

Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	4
J2	20-00-00	11 7/8" NI-40x	2	8
J3	18-00-00	11 7/8" NI-40x	1	25
J3DJ	18-00-00	11 7/8" NI-40x	2	4
J4	16-00-00	11 7/8" NI-40x	1	2
J5	12-00-00	11 7/8" NI-40x	1	2
J6	10-00-00	11 7/8" NI-40x	1	3
J7	8-00-00	11 7/8" NI-40x	1	4
J8	6-00-00	11 7/8" NI-40x	1	1
J9	4-00-00	11 7/8" NI-40x	1	3
J10	2-00-00	11 7/8" NI-40x	1	4
J11	20-00-00	11 7/8" NI-80	1	27
B1	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B2	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B3	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B4	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
7	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
17	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
2	H2	HUS1.81/10
1	H2	HUS1.81/10
1	H4	HGUS410



**THIS IS A FLOOR COMPONENT PLACEMENT PLAN ONLY.**

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

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**DATE:** 2022-11-29

**1st FLOOR FRAMING**



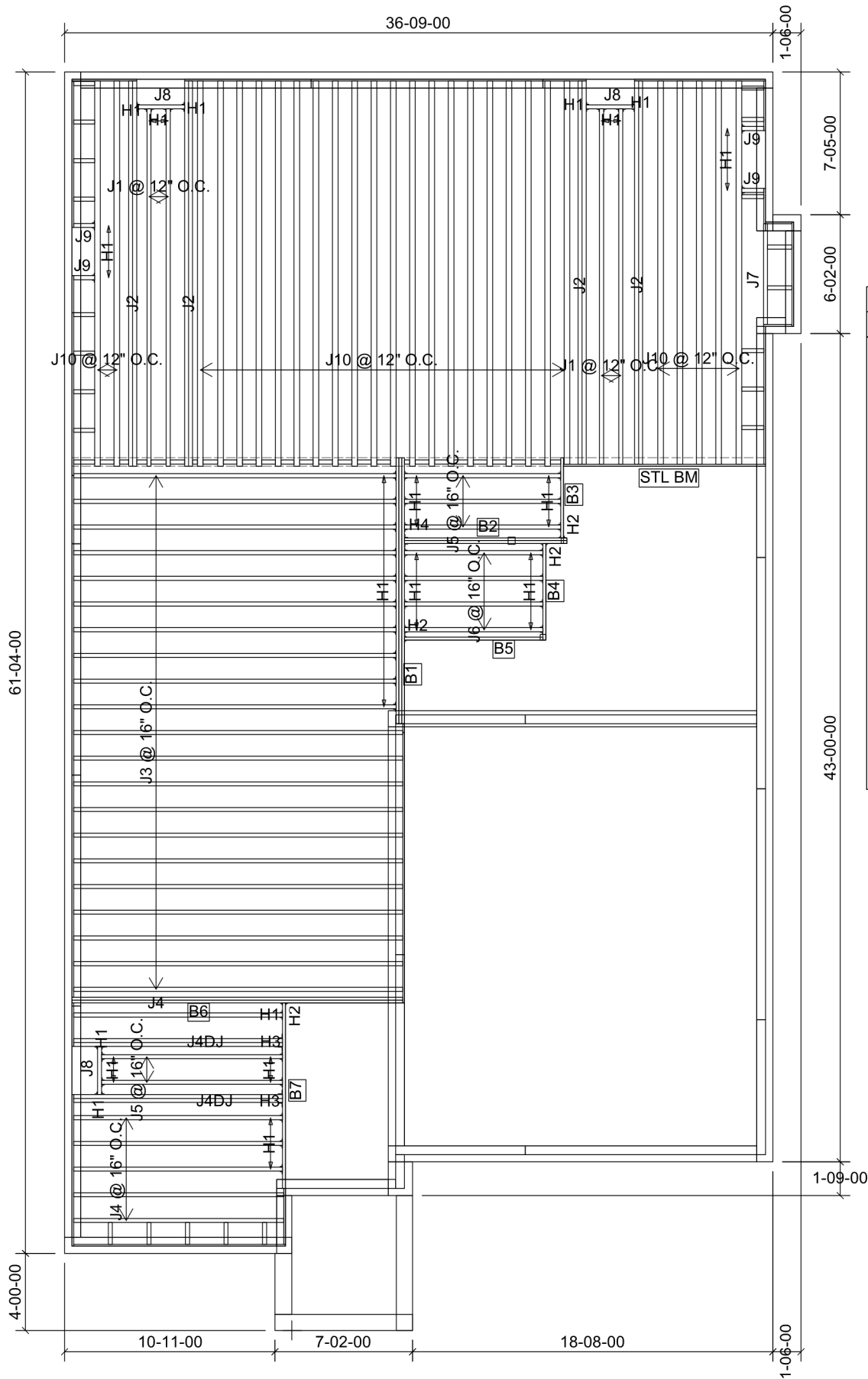
**FROM PLAN DATED:** JAN 2022  
**BUILDER:** ROYAL PINE HOMES  
**SITE:** FORESTSIDE  
**MODEL:** 4505  
**ELEVATION:** A  
**LOT:**  
**CITY:** BRAMPTON  
**SALESMAN:** WILL GARCIA  
**DESIGNER:** AJ  
**REVISION:** lbv

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

ALL **CONNECTORS** MUST BE INSTALLED AS PER THE **MANUFACTURER'S SPECIFICATIONS** USING THE MANUFACTURER **SPECIFIED FASTENERS**.  
ALL **BEAM HANGER FASTENERS** INSTALLED INTO THE **SUPPORTING MEMBER MUST** BE A MINIMUM OF **3.5"** IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD.

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

JOIST LL DEFLECTION LIMIT: L/480  
**SUBFLOOR:** 3/4" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	4
J2	20-00-00	11 7/8" NI-40x	2	8
J3	18-00-00	11 7/8" NI-40x	1	21
J4	12-00-00	11 7/8" NI-40x	1	6
J4DJ	12-00-00	11 7/8" NI-40x	2	4
J5	10-00-00	11 7/8" NI-40x	1	5
J6	8-00-00	11 7/8" NI-40x	1	4
J7	6-00-00	11 7/8" NI-40x	1	1
J8	4-00-00	11 7/8" NI-40x	1	3
J9	2-00-00	11 7/8" NI-40x	1	4
J10	20-00-00	11 7/8" NI-80	1	27
B6	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B1	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B7	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B2	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B3	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B4	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
13	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
17	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
3	H2	HUS1.81/10
1	H2	HUS1.81/10
2	H3	HU312-2
1	H4	HGUS410

DWG# TF22120105 TO TF22120111



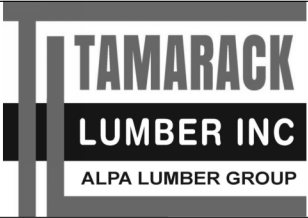
STRUCTURAL COMPONENTS ONLY  
DWG# TF22120114

**THIS IS A FLOOR COMPONENT  
PLACEMENT PLAN ONLY.**

The wood beams and joists outlined on this plan are designed as individual building components to be incorporated into the design of the building at the specification of the building designer. Please see the individual beam reports, joist reports, and/or joist span tables for each component identified on this placement plan.  
The supporting structure is to be specified by the building designer prior to the installation of joist(s) and/or beam(s). The building designer is responsible for the bracing of the floor system and its integration into the bracing of the overall structure. All components labelled "by others" or "as per plan", and all steel beams, are not within the scope of work of this seal.  
The building designer must review and approve this plan to ascertain conformity to the overall structural plan of the building. All dimensions to be verified on site.

DATE: 12/02/22

**1st FLOOR FRAMING**  
**SUNKEN FOYER**



**FROM PLAN DATED:** JAN 2022  
**BUILDER:** ROYAL PINE HOMES  
**SITE:** FORESTSIDE  
**MODEL:** 4505  
**ELEVATION:** A  
**LOT:**  
**CITY:** BRAMPTON  
**SALESMAN:** WILL GARCIA  
**DESIGNER:** AJ  
**REVISION:** lbv

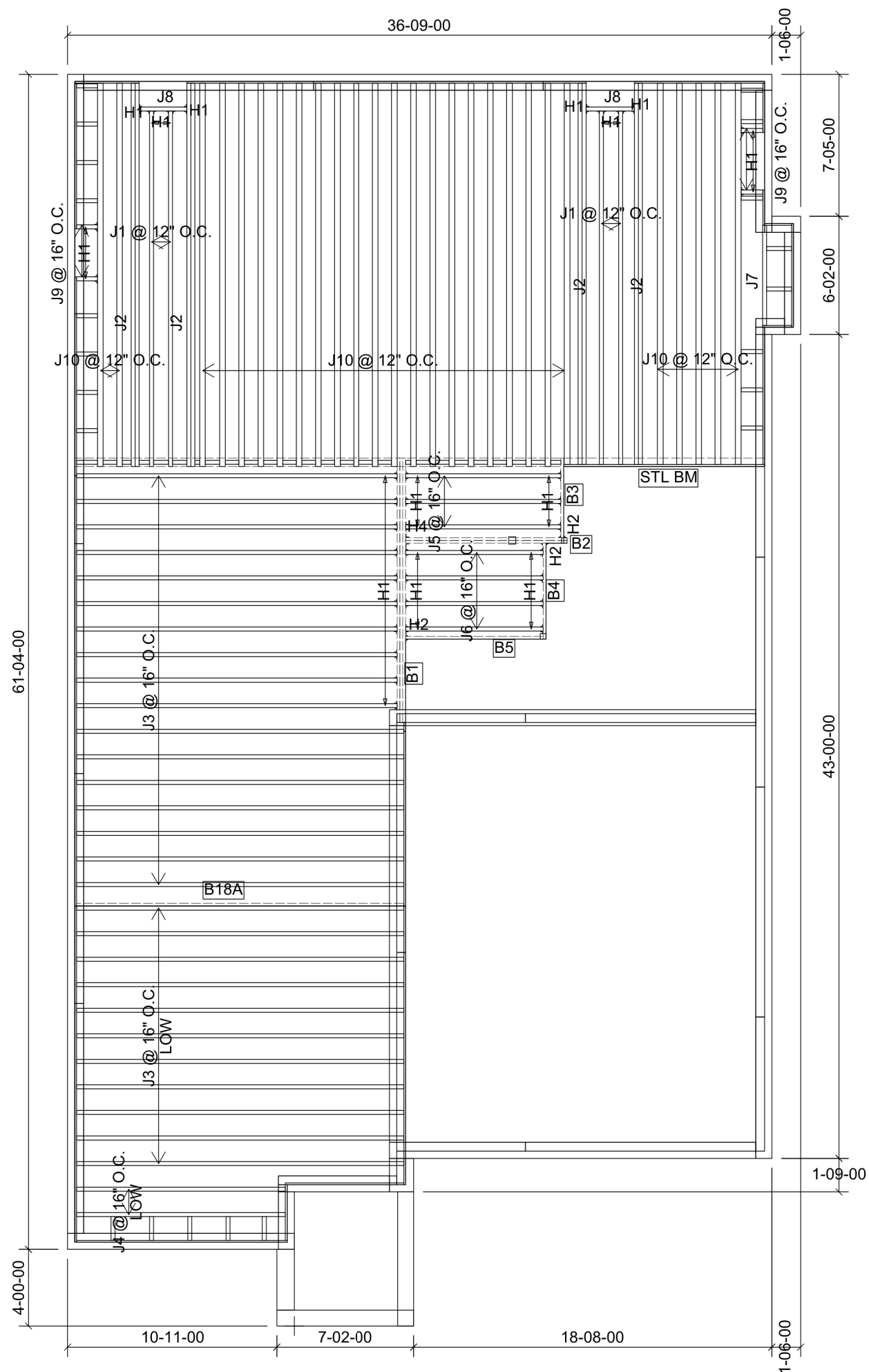
REFER TO THE **NORDIC INSTALLATION** GUIDE FOR PROPER STORAGE AND INSTALLATION.  
**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.  
**MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.  
**CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK**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

ALL **CONNECTORS** MUST BE INSTALLED AS PER THE **MANUFACTURER'S SPECIFICATIONS** USING THE MANUFACTURER **SPECIFIED FASTENERS**.  
ALL **BEAM HANGER FASTENERS** INSTALLED INTO THE **SUPPORTING MEMBER MUST** BE A MINIMUM OF **3.5"** IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD.

