

| duct | Plies | Net Qty |
|---------------------------------------|---|--|
| OIL N.H. A.O | | |
| 2" NI-40x | 1 | 1 |
| 2" NI-40x | 2 | 2 |
| 2" NI-40x | 1 | 7 |
| 2" NI-40x | 1 | 20 |
| 2" NI-40x | 1 | 5 |
| 2" NI-40x | 2 | 2 |
| 2" NI-40x | 2 | 2 |
| 2" NI-40x | 1 | 5 |
| 2" NI-40x | 1 | 2 |
| /4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 1 | 1 |
| /4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| /4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| /4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| ֡֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜ | 2" NI-40x 2" NI-40x 2" NI-40x 2" NI-40x 2" NI-40x 2" NI-40x 2" NI-40x 4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2" NI-40x 1 2" NI-40x 1 2" NI-40x 2 2" NI-40x 2 2" NI-40x 1 2" NI- |

| C | connector | Summary |
|-----|-----------|-------------|
| Qty | Manuf | Product |
| 17 | H1 | IUS2.56/9.5 |
| 3 | H1 | IUS2.56/9.5 |
| 4 | H1 | IUS2.56/9.5 |
| 2 | H2 | HU310-2 |
| 2 | H4 | HGUS410 |



FROM PLAN DATED:

BUILDER: BAYVIEW WELLINGTON

SITE: PASSAGE ON THE CANAL

MODEL: TH7C

ELEVATION: B

LOT:

CITY: ST CATHERINES

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

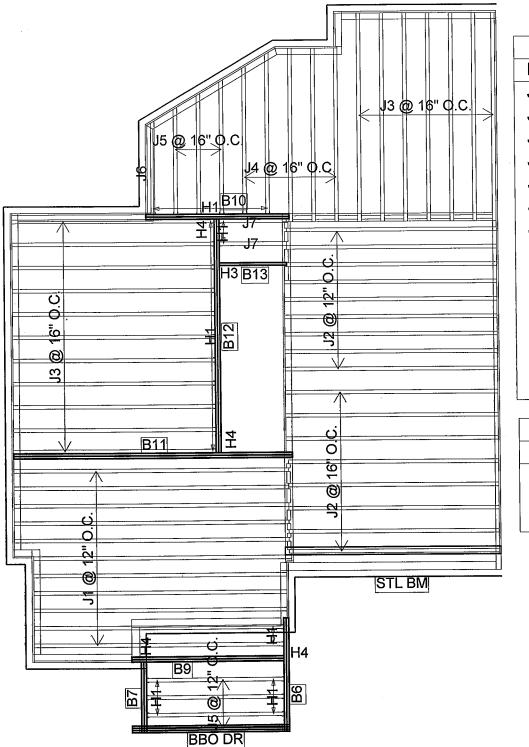
REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION. **SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2** S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING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

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/27/2018

1st FLOOR



| | | Products | | |
|--------|----------|--|-------|---------|
| PlotID | Length | Product | Plies | Net Qty |
| J1 | 16-00-00 | 9 1/2" NI-40x | 1 | 11 |
| J2 | 14-00-00 | 9 1/2" NI-40x | 1 | 17 |
| J3 | 12-00-00 | 9 1/2" NI-40x | 1 | 18 |
| J4 | 10-00-00 | 9 1/2" NI-40x | 1 | 5 |
| J5 | 8-00-00 | 9 1/2" NI-40x | 1 | 7 |
| J6 | 6-00-00 | 9 1/2" NI-40x | 1 | 1 |
| J7 | 4-00-00 | 9 1/2" NI-40x | 1 | 2 |
| B11 | 18-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| B12 | 14-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| B10 | 10-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| В9 | 10-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| B6 | 8-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| B7 | 6-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2 | 2 |
| B13 | 4-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 1 | 1 |

| (| Connector | Summary | | | | | | | | | |
|-------------------|-----------|-------------|--|--|--|--|--|--|--|--|--|
| Qty Manuf Product | | | | | | | | | | | |
| 27 | H1 | IUS2.56/9.5 | | | | | | | | | |
| 1 | H3 | HUS1.81/10 | | | | | | | | | |
| 4 | H4 | HGUS410 | | | | | | | | | |



FROM PLAN DATED:

BUILDER: BAYVIEW WELLINGTON

SITE: PASSAGE ON THE CANAL

MODEL: TH7C

ELEVATION: B

LOT:

CITY: ST CATHERINES

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

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

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/25/2018

2nd FLOOR

(1a)

l-joist to top plate per detail 1b

2-1/2*

3-1/2*

(1d)

NI blocking

panel per detail 1a

or Rim Joist

NI Joists

transfer, see detail 1d.

(1h) Bocker black (use if hanger load exceeds 360 lbs). Before installing a backer black to a double 1-joist, drive three additional 3' nails through the webs and filler black where the backer black will fit. Clinch. Install backer tight to top flange. Use twelve 3' nails, clinched when possible. Moximum factored resistance for hanger for this detail = 1,620 lbs.

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

Minimum grade for backer black material shall be S-P-F No. 2 or better for solid sawn lumber and

wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard.
**For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges

Moterial Thickness Required*

For 2" thick flanges use net depth minus 4-1/4".

- 2x plate flush with inside face of wall

or beam. 1/8" overhang allowed

NOTE: Unless hange

sides laterally support

stiffeners shall be used

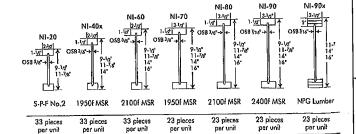
installed per manufacturer's

anst inside face of wall or beam



Refer to the Installation Guide for Residential Floors for additional information. CCMC EVALUATION REPORT 13032-R





WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS

- 1. The distance between the inside edge of the support and the centreline of any hale or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.

 2. 1-joist top and bottom flonges must NEVER be cut, notched, or otherwise modified
- 3. Whenever possible, field-cut holes should be centred on the middle of the web.
 4. The maximum size hole or the maximum depth of a duct chose opening that

2.6' 4-0'
3.4' 4-0'
3.6' 5.6'
0.8' 1-0'
1.8' 3-0'
2.6' 4-0'
2.10' 4-2'
0.8' 1.5'
0.8' 0.9'
0.8' 1.8'
1.10' 3.0'
2.0' 3.4'
0.8' 0.8'
0.8' 0.9'
0.8' 0.9'
0.8' 0.8'
0.8' 0.8'
0.8' 0.8'
0.8' 0.8'
0.8' 0.8'
0.8' 0.8'

can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the tap or bottom of the hale or opening and the adjacent I-joist flange.

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 Hale (ft - in.)

i. Above table may be used for 1-joist spacing of 24 inches on centre or less.

2. Hole location distance is meosured from inside face of supports to centre of hole.

3. Distances in this chart are based on uniformly loaded joists.

1. The above table is based on the 1-joist being used at their maximum spans. The minimum distance as given above may be reduced for sharter spans; contact your local distributor.

6-1/4 7 8 8-5/8 9 10 10-3/4 11 12 12-3/4

- 5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.

 6. Where more than one hole is necessary, the distance between adjacent hole edges
- shall exceed twice the diameter of the largest round hale or twice the size of the largest shall exceed whee the diameter of the largest routin love to whee the second whee second of the long second of the longest rectingular hole or duct chose opening) and each hole and duct chose opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.

 7. A knockout is not considered a hole, may be utilized anywhere it occurs, and may be
- ignored for purposes of calculating minimum distances between hales and/or duct
- 8. Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.
- 9. A 1-1/2 inch hole or smaller can be placed anywhere in the web
- provided that it meets the requirements of rule number 6 above.

 10. All holes and duct chase openings shall be cut in a workmon-like monner in accordance with the restrictions listed above and os illustrated in Figure 7.
- 11. Limit three maximum size hales per span, of which one may be
- a duct chase opening.

 12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single

Simple Span Only

| | 1 | Minimu | ım distanı | ce from in: | | | | nire of c | pening (| t - in.) |
|---------|--------|--------|------------|-------------|----------|-----------------|-----------------|------------------|------------------|------------------|
| Joist | Joist | | | | Duct Cho | isa Leng | th (in.) | | | |
| Depth | Series | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| | NI-20 | 4'-1" | 4'-5" | 4'-10" | 5¹-4* | 5'-8' | 6'-1" | 6'-6" | 7'-1" | 7'-5" |
| | NI-40x | 5'-3" | 5'-8" | 6'-0" | 6'-5" | 6'-10" | 7'-3" | 7'-8" | 8'-2" | 8'-6" |
| 9-1/2" | NI-60 | 5'-4" | 51-91 | 6'-2" | 6'-7" | 7'-1" | 7'-5" | 8'-0" | 8'-3" | 8'-9' |
| ′ ′′~ | NI-70 | 5'-1" | 5'-5" | 5'-10" | 6'-3" | 6'-7" | 7'-1" | 7'-6" | 8'-1" | 8'-4" |
| ĺ | NI-80 | 5'-3' | 5'-8" | 61-01 | 6'-5" | 6 <u>'-</u> 10" | 7'-3" | 7'-8" | 8'-2" | 8'-6' |
| | NI-20 | 5'-9" | 6'-2' | 6'-6" | 7-1" | 7'-5" | 7'-9" | 8'-3" | 8'-9" | 9'-4" |
| | NI-40x | 6'-8" | 7'-2" | 7'-6" | 8'-1" | 8'-6" | 9'-1" | 9'-6" | 10-1 | 10'-9" |
| | NI-60 | 7'.3' | 7'-8" | 8'-0" | B'-6" | 9'-0" | 9'-3" | 9-9- | 10'-3" | 11'-0" |
| 11-7/8* | NI-70 | 7'-1" | 7'-4" | 7'-9' | 8'-3" | 8'-7" | 9-1- | 9'-6" | 10'-1" | 10'-4' |
| | NI-80 | 7'-2" | 7'-7" | 8'-0" | 8'-5' | 8'-10" | 9-3 | 9-8" | 10'-2" | 10'-8" |
| | NI-90 | 7'-6" | 74114 | 8'-4" | 8'-9" | 9'-2" | 9'-7" | 10'-1" | 10-7 | 10:11 |
| | NJ-90x | 7'-7' | 8'-1" | 8'-5" | 8-101 | 9'-4" | 9'-8" | 10'-2" | 10'-8" | 11'-2' |
| | NI-40x | 8'-1" | 8'-7" | ò0. | 9-6 | 10-1 | 10'-7" | 111-2 | 12'-0" | 12'-8" |
| | NI-60 | 8'-9" | 9'-3" | 9-8 | 10-1 | 10-6" | 11-14 | 11'-6" | 13'-3" | 13'-0' |
| 14" | NI-70 | 8'-7" | 9'-1" | 9'-5" | 9-10" | 10'-4" | 10-8 | 11'-2" | 11-7 | 12'-3" |
| 14 | N1-80 | 9'-0" | 9-3 | 9-9 | 10,-1, | 10'-7" | 11,-1, | 11'-6" | 12'-1" | 12'-6' 12'-11 |
| | NI-90 | 9'-2' | 9'-8" | 10'-0" | 10'-6" | 10-11 | | 11'-9" | 12'-4" 12'-7" | 13-2 |
| | NI-90x | 9-4 | 9-9 | 10-3 | 10'-7" | 11-1" | 11-7 | 1241 | | |
| | NI-60 | 10-3 | 10'-8" | 11'-2' | 11'-6" | 12'-1" | 12'-6" | 13'-2" | 14'-1" 13'-3" | 14-10 14-0 |
| | NI-70 | 10-1 | 10'-5" | 11'-0" | 11-4 | 11'-10 | | 12'-8" 13'-1" | 13'-8" | 14-4 |
| 16" | NI-80 | 10-4 | 10'-9' | 11'-3' | 11'-9" | 12'-1" | 12-7" | 13'-6" | 14-2 | 14-10 |
| | NI-90 | 10-9 | 11'-2' | 11-8" | 12'-0" | 12'-6" | 13'-0" | 13'-9" | 14-4 | 15'-2" |
| | N1-90x | 17-1 | 11'-5' | 111-10 | 12'-4" | 12-10 | <u>" 13'-2"</u> | 13.44 | 14-4 | 13.7 |

