

Products				
PlotID	Length	Product	Plies	Net Qty
J11	18-00-00	9 1/2" NI-40x	1	8
J12	10-00-00	9 1/2" NI-40x	1	1
J1	20-00-00	11 7/8" NI-40x	1	8
J1DJ	20-00-00	11 7/8" NI-40x	2	4
J2	18-00-00	11 7/8" NI-40x	1	9
J3	16-00-00	11 7/8" NI-40x	1	3
J4	14-00-00	11 7/8" NI-40x	1	4
J5	12-00-00	11 7/8" NI-40x	1	9
J6	10-00-00	11 7/8" NI-40x	1	2
J7	4-00-00	11 7/8" NI-40x	1	5
J8	2-00-00	11 7/8" NI-40x	1	4
J9	22-00-00	11 7/8" NI-80	1	27
J9DJ	22-00-00	11 7/8" NI-80	2	4
J10	20-00-00	11 7/8" NI-80	1	3
B4	20-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B6	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B1	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B2	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B3	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
3	H1	IUS2.56/11.88
29	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
3	H2	IUS3.56/11.88
1	H3	HUS1.81/10
1	H4C	HUC410
2	H4	HGUS410
2	H7	HU312-2

TOWN OF BRADFORD WEST GWILLIMBURY  
BUILDING DEPARTMENT  
PLANS EXAMINED  
ONTARIO BUILDING CODE APPLIES  
DATE: 2022-09-01

INSPECTOR: BG

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING



FROM PLAN DATED: SEPT. 2021  
BUILDER: BAYVIEW WELLINGTON  
SITE: GREEN VALLEY EAST  
MODEL: S42-21  
ELEVATION: A  
LOT:  
CITY: BRADFORD  
SALESMAN: RICK DICIANO  
DESIGNER: CH  
REVISION:

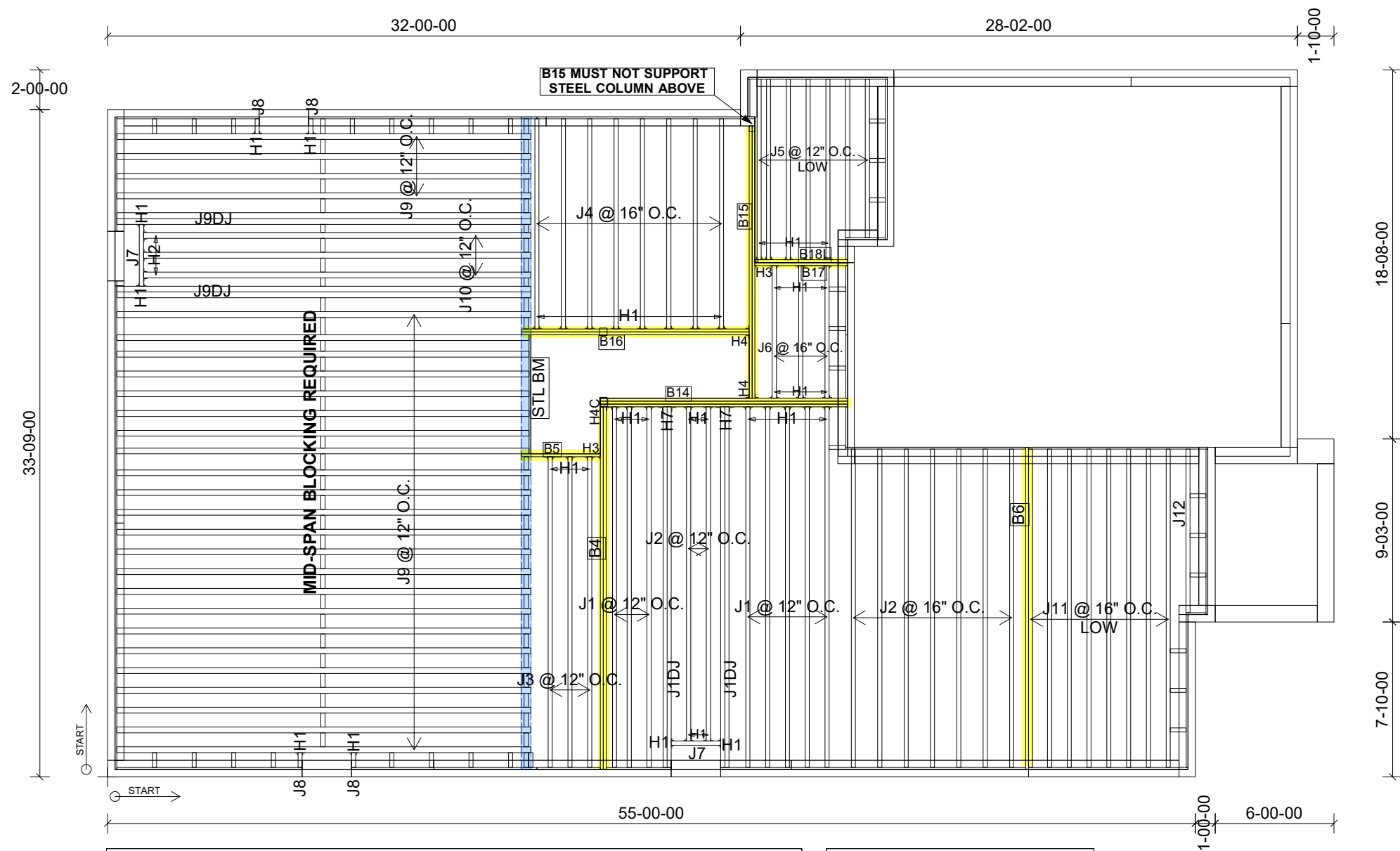
REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.  
SQUASH BLOCKS OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.  
MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.  
CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING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

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

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

JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 5/8" GLUED AND NAILED



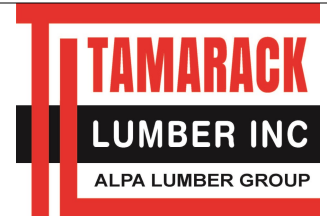
Products				
PlotID	Length	Product	Plies	Net Qty
J11	18-00-00	9 1/2" NI-40x	1	8
J12	10-00-00	9 1/2" NI-40x	1	1
J1	20-00-00	11 7/8" NI-40x	1	8
J1DJ	20-00-00	11 7/8" NI-40x	2	4
J2	18-00-00	11 7/8" NI-40x	1	9
J3	16-00-00	11 7/8" NI-40x	1	3
J4	12-00-00	11 7/8" NI-40x	1	8
J5	10-00-00	11 7/8" NI-40x	1	7
J6	8-00-00	11 7/8" NI-40x	1	3
J7	4-00-00	11 7/8" NI-40x	1	2
J8	2-00-00	11 7/8" NI-40x	1	4
J9	22-00-00	11 7/8" NI-80	1	27
J9DJ	22-00-00	11 7/8" NI-80	2	4
J10	20-00-00	11 7/8" NI-80	1	3
B4	20-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B6	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B15	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B14	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B16	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B17	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B18L	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B5	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
13	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
3	H2	IUS3.56/11.88
2	H3	HUS1.81/10
1	H4C	HUC410
1	H4	HGUS410
1	H4	HGUS410
2	H7	HU312-2

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING  
SUNKEN OPTION



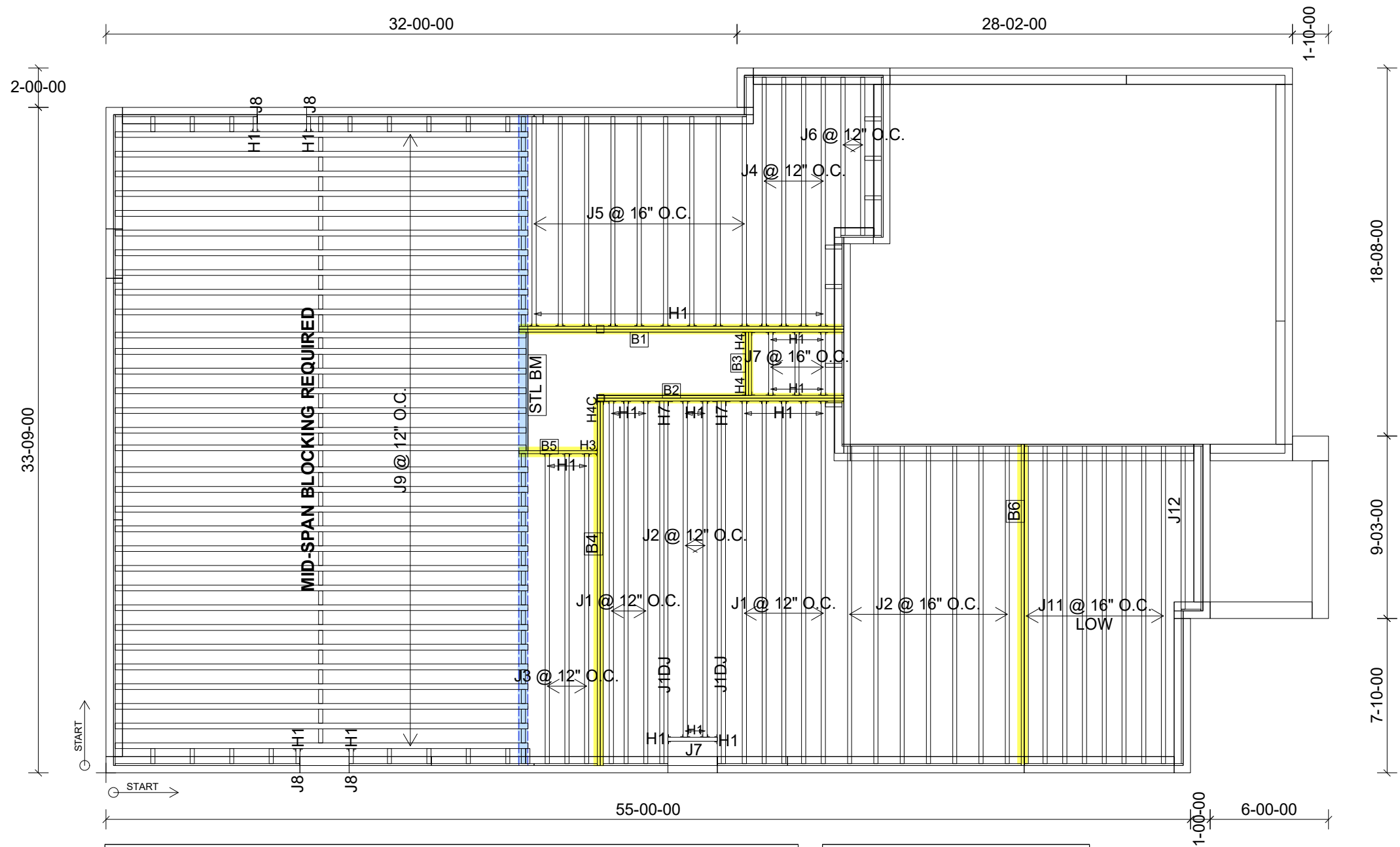
FROM PLAN DATED: SEPT. 2021  
BUILDER: BAYVIEW WELLINGTON  
SITE: GREEN VALLEY EAST  
MODEL: S42-21  
ELEVATION: A  
LOT:  
CITY: BRADFORD  
SALESMAN: RICK DICIANO  
DESIGNER: CH  
REVISION:

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

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

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

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



Products				
PlotID	Length	Product	Plies	Net Qty
J11	18-00-00	9 1/2" NI-40x	1	8
J12	10-00-00	9 1/2" NI-40x	1	1
J1	20-00-00	11 7/8" NI-40x	1	8
J1DJ	20-00-00	11 7/8" NI-40x	2	4
J2	18-00-00	11 7/8" NI-40x	1	9
J3	16-00-00	11 7/8" NI-40x	1	3
J4	14-00-00	11 7/8" NI-40x	1	4
J5	12-00-00	11 7/8" NI-40x	1	9
J6	10-00-00	11 7/8" NI-40x	1	2
J7	4-00-00	11 7/8" NI-40x	1	4
J8	2-00-00	11 7/8" NI-40x	1	4
J9	22-00-00	11 7/8" NI-80	1	32
B4	20-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B6	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B1	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B2	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B3	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
3	H1	IUS2.56/11.88
29	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
1	H3	HUS1.81/10
1	H4C	HUC410
2	H4	HGUS410
2	H7	HU312-2

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING  
WOD / WOB CONDITION



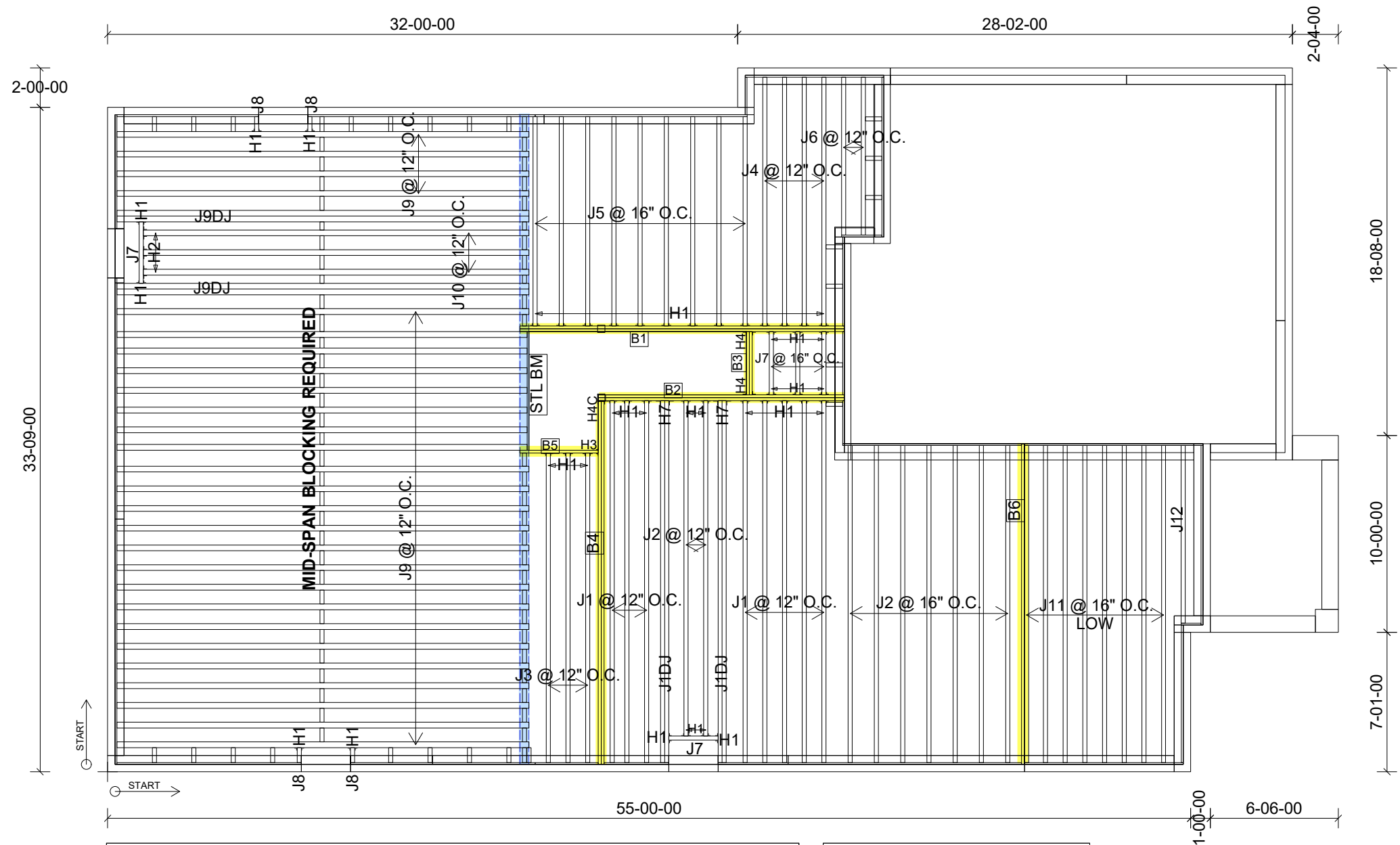
FROM PLAN DATED: SEPT. 2021  
BUILDER: BAYVIEW WELLINGTON  
SITE: GREEN VALLEY EAST  
MODEL: S42-21  
ELEVATION: A  
LOT:  
CITY: BRADFORD  
SALESMAN: RICK DICIANO  
DESIGNER: CH  
REVISION:

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

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

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

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



Products				
PlotID	Length	Product	Plies	Net Qty
J11	18-00-00	9 1/2" NI-40x	1	8
J12	10-00-00	9 1/2" NI-40x	1	1
J1	20-00-00	11 7/8" NI-40x	1	8
J1DJ	20-00-00	11 7/8" NI-40x	2	4
J2	18-00-00	11 7/8" NI-40x	1	9
J3	16-00-00	11 7/8" NI-40x	1	3
J4	14-00-00	11 7/8" NI-40x	1	4
J5	12-00-00	11 7/8" NI-40x	1	9
J6	10-00-00	11 7/8" NI-40x	1	2
J7	4-00-00	11 7/8" NI-40x	1	5
J8	2-00-00	11 7/8" NI-40x	1	4
J9	22-00-00	11 7/8" NI-80	1	27
J9DJ	22-00-00	11 7/8" NI-80	2	4
J10	20-00-00	11 7/8" NI-80	1	3
B4	20-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B6	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B1	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B2	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B3	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
3	H1	IUS2.56/11.88
29	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
3	H2	IUS3.56/11.88
1	H3	HUS1.81/10
1	H4C	HUC410
2	H4	HGUS410
2	H7	HU312-2

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING



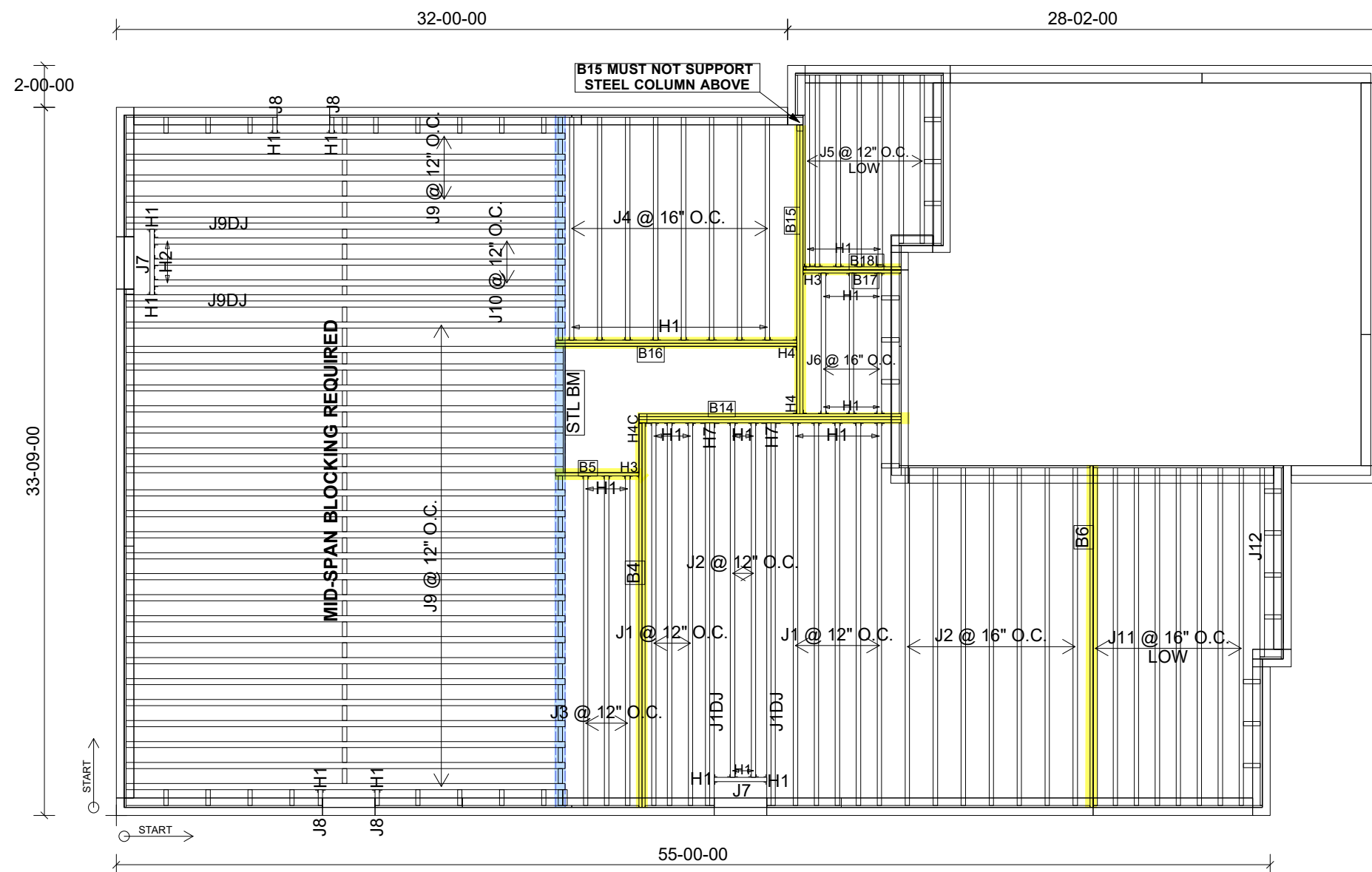
FROM PLAN DATED: SEPT. 2021  
BUILDER: BAYVIEW WELLINGTON  
SITE: GREEN VALLEY EAST  
MODEL: S42-21  
ELEVATION: B  
LOT:  
CITY: BRADFORD  
SALESMAN: RICK DICIANO  
DESIGNER: CH  
REVISION:

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

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

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

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



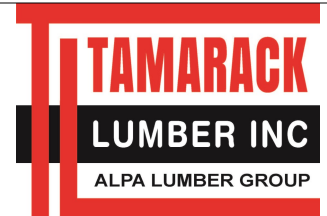
Products				
PlotID	Length	Product	Plies	Net Qty
J11	18-00-00	9 1/2" NI-40x	1	8
J12	10-00-00	9 1/2" NI-40x	1	1
J1	20-00-00	11 7/8" NI-40x	1	8
J1DJ	20-00-00	11 7/8" NI-40x	2	4
J2	18-00-00	11 7/8" NI-40x	1	9
J3	16-00-00	11 7/8" NI-40x	1	3
J4	12-00-00	11 7/8" NI-40x	1	8
J5	10-00-00	11 7/8" NI-40x	1	7
J6	8-00-00	11 7/8" NI-40x	1	3
J7	4-00-00	11 7/8" NI-40x	1	2
J8	2-00-00	11 7/8" NI-40x	1	4
J9	22-00-00	11 7/8" NI-80	1	27
J9DJ	22-00-00	11 7/8" NI-80	2	4
J10	20-00-00	11 7/8" NI-80	1	3
B4	20-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B6	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B15	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B14	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B16	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B17	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B18L	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B5	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1

Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
13	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
3	H2	IUS3.56/11.88
2	H3	HUS1.81/10
1	H4C	HUC410
1	H4	HGUS410
1	H4	HGUS410
2	H7	HU312-2

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING  
SUNKEN OPTION



FROM PLAN DATED: SEPT. 2021

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S42-21

ELEVATION: B

LOT:

CITY: BRADFORD

SALESMAN: RICK DICIANO

DESIGNER: CH

REVISION:

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

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

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

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

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

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

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

**LOADING:**

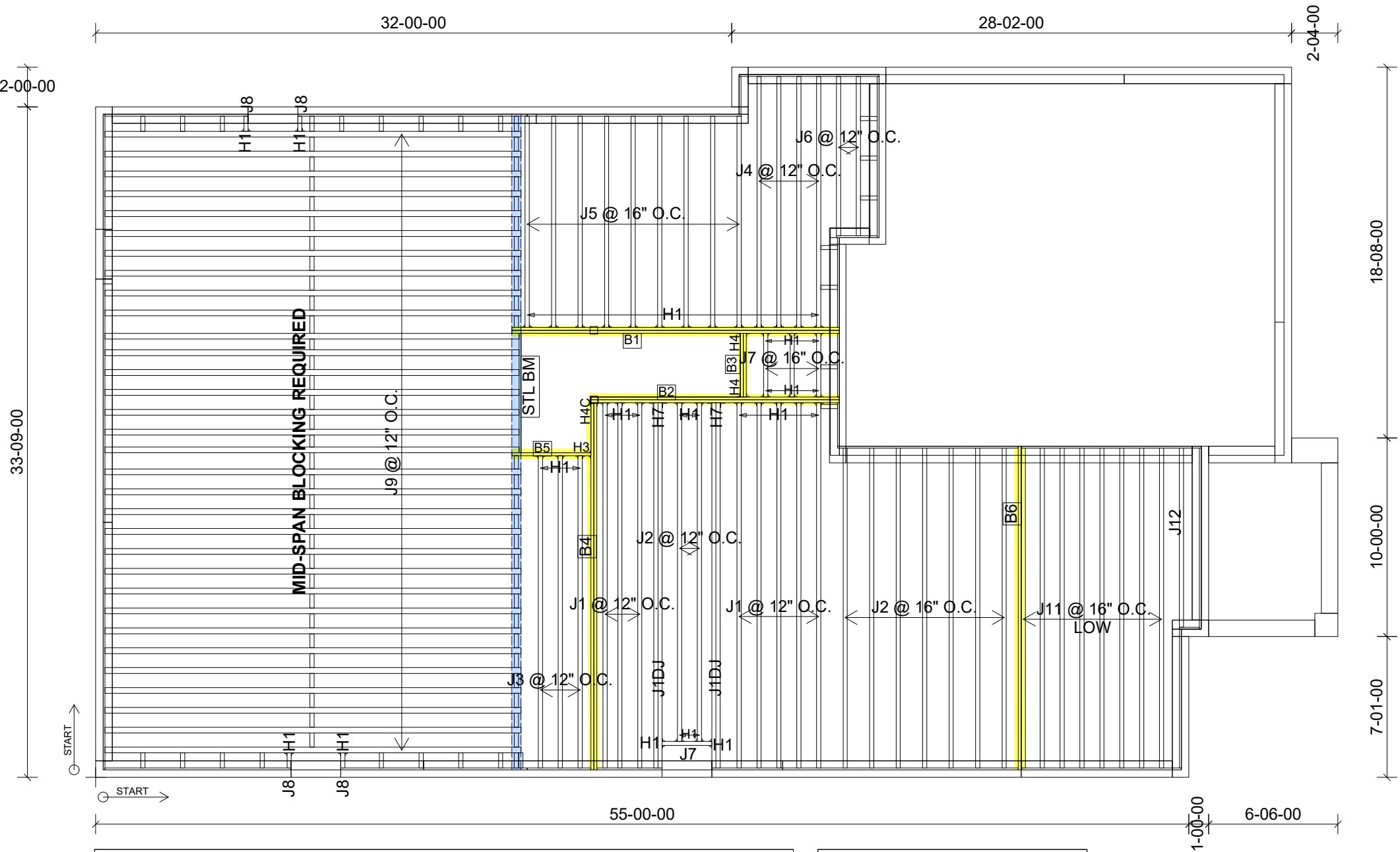
LIVE LOAD: 40.0 lb/ft<sup>2</sup>

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

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

JOIST LL DEFLECTION LIMIT: L/480

SUBFLOOR: 5/8" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J11	18-00-00	9 1/2" NI-40x	1	8
J12	10-00-00	9 1/2" NI-40x	1	1
J1	20-00-00	11 7/8" NI-40x	1	8
J1DJ	20-00-00	11 7/8" NI-40x	2	4
J2	18-00-00	11 7/8" NI-40x	1	9
J3	16-00-00	11 7/8" NI-40x	1	3
J4	14-00-00	11 7/8" NI-40x	1	4
J5	12-00-00	11 7/8" NI-40x	1	9
J6	10-00-00	11 7/8" NI-40x	1	2
J7	4-00-00	11 7/8" NI-40x	1	4
J8	2-00-00	11 7/8" NI-40x	1	4
J9	22-00-00	11 7/8" NI-80	1	32
B4	20-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B6	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B1	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B2	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B3	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
3	H1	IUS2.56/11.88
29	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
1	H3	HUS1.81/10
1	H4C	HUC410
2	H4	HGUS410
2	H7	HU312-2

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING  
WOD / WOB CONDITION



FROM PLAN DATED: SEPT. 2021  
BUILDER: BAYVIEW WELLINGTON  
SITE: GREEN VALLEY EAST  
MODEL: S42-21  
ELEVATION: B  
LOT:  
CITY: BRADFORD  
SALESMAN: RICK DICIANO  
DESIGNER: CH  
REVISION:

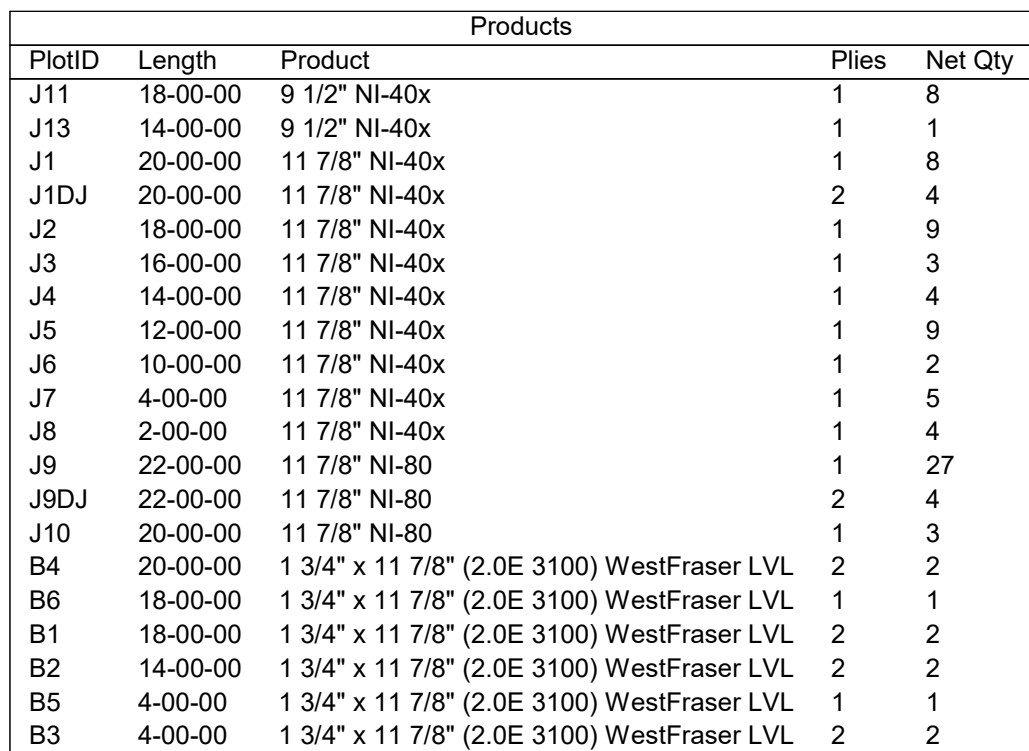
REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.  
**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.  
**MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.  
**CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK**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