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

JOIST LL DEFLECTION LIMIT: L/480

**SUBFLOOR:** 3/4" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	4
J2	20-00-00	11 7/8" NI-40x	2	8
J3	18-00-00	11 7/8" NI-40x	1	28
J4	12-00-00	11 7/8" NI-40x	1	2
J5	10-00-00	11 7/8" NI-40x	1	3
J6	8-00-00	11 7/8" NI-40x	1	4
J7	6-00-00	11 7/8" NI-40x	1	1
J8	4-00-00	11 7/8" NI-40x	1	2
J9	2-00-00	11 7/8" NI-40x	1	4
J10	20-00-00	11 7/8" NI-80	1	27
B18A	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B1	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B2	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B3	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B4	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
7	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
17	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
2	H2	HUS1.81/10
1	H2	HUS1.81/10
1	H4	HGUS410



**THIS IS A FLOOR COMPONENT  
PLACEMENT PLAN ONLY.**

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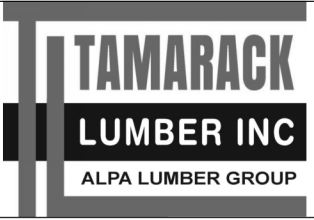
The supporting structure is to be specified by the building designer prior to the installation of joist(s) and/or beam(s). The building designer is responsible for the bracing of the floor system and its integration into the bracing of the overall structure. All components labelled "by others" or "as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

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**DATE:** 2022-11-29

# 1st FLOOR FRAMING

## SUNKEN IN-LAW SUITE



**FROM PLAN DATED:** JAN 2022  
**BUILDER:** ROYAL PINE HOMES  
**SITE:** FORESTSIDE  
**MODEL:** 4505  
**ELEVATION:** A  
**LOT:**  
**CITY:** BRAMPTON  
**SALESMAN:** WILL GARCIA  
**DESIGNER:** AJ  
**REVISION:** lbv

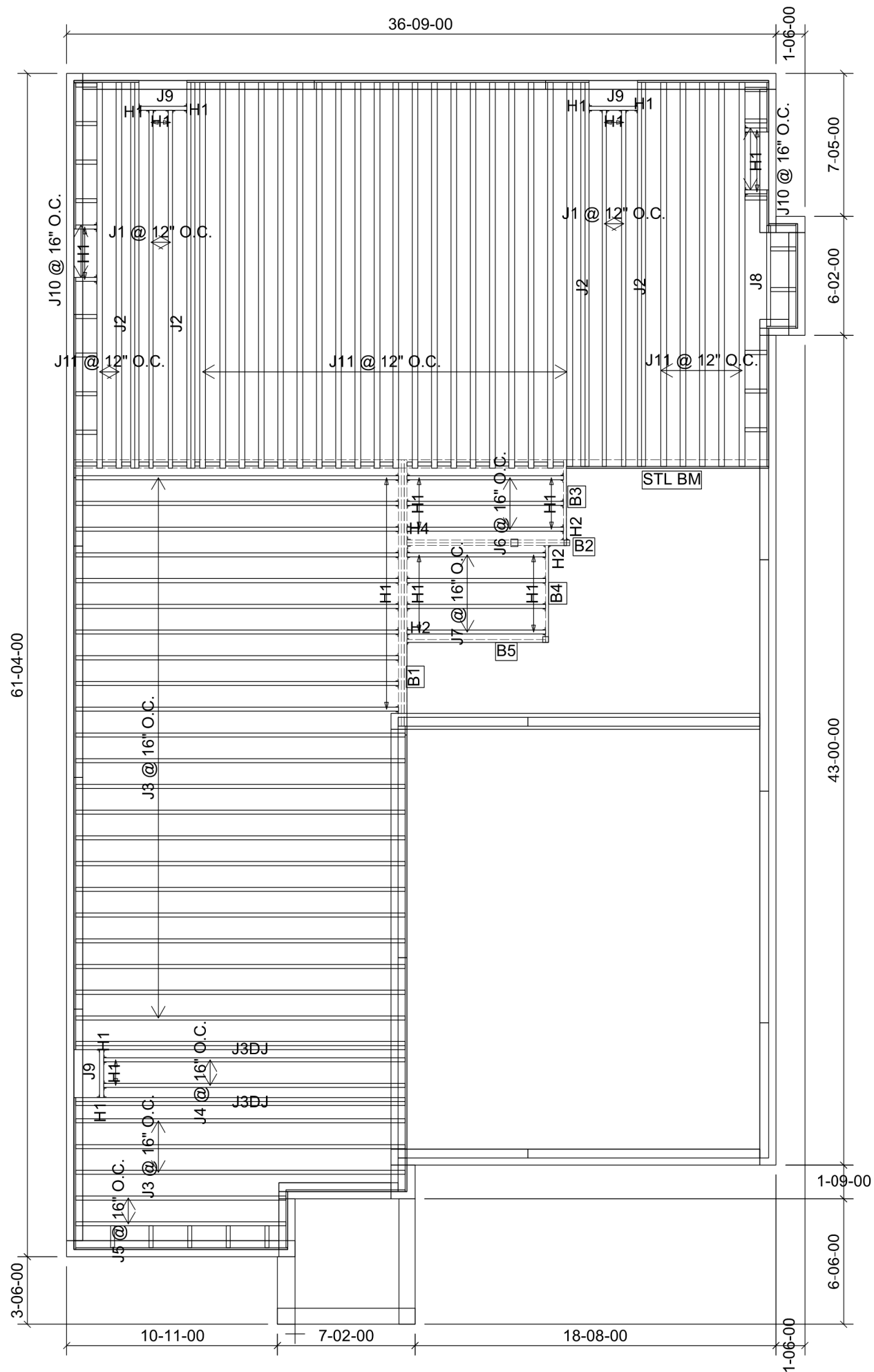
REFER TO THE **NORDIC INSTALLATION GUIDE**  
FOR PROPER STORAGE AND INSTALLATION.  
**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 SPF #2 REQ'D  
UNDER INTERIOR UNIFORM LOAD BEARING WALLS.  
**MULTIPLE SQUASH BLOCKS** REQ'D UNDER  
CONCENTRATED LOADS. SEE FIGURE 1.  
**CANTILEVERED JOISTS** INCLUDING **CANT' OVER**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

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

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

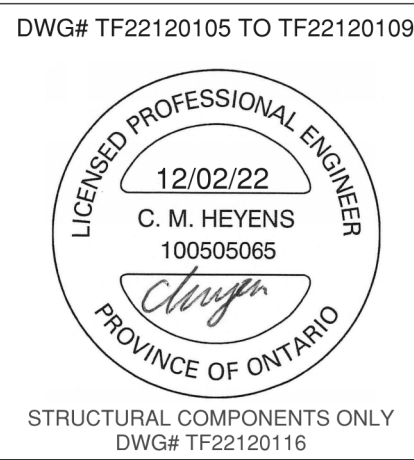
**LOADING:**  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft<sup>2</sup>  
TILE LOAD: +5.0 lb/ft<sup>2</sup>

**SUBFLOOR:** 3/4" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	20-00-00	11 7/8" NI-40x	1	4
J2	20-00-00	11 7/8" NI-40x	2	8
J3	18-00-00	11 7/8" NI-40x	1	25
J3DJ	18-00-00	11 7/8" NI-40x	2	4
J4	16-00-00	11 7/8" NI-40x	1	2
J5	12-00-00	11 7/8" NI-40x	1	2
J6	10-00-00	11 7/8" NI-40x	1	3
J7	8-00-00	11 7/8" NI-40x	1	4
J8	6-00-00	11 7/8" NI-40x	1	1
J9	4-00-00	11 7/8" NI-40x	1	3
J10	2-00-00	11 7/8" NI-40x	1	4
J11	20-00-00	11 7/8" NI-80	1	27
B1	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B2	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B3	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B4	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
7	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
17	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
2	H2	HUS1.81/10
1	H2	HUS1.81/10
1	H4	HGUS410



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**DATE:** 2022-11-29

1st FLOOR FRAMING



**FROM PLAN DATED:** JAN 2022  
**BUILDER:** ROYAL PINE HOMES  
**SITE:** FORESTSIDE  
**MODEL:** 4505  
**ELEVATION:** B  
**LOT:**  
**CITY:** BRAMPTON  
**SALESMAN:** WILL GARCIA  
**DESIGNER:** AJ  
**REVISION:** lbv

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**CERAMIC TILE** APPLICATION AS PER OBC 9.30.6.

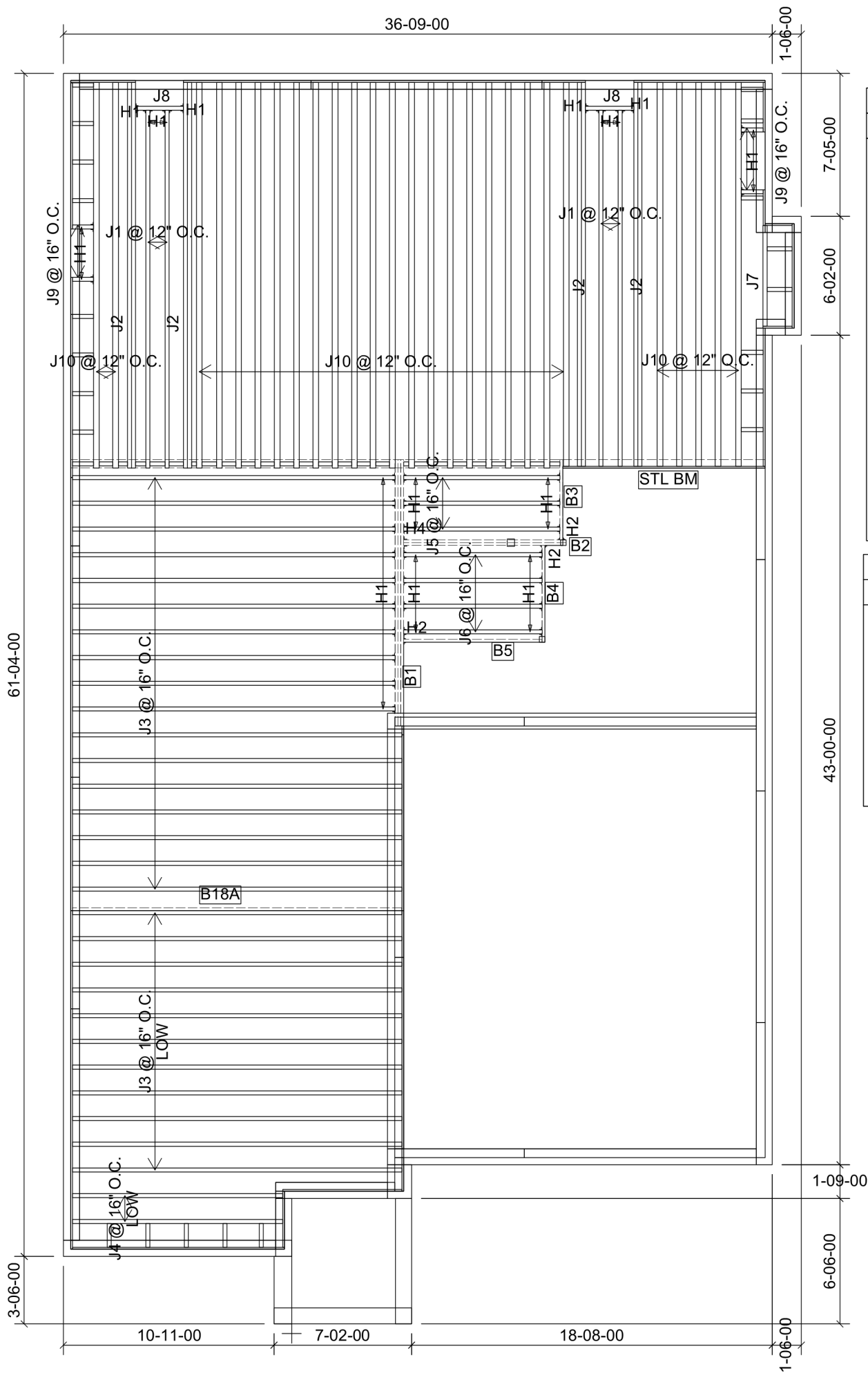
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TILE LOAD: +5.0 lb/ft<sup>2</sup>

JOIST LL DEFLECTION LIMIT: L/480  
**SUBFLOOR:** 3/4" GLUED AND NAILED







Products				
PlotID	Length	Product	Plies	Net Qty
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J4	12'-00-00	11 7/8" NI-40x	1	2
J5	10'-00-00	11 7/8" NI-40x	1	3
J6	8'-00-00	11 7/8" NI-40x	1	4
J7	6'-00-00	11 7/8" NI-40x	1	1
J8	4'-00-00	11 7/8" NI-40x	1	2
J9	2'-00-00	11 7/8" NI-40x	1	4
J10	20'-00-00	11 7/8" NI-80	1	27
B18A	18'-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B1	14'-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B2	10'-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	8'-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
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B4	6'-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
7	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
17	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
2	H2	HUS1.81/10
1	H2	HUS1.81/10
1	H4	HGUS410



