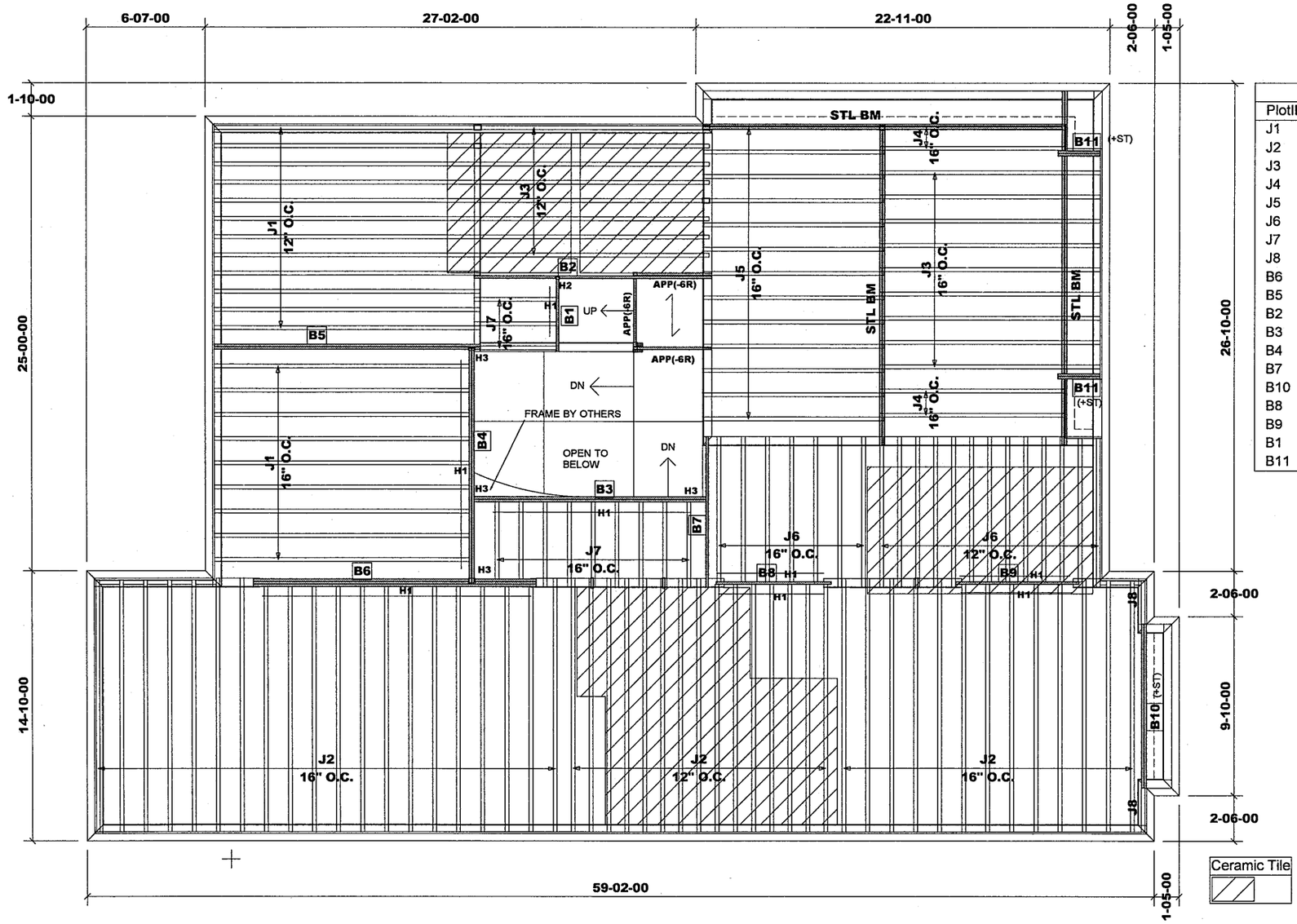


Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	15-00-00	11 7/8" NI-20	1	21	FF
J2	14-00-00	11 7/8" NI-20	1	48	FF
J3	13-00-00	11 7/8" NI-20	1	17	FF
J4	11-00-00	11 7/8" NI-20	1	4	FF
J5	10-00-00	11 7/8" NI-20	1	13	FF
J6	9-00-00	11 7/8" NI-20	1	20	FF
J7	5-00-00	11 7/8" NI-20	1	12	FF
J8	3-00-00	11 7/8" NI-20	1	2	FF
B6	16-00-00	VERSALAM-12 2.0E	3	3	FF
B5	15-00-00	VERSALAM-12 2.0E	2	2	FF
B2	14-00-00	VERSALAM-12 2.0E	1	1	FF
B3	13-00-00	VERSALAM-12 2.0E	2	2	FF
B4	13-00-00	VERSALAM-12 2.0E	2	2	FF
B7	9-00-00	VERSALAM-12 2.0E	1	1	FF
B10	9-00-00	VERSALAM-12 2.0E	2	2	FF
B8	7-00-00	VERSALAM-12 2.0E	1	1	FF
B9	7-00-00	VERSALAM-12 2.0E	1	1	FF
B1	5-00-00	VERSALAM-12 2.0E	1	1	FF
B11	3-00-00	VERSALAM-12 2.0E	2	4	FF

HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
H3----------HGUS410(FM)

NOTE:
TM ---------TOP MOUNT HANGERS
FM--------FACE MOUNT HANGERS

RIMBOARD

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

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic Tile

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

MODEL: UNIT 5003 - EL.A + OPT. LOGGIA

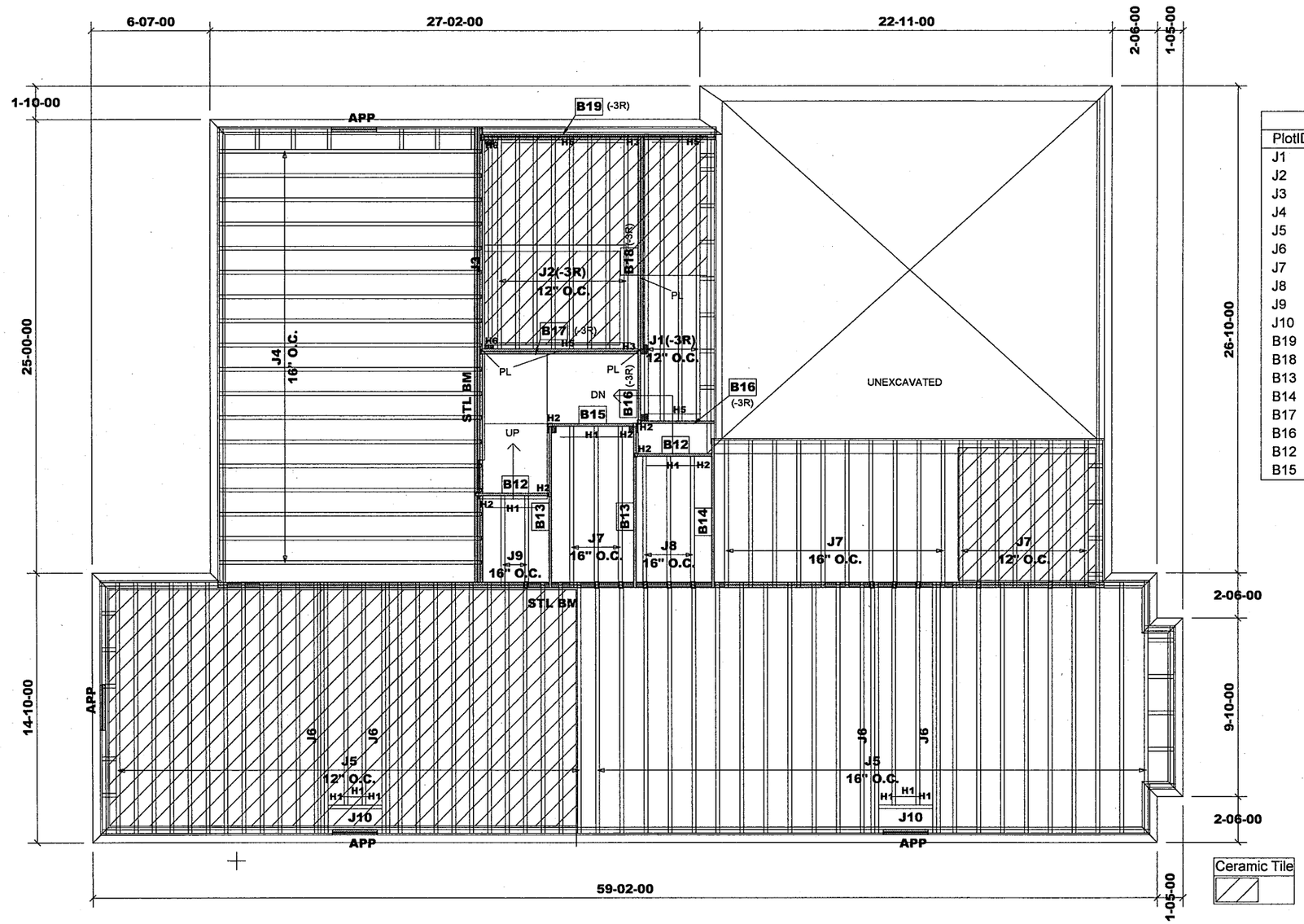
Second Floor Framing

Do not scale - refer to architectural plans for dimensions

SE007790 - SE007820

JT/PL: 45147/105729 | Builder: Gold Park | Location: Vaughan | Designer: NL | Alpa Roof Trusses Inc. | Salesperson: Derek

LI: 318277(290683) | Project: Pine Valley | Date: November 26, 2017 | Sheet: 1 of 16 | Maple, Ontario | Home Lumber



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	16-00-00	9 1/2" NI-20	1	4	FF
J2	12-00-00	9 1/2" NI-20	1	8	FF
J3	12-00-00	9 1/2" NI-20	2	2	FF
J4	15-00-00	11 7/8" NI-20	1	18	FF
J5	14-00-00	11 7/8" NI-20	1	48	FF
J6	14-00-00	11 7/8" NI-20	2	8	FF
J7	9-00-00	11 7/8" NI-20	1	21	FF
J8	8-00-00	11 7/8" NI-20	1	3	FF
J9	6-00-00	11 7/8" NI-20	1	2	FF
J10	4-00-00	11 7/8" NI-20	1	2	FF
B19	13-00-00	VERSALAM-10 2.0E	2	2	FF
B18	12-00-00	VERSALAM-10 2.0E	2	2	FF
B13	10-00-00	VERSALAM-12 2.0E	1	2	FF
B14	9-00-00	VERSALAM-12 2.0E	1	1	FF
B17	9-00-00	VERSALAM-10 2.0E	2	2	FF
B16	5-00-00	VERSALAM-10 2.0E	1	2	FF
B12	5-00-00	VERSALAM-12 2.0E	1	2	FF
B15	5-00-00	VERSALAM-12 2.0E	1	1	FF

HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
H3----------HGUS410(FM)
H5----------LT259(TM)
H6----------MIT39.5-2(TM)

NOTE:
TM --------TOP MOUNT HANGERS
FM--------FACE MOUNT HANGERS

RIMBOARD

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

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

MODEL: UNIT 5003 - EL.A
+ OPT. LOGGIA
+ W.O.D. CONDITION

First Floor Framing

Do not scale - refer to architectural plans for dimensions

REVISION: March 18, 2020

JT/PL: 45147/105729
LI: 318277(290683)

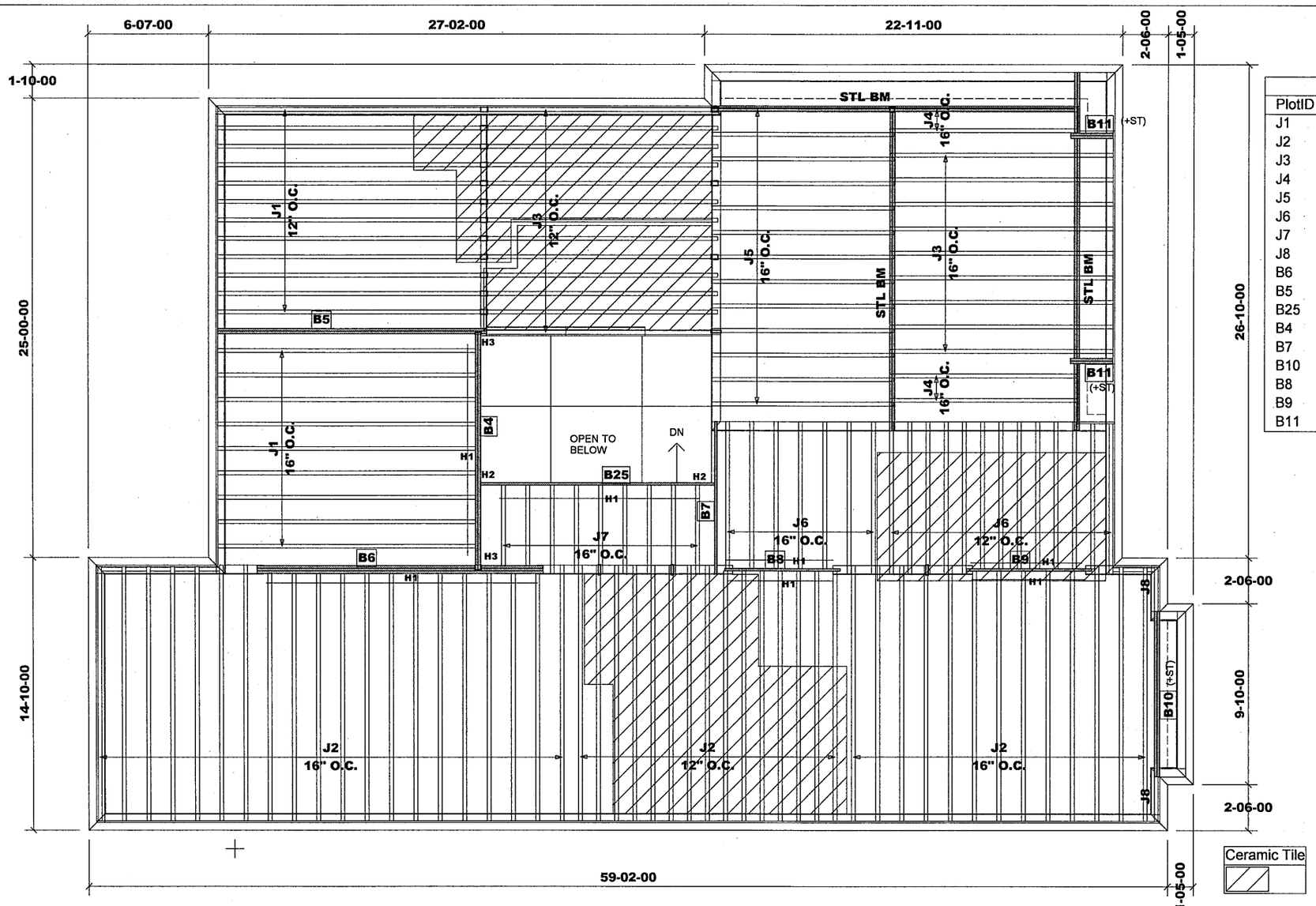
Builder: Gold Park
Project: Pine Valley

Location: Vaughan
Date: November 26, 2017

Designer: NL
Sheet: 2 of 16

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Derek
Home Lumber



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	15-00-00	11 7/8" NI-20	1	21	FF
J2	14-00-00	11 7/8" NI-20	1	48	FF
J3	13-00-00	11 7/8" NI-20	1	22	FF
J4	11-00-00	11 7/8" NI-20	1	4	FF
J5	10-00-00	11 7/8" NI-20	1	13	FF
J6	9-00-00	11 7/8" NI-20	1	20	FF
J7	5-00-00	11 7/8" NI-20	1	9	FF
J8	3-00-00	11 7/8" NI-20	1	2	FF
B6	16-00-00	VERSALAM-12 2.0E	3	3	FF
B5	15-00-00	VERSALAM-12 2.0E	2	2	FF
B25	13-00-00	VERSALAM-12 2.0E	1	1	FF
B4	13-00-00	VERSALAM-12 2.0E	2	2	FF
B7	9-00-00	VERSALAM-12 2.0E	1	1	FF
B10	9-00-00	VERSALAM-12 2.0E	2	2	FF
B8	7-00-00	VERSALAM-12 2.0E	1	1	FF
B9	7-00-00	VERSALAM-12 2.0E	1	1	FF
B11	3-00-00	VERSALAM-12 2.0E	2	4	FF

HANGER SCHEDULE

H1——————LT251188 (TM)
H2——————HUS1.81/10(FM)
H3——————HGUS410(FM)

NOTE:
TM ————TOP MOUNT HANGERS
FM————FACE MOUNT HANGERS

RIMBOARD

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

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic Tile

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

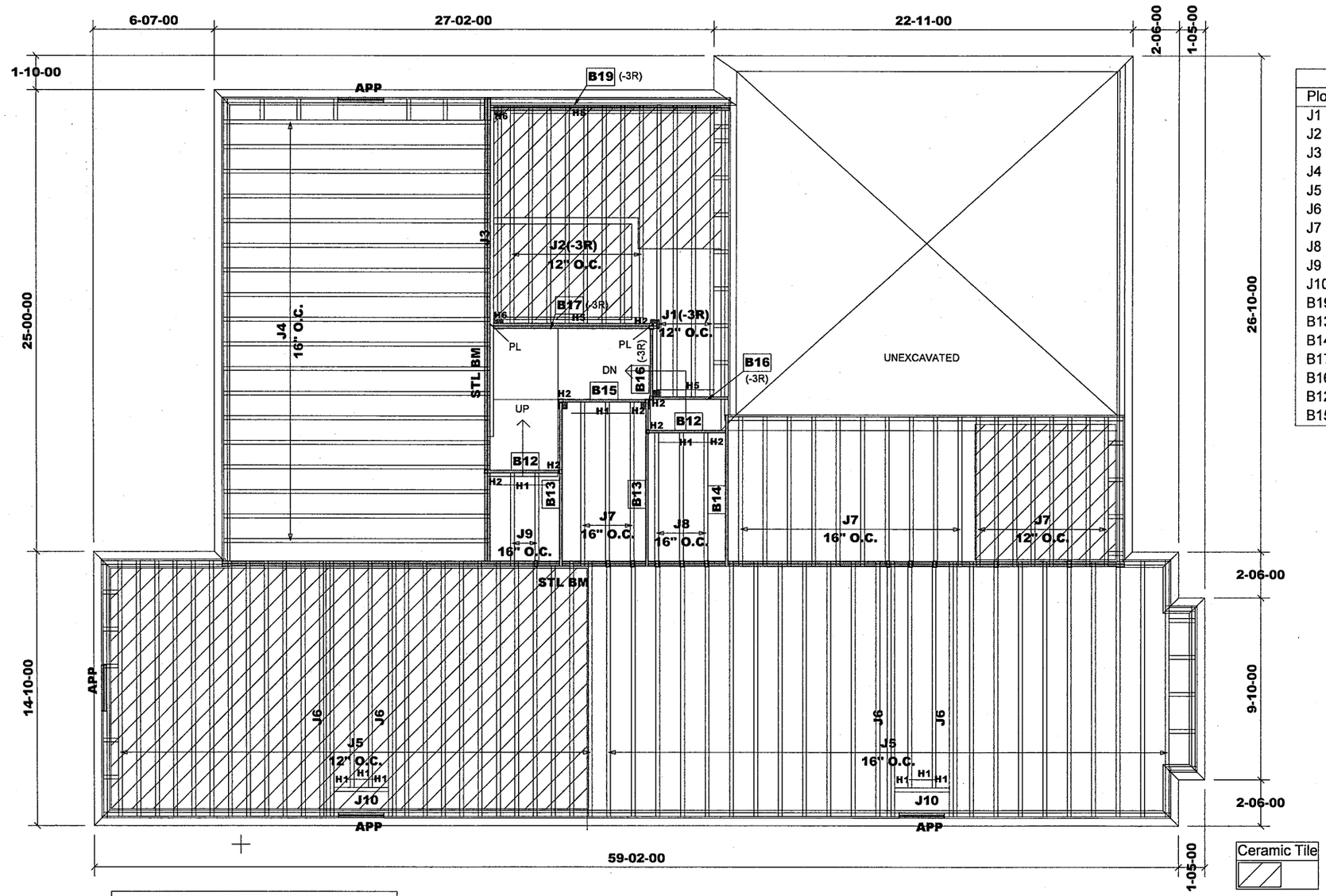
MODEL: UNIT 5003 - EL.A W/OPT. 2ND FLOOR + OPT. LOGGIA

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

JT/PL: 45147/105729 | Builder: Gold Park | Location: Vaughan | Designer: NL | Alpa Roof Trusses Inc. | Salesperson: Derek Home Lumber

LI: 318277(290683) | Project: Pine Valley | Date: November 26, 2017 | Sheet: 3 of 16 | Maple, Ontario



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	16-00-00	9 1/2" NI-20	1	4	FF
J2	12-00-00	9 1/2" NI-20	1	8	FF
J3	12-00-00	9 1/2" NI-20	2	2	FF
J4	15-00-00	11 7/8" NI-20	1	18	FF
J5	14-00-00	11 7/8" NI-20	1	48	FF
J6	14-00-00	11 7/8" NI-20	2	8	FF
J7	9-00-00	11 7/8" NI-20	1	21	FF
J8	8-00-00	11 7/8" NI-20	1	3	FF
J9	6-00-00	11 7/8" NI-20	1	2	FF
J10	4-00-00	11 7/8" NI-20	1	2	FF
B19	13-00-00	VERSALAM-10 2.0E	2	2	FF
B13	10-00-00	VERSALAM-12 2.0E	1	2	FF
B14	9-00-00	VERSALAM-12 2.0E	1	1	FF
B17	9-00-00	VERSALAM-10 2.0E	2	2	FF
B16	5-00-00	VERSALAM-10 2.0E	1	2	FF
B12	5-00-00	VERSALAM-12 2.0E	1	2	FF
B15	5-00-00	VERSALAM-12 2.0E	1	1	FF

HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
H5----------LT259(TM)
H6----------MIT39.5-2(TM)

NOTE:
TM -------TOP MOUNT HANGERS
FM-------FACE MOUNT HANGERS

RIMBOARD

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

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic Tile

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

MODEL: UNIT 5003 - EL.A
W/OPT. 2ND FLOOR
+ OPT. LOGGIA
+ W.O.D. CONDITION

First Floor Framing

Do not scale - refer to architectural plans for dimensions

REVISION: March 18, 2020

JT/PL: 45147/105729
LI: 318277(290683)

