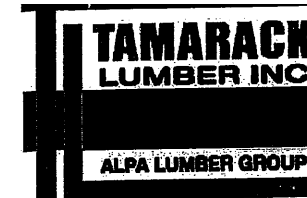


Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	14
J2	14-00-00	9 1/2" NI-40x	1	32
J3	10-00-00	9 1/2" NI-40x	1	13
J4	8-00-00	9 1/2" NI-40x	1	17
J5	6-00-00	9 1/2" NI-40x	1	2
J6	2-00-00	9 1/2" NI-40x	1	6
B1L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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

TOWN OF BRADFORD WEST GWILLIMBURY
BUILDING DEPARTMENT
PLANS EXAMINED
ONTARIO BUILDING CODE APPLIES
DATE: 2018-10-24
INSPECTOR: BG

SITE COPY



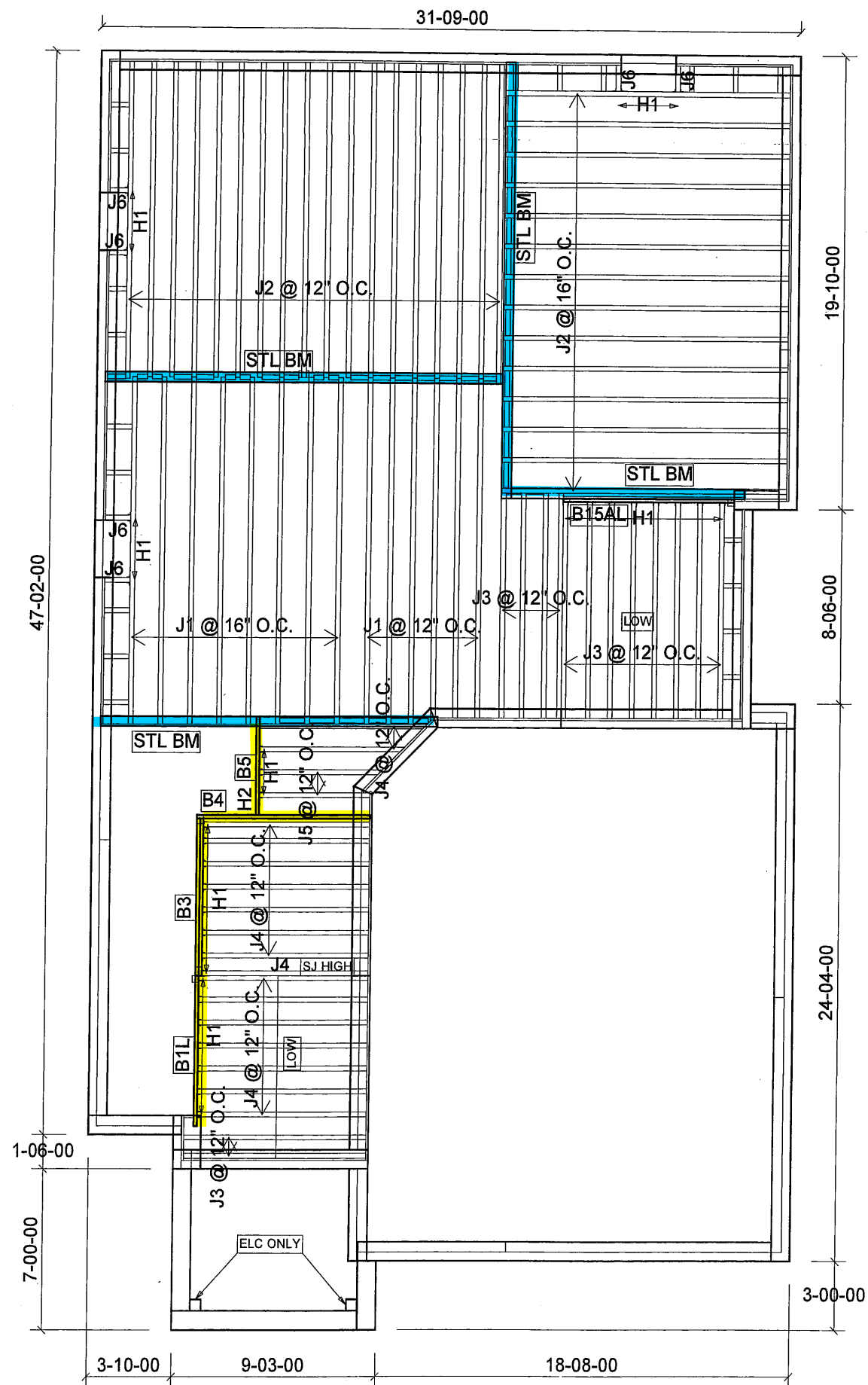
FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-3 BAROSSA 3
ELEVATION: A C
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

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

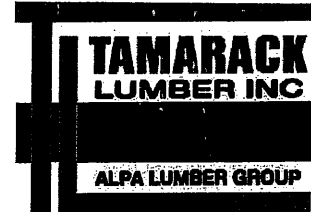
DATE: 16/02/2018

1st FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	14
J2	14-00-00	9 1/2" NI-40x	1	32
J3	10-00-00	9 1/2" NI-40x	1	14
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J5	6-00-00	9 1/2" NI-40x	1	2
J6	2-00-00	9 1/2" NI-40x	1	6
B15AL	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
18	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
1	H2	HUS1.81/10

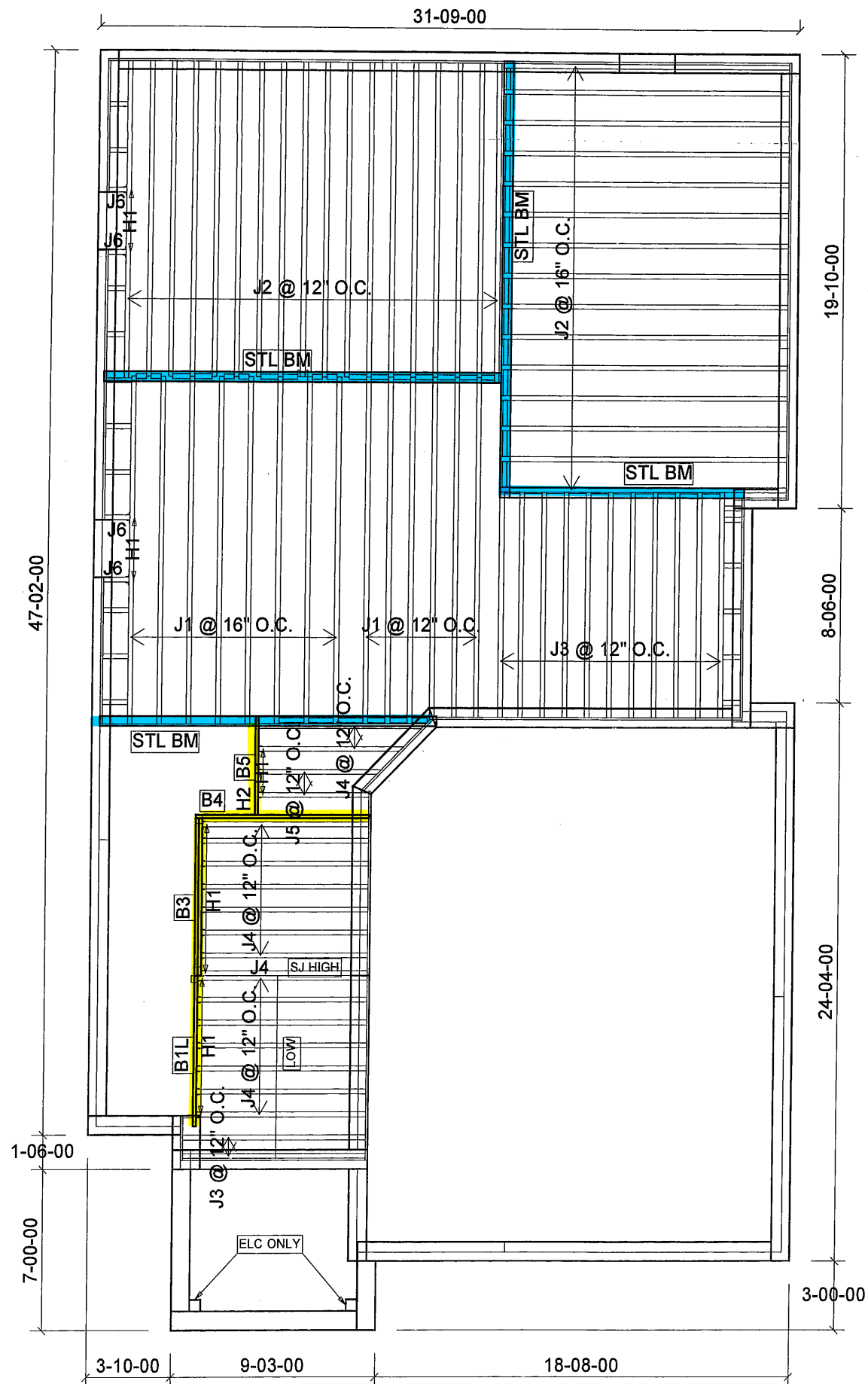


FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-3 BAROSSA 3
ELEVATION: A,C
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

NOTES:
REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2
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AND RIMBOARD CLOSURE AT ENDS.
SEE FIGURES 4 & 5 FOR
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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

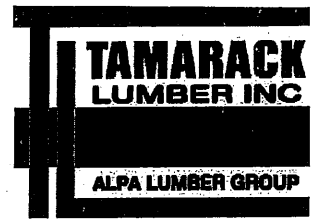
DATE: 16/02/2018
1st FLOOR
SUNKEN

SITE COPY



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	14
J2	14-00-00	9 1/2" NI-40x	1	33
J3	10-00-00	9 1/2" NI-40x	1	13
J4	8-00-00	9 1/2" NI-40x	1	17
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J6	2-00-00	9 1/2" NI-40x	1	4
B1L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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



FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-3 BAROSSA 3
ELEVATION: A,C
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

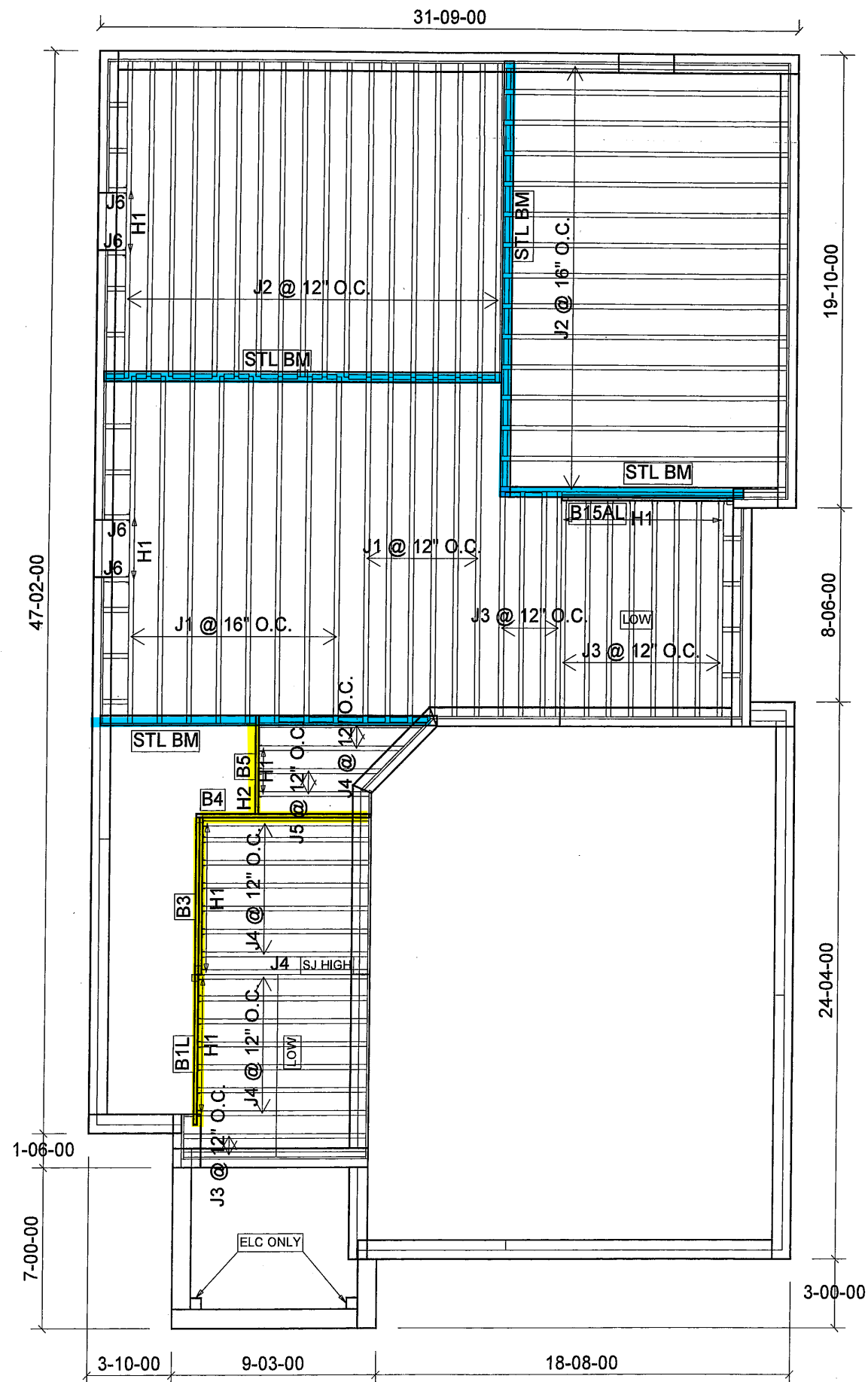
NOTES:
REFER TO THE NORDIC
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UNIFORM LOAD BEARING WALLS.
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FOR HOLES INCLUDING DUCT
CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7, TABLES 1 & 2.
CERAMIC TILE APPLICATION AS PER
O.B.C 9.30.6.
LOADING:
DESIGN 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

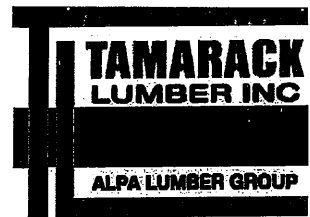
STANDARD WITH WOD & WOB

SITE COPY



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	14
J2	14-00-00	9 1/2" NI-40x	1	33
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J4	8-00-00	9 1/2" NI-40x	1	17
J5	6-00-00	9 1/2" NI-40x	1	2
J6	2-00-00	9 1/2" NI-40x	1	4
B15AL	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
18	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
1	H2	HUS1.81/10



FROM PLAN DATED: JAN 2017

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-3 BAROSSA 3

ELEVATION: A,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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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

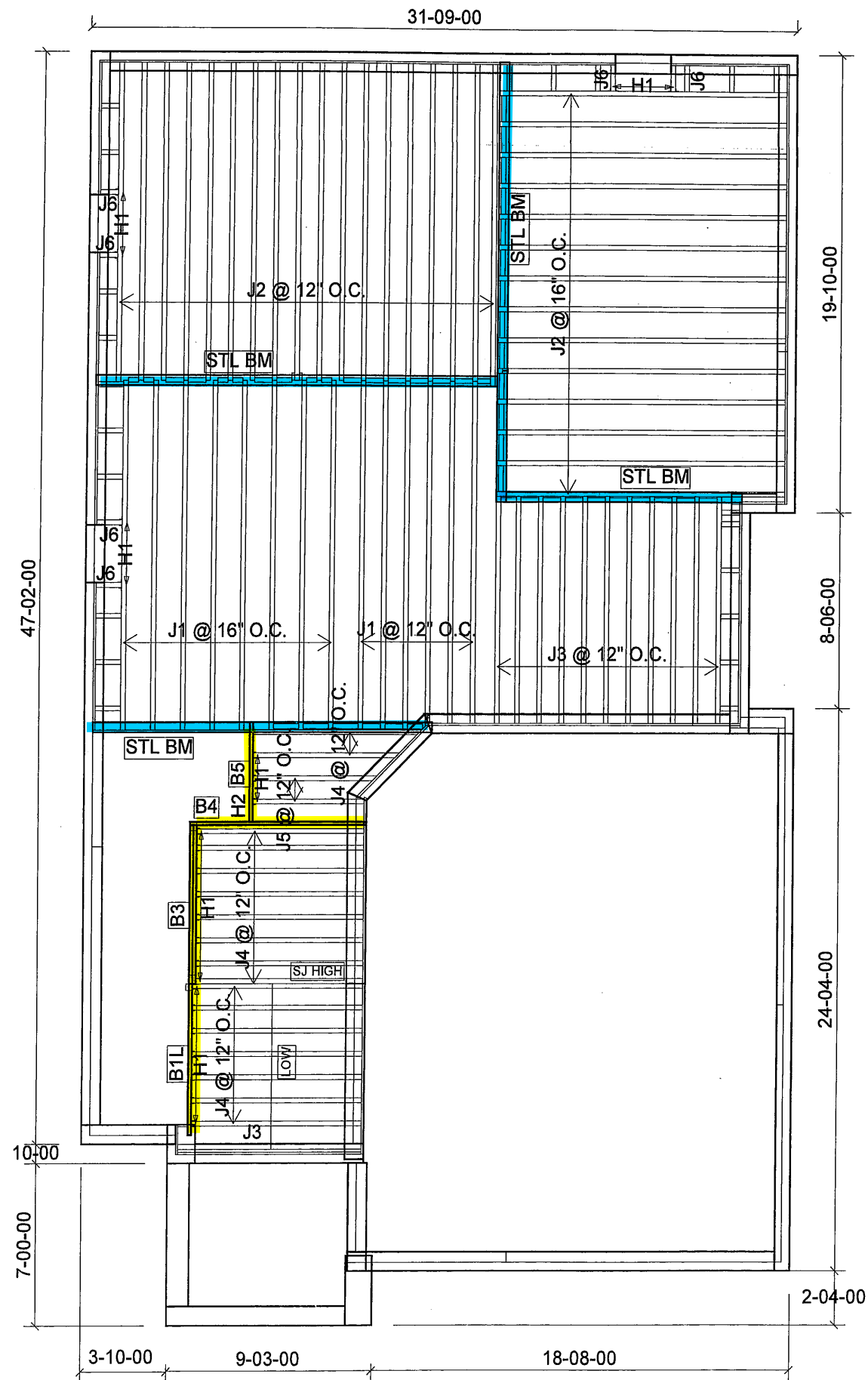
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