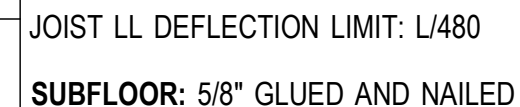
JOIST LL DEFLECTION LIMIT: L/480

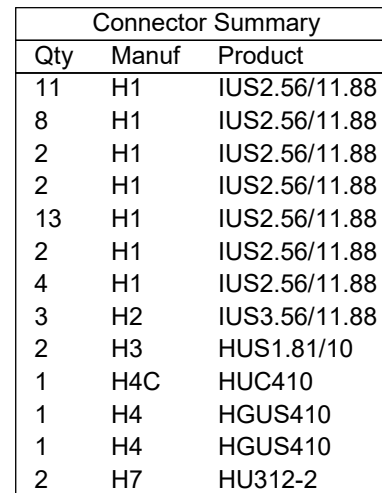
SUBFLOOR: 5/8" GLUED AND NAILED



# REVIEWED

## 1st FLOOR FRAMING





# 1st FLOOR FRAMING SUNKEN OPTION



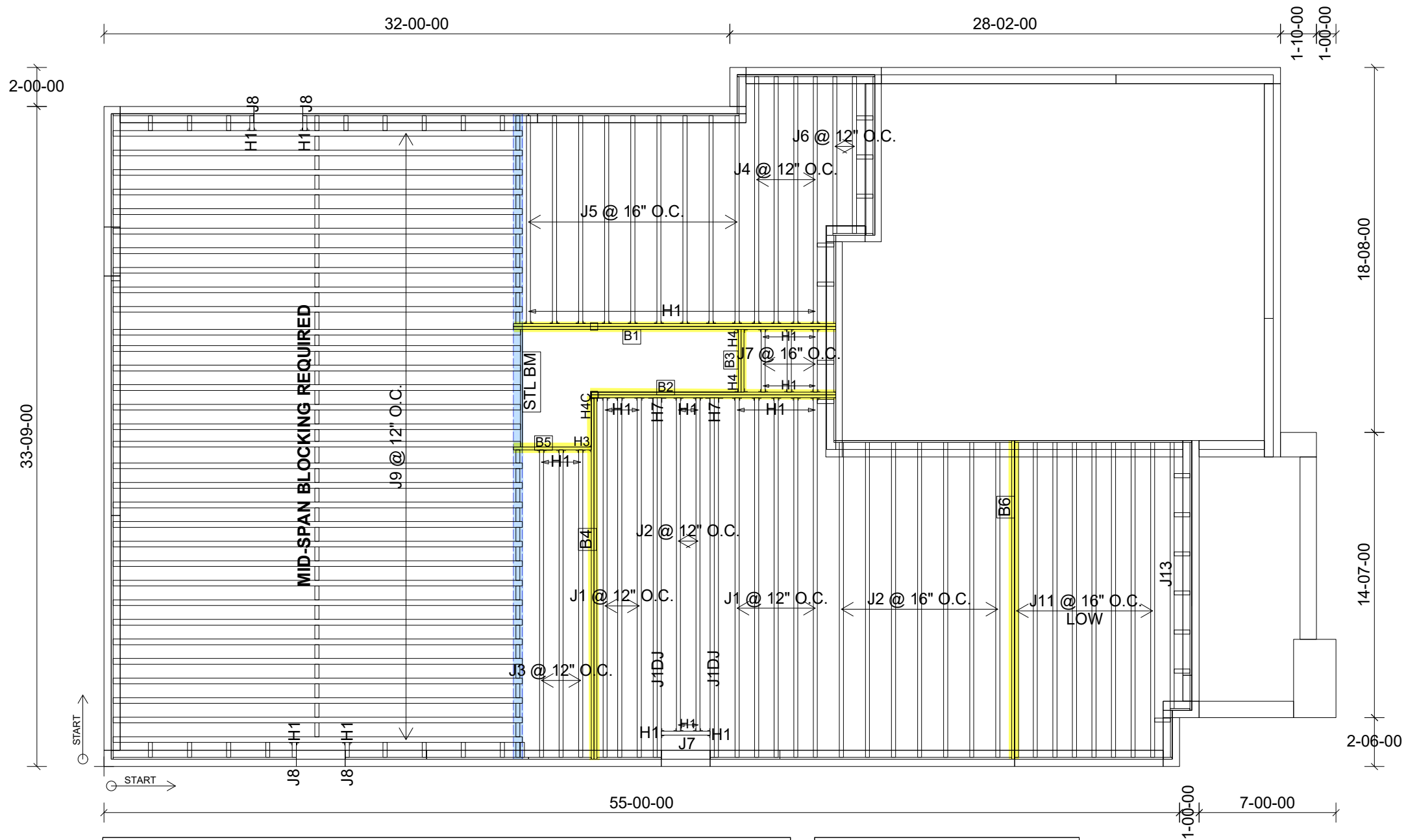
**FROM PLAN DATED:** SEPT. 2021  
**BUILDER:** BAYVIEW WELLINGTON  
**SITE:** GREEN VALLEY EAST  
**MODEL:** S42-21  
**ELEVATION:** C  
**LOT:**  
**CITY:** BRADFORD  
**SALESMAN:** RICK DICIANO  
**DESIGNER:** CH  
**REVISION:**

REFER TO THE **NORDIC INSTALLATION GUIDE**  
FOR PROPER STORAGE AND INSTALLATION.  
**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 SPF #2 REQ'D  
UNDER INTERIOR UNIFORM LOAD BEARING WALLS.  
**MULTIPLE SQUASH BLOCKS** REQ'D UNDER  
CONCENTRATED LOADS. SEE FIGURE 1.  
**CANTILEVERED JOISTS** INCLUDING **CANT' OVER**  
**BRICK** REQ. 1-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:** 5/8" GLUED AND NAILED



Products				
PlotID	Length	Product	Plies	Net Qty
J11	18-00-00	9 1/2" NI-40x	1	8
J13	14-00-00	9 1/2" NI-40x	1	1
J1	20-00-00	11 7/8" NI-40x	1	8
J1DJ	20-00-00	11 7/8" NI-40x	2	4
J2	18-00-00	11 7/8" NI-40x	1	9
J3	16-00-00	11 7/8" NI-40x	1	3
J4	14-00-00	11 7/8" NI-40x	1	4
J5	12-00-00	11 7/8" NI-40x	1	9
J6	10-00-00	11 7/8" NI-40x	1	2
J7	4-00-00	11 7/8" NI-40x	1	4
J8	2-00-00	11 7/8" NI-40x	1	4
J9	22-00-00	11 7/8" NI-80	1	32
B4	20-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B6	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B1	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B2	14-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B5	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	1	1
B3	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
3	H1	IUS2.56/11.88
29	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
2	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
1	H3	HUS1.81/10
1	H4C	HUC410
2	H4	HGUS410
2	H7	HU312-2

REVIEWED

DATE: 6/22/22

1st FLOOR FRAMING  
WOD / WOB CONDITION



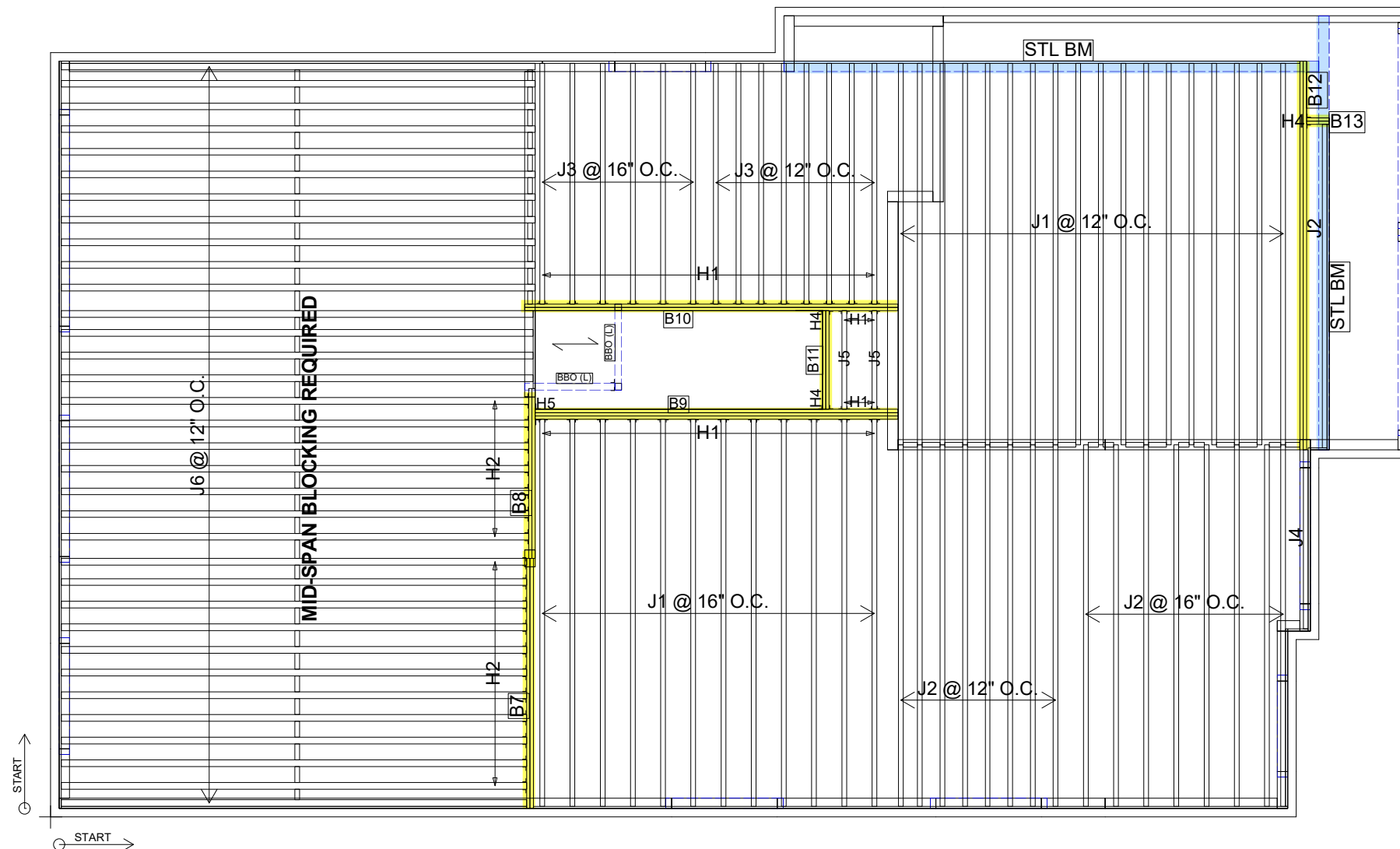
FROM PLAN DATED: SEPT. 2021  
BUILDER: BAYVIEW WELLINGTON  
SITE: GREEN VALLEY EAST  
MODEL: S42-21  
ELEVATION: C  
LOT:  
CITY: BRADFORD  
SALESMAN: RICK DICIANO  
DESIGNER: CH  
REVISION:

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

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

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

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



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	30
J2	16-00-00	11 7/8" NI-40x	1	17
J3	12-00-00	11 7/8" NI-40x	1	14
J4	8-00-00	11 7/8" NI-40x	1	1
J5	6-00-00	11 7/8" NI-40x	1	2
J6	22-00-00	11 7/8" NI-80	1	34
B10	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B12	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B9	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B7	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B8	8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B11	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B13	2-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
16	H1	IUS2.56/11.88
14	H1	IUS2.56/11.88
18	H2	IUS3.56/11.88
2	H4	HGUS410
1	H4	HGUS410
1	H5	HGUS5.50/10

**REVIEWED**

DATE: 6/22/22

2nd FLOOR FRAMING



FROM PLAN DATED: SEPT. 2021  
 BUILDER: BAYVIEW WELLINGTON  
 SITE: GREEN VALLEY EAST  
 MODEL: S42-21  
 ELEVATION: A  
 LOT:  
 CITY: BRADFORD  
 SALESMAN: RICK DICIANO  
 DESIGNER: CH  
 REVISION:

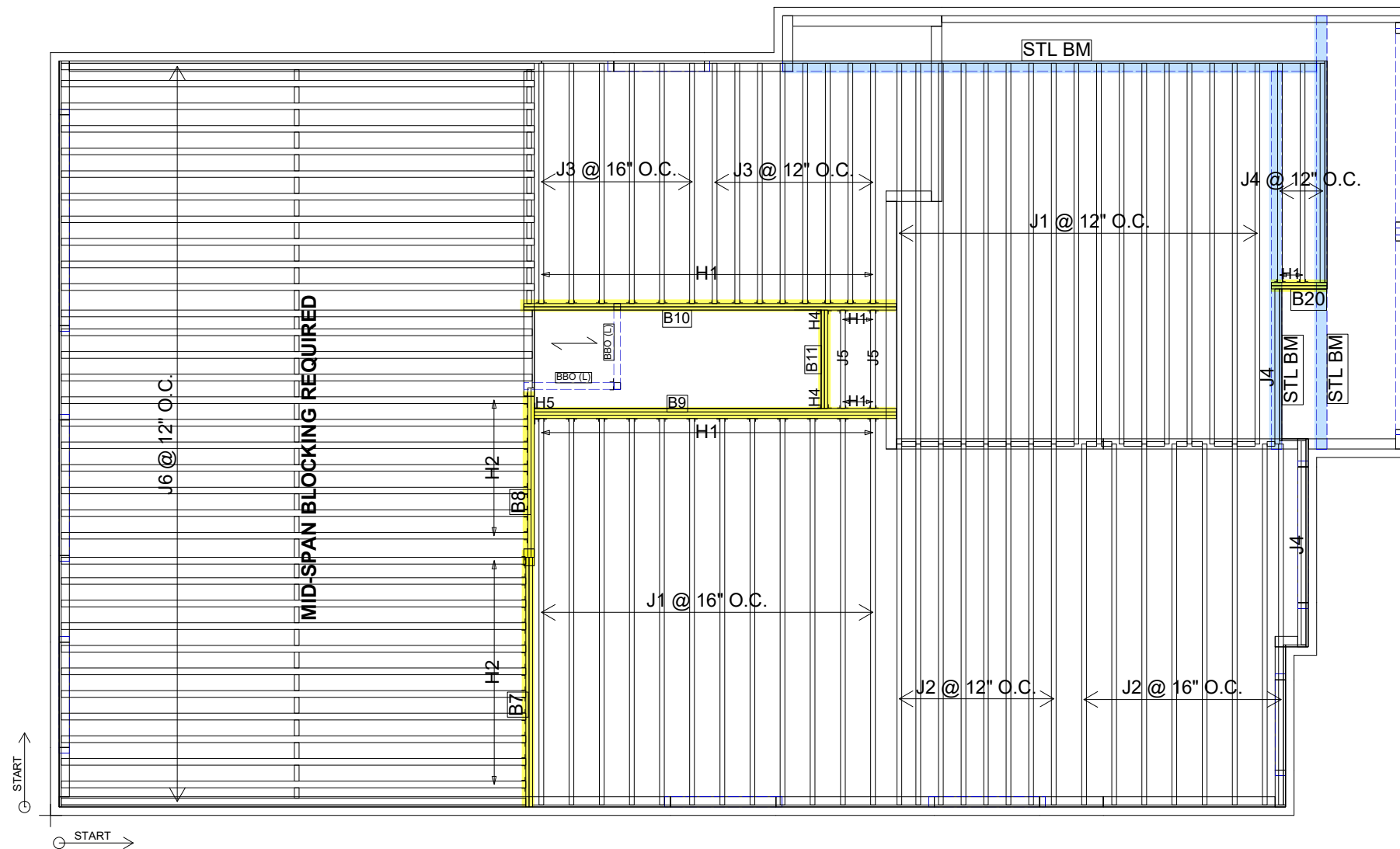
REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.  
**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 SPF #2 REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS.  
**MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1.  
**CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK**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

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

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

JOIST LL DEFLECTION LIMIT: L/480

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



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	29
J2	16-00-00	11 7/8" NI-40x	1	16
J3	12-00-00	11 7/8" NI-40x	1	14
J4	10-00-00	11 7/8" NI-40x	1	5
J5	6-00-00	11 7/8" NI-40x	1	2
J6	22-00-00	11 7/8" NI-80	1	34
B10	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B9	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B7	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B8	8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B11	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B20	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
18	H1	IUS2.56/11.88
14	H1	IUS2.56/11.88
18	H2	IUS3.56/11.88
1	H4	HGUS410
1	H4	HGUS410
1	H5	HGUS5.50/10

