANO

DESIGNER: AJ REVISION:

REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION. SQUASH BLOCKS OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING ALONG BEARING

AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES
4/5 FOR REINFORCEMENT REQUIREMENTS.
FOR HOLES INCLUDING DUCT CHASE AND FIELD
CUT OPENINGS SEE FIGURE 6 AND TABLES 6.1/6.2.
CERAMIC TILE APPLICATION AS PER OBC 9.30.6.

ALL CONNECTORS MUST BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS USING THE MANUFACTURER SPECIFIED FASTENERS.

ALL BEAM HANGER FASTENERS INSTALLED INTO THE SUPPORTING MEMBER MUST BE A MINIMUM OF 3.5" IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD

#### LOADING:

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

JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 5/8" GLUED AND NAILED

# NORDIC

INSTALLATION GUIDE NORDIC JOIST NS-GI33 **■**◆■

VERSION 2020-10-01

**Engineered Wood Products** 

BASIC INSTALLATION **GUIDE FOR RESIDENTIAL FLOORS** 

NORDIC **U**JOIST

NORDIC **STRUCTURES** 

WEB STIFFENERS

**NAIL SPACING** 

nordic.ca

1 x 2-5/16 Minimum width 1-1/2 x 2-5/16 Minimum width

#### INSTALLING NORDIC I-JOISTS

- Except for cutting to length, I-joist flanges should never be cut, drilled or notched
- Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment
- Concentrated loads should only be applied to the top surface of the top flange. Concentrated loads should not be suspended from the bottom flange with the exception of light loads, such as ceiling fans or light fixtures.
- I-joists must be protected from the weather prior to installation.
- I-joists must not be used in applications where they will be permanently exposed to weather, or will reach a moisture content of 15 percent or greater, such as in swimming pool or hot tub areas. They must not be installed where they will remain in direct contact with
- 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.
- I-joists installed beneath bearing walls perpendicular to the joists shall have full-depth blocking panels, rim board, or squash blocks (cripple blocks) to transfer gravity loads from above the floor system to the wall or foundation below.
- For I-inists installed directly beneath bearing walls parallel to the joists or used as rim board or blocking panels, the using a single I-joist is 3,300 plf, and 6,600 plf if double I-joists are used.
- . Continuous lateral support of the I-joist's compression flange is required to prevent rotation and buckling. In simple span uses, lateral support of the top flange is normally supplied by the floor sheathing. In multiple-span or cantilever applications, bracing of the I-joist's bottom flange is also required at interior supports of multiple-span joists, and at the end support next to the cantilever extension. The ends of all cantilever extensions must be laterally braced as shown in details 3, 4, or 5.
- . Nails installed in flange face or edge shall be spaced in accordance with the applicable building code requirements or approved building plans, but should not be closer than those specified on page 3.3 of the Nordic Joist Technical Guide (NS-GT3).
- B. Details 1 show only I-joist-specific fastener requirements. For other fastener requirements, see the applicable building code.
- 4. 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. ndividual components not shown to scale for clarity.

1b

1

2×3 S-P-F No. 2

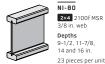
NORDIC I-JOIST SERIES RESIDENTIAL SERIES

2x3 1950f MSR 3/8 in. web 33 pieces per unit



1d

1k



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

SAFETY AND CONSTRUCTION PRECAUTIONS

Avoid Accidents by Following these Important Guidelines

of I-ioists at the end of the bay.

rim board, or cross-bridging.

Never install a damaged I-joist

-joists are not stable until completely installed, and will not carry any load until fully brace

I. 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

2. When the building is completed, the floor sheathing will provide lateral support for the top

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

system. Then, stack building materials over beams or walls only.

flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts,

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

3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels

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

NI-90 2x4 2400f MSR 7/16 in. web

Width 1-1/8 in. APA Rim Board Plus

RIM BOARDS

Do not walk on I-joist

Never stack building

braced or serious

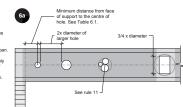
until fully fastened an

#### WEB HOLES AND OPENINGS

#### WEB HOLES IN I-JOISTS

- Rules for Cutting Holes in I-Joists The distance between the inside edge of the support and the centreline of any hole shall be in compliance with the requirement of Table 6.1.

- A 1-1/2 inch hole or smaller can be placed anywhere in the web provide
- materials over unsheathed I-joists Once sheathed, do no overstress I-joist with



#### DUCT CHASE OPENINGS

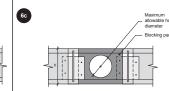
6b

Rules for Cutting Duct Chase Openings in I-joists

- The distance between the inside edge of the support and the co duct chase opening shall be in compliance with the requiremen
- I-joist top and bottom flanges must never be cut, notched or otherwise mo
- 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. 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,
- All openings shall be cut in accordance with the restrictions listed above and as illustrated in detail 6b.

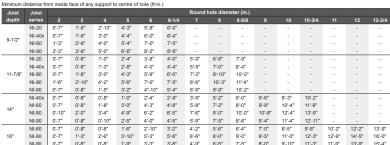
Allowable Hole Size in Lateral-restraint-only Blocking Panels

HOLES IN BLOCKING PANELS



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

### TABLE 6.1 - LOCATION OF WEB HOLES



I-joist depth (in.)	Maximum depth of the opening (in.)
9-1/2	6-1/4
11-7/8	8-5/8
14	10-3/4
16	12-3/4

# Minimum 1/8" space between top or bottom flange and openin

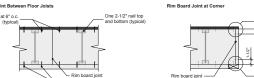
Simple or multiple span  Minimum distance from inside face of any support to centre of hole (ft-in.)														Simple spa Minimum di			
Joist	Joist	st Round hole diameter (in.)													Joist		
depth	series						6-1/4			8-5/8		10	10-3/4		12	12-3/4	depth :
	NI-20	0'-7"	1'-6"	2'-10"	4'-3"	5'-8"	6'-0"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

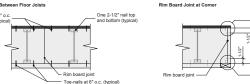
Design Criteria		
Joist spacing	Up to 24 inches	
Loads	Live load = 40 psf and dead load = 15 psf	
Deflection limits	L/480 under live load and L/240 under total load	

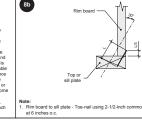
## TABLE 6.2 - LOCATION OF DUCT CHASE OPENINGS