DUCT CHASE OPENING SIZES AND LOCATIONS

| 1 | 1 | Minimu | ım distanı | ce from in: | side face | of suppo | orts to ce | nire of c | pening (| H - in.} |
|----------------|-----------------|--------|------------|-------------|-----------|----------|-----------------|-----------|----------|----------|
| Joist Depth | Joist Series | | | | Duct Cho | se Leng | th (in.) | | | |
| Depin | 301103 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| | NI-20 | 4'-1" | 4'-5" | 4'-10" | 5'-4" | 5'-8' | 6'-1" | 6'-6" | 7'-1" | 7'-5" |
| | NI-40x | 5'-3" | 5'-8" | 6'-0" | 6'-5" | 6'-10" | 7'-3" | 7'-8" | 8'-2" | 8'-6" |
| 9-1/2" | NI-60 | 5-4 | 5'-9" | 6'-2" | 6'-7" | 7'-1" | 7'-5" | 8'-0" | 8'-3" | 8'-9" |
| ′ ′′~ | NI-70 | 5'-1" | 5'-5" | 5'-10" | 6'-3" | 6'-7" | 7'-1" | 7'-6" | 8'-1" | 8'-4" |
| | NI-80 | 5'-3' | 5'-8" | 61-01 | 6'-5" | 6'-10" | 7'-3" | 7'-8" | 8'-2" | 8'-6" |
| | NI-20 | 5'-9* | 6'-2' | 6'-6" | 7-1" | 7'-5" | 7'-9" | 8'-3" | 8'-9" | 9'-4" |
| | NI-40x | 6'-8" | 7'-2" | 7'-6" | 8'-1" | 8'-6" | 9'-1" | 9'-6" | 10-1 | 10'-9" |
| | NI-60 | 7'-3' | 7-8 | 8'-0" | B'-6" | 9'-0" | 9'-3" | 9'-9" | 10'-3" | 11'-0' |
| 11-7/8° | NI-70 | 7'-1" | 71.4 | 7'-9' | 8'-3" | 8'-7" | 9-1- | 9-6" | 10'-1" | 10'-4' |
| | NI-80 | 7'-2" | 7'-7" | 8'-0" | 8'-5' | 8'-10" | 9-3 | 9'-8" | 10'-2" | 10'-8" |
| | NI-90 | 7'-6" | 74114 | 8'-4" | 8'-9" | 9'-2" | 9'-7" | 10'-1" | 10'-7" | 10:-11" |
| | NJ-90x | 7'-7' | 8'-1" | 8'-5" | 8'-10" | 9'-4' | 9'-8" | 10'-2" | 10'-8" | 11'-2' |
| | NI-40x | 8'-1" | 8'-7" | 9·-0° | 9'-6" | 10-1 | 10'-7" | 111-2 | 12'-6" | 12'-8" |
| | NI-60 | 8'-9" | 9'-3" | 9-8 | 10'-1" | 10'-6" | 11'-1" | 11-6 | 13'-3" | 13'-0' |
| 14" | NI-70 | 8'-7" | 9'-1" | 9'-5" | 9'-10" | 10-4 | 10-8 | 11'-2' | 11-7 | 12'-3" |
| 14- | NI-80 | ያ-0 | 9.3 | 9-9 | 10-1 | 10'-7" | 11-1 | 11'-6" | 12'-1" | 12'-6" |
| | NI-90 | 9'-2" | 9'-8" | 10:-0. | 10-6 | | 111-5 | 11'-9' | 12'-4" | 12-11 |
| | NI-90x | 9'-4" | 9-9 | 10-3 | 10'-7' | 11-1. | 11-7 | 12'-1" | 12'-7' | 13'-2' |
| | NI-60 | 10-3 | 10.8 | 11-2 | 11'-6" | 12-1 | 12-6 | 13'-2" | 14-1" | 14-10 |
| | NI-70 | 10-1 | 10'-5" | 11'-0" | 11-4 | 11'-10 | | 12'-8" | 13'-3" | 14'-0' |
| 16" | NI-80 | 10-4 | 10'-9" | 11'-3' | 11'-9" | 12-1 | 12-7" | 13'-1" | 13'-8" | 14'-4' |
| | NI-90 | 10-9 | 11'-2' | 11'-8" | 12'-0" | 12'-6" | 13'-0" | 13'-6" | 14-2 | 14'-10' |
| ļ | N1-90x | 11-1 | 11'-5' | 111-10 | 12'-4" | 12-10 | <u>" 13'-2"</u> | 13'-9" | 14-4 | 15'-2" |

1. Above table may be used for t-joist spacing of 24 inches on centre or less.
2. Duct chase opening location distance is measured from inside face of supports to centre of opening.
3. The above table is based on simple-span joists only. For other opplications, contact your local distributor.
4. The above table is based on uniformly loaded floor joists that meet the span requirements for a design five load of 40 pst and dead load of 15 pst, and a live load deflection limit of L/450.

5. The above table is based on the 1-joist being used of their maximum spans. The minimum distance os given above may be reduced for shorter spans; contact your local distributor.

IP FILLER BLOCK REQUIREMENTS FOR DOUBLE 1-JOIST opposite face by 6°

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

1. Support back of I-joist web during nailing to prevent damage to web/flange connection.

2. Leave a 1/8 to 1/4-inch gap between top of filler black

Maximum suppar

capacity = 1,620 lbs.

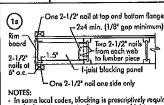
- and bottom of top I-joist flange.

 3. Filler black is required between joists for full length
- of span.

 4. Nail joists together with two rows of 3° noils at 12 inches o.c. (clinched when possible) on each side of the double Ljoist. Total of four noils per foot required. If noils can be
- clinched, only two nails per fool are required.

 5. The moximum factored load that may be applied to one side of the double joist using this detail is 860 lbt/fit.

| Flonge Size | Net Depth | Filler Block Size | (1s |
|--------------------|---------------------------------|--|------------|
| 2-1/2°x 1-1/2° | 9-1/2" 11-7/8" 14" 16" | 2-1/8" x 6" 2-1/8" x 8" 2-1/8" x 10" 2-1/8" x 12" | 2-1 ngi |
| 3-1/2°x 1-1/2° | 9-1/2" 11-7/8" 14" 16" | 3' × 6' 3' × 8' 3' × 10' 3' × 12' | NC |
| 3-1/2°× 2° | 11-7/8* 14* 16* | 3' x 7' 3' x 9' 3' x 11' | i i |



8,090

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

this detail.

Load bearing wall above shall align vertically with the bearing below. Other conditions, such

s offset bearing walls, are not covered by

Blocking required over all interior supports under

Structural Composite Lumber (SCL)

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

Ton- or face-mount hanger

installed per manufacturer's

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

OPTIONAL: Minimum 1x4 inch strop applied to underside of joist at blacking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.

-NI blocking panel per detail 1a

NOTE: Unless hanger sides laterally support the top flange,

- NI blocking panel

bearing stiffeners shall be used.

Nordic Lam or

load-bearing walls or when floor joists are not

1-1/8" Rim Board Plus

One 2-1/2' wire or spirel gail at top and bottom flange

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

2-1/2° nails &

of 6° o.c.

to top plate

NOTE: Unless hanger

sides laterally support

the top flange, bearing stiffeners shall be used

Backer block required

(both sides for face-

- Do not bevel-cut

of wall

NOTE: Blocking required at

bearing for lateral support, no

- Attach I-joist

bearing below Install squash

blocks per detail 1d.

area of blocks

below to post

For hanger capacity see hanger manufacturer's recommendations. Verify double I-joist capacity to suppor

ner detail 1 h

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

 $^{(1)}$

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

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

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

FIGURE 7

TABLE 1

9-1/2"

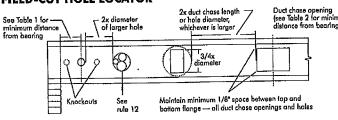
1-7/8

14"

NI.40

NI-70

FIELD-CUT HOLE LOCATOR





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

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

Holes in webs should be cut with a sharp saw.

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

WEB STIFFENERS

RECOMMENDATIONS

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

FIGURE 2

(1b)

2-1/2"-

(1e)

Filler block

Multiple I-joist header with full depth filler

block shown. Nordic Lam or SCL headers may also be used. Verify double 1-jois

Sarker black attached per

detail 1h. Nail with twelve 3"

nails, clinch when possible.

- Install hanger per

recommendations

concentrated loads.

Maximum Factored Uniform

Vertical Load* (plf)

3.300

Maximum Factored

Vertical Load per Pair of Squash Blocks (lbs)

5-1/2 wide

8,500

3-1/2" wide

5,500

1-1/8" Rim Board Plus 4,300 6,600

Minimum Depth**

5-1/2"

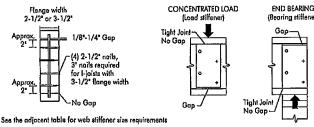
7-1/4

Provide lateral bracing per detail 1a or 1b

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

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

WEB STIFFENER INSTALLATION DETAILS



| flange Width | Web Stiffener Size Each Side of Web |
|-----------------|--|
| 2-1/2" | 1" x 2-5/16" minimum width |
| 3.1/2" | 1-1/2" x 2-5/16" minimum width |

STIFFENIER SIZE REQUIREMENTS

SAFETY AND CONSTRUCTION PRECAUTIONS





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

WARNING: I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed. AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

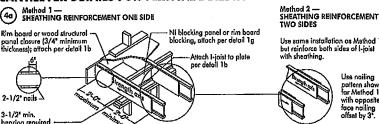
- 1. Brace and noil each t-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends.

 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.
- the required at the interior support.

 When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover. 2. When the automs is owned to the state of the state of
- Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams at walls only. 5. Never install a domoged l-jaist.
- Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to failuw allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious occidents. Follow these installation guidelines carefully.

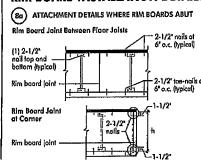


CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET



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

RIM BOARD INSTALLATION DETAILS





8b TOE-NAIL

CONNECTION



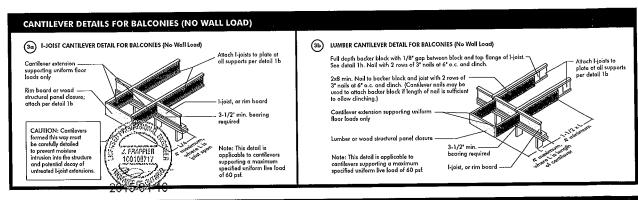
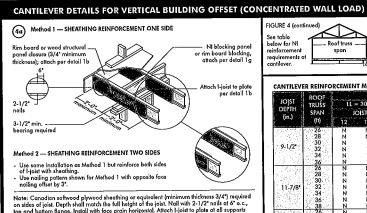
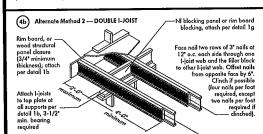


FIGURE 4 (continued)



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



Block L-joists together with filler blocks for the full length of the reinforcement.