1st FLOOR

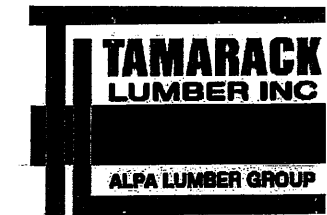
SUNKEN WITH WOD & WOB

SITE COPY



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	14
J2	14-00-00	9 1/2" NI-40x	1	32
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J4	8-00-00	9 1/2" NI-40x	1	17
J5	6-00-00	9 1/2" NI-40x	1	2
J6	2-00-00	9 1/2" NI-40x	1	6
B1L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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



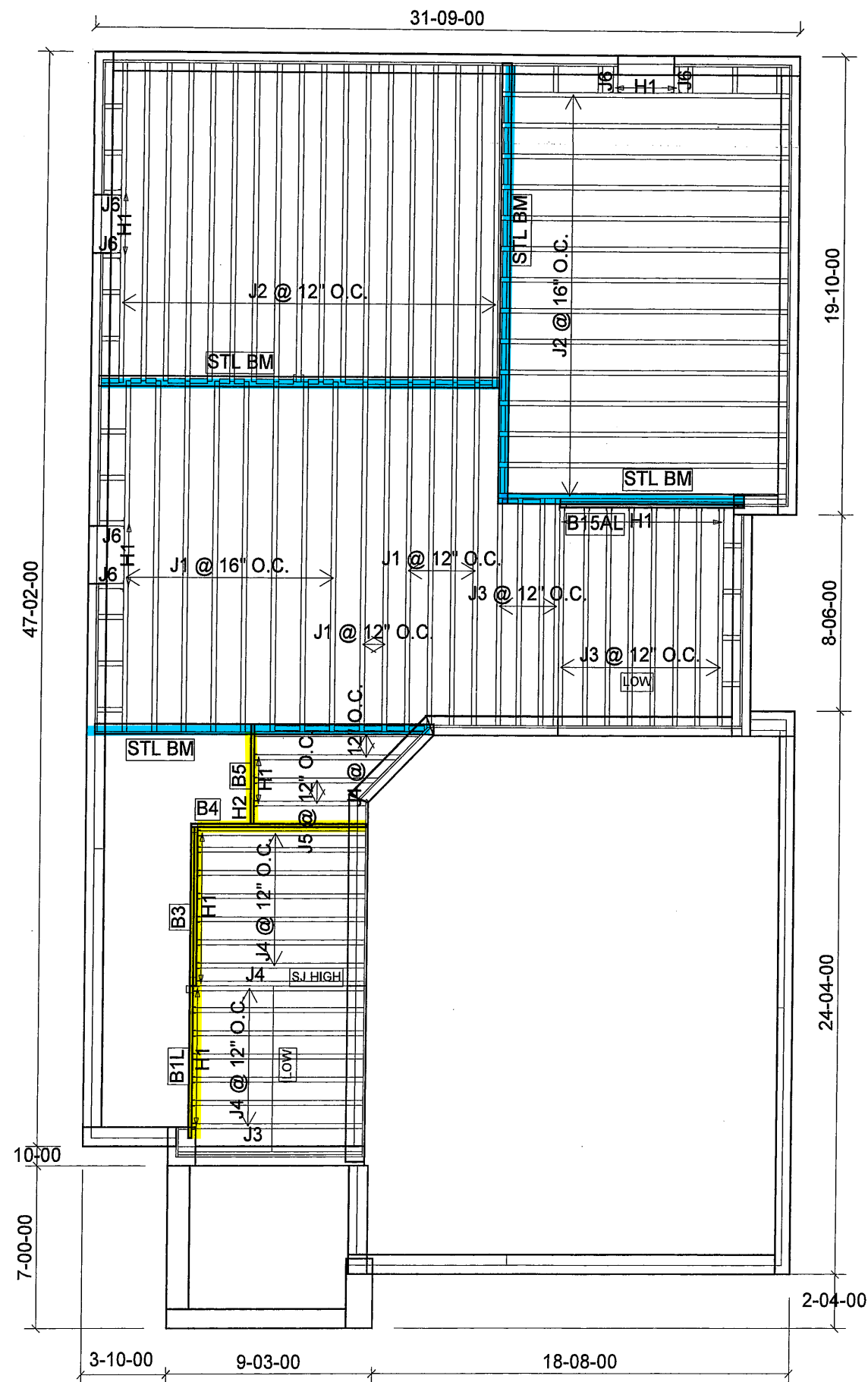
FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-3 BAROSSA 3
ELEVATION: **B**
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

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.
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I-JOIST BLOCKING ALONG BEARING
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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

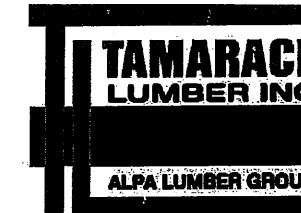
1st FLOOR

SITE COPY



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	14
J2	14-00-00	9 1/2" NI-40x	1	32
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J4	8-00-00	9 1/2" NI-40x	1	17
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J6	2-00-00	9 1/2" NI-40x	1	6
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B1L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
18	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
1	H2	HUS1.81/10



FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-3 BAROSSA 3
ELEVATION: **B**
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

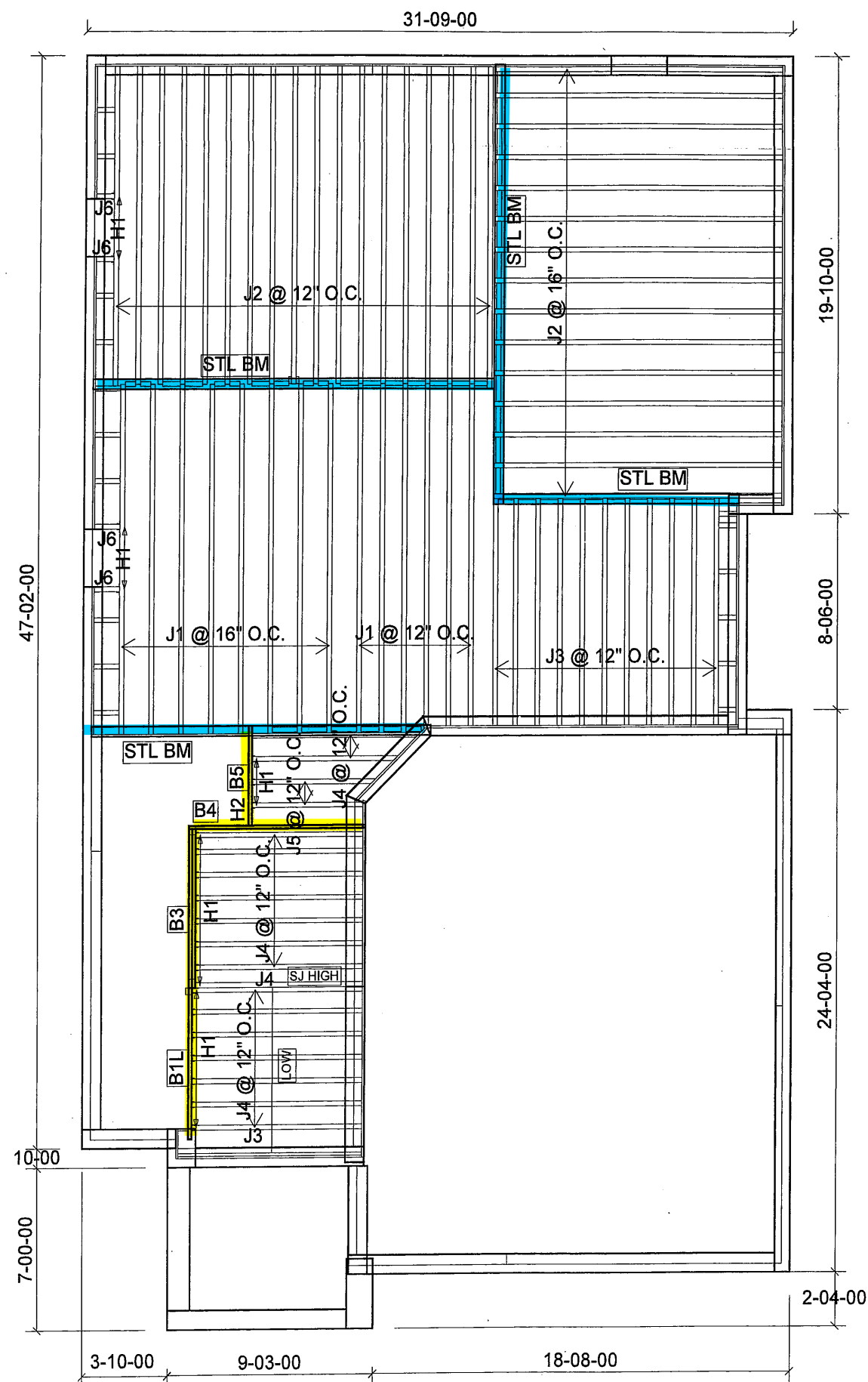
NOTES:
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UNIFORM LOAD BEARING WALLS.
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CHASE AND FIELD CUT OPENINGS
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CERAMIC TILE APPLICATION AS PER
O.B.C 9.30.6.
LOADING:
DESIGN LOADS: L/480.000
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

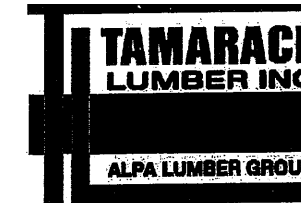
SUNKEN

SITE COPY



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



FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-3 BAROSSA 3
ELEVATION: **B**
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

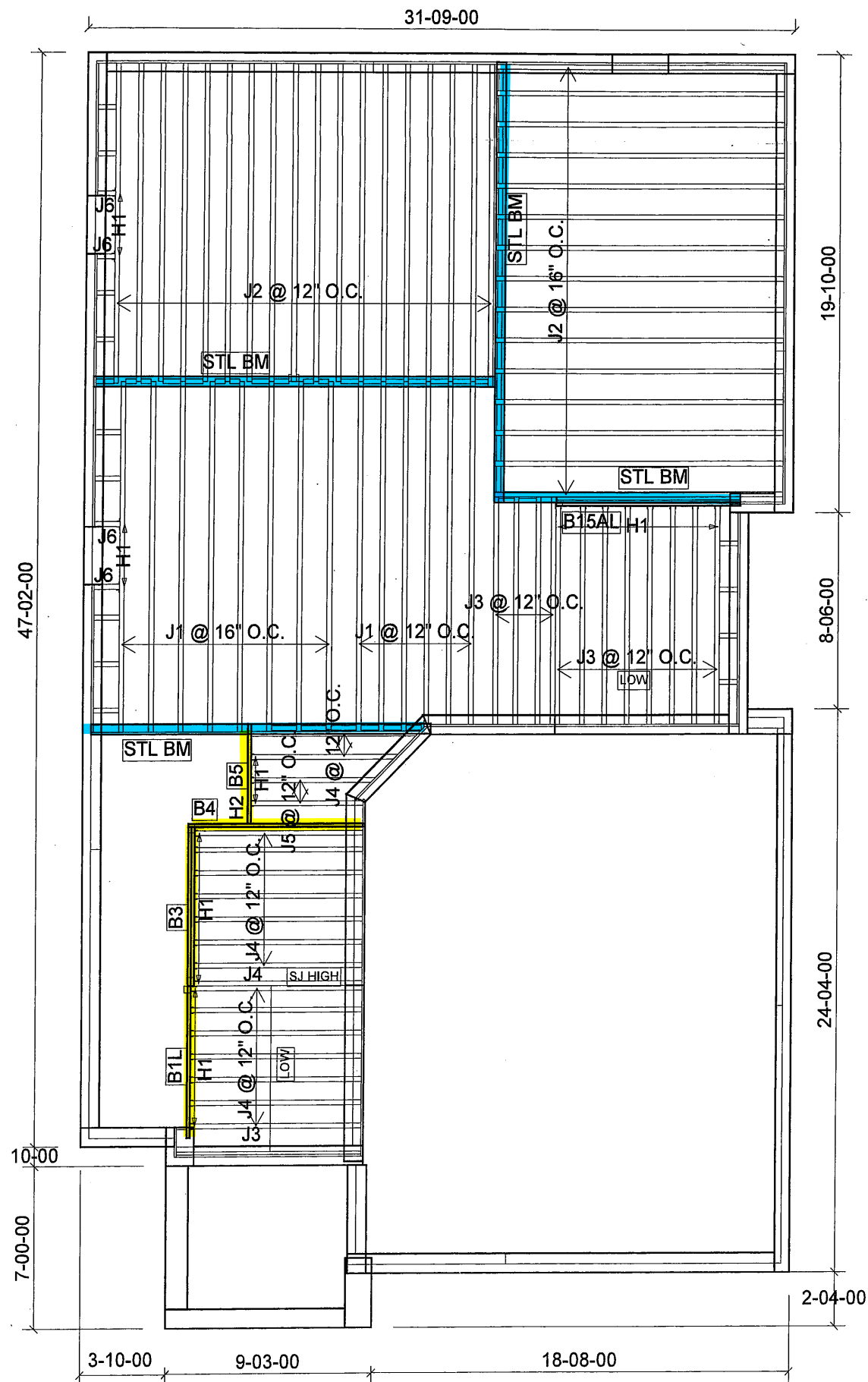
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DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

1st FLOOR

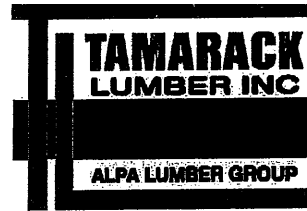
STANDARD WITH WOD & WOB

SITE COPY



Products				
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Connector Summary		
Qty	Manuf	Product
18	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
1	H2	HUS1.81/10



FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-3 BAROSSA 3
ELEVATION: **B**
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

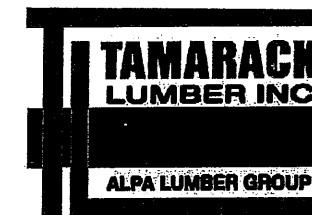
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O.B.C 9.30.6.
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LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

1st FLOOR

SUNKEN WITH WOD & WOB

SITE COPY



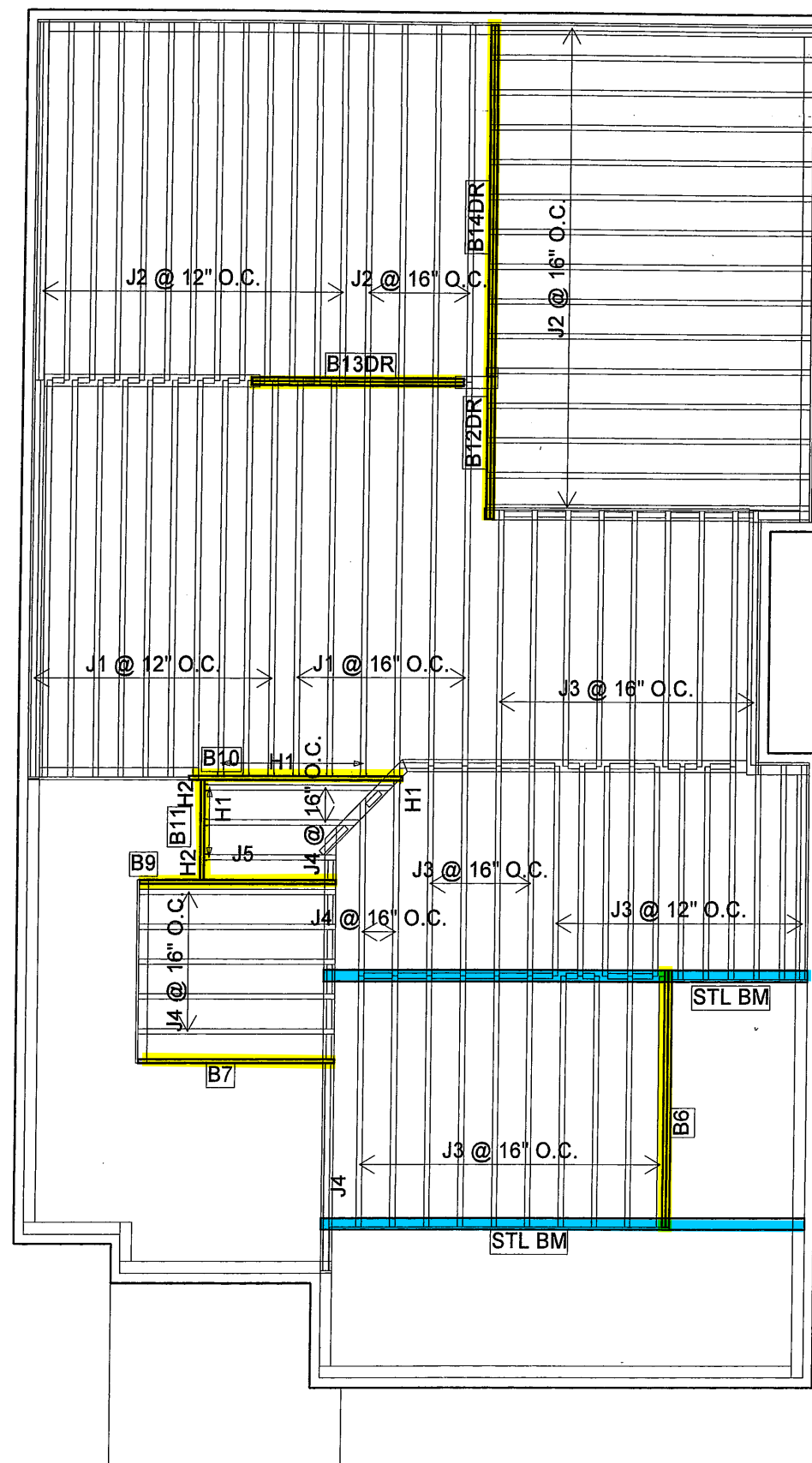
FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-3 BAROSSA 3
ELEVATION: A
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

