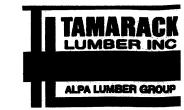


| | Products | | | | | |
|--------|----------|--|-------|---------|--|--|
| PlotID | Length | Product | Plies | Net Qty | | |
| J1 | 16-00-00 | 9 1/2" NI-40x | 1 | 3 | | |
| J2 | 14-00-00 | 9 1/2" NI-40x | 1 | 39 | | |
| J3 | 14-00-00 | 9 1/2" NI-40x | 2 | 12 | | |
| J4 | 12-00-00 | 9 1/2" NI-40x | 1 | 14 | | |
| J5 | 4-00-00 | 9 1/2" NI-40x | 1 | 3 | | |
| B2 | 14-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 1 | 1 | | |
| B1 | 8-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 | | |

| Connector Summary | | | | | |
|-------------------|----|-------------|--|--|--|
| Qty Manuf Product | | | | | |
| 5 | H1 | IUS2.56/9.5 | | | |
| 6 | H1 | IUS2.56/9.5 | | | |
| 4 | H1 | IUS2.56/9.5 | | | |
| 2 | H2 | HU310-2 | | | |

Town of Innisfil Certified Model
01/12/2017 3:20:56 PM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:

BAYVIEW WELLINGTON

SITE:

ALCONA SHORES

MODEL: S30-1

ELEVATION: A

LOT:

CITY: INNISFILL

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

CERAMIC TILE APPLICATION

AS PER O.B.C. 9.30.6.

SQUASH BLOCKS

2x4 OR 2x6 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING

WALLS.

MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS.

CANTILEVERED JOISTS

REQUIRE I-JOIST BLOCKING ALONG

BEARING AND RIMBOARD CLOSURE

AT ENDS.

REFER TO THE NORDIC

INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.

TORAGE AND INSTALL

LOADING:

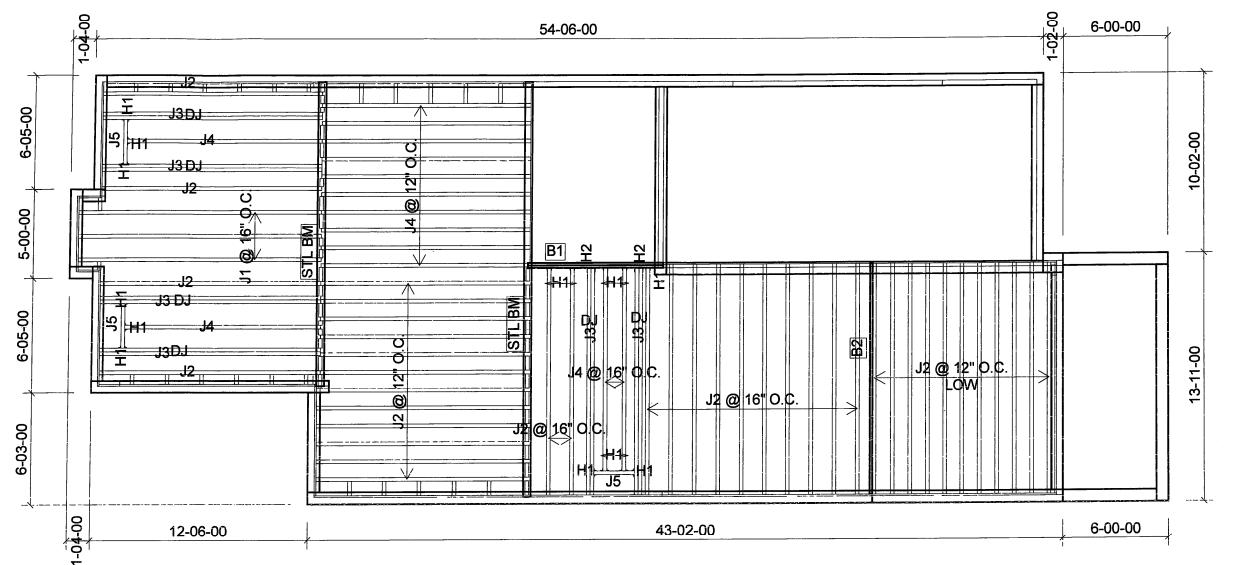
DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 fb/ft TILED AREAS: 20 fb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 9/16/2016

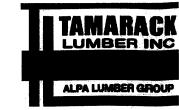
1st FLOOR



| | | Products | | |
|--------|----------|--|-------|---------|
| PlotID | Length | Product | Plies | Net Qty |
| J1 | 16-00-00 | 9 1/2" NI-40x | 1 | 3 |
| J2 | 14-00-00 | 9 1/2" NI-40x | 1 | 39 |
| J3 | 14-00-00 | 9 1/2" NI-40x | 2 | 12 |
| J4 | 12-00-00 | 9 1/2" NI-40x | 1 | 14 |
| J5 | 4-00-00 | 9 1/2" NI-40x | 1 | 3 |
| B2 | 14-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 1 | 1 |
| B1 | 8-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |

| C | Connector Summary | | | | | | |
|--------------|-------------------|--|--|--|--|--|--|
| Qty | Qty Manuf Product | | | | | | |
| 5 | 5 H1 IUS2.56/9.5 | | | | | | |
| 6 | 6 H1 IUS2.56/9.5 | | | | | | |
| 4 | 4 H1 IUS2.56/9.5 | | | | | | |
| 2 H2 HU310-2 | | | | | | | |

Town of Innisfil Certified Model 01/12/2017 3:21:14 PM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:

BAYVIEW WELLINGTON

SITE:

ALCONA SHORES

MODEL: S30-1

ELEVATION: B

LOT:

CITY: INNISFILL

SALESMAN: M D **DESIGNER: AJ REVISION:**

NOTES:

CERAMIC TILE APPLICATION

AS PER O.B.C. 9.30.6. SQUASH BLOCKS

2x4 OR 2x6 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING

WALLS.

MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS.

CANTILEVERED JOISTS

REQUIRE I-JOIST BLOCKING ALONG

BEARING AND RIMBOARD CLOSURE

AT ENDS.

REFER TO THE NORDIC

INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.

LOADING:

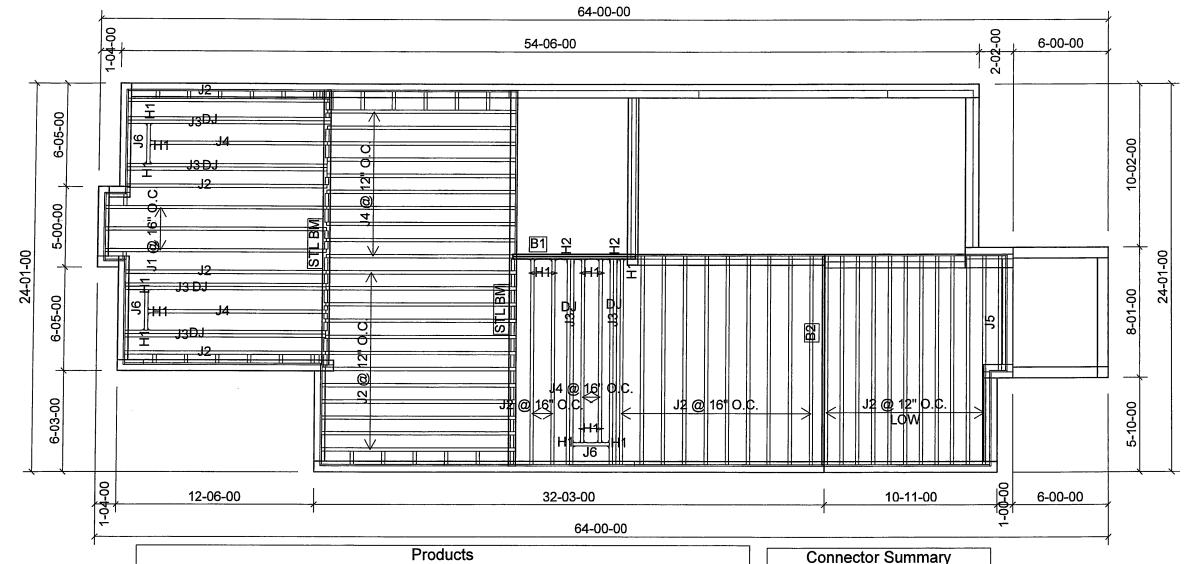
DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft

TILED AREAS: 20 hb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 9/16/2016

1st FLOOR



Plies

1

2

PlotID

J1

J2

J3

J4

J5

J6

B2

B1

Length

16-00-00

14-00-00

14-00-00

12-00-00

8-00-00

4-00-00

14-00-00

8-00-00

Product

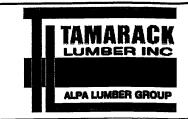
9 1/2" NI-40x

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

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

| | | Connector | Summary |
|---------|----------|-----------|-------------|
| Net Qty | Qty | Manuf | Product |
| 3 | 5 | H1 | IUS2.56/9.5 |
| 39 | 6 | H1 | IUS2.56/9.5 |
| 12 | 4 | H1 | IUS2.56/9.5 |
| 14 | 2 | H2 | HU310-2 |
| 1 | <u> </u> | | |
| 3 | | | Town of In |

Town of Innisfil Certified Model 01/12/2017 3:21:20 PM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:

BAYVIEW WELLINGTON

SITE:

ALCONA SHORES

MODEL: S30-1

ELEVATION: C

LOT:

CITY: INNISFILL

SALESMAN: M D **DESIGNER: AJ REVISION:**

NOTES:

CERAMIC TILE APPLICATION

AS PER O.B.C. 9.30.6.

SQUASH BLOCKS

2x4 OR 2x6 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING

WALLS.

MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS.

CANTILEVERED JOISTS

REQUIRE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS.

REFER TO THE NORDIC

INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.

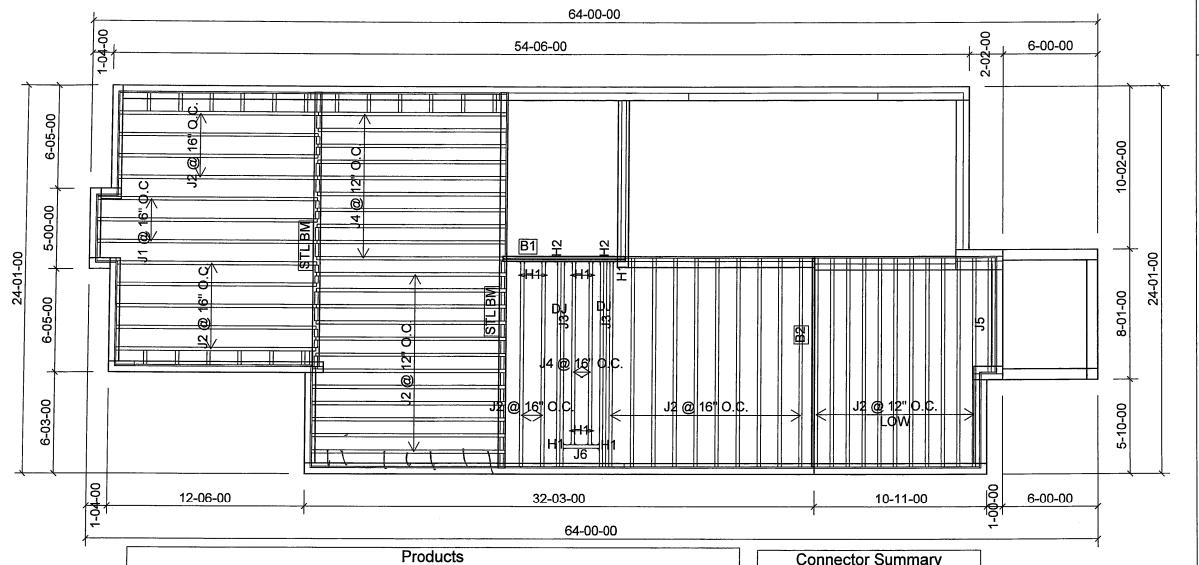
LOADING:

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft TILED AREAS: 20 h/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 9/29/2017

1st FLOOR

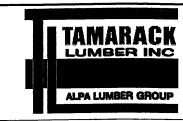


| Products | | | | | |
|----------|----------|--|-------|---------|--|
| PlotID | Length | Product | Plies | Net Qty | |
| J1 | 16-00-00 | 9 1/2" NI-40x | 1 | 3 | |
| J2 | 14-00-00 | 9 1/2" NI-40x | 1 | 44 | |
| J3 | 14-00-00 | 9 1/2" NI-40x | 2 | 4 | |
| J4 | 12-00-00 | 9 1/2" NI-40x | 1 | 12 | |
| J5 | 8-00-00 | 9 1/2" NI-40x | 1 | 1 | |
| J6 | 4-00-00 | 9 1/2" NI-40x | 1 | 1 | |
| B2 | 14-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 1 | 1 | |
| B1 | 8-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 | |

| C | Connector Summary | | | | | |
|-----|-------------------|-------------|--|--|--|--|
| Qty | Manuf | Product | | | | |
| 5 | H1 | IUS2.56/9.5 | | | | |
| 2 | H1 | IUS2.56/9.5 | | | | |
| 2 | H1 | IUS2.56/9.5 | | | | |
| 2 | H2 | HU310-2 | | | | |

Town of Innisfil Certified Model

01/12/2017 3:21:23 PM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:

BAYVIEW WELLINGTON

SITE:

ALCONA SHORES

MODEL: S30-1

ELEVATION: C

LOT:

CITY: INNISFILL

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

CERAMIC TILE APPLICATION AS PER O.B.C. 9.30.6.