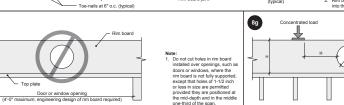
aeptn	series	8	10	12	14	16	18	20	22	24
	NI-20	4'-1"	4'-5"	4'-10"	-	-	-	-	-	-
0.4/01	NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	-	-
9-1/2"	NI-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-5"	8'-0"	-	-
	NI-80	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"
	NI-20	5'-9"	6'-2"	6'-6"	-	-	-	-	-	-
	NI-40x	6'-8"	7'-2"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	-	-
11-7/8"	NI-60	7'-3"	7'-8"	8'-0"	8'-6"	9'-0"	9'-3"	9'-9"	-	-
	NI-80	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-8
	NI-90	7'-6"	7'-11"	8'-4"	8'-9"	9'-2"	9'-7"	10'-1"	10'-7"	10'-1
	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"	-	-
14"	NI-80	9'-0"	9'-3"	9'-9"	10'-1"	10'-7"	11'-1"	11'-6"	12'-1"	12'-€
	NI-90	9'-2"	9'-8"	10'-0"	10'-6"	10'-11"	11'-5"	11'-9"	12'-4"	12'-1
	NI-60	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	13'-2"	-	-
16"	NI-80	10'-4"	10'-9"	11'-3"	11'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'-4
	NI-90	10'-9"	11'-2"	11'-8"	12'-0"	12'-6"	13'-0"	13'-6"	14'-2"	14'-1
		D! 0								
		Design C	riteria							

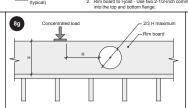
#### RIM BOARDS 8a

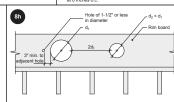




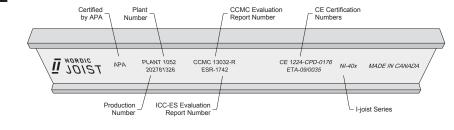








#### -JOIST MARKING



FOR ALL

1n

connection. Leave a 1/8-inch to 1/4-inch gap between top of filler block and bottom of top

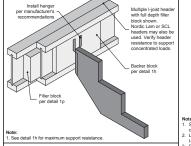
1s-1

2-1/8 to 2-1/4 x 6 2x6 + 5/8" or 3/4" she 2-1/8 to 2-1/4 x 8 2x8 + 5/8" or 3/4" she 2-1/8 to 2-1/4 x 10 2x10 + 5/8" or 3/4" she 2-1/8 to 2-1/4 x 12 2x12 + 5/8" or 3/4" sheathing 2 x 2x10 2 x 2x12

 $\rightarrow$ DC3

# 1h

1g



# 8f

construction details

use net joist depth minus 3-1/4 inches for joists with



CITY:

**GREENPARK HOMES BARLASSINA CONSTRUCTION** 

**GARDEN 9 CAMBRIDGE** 

Job Name: GARDEN 9 EL 1 **1ST FLR FRAMING** Level:

Label: B1 - i1189

Type: **Beam**  3 Ply Member

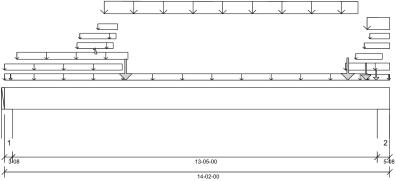
1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL

Status: Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version

Report Version: 2021.03.26 08/03/2022 08:41 8.5.3.233.Update5.15



#### **DESIGN INFORMATION**

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

Amendment)

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

#### Lateral Restraint Requirements:

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

Top: 0' Bottom: 3'- 11 1/4"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2 1/2"
- 615 psi Wall @ 13'- 9 1/2"

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

NAIL FROM BOTH FACES (STAGGER 1/2 SPACE)

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



STRUCTURAL COMPONENT ONLY DWG # TF22080189 PG 1/2

	ANALYSIS RESULTS							
1	Design Criteria	Location	Load Combination	LDF	Design	Limit	Result	
l	Factored Pos. Moment:	6'- 11 1/16"	1.25D + 1.5L	1.00	19912 lb ft	34949 lb ft	Passed - 57%	
l	Factored Shear:	12'- 11"	1.25D + 1.5L	1.00	8889 lb	16578 lb	Passed - 54%	
l	Live Load (LL) Pos. Defl.:	6'- 11 15/16"	L		0.411"	L/360	Passed - L/391	
l	Total Load (TL) Pos. Defl.:	6'- 11 11/16"	D + L		0.658"	L/240	Passed - L/244	
ı	Permanent Deflection:	6'- 11 1/4"			_	L/360	Passed - L/672	

SUP	PORT AND	REACTION INFORM	IATION					
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	4992 lb		19110 lb	11304 lb	Passed - 44%
2	5-08	1.25D + 1.5L	1.00	9512 lb		30030 lb	17764 lb	Passed - 54%

SPECIF	FIED LOAD	os						
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	14'- 2"	Self Weight	Тор	14 lb/ft	-	-	-
Uniform	0'	13'- 4 3/8"	FC1 Floor Decking (Plan View Fill)	Тор	13 lb/ft	25 lb/ft	-	-
Uniform	0'	4'- 4"	FC1 Floor Decking (Plan View Fill)	Тор	11 lb/ft	23 lb/ft	-	-
Uniform	0'- 5 1/2"	4'- 6 1/2"	9(i352)	Тор	81 lb/ft	-	-	-
Uniform	2'- 8"	4'	9(i352)	Тор	-	20 lb/ft	-	-
Uniform	2'- 9 1/4"	4'- 1 1/4"	9(i352)	Тор	0 lb/ft	1 lb/ft	-	-
Uniform	3'- 5 1/4"	4'- 2"	9(i352)	Тор	3 lb/ft	7 lb/ft	-	-
Uniform	12'- 6 1/2"	14'- 2"	8(i351)	Тор	81 lb/ft	-	-	-
Uniform	12'- 11"	13'- 10 3/4"	8(i351)	Тор	3 lb/ft	7 lb/ft	-	-
Uniform	13'- 2 3/4"	14'- 2"	8(i351)	Тор	0 lb/ft	1 lb/ft	-	-
Uniform	13'- 4 3/8"	14'- 2"	FC1 Floor Decking (Plan View Fill)	Тор	5 lb/ft	9 lb/ft	-	-
Uniform	13'- 5 1/4"	14'- 2"	8(i351)	Тор	0 lb/ft	1 lb/ft	-	-
Tapered	3'- 8"	13'	Smoothed Load	Back	123 To 119 lb/ft	249 To 238 lb/ft	-	-
Tapered	13'- 4"	14'- 2"	8(i351)	Тор	118 To 119 lb/ft	236 To 237 lb/ft	-	-
Point	13'- 3 1/2"	13'- 3 1/2"	B2(i1213)	Front	426 lb	835 lb	-	-
Point	13'- 8"	13'- 8"	J3(i1206)	Back	146 lb	293 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E13(i339)	Тор	44 lb	-	-	-
Point	3'- 4"	3'- 4"	9(i352)	Тор	-19 lb	-64 lb	-	-
Point	4'- 5 1/2"	4'- 5 1/2"	9(i352)	Тор	607 lb	1090 lb	-	-
Point	12'- 7 1/2"	12'- 7 1/2"	8(i351)	Тор	652 lb	1180 lb	-	-
Point	14'- 1 5/8"	14'- 1 5/8"	8(i351)	Тор	0 lb	0 lb	-	-

UNFA	UNFACTORED REACTIONS										
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)				
1	0'	0'- 3 1/2"	W16(i29)	1492 lb	2092/-49 lb	-	-				
2	13'- 8 1/2"	14'- 2"	1(i46)	2486 lb	4262/-15 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.