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

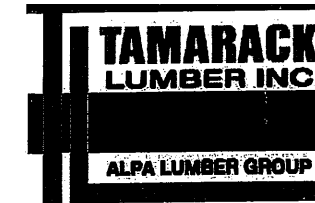
2nd FLOOR

SITE COPY



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	17
J2	14-00-00	9 1/2" NI-40x	1	32
J3	10-00-00	9 1/2" NI-40x	1	34
J4	8-00-00	9 1/2" NI-40x	1	10
J5	6-00-00	9 1/2" NI-40x	1	1
B14DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B13DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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

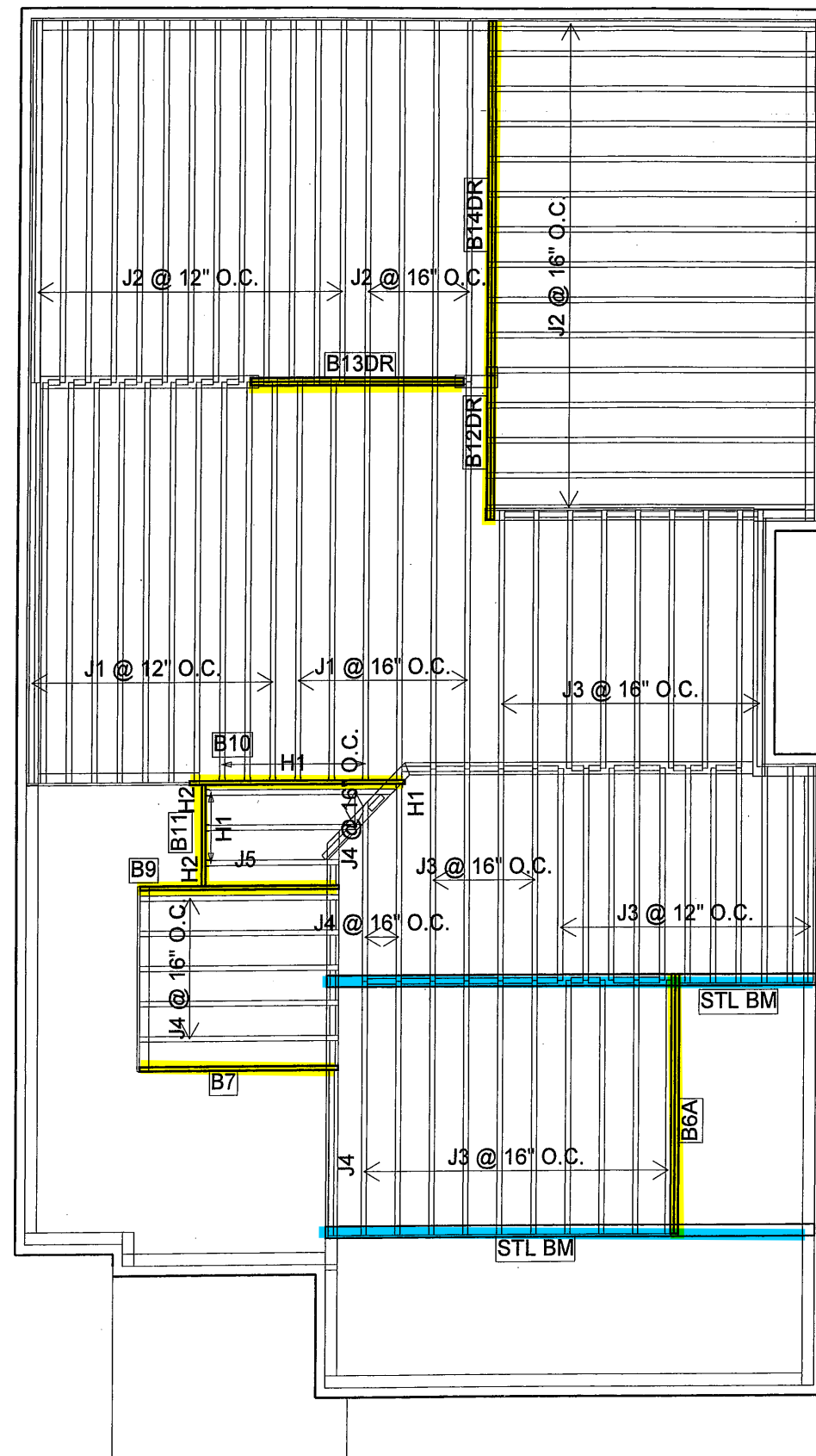


FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-3 BAROSSA 3
ELEVATION: **B**
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

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.
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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	16-00-00	9 1/2" NI-40x	1	17
J2	14-00-00	9 1/2" NI-40x	1	32
J3	10-00-00	9 1/2" NI-40x	1	34
J4	8-00-00	9 1/2" NI-40x	1	10
J5	6-00-00	9 1/2" NI-40x	1	1
B14DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B13DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6A	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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

SITE COPY



FROM PLAN DATED: JAN 2017

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-3 BAROSSA 3

ELEVATION: C

LOT:

CITY: BRADFORD

SALESMAN: M D

DESIGNER: CZ

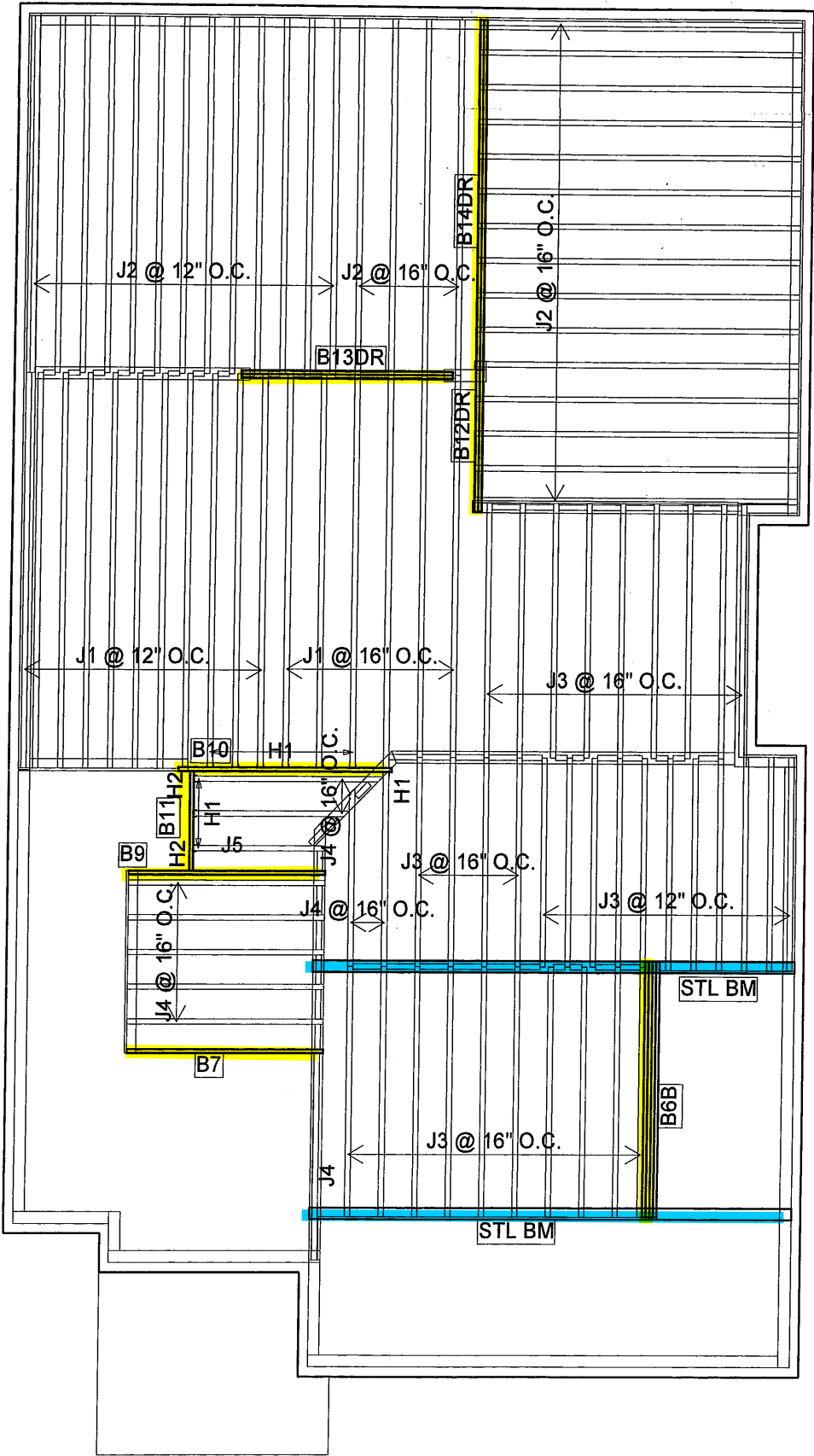
REVISION:

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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MULTIPLE SQUASH BLOCKS REQ'D
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FIGURE 1. CANTILEVERED JOISTS
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I-JOIST BLOCKING ALONG BEARING
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SEE FIGURE 7 TABLES 4 & 5 FOR
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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	16-00-00	9 1/2" NI-40x	1	17
J2	14-00-00	9 1/2" NI-40x	1	32
J3	10-00-00	9 1/2" NI-40x	1	34
J4	8-00-00	9 1/2" NI-40x	1	10
J5	6-00-00	9 1/2" NI-40x	1	1
B14DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B13DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6B	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	4	4
B7	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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

SITE COPY

BC CALC® Design Report



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

September 12, 2017 15:17:54

Build 5 033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

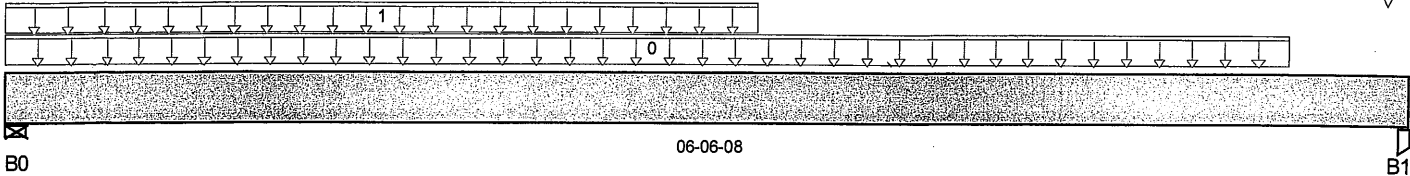
Description: Designs\Flush Beams\Basement\Flush Beams\B1L(i1298

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 06-06-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,160 / 0	532 / 0		
B1, 3-1/2"	685 / 0	297 / 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	06-00-00	154	58			n/a
1	0	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	240	120			n/a
2	J4(i1017)	Conc. Pt. (lbs)	L	06-05-04	06-05-04	80	30			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,631 ft-lbs	12,704 ft-lbs	20.7%	1	02-10-08
End Shear	1,477 lbs	5,785 lbs	25.5%	1	01-03-00
Total Load Defl.	L/999 (0.045")	n/a	n/a	4	03-03-00
Live Load Defl.	L/999 (0.031")	n/a	n/a	5	03-03-00
Max Defl.	0.045"	n/a	n/a	4	03-03-00
Span / Depth	7.5	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"	2,406 lbs	22.1%	20.5%	Unspecified
B1 Post	3-1/2" x 1-3/4"	1,398 lbs	35.1%	18.7%	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 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

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.

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





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B2(i1295)

BC CALC® Design Report



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

September 12, 2017 15:17:54

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

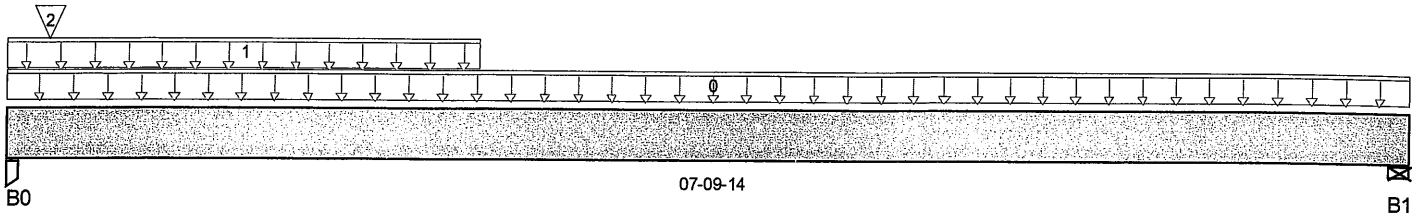
Description: Designs\Flush Beams\Basement\Flush Beams\B2(i1295)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 07-09-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	88 / 0	201 / 0		
B1, 4-3/8"	69 / 0	69 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC 1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-09-14	18	7			n/a
1	0	Unf. Lin. (lb/ft)	L	00-00-00	02-07-08		60			n/a
2	7(i245)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	20	23			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	256 ft-lbs	8,258 ft-lbs	3.1%	0	02-06-05
End Shear	141 lbs	3,761 lbs	3.7%	0	01-01-00
Total Load Defl.	L/999 (0.011")	n/a	n/a	4	03-08-06
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	03-10-11
Max Defl.	0.011"	n/a	n/a	4	03-08-06
Span / Depth	9.2	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"	281 lbs	10.9%	5.8%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	189 lbs	5.8%	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



DWG NO: TAM 9676 -18
 STRUCTURAL
 COMPONENT ONLY

SITE COPY

BC CALC® Design Report



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

September 20, 2017 09:17:39

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3WOD.mmdl

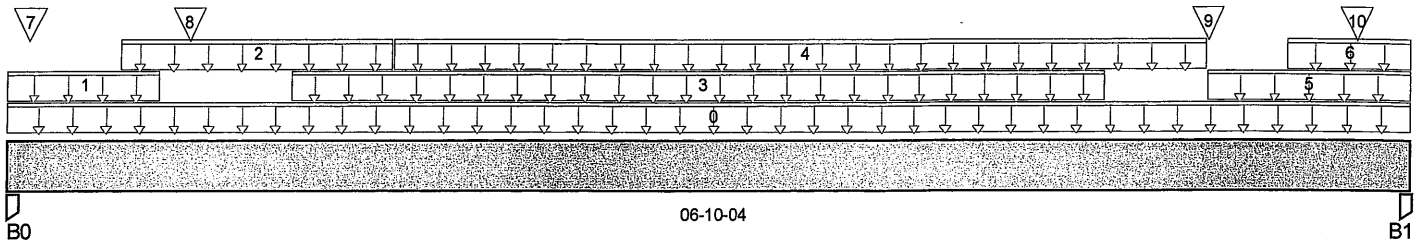
Description: Designs\Flush Beams\Basement\Flush Beams\B3(i1461)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 06-10-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-1/2"	1,120 / 0	891 / 0		
B1, 2-3/4"	1,432 / 0	893 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	7(i245)	Unf. Lin. (lb/ft)	L	00-00-00	06-10-04		81			n/a
1	7(i245)	Unf. Lin. (lb/ft)	L	00-00-00	00-08-14	139	77			n/a
2	7(i245)	Unf. Lin. (lb/ft)	L	00-06-08	01-10-08	150	56			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-08	05-04-08	156	59			n/a
4	7(i245)	Unf. Lin. (lb/ft)	L	01-10-08	05-10-08	162	61			n/a
5	7(i245)	Unf. Lin. (lb/ft)	L	05-10-08	06-10-04	128	48			n/a
6	7(i245)	Unf. Lin. (lb/ft)	L	06-03-02	06-10-04	703	352			n/a
7	J4(i1610)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	68	149			n/a
8	J4(i1576)	Conc. Pt. (lbs)	L	00-10-08	00-10-08	147	66			n/a
9	J4(i1549)	Conc. Pt. (lbs)	L	05-10-08	05-10-08	134	50			n/a
10	J4(i1534)	Conc. Pt. (lbs)	L	06-07-01	06-07-01	86	32			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,798 ft-lbs	25,408 ft-lbs	14.9%	1	03-07-08
End Shear	2,575 lbs	11,571 lbs	22.3%	1	05-10-00
Total Load Defl.	L/999 (0.04")	n/a	n/a	4	03-06-00
Live Load Defl.	L/999 (0.024")	n/a	n/a	5	03-06-00
Max Defl.	0.04"	n/a	n/a	4	03-06-00
Span / Depth	8.1	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	4-1/2" x 3-1/2"	2,793 lbs	27.3%	14.5%	Unspecified
B1 Post	2-3/4" x 3-1/2"	3,265 lbs	52.2%	27.8%	Unspecified

Notes





Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement Flush Beams B3(i1461)

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

September 20, 2017 09:17:39

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3WOD.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B3(i146

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: 00-00-00, Bottom: 00-00-00.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

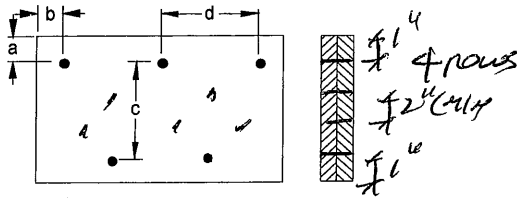
Design based on Dry Service Condition.

CONFORMS TO OBC 2012

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.

Connection Diagram

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

Calculated Side Load = 329.0 lb/ft

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.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

BC CALO®, 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 L.L.C.