SQUASH BLOCKS

2x4 OR 2x6 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING

WALLS.

MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS.

CANTILEVERED JOISTS

REQUIRE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS.

REFER TO THE NORDIC

INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.

LOADING:

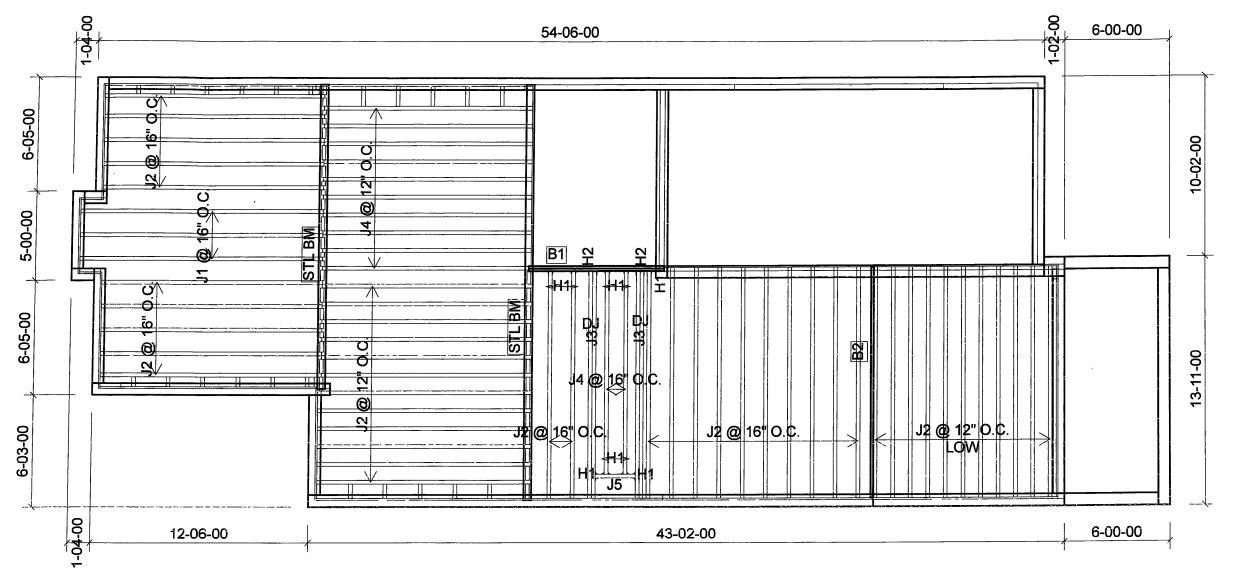
DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 9/29/2017

1st FLOOR

W.O.D



| Products | | | | | |
|----------|----------|--|-------|---------|--|
| PlotID | Length | Product | Plies | Net Qty | |
| J1 | 16-00-00 | 9 1/2" NI-40x | 1 | 3 | |
| J2 | 14-00-00 | 9 1/2" NI-40x | 1 | 45 | |
| J3 | 14-00-00 | 9 1/2" NI-40x | 2 | 4 | |
| J4 | 12-00-00 | 9 1/2" NI-40x | 1 | 12 | |
| J5 | 4-00-00 | 9 1/2" NI-40x | 1 | 1 | |
| B2 | 14-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 1. | 1 | |
| B1 | 8-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 | |

| | Connector Summary | | | | | | |
|-----|-------------------|-------------|--|--|--|--|--|
| Qty | Qty Manuf Product | | | | | | |
| 5 | H1 | IUS2.56/9.5 | | | | | |
| 2 | 2 H1 IUS2.56/9.5 | | | | | | |
| 2 | 2 H1 IUS2.56/9.5 | | | | | | |
| 2 | | | | | | | |

Town of Innisfil Certified Model
01/12/2017 3:21:27 PM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:

BAYVIEW WELLINGTON

SITE:

ALCONA SHORES

MODEL: S30-1

ELEVATION: A&B

LOT:

CITY: INNISFILL

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

CERAMIC TILE APPLICATION

AS PER O.B.C. 9.30.6. SQUASH BLOCKS

2x4 OR 2x6 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING

WALLS.

MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS.

CANTILEVERED JOISTS

REQUIRE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE

AT ENDS.

REFER TO THE NORDIC

INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.

LOADING:

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft²

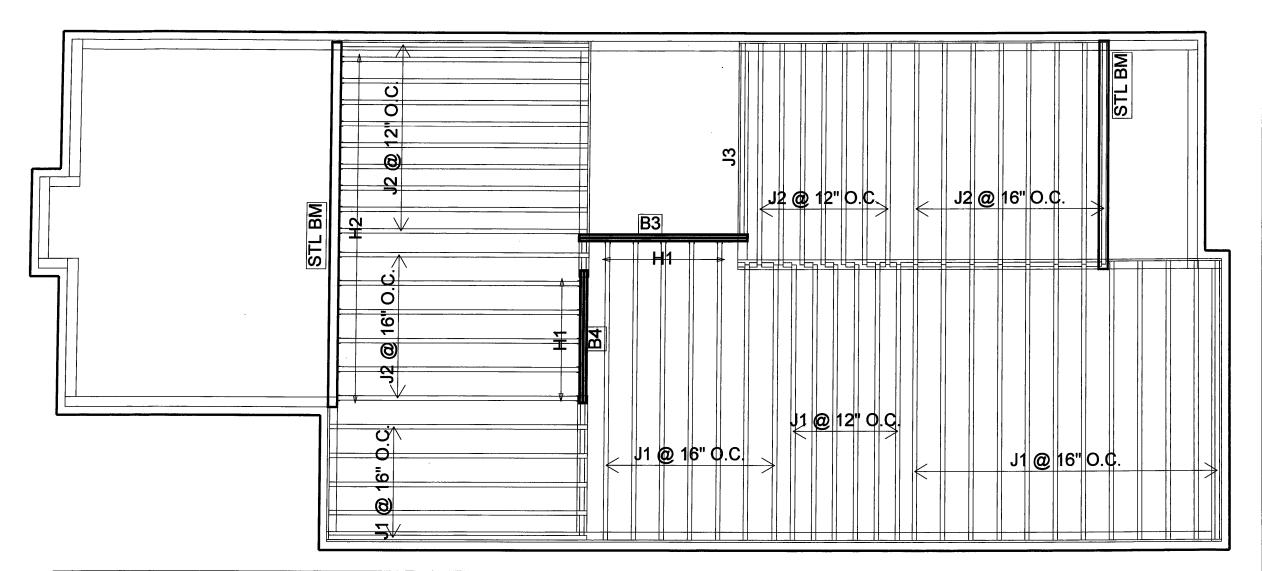
DEAD LOAD: 15.0 h/ft TILED AREAS: 20 h/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 9/16/2016

1st FLOOR

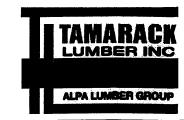
WITH DECK



| Products | | | | | |
|----------|----------|--|-------|---------|--|
| PlotID | Length | Product | Plies | Net Qty | |
| J1 | 14-00-00 | 9 1/2" NI-40x | 1 | 30 | |
| J2 | 12-00-00 | 9 1/2" NI-40x | 1 | 31 | |
| J3 | 10-00-00 | 9 1/2" NI-40x | 1 | 1 | |
| B3 | 8-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 | |
| B4 | 8-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 | |

| Connector Summary | | | | | | |
|-------------------|-------------------|-------------|--|--|--|--|
| Qty | Qty Manuf Product | | | | | |
| 10 | H1 | IUS2.56/9.5 | | | | |
| 15 | H2 | LF259 | | | | |

Town of Innisfil Certified Model 01/12/2017 3:21:31 PM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:

BAYVIEW WELLINGTON

SITE:

ALCONA SHORES

MODEL: S30-1

ELEVATION: A

LOT:

CITY: INNISFILL

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

CERAMIC TILE APPLICATION

AS PER O.B.C. 9.30.6. SQUASH BLOCKS

2x4 OR 2x6 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING

WALLS.

MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS.

CANTILEVERED JOISTS

REQUIRE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE

AT ENDS.

REFER TO THE NORDIC

INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.

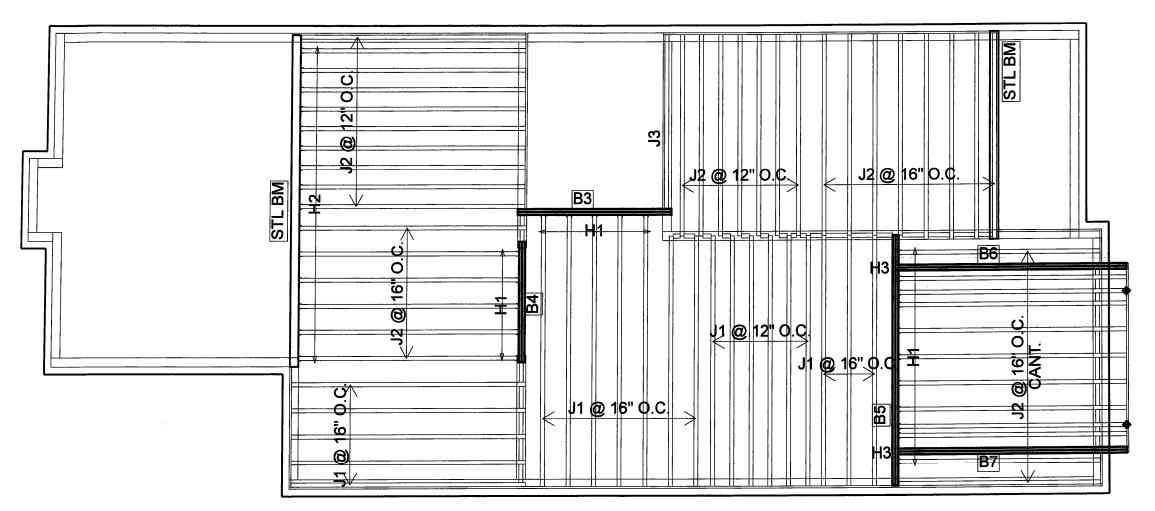
LOADING:

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 fb/ft TILED AREAS: 20 fb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/11/2017

2nd FLOOR



| | | Products | | |
|--------|----------|--|-------|------------|
| PlotID | Length | Product | Plies | Net Qty |
| J1 | 14-00-00 | 9 1/2" NI-40x | 1 | 21 |
| J2 | 12-00-00 | 9 1/2" NI-40x | 1 | 4 3 |
| J3 | 10-00-00 | 9 1/2" NI-40x | 1 | 1 |
| B5 | 14-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| B6 | 12-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| B7 | 12-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| В3 | 8-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| B4 | 8-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |

| Connector Summary | | | | | | |
|-------------------|----|-------------|--|--|--|--|
| Qty Manuf Product | | | | | | |
| 21 | H1 | IUS2.56/9.5 | | | | |
| 15 | H2 | LF259 | | | | |
| 2 | H3 | HGUS410 | | | | |

Town of Innisfil Certified Model
01/12/2017 3:21:34 PM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:

BAYVIEW WELLINGTON

SITE:

ALCONA SHORES

MODEL: S30-1

ELEVATION: B

LOT:

CITY: INNISFILL

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

CERAMIC TILE APPLICATION

AS PER O.B.C. 9.30.6. SQUASH BLOCKS

2x4 OR 2x6 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING

WALLS.

MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS.

CANTILEVERED JOISTS

REQUIRE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE

AT ENDS.

REFER TO THE NORDIC

INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.

LOADING:

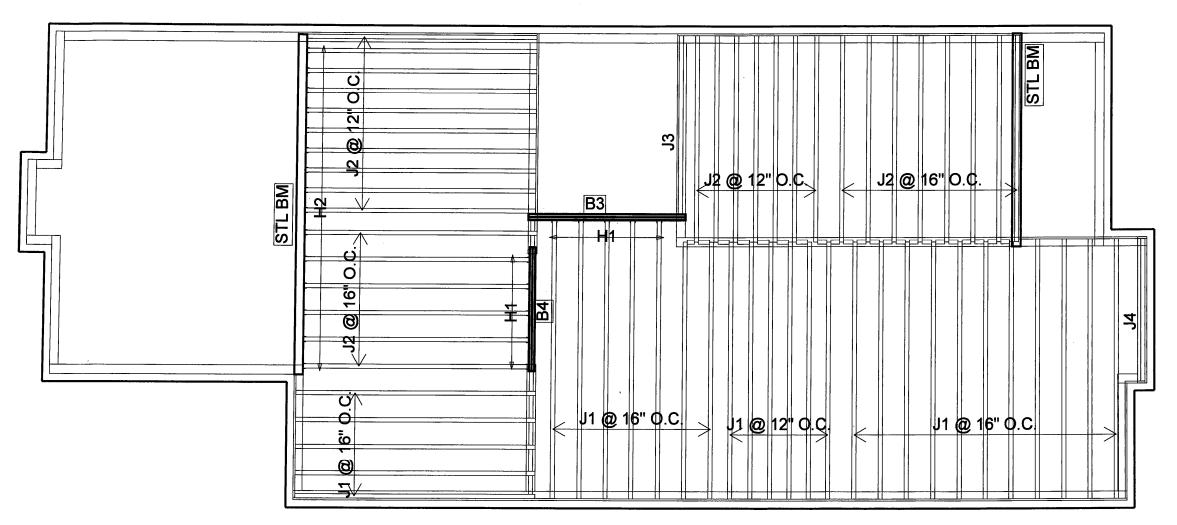
DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 fb/ft TILED AREAS: 20 fb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/11/2017

2nd FLOOR



| Products | | | | | | |
|----------|----------|--|-------|---------|--|--|
| PlotID | Length | Product | Plies | Net Qty | | |
| J1 | 14-00-00 | 9 1/2" NI-40x | 1 | 29 | | |
| J2 | 12-00-00 | 9 1/2" NI-40x | 1 | 31 | | |
| J3 | 10-00-00 | 9 1/2" NI-40x | 1 | 1 | | |
| J4 | 8-00-00 | 9 1/2" NI-40x | 1 | 1 | | |
| B3 | 8-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 | | |
| B4 | 8-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 | | |

| С | Connector Summary | | | | | | |
|-----|-------------------|-------------|--|--|--|--|--|
| Qty | Manuf | Product | | | | | |
| 10 | H1 | IUS2.56/9.5 | | | | | |
| 15 | H2 | LF259 | | | | | |

Town of Innisfil Certified Model 01/12/2017 3:21:38 PM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:

BAYVIEW WELLINGTON

SITE:

ALCONA SHORES

MODEL: S30-1

ELEVATION: C

LOT:

CITY: INNISFILL

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

CERAMIC TILE APPLICATION

AS PER O.B.C. 9.30.6. SQUASH BLOCKS

2x4 OR 2x6 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING

WALLS.

MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS.

CANTILEVERED JOISTS

REQUIRE I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE

AT ENDS.

REFER TO THE NORDIC

INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION.

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: 10/11/2017

2nd FLOOR



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B1(i1001)



BC CALC® Design Report

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

September 16, 2016 08:35:28

Build 4340

Job Name: Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports:

CCMC 12472-R

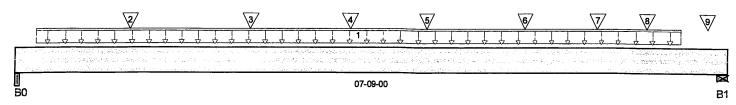
File Name: S30-1.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B1(i1001)

Specifier: Designer:

Company.

Misc:



Total Horizontal Product Length = 07-09-00

| Reaction Summary (Down / Uplift) (lbs) | | | | | | | | |
|--|-----------|-----------|------|------|--|--|--|--|
| Be aring ` | Live | De ad | Snow | Wind | | | | |
| B0, 2-5/8" | 1,719/0 | 896/0 | | | | | | |
| B1, 3-1/2" | 1,931 / 0 | 1,040 / 0 | | | | | | |

| Lo | ad Summary | d Summary | | | Live | Dead | Snow | Wind | Trib. | |
|----|---------------|-------------------|----|----------|----------|------|------|------|-------|-----|
| | g Description | Load Type | Re | f. Start | En d | 1.00 | 0.65 | 1.00 | 1.15 | |
| 1 | Us er Load | Unf. Lin. (lb/ft) | L | 00-02-10 | 07-03-00 | 240 | 120 | | | n/a |
| 2 | J2(i928) | Conc. Pt. (lbs) | L | 01-02-12 | 01-02-12 | 333 | 166 | | | n/a |
| 3 | J2(i911) | Conc. Pt. (lbs) | L | 02-06-12 | 02-06-12 | 319 | 160 | | | n/a |
| 4 | J3(i912) | Conc. Pt. (lbs) | L | 03-07-12 | 03-07-12 | 274 | 137 | | | n/a |
| 5 | J4(i921) | Conc. Pt. (lbs) | L | 04-05-10 | 04-05-10 | 228 | 114 | | | n/a |
| 6 | J4(i1000) | Conc. Pt. (lbs) | L | 05-06-10 | 05-06-10 | 226 | 113 | | | n/a |
| 7 | J3(i987) | Conc. Pt. (lbs) | L | 06-04-04 | 06-04-04 | 198 | 99 | | | n/a |
| 8 | J2(i955) | Conc. Pt. (lbs) | L | 06-10-10 | 06-10-10 | 246 | 123 | | | n/a |
| 9 | 1(i513) | Conc. Pt. (lbs) | L | 07-06-04 | 07-06-04 | 138 | 106 | | | n/a |

| Controls Summary | Factored Demand | Factored Resistance | Demand / Resistance | Load Case | Location | |
|------------------|--------------------|------------------------|------------------------|--------------|----------|--|
| Pos. Moment | 7,385 ft-lbs | 25,408 ft-lbs | 29.1% | 1 | 03-07-12 | |
| End Shear | 3,700 lbs | 11,571 lbs | 32% | 1 | 06-08-00 | |
| Total Load Defl. | L/999 (0.101") | n/a | n/a | 4 | 03-10-04 | |
| Live Load Defl. | L/999 (0.067") | n/a | n/a | 5 | 03-10-04 | |
| Max Defl. | 0.101" | n/a | n/a | 4 | 03-10-04 | |
| Span / Depth | 9.3 | n/a | n/a | | 00-00-00 | |

Town of Innisfil Certified Model 01/12/2017 3:21:43 PM kgervais

| | _ | | | De mand/ Resistance | | |
|-------|-------------|-----------------|-----------|------------------------|--------|-------------|
| Beari | ng Supports | Dim. (L x W) | Demand | Support | Member | Material |
| B0 | Beam | 2-5/8" x 3-1/2" | 3,698 lbs | 94.2% | 33% | Unspecified |
| B1 | Wall/Plate | 3-1/2" x 3-1/2" | 4,197 ibs | 80.2% | 28.1% | Unspecified |

Notes



DWO NO.TAM 51 88817 STRUCTURAL COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B1(i1001)

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

September 16, 2016 08:35:28

BC CALC® Design Report

Build 4340

Job Name:

Address: City, Province, Postal Code: INNISFILL,

Customer:

Code reports:

CCMC 12472-R

File Name: S30-1.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B1(i100

Specifier:

Designer: Company:

Misc:

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

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

Calculations assume Member is Fully Braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

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

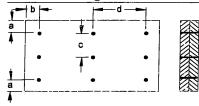
Design based on Dry Service Condition.

CONFORMS TO DBC 2012

Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.

Connection Diagram



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

Calculated Side Load = 517.8 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

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 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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Town of Innisfil Certified Model

01/12/2017 3:21:48 PM kgervais



COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B2(i965)

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

September 16, 2016 08:35:28

BC CALC® Design Report



Build 4340 Job Name:

Address: City, Province, Postal Code:INNISFILL,

Customer:

Code reports:

CCMC 12472-R

File Name: S30-1.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B2(i965)

Specifier: Designer: Company:

Misc:

| ⊠ (B0 | 12-11-04 | B1 |
|------------------|----------|----|

| Reaction Summary Bearing | (Down / Uplift) (lbs) Live | De ad | Snow | Wind | |
|-----------------------------|---------------------------------|--------|------|------|--|
| B0, 2-3/8" | 112/0 | 87 / 0 | | | |
| B1, 2-3/8" | 112/0 | 87 / 0 | | | |

| Load Summary | | | | Live | Dead | Snow Wind | Trib. |
|-----------------------|-------------------|------------|----------|------|------|-----------|-------|
| Tag Description | Load Type | Ref. Start | En a | 1.00 | 0.65 | 1.00 1.15 | |
| 1 FC 1 Floor Material | Unf. Lin. (lb/ft) | L 00-00-00 | 12-11-04 | 17 | 9 | | n/a |

| Controls Summary | Factored Demand | Factored Resistance | Demand / Resistance | Load Case | Location |
|------------------|--------------------|------------------------|------------------------|--------------|----------|
| Pos. Moment | 858 ft-lbs | 12,704 ft-lbs | 6.8% | 1 | 06-05-10 |
| End Shear | 234 lbs | 5,785 lbs | 4% | 1 | 00-11-14 |
| Total Load Defl. | L/999 (0.071") | n/a | n/a | 4 | 06-05-10 |
| Live Load Defl. | L/999 (0.04") | n/a | n/a | 5 | 06-05-10 |
| Max Defl. | 0.071" | n/a | n/a | 4 | 06-05-10 |
| Span / Depth | 16 | n/a | n/a | | 00-00-00 |

| | | | | Demand/ Resistance | | |
|------|--------------|-----------------|---------|-----------------------|--------|-------------|
| Bear | ing Supports | Dim. (L x W) | Demand | Support | Member | Material |
| B0 | Wall/Plate | 2-3/8" x 1-3/4" | 277 lbs | 15.6% | 5.5% | Unspecified |
| B1 | Wall/Plate | 2-3/8" x 1-3/4" | 277 lbs | 15.6% | 5.5% | Unspecified |

Notes

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

Calculations assume Member is Fully Braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9
Deflections less than 1/8" were ignored in the results.

Disclosure

Completeness and accuracy of input must be verified by anyone w ho w ould 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 engineered w ood products must be in accordance w ith 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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ALLJOIST®, BC RIM BOARD™, BCI®,
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Products L.L.C.