For L-joist flange widths greater than 3 inches place an additional row of 3° nails along the centreline of the reinforcing panel from each side. Clinch when possible.

(5a) SHEATHING REINFORCEMENT

| | ROOF | | | | | | | (UNFACT | | | | | بنوائث |
|-------------|----------|------|-----------|---------|-----------------|------|----------|------------------|------|--------|----------------|----------|------------|
| JOIST | TRUSS | . IL | = 30 psf, | DL = 15 | psf | LL = | 40 psf, | DL = 15 | psf. | ll.= | = 50 psf, | DL = 15 | psf |
| DEPTH | SPAN | | OIST SPAC | | | JC | DIST SPA | CING (in. | | J | DIST SPA | CING (in | 1 |
| (in.) | (fr) | | 16 | | | 12 | 16 | 19.2 | 24 | 12 | 16 | 19.2 | 24 |
| 100 | 26 | И | N | 1 | 2 | N | 1 | 2 | Х | N | 2 | X | Х |
| | 28 | N | N | 1 . | Х | N | 1 | 2 | ΧI | Ņ | 2 | X | X |
| 9-1/2" | 30 32 | Ν | 1 | 1 | Х | N | 1 | 2 | ΧI | ! | 5. | Ÿ | 0 |
| 7-1/2 | 32 | N | 1 | 2 | X i | N | 2 | X | | - 1 | Ŷ | Ŷ | ŷ |
| 3/3/4 | 34 | N | į | 2 | ×X | Ņ | 2 | ÷ | ΩÌ | ; | Ŷ | Ŷ | â |
| | 36 26 | N | N N | | —; ` | - N | Ň | — î — | 2 | Ň | - N | -î- | 2 |
| 1.5 | 28 | N | N | N | - ; 1 | N | N | i | 2 | N | ï | í | x |
| 188 | 30 | N | Ň | N | - i | N | N | i | 2 | N | 1 | 2 | Х |
| 11-7/8 | 32 | N | Ň | ï. | il | N | Ň | i | 2 | N | 1 | 2 | Х |
| 11770 | 34 | N | N | i | 2 | N | 1 | 1 | X | N | 1 | 2 | Х |
| | 36 | N | N | i | 2 | N | 1 | 2 | X | N | 1 | 2 | X |
| | 38 | N | N | 1 | 2 | N_ | -1_ | 2 | Χ | N | 2 | X | <u>X</u> _ |
| engal egy | 26 | Ň | N | N | N | N | N | N | 1 1 | N | N | Ņ | ! |
| 180 | 28 | N | N | N | N | N | N | N | ! | N N | N | | , |
| | 30 | N | N | N | N | N | N | N | - ; | N | N | , | 2 |
| 14* | 32 | N | N | N | - ! | N | N | N 1 | - 1 | N | N | , | . 5 |
| | 34 36 | N | N | N | 1 | N N | N | - 1 | 2 | N | i i | i | 2 |
| 1.594 | 36 38 | N | N N | N | - 1 | N | N | i | 2 | Ñ | i | i | x |
| 100 | 40 | N. | N | N | i | N N | N | í | 2 | N- | i | 2 | Х |
| 14 to 12 to | 26 | N | N | N | Ň | N | N | · Ñ | N | N | N | N | 1 |
| 外記等為 | 28 | N | N | N | N | N | N | N | 1 | N | N | N | 1 |
| | 30 | N | N | N | N | N | N | N | - 1 | N | N | Ņ | 1 |
| 9 V 47. | 32 | N | N | N | N | N | N | N | ! | N | N | ! | ì |
| 16" | 34 | N | N | N | N | N | N | N | 1 | N. | N | 1 | 2 |
| 3746Y | 36 | N | N | N | 1 | N. | N | N | 1 | N | N | | 2 |
| | 38 | N | N | N | 1 | N | N | N | , | N N | N | , | 2 |
| | 40 42 | 22 | N | 7 | 1 | 22 | N | - ! | 2 | l N | ñ | i | 2 X |

Roof trusses

Girder

Roof truss

Roof tru

- 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 directural years of the side of the side

)ed)

FIGURE 5 (continued

Roof trusses

Girder Roof truss Jack trusses
truss span 2'-0'

Roominum

For larger openings, or multiple 3:09 width openings spaced less than 6:00 "ac, additional joint beneath the opening spaced less than 6:00 "ac, additional joint beneath the opening cripple study may be required.

17 bels acplies to joints 12 "to 24" o.c. that meet the floor apon requirements for a design live load of 40 pt and dead of 15 pt, and a live load deflection limit of 1:480. Use 12" a.c. requirements for lesser spacing.

12" a.c. requirements for lesser spacing.

12" a.c. requirements for lesser spacing.

For hip roofs with the jack

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

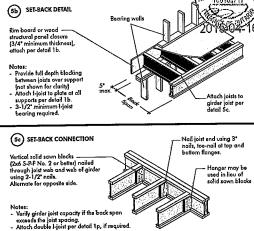
For hip roofs with the jack

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

| | Provide full depth blocking between joists over support (not shown) | Nail reinforcement to top and bottom joist flanges with 2-1/2* nails at 6* | See table below for NI reinforcement requirements at cantilever. | span | 2'-0" C naximum ti cantilevor 5" maximum | Girder 🎜 russ | |
|-------|---|---|--|---------------------------------|---|------------------|-----------------------|
| | at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joint to | o.c. (offset opposite face nailing by 3" when using reinforcement on both sides of 1-joist) max. | JOIST ROOF DEPTH SPAN (in.) (fr) | tL = 30 ps | I, DL = 15 p. ACING (in.) 19.2 | | WED ROOF LI |
| _ | plate or all supports per derival 10. Verily reinforced Lijoist copacity. (5b) SET-BACK DETAIL | 100108717 | 9-1/2* 30 30 32 34 34 36 | 1 X 1 X 2 X 2 X 2 X | X X X X | X X X X | 2 2 2 X X |
| | Rim board or wood structural panel closure [3/4* minimum thickness], attach per detail 1b. | 2010.04-16 | 28 28 30 11-7/8 32 34 36 38 | N 2 1 2 1 2 1 X X 1 X X | × × × × × | ×××× | 1 1 2 2 2 2 |
| | Notes: | | 26 28 | N I | 2 X | X | N 1 |

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

12' minimum length of



| ROOF TRUSS SPAN (ft) 26 | | | DL = 15 CING (in. 19.2 |) : | | | DL = 15 | | | | DL = 15 | |
|-------------------------------------|--|--|--|---|--------|------------------|---|---|-------------|-----------------|---|--|
| (f) 26 28 | | | | | | | | | | | | |
| 26 28 | 12 | 16 | 10.0 | | | DIST SPA | .CING (in. |) 3 | | | CING (in | |
| 28 | 1 | | 19.2 | 24 | 12 | - 16 | 19.2 | 24 | 12 | 16 | 19.2 | 24 |
| 28 | • | Х | Х | X | 2 | X | X | X | 2 | X | X | X |
| 30 | ļ | Ŷ | Ş | Ϋ́Ι | 2 | Ž | X | Ŷ | Ŷ | Ŷ | â | û |
| 32 | 2 | â | â | - â l | 2 | â | â | â | x | X | X | X |
| 34 | 2 | X | X | X I | X | X | X | Ÿ | X | X | X | X |
| | | X | X | | - X | - X - | - \$- | - 2 | | | | - |
| 28 | Ñ | 2 | â | ΩÌ | í | x | X | X | 2 | X | X | X |
| | 1 | 2 | X | χį | . ! | Ÿ | X | Ϋ́Ι | 2 | X | X | X |
| 32 | 1 | 2 ¥ | Ŷ | Ŷ | 5 | â | â | ŝΙ | 2 | â | â | Ŷ |
| 36 | i | ŝ | x | x 1 | 2 | X | X | X | X | X | X | X |
| | _1 | <u> X</u> | —- <u>X</u> — | | 2 N | X - | - X | Ş | X | - ŷ- | - | |
| 28 | N | i | ź | î l | ï | 2 | â | - x | i | x | x | X |
| 30 | N | 2 | X | X | ! | 2 | X | X | 1 | Š | Ŷ. | X |
| 32 | N | 2 | Ş | Ž I | | X | Ŷ | Ŷ | 2 | Ŷ | â | â |
| 36 | ï | ž | â | â | i | â | x | χ̈́ | 2 | X | X | X |
| 38 | . 1 | 2 | X | X | 1 | X | X | X | 2 | Ŷ | Ş | Ŷ |
| 26 | ·] | - X - | - X | | N 2 | - ^ | | Ŷ | Ň | | - ŷ- | X |
| 28 | Ñ | i | 2 | â | N | ż | X | X | 1 | 2 | X | X |
| 30 | N | 1 | 2 | X | N | 2 | Ŷ. | X | | Š | X | Ŷ |
| | | , | X | ŵ | ΙÏ | 2 | â | - Ŷ | l i | â | x | X |
| 36 | N | 2 | × | X | i | X | × | ×Χ | 1 | X | X | X |
| 38 | | 2 | X | X | ! | X | ΞX | ×χ | 2 | X | X | X |
| 40 | ĭ | 2 | :\$ | Ŷ. | 1 | Ŷ | Ŷ | Ŷ | 2 | <u> </u> | Ŷ | <u> </u> |
| | 32, 34, 36, 30, 32, 34, 36, 36, 36, 36, 36, 36, 36, 36, 36, 36 | 32 2 2 2 3 4 2 2 2 4 5 5 6 7 2 2 1 1 2 2 2 1 1 2 2 2 1 1 2 2 2 1 1 2 2 2 1 1 2 2 2 1 1 2 2 2 1 1 2 2 2 1 1 2 2 2 1 1 2 2 2 1 1 2 2 2 2 1 1 2 2 2 2 1 1 2 | 324 2 X 346 2 X 26 N 2 28 N 2 28 N 2 28 N 2 28 N 2 28 N 2 30 1 2 32 1 2 32 1 X 34 1 X 36 1 X 29 N 1 20 N 2 31 N 2 32 N 2 32 N 2 32 N 2 32 N 2 33 N 2 34 N 2 36 N 2 37 N 2 38 N 2 39 N 2 30 N | 324 2 X X X 346 2 X X X 347 2 X X X 347 2 X X X 347 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 | 32 | 32 | 324 2 X X X X X X X X X X X X X X X X X X | 324 2 X X X X X X X X X X X X X X X X X X | 324 | 32 | 324 2 X X X X X X X X X X X X X X X X X X | 32 |

1 = NI reinforced with 3/4" wood structural

- For larger openings, or multiple 3'-0" width openings passed less than 6'-0" o.s., additional joists beneath the opening's cripple should.