**SITE COPY**



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B4(i1299)

BC CALC® Design Report



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

September 12, 2017 15:17:54

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

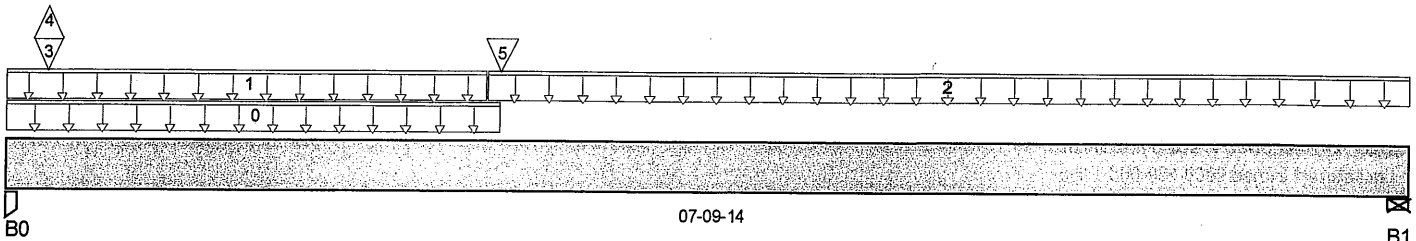
Description: Designs\Flush Beams\Basement\Flush Beams\B4(i1299)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 07-09-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	598 / 1	451 / 0		
B1, 4-3/8"	313 / 0	186 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	0	Unf. Lin. (lb/ft)	L	00-00-00	02-08-14		60			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-08-00	8	3			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	02-08-00	07-09-14	26	10			n/a
3	7(i245)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	121	70			n/a
4	7(i245)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	-1				n/a
5	B5(i791)	Conc. Pt. (lbs)	L	02-08-14	02-08-14	635	307			n/a

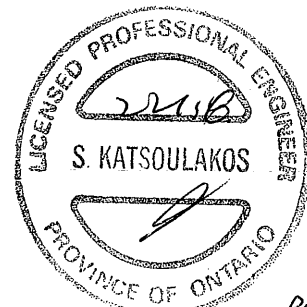
Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,627 ft-lbs	12,704 ft-lbs	20.7%	1	02-08-14
End Shear	1,086 lbs	5,785 lbs	18.8%	1	01-01-00
Total Load Defl.	L/999 (0.059")	n/a	n/a	6	03-07-03
Live Load Defl.	L/999 (0.036")	n/a	n/a	8	03-07-03
Max Defl.	0.059"	n/a	n/a	6	03-07-03
Span / Depth	9.2	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"	1,460 lbs	36.7%	19.5%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	702 lbs	21.5%	7.5%	Unspecified

Notes



SITE COPY

DWG NO. TAM 9618-18
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B4(i1299)

BC CALC® Design Report



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

September 12, 2017 15:17:54

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B4(i1299)

Specifier:

Designer:

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.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

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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DWG NO. TAM 9628.13
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B5(i791)

BC CALC® Design Report



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

September 12, 2017 15:17:54

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmd

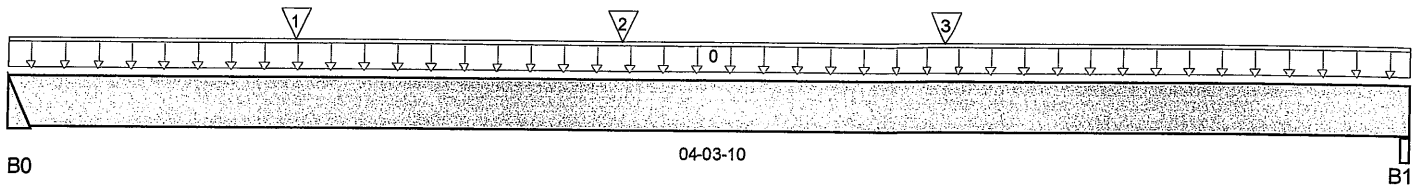
Description: Designs\Flush Beams\Basement\Flush Beams\B5(i791)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 04-03-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	653 / 0	316 / 0		
B1, 5-1/4"	711 / 0	348 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	0	Unf. Lin. (lb/ft)	L	00-00-00	04-03-10	240	120			n/a
1	J5(i1284)	Conc. Pt. (lbs)	L	00-10-08	00-10-08	97	36			n/a
2	J5(i1268)	Conc. Pt. (lbs)	L	01-10-08	01-10-08	106	42			n/a
3	J4(i1246)	Conc. Pt. (lbs)	L	02-10-08	02-10-08	124	47			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,338 ft-lbs	12,704 ft-lbs	10.5%	1	01-10-08
End Shear	860 lbs	5,785 lbs	14.9%	1	03-00-14
Total Load Defl.	L/999 (0.01")	n/a	n/a	4	02-00-06
Live Load Defl.	L/999 (0.007")	n/a	n/a	5	02-00-06
Max Defl.	0.01"	n/a	n/a	4	02-00-06
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"	1,374 lbs	n/a	32.2%	HUS1.81/10
B1 Beam	5-1/4" x 1-3/4"	1,501 lbs	38.2%	13.4%	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.

Hanger Manufacturer: Unassigned

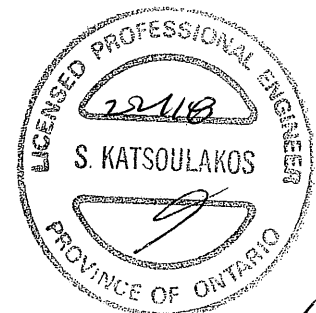
Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9



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DWG NO. TAM 9629-18
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B5(i791)

BC CALC® Design Report



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

September 12, 2017 15:17:54

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B5(i791)

Specifier:

Designer:

Company:

Misc:

Disclosure

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SITE COPY

DWG NO. TAM 9679-18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B6(i695)

BC CALC® Design Report



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

September 12, 2017 15:17:54

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

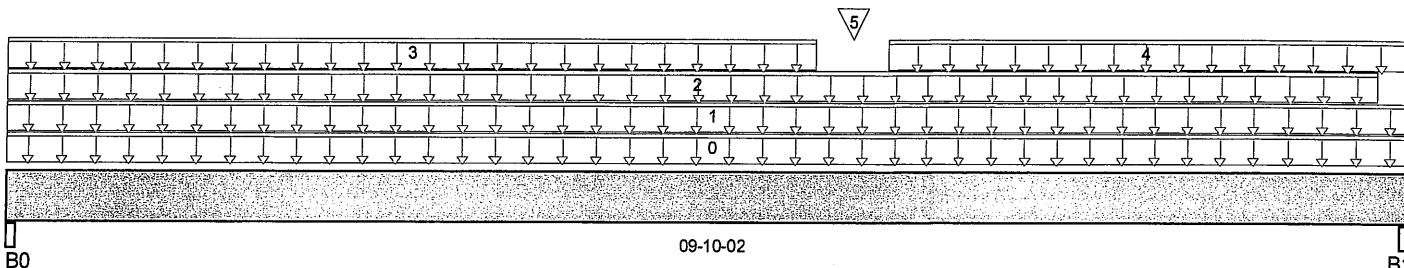
Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i695)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 09-10-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-1/8"	822 / 0	1,270 / 0		
B1, 5-1/4"	1,325 / 0	1,746 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	LOWROOF	Unf. Lin. (lb/ft)	L	00-00-00	09-10-02	33	30		99	n/a
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-10-02	6				n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-07-08	5				n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-00-00	05-07-14	33	130		99	n/a
4	User Load	Unf. Lin. (lb/ft)	L	06-01-14	09-10-02	143	230		429	n/a
5	User Load	Conc. Pt. (lbs)	L	05-10-14	05-10-14	1,001	1,003		3,002	n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	10,088 ft-lbs	25,408 ft-lbs	39.7%	1	05-10-14
End Shear	3,404 lbs	11,571 lbs	29.4%	1	08-07-06
Total Load Defl.	L/552 (0.2")	0.459"	43.5%	4	05-01-01
Live Load Defl.	L/999 (0.086")	n/a	n/a	5	05-01-01
Max Defl.	0.2"	1"	20%	4	05-01-01
Span / Depth	11.6	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	4-1/8" x 3-1/2"	2,821 lbs	45.7%	16%	Unspecified
B1 Beam	5-1/4" x 3-1/2"	4,171 lbs	53.1%	18.6%	Unspecified

Notes



P612

SITE COPY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B6(i695)

BC CALC® Design Report



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

September 12, 2017 15:17:54

Build 5033

Job Name:

Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i695)

Specifier:

Designer:

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.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

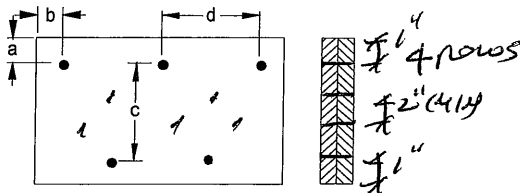
CONFORMS TO OBC 2012

Disclosure

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Connection Diagram



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



SITE COPY

DWG NO. TAM 9600-18
STRUCTURAL
COMPONENT ONLY

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 10:07:54

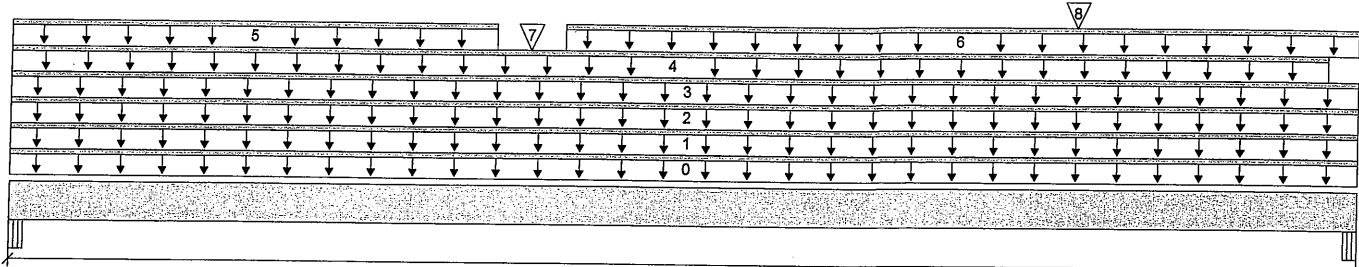
File name: S38-3 BAROSSA 3.mmdl

Description: 1st Floor\Flush Beams\B6(i2072)

Specifier:

Designer: CZ

Company:



B0

09-10-02

B1

Total Horizontal Product Length = 09-10-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-1/8"	905 / 0	1,341 / 0	2,404 / 0	
B1, 5-1/4"	1,482 / 0	1,782 / 0	3,592 / 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	09-10-02	10				00-00-00
1	LOW ROOF	Unf. Lin. (lb/ft)	L	00-00-00	09-10-02	33	30	99		n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-00-00	09-10-02		100			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-10-02	6				n/a
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-07-08	5				n/a
5	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	03-06-06	33	30	99		n/a
6	ROOF	Unf. Lin. (lb/ft)	L	04-00-06	09-10-02	110	100	330		n/a
7	User Load	Conc. Pt. (lbs)	L	03-09-06	03-09-06	455	469	1,366		n/a
8	T12	Conc. Pt. (lbs)	L	07-09-09	07-09-09	743	552	1,388		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	16,620 ft-lbs	23,220 ft-lbs	71.6 %	13	04-08-14
End Shear	7,095 lbs	11,571 lbs	61.3 %	13	08-07-06
Total Load Deflection	L/297 (0.371")	n/a	80.8 %	45	04-11-11
Live Load Deflection	L/421 (0.262")	n/a	85.5 %	61	04-11-11
Max Defl.	0.371"	n/a	37.1 %	45	04-11-11
Span / Depth	11.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Beam	4-1/8" x 3-1/2"	5,735 lbs	74.4 %	32.6 %	Unspecified
B1 Beam	5-1/4" x 3-1/2"	8,356 lbs	85.2 %	37.3 %	Unspecified



1st Floor/Flush Beams\B6(i2072)

Dry | 1 span | No cant.

February 16, 2018 10:07:54

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: BRA...RD

Customer:

Code reports: CCMC 12472-R

File name: S38-3 BAROSSA 3.mmdl

Description: 1st Floor/Flush Beams\B6(i2072)

Specifier:

Designer: CZ

Company:

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.

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

Design based on Dry Service Condition.

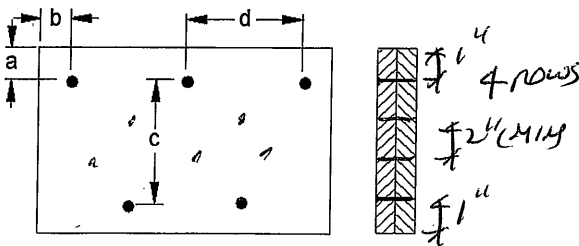
CONFORMS TO OBC 2012

Importance Factor : Normal Part code : Part 9

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.

Connection Diagram



a minimum = 1/2"
b minimum = 3"

c = 3-1/2"
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 Nails

3-1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 9681-13
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report
Build 6215

Dry | 1 span | No cant.

February 16, 2018 14:12:48

Job name:

File name: S38-3 BAROSSA 3ELB.mmdl

Address:

Description: 1st Floor\Flush Beams\B6A(i2256)

City, Province, Postal Code: BRA...RD

Specifier:

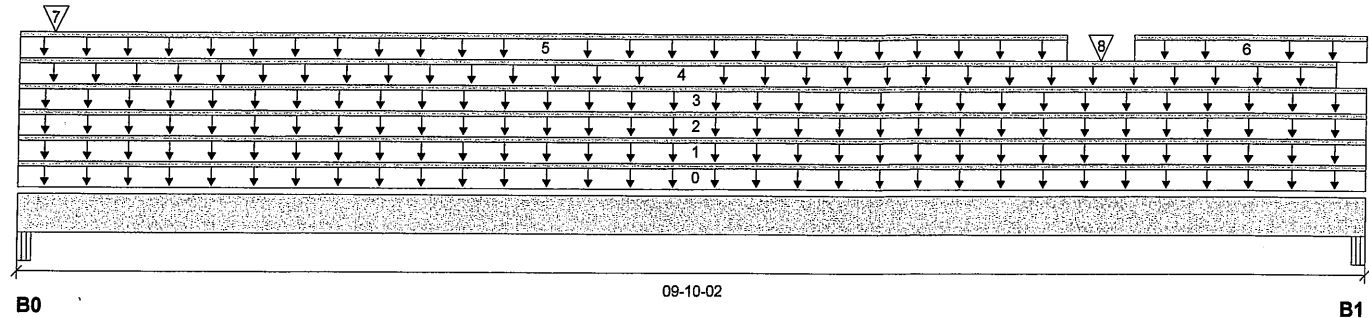
Customer:

Designer: CZ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 09-10-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-1/8"	854 / 0	1,309 / 0	2,404 / 0	
B1, 5-1/4"	1,044 / 0	1,524 / 0	2,967 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-10-02		10			00-00-00
1	LOW ROOF	Unf. Lin. (lb/ft)	L	00-00-00	09-10-02	33	30	99		n/a
2	wall	Unf. Lin. (lb/ft)	L	00-00-00	09-10-02		100			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-10-02	6				n/a
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-07-08	5				n/a
5	roof	Unf. Lin. (lb/ft)	L	00-00-00	07-07-14	88	80	264		n/a
6	roof	Unf. Lin. (lb/ft)	L	08-01-14	09-10-02	88	80	264		n/a
7	MB22	Conc. Pt. (lbs)	L	00-03-00	00-03-00	132	134	396		n/a
8	t12z	Conc. Pt. (lbs)	L	07-10-14	07-10-14	511	536	1,533		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	11,842 ft-lbs	23,220 ft-lbs	51.0 %	13	05-05-00
End Shear	5,781 lbs	11,571 lbs	50.0 %	13	08-07-06
Total Load Deflection	L/412 (0.268")	n/a	58.3 %	45	05-00-01
Live Load Deflection	L/604 (0.182")	n/a	59.6 %	61	05-00-01
Max Defl.	0.268"	n/a	26.8 %	45	05-00-01
Span / Depth	11.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Beam 4-1/8" x 3-1/2"	5,669 lbs	73.5 %	32.2 %	Unspecified
B1	Beam 5-1/4" x 3-1/2"	6,876 lbs	70.1 %	30.7 %	Unspecified



SITE COPY

BC CALC® Design Report
Build 6215

1st Floor\Flush Beams\B6A(i2256)

Dry | 1 span | No cant.

February 16, 2018 14:12:48

Job name:

File name: S38-3 BAROSSA 3ELB.mmdl

Address:

Description: 1st Floor\Flush Beams\B6A(i2256)

City, Province, Postal Code: BRA...RD

Specifier:

Customer:

Designer: CZ

Code reports: CCMC 12472-R

Company:

Notes

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

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

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.

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

CONFORMS TO OBC 2012

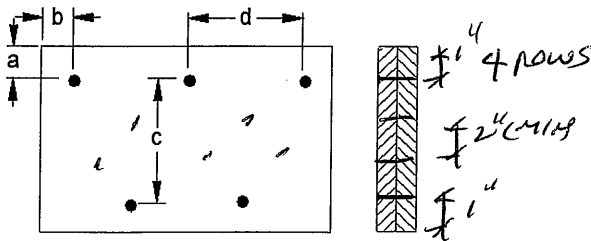
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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.

Connection Diagram



a minimum = 1"
b minimum = 3"

c = 1-1/2"
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 Nails

3-1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 9682-18
STRUCTURAL
COMPONENT ONLY

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 14:00:46

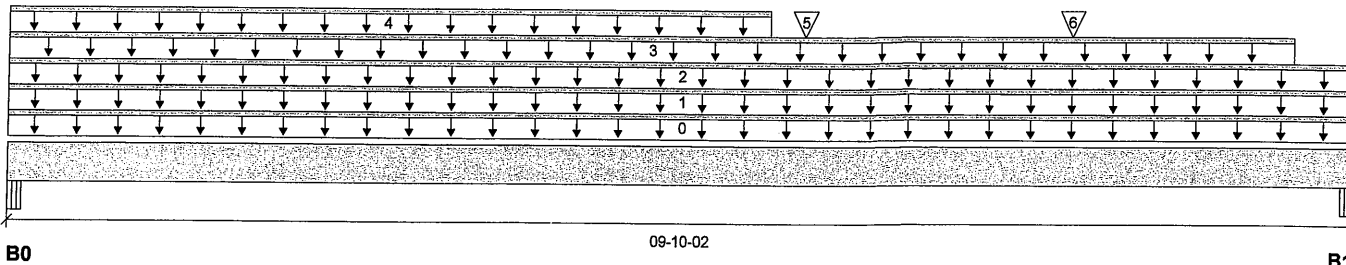
File name: S38-3 BAROSSA 3 EL C-L2.mmdl

Description: 1st Floor\Flush Beams\B6B(i2504)

Specifier:

Designer: CZ

Company:



Total Horizontal Product Length = 09-10-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-1/8"	3,519 / 0	1,839 / 0	1,509 / 0	
B1, 5-1/4"	5,681 / 0	2,567 / 0	2,079 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-10-02		19			00-00-00
1	LOW ROOF	Unf. Lin. (lb/ft)	L	00-00-00	09-10-02	33	30	99		n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-00-00	09-10-02		100			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-04-14	12				n/a
4	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	05-06-09	33	30	99		n/a
5	User Load	Conc. Pt. (lbs)	L	05-09-09	05-09-09	7,264	2,126	1,152		n/a
6	T12	Conc. Pt. (lbs)	L	07-09-09	07-09-09	1,240	574	912		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	38,229 ft-lbs	48,297 ft-lbs	79.2 %	1	05-09-09
End Shear	12,382 lbs	23,142 lbs	53.5 %	1	08-07-06
Total Load Deflection	L/315 (0.349")	n/a	76.1 %	35	05-01-09
Live Load Deflection	L/429 (0.257")	n/a	83.9 %	51	05-01-09
Max Defl.	0.349"	n/a	34.9 %	35	05-01-09
Span / Depth	11.6				

TOP EDGE
LOADED
ONLY.

