

FROM PLAN DATED: AUG 2020

BUILDER: ROYAL PINE HOMES

SITE: WEST GORMLEY

MODEL: 4504

ELEVATION: A,B,C

LOT:

CITY: RICHMOND HILL

SALESMAN: MARIO DI CIANO

DESIGNER: L.D.

REVISION: lbv

NOTES:

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

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING CANT' OVER BRICK RE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 7, TABLES 1 & 2. **CERAMIC TIL** APPLICATION AS PER O.B.C 9.30.6.

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

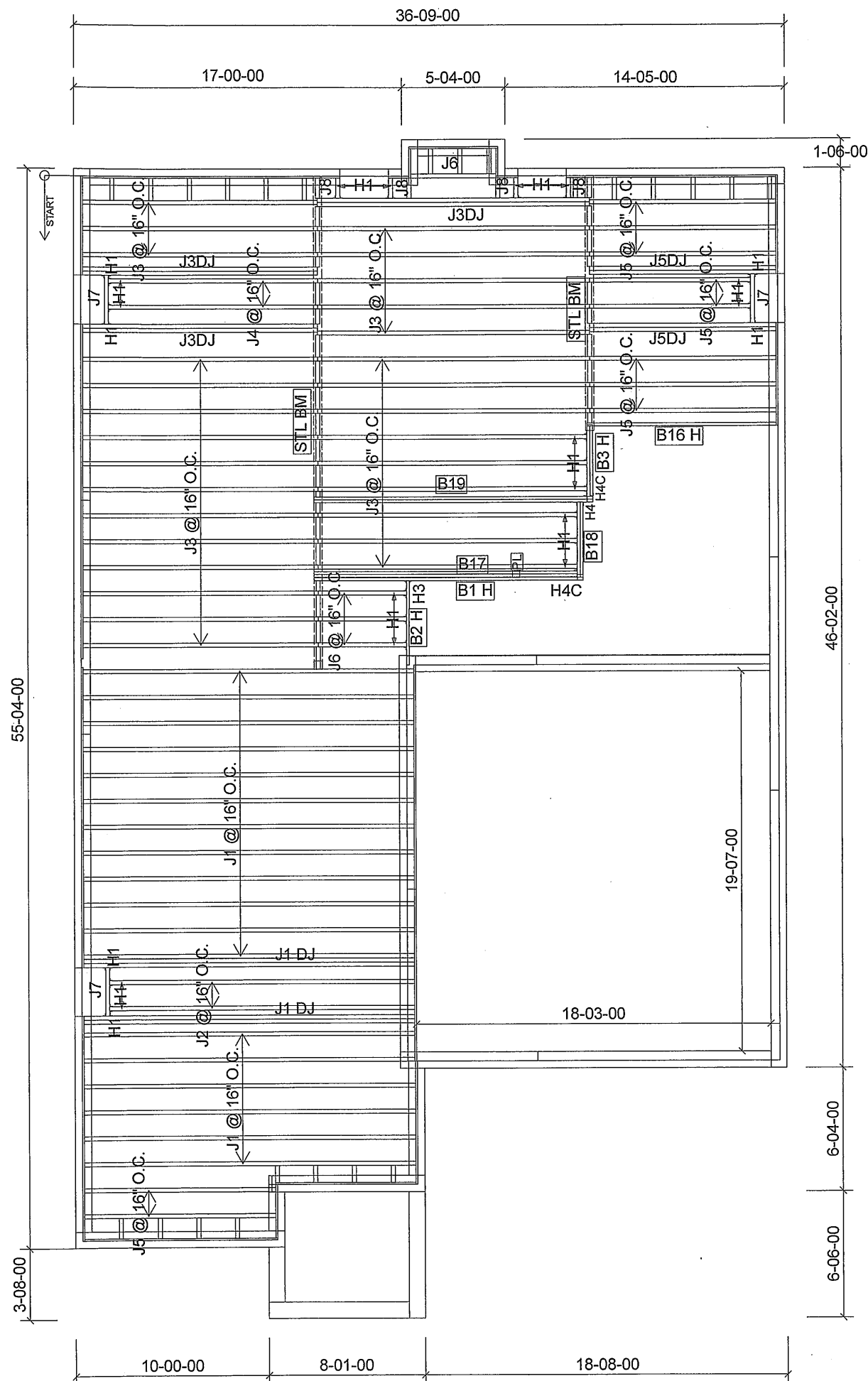
DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2021-05-19

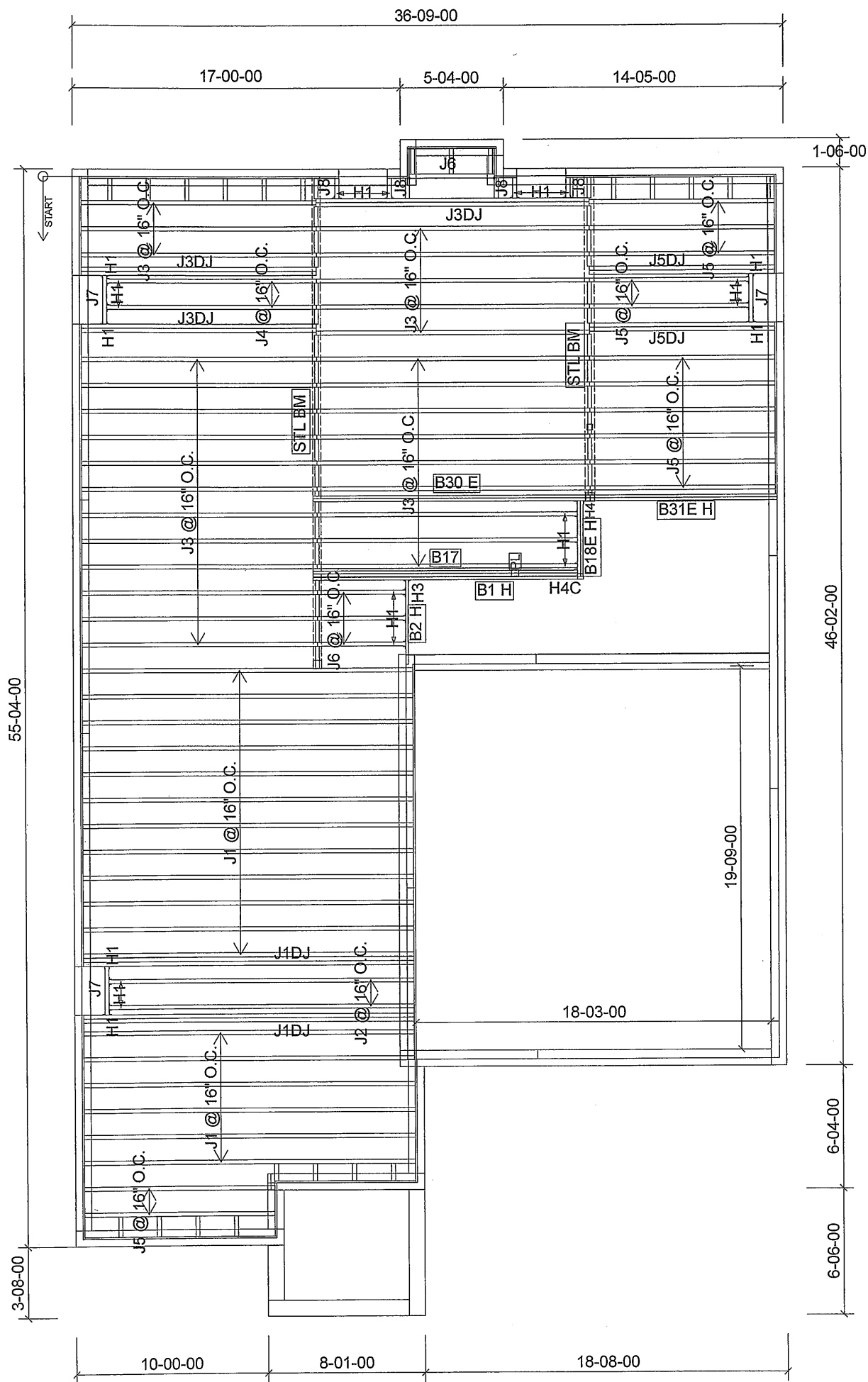
1st FLOOR

STANDARD



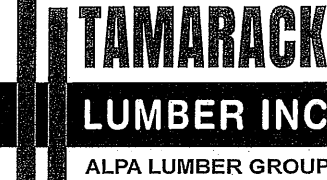
Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	18
J1 DJ	18-00-00	11 7/8" NI-40x	2	4
J2	16-00-00	11 7/8" NI-40x	1	2
J3	14-00-00	11 7/8" NI-40x	1	29
J3DJ	14-00-00	11 7/8" NI-40x	2	6
J4	12-00-00	11 7/8" NI-40x	1	2
J5	10-00-00	11 7/8" NI-40x	1	10
J5DJ	10-00-00	11 7/8" NI-40x	2	4
J6	6-00-00	11 7/8" NI-40x	1	4
J7	4-00-00	11 7/8" NI-40x	1	3
J8	2-00-00	11 7/8" NI-40x	1	4
B19	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1 H	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B17	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B16 H	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2 H	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B18	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3 H	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
6	H1	IUA2.56/11.88
3	H1	IUS2.56/11.88
10	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
1	H3	HUS1.81/10
2	H4C	HUC410
1	H4	HGUS410



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	18
J1DJ	18-00-00	11 7/8" NI-40x	2	4
J2	16-00-00	11 7/8" NI-40x	1	2
J3	14-00-00	11 7/8" NI-40x	1	29
J3DJ	14-00-00	11 7/8" NI-40x	2	6
J4	12-00-00	11 7/8" NI-40x	1	2
J5	10-00-00	11 7/8" NI-40x	1	13
J5DJ	10-00-00	11 7/8" NI-40x	2	4
J6	6-00-00	11 7/8" NI-40x	1	4
J7	4-00-00	11 7/8" NI-40x	1	3
J8	2-00-00	11 7/8" NI-40x	1	4
B30 E	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1 H	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B17	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B31E H	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2 H	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B18E H	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
3	H1	IUS2.56/11.88
3	H1	IUS2.56/11.88
10	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
1	H3	HUS1.81/10
1	H4C	HUC410
1	H4	HGUS410



FROM PLAN DATED: AUG 2020

BUILDER: ROYAL PINE HOMES

SITE: WEST GORMLEY

MODEL: 4504

ELEVATION: A,B,C

LOT:

CITY: RICHMOND HILL

SALESMAN: MARIO DI CIANO

DESIGNER: L.D.

REVISION: lbv

NOTES:
REFER TO THE **NORDIC INSTALLATION**
GUIDE FOR PROPER STORAGE AND
INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P
REQ'D UNDER INTERIOR UNIFORM LOAD
BEARING WALLS. **MULTIPLE SQUASH**
BLOCKS REQ'D UNDER CONCENTRATED
LOADS. SEE FIGURE 1. **CANTILEVERED**
JOISTS INCLUDING **CANT' OVER BRICK RI**
I-JOIST BLOCKING ALONG BEARING AND
RIMBOARD CLOSURE AT ENDS. SEE
FIGURES 4 & 5 FOR REINFORCEMENT
REQUIREMENTS. FOR **HOLES** INCLUDING
DUCT CHASE AND **FIELD CUT OPENINGS**
SEE FIGURE 7, TABLES 1 & 2. **CERAMIC T**
APPLICATION AS PER O.B.C 9.30.6.

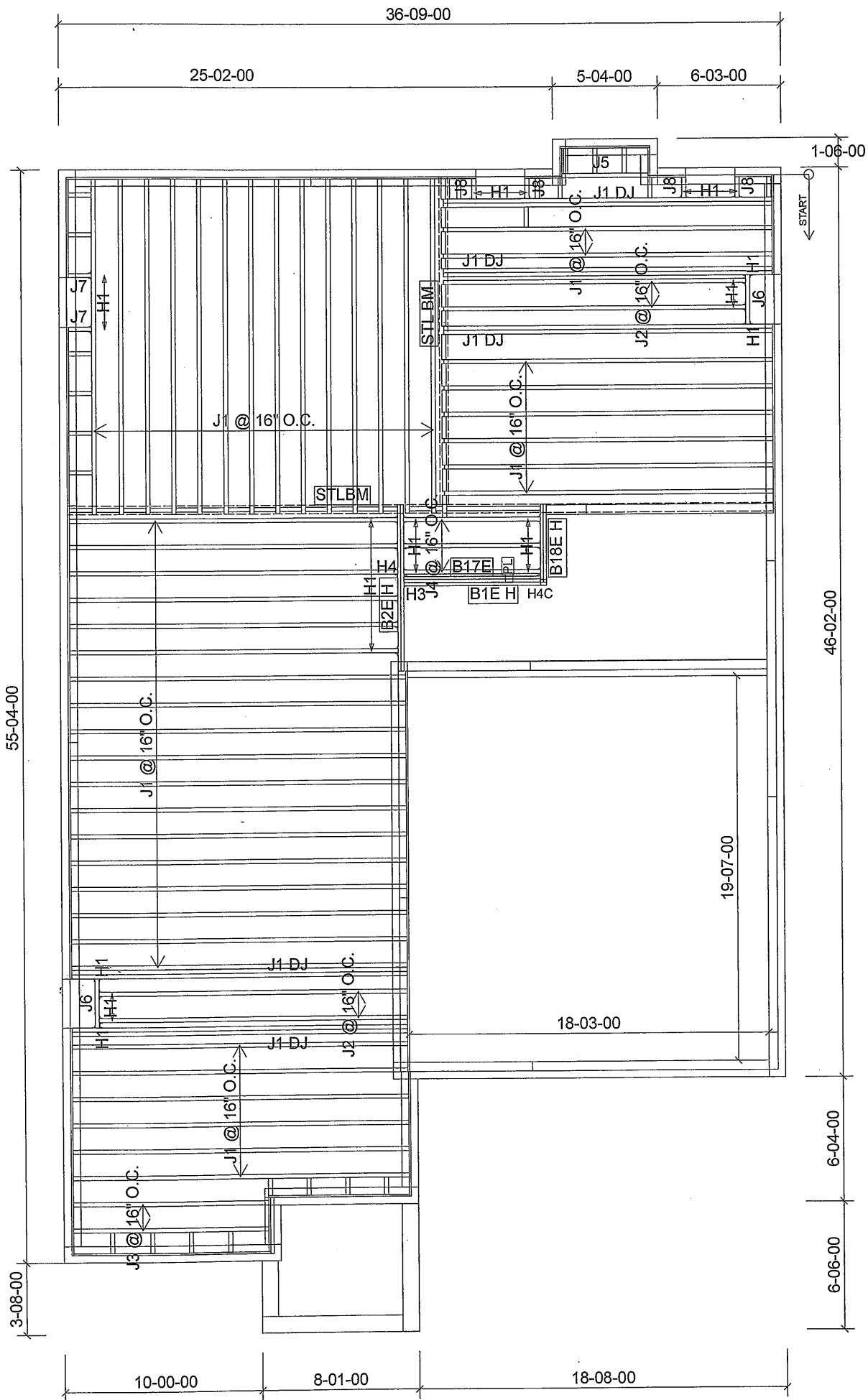
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2021-05-19

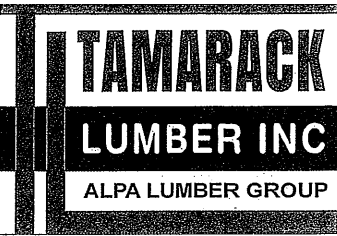
1st FLOOR

STANDARD
IN LAW SUITES



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	46
J1 DJ	18-00-00	11 7/8" NI-40x	2	10
J2	16-00-00	11 7/8" NI-40x	1	4
J3	10-00-00	11 7/8" NI-40x	1	2
J4	8-00-00	11 7/8" NI-40x	1	3
J5	6-00-00	11 7/8" NI-40x	1	1
J6	4-00-00	11 7/8" NI-40x	1	2
J7	2-00-00	11 7/8" NI-40x	1	2
J8	2-00-00	11 7/8" NI-40x	1	4
B2E H	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1E H	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B17E	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B18E H	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
1	H3	HUS1.81/10
1	H4C	HUC410
1	H4	HGUS410



FROM PLAN DATED: AUG 2020

BUILDER: ROYAL PINE HOMES

SITE: WEST GORMLEY

MODEL: 4504

ELEVATION: A,B,C

LOT:

CITY: RICHMOND HILL

SALESMAN: MARIO DI CIANO

DESIGNER: L.D.

REVISION: lbv

NOTES:
REFER TO THE **NORDIC INSTALLATION** GUIDE FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** RE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 7, TABLES 1 & 2. **CERAMIC T** APPLICATION AS PER O.B.C 9.30.6.

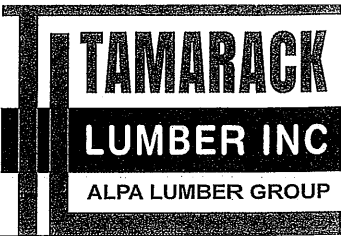
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2021-05-19

1st FLOOR

OPTION



FROM PLAN DATED: AUG 2020

BUILDER: ROYAL PINE HOMES

SITE: WEST GORMLEY

MODEL: 4504

ELEVATION: A,B,C

LOT:

CITY: RICHMOND HILL

SALESMAN: MARIO DI CIANO

DESIGNER: L.D.

REVISION: lbv

NOTES:
REFER TO THE **NORDIC INSTALLATION** GUIDE FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** RE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 7, TABLES 1 & 2. **CERAMIC TI** APPLICATION AS PER O.B.C 9.30.6.

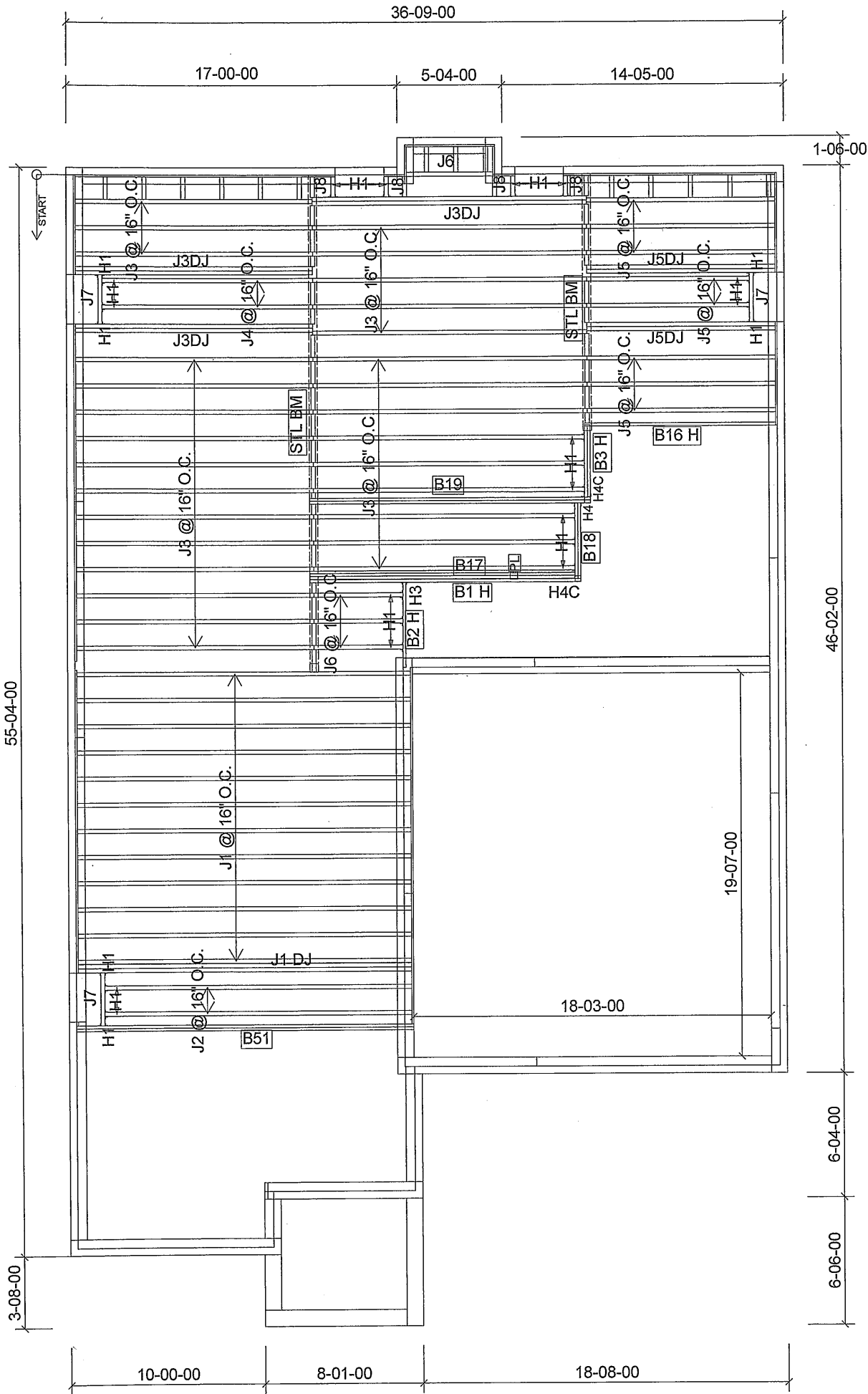
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2021-05-19

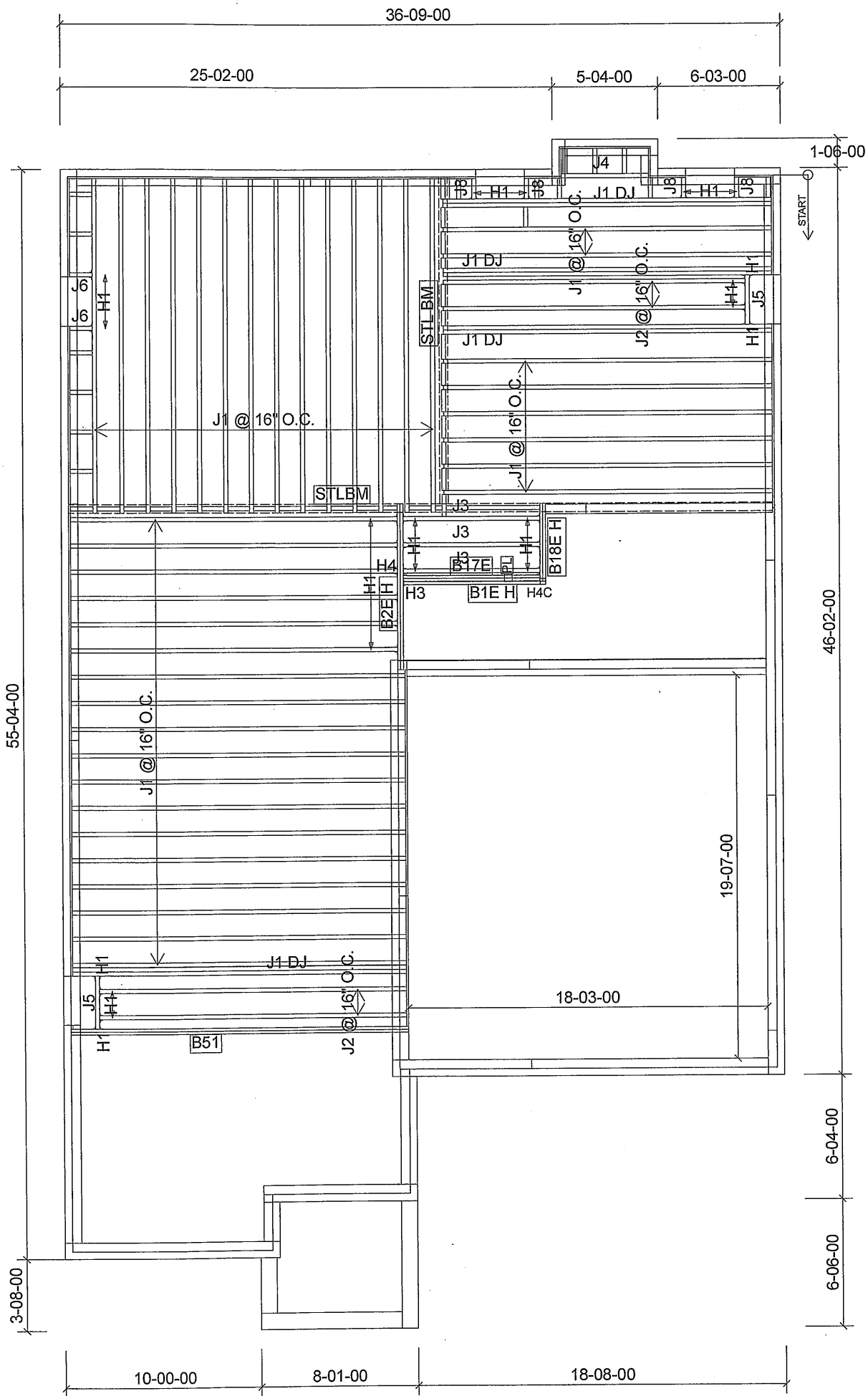
1st FLOOR

STANDARD
SUNKEN FOYER



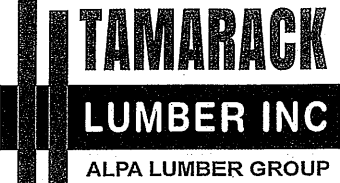
Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	12
J1 DJ	18-00-00	11 7/8" NI-40x	2	2
J2	16-00-00	11 7/8" NI-40x	1	2
J3	14-00-00	11 7/8" NI-40x	1	29
J3DJ	14-00-00	11 7/8" NI-40x	2	6
J4	12-00-00	11 7/8" NI-40x	1	2
J5	10-00-00	11 7/8" NI-40x	1	8
J5DJ	10-00-00	11 7/8" NI-40x	2	4
J6	6-00-00	11 7/8" NI-40x	1	4
J7	4-00-00	11 7/8" NI-40x	1	3
J8	2-00-00	11 7/8" NI-40x	1	4
B51	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B19	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1 H	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B17	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B16 H	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2 H	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B18	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3 H	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
6	H1	IUA2.56/11.88
3	H1	IUS2.56/11.88
1	H1	IUS2.56/11.88
9	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
1	H3	HUS1.81/10
2	H4C	HUC410
1	H4	HGUS410



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	40
J1 DJ	18-00-00	11 7/8" NI-40x	2	8
J2	16-00-00	11 7/8" NI-40x	1	4
J3	8-00-00	11 7/8" NI-40x	1	3
J4	6-00-00	11 7/8" NI-40x	1	1
J5	4-00-00	11 7/8" NI-40x	1	2
J6	2-00-00	11 7/8" NI-40x	1	2
J8	2-00-00	11 7/8" NI-40x	1	4
B51	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2E H	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1E H	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B17E	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B18E H	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
13	H1	IUS2.56/11.88
7	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
1	H3	HUS1.81/10
1	H4C	HUC410
1	H4	HGUS410



FROM PLAN DATED: AUG 2020

BUILDER: ROYAL PINE HOMES

SITE: WEST GORMLEY

MODEL: 4504

ELEVATION: A,B,C

LOT:

CITY: RICHMOND HILL

SALESMAN: MARIO DI CIANO

DESIGNER: L.D.

REVISION: lbv

NOTES:
REFER TO THE **NORDIC INSTALLATION** GUIDE FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK R** I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 7, TABLES 1 & 2. **CERAMIC 1** APPLICATION AS PER O.B.C 9.30.6.

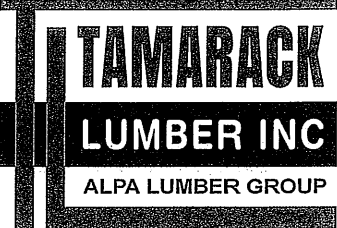
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2021-05-19

1st FLOOR

OPTION
SUNKEN FOYER



FROM PLAN DATED: AUG 2020

BUILDER: ROYAL PINE HOMES

SITE: WEST GORMLEY

MODEL: 4504

ELEVATION: A

LOT:

CITY: RICHMOND HILL

SALESMAN: MARIO DI CIANO

DESIGNER: L.D.

REVISION: lbv

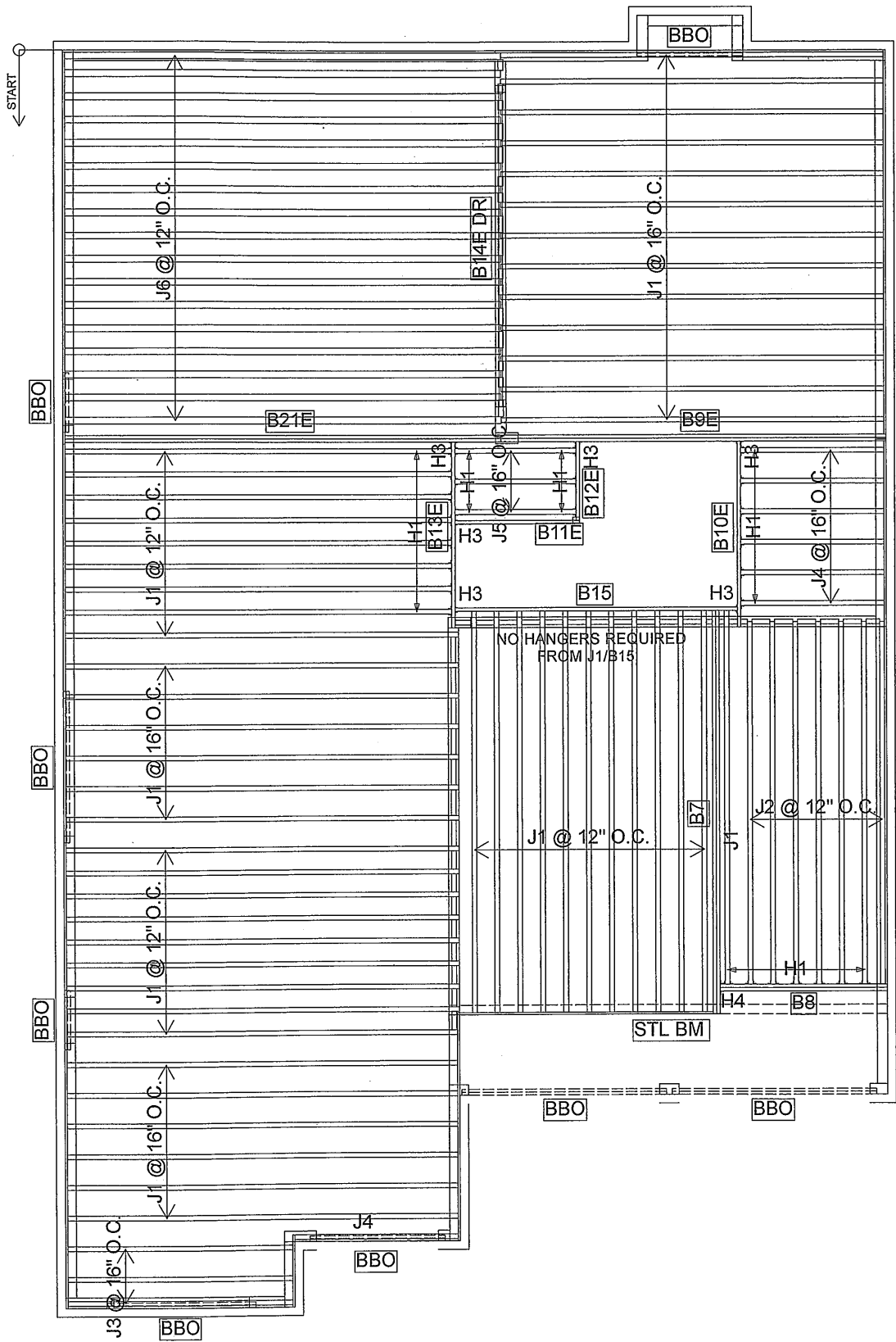
NOTES:
REFER TO THE **NORDIC INSTALLATION** GUIDE FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** RE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 7, TABLES 1 & 2. **CERAMIC T.** APPLICATION AS PER O.B.C 9.30.6.

