

Products								
PlotID	Length	Product	Plies	Net Qty				
J1	16-00-00	11 7/8" NI-40x	1	56				
J1DJ	16-00-00	11 7/8" NI-40x	2	12				
J2	14-00-00	11 7/8" NI-40x	1	6				
J3	8-00-00	11 7/8" NI-40x	1	2				
J4	6-00-00	11 7/8" NI-40x	1	1				
J5	4-00-00	11 7/8" NI-40x	1	3				
B2	16-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2				
B1	8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2				
B5	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1				
B3	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1				
B4	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2				
R1	158-00-00	1 1/8" x 11 7/8" APA Rim Board	1	1				
Bk1	44-00-00	11 7/8" NI-40x	1	1				

Connector Summary									
Qty	Manuf	Product							
5	H1	IUS2.56/11.88							
6	H1	IUS2.56/11.88							
6	H1	IUS2.56/11.88							
2	H2	HUS1.81/10							
1	H13	HU312-2							

1st FLOOR FRAMING



FROM PLAN DATED: 2023/07 **BUILDER:** GREENPARK HOMES

SITE: TRINI GROUP DEVELOPMENT INC

MODEL: ROSE 5 **ELEVATION:** 1

LOT:

CITY: RICHMOND HILL **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:

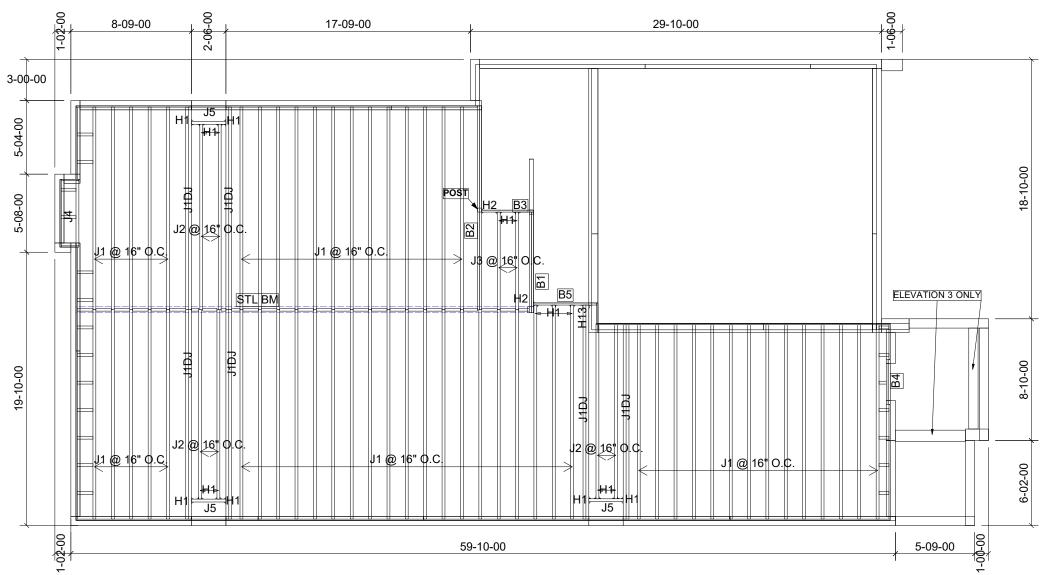
LIVE LOAD: 40.0 b/ft<sup>2</sup>CITY OF RICHMOND HILL DEAD LOAD: 15.0 lb/ft<sup>2</sup> BUILDING DIVISION

TILE LOAD: +5.0 lb/t05/01/2024

JOIST LL DEFLECTION LIMIT: L/480

**RECEIVED** 

SUBFLOOR: 3/4" GLUED AND NAILED abua



Products									
Length	Product	Plies	Net Qty						
16-00-00	11 7/8" NI-40x	1	56						
16-00-00	11 7/8" NI-40x	2	12						
14-00-00	11 7/8" NI-40x	1	6						
8-00-00	11 7/8" NI-40x	1	2						
6-00-00	11 7/8" NI-40x	1	1						
4-00-00	11 7/8" NI-40x	1	3						
16-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2						
8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2						
6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1						
4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1						
4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2						
156-00-00	1 1/8" x 11 7/8" APA Rim Board	1	1						
48-00-00	11 7/8" NI-40x	1	1						
	16-00-00 16-00-00 14-00-00 8-00-00 6-00-00 4-00-00 8-00-00 6-00-00 4-00-00 156-00-00	Length         Product           16-00-00         11 7/8" NI-40x           16-00-00         11 7/8" NI-40x           14-00-00         11 7/8" NI-40x           8-00-00         11 7/8" NI-40x           6-00-00         11 7/8" NI-40x           4-00-00         13/4" x 11 7/8" (2.0E 3100) WestFraser LVL           8-00-00         1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL           6-00-00         1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL           4-00-00         1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL           4-00-00         1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL           156-00-00         1 1/8" x 11 7/8" APA Rim Board	Length         Product         Plies           16-00-00         11 7/8" NI-40x         1           16-00-00         11 7/8" NI-40x         2           14-00-00         11 7/8" NI-40x         1           8-00-00         11 7/8" NI-40x         1           6-00-00         11 7/8" NI-40x         1           4-00-00         11 7/8" NI-40x         1           16-00-00         1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL         2           8-00-00         1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL         2           6-00-00         1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL         1           4-00-00         1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL         1           4-00-00         1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL         2           156-00-00         1 1/8" x 11 7/8" APA Rim Board         1						

Connector Summary							
Qty	Manuf	Product					
5	H1	IUS2.56/11.88					
6	H1	IUS2.56/11.88					
6	H1	IUS2.56/11.88					
2	H2	HUS1.81/10					
1	H13	HU312-2					

1st FLOOR FRAMING



FROM PLAN DATED: 2023/07 BUILDER: GREENPARK HOMES

SITE: TRINI GROUP DEVELOPMENT INC

MODEL: ROSE 5 ELEVATION: 2,3

LOT:

CITY: RICHMOND HILL 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.

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

FOR HOLES INCLUDING DUCT CHASE AND FIELD

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:

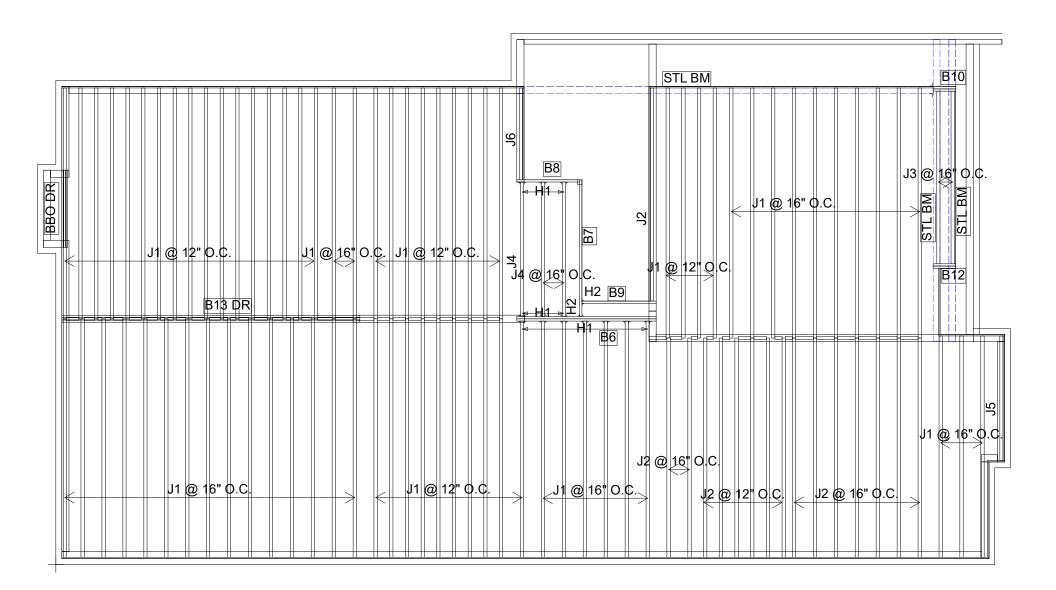
LIVE LOAD: 40.0 lb/ft<sup>2</sup>CITY OF RICHMOND HILL DEAD LOAD: 15.0 lb/ft<sup>2</sup> BUILDING DIVISION