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Beam 4-1/8" x 7"	8,331 lbs	54.0 %	23.6 %	Unspecified
B1	Beam 5-1/4" x 7"	12,770 lbs	65.1 %	28.5 %	Unspecified



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DWG NO. TAM 9603-18
STRUCTURAL
COMPONENT ONLY

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 14:00:46

File name: S38-3 BAROSSA 3 EL C-L2.mmdl

Description: 1st Floor\Flush Beams\B6B(i2504)

Specifier:

Designer: CZ

Company:

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.

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

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

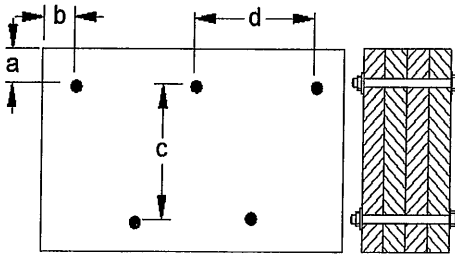
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Beams 7 inches wide will be assumed to be either top-loaded only, or equally loaded from each side.

Bolts are assumed to be Grade A307 or Grade 2 or higher.

Member has no side loads.

Connection Diagram



a minimum = $2\frac{1}{2}$ "
b minimum = $2\frac{1}{2}$ "
c = $4\frac{1}{2}$ "
d = 12 "

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.

Beams 7 inches wide will be assumed to be either top-loaded only, or equally loaded from each side.

Bolts are assumed to be Grade A307 or Grade 2 or higher.

Member has no side loads.

Connectors are: 1/2 in. Staggered Through Bolt

Disclosure

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

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DWG NO. TAM 9603-18
STRUCTURAL COMPONENT ONLY



SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i964)

BC CALC® Design Report



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

September 12, 2017 15:17:55

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

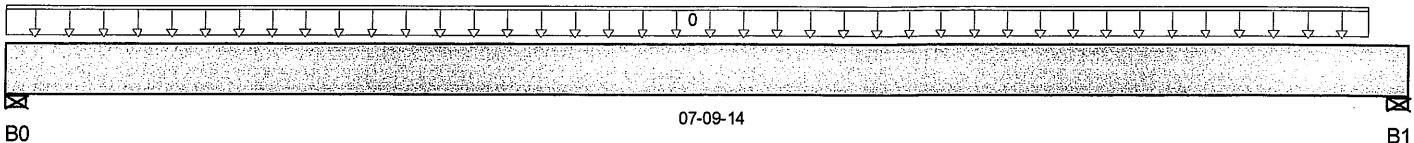
Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i964)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 07-09-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	99 / 0	56 / 0		
B1, 5-1/2"	96 / 0	55 / 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	07-07-04	26	10			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	358 ft-lbs	12,704 ft-lbs	2.8%	1	03-10-06
End Shear	153 lbs	5,785 lbs	2.6%	1	01-01-14
Total Load Defl.	L/999 (0.009")	n/a	n/a	4	03-10-06
Live Load Defl.	L/999 (0.006")	n/a	n/a	5	03-10-06
Max Defl.	0.009"	n/a	n/a	4	03-10-06
Span / Depth	9	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 Wall/Plate	4-3/8" x 1-3/4"	218 lbs	6.7%	2.3%	Unspecified
B1 Wall/Plate	5-1/2" x 1-3/4"	212 lbs	5.2%	1.8%	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



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Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B9(i971)

BC CALC® Design Report



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

September 12, 2017 15:17:55

Build 5033

Job Name:

Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

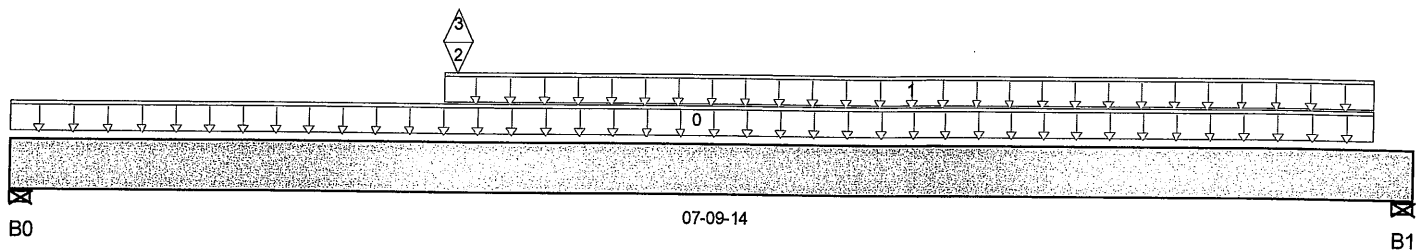
Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i971)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 07-09-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	511 / 1	256 / 0		
B1, 5-1/2"	292 / 1	149 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
0	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-07-04	9	3			n/a
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	02-04-14	07-07-04	19	7			n/a
2	B11(i667)	Conc. Pt. (lbs)	L	02-05-12	02-05-12	629	302			n/a
3	B11(i667)	Conc. Pt. (lbs)	L	02-05-12	02-05-12	-2				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,277 ft-lbs	12,704 ft-lbs	17.9%	1	02-05-12
End Shear	1,053 lbs	5,785 lbs	18.2%	1	01-01-14
Total Load Defl.	L/999 (0.048")	n/a	n/a	6	03-06-13
Live Load Defl.	L/999 (0.032")	n/a	n/a	8	03-06-13
Max Defl.	0.048"	n/a	n/a	6	03-06-13
Span / Depth	9	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"	1,087 lbs	33.2%	11.6%	Unspecified
B1	Wall/Plate 5-1/2" x 1-3/4"	624 lbs	15.2%	5.3%	Unspecified

Notes



SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B9(i971)

BC CALC® Design Report



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

September 12, 2017 15:17:55

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA3.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i971)

Specifier:

Designer:

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.

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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DWG NO. TAM 9605.8
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B10(i1057)

BC CALC® Design Report



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

September 12, 2017 15:17:55

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

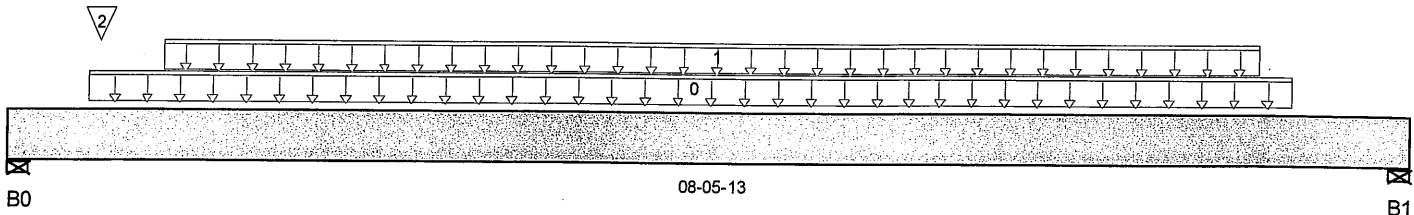
Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i1057)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 08-05-13

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-1/2"	1,658 / 0	706 / 0		
B1, 7-3/4"	1,107 / 0	438 / 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	00-05-12	07-09-08	7	3			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-11-04	07-07-04	304	114			n/a
2	B11(i667)	Conc. Pt. (lbs)	L	00-06-10	00-06-10	684	323			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,674 ft-lbs	12,704 ft-lbs	36.8%	1	04-03-04
End Shear	2,249 lbs	5,785 lbs	38.9%	1	01-02-00
Total Load Defl.	L/679 (0.134")	0.379"	35.4%	6	04-01-04
Live Load Defl.	L/999 (0.096")	n/a	n/a	8	04-01-04
Max Defl.	0.134"	1"	13.4%	6	04-01-04
Span / Depth	9.6	n/a	n/a		00-00-00

Disclosure

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Bearing Supports

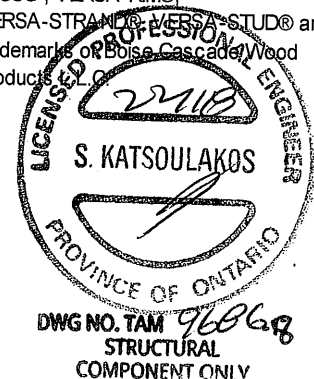
	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4-1/2" x 1-3/4"	3,369 lbs	99.8%	35%	Unspecified
B1 Wall/Plate	7-3/4" x 1-3/4"	2,207 lbs	38%	13.3%	Unspecified

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

SITE COPY



BC CALC® Design Report



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

September 12, 2017 15:17:55

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

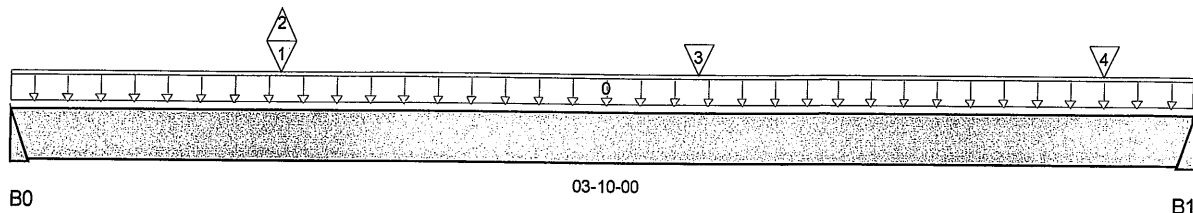
Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i667)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 03-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	635 / 2	305 / 0		
B1	679 / 0	321 / 0		

Load Summary

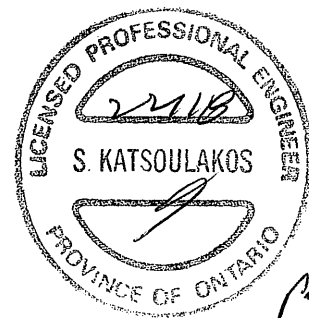
Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	0	Unf. Lin. (lb/ft)	L	00-00-00	03-10-00	240	120			n/a
1	J5(i1102)	Conc. Pt. (lbs)	L	00-10-08	00-10-08	118	44			n/a
2	J5(i1102)	Conc. Pt. (lbs)	L	00-10-08	00-10-08	-2				n/a
3	J4(i1238)	Conc. Pt. (lbs)	L	02-02-08	02-02-08	185	69			n/a
4	J4(i1100)	Conc. Pt. (lbs)	L	03-06-08	03-06-08	91	34			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	02-01-09
End Shear	815 lbs	5,785 lbs	14.1%	1	00-11-08
Total Load Defl.	L/999 (0.008")	n/a	n/a	6	01-11-03
Live Load Defl.	L/999 (0.006")	n/a	n/a	8	01-11-03
Max Defl.	0.008"	n/a	n/a	6	01-11-03
Span / Depth	4.6	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"	1,334 lbs	n/a	31.2%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,419 lbs	n/a	33.2%	HUS1.81/10

Notes




Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B11(i667)

BC CALC® Design Report



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

September 12, 2017 15:17:55

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i667

Specifier:

Designer:

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

CONFORMS TO OBC 2012**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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Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

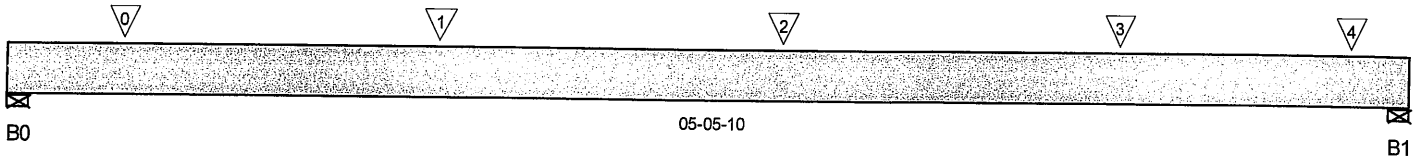
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B12I

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 05-05-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/8"	658 / 0	272 / 0		
B1, 5-1/2"	2,473 / 0	1,023 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	J2(i1116)	Conc. Pt. (lbs)	L	00-05-06	00-05-06	185	69			n/a
1	J2(i1115)	Conc. Pt. (lbs)	L	01-08-02	01-08-02	318	119			n/a
2	J2(i1114)	Conc. Pt. (lbs)	L	03-00-02	03-00-02	331	124			n/a
3	J2(i1113)	Conc. Pt. (lbs)	L	04-04-02	04-04-02	403	151			n/a
4	B14(i1048)	Conc. Pt. (lbs)	L	05-02-14	05-02-14	1,825	754			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,575 ft-lbs	25,408 ft-lbs	6.2%	1	03-00-02
End Shear	1,169 lbs	11,571 lbs	10.1%	1	04-02-10
Total Load Defl.	L/999 (0.008")	n/a	n/a	4	02-09-03
Live Load Defl.	L/999 (0.006")	n/a	n/a	5	02-09-03
Max Defl.	0.008"	n/a	n/a	4	02-09-03
Span / Depth	5.9	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/8" x 3-1/2"	1,327 lbs	11.4%	6.1%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	4,989 lbs	39.9%	21.2%	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 unbraced length of Top: 00-06-12, Bottom: 00-06-12.
 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





Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

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

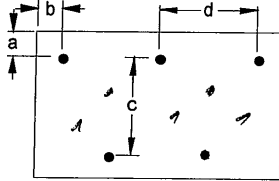
Specifier:

Designer:

Company:

Misc:

Connection Diagram



4 new
4 2" C/L
1"

a minimum = 2" c = 5-1/2"
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 Nails

3-1/2" ARDOX SPIRAL

Disclosure

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Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

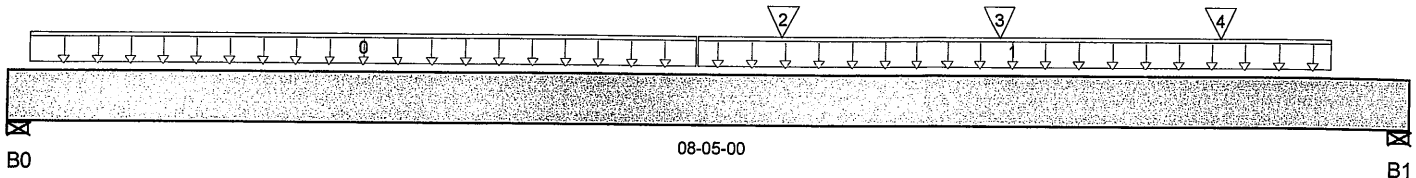
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B13I

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 08-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	2,389 / 0	937 / 0		
B1, 4"	2,124 / 0	838 / 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	00-01-08	04-01-08	573	215			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	04-01-08	07-11-08	310	116			n/a
2	J2(i1135)	Conc. Pt. (lbs)	L	04-07-08	04-07-08	314	118			n/a
3	J2(i1273)	Conc. Pt. (lbs)	L	05-11-08	05-11-08	359	135			n/a
4	J2(i1133)	Conc. Pt. (lbs)	L	07-03-08	07-03-08	359	135			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	8,902 ft-lbs	25,408 ft-lbs	35%	1	04-07-08
End Shear	4,219 lbs	11,571 lbs	36.5%	1	07-03-08
Total Load Defl.	L/683 (0.138")	0.394"	35.1%	4	04-03-00
Live Load Defl.	L/999 (0.099")	n/a	n/a	5	04-03-00
Max Defl.	0.138"	1"	13.8%	4	04-03-00
Span / Depth	9.9	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"	4,756 lbs	52.3%	27.8%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	4,233 lbs	46.5%	24.8%	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: 00-04-02, Bottom: 00-04-02.
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





Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA3.mmdl

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

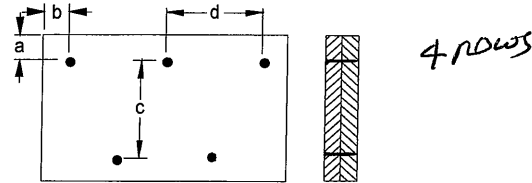
Specifier:

Designer:

Company:

Misc:

Connection Diagram



a minimum = 1" c = 1-1/2"
b minimum = 3" 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.