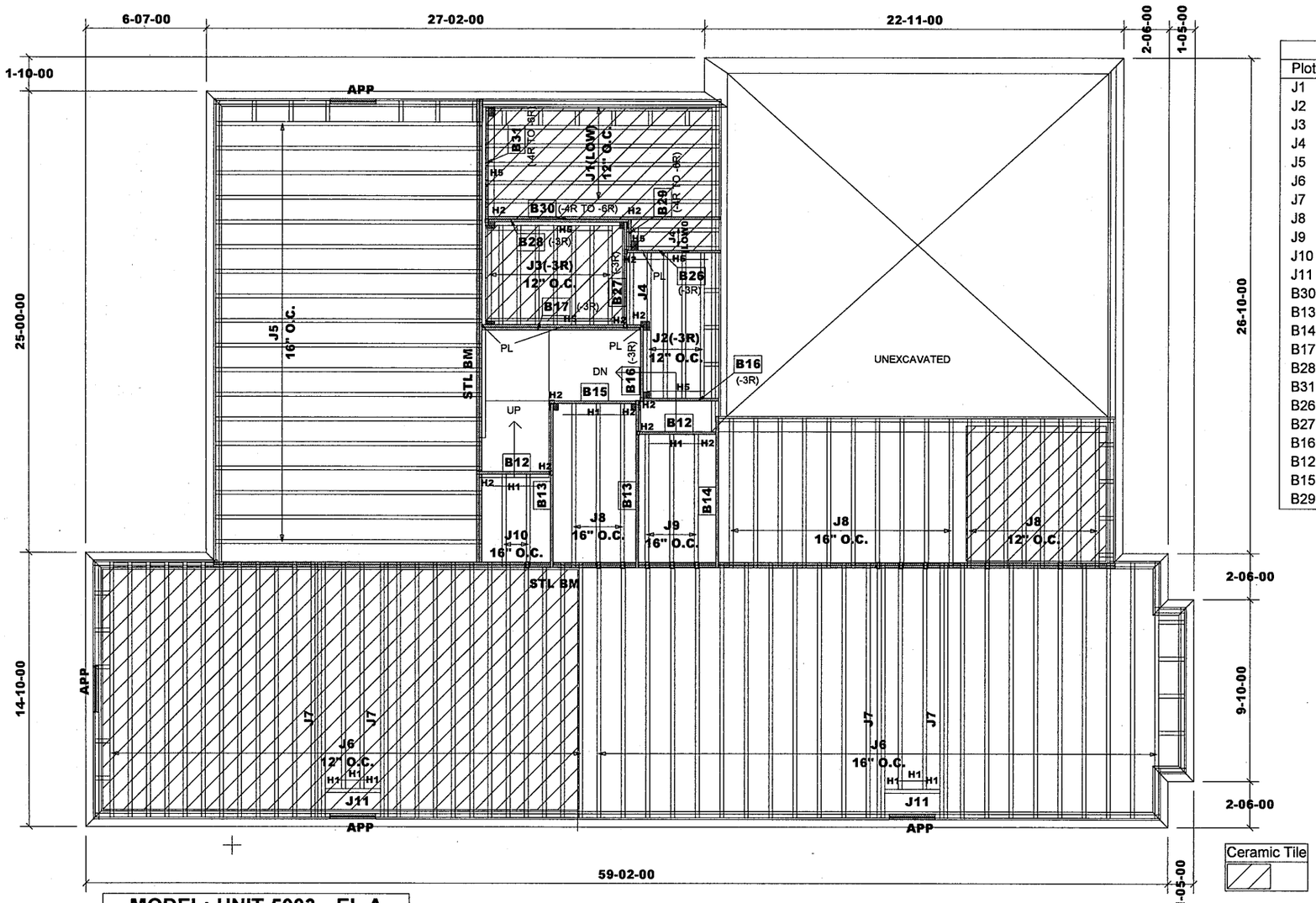
Builder: Gold Park
Project: Pine Valley

Location: Vaughan
Date: November 26, 2017

Designer: NL
Sheet: 4 of 16

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Derek
Home Lumber



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	13-00-00	9 1/2" NI-20	1	6	FF
J2	8-00-00	9 1/2" NI-20	1	4	FF
J3	6-00-00	9 1/2" NI-20	1	8	FF
J4	5-00-00	9 1/2" NI-20	1	3	FF
J5	15-00-00	11 7/8" NI-20	1	18	FF
J6	14-00-00	11 7/8" NI-20	1	48	FF
J7	14-00-00	11 7/8" NI-20	2	8	FF
J8	9-00-00	11 7/8" NI-20	1	21	FF
J9	8-00-00	11 7/8" NI-20	1	3	FF
J10	6-00-00	11 7/8" NI-20	1	2	FF
J11	4-00-00	11 7/8" NI-20	1	2	FF
B30	13-00-00	VERSALAM-10 2.0E	1	1	FF
B13	10-00-00	VERSALAM-12 2.0E	1	2	FF
B14	9-00-00	VERSALAM-12 2.0E	1	1	FF
B17	9-00-00	VERSALAM-10 2.0E	2	2	FF
B28	8-00-00	VERSALAM-10 2.0E	1	1	FF
B31	7-00-00	VERSALAM-10 2.0E	1	1	FF
B26	6-00-00	VERSALAM-10 2.0E	1	1	FF
B27	6-00-00	VERSALAM-10 2.0E	1	1	FF
B16	5-00-00	VERSALAM-10 2.0E	1	2	FF
B12	5-00-00	VERSALAM-12 2.0E	1	2	FF
B15	5-00-00	VERSALAM-12 2.0E	1	1	FF
B29	2-00-00	VERSALAM-10 2.0E	1	1	FF

HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
H5----------LT259(TM)

NOTE:
TM --------TOP MOUNT HANGERS
FM--------FACE MOUNT HANGERS

RIMBOARD

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

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic Tile

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

MODEL: UNIT 5003 - EL.A W/SUNKEN MUD(-4R TO -6R) +OPT. LOGGIA & OPT. 1ST FL. + W.O.D. CONDITION

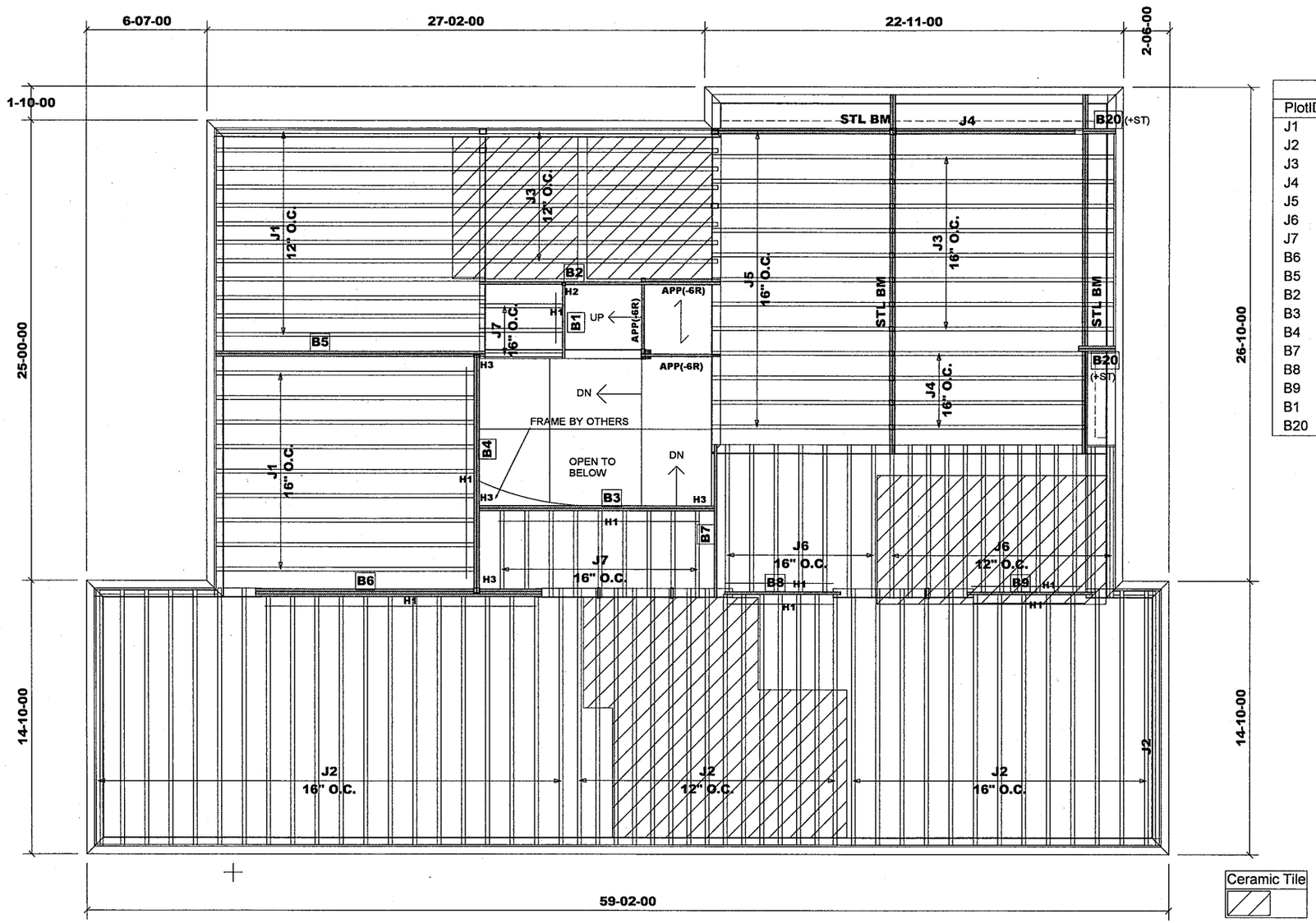
First Floor Framing

Do not scale - refer to architectural plans for dimensions

REVISION: March 18, 2020

JT/PL: 45147/105729 | Builder: Gold Park | Location: Vaughan | Designer: NL | Alpa Roof Trusses Inc. | Salesperson: Derek

LI: 318277(290683) | Project: Pine Valley | Date: November 26, 2017 | Sheet: 5 of 16 | Maple, Ontario | Home Lumber



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	15-00-00	11 7/8" NI-20	1	21	FF
J2	14-00-00	11 7/8" NI-20	1	49	FF
J3	13-00-00	11 7/8" NI-20	1	16	FF
J4	11-00-00	11 7/8" NI-20	1	5	FF
J5	10-00-00	11 7/8" NI-20	1	13	FF
J6	9-00-00	11 7/8" NI-20	1	20	FF
J7	5-00-00	11 7/8" NI-20	1	12	FF
B6	16-00-00	VERSALAM-12 2.0E	3	3	FF
B5	15-00-00	VERSALAM-12 2.0E	2	2	FF
B2	14-00-00	VERSALAM-12 2.0E	1	1	FF
B3	13-00-00	VERSALAM-12 2.0E	2	2	FF
B4	13-00-00	VERSALAM-12 2.0E	2	2	FF
B7	9-00-00	VERSALAM-12 2.0E	1	1	FF
B8	7-00-00	VERSALAM-12 2.0E	1	1	FF
B9	7-00-00	VERSALAM-12 2.0E	1	1	FF
B1	5-00-00	VERSALAM-12 2.0E	1	1	FF
B20	2-00-00	VERSALAM-12 2.0E	2	4	FF

HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
H3----------HGUS410(FM)

NOTE:
TM --------TOP MOUNT HANGERS
FM--------FACE MOUNT HANGERS

RIMBOARD

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

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

Ceramic Tile

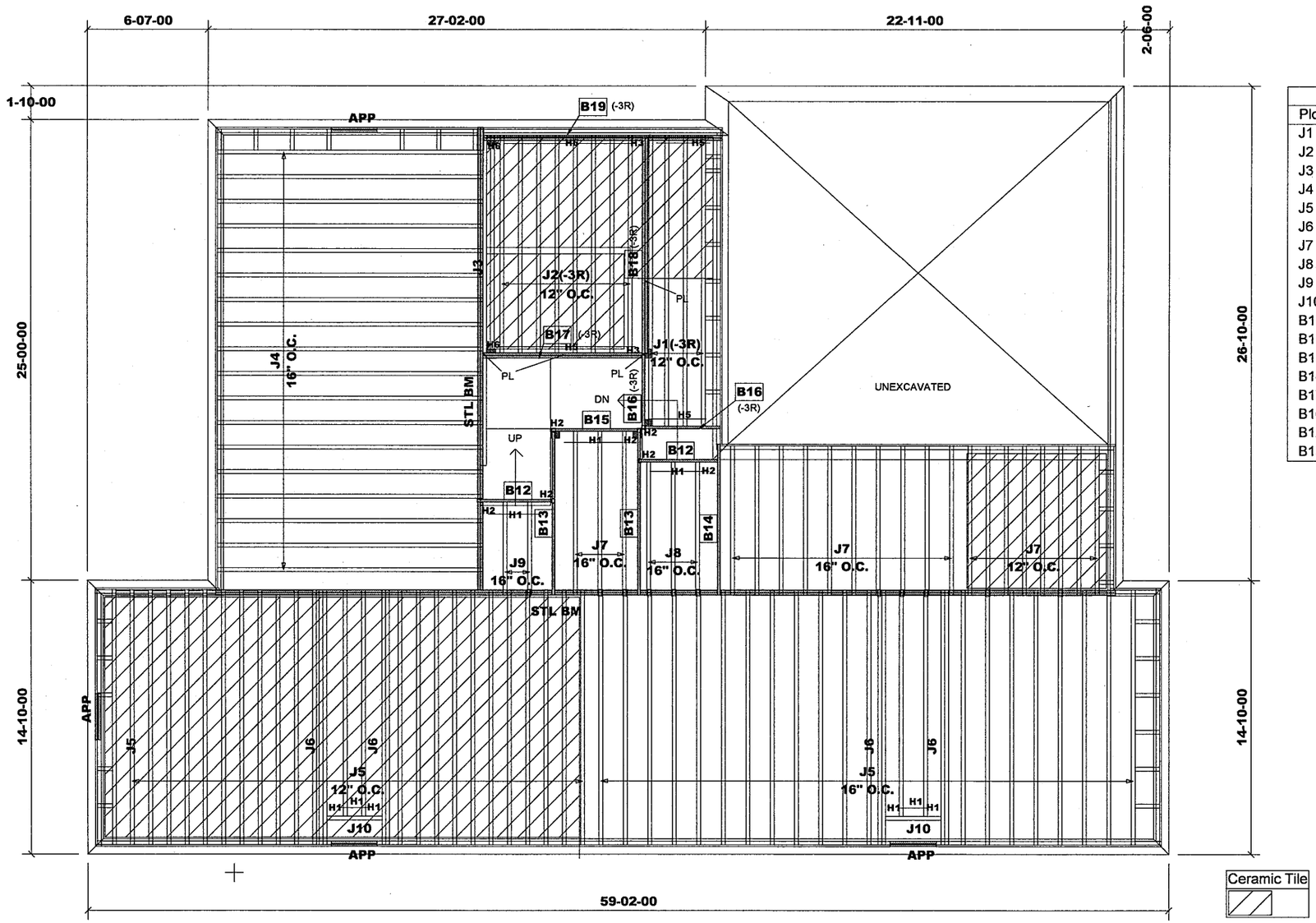
MODEL: UNIT 5003 - EL.B + OPT. LOGGIA

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

JT/PL: 45147/105729 | Builder: Gold Park | Location: Vaughan | Designer: NL | Alpa Roof Trusses Inc. | Salesperson: Derek

LI: 318277(290683) | Project: Pine Valley | Date: November 26, 2017 | Sheet: 6 of 16 | Maple, Ontario | Home Lumber



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	16-00-00	9 1/2" NI-20	1	4	FF
J2	12-00-00	9 1/2" NI-20	1	8	FF
J3	12-00-00	9 1/2" NI-20	2	2	FF
J4	15-00-00	11 7/8" NI-20	1	18	FF
J5	14-00-00	11 7/8" NI-20	1	47	FF
J6	14-00-00	11 7/8" NI-20	2	8	FF
J7	9-00-00	11 7/8" NI-20	1	21	FF
J8	8-00-00	11 7/8" NI-20	1	3	FF
J9	6-00-00	11 7/8" NI-20	1	2	FF
J10	4-00-00	11 7/8" NI-20	1	2	FF
B19	13-00-00	VERSALAM-10 2.0E	2	2	FF
B18	12-00-00	VERSALAM-10 2.0E	2	2	FF
B13	10-00-00	VERSALAM-12 2.0E	1	2	FF
B14	9-00-00	VERSALAM-12 2.0E	1	1	FF
B17	9-00-00	VERSALAM-10 2.0E	2	2	FF
B16	5-00-00	VERSALAM-10 2.0E	1	2	FF
B12	5-00-00	VERSALAM-12 2.0E	1	2	FF
B15	5-00-00	VERSALAM-12 2.0E	1	1	FF

HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
H3----------HGUS410(FM)
H5----------LT259(TM)
H6----------MIT39.5-2(TM)

NOTE:
TM --------TOP MOUNT HANGERS
FM-------FACE MOUNT HANGERS

RIMBOARD

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

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic Tile

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

MODEL: UNIT 5003 - EL.B
+ OPT. LOGGIA
+ W.O.D. CONDITION

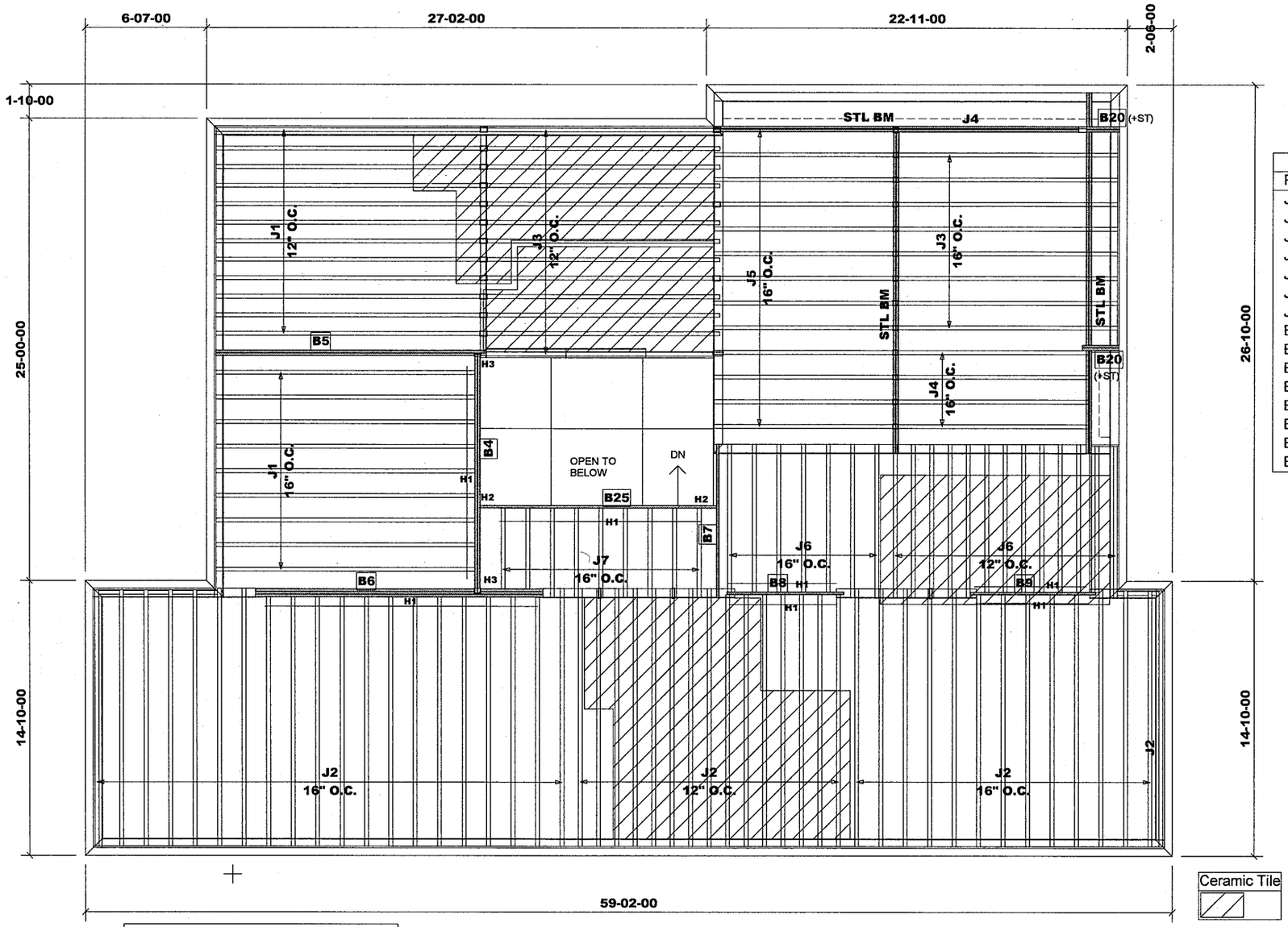
First Floor Framing

Do not scale - refer to architectural plans for dimensions

REVISION: March 18, 2020

JT/PL: 45147/105729 | Builder: Gold Park | Location: Vaughan | Designer: NL | Alpa Roof Trusses Inc. | Salesperson: Derek

LI: 318277(290683) | Project: Pine Valley | Date: November 26, 2017 | Sheet: 7 of 16 | Maple, Ontario | Home Lumber



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	15-00-00	11 7/8" NI-20	1	21	FF
J2	14-00-00	11 7/8" NI-20	1	49	FF
J3	13-00-00	11 7/8" NI-20	1	21	FF
J4	11-00-00	11 7/8" NI-20	1	5	FF
J5	10-00-00	11 7/8" NI-20	1	13	FF
J6	9-00-00	11 7/8" NI-20	1	20	FF
J7	5-00-00	11 7/8" NI-20	1	9	FF
B6	16-00-00	VERSALAM-12 2.0E	3	3	FF
B5	15-00-00	VERSALAM-12 2.0E	2	2	FF
B25	13-00-00	VERSALAM-12 2.0E	1	1	FF
B4	13-00-00	VERSALAM-12 2.0E	2	2	FF
B7	9-00-00	VERSALAM-12 2.0E	1	1	FF
B8	7-00-00	VERSALAM-12 2.0E	1	1	FF
B9	7-00-00	VERSALAM-12 2.0E	1	1	FF
B20	2-00-00	VERSALAM-12 2.0E	2	4	FF

HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
H3----------HGUS410(FM)

NOTE:
TM --------TOP MOUNT HANGERS
FM--------FACE MOUNT HANGERS

RIMBOARD

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

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

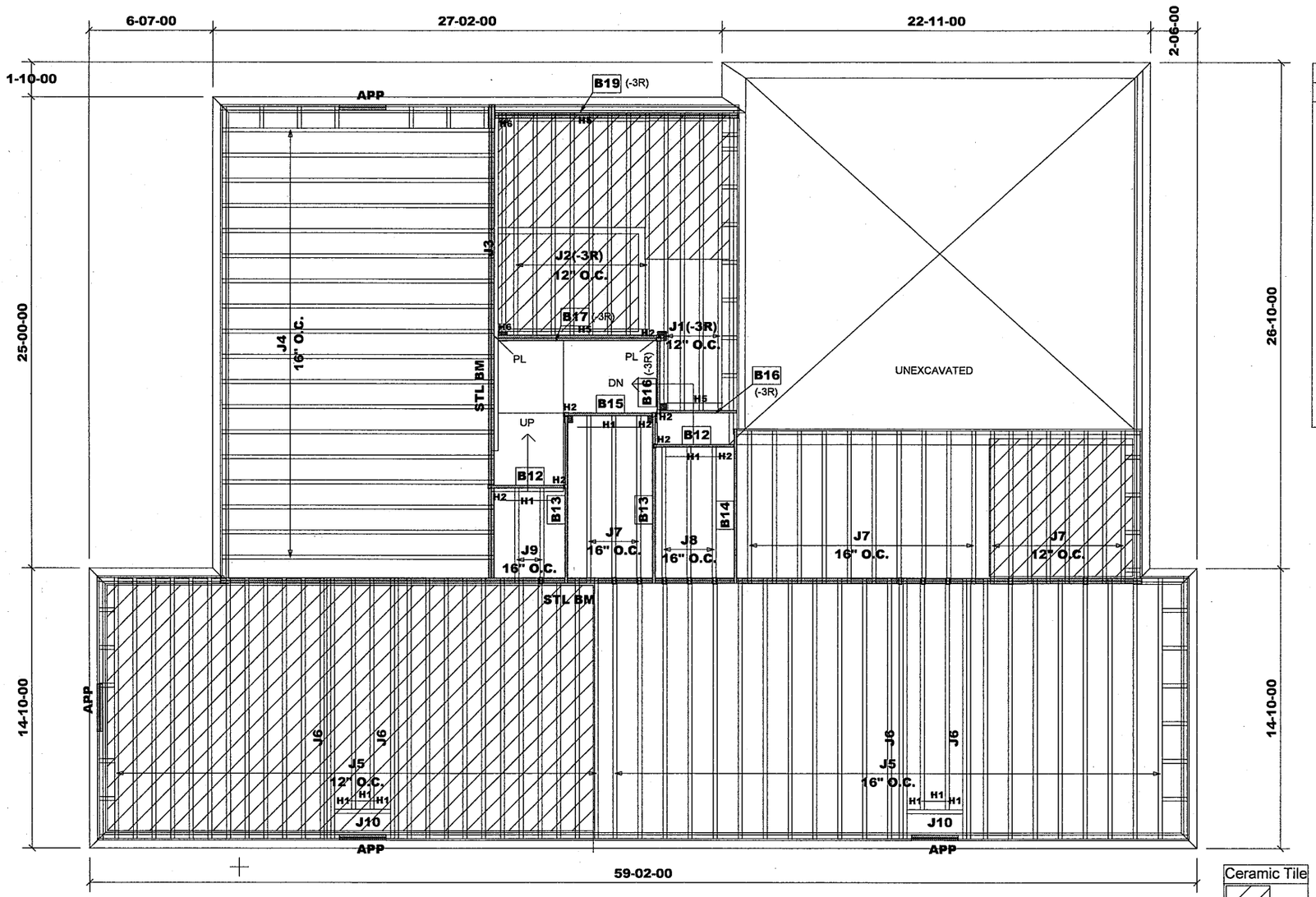
MODEL: UNIT 5003 - EL.B W/OPT. 2ND FLOOR + OPT. LOGGIA