TILE LOAD: +5.0 lb/t05/01/2024

JOIST LL DEFLECTION LIMIT: L/480

RECEIVED

SUBFLOOR: 3/4" GLUED AND NAILED abua



Products							
PlotID	Length	Product	Plies	Net Qty			
J1	16-00-00	11 7/8" NI-40x	1	76			
J2	14-00-00	11 7/8" NI-40x	1	16			
J3	12-00-00	11 7/8" NI-40x	1	2			
J4	10-00-00	11 7/8" NI-40x	1	3			
J5	8-00-00	11 7/8" NI-40x	1	1			
J6	6-00-00	11 7/8" NI-40x	1	1			
B7	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1			
B6	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2			
B8	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1			
B9	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1			
B10	2-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2			
B12	2-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2			
B13 DR	20-00-00	1 3/4" x 16" (2.0E 3100) WestFraser LVL	3	3			
R1	192-00-00	1 1/8" x 11 7/8" APA Rim Board	1	1			
Bk1	34-00-00	11 7/8" NI-40x	1	1			

Connector Summary									
Qty	Manuf	Product							
3	H1	IUS2.56/11.88							
10	H1	IUS2.56/11.88							
1	H2	HUS1.81/10							
1	H2	HUS1.81/10							

2nd FLOOR FRAMING



FROM PLAN DATED: 2023/07 **BUILDER:** GREENPARK HOMES

SITE: TRINI GROUP DEVELOPMENT INC

MODEL: ROSE 5 **ELEVATION:** 1

LOT:

CITY: RICHMOND HILL **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

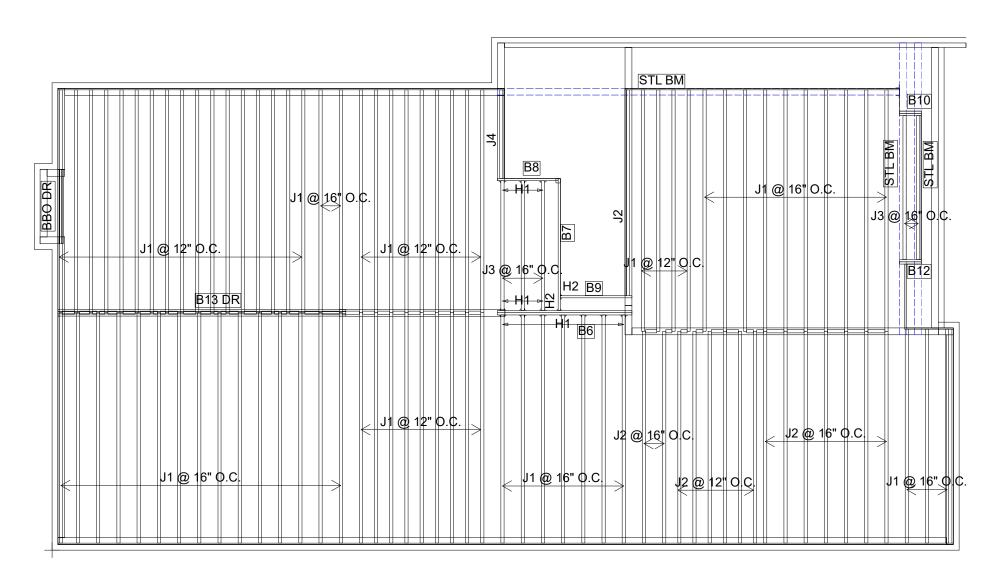
# LOADING:

LIVE LOAD: 40.0 b/ft<sup>2</sup>CITY OF RICHMOND HILL DEAD LOAD: 15.0 lb/ft<sup>2</sup> BUILDING DIVISION

TILE LOAD: +5.0 lb/t05/01/2024

JOIST LL DEFLECTION LIMIT: L/480

**RECEIVED** SUBFLOOR: 5/8" GLUED AND MAILED abua



Products								
PlotID	Length	Product	Plies	Net Qty				
J1	16-00-00	11 7/8" NI-40x	1	76				
J2	14-00-00	11 7/8" NI-40x	1	16				
J3	10-00-00	11 7/8" NI-40x	1	5				
J4	6-00-00	11 7/8" NI-40x	1	1				
B7	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1				
B6	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2				
B8	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1				
B9	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1				
B10	2-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2				
B12	2-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2				
B13 DR	20-00-00	1 3/4" x 16" (2.0E 3100) WestFraser LVL	3	3				
R1	188-00-00	1 1/8" x 11 7/8" APA Rim Board	1	1				
Bk1	32-00-00	11 7/8" NI-40x	1	1				

Connector Summary										
Qty	Manuf	Product								
3	H1	IUS2.56/11.88								
10	H1	IUS2.56/11.88								
1	H2	HUS1.81/10								
1	H2	HUS1.81/10								

2nd FLOOR FRAMING



FROM PLAN DATED: 2023/07 **BUILDER:** GREENPARK HOMES

SITE: TRINI GROUP DEVELOPMENT INC

MODEL: ROSE 5 **ELEVATION: 2** 

LOT:

CITY: RICHMOND HILL **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

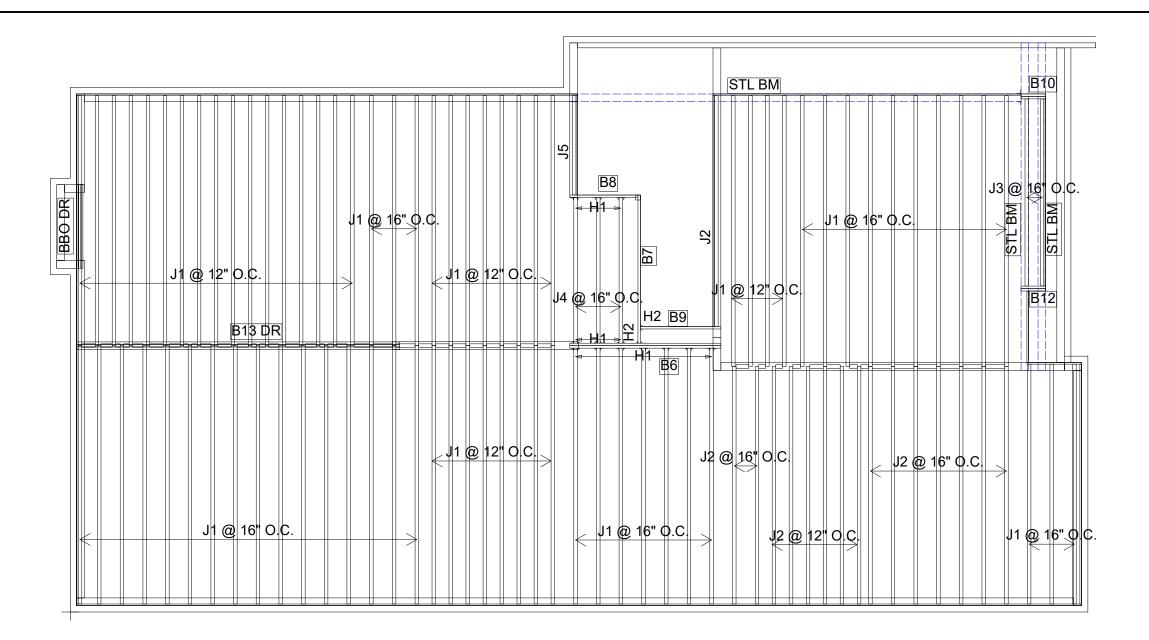
# LOADING:

LIVE LOAD: 40.0 b/ft<sup>2</sup>CITY OF RICHMOND HILL DEAD LOAD: 15.0 lb/ft<sup>2</sup> BUILDING DIVISION

TILE LOAD: +5.0 lb/ft05/01/2024

JOIST LL DEFLECTION LIMIT: L/480

**RECEIVED** SUBFLOOR: 5/8" GLUEDFAND ON AILE Dabua



Products								
PlotID	Length	Product	Plies	Net Qty				
J1	16-00-00	11 7/8" NI-40x	1	76				
J2	14-00-00	11 7/8" NI-40x	1	16				
J3	12-00-00	11 7/8" NI-40x	1	2				
J4	10-00-00	11 7/8" NI-40x	1	3				
J5	6-00-00	11 7/8" NI-40x	1	1				
B7	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1				
B6	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2				
B8	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1				
B9	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1				
B10	2-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2				
B12	2-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2				
B13 DR	20-00-00	1 3/4" x 16" (2.0E 3100) WestFraser LVL	3	3				
R1	190-00-00	1 1/8" x 11 7/8" APA Rim Board	1	1				
Bk1	32-00-00	11 7/8" NI-40x	1	1				

Connector Summary									
Qty	Manuf	Product							
3	H1	IUS2.56/11.88							
10	H1	IUS2.56/11.88							
1	H2	HUS1.81/10							
1	H2	HUS1.81/10							

2nd FLOOR FRAMING



FROM PLAN DATED: 2023/07 BUILDER: GREENPARK HOMES

SITE: TRINI GROUP DEVELOPMENT INC

MODEL: ROSE 5
ELEVATION: 3

LOT:

CITY: RICHMOND HILL 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 b/ft<sup>2</sup>CITY OF RICHMOND HILL DEAD LOAD: 15.0 lb/ft<sup>2</sup> BUILDING DIVISION

TILE LOAD: +5.0 lb/t05/01/2024

JOIST LL DEFLECTION LIMIT: L/480

RECEIVED
SUBFLOOR: 5/8" GLUED AND NAILED abua

# NORDIC

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

**Engineered Wood Products** 

**BASIC** INSTALLATION **GUIDE FOR RESIDENTIAL FLOORS** 

NORDIC **"**JOIST

NORDIC

WEB STIFFENERS

NAIL SPACING

nordic.ca

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

1g

#### INSTALLING NORDIC I-JOISTS

- Except for cutting to length, I-joist flanges should never be cut, drilled or notched
- Concentrated loads should only be applied to the top surface of the top flance. 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 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

- 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.
- 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).