REVIEWED

DATE: 6/22/22

2nd FLOOR FRAMING



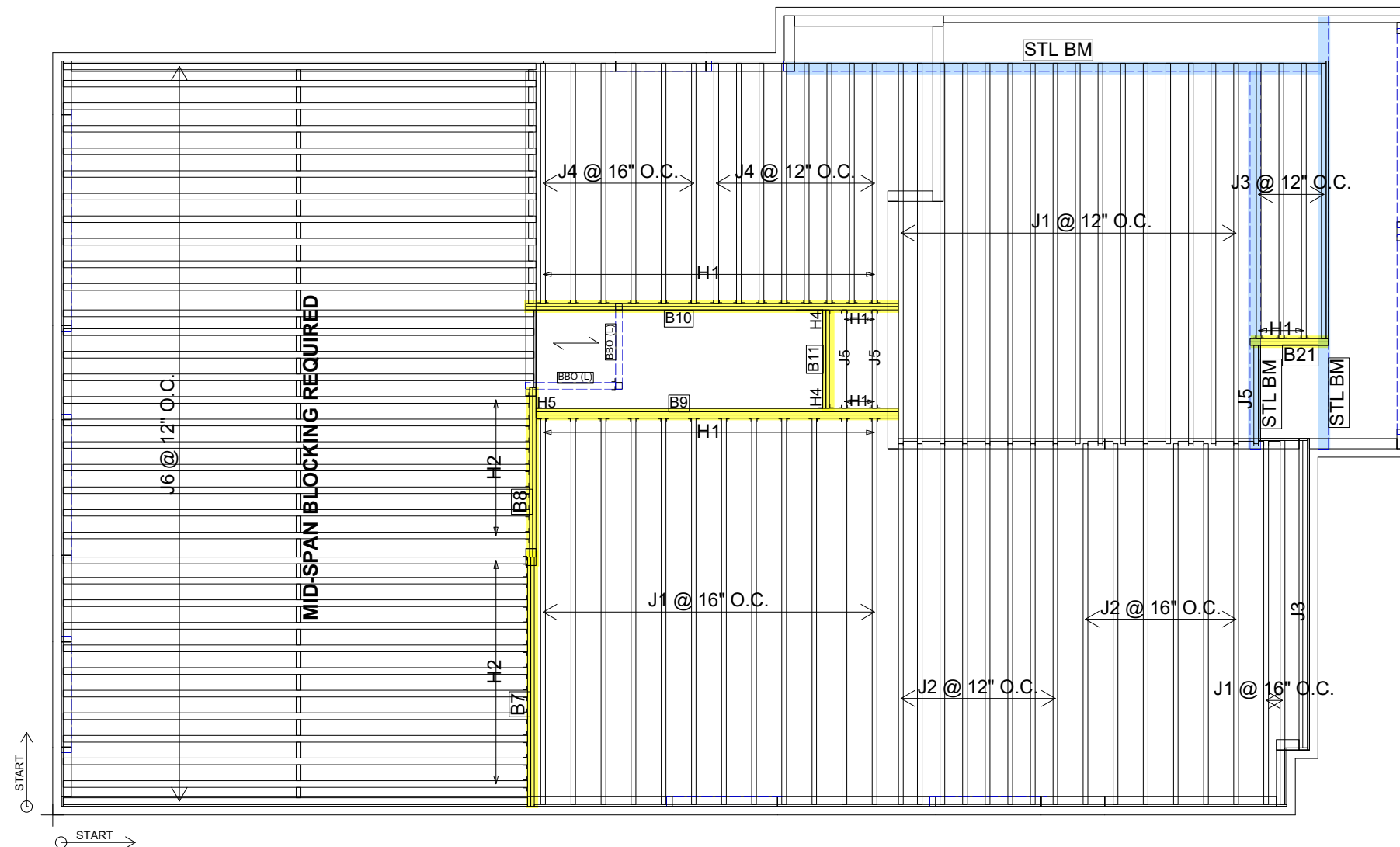
FROM PLAN DATED: SEPT. 2021  
BUILDER: BAYVIEW WELLINGTON  
SITE: GREEN VALLEY EAST  
MODEL: S42-21  
ELEVATION: B  
LOT:  
CITY: BRADFORD  
SALESMAN: RICK DICIANO  
DESIGNER: CH  
REVISION:

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

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

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

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



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	30
J2	16-00-00	11 7/8" NI-40x	1	14
J3	14-00-00	11 7/8" NI-40x	1	5
J4	12-00-00	11 7/8" NI-40x	1	14
J5	6-00-00	11 7/8" NI-40x	1	3
J6	22-00-00	11 7/8" NI-80	1	34
B10	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B9	18-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	3	3
B7	12-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B8	8-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B11	6-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2
B21	4-00-00	1 3/4" x 11 7/8" (2.0E 3100) WestFraser LVL	2	2

Connector Summary		
Qty	Manuf	Product
19	H1	IUS2.56/11.88
14	H1	IUS2.56/11.88
18	H2	IUS3.56/11.88
1	H4	HGUS410
1	H4	HGUS410
1	H5	HGUS5.50/10

REVIEWED

DATE: 6/22/22

2nd FLOOR FRAMING



FROM PLAN DATED: SEPT. 2021  
BUILDER: BAYVIEW WELLINGTON  
SITE: GREEN VALLEY EAST  
MODEL: S42-21  
ELEVATION: C  
LOT:  
CITY: BRADFORD  
SALESMAN: RICK DICIANO  
DESIGNER: CH  
REVISION:

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

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

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

JOIST LL DEFLECTION LIMIT: L/480  
SUBFLOOR: 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 overpress I-joist with concentrated loads from building materials.

### NORDIC I-JOIST SERIES

#### RESIDENTIAL SERIES

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

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

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

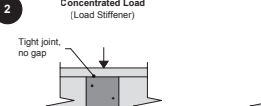
<b>NI-80</b> <b>2x4</b> 2400F MSR 3/8 in. web Depths 11-7/8, 14 and 16 in.
23 pieces per unit

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

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

### WEB STIFFENERS

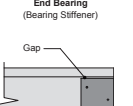
**2** Concentrated Load (Load Stiffener)



Tight joint, no gap

Gap

End Bearing (Bearing Stiffener)



Tight joint, no gap

Gap

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

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

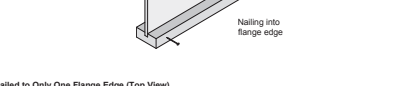
Nailing into flange face



Nailing into flange edge

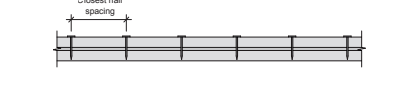


**Nailed to Only One Flange Edge (Top View)**



Closest nail spacing

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



Closest nail spacing

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

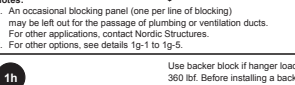
**Recommended Closest Nail Spacing for Fastening Sheathing to I-joist Flanges to Minimize Splitting**

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	
	2	2	2	3	6	
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**

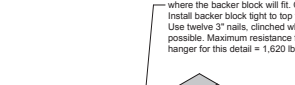


Nordic I-joist blocking panel

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**



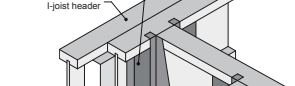
Rim board

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.

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.

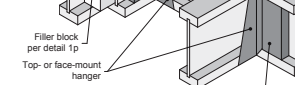
**1c**



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

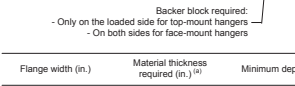
Attach squash block to top and bottom flange with one 2-1/2" nail at each location

**1d**



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

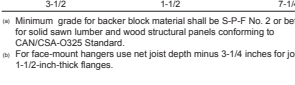
**1e**



Blocking panel

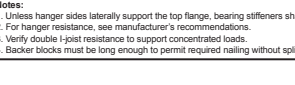
Two 2-1/2" nails from blocking panel web to lumber piece

**1f**



Top-mount hanger installed per manufacturer's recommendations

**1g**



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


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

Joist attachment per detail 1b

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

Nordic I-joist blocking panel per detail 1a

**1h**



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

Double I-joist header

Filler block per detail 1p

Top- or face-mount hanger

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

**1i**



Install hanger per manufacturer's recommendations

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

Backer block per detail 1h

Note: 1. See detail 1h for maximum support resistance.

**1j**



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

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

Note: 1. See detail 1h for maximum support resistance.

**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**



Blocking panel

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

**1m**



Filler block

Offset nails from opposite face by 6"

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

**1n**

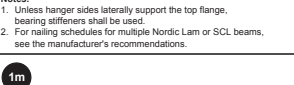


Backer block required: - Only on the loaded side for top-mount hangers - On both sides for face-mount hangers

Attach I-joist per detail 1b

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

**1m**

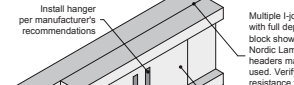


Filler block

Offset nails from opposite face by 6"

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

**1n**

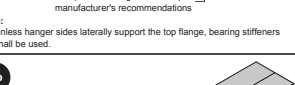


Backer block required: - Only on the loaded side for top-mount hangers - On both sides for face-mount hangers

Attach I-joist per detail 1b

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

**1p**

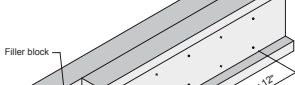


Filler block

Offset nails from opposite face by 6"

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

**1q**

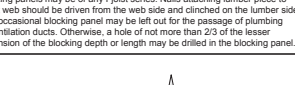


Backer block required: - Only on the loaded side for top-mount hangers - On both sides for face-mount hangers

Attach I-joist per detail 1b

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

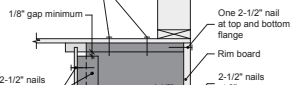
**1r**



Blocking panel

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

**1s**



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

Attach I-joist per detail 1b

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

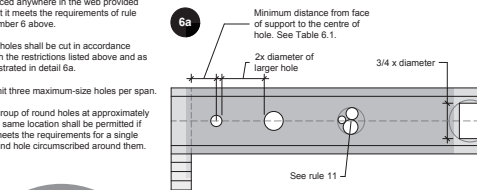
### WEB HOLES AND OPENINGS

**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.

**6a**



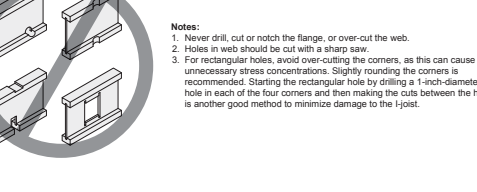
Minimum distance from face of support to the centre of hole. See Table 6.1.

2x diameter of larger hole

3/4 x diameter

See rule 11

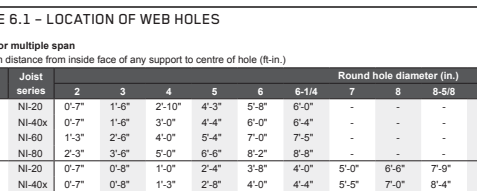
**6b**



Minimum distance from face of support to the centre of opening. See Table 6.2.

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

**6c**



Maximum allowable hole diameter

Blocking panel

**Notes:**

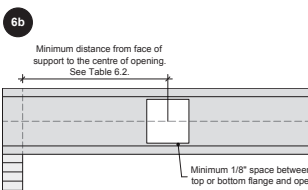
1. Never drill, cut or notch the flange, or over-cut the web.
2. Holes in web should be cut with a sharp saw.
3. For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling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

**6b**



Minimum distance from face of support to the centre of opening. See Table 6.2.

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

**Notes:**

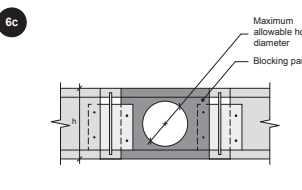
1. Never drill, cut or notch the flange, or over-cut the web.
2. Holes in web should be cut with a sharp saw.
3. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch-diameter 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 above 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.

**6c**



Maximum allowable hole diameter

Blocking panel

**Table 6.1 - LOCATION OF WEB HOLES**

Joist depth	Joist series	Round hole diameter (in.)															
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	
9-1/2"	NI-20	0-7"	1'-6"	2'-10"	4'-3"	5'-8"	6'-0"	-	-	-	-	-	-	-	-	-	
	NI-40x	0-7"	1'-6"	3'-0"	4'-4"	6'-0"	6'-4"	-	-	-	-	-	-	-	-	-	
	NI-60	1'-3"	2'-6"	4'-0"	5'-4"	7'-0"	7'-5"	-	-	-	-	-	-	-	-	-	
	NI-80	2'-3"	3'-6"	5'-0"	6'-6"	8'-2"	8'-8"	-	-	-	-	-	-	-	-	-	
11-7/8"	NI-20	0-7"	0'-8"	1'-0"	2'-4"	3'-8"	4'-0"	5'-0"	6'-8"	7'-9"	-	-	-	-	-	-	
	NI-40x	0-7"	0'-8"	1'-3"	2'-8"	4'-0"	4'-4"	5'-5"	7'-2"	8'-4"	-	-	-	-	-	-	
	NI-60	0-7"	1'-8"	3'-0"	4'-3"	5'-9"	6'-0"	7'-3"	8'-10"	10'-0"	-	-	-	-	-	-	
	NI-80	1'-6"	2'-10"	4'-2"	5'-6"	7'-0"	7'-5"	8'-6"	10'-3"	11'-4"	-	-	-	-	-	-	
14"	NI-20	0-7"	0'-8"	1'-5"	3'-2"	4'-10"	5'-4"	6'-9"	8'-9"	10'-2"	-	-	-	-	-	-	
	NI-40x	0-7"	0'-8"	1'-0"	2'-4"	2'-9"	3'-9"	5'-2"	6'-0"	6'-6"	8'-3"	10'-2"	-	-	-	-	
	NI-60	0-7"	0'-8"	1'-8"	3'-0"	4'-3"	4'-8"	5'-8"	7'-2"	8'-0"	8'-8"	10'-4"	11'-9"	-	-	-	
	NI-80	0'-10"	2'-0"	3'-4"	4'-9"	6'-2"	6'-5"	7'-6"	9'-0"	10'-0"	10'-8"	12'-4"	13'-9"	-	-	-	
16"	NI-20	0-7"	0'-8"	0'-10"	2'-5"	4'-0"	4'-5"	5'-9"	7'-5"	8'-8"	9'-4"	11'-4"	12'-11"	-	-	-	
	NI-40x	0-7"	0'-8"	0'-8"	1'-0"	2'-4"	2'-9"	3'-9"	5'-2"	6'-0"	6'-6"	8'-3"	10'-2"	12'-2"	12'-2"	13'-9"	
	NI-60	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'-4"	13'-9"	
	NI-80	0-7"	1'-3"	2'-6"	3'-10"	5'-3"	5'-6"	6'-6"	8'-0"	9'-0"	9'-5"	11'-0"	12'-3"	12'-9"	14'-5"	16'-0"	
16"	NI-20	0-7"	0'-8"	0'-8"	1'-8"	3'-3"	3'-8"	4'-9"	6'-5"	7'-5"	8'-0"	9'-10"	11'-3"	11'-9"	13'-5"	15'-4"	
	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'-4"	13'-9"	
	NI-60	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'-4"	13'-9"	
	NI-80	0-7"	1'-3"	2'-6"	3'-10"	5'-3"	5'-6"	6'-6"	8'-0"	9'-0"	9'-5"	11'-0"	12'-3"	12'-9"	14'-5"	16'-0"	

**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'-5"	9'-1"	9'-6"	-	-	-	-	-	-	-	-	
	NI-60	7'-3"	7'-6"	8'-0"	8'-6"	9'-0"	9'-3"	9'-8"	-	-	-	-	-	-	-	-	
	NI-80	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-8"	-	-	-	-	-	-	
14"	NI-20	7'-6"	7'-11"	8'-4"	8'-9"	9'-2"	9'-7"	10'-1"	10'-7"	11'-2"	-	-	-	-	-	-	
	NI-40x	8'-1"	8'-7"	9'-0"	9'-6"	10'-1"	10'-7"	11'-2"	-	-	-	-	-	-	-	-	
	NI-60	8'-9"	9'-3"	9'-8"	10'-11"	10'-6"	11'-1"	11'-6"	-	-	-	-	-	-	-	-	
	NI-80	9'-0"	9'-3"	9'-8"	10'-11"	10'-7"	11'-1"	11'-6"	12'-1"	12'-6"	-	-	-	-	-	-	
16"	NI-20	9'-2"	9'-8"	10'-0"	10'-6"	10'-11"	11'-5"	11'-9"	12'-4"	12'-11"	-						



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **2ND FLR FRAMING**  
Label: **B10 - i4096**  
Type: **Beam**

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

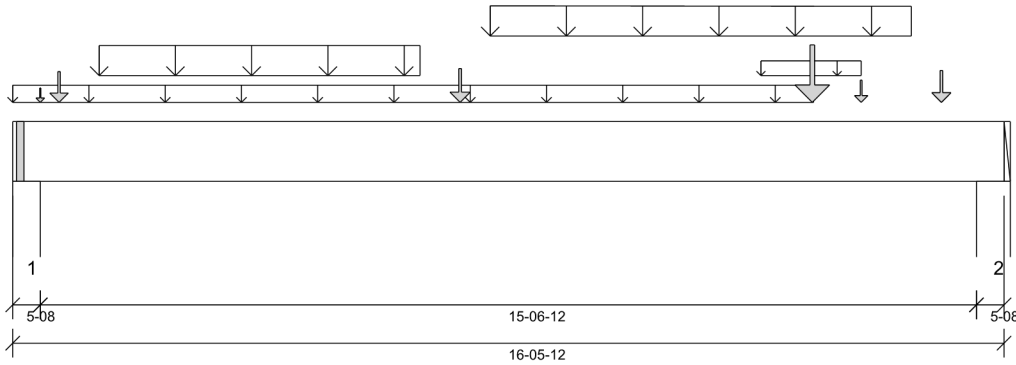
Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20

01/11/2022 15:56



### DESIGN INFORMATION

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

#### Lateral Restraint Requirements:

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

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

#### Factored Resistance of Support Material:

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

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	8'- 5 1/4"	1.25D + 1.5L	1.00	19043 lb ft	35345 lb ft	Passed - 54%
Factored Shear:	15'- 3/8"	1.25D + 1.5L	1.00	5494 lb	13815 lb	Passed - 40%
Live Load (LL) Pos. Defl.:	8'- 4 9/16"	L		0.367"	L/360	Passed - L/509
Total Load (TL) Pos. Defl.:	8'- 4 1/4"	D + L		0.649"	L/240	Passed - L/287
Permanent Deflection:	8'- 3 3/4"			-	L/360	Passed - L/680