 9. Total opplies to joist 12' to 24' o.c. that meet the love spon requirements for or design lives load of 40 pai and dead load of 15 pst, and a live food deflection limit of UABO. Use 12' o.c. requirements for lesser spocing. 1 = NI reinforced with 3/4" wood structural panel on one side only.
 2 = NI reinforced with 3/4" wood structural panel on both rides, or double 1-joist.
 X = Try a deeper joid or closer specing.
 2. Maximum design tood shall be: 15 pat foot dead load, 55 pat floor trial load, and 80 pif woll load is bosed on 3*2"
- 4. Far conventional root construction using a ridge beam, the Roof Irus Span column drows is equivalent to the distance between the supporting well and the ridge beam. When the root is framed using a ridge, board, the Roof Irus Span is equivalent to the distance between the supporting walt as if a trus is used. 5. Conflowered joints supporting girder Irusses or root beams may require additional miniforcing.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centreline of any hole or duct chose opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- 2. I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified. 3. Whenever possible, field-cut holes should be centred on the middle of the web.
- The momentum size hole or the mozimum depth of a duct chase opening that can be cut into an I-piant was shall equal the clear distance between the flanges of the I-piant minus I/A inch. A minimum of I/B inch should othways be maintained between the top or bottom of the hole or opening and the adjacent I-piait flanges.

 The sides of square holes or longest idea of redamplater holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- a/a or the diameter or the maximum round hole permitted at that location. Where more than one hole is necessary, the distance between adjacent hole adjacs shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the largest round hole or twice the largest round hole or hive the length of the largest side of the largest rounds hole and duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and
 may be ignored for purposes of calculating minimum distances between holes
 and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to
- 9. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it
- All holes and dud chase openings shall be cut in a workman-like manner i 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

FIELD-CUT HOLE LOCATOR

8

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.

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

Duct chase opening (see Table 2 for minimum distance from bearing)

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

| Joist Depth | Joist Series | | | | | والمدا | Kou | nd no | | neter (i | | | موصفوا | | | | |
|-----------------|-----------------|-------|-------|--------|-------|--------|-------|-------|-------|----------------|-------|--------|--------|---------|--------|--------|--------|
| Jepin . | النسنة | 22 | 3 | 4 | 5 | . 6 | 6-1/4 | 7: | . 8 | 8-5/8 | 9 | 10 | 0-3/4 | <u></u> | 12.21 | 12-3/4 | Feetor |
| 1 1 2 1 1 1 1 1 | NI-20 | 0.7 | 1,-6. | 2'-10" | 4'-3" | 5'-8' | 6.0. | *** | *** | | | ••• | *** | *** | ••• | | 13-6 |
| | NI-40x | 0-7 | 1'.6" | 3-0 | 4-4 | 6'-0' | 6'-4" | | *** | *** | | *** | | | *** | ••• | 14.9 |
| 9-1/2 | NI-60 | 1-3- | 2'-6" | 4'-0" | 5-4 | 7.0 | 7'-5" | | ••• | *** | | | | *** | *** | *** | 14'11' |
| 100 | NI-70 | 2-0 | 31.4 | 4'-9" | 6'-3" | 8:-0. | 8.4 | *** | *** | | | | ••• | ••• | *** | | 15.9 |
| 100 | NI-80 | 21.31 | 3'-6 | 5'-0" | 6'-6" | 8'-2" | 8'-8" | | *** | | | | | *** | | | 15-6* |
| | NI-20 | 0.7 | 0.8 | 1'-0' | 2'-4" | 3'-8" | 4'-0" | 5'-0" | 6'-6" | 7-9 | *** | | ••• | | *** | *** | 16.6 |
| . 11 | NI-40x | 0-7 | 0.8. | 1'-3" | 2'-8' | 4'-0 | 4'-4" | 5'-5" | 7-0 | 8'-4" | ••• | | | | | | 16'9" |
| A 1 7 . | NI-60 | 0.7 | 148* | 3-0 | 4'-3 | 5'-9" | 6'-0" | 7-3 | 8-10 | | | | *** | | | | 17-5 |
| 11-7/8 | NI-70 | 1,-3, | 2.6 | 4'-0" | 5'-4 | 6'-9' | 7-2 | 8'-4" | 10-0 | 11'-2 11'-4 | | | *** | | | | 17.7 |
| 4.0 | NI-80 | 1'-6" | 2-10 | 4'-2' | 5'-6" | 7-0 | 7.5 | 8'-6 | | 10-2 | | | | | | | 17 11 |
| 28 B. C. | NI-90 | 0-7 | 0-8* | 1.5 | 3'-2" | 4'-10" | 5'-4" | 6'-9 | 85. | | | | | | | | 18.0 |
| 3 3 3 | NI-90x | 0.7 | 0-8* | 0.9 | 1'-0" | 2-4 | 41.91 | 3-9 | 5'-2' | 6'-0 | 6.6 | 8:-3: | 10-2 | | | | 17-11 |
| | NI-10x | 0.7 | 0.8 | 148 | 3-0 | 4'-3" | 4.8 | 5-8 | 7.2 | 8'-0 | 8:-8 | 10.4 | 11.5 | | | | 18-2 |
| Y 22 45 3 | NI 60 | 0.7 | 0'-8' | 3-0 | 4.5 | 5-10 | 6-2 | 7.3 | 8'-9 | 9-9- | 10-4 | 12-0 | 13.5 | | | | 19'2" |
| 14 | NI-70 NI-80 | 0-10 | 2-0 | 3'-4" | 4-9 | 6'-2" | 6-5 | 7.6 | 9.0 | 10.0 | 10.6 | 12-4 | 13-9 | | ••• | | 19-5 |
| 250 270 | NI-90 | 0-10 | 0-8- | 0-10- | 2.5 | 4-0 | 41-5 | 5-9 | 7.5 | 8'-8" | 9.4 | 11'-4' | 12-11 | | | | 19-9 |
| 134 (1440) | NI-90x | 0.7 | 0.8 | 0-8 | 2.0 | 3-9- | 4'-2' | 5-5 | 7'-3' | 8-5 | 9.2 | | | | ••• | | 20.0 |
| | NI-60 | 0.7 | 0.8. | 0.8 | 1:-6" | 2-10 | 3.2 | 41-21 | 5'-6 | 6'-4" | 7.0 | 8'-5' | 9'-8' | 10'-2' | 12:-2* | 13'-9 | 19-10 |
| 1.5 | NI-70 | 0.7 | 11.0 | 2-3 | 3'-6" | 4-10 | 5'-3" | 6-3 | 7-8 | 8-6 | 9-2 | 10-8 | 12'-0" | 12-4 | 14'-0" | 15'-6" | 20 10 |
| 16" | NI-80 | 0.7 | 11-3 | 2.6 | 3-10 | 5'-3' | 5'-6" | 6, 6, | 8'-0- | 9-0- | 9.5 | 111-0 | 12'-3" | 12-9 | 14'-5" | 16'-0" | 211-2 |
| | NI-90 | 0.7 | 0.8 | 0.8 | 1'-9" | 31-31 | 3'-8 | 4-9 | 6'-5' | 7-5 | 8,-0, | 6,10, | 11'3' | 11'-9" | 13-9 | 15'-4" | 21-6 |
| | NI-90x | 0.7 | 0.8 | 0.9 | 2'-0" | 3'-6' | 4'-0' | 5'-0" | 6.9 | 7'-9' | 8'-4" | 10.2 | 11'-6" | 12-0 | *** | *** | 21' 10 |

Above table may be used for I-joist spacing of 24 inches on centre or less.
 Held location distance is measured from inside face of supports to centre of hole.

Hole location distance is measured from inside face of supports.
 Distances in this chart are based on uniformly loaded joists.

he above table is based on the L-joists used at their maximum span. If the L-joists are placed at less than their full maximum span in the control of the co D_{reduced} = Lactual x D

SAF

Distance from the inside face of any support to centre of hole, reduced for less-shon-maximudistance shall not be less than 6 inches from the face of the support to edge of the hole.

SAF

Son Adjustment Fodor given in this toble.

If beduel is greater than 1, use 1 in the above colculation for testing the greater than 1, use 1 in the above colculation for testing the specific process. Where:



Knockouts are prescored holes provide

Never drill, cut or notch the flange, o over-cut the web. Holes in webs should be cut with a

For rectangular holes, avoid over-cutting the corners, as this can cause unnecessal stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and the starting that the contractions of the four corners.

Joist Joist Scries Program distance from inside face of any support to cert Double Scries Durf chass Jones N-20 41-1 N-20 5-1 N-20 5-1 N-20 5-1 N-20 5-2 N-20 5-2 N-20 7-2 N-20 8-7 N-20 5-8 5-9 5-5 6:0° 6:10° 6:0° 7:6° 8:0° 8:4° 8:4° 9:0° 9:5° 9:5° 9:5° 9:5° 10:0° 11:2° 11:3° 11:4° 9-1/2 11-7/8 9.8' 10-7' 11-1' 10-8' 11-1' 11-5' 11-7' 12-6' 12-3' 12-7' 13-0 13-2

-4500

2015-04-1

Above table may be used for light spacing of 24 finches on cattre or less.
 Duck chase opening Isocalian distance is measured from mixed size of supports to centre of pening.
 The obver table is based on himple-span pixtle only, for other opplication, contact your local distributor.
 Distances are based on uniformly loaded floor joint intal meal the span requirement for a daing him to did of 40 pst and dead load of 1 jst, and after load deflected in the ID 1490. For other opplications, contact your local distributor.

INSTALLING THE GLUED FLOOR SYSTEM

1 Wine any mud. dirt. water, or ice from 1-joist flanges before gluing.

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

Snap a chalk line across the l-joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.

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

- Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer. 4. Lay the first panel with tangue side to the wall, and nail in place. This protects the tangue of the next panel from damage when tapped into place with a black and sledgehammer.
- Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists. 6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
- 7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on 1-joint flanges.
- 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&O edges, is recommended. (Use a spacer tool or an 2-1/2* common nail to assure accurate and consistent spacing.)
- nati in assure accurate and consistent spacing.)

 10. Complete all nalling of each panel before glue sets. Check the manufacturer's recommendation for cure time. (Warm weather accelerates glue sating.) 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 disphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the also be not all the short.

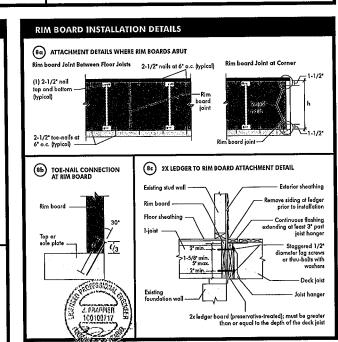
FASTENERS FOR SHEATHING AND SUBFLOORING(1)

| Maximum | Minimum | , N | ail Size and Typ | e | | n Spacing |
|---------------------------|-----------------------------|-----------------------------------|-----------------------------------|---------|----------------|--------------------------------|
| Joist Spacing (in.) | Panel Thickness (in.) | Common Wiro or Spiral Nails | Ring Thread Nails or Screws | Staples | of Fa Edges | stoners Interm. Supports |
| 16 | 5/8 | 2' | 1-3/4" | 2. | 6' | 12' |
| 20 | 5/8 | 2* | 1-3/4" | 2' | 6' | 12' |
| 24 | 3/4 | 2* | 1-3/4" | 2' | 6. | 12' |

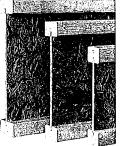
- Fasteners of sheathing and subflooring shall conform to the above table.
- 2. Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown
- 3. Flooring screws shall not be less than 1/8-inch in diameter.
- Special conditions may impose heavy traffic and concentrated 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 Floer System, opplied in accordance with the manufacturer's recommendations. If CSS panels with seeled surfaces and edges are to be used, use only solvent-based glues; check with panel manufacturer.