BUILDER: SITE: MODEL: CITY: GREENPARK HOMES
BARLASSINA CONSTRUCTION
GARDEN 9

**CAMBRIDGE** 

Job Name: **GARDEN 9 EL 1**Level: **1ST FLR FRAMING** 

Label: B1 - i1189 Type: Beam 3 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





CITY:

GREENPARK HOMES
BARLASSINA CONSTRUCTION

GARDEN 9 CAMBRIDGE Job Name: **GARDEN 9 EL 1**Level: **1ST FLR FRAMING** 

Label: **B2 - i1213** Type: **Beam** 

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

Report Version: 2021.03.26

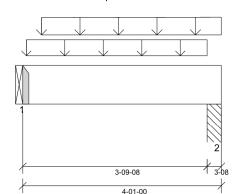
Status:

Design
Passed

08/03/2022 08:41

Illustration Not to Scale. Pitch: 0/12

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



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

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

#### Lateral Restraint Requirements:

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

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

#### Factored Resistance of Support Material:

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

ANALYSIS RESULTS						
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 2 1/16"	1.25D + 1.5L	1.00	1988 lb ft	11650 lb ft	Passed - 17%
Factored Shear:	3'	1.25D + 1.5L	1.00	1935 lb	5526 lb	Passed - 35%
Live Load (LL) Pos. Defl.:	1'- 11 1/4"	L		0.010"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	1'- 11 1/4"	D+L		0.016"	L/240	Passed - L/999

l	SUP	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				
l	1	1-08	1.25D + 1.5L	1.00	1818 lb		2730 lb	-	Passed - 67%				
l	2	3-08	1.25D + 1.5L	1.00	2345 lb		6370 lb	3767 lb	Passed - 62%				

IECTOR	

וח	Part No.	Manufacturer	Na	iling Requirem	ents	Other Information or Requirement for
טו	Fait No.	Manuacturer	Тор	Face	Member	Reinforcement Accessories
1	HUS1 81/10		_	_	_	Connector manually specified by the use

\* 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.

SPECIF	IED LOAD	JS .						
Туре	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 1"	Self Weight	Тор	5 lb/ft	-	-	-
Uniform	0'- 7/8"	3'- 9 1/2"	User Load	Тор	120 lb/ft	240 lb/ft	-	-
Tapered	0'- 4 5/8"	4'- 1"	Smoothed Load	Front	140 To 145 lb/ft	281 To 290 lb/ft	-	-
UNFAC	TORED RE	EACTIONS						
ID	Start Loc	End Loc	Source		Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B1(i1189)	B1(i1189)		835 lb	-	-
2	3'- 9 1/2"	4'- 1"	PBO2(i52)		566 lb	1114 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 # TF22080190



CITY:

GREENPARK HOMES
BARLASSINA CONSTRUCT

GARDEN 9 CAMBRIDGE

BARLASSINA CONSTRUCTION GARDEN 9

Job Name: GARDEN 9 EL 1
Level: 1ST FLR FRAMING

Label: B3 - i1129 Type: Beam 1 Ply Member 1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL

Report Version: 2021.03.26

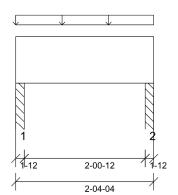
Status:

Design
Passed

08/03/2022 08:41

Illustration Not to Scale. Pitch: 0/12

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



#### DESIGN INFORMATION

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

Amendment)

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

#### Lateral Restraint Requirements:

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

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

#### Factored Resistance of Support Material:

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

ANAL	YSIS RESU	LIS									
D	esign Criteria	Loc	cation I	_oad	Combinatio	n LDF	Design	Limit	Result		
Factore	d Pos. Momen	t: 1'- 2	2 1/16"	1.2	25D + 1.5L	1.00	33 lb ft	11650 lb ft	Passed - 0%		
Factore	d Shear:	1'	'- 5"	1.2	25D + 1.5L	1.00	13 lb	5526 lb	Passed - 0%		
SUPPORT AND REACTION INFORMATION											
ID	Input Bearing Length	Controlling Combina		.DF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member		Result		
1	1-12	1.25D +	1.5L 1	.00	63 lb		3185 lb	1883 lb	Passed - 3%		
2	1-12	1.25D +	1.5L 1	.00	70 lb		3185 lb	1883 lb	Passed - 4%		
SPEC	IFIED LOAD	S									
Туре	Start Loc	End Loc	Source		Face	Dead (D)	Live (L)	Snow (S)	Wind (W)		
Self Weight	0'	2'- 4 1/4"	Self Weigh	t	Тор	5 lb/ft	-	-	-		
Uniform	-0'	2'- 4 1/4"	FC1 Floor Dec (Plan View F		Тор	11 lb/ft	22 lb/ft	-	-		
UNFA	CTORED R	EACTIONS									
ID	Start Loc	End Loc	Sour	се		Dead (D)	Live (L)	Snow (S)	Wind (W)		
1	0'	0'- 1 3/4"	PBO2	(i52)		19 lb	26 lb	-	-		
2	2'- 2 1/2"	2'- 4 1/4"	PBO1	(i51)		20 lb	29 lb	-	-		
DESIG	ON 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.