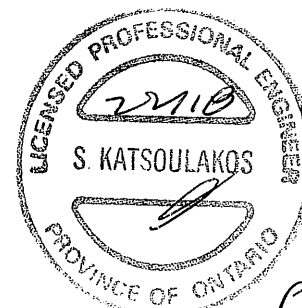
Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

Disclosure

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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BC CALC® Design Report



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

September 13, 2017 10:38:38

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

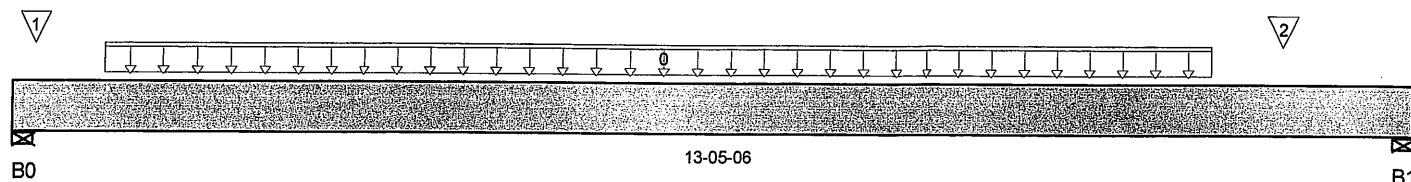
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B14I

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 13-05-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	1,846 / 0	756 / 0		
B1, 4-3/8"	1,623 / 0	673 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-08	11-06-08	251	94			n/a
1	J2(i1540)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	281	106			n/a
2	J2(i1500)	Conc. Pt. (lbs)	L	12-02-08	12-02-08	306	115			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	11,122 ft-lbs	25,408 ft-lbs	43.8%	1	06-10-08
End Shear	3,252 lbs	11,571 lbs	28.1%	1	12-03-08
Total Load Defl.	L/335 (0.462")	0.644"	71.7%	4	06-09-04
Live Load Defl.	L/472 (0.327")	0.429"	76.3%	5	06-09-04
Max Defl.	0.462"	1"	46.2%	4	06-09-04
Span / Depth	16.3	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"	3,714 lbs	32.7%	21.7%	Unspecified
B1 Wall/Plate	4-3/8" x 3-1/2"	3,275 lbs	26.3%	17.5%	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: 00-01-15, Bottom: 00-01-15.

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



BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3.mmdl

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

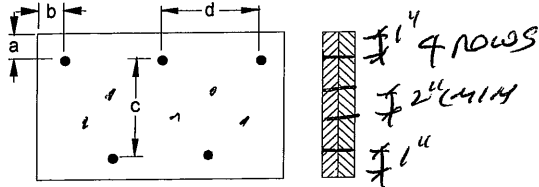
Specifier:

Designer: CZ

Company:

Msc:

Connection Diagram



a minimum = 1" c = 6-1/2"
b minimum = 3" d = 12"

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.

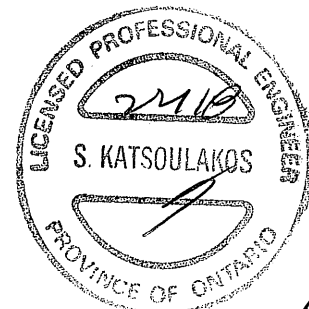
Connectors are: 16d ^{3/8"} Nails

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: S38-3 BAROSSA 3ELB-SUNKEN.mmdl

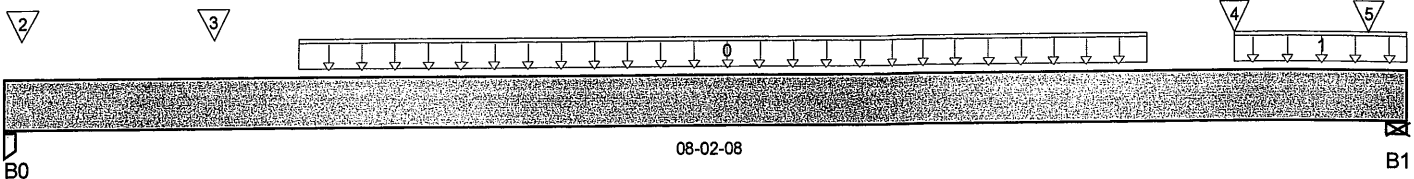
Description: Designs\Flush Beams\Basement\Flush Beams\B15AL(i21

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 08-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	760 / 0	400 / 0		
B1, 5-1/2"	711 / 0	400 / 0		

Load Summary

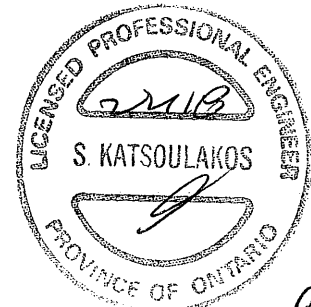
Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	01-08-08	06-08-08	189	95			n/a
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	07-02-08	08-02-08	18	9			n/a
2	J3(i1946)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	114	57			n/a
3	J3(i1949)	Conc. Pt. (lbs)	L	01-02-08	01-02-08	209	104			n/a
4	J3(i2130)	Conc. Pt. (lbs)	L	07-02-08	07-02-08	180	90			n/a
5	E6(i220)	Conc. Pt. (lbs)	L	07-11-12	07-11-12		26			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,971 ft-lbs	12,704 ft-lbs	23.4%	1	04-02-08
End Shear	1,391 lbs	5,785 lbs	24%	1	01-01-00
Total Load Defl.	L/999 (0.086")	n/a	n/a	4	04-00-04
Live Load Defl.	L/999 (0.056")	n/a	n/a	5	04-00-04
Max Defl.	0.086"	n/a	n/a	4	04-00-04
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"	1,640 lbs	33%	21.9%	Unspecified
B1 Wall/Plate	5-1/2" x 1-3/4"	1,567 lbs	11.5%	13.3%	Unspecified

Notes


P6 1/2

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-3 BAROSSA 3ELB-SUNKEN.mmdl

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

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**

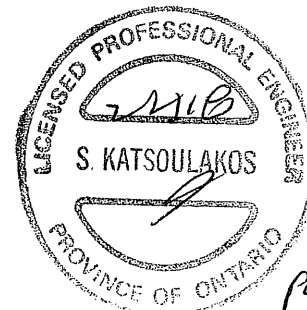
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

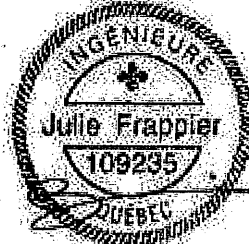
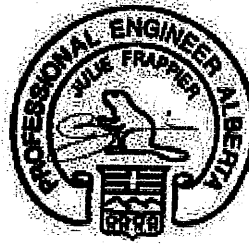
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PCH



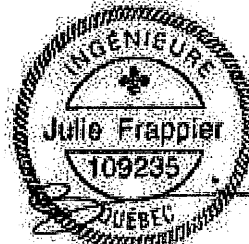
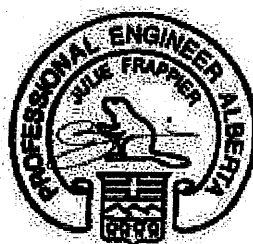
Maximum Floor Spans

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'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

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



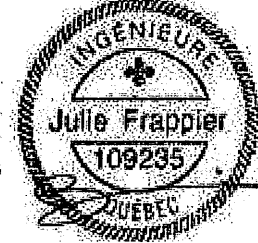
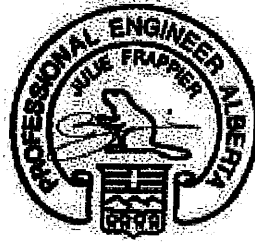
Maximum Floor Spans

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"
14"	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-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"
16"	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"
	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"
	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"

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

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



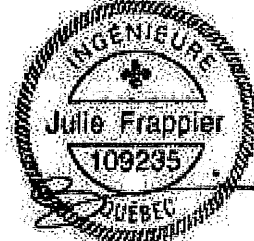
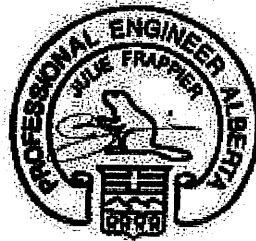
Maximum Floor Spans

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

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

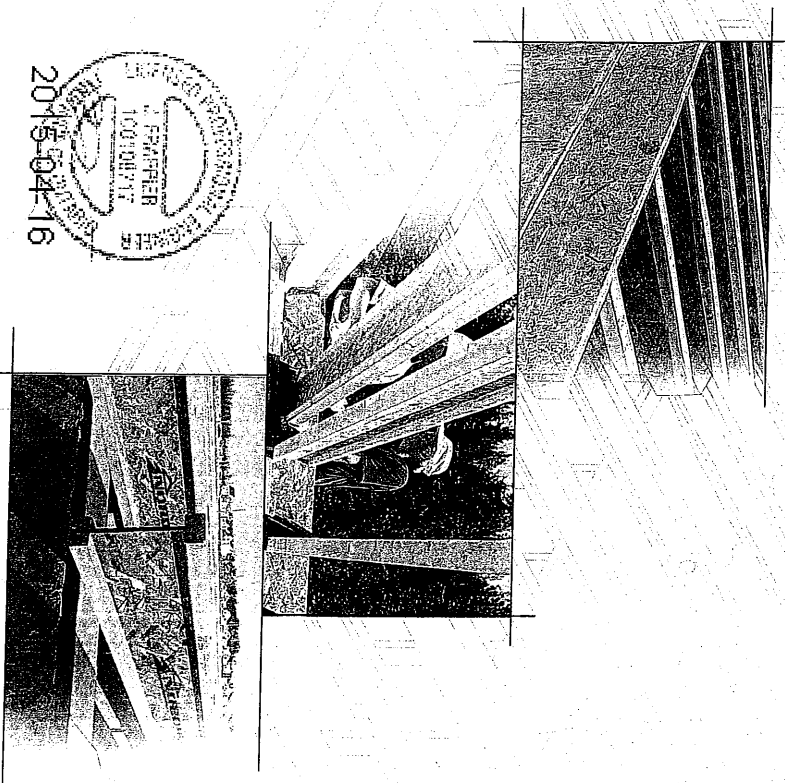
- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load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

NORDIC

ENGINEERED WOOD

INSTALLATION GUIDE

FOR RESIDENTIAL FLOORS



2015-04-16

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SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

WARNING

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

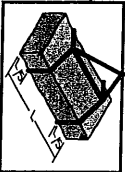
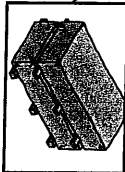
Avoid Accidents by Following these Important Guidelines:

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

- Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGS-7.1.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
- SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

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

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
12"	NI-20	6.5'	8.5'	10.5'	12.5'	6.5'	8.5'	10.5'	12.5'
16"	NI-40	8.5'	11.5'	14.5'	17.5'	8.5'	11.5'	14.5'	17.5'
16"	NI-60	10.5'	14.5'	18.5'	22.5'	10.5'	14.5'	18.5'	22.5'
16"	NI-70	12.5'	17.5'	22.5'	27.5'	12.5'	17.5'	22.5'	27.5'
16"	NI-80	14.5'	20.5'	26.5'	32.5'	14.5'	20.5'	26.5'	32.5'
16"	NI-90	16.5'	23.5'	30.5'	37.5'	16.5'	23.5'	30.5'	37.5'
16"	NI-90x	18.5'	26.5'	34.5'	42.5'	18.5'	26.5'	34.5'	42.5'
16"	NI-100	20.5'	29.5'	38.5'	47.5'	20.5'	29.5'	38.5'	47.5'
16"	NI-110	22.5'	32.5'	42.5'	52.5'	22.5'	32.5'	42.5'	52.5'
16"	NI-120	24.5'	35.5'	46.5'	57.5'	24.5'	35.5'	46.5'	57.5'
16"	NI-130	26.5'	38.5'	50.5'	62.5'	26.5'	38.5'	50.5'	62.5'
16"	NI-140	28.5'	41.5'	54.5'	67.5'	28.5'	41.5'	54.5'	67.5'
16"	NI-150	30.5'	44.5'	58.5'	72.5'	30.5'	44.5'	58.5'	72.5'
16"	NI-160	32.5'	47.5'	62.5'	77.5'	32.5'	47.5'	62.5'	77.5'
16"	NI-170	34.5'	50.5'	66.5'	82.5'	34.5'	50.5'	66.5'	82.5'
16"	NI-180	36.5'	53.5'	70.5'	87.5'	36.5'	53.5'	70.5'	87.5'
16"	NI-190	38.5'	56.5'	74.5'	92.5'	38.5'	56.5'	74.5'	92.5'
16"	NI-200	40.5'	59.5'	78.5'	97.5'	40.5'	59.5'	78.5'	97.5'
16"	NI-210	42.5'	62.5'	82.5'	102.5'	42.5'	62.5'	82.5'	102.5'
16"	NI-220	44.5'	65.5'	86.5'	107.5'	44.5'	65.5'	86.5'	107.5'
16"	NI-230	46.5'	68.5'	90.5'	112.5'	46.5'	68.5'	90.5'	112.5'
16"	NI-240	48.5'	71.5'	94.5'	117.5'	48.5'	71.5'	94.5'	117.5'
16"	NI-250	50.5'	74.5'	98.5'	122.5'	50.5'	74.5'	98.5'	122.5'
16"	NI-260	52.5'	77.5'	102.5'	127.5'	52.5'	77.5'	102.5'	127.5'
16"	NI-270	54.5'	80.5'	106.5'	132.5'	54.5'	80.5'	106.5'	132.5'
16"	NI-280	56.5'	83.5'	110.5'	137.5'	56.5'	83.5'	110.5'	137.5'
16"	NI-290	58.5'	86.5'	114.5'	142.5'	58.5'	86.5'	114.5'	142.5'
16"	NI-300	60.5'	89.5'	118.5'	147.5'	60.5'	89.5'	118.5'	147.5'
16"	NI-310	62.5'	92.5'	122.5'	152.5'	62.5'	92.5'	122.5'	152.5'
16"	NI-320	64.5'	95.5'	126.5'	157.5'	64.5'	95.5'	126.5'	157.5'
16"	NI-330	66.5'	98.5'	130.5'	162.5'	66.5'	98.5'	130.5'	162.5'
16"	NI-340	68.5'	101.5'	134.5'	167.5'	68.5'	101.5'	134.5'	167.5'
16"	NI-350	70.5'	104.5'	138.5'	172.5'	70.5'	104.5'	138.5'	172.5'
16"	NI-360	72.5'	107.5'	142.5'	177.5'	72.5'	107.5'	142.5'	177.5'
16"	NI-370	74.5'	110.5'	146.5'	182.5'	74.5'	110.5'	146.5'	182.5'
16"	NI-380	76.5'	113.5'	150.5'	187.5'	76.5'	113.5'	150.5'	187.5'
16"	NI-390	78.5'	116.5'	154.5'	192.5'	78.5'	116.5'	154.5'	192.5'
16"	NI-400	80.5'	119.5'	158.5'	197.5'	80.5'	119.5'	158.5'	197.5'
16"	NI-410	82.5'	122.5'	162.5'	202.5'	82.5'	122.5'	162.5'	202.5'
16"	NI-420	84.5'	125.5'	166.5'	207.5'	84.5'	125.5'	166.5'	207.5'
16"	NI-430	86.5'	128.5'	170.5'	212.5'	86.5'	128.5'	170.5'	212.5'
16"	NI-440	88.5'	131.5'	174.5'	217.5'	88.5'	131.5'	174.5'	217.5'
16"	NI-450	90.5'	134.5'	178.5'	222.5'	90.5'	134.5'	178.5'	222.5'
16"	NI-460	92.5'	137.5'	182.5'	227.5'	92.5'	137.5'	182.5'	227.5'
16"	NI-470	94.5'	140.5'	186.5'	232.5'	94.5'	140.5'	186.5'	232.5'
16"	NI-480	96.5'	143.5'	190.5'	237.5'	96.5'	143.5'	190.5'	237.5'
16"	NI-490	98.5'	146.5'	194.5'	242.5'	98.5'	146.5'	194.5'	242.5'
16"	NI-500	100.5'	149.5'	198.5'	247.5'	100.5'	149.5'	198.5'	247.5'
16"	NI-510	102.5'	152.5'	202.5'	252.5'	102.5'	152.5'	202.5'	252.5'
16"	NI-520	104.5'	155.5'	206.5'	257.5'	104.5'	155.5'	206.5'	257.5'
16"	NI-530	106.5'	158.5'	210.5'	262.5'	106.5'	158.5'	210.5'	262.5'
16"	NI-540	108.5'	161.5'	214.5'	267.5'	108.5'	161.5'	214.5'	267.5'
16"	NI-550	110.5'	164.5'	218.5'	272.5'	110.5'	164.5'	218.5'	272.5'
16"	NI-560	112.5'	167.5'	222.5'	277.5'	112.5'	167.5'	222.5'	277.5'
16"	NI-570	114.5'	170.5'	226.5'	282.5'	114.5'	170.5'	226.5'	282.5'
16"	NI-580	116.5'	173.5'	230.5'	287.5'	116.5'	173.5'	230.5'	287.5'
16"	NI-590	118.5'	176.5'	234.5'	292.5'	118.5'	176.5'	234.5'	292.5'
16"	NI-600	120.5'	179.5'	238.5'	297.5'	120.5'	179.5'	238.5'	297.5'
16"	NI-610	122.5'	182.5'	242.5'	302.5'	122.5'	182.5'	242.5'	302.5'
16"	NI-620	124.5'	185.5'	246.5'	307.5'	124.5'	185.5'	246.5'	307.5'
16"	NI-630	126.5'	188.5'	250.5'	312.5'	126.5'	188.5'	250.5'	312.5'
16"	NI-640	128.5'	191.5'	254.5'	317.5'	128.5'	191.5'	254.5'	317.5'
16"	NI-650	130.5'	194.5'	258.5'	322.5'	130.5'	194.5'	258.5'	322.5'
16"	NI-660	132.5'	197.5'	262.5'	327.5'	132.5'	197.5'	262.5'	327.5'
16"	NI-670	134.5'	200.5'	266.5'	332.5'	134.5'	200.5'	266.5'	332.5'
16"	NI-680	136.5'	203.5'	270.5'	337.5'	136.5'	203.5'	270.5'	337.5'
16"	NI-690	138.5'	206.5'	274.5'	342.5'	138.5'	206.5'	274.5'	342.5'
16"	NI-700	140.5'	209.5'	278.5'	347.5'	140.5'	209.5'	278.5'	347.5'
16"	NI-710	142.5'	212.5'	282.5'	352.5'	142.5'	212.5'	282.5'	352.5'
16"	NI-720	144.5'	215.5'	286.5'	357.5'	144.5'	215.5'	286.5'	357.5'
16"	NI-730	146.5'	218.5'	290.5'	362.5'	146.5'	218.5'	290.5'	362.5'
16"	NI-740	148.5'	221.5'	294.5'	367.5'	148.5'	221.5'	294.5'	367.5'
16"	NI-750	150.5'	224.5'	298.5'	372.5'	150.5'	224.5'	298.5'	372.5'
16"	NI-760	152.5'	227.5'	302.5'	377.5'	152.5'	227.5'	302.5'	377.5'
16"	NI-770	154.5'	230.5'	306.5'	382.5'	154.5'	230.5'	306.5'	382.5'
16"	NI-780	156.5'	233.5'	310.5'	387.5'	156.5'	233.5'	310.5'	387.5'
16"	NI-790	158.5'	236.5'	314.5'	392.5'	158.5'	236.5'	314.5'	392.5'
16"	NI-800	160.5'	239.5'	318.5'	397.5'	160.5'	239.5'	318.5'	397.5'
16"	NI-810	162.5'	242.5'	322.5'	402.5'	162.5'	242.5'	322.5'	402.5'
16"	NI-820	164.5'	245.5'	326.5'	407.5'	164.5'	245.5'	326.5'	407.5'
16"	NI-830	166.5'	248.5'	330.5'	412.5'	166.5'	248.5'	330.5'	412.5'
16"	NI-840	168.5'	251.5'	334.5'	417.5'	168.5'	251.5'	334.5'	417.5'
16"	NI-850	170.5'	254.5'	338.5'	422.5'	170.5'	254.5'	338.5'	422.5'
16"	NI-860	172.5'	257.5'	342.5'	427.5'	172.5'	257.5'	342.5'	427.5'
16"	NI-870	174.5'	260.5'	346.5'	432.5'	174.5'	260.5'	346.5'	432.5'
16"	NI-880	176.5'	263.5'	350.5'	437.5'	176.5'	263.5'	350.5'	437.5'
16"	NI-890	178.5'	266.5'	354.5'	442.5'	178.5'	266.5'	354.5'	442.5'
16"	NI-900	180.5'	269.5'	358.5'	447.5'	180.5'	269.5'	358.5'	447.5'
16"	NI-910	182.5'	272.5'	362.5'	452.5'	182.5'	272.5'	362.5'	452.5'
16"	NI-920	184.5'	275.5'	366.5'	457.5'	184.5'	275.5'	366.5'	457.5'
16"	NI-930	186.5'	278.5'	370.5'	462.5'	186.5'	278.5'	370.5'	462.5'
16"	NI-940	188.5'	281.5'	374.5'	467.5'	188.5'	281.5'	374.5'	467.5'
16"	NI-950	190.5'	284.5'	378.5'	472.5'	190.5'	284.5'	378.5'	472.5'
16"	NI-960	192.5'	287.5'	382.5'	477.5'	192.5'	287.5'	382.5'	477.5'
16"	NI-970	194.5'	290.5'	386.5'	482.5'	194.5'	290.5'	386.5'	482.5'
16"	NI-980	196.5'	293.5'	390.5'	487.5'	196.5'	293.5'	390.5'	487.5'
16"	NI-990	198.5'	296.5'	394.5'	492.5'	198.5'	296.5'	394.5'	492.5'
16"	NI-1000	200.5'	299.5'	398.5'	497.5'	200.5'	299.5'	398.5'	497.5'
16"	NI-1010	202.5'	302.5'	402.5'	502.5'	202.5'	302.5'	402.5'	502.5'
16"	NI-1020	204.5'	305.5'	406.5'	507.5'	204.5'	305.5'	406.5'	507.5'
16"	NI-1030	206.5'	308.5'	410.5'	512.5'	206.5'	308.5'	410.5'	512.5'
16"	NI-1040	208.5'	311.5'	414.5'	517.5'	208.5'	311.5'	414.5'	517.5'
16"	NI-1050	210.5'	314.5'	418.5'	522.5'	210.5'	314.5'	418.5'	522.5'
16"	NI-1060	212.5'	317.5'	422.5'	527.5'	212.5'	317.5'	422.5'	527.5'
16"	NI-1070	214.5'	320.5'	426.5'	532.5'	214.5'	320.5'	426.5'	532.5'
16"	NI-1080	216.5'	323.5'	430.5'	537.5'	216.5'	323.5'	430.5'	537.5'
16"	NI-1090	218.5'	326.5'	434.5'	542.5'	218.5'	326.5'	434.5'	542.5'
16"	NI-1100	220.5'	329.5'	438.5'	547.5'	220.5'	329.5'	438.5'	547.5'
16"	NI-1110	222.5'	332.5'	442.5'	552.5'	222.5'	332.5'	442.5'	552.5'
16"	NI-1120	224.5'	335.5'	446.5'	557.5'	224.5'	335.5'	446.5'	557.5'
16"	NI-1130	226.5'	338.5'	450.5'	562.5'	226.5'	338.5'	450.5'	562.5'
16"	NI-1140	228.5'	341.5'	454.5'	567.5'	228.5'	341.5'	454.5'	567.5'
16"	NI-1150	230.5'	344.5'	458.5'	572.5'	230.5'	344.5'	458.5'	572.5'
16"	NI-1160	232.5'	347.5'	462.5'	577.5'	232.5'	347.5'	462.5'	577.5'
16"	NI-1170	234.5'	350.5'	466.5'	582.5'	234.5'	350.5'	466.5'	582.5'
16"	NI-1180	236.5'	353.5'	470.5'	587.5'	236.5'	353.5'	470.5'	587.5'
16"	NI-1190	238.5'	356.5'	474.5'	592.5'	238.5'	356.5'	474.5'	592.5'
16"	NI-1200	240.5'	359.5'	478.5'	597.5'	240.5'	359.5'	478.5'	597.5'
16"	NI-1210	242.5'	362.5'	482.5'	602.5'	242.5'	362.5'	482.5'	602.5'
16"	NI-1220	244.5'	365.5'	486.5'	607.5'	244.5'	365.5'	486.5'	607.5'
16"	NI-1230	246.5'	368.5'	490.5'	612.5'	246.5'	368.5'	490.5'	612.5'
16"	NI-1240	248.5'	371.5'	494.5'	617.5'	248.5'	371.5'	494.5'	617.5'
16"	NI-1250	250.5'	374.5'	498.5'	622.5'	250.5'	374.5'	498.5'	