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**DATE:** 2022-11-29

**1st FLOOR FRAMING**  
**SUNKEN IN-LAW SUITE**



**FROM PLAN DATED:** JAN 2022

**BUILDER:** ROYAL PINE HOMES

**SITE:** FORESTSIDE

**MODEL:** 4505

**ELEVATION:** B

**LOT:**

**CITY:** BRAMPTON

**SALESMAN:** WILL GARCIA

**DESIGNER:** AJ

**REVISION:** lbv

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

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

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

**CERAMIC TILE** APPLICATION AS PER OBC 9.30.6.

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**LOADING:**

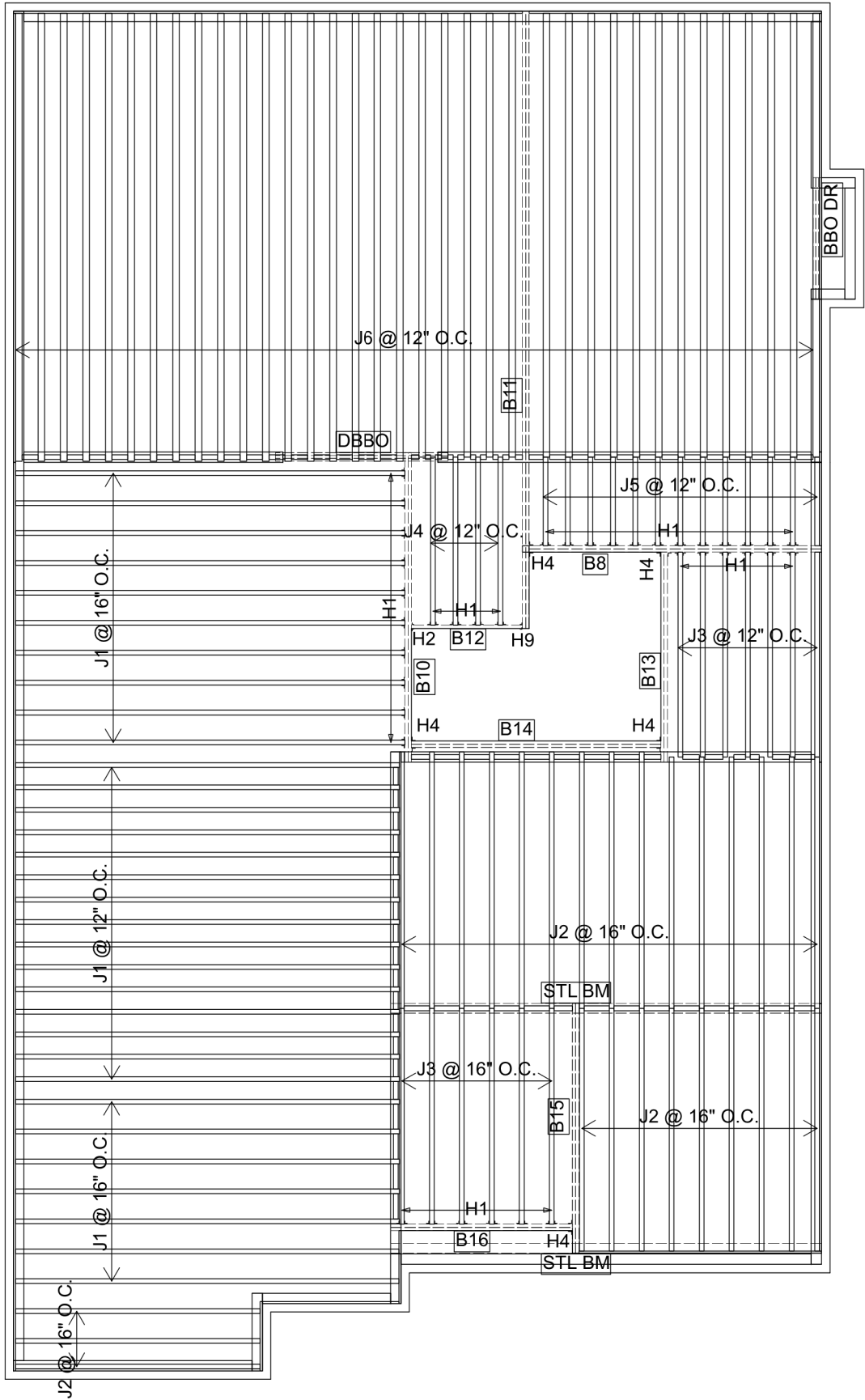
LIVE LOAD: 40.0 lb/ft<sup>2</sup>

DEAD LOAD: 15.0 lb/ft<sup>2</sup>

TILE LOAD: +5.0 lb/ft<sup>2</sup>

JOIST LL DEFLECTION LIMIT: L/480

**SUBFLOOR:** 3/4" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	32
J2	12-00-00	11 7/8" NI-40x	1	27
J3	10-00-00	11 7/8" NI-40x	1	13
J4	8-00-00	11 7/8" NI-40x	1	4
J5	4-00-00	11 7/8" NI-40x	1	13
J6	20-00-00	11 7/8" NI-80	1	36
B11	28-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B10	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B8	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B14	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B15	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B13	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B16	10-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B12	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
4	H1	IUS2.56/11.88
34	H1	IUS2.56/11.88
1	H2	HUS1.81/10
5	H4	HGUS410
1	H9	LS90



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PLACEMENT PLAN ONLY.

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DATE: 2022-11-29

2nd FLOOR FRAMING  
4 BEDROOM CONDITION



FROM PLAN DATED: JAN 2022  
BUILDER: ROYAL PINE HOMES  
SITE: FORESTSIDE  
MODEL: 4505  
ELEVATION: A  
LOT:  
CITY: BRAMPTON  
SALESMAN: WILL GARCIA  
DESIGNER: AJ  
REVISION: lbv

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.

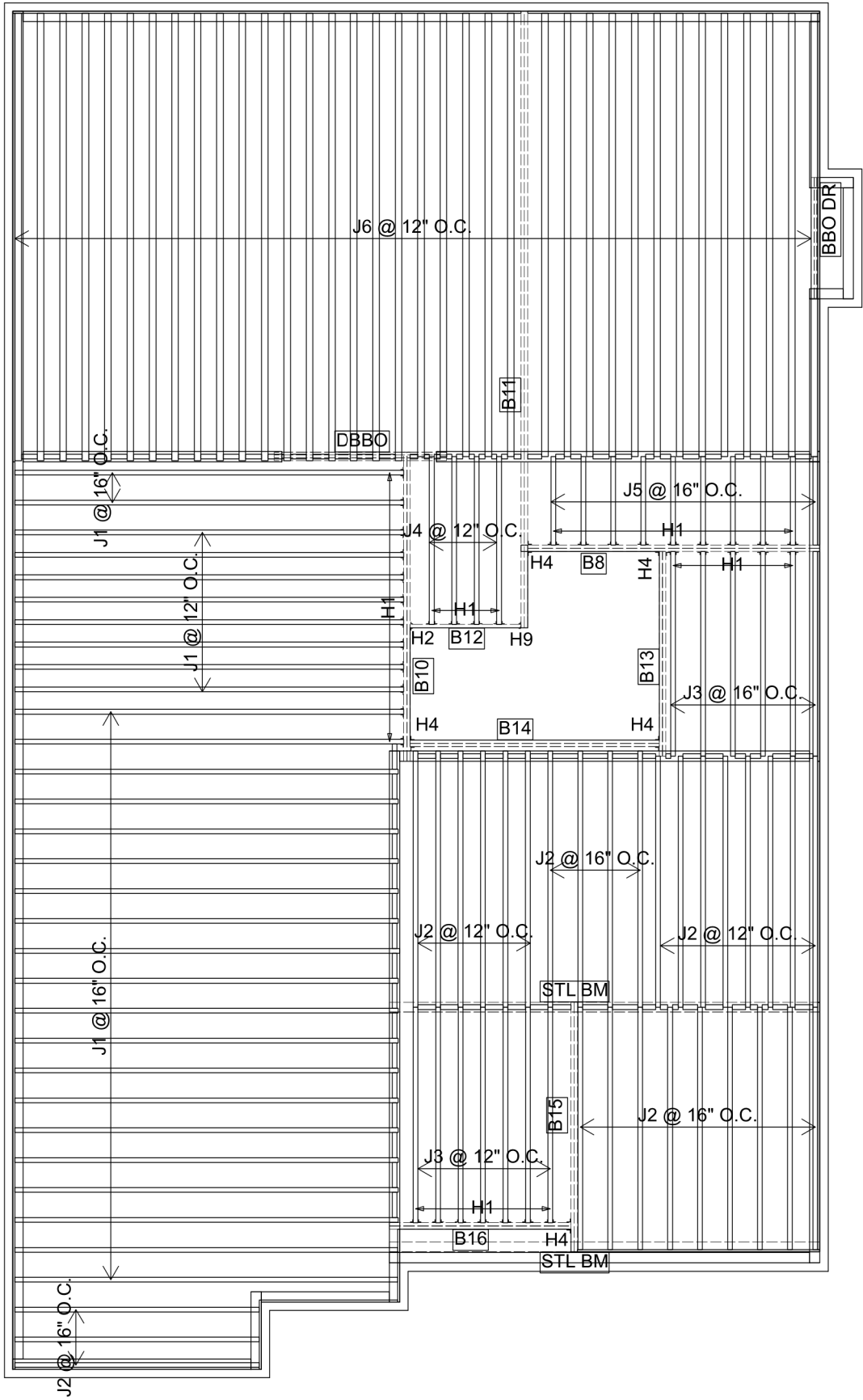
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ALL **BEAM HANGER FASTENERS** INSTALLED INTO THE **SUPPORTING MEMBER MUST** BE A MINIMUM OF **3.5"** IN LENGTH UNLESS OTHERWISE SPECIFIED BY THE SUPPORTING MEMBER ENGINEER OF RECORD.

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

JOIST LL DEFLECTION LIMIT: L/480

**SUBFLOOR:** 5/8" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	30
J2	12-00-00	11 7/8" NI-40x	1	30
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1	H9	LS90

DWG# TF22120097 TO TF22120104



12/02/22  
C. M. HEYENS  
100505065  
PROVINCE OF ONTARIO

STRUCTURAL COMPONENTS ONLY  
DWG# TF22120120

**THIS IS A FLOOR COMPONENT PLACEMENT PLAN ONLY.**

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DATE: 2022-11-29

2nd FLOOR FRAMING

5 BEDROOM



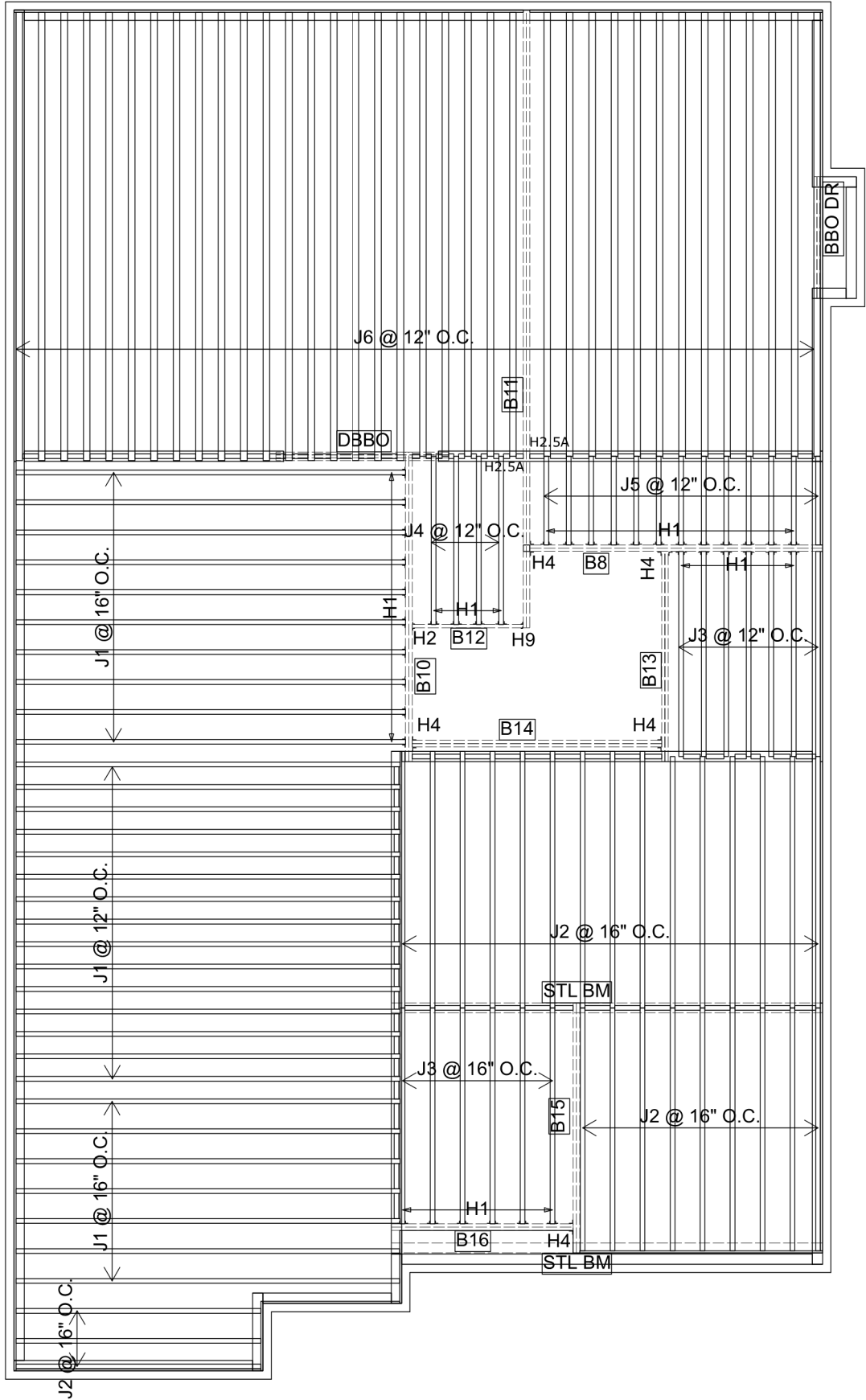
FROM PLAN DATED: JAN 2022  
BUILDER: ROYAL PINE HOMES  
SITE: FORESTSIDE  
MODEL: 4505  
ELEVATION: A  
LOT:  
CITY: BRAMPTON  
SALESMAN: WILL GARCIA  
DESIGNER: AJ  
REVISION: lbv