CITY:

**GREENPARK HOMES** 

**GARDEN 9 CAMBRIDGE** 

**BARLASSINA CONSTRUCTION** 

Label: Type: **Beam** 

Job Name: GARDEN 9 EL 1 **1ST FLR FRAMING** Level: B4 - i1149

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

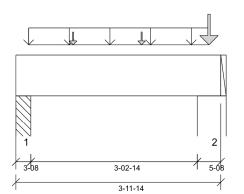
Report Version: 2021.03.26

Status: Design Passed

08/03/2022 08:41

Illustration Not to Scale. Pitch: 0/12

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



#### **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:

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

#### Factored Resistance of Support Material:

- 615 psi Column @ 0'- 2 1/2"
- 615 psi Wall @ 3'- 7 3/8"

ANALYSIS RESULT	S								
Design Criteria	Location	<b>Load Combination</b>	LDF	Design	Limit	Result			
Factored Pos. Moment:	1'- 8 11/16"	1.25D + 1.5L	1.00	1386 lb ft	11650 lb ft	Passed - 12%			
Factored Neg. Moment:	3'- 7 3/8"	1.25D + 1.5L	1.00	578 lb ft	11650 lb ft	Passed - 5%			
Factored Shear:	2'- 8 7/8"	1.25D + 1.5L	1.00	1418 lb	5526 lb	Passed - 26%			
SUPPORT AND REACTION INFORMATION									
Input		Factored	Factored	Factored	Factored				

		Input Bearing Length	Controlling Load Combination		Downwar Reaction	d Uplift	Resistance of Member	Resistance of Support	Result
Ш	1	3-08	1.25D + 1	.5L 1.00	1638 lb		6369 lb	3766 lb	Passed - 44%
	2	5-08	1.25D + 1	.5L 1.00	5869 lb		10010 lb	5921 lb	Passed - 99%
SPECIFIED LOADS									
Ш	Туре	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Ш	Self Weight	0'	3'- 11 7/8"	Self Weight	Тор	5 lb/ft	-	-	-
Ш	Uniform	0'- 3"	3'- 9 1/16"	User Load	Тор	120 lb/ft	240 lb/ft	-	-
Ш	Point	1'- 1 3/8"	1'- 1 3/8"	J1(i1223)	Front	206 lb	411 lb	-	-
Ш	Point	2'- 5 3/8"	2'- 5 3/8"	J1(i1220)	Front	211 lb	421 lb	-	-
Ш	Point	3'- 9 1/8"	3'- 9 1/8"	3(i347)	Тор	960 lb	1817 lb	-	-
Ш	UNFA	CTORED RI	EACTIONS						
Ш	ID	Start Loc	End Loc	Source		Dead (D)	Live (L)	Snow (S)	Wind (W)
Ш	1	0'	0'- 3 1/2"	PBO1(i51	)	436 lb	852 lb	-	-
$\ $	2	3'- 6 3/8"	3'- 11 7/8"	W19(i37	)	1381 lb	2639 lb	-	-

- 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.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 2. Required Load Area: L=2.157", W=1.750". LDF=1.00, Pf=3926 lb, Q'r=3926 lb, Result=100.00%.





CITY:

**GREENPARK HOMES BARLASSINA CONSTRUCTION** 

**GARDEN 9 CAMBRIDGE** 

**1ST FLR FRAMING** Label: B5 - i1058 Type: **Beam** 

Level:

Job Name: GARDEN 9 EL 1

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

Report Version: 2021.03.26

Status: Design Passed

08/03/2022 08:41

Illustration Not to Scale. Pitch: 0/12

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

> 1 2 3-08 2-06-00 3-08

> > 3-01-00

#### **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:

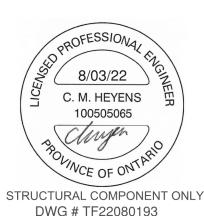
Bottom: 1'- 9 1/2" Top: 0'

#### Factored Resistance of Support Material:

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

#### PLY TO PLY CONNECTION: 3 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 4" O/C

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



ANALY	ANALYSIS RESULTS										
De	esign Criteria	Lo	cation	Load	Combination	on LDF	Design	Limit	Result		
Factored	Pos. Momen	t: 1'- 5	15/16"	1.2	25D + 1.5L	0.81	247 lb ft	18759 lb ft	Passed - 1%		
Factored	Shear:	1	'- 1"	1.2	25D + 1.5L	0.81	173 lb	8899 lb	Passed - 2%		
SUPPO	ORT AND R	EACTION	INFORM <i>A</i>	MOITA							
	Input Bearing Length	Controlling Combina		LDF	Factored Downward Reaction	p	Factored Resistance of Member		Result		
1	3-08	1.25D +	1.5L	0.81	404 lb		10258 lb	6068 lb	Passed - 7%		
2	3-08	1.25D +	1.5L	0.81	423 lb		10257 lb	6068 lb	Passed - 7%		
SPECII	FIED LOAD	S									
Туре	Start Loc	End Loc	Source	•	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)		
Self Weight	0'	3'- 1"	Self Wei	ght	Тор	9 lb/ft	-	-	-		
Uniform	-0'	3'- 1"	E6(i33	,	Тор	121 lb/ft	31 lb/ft	-	-		
Uniform	1'	3'	FC1 Floor D (Plan Viev		Тор	13 lb/ft	27 lb/ft	-	-		
Point	1'	1'	Bk22(i10	53)	Back	15 lb	30 lb	-	-		
Point	3'	3'	Bk23(i10	55)	Back	1 lb	3 lb	-	-		
UNFAC	CTORED RE	EACTIONS	5								
ID	Start Loc	End Loc	Sc	ource		Dead (D)	Live (L)	Snow (S)	Wind (W)		
1 2	0' 2'- 9 1/2"	0'- 3 1/2" 3'- 1"		21(i39) 28(i54)		220 lb 224 lb	86 lb 95 lb	-	-		
				(.5.)			- 3 10				

#### **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



BUILDER: SITE: MODEL: CITY:

R: GREENPARK HOMES
BARLASSINA CONSTRUCTION

GARDEN 9 CAMBRIDGE Level:

Job Name: GARDEN 9 EL 1
Level: 2ND FLR FRAMING

Label: **B6 DR - i1151** Type: **Beam** 

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

WestFraser LVL

Status:

Design
Passed

Illustration Not to Scale. Pitch: 0/12 Designed by Single Member Design Engine in MiTek® Structure Version 8.5.3.233.Update5.15 Report Version: 2021.03.26 08/03/2022 08:41

#### 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: 8'- 9"

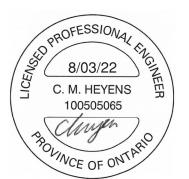
#### Factored Resistance of Support Material:

- 812 psi Wall @ 0'- 3 1/2"
- 812 psi Wall @ 8'- 5 1/2"

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

NAIL FROM BOTH FACES (STAGGER 1/2 SPACE)

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



STRUCTURAL COMPONENT ONLY DWG # TF22080194

ANALYSIS RESULTS						
Design Criteria	Location	<b>Load Combination</b>	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 6"	1.25D + 1.5L	1.00	4480 lb ft	34949 lb ft	Passed - 13%
Factored Shear:	7'- 7"	1.25D + 1.5L	1.00	1853 lb	16578 lb	Passed - 11%
Live Load (LL) Pos. Defl.:	4'- 4 7/16"	L		0.033"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 4 7/16"	D + L		0.051"	L/240	Passed - L/999