### 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	4592 lb		20020 lb	11843 lb	Passed - 39%
2	5-08	1.25D + 1.5L	1.00	5515 lb		20020 lb	11843 lb	Passed - 47%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	16'- 5 3/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	13'- 3 3/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	1'- 5 1/4"	6'- 9 1/4"	Smoothed Load	Back	110 lb/ft	218 lb/ft	-	-
Uniform	12'- 5 1/4"	14'- 1 1/4"	FC3 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Tapered	7'- 11 1/4"	14'- 11 1/4"	Smoothed Load	Back	110 To 106 lb/ft	220 To 213 lb/ft	-	-
Point	13'- 3 1/2"	13'- 3 1/2"	B11(i3622)	Front	298 lb	545 lb	-	-
Point	14'- 1 1/4"	14'- 1 1/4"	J5(i3459)	Front	52 lb	104 lb	-	-
Point	15'- 5 1/4"	15'- 5 1/4"	J5(i3503)	Front	58 lb	116 lb	-	-
Point	0'- 9 1/4"	0'- 9 1/4"	J3(i4038)	Back	107 lb	214 lb	-	-
Point	7'- 5 1/4"	7'- 5 1/4"	J3(i4042)	Back	128 lb	255 lb	-	-
Point	15'- 5 1/4"	15'- 5 1/4"	J3(i4100)	Back	115 lb	230 lb	-	-
Point	0'- 5 1/2"	0'- 5 1/2"	FC3 Floor Decking (Plan View Fill)	Top	1 lb	1 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	9(i1406)	1497 lb	1827 lb	-	-
2	16'- 1/4"	16'- 5 3/4"	E13(i1238)	1600 lb	2330 lb	-	-

### DESIGN NOTES

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

### PLY TO PLY CONNECTION

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

**REVIEWED**



STRUCTURAL COMPONENT ONLY  
DWG # TF22061236



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **2ND FLR FRAMING**  
Label: **B9 - i4162**  
Type: **Beam**

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

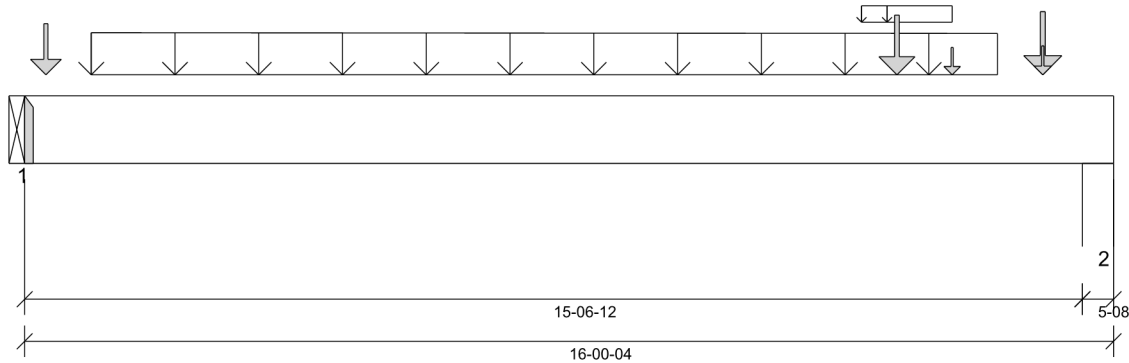
Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20

01/11/2022 15:56



#### 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 Wall @ 15'- 7 3/4"

**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:	8'- 3 3/4"	1.25D + 1.5L	1.00	25220 lb ft	53017 lb ft	Passed - 48%
Factored Shear:	14'- 6 7/8"	1.25D + 1.5L	1.00	7060 lb	20723 lb	Passed - 34%
Live Load (LL) Pos. Defl.:	7'- 10 3/4"	L		0.358"	L/360	Passed - L/521
Total Load (TL) Pos. Defl.:	7'- 10 3/4"	D + L		0.556"	L/240	Passed - L/335
Permanent Deflection:	7'- 10 3/4"			-	L/360	Passed - L/974

#### 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	6194 lb		8190 lb	-	Passed - 76%
2	5-08	1.25D + 1.5L	1.00	7092 lb		30030 lb	17764 lb	Passed - 40%

#### CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	HGUS5.50/10		-	-	-	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'	16'- 1/4"	Self Weight	Top	18 lb/ft	-	-	-
Uniform	12'- 3 3/4"	12'- 8 1/4"	FC3 Floor Decking (Plan View Fill)	Top	4 lb/ft	9 lb/ft	-	-
Uniform	12'- 8 1/4"	13'- 7 3/4"	FC3 Floor Decking (Plan View Fill)	Top	4 lb/ft	9 lb/ft	-	-
Tapered	0'- 11 3/4"	14'- 3 3/4"	Smoothed Load	Front	179 To 174 lb/ft	357 To 348 lb/ft	-	-
Point	0'- 3 3/4"	0'- 3 3/4"	J1(i4155)	Front	161 lb	322 lb	-	-
Point	14'- 11 3/4"	14'- 11 3/4"	J1(i4164)	Front	216 lb	431 lb	-	-
Point	12'- 10"	12'- 10"	B11(i3622)	Back	217 lb	383 lb	-	-
Point	13'- 7 3/4"	13'- 7 3/4"	J5(i3459)	Back	53 lb	106 lb	-	-
Point	14'- 11 3/4"	14'- 11 3/4"	J5(i3503)	Back	60 lb	120 lb	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B8(i4133)	1562 lb	2833 lb	-	-
2	15'- 6 3/4"	16'- 1/4"	E13(i1238)	1786 lb	3235 lb	-	-

#### DESIGN NOTES

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

**REVIEWED**



STRUCTURAL COMPONENT ONLY  
DWG # TF22061237 PG 1/2



BUILDER:	<b>BAYVIEW WELLINGTON</b>	Job Name:	<b>S42-21</b>	<b>3 Ply Member</b>	Status:
SITE:	<b>GREEN VALLEY EAST</b>	Level:	<b>2ND FLR FRAMING</b>	<b>1 3/4" x 11 7/8" (2.0E 3100)</b>	<b>Design</b>
MODEL:	<b>S42-21</b>	Label:	<b>B9 - i4162</b>	<b>WestFraser LVL</b>	<b>Passed</b>
CITY:	<b>BRADFORD</b>	Type:	<b>Beam</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.



# REVIEWED



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **2ND FLR FRAMING**  
Label: **B11 - i3622**  
Type: **Beam**

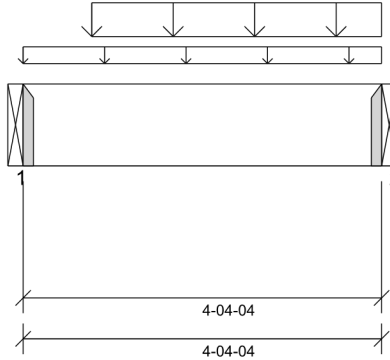
**2 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version  
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/11/2022 15:56



#### 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: 4'- 4 1/4"

#### Factored Resistance of Support Material:

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

#### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 3"	1.25D + 1.5L	1.00	1253 lb ft	35345 lb ft	Passed - 4%
Factored Shear:	0'- 11 7/8"	1.25D + 1.5L	1.00	712 lb	13815 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	847 lb		5460 lb	-	Passed - 16%
2	1-08	1.25D + 1.5L	1.00	1190 lb		5460 lb	-	Passed - 22%

#### 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'	4'- 4 1/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	4'- 4 1/4"	FC3 Floor Decking (Plan View Fill)	Top	10 lb/ft	19 lb/ft	-	-
Uniform	0'- 10"	4'- 4 1/4"	User Load	Back	120 lb/ft	240 lb/ft	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B9(i4162)	217 lb	383 lb	-	-
2	4'- 4 1/4"	4'- 4 1/4"	B10(i4096)	298 lb	545 lb	-	-

#### DESIGN NOTES

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

#### PLY TO PLY CONNECTION

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

# REVIEWED



STRUCTURAL COMPONENT ONLY  
DWG # TF22061238



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **2ND FLR FRAMING**  
Label: **B7 - i4157**  
Type: **Beam**

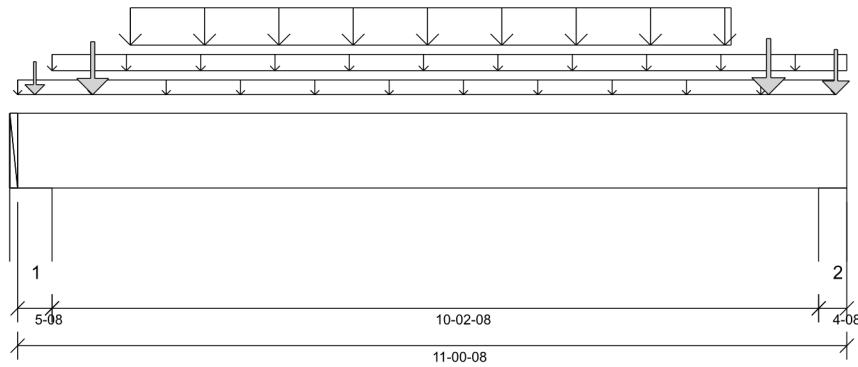
**2 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20 01/11/2022 15:56



#### 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'- 8 1/2"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Wall @ 10'- 9"

#### PLY TO PLY CONNECTION:

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

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



STRUCTURAL COMPONENT ONLY  
DWG # TF22061239

#### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	5'- 11 15/16"	1.25D + 1.5L	1.00	13166 lb ft	35345 lb ft	Passed - 37%
Factored Shear:	1'- 5 3/8"	1.25D + 1.5L + S	1.00	4780 lb	13815 lb	Passed - 35%
Live Load (LL) Pos. Defl.:	5'- 6 3/4"	L		0.115"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 6 3/4"	D + L		0.192"	L/240	Passed - L/637

#### 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 + S	1.00	5198 lb		20020 lb	11843 lb	Passed - 44%
2	4'-08"	1.25D + 1.5L	1.00	5503 lb		16380 lb	9689 lb	Passed - 57%

#### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	11'- 1/2"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	10'- 10 3/4"	FC3 Floor Decking (Plan View Fill)	Top	5 lb/ft	11 lb/ft	-	-
Uniform	0'- 5 1/2"	11'- 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	1'- 6"	9'- 6"	Smoothed Load	Back	206 lb/ft	411 lb/ft	-	-
Point	1'	1'	J6(i3850)	Back	181 lb	362 lb	-	-
Point	10'	10'	J6(i3894)	Back	195 lb	390 lb	-	-
Point	10'- 10 3/4"	10'- 10 3/4"	J6(i3809)	Back	144 lb	288 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E63(i3978)	Top	96 lb	-	169 lb	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	E37(i1379)	1520 lb	2093 lb	175 lb	-
2	10'- 8"	11'- 1/2"	1(i1245)	1569 lb	2353 lb	-6 lb	-

#### DESIGN NOTES

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

#### PLY TO PLY CONNECTION

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

**REVIEWED**



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **2ND FLR FRAMING**  
Label: **B8 - i4133**  
Type: **Beam**

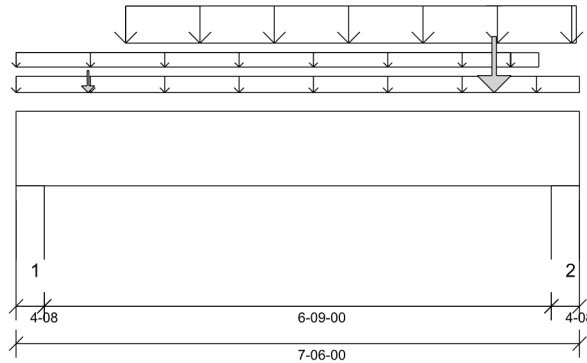
**2 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20 01/11/2022 15:56



### 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 3/4"

#### Factored Resistance of Support Material:

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

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 8 5/16"	1.25D + 1.5L	1.00	8864 lb ft	35345 lb ft	Passed - 25%
Factored Shear:	6'- 1 5/8"	1.25D + 1.5L	1.00	8998 lb	13815 lb	Passed - 65%
Live Load (LL) Pos. Defl.:	3'- 10 15/16"	L		0.036"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 10 7/8"	D + L		0.059"	L/240	Passed - L/999

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4'-08	1.25D + 1.5L	1.00	4336 lb		16380 lb	9689 lb	Passed - 45%
2	4'-08	1.25D + 1.5L	1.00	9134 lb		16380 lb	9689 lb	Passed - 94%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'- 6"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	7'- 6"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'	6'- 7"	FC3 Floor Decking (Plan View Fill)	Top	5 lb/ft	9 lb/ft	-	-
Uniform	6'- 7"	6'- 11 1/2"	FC3 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Tapered	1'- 5 1/2"	7'- 5 1/2"	Smoothed Load	Back	205 To 207 lb/ft	412 To 415 lb/ft	-	-
Point	6'- 4 3/8"	6'- 4 3/8"	B9(i4162)	Front	1562 lb	2833 lb	-	-
Point	0'- 11 1/2"	0'- 11 1/2"	J6(i3891)	Back	281 lb	561 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 1/2"	1(i1245)	1228 lb	1883 lb	-	-
2	7'- 1 1/2"	7'- 6"	9(i1406)	2423 lb	4054 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.
- Bearing capacity of member at support 1, 2 was verified for the effect of concentrated load applied near the support. At support 2. Required Load Area: L=3.500", W=3.500". LDF=1.00, Pf=6202 lb, Q'r=9707 lb, Result=63.89%.

### 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 # TF22061240

**REVIEWED**



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **2ND FLR FRAMING**  
Label: **B12 - i4181**  
Type: **Beam**

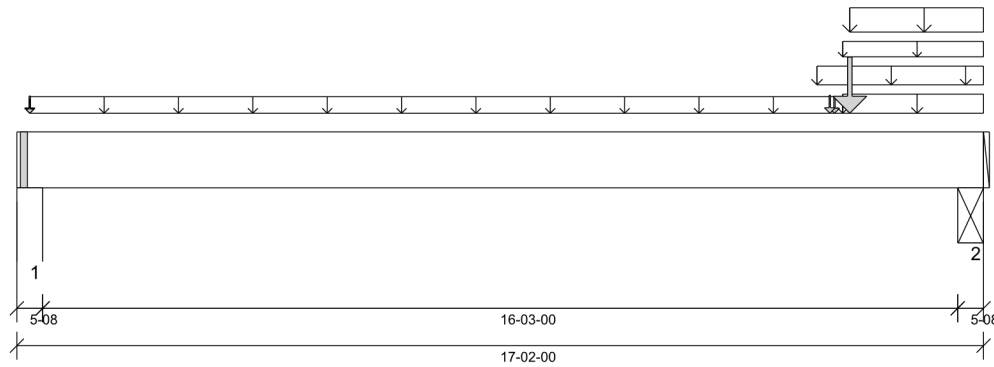
**2 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20 01/11/2022 15:56



#### 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: 14'- 1/2"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Beam @ 14'- 9 1/2"

#### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	14'- 5 1/4"	1.25D + 1.5S + L	1.00	8091 lb ft	35345 lb ft	Passed - 23%
Factored Shear:	15'- 8 5/8"	1.25D + 1.5S + L	1.00	4362 lb	13815 lb	Passed - 32%
Live Load (LL) Pos. Defl.:	9'- 6 1/4"	S + 0.5L		0.148"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	9'- 4 9/16"	D + S + 0.5L		0.256"	L/240	Passed - L/762

#### 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 + 1.5S + L	1.00	1320 lb		20020 lb	11843 lb	Passed - 11%
2	5-08	1.25D + 1.5S + L	1.00	4883 lb		20020 lb	11839 lb	Passed - 41%

#### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	17'- 2"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'- 2 3/4"	14'- 8"	FC3 Floor Decking (Plan View Fill)	Top	18 lb/ft	37 lb/ft	-	-
Uniform	14'- 2 1/2"	17'- 2"	E41(i3731)	Top	100 lb/ft	-	-	-
Uniform	14'- 8"	17'- 2"	User Load	Front	32 lb/ft	-	77 lb/ft	-
Uniform	14'- 8"	17'- 2"	FC3 Floor Decking (Plan View Fill)	Top	10 lb/ft	21 lb/ft	-	-
Uniform	14'- 9 1/2"	17'- 2"	E41(i3731)	Top	56 lb/ft	-	164 lb/ft	-
Point	14'- 6 1/4"	14'- 6 1/4"	B13(i4180)	Front	55 lb	-	69 lb	-
Point	0'- 2 3/4"	0'- 2 3/4"	E44(i3737)	Top	64 lb	-	83 lb	-
Point	0'- 2 3/4"	0'- 2 3/4"	FC3 Floor Decking (Plan View Fill)	Top	0 lb	0 lb	-	-
Point	14'- 5 1/4"	14'- 5 1/4"	E41(i3731)	Top	54 lb	-	131 lb	-
Point	14'- 9 1/2"	14'- 9 1/2"	E41(i3731)	Top	555 lb	-	1440 lb	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	E7(i991)	431 lb	302 lb	318 lb	-
2	16'- 8 1/2"	17'- 2"	STL BM(i1410)	1300 lb	279 lb	1987 lb	-

