

MODEL: 4006- EL.A

REVISION: March 16, 2020

REVISION 3: Oct. 4, 2021

SECOND FLOOR FRAMING

SE039675 - SE039693

SE047000 - SE047002

Ceramic Tile



Products				
PlotID	Length	Product	Plies	Net Qty
B20	9-00-00	11 7/8" NI-20	2	2
B21	13-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B22	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B23	4-00-00	11 7/8" NI-20	2	4
J1	18-00-00	11 7/8" NI-20	1	18
J2	15-00-00	11 7/8" NI-20	1	9
J3	14-00-00	11 7/8" NI-20	1	22
J4	13-00-00	11 7/8" NI-20	1	9
J5	12-00-00	11 7/8" NI-20	1	22
J6	11-00-00	11 7/8" NI-20	1	8
J7	10-00-00	11 7/8" NI-20	1	23
xBk1	62-00-00	11 7/8" NI-20	1	1
xCa1	203-00-00	1 1/8" x 11 7/8" Rim Board	1	1

Connector Summary

PlotID	Qty	Manuf	Product
H1	1		HUS1.81/10
H2	15		LT251188

APP - AS PER PLAN
BBO - BEAM BY OTHERS

RIMBOARD

1-1/8" X 11-7/8" O.S.B

SUBFLOOR

3/4" NAILED & GLUED*

FLOOR LOADING :

LIVE LOAD : 40 PSF
DEAD LOAD : 15 PSF
DEAD LOAD (TILE) : 20 PSF

Blocking panels are required over all interior supports.

Squash blocks are required under concentrated loads.

Ceramic Tile Application as per O.B.C. 9.30.6

Do not scale - refer to architectural plans for dimensions.

JT/PL: 45147/116407

LI: (290671)343713*

Builder: Gold Park

Project: Pine Valley PH.2

Location: Vaughan

Date: November 10, 2017

Designer: NL / JC

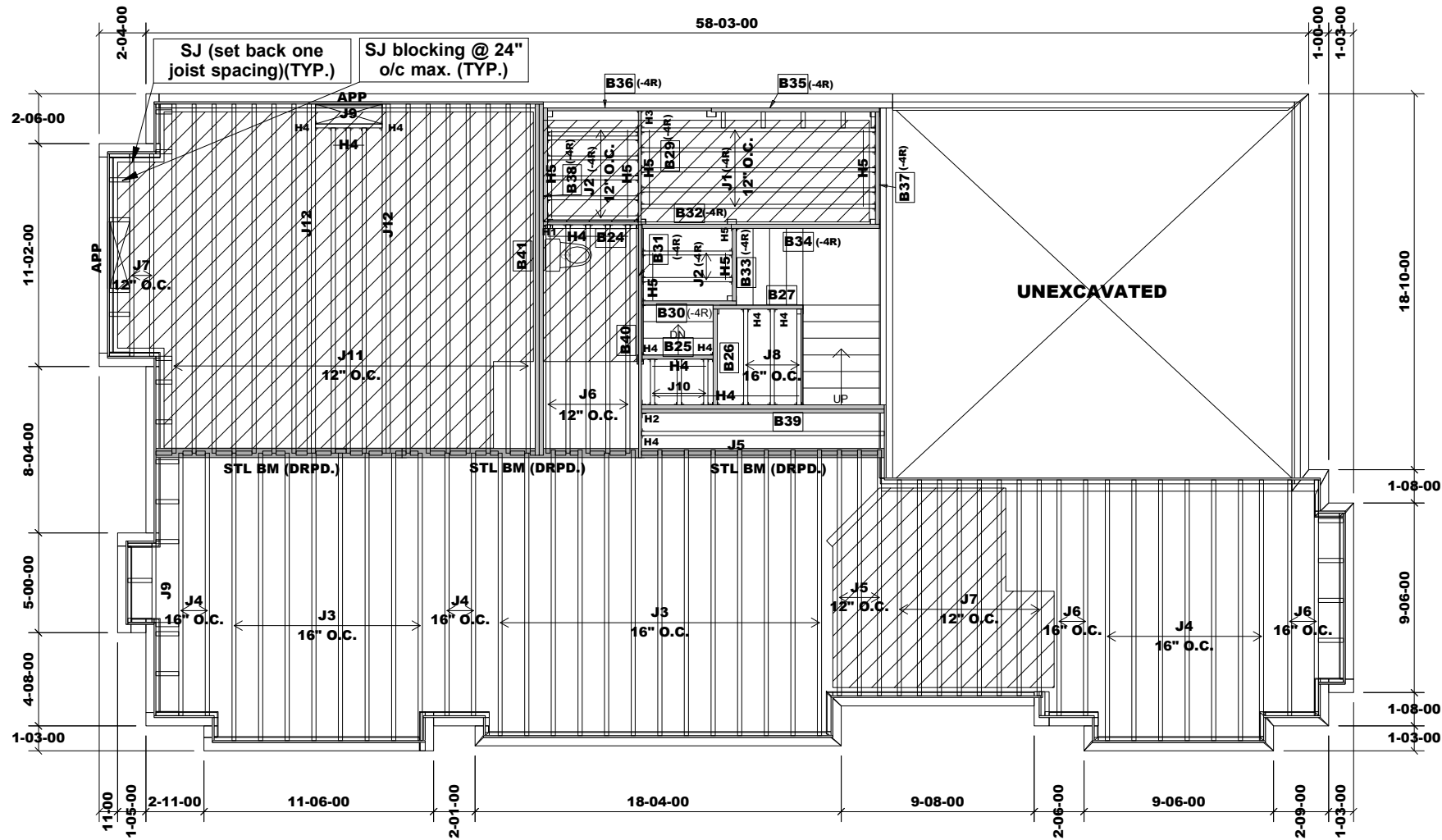
Sheet: 1 of 12

Alpa Roof Trusses Inc.

Maple, Ontario

Salesperson: Derek

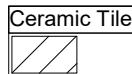
Home Lumber



MODEL: 4006- EL.A
+ OPT. 1ST FLOOR

REVISION: March 16, 2020
REVISION#3: Oct. 4, 2021
REVISION#4: April 26, 2022

FIRST FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
B24	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B25	4-00-00	11 7/8" NI-20	1	1
B26	5-00-00	11 7/8" NI-20	1	1
B27	5-00-00	11 7/8" NI-20	1	1
B29	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B30	5-00-00	9 1/2" NI-20	1	1
B31	7-00-00	9 1/2" NI-20	1	1
B32	5-00-00	9 1/2" NI-20	1	1
B33	4-00-00	9 1/2" NI-20	1	1
B34	8-00-00	9 1/2" NI-20	1	1
B35	9-00-00	9 1/2" NI-20	1	1
B36	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B37	6-00-00	9 1/2" NI-20	1	1
B38	7-00-00	9 1/2" NI-20	1	1
B39	13-00-00	11 7/8" NI-20	2	2
B40	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B41	18-00-00	11 7/8" NI-40x	2	2
J1	12-00-00	9 1/2" NI-20	1	5
J2	5-00-00	9 1/2" NI-20	1	8
J3	15-00-00	11 7/8" NI-20	1	21
J4	14-00-00	11 7/8" NI-20	1	11
J5	13-00-00	11 7/8" NI-20	1	4
J6	12-00-00	11 7/8" NI-20	1	9
J7	11-00-00	11 7/8" NI-20	1	10
J8	5-00-00	11 7/8" NI-20	1	3
J9	4-00-00	11 7/8" NI-20	1	2
J10	3-00-00	11 7/8" NI-20	1	3
J11	18-00-00	11 7/8" NI-40x	1	17
J12	18-00-00	11 7/8" NI-40x	2	4
xBk1	4-00-00	9 1/2" NI-20	1	1
xBk2	54-00-00	11 7/8" NI-20	1	1
xCa1	5-00-00	1 1/8" x 9 1/2" Rim Board	1	1
xCa2	170-00-00	1 1/8" x 11 7/8" Rim Board	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1		HU11
H2	1		HU310-2
H3	1		HUS1.81/10
H4	25		LT251188
H5	28		LT259

APP - AS PER PLAN
BBO - BEAM BY OTHERS

RIMBOARD

1-1/8" X 11-7/8" O.S.B
1-1/8" X 9-1/2" O.S.B

SUBFLOOR

3/4" NAILED & GLUED*

FLOOR LOADING :

LIVE LOAD : 40 PSF
DEAD LOAD : 15 PSF
DEAD LOAD (TILE) : 20 PSF

Blocking panels are required over all interior supports.

Squash blocks are required under concentrated loads.

Ceramic Tile Application as per O.B.C. 9.30.6

Do not scale - refer to architectural plans for dimensions.

JT/PL: 45147/116407

LI: (290671)343713*

Builder: Gold Park

Project: Pine Valley PH.2

Location: Vaughan

Date: November 10, 2017

Designer: NL / JC

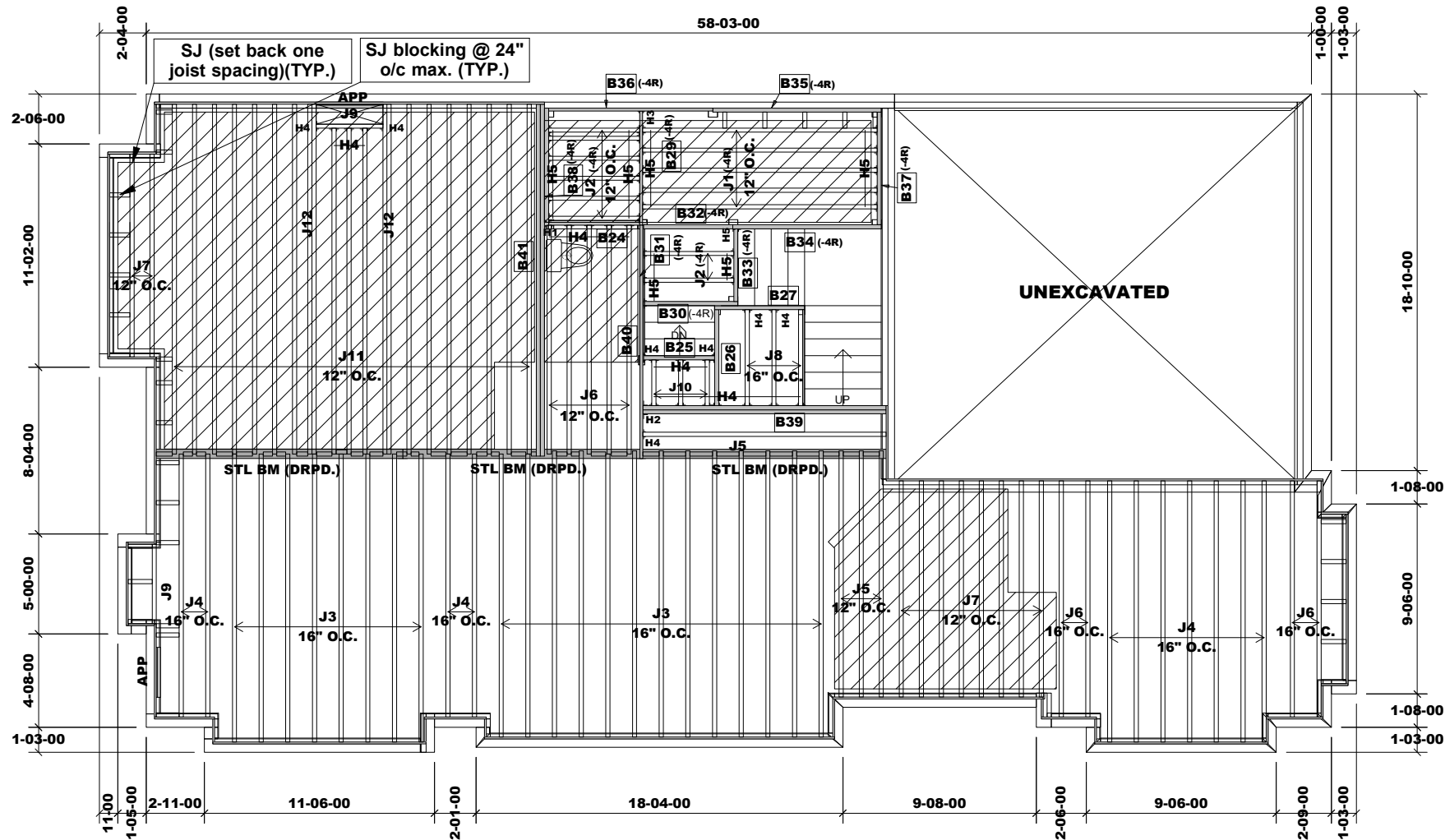
Sheet: 2 of 12

Alpa Roof Trusses Inc.

Maple, Ontario

Salesperson: Derek

Home Lumber



MODEL: 4006- EL.A
W/W.O.D. CONDITION
+ OPT. 1ST FLOOR

REVISION: March 16, 2020
REVISION#3: Oct. 4, 2021
REVISION#4: April 26, 2022

FIRST FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
B24	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B25	4-00-00	11 7/8" NI-20	1	1
B26	5-00-00	11 7/8" NI-20	1	1
B27	5-00-00	11 7/8" NI-20	1	1
B29	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B30	5-00-00	9 1/2" NI-20	1	1
B31	7-00-00	9 1/2" NI-20	1	1
B32	5-00-00	9 1/2" NI-20	1	1
B33	4-00-00	9 1/2" NI-20	1	1
B34	8-00-00	9 1/2" NI-20	1	1
B35	9-00-00	9 1/2" NI-20	1	1
B36	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B37	6-00-00	9 1/2" NI-20	1	1
B38	7-00-00	9 1/2" NI-20	1	1
B39	13-00-00	11 7/8" NI-20	2	2
B40	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B41	18-00-00	11 7/8" NI-40x	2	2
J1	12-00-00	9 1/2" NI-20	1	5
J2	5-00-00	9 1/2" NI-20	1	8
J3	15-00-00	11 7/8" NI-20	1	21
J4	14-00-00	11 7/8" NI-20	1	11
J5	13-00-00	11 7/8" NI-20	1	4
J6	12-00-00	11 7/8" NI-20	1	9
J7	11-00-00	11 7/8" NI-20	1	10
J8	5-00-00	11 7/8" NI-20	1	3
J9	4-00-00	11 7/8" NI-20	1	2
J10	3-00-00	11 7/8" NI-20	1	3
J11	18-00-00	11 7/8" NI-40x	1	17
J12	18-00-00	11 7/8" NI-40x	2	4
xBk1	4-00-00	9 1/2" NI-20	1	1
xBk2	54-00-00	11 7/8" NI-20	1	1
xCa1	5-00-00	1 1/8" x 9 1/2" Rim Board	1	1
xCa2	170-00-00	1 1/8" x 11 7/8" Rim Board	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1		HU11
H2	1		HU310-2
H3	1		HUS1.81/10
H4	25		LT251188
H5	28		LT259

APP - AS PER PLAN
BBO - BEAM BY OTHERS

RIMBOARD

1-1/8" X 11-7/8" O.S.B
1-1/8" X 9-1/2" O.S.B

SUBFLOOR

3/4" NAILED & GLUED*

FLOOR LOADING :

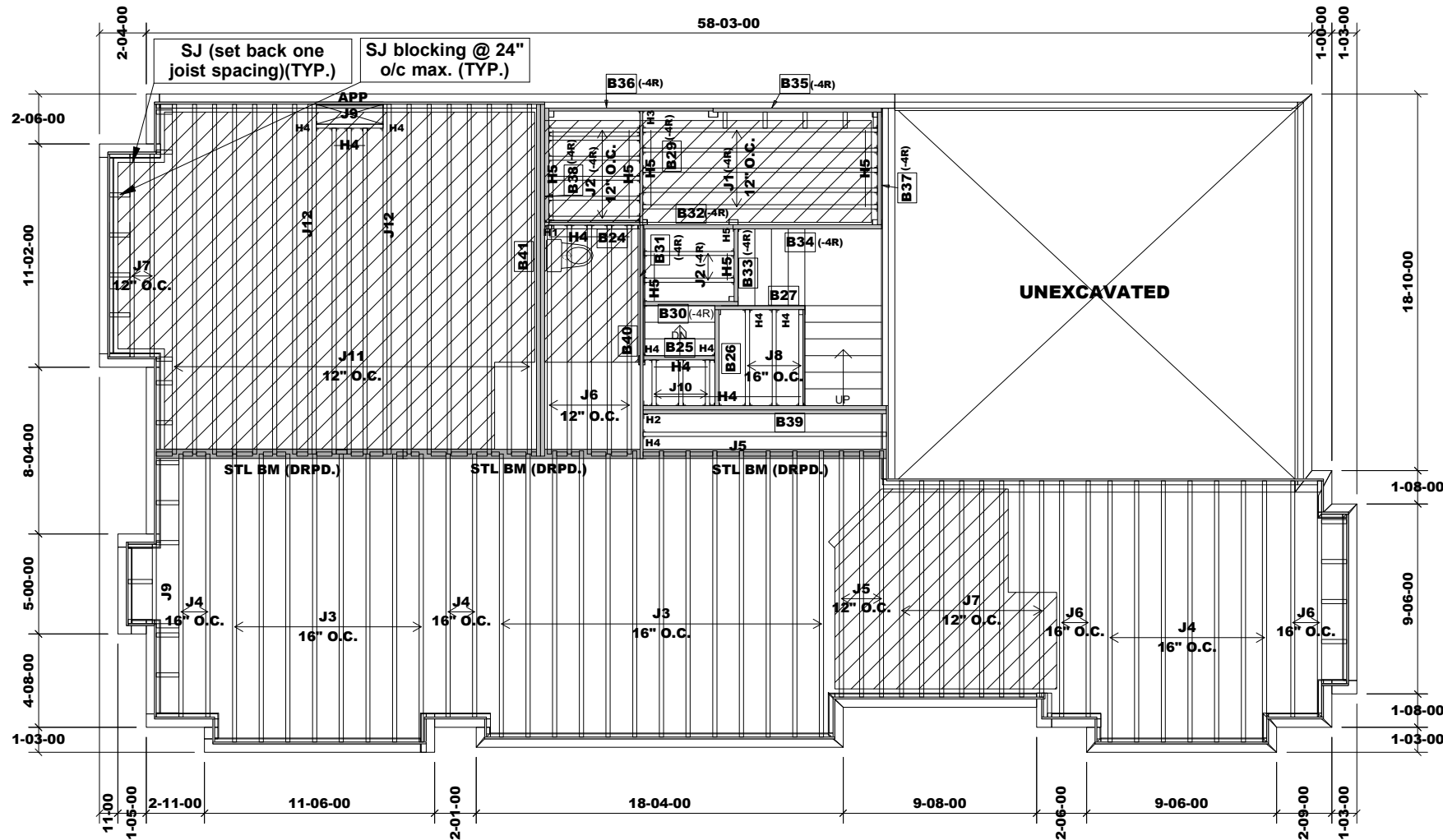
LIVE LOAD : 40 PSF
DEAD LOAD : 15 PSF
DEAD LOAD (TILE) : 20 PSF

Blocking panels are required over all interior supports.

Squash blocks are required under concentrated loads.

Ceramic Tile Application as per O.B.C. 9.30.6

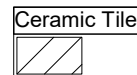
Do not scale - refer to architectural plans for dimensions.



MODEL: 4006- EL.A
W/L.O.D. & W.O.B.
+ OPT. 1ST FLOOR

REVISION: March 16, 2020
REVISION#3: Oct. 4, 2021
REVISION#4: April 27, 2022

FIRST FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
B24	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B25	4-00-00	11 7/8" NI-20	1	1
B26	5-00-00	11 7/8" NI-20	1	1
B27	5-00-00	11 7/8" NI-20	1	1
B29	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B30	5-00-00	9 1/2" NI-20	1	1
B31	7-00-00	9 1/2" NI-20	1	1
B32	5-00-00	9 1/2" NI-20	1	1
B33	4-00-00	9 1/2" NI-20	1	1
B34	8-00-00	9 1/2" NI-20	1	1
B35	9-00-00	9 1/2" NI-20	1	1
B36	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B37	6-00-00	9 1/2" NI-20	1	1
B38	7-00-00	9 1/2" NI-20	1	1
B39	13-00-00	11 7/8" NI-20	2	2
B40	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B41	18-00-00	11 7/8" NI-40x	2	2
J1	12-00-00	9 1/2" NI-20	1	5
J2	5-00-00	9 1/2" NI-20	1	8
J3	15-00-00	11 7/8" NI-20	1	21
J4	14-00-00	11 7/8" NI-20	1	11
J5	13-00-00	11 7/8" NI-20	1	4
J6	12-00-00	11 7/8" NI-20	1	9
J7	11-00-00	11 7/8" NI-20	1	10
J8	5-00-00	11 7/8" NI-20	1	3
J9	4-00-00	11 7/8" NI-20	1	2
J10	3-00-00	11 7/8" NI-20	1	3
J11	18-00-00	11 7/8" NI-40x	1	17
J12	18-00-00	11 7/8" NI-40x	2	4
xBk1	4-00-00	9 1/2" NI-20	1	1
xBk2	54-00-00	11 7/8" NI-20	1	1
xCa1	5-00-00	1 1/8" x 9 1/2" Rim Board	1	1
xCa2	170-00-00	1 1/8" x 11 7/8" Rim Board	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1		HU11
H2	1		HU310-2
H3	1		HUS1.81/10
H4	25		LT251188
H5	28		LT259

APP - AS PER PLAN
BBO - BEAM BY OTHERS

RIMBOARD
1-1/8" X 11-7/8" O.S.B
1-1/8" X 9-1/2" O.S.B

SUBFLOOR
3/4" NAILED & GLUED*

FLOOR LOADING :

LIVE LOAD : 40 PSF
DEAD LOAD : 15 PSF
DEAD LOAD (TILE) : 20 PSF

Blocking panels are required over all interior supports.