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

JT/PL: 45147/105729 | Builder: Gold Park | Location: Vaughan | Designer: NL | Alpa Roof Trusses Inc. | Salesperson: Derek

LI: 318277(290683) | Project: Pine Valley | Date: November 26, 2017 | Sheet: 8 of 16 | Maple, Ontario | Home Lumber



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	16-00-00	9 1/2" NI-20	1	4	FF
J2	12-00-00	9 1/2" NI-20	1	8	FF
J3	12-00-00	9 1/2" NI-20	2	2	FF
J4	15-00-00	11 7/8" NI-20	1	18	FF
J5	14-00-00	11 7/8" NI-20	1	47	FF
J6	14-00-00	11 7/8" NI-20	2	8	FF
J7	9-00-00	11 7/8" NI-20	1	21	FF
J8	8-00-00	11 7/8" NI-20	1	3	FF
J9	6-00-00	11 7/8" NI-20	1	2	FF
J10	4-00-00	11 7/8" NI-20	1	2	FF
B19	13-00-00	VERSALAM-10 2.0E	2	2	FF
B13	10-00-00	VERSALAM-12 2.0E	1	2	FF
B14	9-00-00	VERSALAM-12 2.0E	1	1	FF
B17	9-00-00	VERSALAM-10 2.0E	2	2	FF
B16	5-00-00	VERSALAM-10 2.0E	1	2	FF
B12	5-00-00	VERSALAM-12 2.0E	1	2	FF
B15	5-00-00	VERSALAM-12 2.0E	1	1	FF

HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
H5----------LT259(TM)
H6----------MIT39.5-2(TM)

NOTE:
TM ---------TOP MOUNT HANGERS
FM--------FACE MOUNT HANGERS

RIMBOARD

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

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic Tile

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

MODEL: UNIT 5003 - EL.B
W/OPT. 2ND FLOOR
+ OPT. LOGGIA
+ W.O.D. CONDITION

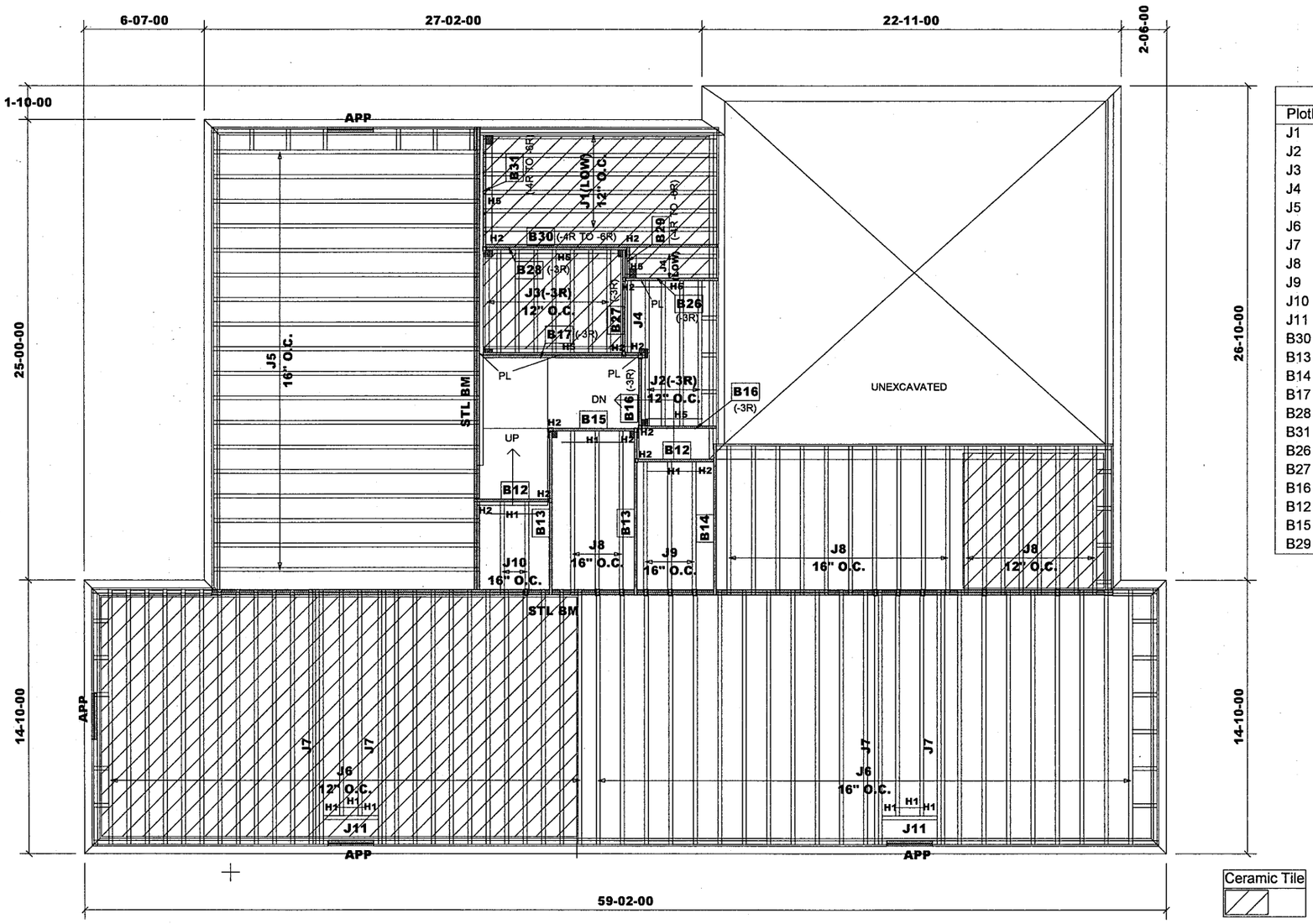
First Floor Framing

Do not scale - refer to architectural plans for dimensions

REVISION: March 18, 2020

JT/PL: 45147/105729 | Builder: Gold Park | Location: Vaughan | Designer: NL | Alpa Roof Trusses Inc. | Salesperson: Derek

LI: 318277(290683) | Project: Pine Valley | Date: November 26, 2017 | Sheet: 9 of 16 | Maple, Ontario | Home Lumber



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	13-00-00	9 1/2" NI-20	1	6	FF
J2	8-00-00	9 1/2" NI-20	1	4	FF
J3	6-00-00	9 1/2" NI-20	1	8	FF
J4	5-00-00	9 1/2" NI-20	1	3	FF
J5	15-00-00	11 7/8" NI-20	1	18	FF
J6	14-00-00	11 7/8" NI-20	1	47	FF
J7	14-00-00	11 7/8" NI-20	2	8	FF
J8	9-00-00	11 7/8" NI-20	1	21	FF
J9	8-00-00	11 7/8" NI-20	1	3	FF
J10	6-00-00	11 7/8" NI-20	1	2	FF
J11	4-00-00	11 7/8" NI-20	1	2	FF
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B13	10-00-00	VERSALAM-12 2.0E	1	2	FF
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B28	8-00-00	VERSALAM-10 2.0E	1	1	FF
B31	7-00-00	VERSALAM-10 2.0E	1	1	FF
B26	6-00-00	VERSALAM-10 2.0E	1	1	FF
B27	6-00-00	VERSALAM-10 2.0E	1	1	FF
B16	5-00-00	VERSALAM-10 2.0E	1	2	FF
B12	5-00-00	VERSALAM-12 2.0E	1	2	FF
B15	5-00-00	VERSALAM-12 2.0E	1	1	FF
B29	2-00-00	VERSALAM-10 2.0E	1	1	FF

HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
H5----------LT259(TM)

NOTE:
TM --------TOP MOUNT HANGERS
FM-------FACE MOUNT HANGERS

RIMBOARD

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BBO - BEAM BY OTHERS

Ceramic Tile

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

MODEL: UNIT 5003 - EL.B W/SUNKEN MUD(-4R TO -6R) +OPT. LOGGIA & OPT. 1ST FL. + W.O.D. CONDITION

First Floor Framing

Do not scale - refer to architectural plans for dimensions

REVISION: March 18, 2020

JT/PL: 45147/105729
LI: 318277(290683)

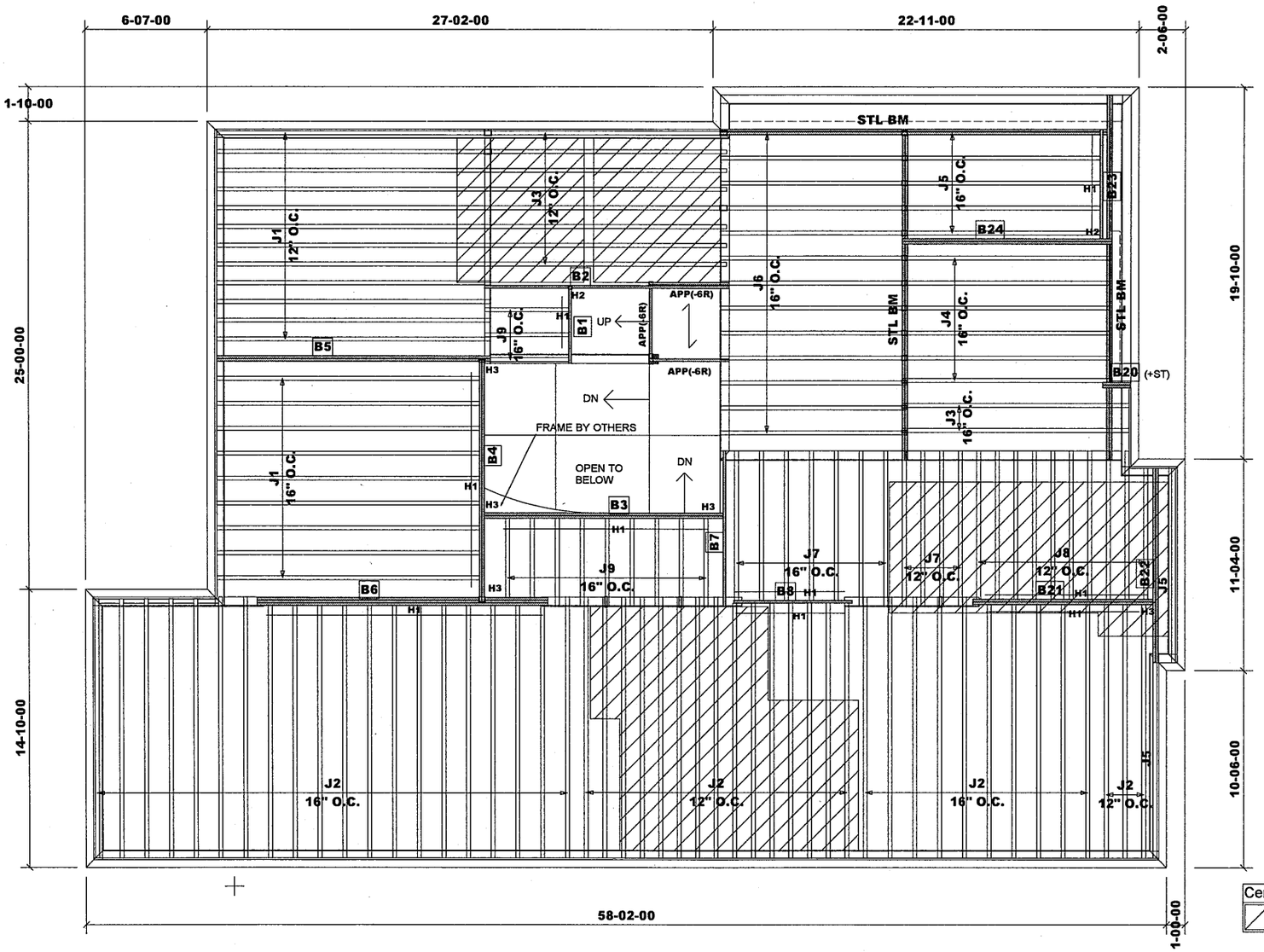
Builder: Gold Park
Project: Pine Valley

Location: Vaughan
Date: November 26, 2017

Designer: NL
Sheet: 10 of 16

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Derek
Home Lumber



Products					
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J4	12-00-00	11 7/8" NI-20	1	6	FF
J5	11-00-00	11 7/8" NI-20	1	7	FF
J6	10-00-00	11 7/8" NI-20	1	13	FF
J7	9-00-00	11 7/8" NI-20	1	11	FF
J8	8-00-00	11 7/8" NI-20	1	10	FF
J9	5-00-00	11 7/8" NI-20	1	12	FF
B6	16-00-00	VERSALAM-12 2.0E	3	3	FF
B5	15-00-00	VERSALAM-12 2.0E	2	2	FF
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B3	13-00-00	VERSALAM-12 2.0E	2	2	FF
B4	13-00-00	VERSALAM-12 2.0E	2	2	FF
B24	12-00-00	VERSALAM-12 2.0E	2	2	FF
B22	11-00-00	VERSALAM-12 2.0E	2	2	FF
B21	10-00-00	VERSALAM-12 2.0E	2	2	FF
B7	9-00-00	VERSALAM-12 2.0E	1	1	FF
B8	7-00-00	VERSALAM-12 2.0E	1	1	FF
B23	6-00-00	VERSALAM-12 2.0E	1	1	FF
B1	5-00-00	VERSALAM-12 2.0E	1	1	FF
B20	2-00-00	VERSALAM-12 2.0E	2	2	FF

HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
H3----------HGUS410(FM)

NOTE:
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FM--------FACE MOUNT HANGERS

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

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APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic Tile

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

MODEL: UNIT 5003 - EL.C + OPT. LOGGIA

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

JT/PL: 45147/105729
LI: 318277(290683)

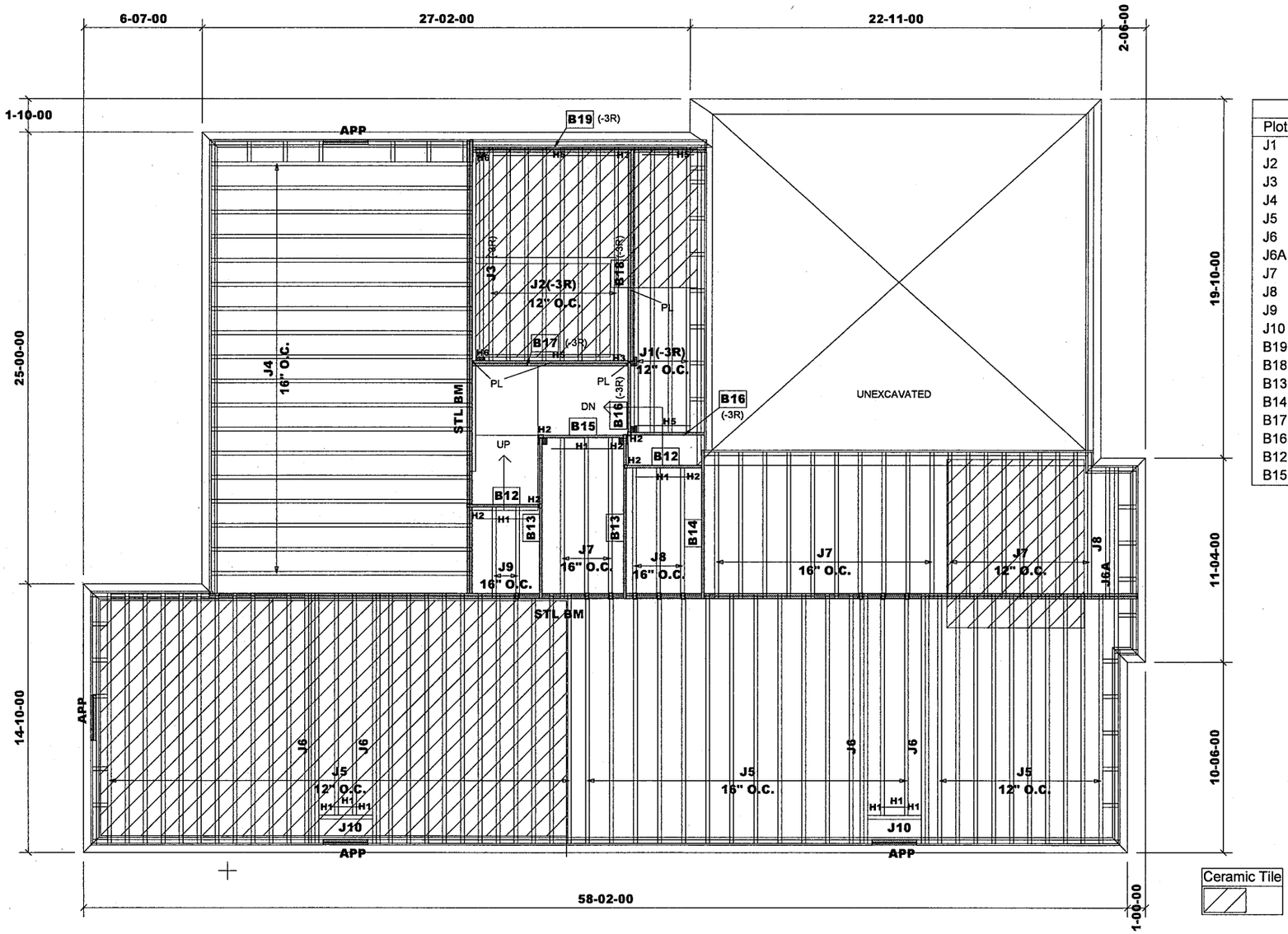
Builder: Gold Park
Project: Pine Valley

Location: Vaughan
Date: November 26, 2017

Designer: NL
Sheet: 11 of 16

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Derek
Home Lumber



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J4	15-00-00	11 7/8" NI-20	1	18	FF
J5	14-00-00	11 7/8" NI-20	1	49	FF
J6	14-00-00	11 7/8" NI-20	2	8	FF
J6A	11-00-00	11 7/8" NI-20	1	1	FF
J7	9-00-00	11 7/8" NI-20	1	22	FF
J8	8-00-00	11 7/8" NI-20	1	4	FF
J9	6-00-00	11 7/8" NI-20	1	2	FF
J10	4-00-00	11 7/8" NI-20	1	2	FF
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B15	5-00-00	VERSALAM-12 2.0E	1	1	FF

HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
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H5----------LT259(TM)
H6----------MIT39.5-2(TM)

NOTE:
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FM------FACE MOUNT HANGERS

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

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

MODEL: UNIT 5003 - EL.C
+ OPT. LOGGIA
+ W.O.D. CONDITION

First Floor Framing

Do not scale - refer to architectural plans for dimensions

REVISION: March 18, 2020

JT/PL: 45147/105729
LI: 318277(290683)

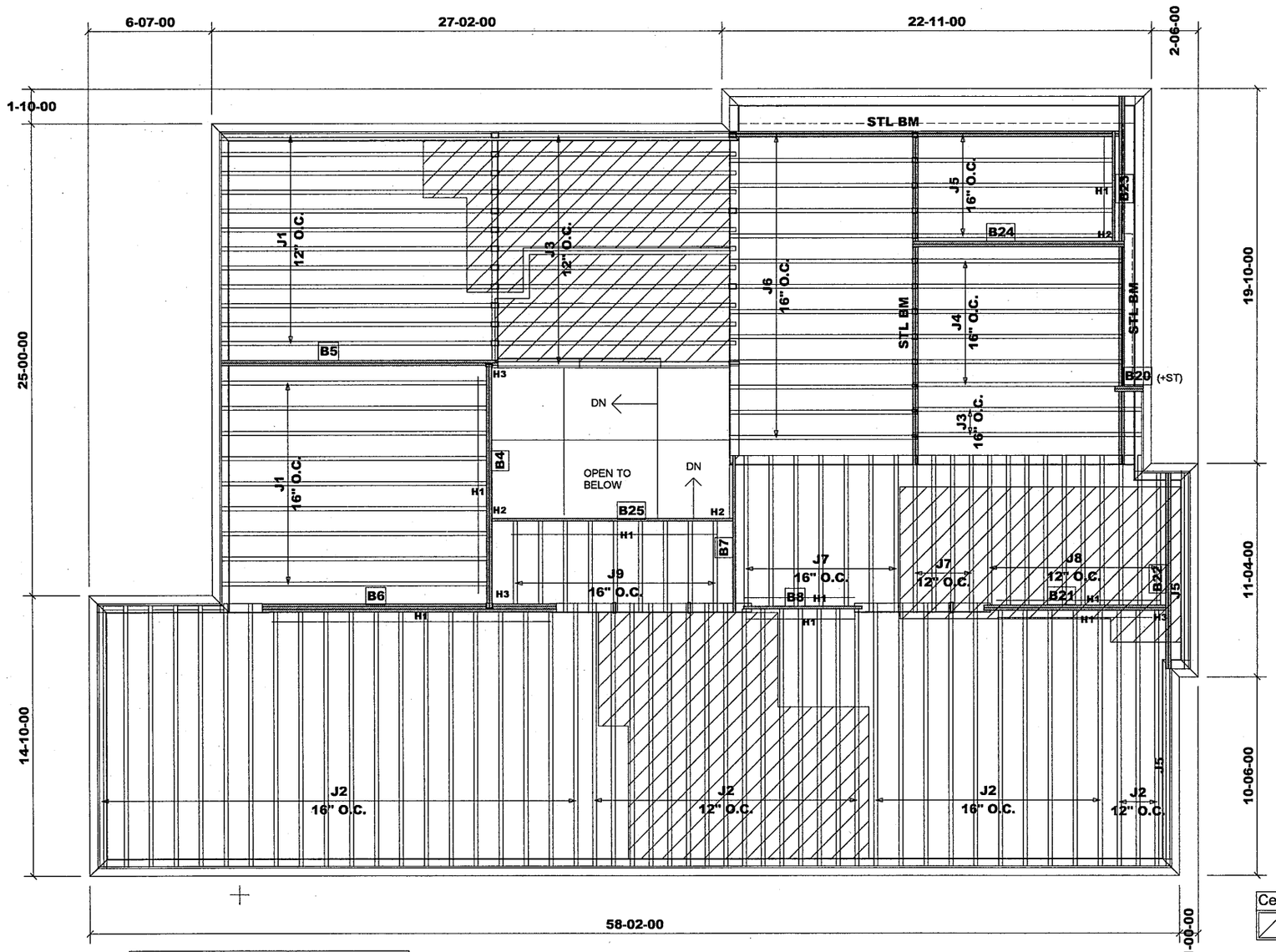
Builder: Gold Park
Project: Pine Valley

Location: Vaughan
Date: November 26, 2017

Designer: NL
Sheet: 12 of 16

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Derek
Home Lumber



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J5	11-00-00	11 7/8" NI-20	1	7	FF
J6	10-00-00	11 7/8" NI-20	1	13	FF
J7	9-00-00	11 7/8" NI-20	1	11	FF
J8	8-00-00	11 7/8" NI-20	1	10	FF
J9	5-00-00	11 7/8" NI-20	1	9	FF
B6	16-00-00	VERSALAM-12 2.0E	3	3	FF
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HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
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NOTE:
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1- 1/8" X 11 7/8" O.S.B.