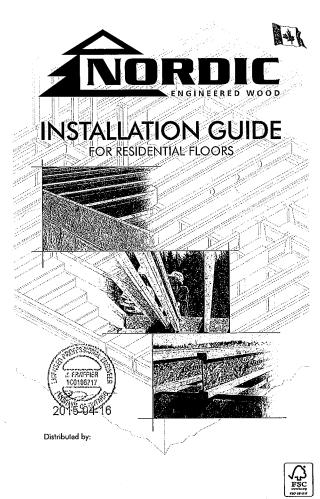
Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

Floor sheathing must be field glued to the 1-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, 1-joist spans must be verified with your local distributor.









SAFETY AND CONSTRUCTION PRECAUTIONS





Never stack building

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 neil each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.

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

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic i-joists, failure to follow allowable hole sizes and locations, or failure to use web attifeners when requir can result in aerious accidents. Follow these intallations guidelines carefully.

MAXIMUM FLOOR SPANS

- I. Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.501. + 1.250. The serviceobility limit states include the consideration of all one load deflection limit of L/480. For multiple-span applications, the end spans shell be 40% care are as of the advances. For multiple-span applications or more of the adjacent span.
- 2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum flickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGBS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the used of gypsum and/or a row of blacking at mid-span.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications
 with other than uniform loads, an engineering analysis may
 be required based on the use of the design properties.
- Tables are based on Limit States Design per CAN/CSA
 O86-09 Standard, and NBC 2010.
- 7. SI units conversion: 1 inch = 25.4 mm 1 foot = 0.305 m

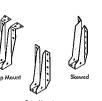
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

- 18-10 18-4 20-0 20-3 21-6 21-9 22-3 22-5 11-7/8
- 22-5: 22-2: 22-7: 23-10: 24-3: 24-9: 25-0: 24-7: 26-0: 26-5: 26-11: 27-3: 17'-11'
 18'-2'
 19'-2'
 19'-5'
 19'-10'
 20'-0'
 19'-10'
 20'-10'
 21'-2'
 21'-6 20-1-20-5-21-7-21-11-22-5-22-7-22-3-23-6-23-11-24-5-18-1' 19-1' 19-4' 19-9 19-11' 19-9' 20-9' 21-1' 21-5' 20-0 21-1 21-5 21-10 22'-2' 21'-10' 23'-0' 23'-4' 23'-9 22'-0' 22'-11' 23'-3' 23'-9'

CCMC EVALUATION REPORT 13032-R

I-JOIST HANGERS

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



STORAGE AND HANDLING GUIDELINES

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

J. FRAFPISR



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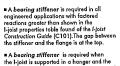
①

Top- or face-mo installed per ma

Transfer load from above to

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

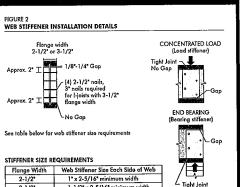
- Nordic Lam or SCL



sides of the hanger do not extend up to, and support, the top flange. The gap between the

* A load stiffener is required at locations where a factored concentrated load greater than 2,370 bis is applied to the top flange between supports, or in the case of a contilever, anywhere between the carrillever only only the property of the contilever of the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted. by the code. The gap between the stiffener and the flange is at the bottom.

SI units conversion: 1 inch = 25.4 mm

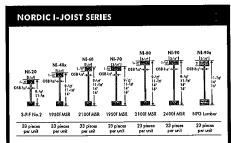


(19)

attachment per detail 1b

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

headers may also be used. Verify double 1-joist capacity to suppor



Chantiers Chibougamau Ltd. harvests its own trees, which enables Mootic products to adhere to strict quality control procedures throughting 1880(1); monufacturing process. Every phase of the operation, from forest 10 life finished product, reflects our commitment to quality. finished product, reflects our commitment to quality

Nordic Engineered Wood I-joists use only finger-joined dicks specification

Timber in their flanges, ensuing consistent quality, superior stratilisation

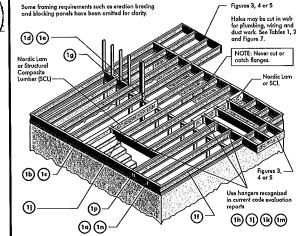
longer span corrying copacity.

(h) Backer block (use if hanger load exceeds 360 lbs)
Before instelling a backer block to a double I-joist, drive three
additional 3 mails through the waber and filler block where the
backer block will fit. Clinch. Instell backer light to top flange.
Use heales 3* mails, clinched when possible. Maximum factored
resistance for hanger for this detail = 1,620 lbs.

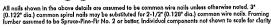
INSTALLING NORDIC I-JOISTS

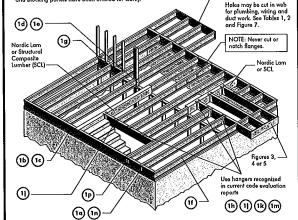
- 1. Before laying out floor system components, verify that 1-joist flange widths match hanger widths. If not, confidence
- 2. Except for cutting to length, 1-joist flanges should never be cut, drilled, or notched. 3. Install 1-joists so that top and bottom flanges are within 1/2 inch of true vertical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

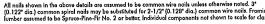
(1b)



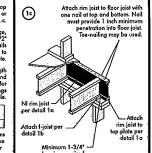
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

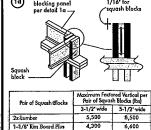


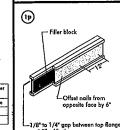




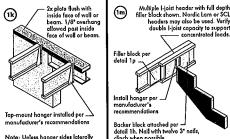






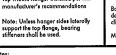


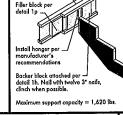


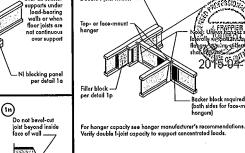


Use single t-joist for loads up to 3,300 plf, double t-joists for loads up to 6,600 plf (filler block no required). Attach t-joist to

Rim board may be used in lieu of t-joists. Backer is no



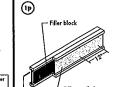




BACKER BLOCKS (Blocks must be long enough to permit required

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

- Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-0325 or CAN/CSA-0437 Standard.
- * For face-mount hangers use net joist depth minus 3-1/4* for joists with 1-1/2* thick flanges. For 2* thick flanges use net dopth minus 4-1/4*



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

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

5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lbf/ft. Verify double I-joist capacity.

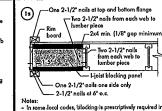
FILLER BLOCK REQUIREMENTS FOR DOUBLE 1-JOIST CONSTRUCTION \odot 2-1/8" x 12"

Optional: Minimum 1x4 inch

l-joist per detail 1 b

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

Opinoral: Minimum 4x4 anch strap applied to underside of joist-at blocking fine or 1/2 inch minimum gypsum ceiling attached to underside of joists.



Notes:

In some local codes, 'blocking is prescriptively required in
the first joist space (or first and second joist space) next to
the starter joist. Where required, see local code requirements
for spacing of the blocking.

All nails are common spiral in this detail.

Blocking Panel or Rim Joist NI Joists 3,300 The uniform vertical load is limited to a joist depth of 16 inches or less and is based on standard term load duration it shall not be used in the design of a bending member, such as joist, header, or vafter. For concentrated vertical load transfer, see detail 1 d.

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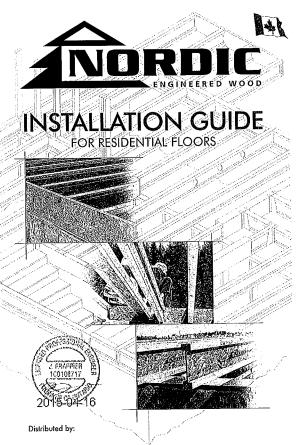
To avoid splitting flange start nails at least 1-1/2 from end of I-joist. Nails ay be driven at an angle to splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings at each side at bearing

1-1/8" Rim Board Plus 8,090 The uniform vertical load is limited to a rim board depth of 15 inches or less and is based on standard termiload duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1 d.

 Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist No serigin of spain.

Noil joist together with two rows of 3 noils at 12 faches o.c. (clinched when possible) on each side of the double't-joist. Total of four noils per foot required. If noils can be clinched, only two noils per foot or a required.

3-1/2° x 11-7/8° 2° 16°



SAFETY AND CONSTRUCTION PRECAUTIONS





Never stack building

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

Avoid Accidents by Following these Important Guidelines

Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.

When the building is completed, the floor sheathing will provide lateral
support for the top flonges of the I-joists. Until this sheathing is applied,
temporary bracking, other called struts, or temporary sheathing must be applied
to prevent I-joist rollover or buckling.

■ Temporary bracing or struts must be 1x4 inch minimum, at least 8 feel long and spaced no more than 8 feel on centre, and must be secured with a minimum of two 2-1/2" noils fastened to the top surface of each 1-joist. Noil the bracing to a lateral restriction at the end of each boy. Lap ends of adjoining bracing over at least two L-joists.

Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the boy.

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

 Install and fully noil permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only. 5. Never install a damaged I-joist.

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

MAXIMUM FLOOR SPANS

1. Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psi and dead load of 15 psi. The ultimate limit states are based on the factored loads of 1.50t. + 1.250. The seviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.

or miner of me unjeken species.

2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of SB inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in COBS-71.26
Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the used of gypsum and/or a row of blocking at mid-span.

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

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

This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.

Tobles are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.

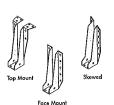
7. SI units conversion: 1 inch = 25.4 mm 1 fact = 0.305 m

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

14'-2' 15'-2' 15'-4' 16'-1' 16'-3' 16'-0' 17'-0' 17'-3' 18'-0' 18'-3' 18'-7' 18'-9' NI-40x NI-60 NI-70 NI-80 NI-20 NI-40x NI-60 NI-70 NI-80 NI-90x NI-40x NI-60 NI-70 NI-80 NI-70 NI-70 NI-80 NI-70 NI-80 NI-70 NI-70 NI-70 NI-80 NI-70 NI NI-70 NI-70 NI-70 NI-70 NI-70 NI NI-70 NI-70 NI-70 NI 9-1/2" 17-6' 17-3' 18-6' 18-9' 19-11' 20-2' 20-7' 17'-0' 16'-7' 17'-7' 18'-1' 19'-1' 19'-4' 19'-11' 20'-1' 21'-2' 21'-6' 21'-10' 20'-9' 20'-6' 20'-11' 22'-1' 22'-5' 22'-10' 18'-9" 20'-4" 18-7' 18-11' 20-0' 20-3' 20-8' 20-11' 20-8' 21-9' 22-1' 22-6' 23'-1" 22'-0" 22'-2" 22-3 23-6 23-11 24-5

I-JOIST HANGERS

- 3. Hangers should be selected based on the joist depth, flange width and load capacity based on the
- 4. Web stiffeners are required when the sides of the hangers do not laterally brace the top flange of the 1-joist.



STORAGE AND HANDLING GUIDELINES

- . Bundle wrap can be slippery when wet. Avoid walking on wrapped
- 2. Store, stack, and handle 1-joists vertically and level only. 3. Always stack and handle I-joists in the upright position only. —
- 4. Do not store 1-joists in direct contact with the ground and/or flatwise.
- 5. Protect I-joists from weather, and use spacers to separate bundles. -
- A Bundled units should be kept intact until time of installation.
- When handling I-joists with a crane on the job site, take a few -simple precautions to prevent damage to the I-joists and injury
- Pick I-joists in bundles as shipped by the supplier.

9. NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST.

- M Orient the hundles so that the webs of the I-joists are vertical.
- Pick the bundles at the 5th points, using a spreader bar if necessary
- 8. Do not handle 1-joists in a horizontal orientation.