Squash blocks are required under concentrated loads.

Ceramic Tile Application as per O.B.C. 9.30.6

Do not scale - refer to architectural plans for dimensions.

JT/PL: 45147/116407

LI: (290671)343713*

Builder: Gold Park

Project: Pine Valley PH.2

Location: Vaughan

Date: November 10, 2017

Designer: NL / JC

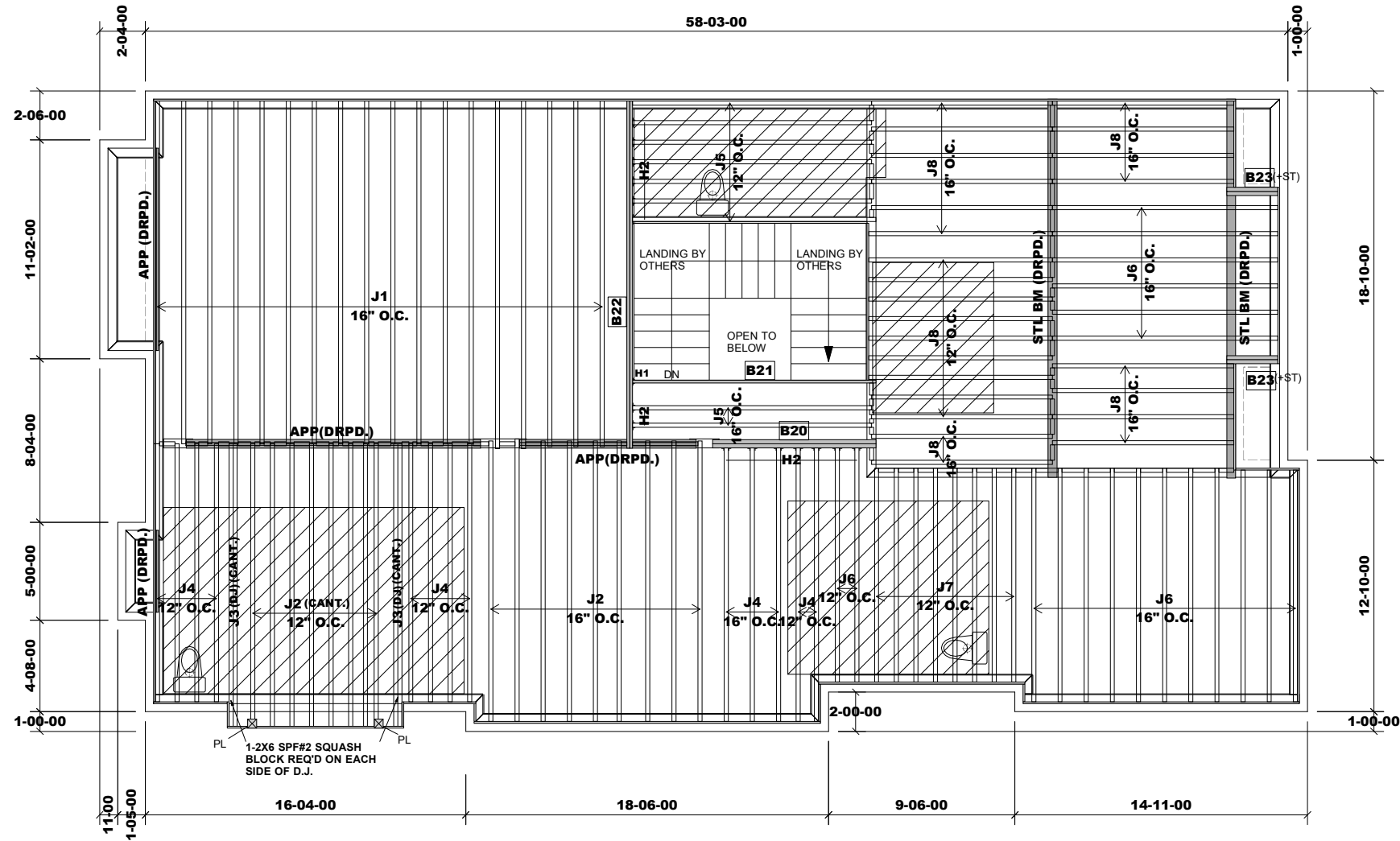
Sheet: 4 of 12

Alpa Roof Trusses Inc.

Maple, Ontario

Salesperson: Derek

Home Lumber



MODEL: 4006- EL.B

REVISION: March 16, 2020

REVISION 3: Oct. 4, 2021

SECOND FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
B20	9-00-00	11 7/8" NI-20	2	2
B21	13-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B22	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B23	3-00-00	11 7/8" NI-20	2	4
J1	18-00-00	11 7/8" NI-20	1	18
J2	15-00-00	11 7/8" NI-20	1	17
J3	15-00-00	11 7/8" NI-20	2	4
J4	14-00-00	11 7/8" NI-20	1	13
J5	13-00-00	11 7/8" NI-20	1	9
J6	12-00-00	11 7/8" NI-20	1	19
J7	11-00-00	11 7/8" NI-20	1	8
J8	10-00-00	11 7/8" NI-20	1	25
xBk1	54-00-00	11 7/8" NI-20	1	1
xCa1	205-00-00	1 1/8" x 11 7/8" Rim Board	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1		HUS1.81/10
H2	15		LT251188

APP - AS PER PLAN
BBO - BEAM BY OTHERS

RIMBOARD
1-1/8" X 11-7/8" O.S.B

SUBFLOOR
3/4" NAILED & GLUED*

FLOOR LOADING :

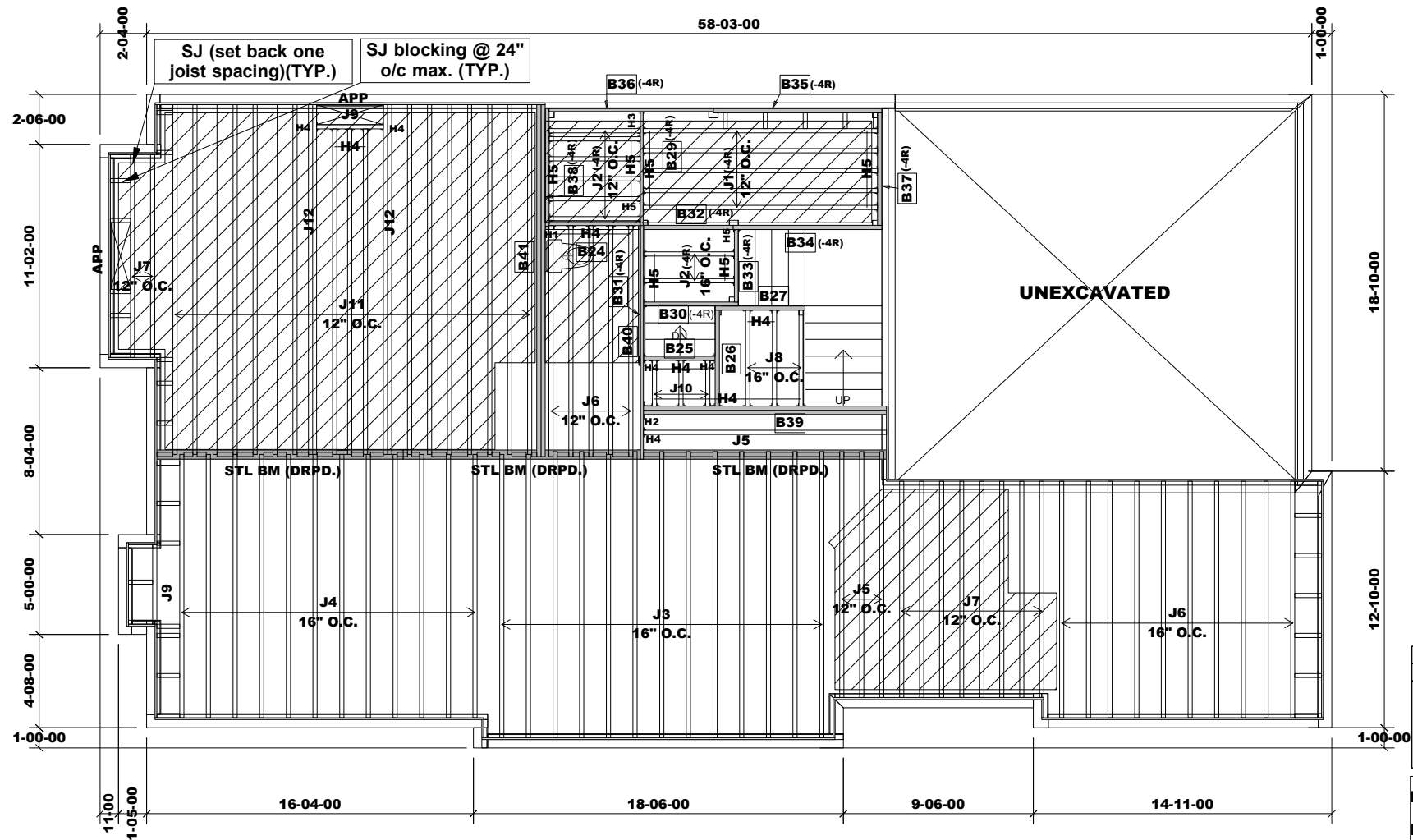
LIVE LOAD : 40 PSF
DEAD LOAD : 15 PSF
DEAD LOAD (TILE) : 20 PSF

Blocking panels are required over all interior supports.
Squash blocks are req'd under concentrated loads.

Provide I-Joist blocking between cantilevered joists (along bearing) and rimboard closure at ends.

Ceramic Tile Application as per O.B.C. 9.30.6

Do not scale - refer to architectural plans for dimensions.



**MODEL: 4006- EL.B
+ OPT. 1ST FLOOR**

**REVISION: March 16, 2020
REVISION#3: Oct. 4, 2021
REVISION#4: April 26, 2022**

FIRST FLOOR FRAMING



Products					
PlotID	Length	Product	Plies	Net Qty	
B24	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	1
B25	4-00-00	11 7/8" NI-20	1	1	1
B26	5-00-00	11 7/8" NI-20	1	1	1
B27	5-00-00	11 7/8" NI-20	1	1	1
B29	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	1
B30	5-00-00	9 1/2" NI-20	1	1	1
B31	7-00-00	9 1/2" NI-20	1	1	1
B32	5-00-00	9 1/2" NI-20	1	1	1
B33	4-00-00	9 1/2" NI-20	1	1	1
B34	8-00-00	9 1/2" NI-20	1	1	1
B35	9-00-00	9 1/2" NI-20	1	1	1
B36	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	1
B37	6-00-00	9 1/2" NI-20	1	1	1
B38	7-00-00	9 1/2" NI-20	1	1	1
B39	13-00-00	11 7/8" NI-20	2	2	2
B40	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	1
B41	18-00-00	11 7/8" NI-40x	2	2	2
J1	12-00-00	9 1/2" NI-20	1	5	5
J2	5-00-00	9 1/2" NI-20	1	8	8
J3	15-00-00	11 7/8" NI-20	1	13	13
J4	14-00-00	11 7/8" NI-20	1	12	12
J5	13-00-00	11 7/8" NI-20	1	4	4
J6	12-00-00	11 7/8" NI-20	1	15	15
J7	11-00-00	11 7/8" NI-20	1	10	10
J8	5-00-00	11 7/8" NI-20	1	3	3
J9	4-00-00	11 7/8" NI-20	1	2	2
J10	3-00-00	11 7/8" NI-20	1	3	3
J11	18-00-00	11 7/8" NI-40x	1	17	17
J12	18-00-00	11 7/8" NI-40x	2	4	4
xBk1	4-00-00	9 1/2" NI-20	1	1	1
xBk2	58-00-00	11 7/8" NI-20	1	1	1
xCa1	5-00-00	1 1/8" x 9 1/2" Rim Board	1	1	1
xCa2	163-00-00	1 1/8" x 11 7/8" Rim Board	1	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1		HU11
H2	1		HU310-2
H3	1		HUS1.81/10
H4	25		LT251188
H5	28		LT259

FLOOR LOADING :
LIVE LOAD : 40 PSF
DEAD LOAD : 15 PSF
DEAD LOAD (TILE) : 20 PSF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

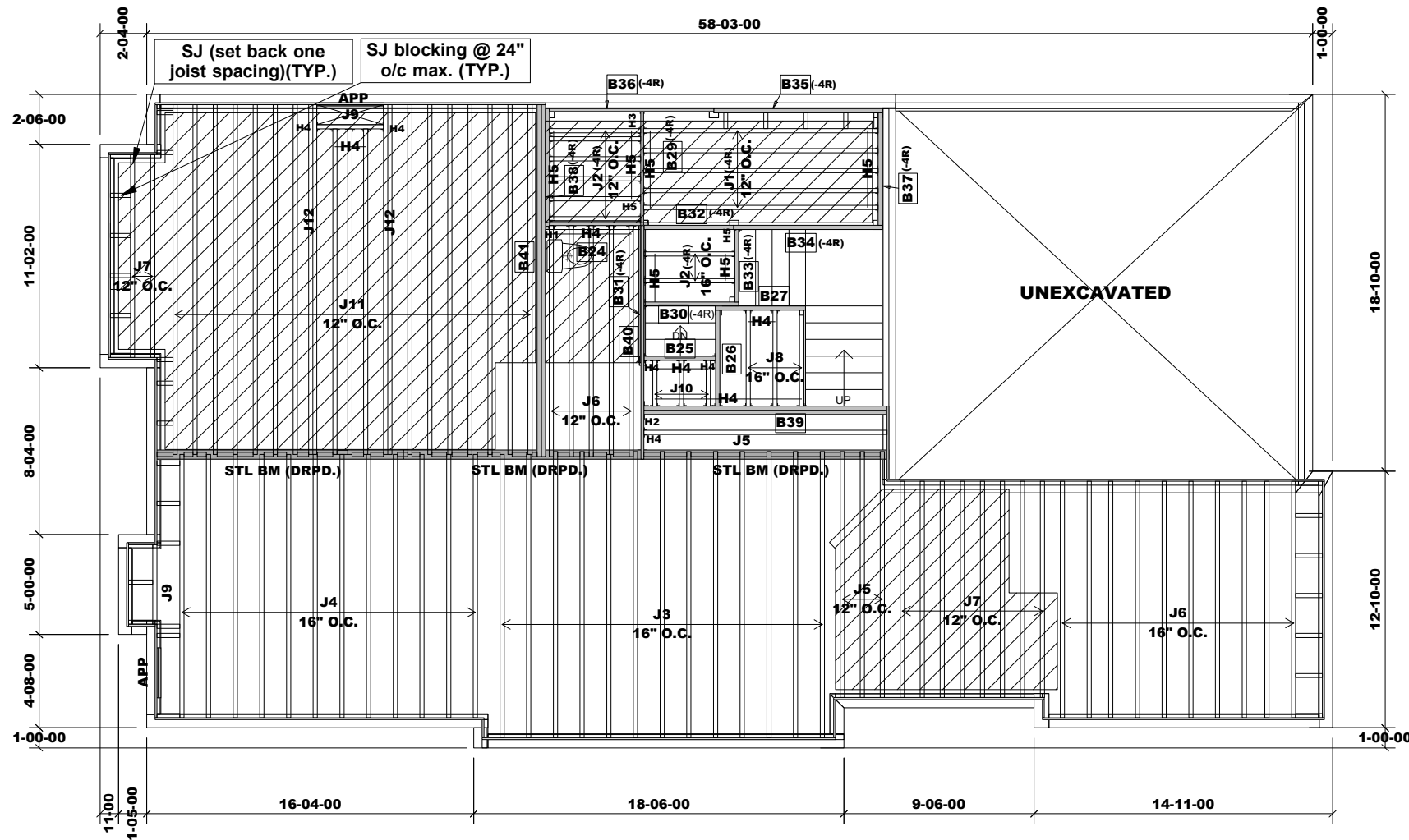
RIMBOARD

1-1/8" X 11-7/8" O.S.B
1-1/8" X 9-1/2" O.S.B

SUBFLOOR

3/4" NAILED & GLUED*

Blocking panels are required over all interior supports.
Squash blocks are required under concentrated loads.
Ceramic Tile Application as per O.B.C. 9.30.6
Do not scale - refer to architectural plans for dimensions.



**MODEL: 4006- EL.B
W/W.O.D. CONDITION
+ OPT. 1ST FLOOR**

REVISION: March 16, 2020
REVISION#3: Oct. 4, 2021
REVISION#4: April 26, 2022

FIRST FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
B24	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B25	4-00-00	11 7/8" NI-20	1	1
B26	5-00-00	11 7/8" NI-20	1	1
B27	5-00-00	11 7/8" NI-20	1	1
B29	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B30	5-00-00	9 1/2" NI-20	1	1
B31	7-00-00	9 1/2" NI-20	1	1
B32	5-00-00	9 1/2" NI-20	1	1
B33	4-00-00	9 1/2" NI-20	1	1
B34	8-00-00	9 1/2" NI-20	1	1
B35	9-00-00	9 1/2" NI-20	1	1
B36	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B37	6-00-00	9 1/2" NI-20	1	1
B38	7-00-00	9 1/2" NI-20	1	1
B39	13-00-00	11 7/8" NI-20	2	2
B40	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B41	18-00-00	11 7/8" NI-40x	2	2
J1	12-00-00	9 1/2" NI-20	1	5
J2	5-00-00	9 1/2" NI-20	1	8
J3	15-00-00	11 7/8" NI-20	1	13
J4	14-00-00	11 7/8" NI-20	1	12
J5	13-00-00	11 7/8" NI-20	1	4
J6	12-00-00	11 7/8" NI-20	1	15
J7	11-00-00	11 7/8" NI-20	1	10
J8	5-00-00	11 7/8" NI-20	1	3
J9	4-00-00	11 7/8" NI-20	1	2
J10	3-00-00	11 7/8" NI-20	1	3
J11	18-00-00	11 7/8" NI-40x	1	17
J12	18-00-00	11 7/8" NI-40x	2	4
xBk1	4-00-00	9 1/2" NI-20	1	1
xBk2	56-00-00	11 7/8" NI-20	1	1
xCa1	5-00-00	1 1/8" x 9 1/2" Rim Board	1	1
xCa2	163-00-00	1 1/8" x 11 7/8" Rim Board	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1		HU11
H2	1		HU310-2
H3	1		HUS1.81/10
H4	25		LT251188
H5	28		LT259

FLOOR LOADING :

LIVE LOAD : 40 PSF
DEAD LOAD : 15 PSF
DEAD LOAD (TILE) : 20 PSF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

RIMBOARD

1-1/8" X 11-7/8" O.S.B
1-1/8" X 9-1/2" O.S.B

SUBFLOOR

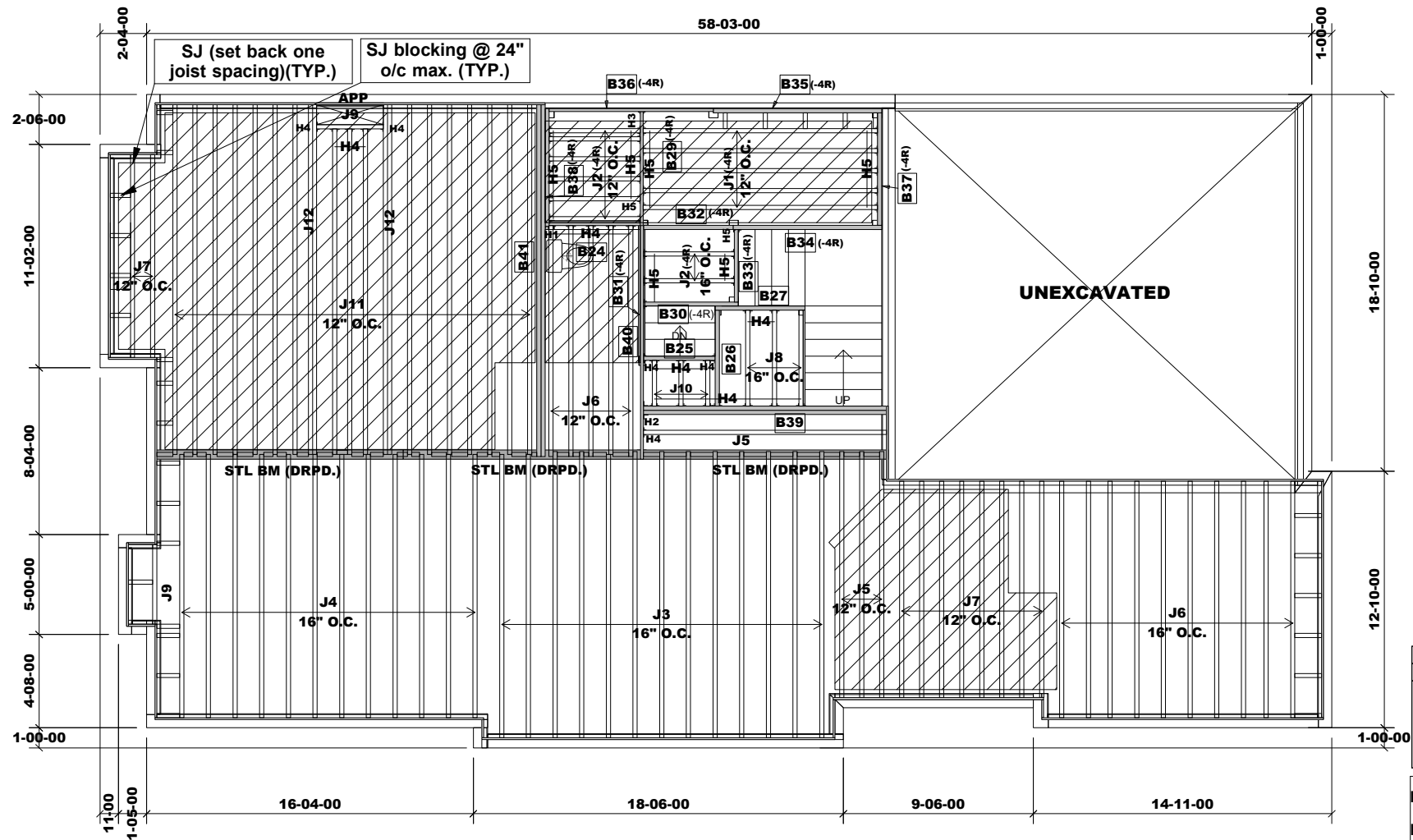
3/4" NAILED & GLUED*

Blocking panels are required over all interior supports.