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BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

Ceramic Tile

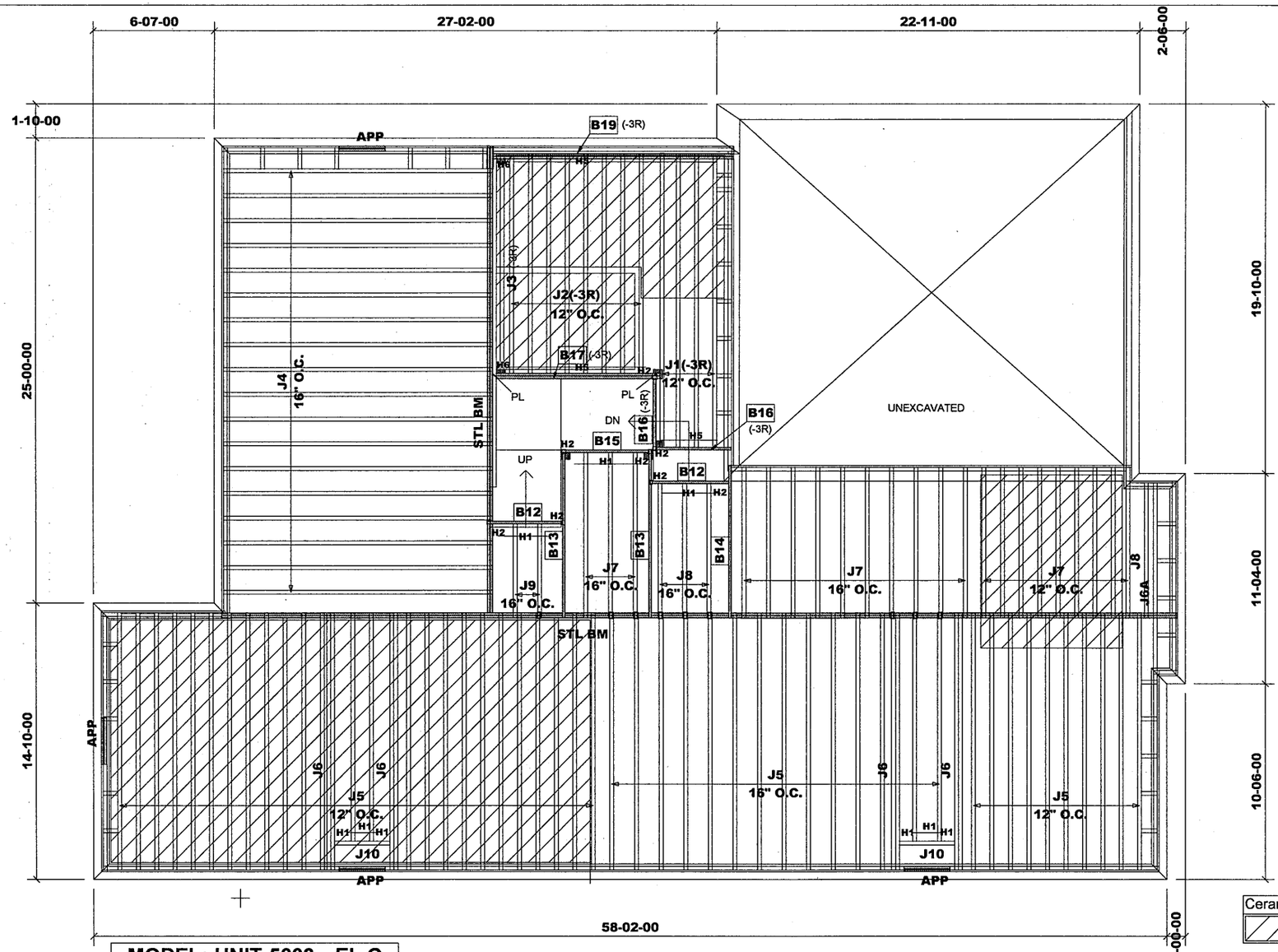
MODEL: UNIT 5003 - EL.C W/OPT. 2ND FLOOR + OPT. LOGGIA

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

JT/PL: 45147/105729 | Builder: Gold Park | Location: Vaughan | Designer: NL | Alpa Roof Trusses Inc. | Salesperson: Derek

LI: 318277(290683) | Project: Pine Valley | Date: November 26, 2017 | Sheet: 13 of 16 | Maple, Ontario | Home Lumber



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HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
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NOTE:
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W/OPT. 2ND FLOOR
+ OPT. LOGGIA
+ W.O.D. CONDITION

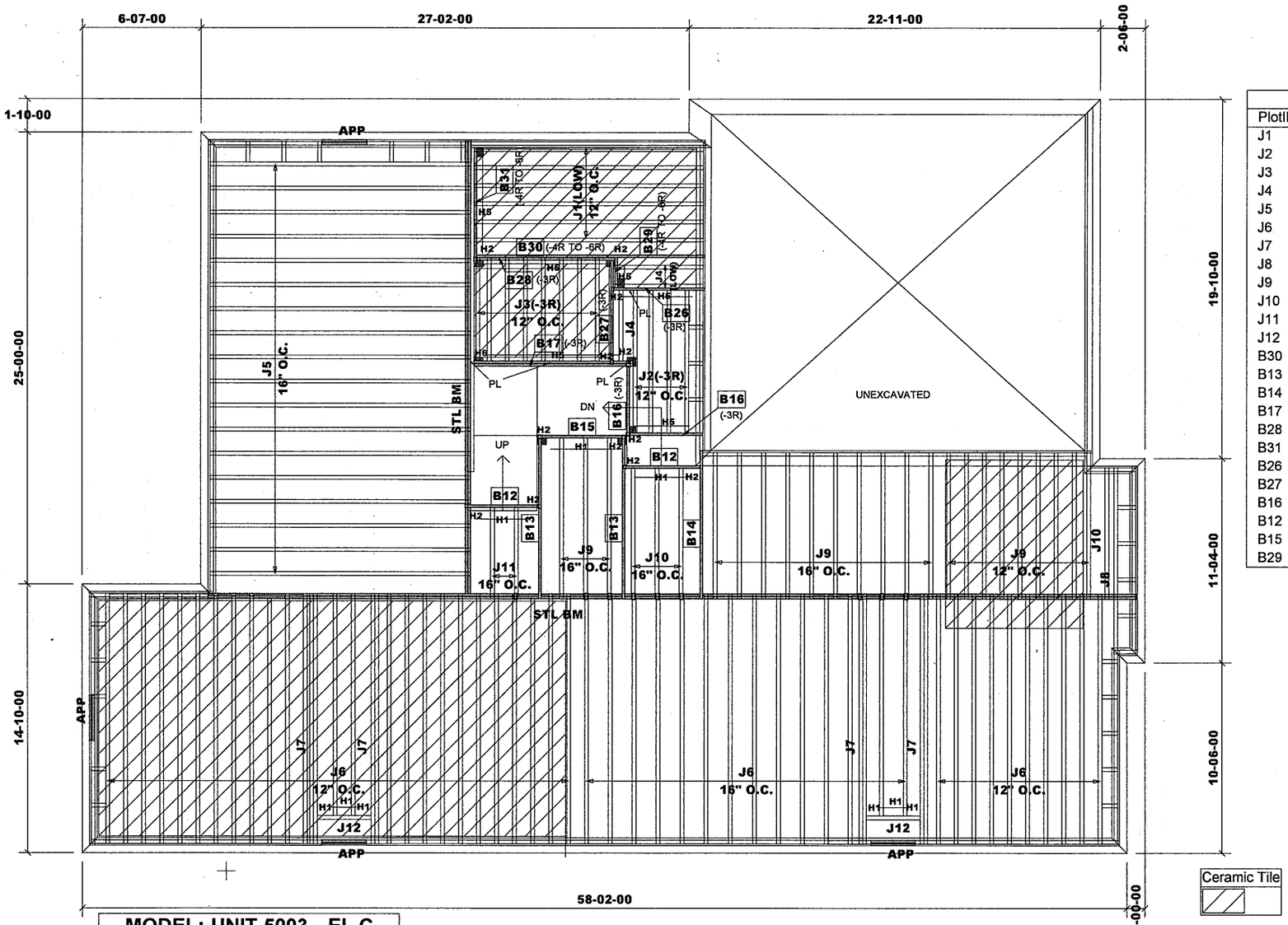
First Floor Framing

Do not scale - refer to architectural plans for dimensions

REVISION: March 18, 2020

JT/PL: 45147/105729 | Builder: Gold Park | Location: Vaughan | Designer: NL | Alpa Roof Trusses Inc. | Salesperson: Derek

LI: 318277(290683) | Project: Pine Valley | Date: November 26, 2017 | Sheet: 14 of 16 | Maple, Ontario | Home Lumber



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HANGER SCHEDULE

H1----------LT251188 (TM)
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First Floor Framing

Do not scale - refer to architectural plans for dimensions

REVISION: March 18, 2020

JT/PL: 45147/105729
LI: 318277(290683)

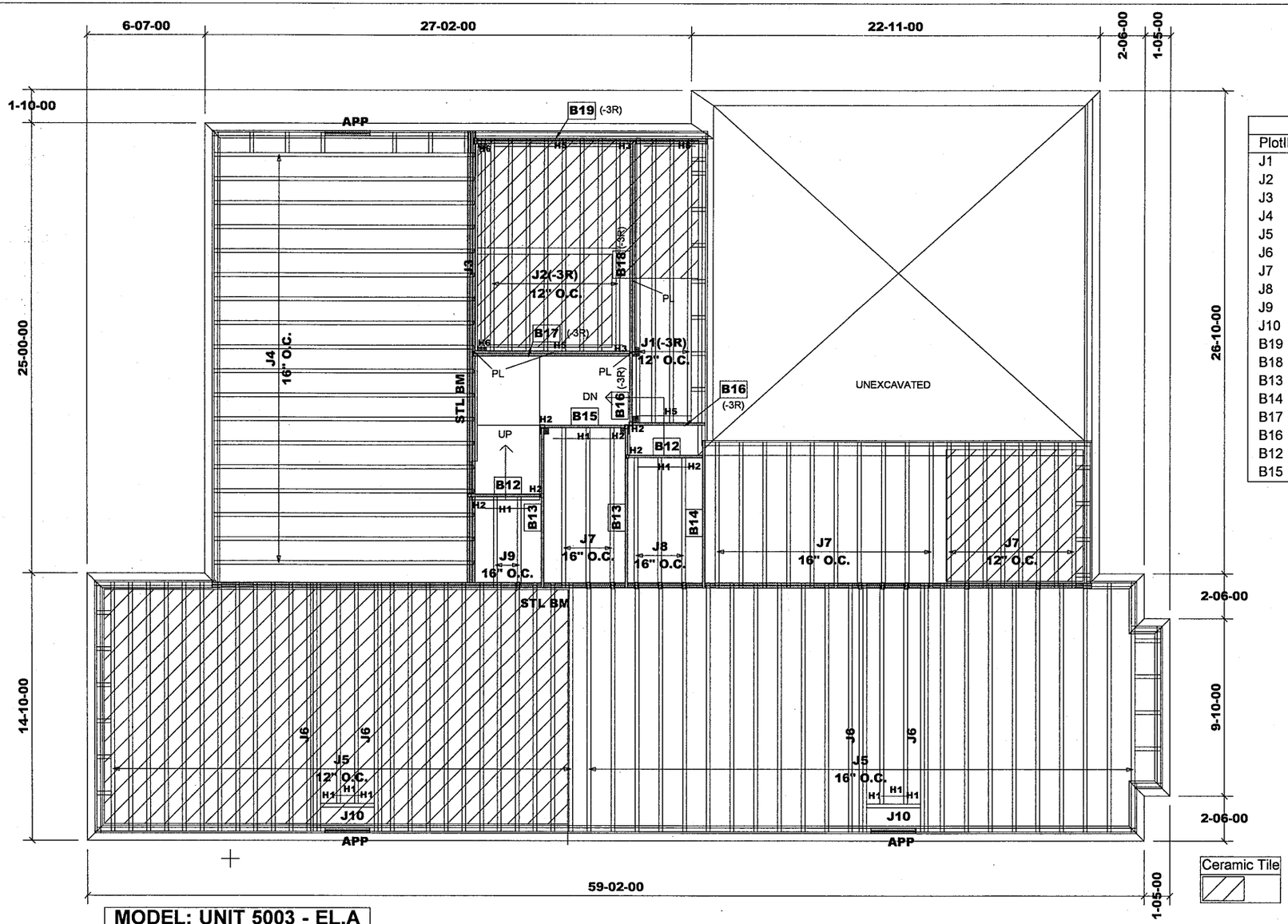
Builder: Gold Park
Project: Pine Valley

Location: Vaughan
Date: November 26, 2017

Designer: NL
Sheet: 15 of 16

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Derek
Home Lumber



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HANGER SCHEDULE

H1----------LT251188 (TM)
H2----------HUS1.81/10(FM)
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NOTE:
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1- 1/8" X 9 1/2" O.S.B.
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SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports
Squash blocks are required under concentraded loads.

MODEL: UNIT 5003 - EL.A
W/L.O.D. & W.O.B. COND.
+ OPT. LOGGIA
EL.B & EL.C SIMILAR

First Floor Framing

Do not scale - refer to architectural plans for dimensions

REVISION: March 18, 2020

JT/PL: 45147/105729
LI: 318277(290683)

Builder: Gold Park
Project: Pine Valley

Location: Vaughan
Date: November 26, 2017

Designer: NL
Sheet: 16 of 16

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Derek
Home Lumber

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

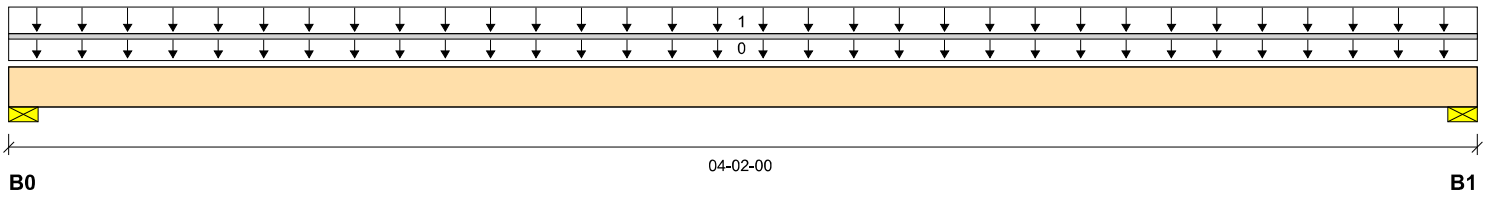
PASSED

B01 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 04-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	417 / 0	169 / 0		
B1, 3-1/2"	417 / 0	169 / 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	04-02-00	Top		6			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	04-02-00	Top	40	15			05-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	690 ft-lbs	17696 ft-lbs	3.9%	1	02-01-00
End Shear	322 lbs	7232 lbs	4.5%	1	01-03-06
Total Load Deflection	L/999 (0.002")	n\a	n\a	4	02-01-00
Live Load Deflection	L/999 (0.002")	n\a	n\a	5	02-01-00
Max Defl.	0.002"	n\a	n\a	4	02-01-00
Span / Depth	3.7				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	836 lbs	22.2%	11.2%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	836 lbs	22.2%	11.2%	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.
Calculations assume member is fully braced.
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 4

Disclosure

Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

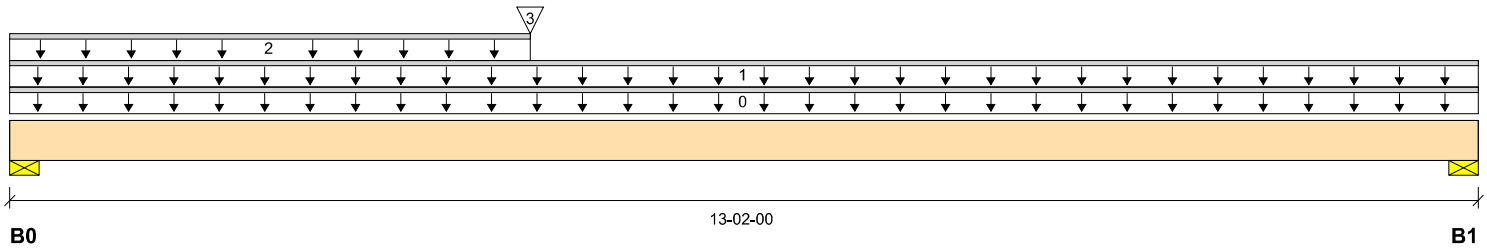
PASSED

B02 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 13-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	554 / 0	691 / 0		
B1, 3-1/2"	344 / 0	597 / 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	13-02-00	Top		6			00-00-00
1		Unf. Lin. (lb/ft)	L	00-00-00	13-02-00	Top	27	74			n\a
2		Unf. Lin. (lb/ft)	L	00-00-00	04-08-00	Top	27	14			n\a
3		Conc. Pt. (lbs)	L	04-08-00	04-08-00	Top	417	169			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	5368 ft-lbs	17696 ft-lbs	30.3%	1	04-08-00
End Shear	1441 lbs	7232 lbs	19.9%	1	01-03-06
Total Load Deflection	L/693 (0.22")	n\a	34.6%	4	06-04-05
Live Load Deflection	L/999 (0.097")	n\a	n\a	5	06-02-15
Max Defl.	0.22"	n\a	22.0%	4	06-04-05
Span / Depth	12.8				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	1695 lbs	45.0%	22.7%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	835 lbs	34.1%	17.2%	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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007791

Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

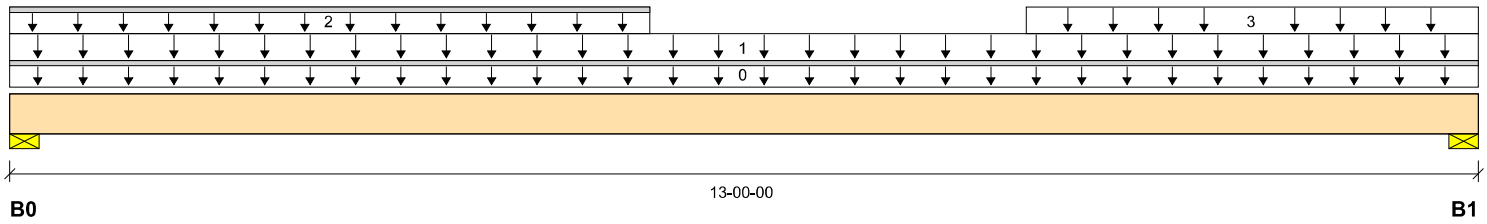
PASSED

B03 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 13-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	886 / 0	411 / 0		
B1, 3-1/2"	1041 / 0	468 / 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	13-00-00	Top		12			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	13-00-00	Top	40	15			02-06-00
2		Unf. Lin. (lb/ft)	L	00-00-00	05-08-00	Top	40	15			n\a
3		Unf. Area (lb/ft²)	L	09-00-00	13-00-00	Top	40	15			02-06-00

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	5449 ft-lbs	35392 ft-lbs	15.4%	1	06-06-00
End Shear	1623 lbs	14464 lbs	11.2%	1	11-08-10
Total Load Deflection	L/999 (0.114")	n\a	n\a	4	06-06-00
Live Load Deflection	L/999 (0.078")	n\a	n\a	5	06-06-00
Max Defl.	0.114"	n\a	n\a	4	06-06-00
Span / Depth	12.7				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	1843 lbs	24.4%	12.3%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	2146 lbs	28.5%	14.4%	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.
Calculations assume member is fully braced.
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 4

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

SE007792

Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

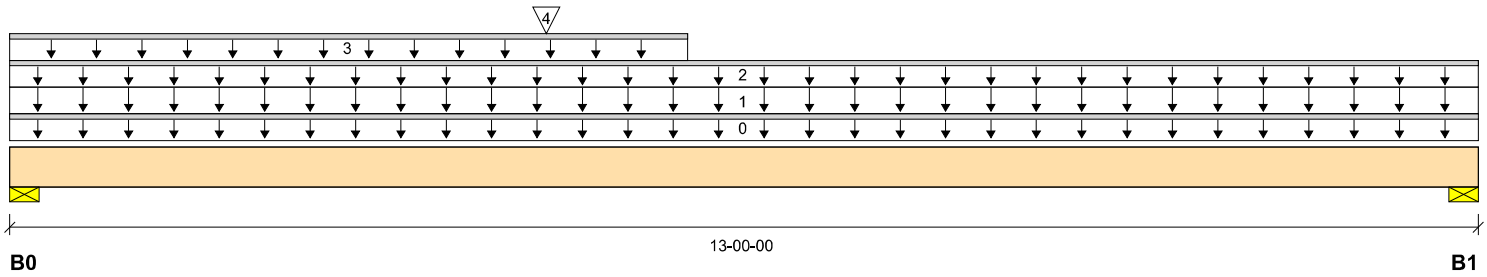
PASSED

B04 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 13-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	2578 / 0	1739 / 0		
B1, 3-1/2"	2240 / 0	1577 / 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	13-00-00	Top		12			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	13-00-00	Top	40	20			07-03-00
2		Unf. Lin. (lb/ft)	L	00-00-00	13-00-00	Top		60			n\a
3		Unf. Lin. (lb/ft)	L	00-00-00	06-00-00	Top	27	14			n\a
4		Conc. Pt. (lbs)	L	04-09-00	04-09-00	Top	886	411			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	18916 ft-lbs	35392 ft-lbs	53.4%	1	05-06-06
End Shear	5061 lbs	14464 lbs	35.0%	1	01-03-06
Total Load Deflection	L/392 (0.384")	n\a	61.2%	4	06-04-05
Live Load Deflection	L/655 (0.23")	n\a	54.9%	5	06-04-05
Max Defl.	0.384"	n\a	38.4%	4	06-04-05
Span / Depth	12.7				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	6040 lbs	80.2%	40.4%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	5332 lbs	70.8%	35.7%	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.
Calculations assume member is fully braced.
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 4

NAIL ONE PLY TO ANOTHER WITH 3-1/2" SPIRAL NAILS @ 9" O/C,
STAGGERED IN 2 ROWS

SE007793

Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

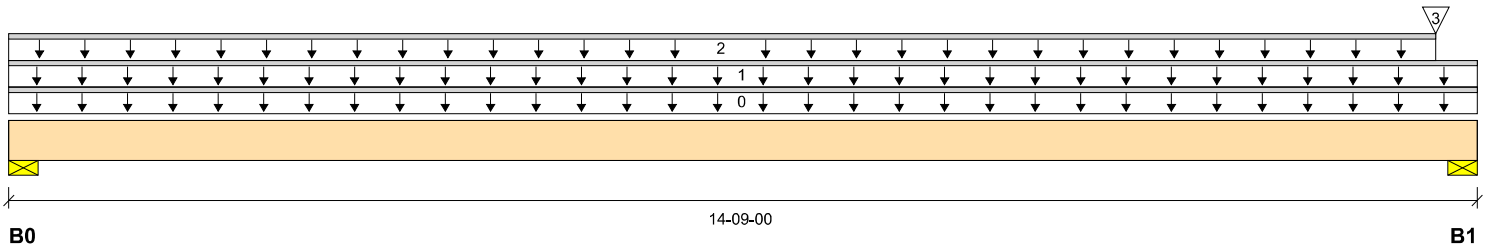
PASSED

B05 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 14-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	428 / 0	758 / 0		
B1, 3-1/2"	2598 / 0	2288 / 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	14-09-00	Top		12			00-00-00
1		Unf. Lin. (lb/ft)	L	00-00-00	14-09-00	Top	27	74			n\a
2		Unf. Lin. (lb/ft)	L	00-00-00	14-04-00	Top	27	14			n\a
3		Conc. Pt. (lbs)	L	14-04-00	14-04-00	Top	2240	1577			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3785 ft-lbs	23005 ft-lbs	16.5%	0	07-06-13
End Shear	1909 lbs	14464 lbs	13.2%	1	13-05-10
Total Load Deflection	L/1045 (0.164")	n\a	23.0%	4	07-06-13
Live Load Deflection	L/999 (0.061")	n\a	n\a	5	07-06-13
Max Defl.	0.164"	n\a	16.4%	4	07-06-13
Span / Depth	14.4				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	1062 lbs	21.7%	10.9%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	6757 lbs	89.7%	45.2%	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.
Calculations assume member is fully braced.
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 4