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

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



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DWG# TF22120097 TO TF22120104

LICENSED PROFESSIONAL ENGINEER  
12/02/22  
C. M. HEYENS  
100505065  
PROVINCE OF ONTARIO

STRUCTURAL COMPONENTS ONLY  
DWG# TF22120121

**THIS IS A FLOOR COMPONENT  
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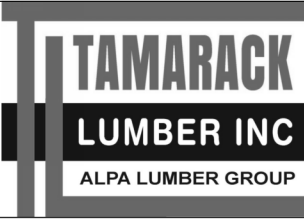
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DATE: 2022-11-29

2nd FLOOR FRAMING

4 BEDROOM



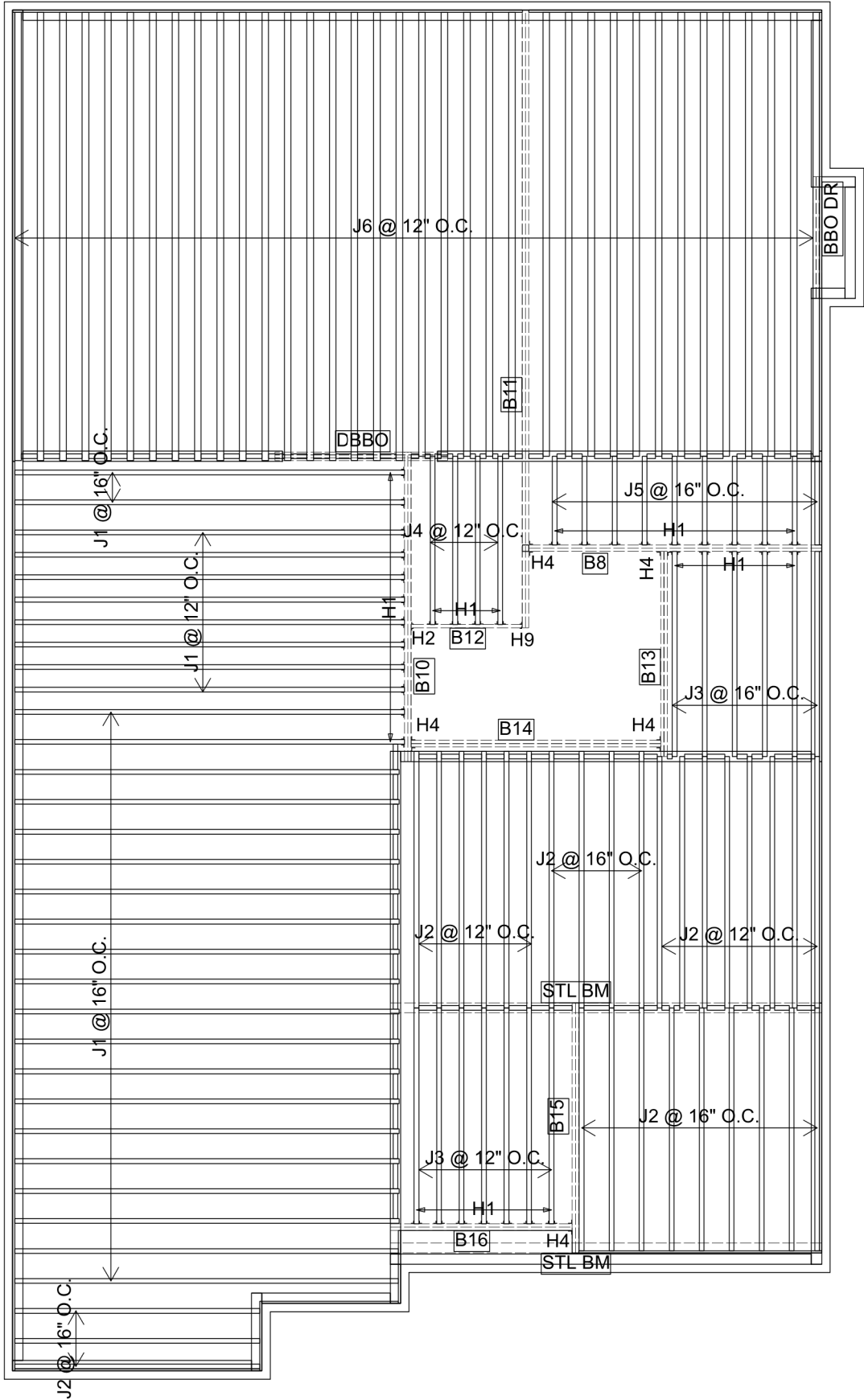
FROM PLAN DATED: JAN 2022  
BUILDER: ROYAL PINE HOMES  
SITE: FORESTSIDE  
MODEL: 4505  
ELEVATION: B  
LOT:  
CITY: BRAMPTON  
SALESMAN: WILL GARCIA  
DESIGNER: AJ  
REVISION: lbv

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



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5	H4	HGUS410
1	H9	LS90

DWG# TF22120097 TO TF22120104



STRUCTURAL COMPONENTS ONLY  
DWG# TF22120122

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DATE: 2022-11-29

**2nd FLOOR FRAMING  
5 BEDROOM**



**FROM PLAN DATED:** JAN 2022  
**BUILDER:** ROYAL PINE HOMES  
**SITE:** FORESTSIDE  
**MODEL:** 4505  
**ELEVATION:** B  
**LOT:**  
**CITY:** BRAMPTON  
**SALESMAN:** WILL GARCIA  
**DESIGNER:** AJ  
**REVISION:** lbv

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TILE LOAD: +5.0 lb/ft<sup>2</sup>

JOIST LL DEFLECTION LIMIT: L/480

**SUBFLOOR:** 5/8" GLUED AND NAILED



# NORDIC

## INSTALLATION GUIDE NORDIC JOIST

NS-G133   
ENGLISH  
VERSION  
2020-10-01

Engineered Wood Products

## BASIC INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



NORDIC  
STRUCTURES

nordic.ca

### INSTALLING NORDIC I-JOISTS

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

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

### SAFETY AND CONSTRUCTION PRECAUTIONS

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

#### Avoid Accidents by Following these Important Guidelines:

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



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



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

### NORDIC I-JOIST SERIES

#### RESIDENTIAL SERIES

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

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

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

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

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

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

### WEB STIFFENERS

**2** Concentrated Load (Load Stiffener)

Tight joint, no gap

End Bearing (Bearing Stiffener)

Gap

Tight joint, no gap

Flange width 2-1/2" or 3-1/2"

Approx. 2"

Approx. 2"

1/8"-1/4" Gap

Four 2-1/2" nails, 3" nails required for I-joists with 3-1/2" flange width

No gap

**Stiffener Size Requirements**

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

### NAIL SPACING

Nailing into flange face

Nailing into flange edge

**Nailed to Only One Flange Edge (Top View)**

Closest nail spacing

**Nailed to Both Flange Edges (Top View)**

Closest nail spacing

1/2 offset spacing <sup>(a)</sup>

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

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

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

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

**1a** Nordic I-joist blocking panel

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

Attach I-joist to top plate per detail 1b

**1b** Rim board

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

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

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

**Note:**  
1. To avoid splitting flange, start nails at least 1-1/2 inch from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate.

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

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

Joist attachment per detail 1b

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

Nordic I-joist blocking panel per detail 1a

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

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

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

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

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

<sup>(a)</sup> Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-Q325 Standard.

<sup>(b)</sup> For face-mount hangers use net joist depth minus 3-1/4 inches for joists with 1-1/2-inch-thick flanges.

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

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

**1k** Top-mount hanger installed per manufacturer's recommendations

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

**1l** Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify header resistance to support concentrated loads.

Backer block per detail 1h

Filler block per detail 1p

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

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

Attach I-joist per detail 1b

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

**1p** Filler block

Offset nails from opposite face by 6"

1/8" to 1/4" gap between top flange and filler block

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

**Filler Block Requirements for Double I-joist Construction**

Flange width (in.)	Net depth (in.)	Filler block size (in.)	Example
2-1/2	9-1/2	2-1/8 to 2-1/4 x 6	2x8 x 5/8" or 3/4" sheathing
	11-7/8	2-1/8 to 2-1/4 x 8	2x8 x 5/8" or 3/4" sheathing
	14	2-1/8 to 2-1/4 x 10	2x10 x 5/8" or 3/4" sheathing
3-1/2	9-1/2	3 x 6	2 x 2x6
	11-7/8	3 x 8	2 x 2x6
	14	3 x 10	2 x 2x10

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

**1s-1** See note 2

1/8" gap minimum

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

Rim board

2-1/2" nails at 6" o.c.

One 2-1/2" nail, one side only

2x4 minimum

Blocking panel (note 1)

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

**This document supersedes all previous versions. For the latest version, consult nordic.ca or contact Nordic Structures.**

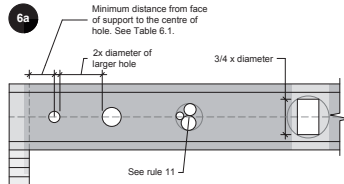
**FOR ALL construction details →DC3**

### WEB HOLES AND OPENINGS

#### WEB HOLES IN I-JOISTS

##### Rules for Cutting Holes in I-Joists

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

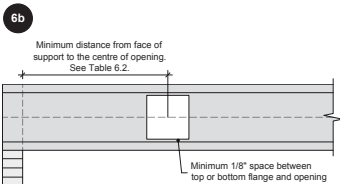


- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
  2. Holes in web should be cut with a sharp saw.
  3. For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular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

#### DUCT CHASE OPENINGS

##### Rules for Cutting Duct Chase Openings in I-joists

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

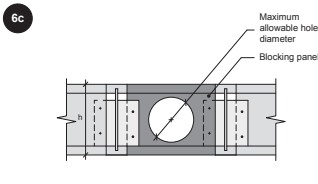


- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
  2. Holes in web should be cut with a sharp saw.
  3. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling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

#### HOLES IN BLOCKING PANELS

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

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



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

<sup>(a)</sup> Maximum allowable hole diameter in blocking panel, where the blocking panel is longer than its height.

TABLE 6.1 - LOCATION OF WEB HOLES

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

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

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

TABLE 6.2 - LOCATION OF DUCT CHASE OPENINGS

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



BUILDER: ROYAL PINE HOMES  
SITE: FORESTSIDE  
MODEL: 4505  
CITY: BRAMPTON

Job Name: 4505  
Level: 2ND FLR FRAMING  
Label: B8 - i4926  
Type: Beam

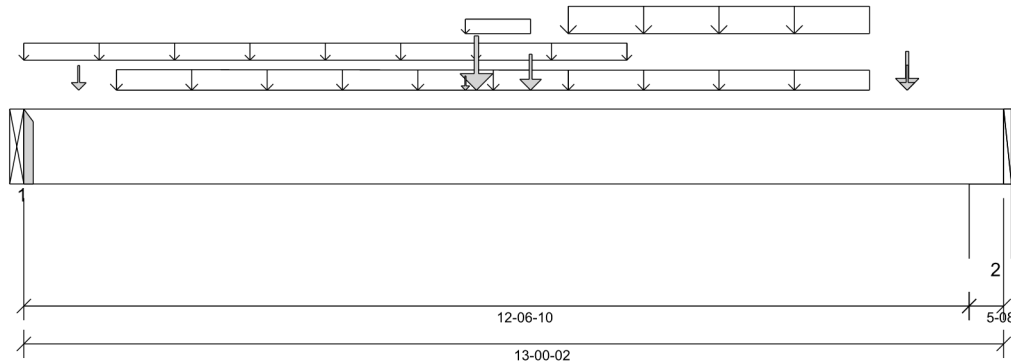
2 Ply Member  
1 3/4" x 11 7/8" (2.0E 3100)  
WestFraser LVL

Status:  
Design  
Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 12/02/2022 13:13



### 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'- 9 1/2"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Wall @ 12'- 7 5/8"

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.

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 8 3/4"	1.25D + 1.5L	1.00	10866 lb ft	35345 lb ft	Passed - 31%
Factored Shear:	11'- 6 3/4"	1.25D + 1.5L	1.00	3341 lb	13815 lb	Passed - 24%
Live Load (LL) Pos. Defl.:	6'- 6 11/16"	L		0.114"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 5 3/8"	D + L		0.230"	L/240	Passed - L/654

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	2554 lb		5460 lb	-	Passed - 47%
2	5-08	1.25D + 1.5L	1.00	3362 lb		20020 lb	11843 lb	Passed - 28%

### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Top	Face	Member	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
1	HGUS410		-	-	-				Connector manually specified by the user.
* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.									