DWUND. YAM \$1989: 17 STRUCTURAL COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B3(i834)

BC CALC® Design Report

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

September 16, 2016 08:35:28

Build 4340

Job Name: Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports:

CCMC 12472-R

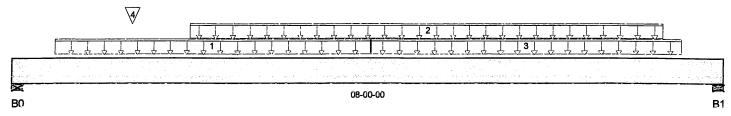
File Name: S30-1.mmdi

Description: Designs\Flush Beams\1st Floor\Flush Beams\B3(i834)

Specifier: Designer:

Company:

Msc:



Total Horizontal Product Length = 08-00-00

| Reaction Summary (Down / Uplift) (ibs) | | | | | | | | | | | | |
|--|-----------|-------|------|------|---|--|--|--|--|--|--|--|
| Be aring | Live | De ad | Snow | Wind | | | | | | | | |
| B0, 5-1/2" | 1,134/0 | 764/0 | | | | | | | | | | |
| B1, 5-1/2" | 1,586 / 0 | 886/0 | | | 1 | | | | | | | |

| Lo | ad Summary | | | | | Live | Dead | Snow | Wind | Trib. |
|----|----------------|-------------------|------------|----------|----------|------|------|------|------|-------|
| | g Description | Load Type | Ref. Start | | En d | 1.00 | 0.65 | 1.00 | 1.15 | |
| 1 | Us er Load | Unf. Lin. (lb/ft) | L | 00-05-08 | 04-00-08 | | 60 | | | n/a |
| 2 | Sm oothed Load | Unf. Lin. (lb/ft) | L | 02-00-00 | 07-04-00 | 286 | 142 | | | n/a |
| 3 | Us er Load | Unf. Lin. (lb/ft) | L | 04-00-08 | 07-06-08 | 240 | 120 | | | n/a |
| 4 | J1 (i896) | Conc. Pt. (lbs) | L | 01-04-00 | 01-04-00 | 343 | 171 | | | n/a |

CONFORMS TO OBG 2012

| | Factored | Factored | Demand / | Load | Location | |
|------------------|----------------|---------------|------------|------|----------|--|
| Controls Summary | Dem and | Resistance | Resistance | Case | | |
| Pos. Moment | 5,957 ft-lbs | 25,408 ft-lbs | 23.4% | 1 | 04-00-08 | |
| End Shear | 3,055 lbs | 11,571 lbs | 26.4% | 1 | 06-09-00 | |
| Total Load Defl. | L/999 (0.078") | n/a | n/a | 4 | 04-00-08 | |
| Live Load Defl. | L/999 (0.049") | n/a | n/a | 5 | 04-01-08 | |
| Max Defl. | 0.078" | n/a | n/a | 4 | 04-00-08 | |
| Span / Depth | 9.1 | n/a | n/a | | 00-00-00 | |

Town of Innisfil Certified Model

01/12/2017 3:21:55 PM kgervais

| | | | | De mand/ Resistance | Demand/ Resistance | |
|------|--------------|-----------------|-----------|------------------------|-----------------------|-------------|
| Bear | ing Supports | Dim.(L x W) | De man d | Support | Member | Material |
| B0 | Wall/Plate | 5-1/2" x 3-1/2" | 2,655 lbs | 32.3% | 11.3% | Unspecified |
| B1 | Wall/Plate | 5-1/2" x 3-1/2" | 3,486 lbs | 42.4% | 14.8% | Unspecified |

Notes

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

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

Calculations assume Member is Fully Braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.



DWO NO. TAM 5189017 STRUCTURAL COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B3(i834)

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

September 16, 2016 08:35:28

BC CALC® Design Report

File Name: S30-1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B3(i834)

Specifier: Designer: Company:

Misc:

City, Province, Postal Code: INNISFILL, Customer:

Code reports:

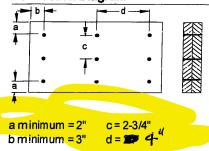
Build 4340

Job Name:

Address:

CCMC 12472-R

Connection Diagram



Calculated Side Load = 513.4 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

ARDOX SPIRAL

Disclosure

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STRUCTURAL ENMPONENT ANIV



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B4(i848)

BC CALC® Design Report

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

September 16, 2016 08:35:29

Build 4340

Job Name: Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports:

CCMC 12472-R

File Name: S30-1.mmdi

Description: Designs\Flush Beams\1st Floor\Flush Beams\B4(i848)

Specifier: Designer:

Company. Misc:

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|-----|----------|----------|---|--------|--------|----------------|--------|---|----------|----------------|-------|----------|------|------|-------|------|---|---|---|---|---|---------|---|----------|-----|----|----|---------|----------|------|----------------|--------------|--------------|---|
| |) | Į Į | Ţ | ļ. | , , | , † | T V | | Ţ | Ţ | Ţ | Ţ | Ų | 4 | 1 | Ţ. | Ţ | Ţ | Ţ | Ţ | Ţ | Ĭ SZ | ∀ | Ţ., | 7 5 | , | Į, | <u></u> | Ţ | Ţ | у . | | _ | Ţ |
| | | | | | ås. 55 | 10.00 | · . | | Service. | 45.4 | 15 AT | | 1, - | 4.25 | | 32.1 | | | | | | | | | | | | | | | | | | |
| ব | <u> </u> | <u> </u> | | . 100. | | - | | | | <u> (18.6)</u> | | <u> </u> | | | 5-02- | | | | | | | | | <u> </u> | | | | | <u> </u> | - 11 | | | | E |
| 30 | | | | | | | | | | | | | | - 00 | J-02- | | | | | | | | | | | | | | | | | | | |

Total Horizontal Product Length = 06-02-00

| Reaction Summary (Down / Uplift) (Ibs) | | | | | | | | | | | | | |
|--|-------|-------|------|------|--|--|--|--|--|--|--|--|--|
| Be aring | Live | De ad | Snow | Wind | | | | | | | | | |
| 80, 4" | 910/0 | 486/0 | | | | | | | | | | | |
| B1, 4" | 801/0 | 431/0 | | | | | | | | | | | |

| Lo | ad Summary | | | Live | Dead | Snow | Wind | Trib. | | |
|----|--------------------|-------------------|-----|-----------|----------|------|------|-------|------|-----|
| | g Description | Load Type | Ret | f. Start | En d | 1.00 | 0.65 | 1.00 | 1.15 | |
| 1 | Smoothed Load | Unf. Lin. (lb/ft) | L | 00-00-00 | 06-02-00 | 255 | 128 | | | n/a |
| 2 | FC3 Floor Material | Unf. Lin. (lb/ft) | L | -00-00-00 | 06-02-00 | 22 | 11 | | | n/a |

CONFORMS TO OBC 2012

| | Factored | Factored | Demand / | Load | Location |
|------------------|----------------|---------------|------------|------|----------|
| Controls Summary | Demand | Resistance | Resistance | Case | |
| Pos. Moment | 2,259 ft-lbs | 25,408 ft-lbs | 8.9% | 1 | 02-10-08 |
| End Shear | 1,251 lbs | 11,571 lbs | 10.8% | 1 | 05-00-08 |
| Total Load Defl. | L/999 (0.018") | n/a | n/a | 4 | 03-01-08 |
| Live Load Defl. | L/999 (0.011") | n/a | n/a | 5 | 03-01-08 |
| Max Defl. | 0.018" | n/a | n/a | 4 | 03-01-08 |
| Span / Depth | 7.1 | n/a | n/a | | 00-00-00 |

Town of Innisfil Certified Model 01/12/2017 3:22:06 PM kgervais

| | | | | De mand/ Resistance | Demand/ Resistance | |
|-------|--------------|-------------|-----------|------------------------|-----------------------|-------------|
| Beari | ing Supports | Dim.(LxW) | De man d | Support | Member | Material |
| BO | Wall/Plate | 4" x 3-1/2" | 1,973 lbs | 33% | 11.6% | Unspecified |
| B1 | Wall/Plate | 4" x 3-1/2" | 1,740 lbs | 29.1% | 10.2% | Unspecified |

Notes

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

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

Calculations assume Member is Fully Braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.

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COMPONENT DHIA



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B4(i848)

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

September 16, 2016 08:35:29

BC CALC® Design Report

Build 4340 Job Name:

Address: City, Province, Postal Code: INNISFILL,

Customer: Code reports:

CCMC 12472-R

File Name: S30-1.mmdl

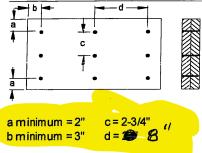
Description: Designs\Flush Beams\1st Floor\Flush Beams\B4(i848)

Specifier: Designer:

Company:

Misc:

Connection Diagram



Calculated Side Load = 562.5 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%" ARDOX SPIKAL

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 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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STRUCTURAL COMPONENT DRLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B5(i1141)

BC CALC® Design Report



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

September 16, 2016 08:51:48

Trib.

n/a n/a

Build 4340 Job Name: Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports:

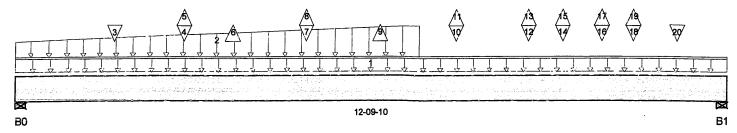
CCMC 12472-R

File Name: S30-1 EL-B.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\85(i1141)

Specifier: Designer: Company:

Misc:



Total Horizontal Product Length = 12-09-10

| Reaction Summary (Down / Uplift) (lbs) | | | | | | | | | | | | | |
|--|------------|-------|------|------|--|--|--|--|--|--|--|--|--|
| Be aring | Live | De ad | Snow | Wind | | | | | | | | | |
| BO, 4-3/8" | 1,379 / 44 | 705/0 | 0/74 | | | | | | | | | | |
| B1, 2-3/4" | 1,396 / 45 | 713/0 | 0/74 | | | | | | | | | | |

| Lo | ad Summary | | | | | Live | Dead | Snow Wind | |
|----|--------------------|---------------------|-----|----------|----------|------|------|-----------|------------|
| | g Description | Load Type | Ref | . Start | En d | 1.00 | 0.65 | 1.00 1.15 | |
| 1 | FC3 Floor Material | Unf. Lin. (lb/ft) | L | 00-00-00 | 12-09-10 | 22 | 11 | | |
| 2 | Smoothed Load | Trapezoidal (lb/ft) | L | 00-00-00 | | 107 | 42 | | |
| | | | | | 07-02-14 | 163 | 61 | | |
| 3 | B7(i1190) | Conc. Pt. (lbs) | L | 01-09-02 | 01-09-02 | -6 | 101 | -15 | |
| 4 | - | Conc. Pt. (lbs) | L | 03-00-04 | 03-00-04 | 143 | 47 | -59 | |
| 5 | - | Conc. Pt. (lbs) | L | 03-00-04 | 03-00-04 | -23 | | | |
| 6 | J2(i1270) | Conc. Pt. (lbs) | L | 03-10-14 | 03-10-14 | -5 | | | |
| 7 | J2(i1294) | Conc. Pt. (lbs) | L | 05-02-14 | 05-02-14 | 286 | 124 | | |
| 8 | J2(i1294) | Conc. Pt. (lbs) | L | 05-02-14 | 05-02-14 | -7 | | | |
| 9 | J2(i1285) | Conc. Pt. (lbs) | L | 06-06-14 | 06-06-14 | -7 | | | |
| 10 | J2(i1275) | Conc. Pt. (lbs) | L | 07-10-14 | 07-10-14 | 286 | 124 | | |
| 11 | J2(i1275) | Conc. Pt. (lbs) | L | 07-10-14 | 07-10-14 | -7 | | | |
| 12 | J2(i1284) | Conc. Pt. (lbs) | L | 09-02-14 | 09-02-14 | 210 | 91 | | |
| 13 | J2(i1284) | Conc. Pt. (lbs) | L | 09-02-14 | 09-02-14 | -5 | | | |
| 14 | J2(i1318) | Conc. Pt. (lbs) | L | 09-10-06 | 09-10-06 | 143 | 47 | -59 | |
| 15 | J2(i1318) | Conc. Pt. (lbs) | L | 09-10-06 | 09-10-06 | -20 | | | |
| 16 | J2(i1265) | Conc. Pt. (lbs) | L | 10-06-14 | 10-06-14 | 136 | 59 | | |
| 17 | J2(i1265) | Conc. Pt. (lbs) | L | 10-06-14 | 10-06-14 | -3 | | | |
| 18 | B6(i1174) | Conc. Pt. (lbs) | L | 11-01-10 | 11-01-10 | 143 | 103 | -15 | |
| 19 | B6 (i1174) | Conc. Pt. (lbs) | L | 11-01-10 | 11-01-10 | -6 | | OFESS | O a series |
| 20 | J2(i1279) | Conc. Pt. (lbs) | L | 11-10-14 | 11-10-14 | 175 | 88 | O PROFESS | MAZ |
| | • • | • • | | | | | | 0.0 | M. C. |

Town of Innisfil Certified Model

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COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B5(i1141)

. ••

CCMC 12472-R

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

n/a

n/a

September 16, 2016 08:51:48

BC CALC® Design Report

Build 4340 Job Name:

Address: City, Province, Postal Code:INNISFILL,

Customer:

Max Defl.