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

SE007794

Boise Cascade

Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

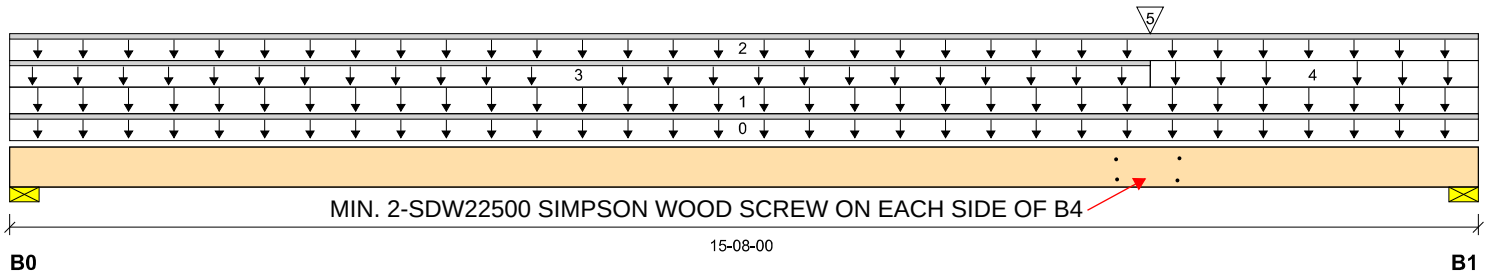
PASSED

B06 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 15-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	2985 / 0	2200 / 0		
B1, 3-1/2"	4658 / 0	3257 / 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	15-08-00	Top		18			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	15-08-00	Top	40	20			07-00-00
2		Unf. Lin. (lb/ft)	L	00-00-00	15-08-00	Top		60			n\a
3		Unf. Lin. (lb/ft)	L	00-00-00	12-02-00	Top	27	14			n\a
4		Unf. Area (lb/ft²)	L	12-02-00	15-08-00	Top	40	15			02-06-00
5		Conc. Pt. (lbs)	L	12-02-00	12-02-00	Top	2578	1739			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	33155 ft-lbs	55212 ft-lbs	60.1%	1	09-07-06
End Shear	9919 lbs	21696 lbs	45.7%	1	14-04-10
Total Load Deflection	L/269 (0.679")	n\a	89.2%	4	08-01-00
Live Load Deflection	L/463 (0.394")	n\a	77.8%	5	08-03-01
Max Defl.	0.679"	n\a	67.9%	4	08-01-00
Span / Depth	15.4				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 5-1/4"	7227 lbs	63.9%	32.2%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 5-1/4"	11059 lbs	97.8%	49.3%	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.
Calculations assume member is fully braced.
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 4

NAIL ONE PLY TO ANOTHER WITH 3-1/2" SPIRAL NAILS @ 8" O/C,
STAGGERED IN 2 ROWS

SE007795

Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

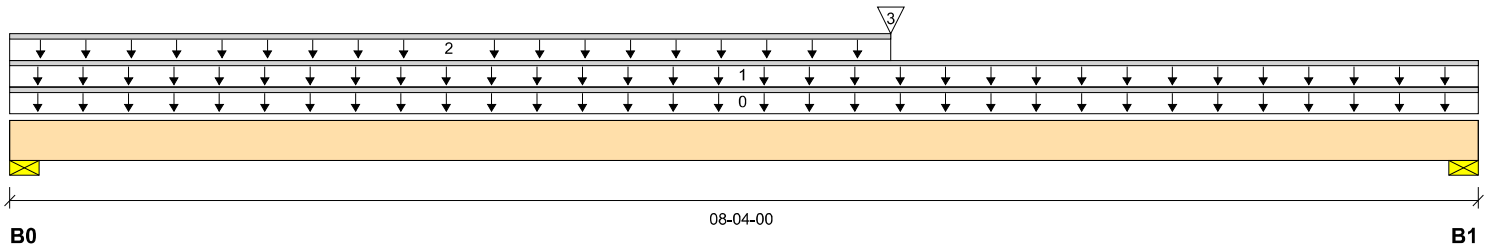
PASSED

B07 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 08-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	619 / 0	568 / 0		
B1, 3-1/2"	782 / 0	637 / 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	08-04-00	Top		6			00-00-00
1		Unf. Lin. (lb/ft)	L	00-00-00	08-04-00	Top	27	74			n\a
2		Unf. Lin. (lb/ft)	L	00-00-00	05-00-00	Top	27	14			n\a
3		Conc. Pt. (lbs)	L	05-00-00	05-00-00	Top	1041	468			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	5337 ft-lbs	17696 ft-lbs	30.2%	1	05-00-00
End Shear	1790 lbs	7232 lbs	24.7%	1	07-00-10
Total Load Deflection	L/999 (0.075")	n\a	n\a	4	04-03-10
Live Load Deflection	L/999 (0.043")	n\a	n\a	5	04-03-10
Max Defl.	0.075"	n\a	n\a	4	04-03-10
Span / Depth	8.0				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	1638 lbs	43.5%	21.9%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	1970 lbs	52.3%	26.4%	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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007796

Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

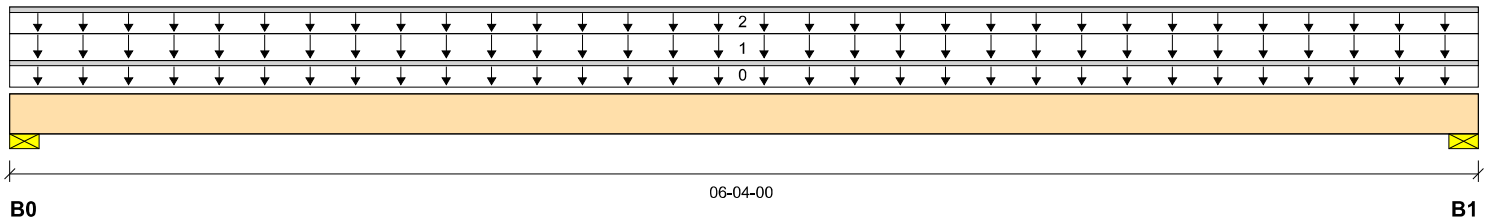
PASSED

B08 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 06-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1393 / 0	906 / 0		
B1, 3-1/2"	1393 / 0	906 / 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	06-04-00	Top		6			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	06-04-00	Top	40	20			11-00-00
2		Unf. Lin. (lb/ft)	L	00-00-00	06-04-00	Top		60			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4390 ft-lbs	17696 ft-lbs	24.8%	1	03-02-00
End Shear	1918 lbs	7232 lbs	26.5%	1	01-03-06
Total Load Deflection	L/999 (0.04")	n\a	n\a	4	03-02-00
Live Load Deflection	L/999 (0.024")	n\a	n\a	5	03-02-00
Max Defl.	0.04"	n\a	n\a	4	03-02-00
Span / Depth	5.9				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	3222 lbs	85.5%	43.1%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	3222 lbs	85.5%	43.1%	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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007797

Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

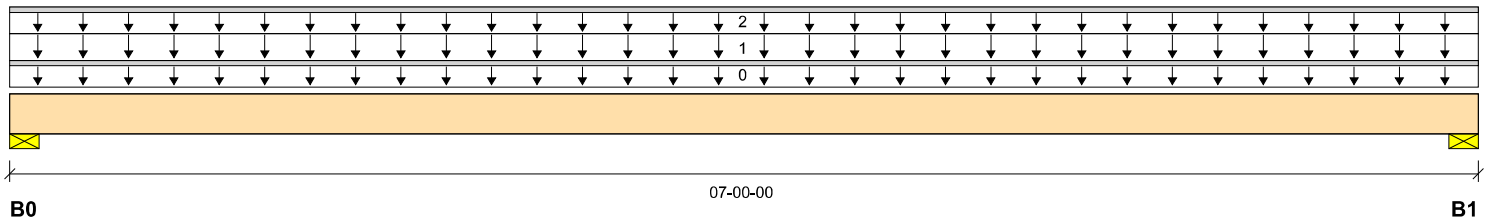
PASSED

B09 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 07-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1540 / 0	1001 / 0		
B1, 3-1/2"	1540 / 0	1001 / 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	07-00-00	Top		6			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	07-00-00	Top	40	20			11-00-00
2		Unf. Lin. (lb/ft)	L	00-00-00	07-00-00	Top		60			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	5443 ft-lbs	17696 ft-lbs	30.8%	1	03-06-00
End Shear	2258 lbs	7232 lbs	31.2%	1	01-03-06
Total Load Deflection	L/999 (0.061")	n\a	n\a	4	03-06-00
Live Load Deflection	L/999 (0.037")	n\a	n\a	5	03-06-00
Max Defl.	0.061"	n\a	n\a	4	03-06-00
Span / Depth	6.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	3561 lbs	94.5%	47.7%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	3561 lbs	94.5%	47.7%	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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007798

Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

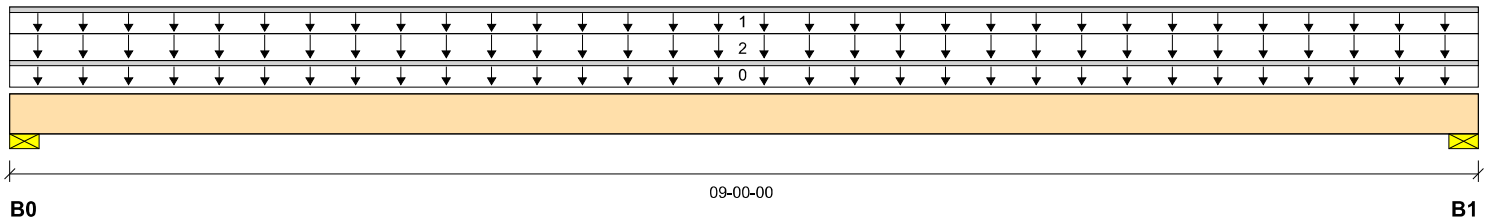
PASSED

B10 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 09-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	121 / 0	756 / 0	283 / 0	
B1, 3-1/2"	122 / 0	756 / 0	284 / 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	09-00-00	Top		12			00-00-00
1		Unf. Lin. (lb/ft)	L	00-00-00	09-00-00	Top	27	114			n\a
2		Unf. Area (lb/ft²)	L	00-00-00	09-00-00	Top		14	21		03-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2145 ft-lbs	23005 ft-lbs	9.3%	0	04-06-00
End Shear	757 lbs	9401 lbs	8.1%	0	01-03-06
Total Load Deflection	L/999 (0.031")	n\a	n\a	11	04-06-00
Live Load Deflection	L/999 (0.01")	n\a	n\a	15	04-06-00
Max Defl.	0.031"	n\a	n\a	11	04-06-00
Span / Depth	8.6				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	1059 lbs	21.6%	10.9%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	1059 lbs	21.6%	10.9%	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.
Calculations assume member is fully braced.
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 4

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

SE007799

Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

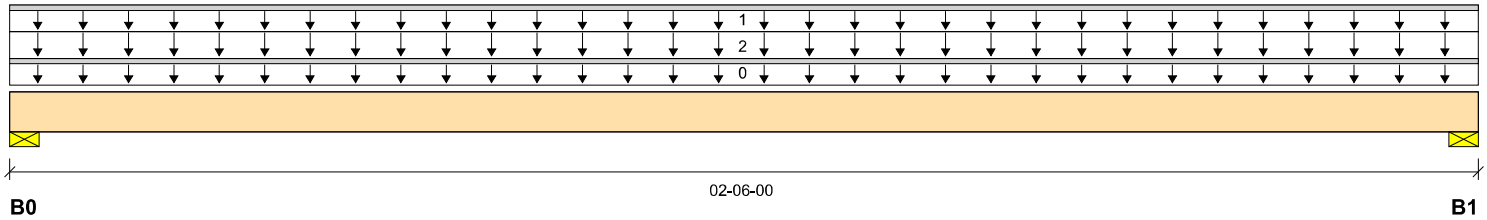
PASSED

B11 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 02-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	34 / 0	315 / 0	236 / 0	
B1, 3-1/2"	34 / 0	315 / 0	236 / 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	02-06-00	Top		12			00-00-00
1		Unf. Lin. (lb/ft)	L	00-00-00	02-06-00	Top	27	114			n\a
2		Unf. Area (lb/ft²)	L	00-00-00	02-06-00	Top		14	21		09-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	326 ft-lbs	35392 ft-lbs	0.9%	5	01-03-00
End Shear	20 lbs	14464 lbs	0.1%	5	01-03-06
Total Load Deflection	L/999 (0")	n\a	n\a	11	01-03-00
Live Load Deflection	L/999 (0")	n\a	n\a	15	01-03-00
Max Defl.	0"	n\a	n\a	11	01-03-00
Span / Depth	2.1				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	782 lbs	10.4%	5.2%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	782 lbs	10.4%	5.2%	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.
Calculations assume member is fully braced.
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 4

NAIL ONE PLY TO ANOTHER WITH 3-1/2" SPIRAL NAILS @ 4" O/C,
STAGGERED IN 2 ROWS

SE007800

Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

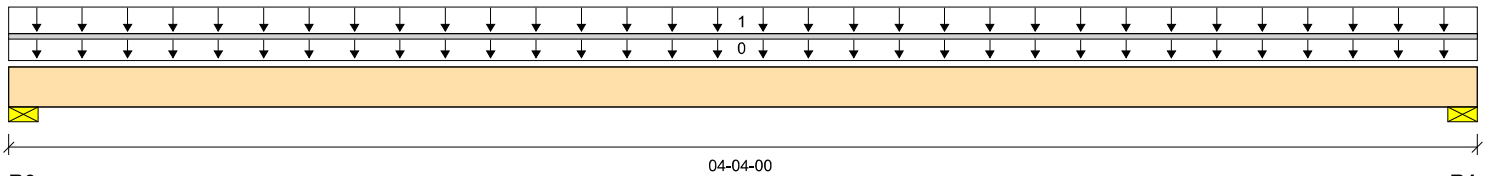
PASSED

B12 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 04-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	433 / 0	176 / 0		
B1, 3-1/2"	433 / 0	176 / 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	04-04-00	Top		6			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	04-04-00	Top	40	15			05-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	753 ft-lbs	17696 ft-lbs	4.3%	1	02-02-00
End Shear	355 lbs	7232 lbs	4.9%	1	01-03-06
Total Load Deflection	L/999 (0.003")	n\a	n\a	4	02-02-00
Live Load Deflection	L/999 (0.002")	n\a	n\a	5	02-02-00
Max Defl.	0.003"	n\a	n\a	4	02-02-00
Span / Depth	3.9				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	869 lbs	23.1%	11.6%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	869 lbs	23.1%	11.6%	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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007801

Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

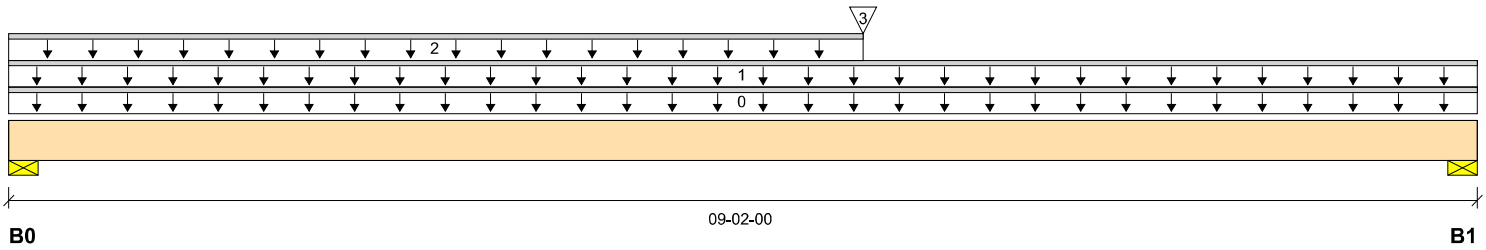
PASSED

B13 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 09-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	407 / 0	218 / 0		
B1, 3-1/2"	418 / 0	216 / 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	09-02-00	Top		6			00-00-00
1		Unf. Lin. (lb/ft)	L	00-00-00	09-02-00	Top	27	14			n\a
2		Unf. Lin. (lb/ft)	L	00-00-00	05-04-00	Top	27	14			n\a
3		Conc. Pt. (lbs)	L	05-04-00	05-04-00	Top	433	176			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2752 ft-lbs	17696 ft-lbs	15.6%	1	05-04-00
End Shear	813 lbs	7232 lbs	11.2%	1	07-10-10
Total Load Deflection	L/999 (0.048")	n\a	n\a	4	04-08-06
Live Load Deflection	L/999 (0.032")	n\a	n\a	5	04-08-06
Max Defl.	0.048"	n\a	n\a	4	04-08-06
Span / Depth	8.8				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	883 lbs	23.4%	11.8%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	897 lbs	23.8%	12.0%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
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 4

Disclosure

SE007802

Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

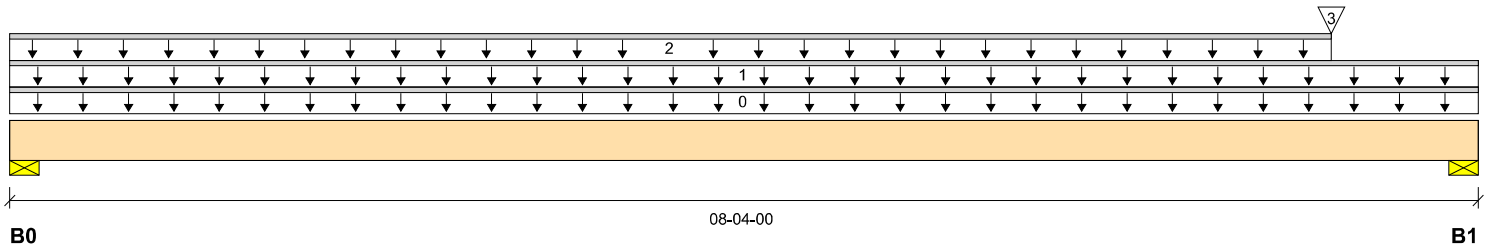
PASSED

B14 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 08-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	258 / 0	405 / 0		
B1, 3-1/2"	603 / 0	543 / 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	08-04-00	Top		6			00-00-00
1		Unf. Lin. (lb/ft)	L	00-00-00	08-04-00	Top	27	74			n\a
2		Unf. Lin. (lb/ft)	L	00-00-00	07-06-00	Top	27	14			n\a
3		Conc. Pt. (lbs)	L	07-06-00	07-06-00	Top	433	176			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1807 ft-lbs	17696 ft-lbs	10.2%	1	04-06-05
End Shear	1009 lbs	7232 lbs	14.0%	1	07-00-10
Total Load Deflection	L/999 (0.031")	n\a	n\a	4	04-03-01
Live Load Deflection	L/999 (0.013")	n\a	n\a	5	04-04-03
Max Defl.	0.031"	n\a	n\a	4	04-03-01
Span / Depth	8.0				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	893 lbs	23.7%	11.9%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	1583 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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007803

Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

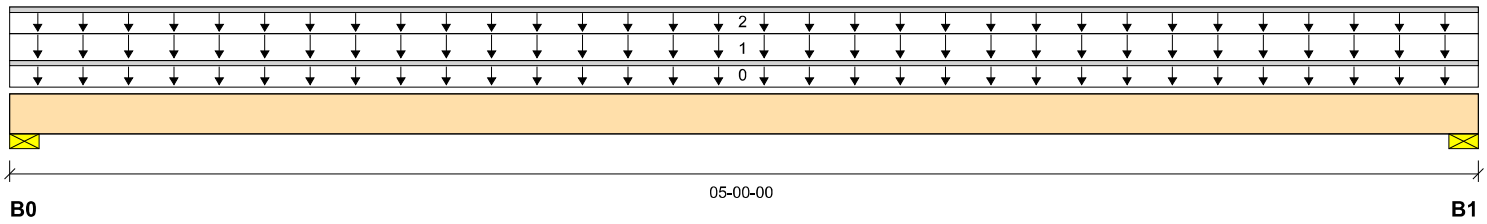
PASSED

B15 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 05-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	458 / 0	337 / 0		
B1, 3-1/2"	458 / 0	337 / 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	05-00-00	Top		6			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	05-00-00	Top	40	15			04-07-00
2		Unf. Lin. (lb/ft)	L	00-00-00	05-00-00	Top		60			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1143 ft-lbs	17696 ft-lbs	6.5%	1	02-06-00
End Shear	540 lbs	7232 lbs	7.5%	1	01-03-06
Total Load Deflection	L/999 (0.006")	n\a	n\a	4	02-06-00
Live Load Deflection	L/999 (0.004")	n\a	n\a	5	02-06-00
Max Defl.	0.006"	n\a	n\a	4	02-06-00
Span / Depth	4.6				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	1109 lbs	29.4%	14.8%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	1109 lbs	29.4%	14.8%	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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007804

Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

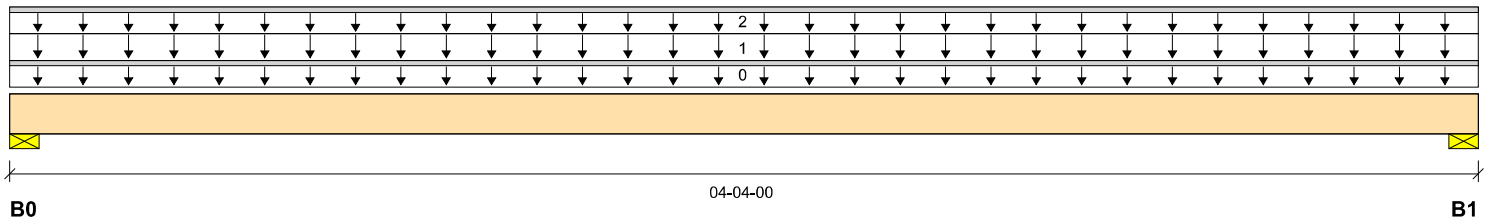
PASSED

B16 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 04-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	780 / 0	530 / 0		
B1, 3-1/2"	780 / 0	530 / 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	04-04-00	Top		5			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	04-04-00	Top	40	20			09-00-00
2		Unf. Lin. (lb/ft)	L	00-00-00	04-04-00	Top		60			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1588 ft-lbs	11610 ft-lbs	13.7%	1	02-02-00
End Shear	917 lbs	5785 lbs	15.8%	1	01-01-00
Total Load Deflection	L/999 (0.012")	n\a	n\a	4	02-02-00
Live Load Deflection	L/999 (0.007")	n\a	n\a	5	02-02-00
Max Defl.	0.012"	n\a	n\a	4	02-02-00
Span / Depth	4.9				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	1833 lbs	48.6%	24.5%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	1833 lbs	48.6%	24.5%	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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007805

Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

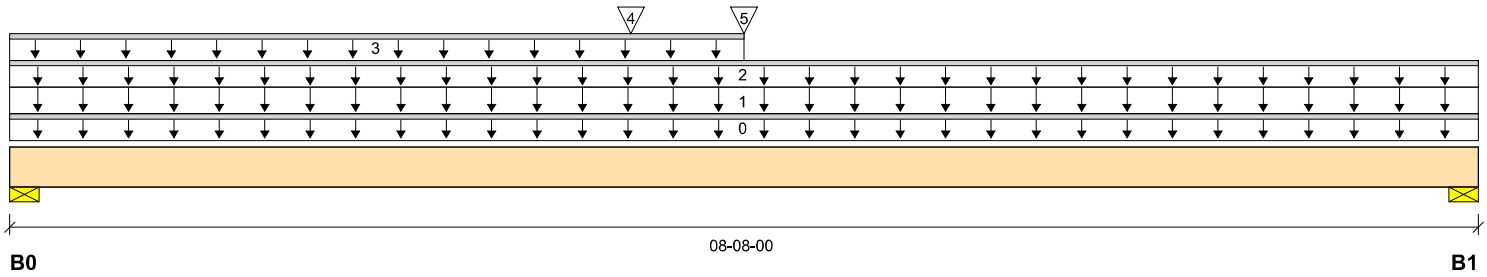
PASSED

B17 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 08-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1743 / 0	1365 / 0		
B1, 3-1/2"	1569 / 0	1290 / 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	08-08-00	Top		10			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	08-08-00	Top	40	20			06-00-00
2		Unf. Lin. (lb/ft)	L	00-00-00	08-08-00	Top		120			n\a
3		Unf. Lin. (lb/ft)	L	00-00-00	04-04-00	Top	27	14			n\a
4		Conc. Pt. (lbs)	L	03-08-00	03-08-00	Top	698	262			n\a
5		Conc. Pt. (lbs)	L	04-04-00	04-04-00	Top	417	169			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	10016 ft-lbs	23220 ft-lbs	43.1%	1	04-00-00
End Shear	3530 lbs	11571 lbs	30.5%	1	01-01-00
Total Load Deflection	L/599 (0.164")	n\a	40.0%	4	04-03-00
Live Load Deflection	L/999 (0.095")	n\a	n\a	5	04-03-00
Max Defl.	0.164"	n\a	16.4%	4	04-03-00
Span / Depth	10.4				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	4321 lbs	57.3%	28.9%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	3966 lbs	52.6%	26.5%	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.
Calculations assume member is fully braced.
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 4