1b

- 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.

# NORDIC I-JOIST SERIES RESIDENTIAL SERIES

2×3 S-P-F No. 2

NI-60 2x3 1950f MSR 3/8 in. web 2×3 2100f MSR 33 pieces per unit 33 pieces per unit

1d

1k



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

SAFETY AND CONSTRUCTION PRECAUTIONS

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

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 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.

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

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

ring wall is planned at that location, blocking will be required at the interior

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



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

Do not walk on I-jois until fully fastened an

Never stack building

braced, or serious

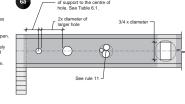
# 2x4 2400f MSR 7/16 in. web

## WEB HOLES AND OPENINGS

#### WEB HOLES IN I-JOISTS

- Rules for Cutting Holes in I-Joists

- materials over unsheathed I-joists Once sheathed, do no overstress I-joist with

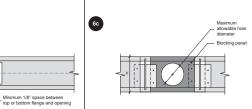


#### DUCT CHASE OPENINGS

- ules for Cutting Duct Chase Openings in I-joists he distance between the inside edge of the support and the uct chase opening shall be in compliance with the requireme
- I-joist top and bottom flanges must never be cut, notched or otherwise ma
- 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. The top and bottom flanges of an I-joist blocking panel must never be cut

HOLES IN BLOCKING PANELS

n Allowable Hole Size in Lateral-restraint-only Blocking Panel



I-joist or rim board blocking depth (in.)	Maximum allowable hole diameter (in.) (a)
9-1/2	6-1/4
11-7/8	7-3/4
14	9-1/4
16	10-1/2
Maniana allamakia kala diamata ia	Continue and the second continue and the second

# TABLE 6.1 - LOCATION OF WEB HOLES

Minimum o	Minimum distance from inside face of any support to centre of hole (ft-in.)															
Joist	Joist Round hole diameter (in.)															
depth	series						6-1/4			8-5/8		10	10-3/4			12-3/4
	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	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"	-	-	-	-	-	-	-	-	-
	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"	-		-	-	-	-
	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"	-	-	-
14"	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"	-	-	-
144	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"	-	-	-
	NI-90	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-60	0'-7"	0'-8"	0'-8"	1'-6"	2'-10"	3'-2"	4'-2"	5'-6"	6'-4"	7'-0"	8'-5"	9'-8"	10'-2"	12'-2"	13'-9"
16"	NI-80	0'-7"	1'-3"	2'-6"	3'-10"	5'-3"	5'-6"	6'-6"	8'-0"	9'-0"	9'-5"	11'-0"	12'-3"	12'-9"	14'-5"	16'-0"
	All OO	01.71	01.01	01.01	41.01	01.01	01.01	41.01	01.51	71.51	01.01	01.401	441.01	441.05	401.01	4 (1) 41

# TABLE 6.2 - LOCATION OF DUCT CHASE OPENINGS

8-5/8

n c	listance fro	m inside	face of any	y support to	centre of	hole (ft-in	.)										Minimum	distance f	from insid	e face of	any suppo	ort to centr	e of oper
	Joist							Round	hole diam	eter (in.)							Joist	Joist				Duct c	hase len
	series						6-1/4			8-5/8		10	10-3/4			12-3/4	depth	series		10			16
	NI-20	0'-7"	1'-6"	2'-10"	4'-3"	5'-8"	6'-0"	-	-		-	-	-	-	-	-		NI-20	4'-1"	4'-5"	4'-10"	-	-
	NI-40x	0'-7"	1'-6"	3'-0"	4'-4"	6'-0"	6'-4"		-		-	-	-	-	-		0.4/01	NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"
	NI-60	1'-3"	2'-6"	4'-0"	5'-4"	7'-0"	7'-5"		-		-	-	-	-	-		9-1/2"	NI-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"
	NI-80	2'-3"	3'-6"	5'-0"	6'-6"	8'-2"	8'-8"		-		-	-	-	-	-			NI-80	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"
П	NI-20	0'-7"	0'-8"	1'-0"	2'-4"	3'-8"	4'-0"	5'-0"	6'-6"	7'-9"	-	-	-	-	-	-		NI-20	5'-9"	6'-2"	6'-6"	-	-
	NI-40x	0'-7"	0'-8"	1'-3"	2'-8"	4'-0"	4'-4"	5'-5"	7'-0"	8'-4"	-	-	-	-	-			NI-40x	6'-8"	7'-2"	7'-6"	8'-1"	8'-6"
	NI-60	0'-7"	1'-8"	3'-0"	4'-3"	5'-9"	6'-0"	7'-3"	8'-10"	10'-0"			-			-	11-7/8"	NI-60	7'-3"	7'-8"	8'-0"	8'-6"	9'-0"

6b

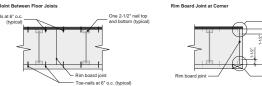
	NI-90	0'-7"	0'-8"	0'-10"	2'-5"	4'-0"	4'-5"	5'-9"	7'-5"	8'-8"	9'-4"	11'-4"	12'-11"				
•	NI-80	0'-10"	2'-0"	3'-4"	4'-9"	6'-2"	6'-5"	7'-6"	9'-0"	10'-0"	10'-8"	12'-4"	13'-9"	-	-	-	
4*	NI-60	0'-7"	0'-8"	1'-8"	3'-0"	4'-3"	4'-8"	5'-8"	7'-2"	8'-0"	8'-8"	10'-4"	11'-9"	-		-	
	NI-40x	0'-7"	0'-8"	0'-8"	1'-0"	2'-4"	2'-9"	3'-9"	5'-2"	6'-0"	6'-6"	8'-3"	10'-2"	-	-	-	
	NI-90	0'-7"	0'-8"	1'-5"	3'-2"	4"-10"	5'-4"	6'-9"	8'-9"	10'-2"	-	-	-	-	-	-	
	NI-80	1'-6"	2'-10"	4'-2"	5'-6"	7'-0"	7'-5"	8'-6"	10'-3"	11'-4"	-	-	-	-	-	-	
1-7/8"	NI-60	0'-7"	1'-8"	3'-0"	4'-3"	5'-9"	6'-0"	7'-3"	8'-10"	10'-0"	-	-	-	-	-	-	
	NI-40x	0'-7"	0'-8"	1'-3"	2'-8"	4'-0"	4'-4"	5'-5"	7'-0"	8'-4"	-	-	-	-	-	-	
	NI-20	0'-7"	0'-8"	1'-0"	2'-4"	3'-8"	4'-0"	5'-0"	6'-6"	7'-9"	-	-	-	-	-	-	
	NI-80	2'-3"	3'-6"	5'-0"	6'-6"	8'-2"	8'-8"	-	-	-	-	-	-	-	-	-	
	NI-60	1-3	2-6	4'-0'	5-4	7-0	7-5	-	-	-	-	-	-	-	-	-	

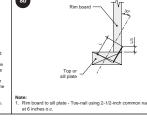
11-3	11-9	13-9	13-4	
				.
d = 15 ps	sf			
under to	ital load			

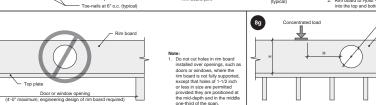
## RIM BOARDS

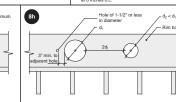
8a



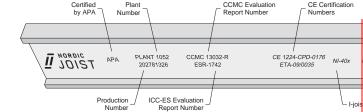








# -JOIST MARKING



Certified by APA

**CITY OF RICHMOND HIL BUILDING DIVISION** 

Per: joshua.nabua

1 5-1/2
1-1/2 7-1/4
1- at

1n

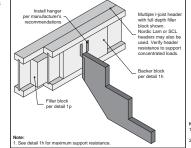
2-1/8 to 2-1/4 x 6 2x6 + 5/8" or 3/4" shi 2-1/8 to 2-1/4 x 8 2x8 + 5/8" or 3/4" shi 2-1/8 to 2-1/4 x 10 2x10 + 5/8" or 3/4" shi

 $\rightarrow$ DC3

2-1/8 to 2-1/4 x 12 2x12 + 5/8" or 3/4" sheathing 2 x 2x10

1s-1 8f

# 1h



FOR ALL construction details



BUILDER: **GREENPARK HOMES** 

SITE: TRINI GROUP DEVELOPMENT...