Squash blocks are required under concentrated loads.

Ceramic Tile Application as per O.B.C. 9.30.6

Do not scale - refer to architectural plans for dimensions.



MODEL: 4006- EL.B
W/L.O.D. & W.O.B.
+ OPT. 1ST FLOOR

REVISION: March 16, 2020
REVISION#3: Oct. 4, 2021
REVISION#4: April 27, 2022

FIRST FLOOR FRAMING



Products					
PlotID	Length	Product	Plies	Net Qty	
B24	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	1
B25	4-00-00	11 7/8" NI-20	1	1	1
B26	5-00-00	11 7/8" NI-20	1	1	1
B27	5-00-00	11 7/8" NI-20	1	1	1
B29	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	1
B30	5-00-00	9 1/2" NI-20	1	1	1
B31	7-00-00	9 1/2" NI-20	1	1	1
B32	5-00-00	9 1/2" NI-20	1	1	1
B33	4-00-00	9 1/2" NI-20	1	1	1
B34	8-00-00	9 1/2" NI-20	1	1	1
B35	9-00-00	9 1/2" NI-20	1	1	1
B36	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	1
B37	6-00-00	9 1/2" NI-20	1	1	1
B38	7-00-00	9 1/2" NI-20	1	1	1
B39	13-00-00	11 7/8" NI-20	2	2	2
B40	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	1
B41	18-00-00	11 7/8" NI-40x	2	2	2
J1	12-00-00	9 1/2" NI-20	1	5	5
J2	5-00-00	9 1/2" NI-20	1	8	8
J3	15-00-00	11 7/8" NI-20	1	13	13
J4	14-00-00	11 7/8" NI-20	1	12	12
J5	13-00-00	11 7/8" NI-20	1	4	4
J6	12-00-00	11 7/8" NI-20	1	15	15
J7	11-00-00	11 7/8" NI-20	1	10	10
J8	5-00-00	11 7/8" NI-20	1	3	3
J9	4-00-00	11 7/8" NI-20	1	2	2
J10	3-00-00	11 7/8" NI-20	1	3	3
J11	18-00-00	11 7/8" NI-40x	1	17	17
J12	18-00-00	11 7/8" NI-40x	2	4	4
xBk1	4-00-00	9 1/2" NI-20	1	1	1
xBk2	58-00-00	11 7/8" NI-20	1	1	1
xCa1	5-00-00	1 1/8" x 9 1/2" Rim Board	1	1	1
xCa2	163-00-00	1 1/8" x 11 7/8" Rim Board	1	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1		HU11
H2	1		HU310-2
H3	1		HUS1.81/10
H4	25		LT251188
H5	28		LT259

FLOOR LOADING :

LIVE LOAD : 40 PSF
DEAD LOAD : 15 PSF
DEAD LOAD (TILE) : 20 PSF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

RIMBOARD

1-1/8" X 11-7/8" O.S.B
1-1/8" X 9-1/2" O.S.B

SUBFLOOR

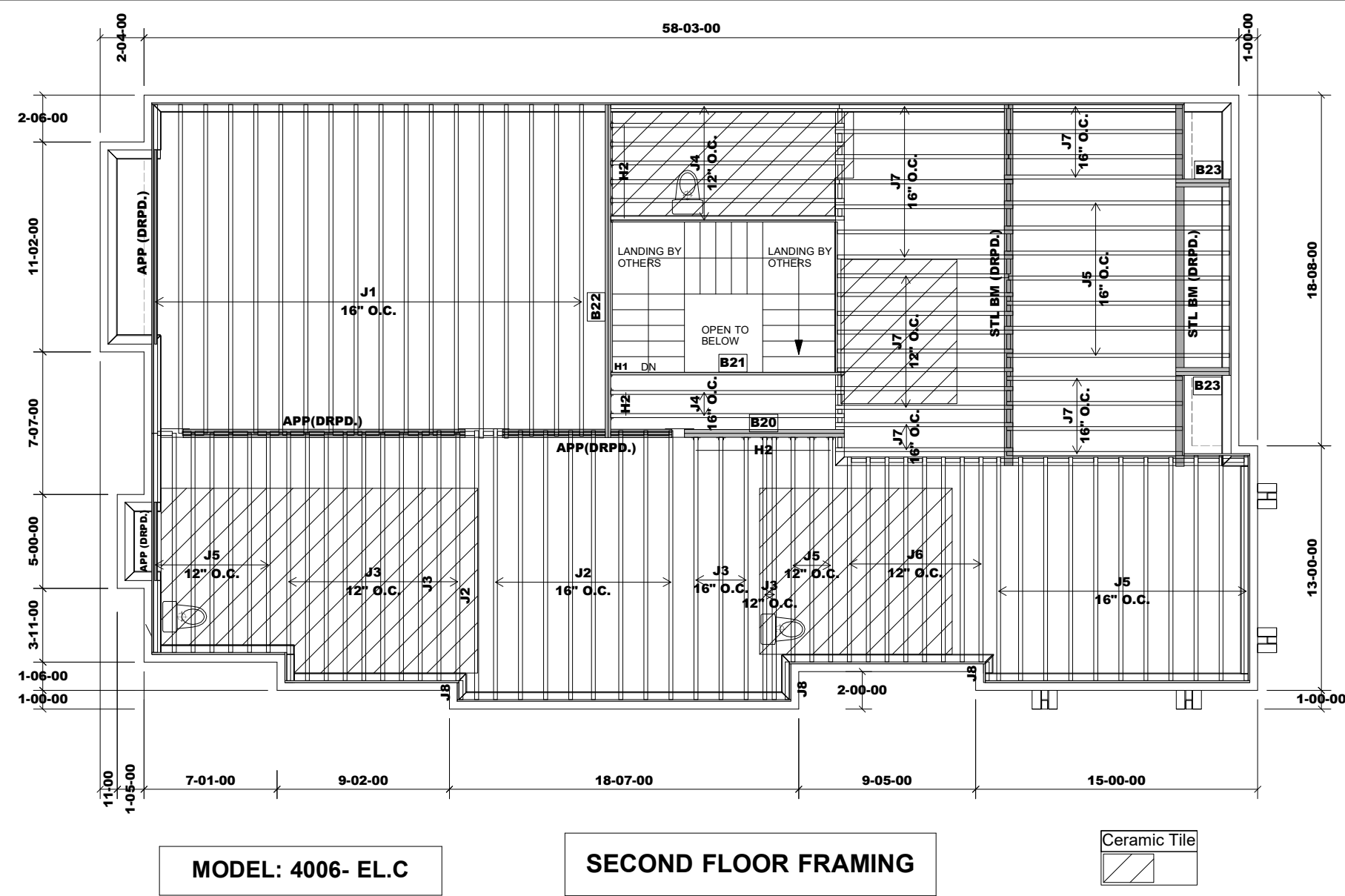
3/4" NAILED & GLUED*

Blocking panels are required over all interior supports.

Squash blocks are required under concentrated loads.

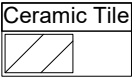
Ceramic Tile Application as per O.B.C. 9.30.6

Do not scale - refer to architectural plans for dimensions.



MODEL: 4006- EL.C

SECOND FLOOR FRAMING



Products				
PlotID	Length	Product	Plies	Net Qty
B20	9-00-00	11 7/8" NI-20	2	2
B21	13-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B22	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B23	3-00-00	11 7/8" NI-20	2	4
J1	18-00-00	11 7/8" NI-20	1	18
J2	15-00-00	11 7/8" NI-20	1	9
J3	14-00-00	11 7/8" NI-20	1	15
J4	13-00-00	11 7/8" NI-20	1	9
J5	12-00-00	11 7/8" NI-20	1	28
J6	11-00-00	11 7/8" NI-20	1	8
J7	10-00-00	11 7/8" NI-20	1	25
J8	2-00-00	11 7/8" NI-20	1	3
xBk1	56-00-00	11 7/8" NI-20	1	1
xCa1	203-00-00	1 1/8" x 11 7/8" Rim Board	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1		HUS1.81/10
H2	16		LT251188

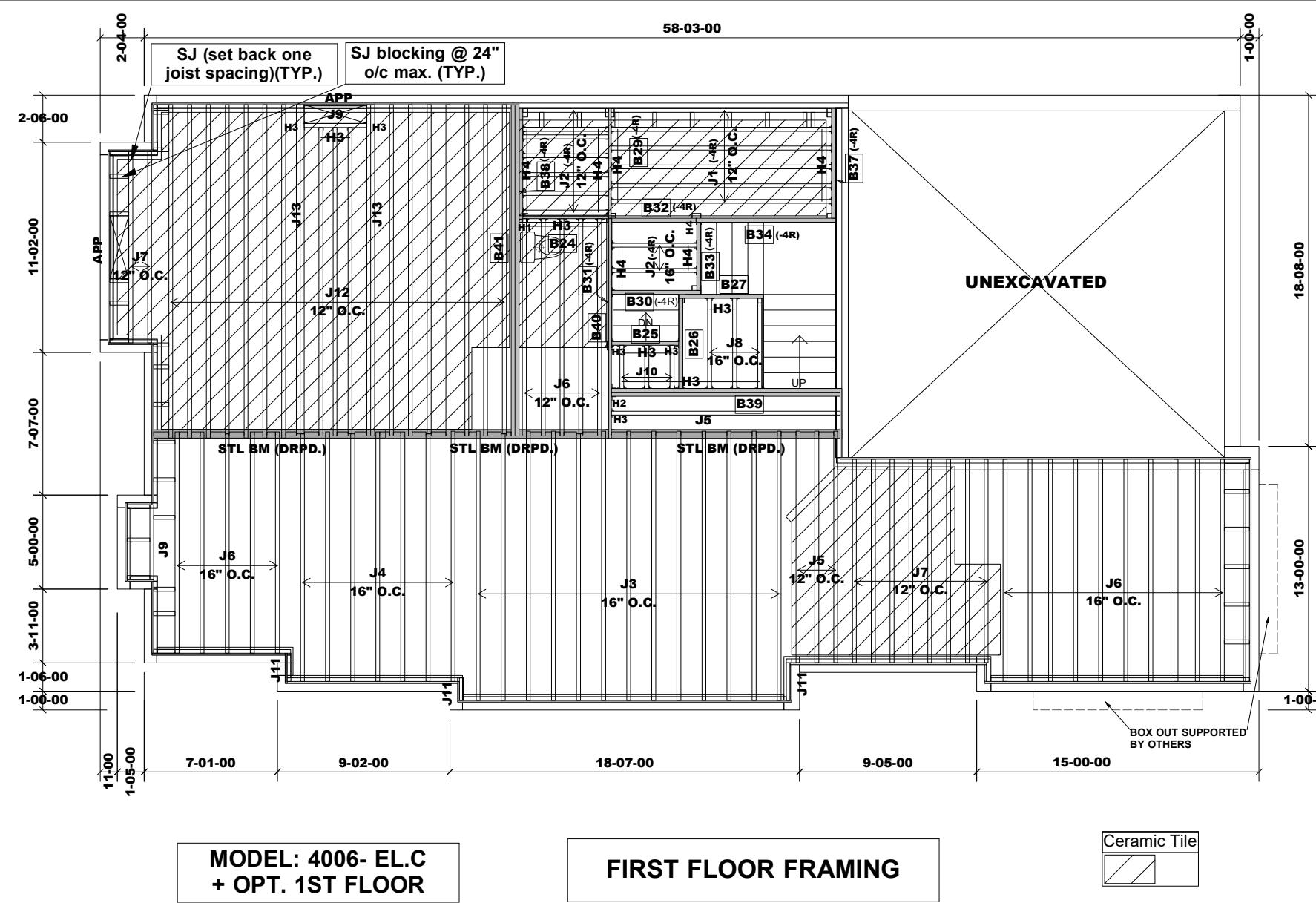
FLOOR LOADING :
LIVE LOAD : 40 PSF
DEAD LOAD : 15 PSF
DEAD LOAD (TILE) : 20 PSF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

RIMBOARD
1-1/8" X 11-7/8" O.S.B

SUBFLOOR
3/4" NAILED & GLUED*

Blocking panels are required over all interior supports.
Squash blocks are required under concentrated loads.
Ceramic Tile Application as per O.B.C. 9.30.6
Do not scale - refer to architectural plans for dimensions.



Products					
PlotID	Length	Product	Plies	Net Qty	
B24	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	1
B25	4-00-00	11 7/8" NI-20	1	1	1
B26	5-00-00	11 7/8" NI-20	1	1	1
B27	5-00-00	11 7/8" NI-20	1	1	1
B29	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	1
B30	5-00-00	9 1/2" NI-20	1	1	1
B31	7-00-00	9 1/2" NI-20	1	1	1
B32	5-00-00	9 1/2" NI-20	1	1	1
B33	4-00-00	9 1/2" NI-20	1	1	1
B34	8-00-00	9 1/2" NI-20	1	1	1
B37	6-00-00	9 1/2" NI-20	1	1	1
B38	7-00-00	9 1/2" NI-20	1	1	1
B39	13-00-00	11 7/8" NI-20	2	2	2
B40	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	1
B41	18-00-00	11 7/8" NI-40x	2	2	2
J1	12-00-00	9 1/2" NI-20	1	6	6
J2	5-00-00	9 1/2" NI-20	1	9	9
J3	15-00-00	11 7/8" NI-20	1	13	13
J4	14-00-00	11 7/8" NI-20	1	7	7
J5	13-00-00	11 7/8" NI-20	1	4	4
J6	12-00-00	11 7/8" NI-20	1	20	20
J7	11-00-00	11 7/8" NI-20	1	10	10
J8	5-00-00	11 7/8" NI-20	1	3	3
J9	4-00-00	11 7/8" NI-20	1	2	2
J10	3-00-00	11 7/8" NI-20	1	3	3
J11	2-00-00	11 7/8" NI-20	1	3	3
J12	18-00-00	11 7/8" NI-40x	1	17	17
J13	18-00-00	11 7/8" NI-40x	2	4	4
xBk1	8-00-00	9 1/2" NI-20	1	1	1
xBk2	56-00-00	11 7/8" NI-20	1	1	1
xCa1	5-00-00	1 1/8" x 9 1/2" Rim Board	1	1	1
xCa2	163-00-00	1 1/8" x 11 7/8" Rim Board	1	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	1		HU11
H2	1		HU310-2
H3	25		LT251188
H4	28		LT259

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BBO - BEAM BY OTHERS

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1-1/8" X 11-7/8" O.S.B
1-1/8" X 9-1/2" O.S.B

SUBFLOOR

3/4" NAILED & GLUED*

FLOOR LOADING :

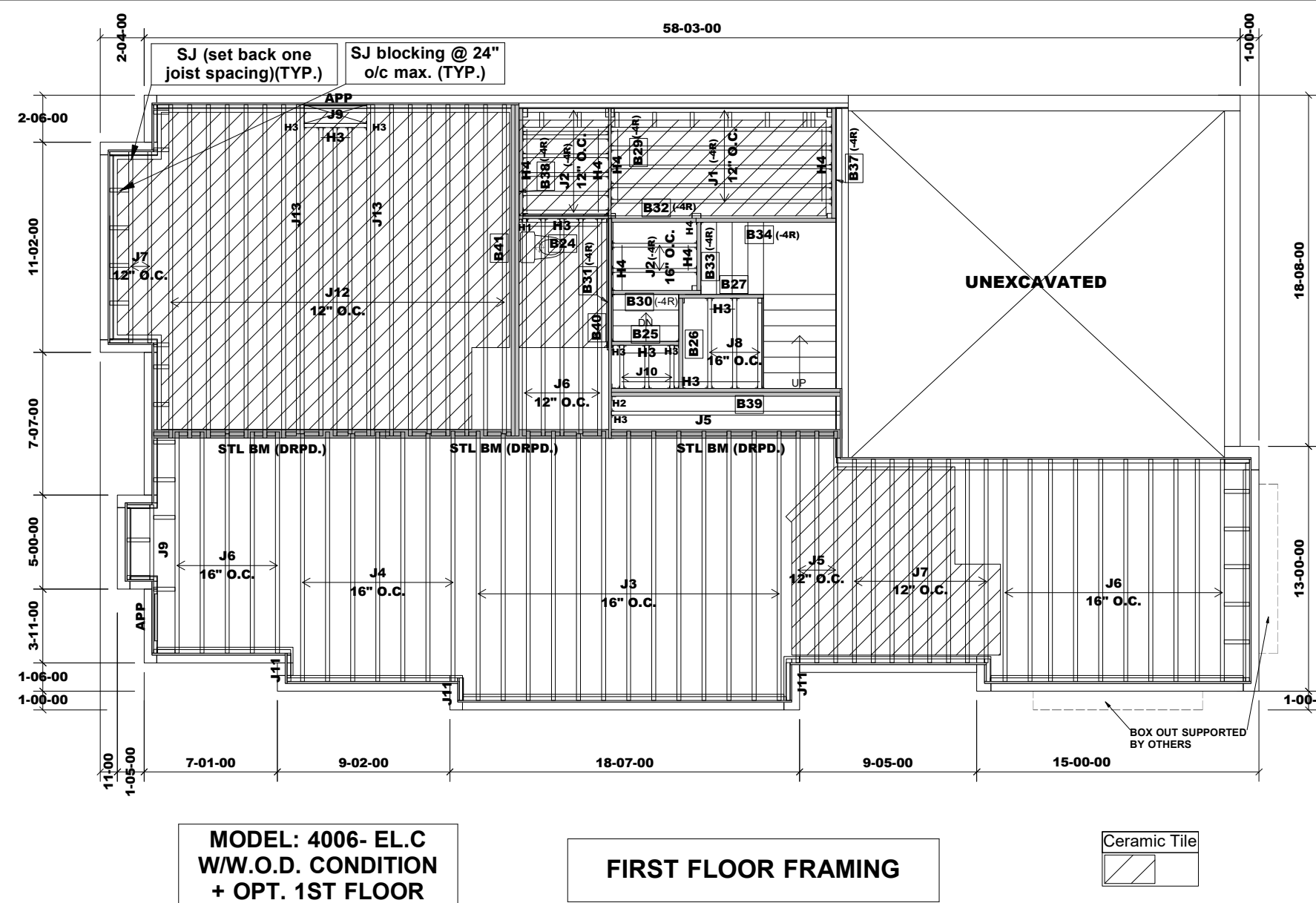
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B25	4-00-00	11 7/8" NI-20	1	1	1
B26	5-00-00	11 7/8" NI-20	1	1	1
B27	5-00-00	11 7/8" NI-20	1	1	1
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B34	8-00-00	9 1/2" NI-20	1	1	1
B37	6-00-00	9 1/2" NI-20	1	1	1
B38	7-00-00	9 1/2" NI-20	1	1	1
B39	13-00-00	11 7/8" NI-20	2	2	2
B40	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	1
B41	18-00-00	11 7/8" NI-40x	2	2	2
J1	12-00-00	9 1/2" NI-20	1	6	6
J2	5-00-00	9 1/2" NI-20	1	9	9
J3	15-00-00	11 7/8" NI-20	1	13	13
J4	14-00-00	11 7/8" NI-20	1	7	7
J5	13-00-00	11 7/8" NI-20	1	4	4
J6	12-00-00	11 7/8" NI-20	1	20	20
J7	11-00-00	11 7/8" NI-20	1	10	10
J8	5-00-00	11 7/8" NI-20	1	3	3
J9	4-00-00	11 7/8" NI-20	1	2	2
J10	3-00-00	11 7/8" NI-20	1	3	3
J11	2-00-00	11 7/8" NI-20	1	3	3
J12	18-00-00	11 7/8" NI-40x	1	17	17
J13	18-00-00	11 7/8" NI-40x	2	4	4
xBk1	8-00-00	9 1/2" NI-20	1	1	1
xBk2	54-00-00	11 7/8" NI-20	1	1	1
xCa1	5-00-00	1 1/8" x 9 1/2" Rim Board	1	1	1
xCa2	163-00-00	1 1/8" x 11 7/8" Rim Board	1	1	1

