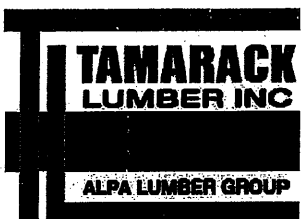


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	19
J1DJ	18-00-00	9 1/2" NI-40x	2	4
J2	16-00-00	9 1/2" NI-40x	1	23
J2DJ	16-00-00	9 1/2" NI-40x	2	4
J3	14-00-00	9 1/2" NI-40x	1	16
J3DJ	14-00-00	9 1/2" NI-40x	2	4
J4	12-00-00	9 1/2" NI-40x	1	9
J5	10-00-00	9 1/2" NI-40x	1	5
J6	8-00-00	9 1/2" NI-40x	1	2
J7	6-00-00	9 1/2" NI-40x	1	4
J8	4-00-00	9 1/2" NI-40x	1	3
B2	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B18A	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
9	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
3	H2	HUS1.81/10

TOWN OF BRADFORD WEST GWILLIMBURY
BUILDING DEPARTMENT
PLANS EXAMINED
ONTARIO BUILDING CODE APPLIES
DATE: 2018-10-25
INSPECTOR: BG

SITE COPY



FROM PLAN DATED: JAN 2017

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-5 BAROSSA 5

ELEVATION: A

LOT:

CITY: BRADFORD

SALESMAN: M D

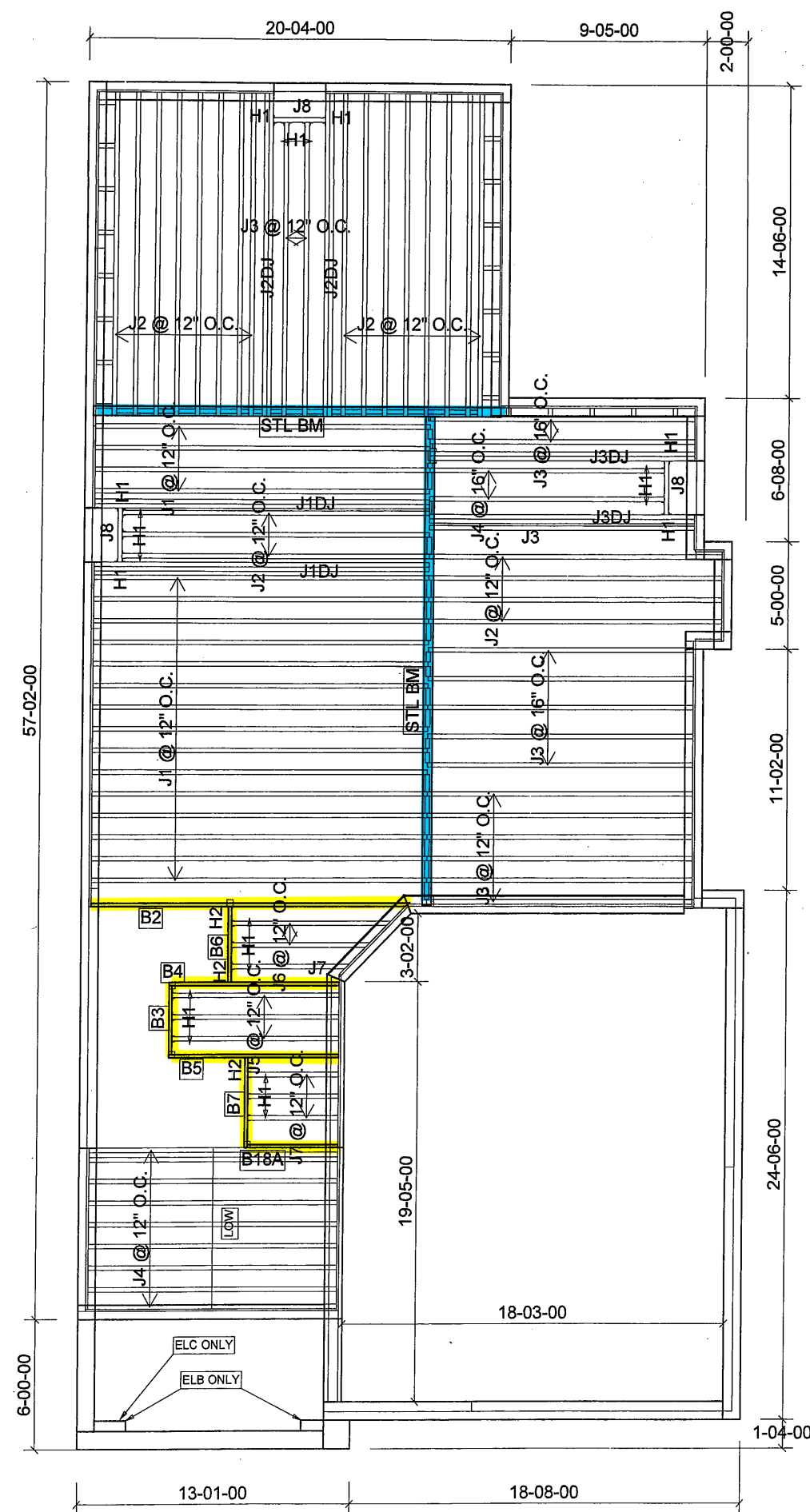
DESIGNER: CZ

REVISION:

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/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

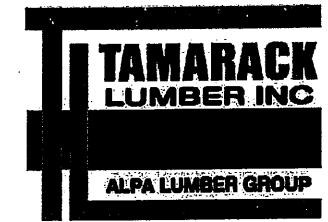
1st FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	19
J1DJ	18-00-00	9 1/2" NI-40x	2	4
J2	16-00-00	9 1/2" NI-40x	1	23
J2DJ	16-00-00	9 1/2" NI-40x	2	4
J3	14-00-00	9 1/2" NI-40x	1	16
J3DJ	14-00-00	9 1/2" NI-40x	2	4
J4	12-00-00	9 1/2" NI-40x	1	11
J5	10-00-00	9 1/2" NI-40x	1	3
J6	8-00-00	9 1/2" NI-40x	1	2
J7	6-00-00	9 1/2" NI-40x	1	4
J8	4-00-00	9 1/2" NI-40x	1	3
B2	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B18A	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
9	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
3	H2	HUS1.81/10

SITE COPY



FROM PLAN DATED: JAN 2017

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-5 BAROSSA 5

ELEVATION: B,C

LOT:

CITY: BRADFORD

SALESMAN: M D

DESIGNER: CZ

REVISION:

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

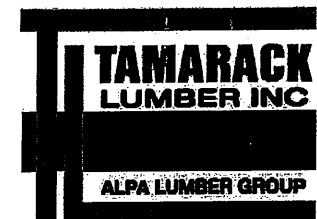
DEAD LOAD: 15.0 lb/ft

TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

1st FLOOR



FROM PLAN DATED: JAN 2017

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-5 BAROSSA 5

ELEVATION: A

LOT:

CITY: BRADFORD

SALESMAN: M D

DESIGNER: CZ

REVISION:

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
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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/ft

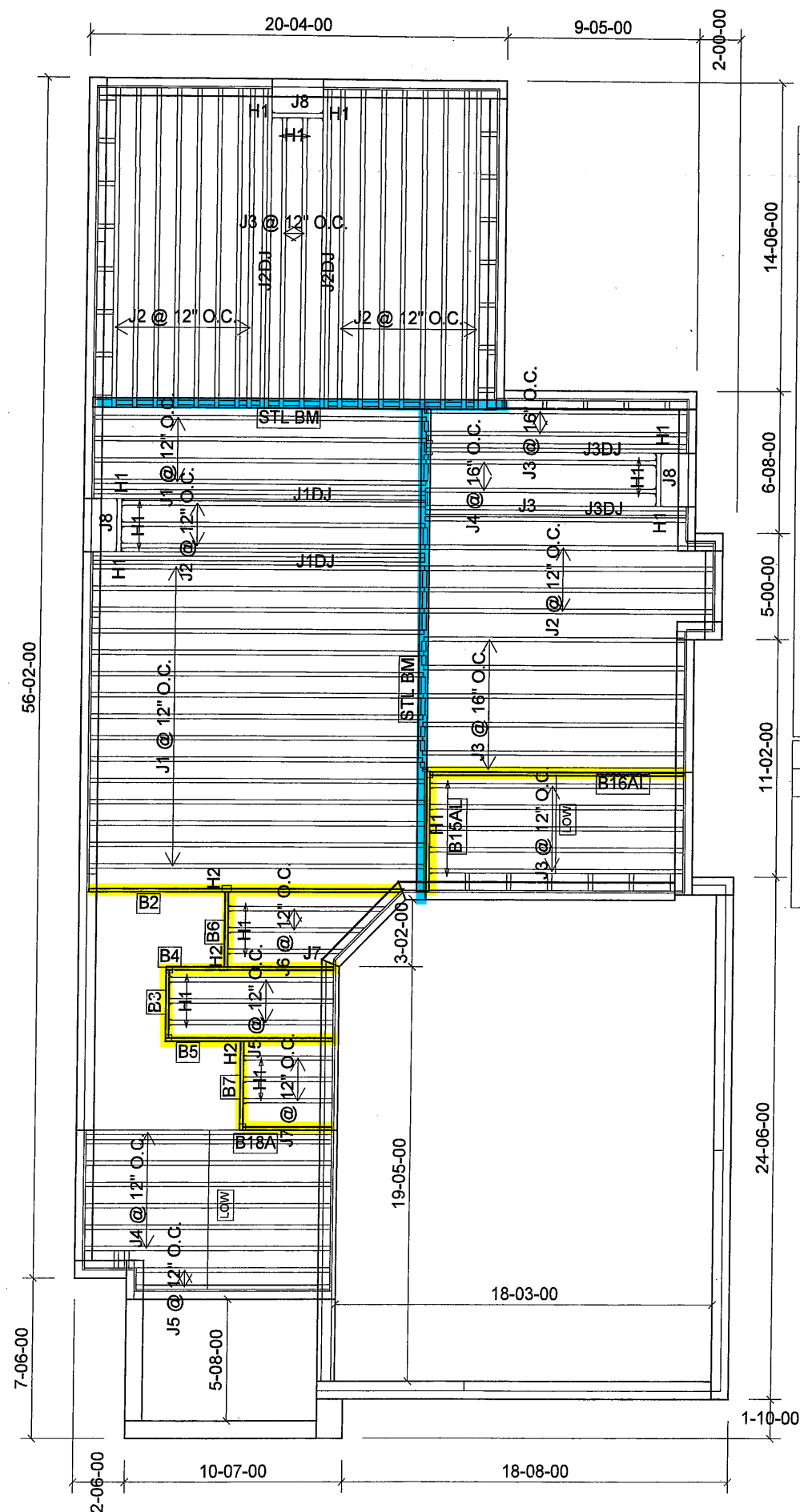
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

1st FLOOR

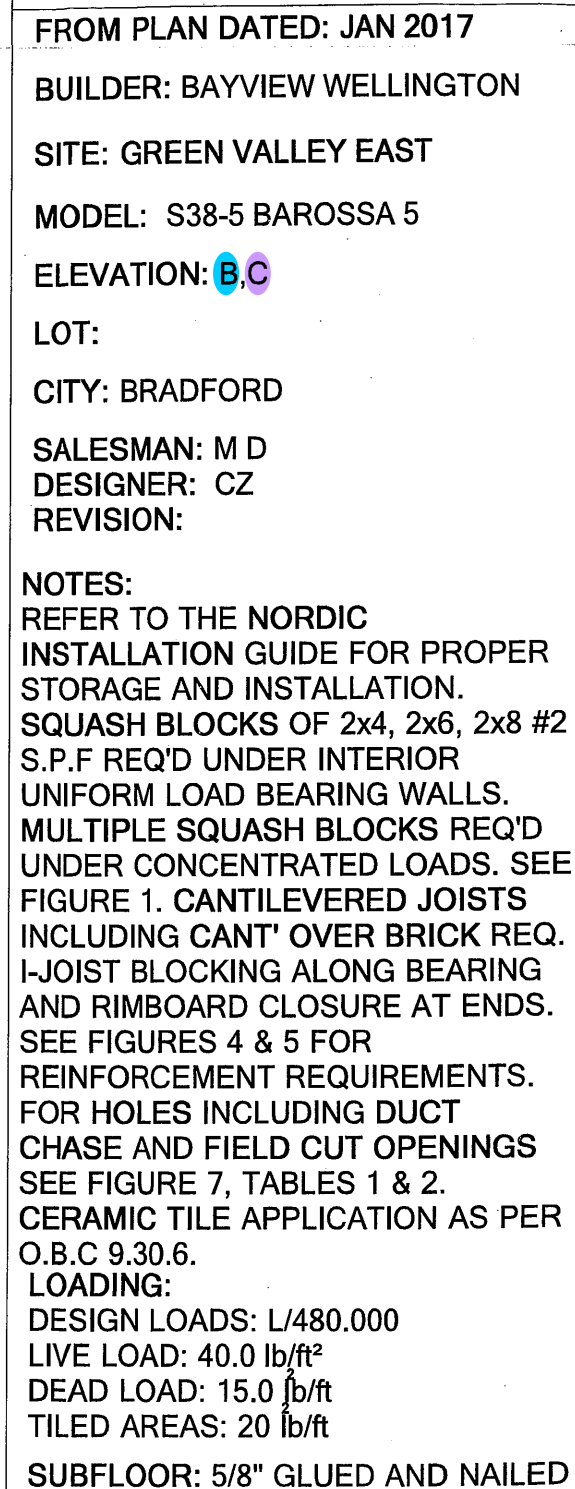
SUNKEN



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	19
J1DJ	18-00-00	9 1/2" NI-40x	2	4
J2	16-00-00	9 1/2" NI-40x	1	23
J2DJ	16-00-00	9 1/2" NI-40x	2	4
J3	14-00-00	9 1/2" NI-40x	1	16
J3DJ	14-00-00	9 1/2" NI-40x	2	4
J4	12-00-00	9 1/2" NI-40x	1	9
J5	10-00-00	9 1/2" NI-40x	1	5
J6	8-00-00	9 1/2" NI-40x	1	2
J7	6-00-00	9 1/2" NI-40x	1	4
J8	4-00-00	9 1/2" NI-40x	1	3
B2	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B16AL	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B15AL	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B18A	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

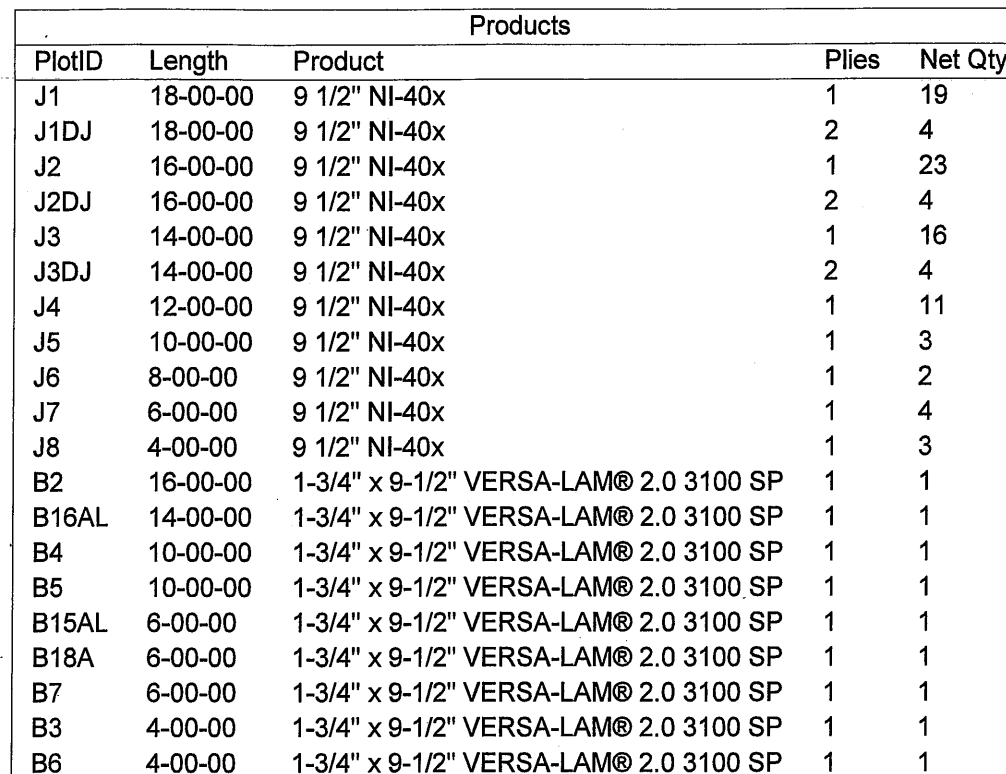
Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
3	H2	HUS1.81/10