MODEL: ROSE 5 CITY:

RICHMOND HILL

Job Name: ROSE 5

Level: 1ST FLR FRAMING

Label: B1 - i2526 Type: Beam

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

2 Ply Member

Report Version: 2021.03.26

Status: Design Passed

08/25/2023 10:00

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.3.353.Update13.13

6-08-10 7-03-10

#### **DESIGN INFORMATION**

NBCC 2015, Part9, BCBC 2018, **Building Code:** 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: 6'- 7 1/8"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 4 1/4"
- 615 psi Column @ 7'- 2 7/8"

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

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



Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 11 7/16"	1.25D + 1.5L	1.00	1287 lb ft	35345 lb ft	Passed - 4%
Factored Shear:	1'- 5 1/8"	1.25D + 1.5L	1.00	3125 lb	13815 lb	Passed - 23%

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-04	1.25D + 1.5L	1.00	3295 lb		19110 lb	11300 lb	Passed - 29%
2	1-12	1.4D	0.65	452 lb		4140 lb	2448 lb	Passed - 18%

OF LOII	ILD LOAD	· .						
Туре	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0,	7'- 3 5/8"	Self Weight	Тор	12 lb/ft		8	-
Uniform	0,	7'- 3 5/8"	User Load	Top	60 lb/ft	727	2	2
Uniform	0'- 2 5/8"	0'- 8 1/2"	FC1 Floor Decking (Plan View Fill)	Тор	3 lb/ft	6 lb/ft	8	9
Uniform	0'- 8 1/2"	7"- 3 5/8"	FC1 Floor Decking (Plan View Fill)	Тор	12 lb/ft	24 lb/ft	*	
Point	0'- 7 5/8"	0'- 7 5/8"	B5(i2513)	Front	693 lb	1363 lb	+0	*
UNFAC	TORED RE	EACTIONS	S					
ID	Start Loc	End Loc	Source		Dead (D)	Live (L)	Snow (S)	Wind (W)

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W
1	0,	0'- 5 1/4"	STL BM(i48)	1004 lb	1439 lb	26	¥
2	7'- 1 7/8"	7'- 3 5/8"	PBO1(i52)	294 lb	86 lb	-	-

#### **DESIGN NOTES**

- · The dead loads used in the design of this member were applied to the structure as projected dead loads.
- · Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 1. Required Load Area: L=3.500", W=3.500". LDF=1.00, Pf=2911 lb, Q'r=10617 lb, Result=27.42%.

## 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.

> CITY OF RICHMOND HILL **BUILDING DIVISION**

05/01/2024



BUILDER: **GREENPARK HOMES** 

TRINI GROUP DEVELOPMENT...

MODEL: ROSE 5

CITY: RICHMOND HILL

Job Name: ROSE 5

Level: 1ST FLR FRAMING

Label: B2 - i2500 Type: Beam

2 Ply Member

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

Report Version: 2021.03.26

Status: Design Passed

08/25/2023 10:00

Illustration Not to Scale. Pitch: 0/12

SITE:

Designed by Single Member Design Engine in MiTek® Structure Version

8.6.3.353.Update13.13

6-10-06 7-01-09 15-00-03

#### **DESIGN INFORMATION**

NBCC 2015, Part9, BCBC 2018, **Building Code:** 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: 7'- 3 5/16"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 4 1/4"
- 615 psi Column @ 7'- 5 3/8"
- 615 psi Wall @ 14'- 9 11/16"

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

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

PROFESSIONAL
RROFESSIONAL ENGINEER 8/25/23  C. M. HEYENS
100505065
3 OVINCE OF ONT ARIO

STRUCTURAL COMPONENT ONLY DWG # TF23080659 PG 1/2

ANALYSIS RESULTS						
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	11'- 7/16"	1.25D + 1.5L	0.86	4751 lb ft	30409 lb ft	Passed - 16%
Factored Neg. Moment:	7'- 5 3/8"	1.25D + 1.5L	0.86	3627 lb ft	28680 lb ft	Passed - 13%
Factored Shear:	8'- 7"	1.25D + 1.5L	0.86	3330 lb	11886 lb	Passed - 28%
Live Load (LL) Pos. Defl.:	11'- 2 11/16"	L		0.017"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	11'- 3 7/16"	D + L		0.032"	L/240	Passed - L/999
Total Load (TL) Neg. Defl.:	4'- 8 5/16"	D + L		0.011"	L/240	Passed - L/999

SUF	PORT AND	REACTION INFORM	MATION					
ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-04	1.25D + 1.5L	0.92	5237 lb		17584 lb	10398 lb	Passed - 50%
2	3-08	1.25D + 1.5L	1.00	5520 lb		12740 lb	7534 lb	Passed - 73%
3	3-08	1.25D + 1.5L	0.86	2508 lb		10961 lb	6484 lb	Passed - 39%

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	15'- 3/16"	Self Weight	Тор	12 lb/ft	-	-	-
Uniform	0'- 2 5/8"	7'- 5 3/8"	FC1 Floor Decking (Plan View Fill)	Тор	27 lb/ft	53 lb/ft	¥	-
Uniform	0'- 6 5/16"	8'- 11 1/8"	User Load	Тор	60 lb/ft		20	
Uniform	7'- 5 3/8"	15'- 3/16"	FC1 Floor Decking (Plan View Fill)	Тор	14 lb/ft	29 lb/ft	*	×
Uniform	8'- 11 1/8"	14'- 6 11/16"	7(i573)	Тор	81 lb/ft		*:	-
Uniform	8'- 11 1/8"	9'- 8 7/8"	7(i573)	Тор	1 lb/ft	2 lb/ft	-	2
Uniform	8'- 11 1/8"	9'- 8"	7(i573)	Тор	500 lb/ft	940 lb/ft	T)	
Uniform	9'- 7/8"	14'- 6 11/16"	7(i573)	Тор	82 lb/ft	33 lb/ft	*	*
Uniform	10'- 9 11/16"	14'- 8 11/16"	User Load	Тор	80 lb/ft	160 lb/ft	2	2
Uniform	13'- 10 7/16"	14'- 6 11/16"	7(i573)	Тор	0 lb/ft	0 lb/ft	-	
Point	7'- 4 1/2"	7'- 4 1/2"	B3(i2532)	Front	205 lb	390 lb	*	*
Point	0'- 2 5/8"	0'- 2 5/8"	6(i572)	Тор	1171 lb	2145 lb	2	2
Point	10'- 9 11/16"	10'- 9 11/16"	User Load	Тор	240 lb	480 lb		-
Point	14'- 9 7/16"	14'- 9 7/16"	E6(i378)	Тор	29 lb	15 lb	-	-

JNFA	CTORED RE	ACTIONS					
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/4"	STL BM(i48)	1391 lb	2447/-177 lb	-	9
2	7'- 3 5/8"	7'- 7 1/8"	PBO2(i55)	1898 lb	1942 lb	-	
3	14'- 8 11/16"	15'- 3/16"	W8(i20)	930 lb	925 lb	28	2

#### **DESIGN NOTES**

- · The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Lateral stability factor (KL) was based on user preference to use the width of all plies. (Consult with manufacturer for guideline pertaining to this design option.)
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution brackets. HIL
- This report is based on modeled conditions input by the user. Source information for the load and said 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 it required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

Per: joshua.nabua



BUILDER: SITE: MODEL:

CITY:

**GREENPARK HOMES** TRINI GROUP DEVELOPMENT...

ROSE 5

**RICHMOND HILL** 

Job Name: ROSE 5

Level: **1ST FLR FRAMING** B2 - i2500 Label:

Type: Beam 2 Ply Member

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

Status: Design **Passed** 

· Bearing capacity of member at support 1, 2, 3 was verified for the effect of concentrated load applied near the support. At support 1. Required Load Area: L=1.500", W=3.500". LDF=0.92, Pf=4681 lb, Q'r=5460 lb, Result=85.74%.

#### **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.



**CITY OF RICHMOND HILL BUILDING DIVISION** 

05/01/2024



**GREENPARK HOMES** BUILDER:

SITE: TRINI GROUP DEVELOPMENT...