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

SE007806

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

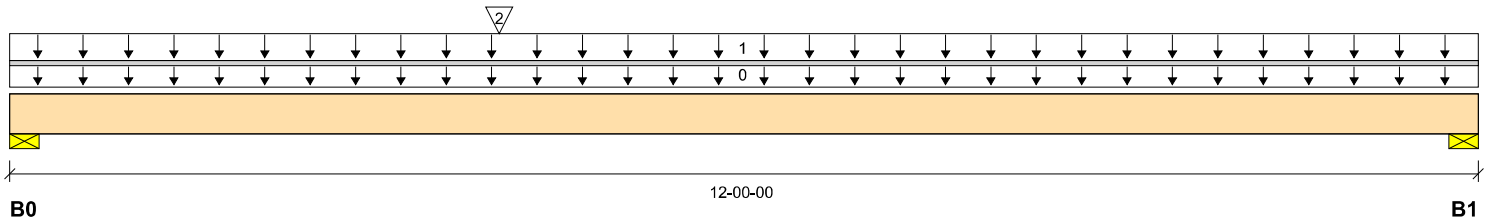
PASSED

B18 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 12-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	559 / 0	298 / 0		
B1, 3-1/2"	394 / 0	236 / 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	12-00-00	Top		10			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	12-00-00	Top	40	20			01-00-00
2		Conc. Pt. (lbs)	L	04-00-00	04-00-00	Top	473	178			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3787 ft-lbs	23220 ft-lbs	16.3%	1	04-00-00
End Shear	1105 lbs	11571 lbs	9.5%	1	01-01-00
Total Load Deflection	L/999 (0.116")	n\a	n\a	4	05-08-12
Live Load Deflection	L/999 (0.076")	n\a	n\a	5	05-08-12
Max Defl.	0.116"	n\a	n\a	4	05-08-12
Span / Depth	14.6				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	1210 lbs	16.1%	8.1%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	887 lbs	11.8%	5.9%	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.
Calculations assume member is fully braced.
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 4

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

SE007807

Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

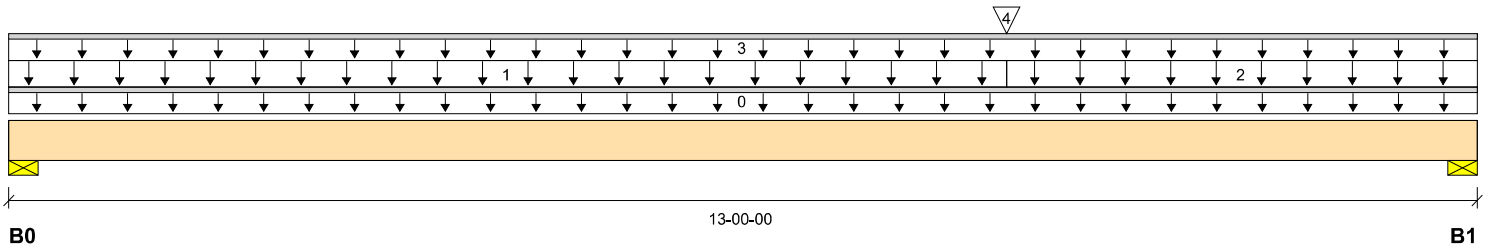
PASSED

B19 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 13-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1733 / 0	1331 / 0		
B1, 3-1/2"	2114 / 0	1536 / 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	13-00-00	Top		10			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	08-10-00	Top	40	20			06-00-00
2		Unf. Area (lb/ft²)	L	08-10-00	13-00-00	Top	40	20			08-00-00
3		Unf. Lin. (lb/ft)	L	00-00-00	13-00-00	Top		60			n\a
4		Conc. Pt. (lbs)	L	08-10-00	08-10-00	Top	394	236			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	14264 ft-lbs	23220 ft-lbs	61.4%	1	07-01-10
End Shear	4261 lbs	11571 lbs	36.8%	1	11-11-00
Total Load Deflection	L/259 (0.581")	n\a	92.7%	4	06-07-13
Live Load Deflection	L/452 (0.333")	n\a	79.6%	5	06-07-13
Max Defl.	0.581"	n\a	58.1%	4	06-07-13
Span / Depth	15.8				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	4264 lbs	56.6%	28.5%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	5092 lbs	67.6%	34.1%	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.
Calculations assume member is fully braced.
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 4

NAIL ONE PLY TO ANOTHER WITH 3-1/2" SPIRAL NAILS @ 10" O/C,
STAGGERED IN 2 ROWS

SE007808

Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

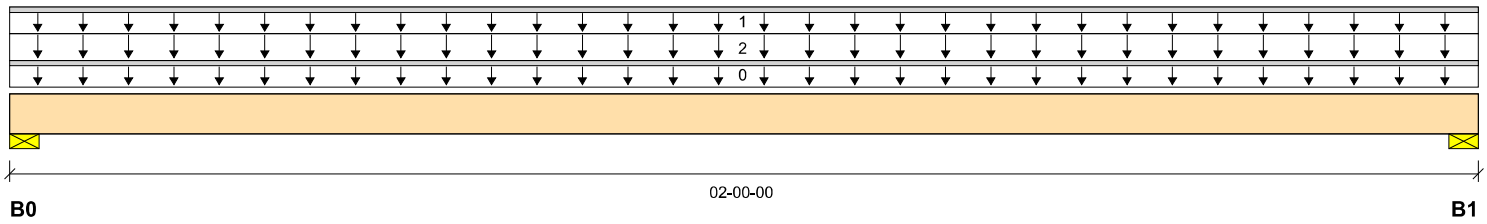
PASSED

B20 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 02-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	27 / 0	252 / 0	189 / 0	
B1, 3-1/2"	27 / 0	252 / 0	189 / 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	02-00-00	Top		12			00-00-00
1		Unf. Lin. (lb/ft)	L	00-00-00	02-00-00	Top	27	114			n\a
2		Unf. Area (lb/ft²)	L	00-00-00	02-00-00	Top		14	21		09-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	186 ft-lbs	35392 ft-lbs	0.5%	5	01-00-00
End Shear	176 lbs	14464 lbs	1.2%	5	01-03-06
Total Load Deflection	L/999 (0")	n\a	n\a	11	01-00-00
Max Defl.	0"	n\a	n\a	11	01-00-00
Span / Depth	1.6				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	626 lbs	8.3%	4.2%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	626 lbs	8.3%	4.2%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
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 4

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

SE007809

Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

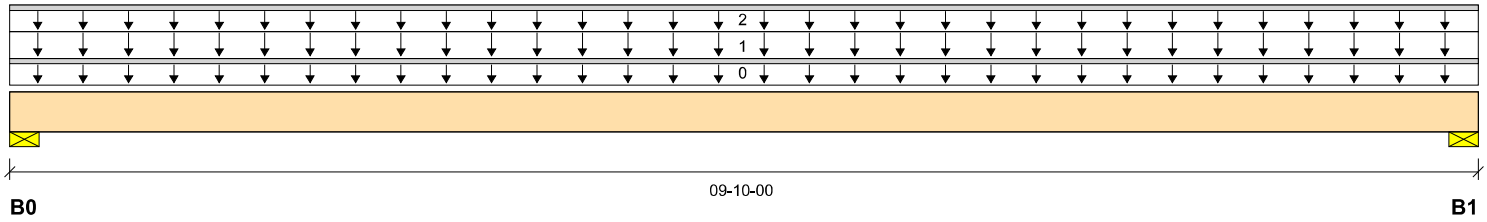
PASSED

B21 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 09-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	2163 / 0	1436 / 0		
B1, 3-1/2"	2163 / 0	1436 / 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	09-10-00	Top		12			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	09-10-00	Top	40	20			11-00-00
2		Unf. Lin. (lb/ft)	L	00-00-00	09-10-00	Top		60			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	11261 ft-lbs	35392 ft-lbs	31.8%	1	04-11-00
End Shear	3726 lbs	14464 lbs	25.8%	1	01-03-06
Total Load Deflection	L/864 (0.13")	n\a	27.8%	4	04-11-00
Live Load Deflection	L/999 (0.078")	n\a	n\a	5	04-11-00
Max Defl.	0.13"	n\a	13.0%	4	04-11-00
Span / Depth	9.5				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	5040 lbs	66.9%	33.7%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	5040 lbs	66.9%	33.7%	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.
Calculations assume member is fully braced.
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 4

NAIL ONE PLY TO ANOTHER WITH 3-1/2" SPIRAL NAILS @ 10" O/C,
STAGGERED IN 2 ROWS

SE007810

Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

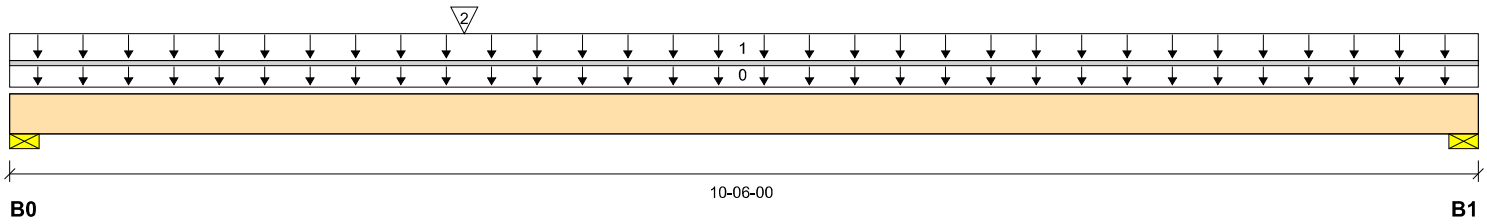
PASSED

B22 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 10-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	3213 / 0	1918 / 0		
B1, 3-1/2"	2352 / 0	1346 / 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	10-06-00	Top		12			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	10-06-00	Top	54	27			06-00-00
2		Conc. Pt. (lbs)	L	03-03-00	03-03-00	Top	2163	1436			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	18109 ft-lbs	35392 ft-lbs	51.2%	1	03-03-00
End Shear	6315 lbs	14464 lbs	43.7%	1	01-03-06
Total Load Deflection	L/538 (0.224")	n\a	44.6%	4	05-00-04
Live Load Deflection	L/859 (0.14")	n\a	41.9%	5	05-00-04
Max Defl.	0.224"	n\a	22.4%	4	05-00-04
Span / Depth	10.1				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	7217 lbs	95.8%	48.3%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	5210 lbs	69.1%	34.9%	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.
Calculations assume member is fully braced.
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 4

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

SE007811

Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

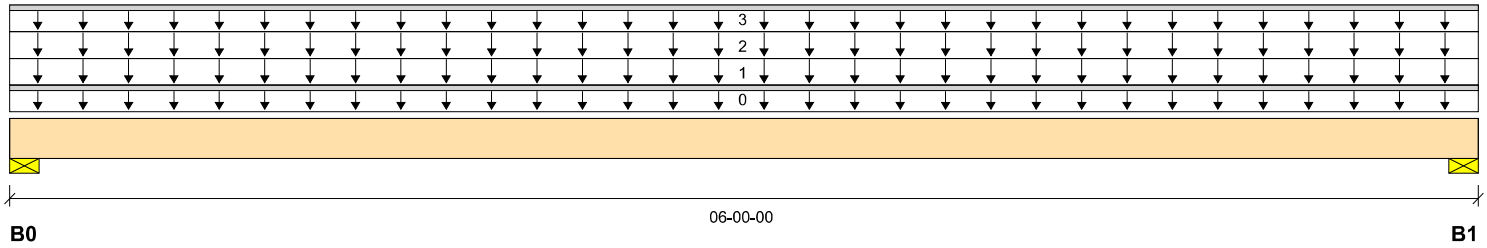
PASSED

B23 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 06-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	660 / 0	690 / 0	63 / 0	
B1, 3-1/2"	660 / 0	690 / 0	63 / 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	06-00-00	Top		6			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	06-00-00	Top	40	20			05-06-00
2		Unf. Area (lb/ft²)	L	00-00-00	06-00-00	Top		14	21		01-00-00
3		Unf. Lin. (lb/ft)	L	00-00-00	06-00-00	Top		100			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2451 ft-lbs	17696 ft-lbs	13.9%	1	03-00-00
End Shear	1097 lbs	7232 lbs	15.2%	1	01-03-06
Total Load Deflection	L/999 (0.02")	n\a	n\a	11	03-00-00
Live Load Deflection	L/999 (0.01")	n\a	n\a	15	03-00-00
Max Defl.	0.02"	n\a	n\a	11	03-00-00
Span / Depth	5.6				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	1916 lbs	50.8%	25.6%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	1916 lbs	50.8%	25.6%	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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007812

Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

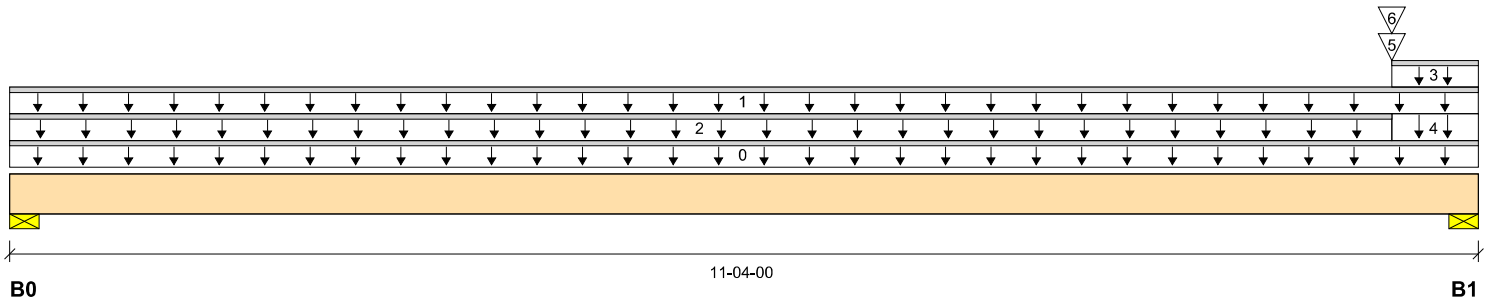
PASSED

B24 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 11-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	332 / 0	264 / 0	15 / 0	
B1, 3-1/2"	922 / 0	1161 / 0	384 / 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	11-04-00	Top		12			00-00-00
1		Unf. Lin. (lb/ft)	L	00-00-00	11-04-00	Top	27	14			n\a
2		Unf. Lin. (lb/ft)	L	00-00-00	10-08-00	Top	27	14			n\a
3		Unf. Lin. (lb/ft)	L	10-08-00	11-04-00	Top		100			n\a
4		Unf. Area (lb/ft²)	L	10-08-00	11-04-00	Top		14	21		03-00-00
5		Conc. Pt. (lbs)	L	10-08-00	10-08-00	Top	660	690	63		n\a
6		Conc. Pt. (lbs)	L	10-08-00	10-08-00	Top		196	294		n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2523 ft-lbs	35392 ft-lbs	7.1%	1	06-05-14
End Shear	1530 lbs	14464 lbs	10.6%	1	10-00-10
Total Load Deflection	L/999 (0.041")	n\a	n\a	11	05-11-05
Live Load Deflection	L/999 (0.023")	n\a	n\a	15	05-09-10
Max Defl.	0.041"	n\a	n\a	11	05-11-05
Span / Depth	11.0				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	843 lbs	11.2%	5.6%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	3218 lbs	42.7%	21.5%	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.
Calculations assume member is fully braced.
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 4

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

SE007813

Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

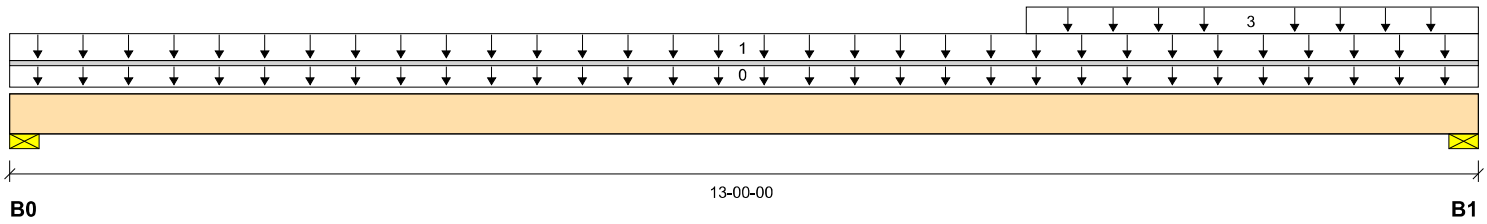
PASSED

B25 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	Second Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 13-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	707 / 0	304 / 0		
B1, 3-1/2"	993 / 0	412 / 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	13-00-00	Top		6			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	13-00-00	Top	40	15			02-06-00
3		Unf. Area (lb/ft²)	L	09-00-00	13-00-00	Top	40	15			02-06-00

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4750 ft-lbs	17696 ft-lbs	26.8%	1	07-00-13
End Shear	1491 lbs	7232 lbs	20.6%	1	11-08-10
Total Load Deflection	L/769 (0.196")	n\a	31.2%	4	06-07-01
Live Load Deflection	L/1096 (0.137")	n\a	32.8%	5	06-07-01
Max Defl.	0.196"	n\a	19.6%	4	06-07-01
Span / Depth	12.7				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	1440 lbs	38.2%	19.3%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	2005 lbs	53.2%	26.8%	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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007814

Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

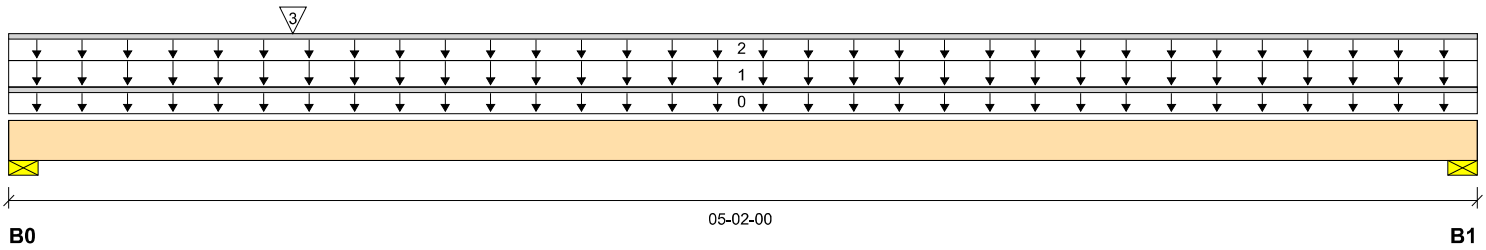
PASSED

B26 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 05-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	912 / 0	575 / 0		
B1, 3-1/2"	594 / 0	455 / 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	05-02-00	Top		5			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	05-02-00	Top	40	20			05-00-00
2		Unf. Lin. (lb/ft)	L	00-00-00	05-02-00	Top		60			n\a
3		Conc. Pt. (lbs)	L	01-00-00	01-00-00	Top	473	178			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1784 ft-lbs	11610 ft-lbs	15.4%	1	02-03-10
End Shear	1440 lbs	5785 lbs	24.9%	1	01-01-00
Total Load Deflection	L/999 (0.021")	n\a	n\a	4	02-06-07
Live Load Deflection	L/999 (0.012")	n\a	n\a	5	02-05-14
Max Defl.	0.021"	n\a	n\a	4	02-06-07
Span / Depth	5.9				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	2087 lbs	55.4%	27.9%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	1460 lbs	38.7%	19.5%	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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007815

Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

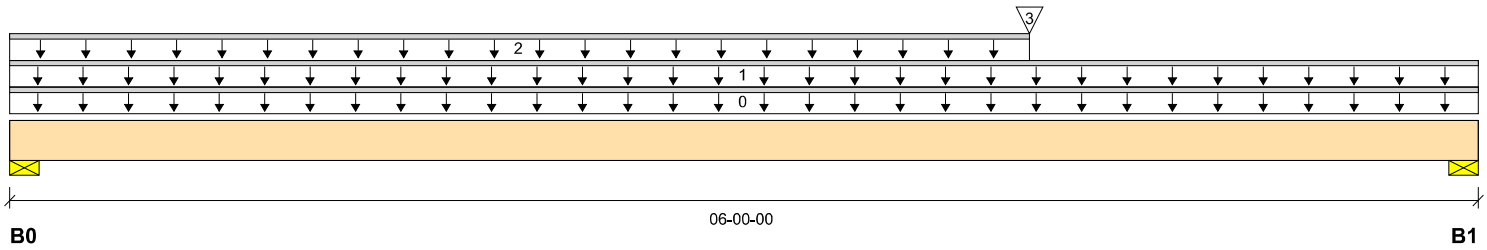
PASSED

B27 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 06-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	420 / 0	442 / 0		
B1, 3-1/2"	767 / 0	665 / 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	06-00-00	Top		5			00-00-00
1		Unf. Lin. (lb/ft)	L	00-00-00	06-00-00	Top	27	74			n\a
2		Unf. Lin. (lb/ft)	L	00-00-00	04-02-00	Top	27	14			n\a
3		Conc. Pt. (lbs)	L	04-02-00	04-02-00	Top	912	575			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2948 ft-lbs	11610 ft-lbs	25.4%	1	04-02-00
End Shear	1830 lbs	5785 lbs	31.6%	1	04-11-00
Total Load Deflection	L/999 (0.04")	n\a	n\a	4	03-02-07
Live Load Deflection	L/999 (0.022")	n\a	n\a	5	03-02-07
Max Defl.	0.04"	n\a	n\a	4	03-02-07
Span / Depth	7.0				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	1182 lbs	31.4%	15.8%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	1981 lbs	52.6%	26.5%	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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007816

Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

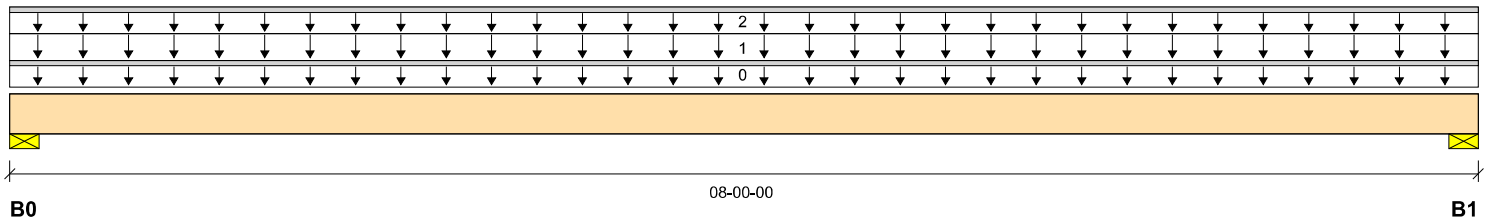
PASSED

B28 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 08-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	480 / 0	499 / 0		
B1, 3-1/2"	480 / 0	499 / 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	08-00-00	Top		5			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	08-00-00	Top	40	20			03-00-00
2		Unf. Lin. (lb/ft)	L	00-00-00	08-00-00	Top		60			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2389 ft-lbs	11610 ft-lbs	20.6%	1	04-00-00
End Shear	980 lbs	5785 lbs	16.9%	1	01-01-00
Total Load Deflection	L/999 (0.071")	n\a	n\a	4	04-00-00
Live Load Deflection	L/999 (0.035")	n\a	n\a	5	04-00-00
Max Defl.	0.071"	n\a	n\a	4	04-00-00
Span / Depth	9.5				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	1344 lbs	35.7%	18.0%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	1344 lbs	35.7%	18.0%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
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 4