SITE COPY



1st FLOOR

SUNKEN



Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
3	H2	HUS1.81/10

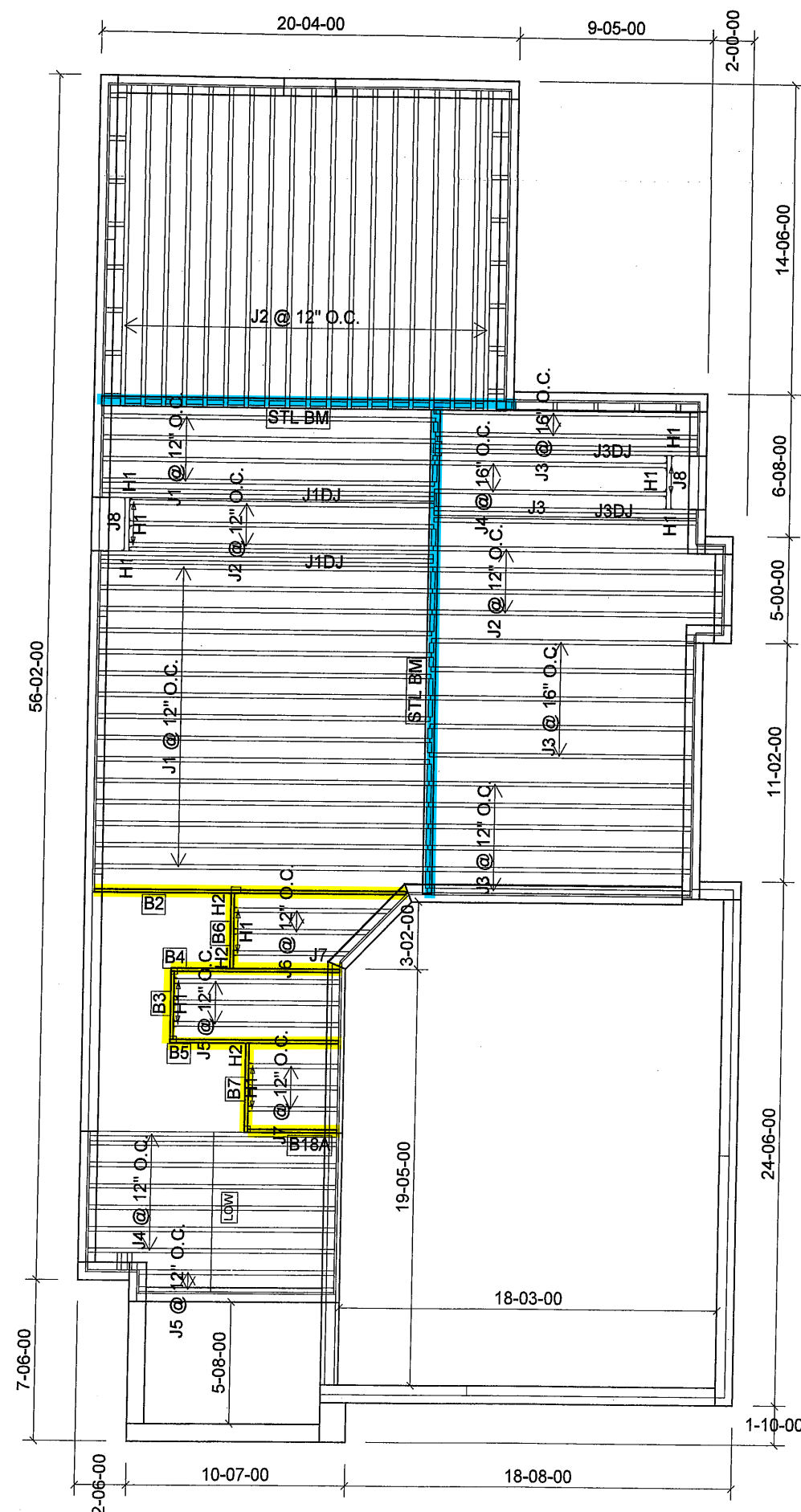
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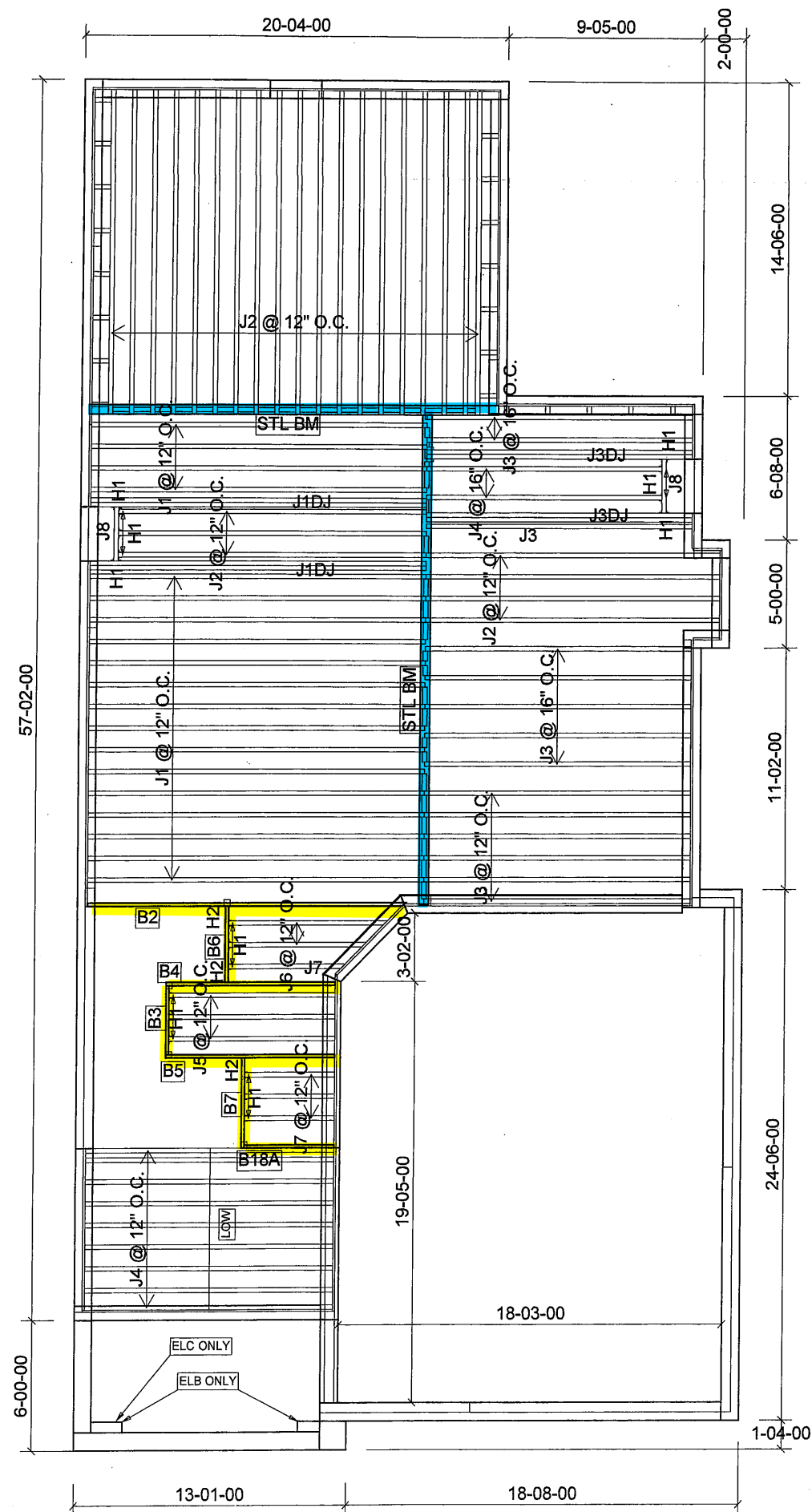
STANDARD WITH WOD & WOB

PlotID	Length	Product	Plies	Net Qtr
J1	18-00-00	9 1/2" NI-40x	1	19
J1DJ	18-00-00	9 1/2" NI-40x	2	4
J2	16-00-00	9 1/2" NI-40x	1	26
J3	14-00-00	9 1/2" NI-40x	1	14
J3DJ	14-00-00	9 1/2" NI-40x	2	4
J4	12-00-00	9 1/2" NI-40x	1	9
J5	10-00-00	9 1/2" NI-40x	1	5
J6	8-00-00	9 1/2" NI-40x	1	2
J7	6-00-00	9 1/2" NI-40x	1	4
J8	4-00-00	9 1/2" NI-40x	1	2
B2	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B18A	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Qty	Manuf	Product
9	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
5	H1	IUS2.56/9.5
3	H2	HUS1.81/10

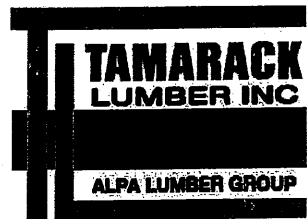


SITE COPY



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	19
J1DJ	18-00-00	9 1/2" NI-40x	2	4
J2	16-00-00	9 1/2" NI-40x	1	26
J3	14-00-00	9 1/2" NI-40x	1	14
J3DJ	14-00-00	9 1/2" NI-40x	2	4
J4	12-00-00	9 1/2" NI-40x	1	11
J5	10-00-00	9 1/2" NI-40x	1	3
J6	8-00-00	9 1/2" NI-40x	1	2
J7	6-00-00	9 1/2" NI-40x	1	4
J8	4-00-00	9 1/2" NI-40x	1	2
B2	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B18A	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
9	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
5	H1	IUS2.56/9.5
3	H2	HUS1.81/10



FROM PLAN DATED: JAN 2017

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-5 BAROSSA 5

ELEVATION: B,C

LOT:

CITY: BRADFORD

SALESMAN: M D

DESIGNER: CZ

REVISION:

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
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FIGURE 1. CANTILEVERED JOISTS
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SEE FIGURES 4 & 5 FOR
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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/ft

TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

1st FLOOR

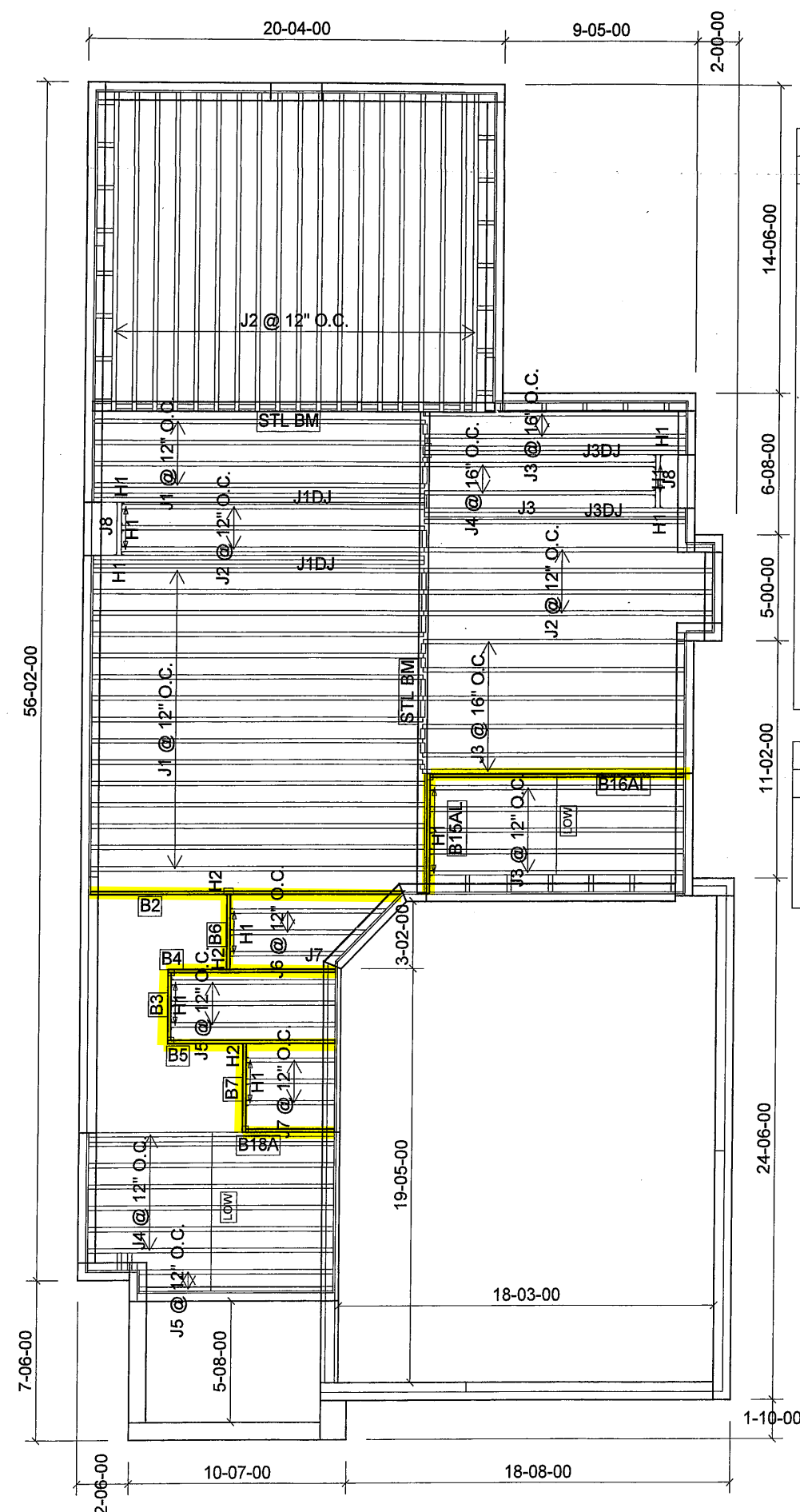
STANDARD WITH WOD & WOB

SITE COPY

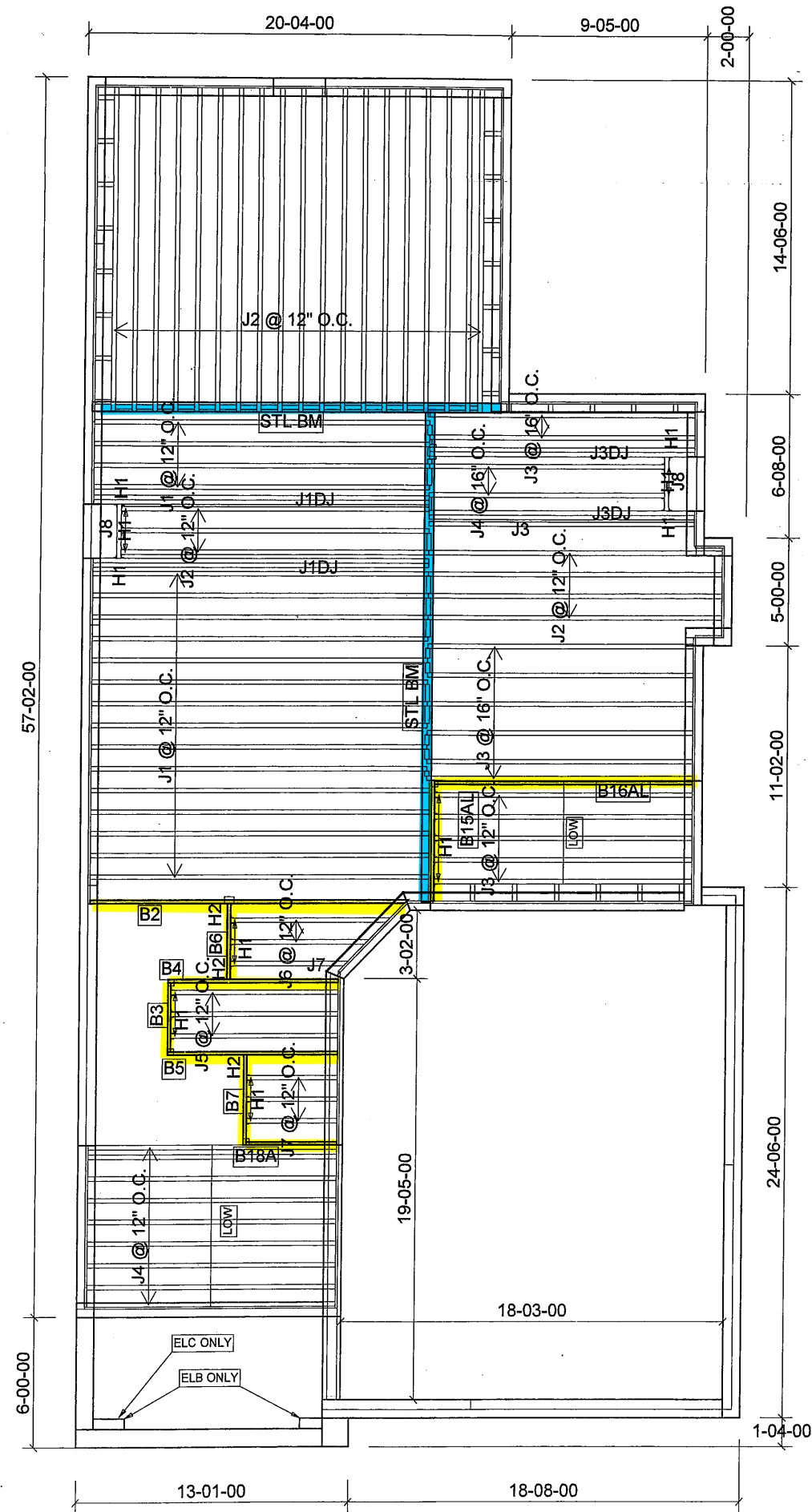
SUNKEN WITH WOD & WOB

Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	19
J1DJ	18-00-00	9 1/2" NI-40x	2	4
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J7	6-00-00	9 1/2" NI-40x	1	4
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B16AL	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
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Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
5	H1	IUS2.56/9.5
3	H2	HUS1.81/10

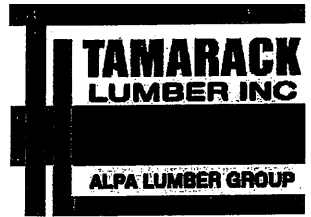


SITE COPY



Products				
PlotID	Length	Product	Plies	Net Qty
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Connector Summary		
Qty	Manuf	Product
14	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
5	H1	IUS2.56/9.5
3	H2	HUS1.81/10



FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-5 BAROSSA 5
ELEVATION: B,C
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

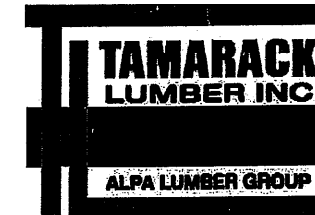
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UNIFORM LOAD BEARING WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
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FIGURE 1. CANTILEVERED JOISTS
INCLUDING CANT' OVER BRICK REQ.
I-JOIST BLOCKING ALONG BEARING
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SEE 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/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

1st FLOOR

SUNKEN WITH WOD & WOB

SITE COPY



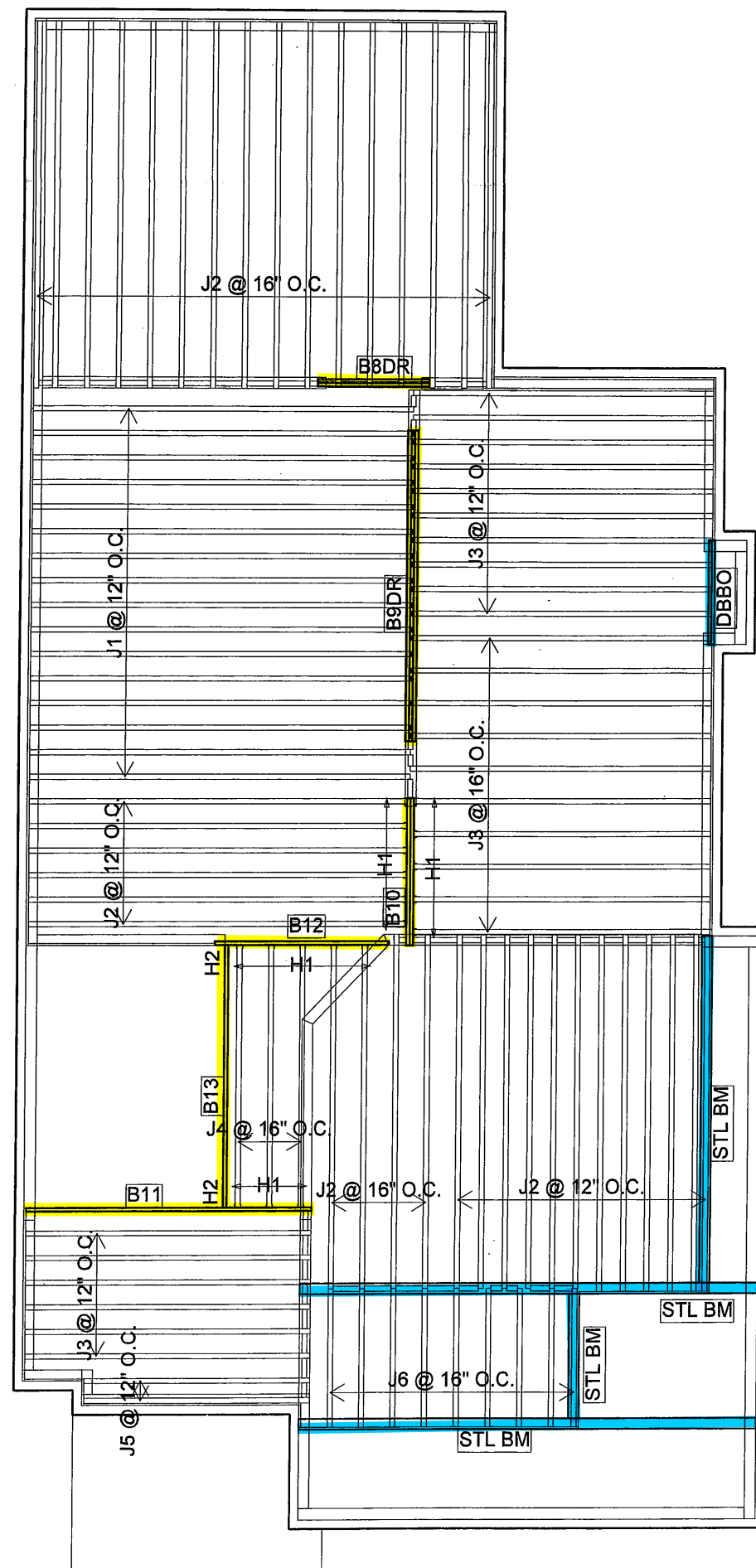
FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-5 BAROSSA 5
ELEVATION: A
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

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 FIGURE 7 TABLES 4 & 5 FOR
REINFORCEMENT REQUIREMENTS.
FOR HOLES INCLUDING DUCT
CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7 TABLES 1 & 2 OF THE
INSTALLATION GUIDE. 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/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

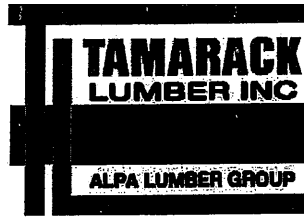
2nd FLOOR

SITE COPY



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	16
J2	16-00-00	9 1/2" NI-40x	1	38
J3	14-00-00	9 1/2" NI-40x	1	26
J4	12-00-00	9 1/2" NI-40x	1	3
J5	10-00-00	9 1/2" NI-40x	1	2
J6	6-00-00	9 1/2" NI-40x	1	9
B11	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/9.5
11	H1	IUS2.56/9.5
2	H2	HUS1.81/10



FROM PLAN DATED: JAN 2017

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-5 BAROSSA 5

ELEVATION: B,C

LOT:

CITY: BRADFORD

SALESMAN: M D

DESIGNER: CZ

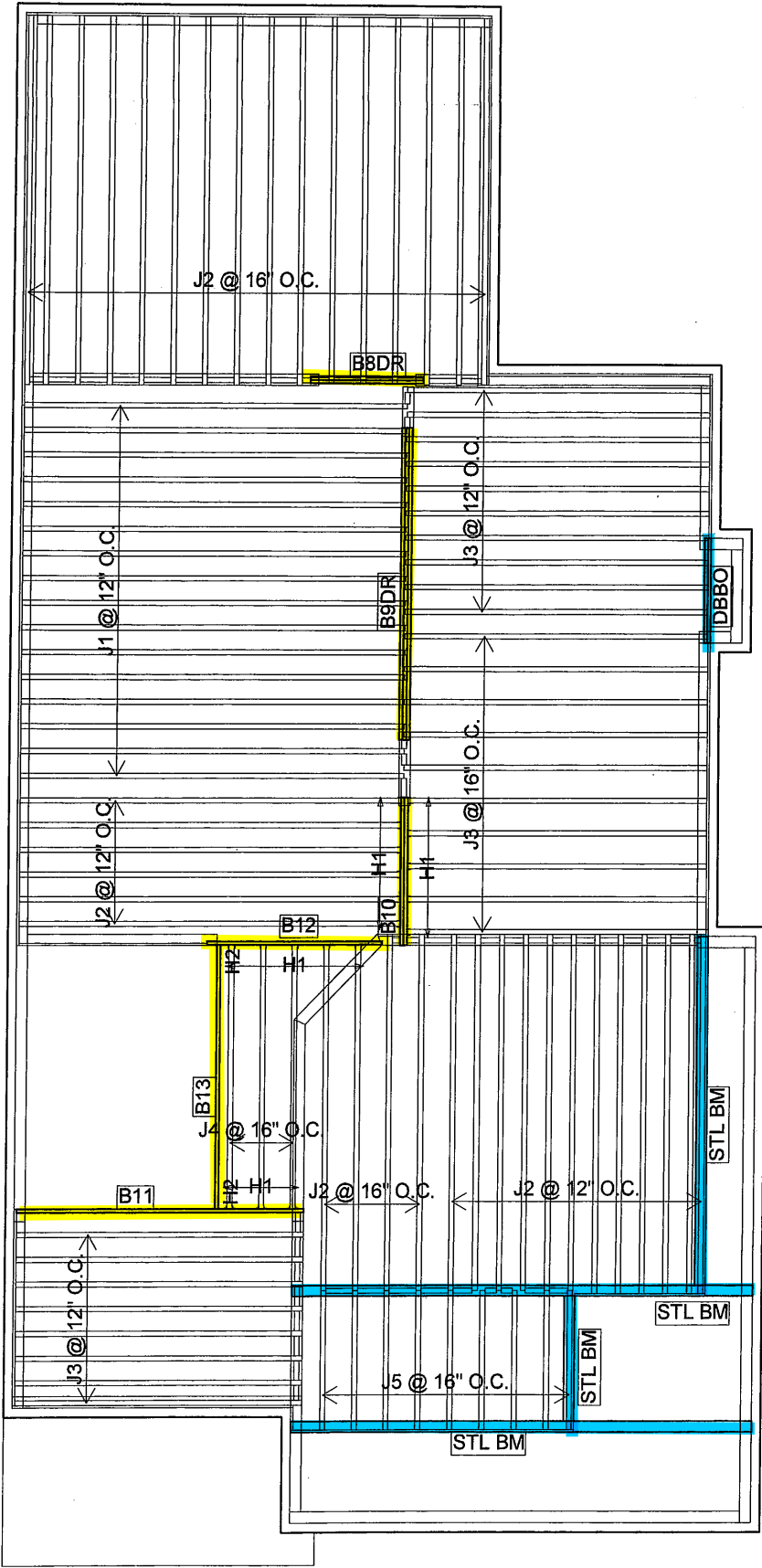
REVISION:

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 FIGURE 7 TABLES 4 & 5 FOR
REINFORCEMENT REQUIREMENTS.
FOR HOLES INCLUDING DUCT
CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7 TABLES 1 & 2 OF THE
INSTALLATION GUIDE. 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/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	16
J2	16-00-00	9 1/2" NI-40x	1	38
J3	14-00-00	9 1/2" NI-40x	1	28
J4	12-00-00	9 1/2" NI-40x	1	3
J5	6-00-00	9 1/2" NI-40x	1	9
B11	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B12	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B10	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B8DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B9DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	3	3

Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/9.5
11	H1	IUS2.56/9.5
2	H2	HUS1.81/10

SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i2856)

Dry | 2 spans | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:25

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

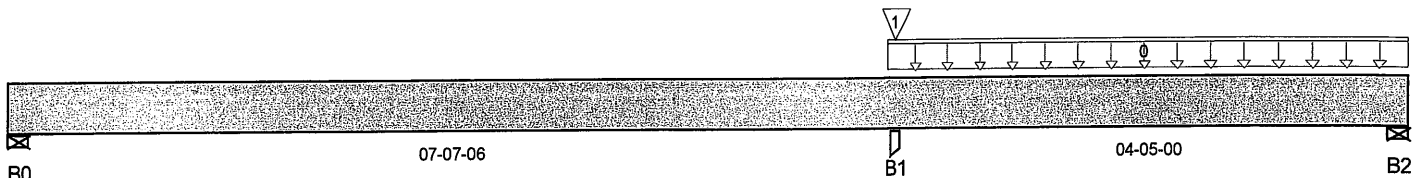
Description: Designs\Flush Beams\Basement\Flush Beams\B1(i2856)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 12-00-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	0 / 1	16 / 0		
B1, 3-1/2"	676 / 0	359 / 0		
B2, 4-3/8"	16 / 0	12 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	07-06-08	12-00-06	8	3			n/a
1	B7(i2851)	Conc. Pt. (lbs)	L	07-07-06	07-07-06	658	316			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	28 ft-lbs	5,862 ft-lbs	0.5%	0	03-03-07
Neg. Moment	-42 ft-lbs	-5,931 ft-lbs	0.7%	1	07-07-06
End Shear	14 lbs	3,761 lbs	0.4%	0	01-03-00
Cont. Shear	23 lbs	3,761 lbs	0.6%	0	06-08-02
Total Load Defl.	L/999 (0.001")	n/a	n/a	9	03-07-08
Live Load Defl.	L/999 (0")	n/a	n/a	13	09-09-00
Max Defl.	0.001"	n/a	n/a	9	03-07-08
Span / Depth	9.1	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 1-3/4"	22 lbs	0.7%	0.3%	Unspecified
B1 Post	3-1/2" x 1-3/4"	1,463 lbs	29.4%	19.6%	Unspecified
B2 Wall/Plate	4-3/8" x 1-3/4"	39 lbs	1%	0.4%	Unspecified

Notes



SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i2856)

Dry | 2 spans | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:25

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i2856)

Specifier:

Designer: CZ

Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume unbraced length of Top: 07-01-00, Bottom: 07-01-00.