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	13'- 1/8"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	8'- 1/8"	User Load	Top	60 lb/ft	-	-	-
Uniform	5'- 10 3/8"	6'- 8 3/4"	FC2 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Uniform	7'- 2 3/4"	11'- 2 3/4"	Smoothed Load	Front	93 lb/ft	185 lb/ft	-	-
Uniform	7'- 2 3/4"	11'- 2 3/4"	Smoothed Load	Back	41 lb/ft	82 lb/ft	-	-
Tapered	1'- 2 3/4"	7'- 2 3/4"	Smoothed Load	Back	45 To 41 lb/ft	90 To 83 lb/ft	-	-
Point	6'- 1/8"	6'- 1/8"	B13(i5238)	Front	388 lb	83 lb	-	-
Point	6'- 8 3/4"	6'- 8 3/4"	J3(i5225)	Front	85 lb	170 lb	-	-
Point	11'- 8 3/4"	11'- 8 3/4"	J3(i5130)	Front	97 lb	193 lb	-	-
Point	0'- 8 3/4"	0'- 8 3/4"	J5(i5339)	Back	41 lb	82 lb	-	-
Point	11'- 8 3/4"	11'- 8 3/4"	J5(i5213)	Back	43 lb	85 lb	-	-
Point	5'- 10 3/8"	5'- 10 3/8"	FC2 Floor Decking (Plan View Fill)	Top	0 lb	1 lb	-	-

### UNFACTORED REACTIONS


ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B11(i4942)	1019 lb	858 lb	-	-
2	12'- 6 5/8"	13'- 1/8"	E34(i2618)	1068 lb	1348 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.
- 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 # TF22120097

	BUILDER: <b>ROYAL PINE HOMES</b> SITE: <b>FORESTSIDE</b> MODEL: <b>4505</b> CITY: <b>BRAMPTON</b>	Job Name: <b>4505</b> Level: <b>2ND FLR FRAMING</b> Label: <b>B8 - i4926</b> Type: <b>Beam</b>	<b>2 Ply Member</b> <b>1 3/4" x 11 7/8" (2.0E 3100)</b> <b>WestFraser LVL</b>	Status: <b>Design Passed</b>
---------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------	---------------------------------

#### PLY TO PLY CONNECTION

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





BUILDER: ROYAL PINE HOMES  
SITE: FORESTSIDE  
MODEL: 4505  
CITY: BRAMPTON

Job Name: 4505  
Level: 2ND FLR FRAMING  
Label: B10 - i5180  
Type: Beam

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

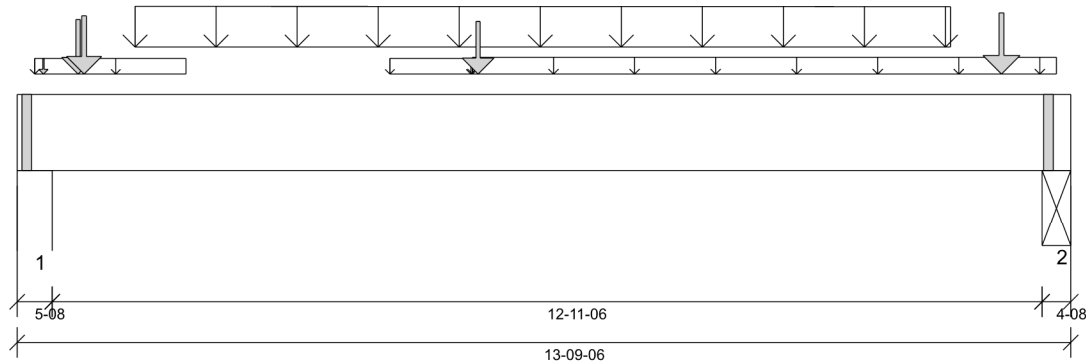
Status:  
Design  
Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26

12/02/2022 13:13



### 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: 1'- 1 1/2"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Beam @ 13'- 5 7/8"

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

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

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 2 1/2"	1.25D + 1.5L	1.00	19097 lb ft	35345 lb ft	Passed - 54%
Factored Shear:	1'- 5 3/8"	1.25D + 1.5L	1.00	6046 lb	13815 lb	Passed - 44%
Live Load (LL) Pos. Defl.:	6'- 10 15/16"	L		0.281"	L/360	Passed - L/552
Total Load (TL) Pos. Defl.:	6'- 10 7/8"	D + L		0.435"	L/240	Passed - L/357

### 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	6085 lb		20020 lb	11843 lb	Passed - 51%
2	4-08	1.25D + 1.5L	1.00	5442 lb		16380 lb	9686 lb	Passed - 56%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	13'- 9 3/8"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'- 2 3/4"	2'- 2 1/2"	FC2 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Uniform	4'- 10 1/2"	5'- 11 1/2"	FC2 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Uniform	5'- 11 1/2"	13'- 7 1/8"	FC2 Floor Decking (Plan View Fill)	Top	11 lb/ft	22 lb/ft	-	-
Tapered	1'- 6 1/2"	12'- 2 1/2"	Smoothed Load	Back	176 To 174 lb/ft	351 To 347 lb/ft	-	-
Point	0'- 9 9/16"	0'- 9 9/16"	B14(i5351)	Front	438 lb	79 lb	-	-
Point	6'- 3/8"	6'- 3/8"	B12(i5207)	Front	173 lb	318 lb	-	-
Point	0'- 10 1/2"	0'- 10 1/2"	J1(i4962)	Back	188 lb	377 lb	-	-
Point	12'- 10 1/2"	12'- 10 1/2"	J1(i5220)	Back	201 lb	402 lb	-	-
Point	0'- 4 1/8"	0'- 4 1/8"	FC2 Floor Decking (Plan View Fill)	Top	1 lb	1 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	1(i1112)	1768 lb	2591 lb	-	-
2	13'- 4 7/8"	13'- 9 3/8"	DBBO(i3450)	1353 lb	2493 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

### PLY TO PLY CONNECTION

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120098



BUILDER: ROYAL PINE HOMES  
SITE: FORESTSIDE  
MODEL: 4505  
CITY: BRAMPTON

Job Name: 4505  
Level: 2ND FLR FRAMING  
Label: B11 - i4942  
Type: Beam

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

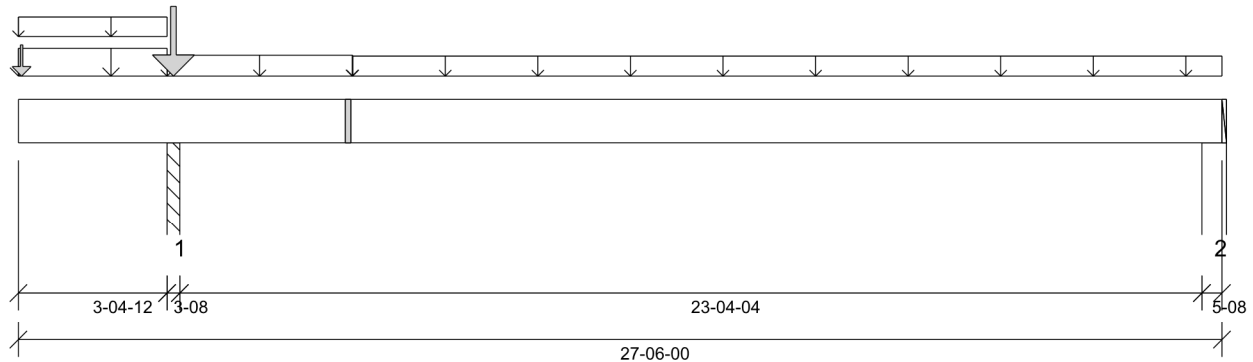
Status:  
Design  
Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26

12/02/2022 13:13



### 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/180,

TL Deflection Limit: L/120,

#### Lateral Restraint Requirements:

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

Top: 0' Bottom: 19'- 2 1/8"

#### Factored Resistance of Support Material:

- 615 psi Column @ 3'- 6 1/2"
- 615 psi Wall @ 27'- 1 1/2"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	16'	1.25D + 1.5L	0.78	4913 lb ft	27437 lb ft	Passed - 18%
Factored Neg. Moment:	3'- 6 1/2"	1.25D + 1.5L	0.95	4450 lb ft	18725 lb ft	Passed - 24%
Factored Shear:	2'- 4 7/8"	1.25D + 1.5L	0.95	1655 lb	13069 lb	Passed - 13%
Live Load (LL) Pos. Defl.:	15'- 3 5/8"	L		0.228"	L/360	Passed - L/999
Live Load (LL) Neg. Defl.:	0'	L		0.111"	L/180	Passed - L/368
Total Load (TL) Pos. Defl.:	15'- 7 7/16"	D + L		0.357"	L/240	Passed - L/784
Total Load (TL) Neg. Defl.:	0'	D + L		0.143"	L/120	Passed - L/285

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.25D + 1.5L	1.00	5574 lb		12740 lb	7534 lb	Passed - 74%
2	5-08	1.25D + 1.5L	0.78	914 lb		15535 lb	9190 lb	Passed - 10%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	27'- 6"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	3'- 4 3/4"	User Load	Front	60 lb/ft	120 lb/ft	-	-
Uniform	0'	3'- 4 3/4"	FC2 Floor Decking (Plan View Fill)	Top	13 lb/ft	25 lb/ft	-	-
Uniform	3'- 4 3/4"	7'- 7 5/8"	FC2 Floor Decking (Plan View Fill)	Top	20 lb/ft	40 lb/ft	-	-
Uniform	7'- 7 5/8"	27'- 6"	FC2 Floor Decking (Plan View Fill)	Top	15 lb/ft	30 lb/ft	-	-
Point	3'- 6 1/2"	3'- 6 1/2"	B8(i4926)	Front	1019 lb	858 lb	-	-
Point	0'- 7/8"	0'- 7/8"	B12(i5207)	Back	174 lb	320 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	3'- 4 3/4"	3'- 8 1/4"	PBO3(i1153)	1869 lb	2157 lb	-	-
2	27'- 1/2"	27'- 6"	E14(i1100)	283 lb	374/-85 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.
- 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=2561 lb, Qr=8493 lb, Result=30.15%.

### PLY TO PLY CONNECTION

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120099



BUILDER: **ROYAL PINE HOMES**  
SITE: **FORESTSIDE**  
MODEL: **4505**  
CITY: **BRAMPTON**

Job Name: **4505**  
Level: **2ND FLR FRAMING**  
Label: **B12 - i5207**  
Type: **Beam**

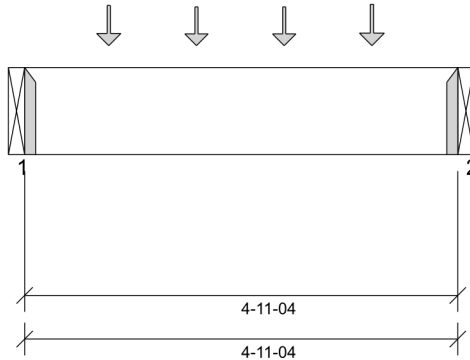
**1 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 12/02/2022 13:13



### 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'- 10 1/2"

#### Factored Resistance of Support Material:

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

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 11 1/2"	1.25D + 1.5L	1.00	1006 lb ft	17672 lb ft	Passed - 6%
Factored Shear:	0'- 11 7/8"	1.25D + 1.5L	1.00	342 lb	6908 lb	Passed - 5%

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	693 lb		2730 lb	-	Passed - 25%
2	1-08	1.25D + 1.5L	1.00	698 lb		2730 lb	-	Passed - 26%

### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	HUS1.81/10		-	-	-	Connector manually specified by the user.
2	LS90		-	-	-	Connector manually specified by the user.