Span / Depth

Code reports:

File Name: S30-1 EL-B.mmdl

06-04-14

00-00-00

Description: Designs\Flush Beams\1st Floor\Flush Beams\B5(i114

Specifier: Designer: Company:

56

Misc:

| Codo ropora. | OOMO ILIILI | • | | 14250. | |
|------------------|--------------------|------------------------|------------------------|--------------|----------|
| Controls Summary | Factored Demand | Factored Resistance | Demand / Resistance | Load Case | Location |
| Pos. Moment | 9,490 ft-lbs | 25,408 ft-lbs | 37.3% | 21 | 06-06-14 |
| End Shear | 2,884 lbs | 11,571 lbs | 24.9% | 21 | 01-01-14 |
| Total Load Defl. | L/406 (0.365") | 0.617" | 59.1% | 56 | 06-04-14 |
| Live Load Defl. | L/604 (0.245") | 0.411" | 59.6% | 83 | 06-04-14 |

n/a

n/a

De mand/ De mand/ Resistance Resistance Bearing Supports Dim. (LxW) De man d Support Me m be r Material **B**0 Wall/Plate 4-3/8" x 3-1/2" 2,951 lbs 36.1% 15.8% **Unspecified B1** Wall/Plate 2-3/4" x 3-1/2" 2,986 lbs 58.1% 25.4% **Unspecified**

Disclosure

Completeness and accuracy of input must be verified by anyone w ho w ould 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 engineered w ood products must be in accordance w ith 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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Products L.L.C.

Notes

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

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

0.365"

15.6

Calculations assume Member is Fully Braced.

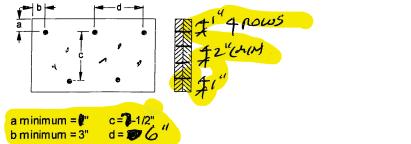
Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086. Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9
Deflections less than 1/8" were ignored in the results.

Connection Diagram



Calculated Side Load = 391.4 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 A Nails

3%" ARDOX SPIRAL

Town of Innisfil Certified Model 01/12/2017 3:27:20 PM kgervais

S. KATSOULAKOS S

DWO NO.TAM SIB92-19 Structural Component only



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B6(i1174)

BC CALC® Design Report



Dry | 2 spans | Right cantilever | 0/12 slope (deg)

September 16, 2016 08:51:48

Build 4340

Job Name: Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports:

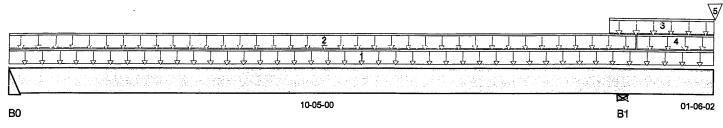
CCMC 12472-R

File Name: S30-1 EL-B.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i1174)

Specifier: Designer: Company.

Misc:



Total Horizontal Product Length = 11-11-02

| Reaction Summary | (Down / Uplift) (lbs) | | | | |
|------------------|-----------------------|-------|-------|------|--|
| Be aring | Live | De ad | Snow | Wind | |
| B0 | 140/6 | 104/0 | 0/13 | | |
| B1, 5-1/2" | 228/0 | 378/0 | 216/0 | | |

| Lo | ad Summary | | | | | Live | Dead | Snow | Wind | Trib. |
|----|--------------------|-------------------|----|----------|-------------|------|------|------|------|-------|
| | g Description | Load Type | Re | f. Start | E nd | 1.00 | 0.65 | 1.00 | 1.15 | |
| 1 | FC3 Floor Material | Unf. Lin. (lb/ft) | L | 00-00-00 | 11-11-02 | 11 | 6 | | | n/a |
| 2 | FC3 Floor Material | Unf. Lin. (lb/ft) | L | 00-00-00 | 10-07-12 | 15 | 8 | | | n/a |
| 3 | Us er Load | Unf. Lin. (lb/ft) | L | 10-02-04 | 11-11-02 | 33 | 110 | 117 | | n/a |
| 4 | FC3 Floor Material | Unf. Lin. (lb/ft) | L | 10-07-12 | 11-11-02 | 6 | 3 | | | n/a |
| 5 | FC3 Floor Material | Conc. Pt. (lbs) | L | 11-11-02 | 11-11-02 | | 22 | | | n/a |

| Controls Summary | Factored Demand | Factored Resistance | Demand / Resistance | Load Case | Location |
|------------------|--------------------|------------------------|------------------------|--------------|------------|
| Pos. Moment | 806 ft-1bs | 25,408 ft-lbs | 3.2% | 44 | 04-10-15 |
| Neg. Moment | -454 ft-lbs | -25,408 ft-lbs | 1.8% | 67 | 10-05-00 |
| Neg. Moment | -454 ft-lbs | -25,408 ft-lbs | 1.8% | 67 | 10-05-00 |
| End Shear | 274 lbs | 11,571 lbs | 2.4% | 44 | 00-11-08 |
| Cont. Shear | 321 lbs | 11,571 lbs | 2.8% | 16 | 09-04-12 |
| Total Load Defl. | L/999 (0.021") | n/a | n/a | 107 | 7 05-02-02 |
| Live Load Defl. | L/999 (0.014") | n/a | n/a | 159 | 05-03-11 |
| Total Neg. Defl. | 2xL/1,998 (-0.0 | 08") n/a | n/a | 107 | 7 11-11-02 |
| Max Defl. | 0.021" | n/a | n/a | 107 | 7 05-02-02 |
| Span / Depth | 13 | n/a | n/a | | 00-00-00 |

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| Bea | ring Supports | Dim.(L x W) | De man d | De mand/ Re sistance Support | De mand/ Resistance Member | Material |
|-----|---------------|-----------------|----------|------------------------------------|----------------------------------|-------------|
| B0 | Hanger | 2" x 3-1/2" | 340 lbs | n/a | 4% | Hanger |
| B1 | Wall/Plate | 5-1/2" x 3-1/2" | 923 lbs | 9% | 3.9% | Unspecified |



DWO NO . TAM 5/893-17 STRUCTURAL COMPONENT DHLY

Notes



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B6(i1174)

BC CALC® Design Report



Dry | 2 spans | Right cantilever | 0/12 slope (deg)

September 16, 2016 08:51:48

Build 4340

Job Name: Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports:

CCMC 12472-R

File Name: S30-1 EL-B.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i1174

Disclosure

Specifier: Designer:

Company:

CONFORMS TO DBC 2012

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

Calculations assume Member is Fully Braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086. Unbalanced snow loads determined from building geometry were used in selected products verification.

Design based on Dry Service Condition.

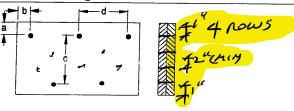
Importance Factor: Normal Part code: Part 9
Deflections less than 1/8" were ignored in the results.

output as

Completeness and accuracy of input must be verified by anyone w ho w ould 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 engineered w ood 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 CALO®, BC FRAMER®, A.IS™, 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.

Connection Diagram



a m inimum = [*" c = 3-1/2" b m inimum = 3" d = 1/2"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record. Member has no side loads.

Connectors are: 16d

Sd Nails

SX ARDOX SPIRAL

Town of Innisfil Certified Model

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DWO NO .TAM SIC 93179 STRUCTURAL COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i1190)

BC CALC® Design Report



Dry | 2 spans | Right cantilever | 0/12 slope (deg)

September 16, 2016 08:51:48

Build 4340

Job Name: Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports:

CCMC 12472-R

File Name: S30-1 EL-B.mmdi

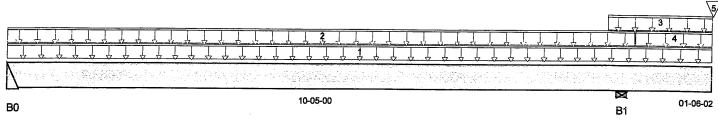
Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i1190)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 11-11-02

| Reaction Summary | Reaction Summary (Down / Uplift) (lbs) Bearing Live Dead Snow Wind | | | | | | | | | |
|------------------|--|-------|-------|------|--|--|--|--|--|--|
| | | De ad | Snow | Wind | | | | | | |
| B0 | 140/6 | 102/0 | 0/13 | | | | | | | |
| B1, 5-1/2" | 235/0 | 393/0 | 216/0 | | | | | | | |

| Lo | ad Summary | | | | | Live | Dead | Snow | Wind | Trib. |
|----|--------------------|-------------------|----|----------|----------|------|------|------|------|-------|
| | g Description | Load Type | Re | f. Start | End | 1.00 | 0.65 | 1.00 | 1.15 | |
| 1 | FC3 Floor Material | Unf. Lin. (lb/ft) | L | 00-00-00 | 11-11-02 | 16 | 8 | | | n/a |
| 2 | FC3 Floor Material | Unf. Lin. (!b/ft) | L | 00-00-00 | 10-07-12 | 10 | 5 | | | n/a |
| 3 | Us er Load | Unf. Lin. (lb/ft) | L | 10-02-04 | 11-11-02 | 33 | 110 | 117 | | n/a |
| 4 | FC3 Floor Material | Unf. Lin. (lb/ft) | L | 10-07-12 | 11-11-02 | 6 | 3 | | | n/a |
| 5 | FC3 Floor Material | Conc. Pt. (lbs) | L | 11-11-02 | 11-11-02 | | 32 | | | n/a |

| Controls Summary | Factored Demand | Factored Resistance | Demand / Resistance | Load Case | Location |
|------------------|--------------------|------------------------|------------------------|--------------|------------|
| Pos. Moment | 796 ft-lbs | 25,408 ft-lbs | 3.1% | 44 | 04-10-15 |
| Neg. Moment | -479 ft-lbs | -25,408 ft-lbs | 1.9% | 49 | 10-05-00 |
| Neg. Moment | -479 ft-lbs | -25,408 ft-lbs | 1.9% | 49 | 10-05-00 |
| End Shear | 272 lbs | 11,571 lbs | 2.4% | 44 | 00-11-08 |
| Cont. Shear | 323 lbs | 11,571 lbs | 2.8% | 16 | 09-04-12 |
| Total Load Defl. | L/999 (0.021") | n/a | n/a | 107 | 7 05-02-02 |
| Live Load Defl. | L/999 (0.014") | n/a | n/a | 159 | 05-03-11 |
| Total Neg. Defl. | 2xL/1,998 (-0.0 | 08") n/a | n/a | 107 | 11-11-02 |
| Max Defl. | 0.021" | n/a | n/a | 107 | |
| Span / Depth | 13 | n/a | n/a | | 00-00-00 |

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| Bear | ing Supports | Dim.(L x W) | De man d | De mand/ Re sistance Support | De mand/ Resistance Me mbe r | Material |
|------|--------------|-----------------|----------|------------------------------------|------------------------------------|-------------|
| B0 | Hanger | 2" x 3-1/2" | 338 lbs | n/a | 4% | Hanger |
| B1 | Wali/Plate | 5-1/2" x 3-1/2" | 952 lbs | 9.3% | 4.1% | Unspecified |

Notes



DWO NO. TAM 5/084 17 STRUCTURAL COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i1190)

Dry | 2 spans | Right cantilever | 0/12 slope (deg)

September 16, 2016 08:51:48

BC CALC® Design Report

Build 4340 Job Name: Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R File Name: S30-1 EL-B.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i1190)

Specifier: Designer: Company:

Misc:

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

Calculations assume Member is Fully Braced.