MODEL: ROSE 5 CITY:

RICHMOND HILL

Job Name: ROSE 5

**1ST FLR FRAMING** Level:

Label: B3 - i2532 Type: Beam

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

1 Ply Member

Report Version: 2021.03.26

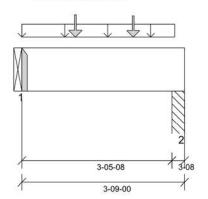
Status:

Design Passed

08/25/2023 10:00

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.3.353.Update13.13



#### **DESIGN INFORMATION**

NBCC 2015, Part9, BCBC 2018, **Building Code:** 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 9/16"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Column @ 3'- 6 1/2"

ANALYSIS RESULTS										
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result				
Factored Pos. Moment:	1'- 7 1/2"	1.25D + 1.5L	1.00	860 lb ft	17672 lb ft	Passed - 5%				
Factored Shear:	2'- 5 5/8"	1.25D + 1.5L	1.00	609 lb	6908 lb	Passed - 9%				

П	SUP	PORT AND	REACTION INFORM	NOITAN					
	ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
I	1	1-08	1.25D + 1.5L	1.00	843 lb		2730 lb	647	Passed - 31%
I	2	3-08	1.25D + 1.5L	1.00	887 lb		6370 lb	3767 lb	Passed - 24%

#### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Na	iling Requirem	nents	Other Information or Requirement for
10	Fait No.	Manufacturer	Тор	Face	Member	Reinforcement Accessories
1	HUS1.81/10		-	2		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.

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	3'- 9"	Self Weight	Тор	6 lb/ft	3.54	7)	-
Uniform	0,	3'- 6 1/4"	User Load	Тор	60 lb/ft	120 lb/ft	57	-
Point	1'- 2 13/16"	1'- 2 13/16"	J3(i2530)	Front	98 lb	196 lb	<b>=</b> 0	-
Point	2'- 6 13/16"	2'- 6 13/16"	J3(i2557)	Front	91 lb	182 lb	2	2
UNFAC	TORED R	EACTIONS						
ID	Start Loc	End Loc	Source		Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0,	B2(i2500)		205 lb	390 lb	=::	-
2	3'- 5 1/2"	3'- 9"	PBO1(i52)		217 lb	411 lb	-	

- · The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

CITY OF RICHMOND HILL **BUILDING DIVISION** 

05/01/2024





BUILDER: SITE:

CITY:

Illustration Not to Scale. Pitch: 0/12

**GREENPARK HOMES** TRINI GROUP DEVELOPMENT...

MODEL: ROSE 5

RICHMOND HILL

Job Name: ROSE 5

Level: 1ST FLR FRAMING

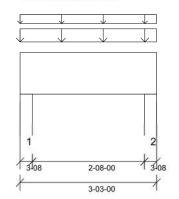
Label: B4 - i2584 Type: Beam

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

Status: Design

Passed Report Version: 2021.03.26 08/25/2023 10:00

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.3.353.Update13.13



#### **DESIGN INFORMATION**

NBCC 2015, Part9, BCBC 2018, **Building Code:** 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: 3'- 3"

#### Factored Resistance of Support Material:

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

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

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



ANALYSIS RESULTS						
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 7 1/2"	1.25D + 1.5L	0.74	332 lb ft	26243 lb ft	Passed - 1%
Factored Shear:	1'- 11 5/8"	1.25D + 1.5L	0.74	116 lb	10258 lb	Passed - 1%

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.25D + 1.5L	0.74	549 lb		9459 lb	5595 lb	Passed - 10%
2	3-08	1.25D + 1.5L	0.74	549 lb		9459 lb	5595 lb	Passed - 10%
SPE	CIFIED I O	Ans						

SPECIF	IED LOAL							
Туре	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0,	3'- 3"	Self Weight	Тор	12 lb/ft	•	-	-
Uniform	-0"	3'- 3"	E11(i385)	Тор	172 lb/ft	32 lb/ft	2	2
Uniform	-0*	3'- 3"	FC1 Floor Decking (Plan View Fill)	Тор	14 lb/ft	28 lb/ft	8	-

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	W22(i43)	321 lb	98 lb	20	8
2	2'- 11 1/2"	3'- 3"	W20(i40)	321 lb	98 lb	**	

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

#### PLY TO PLY CONNECTION

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

> CITY OF RICHMOND HILL **BUILDING DIVISION**

> > 05/01/2024



BUILDER:

**GREENPARK HOMES** 

SITE:

CITY:

TRINI GROUP DEVELOPMENT...

MODEL: ROSE 5

RICHMOND HILL

Job Name: ROSE 5

Level: 1ST FLR FRAMING

Label: B5 - i2513 Type: Beam 1 Ply Member 1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL

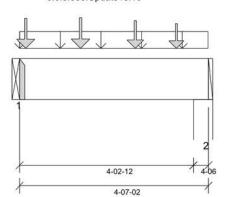
Report Version: 2021.03.26

Status: Design Passed

08/25/2023 10:00

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.3.353.Update13.13



#### DESIGN INFORMATION

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

Amendment) logy: LSD

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

#### Lateral Restraint Requirements:

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

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

## Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Wall @ 4'- 3 3/4"

ANALYSIS RESULTS										
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result				
Factored Pos. Moment:	2'- 2 1/16"	1.25D + 1.5L	1.00	2668 lb ft	17672 lb ft	Passed - 15%				
Factored Shear:	0'- 11 7/8"	1.25D + 1.5L	1.00	2369 lb	6908 lb	Passed - 34%				
Total Load (TL) Pos. Defl.:	2'- 1 15/16"	D + L		0.014"	L/240	Passed - L/999				

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-09	1.25D + 1.5L	1.00	2881 lb		2881 lb		Passed - 100%
2	4-06	1.25D + 1.5L	1.00	2690 lb		7963 lb	4710 lb	Passed - 57%

CONIN	ECTOB	INFORM/	TION
CONN	ECIUR	INFORWA	ALION

ın	Part No.	Dark Na Manufacture		iling Requirem	nents	Other Information or Requirement for
טו	Part No.	Manufacturer	Тор	Face	Member	Reinforcement Accessories
1	HUS1.81/10		140		21	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.

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 7 1/8"	Self Weight	Тор	6 lb/ft		-	-
Uniform	0,	4'- 7"	User Load	Тор	120 lb/ft	240 lb/ft	-	2
Point	0'- 1 13/16"	0'- 1 13/16"	J1(i2561)	Front	204 lb	409 lb	*	-
Point	1'- 5 13/16"	1'- 5 13/16"	J1(i2573)	Front	209 lb	419 lb	20	2
Point	2'- 9 13/16"	2'- 9 13/16"	J1(i2507)	Front	183 lb	366 lb		8
Point	3'- 9 3/4"	3'- 9 3/4"	J1DJ(i2554)	Front	156 lb	312 lb	5	-
UNFAC	TORED R	EACTIONS						
ID	Start Loc	End Loc	Source		Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0"	0'	B1(i2526)		693 lb	1363 lb	20	2
2	4'- 2 3/4"	4'- 7 1/8"	W26(i47)		636 lb	1243 lb		2

#### **DESIGN NOTES**

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the
  default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already
  specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if
  required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing length at support 2 was calculated based on the actual bearing area divided by the supported member width and may not match expected value when bearing is not rectangular or when the supported member is not supported by its full HILL width.

**BUILDING DIVISION** 

05/01/2024

RECEIVED
Per: joshua.nabua



DWG # TF23080662



BUILDER: SITE: MODEL:

CITY:

**GREENPARK HOMES** 

TRINI GROUP DEVELOPMENT...