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

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 11 1/4"	Self Weight	Top	6 lb/ft	-	-	-
Point	0'- 11 1/2"	0'- 11 1/2"	J4(i5139)	Back	81 lb	162 lb	-	-
Point	1'- 11 1/2"	1'- 11 1/2"	J4(i5140)	Back	76 lb	153 lb	-	-
Point	2'- 11 1/2"	2'- 11 1/2"	J4(i5231)	Back	76 lb	153 lb	-	-
Point	3'- 11 1/2"	3'- 11 1/2"	J4(i5236)	Back	85 lb	170 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B10(i5180)	173 lb	318 lb	-	-
2	4'- 11 1/4"	4'- 11 1/4"	B11(i4942)	174 lb	320 lb	-	-

### DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120100





BUILDER: ROYAL PINE HOMES  
SITE: FORESTSIDE  
MODEL: 4505  
CITY: BRAMPTON

Job Name: 4505  
Level: 2ND FLR FRAMING  
Label: B13 - i5238  
Type: Beam

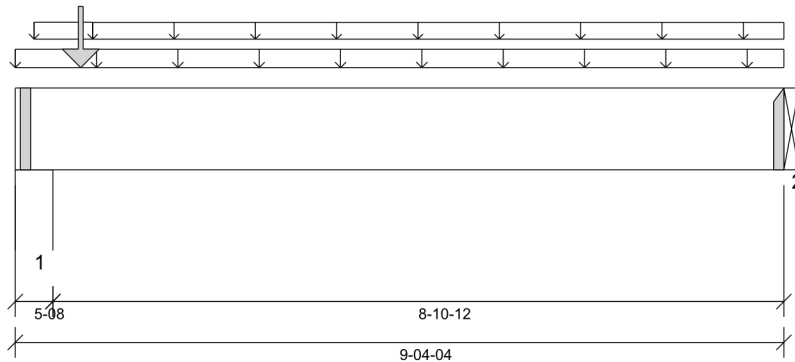
2 Ply Member  
1 3/4" x 11 7/8" (2.0E 3100)  
WestFraser LVL

Status:  
Design  
Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 12/02/2022 13:13



### 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: 8'- 4 15/16"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Beam @ 9'- 4 1/4"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 7 7/16"	1.25D + 1.5L	0.65	1416 lb ft	23027 lb ft	Passed - 6%
Factored Shear:	8'- 4 3/8"	1.25D + 1.5L	0.65	474 lb	9001 lb	Passed - 5%
Total Load (TL) Pos. Defl.:	4'- 9 1/2"	D + L		0.017"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5-08	1.25D + 1.5L	0.65	1247 lb		13042 lb	7715 lb	Passed - 16%
2	1-08	1.25D + 1.5L	0.65	599 lb		3557 lb	-	Passed - 17%

### CONNECTOR INFORMATION

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

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

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	9'- 4 1/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	-0'	9'- 4 1/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'- 2 3/4"	0'- 11 5/16"	FC2 Floor Decking (Plan View Fill)	Top	10 lb/ft	20 lb/ft	-	-
Uniform	0'- 11 5/16"	9'- 4 1/4"	FC2 Floor Decking (Plan View Fill)	Top	9 lb/ft	17 lb/ft	-	-
Point	0'- 9 9/16"	0'- 9 9/16"	B14(i5351)	Back	438 lb	79 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	1(i1112)	801 lb	156 lb	-	-
2	9'- 4 1/4"	9'- 4 1/4"	B8(i4926)	388 lb	83 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

### PLY TO PLY CONNECTION

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120101



BUILDER: ROYAL PINE HOMES  
SITE: FORESTSIDE  
MODEL: 4505  
CITY: BRAMPTON

Job Name: 4505  
Level: 2ND FLR FRAMING  
Label: B14 - i5351  
Type: Beam

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

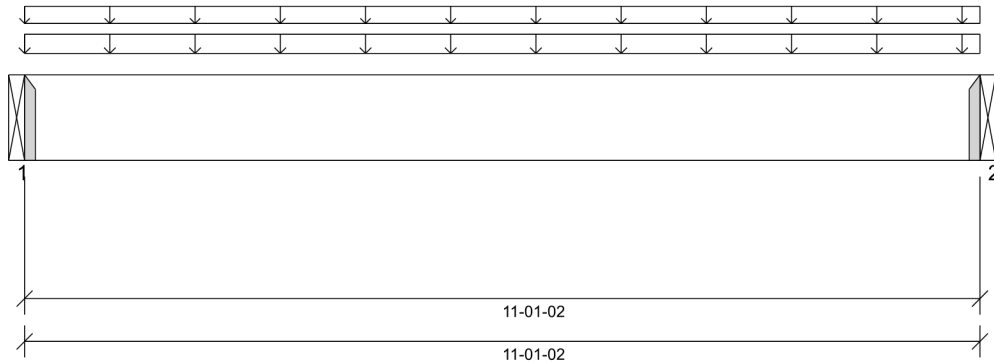
Status:  
Design  
Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26

12/02/2022 13:13



### 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: 11'- 1 1/8"

#### Factored Resistance of Support Material:

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

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 6 9/16"	1.25D + 1.5L	0.65	1847 lb ft	22974 lb ft	Passed - 8%
Factored Shear:	10'- 1 1/4"	1.25D + 1.5L	0.65	547 lb	8980 lb	Passed - 6%
Total Load (TL) Pos. Defl.:	5'- 6 9/16"	D + L		0.033"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	0.65	666 lb		3549 lb	-	Passed - 19%
2	1-08	1.25D + 1.5L	0.65	666 lb		3549 lb	-	Passed - 19%

### CONNECTOR INFORMATION

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

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

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	11'- 1 1/8"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	11'- 1 1/8"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'	11'- 1 1/8"	FC2 Floor Decking (Plan View Fill)	Top	7 lb/ft	14 lb/ft	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B10(i5180)	438 lb	79 lb	-	-
2	11'- 1 1/8"	11'- 1 1/8"	B13(i5238)	438 lb	79 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

### PLY TO PLY CONNECTION

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120102



BUILDER: **ROYAL PINE HOMES**  
SITE: **FORESTSIDE**  
MODEL: **4505**  
CITY: **BRAMPTON**

Job Name: **4505**  
Level: **2ND FLR FRAMING**  
Label: **B15 - i5501**  
Type: **Beam**

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

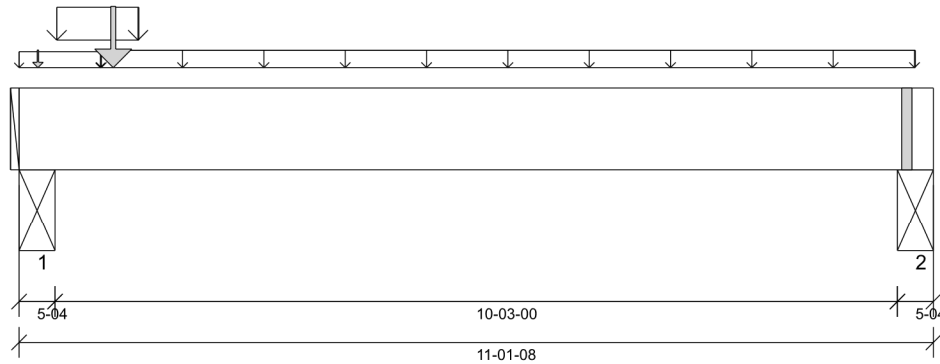
Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26

12/02/2022 13:13



### 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: 9'- 4 3/4"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 4 1/4"
- 615 psi Beam @ 10'- 9 1/4"

#### PLY TO PLY CONNECTION:

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

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

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 3 7/8"	1.25D + 1.5S + L	0.99	3194 lb ft	34946 lb ft	Passed - 9%
Factored Shear:	1'- 5 1/8"	1.25D + 1.5L	0.86	2704 lb	11902 lb	Passed - 23%
Live Load (LL) Pos. Defl.:	5'- 1 1/16"	L + 0.5S		0.020"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 13/16"	D + L + 0.5S		0.040"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5'-04"	1.25D + 1.5S + L	0.99	4413 lb		18894 lb	11173 lb	Passed - 39%
2	5'-04"	1.25D + 1.5L + S	0.97	679 lb		18537 lb	10962 lb	Passed - 6%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	11'- 1 1/2"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	-0'	1'	FC2 Floor Decking (Plan View Fill)	Top	4 lb/ft	8 lb/ft	-	-
Uniform	0'- 5 1/2"	1'- 5 1/2"	E30(i2586)	Top	182 lb/ft	-	161 lb/ft	-
Uniform	1'	10'- 10 7/8"	FC2 Floor Decking (Plan View Fill)	Top	13 lb/ft	27 lb/ft	-	-
Point	1'- 1 3/4"	1'- 1 3/4"	B16(i5490)	Back	1278 lb	676 lb	995 lb	-
Point	0'- 2 3/4"	0'- 2 3/4"	E31(i2591)	Top	67 lb	-	74 lb	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/4"	STL BM(i1149)	1572 lb	766 lb	1162 lb	-
2	10'- 8 1/4"	11'- 1 1/2"	STL BM(i1151)	223 lb	182 lb	68 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.
- 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=0.99, Pf=3809 lb, Qr=10617 lb, Result=35.88%.

### PLY TO PLY CONNECTION

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120103





BUILDER: **ROYAL PINE HOMES**  
SITE: **FORESTSIDE**  
MODEL: **4505**  
CITY: **BRAMPTON**

Job Name: **4505**  
Level: **2ND FLR FRAMING**  
Label: **B16 - i5490**  
Type: **Beam**

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

Status:  
**Design  
Passed**

#### DESIGN NOTES

- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- User loads assume a bearing length of 3.5" in determining member capacity for loads near supports.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 1. Required Load Area: L=1.500", W=3.500". LDF=1.00, Pf=2443 lb, Qr=5460 lb, Result=44.74%.

#### 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.





BUILDER: **ROYAL PINE HOMES**  
SITE: **FORESTSIDE**  
MODEL: **4505**  
CITY: **BRAMPTON**

Job Name: **4505**  
Level: **1ST FLR FRAMING**  
Label: **B1 - i5511**  
Type: **Beam**

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

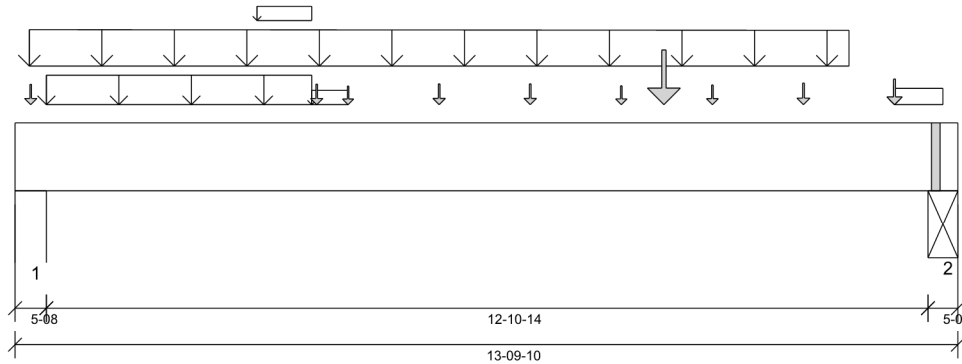
Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26

12/02/2022 13:13



### 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: 1'- 1 1/2"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Beam @ 13'- 5 3/8"

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

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

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	7'- 6 1/2"	1.25D + 1.5L	1.00	28754 lb ft	53017 lb ft	Passed - 54%
Factored Shear:	12'- 4 1/2"	1.25D + 1.5L	1.00	8543 lb	20723 lb	Passed - 41%
Live Load (LL) Pos. Defl.:	6'- 11 11/16"	L		0.273"	L/360	Passed - L/566
Total Load (TL) Pos. Defl.:	6'- 11 3/4"	D + L		0.445"	L/240	Passed - L/347
Permanent Deflection:	6'- 11 7/8"			-	L/360	Passed - L/927

### 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	9019 lb		30030 lb	17764 lb	Passed - 51%
2	5-04	1.25D + 1.5L	1.00	8635 lb		28665 lb	16951 lb	Passed - 51%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	13'- 9 5/8"	Self Weight	Top	18 lb/ft	-	-	-
Uniform	0'- 5 1/2"	4'- 4 1/8"	User Load	Top	120 lb/ft	240 lb/ft	-	-
Uniform	3'- 6 1/2"	4'- 4 1/8"	FC1 Floor Decking (Plan View Fill)	Top	4 lb/ft	9 lb/ft	-	-
Uniform	4'- 4 1/8"	4'- 10 1/2"	FC1 Floor Decking (Plan View Fill)	Top	4 lb/ft	9 lb/ft	-	-
Uniform	12'- 10 1/2"	13'- 7"	FC1 Floor Decking (Plan View Fill)	Top	20 lb/ft	40 lb/ft	-	-
Tapered	0'- 2 1/2"	12'- 2 1/2"	Smoothed Load	Back	173 To 167 lb/ft	346 To 336 lb/ft	-	-
Point	4'- 5"	4'- 5"	B5(i5512)	Front	253 lb	38 lb	-	-
Point	4'- 10 1/2"	4'- 10 1/2"	J7(i5668)	Front	70 lb	140 lb	-	-
Point	6'- 2 1/2"	6'- 2 1/2"	J7(i5734)	Front	101 lb	203 lb	-	-
Point	7'- 6 1/2"	7'- 6 1/2"	J7(i5644)	Front	101 lb	203 lb	-	-
Point	8'- 10 1/2"	8'- 10 1/2"	J7(i5751)	Front	74 lb	149 lb	-	-
Point	9'- 6"	9'- 6"	B2(i5510)	Front	835 lb	918 lb	-	-
Point	10'- 2 1/2"	10'- 2 1/2"	J6(i5722)	Front	87 lb	174 lb	-	-
Point	11'- 6 1/2"	11'- 6 1/2"	J6(i5730)	Front	114 lb	228 lb	-	-
Point	12'- 10 1/2"	12'- 10 1/2"	J6(i5648)	Front	83 lb	165 lb	-	-
Point	12'- 10 1/2"	12'- 10 1/2"	J3(i5765)	Back	170 lb	340 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	2(i1113)	Top	121 lb	167 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	W19(i33)	2431 lb	3993 lb	-	-
2	13'- 4 3/8"	13'- 9 5/8"	STL BM(i34)	2349 lb	3793 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.
- 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 # TF22120105 PG 1/2



	BUILDER: <b>ROYAL PINE HOMES</b> SITE: <b>FORESTSIDE</b> MODEL: <b>4505</b> CITY: <b>BRAMPTON</b>	Job Name: <b>4505</b> Level: <b>1ST FLR FRAMING</b> Label: <b>B1 - i5511</b> Type: <b>Beam</b>	<b>3 Ply Member</b> <b>1 3/4" x 11 7/8" (2.0E 3100)</b> <b>WestFraser LVL</b>	Status: <b>Design Passed</b>
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#### PLY TO PLY CONNECTION