WEB STIFFENERS

RECOMMENDATIONS: A bearing stiffener is required in all engineered applications with factored

engineered opplications with factored reactions greater than shown in the I-joist properties table found of the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.

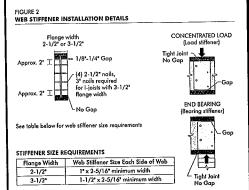
A bearing stiffener is required when the I-joist is supported in a honger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.

sittlener and trange is at the top.

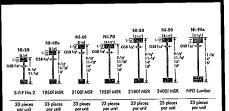
A load siffener is required at locations where a factored concentrated load greate than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever, anywhere between the cantilever, anywhere between the cantilever and the support. These values are for standard term load duration, and may be adjusted for other load durations as permit by the code. The gap between the stiffener and the flange is at the bottom.

SI units conversion: 1 inch = 25.4 mm

(10)



NORDIC 1-JOIST SERIES



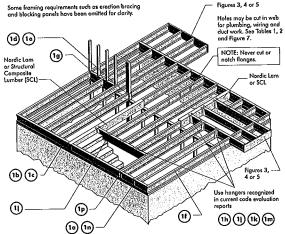
Chantiers Chibougamou Ud. harvests its own trees, which enables Nordis, products to adhere to strict quality control procedures through 1993 (1993) manufacturing process. Every phase of the operation, from order to finished product, reflects our commitment to quality.

Nordic Engineered Wood Ljoists use only finger-jointed packs expression to the finished product, reflects our commitment to quality. In the finished product specific productions of the finished packs of the finishe 2015-04-16

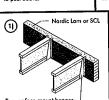
INSTALLING NORDIC I-JOISTS

- 1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contribution 2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
- 3. Install 1-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment. 4. 1-joists must be anchored securely to supports before floor sheathing is attached, and supports t
- 5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bear
- 6. When using hangers, seaf I-joists firmly in hanger bottoms to minimize settlement. 7. Leave a 1/16-inch gap between the l-joist end and a header.
- 8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface at 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 fostened to the I-joist webs.
- 9. Never install 1-joists where they will be permanently exposed to weather, or where they will remain in direct contact with
- 10. Restrain ends of flaor 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. Lipist blocking ponels or other engineered wood products – such as rim board – must be cut to fit between the Lipists, and an Lipist-compatible depth selected.
- 13. Provide permanent lateral support of the bottom flange of all Lipists at Interior supports of multiple-span joists. Similarly, support the bottom flange of all confilevered Lipists at the end support next to the confilever extension. In the completed structure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary
- 14. If square-edge panels are used, edges must be supported between 1-joists with 2x4 blocking. Glue panels to blocking to minimize squeaks. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate underlayment layer is installed.
- 15. Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

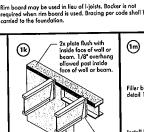


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3' (0.122' dic.) common spiral nails may be substituted for 2-1/2' (0.128' dic.) common wire nails. Framing furner assumed to be Spruce-Pine-Fir No. 2 or better Individual components nat shown to scale for clarify



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

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



Use single 1-joist for loads up to 3,300 pH, double 1-joists for loads up to 6,600 pH (filler block no required). Attach 1-joist to

Provide backer for siding attachment unless nailable

Top-mount hanger installed pe

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

Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL (lm) headers may also be used. Veril double 1-joist capacity to suppo Backer block attached per — detail 1h. Nail with twelve 3" nails,

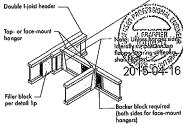
clinch when possible. Aaximum support capacity = 1,620 lbs

Lood bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by this detail. atlachment per detail 1b – NI blocking panel per detail 1 a 2-1/2" nails at

> m l-joist per detail 1b

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

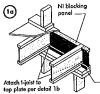
Backer block (use if hanger load exceeds 360 lbs)
Bafore installing a backer block to a double I-joist, drive three
additional 3' noils through the webs and filler block where the
backer block will fit. Clinch. Install backer light to top flange.



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

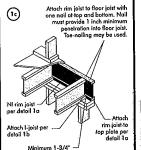
| Flange Width | Material Thickness Required* | Minimum Depth** |
|--------------|---------------------------------|-----------------|
| 2-1/2" | 1' | 5-1/2" |
| 3-1/2" | 1-1/2" | 7-1/4" |

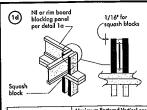
Minimum grade for backer block material shall be S-P.F No. 2 or better for solid sown lumber and wood structural panels conforming to CAN/CSA-0245 or CAN/CSA-0245 Tondon's for foce-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flonges. For 2" thick flonges use net depth minus 4-1/4".



Inches or less and is based on static and real than the list and in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

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

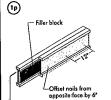




ide lateral bracing per detail 1a, 1b, or 1c

Pair of Squash Blocks

3-1/2 wide 5-1/2 wide 2x Lumber 5-1/2* wide 5-1/2* w -1/8" to 1/4" gap between top flange and filler block

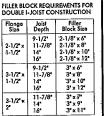


1. Support back of I-joist web during nailing to Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.

3. Filler block is required between joists for rui length of span.

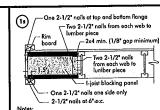
Nail joist logather with two rows of 3' nails of 12 inches o.c. (slinched when possible) on each side of the double 1-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.

i. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lbf/h. Verify double 1-joist capacity.

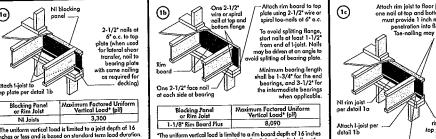


(lt) Lumber 2x4 min., extend block to face of adjacent web. Two 2-1/2" spiral nails from each web to lumber piece, alternate on

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

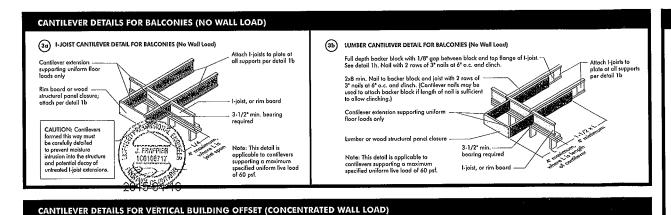


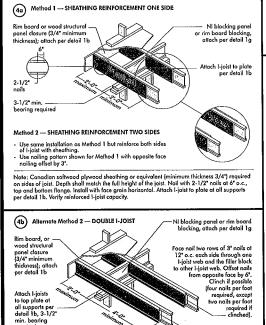
Notes:
- In some local codes, 'Blocking is prescriptively required in the first joint space (or first and second joint space) next to the starterjoist. Where required, see local code requirement for spacing of the blocking.
- All nails are common spiral in this detail.



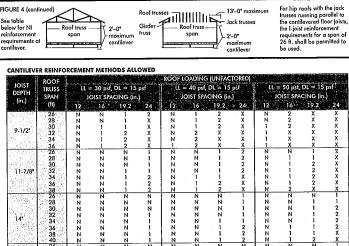
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Block I-joists together with filler blocks for the full length of the reinforcement. — For I-joist flange widths greater than 3 inches place an additional row of 3° noils along the centreline of the reinforcing panel from each side. Clinch when possible.



For larger openings, or multiple 3:0° width openings spaced less than 6:0° o.c., additional joints beneath the openings cripple studs may be required.

3. Table applies to joists 12° to 24° o.c. that meet the floor upon requirements for a design live load of 0.0° pc and one to deficiency in the load of 0.0° pc and 0. . N = No reinforcement required.
1 = NI reinforced with 3/4* wood structural

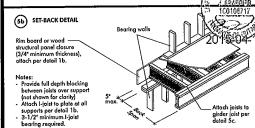
- 1 = NJ reinforced with 3/4" wood structural panel on one side only.
 2 = NJ reinforced with 3/4" wood structural panel on both sides, or double 1-joist.
 X = Try a desper joist or closer spacing.
 2. Maximum design load shall be: 15 pst froof dead load, 55 pst floor total load, and 80 plf wall load. Wall load is bosed on 3'-0'
- A. For conventional road construction using a ridge beam, the Road Trues Span column ridge beam, the Road Trues Span column ridge beam, the Road Trues Span column ridge beam, the supporting wall and the ridge beam. When the road is framed using a ridge board, in the Road Trues Span is equivalent to the distance between the supporting walls as if a true is used.

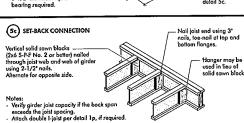
 5. Confilierved joists supporting grider trusses or road beams may require additional reinforcing.

For hip roofs with the jack For hip roots with the lack trusses running parallel to the cantilevered floor joists, the 1-joist reinforcement requirements for a span of 26 ft. shall be permitted to be used.

| (5a) SHEATHING REINFORCI Provide full depth blocking betw joists over support (not shown) . Note: Canadian softwood | | sheathing Nail reinfa and bottor | reinforcement S | GURE 5 (cont iee table pelow for NI einforcement equirements of cantilever. | | oof truss - | | | Roof trus Girder – truss | sset _ |
|---|------------------------------------|---|---|--|-------------------------------|-------------|-------------|----------------------------------|--------------------------------|-----------------------|
| plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match height of the joist. Nail with 2-1, at 6" o.c., top and bottom flang with face grain horizontal. Attac | /2" nails a. Install h I-joist to | nailing by reinforcem sides of I-i max. | opposite face 3" when using sent on both oist) | JOIST DEPTH (in.) | ROOF TRUSS SPAN (ff) | LL = | 30 psf, | METHOL DL = 15 CING (in. 19.2 | psf | WED ROOF LL |
| plate at all supports per detail 1 reinforced 1-joist capacity. | b. Verify | min. | C0108717 | 9-1/2 | 26 28 30 32 34 | 1 1 2 2 | X X X | X X X | X X X | 2 2 2 2 2 |
| 5b SET-BACK DETAIL | Bearing walls | | | | 36 26 28 | 2 N N | 2 2 | - x x | x x | - |

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





| ١ | DEPTH | TRUSS SPAN | | | DL = 15 CING (in. | | | | , DL = 15 \CING (ir | | LL: J | = 50 psf, OIST SPA | DL = 15 CING (in. | psf } |
|----|------------|----------------------|----------|-----|----------------------|----|--------|----------|------------------------|-----|----------|-----------------------|----------------------|----------------|
| J | (in.) | (ft) | 12 | 16 | 19.2 | 24 | 12 | 16 | 19.2 | 24 | 12 | . 16 | 19.2 | 24 |
| λ | 123.50 | 26 28 30 | ! | X | X | X | 2 | X | X | X | 2 | X | X | _ <u>^</u> |
| Å١ | 0.00 | 30 | | â | â | â | 2 | - â | · ŝ | î | â | â | x | x |
| H | 9-1/2 | 32 34 | 2 | X | X | X | 2 | X | X | X | X | Ÿ. | X | X |
| Μ. | | | 2 | â | â | â | Ιŝ | â | â | . î | - x | | x | . î |
| 1 | 13/46/9795 | 36 26 | Ň | 2 | X | X | ! | X | X | X | 1 | X | X | X |
| Е | | 28 30 | N 1 | 2 | x | x | Ιi | x | â | â | 2 | â | â | â |
| 1 | 11-7/8 | 32 34 | j | 2 | X | X | l i | X | X | X | 2 | X | X | X |
| ı | | 34 36 | | X | X | X | 2 | X | X | X | 2 X | X | X | × |
| 1 | 13.13 | 38 26 | <u>i</u> | _ x | - x | â | 2 | <u>X</u> | <u> </u> | X | . X | X | X | x |
| ı | 1.7.75 | 26 28 | N | 1 | 2 | X | N | . 2 | X | X | 1 | X | X | , X |
| ı | | 30 | N | 2 | â | â | 1 i | 2 | â | â | i | â | â | â |
| ı | 14 | 32 | N | 2 | X | X | 1 | X | X | X. | 2 | X | X | x |
| ı | 5.05.7 | 34 36 | N 1 | 2 | × | X | H | x | x | â | 2 | â | â | â |
| | | 36 38 | l i | . 2 | X | X | i | X | X | X | 2 | X | X | X |
| 1 | | 40 | N | X | X 2 | X | 2 N | X | - -X | X | N N | -X- | X | - X |
| 1 | 1000 | 28 | N | i | 2 | x | Ñ | ż | â | â | ï | 2 | X | X |
| 1 | 34400 | 26 28 30 32 | N | 1 | 2 | X | N | 2 | x | Ŷ. | | X | X | X |
| | 16" | 34 | N N | 2 | ź | â | ΙÏ | 2 | â | â | l i | â | â | â |
| 1 | 15,000 | 34 36 | N | 2 | X | X | i i | x | X | Х | 1 | X | X | X |

Roof trusses

| 13'-0' maximum | Jack trusses | Jac

ROOF LOADING (UNFACTORED)

2'-0" maximum cantilever

— Roof truss span

1. N = No reinforcement required.

1 = N1 reinforced with 3/4" wood structural panel on one side only.