**RICHMOND HILL** 

ROSE 5

Level: 2ND FLR FRAMING Label: B13 DR - i2313

Type: Beam

Job Name: ROSE 5

3 Ply Member 1 3/4" x 16" (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 08/25/2023 10:00 8.6.3.353.Update13.13 5-08 18-01-04 18-11-15

#### **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: 1'- 2 3/4" Bottom: 18'- 6 7/16"

#### Factored Resistance of Support Material:

- 812 psi Wall @ 0'- 4 1/2"
- 812 psi Wall @ 18'- 7 3/4"

## PLY TO PLY CONNECTION: 5 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 12" 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 # TF23080663 PG 1/2

ANALYSIS RESULTS						
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	9'- 4"	1.25D + 1.5L	1.00	56827 lb ft	93360 lb ft	Passed - 61%
Factored Shear:	17'- 2 3/4"	1.25D + 1.5L	1.00	11381 lb	27922 lb	Passed - 41%
Live Load (LL) Pos. Defl.:	9'- 6 1/8"	L		0.425"	L/360	Passed - L/510
Total Load (TL) Pos. Defl.:	9'- 6 1/8"	D + L		0.698"	L/240	Passed - L/311
Permanent Deflection:	9'- 6 1/8"			5 <del>.</del> .2	L/360	Passed - L/820

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	12084 lb		30020 lb	23438 lb	Passed - 52%				
2	5-03	1.25D + 1.5L	1.00	13355 lb		28389 lb	22166 lb	Passed - 60%				

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0*	18'- 11 15/16"	Self Weight	Тор	24 lb/ft	180	e	×
Uniform	0'- 5 1/2"	1'- 1 1/8"	Bk1(i2336)	Тор	60 lb/ft		#1	-
Uniform	1'- 5 1/4"	2'- 1 1/8"	Bk1(i2315)	Тор	60 lb/ft	-	€:	2
Uniform	2'	15'- 8 3/8"	Smoothed Load	Top	330 lb/ft	616 lb/ft	50	5
Uniform	2'- 3 5/8"	2'- 6 3/4"	Bk1(i2322)	Тор	60 lb/ft	9.43	-	*
Uniform	2'- 9 1/4"	3'- 1 1/8"	Bk1(i2314)	Тор	60 lb/ft	100	€:	2
Uniform	3'- 3 5/8"	3'- 10 3/4"	Bk1(i2330)	Тор	60 lb/ft	-	5	
Uniform	4'- 3 5/8"	5'- 1 1/8"	Bk1(i2324)	Тор	60 lb/ft	0.00	*:	-
Uniform	5'- 5 1/4"	6'- 1 1/8"	Bk1(i2331)	Top	60 lb/ft		-	2
Uniform	6'- 3 5/8"	6'- 6 3/4"	Bk1(i2335)	Тор	60 lb/ft		5	
Uniform	6'- 9 1/4"	7'- 1 1/8"	Bk1(i2334)	Тор	60 lb/ft	-	¥8	*
Uniform	7'- 3 5/8"	7'- 10 3/4"	Bk1(i2328)	Тор	60 lb/ft		2	2
Uniform	8'- 3 5/8"	9'- 1 1/8"	Bk1(i2321)	Тор	60 lb/ft	250	-	
Uniform	9'- 5 1/4"	10'- 1 1/8"	Bk1(i2319)	Тор	60 lb/ft	141	20	22
Uniform	10'- 3 5/8"	10'- 6 3/4"	Bk1(i2325)	Тор	60 lb/ft		2	9
Uniform	10'- 9 1/4"	11'- 1 1/8"	Bk1(i2323)	Тор	60 lb/ft	-	-	*
Uniform	11'- 3 5/8"	11'- 10 3/4"	Bk1(i2318)	Тор	60 lb/ft	-	20	-
Uniform	12'- 3 5/8"	13'- 1 1/8"	Bk1(i2316)	Тор	60 lb/ft	-	2	2
Uniform	13'- 5 1/4"	14'- 1 1/8"	Bk1(i2320)	Тор	60 lb/ft	-	-	-
Uniform	14'- 3 5/8"	14'- 6 3/4"	Bk1(i2317)	Тор	60 lb/ft	4	₩.	2
Uniform	14'- 9 1/4"	15'- 1 1/8"	Bk1(i2333)	Тор	60 lb/ft	14	2	-
Uniform	15'- 3 5/8"	15'- 10 3/4"	Bk1(i2332)	Тор	60 lb/ft		-	-
Uniform	16'- 3 5/8"	17'- 2 3/4"	Bk1(i2326)	Тор	60 lb/ft	540	25	2
Uniform	17'- 5 1/4"	18'- 6 3/4"	Bk1(i2327)	Тор	60 lb/ft			4
Tapered	15'- 8 3/8"	18'- 11 15/16"	Smoothed Load	Тор	201 To 189 lb/ft	380 To 368 lb/ft	-	=
Point	0'	0'	R1(i1574)	Тор	46 lb	2 lb	¥8	2
Point	0'- 2 3/8"	0'- 2 3/8"	J1(i1628)	Тор	4 lb	6 lb	2	2
Point	0'- 2 3/8"	0'- 2 3/8"	J1(i1545)	Тор	3 lb	5 lb		
Point	1'- 2 3/8"	1'- 2 3/8"	J1(i1716)	Тор	156 lb	291 lb	2	-
Point	1'- 4"	1'- 4"	J1(i1626)	Тор	196 lb	371 lb		_
Point	16'- 2 3/8"	16'- 2 3/8"	J1(i2102)	Тор	168 lb	311 lb	-	
Point	17'- 4"	17'- 4"	J1(i1579)	Тор	186 lb	359 lb	V OF DICUI	MOND HIL
Point	18'- 10 5/8"	18'- 10 5/8"	Bk1(i2329)	Тор	14 lb			

**UNFACTORED REACTIONS** ID End Loc Source Dead (D) Live (L) 5285 lb 3465 lb 0'- 5 1/2" E1(i375) 18'- 6 3/4" 18'- 11 15/16" 6(i572) 3662 lb 5735 lb

#### **DESIGN NOTES**

 The dead loads used in the design of this member were applied to the structure as projected dead loads. Per: joshua.nabua



BUILDER: GREENPARK HOMES
SITE: TRINI GROUP DEVELO

MODEL:

CITY:

TRINI GROUP DEVELOPMENT...

ROSE 5

RICHMOND HILL

Job Name: ROSE 5

Level: 2ND FLR FRAMING Label: B13 DR - i2313

Type: Beam

3 Ply Member 1 3/4" x 16" (2.0E 3100) WestFraser LVL Status: Design Passed

#### **DESIGN NOTES**

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

#### PLY TO PLY CONNECTION

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



CITY OF RICHMOND HILL BUILDING DIVISION

05/01/2024



BUILDER: SITE:

MODEL:

CITY:

**GREENPARK HOMES** TRINI GROUP DEVELOPMENT...

ROSE 5

RICHMOND HILL

Job Name: ROSE 5

2ND FLR FRAMING Level:

Label: B6 - i2379 Type: Beam

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

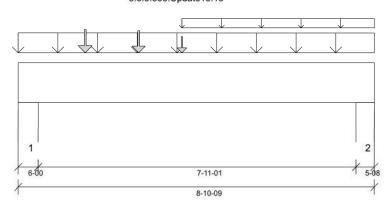
WestFraser LVL

Status: Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.3.353.Update13.13

Report Version: 2021.03.26 08/25/2023 10:00



#### **DESIGN INFORMATION**

NBCC 2015, Part9, BCBC 2018, **Building Code:** 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"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 5"
- 615 psi Wall @ 8'- 6 1/16"

## PLY TO PLY CONNECTION: 4 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 8" O/C

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



DWG # TF23080664

Location	Load Combination	LDF	Design	Limit	Result
4'- 4 1/16"	1.25D + 1.5L	1.00	7270 lb ft	35345 lb ft	Passed - 21%
7'- 5 3/16"	1.25D + 1.5L	1.00	3492 lb	13815 lb	Passed - 25%
4'- 5"	L		0.041"	L/360	Passed - L/999
4'- 5"	D+L		0.063"	L/240	Passed - L/999
	4'- 4 1/16" 7'- 5 3/16" 4'- 5"	4'- 4 1/16" 1.25D + 1.5L 7'- 5 3/16" 1.25D + 1.5L 4'- 5" L	4'- 4 1/16" 1.25D + 1.5L 1.00 7'- 5 3/16" 1.25D + 1.5L 1.00 4'- 5" L	4'- 4 1/16" 1.25D + 1.5L 1.00 7270 lb ft 7'- 5 3/16" 1.25D + 1.5L 1.00 3492 lb 4'- 5" L 0.041"	4'- 4 1/16" 1.25D + 1.5L 1.00 7270 lb ft 35345 lb ft 7'- 5 3/16" 1.25D + 1.5L 1.00 3492 lb 13815 lb 4'- 5" L 0.041" L/360

ı	SUP	PORT AND	REACTION INFORM	NOITAN					
	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	6-00	1.25D + 1.5L	1.00	4655 lb		21743 lb	12862 lb	Passed - 36%
l	2	5-08	1.25D + 1.5L	1.00	3663 lb		20020 lb	11842 lb	Passed - 31%
ı	-		and the same of th						