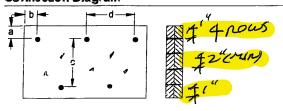
Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSAO86. 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 Deflections less than 1/8" were ignored in the results.

Connection Diagram





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

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 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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STRUCTURAL COMPONENT ONLY



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







| | | | | Bare | | | 1/2" Gyp | sum Ceiling | |
|---------|--------|-----------------|---------|-------------|-----|---------|----------|-------------|-----|
| Depth | Series | | On Cen | tre Spacing | | | On Cent | re Spacing | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| | 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 |
| 9-1/2" | 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 |
| | 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 |
| 11-7/8" | NI-60 | 18'-4" | 17'-3" | 16'-7" | N/A | 19'-0" | 17'-8" | 17'-1" | N/A |
| 11-770 | 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 |
| | 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 |
| 14" | 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 |
| | NI-60 | 22'-3" | 20'-8" | 19'-9" | N/A | 23'-1" | 21'-5" | 20'-6" | N/A |
| 16" | NI-70 | 23'-6" | 21'-9" | 20'-9" | N/A | 24'-3" | 22'-5" | 21'-5" | N/A |
| 10 | 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 |

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

^{1.} Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.

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^{2.} Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

^{3.} Minimum bearing length shall be 1-3/4 inches for the end bearings.

^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

^{5.} This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

^{6.} Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



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







| | | | В | are | | .1 | 1/2" Gyp | sum Ceiling | | | |
|---------|--------|---------|---------|------------|---------|---------|-------------------|---------------------|---------|--|--|
| Depth | Series | | On Cent | re Spacing | | | On Centre Spacing | | | | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | / 19.2" | 24" | | |
| | 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" | | |
| 9-1/2" | 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" | | |
| | 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" | | |
| 11-7/8" | NI-60 | 19'-7" | 18'-2" | 17'-5" | 16'-9" | 20'-2" | 18'-9" | 17'-11" | 17'-2" | | |
| 11-7/0 | 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" | | |
| | 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" | | |
| 14" | 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" | | |
| | NI-60 | 23'-9" | 22'-0" | 20'-11" | 19'-10" | 24'-6" | 22'-9" | 21'-8" | 20'-6" | | |
| 16" | NI-70 | 25'-1" | 23'-2" | 22'-0" | 20'-10" | 25'-9" | 23'-10" | 22'-9" | 21'-6" | | |
| 10 | 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" | | |

| | | | Mid-Spa | n Blocking | | Mid-S | pan Blocking ar | nd 1/2" Gypsum | Ceiling |
|---------|---------|------------------|---------|---------------------|---------------------|---------------------|---------------------|-----------------|---------|
| Depth | Series | | On Cent | re Spacing | | | On Cent | re Spacing | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| | NI-20 | 16'-10" | 15'-5" | 14'-6" | 13'-5" | 16'-10" | 15'-5" | 14'-6" | 13'-5" |
| | N1-40x | 18'-8" | 17'-2" | 16'-3" | 15'-2" | 18'-10" | 17'-2" | 16'-3" | 15'-2" |
| 9-1/2" | 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" |
| | 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" |
| 11-7/8" | NI-60 | 22'-1" | 20'-7" | 19'-7" | 18'-4" | 22' - 8" | 20'-10" | 19'-8" | 18'-4" |
| 11-7/8 | NI-70 | 23'-4" | 21'-8" | 20'-8" | 19'-7" | 23'-10" | 22' - 3" | 21'-2" | 19'-9" |
| | NI-80 | 23'-7" | 21'-11" | 20'-11" | 19'-9" | 24'-1" | 22'-6" | 21'-5" | 20'-0" |
| | NI-90x | 24'-3" | 22'-6" | 21'-6" | 20'-4" | 24'-8" | 23'-0" | 22'-0" | 20'-9" |
| | 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" |
| 14" | NI-70 | 26'-1" | 24'-3" | 23' - 2" | 21'-10" | 26'-8" | 24'-11" | 23 '- 9" | 22'-4" |
| | NI-80 | 26'-6" | 24'-7" | 23'-5" | 22'-2" | 27'-1" | 25' - 3" | 24'-1" | 22'-9" |
| | NI-90x | 27'-3" | 25'-4" | 24'-1" | 22' - 9" | 27'-9" | 25'-11" | 24 '- 8" | 23'-4" |
| | NI-60 | 27' - 3" | 25'-5" | 24'-2" | 22'-10" | 28'-0" | 26'-2" | 24'-9" | 23'-1" |
| 16" | NI-70 | 28'-8" | 26'-8" | 25'-4" | 23'-11" | 29'-3" | 27'-4" | 26'-1" | 24'-8" |
| 10 | NI-80 . | 29'-1" | 27'-0" | 25'-9" | 24'-4" | 29'-8" | 27' - 9" | 26'-5" | 25'-0" |
| | NI-90x | 29'-11" | 27'-10" | 26'-6" | 25'-0" | 30'-6" | 28'-5" | 27'-2" | 25'-8" |

^{1.} Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.

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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.

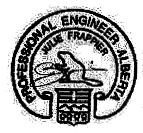
^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

^{5.} This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

^{6.} Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



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







| | | | | Bare | | | 1/2" Gyp | sum Ceiling | |
|---------|--------|-----------------|---------|-------------|-----|---------|---------------------|-------------|-----|
| Depth | Series | | On Cen | tre Spacing | | | On Cent | re Spacing | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| | 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 |
| 9-1/2" | 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 |
| | 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 |
| 11-7/8" | NI-60 | 18'-4" | 17'-3" | 16'-7" | N/A | 19'-0" | 17' - 8" | 17'-1" | N/A |
| 11-7/8 | 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 |
| | 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 |
| 14" | 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 |
| | NI-60 | 22'-3" | 20'-8" | 19'-9" | N/A | 23'-1" | 21'-5" | 20'-6" | N/A |
| 16" | NI-70 | 23' - 6" | 21'-9" | 20'-9" | N/A | 24'-3" | 22'-5" | 21'-5" | N/A |
| 10 | 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 |

| | | | Mid-Spa | n Blocking | | Mid-9 | pan Blocking ar | nd 1/2" Gypsum | Ceiling |
|---------|--------|---------------------|---------------------|-----------------|-----|---------|-----------------|---------------------|---------|
| Depth | Series | | On Cent | re Spacing | | | On Cent | re Spacing | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| | 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 |
| 9-1/2" | 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 |
| | 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 |
| 11-7/8" | NI-60 | 21'-4" | 19'-8" | 18'-5" | N/A | 21'-8" | 19'-8" | 18'-5" | N/A |
| 11-7/0 | 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 |
| - | 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 |
| 14" | 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 |
| - | NI-60 | 26'-5" | 24'-6" | 23'-4" | N/A | 27'-2" | 24'-10" | 23'-4" | N/A |
| 16" | NI-70 | 27'-9" | 25' - 8" | 24'-6" | N/A | 28'-5" | 26'-5" | 25'-2" | N/A |
| 10 | 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 |

^{1.} 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.

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^{2.} Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

^{3.} Minimum bearing length shall be 1-3/4 inches for the end bearings.

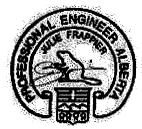
^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

^{5.} This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

^{6.} Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



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







| | | | . В | are | | I | 1/2" Gyp | sum Ceiling | |
|---------|--------|---------------------|---------------------|------------|---------|---------|----------|-------------|---------|
| Depth | Series | | On Cent | re Spacing | | | On Cent | re Spacing | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| | 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" |
| 9-1/2" | 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" |
| | 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" |
| 44 7/0" | N!-60 | 19'-7" | 18'-2" | 17'-5" | 16'-9" | 20'-2" | 18'-9" | 17'-11" | 17'-1" |
| 11-7/8" | 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" |
| | N!-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" |
| 14" | 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" |
| | NI-60 | 23'-9" | 22'-0" | 20'-11" | 19'-10" | 24'-6" | 22'-9" | 21'-8" | 20'-6" |
| 16" | NI-70 | 25 '-1 " | 23'-2" | 22'-0" | 20'-10" | 25'-9" | 23'-10" | 22'-9" | 21'-6" |
| 10 | 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" |

| | | | Mid-Spa | n Blocking | | Mid-S | pan Blocking ar | nd 1/2" Gypsum | Ceiling |
|---------|--------|---------|---------------------|------------|------------------|---------|-----------------|-----------------|---------------------|
| Depth | Series | | On Cent | re Spacing | | | On Cent | re Spacing | |
| | | 12" | 16" | 19.2" | 24" | 12" | 16" | 19.2" | 24" |
| - | 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" |
| 9-1/2" | 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" |
| | 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 '-1 0" | 21'-3" | 19'-3" | 17'-9" | 15' - 10" |
| 11-7/8" | NI-60 | 21'-9" | 19'-8" | 18'-5" | 17'-1" | 21'-9" | 19'-8" | 18'-5" | 17'-1" |
| 11-//0 | 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" |
| | 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" |
| 14" | 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" |
| | NI-60 | 27'-3" | 24'-11" | 23'-5" | 21'-7" | 27'-6" | 24'-11" | 23'-5" | 21'-7" |
| 101 | NI-70 | 28'-8" | 26'-8" | 25'-3" | 23'-4" | 29'-3" | 26'-11" | 25'-3" | 23'-4" |
| 16" | 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" |

^{1.} 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.

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^{2.} Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

^{3.} Minimum bearing length shall be 1-3/4 inches for the end bearings.

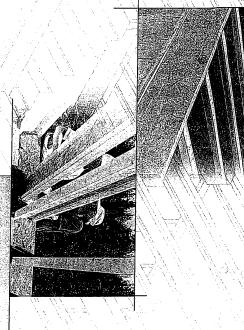
^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

^{5.} This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

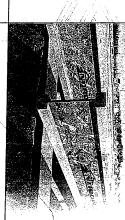
^{6.} Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

NSTALLATION GUIDE ENGINEERED WOOD

FOR RESIDENTIAL FLOORS







Distributed by:



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



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

WARNING

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

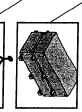
Avoid Accidents by Following these Important Guidelines:

- Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- 2. When the building is completed, the floor sheathing will provide lateral to prevent I-joist rollover or buckling. temporary bracing, often called struts, or temporary sheathing must be applied support for the top flanges of the I-joists. Until this sheathing is applied
- 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 bracing over at least two 1-joists. the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining
- 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.
- Never install a damaged 1-joist.