#### DESIGN NOTES

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

#### PLY TO PLY CONNECTION

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

# REVIEWED



STRUCTURAL COMPONENT ONLY  
DWG # TF22061241



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **2ND FLR FRAMING**  
Label: **B13 - i4180**  
Type: **Beam**

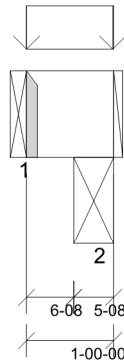
**2 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version  
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/11/2022 15:56



#### DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

#### Lateral Restraint Requirements:

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

Top: 0' Bottom: 0'- 6 1/2"

#### Factored Resistance of Support Material:

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

#### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	0'- 2 3/8"	1.25D + 1.5S	1.00	14 lb ft	35345 lb ft	Passed - 0%
Factored Shear:	0'- 11 7/8"	1.25D + 1.5S	1.00	354 lb	13815 lb	Passed - 3%

#### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5S	1.00	143 lb		5460 lb	-	Passed - 3%
2	5-08	1.25D + 1.5S	1.00	572 lb		20020 lb	11839 lb	Passed - 5%

#### 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'	1'	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	1'	E42(i3732)	Top	218 lb/ft	-	285 lb/ft	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B12(i4181)	55 lb	-	69 lb	-
2	0'- 6 1/2"	1'	STL BM(i1409)	175 lb	-	216 lb	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- 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 # TF22061242

**REVIEWED**



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **1ST FLR FRAMING**  
Label: **B1 - i4037**  
Type: **Beam**

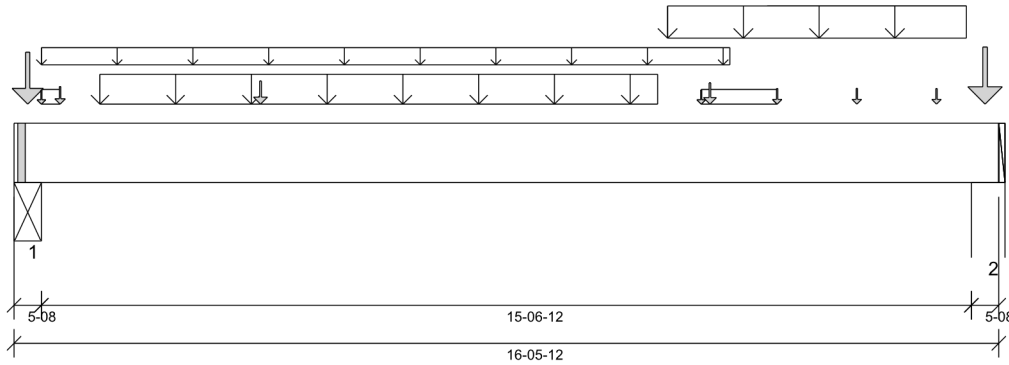
**2 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20 01/11/2022 15:56



### DESIGN INFORMATION

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

#### Lateral Restraint Requirements:

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

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 4 1/2"
- 615 psi Wall @ 16'- 1 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:	8'- 9 1/4"	1.25D + 1.5L	1.00	21171 lb ft	35345 lb ft	Passed - 60%
Factored Neg. Moment:	16'- 1 1/4"	1.25D + 1.5L	1.00	808 lb ft	35345 lb ft	Passed - 2%
Factored Shear:	1'- 5 3/8"	1.25D + 1.5L	1.00	5409 lb	13815 lb	Passed - 39%
Live Load (LL) Pos. Defl.:	8'- 3 3/8"	L		0.418"	L/360	Passed - L/447
Total Load (TL) Pos. Defl.:	8'- 3"	D + L		0.723"	L/240	Passed - L/258
Permanent Deflection:	8'- 2 1/2"			-	L/360	Passed - L/630

### 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	10346 lb		20020 lb	11839 lb	Passed - 87%
2	5-08	1.25D + 1.5L	1.00	11241 lb		20020 lb	11843 lb	Passed - 95%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	16'- 5 3/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'- 5 1/2"	11'- 11 3/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'- 5 1/2"	0'- 9 1/4"	FC1 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Uniform	1'- 5 1/4"	10'- 9 1/4"	Smoothed Load	Back	110 lb/ft	218 lb/ft	-	-
Uniform	11'- 6"	12'- 9 1/4"	FC1 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Tapered	10'- 11 1/4"	15'- 11 1/4"	Smoothed Load	Back	126 To 127 lb/ft	252 To 253 lb/ft	-	-
Point	11'- 7 3/4"	11'- 7 3/4"	B3(i2773)	Front	232 lb	426 lb	-	-
Point	12'- 9 1/4"	12'- 9 1/4"	J7(i3179)	Front	44 lb	87 lb	-	-
Point	14'- 1 1/4"	14'- 1 1/4"	J7(i3194)	Front	47 lb	93 lb	-	-
Point	15'- 5 1/4"	15'- 5 1/4"	J7(i4077)	Front	42 lb	83 lb	-	-
Point	0'- 9 1/4"	0'- 9 1/4"	J5(i4017)	Back	102 lb	203 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	9(i406)	Top	1566 lb	1918 lb	-	-
Point	0'- 5 1/2"	0'- 5 1/2"	FC1 Floor Decking (Plan View Fill)	Top	1 lb	1 lb	-	-
Point	4'- 1 1/2"	4'- 1 1/2"	PBO3(i3656)	Top	326 lb	495 lb	-	-
Point	11'- 6"	11'- 6"	FC1 Floor Decking (Plan View Fill)	Top	0 lb	0 lb	-	-
Point	16'- 3"	16'- 3"	E13(i1238)	Top	1629 lb	2330 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i30)	3327 lb	4210 lb	-	-
2	16'- 1/4"	16'- 5 3/4"	W14(i12)	3206 lb	4737 lb	-	-


### DESIGN NOTES

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

**REVIEWED**



STRUCTURAL COMPONENT ONLY  
DWG # TF22061243 PG 1/2

	BUILDER:	<b>BAYVIEW WELLINGTON</b>	Job Name:	<b>S42-21</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</b> <b>Passed</b>
	SITE:	<b>GREEN VALLEY EAST</b>	Level:	<b>1ST FLR FRAMING</b>		
	MODEL:	<b>S42-21</b>	Label:	<b>B1 - i4037</b>		
	CITY:	<b>BRADFORD</b>	Type:	<b>Beam</b>		

- 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=4835 lb, Q'r=5460 lb, Result=88.54%.  
At support 2. Required Load Area: L=1.520", W=3.500". LDF=1.00, Pf=5531 lb, Q'r=5531 lb, Result=100.00%.

#### PLY TO PLY CONNECTION

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





BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **1ST FLR FRAMING**  
Label: **B2 - i4057**  
Type: **Beam**

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

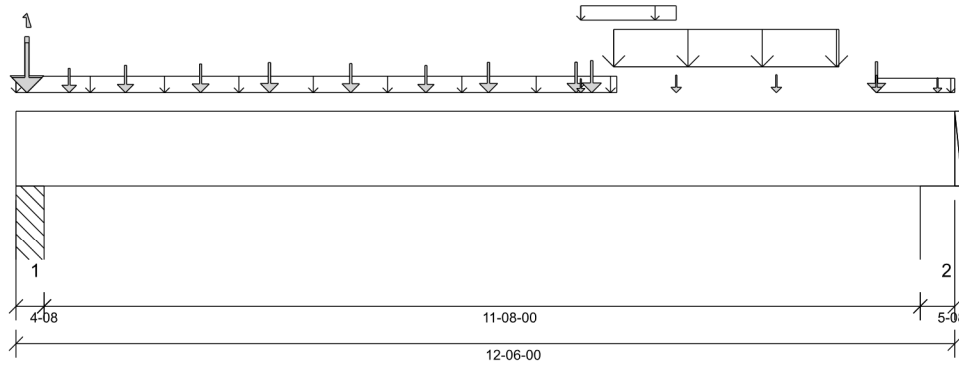
Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20

01/11/2022 15:56



### 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 1/4"

#### Factored Resistance of Support Material:

- 615 psi Column @ 0'- 3 1/2"
- 615 psi Wall @ 12'- 1 1/2"

**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'- 3 1/2"	1.25D + 1.5L + S	1.00	17590 lb ft	35345 lb ft	Passed - 50%
Factored Neg. Moment:	0'- 3 1/2"	1.25D + 1.5L	1.00	583 lb ft	35345 lb ft	Passed - 2%
Factored Shear:	11'- 5/8"	1.25D + 1.5L + S	1.00	5873 lb	13815 lb	Passed - 43%
Live Load (LL) Pos. Defl.:	6'- 3 11/16"	L + 0.5S		0.202"	L/360	Passed - L/692
Total Load (TL) Pos. Defl.:	6'- 3 7/16"	D + L + 0.5S		0.329"	L/240	Passed - L/424

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-08	1.25D + 1.5L	1.00	9578 lb		16380 lb	9686 lb	Passed - 99%
2	5-08	1.25D + 1.5L + S	1.00	5945 lb		20020 lb	11843 lb	Passed - 50%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 6"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	8'	User Load	Top	60 lb/ft	-	-	-
Uniform	7'- 6 1/4"	8'- 9 1/2"	FC1 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Uniform	7'- 11 1/2"	10'- 11 1/2"	Smoothed Load	Front	184 lb/ft	368 lb/ft	-	-
Uniform	11'- 5 1/2"	12'- 6"	FC1 Floor Decking (Plan View Fill)	Top	3 lb/ft	7 lb/ft	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	B4(i4112)	Front	681 lb	853 lb	-4 lb	-
Point	0'- 8 1/2"	0'- 8 1/2"	J1(i4140)	Front	126 lb	253 lb	-	-
Point	1'- 5 1/2"	1'- 5 1/2"	J1(i4158)	Front	163 lb	327 lb	-	-
Point	2'- 5 1/2"	2'- 5 1/2"	J1(i4171)	Front	179 lb	358 lb	-	-
Point	3'- 4 1/2"	3'- 4 1/2"	J1DJ(i2623)	Front	197 lb	393 lb	-	-
Point	4'- 5 1/2"	4'- 5 1/2"	J2(i2961)	Front	184 lb	367 lb	-	-
Point	5'- 5 1/2"	5'- 5 1/2"	J2(i2704)	Front	162 lb	323 lb	-	-
Point	6'- 3 1/2"	6'- 3 1/2"	J1DJ(i2679)	Front	198 lb	396 lb	-	-
Point	7'- 5 1/2"	7'- 5 1/2"	J1(i4126)	Front	201 lb	402 lb	-	-
Point	11'- 5 1/2"	11'- 5 1/2"	J1(i4067)	Front	206 lb	412 lb	-	-
Point	7'- 8"	7'- 8"	B3(i2773)	Back	232 lb	426 lb	-	-
Point	8'- 9 1/2"	8'- 9 1/2"	J7(i3179)	Back	44 lb	87 lb	-	-
Point	10'- 1 1/2"	10'- 1 1/2"	J7(i3194)	Back	47 lb	93 lb	-	-
Point	11'- 5 1/2"	11'- 5 1/2"	J7(i4077)	Back	42 lb	83 lb	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	PBO2(i1247)	Top	509 lb	801 lb	-	-
Point	7'- 6 1/4"	7'- 6 1/4"	FC1 Floor Decking (Plan View Fill)	Top	0 lb	0 lb	-	-
Point	12'- 3 1/4"	12'- 3 1/4"	E13(i1238)	Top	29 lb	-	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 1/2"	PBO1(i31)	2819 lb	4074 lb	-4 lb	-
2	12'- 1/2"	12'- 6"	W14(i12)	1568 lb	2619 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.

**REVIEWED**



STRUCTURAL COMPONENT ONLY  
DWG # TF22061244 PG 1/2



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **1ST FLR FRAMING**  
Label: **B2 - i4057**  
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.

#### PLY TO PLY CONNECTION

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



# REVIEWED



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **1ST FLR FRAMING**  
Label: **B3 - i2773**  
Type: **Beam**

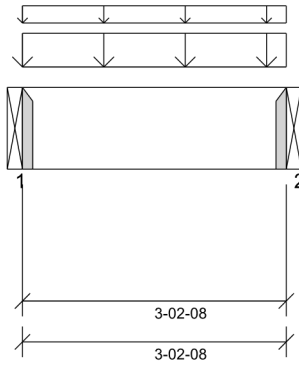
**2 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20 01/11/2022 15:56



#### DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

#### Lateral Restraint Requirements:

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

Top: 0' Bottom: 3'- 2 1/2"

#### Factored Resistance of Support Material:

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

#### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 7 1/4"	1.25D + 1.5L	1.00	745 lb ft	35345 lb ft	Passed - 2%
Factored Shear:	2'- 2 5/8"	1.25D + 1.5L	1.00	356 lb	13815 lb	Passed - 3%

#### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	928 lb		5460 lb	-	Passed - 17%
2	1-08	1.25D + 1.5L	1.00	928 lb		5460 lb	-	Passed - 17%

#### 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'	3'- 2 1/2"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	3'- 2 1/2"	User Load	Back	120 lb/ft	240 lb/ft	-	-
Uniform	0'	3'- 2 1/2"	FC1 Floor Decking (Plan View Fill)	Top	13 lb/ft	25 lb/ft	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B2(i4057)	232 lb	426 lb	-	-
2	3'- 2 1/2"	3'- 2 1/2"	B1(i4037)	232 lb	426 lb	-	-

#### DESIGN NOTES

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

#### PLY TO PLY CONNECTION

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

**REVIEWED**



STRUCTURAL COMPONENT ONLY  
DWG # TF22061245



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **1ST FLR FRAMING**  
Label: **B4 - i4112**  
Type: **Beam**

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

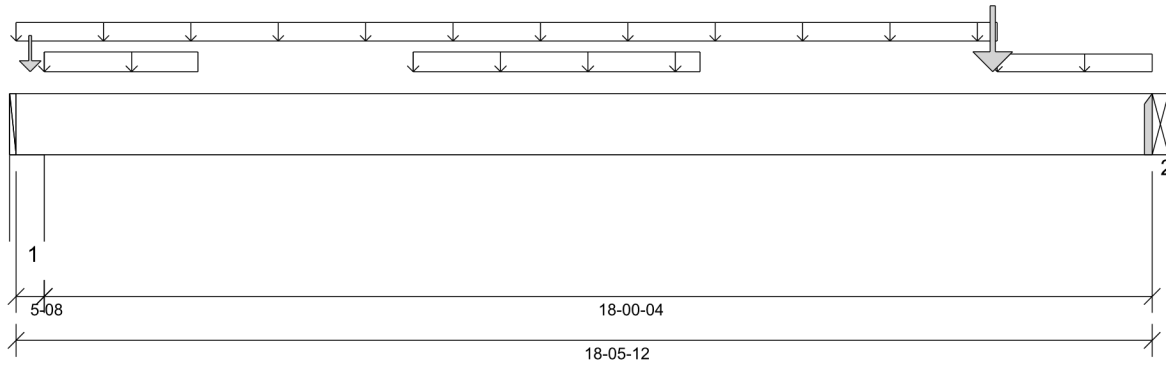
Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20

01/11/2022 15:56



### 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: 15'- 4 1/4"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Beam @ 18'- 5 3/4"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	10'- 8 7/16"	1.25D + 1.5L	0.98	6422 lb ft	34605 lb ft	Passed - 19%
Factored Shear:	17'- 5 7/8"	1.25D + 1.5L	0.98	2077 lb	13526 lb	Passed - 15%
Live Load (LL) Pos. Defl.:	10'- 1 1/8"	L		0.134"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	9'- 9 9/16"	D + L		0.299"	L/240	Passed - L/724

### 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 + 1.5S + L	0.88	1649 lb		17590 lb	10405 lb	Passed - 16%
2	1-08	1.25D + 1.5L	0.98	2131 lb		5346 lb	-	Passed - 40%

### CONNECTOR INFORMATION

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

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

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	18'- 5 3/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	15'- 11 1/2"	FC1 Floor Decking (Plan View Fill)	Top	12 lb/ft	25 lb/ft	-	-
Uniform	0'- 5 1/2"	2'- 11 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	6'- 5 1/2"	11'- 1 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	15'- 11 1/2"	18'- 5 3/4"	FC1 Floor Decking (Plan View Fill)	Top	7 lb/ft	14 lb/ft	-	-
Point	15'- 10 5/8"	15'- 10 5/8"	B5(i4154)	Back	389 lb	756 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E37(i1379)	Top	179 lb	109 lb	169 lb	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	W29(i29)	754 lb	450 lb	173 lb	-
2	18'- 5 3/4"	18'- 5 3/4"	B2(i4057)	681 lb	853 lb	-4 lb	-