SUP	SUPPORT AND REACTION INFORMATION												
ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result					
1	4-08	1.25D + 1.5L	1.00	2418 lb		24570 lb	19184 lb	Passed - 13%					
2	4-08	1.25D + 1.5L	1.00	2561 lb		24570 lb	19184 lb	Passed - 13%					
CDE	CIEIED I C	MDC											

SPECIF	-IED LOAD	15						
Туре	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 9"	Self Weight	Тор	14 lb/ft	-	-	-
Uniform	0'	8'- 9"	Smoothed Load	Тор	127 lb/ft	254 lb/ft	-	-
Uniform	-0'	0'- 4 3/4"	Bk2(i1195)	Тор	3 lb/ft	7 lb/ft	-	-
Uniform	0'- 7 1/4"	1'- 8 3/4"	Bk2(i1177)	Top	3 lb/ft	7 lb/ft	-	-
Uniform	1'- 11 1/4"	3'- 3/4"	Bk2(i1185)	Тор	3 lb/ft	7 lb/ft	-	-
Uniform	3'- 3 1/4"	4'- 4 3/4"	Bk2(i1176)	Top	3 lb/ft	7 lb/ft	-	-
Uniform	4'- 7 1/4"	5'- 8 3/4"	Bk2(i1200)	Top	3 lb/ft	7 lb/ft	-	-
Uniform	5'- 11 1/4"	7'- 3/4"	Bk2(i1187)	Top	3 lb/ft	7 lb/ft	-	-
Uniform	7'- 3 1/4"	8'- 4 3/4"	Bk2(i1186)	Top	3 lb/ft	7 lb/ft	-	-
Point	8'- 8 1/8"	8'- 8 1/8"	Bk2(i1196)	Тор	1 lb	1 lb	-	-

1 Ollit	0 0 1/0	0 0 1/0	DRZ(III00)	iop i ib	1 10						
UNFACTORED REACTIONS											
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)				
1	0'	0'- 4 1/2"	9(i352)	607 lb	1090 lb	-	-				
2	8'- 4 1/2"	8'- 9"	8(i351)	652 lb	1180 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 quideline 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



BUILDER: SITE: MODEL: CITY:

**GREENPARK HOMES BARLASSINA CONSTRUCTION** 

**GARDEN 9 CAMBRIDGE** 

Level: 2ND FLR FRAMING B7 DR - i1170 Label:

Job Name: GARDEN 9 EL 1

Type: **Beam** 

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

WestFraser LVL

Status: Design Passed

Designed by Single Member Design Engine in MiTek® Structure Version Illustration Not to Scale. Pitch: 0/12 Report Version: 2021.03.26 08/03/2022 08:41 8.5.3.233.Update5.15 1 3-08 3-08 8-05-00 9-00-00

#### **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: 9'

#### Factored Resistance of Support Material:

- 812 psi Wall @ 0'- 2 1/2"
- 812 psi Wall @ 8'- 9 1/2"

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

NAIL FROM BOTH FACES (STAGGER 1/2 SPACE)

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



DWG # TF22080195

ANALYSIS RESULTS						
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 4"	1.25D + 1.5L	1.00	10126 lb ft	34949 lb ft	Passed - 29%
Factored Shear:	7'- 11"	1.25D + 1.5L	1.00	4101 lb	16578 lb	Passed - 25%
Live Load (LL) Pos. Defl.:	4'- 6 1/16"	L		0.084"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 6 1/16"	D + L		0.129"	L/240	Passed - L/785

l	SUP	PORT AND	REACTION INFORM	ATION							
	ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result		
l	1	3-08	1.25D + 1.5L	1.00	5256 lb		19110 lb	14920 lb	Passed - 35%		
l	2	3-08	1.25D + 1.5L	1.00	4869 lb		19110 lb	14920 lb	Passed - 33%		
l	SPECIFIED LOADS										

Туре	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	9'	Self Weight	Тор	14 lb/ft	-	-	-
Uniform	0'	9'	Smoothed Load	Тор	261 lb/ft	521 lb/ft	-	-
UNFAC	TORED R	EACTIONS	;					
ID	Start Loc	End Loc	Source		Dead (D)	Live (L)	Snow (S)	Wind (W)

#### 1287 lb 2446 lb 0' 0'- 3 1/2' 7(i350) 8'- 8 1/2" 9' 6(i349) 1186 lb 2244 lb

- 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

**DESIGN NOTES** 



CITY:

**GREENPARK HOMES BARLASSINA CONSTRUCTION** 

**GARDEN 9 CAMBRIDGE** 

Job Name: GARDEN 9 EL 1 Level: 2ND FLR FRAMING B8 DR - i1178 Label:

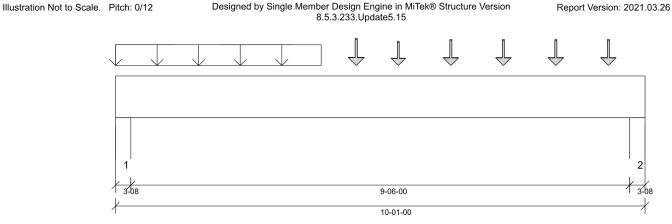
Type: **Beam** 

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

Status: Design

08/03/2022 08:41

WestFraser LVL Passed



#### **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'- 1"

#### Factored Resistance of Support Material:

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

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

NAIL FROM BOTH FACES (STAGGER 1/2 SPACE)

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



STRUCTURAL COMPONENT ONLY DWG # TF22080196

ANALYSIS RESULTS						
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 4 5/8"	1.25D + 1.5L	1.00	12695 lb ft	34949 lb ft	Passed - 36%
Factored Shear:	9'	1.25D + 1.5L	1.00	4699 lb	16578 lb	Passed - 28%
Live Load (LL) Pos. Defl.:	5'- 9/16"	L		0.135"	L/360	Passed - L/842
Total Load (TL) Pos. Defl.:	5'- 9/16"	D + L		0.207"	L/240	Passed - L/551

SL	JPPORT ANI	D REACTION INFORM	IATION					
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	3-08	1.25D + 1.5L	1.00	5530 lb		19110 lb	11301 lb	Passed - 49%
2	3-08	1.25D + 1.5L	1.00	5234 lb		19110 lb	14921 lb	Passed - 35%
C E	ECIEIED I O	ADC						