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-josts, 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
- Store, stack, and handle I-joists vertically and level only.
- 3. Always stack and handle Ljoists in the upright position only.
- Protect I-joists from weather, and use spacers to separate bundles. 4. Do not store I-joists in direct contact with the ground and/or flatwise
- 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 1-joists in bundles as shipped by the supplier.
- ■Orient the bundles so that the webs of the I-joists are vertical.
- Pick the bundles at the 5th points, using a spreader bar if necessary.
- Do not handle I-joists in a horizontal orientation.
- 9. NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST







MAXIMUM FLOOR SPANS

- . Maximum **clear** spans applicable to simple-span or or more of the adjacent span. 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate For multiple-span applications, the end spans shall be 40% limit states are based on the factored loads of 1.50L +
- 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 of gypsum and/or a row of blocking at mid-span. assumed. Increased spans may be achieved with the used Standard. No concrete topping or bridging element was shall meet the requirements given in CGBS-71.26
- 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.
- 5. This span chart is based on uniform loads. For applications be required based on the use of the design properties. with other than uniform loads, an engineering analysis may
- 6. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
- 1 inch = 25.4 mm 1 toot = 0.305 m

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

| | | | | Joist Joist Depth Serie |
|--------------------------------|---|---|--|----------------------------------|
| | | | | U. |
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| 00225 0025 144 | 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 77.75 77.75 77.75 | 13.8 17.10 16.6 16.8 | ole spans tre spacing 19.2 |
| | 20 9 5 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 | 35.6 7.5 7.7 8.6 8.6 | 13:50 14:50 14:00 5:23 15:24 | 24° |
| 26-07 26-07 27-07 | 5 4 4 2 5 5 5 4 4 5 6 5 4 6 6 | | 16.35 17.5 17.77 18.77 | 12" |
| 22.8 124.0 24.5 24.10 | 20-61 20 -111 22 -11 22-55 22-51 28-10 | 17.31 m 18-6 18-6 19-111 20-2 20-7 | 15:41 16:5 16:7 17:41 17:40 | Multiple On centre 16" |
| 21.9 22-11 23-3 23-9 | 1948* 2040* 2111* 2118* 2014* 2240* | 01-510 8:00 8:01 0-61 0-81 | 14:10: 15:10: 10:0:10:10:10:10:10:10:10:10:10:10:10:10 | e spans e spacing 19.2" |
| 211-10 23-0 23-4 | 2011 2011 21.6 21.10 | 18-7: 18-1: 19-1: 19-4: 19-9: | 16-10 16-10 17-0 | 24" |

I-JOIST HANGERS

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







Face Mount



CCMC EVALUATION REPORT 13032-R

NORDIC I-JOIST SERIES

WEB STIFFENERS

RECOMMENDATIONS:

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

STIFFENER SIZE REQUIREMENTS

Flange Width

Web Stiffener Size Each Side of Web

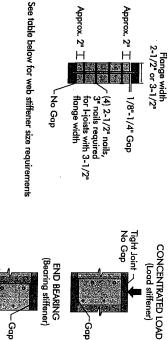
1" x 2-5/16" minimum width 1-1/2" x 2-5/16" minimum width

Tight Joint No Gap

SI units conversion: I inch = 25.4 mm

FIGURE 2

WEB STIFFENER INSTALLATION DETAILS



S-P-F No.2

1950f MSR 33 pieces per unit

2100f MSR 23 pieces per unit

2400f MSR 23 pieces per unit

NPG Lumber 23 pieces per unit

33 pieces per unit 2100f MSR

23 pieces per unit 1950f MSR

lumber in their flanges, ensuring consistent quality, superior strength time. products to adhere to strict quality control procedures throughout the analysis Chantiers Chibougamau Ltd. harvests its own trees, which enables Nortic longer span carrying capacity. Nordic Engineered Wood I-joists use only finger-jointed back spruce finished product, reflects our commitment to quality. manufacturing process. Every phase of the operation, from forest to the

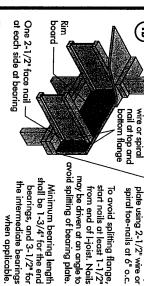
2015-04-1

INSTALLING NORDIC I-JOISTS

- 1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, control your
- 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 formulticle தன்றேன்றார்.
- 5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings 10イ告のから
- 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.
- the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the Concentrated loads greater than those that can normally be expected in residential construction should only be applied to
- 9. Never install Lioists 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 1-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. Hoist blocking panels or other engineered wood products – such as rim board – must be cut to fit between the Ljoists, and an l-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 gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary support the bottom flange of all cantilevered I-joists at the end support next to the cantilever extension. In the completed bracing or struts must be used
- 14. If square-edge panels are used, edges must be supported between Lipists 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.

a

NI blocking pane



with same nailing

bearing plate

as required for

decking)

plate (when used tor lateral shear transter, nail to

6" o.c. to top

2-1/2" nails at

€

One 2-1/2"

Attach rim board to top

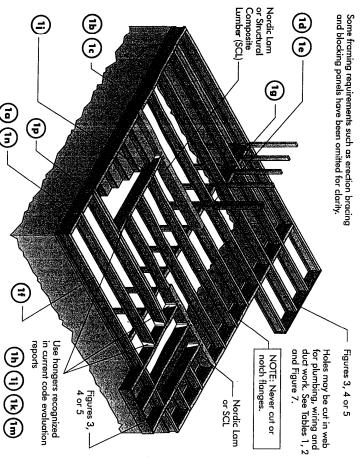
Attach rim joist to floor joist with

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

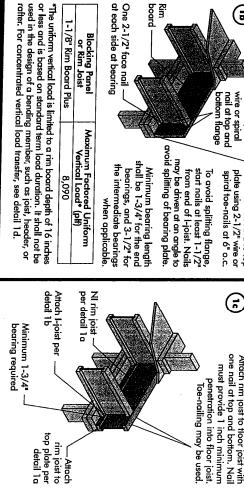
used in the design of a bending member, such as joist, header, or

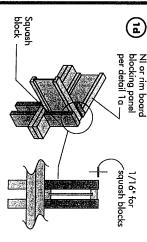
rafter. For concentrated vertical load transfer, see detail 1d.

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



All rails 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





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

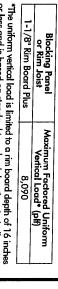
Provide lateral bracing per detail 1a, 1b, or 1c

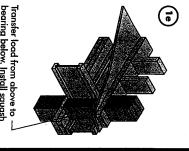
| Th | NI Joists | Blocking Panel or Rim Joist |
|----|-----------|--|
| | 3,300 | Maximum Factored Uniform Vertical Load* (plf) |

Attach I-joist to

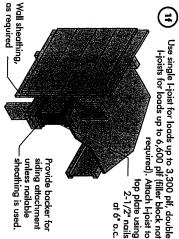
lop plate per detail 1b

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

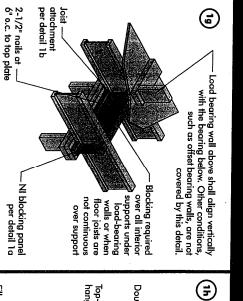




bearing below. Install squash blocks per detail 1d. Match to post above bearing area of blocks below



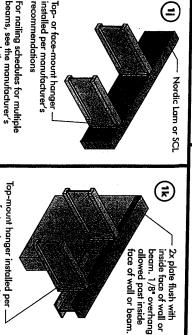
Rim board may be used in lieu of Ljoists. Backer is not carried to the foundation. required when rim board is used. Bracing per code shall be



Before installing a backer block to a double I-joist, drive three

Backer block (use if hanger load exceeds 360 lbs)

backer block will fit. Clinch. Install backer tight to top flange. additional 3" nails through the webs and filler block where the



Filler block per

detail Ip

(1)

Note: Unless hanger sides laterally

manufacturer's recommendations

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

Maximum support capacity = 1,620 lbs.

FILLER BLOCK REQUIREMENTS FOR DOUBLE 1-JOIST CONSTRUCTION

(7)

clinch when possible.

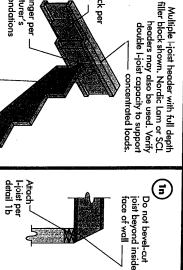
detail 1h. Nail with twelve 3" nails, Backer block attached per recommendations manufacturer's Install hanger per

support the top flange, bearing

recommendations.

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

stiffeners shall be used



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

> hanger Double I-joist header per detail 1p Filler block Top- or face-mount Use twelve 3" nails, clinched when possible. Maximum factored resistance for hanger for this detail = 1,620 lbs. laterally surport the top flange, bearing stiffeners, shall be seen. Note: Unless hanger sides (both sides for face-mount Backer block required 2019042

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

hangers)

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

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

- better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard. Minimum grade for backer block material shall be S-P-F No. 2 or
- ** 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"
- opposite side. to lumber piece, nails from each web Two 2-1/2" spiral of adjacent web. extend block to face Lumber 2x4 min., alternate on **(** board 2P. -One 2-1/2" nails at top and bottom flange lumber piece Two 2-1/2" nails from each web to —2x4 min. (1/8" gap minimum)

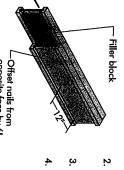
line or 1/2 inch minimum gypsum ceiling strap applied to underside of joist at blocking Optional: Minimum 1x4 inch affached to underside of joists

2-1/2" nails at 6" o.c. One 2-1/2" nails one side only

I-joist blocking panel

panel NI blocking

- 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 detai



-1/8" to 1/4" gap between top flange opposite face by 6"

and filler block

(

- 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 Size

Joist Depth

Filler block is required between joists for full length of span.

2-1/2" x 1-1/2"

6

2-1/8" x 12" 2-1/8" × 10" 2-1/8" × 6" Filler Block Size

/8" × 8"

- 4. Nail joists together with two rows of 3* possible) on each side of the double 1-joist. nails at 12 inches o.c. (clinched when are required. can be clinched, only two nails per foot Total of four nails per foot required. If nails
- The maximum factored load that may be using this detail is 860 lbf/ft. Verify double applied to one side of the double joist

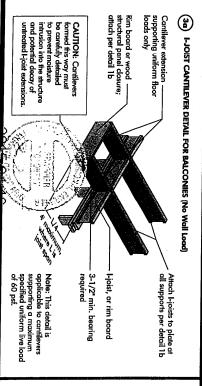
3-1/2"× 2"

ᅙ 4

3" x 7" 3" x 7" 11"

을 보고 일 × 10 12 10 သူ လူ

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)





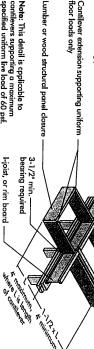
Full depth backer block with 1/8" gap between block and top flange of I-joist. See detail 1h. Nail with 2 rows of 3" nails at 6" o.c. and clinch.

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

2x8 min. Nail to backer block and joist with 2 rows of 3" nails at 6" o.c. and clinch. (Cantilever nails may be used to attach backer block if length of nail is sufficient to allow clinching.)

floor loads only Cantilever extension supporting uniform

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



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)



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

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.



all supports per _ detail 1b, 3-1/2 panel dosure (3/4" minimum thickness); attach per detail 1b min. bearing to top plate at Rim board, or Attach I-joists wood structural , Q1V B Face nail two rows of 3" nails at 12" o.c. each side through one Lioist web and the filler block to other I-joist web. Offset nails from opposite face by 6". (four nails per foot two nails per foor Clinch if possible

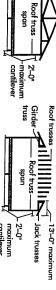
centreline of the reinforcing panel from each side. Clinch when possible. Block Lipists ogether with filler blocks for the full length of the reinforcement. For Lipist flange widths greater than 3 inches place an additional row of 3" natis along the

reinforcement requirements at See table

span

FIGURE 4 (continued) below for NI

cantilever.



13'-0" maximum maximum cantilever

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

| 10.0 | | 117/6 | | JOIST DEPTH (in.) |
|---------------|---|--|------------------|--|
| 46 # 8 # K(S) | 6 muniter 22526 4526 22526 | 8884088 | Se coen | ROOF TRUSS SPAN (ft) |
| ZZZZZZZ | | 222222 | 22222 | |
| 222222 | ZZZZZZZ | ZZZZZZZ | x x 2 | = 30 psf, DL = JOIST SPACING 16 19.2 |
| 222222 | .zzzzzzz | 2223 | | 2 (in 15 |
| 13.25222 | zzzz | ZNan-10- | ××××× | psf .) 24 |
| ********** | 2222222 | ******* | -2222 | ROOF (C LL = JO 12 |
| ZZ ZZ Z Z Z | ZZZZZZZ | zzzz | MMM | ADING (40 psf, D IST SPAC 16 |
| 222222 | zzzz | ZNN | ******* | UNFACTO L = 15 p ING (in.) 19.2 |
| 12 | Z000 | ************************************** | ***** | ORED) sf 24 |
| ZZZZZZZ | ZZZZZZZ | zzzzzzz | z | LL = 50 psf JOIST SP 12 16 |
| ZZZZZZ | zzzzz. | z N = z | ×××>22 | ق ق |
| zz | Žoji je | Z×00007= | ***** | L = 15 ps NG (in.) 19.2 |
| ~~~~~ | | ***** | ××××× | # 24 |

- 1. N = No reinforcement required.
 1 = NI reinforced with 3/4 wood structural panel on one side only.
 2 = NI reinforced with 3/4 wood structural panel on both sides, or double Hoist.
 3 = Try a desper joist or deser spacing.
 4 Maximum design load shall be: 15 per fool dead load, 55 per floor total load, and 80 per well load, Wolf load is based on 3-0 per source.

maximum width window or door opening:

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

 3. Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 pet and deed load of 15 pet, and a live load deflection limit of 1480. Use 12" o.c. requirements for lesser spacing.
 - 4. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting will and the ridge beam. When the roof is framed using a ridge board, by the Roof Truss Span is equivalent to the distance between the supporting walls as if a
- truss is used.