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft₂
TILE LOAD: 20.0 lb/ft₂
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2021-05-19

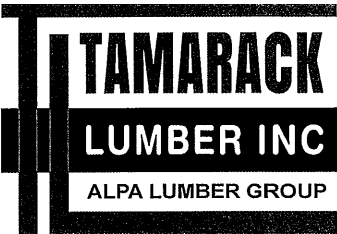
2ND FLOOR

OPTION
5 BEDROOM



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	55
J2	16-00-00	11 7/8" NI-40x	1	7
J3	10-00-00	11 7/8" NI-40x	1	3
J4	8-00-00	11 7/8" NI-40x	1	7
J5	6-00-00	11 7/8" NI-40x	1	3
J6	20-00-00	11 7/8" NI-80	1	17
B7	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B9E	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B15	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B14E DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B10E	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B13E	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B11E	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B12E	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
20	H1	IUS2.56/11.88
7	H1	IUS2.56/11.88
3	H3	HUS1.81/10
3	H3	HUS1.81/10
1	H4	HGUS410



FROM PLAN DATED: AUG 2020

BUILDER: ROYAL PINE HOMES

SITE: WEST GORMLEY

MODEL: 4504

ELEVATION: B

LOT:

CITY: RICHMOND HILL

SALESMAN: MARIO DI CIANO

DESIGNER: L.D.

REVISION: lbv

NOTES:
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RIMBOARD CLOSURE AT ENDS. SEE
FIGURES 4 & 5 FOR REINFORCEMENT
REQUIREMENTS. FOR **HOLES** INCLUDING
DUCT CHASE AND **FIELD CUT OPENINGS**
SEE FIGURE 7, TABLES 1 & 2. **CERAMIC TILE**
APPLICATION AS PER O.B.C 9.30.6.

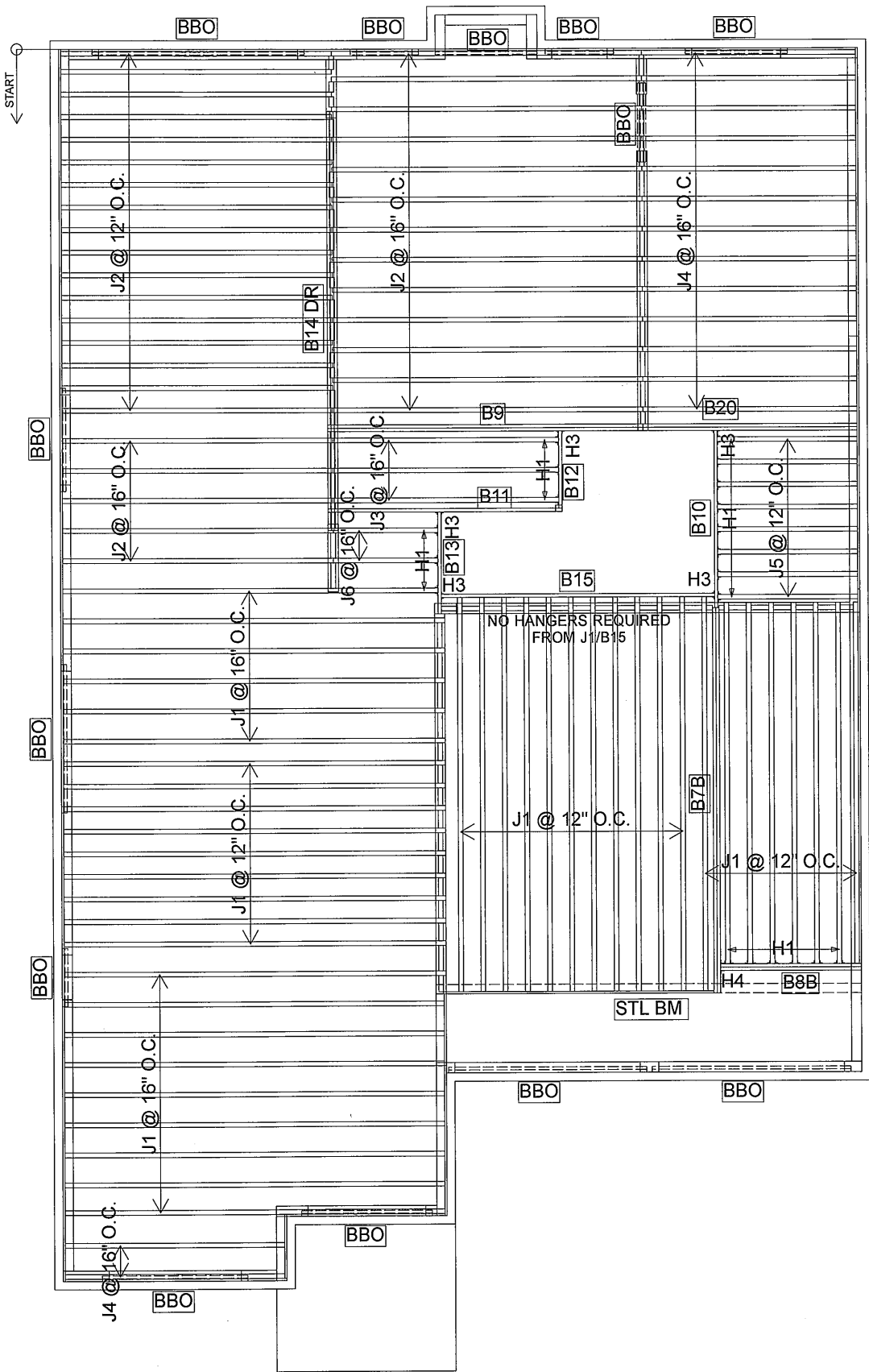
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft₂
TILE LOAD: 20.0 lb/ft₂

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2021-05-19

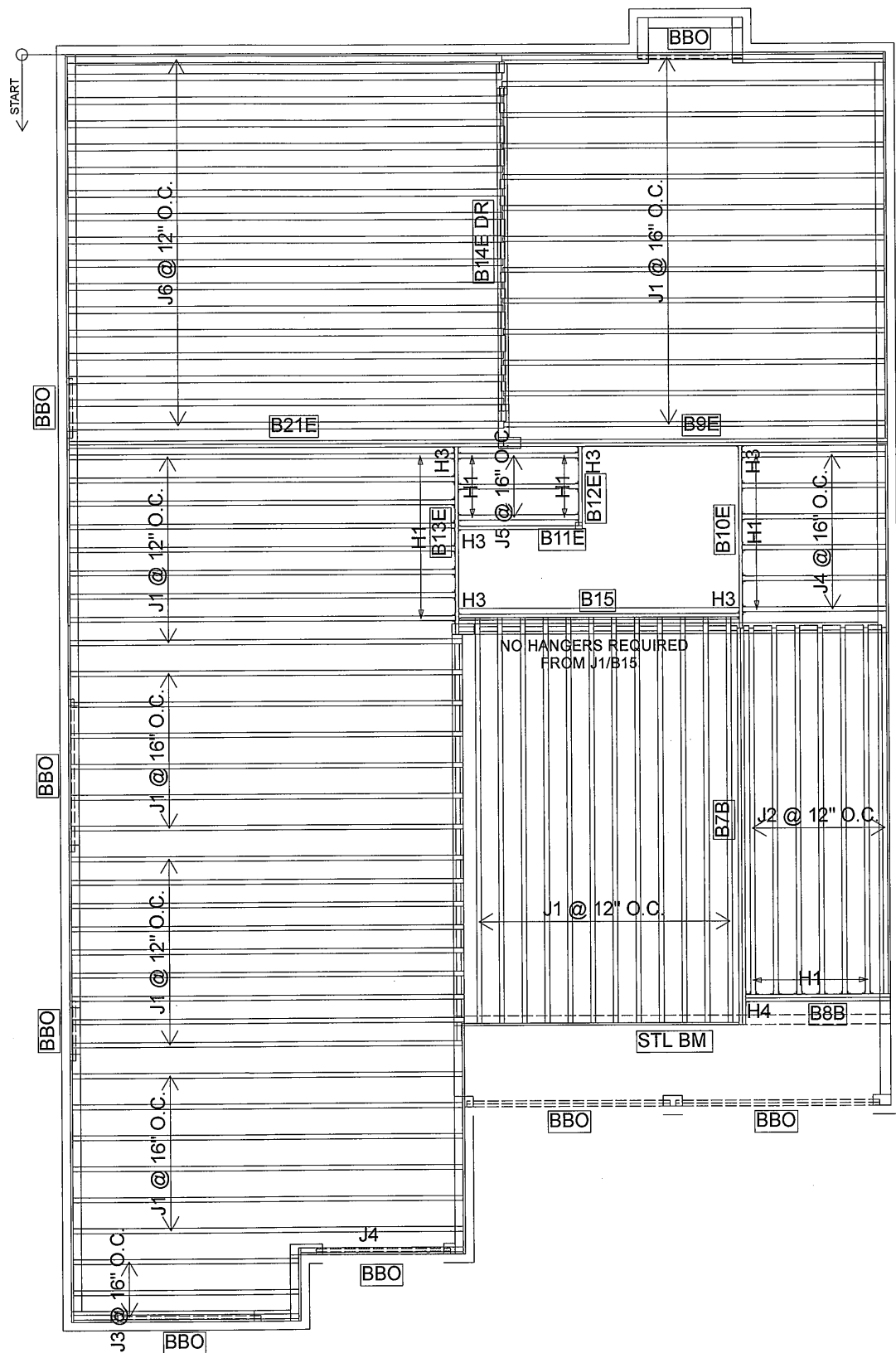
2ND FLOOR

STANDARD
4 BEDROOM



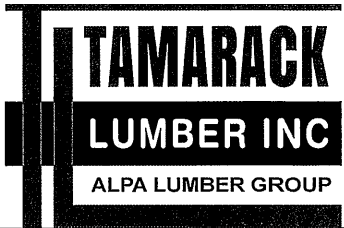
Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	43
J2	14-00-00	11 7/8" NI-40x	1	35
J3	12-00-00	11 7/8" NI-40x	1	3
J4	10-00-00	11 7/8" NI-40x	1	15
J5	8-00-00	11 7/8" NI-40x	1	8
J6	6-00-00	11 7/8" NI-40x	1	2
B7B	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B9	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B15	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B11	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B20	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B10	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8B	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B13	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B12	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B14 DR	20-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
3	H3	HUS1.81/10
2	H3	HUS1.81/10
1	H4	HGUS410



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	55
J2	16-00-00	11 7/8" NI-40x	1	7
J3	10-00-00	11 7/8" NI-40x	1	3
J4	8-00-00	11 7/8" NI-40x	1	7
J5	6-00-00	11 7/8" NI-40x	1	3
J6	20-00-00	11 7/8" NI-80	1	17
B7B	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B9E	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B15	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B14E DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B13E	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B10E	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8B	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B11E	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B12E	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
20	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
3	H3	HUS1.81/10
3	H3	HUS1.81/10
1	H4	HGUS410



FROM PLAN DATED: AUG 2020

BUILDER: ROYAL PINE HOMES

SITE: WEST GORMLEY

MODEL: 4504

ELEVATION: B

LOT:

CITY: RICHMOND HILL

SALESMAN: MARIO DI CIANO

DESIGNER: L.D.

REVISION: lbv

NOTES:
REFER TO THE **NORDIC INSTALLATION**
GUIDE FOR PROPER STORAGE AND
INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F
REQ'D UNDER INTERIOR UNIFORM LOAD
BEARING WALLS. **MULTIPLE SQUASH**
BLOCKS REQ'D UNDER CONCENTRATED
LOADS. SEE FIGURE 1. **CANTILEVERED**
JOISTS INCLUDING **CANT' OVER BRICK** REQ.
I-JOIST BLOCKING ALONG BEARING AND
RIMBOARD CLOSURE AT ENDS. SEE
FIGURES 4 & 5 FOR REINFORCEMENT
REQUIREMENTS. FOR **HOLES** INCLUDING
DUCT CHASE AND **FIELD CUT OPENINGS**
SEE FIGURE 7, TABLES 1 & 2. **CERAMIC TILE**
APPLICATION AS PER O.B.C 9.30.6.

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2021-05-19

2ND FLOOR

OPTION
5 BEDROOM

FROM PLAN DATED: AUG 2020

BUILDER: ROYAL PINE HOMES

SITE: WEST GORMLEY

MODEL: 4504

ELEVATION: A

LOT:

CITY: RICHMOND HILL

SALESMAN: MARIO DI CIANO

DESIGNER: L.D.

REVISION: lbv

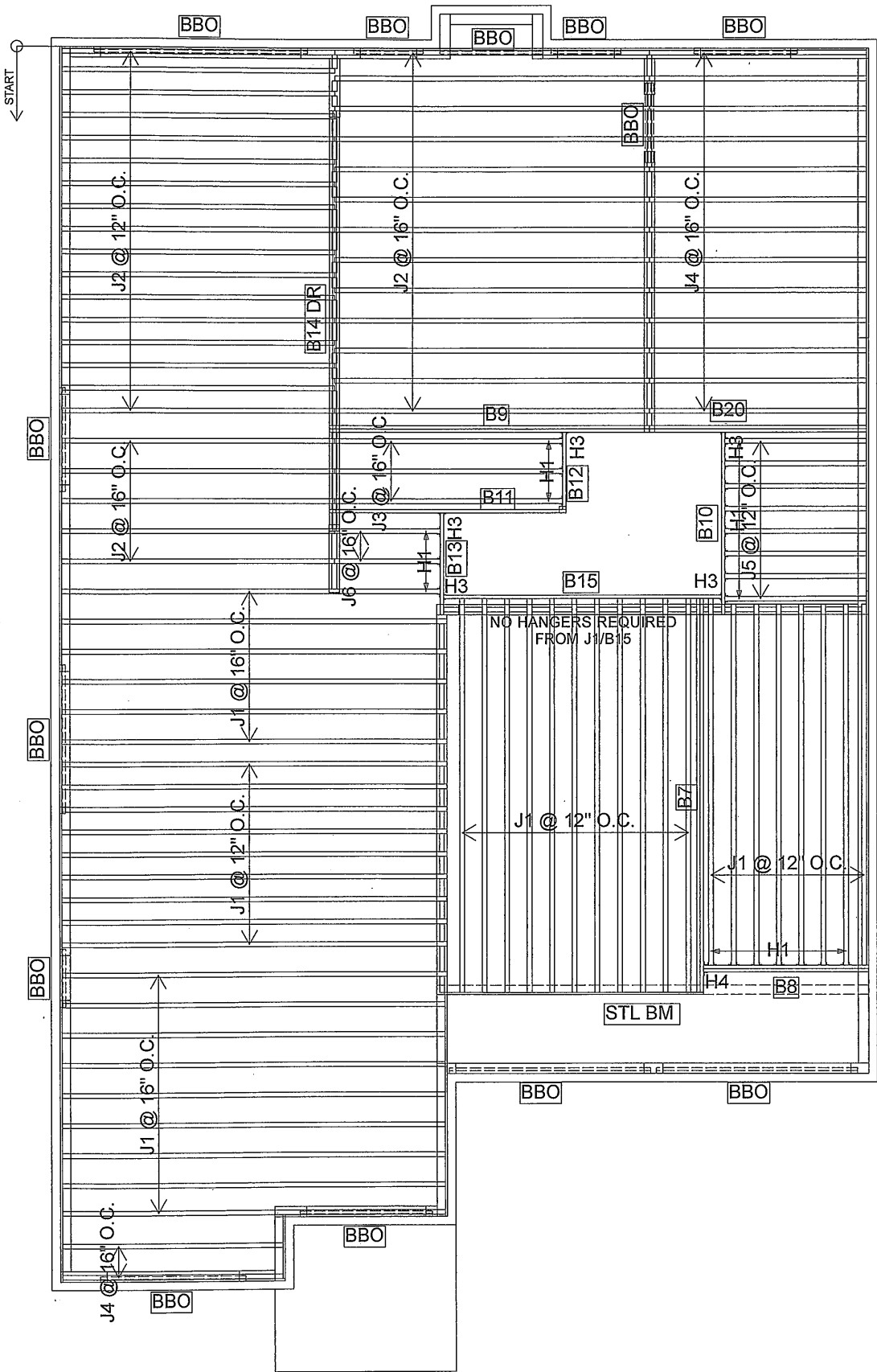
NOTES:
REFER TO THE **NORDIC INSTALLATION**
GUIDE FOR PROPER STORAGE AND
INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P
REQ'D UNDER INTERIOR UNIFORM LOAD
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JOISTS INCLUDING **CANT' OVER BRICK R**
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REQUIREMENTS. FOR **HOLES** INCLUDING
DUCT CHASE AND **FIELD CUT OPENINGS**
SEE FIGURE 7, TABLES 1 & 2. **CERAMIC T**
APPLICATION AS PER O.B.C 9.30.6.

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft ²
TILE LOAD: 20.0 lb/ft ²
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2021-05-19

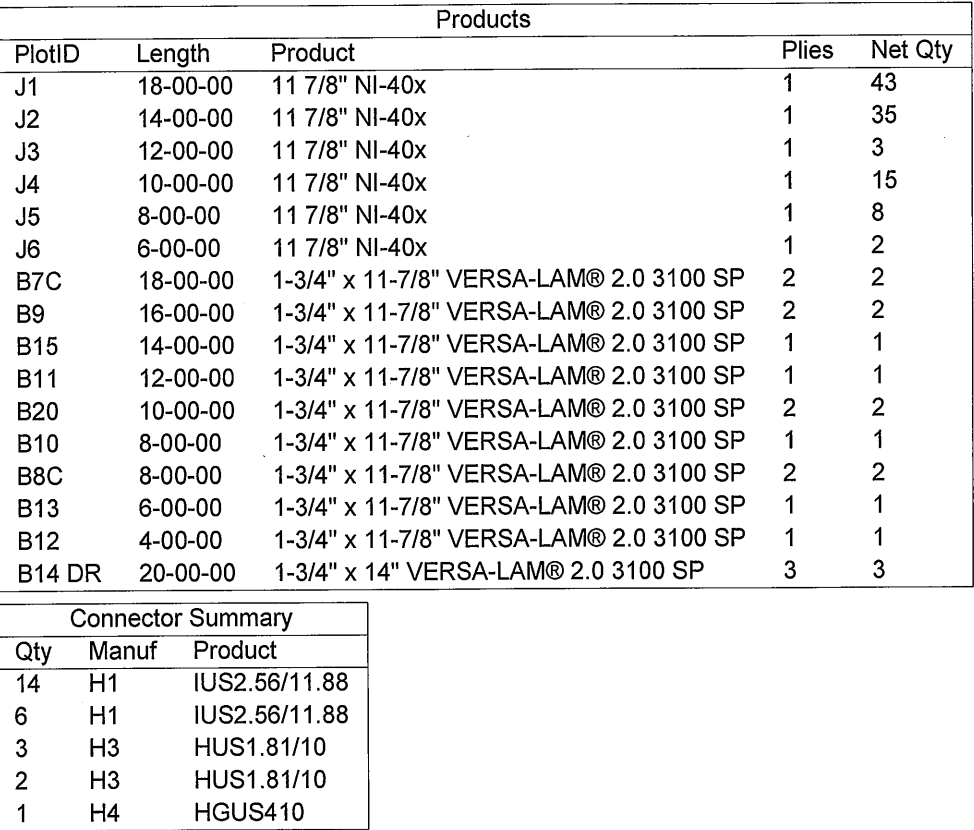
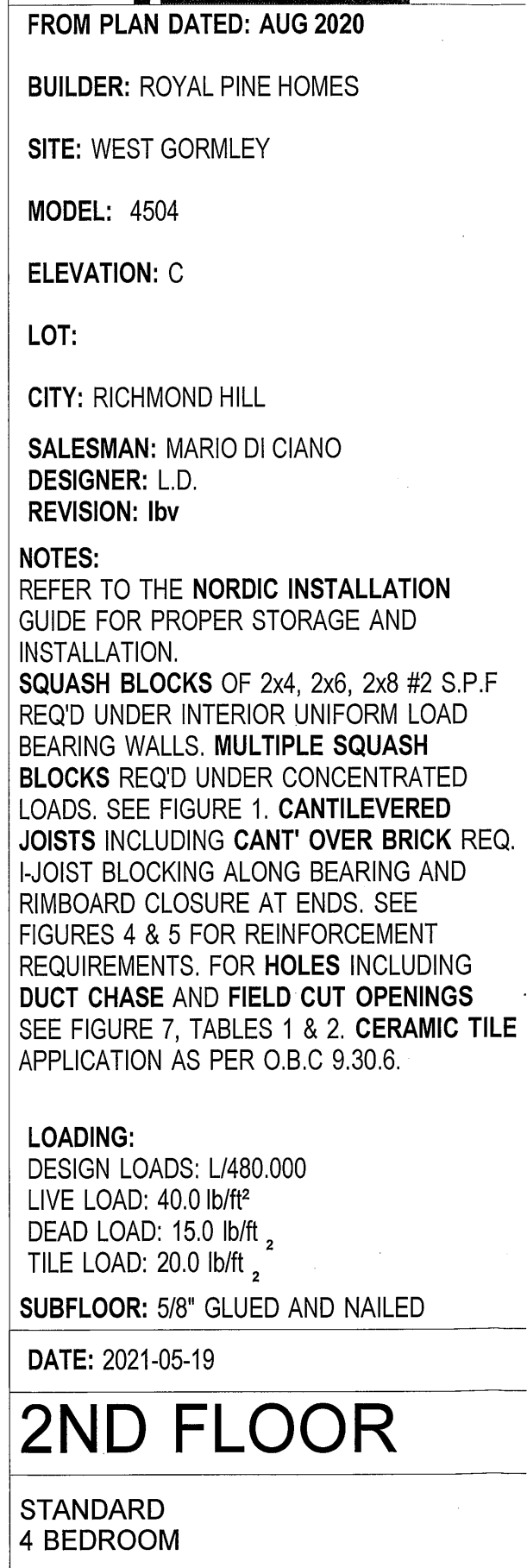
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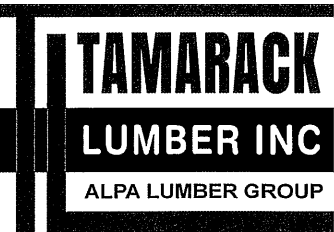
STANDARD
4 BEDROOM



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	43
J2	14-00-00	11 7/8" NI-40x	1	35
J3	12-00-00	11 7/8" NI-40x	1	3
J4	10-00-00	11 7/8" NI-40x	1	15
J5	8-00-00	11 7/8" NI-40x	1	8
J6	6-00-00	11 7/8" NI-40x	1	2
B7	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B9	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B15	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
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B10	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B20	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B8	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B13	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
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Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/11.88
7	H1	IUS2.56/11.88
3	H3	HUS1.81/10
2	H3	HUS1.81/10
1	H4	HGUS410





FROM PLAN DATED: AUG 2020

BUILDER: ROYAL PINE HOMES

SITE: WEST GORMLEY

MODEL: 4504

ELEVATION: C

LOT:

CITY: RICHMOND HILL

SALESMAN: MARIO DI CIANO

DESIGNER: L.D.

REVISION: lbv

NOTES:
REFER TO THE **NORDIC INSTALLATION** GUIDE FOR PROPER STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 7, TABLES 1 & 2. **CERAMIC TILE** APPLICATION AS PER O.B.C 9.30.6.

LOADING:
DESIGN LOADS: L/480.000
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DEAD LOAD: 15.0 lb/ft₂
TILE LOAD: 20.0 lb/ft₂

SUBFLOOR: 5/8" GLUED AND NAILED

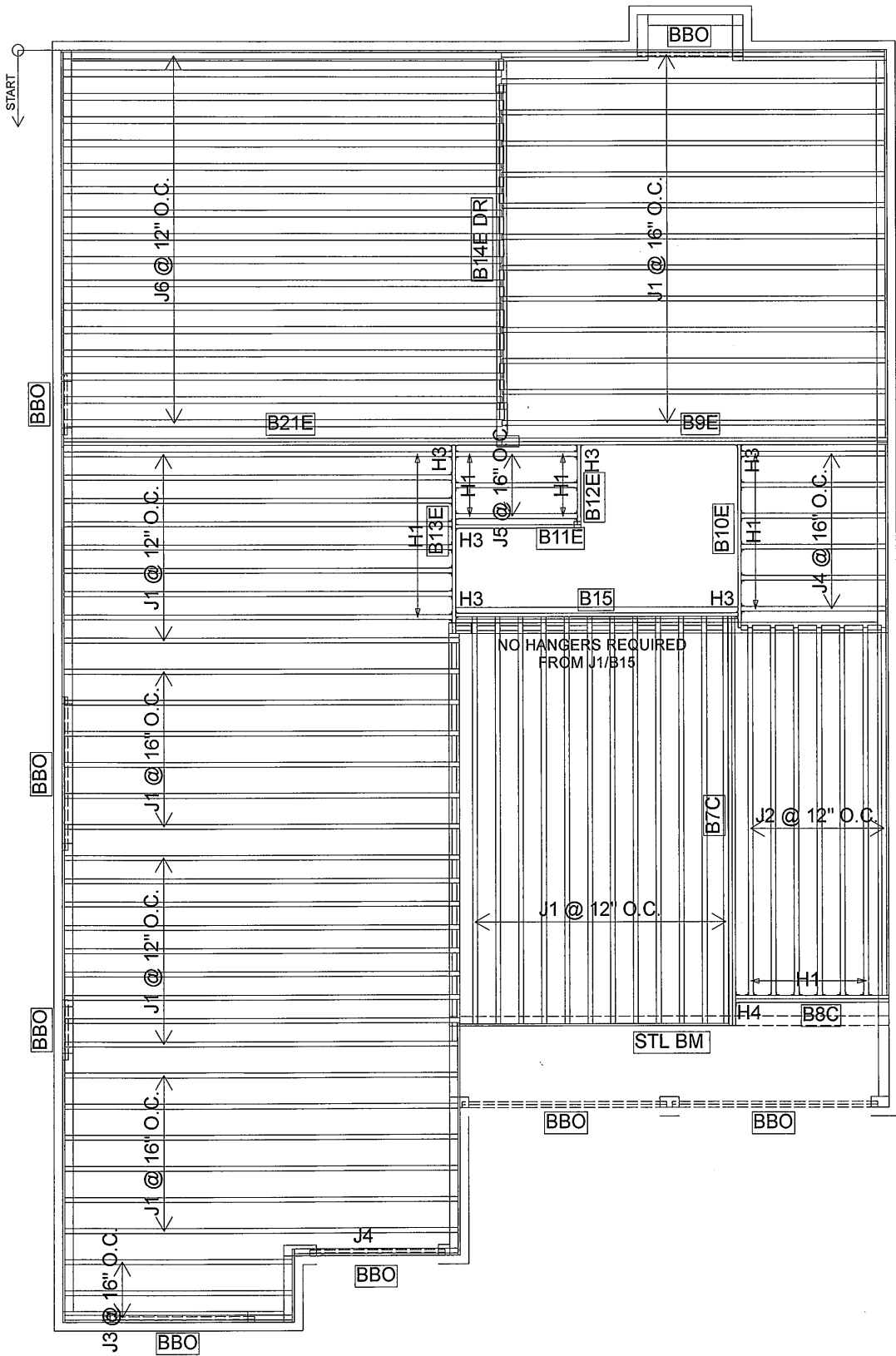
DATE: 2021-05-19

2ND FLOOR

OPTION
5 BEDROOM

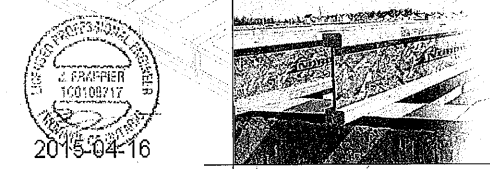
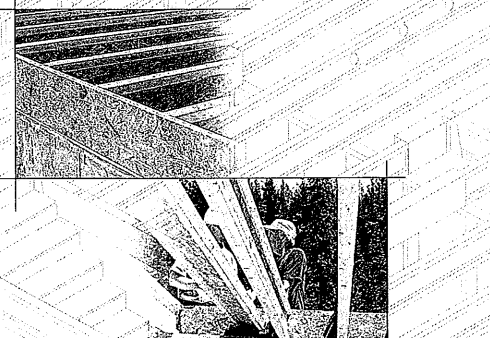
Products				
PlotID	Length	Product	Plies	Net Qty
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J4	8-00-00	11 7/8" NI-40x	1	7
J5	6-00-00	11 7/8" NI-40x	1	3
J6	20-00-00	11 7/8" NI-80	1	17
B7C	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B9E	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B15	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B14E DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B13E	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B10E	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
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Connector Summary		
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3	H3	HUS1.81/10
3	H3	HUS1.81/10
1	H4	HGUS410



INSTALLATION GUIDE

FOR RESIDENTIAL FLOORS

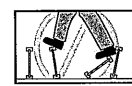


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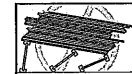


N-C301 / November 2014

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 unbraced 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.

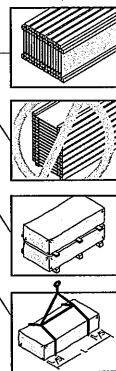
Avoid Accidents by Following these Important Guidelines:

- 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.
- 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.
- For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
- 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.
- 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

- Bundle wrap can be slippery when wet. Avoid walking on wrapped bundles.
- Store, stock, and handle I-joists vertically and level only.
- Always stock and handle I-joists in the upright position only.
- Do not store I-joists in direct contact with the ground and/or flatwise.
- Protect I-joists from weather, and use spacers to separate bundles.
- Bundled units should be kept intact until time of installation.
- 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.
- Do not handle I-joists in a horizontal orientation.
- NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST.