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, structure 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.

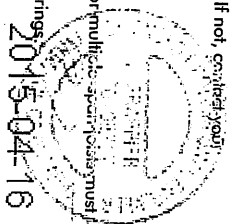
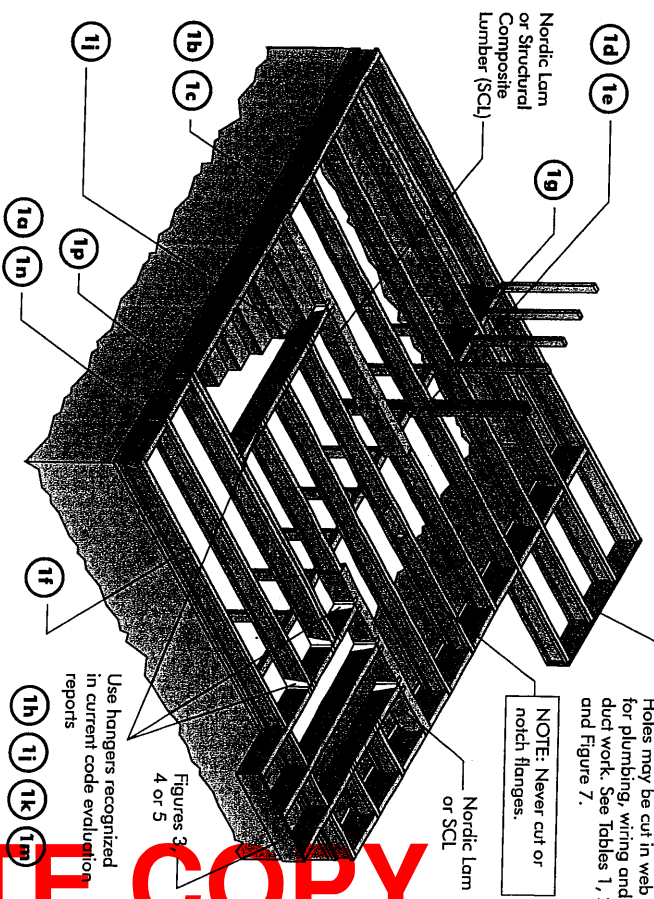


FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

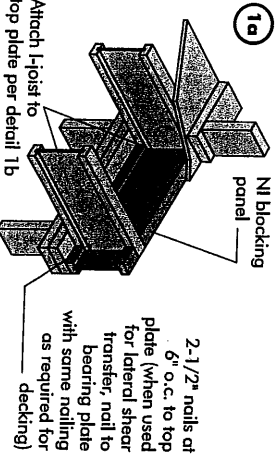
Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.



Figures 3, 4 or 5
Holes may be cut in web for plumbing, wiring and duct work. See Tables 1, 2 and Figure 7.
NOTE: Never cut or notch flanges.

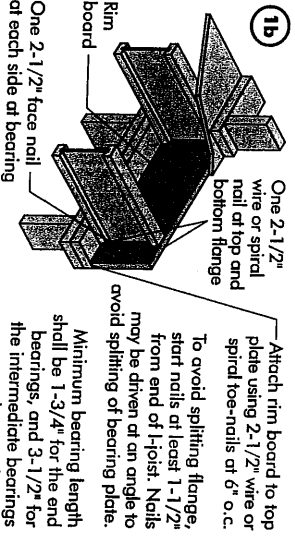
Use hangers recognized in current code evaluation reports
Figures 3, 4 or 5

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



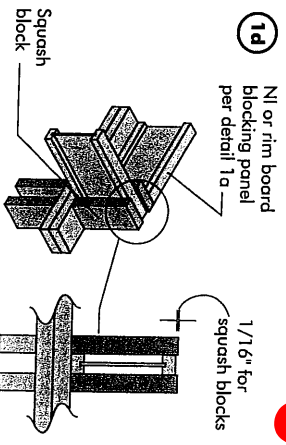
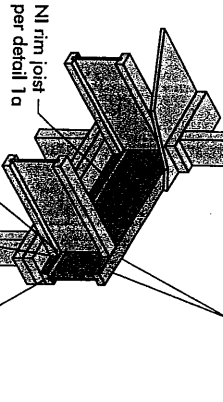
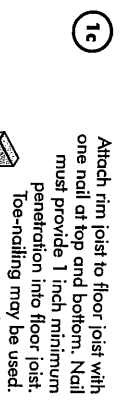
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
Nl Joists	3,300

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



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

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

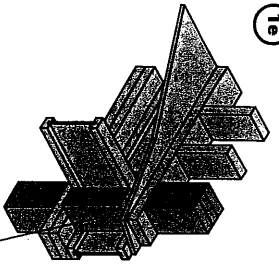


Pair of Squash Blocks	Maximum Factored Vertical Load per Pair of Squash Blocks (lbs)
2x Lumber	3-1/2" wide: 5,500 5-1/2" wide: 8,500
1-1/8" Rim Board Plus	4,300

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

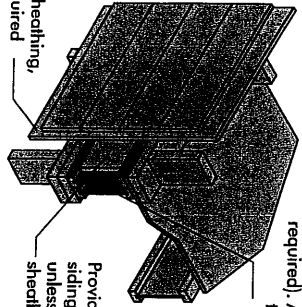
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1e



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

1f



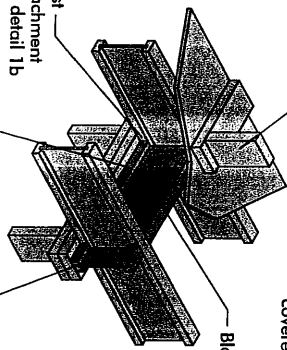
Use single I-joist for loads up to 3,300 plf, double I-joists for loads up to 6,600 plf (filler block not required). Attach I-joist to top plate using 2-1/2" nails at 6" o.c.

Provide backer for siding attachment unless nailable sheathing is used.

Wall sheathing, as required.

Rim board may be used in lieu of I-joists. Backer is not required when rim board is used. Bracing per code shall be carried to the foundation.

1g



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

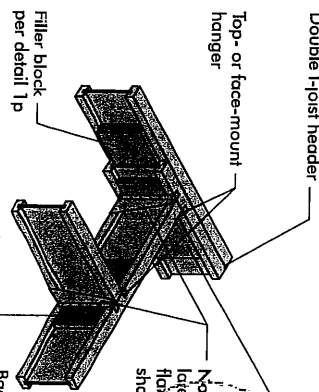
Blocking required over all interior supports under load-bearing walls or when floor joists are not continuous over support

Joist attachment per detail 1b

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

NI blocking panel per detail 1a

1h



Backer block (use if hanger load exceeds 360 lbs)

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

Double I-joist header

Top- or face-mount hanger

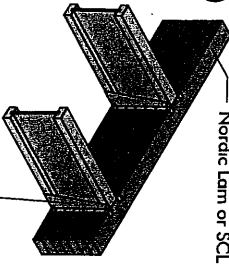
Filler block per detail 1p

Backer block required [both sides for face-mount hangers]

Note: Unless hanger sides laterally support the top flange, blocking stiffeners shall be used.

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1i

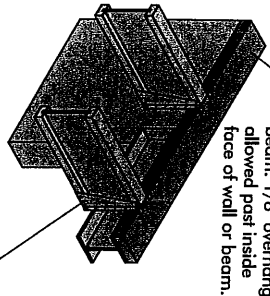


Nordic Lam or SCL

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

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

1k

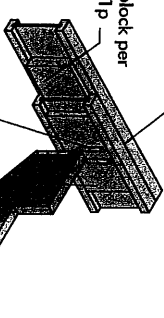


2x plate flush with inside face of wall or beam, 1/8" overhang allowed post inside face of wall or beam.

Top-mount hanger installed per manufacturer's recommendations

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

1m



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

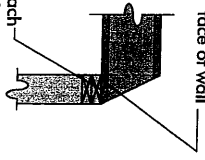
Filler block per detail 1p

Install hanger per manufacturer's recommendations

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

Maximum support capacity = 1,620 lbs.

1n

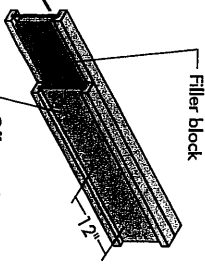


Do not bevel-cut joist beyond inside face of wall

Attach I-joist per detail 1b

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

1p



Filler block

Offset nails from opposite face by 6"

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

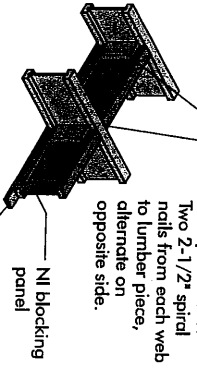
Notes:

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 11-7/8" x 14"	2-1/8" x 6" x 2-1/8" x 8" x 2-1/8" x 10"
3-1/2" x 1-1/2"	9-1/2" x 11-7/8" x 14"	3" x 6" x 3" x 8" x 3" x 10"
3-1/2" x 2"	11-7/8" x 14" x 16"	3" x 7" x 3" x 9" x 3" x 11"

1r

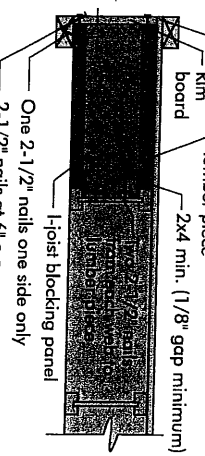


Lumber 2x4 min., extend block to face of adjacent web. Two 2-1/2" spiral nails from each web to lumber piece, alternate on opposite side.

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

NI blocking panel

1s



One 2-1/2" nails at top and bottom flange

Two 2-1/2" nails from each web to 2x4 min. (1/8" gap minimum)

I-joist blocking panel

Rim board

Lumber piece

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

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.

* Minimum grade for backer block material shall be S-PF No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-C325 or CAN/CSA-O437 Standard.