Disclosure

SE007817

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

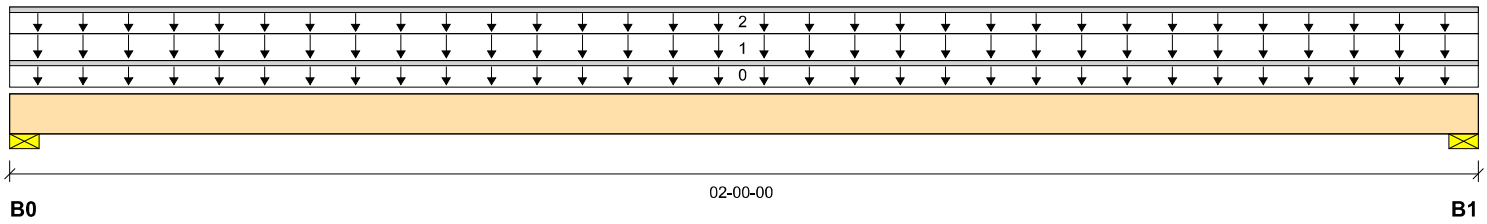
PASSED

B29 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 02-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	103 / 0	116 / 0		
B1, 3-1/2"	103 / 0	116 / 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	02-00-00	Top		5			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	02-00-00	Top	40	20			02-07-00
2		Unf. Lin. (lb/ft)	L	00-00-00	02-00-00	Top		60			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	89 ft-lbs	11610 ft-lbs	0.8%	1	01-00-00
End Shear	25 lbs	5785 lbs	0.4%	1	01-01-00
Total Load Deflection	L/999 (0")	n\a	n\a	4	01-00-00
Live Load Deflection	L/999 (0")	n\a	n\a	5	01-00-00
Max Defl.	0"	n\a	n\a	4	01-00-00
Span / Depth	1.9				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	301 lbs	8.0%	4.0%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	301 lbs	8.0%	4.0%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
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 4

Disclosure

SE007818

Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

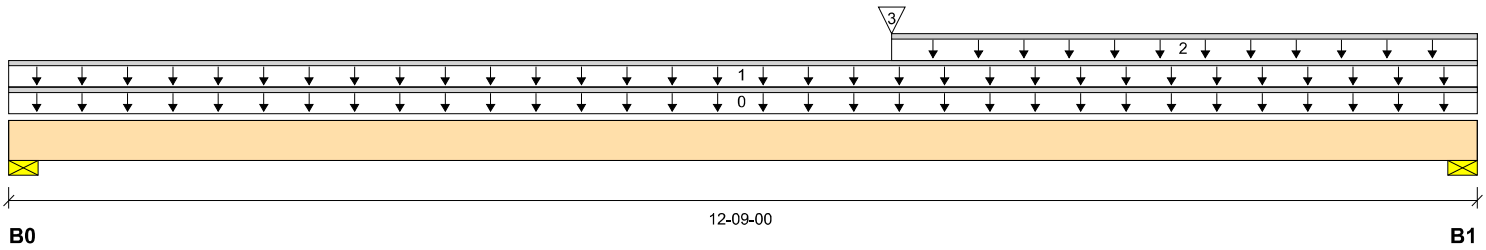
PASSED

B30 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 12-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	239 / 0	562 / 0		
B1, 3-1/2"	346 / 0	630 / 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	12-09-00	Top		5			00-00-00
1		Unf. Lin. (lb/ft)	L	00-00-00	12-09-00	Top	27	74			n\a
2		Unf. Lin. (lb/ft)	L	07-08-00	12-09-00	Top	27	14			n\a
3		Conc. Pt. (lbs)	L	07-08-00	07-08-00	Top	103	116			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2624 ft-lbs	7546 ft-lbs	34.8%	0	07-00-09
End Shear	742 lbs	3761 lbs	19.7%	0	11-08-00
Total Load Deflection	L/491 (0.301")	n\a	48.9%	4	06-05-03
Live Load Deflection	L/999 (0.1")	n\a	n\a	5	06-07-10
Max Defl.	0.301"	n\a	30.1%	4	06-05-03
Span / Depth	15.5				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	786 lbs	32.1%	16.2%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	883 lbs	36.0%	18.2%	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.
Calculations assume member is fully braced.
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 4

Disclosure

SE007819

Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

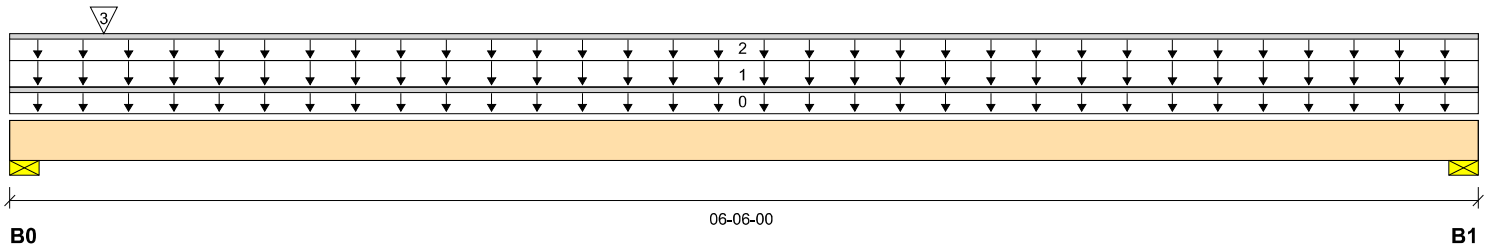
PASSED

B31 (Floor Beam)

BC CALC® Member Report | Dry | 1 span | No cant. | March 18, 2020 11:24:44

Build 7555

Job name:	45147 (5003)	File name:	290683
Address:	Pine Valley	Description:	First Floor Framing
City, Province, Postal Code:	Vaughan, ON	Specifier:	
Builder:	Gold Park	Designer:	NL
Code reports:	CCMC 12472-R	Company:	Alpa Roof Trusses



Total Horizontal Product Length = 06-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1077 / 0	1178 / 0		
B1, 3-1/2"	852 / 0	651 / 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	06-06-00	Top		5			00-00-00
1		Unf. Area (lb/ft²)	L	00-00-00	06-06-00	Top	40	20			06-06-00
2		Unf. Lin. (lb/ft)	L	00-00-00	06-06-00	Top		60			n\a
3		Conc. Pt. (lbs)	L	00-05-00	00-05-00	Top	239	562			n\a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2991 ft-lbs	11610 ft-lbs	25.8%	1	03-02-03
End Shear	1507 lbs	5785 lbs	26.1%	1	01-01-00
Total Load Deflection	L/999 (0.057")	n\a	n\a	4	03-03-00
Live Load Deflection	L/999 (0.032")	n\a	n\a	5	03-03-00
Max Defl.	0.057"	n\a	n\a	4	03-03-00
Span / Depth	7.6				

Bearing Supports

		Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	3087 lbs	81.9%	41.3%	Spruce-Pine-Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	2092 lbs	55.5%	28.0%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
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 4

Disclosure

SE007820

NORDIC
STRUCTURES

Maximum Floor Spans – M2.1, 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:	5/8 in. nailed-glued oriented strand board (OSB) sheathing

Maximum Floor Spans

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

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

Notes:

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

NORDIC
STRUCTURES

Maximum Floor Spans – M4.1, 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:	3/4 in. nailed-glued oriented strand board (OSB) sheathing

Maximum Floor Spans

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

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

Notes:

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

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/

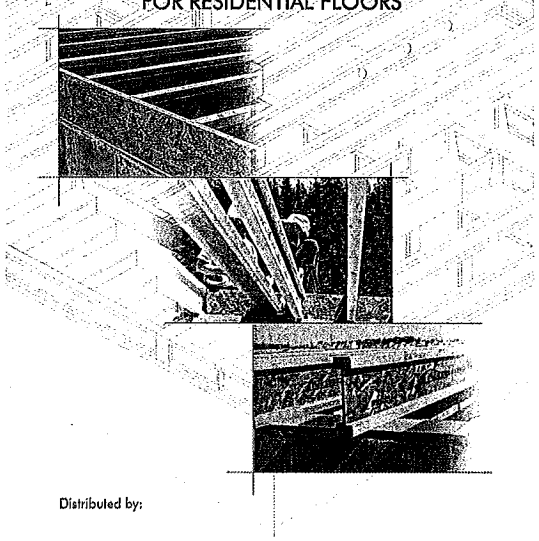
This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.

(Nordic Request 1810-095)

N-C301/April 2014

NORDIC
ENGINEERED WOOD

INSTALLATION GUIDE
FOR RESIDENTIAL FLOORS

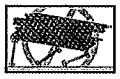


Distributed by:

N-C301 / April 2014

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 unsheathed I-joists. Once sheathed, do not over-stress I-joist 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.

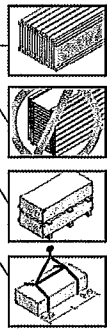
Avoid Accidents by Following these Important Guidelines:

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

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.

STORAGE AND HANDLING GUIDELINES

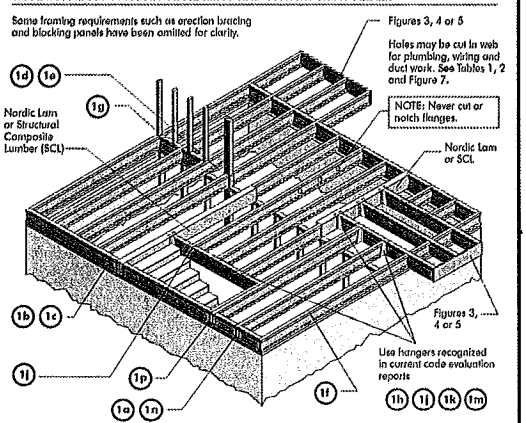
1. Bundle wrap can be slippery when wet. Avoid walking on wrapped bundles.
2. Store, stack, and handle I-joists vertically and level only.
3. Always stack and handle I-joists in the upright position only.
4. Do not store I-joists in direct contact with the ground and/or flatwise.
5. Protect I-joists 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 OR TRY TO REPAIR A DAMAGED I-JOIST.



INSTALLING NORDIC I-JOISTS

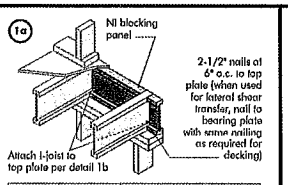
1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
2. Except for cutting to length, I-joist flanges should **never** be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of 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 loads 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 may 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: Space 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



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.

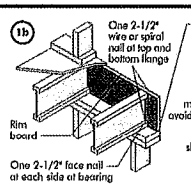
1a



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.

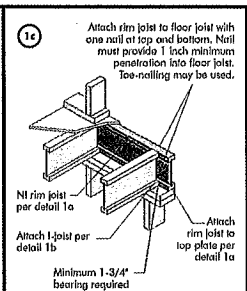
1b



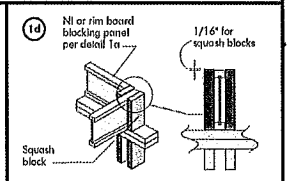
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

*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.

1c



1d



Pair of Squash Blocks	Maximum Factored Vertical per Pair of Squash Blocks (lbs)	
	3-1/2" wide	5-1/2" wide
2x Lumber	6,500	8,500
1-1/8" Rim Board Plus	4,300	6,600

Provide lateral bracing per detail 1a, 1b, or 1c

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.

(Nordic Request 1810-095)

MAXIMUM FLOOR SPANS

1. 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.
2. 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 CGSB-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the used of gypsum and/or a row of blocking at mid-span.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
5. 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.
6. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
7. SI units conversion: 1 inch = 25.4 mm
   1 foot = 0.305 m

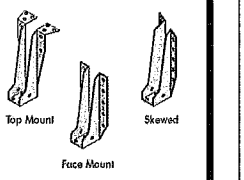
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS
SIMPLE AND MULTIPLE SPANS

Joist Depth	Joist Series	Simple spans On centre spacing				Multiple spans On centre spacing			
		12"	16"	19.2	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-2"	13'-9"	13'-5"	16'-3"	15'-4"	14'-10"	14'-7"
	NI-40c	16'-1"	15'-2"	14'-8"	14'-9"	17'-5"	16'-5"	15'-10"	15'-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"
	NI-80	17'-3"	16'-3"	15'-8"	15'-9"	18'-10"	17'-6"	16'-11"	17'-5"
11-7/8"	NI-20	16'-11"	16'-0"	15'-5"	15'-6"	18'-4"	17'-3"	16'-8"	16'-7"
	NI-40c	18'-1"	17'-0"	16'-5"	16'-6"	20'-0"	18'-6"	17'-9"	17'-7"
	NI-60	18'-4"	17'-3"	16'-7"	16'-9"	20'-3"	18'-9"	18'-0"	18'-9"
	NI-70	19'-6"	18'-0"	17'-4"	17'-5"	21'-6"	19'-11"	19'-0"	19'-8"
	NI-80	19'-9"	18'-3"	17'-6"	17'-7"	21'-9"	20'-2"	19'-3"	19'-11"
	NI-90	20'-2"	18'-7"	17'-10"	17'-11"	22'-3"	20'-7"	19'-8"	19'-9"
	NI-90x	20'-4"	18'-9"	17'-11"	18'-0"	22'-5"	20'-9"	19'-10"	20'-5"
14"	NI-40x	20'-1"	18'-7"	17'-10"	17'-11"	22'-2"	20'-6"	19'-8"	19'-7"
	NI-60	20'-5"	18'-11"	18'-1"	18'-2"	22'-7"	20'-11"	20'-0"	20'-10"
	NI-70	21'-7"	20'-0"	19'-1"	19'-2"	23'-10"	22'-1"	21'-1"	21'-10"
	NI-80	21'-11"	20'-3"	19'-4"	19'-5"	24'-3"	22'-5"	21'-5"	22'-2"
	NI-90	22'-5"	20'-8"	19'-9"	19'-9"	24'-9"	22'-10"	21'-10"	21'-10"
	NI-90x	22'-7"	20'-11"	19'-11"	20'-0"	25'-0"	23'-1"	22'-0"	22'-9"
16"	NI-60	22'-3"	20'-8"	19'-9"	19'-10"	24'-7"	22'-9"	21'-9"	22'-9"
	NI-70	23'-6"	21'-9"	20'-9"	20'-10"	26'-0"	24'-0"	22'-11"	23'-9"
	NI-80	23'-11"	22'-1"	21'-1"	21'-2"	26'-5"	24'-5"	23'-3"	24'-1"
	NI-90	24'-5"	22'-6"	21'-5"	21'-6"	26'-11"	24'-10"	23'-9"	23'-9"
	NI-90x	24'-8"	22'-9"	21'-9"	21'-10"	27'-3"	25'-2"	24'-0"	24'-10"

CCMC EVALUATION REPORT 13032-R

I-JOIST HANGERS

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



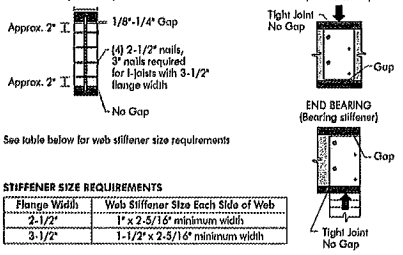
WEB STIFFENERS

RECOMMENDATIONS:

- A *bearing stiffener* is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found of 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 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 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 2
WEB STIFFENER INSTALLATION DETAILS

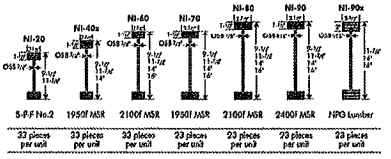


See table below for web stiffener size requirements

STIFFENER SIZE REQUIREMENTS

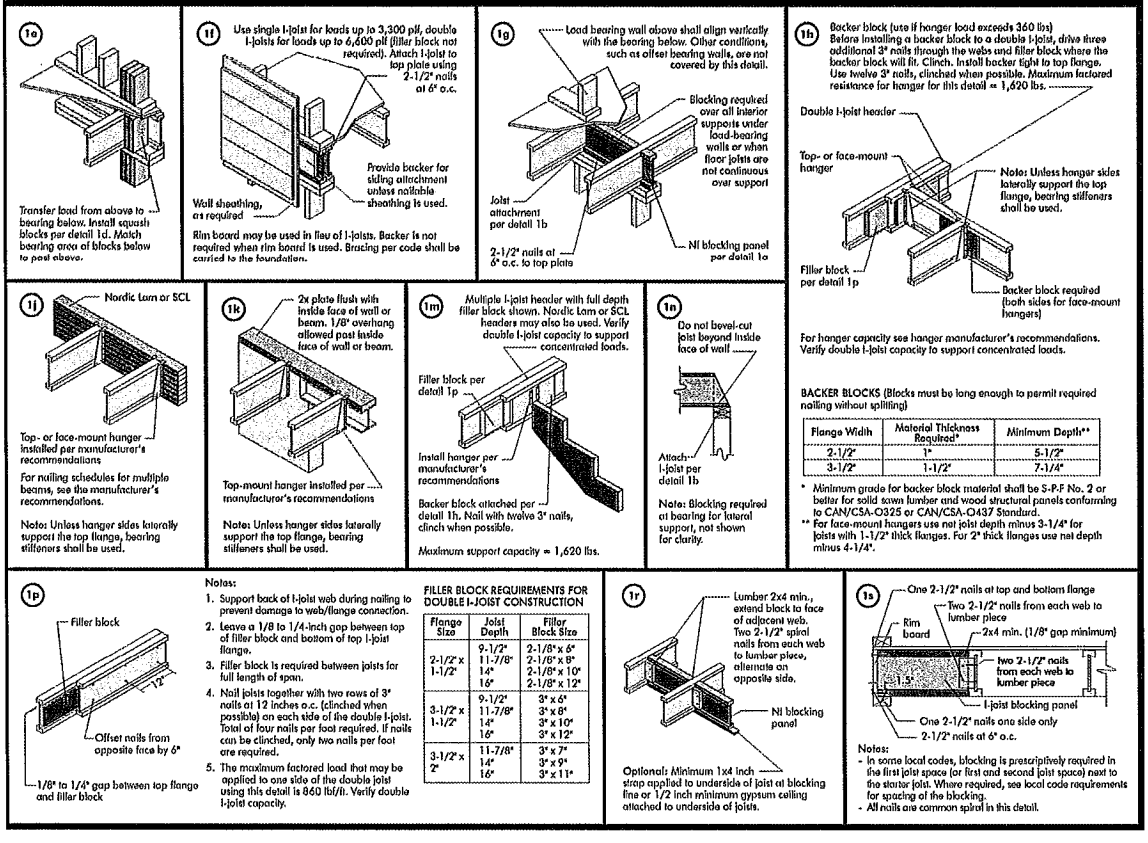
Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

NORDIC I-JOIST SERIES



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.

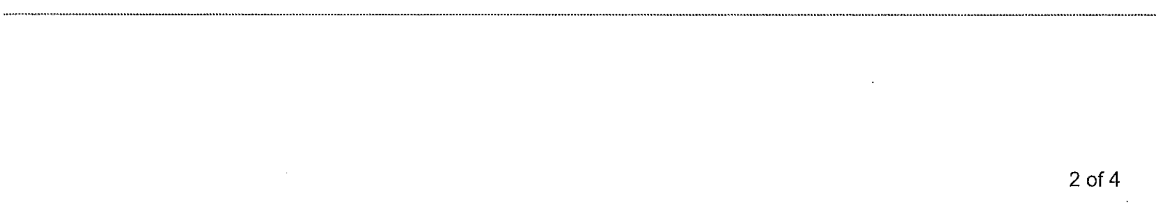
Nordic Engineered Wood I-joists use only finger-jointed black spruce lumber in their flanges, ensuring consistent quality, superior strength, and longer span carrying capacity.



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 sawn 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".



Notes:
1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. 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.
5. 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"	2-1/8" x 6"
	11-7/8"	2-1/8" x 8"
	14"	2-1/8" x 10"
	16"	2-1/8" x 12"
3-1/2" 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"

Notes:
- 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.

The construction details for residential designs are prone to changes.

Details released after April 2014 supersedes N-C301

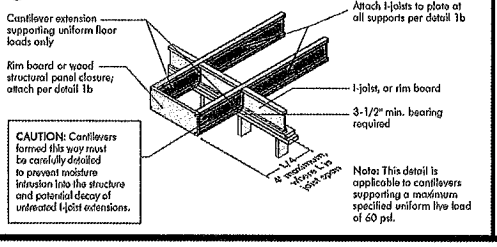
Installation must comply with latest documentation on I-Joist and other Nordic products from the http://nordic.ca/

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.

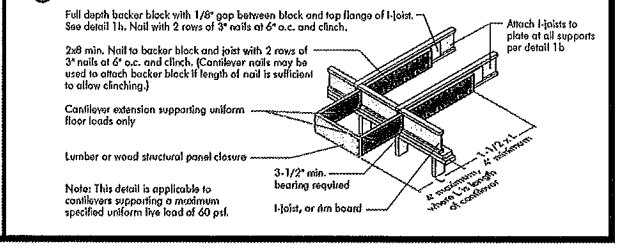
(Nordic Request 1810-095)

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

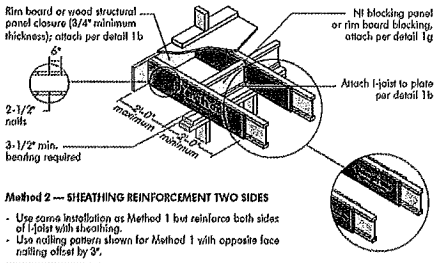


3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE

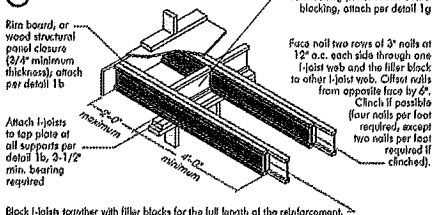


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

- Use same installation as Method 1 but reinforce both sides of I-joist with sheathing.
- Use nailing pattern shown for 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-joist to plate at all supports per detail 1b. Verify reinforced I-joist capacity.

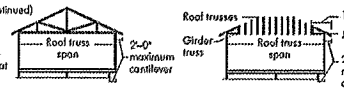
4b Alternate Method 2 — DOUBLE I-JOIST



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.

FIGURE 4 (continued)

See table below for NI reinforcement requirements at cantilever.



For hip roofs with the jack trusses running parallel to the cantilevered floor joists, the I-joist reinforcement requirements for a span of 26 ft. shall be permitted to be used.