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 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

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CONFORMS TO OBC 2012



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Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B2(i2854)

Dry | 2 spans | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:26

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

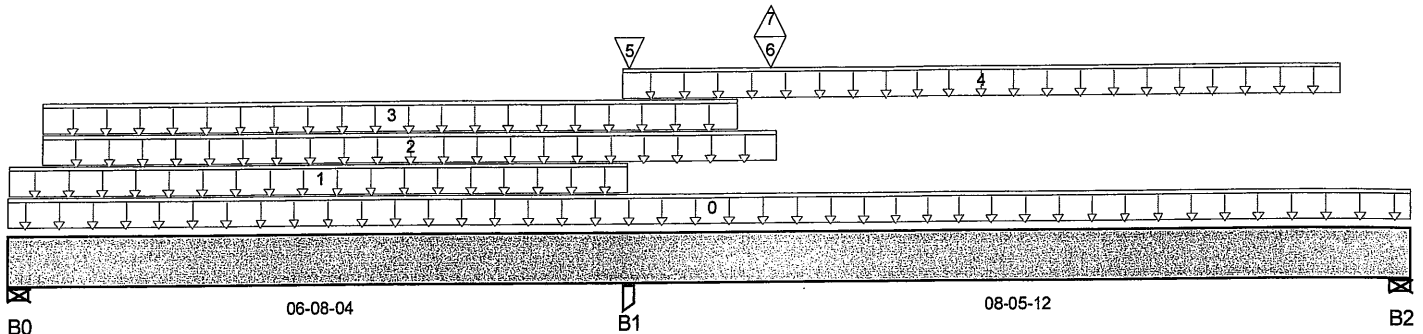
Description: Designs\Flush Beams\Basement\Flush Beams\B2(i2854)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 15-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	140 / 165	385 / 0		
B1, 5-1/2"	2,391 / 108	1,938 / 0		
B2, 6-3/16"	303 / 24	122 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	15-02-00	23	9			n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-00-03	06-08-04		60			n/a
2	9(i1114)	Unf. Lin. (lb/ft)	L	00-04-06	08-03-06		81			n/a
3	9(i1114)	Unf. Lin. (lb/ft)	L	00-04-06	07-10-06	18	9			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	06-07-06	14-05-03	17	6			n/a
5	B6(i2855)	Conc. Pt. (lbs)	L	06-08-04	06-08-04	611	291			n/a
6	9(i1114)	Conc. Pt. (lbs)	L	08-02-06	08-02-06	1,402	785			n/a
7	9(i1114)	Conc. Pt. (lbs)	L	08-02-06	08-02-06	-110				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,031 ft-lbs	12,704 ft-lbs	16%	4	08-02-06
Neg. Moment	-2,967 ft-lbs	-12,704 ft-lbs	23.4%	1	06-08-04
End Shear	538 lbs	5,785 lbs	9.3%	4	13-10-05
Cont. Shear	3,172 lbs	5,785 lbs	54.8%	1	07-08-08
Total Load Defl.	L/999 (0.056")	n/a	n/a	13	10-05-08
Live Load Defl.	L/999 (0.042")	n/a	n/a	17	10-04-08
Total Neg. Defl.	L/999 (-0.014")	n/a	n/a	13	04-09-00
Max Defl.	0.056"	n/a	n/a	13	10-05-08
Span / Depth	10.1	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
------------------	--------------	--------	-----------------------------	----------------------------	----------





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B2(i2854)

Dry | 2 spans | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:26

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i285

Specifier:

Designer: CZ

Company:

Misc:

B0	Wall/Plate	4-3/8" x 1-3/4"	538 lbs	20.3%	8.9%	Unspecified
B1	Post	5-1/2" x 1-3/4"	6,009 lbs	76.9%	51.2%	Unspecified
B2	Wall/Plate	6-3/16" x 1-3/4"	608 lbs	10.5%	4.6%	Unspecified

Disclosure

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Notes

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume unbraced length of Top: 00-00-14, Bottom: 00-00-14.

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 2010 and CSA O86.

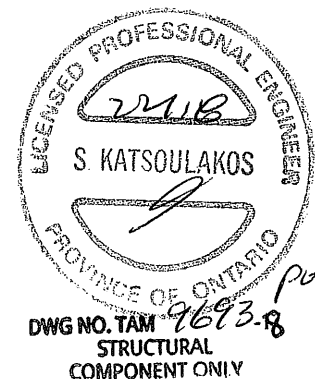
CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B3(i2850)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:25

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

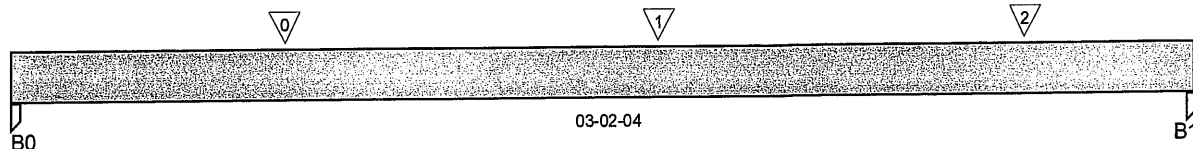
Description: Designs\Flush Beams\Basement\Flush Beams\B3(i2850)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 03-02-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	206 / 0	85 / 0		
B1, 1-3/4"	229 / 0	94 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	J5(i2370)	Conc. Pt. (lbs)	L	00-08-12	00-08-12	149	56			n/a
1	J5(i2555)	Conc. Pt. (lbs)	L	01-08-12	01-08-12	160	60			n/a
2	J5(i2426)	Conc. Pt. (lbs)	L	02-08-12	02-08-12	126	47			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	380 ft-lbs	12,704 ft-lbs	3%	1	01-08-12
End Shear	332 lbs	5,785 lbs	5.7%	1	00-11-04
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-06-15
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-06-15
Max Defl.	0.002"	n/a	n/a	4	01-06-15
Span / Depth	3.8	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	1-3/4" x 1-3/4"	414 lbs	16.7%	11.1%	Unspecified
B1 Post	1-3/4" x 1-3/4"	461 lbs	18.5%	12.3%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 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 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Disclosure

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DWG NO. TAM 9694-18
 STRUCTURAL
 COMPONENT ONLY

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Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B4(i2853)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:25

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

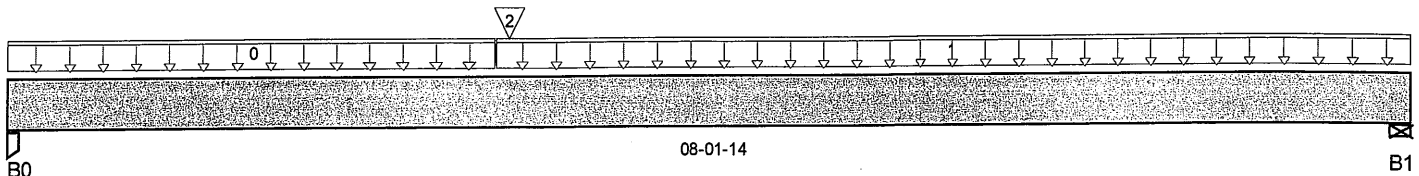
Description: Designs\Flush Beams\Basement\Flush Beams\B4(i2853)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 08-01-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	460 / 0	232 / 0		
B1, 4-3/8"	312 / 0	159 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-10-00	12	5			n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	02-10-00	08-01-14	27	10			n/a
2	B6(i2855)	Conc. Pt. (lbs)	L	02-10-14	02-10-14	596	285			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,496 ft-lbs	12,704 ft-lbs	19.6%	1	02-10-14
End Shear	947 lbs	5,785 lbs	16.4%	1	01-01-00
Total Load Defl.	L/999 (0.061")	n/a	n/a	4	03-09-10
Live Load Defl.	L/999 (0.041")	n/a	n/a	5	03-09-10
Max Defl.	0.061"	n/a	n/a	4	03-09-10
Span / Depth	9.6	n/a	n/a		00-00-00

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 1-3/4"	979 lbs	19.7%	13.1%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	667 lbs	16.3%	7.1%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 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 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products Ltd.



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DWG NO. TAM 9695-8
 STRUCTURAL
 COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B5(i2857)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:25

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

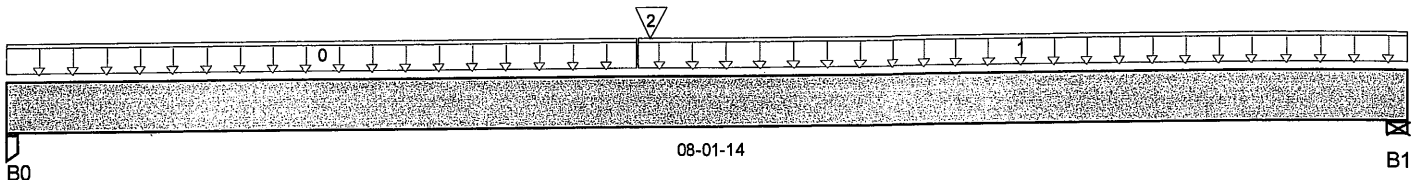
Description: Designs\Flush Beams\Basement\Flush Beams\B5(i2857)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 08-01-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	425 / 0	216 / 0		
B1, 4-3/8"	411 / 0	206 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-08-00	18	7			n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-08-00	08-01-14	33	13			n/a
2	B7(i2851)	Conc. Pt. (lbs)	L	03-08-14	03-08-14	622	303			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,903 ft-lbs	12,704 ft-lbs	22.8%	1	03-08-14
End Shear	863 lbs	5,785 lbs	14.9%	1	01-01-00
Total Load Defl.	L/999 (0.071")	n/a	n/a	4	03-11-15
Live Load Defl.	L/999 (0.047")	n/a	n/a	5	03-11-15
Max Defl.	0.071"	n/a	n/a	4	03-11-15
Span / Depth	9.6	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 1-3/4"	907 lbs	18.2%	12.1%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	875 lbs	21.4%	9.4%	Unspecified

Notes

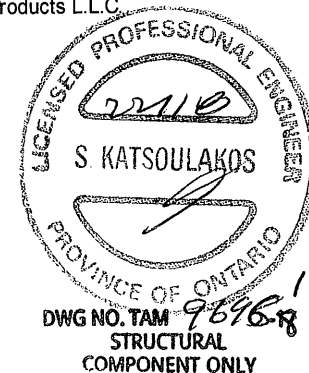
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 Calculations assume 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 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Disclosure

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Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B6(i2855)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:25

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

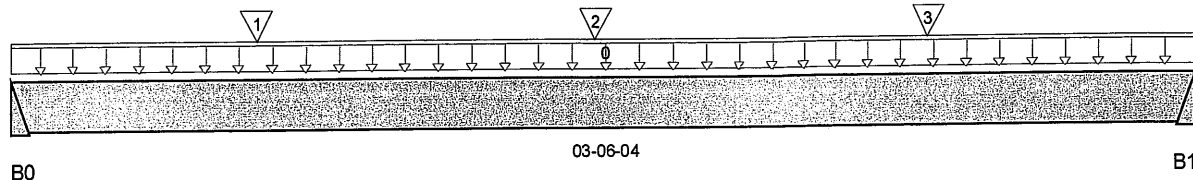
Description: Designs\Flush Beams\Basement\Flush Beams\B6(i2855)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 03-06-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	595 / 0	285 / 0		
B1	612 / 0	291 / 0		

Load Summary

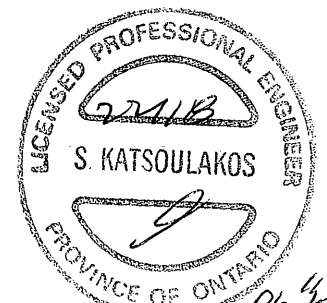
Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-04	240	120			n/a
1	J7(i2281)	Conc. Pt. (lbs)	L	00-08-12	00-08-12	98	37			n/a
2	J6(i2368)	Conc. Pt. (lbs)	L	01-08-12	01-08-12	127	48			n/a
3	J6(i2264)	Conc. Pt. (lbs)	L	02-08-12	02-08-12	137	52			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,068 ft-lbs	12,704 ft-lbs	8.4%	1	01-08-12
End Shear	731 lbs	5,785 lbs	12.6%	1	02-06-12
Total Load Defl.	L/999 (0.006")	n/a	n/a	4	01-09-01
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	01-09-01
Max Defl.	0.006"	n/a	n/a	4	01-09-01
Span / Depth	4.2	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	1,249 lbs	n/a	29.2%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,282 lbs	n/a	30%	HUS1.81/10

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 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 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9



SITE COPY

DWG NO. TAM 9690-13
 STRUCTURAL
 COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B6(i2855)

Dry | 1 span | No cantilevers | 0/12 slope(deg)

September 14, 2017 09:01:25

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B6(i285

Specifier:

Designer: CZ

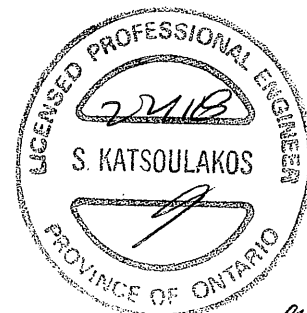
Company:

Misc:

Disclosure

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SITE COPY

DWG NO. TAM 9697-18
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B7(i2851)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:26

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

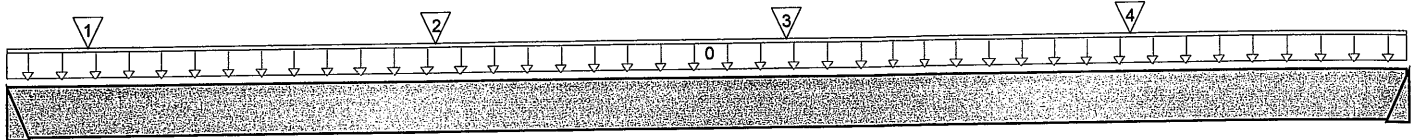
Description: Designs\Flush Beams\Basement\Flush Beams\B7(i2851)

Specifier:

Designer: CZ

Company:

Misc:



04-00-04

B1

B0

Total Horizontal Product Length = 04-00-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	655 / 0	315 / 0		
B1	625 / 0	304 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	User Load	Unf. Lin. (lb/ft)	L	00-00-00	04-00-04	240	120			n/a
1	J7(i2508)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	60	22			n/a
2	J7(i2495)	Conc. Pt. (lbs)	L	01-02-12	01-02-12	87	33			n/a
3	J7(i2545)	Conc. Pt. (lbs)	L	02-02-12	02-02-12	87	33			n/a
4	J7(i2357)	Conc. Pt. (lbs)	L	03-02-12	03-02-12	81	30			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,243 ft-lbs	12,704 ft-lbs	9.8%	1	02-01-04
End Shear	790 lbs	5,785 lbs	13.7%	1	03-00-12
Total Load Defl.	L/999 (0.009")	n/a	n/a	4	02-00-08
Live Load Defl.	L/999 (0.006")	n/a	n/a	5	02-00-08
Max Defl.	0.009"	n/a	n/a	4	02-00-08
Span / Depth	4.8	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	1,377 lbs	n/a	32.2%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,318 lbs	n/a	30.9%	HUS1.81/10

Notes





BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B7(i285

Specifier:

Designer: CZ

Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

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 2010 and CSA O86.