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

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

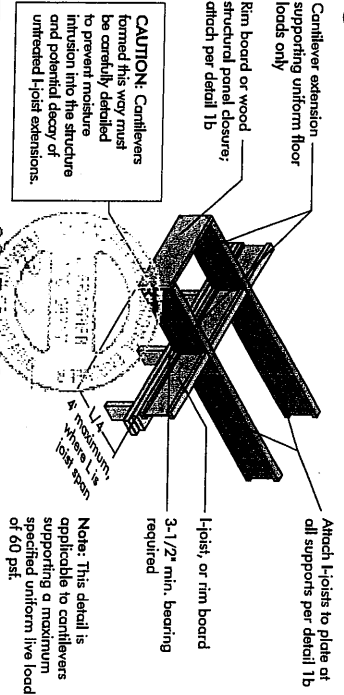
BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting)

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

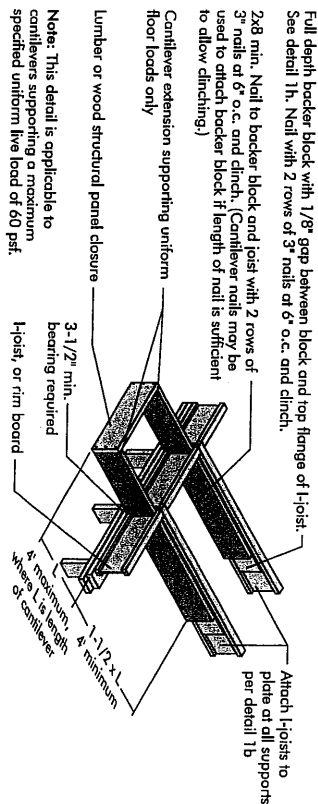
SITE COPY

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

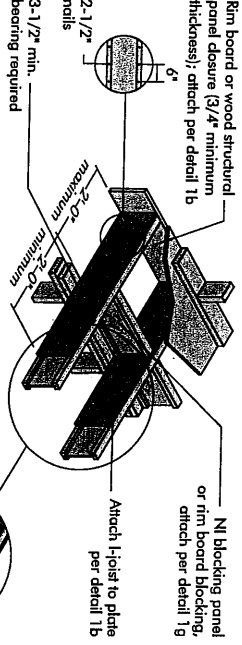


3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE

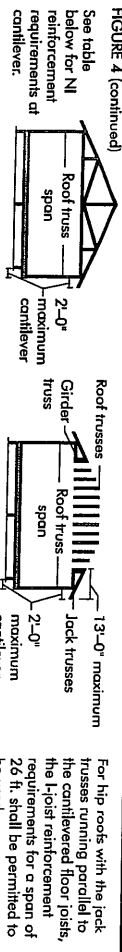
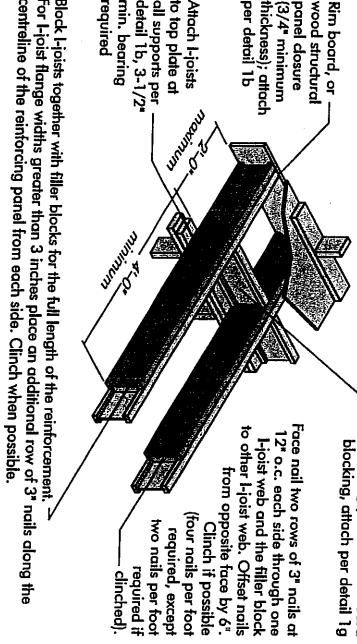


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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

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

4b Alternate Method 2 — DOUBLE I-JOIST



CANTILEVER REINFORCEMENT METHODS ALLOWED

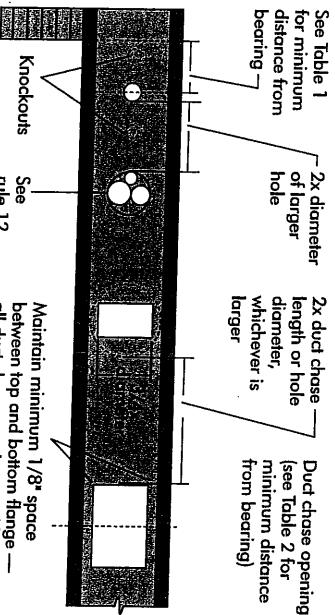
JOIST DEPTH (in.)	TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)						
		LL = 30 psf, DL = 15 psf JOIST SPACING (in.)		LL = 40 psf, DL = 15 psf JOIST SPACING (in.)				
24	12	16	19.2	24	12	16	19.2	24
30	12	16	19.2	24	12	16	19.2	24
36	12	16	19.2	24	12	16	19.2	24
42	12	16	19.2	24	12	16	19.2	24
48	12	16	19.2	24	12	16	19.2	24
54	12	16	19.2	24	12	16	19.2	24
60	12	16	19.2	24	12	16	19.2	24
66	12	16	19.2	24	12	16	19.2	24
72	12	16	19.2	24	12	16	19.2	24
78	12	16	19.2	24	12	16	19.2	24
84	12	16	19.2	24	12	16	19.2	24
90	12	16	19.2	24	12	16	19.2	24
96	12	16	19.2	24	12	16	19.2	24
102	12	16	19.2	24	12	16	19.2	24
108	12	16	19.2	24	12	16	19.2	24
114	12	16	19.2	24	12	16	19.2	24
120	12	16	19.2	24	12	16	19.2	24
126	12	16	19.2	24	12	16	19.2	24
132	12	16	19.2	24	12	16	19.2	24
138	12	16	19.2	24	12	16	19.2	24
144	12	16	19.2	24	12	16	19.2	24
150	12	16	19.2	24	12	16	19.2	24
156	12	16	19.2	24	12	16	19.2	24
162	12	16	19.2	24	12	16	19.2	24
168	12	16	19.2	24	12	16	19.2	24
174	12	16	19.2	24	12	16	19.2	24
180	12	16	19.2	24	12	16	19.2	24
186	12	16	19.2	24	12	16	19.2	24
192	12	16	19.2	24	12	16	19.2	24
198	12	16	19.2	24	12	16	19.2	24
204	12	16	19.2	24	12	16	19.2	24
210	12	16	19.2	24	12	16	19.2	24
216	12	16	19.2	24	12	16	19.2	24
222	12	16	19.2	24	12	16	19.2	24
228	12	16	19.2	24	12	16	19.2	24
234	12	16	19.2	24	12	16	19.2	24
240	12	16	19.2	24	12	16	19.2	24
246	12	16	19.2	24	12	16	19.2	24
252	12	16	19.2	24	12	16	19.2	24
258	12	16	19.2	24	12	16	19.2	24
264	12	16	19.2	24	12	16	19.2	24
270	12	16	19.2	24	12	16	19.2	24
276	12	16	19.2	24	12	16	19.2	24
282	12	16	19.2	24	12	16	19.2	24
288	12	16	19.2	24	12	16	19.2	24
294	12	16	19.2	24	12	16	19.2	24
300	12	16	19.2	24	12	16	19.2	24
306	12	16	19.2	24	12	16	19.2	24
312	12	16	19.2	24	12	16	19.2	24
318	12	16	19.2	24	12	16	19.2	24
324	12	16	19.2	24	12	16	19.2	24
330	12	16	19.2	24	12	16	19.2	24
336	12	16	19.2	24	12	16	19.2	24
342	12	16	19.2	24	12	16	19.2	24
348	12	16	19.2	24	12	16	19.2	24
354	12	16	19.2	24	12	16	19.2	24
360	12	16	19.2	24	12	16	19.2	24
366	12	16	19.2	24	12	16	19.2	24
372	12	16	19.2	24	12	16	19.2	24
378	12	16	19.2	24	12	16	19.2	24
384	12	16	19.2	24	12	16	19.2	24
390	12	16	19.2	24	12	16	19.2	24
396	12	16	19.2	24	12	16	19.2	24
402	12	16	19.2	24	12	16	19.2	24
408	12	16	19.2	24	12	16	19.2	24
414	12	16	19.2	24	12	16	19.2	24
420	12	16	19.2	24	12	16	19.2	24
426	12	16	19.2	24	12	16	19.2	24
432	12	16	19.2	24	12	16	19.2	24
438	12	16	19.2	24	12	16	19.2	24
444	12	16	19.2	24	12	16	19.2	24
450	12	16	19.2	24	12	16	19.2	24
456	12	16	19.2	24	12	16	19.2	24
462	12	16	19.2	24	12	16	19.2	24
468	12	16	19.2	24	12	16	19.2	24
474	12	16	19.2	24	12	16	19.2	24
480	12	16	19.2	24	12	16	19.2	24
486	12	16	19.2	24	12	16	19.2	24
492	12	16	19.2	24	12	16	19.2	24
498	12	16	19.2	24	12	16	19.2	24
504	12	16	19.2	24	12	16	19.2	24
510	12	16	19.2	24	12	16	19.2	24
516	12	16	19.2	24	12	16	19.2	24
522	12	16	19.2	24	12	16	19.2	24
528	12	16	19.2	24	12	16	19.2	24
534	12	16	19.2	24	12	16	19.2	24
540	12	16	19.2	24	12	16	19.2	24
546	12	16	19.2	24	12	16	19.2	24
552	12	16	19.2	24	12	16	19.2	24
558	12	16	19.2	24	12	16	19.2	24
564	12	16	19.2	24	12	16	19.2	24
570	12	16	19.2	24	12	16	19.2	24
576	12	16	19.2	24	12	16	19.2	24
582	12	16	19.2	24	12	16	19.2	24
588	12	16	19.2	24	12	16	19.2	24
594	12	16	19.2	24	12	16	19.2	24
600	12	16	19.2	24	12	16	19.2	24
606	12	16	19.2	24	12	16	19.2	24
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618	12	16	19.2	24	12	16	19.2	24
624	12	16	19.2	24	12	16	19.2	24
630	12	16	19.2	24	12	16	19.2	24
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666	12	16	19.2	24	12	16	19.2	24
672	12	16	19.2	24	12	16	19.2	24
678	12	16	19.2	24	12	16	19.2	24
684	12	16	19.2	24	12	16	19.2	24
690	12	16	19.2	24	12	16	19.2	24
696	12	16	19.2	24	12	16	19.2	24
702	12	16	19.2	24	12	16	19.2	24
708	12	16	19.2	24	12	16	19.2	24
714	12	16	19.2	24	12	16	19.2	24
720	12	16	19.2	24	12	16	19.2	24
726	12	16	19.2	24	12	16	19.2	24
732	12	16	19.2	24	12	16	19.2	24
738	12	16	19.2	24	12	16	19.2	24
744	12	16	19.2	24	12	16	19.2	24
750	12	16	19.2	24	12	16	19.2	24
756	12	16	19.2	24	12	16	19.2	24
762	12	16	19.2	24	12	16	19.2	24
768	12	16	19.2	24	12	16	19.2	24
774	12	16	19.2	24	12	16	19.2	24
780	12	16	19.2	24	12	16	19.2	24
786	12	16	19.2	24	12	16	19.2	24
792	12	16	19.2	24	12	16	19.2	24
798	12	16	19.2	24	12	16	19.2	24
804	12	16	19.2	24	12	16	19.2	24
810	12	16	19.2	24	12	16	19.2	24
816	12	16	19.2	24	12	16	19.2	24
822	12	16	19.2	24	12	16	19.2	24
828	12	16	19.2	24	12	16	19.2	24
834	12	16	19.2	24	12	16	19.2	24
840	12	16	19.2	24	12	16	19.2	24
846	12	16	19.2	24	12	16	19.2	24
852	12	16	19.2	24	12	16	19.2	24
858	12	16	19.2	24	12	16	19.2	24
864	12	16	19.2	24	12	16	19.2	24
870	12	16	19.2	24	12	16	19.2	24
876	12	16	19.2	24	12	16	19.2	24
882	12	16	19.2	24	12	16	19.2	24
888	12	16	19.2	24	12	16	19.2	24
894	12	16	19.2	24	12	16	19.2	24
900	12	16	19.2	24	12	16	19.2	24
906	12	16	19.2	24	12	16	19.2	24
912	12	16	19.2	24	12	16	19.2	24
918	12	16	19.2	24	12	16	19.2	24
924	12	16	19.2	24	12	16	19.2	24
930	12	16	19.2	24	12	16	19.2	24
936	12	16	19.2	24	12	16	19.2	24
942	12	16	19.2	24	12	16	19.2	24
948	12	16	19.2	24	12	16	19.2	24
954	12	16	19.2	24	12	16	19.2	24
960	12	16	19.2	24	12	16	19.2	24
966	12	16	19.2	24	12	16	19.2	24
972	12	16	19.2	24	12	16	19.2	24
978	12	16	19.2	24	12	16	19.2	24
984	12	16	19.2	24	12	16	19.2	24
990	12	16	19.2	24	12	16	19.2	24
996	12	16	19.2	24	12	16	19.2	24
1002	12	16	19.2	24	12	16	19.2	24
1008	12	16	19.2	24	12	16	19.2	24
1014	12	16	19.2	24	12	16	19.2	24
1020	12	16	19.2	24	12	16	19.2	24
1026	12	16	19.2	24	12	16	19.2	24
1032	12	16	19.2	24	12	16	19.2	24
1038	12	16	19.2	24	12	16	19.2	24
1044	12	16	19.2					

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

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.

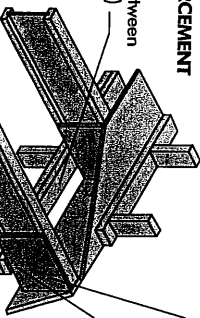
TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS
Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

Sample of 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
10	10	10	10	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	12	12	12	12
14	14	14	14	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	16	16	16	16
18	18	18	18	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	20	20	20	20
22	22	22	22	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	24	24	24	24
26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38
40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
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194	194	194	194	194	194	19										

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

5a SHEATHING REINFORCEMENT

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

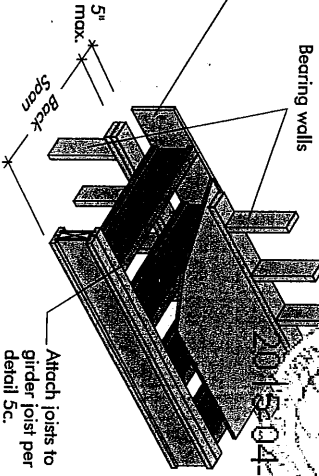


Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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

5b SET-BACK DETAIL

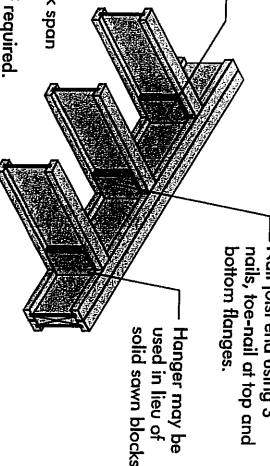
Rim board or wood structural panel closure (3/4" minimum thickness), attach per detail 1b.

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

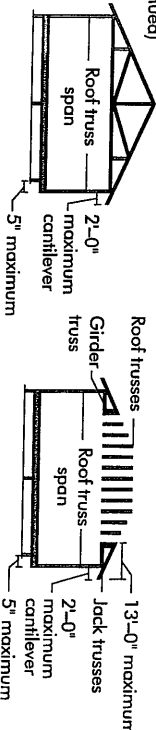
Vertical solid sawn blocks (2x6 S-P-F No. 2 or better) nailed through joist web and web of girder Alternate for opposite side.



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)			
	SPAN (ft)	JOIST SPACING (in.)	LL = 30 psf, DL = 15 psf	LL = 40 psf, DL = 15 psf	LL = 50 psf, DL = 15 psf	JOIST SPACING (in.)
26	26	12	X	X	X	12
30	30	16	X	X	X	16
32	32	19.2	X	X	X	19.2
34	34	24	X	X	X	24
36	36	24	X	X	X	24
38	38	24	X	X	X	24
40	40	24	X	X	X	24
42	42	24	X	X	X	24
44	44	24	X	X	X	24
46	46	24	X	X	X	24
48	48	24	X	X	X	24
50	50	24	X	X	X	24
52	52	24	X	X	X	24
54	54	24	X	X	X	24
56	56	24	X	X	X	24
58	58	24	X	X	X	24
60	60	24	X	X	X	24
62	62	24	X	X	X	24
64	64	24	X	X	X	24
66	66	24	X	X	X	24
68	68	24	X	X	X	24
70	70	24	X	X	X	24
72	72	24	X	X	X	24
74	74	24	X	X	X	24
76	76	24	X	X	X	24
78	78	24	X	X	X	24
80	80	24	X	X	X	24
82	82	24	X	X	X	24
84	84	24	X	X	X	24
86	86	24	X	X	X	24
88	88	24	X	X	X	24
90	90	24	X	X	X	24
92	92	24	X	X	X	24
94	94	24	X	X	X	24
96	96	24	X	X	X	24
98	98	24	X	X	X	24
100	100	24	X	X	X	24

1. N = NI reinforcement required.
2. NI = NI reinforcement with 3/4" wood structural panel on one side only.
3. NI = NI reinforcement with 3/4" wood structural panel on both sides, or double I-joist.
4. NI = NI reinforcement with 3/4" wood structural panel on one side only.
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98. NI = NI reinforcement with 3/4" wood structural panel on one side only.
99. NI = NI reinforcement with 3/4" wood structural panel on both sides, or double I-joist.
100. NI = NI reinforcement with 3/4" wood structural panel on one side only.

SITE COPY

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

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

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

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

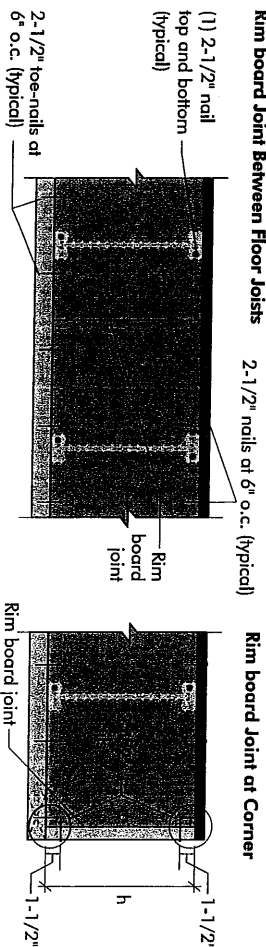
Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

IMPORTANT NOTE:

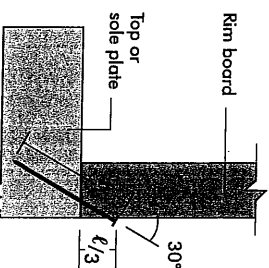
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

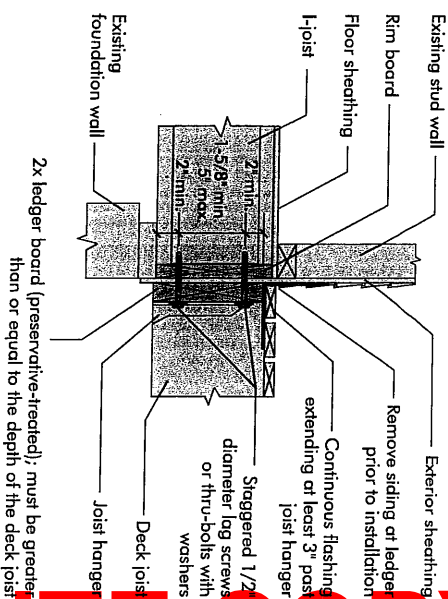
8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



8b TOE-NAIL CONNECTION AT RIM BOARD



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



2015-04-16

PRODUCT WARRANTY

Customer's Obligations: Customer agrees that in accordance with our specifications, these products are for use as described. All other uses are void. Customer agrees to maintain proper installation and use of these products. Customer's Obligations: Customer agrees that our products, when installed in accordance with our building and installation instructions, will meet or exceed our specifications for the lifetime of the structure.

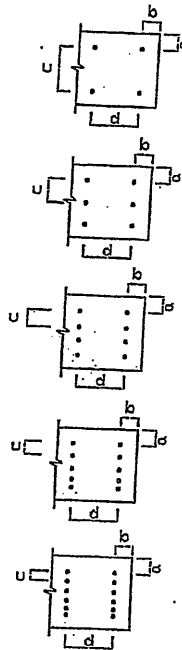
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MICRO CITY ENGINEERING SERVICES INC.

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 NO X SEE

DWG #TAMN1001-14

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