SPECIF	FIED LOAD	os						
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 10 9/16"	Self Weight	Тор	12 lb/ft	140		
Uniform	4'- 1"	8'- 10 9/16"	FC2 Floor Decking (Plan View Fill)	Тор	24 lb/ft	49 lb/ft	*:	
Tapered	0,	8'- 10 9/16"	Smoothed Load	Top	173 To 170 lb/ft	345 To 340 lb/ft	55	*
Point	1'- 8 1/16"	1'- 8 1/16"	J4(i1458)	Back	118 lb	236 lb	20	~
Point	3'- 1/16"	3'- 1/16"	J4(i1652)	Back	109 lb	218 lb	-	<u>~</u>
Point	4'- 1"	4'- 1"	B7(i2388)	Back	89 lb	105 lb	-	

UNFACTORED REACTIONS											
ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)				
1	0,	0'- 6"	6(i572)	1147 lb	2145 lb	+1	+				
2	8'- 5 1/16"	8'- 10 9/16"	4(i568)	912 lb	1684 lb	- 2	9				

#### **DESIGN NOTES**

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

#### PLY TO PLY CONNECTION

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

CITY OF RICHMOND HILL **BUILDING DIVISION** 

05/01/2024



**GREENPARK HOMES** BUILDER:

SITE: TRINI GROUP DEVELOPMENT... MODEL:

ROSE 5

RICHMOND HILL

Job Name: ROSE 5

2ND FLR FRAMING Level:

Label: B7 - i2388 Type: Beam

1 Ply Member 1 3/4" x 11 7/8" (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 08/25/2023 10:00 8.6.3.353.Update13.13 8-05-00 8-08-08

#### **DESIGN INFORMATION**

CITY:

NBCC 2015, Part9, BCBC 2018, **Building Code:** 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: 7'- 7"

## Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Column @ 8'- 6"

ANALYSIS RESULTS						
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 2 3/8"	1.25D + 1.5L	1.00	520 lb ft	17672 lb ft	Passed - 3%
Factored Shear:	0'- 11 7/8"	1.25D + 1.5L	1.00	209 lb	6908 lb	Passed - 3%
Total Load (TL) Pos. Defl.:	4'- 2 13/16"	D + L	ACCES AND	0.010"	L/240	Passed - L/999

SUF	PORTAND	REACTION INFORM	MATION					
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	269 lb		2730 lb	-	Passed - 10%
2	3-08	1.25D + 1.5L	1.00	254 lb		6370 lb	3767 lb	Passed - 7%

#### CONNECTOR INFORMATIO

ID	Dest No.	Part No. Manufacturer Nailing Requirements  Top Face Member		iling Requirem	nents	Other Information or Requirement for
טו	Part No.			Member	Reinforcement Accessories	
1	HUS1.81/10		-	22	21	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.

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 8 1/2"	Self Weight	Тор	6 lb/ft		-	3
Uniform	0'	0'- 11 3/4"	FC2 Floor Decking (Plan View Fill)	Тор	11 lb/ft	22 lb/ft	÷	
Uniform	0'- 11 3/4"	8'- 8 1/2"	FC2 Floor Decking (Plan View Fill)	Тор	11 lb/ft	23 lb/ft	2	
Point	0'- 10 7/8"	0'- 10 7/8"	B9(i2350)	Front	16 lb	6 lb	-	
UNFAC	TORED RE	EACTIONS	3					
ID	Start Loc	End Loc	Source		Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B6(i2379)		89 lb	105 lb	•	-
2	8'- 5"	8'- 8 1/2"	PBO4(i578)		79 lb	103 lb	2	2

# **DESIGN NOTES**

- · The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

CITY OF RICHMOND HILL **BUILDING DIVISION** 

05/01/2024





**GREENPARK HOMES** BUILDER:

SITE: TRINI GROUP DEVELOPMENT...

MODEL: ROSE 5 CITY:

RICHMOND HILL

Job Name: ROSE 5

2ND FLR FRAMING Level:

Label: B8 - i2413 Type: Beam

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

WestFraser LVL

Report Version: 2021.03.26

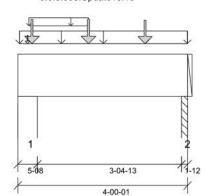
Status:

Design Passed

08/25/2023 10:00

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.3.353.Update13.13



#### **DESIGN INFORMATION**

NBCC 2015, Part9, BCBC 2018, **Building Code:** 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"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Column @ 3'- 11 5/16"

ANAL	roio Resul	15							
D	esign Criteria	Loc	ation	Load	Combinatio	n LDF	Design	Limit	Result
Factored	Pos. Moment:	1'- 11	11/16"	1.2	25D + 1.5L	1.00	947 lb ft	17672 lb ft	Passed - 5%
Factored	Shear:	2'- 10	7/16"	1.2	25D + 1.5L	1.00	702 lb	6908 lb	Passed - 10%
SUPP	ORT AND RE	ACTION	NFORM	NOITA					
	Input Bearing Length	Controlling Combina		LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member		Result
1	5-08	1.25D + 1	1.5L	1.00	1519 lb		10010 lb	5921 lb	Passed - 26%
2	1-12	1.25D + 1	1.5L	1.00	1000 lb		3185 lb	1883 lb	Passed - 53%
SPECI	FIED LOADS	5							
Туре	Start Loc	End Loc	Source	9	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0,	4'- 1/16"	Self We	ight	Тор	6 lb/ft		8	-
Uniform	0'- 7/16"	4'- 1/16"	User Lo		Тор	60 lb/ft	120 lb/ft	2	2
Uniform	0'- 3 1/8"	1'- 8"	FC2 Floor D (Plan View		Тор	2 lb/ft	3 lb/ft		œ
Point	0'- 4"	0'- 4"	J4(i239	7)	Front	116 lb	232 lb	2	2
Point	1'- 8"	1'- 8"	J4(i145	(8)	Front	117 lb	234 lb	₹:	•
Point	3'	3'	J4(i165	(2)	Front	110 lb	220 lb	*	-
Point	0'- 2 3/4"	0'- 2 3/4"	User Lo	ad	Тор	9 lb	1520	25	@
UNFA	CTORED REA	ACTIONS	a a						
ID	Start Loc	End Loc	S	ource		Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	7	(i573)		370 lb	695 lb	5	-
2	3'- 10 5/16"	4'- 1/16"	PBG	04(i578)		246 lb	471 lb	-8	*
DESIG	N NOTES								

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.



STRUCTURAL COMPONENT ONLY DWG # TF23080666

CITY OF RICHMOND HILL **BUILDING DIVISION** 

05/01/2024



BUILDER: **GREENPARK HOMES** 

SITE: TRINI GROUP DEVELOPMENT...

MODEL: ROSE 5 CITY:

RICHMOND HILL

Job Name: ROSE 5

2ND FLR FRAMING Level:

Label: B9 - i2350 Type: Beam

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

Report Version: 2021.03.26

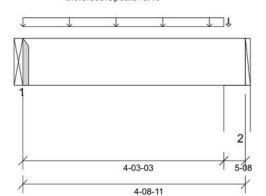
Status:

Design Passed

08/25/2023 10:00

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.3.353.Update13.13



#### **DESIGN INFORMATION**

NBCC 2015, Part9, BCBC 2018, **Building Code:** 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: 4'- 3 3/16"

## Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Wall @ 4'- 4 3/16"

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 2"	1.25D + 1.5L	0.79	32 lb ft	13991 lb ft	Passed - 0%
Factored Shear:	0'- 11 7/8"	1.25D + 1.5L	0.79	16 lb	5469 lb	Passed - 0%

Ц	SUP	PORT AND	REACTION INFORM	NOITAN					
	ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
Ш	1	1-08	1.25D + 1.5L	0.79	30 lb		2161 lb	(4)	Passed - 1%
Ш	2	5-08	1.25D + 1.5L	0.79	33 lb		7925 lb	4688 lb	Passed - 1%

#### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Na	iling Requirem	ents	Other Information or Requirement for
10	Fait No.	Manuacturer	Тор	Face	Member	Reinforcement Accessories
1	HUS1.81/10		-	2	-	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.

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 8 11/16"	Self Weight	Тор	6 lb/ft	155	7)	
Uniform	0,	4'- 3 3/16"	FC2 Floor Decking (Plan View Fill)	Тор	2 lb/ft	3 lb/ft	41	្
Point	4'- 4 3/8"	4"- 4 3/8"	FC2 Floor Decking (Plan View Fill)	Тор	0 lb	1 lb	70	
UNFAC	TORED R	EACTIONS	;					
ID	Start Loc	End Loc	Source		Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B7(i2388)		16 lb	6 lb	=	-
2	4'- 3 3/16"	4'- 8 11/16"	3(i567)		19 lb	7 lb	21	2

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (KL) = 1.00
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

CITY OF RICHMOND HILL **BUILDING DIVISION** 

05/01/2024

RECEIVED Per: joshua.nabua



DWG # TF23080667



BUILDER: SITE:

MODEL:

CITY:

GREENPARK HOMES

TRINI GROUP DEVELOPMENT...