### DESIGN NOTES

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

### PLY TO PLY CONNECTION

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

**REVIEWED**



STRUCTURAL COMPONENT ONLY  
DWG # TF22061246



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **1ST FLR FRAMING**  
Label: **B5 - i4154**  
Type: **Beam**

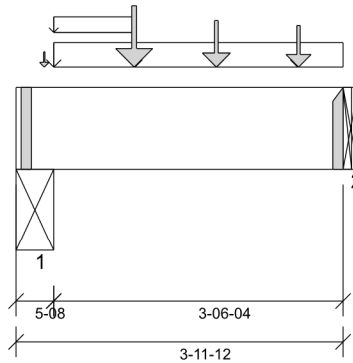
**1 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version  
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/11/2022 15:56



### 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'- 4 1/2"
- 615 psi Beam @ 3'- 11 3/4"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 5 1/4"	1.25D + 1.5L	1.00	1628 lb ft	17672 lb ft	Passed - 9%
Factored Shear:	2'- 11 7/8"	1.25D + 1.5L	1.00	800 lb	6908 lb	Passed - 12%

### 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	1524 lb		10010 lb	5919 lb	Passed - 26%
2	1-08	1.25D + 1.5L	1.00	1624 lb		2730 lb	-	Passed - 59%

### CONNECTOR INFORMATION

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

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

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	3'- 11 3/4"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'- 5 1/2"	3'- 11 3/4"	User Load	Top	60 lb/ft	120 lb/ft	-	-
Uniform	0'- 5 1/2"	1'- 5 1/4"	FC1 Floor Decking (Plan View Fill)	Top	2 lb/ft	3 lb/ft	-	-
Point	1'- 5 1/4"	1'- 5 1/4"	J3(i4165)	Front	231 lb	462 lb	-	-
Point	2'- 5 1/4"	2'- 5 1/4"	J3(i4141)	Front	157 lb	314 lb	-	-
Point	3'- 5 1/4"	3'- 5 1/4"	J3(i4118)	Front	133 lb	265 lb	-	-
Point	0'- 4 1/8"	0'- 4 1/8"	FC1 Floor Decking (Plan View Fill)	Top	1 lb	1 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i30)	369 lb	711 lb	-	-
2	3'- 11 3/4"	3'- 11 3/4"	B4(i4112)	389 lb	756 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 # TF22061247

**REVIEWED**



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21**  
Level: **1ST FLR FRAMING**  
Label: **B6 - i4071**  
Type: **Beam**

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

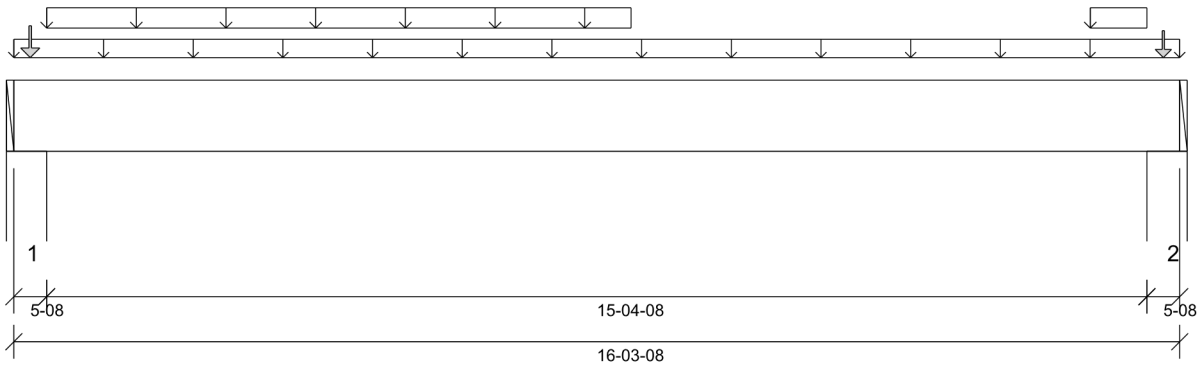
Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20

01/11/2022 15:56



#### 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: 15'- 4 1/2"

#### Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 4 1/2"
- 615 psi Wall @ 15'- 11"

#### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	7'- 15/16"	1.25D + 1.5L	0.79	2650 lb ft	13974 lb ft	Passed - 19%
Factored Neg. Moment:	0'- 4 1/2"	1.25D + 1.5S + L	0.73	32 lb ft	2919 lb ft	Passed - 1%
Factored Shear:	1'- 5 3/8"	1.4D	0.65	557 lb	4490 lb	Passed - 12%
Live Load (LL) Pos. Defl.:	8'- 1 5/8"	L		0.047"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	7'- 10 5/16"	D + L		0.179"	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 + 1.5S + L	0.73	942 lb		7292 lb	4313 lb	Passed - 22%
2	5-08	1.25D + 1.5L	0.79	717 lb		7915 lb	4682 lb	Passed - 15%

#### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	16'- 3 1/2"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	16'- 3 1/2"	FC1 Floor Decking (Plan View Fill)	Top	8 lb/ft	17 lb/ft	-	-
Uniform	0'- 5 1/2"	8'- 7 1/2"	User Load	Top	60 lb/ft	-	-	-
Uniform	15'- 1/2"	15'- 10"	User Load	Top	60 lb/ft	-	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	E17(i1244)	Top	63 lb	-	84 lb	-
Point	16'- 3/4"	16'- 3/4"	E14(i1241)	Top	43 lb	57 lb	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	W30(i37)	544 lb	139 lb	86 lb	-
2	15'- 10"	16'- 3 1/2"	W15(i13)	335 lb	196 lb	-2 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 # TF22061248

**REVIEWED**



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21 SUNKEN**  
Level: **1ST FLR FRAMING**  
Label: **B16 - i4530**  
Type: **Beam**

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

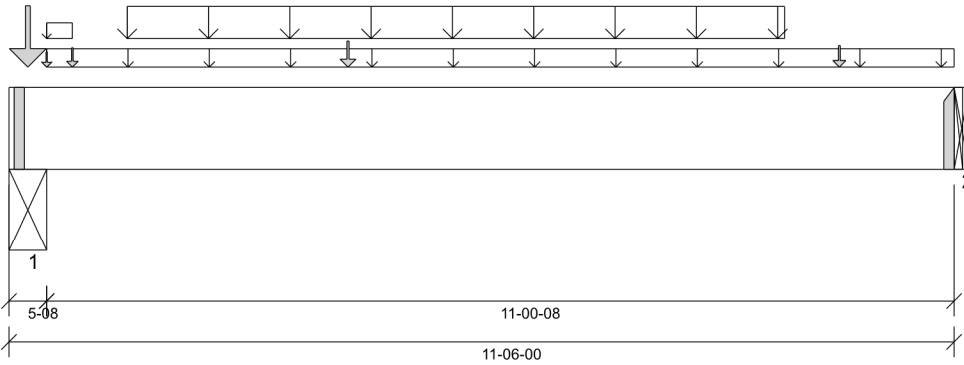
Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single member Design Engine in Mitek® Structure version  
8.4.2.286 Updated 9/13

Report Version: 2020.06.20

01/11/2022 16:28



### 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'- 3 1/2"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'- 4 1/2"
- 615 psi Beam @ 11'- 6"

**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:	4'- 11 9/16"	1.25D + 1.5L	1.00	10411 lb ft	35345 lb ft	Passed - 29%
Factored Neg. Moment:	0'- 4 1/2"	1.25D + 1.5L	1.00	706 lb ft	35345 lb ft	Passed - 2%
Factored Shear:	1'- 5 3/8"	1.25D + 1.5L	1.00	3755 lb	13815 lb	Passed - 27%
Live Load (LL) Pos. Defl.:	5'- 10 5/16"	L		0.097"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	5'- 10 7/16"	D + L		0.174"	L/240	Passed - L/760

### 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	8691 lb		20020 lb	11839 lb	Passed - 73%
2	1-08	1.25D + 1.5L	1.00	3124 lb		5460 lb	-	Passed - 57%

### 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'	11'- 6"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'- 5 1/2"	11'- 6"	User Load	Top	60 lb/ft	-	-	-
Uniform	0'- 5 1/2"	0'- 9 1/4"	FC1 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Uniform	1'- 5 1/4"	9'- 5 1/4"	Smoothed Load	Back	110 lb/ft	218 lb/ft	-	-
Point	0'- 9 1/4"	0'- 9 1/4"	J4(i4460)	Back	102 lb	203 lb	-	-
Point	10'- 1 1/4"	10'- 1 1/4"	J4(i4430)	Back	160 lb	320 lb	-	-
Point	0'- 2 3/4"	0'- 2 3/4"	9(i1406)	Top	1566 lb	1918 lb	-	-
Point	0'- 5 1/2"	0'- 5 1/2"	FC1 Floor Decking (Plan View Fill)	Top	1 lb	1 lb	-	-
Point	4'- 1 1/2"	4'- 1 1/2"	PBO3(i3656)	Top	326 lb	495 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i30)	2831 lb	3501 lb	-	-
2	11'- 6"	11'- 6"	B15(i4586)	999 lb	1184 lb	-	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- 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=1.500", W=3.500". LDF=1.00, Pf=4835 lb, Qf=5160 lb, Result=83.54%

### PLY TO PLY CONNECTION

**REVIEWED**



STRUCTURAL COMPONENT ONLY  
DWG # TF22061249 PG 1/2



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21 SUNKEN**  
Level: **1ST FLR FRAMING**  
Label: **B16 - i4530**  
Type: **Beam**

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

Status:  
**Design  
Passed**

#### PLY TO PLY CONNECTION

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





BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21 SUNKEN**  
Level: **1ST FLR FRAMING**  
Label: **B14 - i4604**  
Type: **Beam**

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

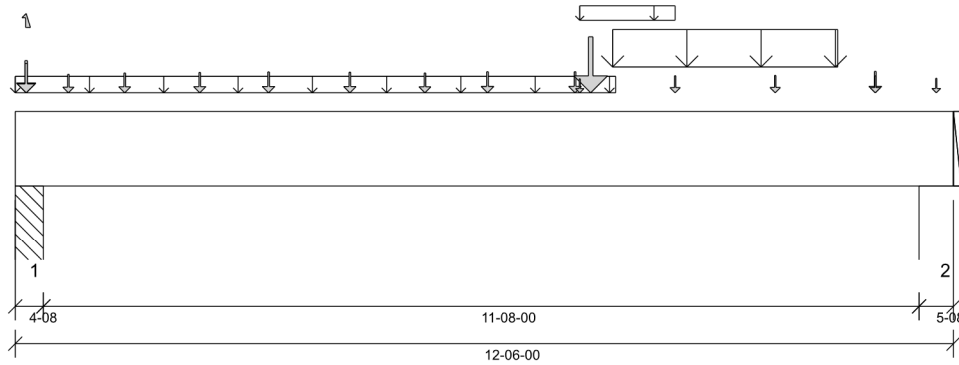
Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20

01/11/2022 16:28



### 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 1/4"

#### Factored Resistance of Support Material:

- 615 psi Column @ 0'- 3 1/2"
- 615 psi Wall @ 12'- 1 1/2"

#### 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:	7'- 8"	1.25D + 1.5L + S	1.00	29303 lb ft	53017 lb ft	Passed - 55%
Factored Neg. Moment:	0'- 3 1/2"	1.25D + 1.5L	1.00	585 lb ft	53017 lb ft	Passed - 1%
Factored Shear:	11'- 5/8"	1.25D + 1.5L + S	1.00	8922 lb	20723 lb	Passed - 43%
Live Load (LL) Pos. Defl.:	6'- 5"	L + 0.5S		0.200"	L/360	Passed - L/699
Total Load (TL) Pos. Defl.:	6'- 5"	D + L + 0.5S		0.343"	L/240	Passed - L/408

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-08	1.25D + 1.5L	1.00	11286 lb		24570 lb	14529 lb	Passed - 78%
2	5-08	1.25D + 1.5L + S	1.00	9009 lb		30030 lb	17764 lb	Passed - 51%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 6"	Self Weight	Top	18 lb/ft	-	-	-
Uniform	0'	8'	User Load	Top	60 lb/ft	-	-	-
Uniform	7'- 6 1/4"	8'- 9 1/2"	FC1 Floor Decking (Plan View Fill)	Top	4 lb/ft	9 lb/ft	-	-
Uniform	7'- 11 1/2"	10'- 11 1/2"	Smoothed Load	Front	184 lb/ft	368 lb/ft	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	B4(i4610)	Front	685 lb	860 lb	-4 lb	-
Point	0'- 8 1/2"	0'- 8 1/2"	J1(i4597)	Front	127 lb	255 lb	-	-
Point	1'- 5 1/2"	1'- 5 1/2"	J1(i4599)	Front	165 lb	329 lb	-	-
Point	2'- 5 1/2"	2'- 5 1/2"	J1(i4587)	Front	180 lb	361 lb	-	-
Point	3'- 4 1/2"	3'- 4 1/2"	J1DJ(i4617)	Front	198 lb	396 lb	-	-
Point	4'- 5 1/2"	4'- 5 1/2"	J2(i4626)	Front	185 lb	370 lb	-	-
Point	5'- 5 1/2"	5'- 5 1/2"	J2(i4578)	Front	163 lb	326 lb	-	-
Point	6'- 3 1/2"	6'- 3 1/2"	J1DJ(i4612)	Front	200 lb	399 lb	-	-
Point	7'- 5 1/2"	7'- 5 1/2"	J1(i4602)	Front	202 lb	404 lb	-	-
Point	11'- 5 1/2"	11'- 5 1/2"	J1(i4621)	Front	208 lb	417 lb	-	-
Point	7'- 8"	7'- 8"	B15(i4586)	Back	1612 lb	1955 lb	-	-
Point	8'- 9 1/2"	8'- 9 1/2"	J6(i4582)	Back	89 lb	178 lb	-	-
Point	10'- 1 1/2"	10'- 1 1/2"	J6(i4620)	Back	95 lb	191 lb	-	-
Point	11'- 5 1/2"	11'- 5 1/2"	J6(i4580)	Back	84 lb	168 lb	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	PBO2(i1247)	Top	509 lb	801 lb	-	-
Point	7'- 6 1/4"	7'- 6 1/4"	FC1 Floor Decking (Plan View Fill)	Top	0 lb	1 lb	-	-
Point	12'- 3 1/4"	12'- 3 1/4"	E79(i4409)	Top	44 lb	-	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4 1/2"	PBO1(i31)	3428 lb	4738 lb	-4 lb	-
2	12'- 1/2"	12'- 6"	W83(i4389)	2578 lb	3787 lb	-	-


### DESIGN NOTES

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

**REVIEWED**



STRUCTURAL COMPONENT ONLY  
DWG # TF22061250 PG 1/2

	BUILDER: <b>BAYVIEW WELLINGTON</b> SITE: <b>GREEN VALLEY EAST</b> MODEL: <b>S42-21</b> CITY: <b>BRADFORD</b>	Job Name: <b>S42-21 SUNKEN</b> Level: <b>1ST FLR FRAMING</b> Label: <b>B14 - i4604</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>
---	---	---	---	---------------------------------

- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

#### PLY TO PLY CONNECTION

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





BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21 SUNKEN**  
Level: **1ST FLR FRAMING**  
Label: **B15 - i4586**  
Type: **Beam**

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

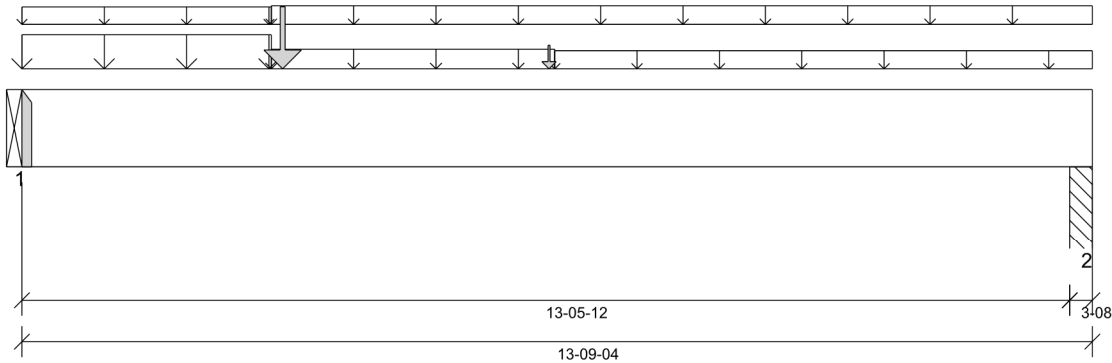
Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20