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





BUILDER: ROYAL PINE HOMES  
SITE: FORESTSIDE  
MODEL: 4505  
CITY: BRAMPTON

Job Name: 4505  
Level: 1ST FLR FRAMING  
Label: B2 - i5510  
Type: Beam

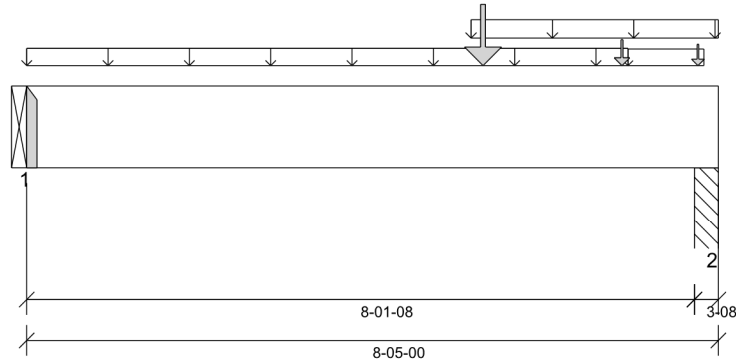
2 Ply Member  
1 3/4" x 11 7/8" (2.0E 3100)  
WestFraser LVL

Status:  
Design  
Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 12/02/2022 13:13



### 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'- 2 1/8" Bottom: 7'- 2 1/16"

#### Factored Resistance of Support Material:

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

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

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

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 6 5/8"	1.25D + 1.5L	1.00	11804 lb ft	35345 lb ft	Passed - 33%
Factored Shear:	7'- 1 5/8"	1.25D + 1.5L	1.00	5326 lb	13815 lb	Passed - 39%
Live Load (LL) Pos. Defl.:	4'- 5 3/4"	L		0.046"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 5 3/4"	D + L		0.087"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	2337 lb		5460 lb	-	Passed - 43%
2	3-08	1.25D + 1.5L	1.00	6226 lb		12740 lb	7534 lb	Passed - 83%

### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	HGUS410		-	-	-	Connector manually specified by the user.
* Connectors: Refer to manufacturer's specifications, fasteners requirements and installation instruction. Where header fasteners are longer than the width of the supporting member, install backer block or clinch header nails.						

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 5"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	7'- 3 13/16"	FC1 Floor Decking (Plan View Fill)	Top	13 lb/ft	27 lb/ft	-	-
Uniform	5'- 4 7/8"	8'- 5"	User Load	Top	60 lb/ft	-	-	-
Uniform	7'- 3 13/16"	8'- 2 7/8"	FC1 Floor Decking (Plan View Fill)	Top	9 lb/ft	17 lb/ft	-	-
Point	7'- 2 15/16"	7'- 2 15/16"	B4(i5672)	Front	324 lb	621 lb	-	-
Point	8'- 2"	8'- 2"	B3(i5746)	Back	263 lb	275 lb	-	-
Point	5'- 6 5/8"	5'- 6 5/8"	PBO3(i1153)	Top	1951 lb	2157 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B1(i5511)	835 lb	918 lb	-	-
2	8'- 1 1/2"	8'- 5"	PBO1(i42)	2091 lb	2351 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

### PLY TO PLY CONNECTION

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120106



BUILDER: **ROYAL PINE HOMES**  
SITE: **FORESTSIDE**  
MODEL: **4505**  
CITY: **BRAMPTON**

Job Name: **4505**  
Level: **1ST FLR FRAMING**  
Label: **B3 - i5746**  
Type: **Beam**

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

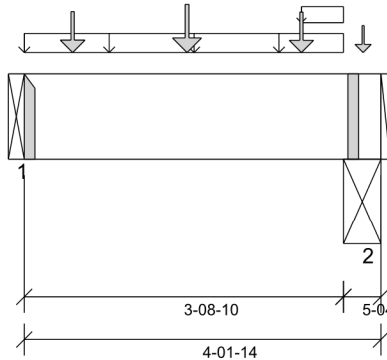
Status:  
**Design  
Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26

12/02/2022 13:13



### 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: 1'- 1 1/2"

#### Factored Resistance of Support Material:

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

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 10 3/4"	1.25D + 1.5L	1.00	798 lb ft	17672 lb ft	Passed - 5%
Factored Shear:	0'- 11 7/8"	1.25D + 1.5L	1.00	677 lb	6908 lb	Passed - 10%

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	758 lb		2730 lb	-	Passed - 28%
2	5-04	1.25D + 1.5L	1.00	922 lb		9555 lb	5650 lb	Passed - 16%

### CONNECTOR INFORMATION

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

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

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 1 7/8"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	3'- 8 5/8"	User Load	Top	60 lb/ft	-	-	-
Uniform	3'- 2 3/4"	3'- 8 5/8"	FC1 Floor Decking (Plan View Fill)	Top	2 lb/ft	3 lb/ft	-	-
Point	0'- 6 3/4"	0'- 6 3/4"	J6(i5722)	Back	87 lb	174 lb	-	-
Point	1'- 10 3/4"	1'- 10 3/4"	J6(i5730)	Back	112 lb	224 lb	-	-
Point	3'- 2 3/4"	3'- 2 3/4"	J6(i5648)	Back	85 lb	170 lb	-	-
Point	3'- 11 3/8"	3'- 11 3/8"	3(i1114)	Top	46 lb	69 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B2(i5510)	263 lb	275 lb	-	-
2	3'- 8 5/8"	4'- 1 7/8"	STL BM(i34)	316 lb	363 lb	-	-

### DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120107



BUILDER: **ROYAL PINE HOMES**  
SITE: **FORESTSIDE**  
MODEL: **4505**  
CITY: **BRAMPTON**

Job Name: **4505**  
Level: **1ST FLR FRAMING**  
Label: **B4 - i5672**  
Type: **Beam**

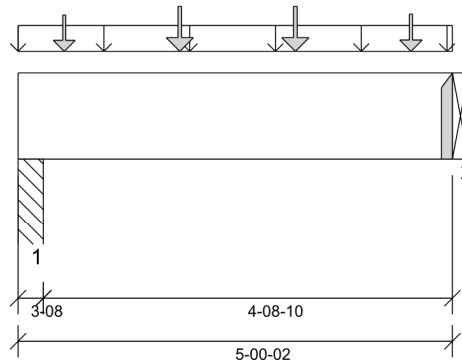
**1 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 12/02/2022 13:13



### 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: 1'- 1 1/2"

#### Factored Resistance of Support Material:

- 615 psi Column @ 0'- 2 1/2"
- 615 psi Beam @ 5'- 1/8"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 8 1/2"	1.25D + 1.5L	1.00	1609 lb ft	17672 lb ft	Passed - 9%
Factored Shear:	1'- 3 3/8"	1.25D + 1.5L	1.00	796 lb	6908 lb	Passed - 12%
Total Load (TL) Pos. Defl.:	2'- 7 5/16"	D + L		0.010"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-08	1.25D + 1.5L	1.00	1429 lb		6370 lb	3767 lb	Passed - 38%
2	1-08	1.25D + 1.5L	1.00	1337 lb		2730 lb	-	Passed - 49%

### CONNECTOR INFORMATION

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

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 1/8"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	5'- 1/8"	User Load	Top	60 lb/ft	120 lb/ft	-	-
Point	0'- 6 3/8"	0'- 6 3/8"	J7(i5668)	Back	70 lb	139 lb	-	-
Point	1'- 10 3/8"	1'- 10 3/8"	J7(i5734)	Back	99 lb	199 lb	-	-
Point	3'- 2 3/8"	3'- 2 3/8"	J7(i5644)	Back	99 lb	199 lb	-	-
Point	4'- 6 3/8"	4'- 6 3/8"	J7(i5751)	Back	73 lb	146 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	PBO2(i684)	347 lb	663 lb	-	-
2	5'- 1/8"	5'- 1/8"	B2(i5510)	324 lb	621 lb	-	-

### DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120108



BUILDER: **ROYAL PINE HOMES**  
SITE: **FORESTSIDE**  
MODEL: **4505**  
CITY: **BRAMPTON**

Job Name: **4505**  
Level: **1ST FLR FRAMING**  
Label: **B5 - i5512**  
Type: **Beam**

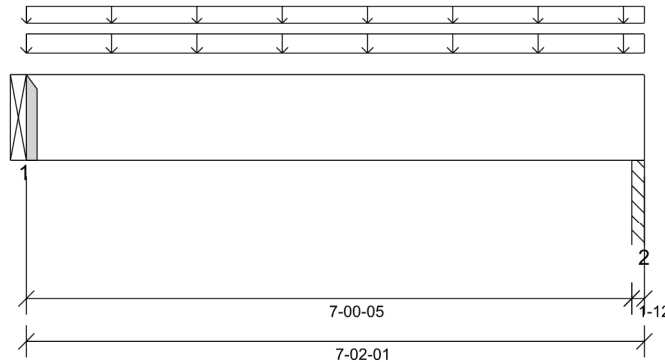
**1 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 12/02/2022 13:13



### 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: 7'- 2 1/16"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Column @ 7'- 1 5/16"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 6 5/8"	1.25D + 1.5L	0.65	663 lb ft	11487 lb ft	Passed - 6%
Factored Shear:	0'- 11 7/8"	1.25D + 1.5L	0.65	269 lb	4490 lb	Passed - 6%
Total Load (TL) Pos. Defl.:	3'- 6 5/8"	D + L		0.010"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	0.65	373 lb		1774 lb	-	Passed - 21%
2	1-12	1.25D + 1.5L	0.65	383 lb		2070 lb	1224 lb	Passed - 31%

### CONNECTOR INFORMATION

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

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

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'- 2 1/16"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	7'- 2 1/16"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'	7'- 2 1/16"	FC1 Floor Decking (Plan View Fill)	Top	5 lb/ft	11 lb/ft	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B1(i5511)	253 lb	38 lb	-	-
2	7'- 5/16"	7'- 2 1/16"	PBO2(i684)	258 lb	40 lb	-	-

### DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120109



BUILDER: ROYAL PINE HOMES  
SITE: FORESTSIDE  
MODEL: 4505  
CITY: BRAMPTON

Job Name: 4505 SUNKEN FOYER  
Level: 1ST FLR FRAMING  
Label: B6 - i3950  
Type: Beam

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

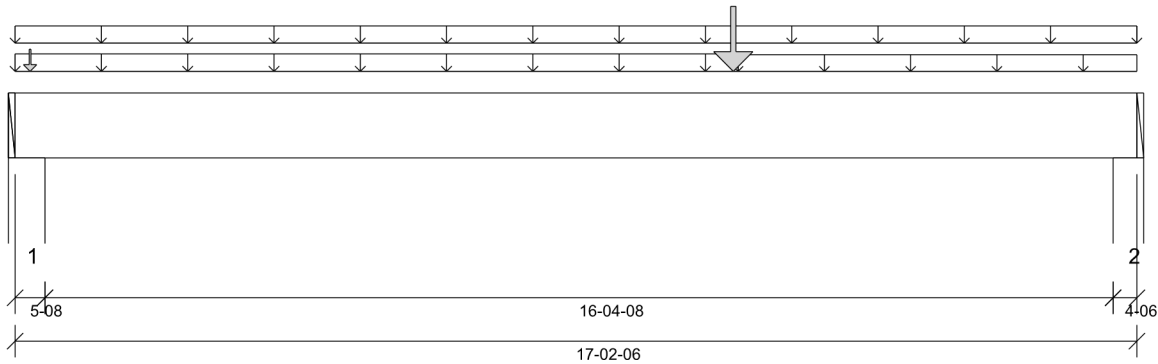
Status:  
Design  
Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26

11-29-2022 11:54



### DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

#### Lateral Restraint Requirements:

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

Top: 0' Bottom: 10'- 5 3/4"

#### Factored Resistance of Support Material:

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

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	11'- 1/8"	1.25D + 1.5L	1.00	9828 lb ft	35345 lb ft	Passed - 28%
Factored Shear:	15'- 10 1/8"	1.25D + 1.5L	1.00	1761 lb	13815 lb	Passed - 13%
Live Load (LL) Pos. Defl.:	9'- 1 5/8"	L		0.189"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	9'- 1 5/16"	D + L		0.308"	L/240	Passed - L/638

### 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	1579 lb		20020 lb	11843 lb	Passed - 13%
2	4-06	1.25D + 1.5L	1.00	1833 lb		15925 lb	9420 lb	Passed - 19%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	17'- 2 3/8"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	-0'	17'- 2 3/8"	FC1 Floor Decking (Plan View Fill)	Top	6 lb/ft	11 lb/ft	-	-
Uniform	0'	11'- 1"	FC1 Floor Decking (Plan View Fill)	Top	8 lb/ft	15 lb/ft	-	-
Uniform	11'- 1"	17'- 2 3/8"	FC1 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Point	11'- 1/8"	11'- 1/8"	B7(i3940)	Front	502 lb	955 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E13(i1101)	Top	74 lb	101 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	W3(i16)	465 lb	661 lb	-	-
2	16'- 10"	17'- 2 3/8"	W20(i32)	515 lb	797 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.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