**ROSE 5** 

RICHMOND HILL

Job Name: ROSE 5

Level: 2ND FLR FRAMING

Label: **B10 - i2349** Type: **Beam** 

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

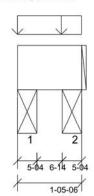
Report Version: 2021.03.26

Status: Design Passed

08/25/2023 10:00

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.3.353.Update13.13



#### DESIGN INFORMATION

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

Amendment)

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

#### Lateral Restraint Requirements:

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

Top: 0' Bottom: 0'- 6 7/8"

#### Factored Resistance of Support Material:

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

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

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



ANALYSIS RESULTS						
Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	0'- 8 11/16"	1.25D + 1.5S	0.98	3 lb ft	34661 lb ft	Passed - 0%
Factored Shear:	1'- 5 1/8"	1.25D + 1.5S	0.98	243 lb	13548 lb	Passed - 2%

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	0.98	384 lb		18740 lb	11082 lb	Passed - 3%
2	5-04	1.25D + 1.5S	0.98	381 lb		18740 lb	11082 lb	Passed - 3%

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W
Self Weight	0,	1'- 5 3/8"	Self Weight	Тор	12 lb/ft		-	-
Uniform	-0"	1'- 5 5/16"	E19(i804)	Тор	190 lb/ft	(2)	185 lb/ft	2

-			republication (laborated laborated laborated					
	ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
Г	1	0,	0'- 5 1/4"	STL BM(i580)	146 lb	0.00	134 lb	-
1	2	1'- 1/8"	1'- 5 3/8"	STL BM(i581)	145 lb		133 lb	-

#### **DESIGN NOTES**

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

#### PLY TO PLY CONNECTION

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

CITY OF RICHMOND HILL BUILDING DIVISION

05/01/2024

BUILDER: SITE:

**GREENPARK HOMES** 

MODEL:

CITY:

ROSE 5

TRINI GROUP DEVELOPMENT...

RICHMOND HILL

Level: 2ND FLR FRAMING

Type: Beam

Job Name: ROSE 5

Label: B12 - i2346

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

WestFraser LVL

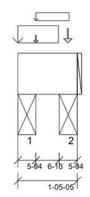
Design Passed

Status:

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.3.353.Update13.13

Report Version: 2021.03.26 08/25/2023 10:00



#### **DESIGN INFORMATION**

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

Amendment)

Design Methodology: LSD Service Condition: Dry L/360 LL Deflection Limit: 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'- 6 13/16"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 4 1/4" • 615 psi Beam @ 1'- 1 1/16"
- PLY TO PLY CONNECTION: 4 ROWS OF 3.25" PNEUMATIC GUN NAILS (0.120"x3.25") @ 4" O/C

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



Silver and the second s		mhichel							
D	esign Criteria	Loc	cation	Load	Combination	n LDF	Design	Limit	Result
Factored	Pos. Momer	nt: 0'- 8	15/16"	1.2	25D + 1.5L	0.65	3 lb ft	22974 lb ft	Passed - 0%
Factored	Shear:	1'- 9	5 1/8"	1.25	D + 1.5L + S	0.85	58 lb	11729 lb	Passed - 0%
SUPP	ORT AND R	REACTION	INFORM	MATION					
	Input Bearing Length	Controlling Combina		LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member		Result
1	5-04	1.25D + 1.	5S + L	0.99	410 lb		18937 lb	11198 lb	Passed - 4%
2	5-04	1.25D + 1.	5S + L	0.99	344 lb		18937 lb	11198 lb	Passed - 3%
SPEC	FIED LOAD	os							
Type	Start Loc	End Loc	Sour	ce	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0,	1'- 5 5/16"	Self W	/eight	Тор	12 lb/ft		8	2
Uniform	0,	0'- 11 13/16"	E21(i		Тор	190 lb/ft	750	185 lb/ft	2
Uniform	0'- 5 1/4"	1'- 2 15/16"	FC2 Floor (Plan Vi		Тор	3 lb/ft	6 lb/ft	9	9
Point	0'- 5 1/4"	0'- 5 1/4"	FC2 Floor (Plan Vi		Тор	1 lb	3 lb	*	
Point	1'- 2 9/16"	1'- 2 9/16"	E20(i	805)	Тор	68 lb		79 lb	
UNFA	CTORED R	EACTIONS	le:						
ID	Start Loc	End Loc		Source		Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/4"	ST	L BM(i580	)	153 lb	5 lb	138 lb	-
2	1'- 1/16"	1'- 5 5/16"	ST	L BM(i581	)	127 lb	2 lb	127 lb	

# **DESIGN NOTES**

ANALYSIS RESULTS

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

#### PLY TO PLY CONNECTION

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

> CITY OF RICHMOND HILL **BUILDING DIVISION**

05/01/2024



# 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. gyr	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"	-
11-7/8"	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"	3" 17'-1" 10" 18'-0" 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	with 1x4 inch s	trap	Mid-span blocking and 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"	-		

#### 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.

CITY OF RICHMOND HILL BUILDING DIVISION

05/01/2024



# 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 <sub>l</sub>	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"
0.4/0"	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"

#### 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.

CITY OF RICHMOND HILL BUILDING DIVISION

05/01/2024



# 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"	-
9-1/2"	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"	-

#### 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.

CITY OF RICHMOND HILL BUILDING DIVISION

05/01/2024



# 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. gyp	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'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
9-1/2"	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"
11-7/8"	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"
	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	oan blocking an	d 1/2 in. gypsu	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"
0.4/0"	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"

#### 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.

CITY OF RICHMOND HILL BUILDING DIVISION

05/01/2024



# 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. gyr	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'-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	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"	-
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"	-
11-7/8"	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"	-
	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"	-

#### 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.

CITY OF RICHMOND HILL BUILDING DIVISION

05/01/2024



# 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 <sub>l</sub>	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"	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"
4.4"	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. gypsur	n 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"
0.4/0"	NI-40x	18'-8"	17'-2"	16'-3"	14'-11"	18'-10"	17'-2"	16'-3"	14'-11"
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'-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"

#### 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.

CITY OF RICHMOND HILL BUILDING DIVISION

05/01/2024



# 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 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"	-
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 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"	19'-3"	-
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.

CITY OF RICHMOND HILL BUILDING DIVISION

05/01/2024



# 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 series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing				
Joist depth										
		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		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	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"	

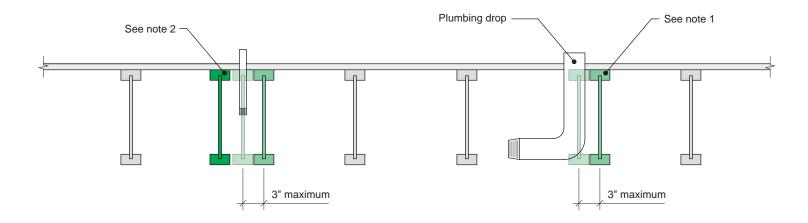
Joist depth	Joist series	Mid-span blocking with 1x4 inch strap On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling On centre spacing				
		9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"
NI-40x	18'-7"		17'-2"	16'-3"	14'-11"	18'-10"	17'-2"	16'-3"	14'-11'	
NI-60	18'-10"		17'-6"	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"	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.

CITY OF RICHMOND HILL BUILDING DIVISION

05/01/2024



#### 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.

05/01/2024

**CITY OF RICHMOND HILL** 

NORDIC STRUCTURES

nordic.ca



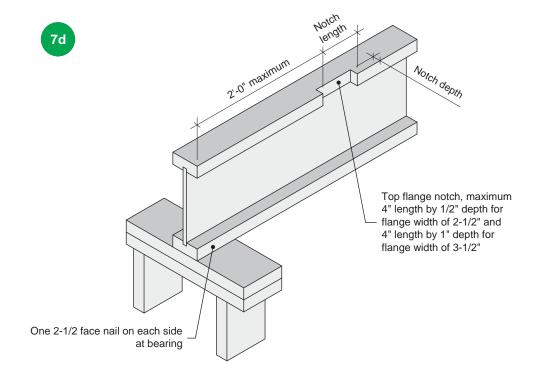
Allowance for Piping

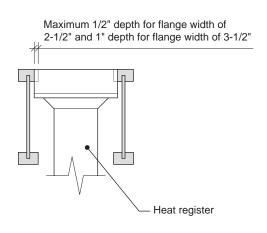
CATEGORY

Openings for Vertical Elements

SCALE

-





#### 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.

NORDIC STRUCTURES



Notch in I-joist for Heat Register

Openings for Vertical Elements

SCALE

05/01/2024

CITY OF RICHMOND HILL

2020-10-01 RECEIVED