MAXIMUM FLOOR SPANS

- Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGS8-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Limit States Design per CAN/CSA C08-09 Standard, and NBC 2010.
- SI units conversion: 1 inch = 25.4 mm, 1 foot = 0.305 m

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

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

CCMC EVALUATION REPORT 13032-R

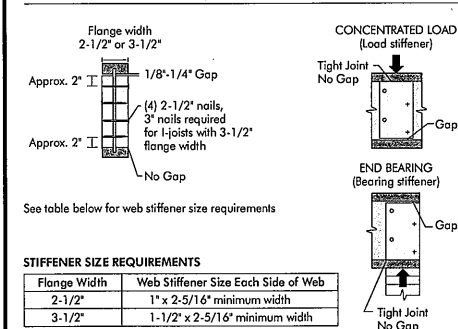
WEB STIFFENERS

RECOMMENDATIONS:

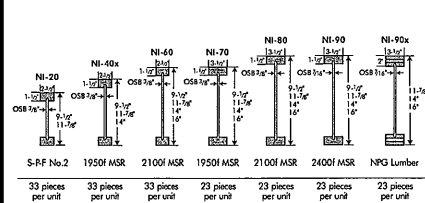
- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is supported in 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



NORDIC I-JOIST SERIES



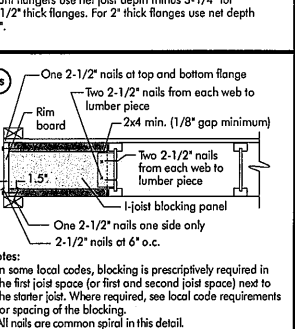
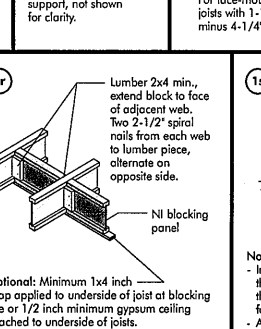
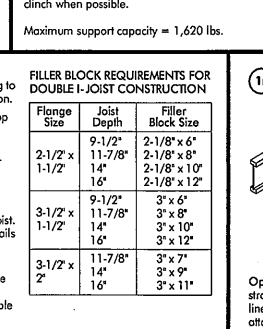
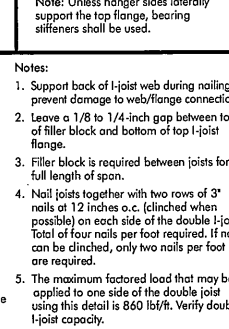
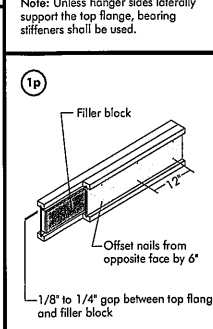
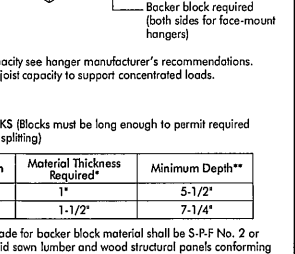
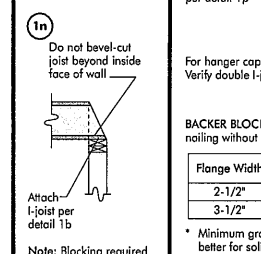
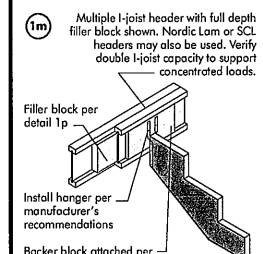
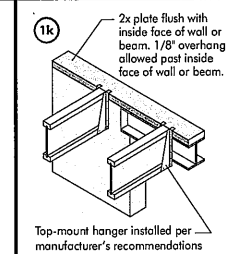
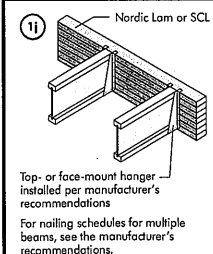
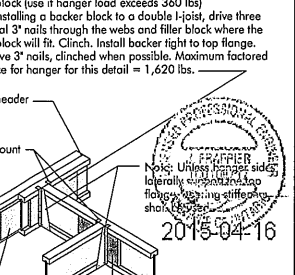
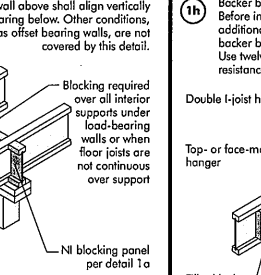
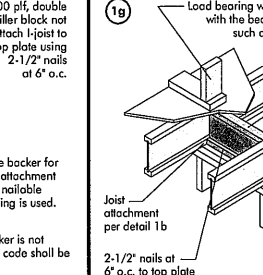
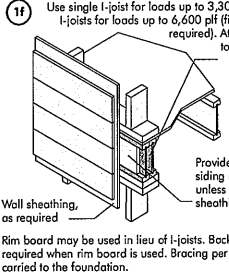
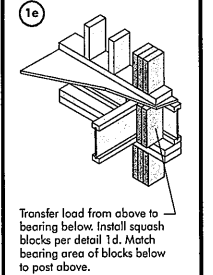
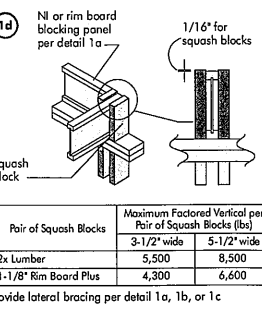
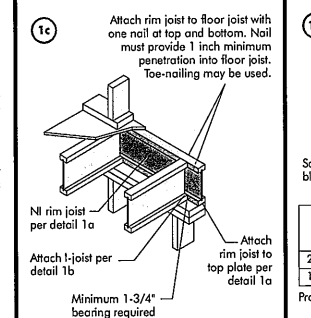
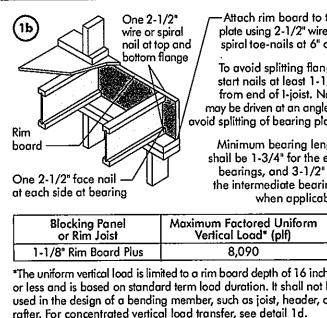
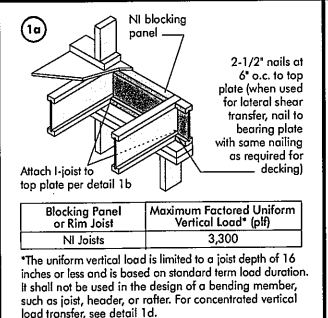
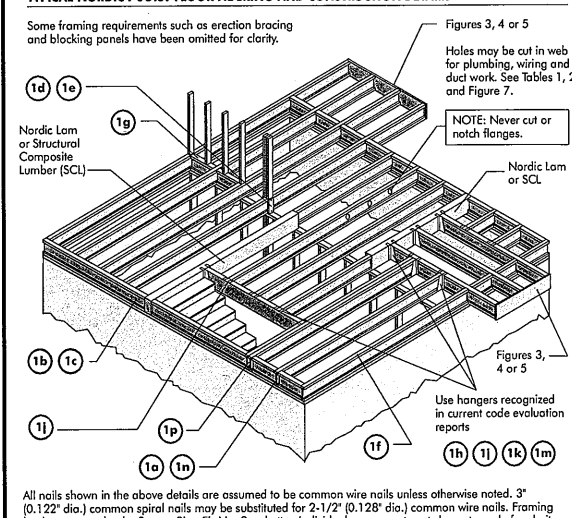
Chantiers Chibougamou Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures throughout the manufacturing process. Every phase of the operation, from forest to the finished product, reflects our commitment to quality.

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.

INSTALLING NORDIC I-JOISTS

- Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
- Except for cutting to length, I-joist flanges should **never** be cut, drilled, or notched.
- Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
- I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple span applications must be level.
- Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
- When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
- Leave a 1/16-inch gap between the I-joist end and a header.
- 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.
- Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
- Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
- 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.
- 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.
- 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.
- 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.
- 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



CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

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

2x8 min. Nail to backer block and joist with 2 rows of 3" nails at 6" o.c. and clinch. (Confer with local building authority for nail length to allow clinching.)

Cantilever extension supporting uniform floor loads only

Rim board or wood structural panel closure; attach per detail 1b

I-joist, or rim board

3-1/2" min. bearing required

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

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

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

2x8 min. Nail to backer block and joist with 2 rows of 3" nails at 6" o.c. and clinch. (Confer with local building authority for nail length to allow clinching.)

Cantilever extension supporting uniform floor loads only

Lumber or wood structural panel closure

3-1/2" min. bearing required

I-joist, or rim board

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

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a) Method 1 — SHEATHING REINFORCEMENT ONE SIDE

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

2-1/2" nails

3-1/2" min. bearing required

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

Attach I-joist to plate per detail 1b

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

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

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

Face nail two rows of 3" nails at 12" o.c. each side through one I-joist web and the filler block to other I-joist web. Offset nails from opposite face by 6". Clinch if possible (four nails per foot required, except two nails per foot required if clinched).

Attach I-joists to top plate at all supports per detail 1b, 3-1/2" min. bearing required

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.

Roof truss span

2'-0" maximum cantilever

Roof truss span

13'-0" maximum

Jack trusses

2'-0" maximum 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				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf				
		JOIST SPACING (in.)				JOIST SPACING (in.)				JOIST SPACING (in.)				
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24	
9-1/2"	26	N	N	N	1	2	N	N	1	2	N	2	X	X
	28	N	N	N	1	2	N	N	1	2	N	2	X	X
	30	N	N	1	1	X	N	1	2	X	1	2	X	X
	32	N	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	X
11-7/8"	26	N	N	N	1	2	N	N	1	2	N	2	X	X
	28	N	N	N	1	2	N	N	1	2	N	1	1	X
	30	N	N	N	1	1	N	N	1	2	N	1	2	X
	32	N	N	1	1	2	N	N	1	2	N	1	2	X
	34	N	N	1	2	X	N	1	1	X	1	1	2	X
14"	26	N	N	N	1	2	N	N	1	2	N	2	X	X
	28	N	N	N	1	2	N	N	1	2	N	2	X	X
	30	N	N	N	1	1	N	N	1	1	N	N	1	2
	32	N	N	N	1	1	N	N	1	1	N	N	1	2
	34	N	N	N	1	1	N	N	1	1	N	N	1	2
16"	26	N	N	N	1	2	N	N	1	2	N	2	X	X
	28	N	N	N	1	2	N	N	1	2	N	2	X	X
	30	N	N	N	1	1	N	N	1	1	N	N	1	2
	32	N	N	N	1	1	N	N	1	1	N	N	1	2
	34	N	N	N	1	1	N	N	1	1	N	N	1	2

1. N = No reinforcement required.
2 = NI reinforced with 3/4" wood structural panel on one side only
3 = 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: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.
3. For larger openings, or multiple 3'-0" wide openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
4. 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.
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

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

12" minimum length of sheathing reinforcement

Nail reinforcement to top and bottom joist flanges with 2-1/2" nails at 6" o.c. (offset opposite face nailing by 3" when using reinforcement on both sides of I-joist)

3-1/2" max.

3-1/2" min.

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

5b) SET-BACK DETAIL

Bearing walls

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

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

5c) SET-BACK CONNECTION

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

Alternate for opposite side.

Nail joist end using 3" nails, toe-nail at top and bottom flanges.

Hanger may be used in lieu of solid sawn blocks.

FIGURE 5 (continued)

See table below for NI reinforcement requirements at cantilever.

Roof truss span

2'-0" maximum cantilever

Roof truss span

13'-0" maximum

Jack trusses

2'-0" maximum 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				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
		JOIST SPACING (in.)				JOIST SPACING (in.)				JOIST SPACING (in.)			
		12	16	19.2	24	12	16	19.2	24	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	2	X	X	X
	30	1	X	X	X	2	X	X	X	2	X	X	X
	32	2	X	X	X	2	X	X	X	2	X	X	X
	34	2	X	X	X	2	X	X	X	2	X	X	X
11-7/8"	26	N	2	X	X	1	X	X	X	1	X	X	X
	28	N	2	X	X	1	X	X	X	1	X	X	X
	30	N	2	X	X	1	2	X	X	1	2	X	X
	32	N	2	X	X	1	2	X	X	1	2	X	X
	34	N	2	X	X	1	2	X	X	1	2	X	X
14"	26	N	2	X	X	1	2	X	X	1	2	X	X
	28	N	2	X	X	1	2	X	X	1	2	X	X
	30	N	2	X	X	1	2	X	X	1	2	X	X
	32	N	2	X	X	1	2	X	X	1	2	X	X
	34	N	2	X	X	1	2	X	X	1	2	X	X
16"	26	N	2	X	X	1	2	X	X	1	2	X	X
	28	N	2	X	X	1	2	X	X	1	2	X	X
	30	N	2	X	X	1	2	X	X	1	2	X	X
	32	N	2	X	X	1	2	X	X	1	2	X	X
	34	N	2	X	X	1	2	X	X	1	2	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: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.
3. For larger openings, or multiple 3'-0" wide openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
4. 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.
5. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.
- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the longest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is **not** considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.
- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
- All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- Limit three maximum size holes per span, of which one may be a duct chase opening.
- A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

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

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (ft.-in.)												Span adjustment factor
		Round hole diameter (in.)												
		2	3	4	5	6	7	8	9	10	11	12	13	
9-1/2"	NL-20	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-24	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-30	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-36	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-42	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
11-7/8"	NL-20	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-24	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-30	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-36	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-42	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
14"	NL-20	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-24	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-30	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-36	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-42	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
16"	NL-20	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-24	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-30	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-36	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
	NL-42	0'-7"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-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.

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 Span Table), the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:
Reduced = Actual x D
Where: Reduced = Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span applications
Actual = The actual measured span distance between the inside faces of supports (ft.)
D = Span Adjustment Factor given in this table.
The minimum distance from the inside face of any support to centre of hole from this table.
If Actual is greater than 1, use 1 in the above calculation for Actual.

FIGURE 7 FIELD-CUT HOLE LOCATOR

See Table 1 for minimum distance from bearing

2x diameter of larger hole

2x duct chase length or hole diameter, whichever is larger

Duct chase opening

See Table 2 for minimum distance from bearing

Knockouts

See rule 12

Maintain minimum 1/8" space between top and bottom flange — all duct chase openings and holes

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.

FIGURE 7 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	26	28	
9-1/2"	NL-20	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-24	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-30	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-36	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-42	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
11-7/8"	NL-20	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-24	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-30	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-36	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-42	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
14"	NL-20	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-24	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-30	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-36	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-42	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
16"	NL-20	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-24	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-30	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-36	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	
	NL-42	4'-1"	4'-3"	4'-5"	4'-7"	4'-9"	5'-1"	5'-3"	5'-5"	5'-7"	5'-9"	5'-11"	

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

- Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
- Snap a chalk line across the I-joists four feet from the wall for panel edge alignment and as a boundary for spreading glue.
- Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
- Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when topped into place with a block and sledgehammer.
- Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
- Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
- After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying



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:

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- I-joint top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joint web shall equal the clear distance between the flanges of the I-joint 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-joint flange.
- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the longest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.
- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
- All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- Limit three maximum size holes per span, of which one may be a duct chase opening.
- A group of round holes of 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
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"	4-8"	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"	7-5"	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"	---	---	---
14"	NI-20	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---
	NI-40x	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	---	---	---	---	---
	NI-60	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-70	0-7"	0-8"	1-8"	3-0"	4-3"	4-8"	5-8"	7-2"	8-0"	8-8"	10-4"	11-9"
	NI-80	0-8"	1-10"	3-0"	4-5"	5-10"	6-2"	7-3"	8-9"	9-9"	10-4"	12-0"	13-5"
16"	NI-20	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-40x	0-7"	0-8"	0-10"	2-5"	4-0"	4-5"	5-9"	7-5"	8-8"	9-4"	11-4"	12-11"
	NI-60	0-7"	0-8"	0-8"	2-0"	3-9"	4-2"	5-5"	7-3"	8-5"	9-2"	---	---
	NI-70	0-7"	0-8"	0-8"	1-6"	2-10"	3-2"	4-2"	5-6"	6-4"	7-0"	8-5"	9-8"
	NI-80	0-7"	1-0"	2-3"	3-6"	4-10"	5-3"	6-3"	7-8"	8-6"	9-2"	10-8"	12-0"

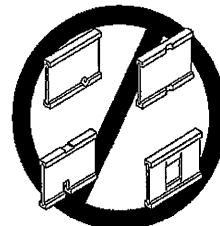
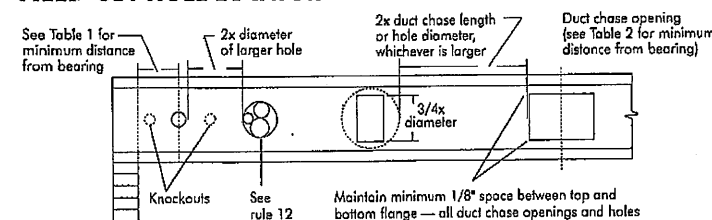
- Above table may be used for I-joint spacing of 24 inches on centre or less.
- Hole location distance is measured from inside face of supports to centre of hole.
- Distances in this chart are based on uniformly loaded joists.
- The above table is based on the I-joints being used at their maximum spans. 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	5-2"	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"			
14"	NI-20	7-2"	8-1"	8-5"	9-10"	9-4"	9-8"	10-2"	10-8"	11-2"			
	NI-40x	8-1"	8-7"	9-0"	9-6"	10-1"	10-7"	11-2"	12-0"	12-8"			
	NI-60	8-9"	9-3"	9-8"	10-1"	10-6"	11-1"	11-6"	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"			
16"	NI-20	9-2"	9-6"	10-0"	10-6"	10-11"	11-5"	11-9"	12-4"	12-11"			
	NI-40x	9-4"	9-9"	10-3"	10-7"	11-1"	11-7"	12-1"	12-7"	13-2"			
	NI-60	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-2"	14-1"	14-10"			
	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"	11-8"	12-1"	12-7"	13-1"	13-8"	14-4"			

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

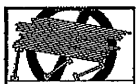
Holes in webs should be cut with a sharp saw.

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 cut between the holes is another good method to minimize damage to the I-joint.

SAFETY AND CONSTRUCTION PRECAUTIONS



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



Never stack building materials over unshathed I-joints. Once shathed, do not over-stress I-joints with concentrated loads from building materials.

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

- Brace and nail each I-joint as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joints are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joints. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joint 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-joint. Nail the bracing to a lateral restraint at the end of each bay. Top ends of adjoining bracing over at least two I-joints.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joints at the end of the bay.
- For cantilevered I-joints, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
- Install and fully nail permanent sheathing to each I-joint before placing loads on the floor system. Then, stock building materials over beams or walls only.
- Never install a damaged I-joint.

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joints, 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.



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.

1a NI blocking panel

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)

Attach I-joint to top plate per detail 1b

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

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

Provide lateral bracing per detail 1a or 1b

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

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-PF 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".

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

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

Top-mount hanger installed per manufacturer's recommendations

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

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

Filler block per detail 1p

Install hanger per manufacturer's recommendations

Maximum support capacity = 1,620 lbs.

1p FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

Filler block

Offset nails from opposite face by 6"

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

NOTES:

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

1b Rim board

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

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

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

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

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

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

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

1g Joist attachment per detail 1b

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

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

NI blocking panel per detail 1a

1l Nordic Lam or Structural Composite Lumber (SCL)

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

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

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

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

Attach I-joint per detail 1b

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

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

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

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

I-joint blocking panel

One 2-1/2" nail one side only

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.

Flange Size	Net 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"

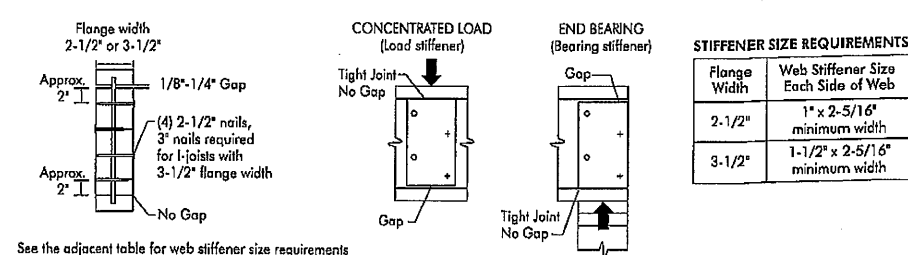
All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for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

WEB STIFFENERS

RECOMMENDATIONS:

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joint properties table found in the I-joint Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joint is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A load stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the 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



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE

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

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

Attach I-joint to plate per detail 1b

2-1/2" nails

3-1/2" min. bearing required

Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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

Use nailing pattern shown 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-joint to plate at all supports per detail 1b. Verify reinforced I-joint capacity.

RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim Board Joint Between Floor Joists

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

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

Rim board joint

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

Rim Board Joint at Corner

1-1/2"

2-1/2" nails

Rim board joint

1-1/2"

8b TOE-NAIL CONNECTION AT RIM BOARD

Rim board

Top or sole plate

30°

1/3"

NORDIC STRUCTURES

COMPANY
Aug. 26, 2020 09:23

PROJECT
J7 - 1ST FLOOR

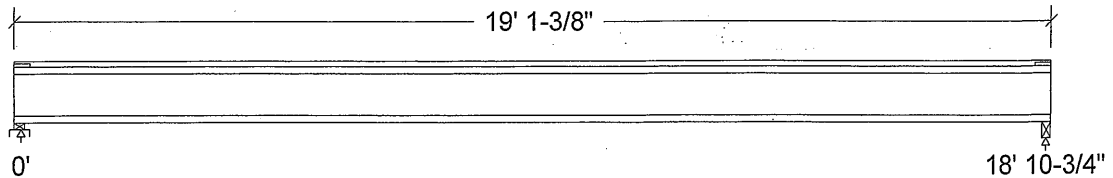
Design Check Calculation Sheet

Nordic Sizer – Canada 7.2

Loads:

Load	Type	Distribution	Pat- tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			20.00	psf
Load2	Live	Full Area			40.00	psf

Maximum Reactions (lbs) and Support Bearing (in):



Unfactored:			
Dead	189		189
Live	378		378
Factored:			
Total	803		803
Bearing:			
Capacity			
Joist	2188		2154
Support	5573		-
Des ratio			
Joist	0.37		0.37
Support	0.14		-
Load case	#2		#2
Length	2-3/8		2
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcp sup	769		-
Kzcp sup	1.09		-

Nordic Joist 11-7/8" NI-80 Floor joist @ 12" o.c.

Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Steel Beam, W;
Total length: 19' 1-3/8"; Clear span: 18' 9"; 3/4" nailed and glued OSB sheathing
This section PASSES the design code check.

Limit States Design using CSA O86-14 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 803	Vr = 2336	lbs	Vf/Vr = 0.34
Moment (+)	Mf = 3794	Mr = 11609	lbs-ft	Mf/Mr = 0.33
Perm. Defl'n	0.11 = < L/999	0.63 = L/360	in	0.17
Live Defl'n	0.21 = < L/999	0.47 = L/480	in	0.45
Total Defl'n	0.32 = L/715	0.94 = L/240	in	0.34
Bare Defl'n	0.24 = L/954	0.63 = L/360	in	0.38
Vibration	Lmax = 18'-10.8	Lv = 21'-2.7	ft	0.89
Defl'n	= 0.025	= 0.033	in	0.75



ENGINEER NO. TAM8757-21
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	11609	1.00	1.00	-	1.000	-	-	-	#2
EI	547.1 million	-	-	-	-	-	-	-	#2

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L
 Moment(+) : LC #2 = 1.25D + 1.5L
 Deflection: LC #1 = 1.0D (permanent)
 LC #2 = 1.0D + 1.0L (live)
 LC #2 = 1.0D + 1.0L (total)
 LC #2 = 1.0D + 1.0L (bare joist)
 Bearing : Support 1 - LC #2 = 1.25D + 1.5L
 Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake
 L=live(use,occupancy) Ls=live(storage,equipment) f=fire

Load Patterns: s=S/2 L=L+Ls _=no pattern load in this span

All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:

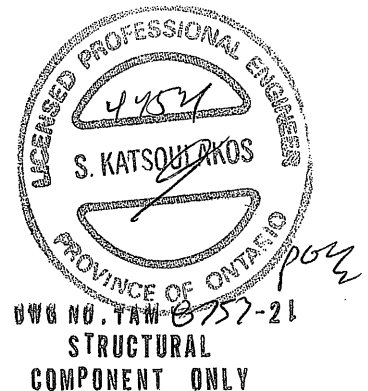
EI_{eff} = 625.37 lb-in² K= 6.18e06 lbs

"Live" deflection is due to all non-dead loads (live, wind, snow...) CONFORMS TO OBC 2012

AMENDED 2020

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis 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 this component based on the design criteria and loadings shown.



NORDIC STRUCTURES

COMPANY
Aug. 25, 2020 17:31

PROJECT
J6 - 2ND FLOOR

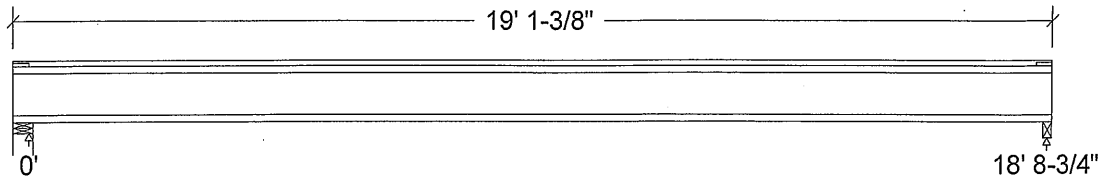
Design Check Calculation Sheet

Nordic Sizer – Canada 7.2

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			20.00	psf
Load2	Live	Full Area			40.00	psf

Maximum Reactions (lbs) and Support Bearing (in):



Unfactored:			
Dead	187		187
Live	375		375
Factored:			
Total	796		796
Bearing:			
Capacity			
Joist	2336		2154
Support	10841		4305
Des ratio			
Joist	0.34		0.37
Support	0.07		0.18
Load case	#2		#2
Length	4-3/8		2
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		1.00
fcp sup	769		769
Kzcp sup	-		1.00

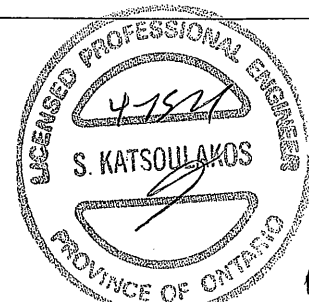
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

Nordic Joist 11-7/8" NI-80 Floor joist @ 12" o.c.

Supports: 1 - Lumber Wall, No.1/No.2; 2 - Lumber Beam, No.1/No.2;

Total length: 19' 1-3/8"; Clear span: 18' 7"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.



OWB NO. TAM B758-21
STRUCTURAL
COMPONENT ONLY

Limit States Design using CSA O86-14 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 796	Vr = 2336	lbs	Vf/Vr = 0.34
Moment(+)	Mf = 3727	Mr = 11609	lbs-ft	Mf/Mr = 0.32
Perm. Defl'n	0.10 = < L/999	0.62 = L/360	in	0.17
Live Defl'n	0.21 = < L/999	0.47 = L/480	in	0.44
Total Defl'n	0.31 = L/720	0.94 = L/240	in	0.33
Bare Defl'n	0.23 = L/978	0.62 = L/360	in	0.37
Vibration	Lmax = 18'-8.8	Lv = 20'-5.8	ft	0.91
Defl'n	= 0.027	= 0.034	in	0.81

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	11609	1.00	1.00	-	1.000	-	-	-	#2
EI	547.1 million	-	-	-	-	-	-	-	#2

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L
 Moment(+) : LC #2 = 1.25D + 1.5L
 Deflection: LC #1 = 1.0D (permanent)
 LC #2 = 1.0D + 1.0L (live)
 LC #2 = 1.0D + 1.0L (total)
 LC #2 = 1.0D + 1.0L (bare joist)

Bearing : Support 1 - LC #2 = 1.25D + 1.5L
 Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake
 L=live(use,occupancy) Ls=live(storage,equipment) f=fire

Load Patterns: s=S/2 L=L+Ls _=no pattern load in this span
 All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:

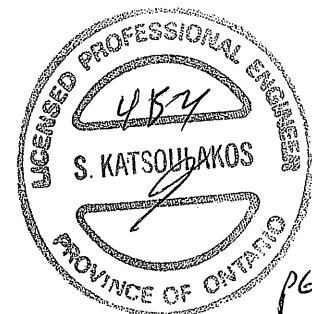
EI_{eff} = 613.27 lb-in² K= 6.18e06 lbs

"Live" deflection is due to all non-dead loads (live, wind, snow...) CONFORMS TO OBC 2012

AMENDED 2020

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis 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 this component based on the design criteria and loadings shown.



OWB NO. YAM 8758-21
 STRUCTURAL
 COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
Aug. 26, 2020 09:18

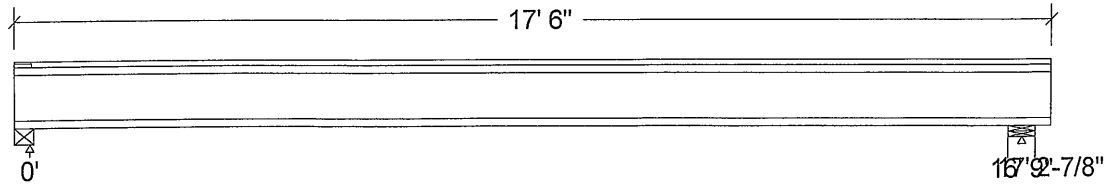
PROJECT
J1 - 2ND FLOOR CANT

Design Check Calculation Sheet Nordic Sizer – Canada 7.2

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area	No		20.00	psf
Load2	Live	Full Area	Yes		40.00	psf

Maximum Reactions (lbs) and Support Bearing (in):



Unfactored:				
Dead	167		177	
Live	335		355	
Factored:				
Total	712		754	
Bearing:				
Capacity				
Joist	2334		2336	
Support	-		9724	
Des ratio				
Joist	0.30		0.32	
Support	-		0.08	
Load case	#4		#2	
Length	4		5-1/2	
Min req'd	1-3/4		1-3/4	
Stiffener	No		No	
KD	1.00		1.00	
KB support	-		-	
fcp sup	-		769	
Kzcp sup	-		-	

*Minimum bearing length for joists is 3" for intermediate supports

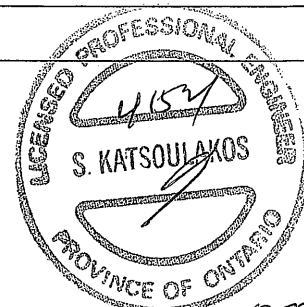
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

Nordic Joist 11-7/8" NI-40x Floor joist @ 12" o.c.