Design based on Dry Service Condition.

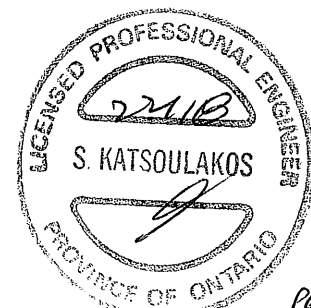
Importance Factor : Normal Part code : Part 9

Disclosure

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CONFORMS TO OBC 2012



BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

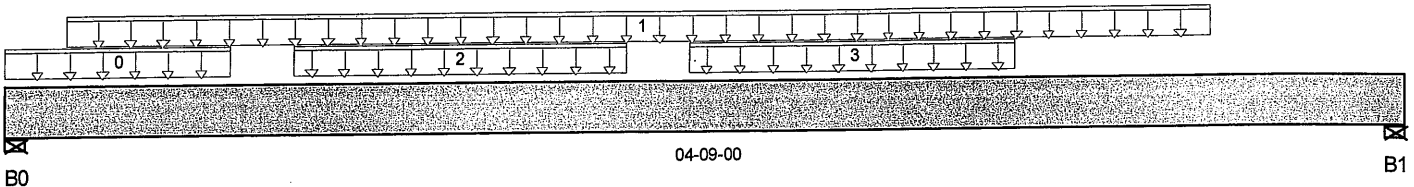
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B8D

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 04-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	670 / 0	273 / 0		
B1, 4"	562 / 0	233 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Bk1(i2310)	Unf. Lin. (lb/ft)	L	00-00-00	00-09-04	21	8			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-02-08	04-01-04	298	112			n/a
2	Bk1(i2398)	Unf. Lin. (lb/ft)	L	00-11-12	02-01-04	21	8			n/a
3	Bk1(i2266)	Unf. Lin. (lb/ft)	L	02-03-12	03-05-04	21	8			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,472 ft-lbs	25,408 ft-lbs	5.8%	1	02-02-08
End Shear	1,117 lbs	11,571 lbs	9.7%	1	03-07-08
Total Load Defl.	L/999 (0.006")	n/a	n/a	4	02-04-10
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	02-04-10
Max Defl.	0.006"	n/a	n/a	4	02-04-10
Span / Depth	5.3	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	1,346 lbs	11.8%	7.9%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	1,135 lbs	10%	6.6%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 Calculations assume unbraced length of Top: 00-03-13, Bottom: 00-03-13.
 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 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012





BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B

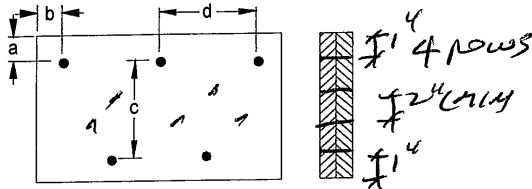
Specifier:

Designer: CZ

Company:

Msc:

Connection Diagram



a minimum = 1"
b minimum = 3"
c = 1-1/2"
d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.

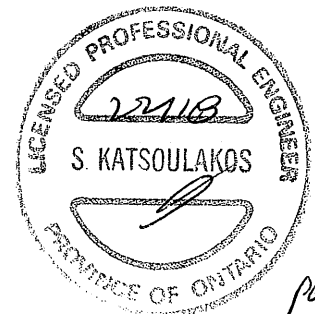
Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

Disclosure

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BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

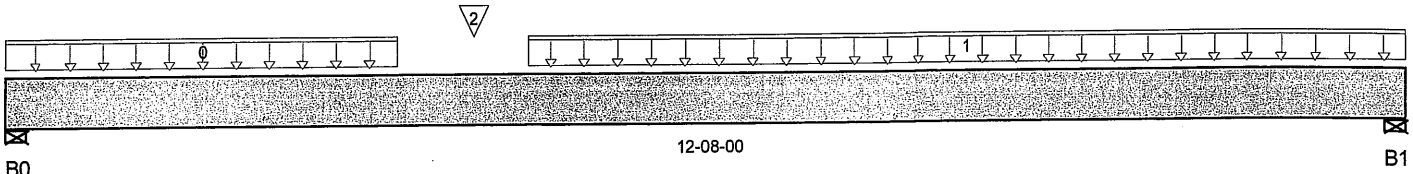
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B9D

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 12-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-7/8"	3,885 / 0	1,571 / 0		
B1, 3-7/8"	3,693 / 0	1,500 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-08	645	241			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	04-08-08	12-08-00	575	216			n/a
2	-	Conc. Pt. (lbs)	L	04-02-08	04-02-08	719	270			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	21,107 ft-lbs	60,415 ft-lbs	34.9%	1	06-02-08
End Shear	6,263 lbs	21,696 lbs	28.9%	1	01-03-12
Total Load Defl.	L/545 (0.268")	0.607"	44.1%	4	06-04-08
Live Load Defl.	L/766 (0.19")	0.405"	47%	5	06-04-08
Max Defl.	0.268"	1"	26.8%	4	06-04-08
Span / Depth	12.3	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-7/8" x 5-1/4"	7,791 lbs	46.8%	31.2%	Unspecified
B1 Wall/Plate	3-7/8" x 5-1/4"	7,416 lbs	44.5%	29.7%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 Calculations assume unbraced length of Top: 00-04-03, Bottom: 00-04-03.
 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 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012





BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B

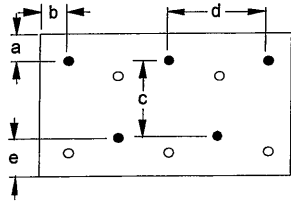
Specifier:

Designer: CZ

Company:

Misc:

Connection Diagram



4 nails

a minimum = 1" c = 6-7/8"
 b minimum = 3" d = 4"
 e minimum = 2"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Nailing schedule applies to both sides of the member.

Member has no side loads.

Connectors are: 16d ^{Sinker} Nails

3-1/2" ARDOX SPIRAL

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

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Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10DR(i2841)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:24

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

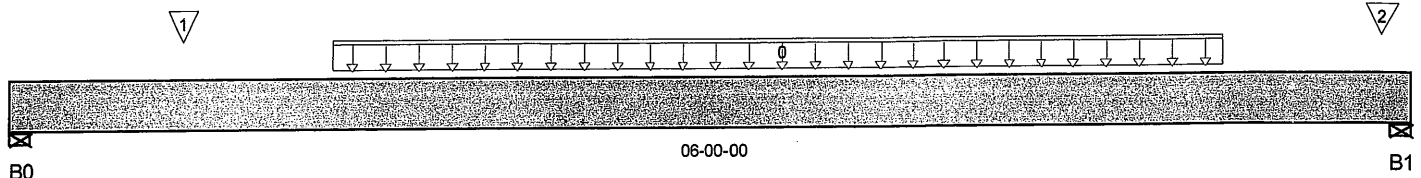
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B101

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 06-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,497 / 0	592 / 0		
B1, 4"	1,969 / 0	769 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-08	05-02-08	591	222			n/a
1	-	Conc. Pt. (lbs)	L	00-08-13	00-08-13	496	186			n/a
2	-	Conc. Pt. (lbs)	L	05-10-08	05-10-08	702	264			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,002 ft-lbs	25,408 ft-lbs	15.7%	1	03-02-08
End Shear	2,518 lbs	11,571 lbs	21.8%	1	04-10-08
Total Load Defl.	L/999 (0.028")	n/a	n/a	4	03-00-08
Live Load Defl.	L/999 (0.02")	n/a	n/a	5	03-00-08
Max Defl.	0.028"	n/a	n/a	4	03-00-08
Span / Depth	6.7	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	2,984 lbs	19.1%	12.7%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	3,914 lbs	34.4%	22.9%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 Calculations assume unbraced length of Top: 00-02-12, Bottom: 00-02-12.
 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 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10DR(i2841)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:24

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B1

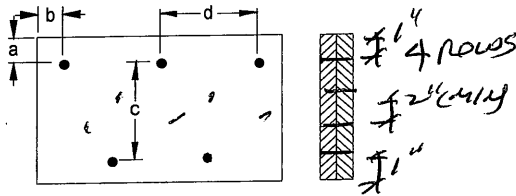
Specifier:

Designer: CZ

Company:

Misc:

Connection Diagram



a minimum = 2" c = 1-1/2"
b minimum = 3" d = 4"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Member has no side loads.

Connectors are: 16d Sinker Nails

3-1/2" ARDOX SPIRAL

Disclosure

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BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

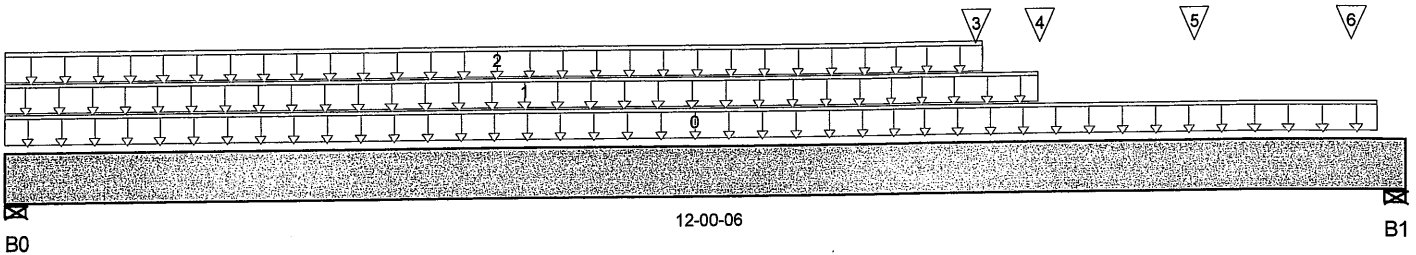
Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i2843)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 12-00-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	279 / 0	477 / 0		
B1, 5-1/2"	968 / 0	597 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-09-10	19	7			n/a
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-10-14	3				n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-00-00	08-05-02		60			n/a
3	B13(i2842)	Conc. Pt. (lbs)	L	08-04-04	08-04-04	204	120			n/a
4	J4(i2522)	Conc. Pt. (lbs)	L	08-10-14	08-10-14	211	79			n/a
5	J4(i2278)	Conc. Pt. (lbs)	L	10-02-14	10-02-14	289	108			n/a
6	J4(i2265)	Conc. Pt. (lbs)	L	11-06-14	11-06-14	289	108			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,822 ft-lbs	12,704 ft-lbs	30.1%	1	08-02-00
End Shear	1,584 lbs	5,785 lbs	27.4%	1	10-09-06
Total Load Defl.	L/544 (0.25")	0.567"	44.1%	4	06-03-05
Live Load Defl.	L/999 (0.119")	n/a	n/a	5	06-06-00
Max Defl.	0.25"	1"	25%	4	06-03-05
Span / Depth	14.3	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4-3/8" x 1-3/4"	668 lbs	25.1%	11%	Unspecified
B1 Wall/Plate	5-1/2" x 1-3/4"	2,199 lbs	42.8%	18.7%	Unspecified

Notes





Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B11(i2843)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:25

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i284

Specifier:

Designer: CZ

Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

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 2010 and CSA O86.

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Disclosure

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BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

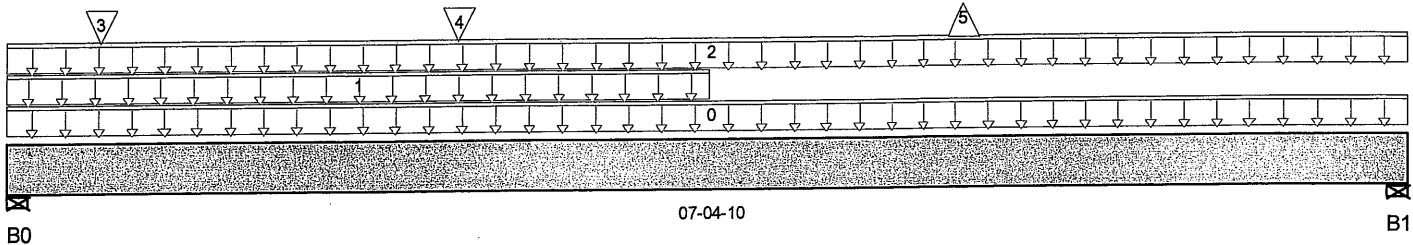
Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i2834)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 07-04-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5"	1,386 / 110	777 / 0		
B1, 6-7/8"	721 / 281	236 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-04-10	16	6			n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-08-05		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	07-04-10	84	29			n/a
3	B13(i2842)	Conc. Pt. (lbs)	L	00-05-14	00-05-14	770	402			n/a
4	J4(i2278)	Conc. Pt. (lbs)	L	02-04-08	02-04-08	289	108			n/a
5	J2(i2532)	Conc. Pt. (lbs)	L	05-00-08	05-00-08	-391	-126			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,250 ft-lbs	12,704 ft-lbs	17.7%	1	03-07-05
Neg. Moment	-576 ft-lbs	-12,704 ft-lbs	4.5%	4	05-00-08
End Shear	1,319 lbs	5,785 lbs	22.8%	1	01-02-08
Uplift	209 lbs	n/a	n/a	4	07-04-10
Total Load Defl.	L/999 (0.047")	n/a	n/a	6	03-05-06
Live Load Defl.	L/999 (0.033")	n/a	n/a	8	03-06-05
Total Neg. Defl.	L/999 (-0")	n/a	n/a	7	05-07-13
Max Defl.	0.047"	n/a	n/a	6	03-05-06
Span / Depth	8.2	n/a	n/a		00-00-00

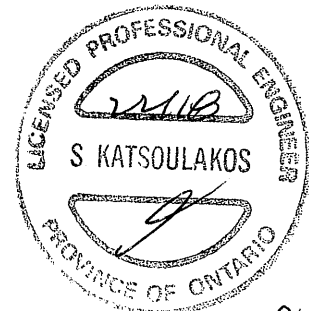
Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5" x 1-3/4"	3,050 lbs	65.3%	28.6%	Unspecified
B1 Wall/Plate	6-7/8" x 1-3/4"	1,376 lbs	21.3%	9.3%	Unspecified

Cautions

Uplift of 209 lbs found at span 1 - Right. (SIMPSON 1-H2-SA @ B1)

Notes





Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B12(i2834)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:25

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i2834)

Specifier:

Designer: CZ

Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

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 2010 and CSA O86.