2 = N1 reinforced with 3/4" wood structural panel on both sides, or double l-joint.

X = Try or desper joint or doser specing.

2. Maximum design lood shall be 15 par foot deed lood, 55 paf floor total lood, and 80 pff woll lood. Well lood is based on 3-0" maximum width window or door openings.

For larger openings, or multiple 3-0° width openings spaced less than 6° 0° o.c., additional joist beneath the opening's criple studium by serveruled.

3. Tobia applies to joist 12° to 24° o.c., that meet had look a policy to joist 12° to 24° o.c. that meet had look a policy to joist 12° to 24° o.c. that meet had look a policy to joist 12° to 24° o.c. that meet had look applies to joist 12° to 24° o.c. that meet had look applies to joist 12° to 24° o.c. that meet had look applies to joist 12° to 24° o.c. that meet had look applies to joist 15° o.c. that m

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- 2 Ligist top and bottom flanges must NEVER be cut, notched, or otherwise modified 3. Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole or the maximum depth of a duct chase opening that can be cut into an Lipist web shall equal the clear distance between the flonges of the Lipist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent Lipist flange.
- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the moximum round hole permitted at that location.
- 37 a or the diameter or the moximum round note permitted of that location.

 Where more than one hole is necessary, the distance between adjacent hole adges shall exceed twice the diameter of the largest round hole or twice the size of the largest source hole (or twice the length of the longest side of the longest rectangular hole or duct chose opening) and each hole and duct chose opening hall be sized and lacoled in compliance with the requirements of Tobles 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to
- 9. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it neets the requirements of rule number 6 above
- All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- 11. Limit three maximum size holes per span, of which one may be a duct chase
- 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.

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

| Joist | Joist | | Mu | nimun | dista | nce fro | | | e of ar | | | centre | of hol | e (II-II | | | | ppan |
|--------------------------|----------|-------|------------|--------|--------|------------------|----------------|----------------|----------------|----------------|-------|-----------------|---------------|----------|--------|--------|----------|--------------|
| | Series | | singular s | | | | Rot | ind ho | le dian | ncier (| in.) | | | | | 44. 4 | aal | usimer |
| Debiit | Series | 22.0 | . 3 | 4 | 5 | 6 | 6-1/4 | | - 8 | 8-5/8 | 9 2 | 10 | 10-3/4 | | 12.0 | 2-3/4 | | actor |
| | ·: NI-20 | 0'-7' | 1'-6" | 2'-10' | 4'-3" | 5-8 | 6'-0" | | | | | | | | | | | 13.6 |
| 16.1394 | NI-40x | 0-7 | 1.6 | 3.0 | 4'-4" | 6'-0" | 6'-4" | | ••• | ••• | | | | *** | *** | *** | 119 | 14-9 |
| 9-1/2 | NI-60 | 1'-3' | 2.6 | 4'-0" | 5'-4" | 7'-0" | 7-5* | ••• | ••• | ••• | ••• | *** | *** | *** | *** | | | 14:11 |
| | NI-70 | 2'-0' | 3'-4" | 4-9 | 6-3 | 8'-0" | 8'-4 | *** | *** | *** | *** | | *** | *** | ••• | | | 15'-7' |
| 19.00 | N1-80 | 2:-3* | 3'-6' | 5'-0" | 6.6 | 8'-2' | 8'-8' | ••• | *** | *** | | | | *** | ••• | | | 15.9 |
| 7 1 1 1 N E. | NI-20 | 0-7* | 0.8 | 1'-0" | 2.4 | 3.8 | 4'-0" | 5'-0" | 6'-6' | 7-9 | ••• | • | • | | | *** | | 15'-6" |
| | NI-40x | 0'-7" | 0.8 | 1'-3" | 2.8 | 4.0 | 4'-4' | 5'-5" | 7.0 | 8-4 | *** | *** | ••• | *** | *** | | | 16'-6' |
| 30 967 | NI-60. | 0-7 | 1'-8' | 3.0. | 4'-3" | 5'-9" | 6.0. | 7'-3" | 8-10- | 10.0 | *** | *** | *** | ••• | ••• | | ١. | 16.9 |
| 11-7/8 | NI-70 | 1'-3' | 2-6* | 4'-0" | 5-4 | 6-9 | 7-2 | 8'-4" | 10-0 | 11'-2' | ••• | | | *** | ••• | | | 17-5 |
| | NI-80 | 1-6 | 2-10' | 4-2 | 5'-6" | 7.0' | 7-5 | 8-6 | 10-3* | 111-41 | | | *** | ••• | *** | *** | | 17-7 |
| A. 1. 1 | NI-90 | 0.7 | 0.8 | 1'-5" | 3'-2' | 4'-10' | 5'-4" | 6.9 | 8'-9" | 10'-2" | | | *** | *** | ••• | | | 17:11 |
| 2010/06/20 | NI-90x | 0'-7' | 0.8 | 0-9 | 2-5 | 4'-4' | 4'-9" | 6:3" | | *** | *** | *** | *** | *** | *** | | <u> </u> | 18.0 |
| 化多种抗原 | NI-40x | 0'-7" | 0.8 | 0'-8' | 1:-0. | 2-4 | 2'-9" | 3-9 | 5'-2' | 6:-0, | 6,-6, | 8'-3" | 10-2 | | | | 4.5 | 17-11 |
| 100 | NI-60 | 0.7 | 0.8 | 1.8 | 3.0 | 4'-3' | 4'-8" | 5'-8" | 7'-2* | 8.0. | 88, | 10-4 | 11:-9" | *** | *** | | | 18-2 19-2 |
| 14 | NI-70 | 0.8 | 1'-10' | 30. | 4'-5" | 5-10 | 6.2 | 7:-3 | 8-9 | 9-9 | 10-4 | 12:0 | 13.5 | *** | *** | *** | 1: 1 | 19.5 |
| | NI-80 | 0-10 | 2.0 | 3'-4" | 4'-9" | 6.2 | 6'-5" | 7-6 | 9-0 | 10-0 | 10.8 | 12-4" | 13.91 | ••• | *** | | | 19-9 |
| 100 | NI-90 | 0.7 | 0.8 | 0-10 | 2-5 | 4:-0" | 4'-5" | 5-9 | 7-5 | 8-8" | 9-4" | | | ••• | *** | | 1. | 20.0 |
| | NI-90x | 0.7* | 0.8 | 0'-8" | 2:01 | 3-9 | 4'-2" | 5'-5' | 7.3 | 8'-5" | 9-2 | 01.64 | CI DI | 10:2* | 12-2 | 13'-9" | | 19-10 |
| Programme and the second | NI-60 | 0.7 | 0.8 | 0.8 | 1'-6" | 2'-10' 4'-10' | 3-2 | 6:3 | 5'.6' 7'.8' | 6'-4" 8'-6" | 7.0 | 8'-5' 10'-8' | 9-8' 12-0' | 12-4 | 14:0 | 15'-6" | ĽĽ. | 20-10 |
| | N1-70 | 0-7 | 1'-0" | 2'-3" | 3'-6" | 5'-3" | 5'-3' | 6'-6" | 8'-0' | 9-0 | 9.5 | 11:0 | 12.3 | 12.9 | 14'-5" | 16:0 | | 21.2 |
| 16" | N1-80 | 0.7 | 143 | 2-6 | 3'-10" | 3.3 | 5'-6" | | | 7-5* | 8:0, | | 111-31 | 111.9 | 13-9 | 15'-4" | | 21.6 |
| 강경 열차 | NI-90 | 0.7 | 0.8 | 0'-8' | 1'-9" | | 3'-8" 4'-0" | 4'-9' 5'-0' | 6'-5' | | 8-4" | 9.10 | 1356 | 12:-0' | 13.9 | | | 21 10 |
| 1.00 | NI-90x | 1 0.7 | 0'-8" | 0'-9" | 2.0 | 3-6 | 4.0 | 5-0 | _ 6.9 | _7-9'_ | 0-4 | 10.2 | 111-0 | 12-0 | *** | | | |

Above table may be used for I-joist spacing of 24 inches an centre or less.
 Hole location distance is measured from inside face of supports to centre of hole.
 Distances in this chart are based on uniformly loaded joists.

The above table is based on the I-joists used at their maximum span. If the 1-joists are placed at less than their full maximum span (the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows: D_{reduced} = Lactual x D

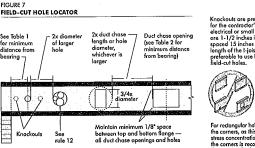
Portion of Control of

If Lactual is greater than 1, use 1 in the above calculation for Lactual.

SAF

SAF

2015-04-16

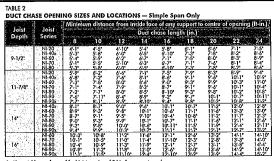


A knockout is NOT considered a hole, may be utilized wherever it occurs and may be ignored for purposes of calculating minimum distances between holes.

Knackouts are prescored holes provide for the contrador's convenience to instelectrical or small plumbing lines. They are 1-1/2 inches in diameter, and are spaced 15 inches on centre along the length of the 1-joist. Where possible, it i preferable to use knackouts instead of



For redangular holes, avoid over-culling the corners, as this can cause unnecessariess concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and them andking the cuts between the holes is arother good method to minimize domage to the 1-joist.



Above table may be used for I-joist spacing of 24 inches an centre or less.
 Dud chase apening location distance is measured from inside lace of supports to centre of opening.
 The above label is based on simple-span joist only, for other oppfications, contact your local distributor.
 Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection faith of 1/400, for other oppfications, contact you local distributor.

INSTALLING THE GLUED FLOOR SYSTEM

- 1. Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
- 2. Snop 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 the glue manufacturer.
- 4. Lay the first panel with tongue side to the wall, and noil in place. This protects the tongue of the next panel from damage when tapped into place with a block and sledgehammer.
- Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
- 6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
- 7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on I-joist flanges.
- 8. Tap the second row of panels into place, using a block to protect groove edges.
- 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
- 10. Complete all natiling of each panel before glue sets. Check the manufacturer's recommendation 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 linker panels. Space nails per the table below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue band.