CANTILEVER REINFORCEMENT METHODS ALLOWED

Joist Depth (in.)	Roof Truss Span (ft)	ROOF LOADING (UNFACTORED) LL = 30 psf, DL = 15 psf — Joist Spacing (in.) 12	16	19.2	24	LL = 40 psf, DL = 15 psf — Joist Spacing (in.) 12	16	19.2	24	LL = 50 psf, DL = 15 psf — Joist Spacing (in.) 12	16	19.2	24
9-1/2	26	N	N	1	2	N	1	2	X	N	2	X	X
	28	N	N	1	X	N	1	2	X	N	2	X	X
	30	N	1	1	X	N	1	2	X	1	2	X	X
	32	N	1	2	X	N	2	X	X	1	X	X	X
	34	N	1	2	X	N	2	X	X	1	X	X	X
	36	N	1	2	X	1	2	X	X	1	X	X	X
11-7/8	26	1	N	N	1	1	N	1	2	2	N	1	2
	28	1	N	N	1	2	N	1	2	2	1	1	X
	30	1	N	N	1	2	N	1	2	X	1	2	X
	32	1	N	1	1	2	N	1	2	X	1	2	X
	34	1	N	1	2	2	1	1	X	X	1	2	X
	36	2	N	1	2	X	1	2	X	X	1	2	X
	38	2	N	1	2	X	1	2	X	X	2	X	X
14	26	N	N	N	N	N	N	N	1	N	N	N	1
	28	N	N	N	N	N	N	N	1	N	N	1	1
	30	N	N	N	N	N	N	N	1	N	N	1	2
	32	N	N	N	1	N	N	N	1	N	N	1	2
	34	N	N	N	1	N	N	1	1	N	N	1	2
	36	N	N	N	1	N	N	1	2	N	1	1	2
	38	N	N	N	1	N	N	1	2	N	1	1	X
	40	N	N	N	1	N	N	1	2	N	1	2	X
16	26	N	N	N	N	N	N	N	N	N	N	N	1
	28	N	N	N	N	N	N	N	1	N	N	N	1
	30	N	N	N	N	N	N	N	1	N	N	N	1
	32	N	N	N	N	N	N	N	1	N	N	1	1
	34	N	N	N	N	N	N	N	1	N	N	1	2
	36	N	N	N	1	N	N	N	1	N	N	1	2
	38	N	N	N	1	N	N	N	1	N	N	1	2
	40	N	N	N	1	N	N	1	2	N	N	1	2

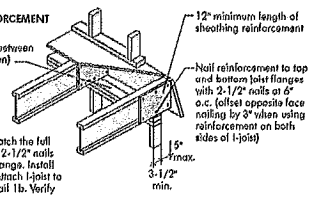
1. N = No reinforcement required.
   1 = NI reinforced with 3/4" wood structural panel on one side only.
   2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
   X = Try a deeper joist or closer spacing.
2. Maximum design load shall be 18 psf roof dead load, 55 psf floor total load, and 80 plf wall load. Wall load is based on 3'-0" maximum width window or door openings.

For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.

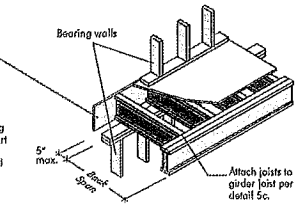
3. Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
4. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting walls and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
5. 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



5b SET-BACK DETAIL



5c SET-BACK CONNECTION

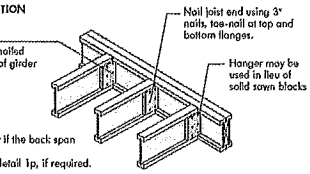
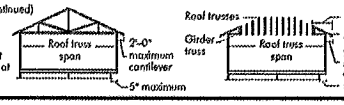


FIGURE 5 (continued)

See table below for NI reinforcement requirements at cantilever.



For hip roofs with the jack trusses running parallel to the cantilevered floor joists, the I-joist reinforcement requirements for a span of 26 ft. shall be permitted to be used.

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

Joist Depth (in.)	Roof Truss Span (ft)	ROOF LOADING (UNFACTORED) LL = 30 psf, DL = 15 psf — Joist Spacing (in.) 12	16	19.2	24	LL = 40 psf, DL = 15 psf — Joist Spacing (in.) 12	16	19.2	24	LL = 50 psf, DL = 15 psf — Joist Spacing (in.) 12	16	19.2	24
9-1/2	26	1	X	X	X	2	X	X	X	2	X	X	X
	28	1	X	X	X	2	X	X	X	X	X	X	X
	30	1	X	X	X	2	X	X	X	X	X	X	X
	32	2	X	X	X	2	X	X	X	X	X	X	X
	34	2	X	X	X	X	X	X	X	X	X	X	X
	36	2	X	X	X	X	X	X	X	X	X	X	X
11-7/8	26	X	2	X	X	X	X	X	X	X	X	X	X
	28	X	2	X	X	X	X	X	X	X	X	X	X
	30	X	2	X	X	X	X	X	X	X	X	X	X
	32	X	2	X	X	X	X	X	X	X	X	X	X
	34	X	X	X	X	X	X	X	X	X	X	X	X
	36	X	X	X	X	X	X	X	X	X	X	X	X
	38	X	X	X	X	X	X	X	X	X	X	X	X
14	26	N	2	X	X	1	X	X	X	1	X	X	X
	28	N	2	X	X	1	X	X	X	2	X	X	X
	30	1	2	X	X	1	X	X	X	2	X	X	X
	32	1	X	X	X	1	X	X	X	2	X	X	X
	34	1	X	X	X	2	X	X	X	2	X	X	X
	36	1	X	X	X	2	X	X	X	X	X	X	X
	38	1	X	X	X	2	X	X	X	X	X	X	X
	40	1	X	X	X	2	X	X	X	X	X	X	X
16	26	1	2	X	X	1	X	X	X	2	X	X	X
	28	1	2	X	X	1	X	X	X	2	X	X	X
	30	1	X	X	X	1	X	X	X	2	X	X	X
	32	1	X	X	X	2	X	X	X	2	X	X	X
	34	1	X	X	X	2	X	X	X	X	X	X	X
	36	1	X	X	X	2	X	X	X	X	X	X	X
	38	1	X	X	X	2	X	X	X	X	X	X	X
	40	2	X	X	X	2	X	X	X	X	X	X	X

1. 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.
2. Maximum design load shall be 18 psf roof dead load, 55 psf floor total load, and 80 plf wall load. Wall load is based on 3'-0" maximum width window or door openings.

For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.

3. 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.
4. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting walls and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
5. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

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(Nordic Request 1810-095)

WEB HOLES

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 or 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 shall be permitted anywhere in a cantilevered 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 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
		Round hole diameter (in.)															
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	
9-1/2"	NI-20	0'-7"	1'-6"	2'-10"	4'-3"	5'-8"	6'-0"	---	---	---	---	---	---	---	---	---	13'-6"
	NI-40x	0'-7"	1'-6"	3'-0"	4'-4"	6'-0"	6'-4"	---	---	---	---	---	---	---	---	---	14'-9"
	NI-60	1'-3"	2'-6"	4'-0"	5'-4"	7'-0"	7'-5"	---	---	---	---	---	---	---	---	---	14'-11"
	NI-70	2'-0"	3'-4"	4'-9"	6'-3"	8'-0"	8'-4"	---	---	---	---	---	---	---	---	---	15'-7"
	NI-80	2'-3"	3'-6"	5'-0"	6'-6"	8'-2"	8'-8"	---	---	---	---	---	---	---	---	---	15'-9"
11-7/8"	NI-20	0'-7"	0'-8"	1'-0"	2'-4"	3'-8"	4'-0"	5'-0"	6'-6"	7'-9"	---	---	---	---	---	---	15'-6"
	NI-40x	0'-7"	0'-8"	1'-3"	2'-8"	4'-0"	4'-4"	5'-5"	7'-0"	8'-4"	---	---	---	---	---	---	16'-6"
	NI-60	0'-7"	1'-8"	3'-0"	4'-3"	5'-9"	6'-0"	7'-3"	8'-10"	10'-0"	---	---	---	---	---	---	16'-9"
	NI-70	1'-3"	2'-6"	4'-0"	5'-4"	6'-9"	7'-2"	8'-4"	10'-0"	11'-2"	---	---	---	---	---	---	17'-5"
	NI-80	1'-6"	2'-10"	4'-2"	5'-6"	7'-0"	7'-5"	8'-6"	10'-3"	11'-4"	---	---	---	---	---	---	17'-7"
	NI-90	0'-7"	0'-8"	1'-6"	3'-2"	4'-10"	5'-4"	6'-9"	8'-9"	10'-2"	---	---	---	---	---	---	17'-11"
	NI-90x	0'-7"	0'-8"	0'-9"	2'-5"	4'-4"	4'-9"	6'-3"	---	---	---	---	---	---	---	---	18'-0"
14"	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"	---	---	---	17'-11"
	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"	---	---	---	18'-2"
	NI-70	0'-8"	1'-10"	3'-0"	4'-6"	5'-10"	6'-2"	7'-3"	8'-9"	9'-9"	10'-4"	12'-0"	13'-5"	---	---	---	19'-2"
	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"	---	---	---	19'-5"
	NI-90	0'-7"	0'-8"	0'-10"	2'-5"	4'-0"	4'-5"	5'-9"	7'-5"	8'-5"	9'-4"	11'-4"	12'-11"	---	---	---	19'-9"
	NI-90x	0'-7"	0'-8"	0'-9"	2'-0"	3'-9"	4'-2"	5'-5"	7'-3"	8'-5"	9'-2"	---	---	---	---	---	20'-0"
16"	NI-60	0'-7"	0'-8"	0'-8"	1'-6"	2'-10"	3'-2"	4'-2"	5'-6"	6'-4"	7'-0"	8'-5"	9'-8"	10'-2"	12'-2"	13'-9"	19'-10"
	NI-70	0'-7"	1'-0"	2'-3"	3'-6"	4'-10"	5'-3"	6'-5"	7'-8"	8'-6"	9'-2"	10'-8"	12'-0"	12'-4"	14'-0"	15'-6"	20'-10"
	NI-80	0'-7"	1'-3"	2'-6"	3'-10"	5'-3"	5'-6"	6'-6"	8'-0"	9'-0"	9'-5"	11'-0"	12'-3"	12'-9"	14'-5"	16'-0"	21'-2"
	NI-90	0'-7"	0'-8"	0'-8"	1'-9"	3'-3"	3'-8"	4'-9"	6'-6"	7'-5"	8'-0"	9'-10"	11'-3"	11'-9"	13'-9"	15'-4"	21'-6"
	NI-90x	0'-7"	0'-8"	0'-9"	2'-0"	3'-6"	4'-0"	5'-0"	6'-9"	7'-9"	8'-4"	10'-2"	11'-6"	12'-0"	---	---	21'-10"

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.

OPTIONAL:

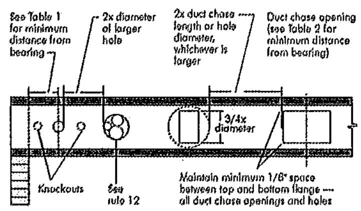
The above table is based on the I-joists used at their maximum span. If the I-joists are placed at less than their full maximum span (see Maximum Floor Spans), the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

$$D_{reduced} = \frac{L_{actual}}{SAF} \times D$$

Where:

- $D_{reduced}$ = Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span applications (ft). The reduced distance shall not be less than 6 inches from the face of the support to edge of the hole.
- L_{actual} = The actual measured span distance between the inside faces of supports (ft).
- SAF = 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 $\frac{L_{actual}}{SAF}$ is greater than 1, use 1 in the above calculation for $\frac{L_{actual}}{SAF}$.

FIGURE 7
FIELD-CUT HOLE LOCATOR



A knockout is **NOT** considered a hole, may be utilized wherever it occurs and may be ignored for purposes of calculating minimum distances between holes.

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.

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.)								
		Duct chase length (in.)								
		8	10	12	14	16	18	20	22	24
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	5'-1"	5'-5"	5'-10"	6'-3"	6'-7"	7'-1"	7'-6"	8'-1"	8'-4"
	NI-80	5'-3"	5'-8"	6'-0"	6'-6"	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"
	NI-80	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-8"
	NI-90	7'-6"	7'-11"	8'-4"	8'-9"	9'-2"	9'-7"	10'-1"	10'-7"	10'-11"
	NI-90x	7'-7"	8'-1"	8'-5"	8'-10"	9'-4"	9'-8"	10'-2"	10'-8"	11'-2"
14"	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"	13'-3"	13'-0"
	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'-2"	9'-8"	10'-0"	10'-6"	10'-11"	11'-5"	11'-9"	12'-4"	12'-11"
	NI-90x	9'-4"	9'-9"	10'-3"	10'-7"	11'-1"	11'-7"	12'-1"	12'-7"	13'-2"
16"	NI-60	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	13'-2"	14'-1"	14'-10"
	NI-70	10'-1"	10'-6"	11'-0"	11'-4"	11'-10"	12'-3"	12'-8"	13'-3"	14'-0"
	NI-80	10'-4"	10'-9"	11'-3"	11'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'-4"
	NI-90	10'-9"	11'-2"	11'-8"	12'-0"	12'-6"	13'-0"	13'-6"	14'-2"	14'-10"
	NI-90x	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. For other applications, contact your local distributor.

INSTALLING THE GLUED FLOOR SYSTEM

1. *Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.*
2. *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.*
3. *Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.*
4. *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.*
5. *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.*
6. *Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.*
7. *After the first row of panels is in place, spread glue in the groove of 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.*
8. *Tap the second row of panels into place, using a block to protect groove edges.*
9. *Stagger end 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.)*
10. **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	Interm. Supports
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"

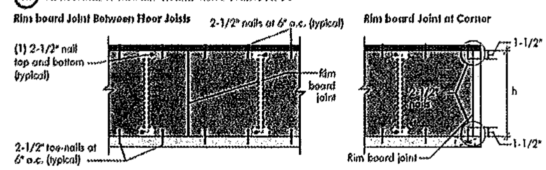
1. Fasteners of sheathing and subflooring shall conform to the above table.
2. Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to framing.
3. Flooring screws shall not be less than 1/8-inch in diameter.
4. Special conditions may impose heavy traffic and concentrated loads that require construction in excess of the minimums shown.
5. Use only adhesives conforming to CAN/CGSB-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.

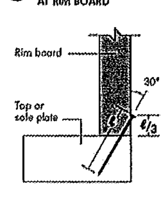
IMPORTANT NOTE:
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

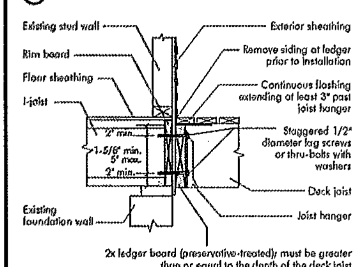
(8a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



(8b) TOE-NAIL CONNECTION AT RIM BOARD



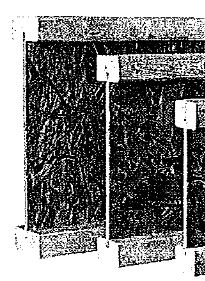
(8c) 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



PRODUCT WARRANTY

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

Furthermore, Chantiers Chibougamau 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.



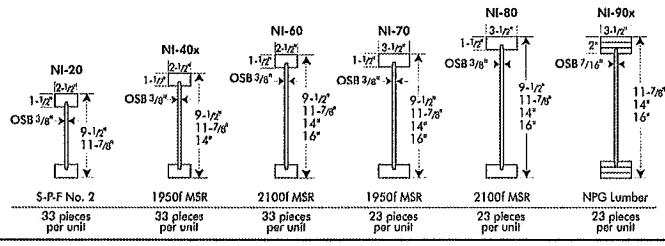
CONSTRUCTION DETAILS FOR RESIDENTIAL FLOORS

NORDIC ENGINEERED WOOD

www.nordicewp.com

FSC www.fsc.org FSC® C011817 The mark of responsible forestry

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 or 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 cantilevered 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 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.) Round Hole Diameter (in.) 2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4
9-1/2"	NI-20	0'-7"	1'-6"	2'-10"	4'-3"	5'-8"	6'-0"	---	---	---	---	---	---	---	---	---
	NI-40x	0'-7"	1'-6"	3'-0"	4'-4"	6'-0"	6'-4"	---	---	---	---	---	---	---	---	---
	NI-60	1'-3"	2'-6"	4'-0"	5'-4"	7'-0"	7'-5"	---	---	---	---	---	---	---	---	---
	NI-70	2'-0"	3'-4"	4'-9"	6'-3"	8'-0"	8'-4"	---	---	---	---	---	---	---	---	---
	NI-80	2'-3"	3'-6"	5'-0"	6'-6"	8'-2"	8'-8"	---	---	---	---	---	---	---	---	---
11-7/8"	NI-20	0'-7"	0'-8"	1'-0"	2'-4"	3'-8"	4'-0"	5'-0"	6'-6"	7'-9"	---	---	---	---	---	---
	NI-40x	0'-7"	0'-8"	1'-3"	2'-8"	4'-0"	4'-4"	5'-5"	7'-0"	8'-4"	---	---	---	---	---	---
	NI-60	0'-7"	1'-8"	3'-0"	4'-3"	5'-9"	6'-0"	7'-3"	8'-10"	10'-0"	---	---	---	---	---	---
	NI-70	1'-3"	2'-6"	4'-0"	5'-4"	6'-9"	7'-2"	8'-4"	10'-0"	11'-2"	---	---	---	---	---	---
	NI-80	1'-6"	2'-10"	4'-2"	5'-6"	7'-0"	7'-5"	8'-6"	10'-3"	11'-4"	---	---	---	---	---	---
	NI-90x	0'-7"	0'-8"	0'-9"	2'-5"	4'-4"	4'-9"	6'-3"	---	---	---	---	---	---	---	---
14"	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"	---	---	---
	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-90x	0'-7"	0'-8"	0'-8"	2'-0"	3'-9"	4'-2"	5'-5"	7'-3"	8'-5"	9'-2"	---	---	---	---	---
16"	NI-60	0'-7"	0'-8"	0'-8"	1'-6"	2'-10"	3'-2"	4'-2"	5'-6"	6'-4"	7'-0"	8'-5"	9'-8"	10'-2"	12'-2"	13'-9"
	NI-70	0'-7"	1'-0"	2'-3"	3'-6"	4'-10"	5'-3"	6'-3"	7'-8"	8'-6"	9'-2"	10'-8"	12'-0"	12'-4"	14'-0"	15'-6"
	NI-80	0'-7"	1'-3"	2'-6"	3'-10"	5'-3"	5'-6"	6'-6"	8'-0"	9'-0"	9'-5"	11'-0"	12'-3"	12'-9"	14'-5"	16'-0"
	NI-90x	0'-7"	0'-8"	0'-9"	2'-0"	3'-6"	4'-0"	5'-0"	6'-9"	7'-9"	8'-4"	10'-2"	11'-6"	12'-0"	---	---

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

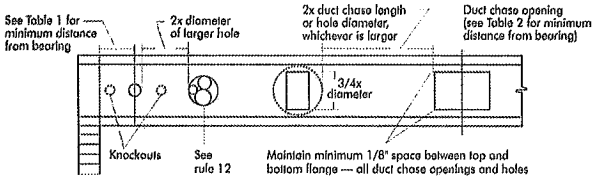
Simple Span Only

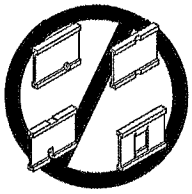
Joist Depth	Joist Series	Minimum Distance from Inside Face of Supports to Centre of Opening (ft - in.) Duct Chase Length (in.) 8	10	12	14	16	18	20	22	24
9-1/2"	NI-20	4'-1"	4'-5"	4'-10"	5'-4"	5'-8"	6'-1"	6'-6"	7'-1"	7'-5"
	NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"
	NI-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-5"	8'-0"	8'-3"	8'-9"
	NI-70	5'-1"	5'-5"	5'-10"	6'-3"	6'-7"	7'-1"	7'-6"	8'-1"	8'-4"
	NI-80	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"
11-7/8"	NI-20	5'-9"	6'-2"	6'-6"	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"
	NI-80	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-8"
	NI-90x	7'-7"	8'-1"	8'-5"	8'-10"	9'-4"	9'-8"	10'-2"	10'-8"	11'-2"
14"	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"	13'-3"	13'-0"
	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-90x	9'-4"	9'-9"	10'-3"	10'-7"	11'-1"	11'-7"	12'-1"	12'-7"	13'-2"
16"	NI-60	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	13'-2"	14'-1"	14'-10"
	NI-70	10'-1"	10'-5"	11'-0"	11'-4"	11'-10"	12'-3"	12'-8"	13'-3"	14'-0"
	NI-80	10'-4"	10'-9"	11'-3"	11'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'-4"
	NI-90x	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 unsheathed 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-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
   - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
   - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
5. Never install a damaged I-joist.

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.

CHANTIERS CHIBOUGAMAU

PRODUCT WARRANTY

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

Furthermore, Chantiers Chibougamau 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.

The construction details for residential designs are prone to changes.

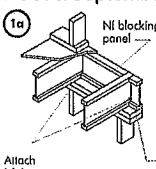
Details released after September 2013 supersedes N-303

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.

(Nordic Request 1810-095)

1a

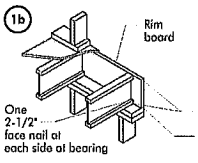


Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

*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.

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

1b



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.

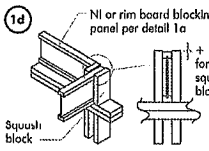
One 2-1/2" wire or spiral nail at top and bottom flange

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-joist. 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.

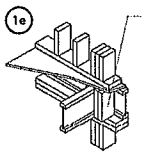
1d



Pair of Squash Blocks	Maximum Factored Vertical Load per Pair of Squash Blocks (lbs)	
	3-1/2" wide	5-1/2" wide
2x Lumber	5,500	8,500
1-1/8" Rim Board Plus	4,300	6,600

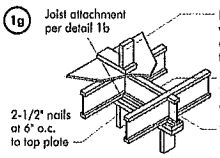
Provide lateral bracing per detail 1a or 1b

1e



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

1g



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

1h

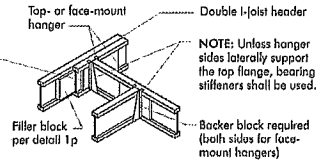
Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double I-joist, drive three additional 3" nails through the web and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3" nails, clinched when possible. Maximum factored 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"

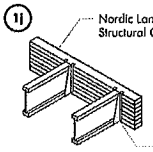
* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard.

** 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".



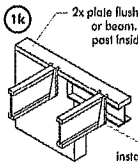
For hanger capacity see hanger manufacturer's recommendations. Verify double I-joist capacity to support concentrated loads.

1i

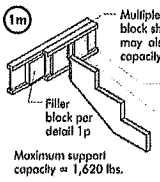


NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

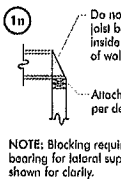
1k



1m

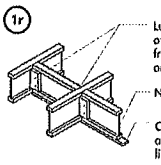


1n

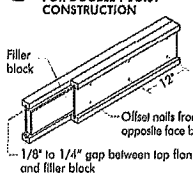


NOTE: Blocking required at bearing for lateral support, not shown for clarity.

1r



1p FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

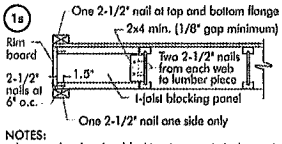


NOTES:

1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. 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.
5. 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.

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

1s



NOTES:

- 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.

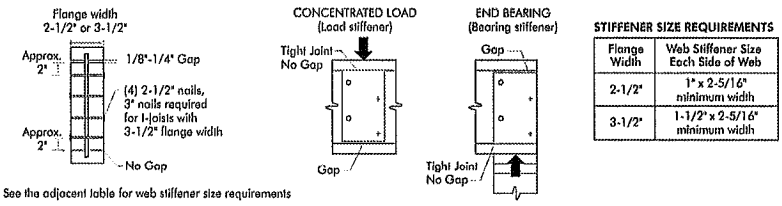
All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for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

WEB STIFFENERS

RECOMMENDATIONS:

- A *bearing stiffener* is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found of 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 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 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.

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



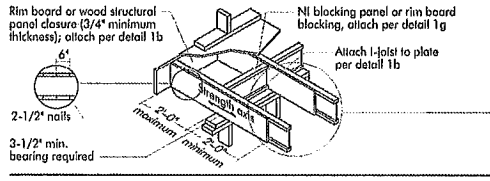
See the adjacent table for web stiffener size requirements

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

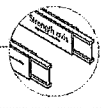
CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE



Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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



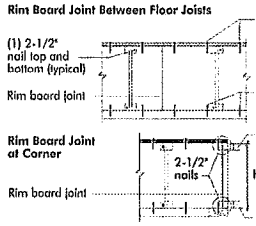
Use nailing pattern shown for Method 1 with opposite face nailing offset by 3".

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-joist to plate at all supports per detail 1b. Verify reinforced I-joist capacity.

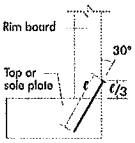
RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim Board Joint Between Floor Joists



8b TOE-NAIL CONNECTION AT RIM BOARD



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.

(Nordic Request 1810-095)