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Disclosure

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DWG NO. TAM 9703-18
STRUCTURAL
COMPONENT ONLY

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BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

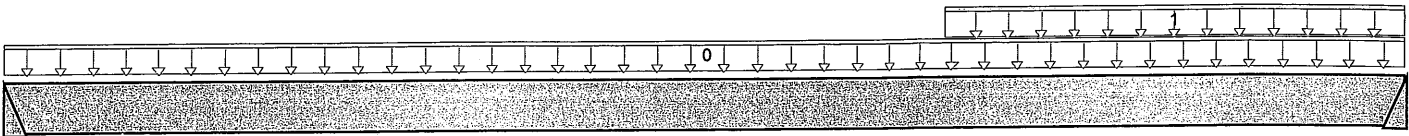
Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i2842)

Specifier:

Designer: CZ

Company:

Misc:



10-08-05

B1

Total Horizontal Product Length = 10-08-05

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	199 / 0	117 / 0		
B1	775 / 0	405 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-08-05	12	5			n/a
1	User Load	Unf. Lin. (lb/ft)	L	07-02-05	10-08-05	240	120			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,402 ft-lbs	12,704 ft-lbs	18.9%	1	07-08-00
End Shear	1,150 lbs	5,785 lbs	19.9%	1	09-08-13
Total Load Defl.	L/999 (0.117")	n/a	n/a	4	05-09-15
Live Load Defl.	L/999 (0.076")	n/a	n/a	5	05-11-01
Max Defl.	0.117"	n/a	n/a	4	05-09-15
Span / Depth	13.2	n/a	n/a		00-00-00

Disclosure

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Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	444 lbs	n/a	10.4%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,668 lbs	n/a	39.1%	HUS1.81/10

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 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 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

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Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\...\B15AL(i2836)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

September 14, 2017 09:01:25

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

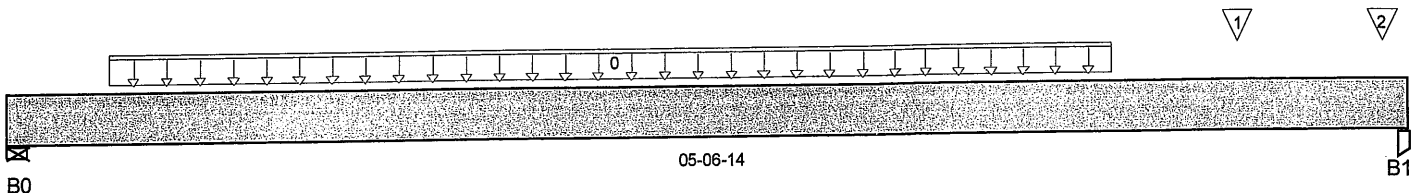
Description: Designs\Flush Beams\Basement\Flush Beams\B15AL(i28

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 05-06-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	593 / 0	236 / 0		
B1, 3-1/2"	682 / 0	270 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-14	04-04-14	246	92			n/a
1	J3(i2818)	Conc. Pt. (lbs)	L	04-10-14	04-10-14	206	77			n/a
2	J3(i2824)	Conc. Pt. (lbs)	L	05-05-10	05-05-10	82	31			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,604 ft-lbs	12,704 ft-lbs	12.6%	1	02-10-14
End Shear	1,024 lbs	5,785 lbs	17.7%	1	01-01-14
Total Load Defl.	L/999 (0.02")	n/a	n/a	4	02-10-02
Live Load Defl.	L/999 (0.014")	n/a	n/a	5	02-10-02
Max Defl.	0.02"	n/a	n/a	4	02-10-02
Span / Depth	6.4	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4-3/8" x 1-3/4"	1,184 lbs	29%	12.7%	Unspecified
B1 Post	3-1/2" x 1-3/4"	1,361 lbs	27.4%	18.2%	Unspecified

Notes

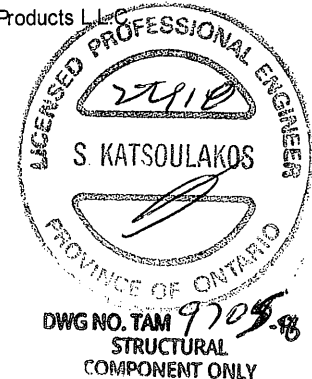
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 Calculations assume 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 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Disclosure

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Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\...\B16AL(i2885)

Dry | 1 span | No cantilevers | 0/12 slope (deg)

September 19, 2017 16:40:24

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

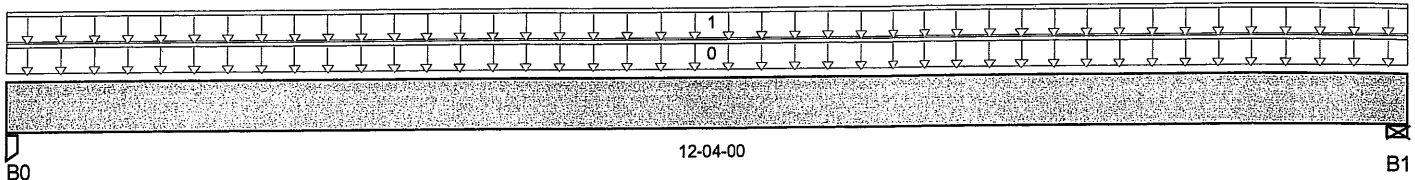
Description: Designs\Flush Beams\Basement\Flush Beams\B16AL(i28

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 12-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	93 / 0	428 / 0		
B1, 4-3/8"	97 / 0	443 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
0	User Load	Unf. Lin. (lb/ft)	L	00-00-00	12-04-00	1.00	0.65	1.00	1.15	n/a
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-04-00	15	6			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,764 ft-lbs	8,258 ft-lbs	21.4%	0	06-00-11
End Shear	506 lbs	3,761 lbs	13.5%	0	00-11-04
Total Load Defl.	L/909 (0.158")	0.597"	26.4%	4	06-00-11
Live Load Defl.	L/999 (0.028")	n/a	n/a	5	06-00-11
Max Defl.	0.158"	n/a	n/a	4	06-00-11
Span / Depth	15.1	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	1-3/4" x 1-3/4"	599 lbs	37%	24.7%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	620 lbs	23.3%	10.2%	Unspecified

Notes

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

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

Calculations assume 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 2010 and CSA O86.

Design based on Dry Service Condition.

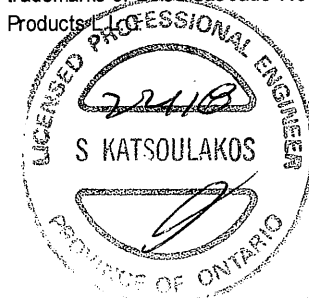
Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Disclosure

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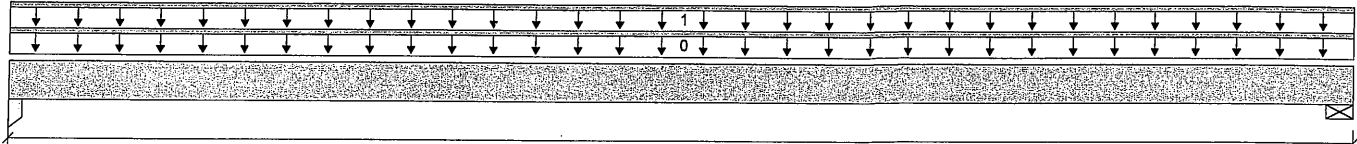
BC CALC® Design Report
Build 6215
Job name:
Address:
City, Province, Postal Code: BRA...RD

Customer:
Code reports: CCMC 12472-R

Dry | 1 span | No cant.
February 16, 2018 08:42:56
File name: S38-5 BAROSSA 5-ELB,C-SUNKEN.mmdl

Description: Basment\Flush Beams\B18A(i2890)

Specifier:
Designer: CZ

Company:

B0

04-04-02

B1
Total Horizontal Product Length = 04-04-02
Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	46 / 0	27 / 0		
B1, 4-3/8"	50 / 0	30 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-04-02	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-04-02	22	8			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	97 ft-lbs	11,610 ft-lbs	0.8 %	1	02-00-12
End Shear	56 lbs	5,785 lbs	1.0 %	1	00-11-04
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	02-00-12
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-00-12
Max Defl.	0.001"	n/a	n/a	4	02-00-12
Span / Depth	5.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Column 1-3/4" x 1-3/4"	102 lbs	4.1 %	2.7 %	Unspecified
B1	Wall/Plate 4-3/8" x 1-3/4"	113 lbs	2.8 %	1.2 %	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume 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 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012
Disclosure

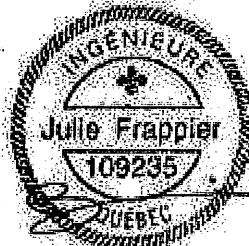
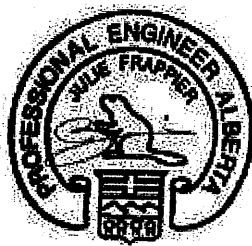
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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCi®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

DWG NO. TAM 9707-18
STRUCTURAL COMPONENT ONLY



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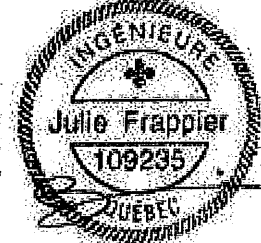
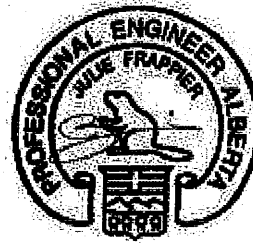
Maximum Floor Spans

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
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'-9"	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
14"	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	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
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"	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.



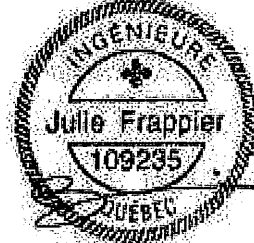
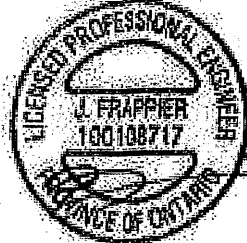
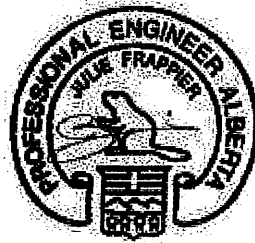
Maximum Floor Spans

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"

1. 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.
2. 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.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
5. This span chart is based on uniform loads. For applications with other than 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.
6. 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.



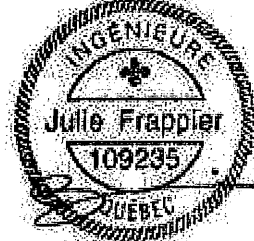
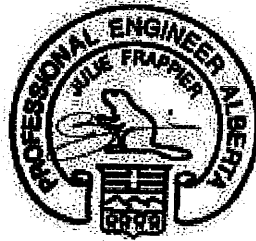
Maximum Floor Spans

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
	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	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
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
14"	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
	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"	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

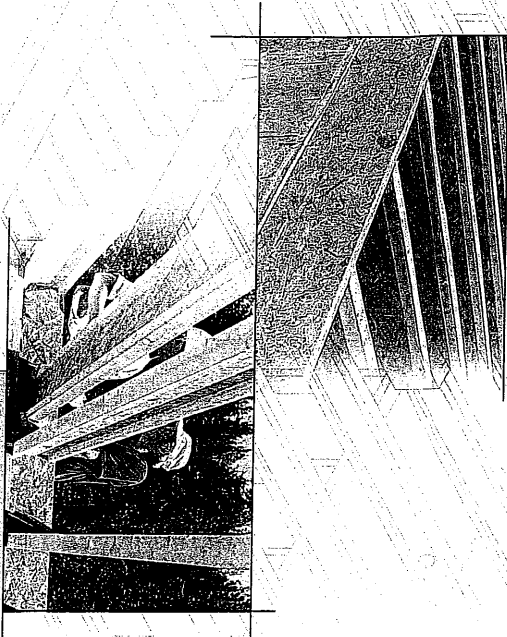
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	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"
	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'-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"
	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	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"
	NI-90x	24'-3"	22'-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"
14"	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"
	NI-90x	27'-3"	25'-4"	24'-1"	22'-4"	27'-9"	25'-10"	24'-3"	22'-4"
16"	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"

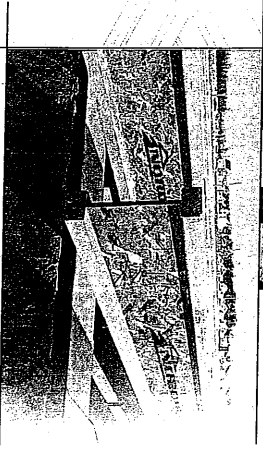
- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load 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.



INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



Distributed by:



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 unsheathed I-joists. Once sheathed, do not over-stress I-joist with concentrated loads from building materials.

WARNING

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

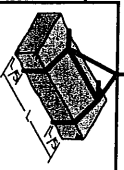
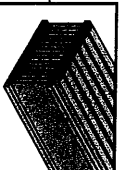
Avoid Accidents by Following these Important Guidelines:

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

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

STORAGE AND HANDLING GUIDELINES

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



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MAXIMUM FLOOR SPANS

1. Maximum **clear** spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
5. This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
6. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
7. SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

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

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing	On centre spacing	On centre spacing	On centre spacing	On centre spacing	On centre spacing	On centre spacing	On centre spacing
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
12"	NI-20	14.5'	10.5'	8.5'	6.5'	14.5'	10.5'	8.5'	6.5'
16"	NI-24	18.5'	13.5'	11.5'	8.5'	18.5'	13.5'	11.5'	8.5'
19.2"	NI-28	22.5'	16.5'	14.5'	10.5'	22.5'	16.5'	14.5'	10.5'
24"	NI-32	26.5'	19.5'	17.5'	12.5'	26.5'	19.5'	17.5'	12.5'
	NI-36	30.5'	22.5'	20.5'	14.5'	30.5'	22.5'	20.5'	14.5'
	NI-40	34.5'	25.5'	23.5'	16.5'	34.5'	25.5'	23.5'	16.5'
	NI-44	38.5'	28.5'	26.5'	18.5'	38.5'	28.5'	26.5'	18.5'
	NI-48	42.5'	31.5'	29.5'	20.5'	42.5'	31.5'	29.5'	20.5'
	NI-52	46.5'	34.5'	32.5'	22.5'	46.5'	34.5'	32.5'	22.5'
	NI-56	50.5'	37.5'	35.5'	24.5'	50.5'	37.5'	35.5'	24.5'
	NI-60	54.5'	40.5'	38.5'	26.5'	54.5'	40.5'	38.5'	26.5'
	NI-64	58.5'	43.5'	41.5'	28.5'	58.5'	43.5'	41.5'	28.5'
	NI-68	62.5'	46.5'	44.5'	30.5'	62.5'	46.5'	44.5'	30.5'
	NI-72	66.5'	49.5'	47.5'	32.5'	66.5'	49.5'	47.5'	32.5'
	NI-76	70.5'	52.5'	50.5'	34.5'	70.5'	52.5'	50.5'	34.5'
	NI-80	74.5'	55.5'	53.5'	36.5'	74.5'	55.5'	53.5'	36.5'
	NI-84	78.5'	58.5'	56.5'	38.5'	78.5'	58.5'	56.5'	38.5'
	NI-88	82.5'	61.5'	59.5'	40.5'	82.5'	61.5'	59.5'	40.5'
	NI-92	86.5'	64.5'	62.5'	42.5'	86.5'	64.5'	62.5'	42.5'
	NI-96	90.5'	67.5'	65.5'	44.5'	90.5'	67.5'	65.5'	44.5'
	NI-100	94.5'	70.5'	68.5'	46.5'	94.5'	70.5'	68.5'	46.5'
	NI-104	98.5'	73.5'	71.5'	48.5'	98.5'	73.5'	71.5'	48.5'
	NI-108	102.5'	76.5'	74.5'	50.5'	102.5'	76.5'	74.5'	50.5'
	NI-112	106.5'	79.5'	77.5'	52.5'	106.5'	79.5'	77.5'	52.5'
	NI-116	110.5'	82.5'	80.5'	54.5'	110.5'	82.5'	80.5'	54.5'
	NI-120	114.5'	85.5'	83.5'	56.5'	114.5'	85.5'	83.5'	56.5'