### PLY TO PLY CONNECTION

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120110





BUILDER: ROYAL PINE HOMES  
SITE: FORESTSIDE  
MODEL: 4505  
CITY: BRAMPTON

Job Name: 4505 SUNKEN FOYER  
Level: 1ST FLR FRAMING  
Label: B7 - i3940  
Type: Beam

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

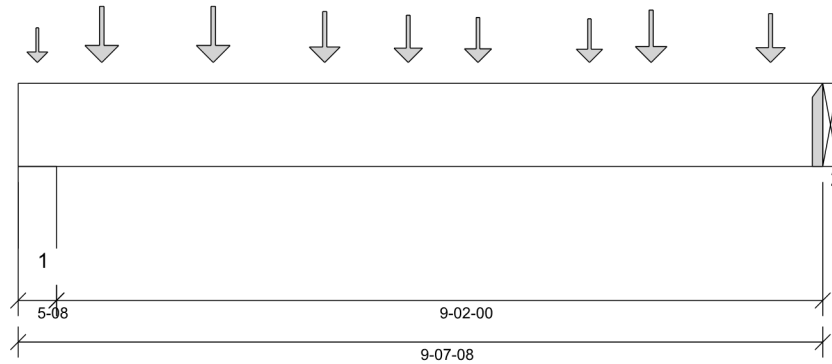
Status:  
Design  
Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26

11-29-2022 11:54



### DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

#### Lateral Restraint Requirements:

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

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

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Beam @ 9'- 7 1/2"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 8"	1.25D + 1.5L	1.00	5044 lb ft	17672 lb ft	Passed - 29%
Factored Shear:	1'- 5 3/8"	1.25D + 1.5L	1.00	1563 lb	6908 lb	Passed - 23%
Live Load (LL) Pos. Defl.:	4'- 11 7/8"	L		0.075"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 11 7/8"	D + L		0.115"	L/240	Passed - L/958

### 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	2470 lb		10010 lb	5921 lb	Passed - 42%
2	1-08	1.25D + 1.5L	1.00	2066 lb		2730 lb	-	Passed - 76%

### CONNECTOR INFORMATION

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

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	9'- 7 1/2"	Self Weight	Top	6 lb/ft	-	-	-
Point	1'	1'	J4(i3927)	Back	145 lb	289 lb	-	-
Point	2'- 4"	2'- 4"	J4(i3948)	Back	145 lb	289 lb	-	-
Point	3'- 8"	3'- 8"	J4(i3980)	Back	126 lb	253 lb	-	-
Point	4'- 8"	4'- 8"	J4DJ(i3997)	Back	113 lb	226 lb	-	-
Point	5'- 6"	5'- 6"	J5(i2930)	Back	105 lb	210 lb	-	-
Point	6'- 10"	6'- 10"	J5(i3043)	Back	100 lb	201 lb	-	-
Point	7'- 6 7/8"	7'- 6 7/8"	J4DJ(i3952)	Back	131 lb	263 lb	-	-
Point	9'	9'	J4(i4011)	Back	119 lb	238 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E23(i1103)	Top	104 lb	101 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	W14(i28)	643 lb	1115 lb	-	-
2	9'- 7 1/2"	9'- 7 1/2"	B6(i3950)	502 lb	955 lb	-	-

### DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120111



BUILDER: ROYAL PINE HOMES  
SITE: FORESTSIDE  
MODEL: 4505  
CITY: BRAMPTON

Job Name: 4505 SUNKEN IN-LAW SUITE  
Level: 1ST FLR FRAMING  
Label: B18A - i3672  
Type: Beam

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

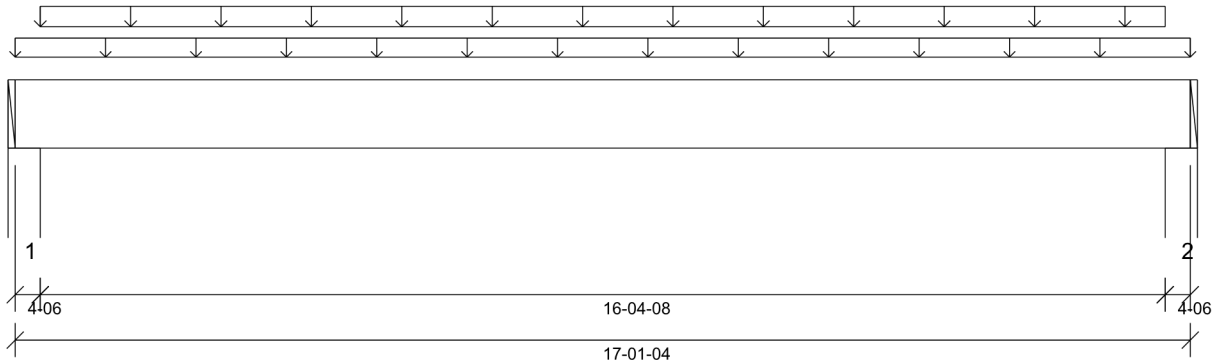
Status:  
Design  
Passed

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26

12/02/2022 13:15



### DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

#### Lateral Restraint Requirements:

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

Top: 0' Bottom: 16'- 4 1/2"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 3 3/8"
- 615 psi Wall @ 16'- 9 7/8"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	8'- 6 5/8"	1.25D + 1.5L	0.75	4555 lb ft	13311 lb ft	Passed - 34%
Factored Shear:	1'- 4 1/4"	1.25D + 1.5L	0.75	959 lb	5203 lb	Passed - 18%
Live Load (LL) Pos. Defl.:	8'- 6 5/8"	L		0.085"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	8'- 6 5/8"	D + L		0.361"	L/240	Passed - L/543
Permanent Deflection:	8'- 6 5/8"			-	L/360	Passed - L/732

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-06	1.25D + 1.5L	0.75	1117 lb		5998 lb	3548 lb	Passed - 31%
2	4-06	1.25D + 1.5L	0.75	1117 lb		5998 lb	3548 lb	Passed - 31%

### SPECIFIED LOADS

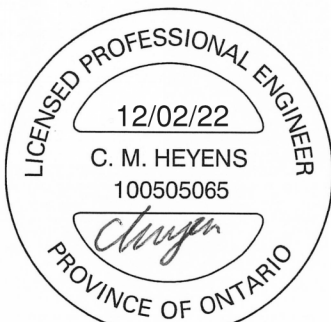
Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	17'- 1 1/4"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	17'- 1 1/4"	FC1 Floor Decking (Plan View Fill)	Top	12 lb/ft	24 lb/ft	-	-
Uniform	0'- 4 3/8"	16'- 8 7/8"	User Load	Top	60 lb/ft	-	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 3/8"	W3(i16)	646 lb	207 lb	-	-
2	16'- 8 7/8"	17'- 1 1/4"	W20(i32)	645 lb	207 lb	-	-

### DESIGN NOTES

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22120112

### Maximum Floor Spans – S2.1

#### Design Criteria

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

#### Maximum Floor Spans

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

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

#### Notes:

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

## Maximum Floor Spans – S4.1

### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued oriented strand board (OSB) sheathing

### Maximum Floor Spans

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

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

### Notes:

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

### Maximum Floor Spans – S6.1

#### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued Canadian softwood plywood

#### Maximum Floor Spans

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

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

#### Notes:

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

## Maximum Floor Spans – S7.1

### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 15 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued Canadian softwood plywood

### Maximum Floor Spans

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

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

### Notes:

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

## Maximum Floor Spans – M2.1

### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued oriented strand board (OSB) sheathing

### Maximum Floor Spans

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

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

### Notes:

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

## Maximum Floor Spans – M4.1

### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	3/4 in. nailed-glued oriented strand board (OSB) sheathing

### Maximum Floor Spans

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

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

### Notes:

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



### Maximum Floor Spans – M6.1

#### Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/480 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued Canadian softwood plywood

#### Maximum Floor Spans

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

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

#### Notes:

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

## Maximum Floor Spans – M7.1

### Design Criteria

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

### Maximum Floor Spans

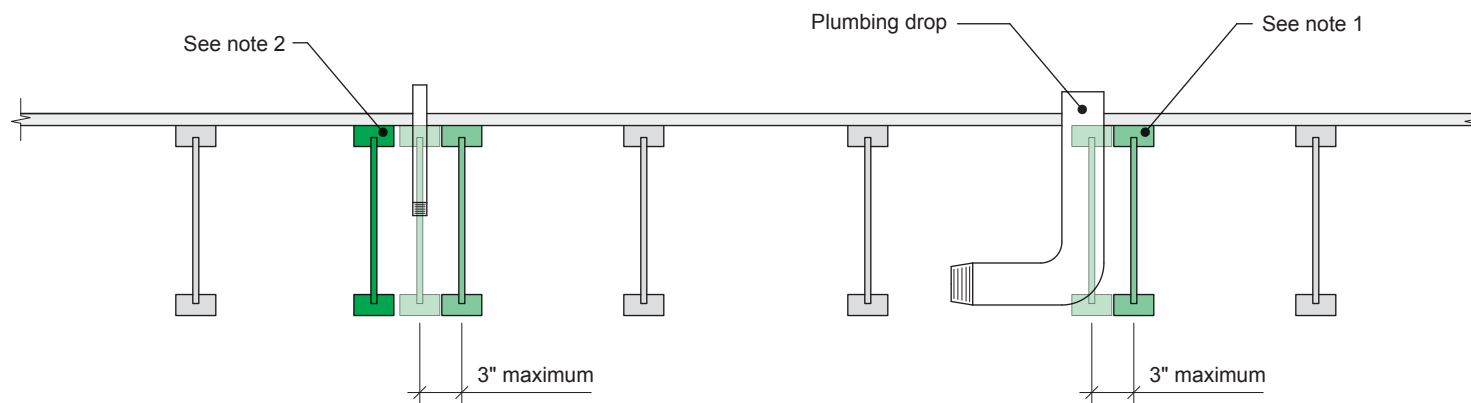
Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	14'-11"
	NI-60	17'-1"	16'-1"	15'-6"	14'-10"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

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

### Notes:

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

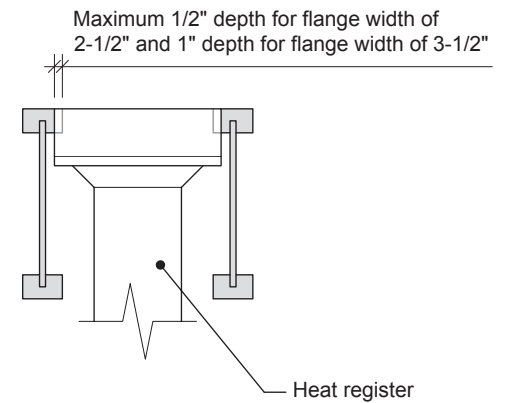
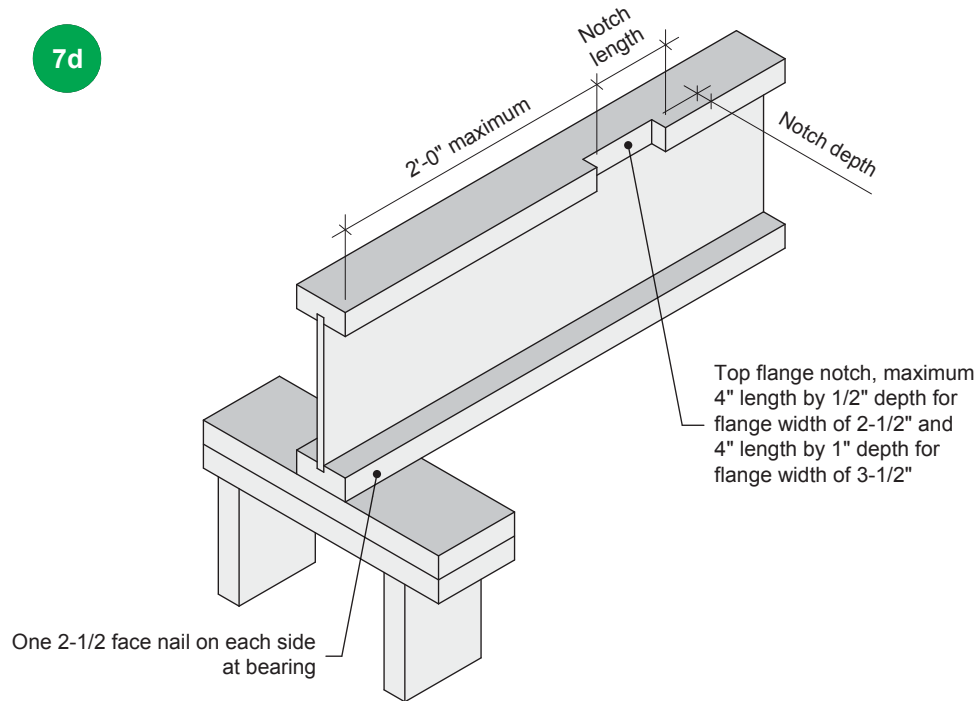
7c

**Notes:**

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

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

7d



**Notes:**

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

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