Supports: 1 - Steel Beam, W; 2 - Lumber Wall, No.1/No.2;

Total length: 17' 6"; Clear span: 16' 5-3/8", 0' 3-1/8"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.



ENG NO. TAM B759-21

**STRUCTURAL
COMPONENT ONLY**

Limit States Design using CSA O86-14 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 712	Vr = 2336	lbs	Vf/Vr = 0.31
Moment (+)	Mf = 2980	Mr = 6255	lbs-ft	Mf/Mr = 0.48
Moment (-)	Mf = 10	Mr = 4065	lbs-ft	Mf/Mr = 0.00
Deflection:				
Interior Perm	0.09 = < L/999	0.56 = L/360	in	0.17
Live	0.19 = < L/999	0.42 = L/480	in	0.44
Total	0.28 = L/723	0.84 = L/240	in	0.33
Cantil. Perm	-0.01 = L/770	0.03 = L/180	in	0.23
Live	-0.02 = L/383	0.02 = L/240	in	0.63
Total	-0.02 = L/256	0.05 = L/120	in	0.47
Bare Defl'n	-0.02 = L/329	0.03 = L/180	in	0.55
Vibration	Lmax = 16'-9	Lv = 18'-3.6	ft	0.92
Defl'n	= 0.029	= 0.038	in	0.76

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	6255	1.00	1.00	-	1.000	-	-	-	#4
Mr-	6255	0.65	1.00	-	1.000	-	-	-	#5
EI	371.1 million	-	-	-	-	-	-	-	#4

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L
 Moment (+) : LC #4 = 1.25D + 1.5L (pattern: L₋)
 Moment (-) : LC #5 = 1.25D + 1.5L (pattern: L)
 Deflection: LC #1 = 1.0D (permanent)
 LC #4 = 1.0D + 1.0L (pattern: L₋) (live)
 LC #4 = 1.0D + 1.0L (pattern: L₋) (total)
 LC #4 = 1.0D + 1.0L (pattern: L₋) (bare joist)

Bearing : Support 1 - LC #4 = 1.25D + 1.5L (pattern: L₋)
 Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth, groundwater E=earthquake
 L=live (use, occupancy) Ls=live (storage, equipment) f=fire

Load Patterns: s=S/2 L=L+Ls -=no pattern load in this span
 All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:

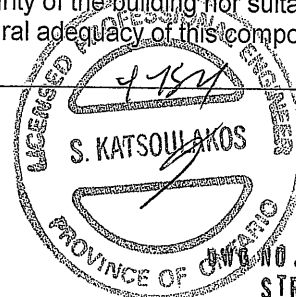
EI_{eff} = 432.91 lb-in² K= 6.18e06 lbs

"Live" deflection is due to all non-dead loads (live, wind, snow...) **CONFORMS TO OBC 2012**

Design Notes:

AMENDED 2020

- WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
- Please verify that the default deflection limits are appropriate for your application.
- Refer to Nordic Structures technical documentation for installation guidelines and construction details.
- Nordic I-joists are listed in CCMC evaluation report 13032-R.
- Joists shall be laterally supported at supports and continuously along the compression edge.
- The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis 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 this component based on the design criteria and loadings shown.



NO. TAM 8759-21
**STRUCTURAL
 COMPONENT ONLY**



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

PASSED

1ST FLOOR \Flush Beams\B51(i20612) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

May 19, 2021 17:02:13

Build 7773

Job name:

File name: 4504 - EL A,B,C STAND...RM SUNKEN FOYER.mmdl

Address:

Description: 1ST FLOOR \Flush Beams\B51(i20612)

City, Province, Postal Code: RICHMOND HILL

Specifier:

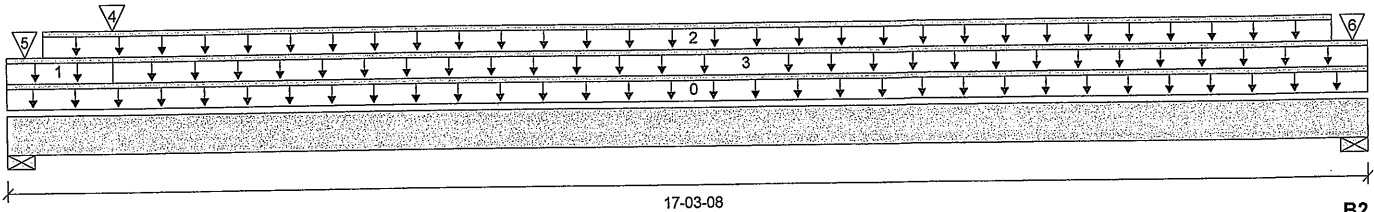
Customer:

Designer: L.D.

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 17-03-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	571 / 0	963 / 0	75 / 0	
B2, 5-1/2"	176 / 0	768 / 0	75 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	17-03-08	Top		12			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-00	Top	20				n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-05-08	16-10-00	Top		60			n/a
3	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	01-04-00	17-03-08	Top	18	9			n/a
4	J7(i20156)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	Top	441	220			n/a
5	E80(i20610)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top		83	75		n/a
6	6(i699)	Conc. Pt. (lbs)	L	17-01-04	17-01-04	Top		84	75		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3996 ft-lbs	23005 ft-lbs	17.4%	0	08-06-07
End Shear	1732 lbs	14464 lbs	12.0%	1	01-05-06
Total Load Deflection	L/1061 (0.187")	n/a	22.6%	35	08-06-07
Live Load Deflection	L/999 (0.042")	n/a	n/a	51	08-02-06
Max Defl.	0.187"	n/a	n/a	35	08-06-07
Span / Depth	16.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	2135 lbs	18.0%	9.1%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	1075 lbs	14.0%	7.0%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 15-04-12.

CONFORMS TO OBC 2012

AMENDED 2020



006 NO. TAM 10651-21
STRUCTURAL
COMPONENT ONLY



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - EL A,B,C STAND...RM SUNKEN FOYER.mmdl

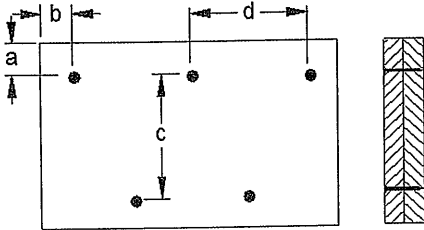
Description: 1ST FLOOR \Flush Beams\B51(i20612)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 10"

Calculated Side Load = 468.3 lb/ft

Connectors are: 1/2" x 10" ARDOX SPIRAL Nails

3 1/2" ARDOX SPIRAL



OWO NO. TAM/0651-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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

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



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

PASSED

1ST FLOOR \Flush Beams\B17E(i25022) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

May 19, 2021 16:40:17

Build 7773

Job name:

File name: 4504 - OPTIONS 5 BEDRM.mmdl

Address:

Description: 1ST FLOOR \Flush Beams\B17E(i25022)

City, Province, Postal Code: RICHMOND HILL

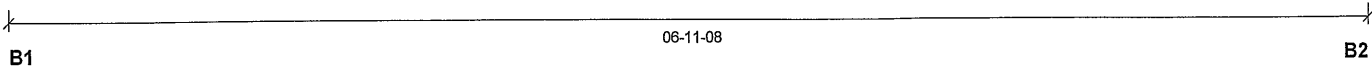
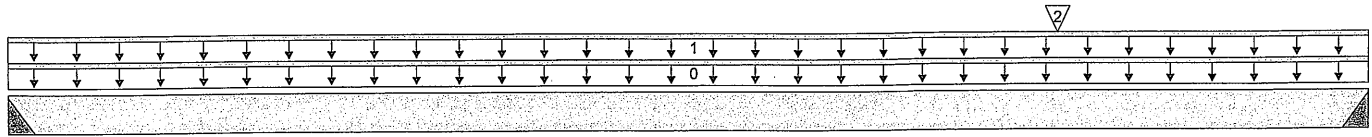
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 06-11-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	180 / 0	153 / 0		
B2, 4"	573 / 0	416 / 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	06-11-08	Top		12			00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	06-11-08	Top	14	7			n/a
2	PBO8(i20297)	Conc. Pt. (lbs)	L	05-04-04	05-04-04	Top	656	437			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1784 ft-lbs	35392 ft-lbs	5.0%	1	05-04-03
End Shear	1320 lbs	14464 lbs	9.1%	1	05-07-10
Total Load Deflection	L/999 (0.008")	n/a	n/a	4	03-09-05
Live Load Deflection	L/999 (0.005")	n/a	n/a	5	03-09-05
Max Defl.	0.008"	n/a	n/a	4	03-09-05
Span / Depth	6.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	2" x 3-1/2"	462 lbs	n/a	5.4%	HGUS410
B2 Hanger	4" x 3-1/2"	1379 lbs	n/a	8.1%	HUC410

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 11-7/8" LVL Beam.
Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Header for the hanger HUC410 is a Double 1-3/4" x 11-7/8" LVL Beam.
Hanger model HUC410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9
Calculations assume unbraced length of Top: 00-00-00, Bottom: 06-11-08.

CONFORMS TO OBC 2012



006 NO. TAM 10652-21
STRUCTURAL
COMPONENT ONLY



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - OPTIONS 5 BEDRM.mmdl

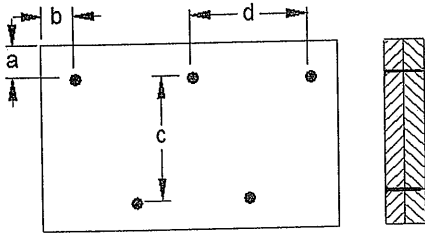
Description: 1ST FLOOR \Flush Beams\B17E(i25022)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

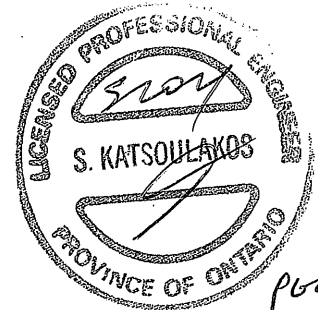
b minimum = 3"

c = 7-7/8"

d = 20"

Connectors are: 1/2" x 3" Nails

3/4" ARDOX SPIRAL



DWG NO. TAM 10652-21

STRUCTURAL

COMPONENT ONLY

Disclosure

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

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



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

PASSED

1ST FLOOR \Flush Beams\B18E H(i24922) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

May 19, 2021 16:40:17

Build 7773

Job name:

File name: 4504 - OPTIONS 5 BEDRM.mmdl

Address:

Description: 1ST FLOOR \Flush Beams\B18E H(i24922)

City, Province, Postal Code: RICHMOND HILL

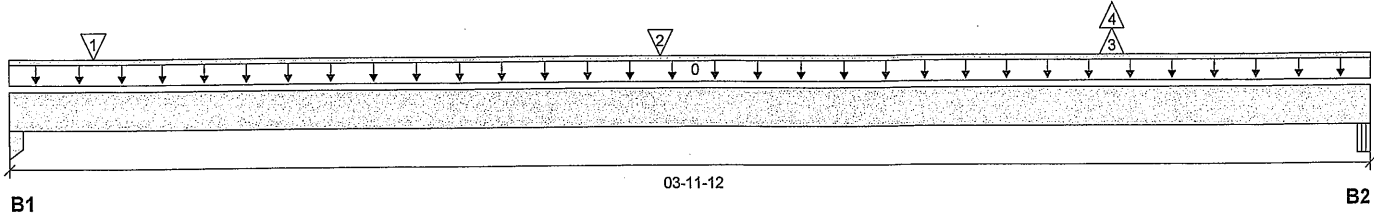
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 03-11-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	768 / 22	515 / 0		
B2, 5-1/4"	270 / 179	52 / 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	03-11-12	Top		12			00-00-00
1	-	Conc. Pt. (lbs)	L	00-02-14	00-02-14	Top	686	468			n/a
2	J4(i25042)	Conc. Pt. (lbs)	L	01-10-10	01-10-10	Top	201	101			n/a
3	J4(i24915)	Conc. Pt. (lbs)	L	03-02-10	03-02-10	Top	146	-53			n/a
4	J4(i24915)	Conc. Pt. (lbs)	L	03-02-10	03-02-10	Top	-201				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	557 ft-lbs	35392 ft-lbs	1.6%	1	01-10-10
Neg. Moment	-88 ft-lbs	-35392 ft-lbs	0.2%	4	03-02-10
End Shear	319 lbs	14464 lbs	2.2%	1	01-01-10
Total Load Deflection	L/999 (0.001")	n/a	n/a	6	01-09-08
Live Load Deflection	L/999 (0.001")	n/a	n/a	8	01-10-01
Max Defl.	0.001"	n/a	n/a	6	01-09-08
Span / Depth	3.6				

Bearing Supports

				Demand/ Resistance Support	Demand/ Resistance Member	Material
Bearing Supports		Dim. (LxW)	Demand			
B1	Column	1-3/4" x 3-1/2"	1796 lbs	45.1%	24.0%	Unspecified
B2	Beam	5-1/4" x 3-1/2"	470 lbs	6.0%	2.1%	Unspecified
B2	Uplift		222 lbs			

Cautions

Uplift of 222 lbs found at bearing B2. *(SIMPSON 2-H254 @ BS B1+B2)*
Concentrated side load(s) 1 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.

Notes

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

CONFORMS TO OBC 2012

AMENDED 2020



UWB NO. TAN 10653-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

1ST FLOOR \Flush Beams\B18E H(i24922) (Flush Beam)

Dry | 1 span | No cant.

May 19, 2021 16:40:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - OPTIONS 5 BEDRM.mmdl

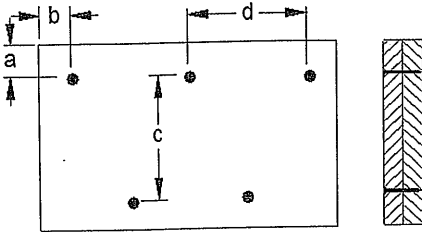
Description: 1ST FLOOR \Flush Beams\B18E H(i24922)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

c = 7-7/8"
d = 0"

Calculated Side Load = 213.9 lb/ft

Connectors are: 3 1/2" ARDOX SPIRAL Nails



Disclosure

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

1ST FLOOR \Flush Beams\B1E H(i25004) (Flush Beam)

Dry | 1 span | No cant.

PASSED

May 19, 2021 16:40:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

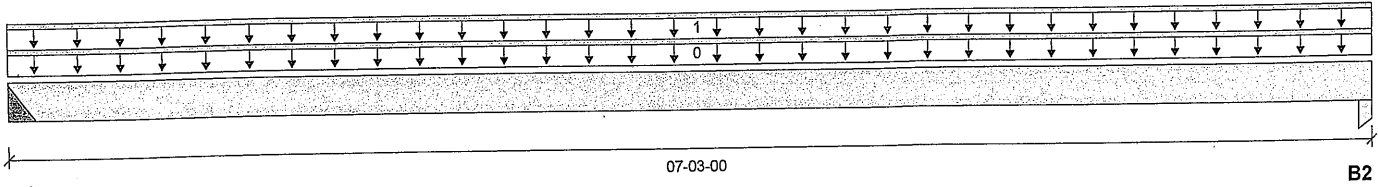
File name: 4504 - OPTIONS 5 BEDRM.mmdl

Description: 1ST FLOOR \Flush Beams\B1E H(i25004)

Specifier:

Designer: L.D.

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	23 / 0	33 / 0		
B2, 3-1/2"	24 / 0	34 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-03-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	07-03-00	Top	7	3			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	124 ft-lbs	17696 ft-lbs	0.7%	1	03-07-04
End Shear	50 lbs	7232 lbs	0.7%	1	01-02-14
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	03-07-04
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	03-07-04
Max Defl.	0.002"	n/a	n/a	4	03-07-04
Span / Depth	6.9				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	3" x 1-3/4"	77 lbs	n/a	1.2%	HUS1.81/10
B2 Column	3-1/2" x 1-3/4"	77 lbs	1.9%	1.0%	Unspecified

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

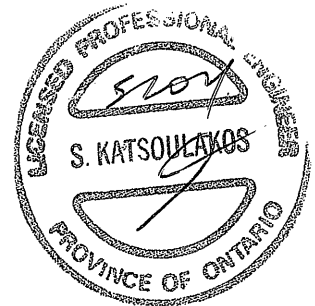
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 06-11-08.

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAM 1065421
STRUCTURAL
COMPONENT ONLY

Disclosure

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

PASSED

1ST FLOOR \Flush Beams\B2E H (i24897) (Flush Beam)

Dry | 1 span | No cant.

May 19, 2021 16:40:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

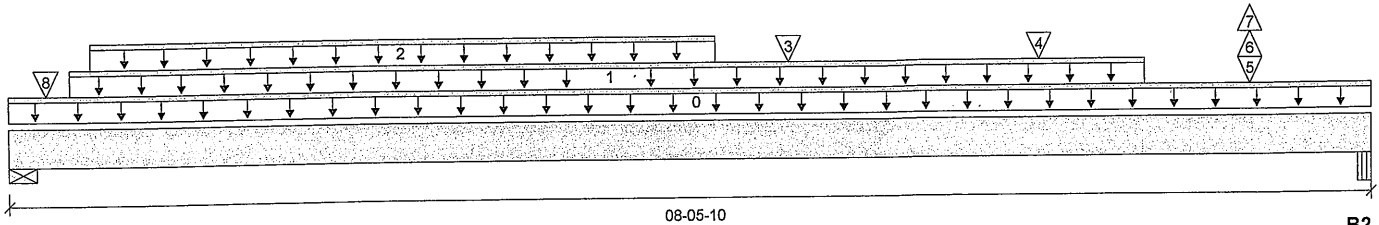
File name: 4504 - OPTIONS 5 BEDRM.mmdl

Description: 1ST FLOOR \Flush Beams\B2E H (i24897)

Specifier:

Designer: L.D.

Company:



Total Horizontal Product Length = 08-05-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	3716 / 24	2426 / 0		
B2, 5-1/4"	1997 / 446	816 / 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	08-05-10	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-08	07-00-08	Top	338	169			n/a
2	STAIRS	Unf. Lin. (lb/ft)	L	00-06-00	04-04-02	Top	240	120			n/a
3	-	Conc. Pt. (lbs)	L	04-09-08	04-09-08	Top	325	229			n/a
4	J4(i25042)	Conc. Pt. (lbs)	L	06-04-08	06-04-08	Top	193	97			n/a
5	-	Conc. Pt. (lbs)	L	07-08-08	07-08-08	Top	453	158			n/a
6	-	Conc. Pt. (lbs)	L	07-08-08	07-08-08	Top		-227			n/a
7	-	Conc. Pt. (lbs)	L	07-08-08	07-08-08	Top	-470				n/a
8	2(i20298)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	1531	1258			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	9126 ft-lbs	35392 ft-lbs	25.8%	1	04-00-05
End Shear	4318 lbs	14464 lbs	29.9%	1	01-05-06
Total Load Deflection	L/999 (0.07")	n/a	n/a	6	04-02-03
Live Load Deflection	L/999 (0.045")	n/a	n/a	8	04-02-03
Max Defl.	0.07"	n/a	n/a	6	04-02-03
Span / Depth	7.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	8606 lbs	72.6%	36.6%	Spruce-Pine-Fir
B2	Beam 5-1/4" x 3-1/2"	4015 lbs	51.2%	17.9%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-01-08.

CONFORMS TO OBC 2012

AMENDED 2020


 DWG NO. YAM 10655-21
 STRUCTURAL
 COMPONENT ONLY



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

PASSED

1ST FLOOR \Flush Beams\B2E H (i24897) (Flush Beam)

Dry | 1 span | No cant.

May 19, 2021 16:40:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - OPTIONS 5 BEDRM.mmdl

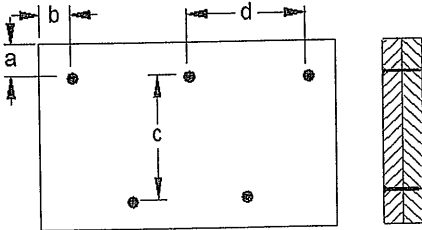
Description: 1ST FLOOR \Flush Beams\B2E H (i24897)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



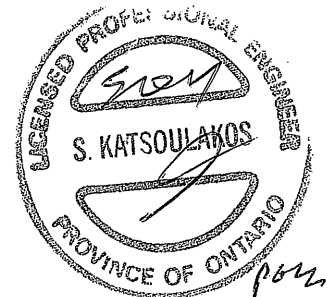
a minimum = 2"
b minimum = 3"

c = 7-7/8"
d = 6"

Calculated Side Load = 960.5 lb/ft

Connectors are: 3/4" Nails

3 1/2" ARDOX SPIRAL



OWG NO. TAM 10655-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

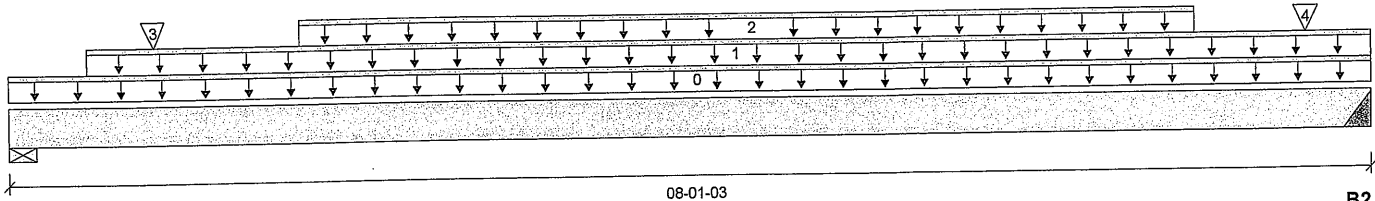
File name: 4504 - OPTIONS 5 BEDRM.mmdl

Description: 2ND FLOOR \Flush Beams\B10E(i24622)

Specifier:

Designer: L.D.

Company:



B1

Total Horizontal Product Length = 08-01-03

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	481 / 0	871 / 0		
B2, 3"	482 / 0	523 / 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	08-01-03	Top		6			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-05-08	08-01-03	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-08-08	07-00-08	Top	126	63			n/a
3	-	Conc. Pt. (lbs)	L	00-10-04	00-10-04	Top	167	489			n/a
4	J4(i24508)	Conc. Pt. (lbs)	L	07-08-08	07-08-08	Top	117	59			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2570 ft-lbs	17696 ft-lbs	14.5%	1	03-08-08
End Shear	1205 lbs	7232 lbs	16.7%	1	01-05-06
Total Load Deflection	L/999 (0.039")	n/a	n/a	4	04-00-08
Live Load Deflection	L/999 (0.018")	n/a	n/a	5	04-02-08
Max Defl.	0.039"	n/a	n/a	4	04-00-08
Span / Depth	7.6				

			Demand/ Resistance Support	Demand/ Resistance Member		
Bearing Supports	Dim. (LxW)	Demand			Material	
B1	Wall/Plate	5-1/2" x 1-3/4"	1220 lbs	31.7%	16.0%	Spruce-Pine-Fir
B2	Hanger	3" x 1-3/4"	1378 lbs	n/a	21.5%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-01-08.

CONFORMS TO CBC 2012

AMENDED 2020



OWG NO. 10656-21

STRUCTURAL

COMPONENT ONLY

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



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

PASSED

2ND FLOOR \Flush Beams\B11E(i24554) (Flush Beam)

Dry | 1 span | No cant.

May 19, 2021 16:40:18

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

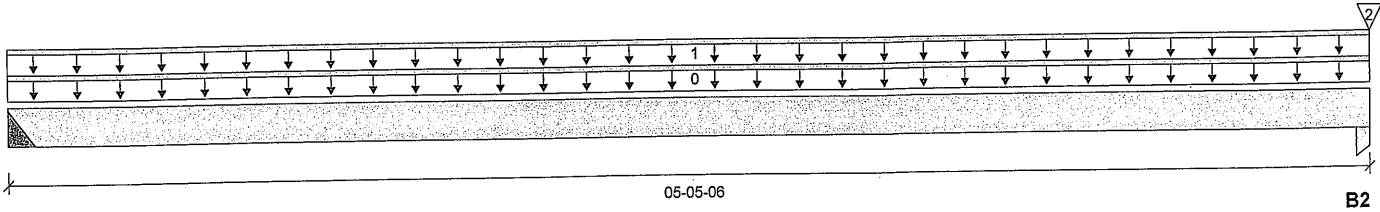
File name: 4504 - OPTIONS 5 BEDRM.mmdl

Description: 2ND FLOOR \Flush Beams\B11E(i24554)

Specifier:

Designer: L.D.

Company:



Total Horizontal Product Length = 05-05-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	28 / 0	30 / 0		
B2, 3-1/2"	64 / 0	48 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-05-06	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	05-05-06	Top	10	5			n/a
2	STAIR	Conc. Pt. (lbs)	L	05-05-06	05-05-06	Top	35	18			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	94 ft-lbs	17696 ft-lbs	0.5%	1	02-08-07
End Shear	43 lbs	7232 lbs	0.6%	1	01-02-14
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	02-08-07
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-08-07
Max Defl.	0.001"	n/a	n/a	4	02-08-07
Span / Depth	5.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	3" x 1-3/4"	80 lbs	n/a	1.3%	HUS1.81/10
B2 Column	3-1/2" x 1-3/4"	156 lbs	3.9%	2.1%	Unspecified

Cautions

Header for the hanger HUS1.81/10 is a Single 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 05-03-10.

CONFORMS TO OBC 2012

AMENDED 2020



Disclosure

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

2ND FLOOR \Flush Beams\B12E(i24568) (Flush Beam)

Dry | 1 span | No cant.

PASSED

May 19, 2021 16:40:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

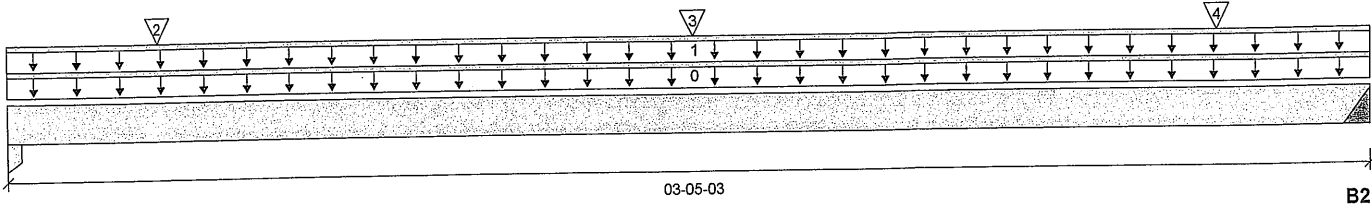
File name: 4504 - OPTIONS 5 BEDRM.mmdl

Description: 2ND FLOOR \Flush Beams\B12E(i24568)

Specifier:

Designer: L.D.

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	573 / 0	297 / 0		
B2, 3"	608 / 0	315 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-05-03	Top	1.00	0.65	1.00	1.15	00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-05-03	Top	240	120			n/a
2	J5(i24469)	Conc. Pt. (lbs)	L	00-04-08	00-04-08	Top	104	52			n/a
3	J5(i24553)	Conc. Pt. (lbs)	L	01-08-08	01-08-08	Top	149	75			n/a
4	J5(i24596)	Conc. Pt. (lbs)	L	03-00-08	03-00-08	Top	104	52			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	950 ft-lbs	17696 ft-lbs	5.4%	1	01-08-08
End Shear	474 lbs	7232 lbs	6.5%	1	02-02-05
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	01-08-01
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-08-01
Max Defl.	0.002"	n/a	n/a	4	01-08-01
Span / Depth	3.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Column	1-3/4" x 1-3/4"	1230 lbs	61.8%	32.9%	Unspecified
B2 Hanger	3" x 1-3/4"	1305 lbs	n/a	20.4%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-01-08.

CONFORMS TO CBC 2012

AMENDED 2020



STRUCTURAL
COMPONENT ONLY

Disclosure

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

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BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

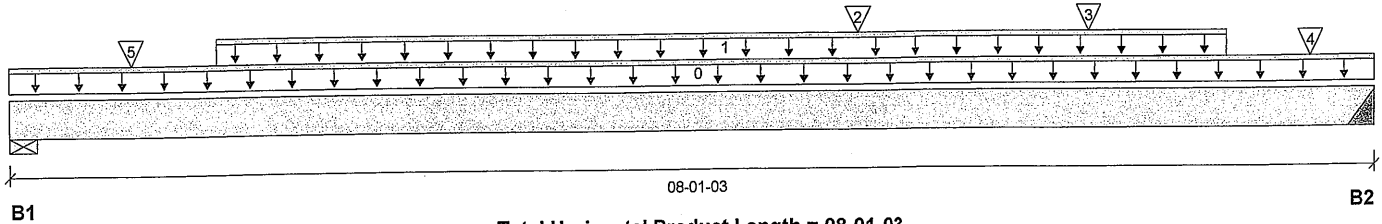
File name: 4504 - OPTIONS 5 BEDRM.mmdl

Description: 2ND FLOOR \Flush Beams\B13E(i24581)

Specifier:

Designer: L.D.

Company:



Total Horizontal Product Length = 08-01-03

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1485 / 0	1159 / 0		
B2, 3"	1584 / 0	846 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-01-03	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-02-08	07-02-08	Top	337	168			n/a
2	-	Conc. Pt. (lbs)	L	04-11-10	04-11-10	Top	100	79			n/a
3	J5(i24553)	Conc. Pt. (lbs)	L	06-04-08	06-04-08	Top	145	73			n/a
4	-	Conc. Pt. (lbs)	L	07-08-08	07-08-08	Top	360	180			n/a
5	-	Conc. Pt. (lbs)	L	00-08-08	00-08-08	Top	407	609			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5929 ft-lbs	17696 ft-lbs	33.5%	1	04-08-08
End Shear	2767 lbs	7232 lbs	38.3%	1	06-10-05
Total Load Deflection	L/999 (0.088")	n/a	n/a	4	04-02-09
Live Load Deflection	L/999 (0.056")	n/a	n/a	5	04-02-09
Max Defl.	0.088"	n/a	n/a	4	04-02-09
Span / Depth	7.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	3675 lbs	62.1%	31.3%	Spruce-Pine-Fir
B2	Hanger 3" x 1-3/4"	3434 lbs	n/a	53.6%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-09-08.