SPECIF	IED LOAD	15						
Туре	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	10'- 1"	Self Weight	Тор	14 lb/ft	-	-	-
Tapered	0'	3'- 11"	Smoothed Load	Top	257 To 254 lb/ft	514 To 508 lb/ft	-	-
Point	4'- 7"	4'- 7"	J2(i374)	Top	138 lb	277 lb	-	-
Point	4'- 7"	4'- 7"	J2(i433)	Top	128 lb	256 lb	-	-
Point	5'- 4 5/8"	5'- 4 5/8"	J2(i805)	Тор	117 lb	234 lb	-	-
Point	5'- 4 5/8"	5'- 4 5/8"	J2(i832)	Top	108 lb	216 lb	-	-
Point	6'- 4 5/8"	6'- 4 5/8"	J2(i740)	Top	130 lb	259 lb	-	-
Point	6'- 4 5/8"	6'- 4 5/8"	J2(i827)	Top	120 lb	240 lb	-	-
Point	7'- 4 5/8"	7'- 4 5/8"	J2(i740)	Top	130 lb	259 lb	-	-
Point	7'- 4 5/8"	7'- 4 5/8"	J2(i827)	Top	120 lb	240 lb	-	-
Point	8'- 4 5/8"	8'- 4 5/8"	J2(i740)	Тор	130 lb	259 lb	-	-
Point	8'- 4 5/8"	8'- 4 5/8"	J2(i827)	Тор	120 lb	240 lb	-	-
Point	9'- 4 5/8"	9'- 4 5/8"	J2(i740)	Тор	130 lb	259 lb	-	-
Point	9'- 4 5/8"	9'- 4 5/8"	J2(i827)	Тор	120 lb	240 lb	-	-

Point	9'- 4 5/8"	9'- 4 5/8"	J2(1827) I	op 120 lb	240 lb	-	-
UNFAC	CTORED RE	EACTIONS					
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	6(i349)	1351 lb	2560 lb	-	-
2	9'- 9 1/2"	10'- 1"	5(i348)	1283 lb	2421 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.
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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 study, or beveled plates are required to transfer the loads to this beam.

#### PLY TO PLY CONNECTION



CITY:

**GREENPARK HOMES** 

**GARDEN 9 CAMBRIDGE** 

**BARLASSINA CONSTRUCTION** 

Label: B9 - i1188 Type: **Beam** 

Level:

Job Name: GARDEN 9 EL 1

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

Report Version: 2021.03.26

Status:

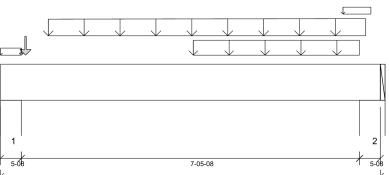
Design Passed

08/03/2022 08:41

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version

8.5.3.233.Update5.15



8-04-08

#### **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:

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

#### Factored Resistance of Support Material:

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

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

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



DWG # TF22080197

ANALYSIS RESULTS						
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 6 5/8"	1.25D + 1.5L	1.00	6638 lb ft	23299 lb ft	Passed - 28%
Factored Shear:	7'- 1 1/2"	1.25D + 1.5L	1.00	3494 lb	11052 lb	Passed - 32%
Live Load (LL) Pos. Defl.:	4'- 3 7/16"	L		0.065"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 3 3/8"	D + L		0.099"	L/240	Passed - L/904

l	SUP	PORT AND	REACTION INFORM	IATION					
	ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
l	1	5-08	1.25D + 1.5L	1.00	2948 lb		20020 lb	11843 lb	Passed - 25%
l	2	5-08	1.25D + 1.5L	1.00	3920 lb		20020 lb	11842 lb	Passed - 33%
l	SPE	CIFIED I O	ADS						

П	3F LOII	ILD LOAL	,3						
l	Туре	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
	Self Weight	0'	8'- 4 1/2"	Self Weight	Тор	9 lb/ft	-	-	-
П	Uniform	4'- 3"	7'- 11"	User Load	Top	120 lb/ft	240 lb/ft	-	-
	Uniform	7'- 6 5/8"	8'- 2"	FC2 Floor Decking (Plan View Fill)	Тор	3 lb/ft	6 lb/ft	-	-
	Tapered	0'	0'- 5 1/2"	FC2 Floor Decking (Plan View Fill)	Тор	5 To 5 lb/ft	11 To 10 lb/ft	-	-
П	Tapered	1'- 5/8"	8'- 5/8"	Smoothed Load	Front	146 To 153 lb/ft	292 To 307 lb/ft	-	-
П	Point	0'- 6 5/8"	0'- 6 5/8"	J1(i1182)	Front	99 lb	198 lb	-	-
	Point	0'- 5 1/2"	0'- 5 1/2"	FC2 Floor Decking (Plan View Fill)	Тор	0 lb	1 lb	-	-

UNFAC	CTORED R	EACTIONS					
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	8(i351)	724 lb	1368 lb	-	-
2	7'- 11"	8'- 4 1/2"	3(i347)	948 lb	1817 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.
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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



#### Maximum Floor Spans - S2.1

#### Design Criteria

Spans: Simple span

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**

			В	are			1/2 in. gyp	sum ceiling	
Joist depth	Joist series		On cent	re spacing			On cent	re spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	15'-1"	14'-3"	13'-10"	-	15'-7"	14'-9"	14'-3"	-
9-1/2"	NI-40x	16'-2"	15'-3"	14'-8"	-	16'-7"	15'-8"	15'-1"	-
9-1/2	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"	-
	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"	-
11-7/8"	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"	-
	NI-40x	20'-1"	18'-8"	17'-10"	-	20'-10"	19'-4"	18'-6"	-
14"	NI-60	20'-6"	18'-11"	18'-2"	-	21'-2"	19'-8"	18'-9"	-
14	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"	-
	NI-60	22'-4"	20'-8"	19'-9"	-	23'-1"	21'-5"	20'-6"	-
16"	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"	-

		Mi	d-span blocking	g with 1x4 inch s	trap	Mid-sp	an blocking an	d 1/2 in. gypsum	ceiling
Joist depth	Joist series		On cent	re spacing			On cent	re spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	16'-8"	15'-3"	14'-5"	-	16'-8"	15'-3"	14'-5"	-
0.4/0"	NI-40x	17'-11"	17'-0"	16'-1"	-	18'-5"	17'-1"	16'-1"	-
9-1/2"	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"	-
	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"	-
11-7/8"	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"	-
	NI-40x	23'-8"	21'-11"	20'-11"	-	24'-4"	22'-8"	21'-8"	-
14"	NI-60	24'-0"	22'-3"	21'-3"	-	24'-8"	22'-11"	21'-11"	-
14	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"	-
	NI-60	26'-5"	24'-6"	23'-5"	-	27'-2"	25'-3"	24'-2"	-
16"	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"	-