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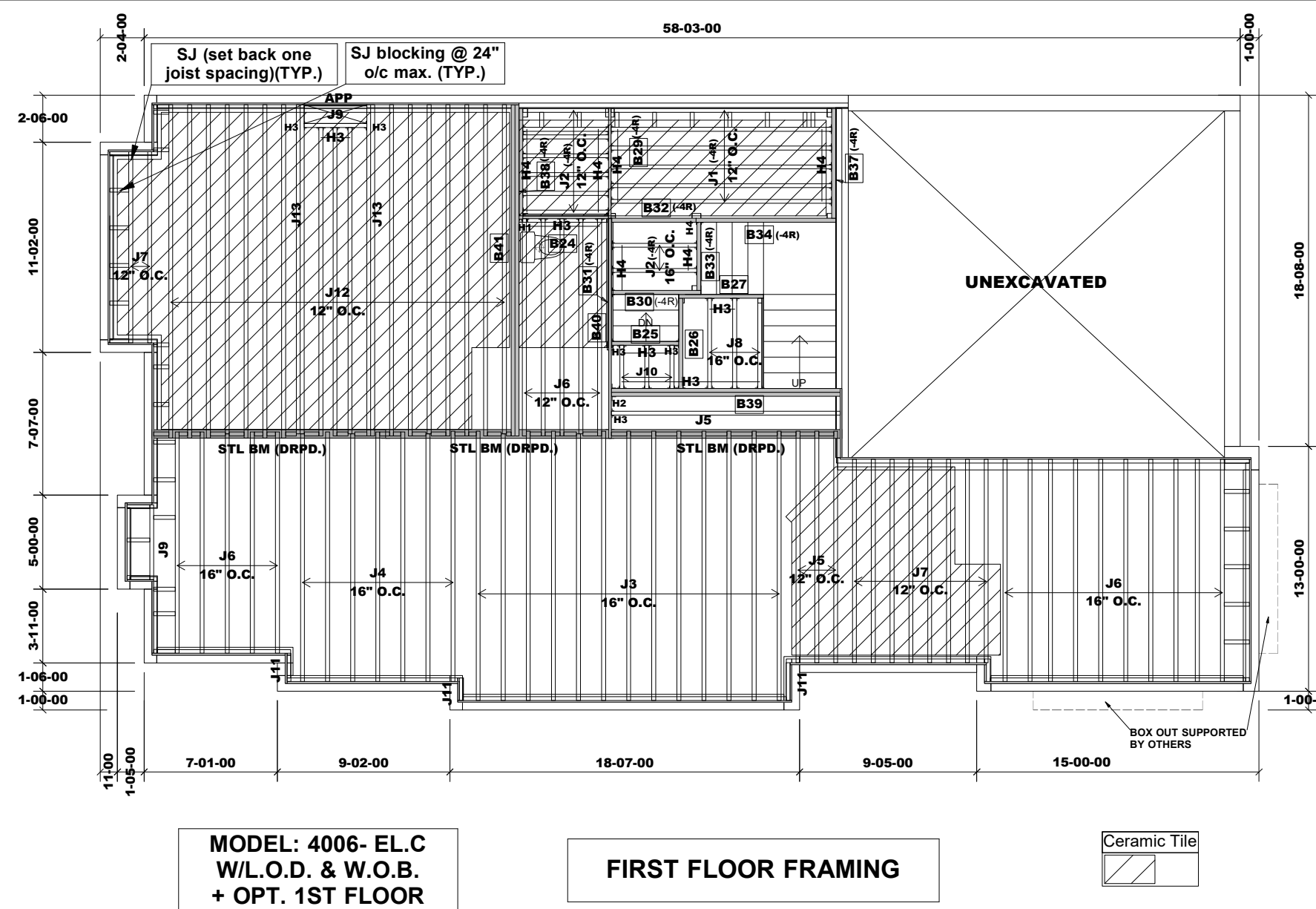
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B26	5-00-00	11 7/8" NI-20	1	1	1
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B41	18-00-00	11 7/8" NI-40x	2	2	2
J1	12-00-00	9 1/2" NI-20	1	6	6
J2	5-00-00	9 1/2" NI-20	1	9	9
J3	15-00-00	11 7/8" NI-20	1	13	13
J4	14-00-00	11 7/8" NI-20	1	7	7
J5	13-00-00	11 7/8" NI-20	1	4	4
J6	12-00-00	11 7/8" NI-20	1	20	20
J7	11-00-00	11 7/8" NI-20	1	10	10
J8	5-00-00	11 7/8" NI-20	1	3	3
J9	4-00-00	11 7/8" NI-20	1	2	2
J10	3-00-00	11 7/8" NI-20	1	3	3
J11	2-00-00	11 7/8" NI-20	1	3	3
J12	18-00-00	11 7/8" NI-40x	1	17	17
J13	18-00-00	11 7/8" NI-40x	2	4	4
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xCa1	5-00-00	1 1/8" x 9 1/2" Rim Board	1	1	1
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BBO - BEAM BY OTHERS

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1-1/8" X 11-7/8" O.S.B
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SUBFLOOR

3/4" NAILED & GLUED*

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DEAD LOAD : 15 PSF
DEAD LOAD (TILE) : 20 PSF

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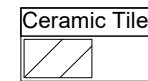
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Do not scale - refer to architectural plans for dimensions.

MODEL: 4006- EL.C
W/L.O.D. & W.O.B.
+ OPT. 1ST FLOOR

FIRST FLOOR FRAMING





Customer: **Gold Park**
 Job Address: **Pine Valley**
 City: **Vaughan**
 Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
 Level: **2nd Floor**
 Label: **B20 - i14484**
 Type: **Beam**

2 Ply Member

11 7/8" NI-20

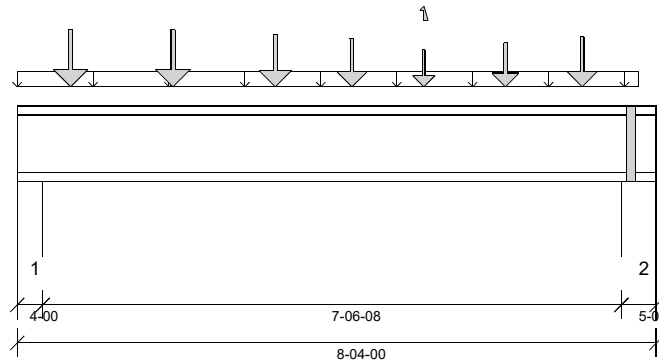
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure version
 8.4.2.2861 Updated 9.13

Report Version: 2020.06.20 10/04/2021 13:46



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, 0.75" (absolute)
 TL Deflection Limit: L/240, 1.00" (absolute)

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'- 3"
- 615 psi Wall @ 7'- 11 1/2"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 4 3/8"	1.25D + 1.5L	1.00	4373 lb ft	11160 lb ft	Passed - 39%
Factored Shear:	0'- 4 1/16"	1.25D + 1.5L	1.00	2389 lb	4480 lb	Passed - 53%
Live Load (LL) Pos. Defl.:	4'- 1"	L		0.061"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 1 1/16"	D + L		0.088"	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	4-00	1.25D + 1.5L	1.00	2404 lb		4480 lb	12304 lb	Passed - 54%
2	5-08	1.25D + 1.5L	1.00	2206 lb		4480 lb	16918 lb	Passed - 49%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 4"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	8'- 1 1/4"	FC2 Floor Decking (Plan View Fill)	Top	7 lb/ft	19 lb/ft	-	-
Point	0'- 8 3/8"	0'- 8 3/8"	J3(i14556)	Front	141 lb	375 lb	-	-
Point	2'- 3/8"	2'- 3/8"	J3(i14201)	Front	141 lb	375 lb	-	-
Point	3'- 4 3/8"	3'- 4 3/8"	J3(i14349)	Front	135 lb	328 lb	-	-
Point	4'- 4 3/8"	4'- 4 3/8"	J3(i14339)	Front	143 lb	273 lb	-	-
Point	5'- 3 5/8"	5'- 3 5/8"	J3(i14216)	Front	84 lb	193/0 lb	-	-
Point	6'- 4 3/8"	6'- 4 3/8"	J5(i14062)	Front	111 lb	249 lb	-	-
Point	7'- 4 3/8"	7'- 4 3/8"	J5(i13998)	Front	133 lb	299 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4"	5(i11040)	503 lb	1183 lb	-	-
2	7'- 10 1/2"	8'- 4"	1(i11001)	490 lb	1062 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.

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.

SE039675

2nd Floor\Flush Beams\B21(i15297) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

October 4, 2021 13:52:59

Build 7773

Job name: 45147-UNIT 4006 (290671) 337556

File name: 337556-A.mmdl

Address: Pine Valley

Description: 2nd Floor\Flush Beams\B21(i15297)

City, Province, Postal Code: Vaughan, ON

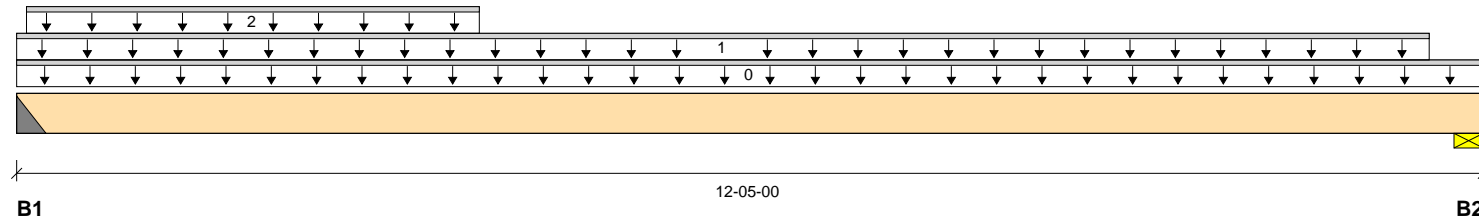
Specifier:

Customer: Gold Park

Designer: JC

Code reports: CCMC 12472-R

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	533 / 0	237 / 0		
B2, 5-1/2"	116 / 0	82 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-05-00	Top		6			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	11-11-08	Top	3	1			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	00-01-00	03-11-00	Top	160	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1802 ft-lbs	17696 ft-lbs	10.2%	1	03-04-12
End Shear	742 lbs	7232 lbs	10.3%	1	01-01-14
Total Load Deflection	L/999 (0.057")	n/a	n/a	4	05-05-08
Live Load Deflection	L/999 (0.037")	n/a	n/a	5	05-04-03
Max Defl.	0.057"	n/a	n/a	4	05-05-08
Span / Depth	12.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	1096 lbs	n/a	25.7%	HUS1.81/10
B2	Wall/Plate 5-1/2" x 1-3/4"	276 lbs	4.7%	2.3%	Spruce-Pine-Fir

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 11-7/8" LVL Beam.
 Hanger model HUS1.81/10 and seat length were input by the user.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum Total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 Hanger Manufacturer: Unassigned
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 11-11-08.


Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

BC CALC®, BC FRAMER®, AJST™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

SE039676

2nd Floor\Flush Beams\B22(i15177) (Flush Beam)

Dry | 1 span | No cant.

October 4, 2021 13:53:33

BC CALC® Member Report

Build 7773

Job name: 45147-UNIT 4006 (290671) 337556

File name: 337556-A.mmdl

Address: Pine Valley

Description: 2nd Floor\Flush Beams\B22(i15177)

City, Province, Postal Code: Vaughan, ON

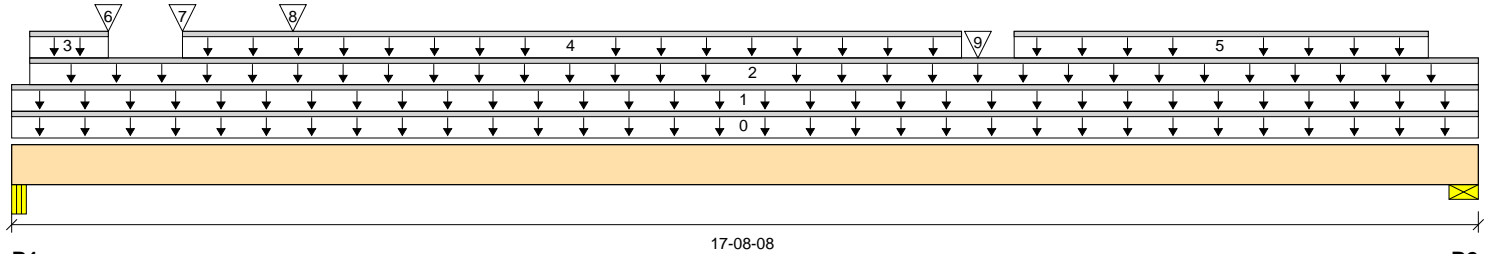
Specifier:

Customer: Gold Park

Designer: JC

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 17-08-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	1611 / 0	1423 / 0		
B2, 4-3/8"	1557 / 0	1592 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	17-08-08	Top		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	17-08-08	Top		60			n/a
2	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-10	17-08-08	Top	28	11			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-02-10	01-02-00	Top	37				n/a
4	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	02-00-12	11-05-10	Top	8				n/a
5	Smoothed Load	Unf. Lin. (lb/ft)	L	12-01-04	17-01-04	Top	245	121			n/a
6	J4(i15259)	Conc. Pt. (lbs)	L	01-02-00	01-02-00	Top	219	82			n/a
7	J4(i15315)	Conc. Pt. (lbs)	L	02-00-12	02-00-12	Top	428	161			n/a
8	B21(i15297)	Conc. Pt. (lbs)	L	03-04-12	03-04-12	Top	532	236			n/a
9	J4(i15215)	Conc. Pt. (lbs)	L	11-08-00	11-08-00	Top	165	431			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	14533 ft-lbs	35392 ft-lbs	41.1%	1	11-02-10
End Shear	3997 lbs	14464 lbs	27.6%	1	16-04-04
Total Load Deflection	L/349 (0.586")	n/a	68.9%	4	08-11-10
Live Load Deflection	L/753 (0.272")	n/a	47.8%	5	08-11-10
Max Defl.	0.586"	n/a	58.6%	4	08-11-10
Span / Depth	17.2				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5-1/4" x 3-1/2"	4195 lbs	37.1%	18.7%	Unspecified
B2	Wall/Plate 4-3/8" x 3-1/2"	4326 lbs	45.9%	23.2%	Spruce-Pine-Fir

 NAIL ONE PLY TO ANOTHER WITH 3-1/2" SPIRAL NAILS @ 12" O/C,
 STAGGERED IN 2 ROWS



Customer: **Gold Park**
 Job Address: **Pine Valley**
 City: **Vaughan**
 Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
 Level: **2nd Floor**
 Label: **B23 - i15407**
 Type: **Beam**

2 Ply Member

11 7/8" NI-20

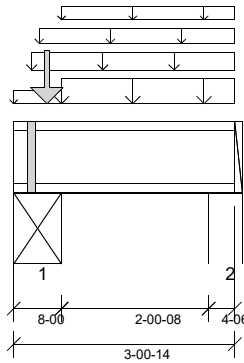
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.2861 Updated 9.13

Report Version: 2020.06.20 10/04/2021 13:54



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
 Design Methodology: LSD
 Service Condition: Dry
 LL Deflection Limit: L/360, 0.75" (absolute)
 TL Deflection Limit: L/240, 1.00" (absolute)

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

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



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 9"	1.25D + 1.5L + S	0.85	235 lb ft	9483 lb ft	Passed - 2%
Factored Neg. Moment:	0'- 7"	1.25D + 1.5S + L	0.97	104 lb ft	10784 lb ft	Passed - 1%
Factored Shear:	0'- 8 1/16"	1.25D + 1.5S + L	0.97	583 lb	4329 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	8-00	1.25D + 1.5S + L	0.97	1436 lb		4329 lb	29724 lb	Passed - 33%
2	4-06	1.25D + 1.5L + S	0.85	629 lb		3807 lb	11435 lb	Passed - 17%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	3'- 7/8"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	0'- 8"	FC2 Floor Decking (Plan View Fill)	Top	-	7 lb/ft	-	-
Uniform	0'- 3"	3'- 7/8"	E51(i11035)	Top	101 lb/ft	-	-	-
Uniform	0'- 4 1/4"	3'- 7/8"	FC2 Floor Decking (Plan View Fill)	Top	7 lb/ft	20 lb/ft	-	-
Uniform	0'- 8"	3'- 7/8"	E51(i11035)	Top	101 lb/ft	-	158 lb/ft	-
Uniform	0'- 8"	3'- 7/8"	FC2 Floor Decking (Plan View Fill)	Top	-	8 lb/ft	-	-
Point	0'- 5 9/16"	0'- 5 9/16"	-	Top	264 lb	-	298 lb	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 8"	STL BM (DRPD.)()	541 lb	38 lb	463 lb	-
2	2'- 8 1/2"	3'- 7/8"	E11(i10958)	298 lb	43 lb	215 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.

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.

SE039678

1st Floor\Flush Beams\B24(i15880) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

October 4, 2021 14:11:41

Build 7773

Job name: 45147-UNIT 4006 (290671) 337556

File name: 337556-A.mmdl

Address: Pine Valley

Description: 1st Floor\Flush Beams\B24(i15880)

City, Province, Postal Code: Vaughan, ON

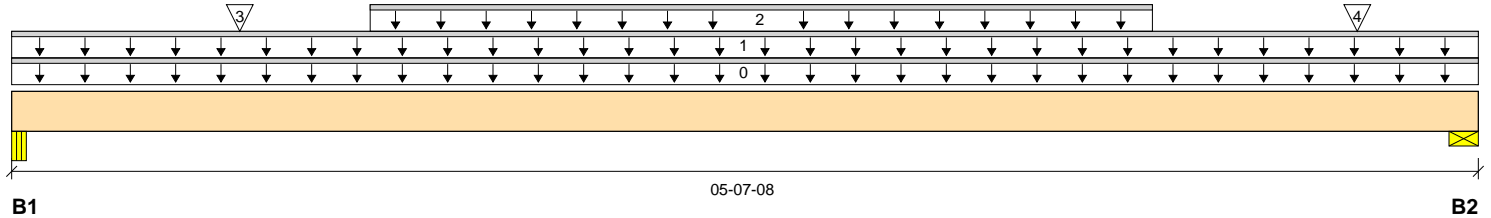
Specifier:

Customer: Gold Park

Designer: JC

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 05-07-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/4"	457 / 0	402 / 0		
B2, 5-1/2"	749 / 0	518 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-07-08	Top		6			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	05-07-08	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-08	04-04-08	Top	186	91			n/a
3	J8(i15869)	Conc. Pt. (lbs)	L	00-10-08	00-10-08	Top	198	92			n/a
4	-	Conc. Pt. (lbs)	L	05-01-15	05-01-15	Top	448	183			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1457 ft-lbs	17696 ft-lbs	8.2%	1	02-10-08
End Shear	860 lbs	7232 lbs	11.9%	1	01-04-10
Total Load Deflection	L/999 (0.009")	n/a	n/a	4	02-09-00
Live Load Deflection	L/999 (0.005")	n/a	n/a	5	02-09-00
Max Defl.	0.009"	n/a	n/a	4	02-09-00
Span / Depth	4.9				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 4-3/4" x 1-3/4"	1188 lbs	23.2%	11.7%	Unspecified
B2	Wall/Plate 5-1/2" x 1-3/4"	1771 lbs	29.9%	15.1%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum Total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 Calculations assume unbraced length of Top: 00-01-08, Bottom: 00-09-08.