CONFORMS TO CBC 2012

AMENDED 2020



STRUCTURAL

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

PASSED

2ND FLOOR \Flush Beams\B15(i23401) (Flush Beam)

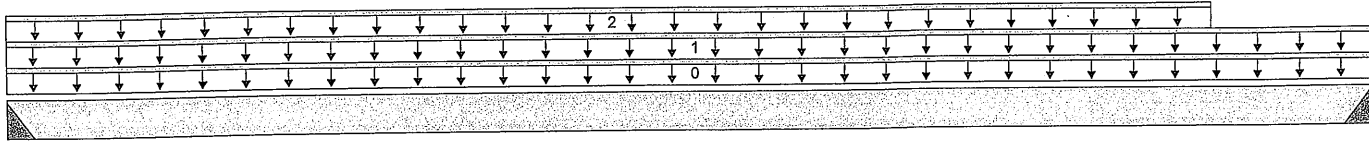
BC CALC® Member Report
Build 7773

Dry | 1 span | No cant.

May 19, 2021 16:40:18

Job name:
Address:
City, Province, Postal Code: RICHMOND HILL
Customer:
Code reports: CCMC 12472-R

File name: 4504 - OPTIONS 5 BEDRM.mmdl
Description: 2ND FLOOR \Flush Beams\B15(i23401)
Specifier:
Designer: L.D.
Company:



B1 12-03-09 B2
Total Horizontal Product Length = 12-03-09

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	77 / 0	444 / 0		
B2, 3"	60 / 0	436 / 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	12-03-09	Top		6			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	12-03-09	Top		60			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-09-14	Top	13	6			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1796 ft-lbs	11502 ft-lbs	15.6%	0	06-02-06
End Shear	505 lbs	4701 lbs	10.8%	0	01-02-14
Total Load Deflection	L/999 (0.079")	n/a	n/a	4	06-02-06
Live Load Deflection	L/999 (0.011")	n/a	n/a	5	06-00-14
Max Defl.	0.079"	n/a	n/a	4	06-02-06
Span / Depth	12.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	3" x 1-3/4"	622 lbs	n/a	14.9%	HUS1.81/10
B2 Hanger	3" x 1-3/4"	610 lbs	n/a	14.7%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Single 1-3/4" x 11-7/8" LVL Beam.
Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

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



OWG NO. TAM 10660-21
STRUCTURAL
COMPONENT ONLY

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CONFORMS TO CBC 2012

AMENDED 2020



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

PASSED

2ND FLOOR \Flush Beams\B21E(i24505) (Flush Beam)

Dry | 1 span | No cant.

May 19, 2021 16:40:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

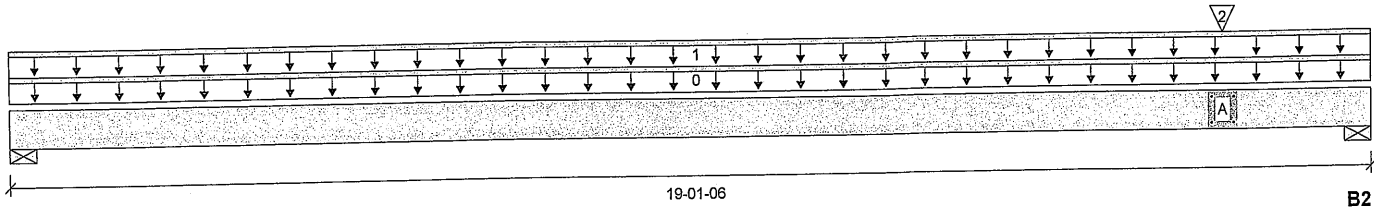
File name: 4504 - OPTIONS 5 BEDRM.mmdl

Description: 2ND FLOOR \Flush Beams\B21E(i24505)

Specifier:

Designer: L.D.

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	417 / 0	330 / 0		
B2, 2-3/4"	1639 / 0	985 / 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	19-01-06	Top		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	19-01-06	Top	27	13			n/a
2	B13E(i24581)	Conc. Pt. (lbs)	L	17-00-02	17-00-02	Top	1547	831			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7218 ft-lbs	35392 ft-lbs	20.4%	1	14-06-12
End Shear	3637 lbs	14464 lbs	25.1%	1	17-10-12
Total Load Deflection	L/696 (0.322")	n/a	34.5%	4	10-04-14
Live Load Deflection	L/1182 (0.189")	n/a	30.5%	5	10-04-14
Max Defl.	0.322"	n/a	n/a	4	10-04-14
Span / Depth	18.8				

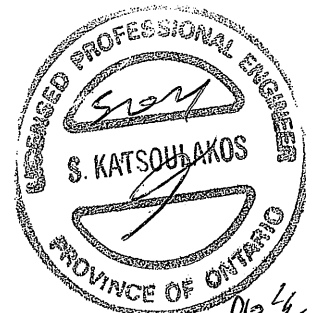
Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 3-1/2"	1039 lbs	11.0%	5.6%	Spruce-Pine-Fir
B2	Wall/Plate 2-3/4" x 3-1/2"	3691 lbs	62.4%	31.5%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9
Calculations assume unbraced length of Top: 00-00-00, Bottom: 16-06-14.

CONFORMS TO OBC 2012

AMENDED 2020



0000 NO. TAM/0661-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLOOR \Flush Beams\B21E(i24505) (Flush Beam)

Dry | 1 span | No cant.

May 19, 2021 16:40:17

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - OPTIONS 5 BEDRM.mmdl

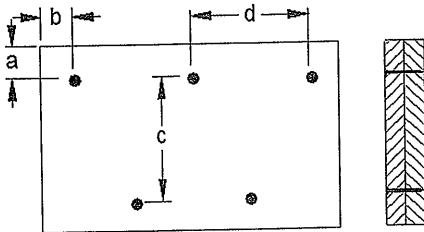
Description: 2ND FLOOR \Flush Beams\B21E(i24505)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

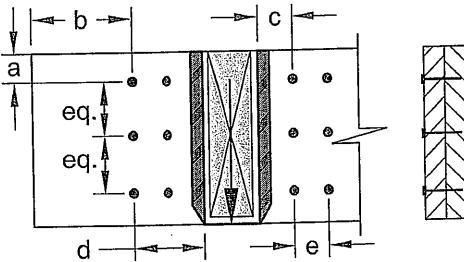
c = 7-7/8"
d = 4"

Connectors are: Nails

3 1/2" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Connection Tag: A Applies to load tag(s): 3



a minimum = 2"
b minimum = 4"
c minimum = 4"
d maximum = 12"
e minimum = 4"

Connectors are: Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM/0661-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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

PASSED

2ND FLOOR \Flush Beams\B9E(i24466) (Flush Beam)

Dry | 1 span | No cant.

May 19, 2021 16:40:17

BC CALC® Member Report

Build 7773

Job name:

File name: 4504 - OPTIONS 5 BEDRM.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B9E(i24466)

City, Province, Postal Code: RICHMOND HILL

Specifier:

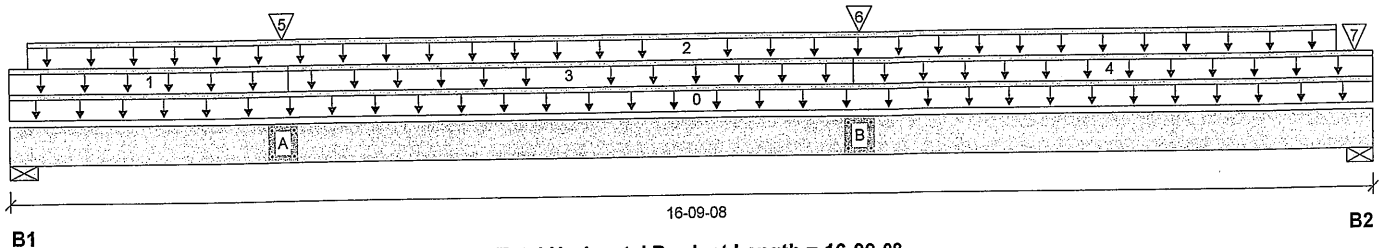
Customer:

Designer: L.D.

Code reports:

CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 9"	813 / 0	1129 / 0		
B2, 5-1/2"	555 / 0	1048 / 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	16-09-08	Top		12			00-00-00
1	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	03-05-00	Top	27	13			n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-02-12	16-04-00	Top		60			n/a
3	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	03-05-00	10-03-03	Top	6	3			n/a
4	FC2 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	10-03-03	16-09-08	Top	27	13			n/a
5	B12E(i24568)	Conc. Pt. (lbs)	L	03-04-02	03-04-02	Top	589	305			n/a
6	B10E(i24622)	Conc. Pt. (lbs)	L	10-04-01	10-04-01	Top	474	527			n/a
7	E59(i3207)	Conc. Pt. (lbs)	L	16-06-12	16-06-12	Top		24			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	9962 ft-lbs	35392 ft-lbs	28.1%	1	10-04-01
End Shear	2392 lbs	14464 lbs	16.5%	1	01-08-14
Total Load Deflection	L/579 (0.326")	n/a	41.5%	4	08-06-10
Live Load Deflection	L/999 (0.124")	n/a	n/a	5	08-06-10
Max Defl.	0.326"	n/a	n/a	4	08-06-10
Span / Depth	15.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 9" x 3-1/2"	2630 lbs	13.6%	6.8%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	1468 lbs	19.1%	9.6%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 06-10-03.

CONFIRMS TO OBC 2012

AMENDED 2020



OWN NO. 10662-21
 STRUCTURAL
 COMPONENT ONLY



BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - OPTIONS 5 BEDRM.mmdl

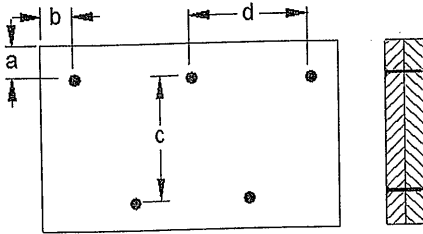
Description: 2ND FLOOR \Flush Beams\B9E(i24466)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



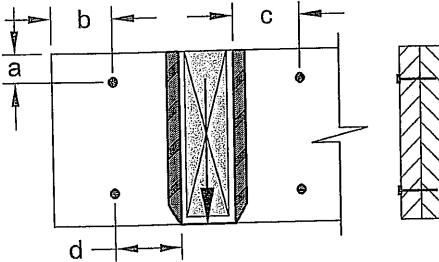
a minimum = 2"
b minimum = 3"

c = 7-7/8"
d = 8"

Connectors are: 3/4" x 16d Nails
3/2" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

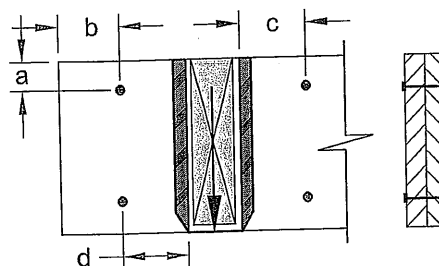
Connection Tag: A Applies to load tag(s): 3



a minimum = 2"
b minimum = 4"
c minimum = 4"
d maximum = 12"

Connectors are: 16d Nails
3/2" ARDOX SPIRAL

Connection Tag: B Applies to load tag(s): 7



a minimum = 2"
b minimum = 4"
c minimum = 4"
d maximum = 12"

Connectors are: 16d Nails
3/2" ARDOX SPIRAL



DWG NO. TAN 10662-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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BC CALC® Member Report

Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 1ST FLOOR \Flush Beams\B1 H(i19242)

City, Province, Postal Code: RICHMOND HILL

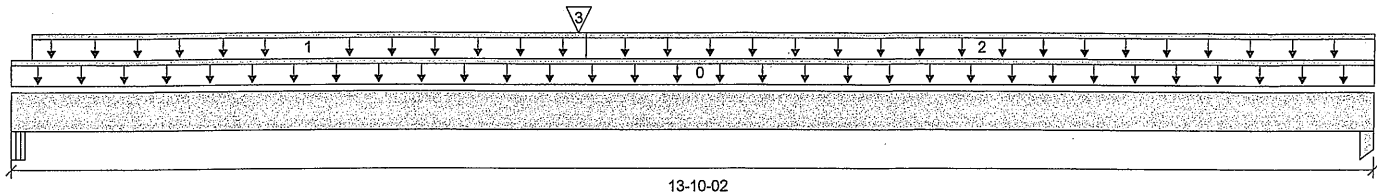
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



B1

Total Horizontal Product Length = 13-10-02

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5"	512 / 0	304 / 0		
B2, 3-1/2"	336 / 0	213 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	13-10-02	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-08	05-09-03	Top	19	10			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-09-03	13-10-02	Top	6	3			n/a
3	B2 H(i18641)	Conc. Pt. (lbs)	L	05-08-05	05-08-05	Top	689	354			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5393 ft-lbs	17696 ft-lbs	30.5%	1	05-08-05
End Shear	1088 lbs	7232 lbs	15.0%	1	01-04-14
Total Load Deflection	L/786 (0.203")	n/a	30.5%	4	06-07-06
Live Load Deflection	L/1241 (0.128")	n/a	29.0%	5	06-07-06
Max Defl.	0.203"	n/a	n/a	4	06-07-06
Span / Depth	13.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5" x 1-3/4"	1148 lbs	24.6%	10.8%	Unspecified
B2	Column 3-1/2" x 1-3/4"	770 lbs	15.5%	10.3%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live 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 9

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAM B760-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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BC CALC® Member Report

Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 1ST FLOOR \Flush Beams\B16 H(i18656)

City, Province, Postal Code: RICHMOND HILL

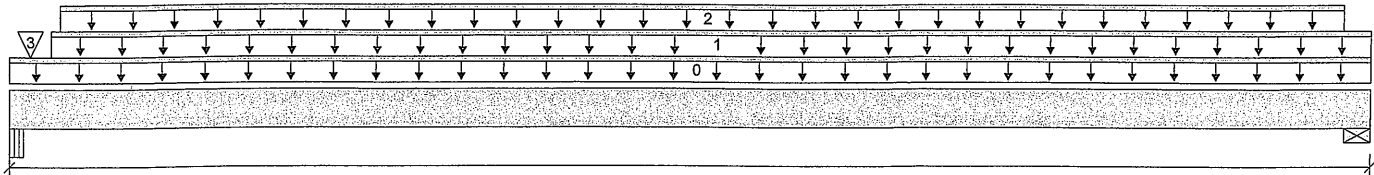
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



B1

Total Horizontal Product Length = 09-09-02

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-1/4"	142 / 0	389 / 0		
B2, 2-3/8"	75 / 0	343 / 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	09-09-02	Top		6			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-03-08	09-09-02	Top	16	8			n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-04-04	09-06-12	Top		60			n/a
3	8(i736)	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Top	68	46			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1125 ft-lbs	11502 ft-lbs	9.8%	0	04-11-08
End Shear	374 lbs	4701 lbs	7.9%	0	01-04-02
Total Load Deflection	L/999 (0.031")	n/a	n/a	4	04-11-08
Live Load Deflection	L/999 (0.005")	n/a	n/a	5	04-11-08
Max Defl.	0.031"	n/a	n/a	4	04-11-08
Span / Depth	9.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam 4-1/4" x 1-3/4"	545 lbs	21.1%	9.2%	Unspecified
B2	Wall/Plate 2-3/8" x 1-3/4"	480 lbs	28.9%	14.6%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

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 9

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAM 8161-2L
STRUCTURAL
COMPONENT ONLY

Disclosure

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BC CALC® Member Report

Dry | 1 span | No cant.

August 25, 2020 16:35:39

Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 1ST FLOOR \Flush Beams\B2 H(i18641) (Flush Beam)

City, Province, Postal Code: RICHMOND HILL

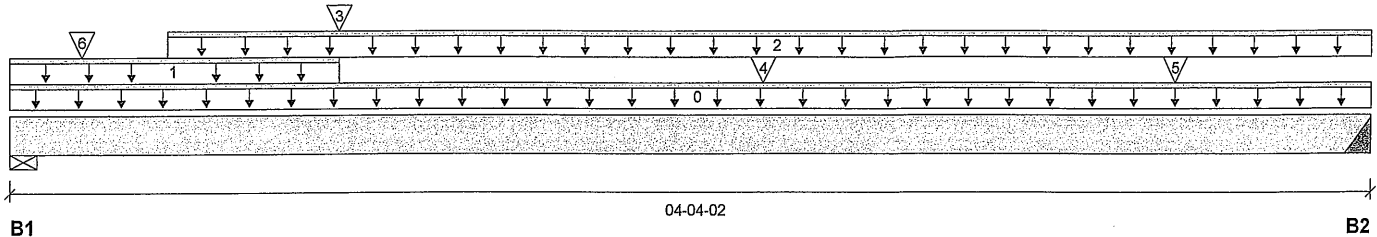
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 04-04-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	663 / 0	405 / 0		
B2, 3"	725 / 0	375 / 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	04-04-02	Top		6			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-00-08	Top	23	11			n/a
2	STAIRS	Unf. Lin. (lb/ft)	L	00-06-00	04-04-02	Top	240	120			n/a
3	J6(i19022)	Conc. Pt. (lbs)	L	01-00-08	01-00-08	Top	131	65			n/a
4	J6(i19210)	Conc. Pt. (lbs)	L	02-04-08	02-04-08	Top	149	74			n/a
5	J6(i19024)	Conc. Pt. (lbs)	L	03-08-08	03-08-08	Top	114	57			n/a
6	7(i702)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	49	85			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1456 ft-lbs	17696 ft-lbs	8.2%	1	02-04-08
End Shear	1230 lbs	7232 lbs	17.0%	1	01-03-06
Total Load Deflection	L/999 (0.006")	n/a	n/a	4	02-02-00
Live Load Deflection	L/999 (0.004")	n/a	n/a	5	02-02-00
Max Defl.	0.006"	n/a	n/a	4	02-02-00
Span / Depth	4.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 3-1/2" x 1-3/4"	1500 lbs	39.8%	20.1%	Spruce-Pine-Fir
B2	Hanger 3" x 1-3/4"	1557 lbs	n/a	24.3%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Single 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.



DOB NO. TAM B765-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

1ST FLOOR \Flush Beams\B2 H(i18641) (Flush Beam)

Dry | 1 span | No cant.

August 25, 2020 16:35:39

BC CALC® Member Report
Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 1ST FLOOR \Flush Beams\B2 H(i18641)

City, Province, Postal Code: RICHMOND HILL

Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



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BC CALC® Member Report

Dry | 1 span | No cant.

August 25, 2020 16:35:39

Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 2ND FLOOR \Dropped Beams\B14 DR(i18631)

City, Province, Postal Code: RICHMOND HILL

Specifier:

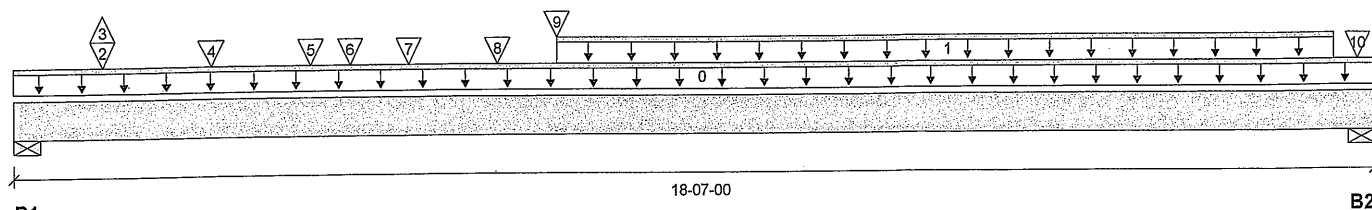
Customer:

Designer: L.D.

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 18-07-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	4531 / 12	2911 / 0		
B2, 3-1/2"	4751 / 0	2696 / 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	18-07-00	Top		21			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	07-04-00	18-00-00	Top	506	253			n/a
2	-	Conc. Pt. (lbs)	L	01-02-09	01-02-09	Top	723	432			n/a
3	-	Conc. Pt. (lbs)	L	01-02-09	01-02-09	Top	-12				n/a
4	-	Conc. Pt. (lbs)	L	02-08-00	02-08-00	Top	619	310			n/a
5	-	Conc. Pt. (lbs)	L	04-00-00	04-00-00	Top	532	266			n/a
6	B9(i18715)	Conc. Pt. (lbs)	L	04-06-07	04-06-07	Top	333	664			n/a
7	-	Conc. Pt. (lbs)	L	05-04-00	05-04-00	Top	585	292			n/a
8	-	Conc. Pt. (lbs)	L	06-06-07	06-06-07	Top	613	306			n/a
9	J3(i18883)	Conc. Pt. (lbs)	L	07-04-00	07-04-00	Top	241	121			n/a
10	J3(i18753)	Conc. Pt. (lbs)	L	18-04-00	18-04-00	Top	241	121			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	48265 ft-lbs	75349 ft-lbs	64.1%	1	09-04-00
End Shear	10057 lbs	25578 lbs	39.3%	1	01-05-08
Total Load Deflection	L/257 (0.846")	n/a	93.3%	6	09-04-00
Live Load Deflection	L/411 (0.529")	n/a	87.6%	8	09-04-00
Max Defl.	0.846"	n/a	n/a	6	09-04-00
Span / Depth	15.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 5-1/4"	10435 lbs	42.6%	46.5%	Spruce-Pine-Fir
B2	Wall/Plate 3-1/2" x 5-1/4"	10496 lbs	42.8%	46.8%	Spruce-Pine-Fir

Notes

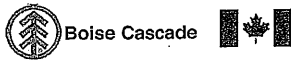
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 01-02-12, Bottom: 01-02-12.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. YAM 8767-21
**STRUCTURAL
 COMPONENT ONLY**



Triple 1-3/4" x 14" VERSA-LAM® 2.0 3100 SP
2ND FLOOR \Dropped Beams\B14 DR(i18631) (Dropped Beam)

PASSED

BC CALC® Member Report
Build 7493

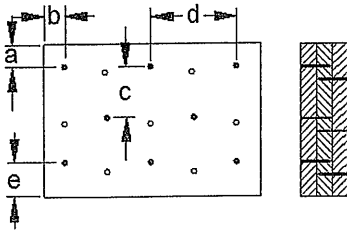
Dry | 1 span | No cant.

August 25, 2020 16:35:39

Job name:
Address:
City, Province, Postal Code: RICHMOND HILL
Customer:
Code reports: CCMC 12472-R

File name: 4504 - EL A,B,C STANDARD.mmdl
Description: 2ND FLOOR \Dropped Beams\B14 DR(i18631)
Specifier:
Designer: L.D.
Company:

Connection Diagram: Full Length of Member



a minimum = 2" c = 5"
b minimum = 3" d = 24"
e minimum = 3"

Nailing applies to both sides of the member
Connectors are: Nails

3 1/2" ARDOX SPIRAL



POZ
DWG NO. YAM B761-21
**STRUCTURAL
COMPONENT ONLY**

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

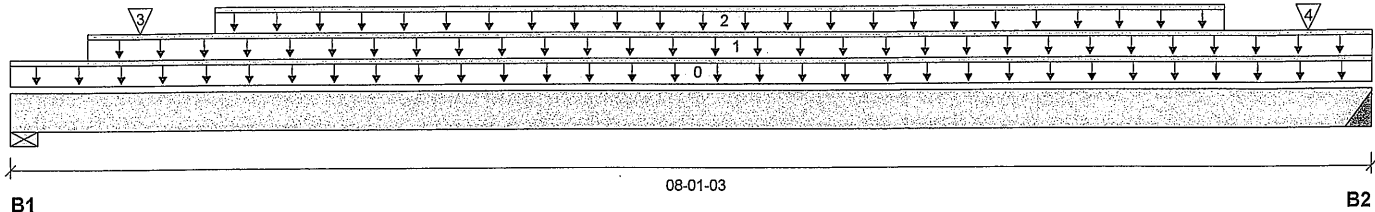
BC CALC® Member Report
Build 7493

Dry | 1 span | No cant.

August 25, 2020 16:35:39

Job name:
Address:
City, Province, Postal Code: RICHMOND HILL
Customer:
Code reports: CCMC 12472-R

File name: 4504 - EL A,B,C STANDARD.mmdl
Description: 2ND FLOOR \Flush Beams\B10(i19261)
Specifier:
Designer: L.D.
Company:



Total Horizontal Product Length = 08-01-03

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	555 / 0	909 / 0		
B2, 3"	485 / 0	525 / 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	08-01-03	Top		6			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-05-08	08-01-03	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-02-08	07-02-08	Top	126	62			n/a
3	-	Conc. Pt. (lbs)	L	00-09-04	00-09-04	Top	185	499			n/a
4	J6(i18791)	Conc. Pt. (lbs)	L	07-08-08	07-08-08	Top	96	48			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2599 ft-lbs	17696 ft-lbs	14.7%	1	03-08-08
End Shear	1263 lbs	7232 lbs	17.5%	1	01-05-06
Total Load Deflection	L/999 (0.04")	n/a	n/a	4	04-01-00
Live Load Deflection	L/999 (0.019")	n/a	n/a	5	04-01-00
Max Defl.	0.04"	n/a	n/a	4	04-01-00
Span / Depth	7.6				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	1968 lbs	33.2%	16.8%	Spruce-Pine-Fir
B2	Hanger 3" x 1-3/4"	1384 lbs	n/a	21.6%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 11-7/8" LVL Beam.
Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



ENG NO. 4154, TAM 076621

STRUCTURAL
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BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

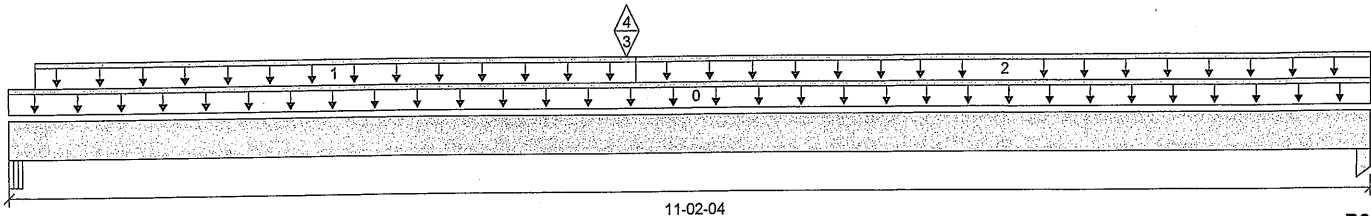
File name: 4504 - EL A,B,C STANDARD.mmdl

Description: 2ND FLOOR \Flush Beams\B11(i18661)

Specifier:

Designer: L.D.

Company:



B1

Total Horizontal Product Length = 11-02-04

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	216 / 12	179 / 0		
B2, 3-1/2"	145 / 10	135 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-02-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	05-01-03	Top	27	13			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	05-01-03	11-02-04	Top	9	4			n/a
3	B13(i18691)	Conc. Pt. (lbs)	L	05-00-05	05-00-05	Top	178	155			n/a
4	B13(i18691)	Conc. Pt. (lbs)	L	05-00-05	05-00-05	Top	-22				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1797 ft-lbs	17696 ft-lbs	10.2%	1	05-00-05
End Shear	468 lbs	7232 lbs	6.5%	1	01-05-02
Total Load Deflection	L/999 (0.046")	n/a	n/a	6	05-04-13
Live Load Deflection	L/999 (0.025")	n/a	n/a	8	05-04-13
Max Defl.	0.046"	n/a	n/a	6	05-04-13
Span / Depth	10.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5-1/4" x 1-3/4"	547 lbs	4.9%	4.9%	VL 2.0 3100 SP
B2	Column 3-1/2" x 1-3/4"	385 lbs	7.7%	5.2%	Unspecified

Notes

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

CONFORMS TO OBC 2012

AMENDED 2020



OWB NO. 174W 0769-21

STRUCTURAL
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Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B12(i19204)

City, Province, Postal Code: RICHMOND HILL

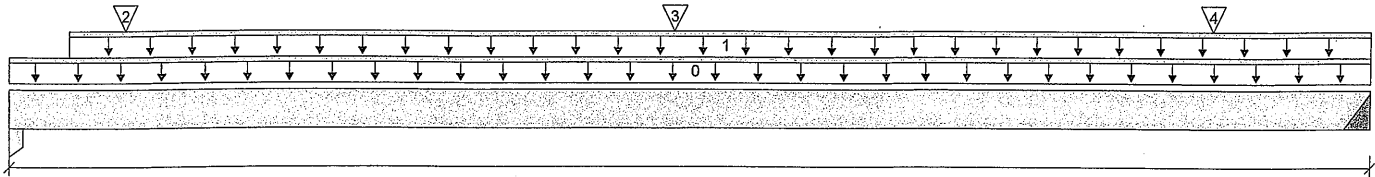
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



B1

Total Horizontal Product Length = 03-04-01

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	693 / 0	356 / 0		
B2, 3"	763 / 0	392 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-04-01	Top	1.00	0.65	1.00	1.15	00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-01-12	03-04-01	Top	240	120			n/a
2	J4(i19241)	Conc. Pt. (lbs)	L	00-03-06	00-03-06	Top	192	96			n/a
3	J4(i18835)	Conc. Pt. (lbs)	L	01-07-06	01-07-06	Top	293	146			n/a
4	J4(i19253)	Conc. Pt. (lbs)	L	02-11-06	02-11-06	Top	205	103			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1170 ft-lbs	17696 ft-lbs	6.6%	1	01-07-06
End Shear	619 lbs	7232 lbs	8.6%	1	01-01-10
Total Load Deflection	L/999 (0.003")	n/a	n/a	4	01-07-06
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-07-06
Max Defl.	0.003"	n/a	n/a	4	01-07-06
Span / Depth	3.1				

			Demand/Resistance Support	Demand/Resistance Member		
Bearing Supports	Dim. (LxW)	Demand			Material	
B1	Column	1-3/4" x 1-3/4"	1484 lbs	59.7%	39.7%	Unspecified
B2	Hanger	3" x 1-3/4"	1636 lbs	n/a	25.5%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 11-7/8" LVL Beam.
Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. YAM B770-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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

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

BC CALC® Member Report

Dry | 1 span | No cant.

August 25, 2020 16:35:39

Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B13(i18691)

City, Province, Postal Code: RICHMOND HILL

Specifier:

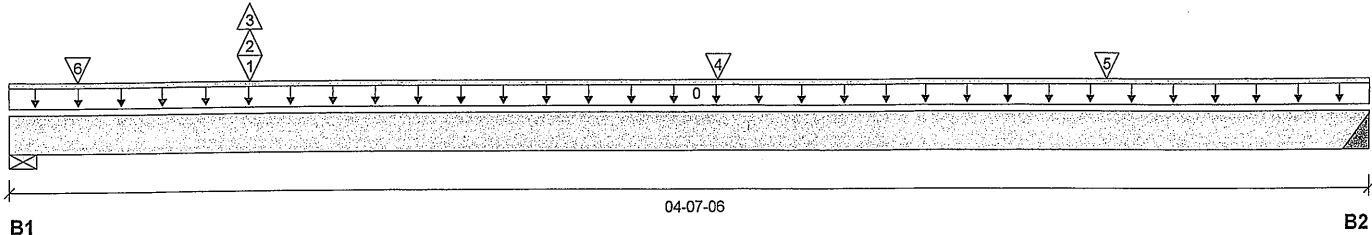
Customer:

Designer: L.D.