CCMC EVALUATION REPORT 13032-R

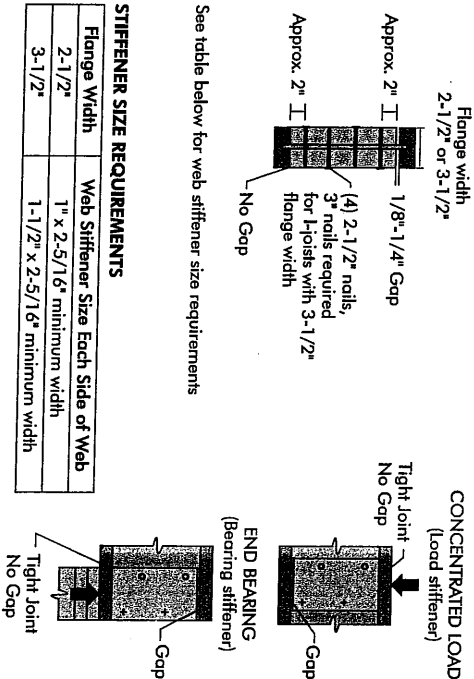
WEB STIFFENERS

RECOMMENDATIONS:

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

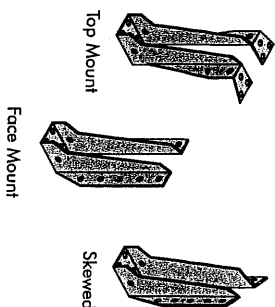
SI units conversion: 1 inch = 25.4 mm

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



I-JOIST HANGERS

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



NORDIC I-JOIST SERIES

S-F No.2	1950F MSR	2100F MSR	1950F MSR	2100F MSR	2400F MSR	NFC Lumber
33 pieces per unit	33 pieces per unit	33 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit
NI-20	NI-40x	NI-60	NI-70	NI-80	NI-90	NI-90x
1-1/2" x 3/4" x 1/2" OSB 3/8" x 1/2" x 1/2"	1-1/2" x 3/4" x 1/2" OSB 3/8" x 1/2" x 1/2"	1-1/2" x 3/4" x 1/2" OSB 3/8" x 1/2" x 1/2"	1-1/2" x 3/4" x 1/2" OSB 3/8" x 1/2" x 1/2"	1-1/2" x 3/4" x 1/2" OSB 3/8" x 1/2" x 1/2"	1-1/2" x 3/4" x 1/2" OSB 3/8" x 1/2" x 1/2"	1-1/2" x 3/4" x 1/2" OSB 3/8" x 1/2" x 1/2"
9-1/2" x 11-7/8" x 16"	9-1/2" x 11-7/8" x 16"	9-1/2" x 11-7/8" x 16"	9-1/2" x 11-7/8" x 16"	9-1/2" x 11-7/8" x 16"	9-1/2" x 11-7/8" x 16"	9-1/2" x 11-7/8" x 16"

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

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

2015-04-16

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INSTALLING NORDIC I-JOISTS

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

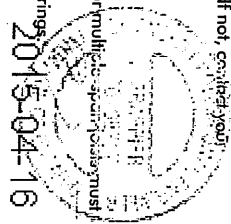
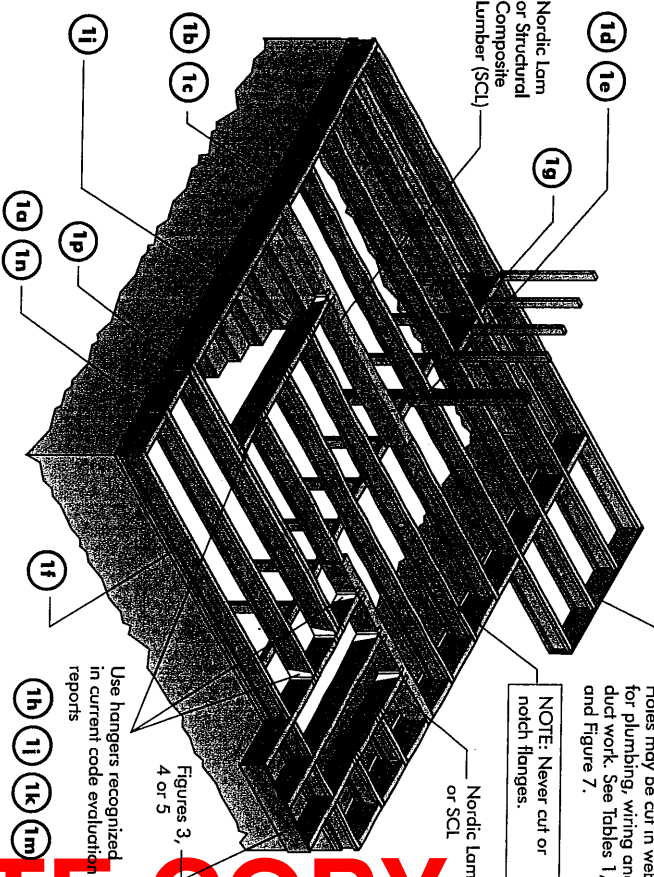
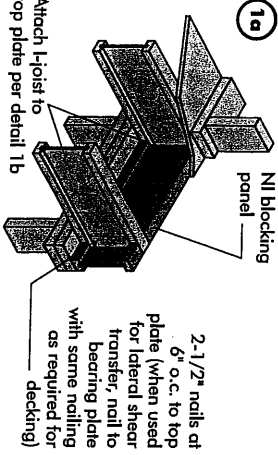


FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

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

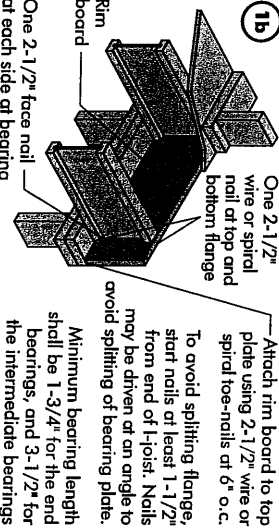


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for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



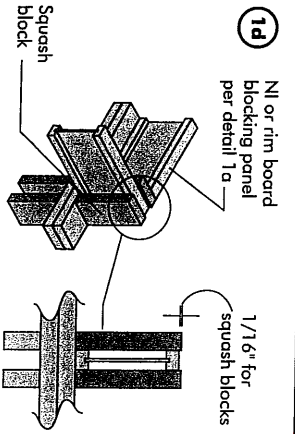
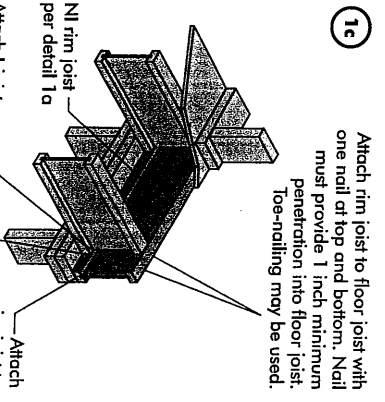
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (pf)
NI Joists	3,300

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



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

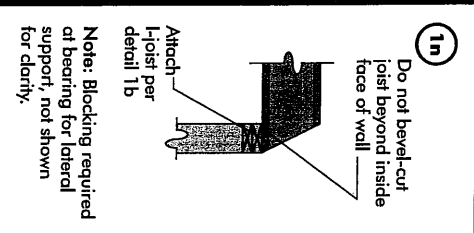
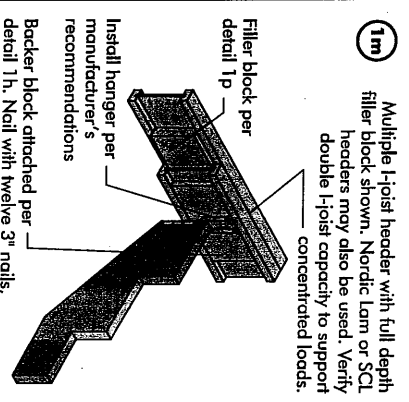
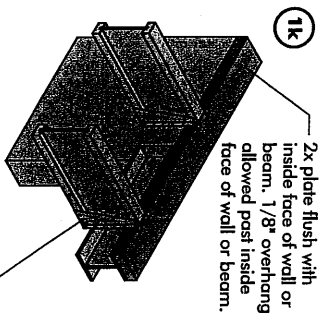
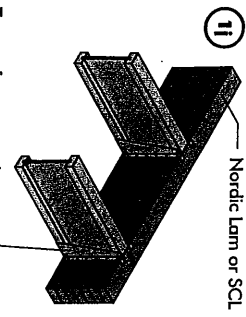
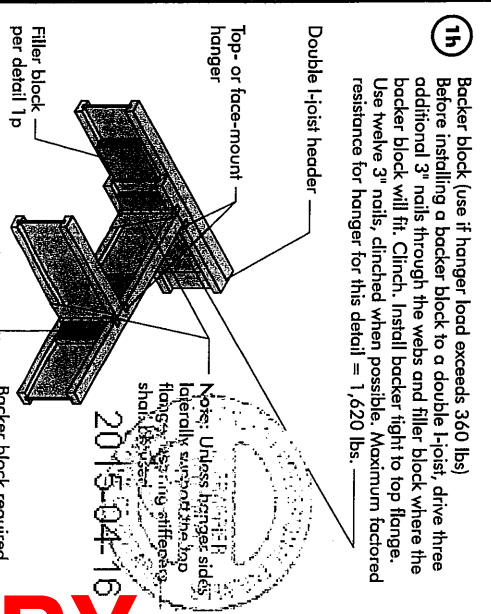
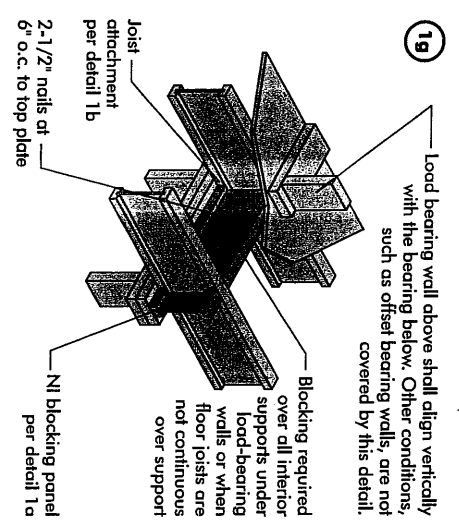
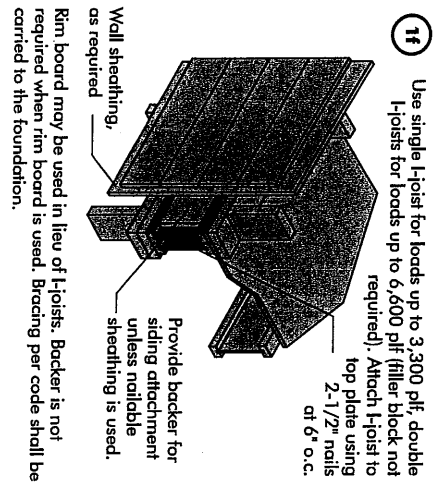
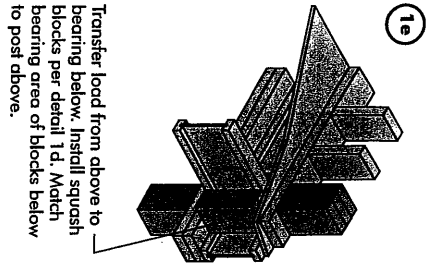
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



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

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

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

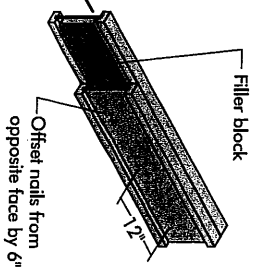
Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2"	1"	5-1/2"
3-1/2"	1-1/2"	7-1/4"

* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-Q325 or CAN/CSA-Q437 Standard.
 ** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

Top- or face-mount hanger installed per manufacturer's recommendations
 For nailing schedules for multiple beams, see the manufacturer's recommendations.
 Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

Top-mount hanger installed per manufacturer's recommendations
 Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

1p



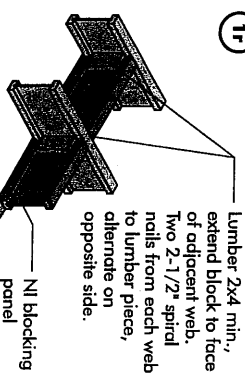
1/8" to 1/4" gap between top flange and filler block
 Offset nails from opposite face by 6"

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

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

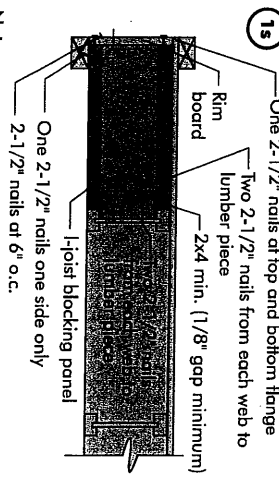
Flange Size	Joist Depth	Filler Block Size
2-1/2" x 1-1/2"	9-1/2" x 14"	2-1/8" x 6"
3-1/2" x 1-1/2"	11-7/8" x 14"	2-1/8" x 8"
3-1/2" x 1-1/2"	11-7/8" x 16"	2-1/8" x 10"
3-1/2" x 1-1/2"	11-7/8" x 16"	2-1/8" x 12"
3-1/2" x 1-1/2"	11-7/8" x 16"	3" x 6"
3-1/2" x 1-1/2"	11-7/8" x 16"	3" x 8"
3-1/2" x 1-1/2"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

1r



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

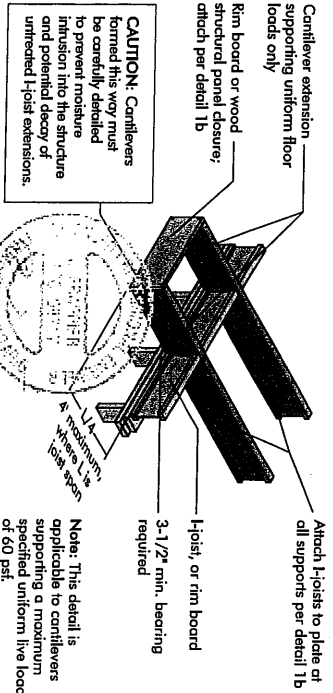
1s



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

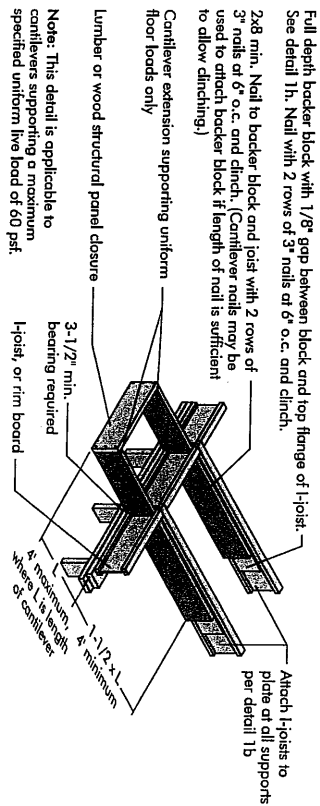
CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

39 L-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



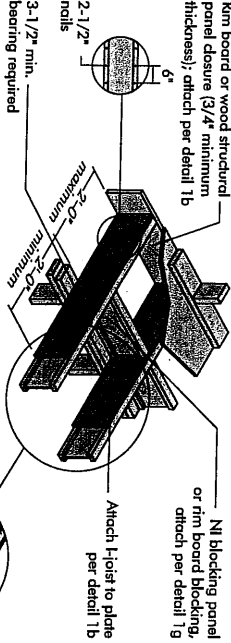
2015-04-10

35 LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

40 Method 1 — SHEATHING REINFORCEMENT ONE SIDE

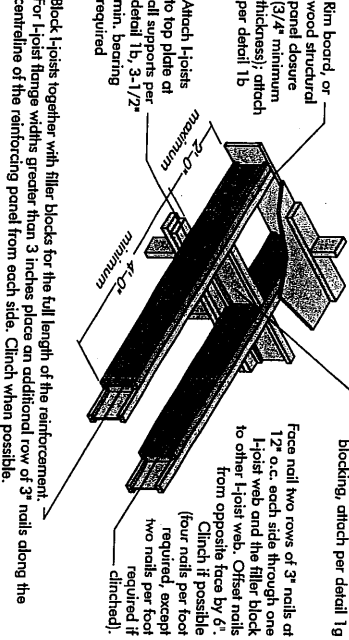


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

- Use same installation as Method 1 but reinforce both sides of L-joist with sheathing.
- Use nailing pattern shown for Method 1 with opposite face nailing offset by 3".