- 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

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**

			В	are			1/2 in. gy	osum ceiling	
Joist depth	Joist series		On cent	re spacing			On cent	re spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	15'-11"	15'-0"	14'-6"	13'-5"	16'-5"	15'-5"	14'-6"	13'-5"
0.4/0"	NI-40x	17'-0"	16'-0"	15'-5"	14'-10"	17'-5"	16'-5"	15'-10"	15'-2"
9-1/2"	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"
	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"
11-7/8"	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"
	NI-40x	21'-5"	19'-11"	18'-11"	18'-0"	22'-1"	20'-7"	19'-7"	18'-7"
14"	NI-60	21'-10"	20'-2"	19'-3"	18'-3"	22'-6"	20'-10"	19'-11"	18'-10
14	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"
	NI-60	23'-9"	22'-0"	21'-0"	19'-10"	24'-6"	22'-9"	21'-8"	20'-7"
16"	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"

		Mi	d-span blocking	with 1x4 inch	strap	Mid-sp	oan blocking an	d 1/2 in. gypsui	m ceiling
Joist depth	Joist series		On cent	re spacing			On cent	re spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
9-1/2"	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
9-1/2	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'
	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"
11-7/8"	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"
	NI-40x	24'-5"	22'-9"	21'-9"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
14"	NI-60	24'-10"	23'-2"	22'-1"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10'
14	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"
	NI-60	27'-3"	25'-5"	24'-3"	22'-11"	28'-0"	26'-2"	24'-9"	23'-1"
16"	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"

- 1. The tabulated clear spans are based on CSA 086-14 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**

			В	are			1/2 in. gyp	sum ceiling	
Joist depth	Joist series		On cent	re spacing			On cent	re spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	14'-11"	14'-1"	13'-7"	-	15'-4"	14'-6"	14'-1"	-
0.4/0"	NI-40x	15'-11"	15'-0"	14'-6"	-	16'-4"	15'-5"	14'-11"	-
9-1/2"	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"	-
	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"	-
11-7/8"	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"	-
	NI-40x	19'-10"	18'-4"	17'-8"	-	20'-6"	19'-1"	18'-3"	-
14"	NI-60	20'-2"	18'-8"	17'-11"	-	20'-10"	19'-4"	18'-6"	-
14	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"	-
	NI-60	22'-0"	20'-4"	19'-6"	-	22'-9"	21'-1"	20'-2"	-
16"	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"	-

	·	Mi	d-span blocking	with 1x4 inch st	trap	Mid-sp	an blocking an	d 1/2 in. gypsum	ceiling
Joist depth	Joist series		On cent	re spacing			On cent	re spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	16'-6"	15'-1"	14'-3"	-	16'-6"	15'-1"	14'-3"	-
0.4/0"	NI-40x	17'-9"	16'-10"	15'-11"	-	18'-2"	16'-11"	15'-11"	-
9-1/2"	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"	-
	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"	-
11-7/8"	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"	-
	NI-40x	23'-5"	21'-8"	20'-9"	-	24'-0"	22'-5"	21'-5"	-
14"	NI-60	23'-9"	22'-0"	21'-0"	-	24'-5"	22'-8"	21'-8"	-
14	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"	-
	NI-60	26'-2"	24'-3"	23'-2"	-	26'-11"	25'-0"	23'-11"	-
16"	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"	-

- 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**

			В	are			1/2 in. gy	sum ceiling	
Joist depth	Joist series		On cent	re spacing			On cent	re spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
0.4/0"	NI-40x	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	15'-1"
9-1/2"	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"
	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
11-7/8"	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"
	NI-40x	21'-4"	19'-9"	18'-10"	17'-11"	22'-0"	20'-5"	19'-6"	18'-6"
14"	NI-60	21'-8"	20'-1"	19'-2"	18'-2"	22'-4"	20'-9"	19'-9"	18'-9"
14	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"
	NI-60	23'-7"	21'-10"	20'-10"	19'-9"	24'-4"	22'-7"	21'-7"	20'-5"
16"	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"

		Mi	d-span blocking	with 1x4 inch	strap	Mid-sp	an blocking an	d 1/2 in. gypsu	ım ceiling
Joist depth	Joist series		On cent	re spacing			On cent	re spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
9-1/2"	NI-40x	18'-7"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
9-1/2	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'
	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"
11-7/8"	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"
	NI-40x	24'-4"	22'-8"	21'-8"	19'-5"	25'-0"	23'-2"	21'-9"	19'-5"
14"	NI-60	24'-9"	23'-0"	22'-0"	20'-9"	25'-5"	23'-8"	22'-4"	20'-10'
14	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"
	NI-60	27'-2"	25'-4"	24'-2"	22'-10"	27'-11"	26'-1"	24'-9"	23'-1"
16"	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"

- 1. The tabulated clear spans are based on CSA 086-14 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

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**

			В	are			1/2 in. gyp	sum ceiling	
Joist depth	Joist series		On cent	re spacing			On cent	re spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	15'-1"	14'-3"	13'-10"	-	15'-7"	14'-9"	14'-3"	-
0.4/0"	NI-40x	16'-2"	15'-3"	14'-8"	-	16'-7"	15'-8"	15'-1"	-
9-1/2"	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"	-
	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"	-
11-7/8"	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"	-
	NI-40x	20'-1"	18'-8"	17'-10"	-	20'-10"	19'-4"	18'-6"	-
14"	NI-60	20'-6"	18'-11"	18'-2"	-	21'-2"	19'-8"	18'-9"	-
14	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"	-
	NI-60	22'-4"	20'-8"	19'-9"	-	23'-1"	21'-5"	20'-6"	-
16"	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"	-

		Mi	d-span blocking	g with 1x4 inch s	trap	Mid-sp	oan blocking an	d 1/2 in. gypsum	ceiling	
Joist depth	Joist series		On cent	re spacing		On centre spacing				
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	16'-8"	15'-3"	14'-5"	-	16'-8"	15'-3"	14'-5"	-	
9-1/2"	NI-40x	17'-11"	17'-0"	16'-1"	-	18'-5"	17'-1"	16'-1"	-	
9-1/2	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"	-	
	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"	-	
11-7/8"	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"	-	
	NI-40x	23'-8"	21'-11"	20'-11"	-	24'-4"	22'-8"	20'-11"	-	
14"	NI-60	24'-0"	22'-3"	21'-3"	-	24'-8"	22'-11"	21'-11"	-	
14	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"	-	
	NI-60	26'-5"	24'-6"	23'-5"	-	27'-2"	25'-3"	24'-2"	-	
16"	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"	_	

- 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

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**

			В	are			1/2 in. gy	osum ceiling		
Joist depth	Joist series		On cent	re spacing		On centre spacing				
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	15'-11"	15'-0"	14'-6"	13'-5"	16'-5"	15'-5"	14'-6"	13'-5"	
0.4/0"	NI-40x	17'-0"	16'-0"	15'-5"	14'-10"	17'-5"	16'-5"	15'-10"	14'-11'	
9-1/2"	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"	
	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"	
11-7/8"	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"	
	NI-40x	21'-5"	19'-11"	18'-11"	18'-0"	22'-1"	20'-7"	19'-7"	18'-7"	
14"	NI-60	21'-10"	20'-2"	19'-3"	18'-3"	22'-6"	20'-10"	19'-11"	18'-10'	
14	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"	