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-07-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	287 / 120	465 / 0		
B2, 3"	183 / 23	134 / 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	04-07-06	Top		6			00-00-00
1	-	Conc. Pt. (lbs)	L	00-09-11	00-09-11	Top	200	445			n/a
2	-	Conc. Pt. (lbs)	L	00-09-11	00-09-11	Top		-10			n/a
3	-	Conc. Pt. (lbs)	L	00-09-11	00-09-11	Top	-143				n/a
4	J7(i18832)	Conc. Pt. (lbs)	L	02-04-08	02-04-08	Top	130	65			n/a
5	J7(i19223)	Conc. Pt. (lbs)	L	03-08-08	03-08-08	Top	111	56			n/a
6	FC3 Floor Material	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	26	13			n/a

Controls Summary

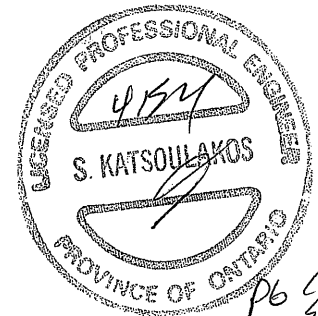
	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	569 ft-lbs	17696 ft-lbs	3.2%	1	02-04-08
End Shear	422 lbs	7232 lbs	5.8%	1	01-05-06
Total Load Deflection	L/999 (0.002")	n/a	n/a	6	02-03-13
Live Load Deflection	L/999 (0.001")	n/a	n/a	8	02-04-08
Max Defl.	0.002"	n/a	n/a	6	02-03-13
Span / Depth	4.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Wall/Plate	5-1/2" x 1-3/4"	1012 lbs	17.1%	8.6%	Spruce-Pine-Fir
B2 Hanger	3" x 1-3/4"	441 lbs	n/a	6.9%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Single 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.


OWB NO. YAH 8771 -21
**STRUCTURAL
COMPONENT ONLY**



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

PASSED

2ND FLOOR \Flush Beams\B13(i18691) (Flush Beam)

Dry | 1 span | No cant.

August 25, 2020 16:35:39

BC CALC® Member Report

Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B13(i18691)

City, Province, Postal Code: RICHMOND HILL

Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

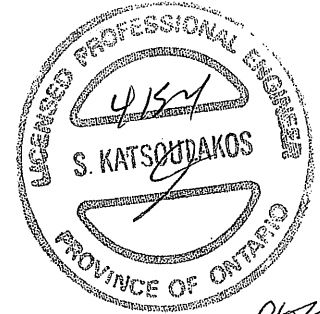
CONFORMS TO OBC 2012

AMENDED 2020

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9



DWG NO. TAM B771 -21
STRUCTURAL
COMPONENT ONLY

Disclosure

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Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B15(i19154)

City, Province, Postal Code: RICHMOND HILL

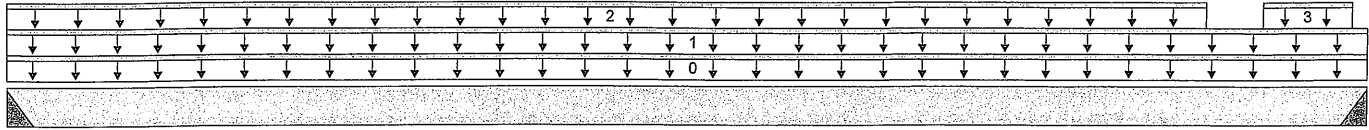
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



B1

Total Horizontal Product Length = 12-03-09

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	78 / 0	445 / 0		
B2, 3"	70 / 0	441 / 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	12-03-09	Top		6			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	12-03-09	Top		60			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-09-14	Top	13	6			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	11-04-02	12-01-14	Top	13				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1797 ft-lbs	11502 ft-lbs	15.6%	0	06-02-06
End Shear	506 lbs	4701 lbs	10.8%	0	01-02-14
Total Load Deflection	L/999 (0.079")	n/a	n/a	4	06-02-06
Live Load Deflection	L/999 (0.012")	n/a	n/a	5	06-00-14
Max Defl.	0.079"	n/a	n/a	4	06-02-06
Span / Depth	12.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 3" x 1-3/4"	622 lbs	n/a	15.0%	HUS1.81/10
B2	Hanger 3" x 1-3/4"	617 lbs	n/a	14.8%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Single 1-3/4" x 11-7/8" LVL Beam.
Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. YAM 0772-21
STRUCTURAL
COMPONENT ONLY

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BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

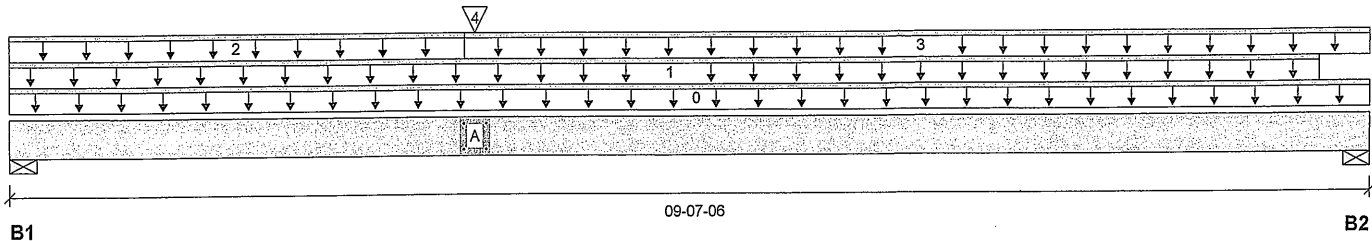
File name: 4504 - EL A,B,C STANDARD.mmdl

Description: 2ND FLOOR \Flush Beams\B20(i18684)

Specifier:

Designer: L.D.

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/4"	422 / 0	739 / 0		
B2, 4-3/8"	287 / 0	568 / 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	09-07-06	Top		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	09-03-00	Top		60			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-02-03	Top	19	9			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	03-02-03	09-07-06	Top	27	13			n/a
4	B10(i19261)	Conc. Pt. (lbs)	L	03-03-01	03-03-01	Top	478	520			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4118 ft-lbs	35392 ft-lbs	11.6%	1	03-03-01
End Shear	1398 lbs	14464 lbs	9.7%	1	01-02-10
Total Load Deflection	L/999 (0.042")	n/a	n/a	4	04-06-01
Live Load Deflection	L/999 (0.016")	n/a	n/a	5	04-05-02
Max Defl.	0.042"	n/a	n/a	4	04-06-01
Span / Depth	9.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 2-3/4" x 3-1/2"	1034 lbs	26.9%	13.5%	Spruce-Pine-Fir
B2	Wall/Plate 4-3/8" x 3-1/2"	795 lbs	13.0%	6.5%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

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 9

CONFORMS TO OBC 2012

AMENDED 2020


DWG NO. TAM-173-21
**STRUCTURAL
COMPONENT ONLY**

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

August 25, 2020 16:35:39

File name: 4504 - EL A,B,C STANDARD.mmdl

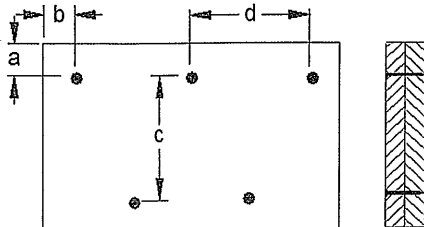
Description: 2ND FLOOR \Flush Beams\B20(i18684) (Flush Beam)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

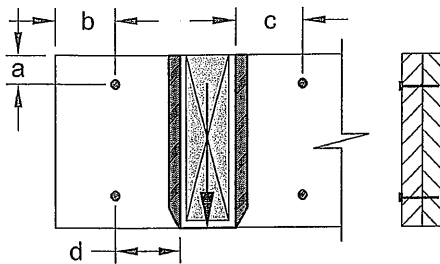
d = 24"

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Connection Tag: A Applies to load tag(s): 4



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



DWG NO. YAM B73-21
STRUCTURAL
COMPONENT ONLY

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BC CALC® Member Report

Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B7(i19188)

City, Province, Postal Code: RICHMOND HILL

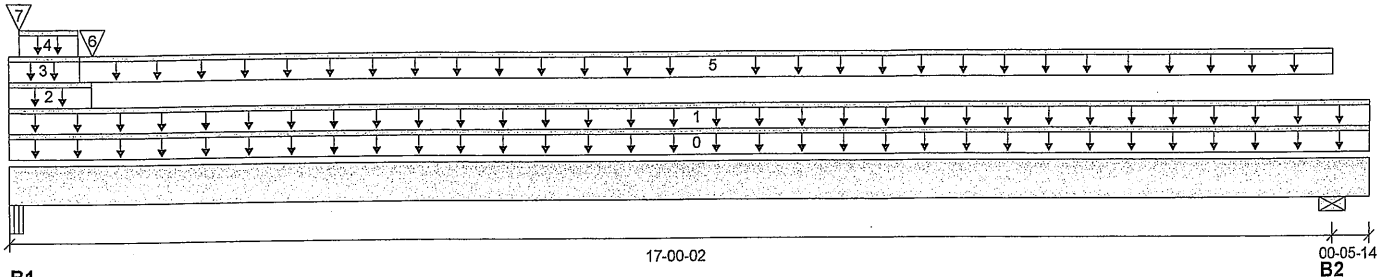
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



B1

17-00-02

00-05-14
B2

Total Horizontal Product Length = 17-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-7/8"	1278 / 0	1628 / 0	1160 / 0	
B2, 5-1/2"	279 / 0	287 / 0	54 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	17-06-00	Top		12			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	17-06-00	Top	10	5			n/a
2	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	01-00-10	Top	33	30	78		n/a
3	E43(i937)	Unf. Lin. (lb/ft)	L	00-00-00	00-10-14	Top		81			n/a
4	E43(i937)	Unf. Lin. (lb/ft)	L	00-01-10	00-10-10	Top	33	30	78		n/a
5	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-10-14	17-00-02	Top	16	8			n/a
6	-	Conc. Pt. (lbs)	L	01-00-13	01-00-13	Top	1048	1334	1033		n/a
7	E43(i937)	Conc. Pt. (lbs)	L	00-01-10	00-01-10	Top			30		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4604 ft-lbs	35392 ft-lbs	13.0%	2	05-07-05
Neg. Moment	-4 ft-lbs	-35392 ft-lbs	n/a	1	17-00-02
End Shear	3826 lbs	14464 lbs	26.5%	1	01-03-12
Cont. Shear	726 lbs	14464 lbs	5.0%	1	15-09-08
Total Load Deflection	L/1095 (0.184")	n/a	21.9%	82	08-01-03
Live Load Deflection	L/999 (0.103")	n/a	n/a	120	07-10-08
Total Neg. Defl.	2xL/1998 (-0.016")	n/a	n/a	82	17-06-00
Max Defl.	0.184"	n/a	n/a	82	08-01-03
Span / Depth	16.9				

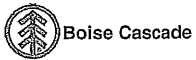
Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam 3-7/8" x 3-1/2"	5111 lbs	70.6%	30.9%	Unspecified
B2	Wall/Plate 5-1/2" x 3-1/2"	831 lbs	7.0%	3.5%	Spruce-Pine-Fir

Cautions

Concentrated side load(s) 20 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.


DWG NO. TAW 0774-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLOOR \Flush Beams\B7(i19188) (Flush Beam)

Dry | 2 spans | R cant.

August 25, 2020 16:35:39

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - EL A,B,C STANDARD.mmdl

Description: 2ND FLOOR \Flush Beams\B7(i19188)

Specifier:

Designer: L.D.

Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live 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.

Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

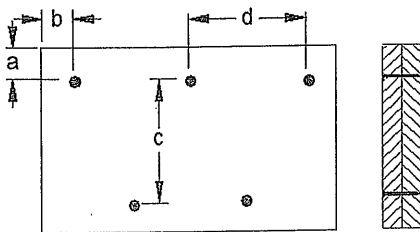
Importance Factor : Normal Part code : Part 9

Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 12"

Calculated Side Load = 465.0 lb/ft

Connectors are: 3 1/2" ARDOX SPIRAL



DWG NO. TAM B774-21

STRUCTURAL
COMPONENT ONLY

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

BC CALC® Member Report

Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B8(i19157)

City, Province, Postal Code: RICHMOND HILL

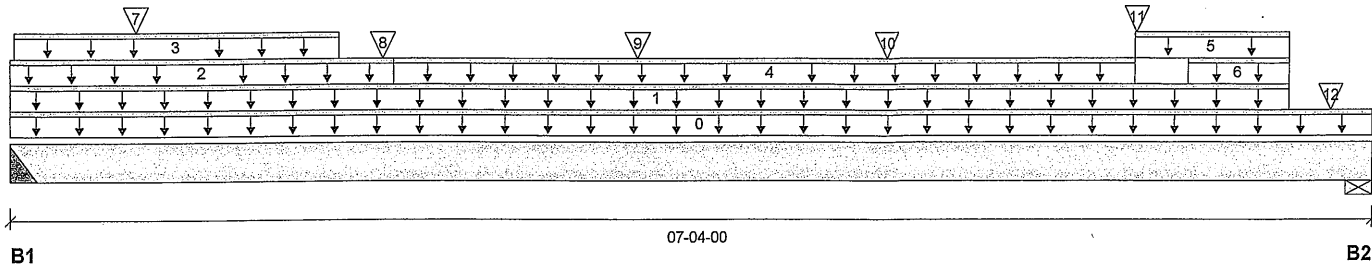
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1090 / 0	1136 / 0	644 / 0	
B2, 5-1/2"	972 / 0	1051 / 0	632 / 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	07-04-00	Top		12			00-00-00
1	J03	Unf. Lin. (lb/ft)	L	00-00-00	06-10-08	Top		36	69		n/a
2	E75(i3228)	Unf. Lin. (lb/ft)	L	00-00-00	02-00-08	Top		81			n/a
3	E75(i3228)	Unf. Lin. (lb/ft)	L	00-00-04	01-09-00	Top		46	110		n/a
4	E76(i3229)	Unf. Lin. (lb/ft)	L	02-00-08	06-00-08	Top		41			n/a
5	E42(i931)	Unf. Lin. (lb/ft)	L	06-00-08	06-10-08	Top		81			n/a
6	E42(i931)	Unf. Lin. (lb/ft)	L	06-04-00	06-10-08	Top		46	110		n/a
7	J1(i19246)	Conc. Pt. (lbs)	L	00-08-00	00-08-00	Top	352	176			n/a
8	-	Conc. Pt. (lbs)	L	01-11-13	01-11-13	Top	433	357	254		n/a
9	J2(i19095)	Conc. Pt. (lbs)	L	03-04-00	03-04-00	Top	433	217			n/a
10	J2(i19277)	Conc. Pt. (lbs)	L	04-08-00	04-08-00	Top	433	217			n/a
11	-	Conc. Pt. (lbs)	L	06-00-09	06-00-09	Top	401	340	250		n/a
12	E59(i3207)	Conc. Pt. (lbs)	L	07-01-04	07-01-04	Top		43	48		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5581 ft-lbs	35392 ft-lbs	15.8%	1	03-04-00
End Shear	2951 lbs	14464 lbs	20.4%	1	05-10-10
Total Load Deflection	L/999 (0.035")	n/a	n/a	35	03-07-00
Live Load Deflection	L/999 (0.021")	n/a	n/a	51	03-07-00
Max Defl.	0.035"	n/a	n/a	35	03-07-00
Span / Depth	6.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 3-1/2"	3699 lbs	n/a	21.7%	HGUS410
B2	Wall/Plate 5-1/2" x 3-1/2"	3404 lbs	28.7%	14.5%	Spruce-Pine-Fir

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.



DWG NO. YAM 8725-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLOOR \Flush Beams\B8(i19157) (Flush Beam)

Dry | 1 span | No cant.

August 25, 2020 16:35:39

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - EL A,B,C STANDARD.mmdl

Description: 2ND FLOOR \Flush Beams\B8(i19157)

Specifier:

Designer: L.D.

Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Unbalanced snow loads determined from building geometry were used in selected product's verification.

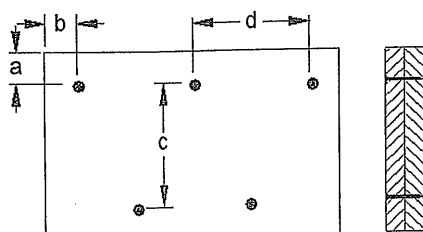
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



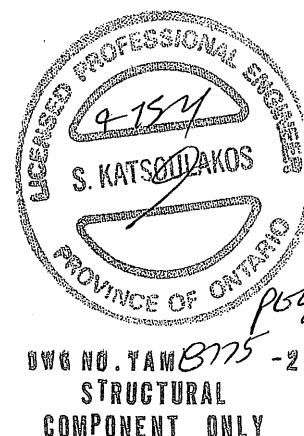
a minimum = 2"
b minimum = 3"

c = 7-7/8"
d = 6"

Calculated Side Load = 920.8 lb/ft

Connectors are: 3 1/2" ARDUX SPIRAL Nails

3 1/2" ARDUX SPIRAL



Disclosure

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Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B9(i18715)

City, Province, Postal Code: RICHMOND HILL

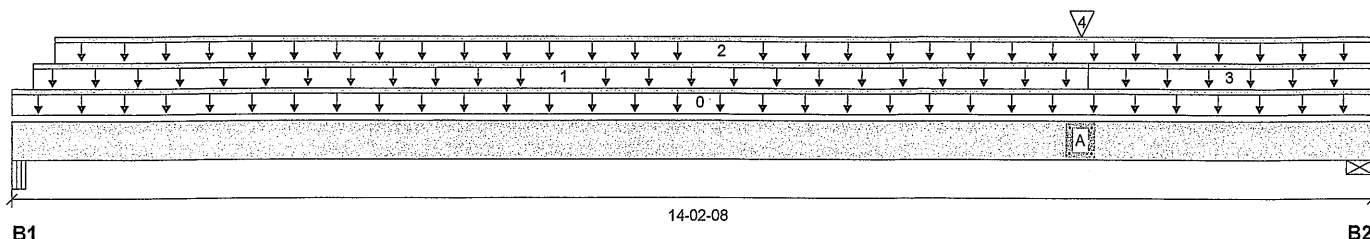
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 14-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	337 / 0	664 / 0		
B2, 2-3/4"	727 / 0	876 / 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	14-02-08	Top		12			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	11-02-04	Top	27	13			n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-05-04	14-02-08	Top		60			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	11-02-04	14-02-08	Top	19	9			n/a
4	B12(i19204)	Conc. Pt. (lbs)	L	11-01-06	11-01-06	Top	715	368			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	5991 ft-lbs	35392 ft-lbs	16.9%	1	09-05-06
End Shear	2028 lbs	14464 lbs	14.0%	1	12-11-14
Total Load Deflection	L/1086 (0.151")	n/a	22.1%	4	07-05-13
Live Load Deflection	L/999 (0.062")	n/a	n/a	5	07-09-07
Max Defl.	0.151"	n/a	n/a	4	07-05-13
Span / Depth	13.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam 5-1/4" x 3-1/2"	929 lbs	6.4%	6.4%	VL 2.0 3100 SP
B2	Wall/Plate 2-3/4" x 3-1/2"	2186 lbs	36.9%	18.6%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86.

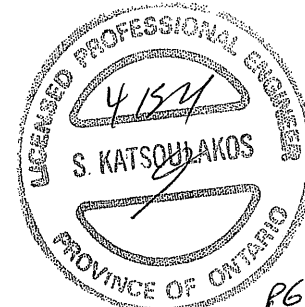
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAM 8726-21
STRUCTURAL
COMPONENT ONLY

BC CALC® Member Report

Dry | 1 span | No cant.

August 25, 2020 16:35:39

Build 7493

Job name:

File name: 4504 - EL A,B,C STANDARD.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B9(i18715)

City, Province, Postal Code: RICHMOND HILL

Specifier:

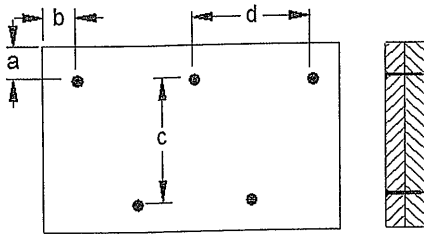
Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

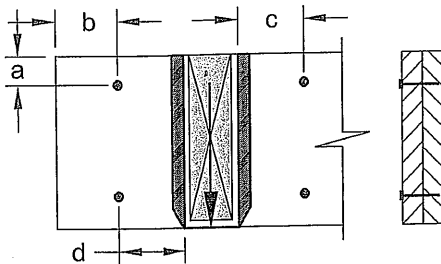
c = 7-7/8"
d = 24"

Connectors are:

3 1/2" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

Connection Tag: A Applies to load tag(s): 3



a minimum = 2"
b minimum = 4"
c minimum = 4"
d maximum = 12"

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



DWG NO. YAM 0576-21
STRUCTURAL
COMPONENT ONLY

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**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR \Flush Beams\B17E(i23447) (Flush Beam)**

Dry | 1 span | No cant.

August 26, 2020 10:53:26

BC CALC® Member Report

Build 7493

Job name:

File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

Address:

Description: 1ST FLOOR \Flush Beams\B17E(i23447)

City, Province, Postal Code: RICHMOND HILL

Specifier:

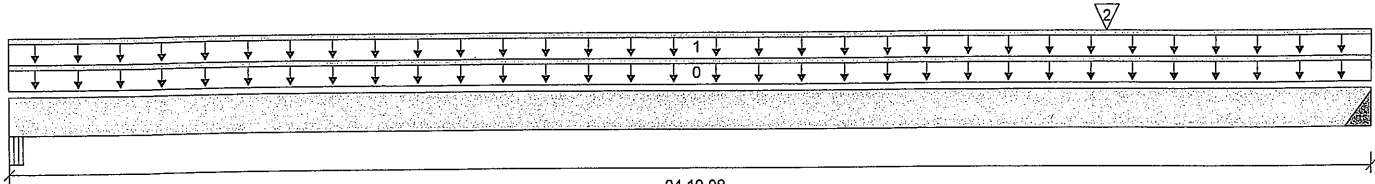
Customer:

Designer: L.D.

Code reports:

CCMC 12472-R

Company:



B1

B2

Total Horizontal Product Length = 04-10-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	138 / 0	115 / 0		
B2, 4"	610 / 0	429 / 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	04-10-08	Top		12			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-10-08	Top	14	7			n/a
2	PBO8(i20297)	Conc. Pt. (lbs)	L	03-11-00	03-11-00	Top	680	451			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	979 ft-lbs	35392 ft-lbs	2.8%	1	03-11-00
End Shear	808 lbs	14464 lbs	5.6%	1	03-06-10
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	02-08-01
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	02-08-01
Max Defl.	0.002"	n/a	n/a	4	02-08-01
Span / Depth	4.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	2-5/8" x 3-1/2"	351 lbs	9.0%	3.1%	Unspecified
B2 Hanger	4" x 3-1/2"	1450 lbs	n/a	8.5%	HUC410

Cautions

Header for the hanger HUC410 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUC410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

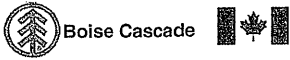
AMENDED 2020



DWG NO. TAW 877-21

STRUCTURAL

COMPONENT ONLY



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

PASSED

1ST FLOOR \Flush Beams\B17E(i23447) (Flush Beam)

Dry | 1 span | No cant.

August 26, 2020 10:53:26

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

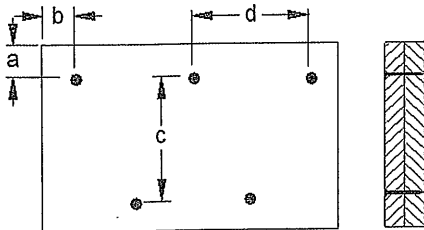
Description: 1ST FLOOR \Flush Beams\B17E(i23447)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 24"

Connectors are: 3 1/2" ARDOX SPIRAL Nails

3 1/2" ARDOX SPIRAL



090 NO. 1AM 877-21
STRUCTURAL
COMPONENT ONLY

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BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

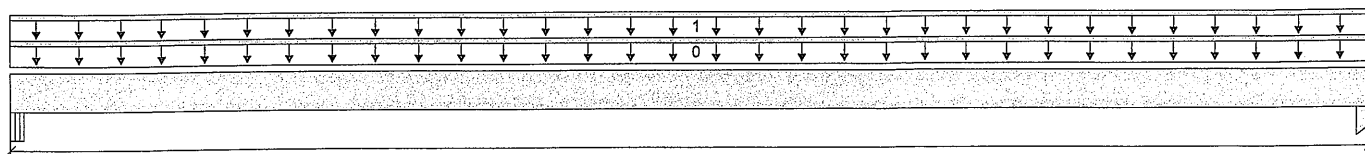
File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

Description: 1ST FLOOR \Flush Beams\B1E H(i23528)

Specifier:

Designer: L.D.

Company:



B1

05-02-00

B2

Total Horizontal Product Length = 05-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	16 / 0	24 / 0		
B2, 3-1/2"	17 / 0	24 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-02-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-02-00	Top	6	3			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	61 ft-lbs	17696 ft-lbs	0.3%	1	02-06-09
End Shear	28 lbs	7232 lbs	0.4%	1	01-02-08
Total Load Deflection	L/999 (0")	n/a	n/a	4	02-06-09
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-06-09
Max Defl.	0"	n/a	n/a	4	02-06-09
Span / Depth	4.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	2-5/8" x 1-3/4"	54 lbs	2.8%	1.0%	Unspecified
B2 Column	3-1/2" x 1-3/4"	56 lbs	1.4%	0.7%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live 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 9

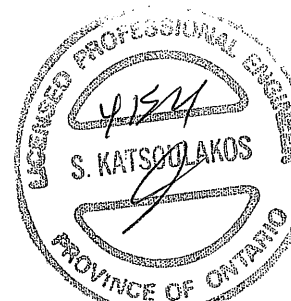
CONFORMS TO OBC 2012

AMENDED 2020

Disclosure

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UWG NO. YAM 077-21
STRUCTURAL
COMPONENT ONLY

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

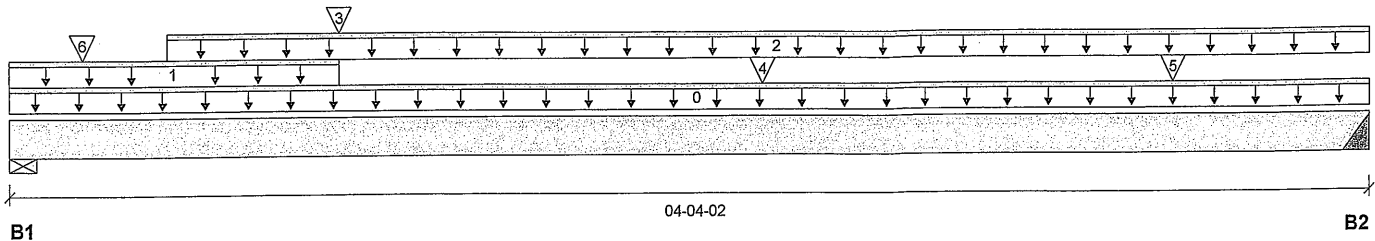
File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

Description: 1ST FLOOR \Flush Beams\B2E H (i23572)

Specifier:

Designer: L.D.

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1039 / 0	568 / 0		
B2, 4"	1234 / 0	644 / 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	04-04-02	Top		12			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-00-08	Top	23				n/a
2	STAIRS	Unf. Lin. (lb/ft)	L	00-06-00	04-04-02	Top	240	120			n/a
3	J1(i23624)	Conc. Pt. (lbs)	L	01-00-08	01-00-08	Top	467	233			n/a
4	J1(i23654)	Conc. Pt. (lbs)	L	02-04-08	02-04-08	Top	478	239			n/a
5	J1(i23639)	Conc. Pt. (lbs)	L	03-08-08	03-08-08	Top	379	190			n/a
6	2(i20298)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top		25			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2436 ft-lbs	35392 ft-lbs	6.9%	1	02-04-08
End Shear	1957 lbs	14464 lbs	13.5%	1	01-03-06
Total Load Deflection	L/999 (0.005")	n/a	n/a	4	02-01-10
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	02-01-10
Max Defl.	0.005"	n/a	n/a	4	02-01-10
Span / Depth	3.9				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Wall/Plate	3-1/2" x 3-1/2"	2269 lbs	30.1%	15.2%	Spruce-Pine-Fir
B2 Hanger	4" x 3-1/2"	2656 lbs	n/a	15.5%	HGUS410

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.


 DWG NO. YAM 8780-21
 STRUCTURAL
 COMPONENT ONLY



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

PASSED

1ST FLOOR \Flush Beams\B2E H (i23572) (Flush Beam)

Dry | 1 span | No cant.

August 26, 2020 10:53:26

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

Description: 1ST FLOOR \Flush Beams\B2E H (i23572)

Specifier:

Designer: L.D.

Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

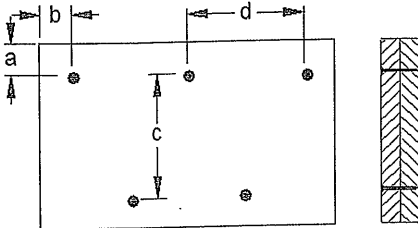
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

c = 7-7/8"
d = 12"

Calculated Side Load = 495.9 lb/ft

Connectors are: 3 1/2" ARDOX SPIKAL

3 1/2" ARDOX SPIKAL



OWN NO. YAM 8780-21
STRUCTURAL
COMPONENT ONLY

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BC CALC® Member Report

Build 7493

Job name:

File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

Address:

Description: 1ST FLOOR \Flush Beams\B41 E(i23552)

City, Province, Postal Code: RICHMOND HILL

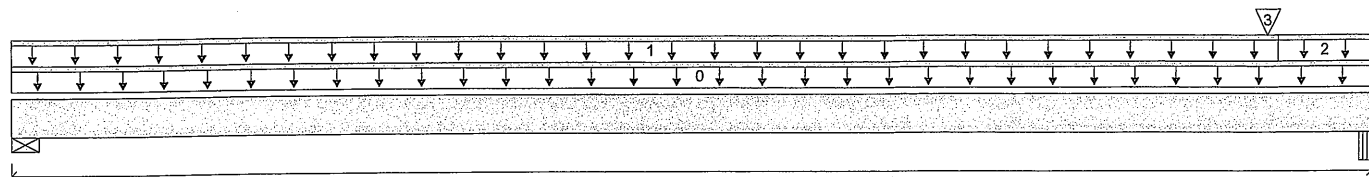
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



B1

Total Horizontal Product Length = 19-01-06

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	337 / 0	285 / 0		
B2, 2-5/8"	1312 / 0	793 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	19-01-06	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	17-09-02	Top	27	13			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	17-09-02	19-01-06	Top	14	7			n/a
3	B2E H (i23572)	Conc. Pt. (lbs)	L	17-07-06	17-07-06	Top	1156	602			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5052 ft-lbs	35392 ft-lbs	14.3%	1	11-11-10
End Shear	2906 lbs	14464 lbs	20.1%	1	17-10-14
Total Load Deflection	L/931 (0.243")	n/a	25.8%	4	10-02-01
Live Load Deflection	L/1640 (0.138")	n/a	22.0%	5	10-02-01
Max Defl.	0.243"	n/a	n/a	4	10-02-01
Span / Depth	19.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 3-1/2"	861 lbs	16.8%	8.5%	Spruce-Pine-Fir
B2	Beam 2-5/8" x 3-1/2"	2960 lbs	75.4%	26.4%	Unspecified

Cautions

Concentrated side load(s) 2 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live 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 9

CONFORMS TO OBC 2012

AMENDED 2020



OWN NO. YAM B781-21
 STRUCTURAL
 COMPONENT ONLY



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

PASSED

1ST FLOOR \Flush Beams\B41 E(i23552) (Flush Beam)

Dry | 1 span | No cant.

August 26, 2020 10:53:26

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

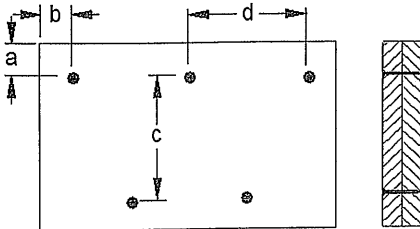
Description: 1ST FLOOR \Flush Beams\B41 E(i23552)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 24"

Connectors are: 3 1/2" ARDOX SPIRAL Nails



DWG NO. TAM 8781-21
STRUCTURAL
COMPONENT ONLY

Disclosure

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

Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLOOR \Dropped Beams\B14E DR(i23617) (Dropped Beam)

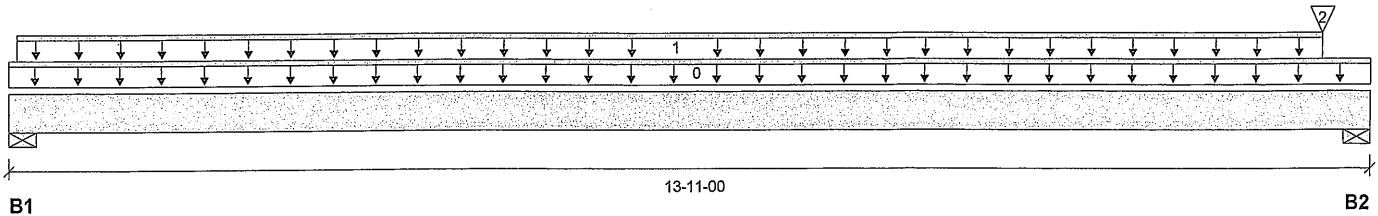
PASSED

BC CALC® Member Report
Build 7493

Dry | 1 span | No cant.

August 26, 2020 10:53:26

Job name:
Address:
City, Province, Postal Code: RICHMOND HILL
Customer:
Code reports: CCMC 12472-R

File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl
Description: 2ND FLOOR \Dropped Beams\B14E DR(i23617)
Specifier:
Designer: L.D.
Company:


Total Horizontal Product Length = 13-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	4952 / 0	2607 / 0		
B2, 3-1/2"	4774 / 0	2518 / 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	13-11-00	Top		18			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-01-00	13-05-00	Top	701	351			n/a
2	J6(i23790)	Conc. Pt. (lbs)	L	13-05-00	13-05-00	Top	379	190			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	34738 ft-lbs	55212 ft-lbs	62.9%	1	07-05-00
End Shear	9535 lbs	21696 lbs	44.0%	1	12-07-10
Total Load Deflection	L/295 (0.547")	n/a	81.2%	4	06-11-00
Live Load Deflection	L/451 (0.358")	n/a	79.8%	5	06-11-00
Max Defl.	0.547"	n/a	n/a	4	06-11-00
Span / Depth	13.6				

Bearing Supports

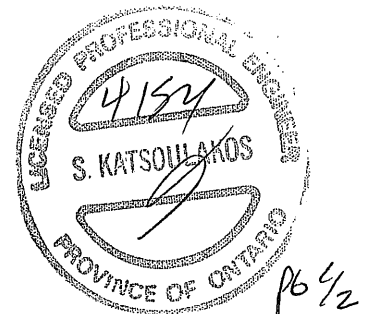
	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 3-1/2" x 5-1/4"	10687 lbs	43.6%	47.7%	Spruce-Pine-Fir
B2	Wall/Plate 3-1/2" x 5-1/4"	10309 lbs	42.0%	46.0%	Spruce-Pine-Fir

Notes

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

CONFORMS TO OBC 2012

AMENDED 2020


OWB NO. YAM B7B2-21
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP
2ND FLOOR \Dropped Beams\B14E DR(i23617) (Dropped Beam)

PASSED

BC CALC® Member Report
 Build 7493

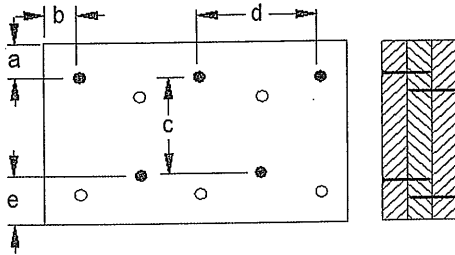
Dry | 1 span | No cant.

August 26, 2020 10:53:26

Job name:
 Address:
 City, Province, Postal Code: RICHMOND HILL
 Customer:
 Code reports: CCMC 12472-R

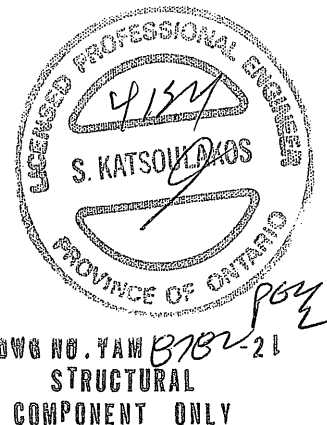
File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl
 Description: 2ND FLOOR \Dropped Beams\B14E DR(i23617)
 Specifier:
 Designer: L.D.
 Company:

Connection Diagram: Full Length of Member



a minimum = 2"
 b minimum = 3"
 c = 7-7/8"
 d = 24"
 e minimum = 3"

Nailing applies to both sides of the member
 Connectors are: 3 1/2" ARDOX SPIRAL



Disclosure

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

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

**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR \Flush Beams\B10E(i23469) (Flush Beam)**

Dry | 1 span | No cant.

August 26, 2020 10:53:26

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

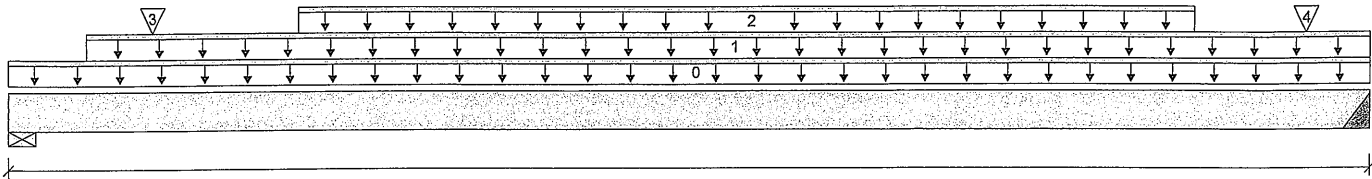
File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

Description: 2ND FLOOR \Flush Beams\B10E(i23469)

Specifier:

Designer: L.D.

Company:



B1

08-01-03

B2

Total Horizontal Product Length = 08-01-03

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	481 / 0	871 / 0		
B2, 3"	482 / 0	523 / 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	08-01-03	Top		6			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-05-08	08-01-03	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-08-08	07-00-08	Top	126	63			n/a
3	-	Conc. Pt. (lbs)	L	00-10-04	00-10-04	Top	167	489			n/a
4	J5(i23415)	Conc. Pt. (lbs)	L	07-08-08	07-08-08	Top	117	59			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2570 ft-lbs	17696 ft-lbs	14.5%	1	03-08-08
End Shear	1205 lbs	7232 lbs	16.7%	1	01-05-06
Total Load Deflection	L/999 (0.039")	n/a	n/a	4	04-00-08
Live Load Deflection	L/999 (0.018")	n/a	n/a	5	04-02-08
Max Defl.	0.039"	n/a	n/a	4	04-00-08
Span / Depth	7.6				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Wall/Plate	5-1/2" x 1-3/4"	1220 lbs	31.7%	16.0%	Spruce-Pine-Fir
B2 Hanger	3" x 1-3/4"	1378 lbs	n/a	21.5%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. TAM B783-21
**STRUCTURAL
 COMPONENT ONLY**

Disclosure

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

Build 7493

Job name:

File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B11E(i23434)

City, Province, Postal Code: RICHMOND HILL

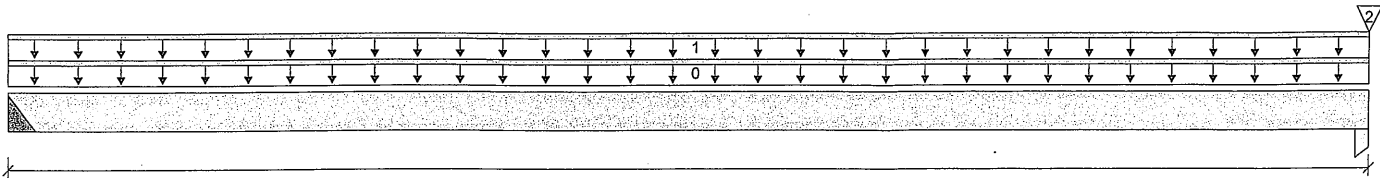
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



B1

06-01-02

B2

Total Horizontal Product Length = 06-01-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	32 / 0	34 / 0		
B2, 3-1/2"	67 / 0	52 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-01-02	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-01-02	Top	10	5			n/a
2	STAIR	Conc. Pt. (lbs)	L	06-01-02	06-01-02	Top	35	18			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	119 ft-lbs	17696 ft-lbs	0.7%	1	03-00-05
End Shear	53 lbs	7232 lbs	0.7%	1	01-02-14
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	03-00-05
Live Load Deflection	L/999 (0")	n/a	n/a	5	03-00-05
Max Defl.	0.001"	n/a	n/a	4	03-00-05
Span / Depth	5.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 3" x 1-3/4"	90 lbs	n/a	1.4%	HUS1.81/10
B2	Column 3-1/2" x 1-3/4"	165 lbs	4.2%	2.2%	Unspecified

Cautions

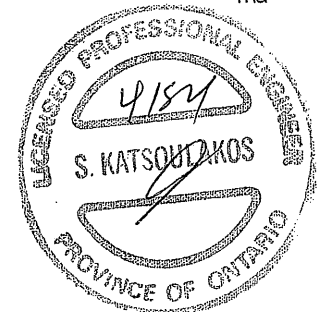
Header for the hanger HUS1.81/10 is a Single 1-3/4" x 11-7/8" LVL Beam.
Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. YAM B7B421
STRUCTURAL
COMPONENT ONLY

Disclosure

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

**Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR \Flush Beams\B12E(i23441) (Flush Beam)**

Dry | 1 span | No cant.

August 26, 2020 10:53:26

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

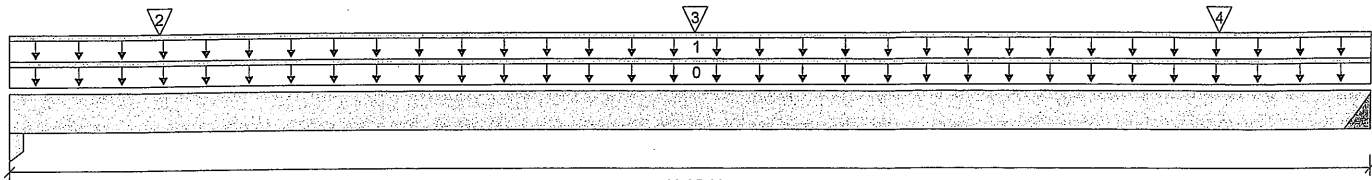
File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

Description: 2ND FLOOR \Flush Beams\B12E(i23441)

Specifier:

Designer: L.D.

Company:



B1

B2

Total Horizontal Product Length = 03-05-03

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	593 / 0	306 / 0		
B2, 3"	630 / 0	325 / 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	03-05-03	Top		6			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-05-03	Top	240	120			n/a
2	J6(i23391)	Conc. Pt. (lbs)	L	00-04-08	00-04-08	Top	116	58			n/a
3	J6(i23433)	Conc. Pt. (lbs)	L	01-08-08	01-08-08	Top	166	83			n/a
4	J6(i23458)	Conc. Pt. (lbs)	L	03-00-08	03-00-08	Top	117	58			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	984 ft-lbs	17696 ft-lbs	5.6%	1	01-08-08
End Shear	496 lbs	7232 lbs	6.9%	1	02-02-05
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	01-08-01
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-08-01
Max Defl.	0.002"	n/a	n/a	4	01-08-01
Span / Depth	3.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column	1272 lbs	63.9%	34.0%	Unspecified
B2	Hanger	1351 lbs	n/a	21.1%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

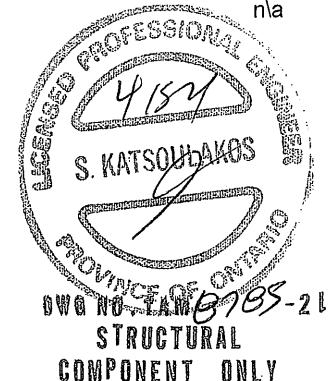
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020

**Disclosure**

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

BC CALC® Member Report

Build 7493

Job name:

File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B13E(i23672)

City, Province, Postal Code: RICHMOND HILL

Specifier:

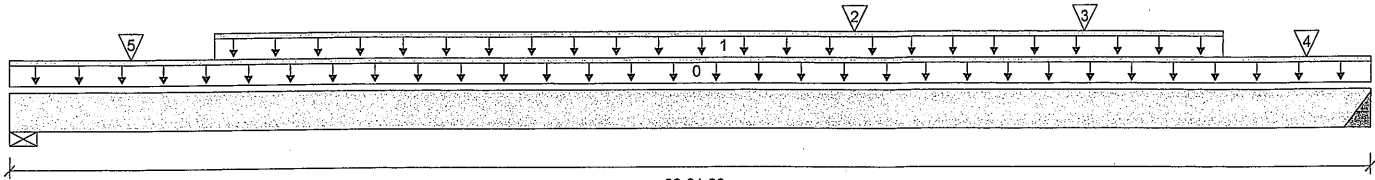
Customer:

Designer: L.D.

Code reports:

CCMC 12472-R

Company:



B1

08-01-03

B2

Total Horizontal Product Length = 08-01-03

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1495 / 0	1164 / 0		
B2, 3"	1619 / 0	865 / 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	08-01-03	Top		6			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-02-08	07-02-08	Top	336	168			n/a
2	-	Conc. Pt. (lbs)	L	04-11-10	04-11-10	Top	112	89			n/a
3	J5(i23433)	Conc. Pt. (lbs)	L	06-04-08	06-04-08	Top	162	81			n/a
4	-	Conc. Pt. (lbs)	L	07-08-08	07-08-08	Top	372	186			n/a
5	-	Conc. Pt. (lbs)	L	00-08-08	00-08-08	Top	407	609			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6025 ft-lbs	17696 ft-lbs	34.0%	1	04-08-08
End Shear	2820 lbs	7232 lbs	39.0%	1	06-10-05
Total Load Deflection	L/999 (0.089")	n/a	n/a	4	04-02-09
Live Load Deflection	L/999 (0.057")	n/a	n/a	5	04-02-09
Max Defl.	0.089"	n/a	n/a	4	04-02-09
Span / Depth	7.6				

				Demand/ Resistance Support	Demand/ Resistance Member	
Bearing Supports	Dim. (LxW)	Demand				Material
B1	Wall/Plate	5-1/2" x 1-3/4"	3698 lbs	62.4%	31.5%	Spruce-Pine-Fir
B2	Hanger	3" x 1-3/4"	3509 lbs	n/a	54.8%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020


Disclosure

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

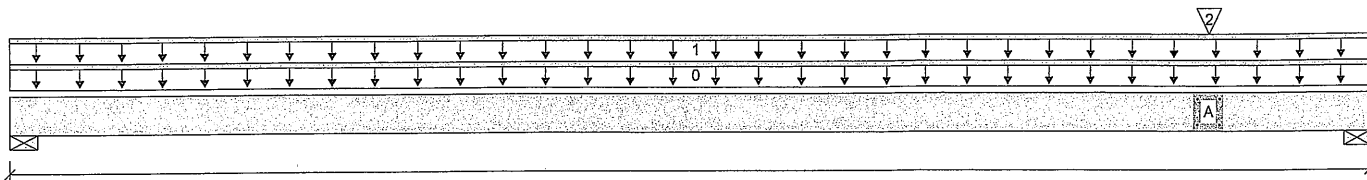
Build 7493
Job name:
File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

Address:
Description: 2ND FLOOR \Flush Beams\B21E(i23576)

City, Province, Postal Code: RICHMOND HILL

Specifier:
Customer:
Designer: L.D.

Code reports: CCMC 12472-R

Company:

B1

19-04-02

B2
Total Horizontal Product Length = 19-04-02
Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	421 / 0	332 / 0		
B2, 5-1/2"	1676 / 0	1007 / 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	19-04-02	Top		12			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	19-04-02	Top	27	13			n/a
2	B13E(i23672)	Conc. Pt. (lbs)	L	17-00-02	17-00-02	Top	1581	849			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	7326 ft-lbs	35392 ft-lbs	20.7%	1	14-06-12
End Shear	3703 lbs	14464 lbs	25.6%	1	17-10-12
Total Load Deflection	L/687 (0.325")	n/a	34.9%	4	10-04-14
Live Load Deflection	L/1166 (0.192")	n/a	30.9%	5	10-04-14
Max Defl.	0.325"	n/a	n/a	4	10-04-14
Span / Depth	18.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 4-3/8" x 3-1/2"	1047 lbs	11.1%	5.6%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	3773 lbs	31.9%	16.1%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

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 9

CONFORMS TO OBC 2012
AMENDED 2020

**DWG NO. TAM 8787-21
STRUCTURAL
COMPONENT ONLY**

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

August 26, 2020 10:53:26

File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

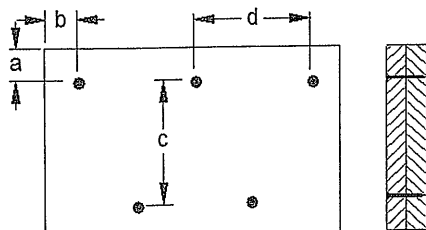
Description: 2ND FLOOR \Flush Beams\B21E(i23576) (Flush Beam)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



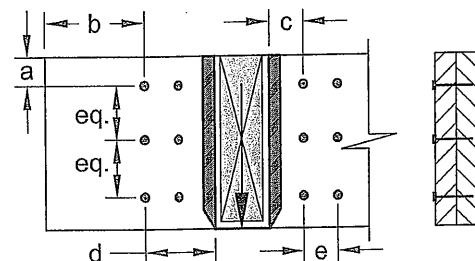
a minimum = 2"
b minimum = 3"

c = 7-7/8"
d = 24"

Connectors are: 3 1/2" ARDOX SPIRAL Nails

Connection Diagrams: Concentrated Side Loads

Connection Tag: A Applies to load tag(s): 3



a minimum = 2"
b minimum = 4"
c minimum = 4"
d maximum = 12"
e minimum = 4"
Connectors are: 3 1/2" ARDOX SPIRAL Nails

3 1/2" ARDOX SPIRAL



OWG NO. YAM 8787-21
STRUCTURAL
COMPONENT ONLY

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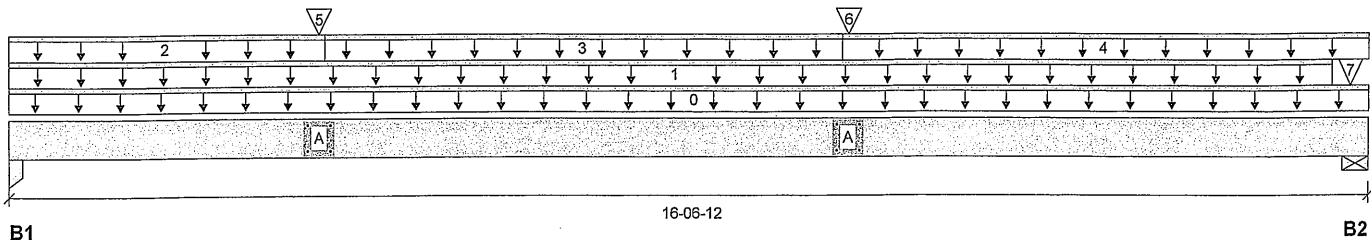
BC CALC® Member Report
Build 7493

Dry | 1 span | No cant.

August 26, 2020 10:53:26

Job name:
Address:
City, Province, Postal Code: RICHMOND HILL
Customer:
Code reports: CCMC 12472-R

File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl
Description: 2ND FLOOR \Flush Beams\B9E(i23405)
Specifier:
Designer: L.D.
Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	854 / 0	1143 / 0		
B2, 5-1/2"	623 / 0	1085 / 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	16-06-12	Top		12			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	16-01-04	Top		60			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-10-00	Top	27	13			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-10-00	10-00-07	Top	19	9			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	10-00-07	16-06-12	Top	27	13			n/a
5	B12E(i23441)	Conc. Pt. (lbs)	L	03-09-02	03-09-02	Top	610	315			n/a
6	B10E(i23469)	Conc. Pt. (lbs)	L	10-01-05	10-01-05	Top	474	527			n/a
7	E59(i3207)	Conc. Pt. (lbs)	L	16-04-00	16-04-00	Top		24			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	10860 ft-lbs	35392 ft-lbs	30.7%	1	10-01-05
End Shear	2498 lbs	14464 lbs	17.3%	1	01-05-06
Total Load Deflection	L/519 (0.365")	n/a	46.2%	4	08-03-08
Live Load Deflection	L/1277 (0.148")	n/a	28.2%	5	08-01-03
Max Defl.	0.365"	n/a	n/a	4	08-03-08
Span / Depth	15.9				

				Demand/ Resistance Support	Demand/ Resistance Member	Material
Bearing Supports	Dim. (LxW)	Demand				
B1	Column	5-1/2" x 3-1/2"	2710 lbs	21.7%	11.5%	Unspecified
B2	Wall/Plate	5-1/2" x 3-1/2"	1519 lbs	19.7%	10.0%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

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 9

CONFORMS TO OBC 2012

AMENDED 2020



DWG NO. YAM B788.21
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLOOR \Flush Beams\B9E(i23405) (Flush Beam)

Dry | 1 span | No cant.

August 26, 2020 10:53:26

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - EL A,B,C OPTION GROUND FLOOR.mmdl

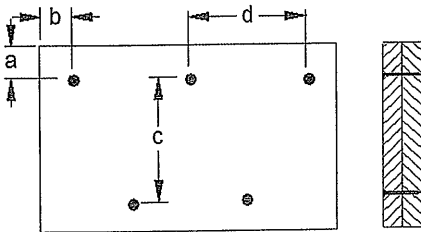
Description: 2ND FLOOR \Flush Beams\B9E(i23405)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



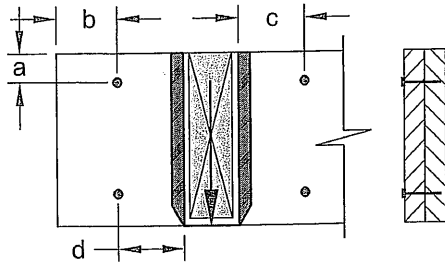
a minimum = 2"
b minimum = 3"

c = 7-7/8"
d = 24"

Connectors are: 3 1/2" ARDOX SPIRAL Nails

Connection Diagrams: Concentrated Side Loads

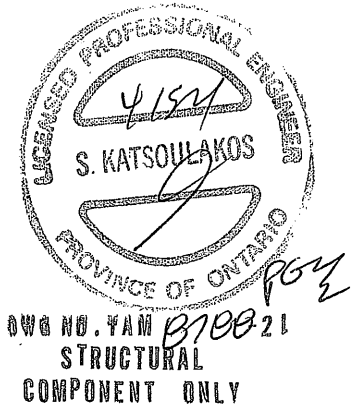
Connection Tag: A Applies to Load tag(s): 3,7



a minimum = 2"
b minimum = 4"
c minimum = 4"
d maximum = 12"

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



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**Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR \Flush Beams\B18E H(i20862) (Flush Beam)**

Dry | 1 span | No cant.

August 26, 2020 09:07:47

BC CALC® Member Report

Build 7493

Job name:

File name: 4504 - EL A,B,C IN-LAW SUITE.mmdl

Address:

Description: 1ST FLOOR \Flush Beams\B18E H(i20862)

City, Province, Postal Code: RICHMOND HILL

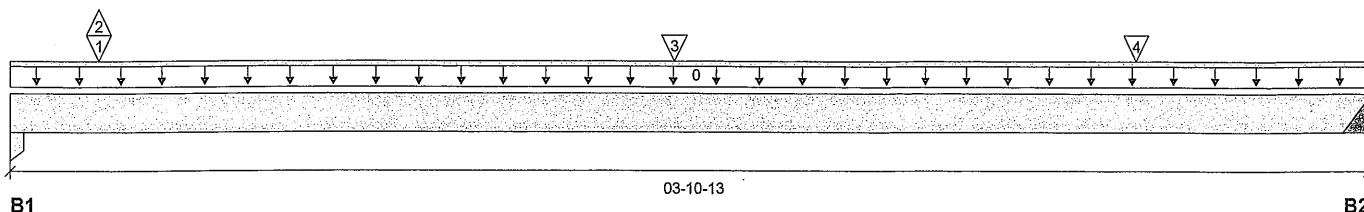
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 03-10-13

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	1220 / 5	832 / 0		
B2, 4"	504 / 0	282 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-10-13	Top	1.00	0.65	1.00	1.15	00-00-00
1	-	Conc. Pt. (lbs)	L	00-03-00	00-03-00	Top	1058	734			n/a
2	-	Conc. Pt. (lbs)	L	00-03-00	00-03-00	Top	-5				n/a
3	J3(i21356)	Conc. Pt. (lbs)	L	01-10-10	01-10-10	Top	368	184			n/a
4	J3(i21221)	Conc. Pt. (lbs)	L	03-02-10	03-02-10	Top	298	149			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1057 ft-lbs	35392 ft-lbs	3.0%	1	01-10-10
End Shear	677 lbs	14464 lbs	4.7%	1	02-06-15
Total Load Deflection	L/999 (0.002")	n/a	n/a	6	01-10-01
Live Load Deflection	L/999 (0.001")	n/a	n/a	8	01-10-01
Max Defl.	0.002"	n/a	n/a	6	01-10-01
Span / Depth	3.6				

Bearing Supports

				Demand/ Resistance Support	Demand/ Resistance Member	
Bearing Supports		Dim. (LxW)	Demand			Material
B1	Column	1-3/4" x 3-1/2"	2870 lbs	57.7%	38.4%	Unspecified
B2	Hanger	4" x 3-1/2"	1108 lbs	n/a	6.5%	HGUS410

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Concentrated side load(s) 1 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.



UW6 NO. TAM 8709-21
 STRUCTURAL
 COMPONENT ONLY



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

PASSED

1ST FLOOR \Flush Beams\B18E H(i20862) (Flush Beam)

Dry | 1 span | No cant.

August 26, 2020 09:07:47

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - EL A,B,C IN-LAW SUITE.mmdl

Description: 1ST FLOOR \Flush Beams\B18E H(i20862)

Specifier:

Designer: L.D.

Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

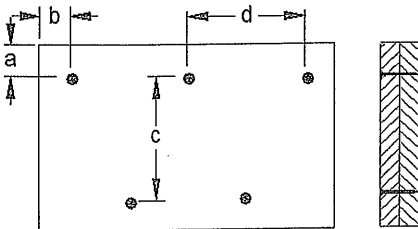
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 24"

Calculated Side Load = 391.0 lb/ft

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



DWG NO. YAM 8709-21
STRUCTURAL
COMPONENT ONLY

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

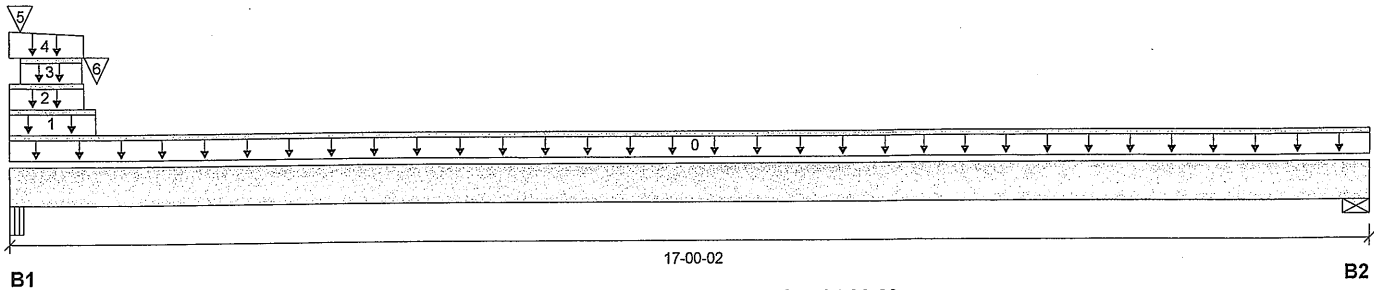
BC CALC® Member Report
Build 7493

2ND FLOOR \Flush Beams\B7B(i17747) (Flush Beam)

Dry | 1 span | No cant.