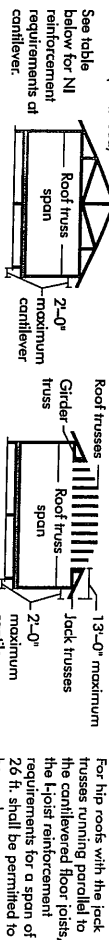
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c. top and bottom flange. Install with face grain horizontal. Attach L-joist to plate or all supports per detail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

43 Alternate Method 2 — DOUBLE L-JOIST



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

FIGURE 4 (continued)



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.)
24	12	12	16	19.2	24
24	16	16	19.2	24	24
24	24	24	24	24	24
24	32	32	32	32	32
24	36	36	36	36	36
24	40	40	40	40	40
24	48	48	48	48	48
24	56	56	56	56	56
24	64	64	64	64	64
24	72	72	72	72	72
24	80	80	80	80	80
24	88	88	88	88	88
24	96	96	96	96	96
24	104	104	104	104	104
24	112	112	112	112	112
24	120	120	120	120	120
24	128	128	128	128	128
24	136	136	136	136	136
24	144	144	144	144	144
24	152	152	152	152	152
24	160	160	160	160	160
24	168	168	168	168	168
24	176	176	176	176	176
24	184	184	184	184	184
24	192	192	192	192	192
24	200	200	200	200	200
24	208	208	208	208	208
24	216	216	216	216	216
24	224	224	224	224	224
24	232	232	232	232	232
24	240	240	240	240	240
24	248	248	248	248	248
24	256	256	256	256	256
24	264	264	264	264	264
24	272	272	272	272	272
24	280	280	280	280	280
24	288	288	288	288	288
24	296	296	296	296	296
24	304	304	304	304	304
24	312	312	312	312	312
24	320	320	320	320	320
24	328	328	328	328	328
24	336	336	336	336	336
24	344	344	344	344	344
24	352	352	352	352	352
24	360	360	360	360	360
24	368	368	368	368	368
24	376	376	376	376	376
24	384	384	384	384	384
24	392	392	392	392	392
24	400	400	400	400	400
24	408	408	408	408	408
24	416	416	416	416	416
24	424	424	424	424	424
24	432	432	432	432	432
24	440	440	440	440	440
24	448	448	448	448	448
24	456	456	456	456	456
24	464	464	464	464	464
24	472	472	472	472	472
24	480	480	480	480	480
24	488	488	488	488	488
24	496	496	496	496	496
24	504	504	504	504	504
24	512	512	512	512	512
24	520	520	520	520	520
24	528	528	528	528	528
24	536	536	536	536	536
24	544	544	544	544	544
24	552	552	552	552	552
24	560	560	560	560	560
24	568	568	568	568	568
24	576	576	576	576	576
24	584	584	584	584	584
24	592	592	592	592	592
24	600	600	600	600	600
24	608	608	608	608	608
24	616	616	616	616	616
24	624	624	624	624	624
24	632	632	632	632	632
24	640	640	640	640	640
24	648	648	648	648	648
24	656	656	656	656	656
24	664	664	664	664	664
24	672	672	672	672	672
24	680	680	680	680	680
24	688	688	688	688	688
24	696	696	696	696	696
24	704	704	704	704	704
24	712	712	712	712	712
24	720	720	720	720	720
24	728	728	728	728	728
24	736	736	736	736	736
24	744	744	744	744	744
24	752	752	752	752	752
24	760	760	760	760	760
24	768	768	768	768	768
24	776	776	776	776	776
24	784	784	784	784	784
24	792	792	792	792	792
24	800	800	800	800	800
24	808	808	808	808	808
24	816	816	816	816	816
24	824	824	824	824	824
24	832	832	832	832	832
24	840	840	840	840	840
24	848	848	848	848	848
24	856	856	856	856	856
24	864	864	864	864	864
24	872	872	872	872	872
24	880	880	880	880	880
24	888	888	888	888	888
24	896	896	896	896	896
24	904	904	904	904	904
24	912	912	912	912	912
24	920	920	920	920	920
24	928	928	928	928	928
24	936	936	936	936	936
24	944	944	944	944	944
24	952	952	952	952	952
24	960	960	960	960	960
24	968	968	968	968	968
24	976	976	976	976	976
24	984	984	984	984	984
24	992	992	992	992	992
24	1000	1000	1000	1000	1000

1. N = No reinforcement required.
2. N = NI reinforced with 3/4" wood structural panel on one side only.
3. X = Try a deeper joist or closer spacing.
4. For larger openings, or multiple 3'-0" with openings spaced less than 6'-0" o.c., additional joists beneath the opening is required. Tabs may be required.
5. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is formed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
6. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

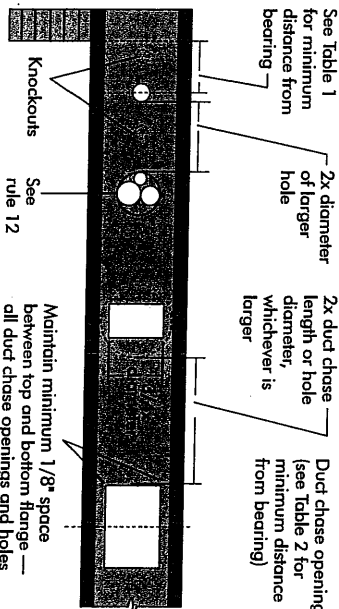
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WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

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

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (ft.-in.)												Span adjustment Factor			
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	
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1. Above table may be used for I-joist spacing of 24 inches on centre or less.
2. Hole location distance is measured from inside face of supports to centre of hole.
3. Distances in this chart are based on uniformly loaded joists.

OPTIONAL:

The above table is based on the I-joists used at their maximum span. If the I-joists are placed at less than their full maximum span (see Maximum Floor Joist Spacing 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:

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

Where:

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

$$D_{\text{actual}} = \text{The actual measured span distance between the inside faces of supports (ft).}$$

$$\text{SAF} = \text{Span Adjustment Factor given in this table.}$$

$$D = \text{The minimum distance from the inside face of any support to centre of hole from this table.}$$

$$\text{If } D_{\text{actual}} \text{ is greater than 1, use 1 in the above calculation for } D_{\text{actual}}.$$

SAF

SAF

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

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of opening (ft-in.)	Duct chase length (in.)	8	10	12	14	16	18	20	22	24
10	10	10	10	10	10	10	10	10	10	10	10	10
12	12	12	12	12	12	12	12	12	12	12	12	12
14	14	14	14	14	14	14	14	14	14	14	14	14
16	16	16	16	16	16	16	16	16	16	16	16	16
18	18	18	18	18	18	18	18	18	18	18	18	18
20	20	20	20	20	20	20	20	20	20	20	20	20
22	22	22	22	22	22	22	22	22	22	22	22	22
24	24	24	24	24	24	24	24	24	24	24	24	24

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.

2015-04-16

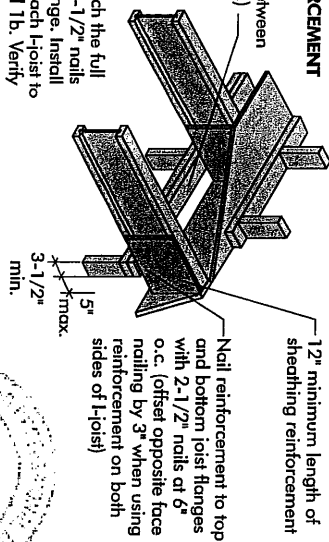
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BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

5a SHEATHING REINFORCEMENT

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

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

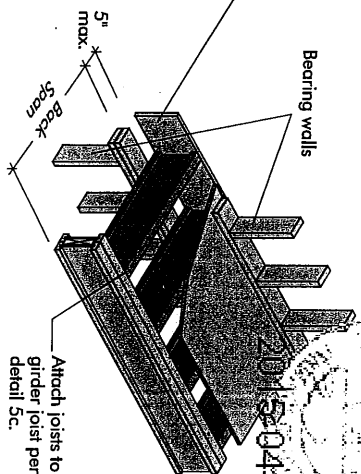


5b SET-BACK DETAIL

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-P-F No. 2 or better) nailed through joist web and web of girder using 2-1/2" nails.

Alternate for opposite side.

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

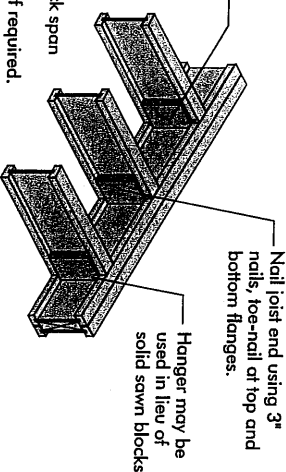
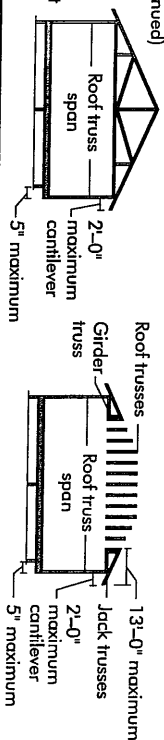


FIGURE 5 (continued)
See table below for NI reinforcement requirements at cantilever.



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

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS		ROOF LOADING (UNFACTORED)				LL = 50 psf, DL = 15 psf			
	SPAN (ft)	JOIST SPACING (in.)	LL = 30 psf, DL = 15 psf	JOIST SPACING (in.)	LL = 40 psf, DL = 15 psf	JOIST SPACING (in.)	JOIST SPACING (in.)	JOIST SPACING (in.)	JOIST SPACING (in.)	JOIST SPACING (in.)
12	12	16	19.2	24	12	16	19.2	24	12	16
14	12	16	19.2	24	12	16	19.2	24	12	16
16	12	16	19.2	24	12	16	19.2	24	12	16
18	12	16	19.2	24	12	16	19.2	24	12	16
20	12	16	19.2	24	12	16	19.2	24	12	16
22	12	16	19.2	24	12	16	19.2	24	12	16
24	12	16	19.2	24	12	16	19.2	24	12	16
26	12	16	19.2	24	12	16	19.2	24	12	16
28	12	16	19.2	24	12	16	19.2	24	12	16
30	12	16	19.2	24	12	16	19.2	24	12	16
32	12	16	19.2	24	12	16	19.2	24	12	16
34	12	16	19.2	24	12	16	19.2	24	12	16
36	12	16	19.2	24	12	16	19.2	24	12	16
38	12	16	19.2	24	12	16	19.2	24	12	16
40	12	16	19.2	24	12	16	19.2	24	12	16
42	12	16	19.2	24	12	16	19.2	24	12	16

1. N = No reinforcement required.
2. N = NI reinforced with 3/4" wood structural panel on one side only.
3. X = Try a deeper joist or closer spacing.
4. For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
5. 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.

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INSTALLING THE GLUED FLOOR SYSTEM

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

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

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

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

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

IMPORTANT NOTE:

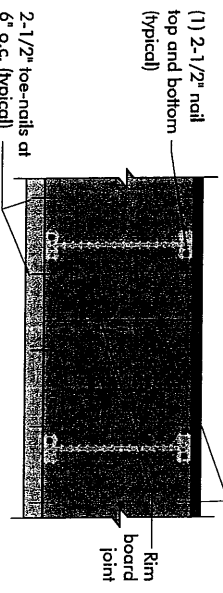
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

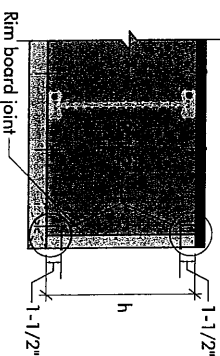
Rim board Joint Between Floor Joists

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

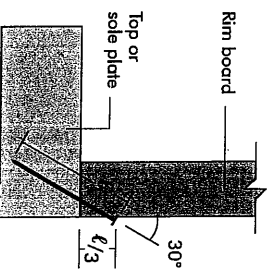


2-1/2" nails at 6' o.c. (typical)

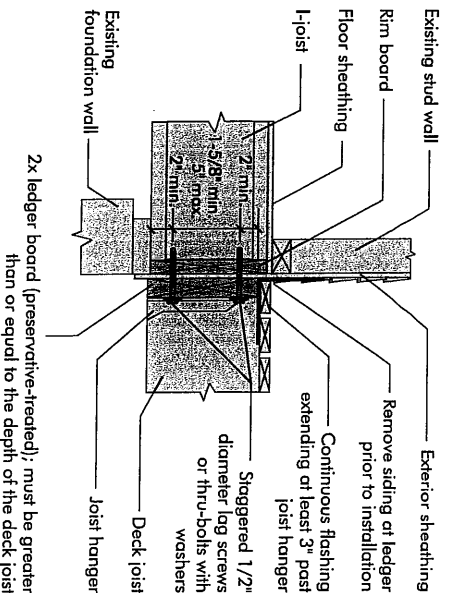
Rim board Joint at Corner



8b TOE-NAIL CONNECTION AT RIM BOARD



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



2015-04-16

PRODUCT WARRANTY

Customer's obligation requires that, in accordance with our specifications, Nordic products are for use in residential applications in material and workmanship.

Furthermore, Customer's obligation requires that our products, when installed in accordance with our handling and installation instructions, will meet or exceed our specifications for the lifetime of the structure.

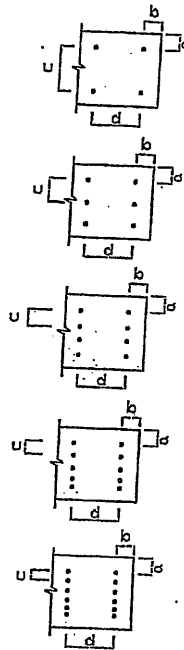
SITE COPY

MICRO CITY ENGINEERING SERVICES INC.

TEL: (519) 287 - 2242

R.R. #1, P.O. BOX 61, GLENCOE, ONTARIO, N0L 1M0

LVL HEADER AND CONVENTIONAL LUMBER NAILING DETAILS		
DETAIL NUMBER	NUMBER OF ROWS	SPACING (INCHES o/c) "d"
A	2	12
B	2	8
C	2	6
D	2	4
1A	3	12
1B	3	8
1C	3	6
1D	3	4
2A	4	12
2B	4	8
2C	4	6
2D	4	4
3A	5	12
3B	5	8
3C	5	6
3D	5	4
4A	6	12
4B	6	8
4C	6	6
4D	6	4



NOTES:

- (1) MINIMUM LUMBER EDGE DISTANCE "a" = 1"
- (2) MINIMUM LUMBER END DISTANCE "b" = 2"
- (3) MINIMUM NAIL ROW SPACING "c" = 2"
- (4) STAGGER NAILS "d/2" BETWEEN PLYS FOR MULTI-PLY MEMBERS (3 PLY OR MORE)
- (5) ALL NAILS ARE 3-1/2" ARDOX SPIRAL NAILS
- (6) DO NOT USE AIR-DRIVEN NAILS



DWG NO TAMN1001.14

STRUCTURAL

COMPONENT ONLY

TO BE USED ONLY
WITH BEAM CALCS
BEARING THE
STAMP BELOW

PROVIDE NAILING
DETAIL # X SEE
DWG #TAMN1001-14

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