		Mid-span blocking with 1x4 inch strap				Mid-sp	oan blocking an	d 1/2 in. gypsur	n ceiling	
Joist depth	Joist series		On cent	re spacing		On centre spacing				
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"	
9-1/2"	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'	
	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"	
11-7/8"	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"	
	NI-40x	24'-5"	22'-9"	20'-11"	18'-8"	25'-1"	22'-11"	20'-11"	18'-8"	
14"	NI-60	24'-10"	23'-2"	22'-1"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10'	
14	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"	
	NI-60	27'-3"	25'-5"	24'-3"	22'-11"	28'-0"	26'-2"	24'-9"	23'-1"	
16"	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"	

- 1. The tabulated clear spans are based on CSA 086-14 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**

			В	are			1/2 in. gyp	sum ceiling		
Joist depth	Joist series		On cent	re spacing		On centre spacing				
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	14'-11"	14'-1"	13'-7"	-	15'-4"	14'-6"	14'-1"	-	
9-1/2"	NI-40x	15'-11"	15'-0"	14'-6"	-	16'-4"	15'-5"	14'-11"	-	
9-1/2	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"	-	
	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"	-	
11-7/8"	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"	-	
	NI-40x	19'-10"	18'-4"	17'-8"	-	20'-6"	19'-1"	18'-3"	-	
14"	NI-60	20'-2"	18'-8"	17'-11"	-	20'-10"	19'-4"	18'-6"	-	
14	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"	-	
	NI-60	22'-0"	20'-4"	19'-6"	-	22'-9"	21'-1"	20'-2"	-	
16"	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 series	Mid-span blocking with 1x4 inch strap				Mid-span blocking and 1/2 in. gypsum ceiling				
Joist depth			On cent	re spacing		On centre spacing				
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	16'-6"	15'-1"	14'-3"	-	16'-6"	15'-1"	14'-3"	-	
0.4/0"	NI-40x	17'-9"	16'-10"	15'-11"	-	18'-2"	16'-11"	15'-11"	-	
9-1/2"	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"	-	
	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"	-	
11-7/8"	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"	-	
	NI-40x	23'-5"	21'-8"	20'-9"	-	24'-0"	22'-5"	20'-11"	-	
14"	NI-60	23'-9"	22'-0"	21'-0"	-	24'-5"	22'-8"	21'-8"	-	
14	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"	-	
	NI-60	26'-2"	24'-3"	23'-2"	-	26'-11"	25'-0"	23'-11"	-	
16"	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"	_	

- 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

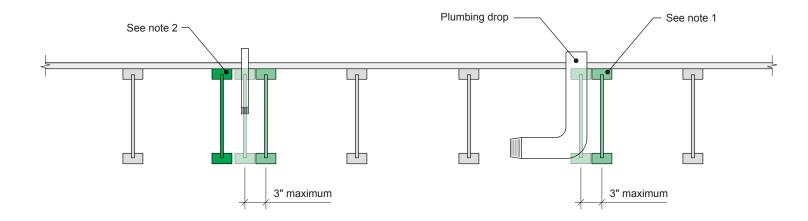
Loads: Live load = 40 psf and dead load = 20 psf
Deflection limits: L/480 under live load and L/240 under total load
Sheathing: 3/4 in. nailed-glued Canadian softwood plywood

#### **Maximum Floor Spans**

			В	are		1/2 in. gypsum ceiling On centre spacing				
Joist depth	Joist series		On cent	re spacing						
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"	
0.4/0"	NI-40x	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	14'-11'	
9-1/2"	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"	
	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'	
11-7/8"	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"	
	NI-40x	21'-4"	19'-9"	18'-10"	17'-11"	22'-0"	20'-5"	19'-6"	18'-6"	
14"	NI-60	21'-8"	20'-1"	19'-2"	18'-2"	22'-4"	20'-9"	19'-9"	18'-9"	
14	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"	

		Mid-span blocking with 1x4 inch strap				Mid-sp	an blocking an	d 1/2 in. gypsur	m ceiling	
Joist depth	Joist series		On cent	re spacing		On centre spacing				
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"	
9-1/2"	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'	
	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"	
11-7/8"	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"	
	NI-40x	24'-4"	22'-8"	20'-11"	18'-8"	25'-0"	22'-11"	20'-11"	18'-8"	
14"	NI-60	24'-9"	23'-0"	22'-0"	20'-9"	25'-5"	23'-8"	22'-4"	20'-10'	
14	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"	
	NI-60	27'-2"	25'-4"	24'-2"	22'-10"	27'-11"	26'-1"	24'-9"	23'-1"	
16"	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"	

- 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.



#### Notes:

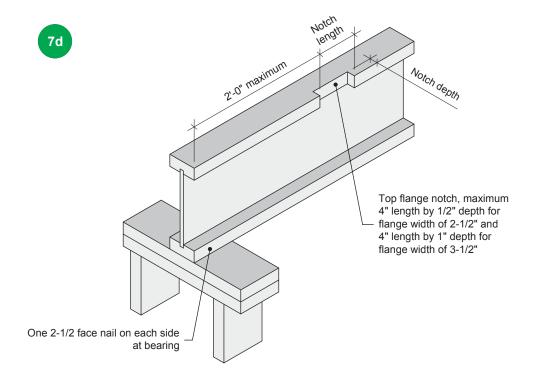
- 1. To prevent interference with plumbing, a joist may be shifted up to 3 inches if the edge of the floor panel is supported and the span rating is not exceeded.
- 2. In all other cases, an additional joist is required.

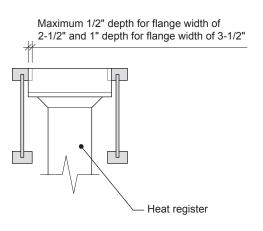
All nails shown in the details are assumed to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.128 inch for 2-1/2-inch nails, or 0.144 inch for 3-inch nails. Individual components not shown to scale for clarity.





Allowance for Piping		7c	
CATEGORY Openings for Vertical Elements	SCALE	DATE 2020-10-01	PAGE 3.10
Openings for vertical Elements	-	2020-10-01	5.10





#### 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.





TITLE		DRAWING		
Notch in I-joist for Heat Register		7d		
CATEGORY	SCALE	DATE	PAGE	
Openings for Vertical Elements	-	2020-10-01	3.11	