01/11/2022 16:28



### DESIGN INFORMATION

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

#### Lateral Restraint Requirements:

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

Top: 0' Bottom: 6'- 11"

#### Factored Resistance of Support Material:

- 615 psi Beam @ 0'
- 615 psi Column @ 13'- 6 3/4"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 4 5/8"	1.25D + 1.5L	1.00	13243 lb ft	35345 lb ft	Passed - 37%
Factored Shear:	0'- 11 7/8"	1.25D + 1.5L	1.00	4701 lb	13815 lb	Passed - 34%
Live Load (LL) Pos. Defl.:	6'- 3"	L		0.158"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	6'- 4"	D + L		0.316"	L/240	Passed - L/512

### 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	4918 lb		5460 lb	-	Passed - 90%
2	3-08	1.25D + 1.5L	1.00	2362 lb		12740 lb	7534 lb	Passed - 31%

### 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'	13'- 9 1/4"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	3'- 2 1/2"	User Load	Back	120 lb/ft	240 lb/ft	-	-
Uniform	0'	3'- 2 1/2"	FC1 Floor Decking (Plan View Fill)	Top	13 lb/ft	25 lb/ft	-	-
Uniform	3'- 2 1/2"	13'- 9 1/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	3'- 2 1/2"	6'- 10 1/4"	FC1 Floor Decking (Plan View Fill)	Top	27 lb/ft	53 lb/ft	-	-
Uniform	6'- 10 1/4"	13'- 9 1/4"	FC1 Floor Decking (Plan View Fill)	Top	17 lb/ft	34 lb/ft	-	-
Point	6'- 9 3/8"	6'- 9 3/8"	B17(i4618)	Front	136 lb	247 lb	-	-
Point	3'- 4 1/4"	3'- 4 1/4"	B16(i4530)	Back	999 lb	1184 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B14(i4604)	1612 lb	1955 lb	-	-
2	13'- 5 3/4"	13'- 9 1/4"	PBO5(i4572)	960 lb	755 lb	-	-

### DESIGN NOTES

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

### PLY TO PLY CONNECTION

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

**REVIEWED**



STRUCTURAL COMPONENT ONLY  
DWG # TF22061251



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21 SUNKEN**  
Level: **1ST FLR FRAMING**  
Label: **B17 - i4618**  
Type: **Beam**

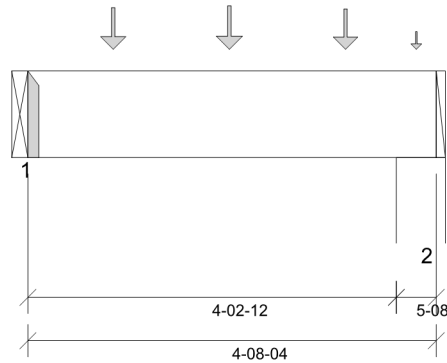
**1 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version  
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/11/2022 16:28



### 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 Wall @ 4'- 3 3/4"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 3 3/4"	1.25D + 1.5L	1.00	734 lb ft	17672 lb ft	Passed - 4%
Factored Shear:	3'- 2 7/8"	1.25D + 1.5L	1.00	602 lb	6908 lb	Passed - 9%

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-08	1.25D + 1.5L	1.00	539 lb		2730 lb	-	Passed - 20%
2	5-08	1.25D + 1.5L	1.00	632 lb		10010 lb	5921 lb	Passed - 11%

### 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'- 8 1/4"	Self Weight	Top	6 lb/ft	-	-	-
Point	0'- 11 3/4"	0'- 11 3/4"	J6(i4582)	Front	87 lb	174 lb	-	-
Point	2'- 3 3/4"	2'- 3 3/4"	J6(i4620)	Front	93 lb	187 lb	-	-
Point	3'- 7 3/4"	3'- 7 3/4"	J6(i4580)	Front	83 lb	165 lb	-	-
Point	4'- 5 1/2"	4'- 5 1/2"	E79(i4409)	Top	15 lb	-	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B15(i4586)	136 lb	247 lb	-	-
2	4'- 2 3/4"	4'- 8 1/4"	W83(i4389)	170 lb	279 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 # TF22061252

**REVIEWED**



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21 SUNKEN**  
Level: **1ST FLR FRAMING**  
Label: **B18L - i4391**  
Type: **Beam**

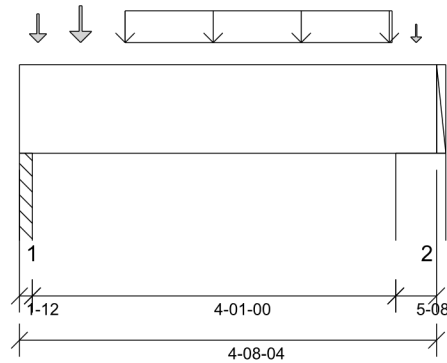
**1 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version  
8.4.2.286 Updated 9-13

Report Version: 2020.06.20 01/11/2022 16:28



### DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

#### Lateral Restraint Requirements:

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

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

#### Factored Resistance of Support Material:

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

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 8 1/4"	1.25D + 1.5L	1.00	873 lb ft	17672 lb ft	Passed - 5%
Factored Shear:	1'- 1 5/8"	1.25D + 1.5L	1.00	866 lb	6908 lb	Passed - 13%

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1'-12	1.25D + 1.5L	1.00	874 lb		3185 lb	1883 lb	Passed - 46%
2	5'-08	1.25D + 1.5L	1.00	810 lb		10010 lb	5921 lb	Passed - 14%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 8 1/4"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	1'- 2 1/4"	4'- 2 1/4"	Smoothed Load	Back	91 lb/ft	183 lb/ft	-	-
Point	0'- 2 1/2"	0'- 2 1/2"	J5(i4405)	Back	41 lb	82 lb	-	-
Point	0'- 8 1/4"	0'- 8 1/4"	J5(i4398)	Back	68 lb	135 lb	-	-
Point	4'- 5 1/2"	4'- 5 1/2"	E13(i1238)	Top	18 lb	-	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 1 3/4"	PBO4(i4390)	214 lb	402 lb	-	-
2	4'- 2 3/4"	4'- 8 1/4"	W14(i12)	214 lb	364 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 # TF22061253

**REVIEWED**



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21 EL B**  
Level: **2ND FLR FRAMING**  
Label: **B20 - i4582**  
Type: **Beam**

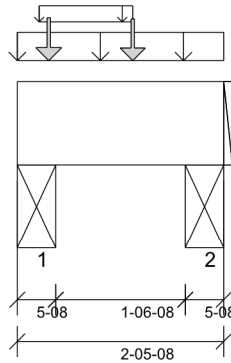
**2 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20 01/11/2022 16:46



### 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'- 4 1/2"
- 615 psi Beam @ 2'- 1"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 4 1/2"	1.25D + 1.5L + S	0.99	249 lb ft	34817 lb ft	Passed - 1%
Factored Shear:	1'- 1/8"	1.25D + 1.5L + S	0.99	228 lb	13609 lb	Passed - 2%

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5'-08	1.25D + 1.5L + S	0.99	945 lb		19721 lb	11662 lb	Passed - 8%
2	5'-08	1.25D + 1.5S + L	0.96	604 lb		19186 lb	11346 lb	Passed - 5%

### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	2'- 5 1/2"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	2'- 5 1/2"	E78(i4667)	Top	135 lb/ft	-	108 lb/ft	-
Uniform	0'- 3 1/8"	1'- 4 1/2"	FC3 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Point	0'- 4 1/2"	0'- 4 1/2"	J4(i4664)	Back	97 lb	194 lb	-	-
Point	1'- 4 1/2"	1'- 4 1/2"	J4(i4589)	Back	93 lb	185 lb	-	-

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i4481)	319 lb	276 lb	133 lb	-
2	2'	2'- 5 1/2"	STL BM(i1409)	236 lb	110 lb	133 lb	-

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- 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 # TF22061254

**REVIEWED**



BUILDER: **BAYVIEW WELLINGTON**  
SITE: **GREEN VALLEY EAST**  
MODEL: **S42-21**  
CITY: **BRADFORD**

Job Name: **S42-21 EL C**  
Level: **2ND FLR FRAMING**  
Label: **B21 - i5367**  
Type: **Beam**

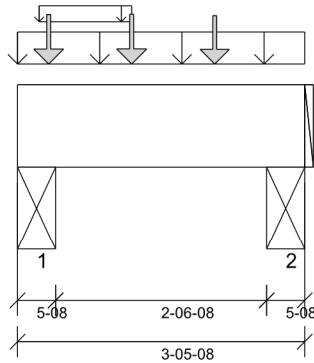
**2 Ply Member**  
**1 3/4" x 11 7/8" (2.0E 3100)**  
**WestFraser LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2020.06.20 01/11/2022 17:06



#### 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'- 4 1/2"
- 615 psi Beam @ 3'- 1"

#### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 6 11/16"	1.25D + 1.5L + S	1.00	765 lb ft	35345 lb ft	Passed - 2%
Factored Shear:	2'- 1/8"	1.25D + 1.5L + S	1.00	671 lb	13815 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	5'-08	1.25D + 1.5L + S	1.00	1639 lb		20020 lb	11839 lb	Passed - 14%
2	5'-08	1.25D + 1.5S + L	1.00	1222 lb		19955 lb	11800 lb	Passed - 10%

#### SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	3'- 5 1/2"	Self Weight	Top	12 lb/ft	-	-	-
Uniform	0'	3'- 5 1/2"	E78(i5343)	Top	156 lb/ft	-	164 lb/ft	-
Uniform	0'- 3 1/8"	1'- 4 1/2"	FC3 Floor Decking (Plan View Fill)	Top	3 lb/ft	6 lb/ft	-	-
Point	0'- 4 1/2"	0'- 4 1/2"	J3(i5474)	Back	122 lb	244 lb	-	-
Point	1'- 4 1/2"	1'- 4 1/2"	J3(i5355)	Back	123 lb	247 lb	-	-
Point	2'- 4 1/2"	2'- 4 1/2"	J3(i5383)	Back	118 lb	236 lb	-	-

#### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	STL BM(i4481)	524 lb	467 lb	284 lb	-
2	3'	3'- 5 1/2"	STL BM(i1409)	424 lb	266 lb	284 lb	-

#### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Calculation of lateral stability factor (KL) is based on width of all plies.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.
- 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 # TF22061255

**REVIEWED**

### Maximum Floor Spans – S2.1

#### Design Criteria

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

#### Maximum Floor Spans

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

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

#### Notes:

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

## Maximum Floor Spans – S4.1

### Design Criteria

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

### Maximum Floor Spans

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

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

### Notes:

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

### Maximum Floor Spans – S6.1

#### Design Criteria

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

#### Maximum Floor Spans

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

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

#### Notes:

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

## Maximum Floor Spans – S7.1

### Design Criteria

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

### Maximum Floor Spans

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

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

### Notes:

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

### Maximum Floor Spans – M2.1

#### Design Criteria

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

#### Maximum Floor Spans

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

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

#### Notes:

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

## Maximum Floor Spans – M4.1

### Design Criteria

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

### Maximum Floor Spans

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

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

### Notes:

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

### Maximum Floor Spans – M6.1

#### Design Criteria

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

#### Maximum Floor Spans

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

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

#### Notes:

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

## Maximum Floor Spans – M7.1

### Design Criteria

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

### Maximum Floor Spans

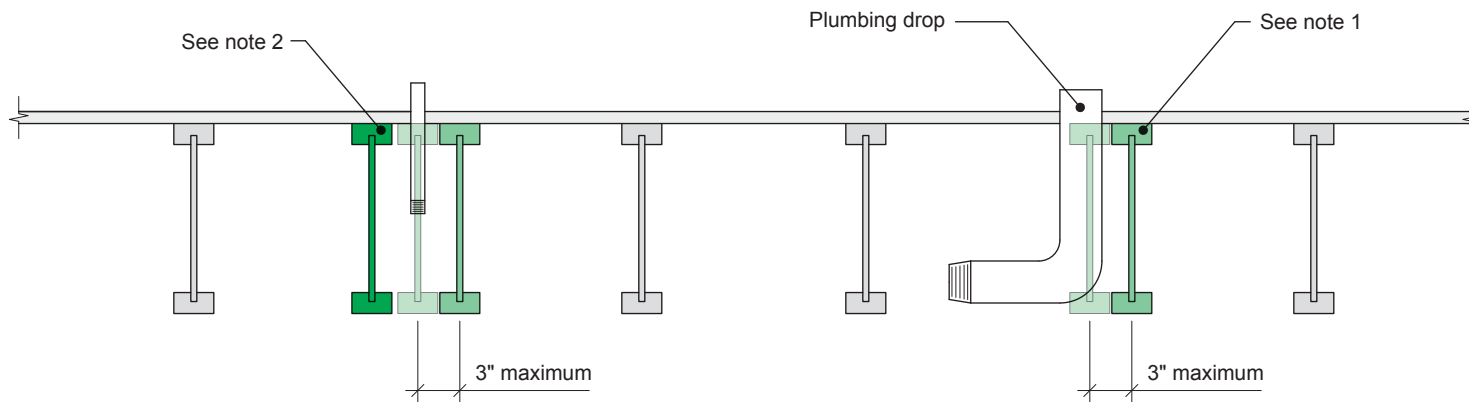
Joist depth	Joist series	Bare On centre spacing				1/2 in. gypsum ceiling On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	16'-11"	15'-11"	15'-4"	14'-9"	17'-4"	16'-4"	15'-9"	14'-11"
	NI-60	17'-1"	16'-1"	15'-6"	14'-10"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

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

### Notes:

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

7c

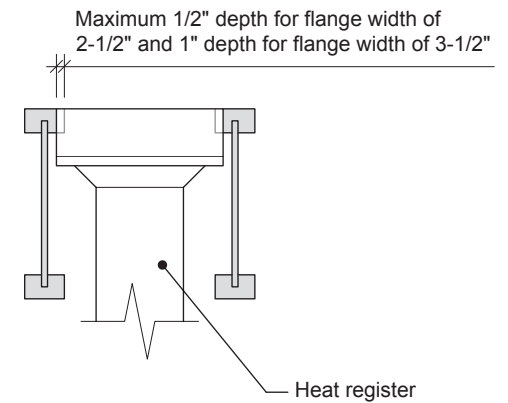
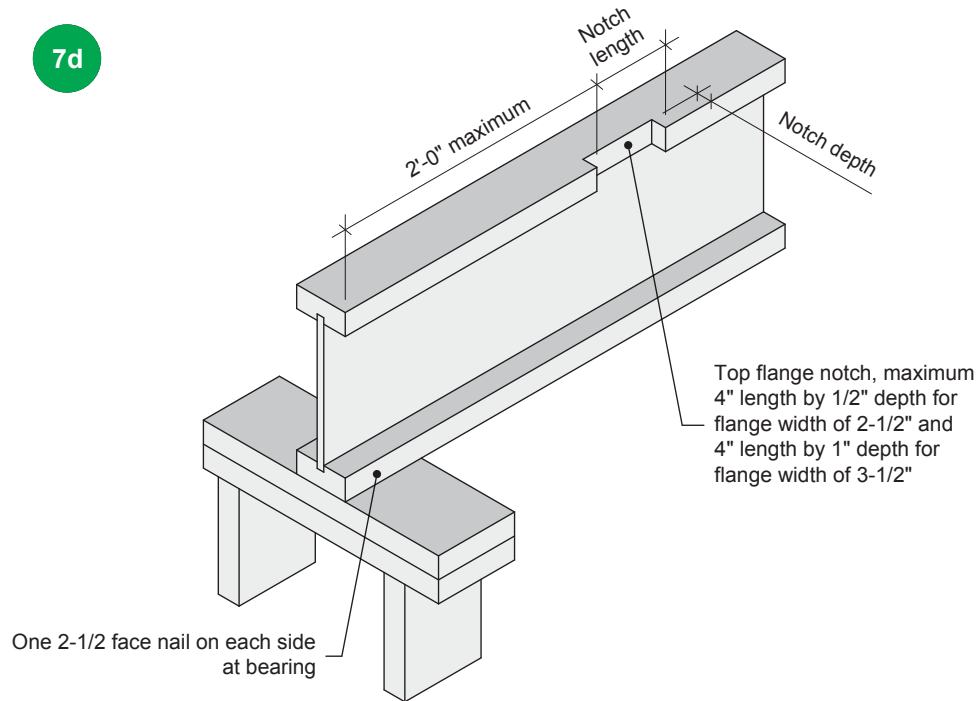


**Notes:**

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

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

7d



**Notes:**

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

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