August 26, 2020 10:01:33

Job name:
Address:
City, Province, Postal Code: RICHMOND HILL
Customer:
Code reports: CCMC 12472-R

File name: 4504 - EL B 2ND FLR 4 BEDROOM.mmdl
Description: 2ND FLOOR \Flush Beams\B7B(i17747)
Specifier:
Designer: L.D.
Company:


Total Horizontal Product Length = 17-00-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-7/8"	768 / 0	1250 / 0	1014 / 0	
B2, 2-3/4"	35 / 0	155 / 0	47 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	17-00-02	Top		12			00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	01-00-10	Top	33	30	78		n/a
2	E43(i937)	Unf. Lin. (lb/ft)	L	00-00-00	00-10-14	Top		81			n/a
3	E43(i937)	Unf. Lin. (lb/ft)	L	00-01-10	00-10-10	Top	33	30	78		n/a
4	FC3 Floor Material	Trapezoidal (lb/ft)	L	00-00-00	00-10-14	Top	27				n/a
5	E43(i937)	Conc. Pt. (lbs)	L	00-01-10	00-01-10	Top		13	30		n/a
6	-	Conc. Pt. (lbs)	L	01-00-13	01-00-13	Top	722	1049	887		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2812 ft-lbs	35392 ft-lbs	7.9%	13	01-01-10
End Shear	2812 lbs	14464 lbs	19.4%	13	01-03-12
Total Load Deflection	L/999 (0.09")	n/a	n/a	35	07-07-12
Live Load Deflection	L/999 (0.043")	n/a	n/a	51	07-02-05
Max Defl.	0.09"	n/a	n/a	35	07-07-12
Span / Depth	16.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam 3-7/8" x 3-1/2"	3852 lbs	53.2%	23.3%	Unspecified
B2	Wall/Plate 2-3/4" x 3-1/2"	217 lbs	5.6%	2.8%	Spruce-Pine-Fir

Cautions

Concentrated side load(s) 24 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.



415-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLOOR \Flush Beams\B7B(i17747) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

August 26, 2020 10:01:33

Build 7493

Job name:

File name: 4504 - EL B 2ND FLR 4 BEDROOM.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B7B(i17747)

City, Province, Postal Code: RICHMOND HILL

Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

CONFORMS TO OBC 2012

Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00.

AMENDED 2020

Resistance Factor phi has been applied to all presented results per CSA O86.

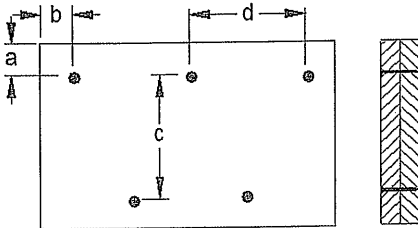
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

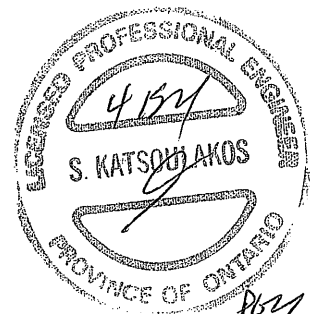
b minimum = 3"

d = 24"

Calculated Side Load = 355.5 lb/ft

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



ENG NO. YAM 8792-21
STRUCTURAL
COMPONENT ONLY

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

BC CALC® Member Report

Build 7493

Job name:

File name: 4504 - EL B 2ND FLR 4 BEDROOM.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B8B(i17721)

City, Province, Postal Code: RICHMOND HILL

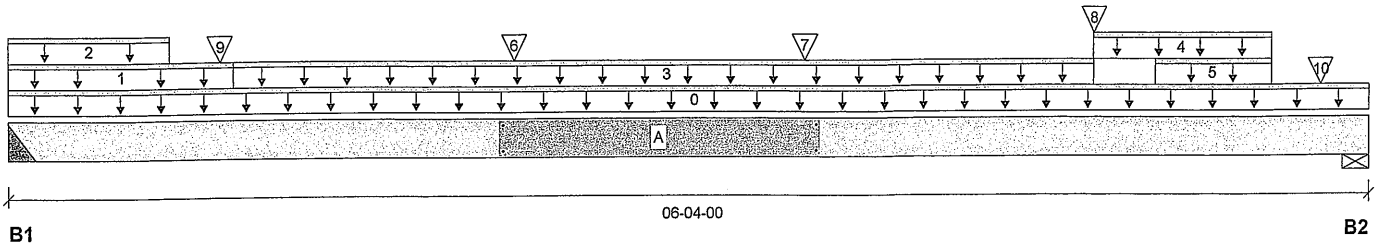
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	728 / 0	828 / 0	495 / 0	
B2, 5-1/2"	793 / 0	866 / 0	515 / 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		12			00-00-00
1	E75(i3228)	Unf. Lin. (lb/ft)	L	00-00-00	01-00-08	Top		81			n/a
2	E75(i3228)	Unf. Lin. (lb/ft)	L	00-00-00	00-09-00	Top		46	110		n/a
3	E76(i3229)	Unf. Lin. (lb/ft)	L	01-00-08	05-00-08	Top		41			n/a
4	E42(i931)	Unf. Lin. (lb/ft)	L	05-00-08	05-10-08	Top		81			n/a
5	E42(i931)	Unf. Lin. (lb/ft)	L	05-04-00	05-10-08	Top		46	110		n/a
6	J2(i17898)	Conc. Pt. (lbs)	L	02-04-00	02-04-00	Top	433	265	92		n/a
7	J2(i17897)	Conc. Pt. (lbs)	L	03-08-00	03-08-00	Top	433	265	92		n/a
8	-	Conc. Pt. (lbs)	L	05-00-08	05-00-08	Top	401	383	333		n/a
9	-	Conc. Pt. (lbs)	L	00-11-12	00-11-12	Top	244	272	300		n/a
10	E59(i3207)	Conc. Pt. (lbs)	L	06-01-04	06-01-04	Top		43	48		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3701 ft-lbs	35392 ft-lbs	10.5%	1	03-08-00
End Shear	2432 lbs	14464 lbs	16.8%	1	04-10-10
Total Load Deflection	L/999 (0.017")	n/a	n/a	35	03-01-00
Live Load Deflection	L/999 (0.01")	n/a	n/a	51	03-02-00
Max Defl.	0.017"	n/a	n/a	35	03-01-00
Span / Depth	5.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	4" x 3-1/2"	2622 lbs	n/a	15.3%	HGUS410
B2 Wall/Plate	5-1/2" x 3-1/2"	2788 lbs	23.5%	11.9%	Spruce-Pine-Fir

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.





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

PASSED

2ND FLOOR \Flush Beams\B8B(i17721) (Flush Beam)

Dry | 1 span | No cant.

August 26, 2020 10:01:33

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - EL B 2ND FLR 4 BEDROOM.mmdl

Description: 2ND FLOOR \Flush Beams\B8B(i17721)

Specifier:

Designer: L.D.

Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Unbalanced snow loads determined from building geometry were used in selected product's verification.

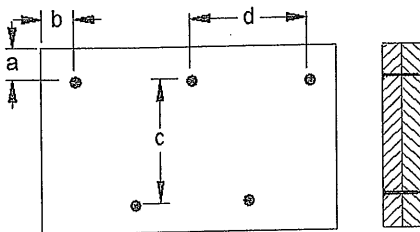
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO UBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



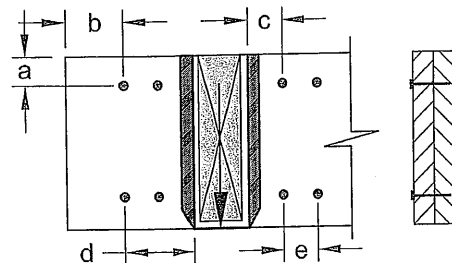
a minimum = 2" c = 7-7/8"
b minimum = 3" d = 12"

Calculated Side Load = 494.8 lb/ft

Connectors are: 3/4" ARDOX SPIRAL Nails

Connection Diagrams: Concentrated Side Loads

Connection Tag: A Applies to load tag(s): 23+24+25+26+27+28+29+30+31+32



a minimum = 2"
b minimum = 4"
c minimum = 4"
d maximum = 12"
e minimum = 4"
Connectors are:
Nails

3/4" ARDOX SPIRAL



OWN NO. YAW B193-21
STRUCTURAL
COMPONENT ONLY

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BC CALC® Member Report

Build 7493

Job name:

File name: 4504 - EL C 2ND FLR 5 BEDROOM.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B7C(i21289)

City, Province, Postal Code: RICHMOND HILL

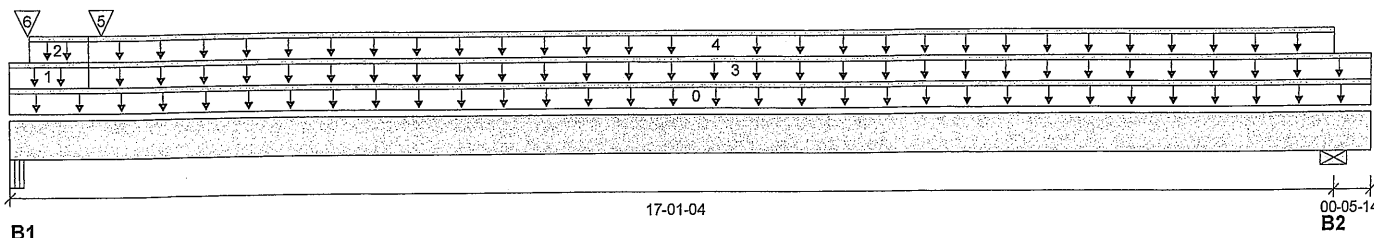
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 17-07-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5"	1109 / 0	1342 / 0	795 / 0	
B2, 5-1/2"	233 / 0	254 / 0	38 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	17-07-02	Top		12			00-00-00
1	E43(i937)	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	Top		81			n/a
2	E43(i937)	Unf. Lin. (lb/ft)	L	00-03-00	01-00-00	Top	33	30	78		n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-00-00	17-07-02	Top	5	3			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-00-00	17-01-04	Top	16	8			n/a
5	-	Conc. Pt. (lbs)	L	01-02-00	01-02-00	Top	954	1088	747		n/a
6	E43(i937)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top			28		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3841 ft-lbs	35392 ft-lbs	10.9%	2	05-11-03
Neg. Moment	-5 ft-lbs	-35392 ft-lbs	n/a	1	17-01-04
End Shear	3124 lbs	14464 lbs	21.6%	1	01-04-14
Cont. Shear	611 lbs	14464 lbs	4.2%	1	15-10-10
Total Load Deflection	L/1316 (0.153")	n/a	18.2%	82	08-02-05
Live Load Deflection	L/999 (0.083")	n/a	n/a	120	07-11-10
Total Neg. Defl.	2xL/1998 (-0.013")	n/a	n/a	82	17-07-02
Max Defl.	0.153"	n/a	n/a	82	08-02-05
Span / Depth	16.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5" x 3-1/2"	4137 lbs	55.3%	19.4%	Unspecified
B2 Wall/Plate	5-1/2" x 3-1/2"	706 lbs	6.0%	3.0%	Spruce-Pine-Fir

Cautions

Concentrated side load(s) 15 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.



DWG NO. YAM B799-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLOOR \Flush Beams\B7C(i21289) (Flush Beam)

Dry | 2 spans | R cant.

August 26, 2020 13:12:24

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: RICHMOND HILL

Customer:

Code reports: CCMC 12472-R

File name: 4504 - EL C 2ND FLR 5 BEDROOM.mmdl

Description: 2ND FLOOR \Flush Beams\B7C(i21289)

Specifier:

Designer: L.D.

Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live 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.

Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

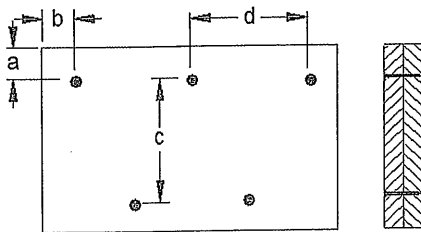
Importance Factor : Normal Part code : Part 9

Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

c = 7-7/8"
d = 24"

Calculated Side Load = 250.5 lb/ft

Connectors are: 3 1/2" ARDOX SPIRAL



DWG NO. YAM B794-21
STRUCTURAL
COMPONENT ONLY

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BC CALC® Member Report

Build 7493

Job name:

File name: 4504 - EL C 2ND FLR 5 BEDROOM.mmdl

Address:

Description: 2ND FLOOR \Flush Beams\B8C(i21294)

City, Province, Postal Code: RICHMOND HILL

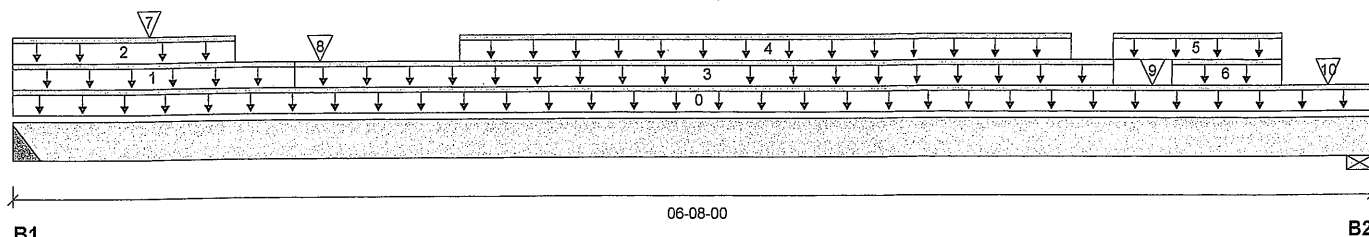
Specifier:

Customer:

Designer: L.D.

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 06-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	978 / 0	898 / 0	361 / 0	
B2, 5-1/2"	910 / 0	854 / 0	347 / 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	06-08-00	Top		12			00-00-00
1	E75(i3228)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-08	Top		81			n/a
2	E75(i3228)	Unf. Lin. (lb/ft)	L	00-00-00	01-01-00	Top		46	110		n/a
3	E76(i3229)	Unf. Lin. (lb/ft)	L	01-04-08	05-04-08	Top		41			n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	02-02-00	05-02-00	Top	325	162			n/a
5	E42(i931)	Unf. Lin. (lb/ft)	L	05-04-08	06-02-08	Top		81			n/a
6	E42(i931)	Unf. Lin. (lb/ft)	L	05-08-00	06-02-08	Top		46	110		n/a
7	J2(i21370)	Conc. Pt. (lbs)	L	00-08-00	00-08-00	Top	295	147			n/a
8	-	Conc. Pt. (lbs)	L	01-06-00	01-06-00	Top	325	302	254		n/a
9	-	Conc. Pt. (lbs)	L	05-06-13	05-06-13	Top	293	285	250		n/a
10	E59(i3207)	Conc. Pt. (lbs)	L	06-05-04	06-05-04	Top		34	25		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3841 ft-lbs	35392 ft-lbs	10.9%	1	03-08-00
End Shear	2311 lbs	14464 lbs	16.0%	1	01-03-14
Total Load Deflection	L/999 (0.019")	n/a	n/a	35	03-03-08
Live Load Deflection	L/999 (0.012")	n/a	n/a	51	03-03-08
Max Defl.	0.019"	n/a	n/a	35	03-03-08
Span / Depth	6.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 3-1/2"	2950 lbs	n/a	17.3%	HGUS410
B2	Wall/Plate 5-1/2" x 3-1/2"	2779 lbs	23.5%	11.8%	Spruce-Pine-Fir

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 11-7/8" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.



DWG NO. YAM B795-21
STRUCTURAL
COMPONENT ONLY



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

PASSED

BC CALC® Member Report
Build 7493

Dry | 1 span | No cant.

August 26, 2020 13:12:24

Job name:
Address:
City, Province, Postal Code: RICHMOND HILL
Customer:
Code reports: CCMC 12472-R

File name: 4504 - EL C 2ND FLR 5 BEDROOM.mmdl
Description: 2ND FLOOR \Flush Beams\B8C(i21294)
Specifier:
Designer: L.D.
Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria.

Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Unbalanced snow loads determined from building geometry were used in selected product's verification.

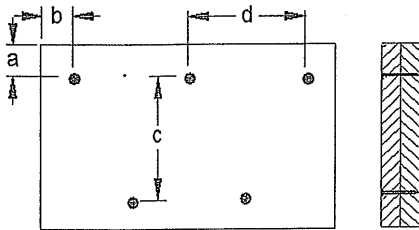
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020

Connection Diagram: Full Length of Member



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 12"

Calculated Side Load = 690.0 lb/ft
Connectors are: 16d Common Nails

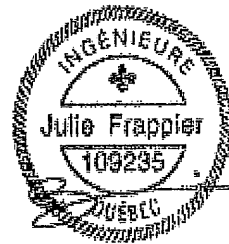
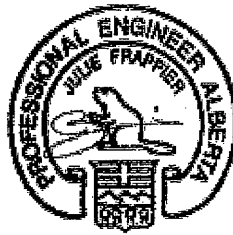
3 1/2" ARDOX SPIRAL



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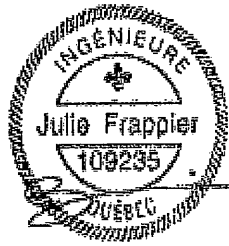
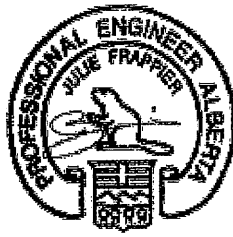
Maximum Floor Spans

Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	14'-2"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
11-7/8"	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
14"	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
16"	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-8"	15'-3"	14'-5"	N/A	16'-8"	15'-3"	14'-5"	N/A
	NI-40x	17'-11"	16'-11"	16'-1"	N/A	18'-5"	17'-1"	16'-1"	N/A
	NI-60	18'-2"	17'-1"	16'-4"	N/A	18'-7"	17'-4"	16'-4"	N/A
	NI-70	19'-2"	17'-10"	17'-2"	N/A	19'-7"	18'-3"	17'-7"	N/A
	NI-80	19'-5"	18'-0"	17'-4"	N/A	19'-10"	18'-5"	17'-8"	N/A
11-7/8"	NI-20	19'-6"	18'-1"	17'-3"	N/A	19'-11"	18'-3"	17'-3"	N/A
	NI-40x	21'-0"	19'-6"	18'-8"	N/A	21'-7"	20'-2"	19'-2"	N/A
	NI-60	21'-4"	19'-9"	18'-11"	N/A	21'-11"	20'-4"	19'-6"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-5"	20'-5"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-8"	N/A
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
14"	NI-40x	23'-7"	21'-11"	20'-11"	N/A	24'-3"	22'-7"	21'-7"	N/A
	NI-60	24'-0"	22'-3"	21'-3"	N/A	24'-8"	22'-11"	21'-11"	N/A
	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-11"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
16"	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	25'-3"	24'-2"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A

- Maximum clear span applicable to simple-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, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- 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. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans

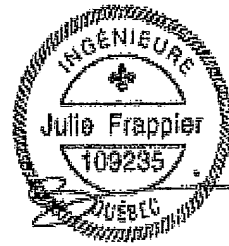
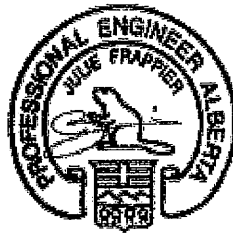
Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/480 Deflection Limit
3/4" OSB G&N Sheathing

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	16'-7"	15'-11"	15'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-7"	18'-5"	17'-3"	16'-7"	15'-11"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"
11-7/8"	NI-20	17'-10"	16'-10"	16'-2"	15'-6"	18'-6"	17'-4"	16'-9"	16'-1"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	18'-6"	17'-9"	17'-0"
	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"
	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
14"	NI-40x	21'-5"	19'-10"	18'-11"	17'-11"	22'-1"	20'-6"	19'-7"	18'-7"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"
	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
16"	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"
	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"
	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"
Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"
	NI-70	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17'-10"	16'-7"
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"
11-7/8"	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"
	NI-40x	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"
	NI-60	22'-1"	20'-7"	19'-7"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"
	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"	21'-2"	19'-9"
	NI-80	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"	21'-5"	20'-0"
	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"
14"	NI-40x	24'-5"	22'-9"	21'-8"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
	NI-60	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
	NI-70	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"	23'-9"	22'-4"
	NI-80	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"
16"	NI-60	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"
	NI-80	29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90x	29'-11"	27'-10"	26'-6"	25'-0"	30'-6"	28'-5"	27'-2"	25'-8"

- Maximum clear span applicable to simple-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, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

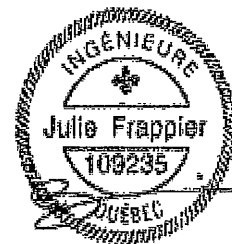
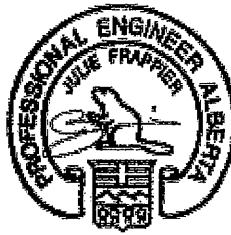
Maximum Floor Spans

Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing



Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
11-7/8"	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
14"	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A
Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	17'-9"	16'-1"	15'-1"	N/A	17'-9"	16'-1"	15'-1"	N/A
	NI-60	18'-1"	16'-4"	15'-4"	N/A	18'-1"	16'-4"	15'-4"	N/A
	NI-70	19'-2"	17'-10"	16'-9"	N/A	19'-7"	17'-10"	16'-9"	N/A
	NI-80	19'-5"	18'-0"	17'-1"	N/A	19'-10"	18'-3"	17'-1"	N/A
11-7/8"	NI-20	18'-9"	17'-0"	16'-0"	N/A	18'-9"	17'-0"	16'-0"	N/A
	NI-40x	21'-0"	19'-3"	17'-9"	N/A	21'-3"	19'-3"	17'-9"	N/A
	NI-60	21'-4"	19'-8"	18'-5"	N/A	21'-8"	19'-8"	18'-5"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-4"	20'-0"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-5"	N/A
14"	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-5"	19'-6"	N/A	24'-1"	21'-5"	19'-6"	N/A
	NI-60	24'-0"	22'-3"	21'-0"	N/A	24'-8"	22'-5"	21'-0"	N/A
	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-9"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
16"	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	24'-10"	23'-4"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 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, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- 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. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans

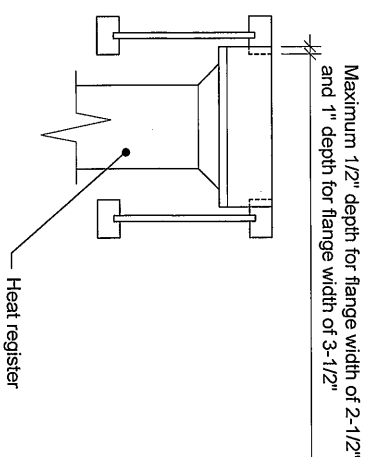
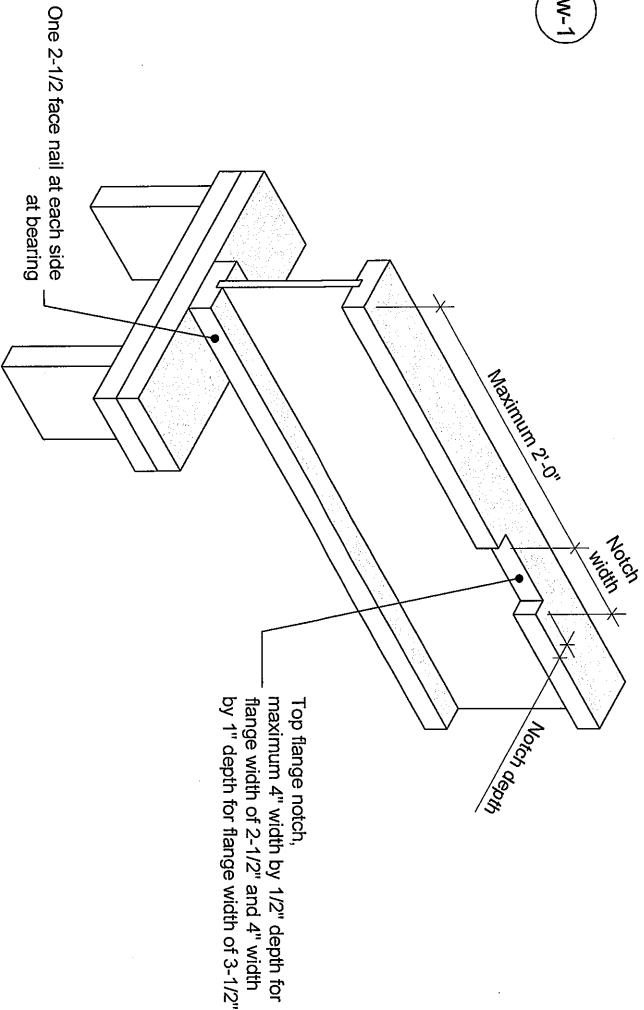
Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
3/4" OSB G&N Sheathing

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	16'-5"	15'-5"	14'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-6"	18'-5"	17'-3"	16'-7"	15'-6"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	15'-10"
11-7/8"	NI-20	17'-10"	16'-10"	16'-0"	14'-10"	18'-6"	17'-1"	16'-0"	14'-10"
	NI-40x	19'-4"	17'-11"	17'-3"	15'-10"	19'-11"	18'-6"	17'-9"	15'-10"
	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-1"
	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
14"	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-5"	22'-1"	20'-6"	19'-6"	17'-5"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"
	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
16"	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"
	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"
	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"
	NI-60	18'-1"	16'-5"	15'-5"	14'-3"	18'-1"	16'-5"	15'-5"	14'-3"
	NI-70	19'-10"	17'-11"	16'-9"	15'-6"	19'-10"	17'-11"	16'-9"	15'-6"
	NI-80	20'-2"	18'-3"	17'-1"	15'-10"	20'-2"	18'-3"	17'-1"	15'-10"
11-7/8"	NI-20	18'-10"	17'-1"	16'-0"	14'-10"	18'-10"	17'-1"	16'-0"	14'-10"
	NI-40x	21'-3"	19'-3"	17'-9"	15'-10"	21'-3"	19'-3"	17'-9"	15'-10"
	NI-60	21'-9"	19'-8"	18'-5"	17'-1"	21'-9"	19'-8"	18'-5"	17'-1"
	NI-70	23'-4"	21'-5"	20'-1"	18'-6"	23'-8"	21'-5"	20'-1"	18'-6"
	NI-80	23'-7"	21'-10"	20'-5"	18'-11"	24'-1"	21'-10"	20'-5"	18'-11"
14"	NI-90x	24'-3"	22'-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"
	NI-40x	24'-2"	21'-5"	19'-6"	17'-5"	24'-2"	21'-5"	19'-6"	17'-5"
	NI-60	24'-9"	22'-5"	21'-0"	19'-6"	24'-9"	22'-5"	21'-0"	19'-6"
	NI-70	26'-1"	24'-3"	22'-9"	21'-0"	26'-8"	24'-3"	22'-9"	21'-0"
	NI-80	26'-6"	24'-7"	23'-3"	21'-6"	27'-1"	24'-10"	23'-3"	21'-6"
16"	NI-90x	27'-3"	25'-4"	24'-1"	22'-4"	27'-9"	25'-10"	24'-3"	22'-4"
	NI-60	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"
	NI-70	28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"
	NI-80	29'-1"	27'-0"	25'-9"	23'-10"	29'-8"	27'-6"	25'-10"	23'-10"
	NI-90x	29'-11"	27'-10"	26'-6"	24'-10"	30'-6"	28'-5"	26'-11"	24'-10"

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 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, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

1W-1



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

This document supersedes all previous versions. If the document has been in effect for more than one year, consult nordic.ca or contact Nordic Structures.
All nails shown in the details are assumed to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.128 inch for 2'-1/2-inch nails, 0.144 inch for 3-inch nails. Individual components not shown to scale for clarity.

TITLE

Notch in I-joist for Heat Register

DOCUMENT

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CATEGORY

I-joist - Typical Floor Framing and Construction Details

T 514-871-8526
1 866 817-3418

nordic.ca

DATE
2018-04-10

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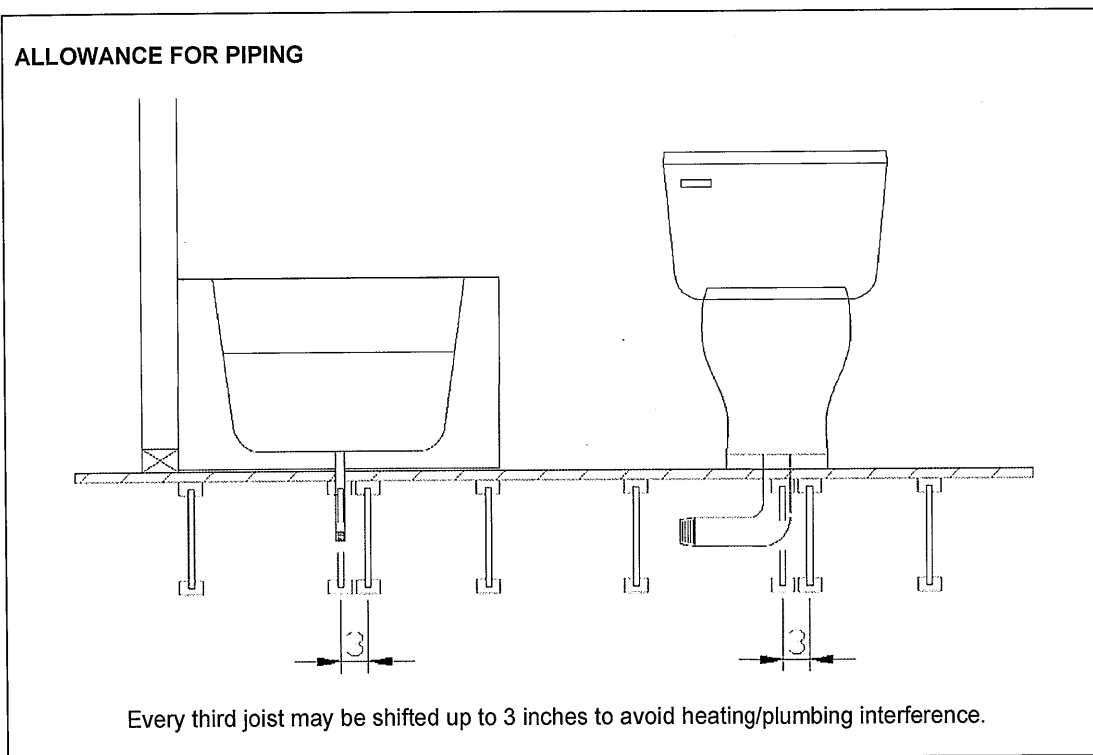
NORDIC
STRUCTURES

Allowance for Piping (Installation Notes)

The floor layouts have usually not been checked for heating and/or plumbing interference. On-site adjustment of joists of up to 3 inches is permitted to avoid interferences. When moving a joist, the subfloor thickness shall be checked with code requirements when the joist spacing exceeds 19.2 inches. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.

Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced for shorter spans; contact your distributor for additional information.

The detail below shows the 3-inch allowance for piping. Every third joist may be shifted up to 3 inches to avoid heating/plumbing interference. For other applications, please contact your distributor.



Revised April 12, 2012