 5. Cantilevered joists supporting girder trusses or roof beams may require additional

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centreline of any Table 1 or 2, respectively. nole or duct chase opening shall be in compliance with the requirements of
- l-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified
- ω Whenever possible, field-cut holes should be centred on the middle of the web.
- 4. between the top or bottom of the hole or opening and the adjacent I-joist flange. 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 The maximum size hole or the maximum depth of a duct chase opening that car
- 'n 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.
- ٥. Where more than one hole is necessary, the distance between adjacent hole size of the largest square hole (or twice the length of the langest side of the langest rectangular hale or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of edges shall exceed twice the diameter of the largest round hole or twice the Tables 1 and 2, respectively
- A knockout is **not** considered a hole, may be utilized anywhere it occurs, and and/or duct chase openings. may be ignored for purposes of calculating minimum distances between holes
- Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a verification. cantilevered section of a joist. Holes of greater size may be permitted subject to
- 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
- 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

Joist

Joist

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 Minimum distance from inside face of any support to centre of hole (ft-in.)

| ### Series 2 3 4 5 6 6-1/4 7 8 8-5/8 9 10 10-3/4 11 12 12-3/4 ################################### | | | | | | | | | | | |
|--|---------|--------------|-----|------|---|-------|-----|----------|------|-----|----------|
| | ,epiii | Series | 2 3 | 4 5 | | 1/4 7 | | 8 (III.) | | | 15 2% QL |
| 1.4 224 427 504 70 75 | | (e) | - | 2 10 | 1 | 0 | | | | | |
| Color Colo | |) • <u>.</u> | | | yo, | | | n | | i i | H |
| 93 | | | | | | | | H | | 1 | 1 |
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| | | ~1.0 | | | | | | 66 | 40.2 | | |
| 100 100 100 100 100 100 100 100 100 100 | | | | | 6 | | | 0.0 | 3.5 | | |
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| | | *) Le | | | | | | 32 | | | 5 |
| | | | | | | | 100 | 84 | | | 564 |
| DOVE HOUR MOV DE HEAD for Light angular of 134 inches on the Light and the light angular of 134 inches on the light angular of 134 inches of 134 inches on the light angular of 134 inches of 1 | | DOV DO USE | | | 100 00 000 | | | | | | |

- The best of the state of the spacing of 24 inches on centre or less.

 Hole location distincte is measured from inside face of supports to centre of hole.

 Distances in this chart are based on uniformly loaded joists.

OPTIONAL:

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

Dreduced = Lactual x D

- Where:
- Dreduced
- actual
- ¥
- Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span applications (fit. The reduced distance shall not be less than 6 inches from the face of the support to edge of the hole.

 The actual measured span distance between the inside faces of supports (fit).
- Span Adjustment Factor given in this table.
- The minimum distance from the inside face of any support to centre of hole from this table

If <u>Lactual</u> is greater than 1, use 1 in the above calculation for <u>Lactual</u>. SAF

0/5/04/16

FIELD-CUT HOLE LOCATOR FIGURE 7

bearing distance from for minimum See Table 1 Knockouts of larger ô See rule 12 2x diameter diameter, length or hole 2x duct chase whichever is between top and bottom flange — all duct chase openings and holes Maintain minimum 1/8" space Duct chase opening from bearing) minimum distance (see Table 2 for

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

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



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

Holes in webs sharp saw. should be cut with a

and then making the cuts between the rectangular hole by drilling a 1-inch diameter hole in each of the four corners stress concentrations. Slightly rounding the corners is recommended. Starting the holes is another good method to the corners, as this can cause unnecessary For redangular holes, avoid over-cutting

TABLE 2

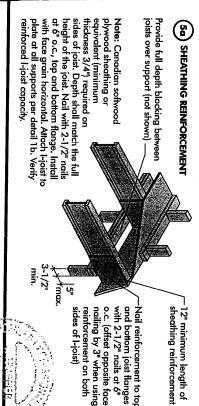
| oist | Joist | | ili distail | ce Irom I | nside idc | e or any s | upport to | o centre c | of openin | 9 |
|-------|--------------|-----------------------|-------------|--------------|-----------|-------------------|-----------|------------|-----------|----------|
| Depth | Series | X 0 | 10 | รี | Duct ct | nase lenç | Jth (in.) | | | |
| | PARTY ALVERT | entitle to the second | | 7.1 | 14 | • | ő | 20 | 22 | 24 |
| | | 014 | 5180 | 000 | 664 | 5.8° | 6.1 | 19:9 | 7.17 | 7 |
| 7 | 1 7 1:1: | | 5.9 5.5 | 612° 510° | | | 715 | 8.0 | 80.6 | 000 |
| | | 5131 | 5.6 | 6.0 | 6.5 | 610 | 73 | 7.8 | 8:2 | 90 |
| | | | | | | 0 \ 2 \ 2 \ | | 8-3 | 8.9 | Q |
| | | 1 | 7.8 | 80 | 6. | 9 | 9.3 | 9.9 | 0.3 | |
| | | 722 | 777 | 8.0 | 86 | 8.10 | 973 | 9.8 | 10.2 | |
| | | | | 8.5 | BAY | 2.7 | 9.7 | | 10.7 | 3,5 |
| | | | | 9.8° | 926 | 100 | 10.7 | 152 | 12.0 | 12-8 |
| | | | | 9.9 | 7 | | 8.01 | 1112 | | 5 |
| | | | 0 0 0 0 | | 0.6 | o S | | 11.9 | | () T |
| | | 2010 | 8.0 | 1122 | 911.6 | 12118 | 172.6 | 13.2 | 10.7 | |
| | | | | | o L | 0110 | | 12.8 | 333 | |

- 14.5
- . Above table may be used for I-joist spacing of 24 inches on centre or less.

 Duct dhase opening location distance is measured from inside face of supports to centre of opening.

 The above table is based on simple-span joists only. For other applications, contact your local distributor, because the span instance is the span inside span inside span inside span inside span inside the span requirements for a design live local of 40 pst and dead load of 15 pst, and a live load deflection limit of I/480. For other applications, contact your local distributor.

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



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

structural panel closure (3/4" minimum thickness),

Rim board or wood

attach per detail 1b.

F

SET-BACK DETAIL

Bearing walls

(5c) SET-BACK CONNECTION

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

girder joist per detail 5c.

Attach joists to

Attach I-joist to plate at all 3-1/2" minimum I-joist supports per detail 1b.

a ax

(not shown for clarity)

bearing required.

Provide full depth blocking between joists over support

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

Alternate for opposite side.

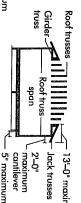


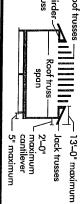
- used in lieu of solid sawn blocks Hanger may be
- N = No reinforcement required.
 N = NI reinforced with 3/4" wood structural panel on one side only.
 2 = NI reinforced with 3/4" wood structural
- Maximum design load shall be: 15 psf roof dead load, 55 psf floor total load, and 80 plf wall load. Wall load is based on 3*0* X = Try a deeper joist or closer spacing. panel on both sides, or double I-joist.

maximum width window or door openings

- For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
- μ the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use Table applies to joists 12" to 24" o.c. that meet 12" o.c. requirements for lesser spacing.
- the supporting wall and the ridge beam. When the roof is framed using a ridge board, For conventional roof construction using a ridge beam, the Roof Truss Span column distance between the supporting walls as if a above is equivalent to the distance between truss is used. the Roof Truss Span is equivalent to the
- Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

| מ | −5" maximum | Į | cci illevel. |
|-------|-------------|------------|----------------------|
| | cantilever | | requirements at |
| truss | Lmaximum | span | reinforcement |
| Girde | √ 2'-0" | Roof truss | below for NI |
| | , | | See table |
| Roof. | | yed) | FIGURE 5 (continued) |
| | | | |





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

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

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.
- Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from
- 4. Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when tapped into place with a block and sledgehammer.
- 5. Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists
- 6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
- 7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time a thinner line (1/8 inch) than used on I-joist flanges. before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying
- 8. Tap the second row of panels into place, using a block to protect groove edges.
- 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

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

| The contract of the contract o | 24 | 240 | | Maximum Joist Spacing (in.) |
|--|-------|--------|--------|--|
| STATE STATE STATE SPECIAL STATES | 3/4 | 5/8 | | Minimum Panel Thickness (in.) |
| | 2 | 2" | 2" | Common Wire or Spiral Nails |
| | 1-3/4 | 1-3/4* | 1-3/4" | iil Size and Type Ring Thread Nails or Screws |
| | 2" | 2" | 2" | pe Staples |
| ļ | 6. | 6" | 6" | Maximum of Fast |
| - | 10" | 12" | 12" | Spacing teners Interm, Supports |

- 1. Fasteners of sheathing and subflooring shall conform to the above table
- Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to framing
- 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

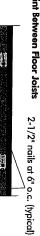
IMPORTANT NOTE:

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

Rim board Joint Between Floor Joists (8a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

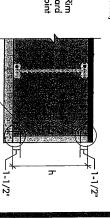
Rim board Joint at Corner



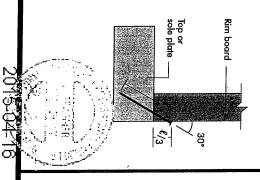


(typical)

(1) 2-1/2" nail

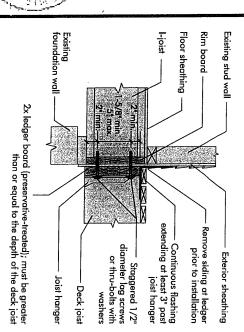


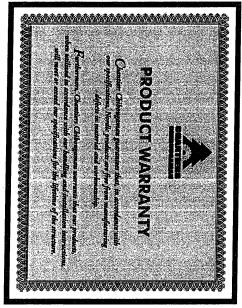
(8 TOE-NAIL CONNECTION AT RIM BOARD

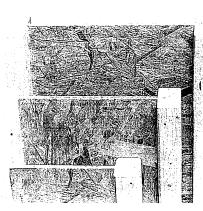


• 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL

Rim board joint







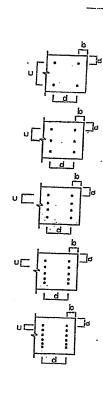
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| | LIVI HEAT | SED AND OO | | |
|------------------|-----------|---|------------------------|--|
| | | DER AND CONVENTIONAL BER NAILING DETAILS | | |
| DETAIL NUMBER | | NUMBER OF ROWS | SPACING (INCHES o/c | |
| | A | 2. | 12 | |
| - | В | 2 | 8 | |
| | С | 2 | 6 | |
| | D | 2 | 4 | |
| | 1A | 3 | 12 | |
| | 1B | 3 | 8 | |
| | 1C | 3 | . 6 | |
| | 1D | . 3: | 4 . | |
| 1 | 2A | 4 | . 12 | |
| 1 | 2B | 4 | 8 . | |
| L | 2C | 4 | 6 | |
| Ŀ | 2D | 4 | 4 | |
| L | ЗА | 5 | 12 | |
| L | 3B | 5 | . 8 | |
| L | 3C | 5 | 6 | |
| L | 3D | 5 | 4 | |
| L | 4A | 6 | 12 | |
| Ŀ | 4B | 6 | 8 | |
| Ŀ | 4C | 6 | 6 | |
| Ŀ | 4D | 6 | 4 | |



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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 PLIES 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



DNG NO TAMPLOOL. 14

STRUCTURAL

COMPONENT ONLY

TO BE USED ONLY

WITH BEAM CALCS

PSEARING THE

STAMP BELOWS

PROVICE NATLING
DETAIL № × SEE
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