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA).
 Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods.
 Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

BC CALC®, BC FRAMER®, AJST™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

SE039679



Customer: **Gold Park**
 Job Address: **Pine Valley**
 City: **Vaughan**
 Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
 Level: **1st Floor**
 Label: **B25 - i15602**
 Type: **Beam**

1 Ply Member

11 7/8" NI-20

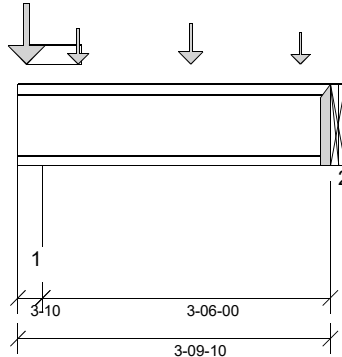
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
 8.4.2.286.1 Undated 9.13

Report Version: 2020.06.20 10/04/2021 13:57



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, 0.75" (absolute)
 TL Deflection Limit: L/240, 1.00" (absolute)

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'- 2 5/8"
- 769 psi Beam @ 3'- 9 5/8"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 1 1/4"	1.25D + 1.5L	1.00	470 lb ft	5580 lb ft	Passed - 8%
Factored Neg. Moment:	0'- 2 5/8"	1.25D + 1.5L	1.00	82 lb ft	5580 lb ft	Passed - 1%
Factored Shear:	0'- 3 11/16"	1.25D + 1.5L	1.00	552 lb	2240 lb	Passed - 25%

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3'-10"	1.25D + 1.5L	1.00	1307 lb		2195 lb	5575 lb	Passed - 60%
2	1'-12"	1.25D + 1.5L	1.00	493 lb		1970 lb	-	Passed - 25%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	LT251188		-	-	-	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'- 9 5/8"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'- 1 1/4"	0'- 9 1/4"	FC1 Floor Decking (Plan View Fill)	Top	19 lb/ft	50 lb/ft	-	-
Point	0'- 8 13/16"	0'- 8 13/16"	-	Front	63 lb	169 lb	-	-
Point	2'- 1 1/4"	2'- 1 1/4"	J13(i15469)	Front	77 lb	206 lb	-	-
Point	3'- 5 1/4"	3'- 5 1/4"	J13(i15395)	Front	52 lb	138 lb	-	-
Point	0'- 1 1/4"	0'- 1 1/4"	J9(i15594)	Back	283 lb	235 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 5/8"	9(i11778)	414 lb	539 lb	-	-
2	3'- 9 5/8"	3'- 9 5/8"	B26(i15596)	85 lb	245 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.

SE039680



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
Level: **1st Floor**
Label: **B26 - i15596**
Type: **Beam**

1 Ply Member

11 7/8" NI-20

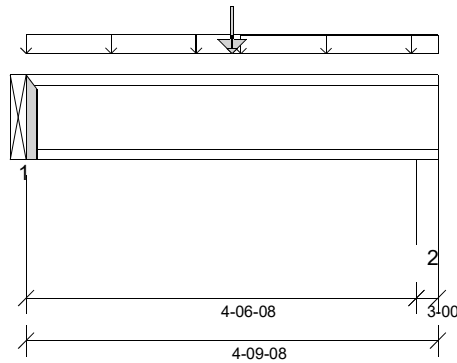
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure version
8.4.2.2861 dated 9.13

Report Version: 2020.06.20 10/04/2021 13:57



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, 0.75" (absolute)
TL Deflection Limit: L/240, 1.00" (absolute)

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

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



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 4 3/4"	1.25D + 1.5L	1.00	781 lb ft	5580 lb ft	Passed - 14%
Factored Shear:	0'- 1/16"	1.25D + 1.5L	1.00	424 lb	2240 lb	Passed - 19%
Live Load (LL) Pos. Defl.:	2'- 3 15/16"	L		0.011"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 3 15/16"	D + L		0.016"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-12	1.25D + 1.5L	1.00	441 lb		1970 lb	-	Passed - 22%
2	3-00	1.25D + 1.5L	1.00	452 lb		2120 lb	4614 lb	Passed - 21%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	LT251188		-	-	-	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'- 9 1/2"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'	2'- 6"	FC1 Floor Decking (Plan View Fill)	Top	15 lb/ft	40 lb/ft	-	-
Uniform	2'- 6"	4'- 9 1/2"	FC1 Floor Decking (Plan View Fill)	Top	12 lb/ft	33 lb/ft	-	-
Point	2'- 4 3/4"	2'- 4 3/4"	B25(i15602)	Back	85 lb	245 lb	-	-
Point	2'- 4 3/4"	2'- 4 3/4"	FC1 Floor Decking (Plan View Fill)	Top	5 lb	14 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B28(i15601)	85 lb	216 lb	-	-
2	4'- 6 1/2"	4'- 9 1/2"	7(i11774)	91 lb	233 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.

SE039681



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
Level: **1st Floor**
Label: **B27 - i15439**
Type: **Beam**

1 Ply Member

11 7/8" NI-20

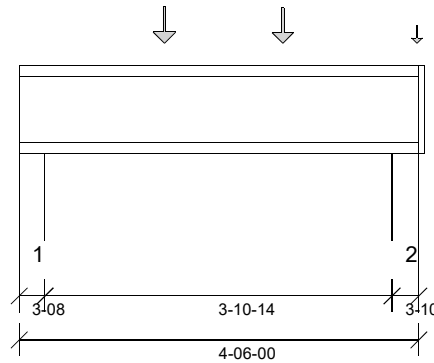
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure version
8.4.2.2861 Undated 9.13

Report Version: 2020.06.20 10/04/2021 13:57



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, 0.75" (absolute)

TL Deflection Limit: L/240, 1.00" (absolute)

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 7/8"

Factored Resistance of Support Material:

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



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	1'- 7 5/8"	1.25D + 1.5L	1.00	410 lb ft	5580 lb ft	Passed - 7%
Factored Shear:	4'- 2 5/16"	1.25D + 1.5L	1.00	299 lb	2240 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	3-08	1.25D + 1.5L	1.00	291 lb		2180 lb	5383 lb	Passed - 13%
2	3-10	1.25D + 1.5L	1.00	319 lb		2195 lb	5575 lb	Passed - 15%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 6"	Self Weight	Top	3 lb/ft	-	-	-
Point	1'- 7 5/8"	1'- 7 5/8"	J11(i15468)	Front	57 lb	153 lb	-	-
Point	2'- 11 5/8"	2'- 11 5/8"	J11(i15549)	Front	52 lb	139 lb	-	-
Point	4'- 5 3/4"	4'- 5 3/4"	FC1 Floor Decking (Plan View Fill)	Top	4 lb	10 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3 1/2"	7(i11774)	60 lb	144 lb	-	-
2	4'- 2 3/8"	4'- 6"	8(i11776)	65 lb	158 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.

SE039682

1st Floor\Flush Beams\B29(i15881) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

October 4, 2021 14:12:09

Build 7773

Job name: 45147-UNIT 4006 (290671) 337556

File name: 337556-A.mmdl

Address: Pine Valley

Description: 1st Floor\Flush Beams\B29(i15881)

City, Province, Postal Code: Vaughan, ON

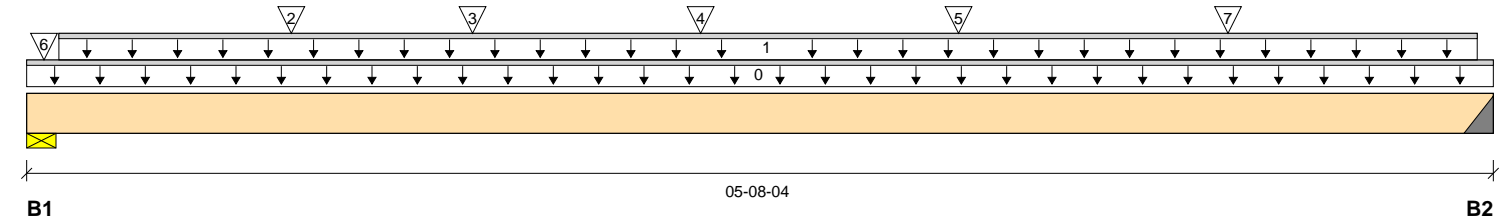
Specifier:

Customer: Gold Park

Designer: JC

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 05-08-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	1150 / 0	854 / 0		
B2, 2"	791 / 0	566 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-08-04	Top		5			00-00-00
1	wall	Unf. Lin. (lb/ft)	L	00-01-08	05-07-08	Top		60			n/a
2	-	Conc. Pt. (lbs)	L	01-00-05	01-00-05	Top	309	153			n/a
3	J1(i14894)	Conc. Pt. (lbs)	L	01-08-12	01-08-12	Top	218	108			n/a
4	-	Conc. Pt. (lbs)	L	02-07-06	02-07-06	Top	331	165			n/a
5	-	Conc. Pt. (lbs)	L	03-07-06	03-07-06	Top	331	165			n/a
6	-	Conc. Pt. (lbs)	L	00-00-13	00-00-13	Top	361	284			n/a
7	-	Conc. Pt. (lbs)	L	04-07-14	04-07-14	Top	385	185			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2880 ft-lbs	11610 ft-lbs	24.8%	1	02-08-12
End Shear	1820 lbs	5785 lbs	31.5%	1	04-08-12
Total Load Deflection	L/999 (0.043")	n/a	n/a	4	02-10-09
Live Load Deflection	L/999 (0.025")	n/a	n/a	5	02-10-09
Max Defl.	0.043"	n/a	n/a	4	02-10-09
Span / Depth	6.8				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3" x 1-3/4"	2792 lbs	86.5%	43.6%	Spruce-Pine-Fir
B2	Hanger 2" x 1-3/4"	1893 lbs	n/a	44.3%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Single 1-3/4" x 9-1/2" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user.



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
Level: **1st Floor**
Label: **B30 - i14911**
Type: **Beam**

1 Ply Member

9 1/2" NI-20

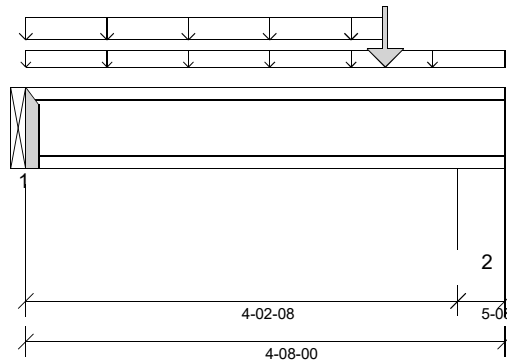
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.4.2.2861 Updated 9.13

Report Version: 2020.06.20 10/04/2021 14:12



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, 0.75" (absolute)
TL Deflection Limit: L/240, 1.00" (absolute)

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'- 5 1/2"

Factored Resistance of Support Material:

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



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 9 1/8"	1.25D + 1.5L	1.00	955 lb ft	4310 lb ft	Passed - 22%
Factored Shear:	4'- 2 7/16"	1.25D + 1.5L	1.00	1141 lb	1770 lb	Passed - 64%
Live Load (LL) Pos. Defl.:	2'- 3 1/16"	L		0.020"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 3 1/16"	D + L		0.028"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	1-12	1.25D + 1.5L	1.00	691 lb		1630 lb	-	Passed - 42%
2	5-08	1.25D + 1.5L	1.00	1166 lb		1770 lb	8459 lb	Passed - 66%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	LT251188		-	-	-	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"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	-0'	4'- 8"	FC3 Floor Decking (Plan View Fill)	Top	10 lb/ft	25 lb/ft	-	-
Uniform	0'	3'- 6"	User Load	Top	38 lb/ft	100 lb/ft	-	-
Point	3'- 6"	3'- 6"	User Load	Top	175 lb	467 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B31(i14912)	136 lb	348 lb	-	-
2	4'- 2 1/2"	4'- 8"	13(i11782)	227 lb	588 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.

SE039685



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
Level: **1st Floor**
Label: **B31 - i14912**
Type: **Beam**

1 Ply Member

9 1/2" NI-20

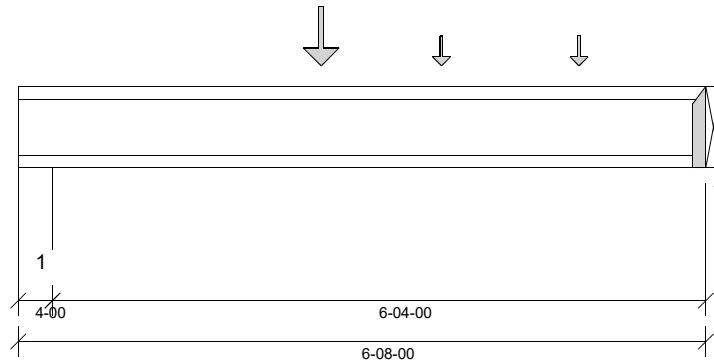
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.2861 Undated 9.13

Report Version: 2020.06.20 10/04/2021 14:13



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360, 0.75" (absolute)
TL Deflection Limit: L/240, 1.00" (absolute)

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: 2'- 6" Bottom: 2'- 6"

Factored Resistance of Support Material:

- 1334 psi Wall @ 0'- 3"
- 769 psi Beam @ 6'- 8"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 11 1/4"	1.25D + 1.5L	1.00	1462 lb ft	4310 lb ft	Passed - 34%
Factored Shear:	6'- 7 15/16"	1.25D + 1.5L	1.00	625 lb	1770 lb	Passed - 35%
Live Load (LL) Pos. Defl.:	3'- 5 1/4"	L		0.048"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 5 1/4"	D + L		0.067"	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	4-00	1.25D + 1.5L	1.00	549 lb		1770 lb	13344 lb	Passed - 31%
2	1-12	1.25D + 1.5L	1.00	625 lb		1630 lb	-	Passed - 38%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	LT251188		-	-	-	Connector manually specified by the user.

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

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	6'- 8"	Self Weight	Top	3 lb/ft	-	-	-
Point	2'- 11 1/4"	2'- 11 1/4"	B30(i14911)	Front	136 lb	348 lb	-	-
Point	4'- 1 1/4"	4'- 1 1/4"	J2(i14915)	Front	44 lb	116 lb	-	-
Point	5'- 5 1/4"	5'- 5 1/4"	J2(i14914)	Front	44 lb	118 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4"	9(i11778)	114 lb	271 lb	-	-
2	6'- 8"	6'- 8"	B32(i15883)	127 lb	311 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.

SE039686



Customer: **Gold Park**
 Job Address: **Pine Valley**
 City: **Vaughan**
 Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
 Level: **1st Floor**
 Label: **B32 - i15883**
 Type: **Beam**

1 Ply Member

9 1/2" NI-20

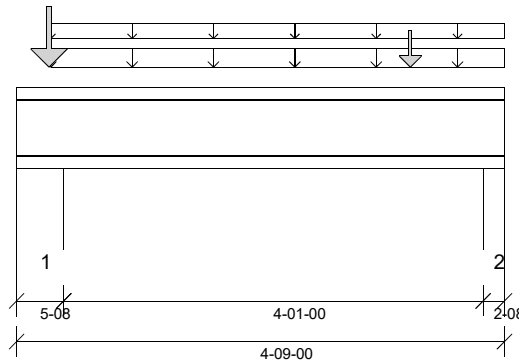
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure version
 8.4.2.2861 Updated 9.13

Report Version: 2020.06.20 10/04/2021 14:13



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
 Design Methodology: LSD
 Service Condition: Dry
 LL Deflection Limit: L/360, 0.75" (absolute)
 TL Deflection Limit: L/240, 1.00" (absolute)

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'- 1 1/8" Bottom: 4'- 5"

Factored Resistance of Support Material:

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



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 10"	1.25D + 1.5L	1.00	507 lb ft	4310 lb ft	Passed - 12%
Factored Neg. Moment:	0'- 4 1/2"	1.25D + 1.5L	1.00	91 lb ft	4310 lb ft	Passed - 2%
Factored Shear:	4'- 6 7/16"	1.25D + 1.5L	1.00	671 lb	1770 lb	Passed - 38%

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	1615 lb		1770 lb	8459 lb	Passed - 91%
2	2'-08"	1.25D + 1.5L	1.00	692 lb		1677 lb	3845 lb	Passed - 41%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	4'- 9"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'- 4"	4'- 9"	FC3 Floor Decking (Plan View Fill)	Top	18 lb/ft	47 lb/ft	-	-
Uniform	0'- 4"	4'- 9"	FC3 Floor Decking (Plan View Fill)	Top	2 lb/ft	-	-	-
Point	0'- 3 13/16"	0'- 3 13/16"	-	Front	342 lb	564 lb	-	-
Point	3'- 10"	3'- 10"	User Load	Top	115 lb	307 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	16(i11786)	422 lb	749 lb	-	-
2	4'- 6 1/2"	4'- 9"	14(i11783)	131 lb	328 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.
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- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

SE039687



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
Level: **1st Floor**
Label: **B33 - i14913**
Type: **Beam**

1 Ply Member

9 1/2" NI-20

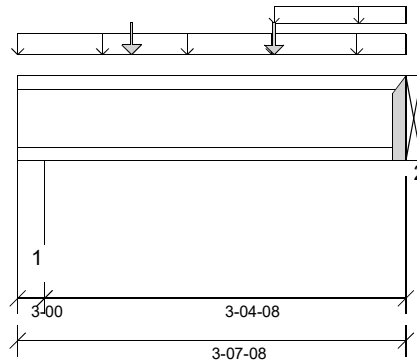
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure version
8.4.2.2861 Updated 9.13

Report Version: 2020.06.20 10/04/2021 14:13



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360, 0.75" (absolute)

TL Deflection Limit: L/240, 1.00" (absolute)

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'- 2"
- 769 psi Beam @ 3'- 7 1/2"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 1 1/2"	1.25D + 1.5L	1.00	481 lb ft	4310 lb ft	Passed - 11%
Factored Shear:	0'- 3 1/16"	1.25D + 1.5L	1.00	503 lb	1770 lb	Passed - 28%
Total Load (TL) Pos. Defl.:	1'- 10 3/4"	D + L		0.012"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3'-00	1.25D + 1.5L	1.00	537 lb		1708 lb	4614 lb	Passed - 31%
2	1'-12	1.25D + 1.5L	1.00	493 lb		1630 lb	-	Passed - 30%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
2	LT251188		-	-	-	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'- 7 1/2"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'	3'- 7 1/2"	User Load	Top	25 lb/ft	67 lb/ft	-	-
Uniform	2'- 4 3/4"	3'- 7 1/2"	FC3 Floor Decking (Plan View Fill)	Top	7 lb/ft	19 lb/ft	-	-
Point	1'- 3/4"	1'- 3/4"	J2(i14915)	Back	48 lb	127 lb	-	-
Point	2'- 4 3/4"	2'- 4 3/4"	J2(i14914)	Back	47 lb	124 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	13(i11782)	106 lb	270 lb	-	-
2	3'- 7 1/2"	3'- 7 1/2"	B34(i14897)	98 lb	248 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.
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- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

SE039688



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
Level: **1st Floor**
Label: **B34 - i14897**
Type: **Beam**

1 Ply Member

9 1/2" NI-20

Status:

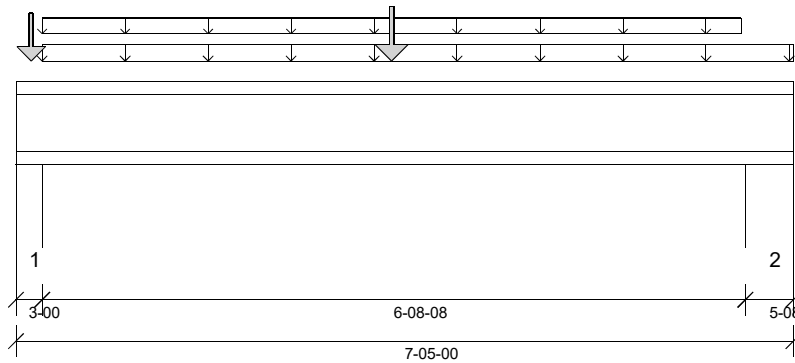
**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in Mitek® Structure version
8.4.2.2861 dated 9.13

Report Version: 2020.06.20

10/04/2021 14:14



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, 0.75" (absolute)
TL Deflection Limit: L/240, 1.00" (absolute)

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 1/2"

Factored Resistance of Support Material:

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



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 7"	1.25D + 1.5L	1.00	1317 lb ft	4310 lb ft	Passed - 31%
Factored Shear:	0'- 3 1/16"	1.25D + 1.5L	1.00	467 lb	1770 lb	Passed - 26%
Live Load (LL) Pos. Defl.:	3'- 7 3/16"	L		0.045"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 7 3/16"	D + L		0.064"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-00	1.25D + 1.5L	1.00	963 lb		1708 lb	4614 lb	Passed - 56%
2	5-08	1.25D + 1.5L	1.00	483 lb		1770 lb	8459 lb	Passed - 27%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	7'- 5"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'- 3"	7'- 5"	FC3 Floor Decking (Plan View Fill)	Top	8 lb/ft	22 lb/ft	-	-
Uniform	0'- 3"	6'- 11"	FC3 Floor Decking (Plan View Fill)	Top	1 lb/ft	-	-	-
Point	0'- 1 3/4"	0'- 1 3/4"	B33(i14913)	Front	98 lb	248 lb	-	-
Point	3'- 7"	3'- 7"	User Load	Top	115 lb	307 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	14(i11783)	200 lb	483 lb	-	-
2	6'- 11 1/2"	7'- 5"	15(i11784)	100 lb	230 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.

SE039689



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
Level: **1st Floor**
Label: **B35 - i14899**
Type: **Beam**

1 Ply Member

9 1/2" NI-20

Status:

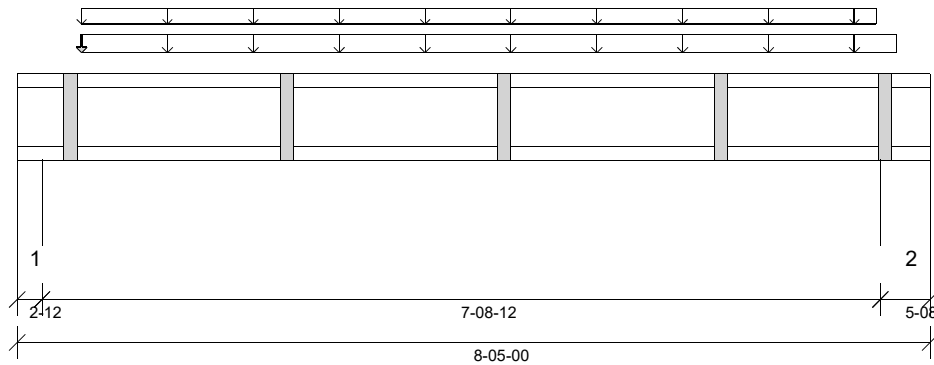
**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.4.2.2861 Updated 9.13

Report Version: 2020.06.20

10/04/2021 14:14



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, 0.75" (absolute)
TL Deflection Limit: L/240, 1.00" (absolute)

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'- 9 1/2"

Factored Resistance of Support Material:

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



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	4'- 7/8"	1.25D + 1.5L	1.00	372 lb ft	4310 lb ft	Passed - 9%
Factored Shear:	0'- 2 13/16"	1.25D + 1.5L	1.00	193 lb	1770 lb	Passed - 11%
Live Load (LL) Pos. Defl.:	4'- 1 1/16"	L		0.017"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	4'- 1 1/16"	D + L		0.026"	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	2'-12	1.25D + 1.5L	1.00	194 lb		1692 lb	4229 lb	Passed - 11%
2	5'-08	1.25D + 1.5L	1.00	192 lb		1770 lb	8459 lb	Passed - 11%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	8'- 5"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	0'- 7 1/8"	8'- 1 1/4"	FC3 Floor Decking (Plan View Fill)	Top	8 lb/ft	22 lb/ft	-	-
Uniform	0'- 7 1/8"	7'- 11"	FC3 Floor Decking (Plan View Fill)	Top	1 lb/ft	-	-	-
Point	0'- 7 1/8"	0'- 7 1/8"	xBk1(i14886)	Front	5 lb	14 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 2 3/4"	11(i11780)	46 lb	91 lb	-	-
2	7'- 11 1/2"	8'- 5"	12(i11781)	46 lb	89 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.

SE039690

1st Floor\Flush Beams\B36(i15872) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

October 4, 2021 14:15:20

Build 7773

Job name: 45147-UNIT 4006 (290671) 337556

File name: 337556-A.mmdl

Address: Pine Valley

Description: 1st Floor\Flush Beams\B36(i15872)

City, Province, Postal Code: Vaughan, ON

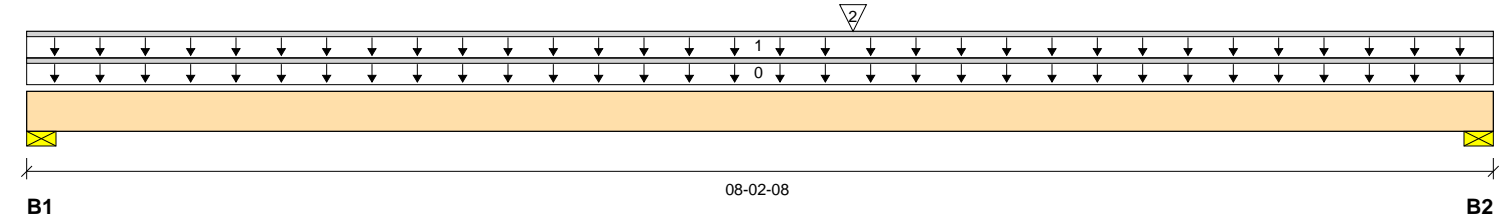
Specifier:

Customer: Gold Park

Designer: JC

Code reports: CCMC 12472-R

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	425 / 0	295 / 0		
B2, 2-3/4"	524 / 0	366 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-02-08	Top		5			00-00-00
1	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	08-02-08	Top	22	8			n/a
2	B29(i15881)	Conc. Pt. (lbs)	L	04-07-08	04-07-08	Top	768	549			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3928 ft-lbs	11610 ft-lbs	33.8%	1	04-07-08
End Shear	1193 lbs	5785 lbs	20.6%	1	07-02-04
Total Load Deflection	L/999 (0.102")	n/a	n/a	4	04-03-07
Live Load Deflection	L/999 (0.06")	n/a	n/a	5	04-03-07
Max Defl.	0.102"	n/a	n/a	4	04-03-07
Span / Depth	9.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3" x 1-3/4"	1006 lbs	31.1%	15.7%	Spruce-Pine-Fir
B2	Wall/Plate 2-3/4" x 1-3/4"	1244 lbs	42.0%	21.2%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Design meets User specified (0.75") Maximum live load deflection criteria.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9
Calculations assume unbraced length of Top: 00-00-00, Bottom: 04-06-10.


Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

BC CALC®, BC FRAMER®, AJST™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

SE039691



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
Level: **1st Floor**
Label: **B37 - i14893**
Type: **Beam**

1 Ply Member

9 1/2" NI-20

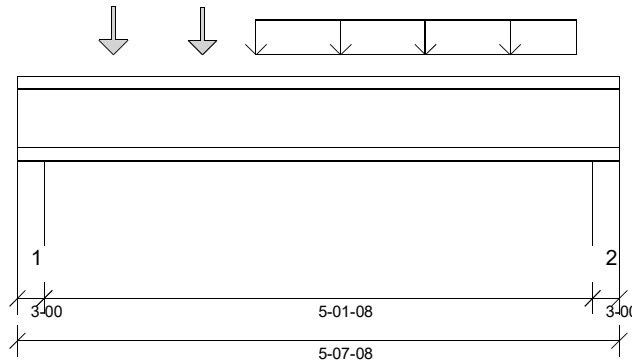
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.4.2.2861 Updated 9.13

Report Version: 2020.06.20 10/04/2021 14:15



DESIGN INFORMATION

Building Code: NBCC 2015, Part9, BCBC 2018, ABC 2019, OBC 2012 (2019 Amendment)
Design Methodology: LSD
Service Condition: Dry
LL Deflection Limit: L/360, 0.75" (absolute)
TL Deflection Limit: L/240, 1.00" (absolute)

Lateral Restraint Requirements:

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

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

Factored Resistance of Support Material:

- 615 psi Wall @ 0'- 2"
- 615 psi Wall @ 5'- 5 1/2"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	2'- 8 3/4"	1.25D + 1.5L	1.00	1872 lb ft	4310 lb ft	Passed - 43%
Factored Shear:	5'- 4 7/16"	1.25D + 1.5L	1.00	1272 lb	1770 lb	Passed - 72%
Live Load (LL) Pos. Defl.:	2'- 9 3/4"	L		0.047"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	2'- 9 11/16"	D + L		0.071"	L/240	Passed - L/869

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	3-00	1.25D + 1.5L	1.00	1269 lb		1708 lb	4614 lb	Passed - 74%
2	3-00	1.25D + 1.5L	1.00	1278 lb		1708 lb	4614 lb	Passed - 75%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	5'- 7 1/2"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	2'- 2 3/4"	5'- 2 3/4"	Smoothed Load	Back	120 lb/ft	246 lb/ft	-	-
Point	0'- 10 3/4"	0'- 10 3/4"	J1(i14898)	Back	113 lb	232 lb	-	-
Point	1'- 8 3/4"	1'- 8 3/4"	J1(i14894)	Back	110 lb	222 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 3"	15(i11784)	300 lb	596 lb	-	-
2	5'- 4 1/2"	5'- 7 1/2"	12(i11781)	299 lb	603 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.

SE039692



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **337556-A**
Level: **1st Floor**
Label: **B38 - i15875**
Type: **Beam**

1 Ply Member

9 1/2" NI-20

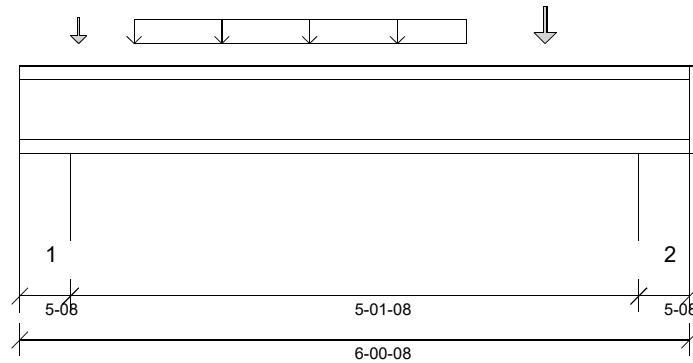
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version
8.4.2.2861 Updated 9.13

Report Version: 2020.06.20 10/04/2021 14:16



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, 0.75" (absolute)
TL Deflection Limit: L/240, 1.00" (absolute)

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

Factored Resistance of Support Material:

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



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	3'- 6 3/8"	1.25D + 1.5L	1.00	739 lb ft	4310 lb ft	Passed - 17%
Factored Shear:	0'- 5 9/16"	1.25D + 1.5L	1.00	580 lb	1770 lb	Passed - 33%
Live Load (LL) Pos. Defl.:	3'- 3/8"	L		0.019"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	3'- 3/8"	D + L		0.029"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	5'-08	1.25D + 1.5L	1.00	581 lb		1770 lb	8459 lb	Passed - 33%
2	5'-08	1.25D + 1.5L	1.00	523 lb		1770 lb	8459 lb	Passed - 30%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	6'- 1/2"	Self Weight	Top	3 lb/ft	-	-	-
Uniform	1'- 3/8"	4'- 3/8"	Smoothed Load	Front	50 lb/ft	99 lb/ft	-	-
Point	0'- 6 3/8"	0'- 6 3/8"	J2(i15873)	Front	35 lb	69 lb	-	-
Point	4'- 8 7/8"	4'- 8 7/8"	-	Front	70 lb	145 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 5 1/2"	18(i11789)	144 lb	270 lb	-	-
2	5'- 7"	6'- 1/2"	10(i11779)	126 lb	241 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.

SE039693



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **343713-A**
Level: **1st Floor**
Label: **B39 - i17042**
Type: **Beam**

2 Ply Member

11 7/8" NI-20

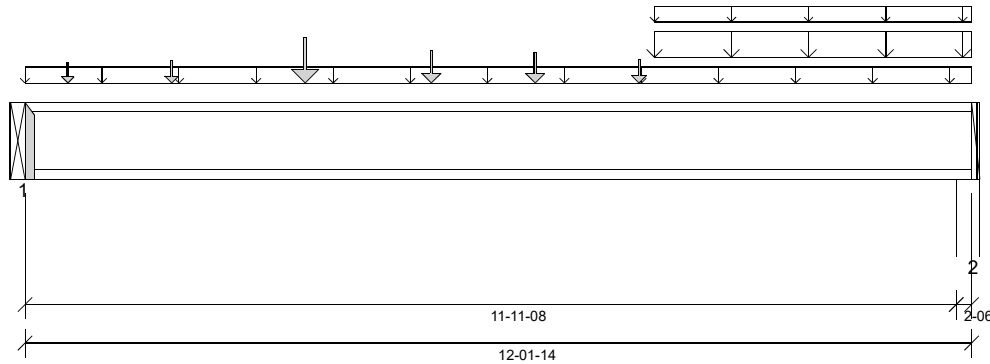
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 04/26/2022 15:13



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360, 0.75" (absolute)

TL Deflection Limit: L/240, 1.00" (absolute)

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'- 10 1/2"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'
- 615 psi Wall @ 12'- 1/2"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	6'- 6 5/8"	1.25D + 1.5L	1.00	5445 lb ft	11160 lb ft	Passed - 49%
Factored Shear:	11'- 11 7/16"	1.25D + 1.5L	1.00	2076 lb	4480 lb	Passed - 46%
Live Load (LL) Pos. Defl.:	6'- 1 7/16"	L		0.160"	L/360	Passed - L/896
Total Load (TL) Pos. Defl.:	6'- 1 3/8"	D + L		0.227"	L/240	Passed - L/631

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	1502 lb		3940 lb	-	Passed - 38%
2	2-06	1.25D + 1.5L	1.00	2168 lb		4090 lb	7305 lb	Passed - 53%

CONNECTOR INFORMATION

ID	Part No.	Manufacturer	Nailing Requirements			Other Information or Requirement for Reinforcement Accessories
			Top	Face	Member	
1	HU310-2	-	-	-	-	Connector manually specified by the user.

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

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	12'- 1 7/8"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'	12'- 1 7/8"	FC1 Floor Decking (Plan View Fill)	Top	9 lb/ft	25 lb/ft	-	-
Uniform	8'- 1"	12'- 1 7/8"	User Load	Top	67 lb/ft	177 lb/ft	-	-
Uniform	8'- 1"	12'- 1 7/8"	FC1 Floor Decking (Plan View Fill)	Top	3 lb/ft	8 lb/ft	-	-
Point	0'- 6 5/8"	0'- 6 5/8"	J10(i17066)	Back	20 lb	53 lb	-	-
Point	1'- 10 5/8"	1'- 10 5/8"	J10(i17122)	Back	27 lb	72 lb	-	-
Point	3'- 7 3/16"	3'- 7 3/16"	-	Back	103 lb	253 lb	-	-
Point	5'- 2 5/8"	5'- 2 5/8"	J8(i17189)	Back	56 lb	150 lb	-	-
Point	6'- 6 5/8"	6'- 6 5/8"	J8(i17254)	Back	52 lb	139 lb	-	-
Point	7'- 10 5/8"	7'- 10 5/8"	J8(i17187)	Back	29 lb	76 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'	B40(i17065)	316 lb	736 lb	-	-
2	11'- 11 1/2"	12'- 1 7/8"	W33(i10531)	444 lb	1077 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.
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- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
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- When the applied loads are coming from a member/post/wall above that does not sit directly on this beam, adequate load transfer elements, such as squash blocks, wall studs, or beveled plates are required to transfer the loads to this beam.

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

SE047000

1st Floor\Flush Beams\B40(i17065) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

April 26, 2022 15:13:38

Build 8183

Job name: 45147-UNIT 4006 (290671) 337556

File name: 343713-A.mmdl

Address: Pine Valley

Description: 1st Floor\Flush Beams\B40(i17065)

City, Province, Postal Code: Vaughan, ON

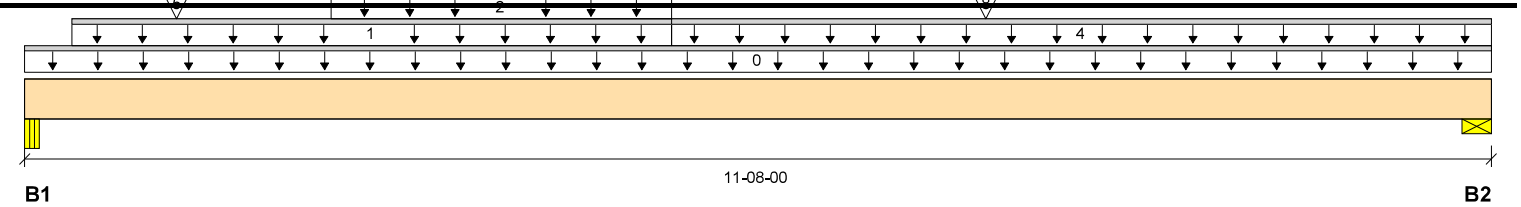
Specifier:

Customer: Gold Park

Designer: JC

Code reports: CCMC 12472-R

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1201 / 0	664 / 0		
B2, 2-1/4"	568 / 0	549 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-08-00	Top		6			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-04-08	05-01-12	Top	12	5			n/a
2	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	02-05-04	05-01-12	Top	13	5			n/a
3	wall	Unf. Lin. (lb/ft)	L	04-03-12	11-05-12	Top		60			n/a
4	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	05-01-12	11-08-00	Top	14	5			n/a
5	J5(i17092)	Conc. Pt. (lbs)	L	01-02-08	01-02-08	Front	269	101			
6	B39(i17042)	Conc. Pt. (lbs)	L	02-05-04	02-05-04	Front	736	316			
7	B25(i17064)	Conc. Pt. (lbs)	L	05-00-08	05-00-08	Front	207	83			
8	User Load	Conc. Pt. (lbs)	L	07-07-12	07-07-12	Top	360	135			

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5824 ft-lbs	17696 ft-lbs	32.9%	1	05-00-08
End Shear	2465 lbs	7232 lbs	34.1%	1	01-05-06
Total Load Deflection	L/698 (0.192")	n/a	34.4%	4	05-09-04
Live Load Deflection	L/999 (0.112")	n/a	n/a	5	05-09-04
Max Defl.	0.192"	n/a	n/a	4	05-09-04
Span / Depth	11.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5-1/2" x 1-3/4"	2632 lbs	44.5%	22.4%	Unspecified
B2	Wall/Plate 2-1/4" x 1-3/4"	1539 lbs	63.5%	32.0%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 06-04-00.


Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

SE047001



Customer: **Gold Park**
Job Address: **Pine Valley**
City: **Vaughan**
Job Track: **45147-UNIT 4006 (290671) 3375...**

Job Name: **343713-A**
Level: **1st Floor**
Label: **B41 - i17103**
Type: **Beam**

2 Ply Member

11 7/8" NI-40x

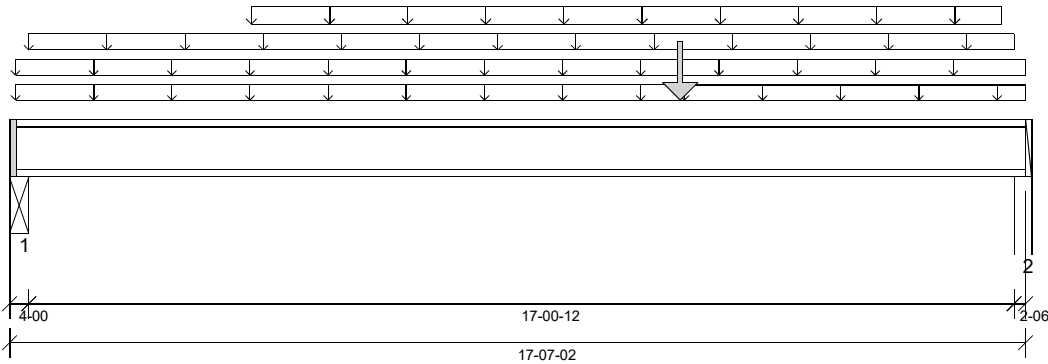
Status:

**Design
Passed**

Illustration Not to Scale. Pitch: 0/12

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

Report Version: 2021.03.26 04/26/2022 15:14



DESIGN INFORMATION

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

Design Methodology: LSD

Service Condition: Dry

LL Deflection Limit: L/360,

TL Deflection Limit: L/240,

Lateral Restraint Requirements:

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

Top: 0' Bottom: 11'- 2 1/2"

Factored Resistance of Support Material:

- 769 psi Beam @ 0'- 3"
- 615 psi Wall @ 17'- 5 3/4"



ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Factored Pos. Moment:	11'- 7 3/8"	1.25D + 1.5L	0.95	10532 lb ft	11822 lb ft	Passed - 89%
Factored Shear:	17'- 4 11/16"	1.25D + 1.5L	0.95	2246 lb	4423 lb	Passed - 51%
Live Load (LL) Pos. Defl.:	9'- 3 1/8"	L		0.254"	L/360	Passed - L/807
Total Load (TL) Pos. Defl.:	9'- 2 1/2"	D + L		0.581"	L/240	Passed - L/352
Permanent Deflection:	9'- 2"			-	L/360	Passed - L/696

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Factored Downward Reaction	Factored Uplift Reaction	Factored Resistance of Member	Factored Resistance of Support	Result
1	4-00	1.25D + 1.5L	0.95	1620 lb		4423 lb	14534 lb	Passed - 37%
2	2-06	1.25D + 1.5L	0.95	2260 lb		3972 lb	6904 lb	Passed - 57%

SPECIFIED LOADS

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Wind (W)
Self Weight	0'	17'- 7 1/8"	Self Weight	Top	6 lb/ft	-	-	-
Uniform	0'- 1 1/4"	17'- 7 1/8"	FC1 Floor Decking (Plan View Fill)	Top	4 lb/ft	11 lb/ft	-	-
Uniform	0'- 1 1/4"	11'- 8 1/4"	FC1 Floor Decking (Plan View Fill)	Top	3 lb/ft	9 lb/ft	-	-
Uniform	0'- 4"	17'- 4 3/4"	User Load	Top	10 lb/ft	20 lb/ft	-	-
Uniform	4'- 2 1/4"	17'- 2 1/4"	User Load	Top	60 lb/ft	-	-	-
Uniform	11'- 8 1/4"	17'- 7 1/8"	FC1 Floor Decking (Plan View Fill)	Top	3 lb/ft	8 lb/ft	-	-
Point	11'- 7 3/8"	11'- 7 3/8"	B24(i17102)	Front	419 lb	557 lb	-	-

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Wind (W)
1	0'	0'- 4"	STL BM (DRPD.)(i11617)	658 lb	543 lb	-	-
2	17'- 4 3/4"	17'- 7 1/8"	W10(i10505)	949 lb	704 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.

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.

SE047002

Maximum Floor Spans – M3.1, L/360

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/360 under live load and L/240 under total load
Sheathing:	23/32 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'-9"	14'-10"	14'-4"	13'-5"	16'-2"	15'-4"	14'-6"	13'-5"
	NI-40x	16'-10"	15'-10"	15'-3"	14'-8"	17'-2"	16'-3"	15'-8"	14'-11"
	NI-60	16'-11"	16'-0"	15'-5"	14'-9"	17'-4"	16'-4"	15'-9"	15'-2"
	NI-80	18'-0"	16'-11"	16'-3"	15'-7"	18'-5"	17'-3"	16'-7"	15'-11"
11-7/8"	NI-20	17'-8"	16'-8"	16'-1"	15'-6"	18'-3"	17'-3"	16'-7"	16'-0"
	NI-40x	19'-1"	17'-9"	17'-1"	16'-5"	19'-8"	18'-3"	17'-6"	16'-10"
	NI-60	19'-4"	17'-11"	17'-3"	16'-7"	19'-11"	18'-6"	17'-8"	17'-0"
	NI-80	20'-9"	19'-2"	18'-3"	17'-5"	21'-3"	19'-8"	18'-9"	17'-10"
	NI-90	21'-2"	19'-7"	18'-8"	17'-9"	21'-8"	20'-1"	19'-1"	18'-1"
14"	NI-40x	21'-2"	19'-7"	18'-8"	17'-9"	21'-10"	20'-3"	19'-4"	18'-4"
	NI-60	21'-6"	19'-11"	19'-0"	18'-0"	22'-2"	20'-7"	19'-8"	18'-8"
	NI-80	23'-1"	21'-4"	20'-3"	19'-3"	23'-8"	21'-11"	20'-10"	19'-9"
	NI-90	23'-6"	21'-9"	20'-8"	19'-7"	24'-1"	22'-4"	21'-3"	20'-1"
16"	NI-60	23'-5"	21'-8"	20'-8"	19'-7"	24'-2"	22'-5"	21'-5"	20'-4"
	NI-80	25'-1"	23'-2"	22'-1"	20'-11"	25'-9"	23'-10"	22'-9"	21'-6"
	NI-90	25'-7"	23'-7"	22'-6"	21'-3"	26'-3"	24'-3"	23'-1"	21'-11"

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	17'-1"	15'-5"	14'-6"	13'-5"	17'-1"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-6"	17'-5"	16'-7"	14'-11"	19'-0"	17'-8"	16'-7"	14'-11"
	NI-60	18'-9"	17'-7"	16'-10"	15'-7"	19'-2"	17'-11"	16'-10"	15'-7"
	NI-80	20'-0"	18'-7"	17'-10"	17'-1"	20'-6"	19'-1"	18'-2"	17'-5"
11-7/8"	NI-20	20'-1"	18'-8"	17'-6"	16'-1"	20'-7"	18'-8"	17'-6"	16'-1"
	NI-40x	21'-8"	20'-2"	19'-0"	17'-0"	22'-3"	20'-9"	19'-0"	17'-0"
	NI-60	21'-11"	20'-5"	19'-6"	18'-6"	22'-6"	21'-0"	20'-1"	18'-8"
	NI-80	23'-5"	21'-9"	20'-9"	19'-8"	23'-11"	22'-3"	21'-3"	20'-2"
	NI-90	23'-11"	22'-2"	21'-1"	20'-0"	24'-4"	22'-8"	21'-8"	20'-6"
14"	NI-40x	24'-3"	22'-7"	20'-11"	18'-8"	24'-11"	22'-11"	20'-11"	18'-8"
	NI-60	24'-8"	22'-11"	21'-10"	20'-8"	25'-3"	23'-7"	22'-7"	21'-4"
	NI-80	26'-3"	24'-5"	23'-3"	22'-0"	26'-10"	25'-0"	23'-10"	22'-7"
	NI-90	26'-9"	24'-10"	23'-8"	22'-5"	27'-4"	25'-5"	24'-3"	22'-11"
16"	NI-60	27'-1"	25'-2"	24'-0"	22'-9"	27'-9"	26'-0"	24'-10"	23'-1"
	NI-80	28'-10"	26'-10"	25'-6"	24'-2"	29'-6"	27'-6"	26'-3"	24'-10"
	NI-90	29'-5"	27'-3"	26'-0"	24'-6"	30'-0"	27'-11"	26'-8"	25'-2"

Notes:

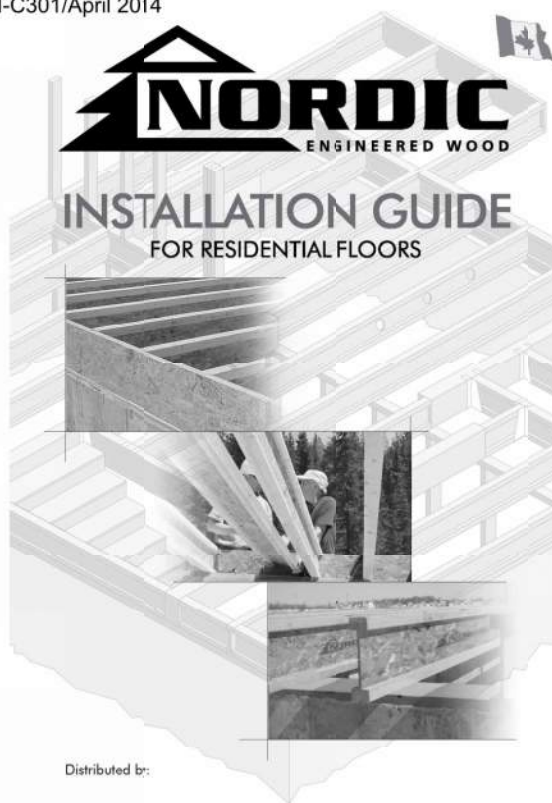
- The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
- For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Minimum bearing length shall be 1-3/4 inch for end bearings,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

The construction details for residential designs are prone to changes.

Details released after April 2014 supersedes N-C301

Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.



Distributed by:



SAFETY AND CONSTRUCTION PRECAUTIONS



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



Never stack building materials over unshathed I-joists. Once sheathed, do not move across I-joists with concentrated loads from building materials.

WARNING

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

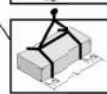
Avoid Accidents by Following these Important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-briding 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 flange 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 1 foot long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each 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-briding.
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.

STORAGE AND HANDLING GUIDELINES

1. Bundle wrap on the shipping side and avoid cutting unbraced bundles.
2. Store, stack, and handle I-joists vertically and level only.
3. Always stack and handle I-joists in the upright position only.
4. Do not store I-joists in direct contact with the ground and/or flatwise.
5. Protect I-joists from weather, and use spacers to separate bundles.
6. Bundled units should be kept intact until time of installation.
7. When handling I-joists with a crane on the job site, take a few simple precautions to prevent damage to the I-joists and injury to your work crew.
 - Pick I-joists in bundles as shipped by the supplier.
 - Orient the bundles so that the webs of the I-joists are vertical.
 - Pick the bundles at the 5th points, using a spreader bar if necessary.
8. Do not handle I-joists in a horizontal orientation.
9. NEVER USE CRUTY TO REPAIR A DAMAGED I-JOIST.

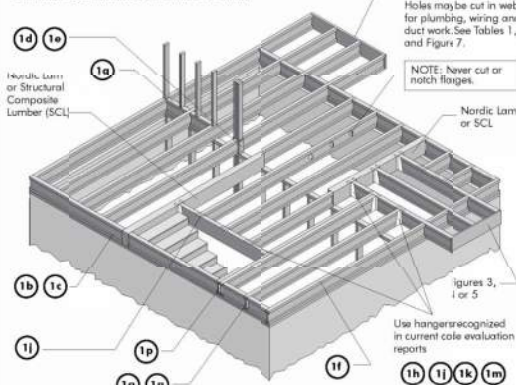


INSTALLING NORDIC I-JOISTS

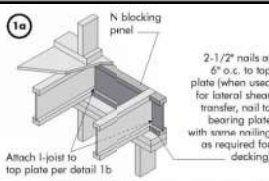
1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not contact your supplier.
2. Except for cutting to length, I-joist flanges should **never** be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple-span joists must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist end and a header.
8. Concentrated load greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber set on edge **must never** be used as blocking or rim boards. I-joist blocking panels or other engineered wood products – such as rim board – must be cut to fit between the I-joists, and an I-joist-compatible depth selected.
13. Provide permanent lateral support of the bottom flange of all I-joists at interior supports of multiple-span joists. Similarly, support the bottom flange of all cantilevered I-joists at the end support next to the cantilever extension in the completed structure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or struts must be used.
14. If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Glue panels to blocking to minimize squeaks. Blocking is not required under structural finish flooring, such as wood strip flooring or if a separate underlayment layer is installed.
15. Nail spacing: Spacing nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.

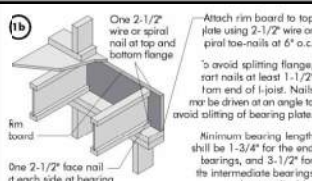


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.



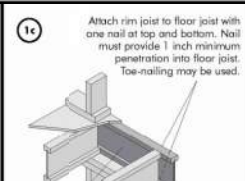
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
Ni Joists	3,300

*The uniform vertical load is limited to a joist depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



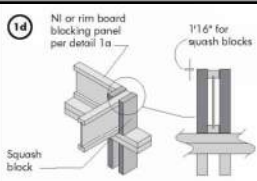
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



Pair of Squash Blocks	Maximum Factored Uniform Vertical Load* (plf)
2x Lumber	5,500
1-1/8" Rim Board Plus	4,300

*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

The construction details for residential designs are prone to changes.

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Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

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MAXIMUM FLOOR SPANS

- Maximum **clear** spans applicable to simple span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Limit States Design per CAN/CSA C86-09 Standard, and NBC 2010.
- SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	Ni-20	15-1"	14-2"	13-5"	13-5"	16-3"	15-4"	14-10"	14-7"
	Ni-40	14-1"	13-2"	12-5"	12-5"	15-6"	14-6"	13-10"	13-5"
	Ni-60	16-3"	15-4"	14-10"	14-11"	17-7"	16-7"	16-0"	16-6"
	Ni-70	17-1"	16-1"	15-6"	15-7"	18-7"	17-4"	16-9"	17-2"
11-7/8"	Ni-20	17-3"	16-3"	15-8"	15-9"	18-10"	17-6"	16-11"	17-5"
	Ni-40x	16-11"	15-0"	13-5"	13-6"	18-4"	17-3"	16-8"	16-7"
	Ni-60	18-11"	17-0"	16-5"	16-6"	20-0"	18-6"	17-9"	17-7"
	Ni-70	19-4"	18-0"	17-4"	17-5"	21-6"	19-11"	19-0"	19-8"
14"	Ni-20	19-9"	18-3"	17-6"	17-7"	21-9"	20-2"	19-3"	19-11"
	Ni-40	20-2"	18-7"	17-10"	17-11"	22-3"	20-7"	19-8"	19-9"
	Ni-60	20-4"	18-9"	17-11"	18-0"	22-5"	20-8"	19-10"	20-4"
	Ni-70	20-5"	19-11"	18-1"	18-2"	22-7"	20-11"	20-0"	20-10"
16"	Ni-20	21-7"	20-0"	19-1"	19-2"	23-10"	22-1"	21-1"	21-10"
	Ni-40	21-11"	20-3"	19-4"	19-5"	24-3"	22-5"	21-5"	22-2"
	Ni-60	22-5"	20-8"	19-9"	19-9"	24-9"	22-10"	21-10"	21-10"
	Ni-70	22-7"	21-11"	19-11"	20-0"	25-0"	23-1"	22-0"	22-9"
18"	Ni-20	22-9"	21-2"	20-2"	20-3"	25-2"	23-2"	22-1"	22-9"
	Ni-40	23-6"	21-9"	20-9"	20-10"	26-0"	24-0"	22-11"	23-9"
	Ni-60	23-11"	22-1"	21-1"	21-2"	26-5"	24-5"	23-3"	24-1"
	Ni-70	24-5"	22-6"	21-5"	21-6"	26-11"	24-10"	23-9"	23-9"
20"	Ni-20	24-8"	22-9"	21-9"	21-10"	27-3"	25-2"	24-0"	24-10"
	Ni-40	25-2"	23-3"	22-3"	22-4"	27-7"	25-6"	24-4"	24-10"

CCAC EVALUATION REPORT 13032-R

I-JOIST HANGERS

- Hangers shown illustrate the three most commonly used metal hangers to support I-joists.
- All nailing must meet the hanger manufacturer's recommendations.
- Hangers should be selected based on the joist depth, flange width and load capacity based on the maximum spans.
- Web stiffeners are required when the sides of the hangers do not laterally brace the top flange of the I-joist.



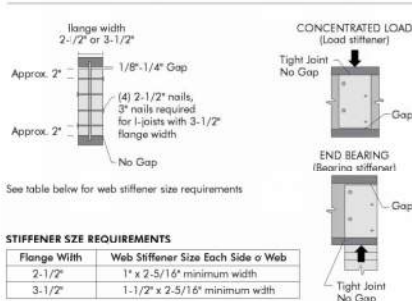
WEB STIFFENER

RECOMMENDATIONS:

- A **bearing stiffener** is required in all engineered applications with factored reactions greater than those in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A **bearing stiffener** is required when the I-joist is supported in hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and the flange is at the top.
- A **load stiffener** is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

SI units conversion: 1 inch = 25.4 mm

FIGURE 4 WEB STIFFENER INSTALLATION DETAILS



STIFFENER SIZE REQUIREMENTS

Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

NORDIC I-JOIST SERIES

Ni-20	Ni-40x	Ni-60	Ni-70	Ni-80	Ni-90	Ni-90x
3-5/8" No. 2	3-5/8" No. 2	3-5/8" No. 2	3-5/8" No. 2	3-5/8" No. 2	3-5/8" No. 2	3-5/8" No. 2
33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit	2 pieces per unit

Chantiers Chibougamau Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures throughout the manufacturing process. Every phase of the operation, from forest to the finished product, reflects our commitment to quality.

Nordic Engineered Wood I-joists use only finger-jointed black spruce lumber in their flanges, ensuring consistent quality, superior strength, and longer span carrying capacity.

10 Transfer load from above to bearing below. Install squish blocks per detail 1d. Match bearing area of blocks below to post above.

11 Use single I-joist for load up to 3,300 plf, double I-joists for loads up to 1,600 plf (filler block not required). Attach I-joist to top plate using 2-1/2" nails at 6" o.c.

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

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

14 Double I-joist header

15 Top- or face-mount hanger installed per manufacturer's recommendations. For nailing schedules for multiple beams, see the manufacturer's recommendations.

16 2x plate flush with inside face of wall or beam. 1/8" overhang allowed past inside face of wall or beam.

17 Top-mount hanger installed per manufacturer's recommendations.

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

19 Do not level-cut joist beyond inside face of wall.

20 Backer block required at bearing for lateral resistance to not exceed for clarity.

21 Filler block

22 One 2-1/2" nails at top and bottom flange. Two 2-1/2" nails from each web to lumber piece. 2x4 min. (1/8" gap minimum)

Notes:

- Support back of I-joist web during nailing to prevent damage to web/flange connection.
- Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
- Filler block is required between joists for full length of span.
- Nail joists together with two rows of 3" nails at 12 inches o.c. (clinched when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
- The maximum factored load that may be applied to one side of the double joist using this detail is 860 lbf/ft. Verify double I-joist capacity.

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

Flange Size	Joist Depth	Filler Block Size
2-1/2" x 1-1/2"	9-1/2"	21/8" x 6"
	11-7/8"	21/8" x 8"
	14"	21/8" x 10"
	16"	21/8" x 12"
2-1/2" x 1-1/2"	9-1/2"	3" x 6"
	11-7/8"	3" x 8"
	14"	3" x 10"
	16"	3" x 12"
3-1/2" x 2"	11-7/8"	3" x 7"
	14"	3" x 9"
	16"	3" x 11"

Optional: Minimum x4 inch strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.

Notes:

- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the stark joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.

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CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

3a I-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

Cantilever extension supporting uniform floor loads only

Attach I-joists to plate at all supports per detail 1b

3-1/2" min. bearing required

CAUTION: Cantilevers formed this way must be carefully detailed to prevent moisture intrusion into the structure and potential decay of untreated I-joist extensions.

Note: This detail is applicable to cantilevers supporting a maximum specified uniform live load of 60 psf.

3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

Full depth backer block with 1/8" gap between block and top flange of I-joist. See detail 1b. Nail with 2 rows of 3" nails at 6" o.c. and clinch.

2x6 min. Nail to backer block and joist with 2 rows of 3" nails at 6" o.c. and clinch. (Cantilever nails may be used to attach backer block if length of nail is sufficient to allow clinching.)

Cantilever extension supporting uniform floor loads only

Lumber or wood structural panel closure

3-1/2" min. bearing required

Attach I-joists to plate at all supports per detail 1b

Note: This detail is applicable to cantilevers supporting a maximum specified uniform live load of 60 psf.

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

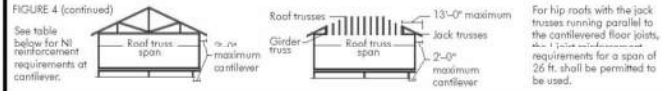
4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE

Use same installation as Method 1 but reinforce both sides of I-joist with sheathing.

Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail 1b. Verify reinforced I-joist capacity.

4b Alternate Method 2 — DOUBLE I-JOIST

Block I-joists together with filler blocks for the full length of the reinforcement. For I-joist flange widths greater than 3 inches place an additional row of 3" nails along the centreline of the reinforcing panel from each side. Clinch when possible.



CANTILEVER REINFORCEMENT METHODS ALLOWED

Joist Depth (in.)	Roof Truss Span (ft)	ROOF LOADING (UNFACTORED)							
		LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf			
		Joist Spacing (in.)				Joist Spacing (in.)			
		12	16	19.2	24	12	16	19.2	24
9-1/2	26	N	N	1	2	N	1	2	X
	28	N	N	1	2	N	1	2	X
	30	N	1	1	X	N	1	2	X
	32	N	1	2	X	N	2	X	X
	34	N	1	2	X	N	2	X	X
11.7/8	26	N	1	2	X	N	1	2	X
	28	N	1	2	X	N	1	2	X
	30	N	1	2	X	N	1	2	X
	32	N	1	2	X	N	1	2	X
	34	N	1	2	X	N	1	2	X
14	26	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N
16	26	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N

- N = No reinforcement required.
- 1 = NI reinforced with 3/4" wood structural panel on one side only.
- 2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
- X = Try a deeper joist or closer spacing.
- Maximum design load shall be: 15 psf roof dead load, 65 psf floor total load, and 80 psf wall load. Wall load is based on 9'-0" maximum width window or door openings.
- For larger openings, or multiple 9'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
- Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
- For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge beam, the Roof Truss Span is equivalent to the distance between the supporting walls or if a truss is used.
- Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

5a SHEATHING REINFORCEMENT

Provide full depth blocking between joists over support (not shown)

Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail 1b. Verify reinforced I-joist capacity.

5b SET-BACK DETAIL

Kim board or wood structural panel closure (3/4" minimum thickness), attach per detail 1b.

Notes:

- Provide full depth blocking between joists over support (not shown for clarity).
- Attach I-joist to plate at all supports per detail 1b.
- 3-1/2" minimum I-joist bearing required.

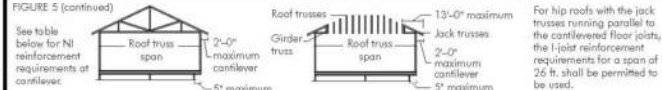
5c SET-BACK CONNECTION

Vertical solid sawn blocks (2x6 S-P-F No. 2 or better) nailed through joist web and web of girder using 2-1/2" nails.

Alternate for opposite side.

Notes:

- Verify girder joist capacity if the back span exceeds the joist spacing.
- Attach double I-joist per detail 1p, if required.



BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

Joist Depth (in.)	Roof Truss Span (ft)	ROOF LOADING (UNFACTORED)							
		LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf			
		Joist Spacing (in.)				Joist Spacing (in.)			
		12	16	19.2	24	12	16	19.2	24
9-1/2	26	1	X	X	X	2	X	X	X
	28	1	X	X	X	2	X	X	X
	30	1	X	X	X	2	X	X	X
	32	2	X	X	X	2	X	X	X
	34	2	X	X	X	2	X	X	X
11.7/8	26	X	2	X	X	X	X	X	X
	28	X	2	X	X	X	X	X	X
	30	X	2	X	X	X	X	X	X
	32	X	2	X	X	X	X	X	X
	34	X	2	X	X	X	X	X	X
14	26	N	2	X	X	1	X	X	X
	28	N	2	X	X	1	X	X	X
	30	1	X	X	X	1	X	X	X
	32	1	X	X	X	2	X	X	X
	34	1	X	X	X	2	X	X	X
16	26	1	2	X	X	1	X	X	X
	28	1	2	X	X	1	X	X	X
	30	1	2	X	X	2	X	X	X
	32	1	2	X	X	2	X	X	X
	34	1	2	X	X	2	X	X	X

- N = No reinforcement required.
- 1 = NI reinforced with 3/4" wood structural panel on one side only.
- 2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
- X = Try a deeper joist or closer spacing.
- Maximum design load shall be: 15 psf roof dead load, 65 psf floor total load, and 80 psf wall load. Wall load is based on 9'-0" maximum width window or door openings.
- For larger openings, or multiple 9'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
- Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
- For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge beam, the Roof Truss Span is equivalent to the distance between the supporting walls or if a truss is used.
- Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

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WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole or 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 edges of the hole or duct chase opening and the adjacent I-joist flange.
- 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.
- 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 or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is **not** considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a continuous section of a joist. Holes of greater size may be permitted subject to verification.
- 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.
- All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- Limit three maximum size holes per span, of which one may be a duct chase opening.
- A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS
Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (ft.-in.)													Span adjustment Factor
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	
9-1/2"	N120	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
	N140	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
	N160	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
	N180	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
11-7/8"	N120	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
	N140	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
	N160	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
	N180	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
14"	N120	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
	N140	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
	N160	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
	N180	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
16"	N120	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
	N140	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
	N160	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"
	N180	0-7"	1-0"	1-10"	1-4"	1-6"	1-7"	1-8"	1-9"	1-10"	1-11"	1-12"	1-13"	1-14"	1-15"

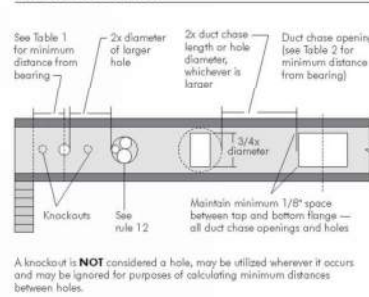
- Above table may be used for I-joist spacing of 24 inches on centre or less.
- Hole location distance is measured from inside face of supports to centre of hole.
- Distances in this chart are based on uniformly loaded joists.

OPTIONAL:

The above table is based on the I-joists used at their maximum span. If the I-joists are placed at less than their full maximum span (see Maximum Floor Spans), the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

- Where:
- $D_{reduced} = D \times \frac{S_{actual}}{S_{max}}$ = Distance from the inside face of any support to centre of hole, reduced for less than maximum span applications [9]. The reduced distance shall not be less than 6 inches from the face of the support to edge of the hole.
 - S_{actual} = The actual measured span distance between the inside faces of supports [9].
 - S_{max} = Span Adjustment Factor given in this table.
 - D = The minimum distance from the inside face of any support to centre of hole from this table.
- If $\frac{S_{actual}}{S_{max}}$ is greater than 1, use 1 in the above calculation for $\frac{S_{actual}}{S_{max}}$.

FIGURE 7
FIELD-CUT HOLE LOCATOR



Knockouts are pre-cored holes provided for the contractor's convenience to install electrical or small plumbing lines. They are 1-1/2 inches in diameter, and are spaced 15 inches on centre along the length of the I-joist. Where possible, it is preferable to use knockouts instead of field-cut holes.

Never drill, cut or notch the flange, or over-cut the web. Holes in webs should be cut with a sharp saw.

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.

TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of opening (ft.-in.)												
		8	10	12	14	16	18	20	22	24	26	28	30	32
9-1/2"	N120	4-1"	4-5"	4-10"	4-5"	5-0"	5-5"	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"
	N140	5-0"	5-5"	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"
	N160	5-5"	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"	11-5"
	N180	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"	11-5"	12-0"
11-7/8"	N120	4-1"	4-5"	4-10"	4-5"	5-0"	5-5"	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"
	N140	5-0"	5-5"	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"
	N160	5-5"	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"	11-5"
	N180	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"	11-5"	12-0"
14"	N120	4-1"	4-5"	4-10"	4-5"	5-0"	5-5"	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"
	N140	5-0"	5-5"	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"
	N160	5-5"	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"	11-5"
	N180	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"	11-5"	12-0"
16"	N120	4-1"	4-5"	4-10"	4-5"	5-0"	5-5"	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"
	N140	5-0"	5-5"	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"
	N160	5-5"	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"	11-5"
	N180	6-0"	6-5"	7-0"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"	11-5"	12-0"

- Above table may be used for I-joist spacing of 24 inches on centre or less.
- Duct chase opening location distance is measured from inside face of supports to centre of opening.
- The above table is based on simple-span joist only. For other applications, contact your local distributor.
- Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. For other applications, contact your local distributor.

INSTALLING THE GLUED FLOOR SYSTEM

- Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
- Snap a chalk line across the I-joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
- Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
- Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when tapped into place with a block and sledgehammer.
- Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
- Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
- After the first row of panels is in place, spread glue in the groove on one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on I-joist flanges.
- Tap the second row of panels into place, using a block to protect groove edges.
- Stagger and joints in each succeeding row of panels. A 1/8-inch space between all end joints and 1/8-inch at all edges, including T&G edges, is recommended. (Use a spacer tool or an 2-1/2" common nail to assure accurate and consistent spacing.)
- Complete all nailing of each panel before glue sets.** Check the manufacturer's recommendations for cure time. (Warm weather accelerates glue setting.) Use 2" ring- or screw-shank nails for panels 3/4-inch thick or less, and 2-1/2" ring- or screw-shank nails for thicker panels. Space nails per the table below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

Maximum Joist Spacing (in.)	Minimum Panel Thickness (in.)	Nail Size and Type			Maximum Spacing of Fasteners	
		Common Wire or Spiral Nails	Ring Thread Nails or Screws	Staples	Edges	Interiors
16	5/8	2"	1-3/4"	2"	6"	12"
20	5/8	2"	1-3/4"	2"	6"	12"
24	3/4	2"	1-3/4"	2"	6"	12"

- Fasteners of sheathing and subflooring shall conform to the above table.
- Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to framing.
- Flooring screws shall not be less than 1/8-inch in diameter.
- Special conditions may impose heavy traffic and concentrated loads that require construction in excess of above minimums.
- Use only adhesives conforming to CAN/CSB-71.26 Standard, Adhesives for Field-Gluing Plywood to Lumber Framing for Floor System, applied in accordance with the manufacturer's recommendations. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glues; check with panel manufacturer.

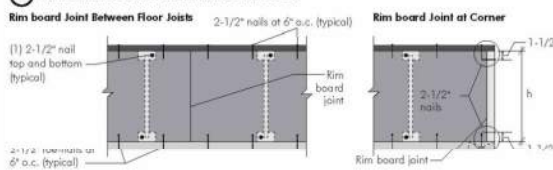
Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

IMPORTANT NOTE:

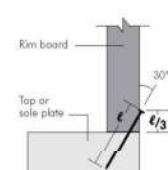
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

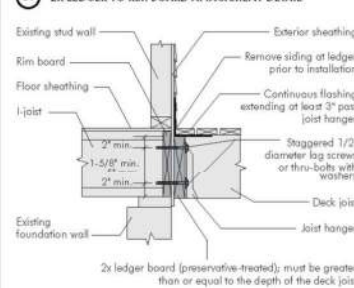
80 ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



80 TOE-NAIL CONNECTION AT RIM BOARD



80 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



PRODUCT WARRANTY

Chertex Chivignoux guarantees that, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.

Furthermore, Chertex Chivignoux warrants that our products, when utilized in accordance with our handling and installation instructions, will meet or exceed our specifications for the lifetime of the structure.



Refer to the Installation Guide for Residential Floors for additional information.
CCMC EVALUATION REPORT 13032-R

WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

1. The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
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 or 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/bottom of the hole or 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 or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
7. A knockout is **not** considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
8. Holes measuring 1-1/2 inches or smaller are permitted anywhere in a canilevered section of a joist. Holes of greater size may be permitted subject to verification.

9. 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.
10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
11. Limit three maximum size holes per span, of which one may be a duct chase opening.
12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for single round hole circumscribed around them.

TABLE 1

LOCATION OF CIRCULAR HOLES IN JOIST WEBS

Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

Joist Depth	Joist Series	Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.)											
		Round Hole Diameter (in.)											
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
9-1/2"	NI-20	0-7"	1-6"	2-10"	4-3"	5-3"	6-0"	---	---	---	---	---	---
	NI-40x	0-7"	1-6"	3-0"	4-4"	6-3"	6-4"	---	---	---	---	---	---
	NI-60	1-3"	2-6"	4-0"	5-4"	7-3"	7-5"	---	---	---	---	---	---
	NI-80	2-0"	3-4"	4-8"	6-2"	8-1"	8-4"	---	---	---	---	---	---
11-7/8"	NI-20	0-7"	0-8"	1-0"	2-4"	3-3"	4-0"	5-0"	6-6"	7-9"	---	---	---
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-3"	4-4"	5-5"	7-0"	8-4"	---	---	---
	NI-60	0-7"	1-8"	3-0"	4-3"	5-2"	6-0"	7-3"	8-10"	10-0"	---	---	---
	NI-70	1-3"	2-6"	4-0"	5-4"	6-3"	7-2"	8-4"	10-0"	11-2"	---	---	---
14"	NI-80	1-6"	2-10"	4-2"	5-6"	7-3"	7-5"	8-6"	10-3"	11-4"	---	---	---
	NI-90	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	---	---	---	---	---
	NI-40x	0-7"	0-8"	0-8"	1-0"	2-4"	2-9"	3-9"	5-2"	6-0"	6-6"	8-3"	10-2"
	NI-60	0-7"	0-8"	1-8"	3-0"	4-3"	4-8"	5-8"	7-2"	8-0"	8-8"	10-4"	11-9"
16"	NI-70	0-8"	1-10"	3-0"	4-5"	5-10"	6-2"	7-3"	8-9"	9-9"	10-4"	12-0"	13-5"
	NI-80	0-10"	2-0"	3-4"	4-9"	6-2"	6-5"	7-6"	9-0"	10-0"	10-8"	12-4"	13-9"
	NI-90	0-7"	0-8"	0-8"	2-0"	3-2"	4-2"	5-5"	7-3"	8-5"	9-2"	---	---
	NI-60	0-7"	0-8"	0-8"	1-6"	2-10"	3-2"	4-2"	5-6"	6-4"	7-0"	8-5"	9-8"
18"	NI-70	0-7"	1-0"	2-3	3-6	4-10	3-3	6-3	7-6	8-6	9-2	10-8	12-0
	NI-80	0-7"	1-3"	2-6"	3-10"	5-3"	5-6"	6-6"	8-0"	9-0"	9-8"	11-0"	12-3"
	NI-90	0-7"	0-8"	0-9"	2-0"	3-5"	4-0"	5-0"	6-9"	7-9"	8-4"	10-2"	11-6"
	NI-60	0-7"	0-8"	0-8"	1-6"	2-10"	3-2"	4-2"	5-6"	6-4"	7-0"	8-5"	9-8"

1. Above table may be used for I-joist spacing of 24 inches on centre or less.
2. Hole location distance is measured from inside face of supports to centre of hole.
3. Distances in this chart are based on uniformly loaded joists.
4. The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

TABLE 2

DUCT CHASE OPENING SIZES AND LOCATIONS

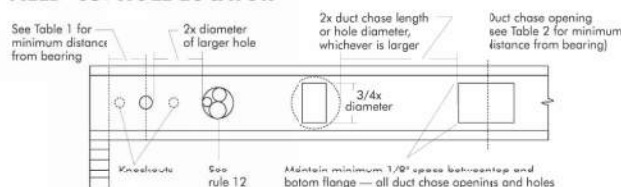
Simple Span Only

Joist Depth	Joist Series	Minimum Distance from Inside Face of Supports to Centre of Opening (ft - in.)											
		Duct Chase Length (in.)											
		8	10	12	14	16	18	20	22	24	26	28	30
9-1/2"	NI-20	4-1"	4-5"	4-10"	5-4"	5-8"	6-1"	6-6"	7-1"	7-5"	---	---	---
	NI-40x	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"	---	---	---
	NI-60	5-4"	5-9"	6-2"	6-7"	7-1"	7-5"	8-0"	8-3"	8-9"	---	---	---
	NI-70	6-1"	6-4"	6-10"	6-9"	6-10"	7-3"	7-8"	8-2"	8-6"	---	---	---
11-7/8"	NI-20	5-9"	6-2"	6-6"	7-1"	7-5"	7-9"	8-3"	8-9"	9-4"	---	---	---
	NI-40x	6-8"	7-2"	7-6"	8-1"	8-6"	9-1"	9-6"	10-1"	10-9"	---	---	---
	NI-60	7-3"	7-8"	8-0"	8-6"	9-0"	9-3"	9-9"	10-3"	11-0"	---	---	---
	NI-70	7-1"	7-4"	7-9"	8-3"	8-7"	9-1"	9-6"	10-1"	10-4"	---	---	---
14"	NI-80	7-2"	7-7"	8-0"	8-5"	8-10"	9-4"	9-8"	10-2"	10-8"	---	---	---
	NI-90	7-7"	8-1"	8-5"	8-10"	9-4"	9-8"	10-2"	10-8"	11-2"	---	---	---
	NI-40x	8-1"	8-7"	9-0"	9-6"	10-1"	10-7"	11-2"	12-0"	12-8"	---	---	---
	NI-60	8-9"	9-3"	9-8"	10-1"	10-6"	11-1"	11-6"	12-3"	13-0"	---	---	---
16"	NI-70	8-7"	9-1"	9-5"	9-10"	10-4"	10-8"	11-2"	11-7"	12-3"	---	---	---
	NI-80	9-0"	9-3"	9-9"	10-1"	10-7"	11-1"	11-6"	12-1"	12-6"	---	---	---
	NI-90	9-4"	9-9"	10-3"	10-7"	11-1"	11-7"	12-1"	12-7"	13-2"	---	---	---
	NI-60	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-2"	14-1"	14-10"	---	---	---
18"	NI-70	10-1"	10-5"	11-0"	11-4"	11-10"	12-3"	12-8"	13-2"	14-0"	---	---	---
	NI-80	10-4"	10-9"	11-3"	11-9"	12-1"	12-7"	13-1"	13-6"	14-4"	---	---	---
	NI-90	11-1"	11-5"	11-10"	12-4"	12-10"	13-2"	13-9"	14-4"	15-2"	---	---	---
	NI-60	11-1"	11-5"	11-10"	12-4"	12-10"	13-2"	13-9"	14-4"	15-2"	---	---	---

1. Above table may be used for I-joist spacing of 24 inches on centre or less.
2. Duct chase opening location distance is measured from inside face of supports to centre of opening.
3. The above table is based on simple-span joists only. For other applications, contact your local distributor.
4. Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480.
5. The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

FIGURE 7

FIELD-CUT HOLE LOCATOR



Knockouts are prescored holes provided for the contractor's convenience to install electrical or small plumbing lines. They are 1-1/2 inches in diameter, and are spaced 15 inches on centre along the length of the I-joist. Where possible, it is preferable to use knockouts instead of field-cut holes.

Never drill, cut or notch the flange, or over-cut the web.

Holes in webs should be cut with a sharp saw.

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.

SAFETY AND CONSTRUCTION PRECAUTIONS



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



Never stack building materials over unbraced I-joists. Once sheathed, do not over-stress I-joists with concentrated loads from building materials.

WARNING: 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-briding at joist ends. When I-joists are installed 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, when called for, or temporary sheathing must be applied to prevent I-joist rafter 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" 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-briding.
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.

The construction details for residential designs are prone to changes.

Details released after September 2013 supersedes N-303

Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.



1a NI blocking panel

Attach I-joint to top plate per detail 1b

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

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
N Joists	3,300

*The uniform vertical load is limited to a joist depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

1b Rim board

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

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

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

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

To avoid splitting/flange, start nails at least 1-1/2" from end of I-joint. Nails may be driven at an angle to avoid splitting of bearing plate.

Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

1d NI or rim board blocking panel per detail 1a

Squash block

Pair of Squash Blocks

Pair of Squash Blocks	Maximum Factored Vertical Load per Pair of Squash Blocks (lbs)
2x Lumber	5,500
1-1/8" Kim Board Plus	4,300

3-1/2" wide
5-1/2" wide

Provide lateral bracing per detail 1a or 1b

1e Transfer load from above to bearing below. Install squash blocks per detail 1d. Match bearing area of blocks below to post above.

1f Joist attachment per detail 1b

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

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

Blocking required over all interior supports under load-bearing walls or when floor joists are not continuous over support

NI blocking panel per detail 1a

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

BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting)

Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2"	1"	5-1/2"
3-1/2"	1-1/2"	7-1/4"

* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid own lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard.

** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

Top- or face-mount hanger

Double I-joint header

Filler block - per detail 1p

Backer block required (both sides for face-mount hangers)

For hanger capacity see hanger manufacturer's recommendations. Verify double I-joint capacity to support concentrated loads.

1i Nordic Lam or Structural Composite Lumber (SCL)

For nailing schedules for multiple beams, see the manufacturer's recommendations.

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

NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

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

NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

Top-mount hanger installed per manufacturer's recommendations

1m Multiple I-joint header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify double I-joint capacity to support concentrated loads.

Backer block attached per detail 1h. Nail with twelve 3" nails, clinch when possible.

Install hanger per manufacturer's recommendations

Maximum support capacity = 1,620 lbs.

1n Do not bevel-cut joist beyond inside face of wall

Attach I-joint per detail 1b

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

1r Lumber 2x4 min., extend blocks to face of adjacent web. Two 2-1/2" spiral nails from each web to lumber piece, alternate on opposite side

NI blocking panel

OPTIONAL: Minimum 1x4 incl strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.

1p FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

Filler block

Offset nails from opposite face by 6"

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

NOTES:

- Support back of I-joint web during nailing to prevent damage to web/flange connection
- Leave a 1/8 to 1/4-inch gap between top and bottom of top I-joint flange.
- Filler block is required between joists for full length of span.
- Nail joists together with two rows of 3" nails at 12 inches o.c. (clinched when possible) on each side of the double I-joint. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
- The maximum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joint capacity.

Flange Size	Net Depth	Filler Block Size
2-1/2" x 1-1/2"	1-1/8" x 1-7/8"	2-1/8" x 8"
	4"	2-1/8" x 10"
	6"	2-1/8" x 12"
3-1/2" x 1-1/2"	1-1/8" x 1-7/8"	3" x 6"
	4"	3" x 8"
	6"	3" x 10"
3-1/2" x 2"	1-7/8" x 1-7/8"	3" x 7"
	4"	3" x 9"
	6"	3" x 11"

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

2x4 min. (1/8" gap minimum)

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

I-joint blocking panel

One 2-1/2" nail one side only

NOTE:

- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.

All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.125" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

WEB STIFFENERS

RECOMMENDATIONS:

- A **bearing stiffener** is required in all engineered applications with factored reactions greater than shown in the I-joint properties table found in the I-Joint Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A **bearing stiffener** is required when the I-joint is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A **load stiffener** is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the area of a stiffener, anywhere between the stiffener top and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

FIGURE 2

WEB STIFFENER INSTALLATION DETAILS

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

Approx. 2"

1/8"-1/4" Gap

(4) 2-1/2" nails, 3" nails required for I-joints with 3-1/2" flange width

No Gap

See the adjacent table for web stiffener size requirements

CONCENTRATED LOAD (Load stiffener)

Tight Joint No Gap

Gap

END BEARING (Bearing stiffener)

Gap

Tight Joint No Gap

Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/8" minimum width
3-1/2"	1-1/2" x 2-1/8" minimum width

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

Method 1 — SHEATHING REINFORCEMENT ONE SIDE

Rim board or wood structural panel closure (3/4" minimum thickness; attach per detail 1b)

6"

2-1/2" nails

3-1/2" min. bearing required

NI blocking panel or rim board blocking, attach per detail 1g

Attach I-joint to plate per detail 1b

Strength axis

2-0" minimum

2-0" minimum

Method 2 — SHEATHING REINFORCEMENT TWO SIDES

Use same installation as Method 1 but reinforce both sides of I-joint with sheathing.

Use nailing pattern shown in Method 1 with opposite face nailing offset by 3".

NOTE: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joint to plate at all supports per detail 1b. Verify reinforced I-joint capacity.

RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim Board Joint Between Floor Joists

(1) 2-1/2" nail top and bottom (typical)

2-1/2" nails at 6" o.c. (typical)

2-1/2" toe-nails at 6" o.c. (typical)

Rim board joint

Rim Board Joint at Corner

2-1/2" nails

h

1-1/2"

1-1/2"

8b TOE-NAIL CONNECTION AT RIMBOARD

Rim board

Top or sole plate

30°

1/3

The construction details for residential designs are prone to changes.

Details released after September 2013 supersedes N-303

Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.