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

| Maximum Joist | Minimum Panel | | ail Size and Typ Ring Thread | e . | Maximum of Fas | n Spacing Jeners |
|------------------|--------------------|-------------------------|---------------------------------|---------|-------------------|---------------------|
| Spacing (in.) | Thickness (in.) | Wire or Spiral Nails | Nails or Screws | Staples | Edges | Interm. Supports |
| 16 | 5/8 | 2" | 1-3/4" | 2, | 6' | 12" |
| 20 | 5/8 | 2" | 1-3/4" | 2" | 6 | 12' |
| 24 | 3/4 | 2" | 1-3/4" | 2' | 6. | 12* |

- Fasteners of sheathing and subflooring shall conform to the above table.
- 2. Stagles shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown
- 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
- Use only adhesives conforming to CAN/CGS8-71.26 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.

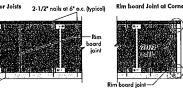
Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

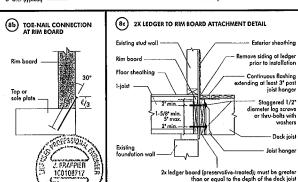
IMPORTANT NOTE:
Floor shealthing must be field glued to the I-joist flonges in order to achieve the maximum spans shown in this document. If sheathing is notled only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

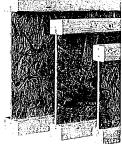
(1) 2-1/2" nail

(8a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT Rim board Joint Between Floor Joists 2-1/2" nails at 6" o.c. (typical)









Attach I-joist to lop plate per detail 1b

2-1/2*

3-1/2*

NI or n'm boord blocking.

Flange Width Moterial Thickness Required*

- 2x plate flush with inside face of wall

or beam. 1/6" overhang allowed past inside face of wall or beam.

sides laterally suppor

the top flange, bearing

installed per manufacturer's

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

A bearing stiffener is required when the I-loist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.

A load stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the contilever fip and the support. These volues are for standard term load derotion, and may be adjusted for other load durotions as permitted by the code. The gap between the stiffener and the flange is at the baltom.

panel per detail la

(1d)



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| $\begin{array}{c} N1-20 \\ 1.\overline{y_1'} & OS \\ OSB ^2/n^2 \rightarrow \begin{pmatrix} 9 & 1 & 1 \\ 9 & 1 & 1 \\ 1 & 1 & 1 \end{pmatrix}$ | N]-40x 1-1/1 OS 88 3/6"-3 - 9-1/3' 11-2/4' | | 1.7 09 18 3/8 4 9-1/2 | 9.1/2 | 9-1/2' | 3.107 21 50 27 6'-> 4' |
|--|---|-----------------------|--------------------------|-----------------------|-----------------------|------------------------------|
| \$-P-F No.2 | 1950FMSR | 2100f MSR | 1950f MSR | 2100f MSR | 2400f MSR | NPG Lumber |
| 33 pieces per unil | 33 pieces per unit | 33 pieces per unit | 23 pieces per unit | 23 pieces per unil | 23 pieces per unil | 23 pieces par unit |

Refer to the installation Guide for Residential Floors for additional information. CCMC EVALUATION REPORT 13032-R

WEB HOLE SPECIFICATIONS

- 1. The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of
- Table 1 or 2, respectively.

 2. I-joist top and bottom fonges must NEVER be out, notched, or otherwise modified.

 3. Whenever possible, field-out holes should be centred on the middle of the web.

 4. The mostimum size hole or the maximum depth of a duct chose opening that can be cut into an I-joist wab shall equal the dear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained veen the top or bottom of the hole or opening and the adjacent l-joist flange.

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

2:10° 4'.3° 5'.8° 6'.0° ...
3:0° 4'.4° 6'.0° 6'.4′ ...
4'.9° 5'.4″ 7'.0° 7'.5' ...
4'.9° 6'.3° 8'.0° 8'.4′ ...
5'.0° 6'.6′ 8'.2° 8'.8° ...
1'.0° 2'.4° 3'.8° 4'.0° 5'.0°

Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.) Round Hole Diameter (in.)

6 6-1/4 7 8 8-5/8 9 10 10-3/4 11 12 12-3/4

... :-

Above table may be used for t-joist spacing of 24 inches an centre or less.
 Hale lacation distance is measured from inside face of supports to centre of hote.
 Sistances in this chart are based on uniformly loaded joints.
 The above table is based on the t-joists being used of their maximum spans. The minimum distance as given above may be reduced for sharter spans; contact your local distributor.

- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of
 the diameter of the modimum round hole permitted at that location.
 Where more than one hole is necessary, the distance between adjacent hole edges
 shall exceed twice the diameter of the largest round hole or twice the size of the largest
 square hole (or twice the length of the longest side of the longest rectangular hole or
 duct chose opening) and each hole and duct chose opening shall be sized and located
 in compliance with the requirements of Tables 1 and 2, respectively.
 A knockoul is not considered a hole, may be utilized anywhere it occurs, and may be
 ignored for purposes of calculating minimum distances between holes and/or duct
 chose openings.
- Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a jaist. Holes of greater size may be permitted subject to verification.
- 9. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.

 10. All holes and duct chase openings shall be cut in a workman-like
- and once with the restrictions listed above and as Ilustrated in Figure 7.
- . Limit three maximum size hales per span, of which one may be a duct chase opening.

 12. A group of round holes at approximately the same location
- shall be permitted if they meet the requirements for a single round hale circumscribed around them.

DUCT CHASE OPENING SIZES AND LOCATIONS

Simple Span Only

| Joist | loist | Minim | m distana | e from ins | | of suppo se Long | | nire of o | Baylua (| H - in. |
|---------|--------|--------|-----------|------------|--------|---------------------|--------|-----------|------------------|------------|
| Depth | Series | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| | NI-20 | 4'-1' | 4'-5' | 4-10 | 5-4" | 5'-8' | 6-1" | 6'-6" | 7-1 | 7'-5' |
| | NI-40x | 5'-3' | 5-8" | 6.01 | 6'-5" | 6'-10" | 7-31 | 7'-8" | 8'-2' | 8-6 8-9 |
| 9-1/2" | NI-60 | 5'-4' | 51-91 | 6'-2' | 6'-7" | 7'-1" | 7'-5' | 8:-0: | 8'-3" | 8-9 |
| /-1/2 | NI-70 | 5-1 | 5'-5' | 5'-10" | 6'-3" | 6'-7" | 7'-1" | 7'-6' | 8'-1" | 8'-4 |
| | NI-80 | 51-31 | 5.8 | 6'-0' | 6'-5" | 6-10 | 7'-3' | 7'-8' | 8-2 | 8-6 |
| | NI-20 | 5'-9' | 61-21 | 6'-6" | 7'-10 | 7'-5" | 7'-9' | 8-3 | 8'-9" | 9-4 |
| | NI-40x | 6'-8" | 7'-2" | 7'-6" | 8'-1" | 8-5 | 9-11 | 9.5 | 10:1" | 10\ |
| | NI-60 | 7.3 | 7-8 | 8'-0' | 81-6" | 9.0 | 9-3 | 9-9 | 10'-3' | 11'- |
| 11-7/8* | NI-70 | 7·1' | 7.4 | 749" | 8'-3" | 8'-7" | 9-1" | 9'-6" | 10'-1" | 10 |
| .,.,, | NI-80 | 7-2 | 7'-7" | 8-0 | 8'-5" | 8'-10" | 9-3 | 9-8 | 10'-2" | 104 |
| | NI-90 | 7'-6" | 74111 | 8'-4" | 8-9- | 9'-2" | 9'-7" | 10'-1" | 10-7 | 10 |
| | NJ-90x | 7:-7* | 8-19 | 8'-5' | 8'-10' | 9'-4" | 91.8" | 10'-2" | 10'-8" | 111 |
| | NI-40x | 8'-1" | 8'-7' | 9.0 | 9'-6" | 10-10 | 10-7 | 11:-2" | 12'-0" | 12 |
| | NI-60 | 8'-9' | 9'-3" | 5.B. | 10'-1' | 10-6 | 11:1" | 11'-6" | 13'-3" | 13 |
| 14* | NI-70 | 8'-7' | 9-1 | 9'-5" | 9-10 | 10-4* | 10-8 | 11'-2" | 11'-7' | 12 |
| 14" | NI-80 | 9.0 | 9'-3" | 9-9 | 10-1 | 10-7 | 1141 | 13'-6" | 12'-1" | 12 |
| | NI-90 | 9-2 | 9-8' | 10.0 | 10'-6' | 10-11 | | 11-9 | 12'-4" | 124 |
| | NI-90x | 9'-4" | 3.3, | 10:3* | 10'-7' | 11'-1" | 1147 | 1241 | 12-7 | 13 |
| | NI-60 | 10'-3" | 10'-B" | 11-2" | 11.6 | 12'-1" | 12-6 | 13'-2" | 14'-1" | 14 |
| | NI-70 | 10-1 | 10-5" | 11'-0" | 11'-4" | 11'-10 | | 12'-8" | 13'-3" | 14 |
| 164 | NI-80 | 10-4" | 10-9" | 115-3" | 11'-9' | 12'-1" | 12'-7" | 7341" | 13'-8" 14'-2" | 14 |
| | NI-90 | 10-9 | 111-2" | 11'-8" | 12'-0" | 12'-6" | 13'-0" | 13'-6" | | 14' 15' |
| | M-90* | 17419 | 111-5" | 11410 | 12-4 | 12-10 | 13-2 | 13.9 | 14-4 | |

- Above table may be used for 1-joist spacing of 24 inches on centre or less.
 Duct chase opening location distance is measured from thiside face of supports to centre of opening.
 The above table is based on simple-span joists only. For other applications, contact your local distributor.
 Distances one based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 pst and dead load of 15 pst, and a live load deflection limit of L/480.
 The above table is based on the 1-joist being used of their maximum spans. The minimum distance os given above may be reduced for shorter spans; contact your local distributor.

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST - Offset nails from

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

WEB STIFFENERS

NOTES:

Maximum suppor capacity = 1,620 lbs.

- NOTES:

 1. Support back of Ljoist web during nailing to prevent damage to web/flange connection.

 2. Leave a 1/8 to 1/4-inch gap between top of filler black and bottom of top Ljoist Range.

 3. Filler black is required between joists for full length
- of span.

 4. Nail joist together with two rows of 31 noils of 12 inches o.e. (clinched when possible) on such side of the double l-joist, Total of four noils per fool required. If noils can be cliniched, only two noils per fool are required.

 5. The maximum factored load that may be applied to one

Maximum Factored Uniform

3,300

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

- 2-1/2" nails at 6" a.c. to top plate (when used for latera

shear transfer, roll to bearing plate with same nailing as required for decking)

ronsfer, see detail 1d.

Backer block (use if hunger load exceeds 360 lbs). Before installing a backer block to a

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

double I-joist, drive three additional 3° noils through the webs and filler block where the backer block will fit. Clinch. Install backer light to top flange. Use twolve 3° noils, clinched when possible. Maximum foctored resistance for hanger for this detail = 1,620 lbs.

Minimum grade for backer black material shall be S-PF No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-0325 or CAN/CSA-0437 Standard.

For face-mount hanges use net joist depth minus 3-1/4 for joists with 1-1/2* thick flanges.
For 2* thick flanges use not depth minus 4-1/4*.

(m)

Vertical Load* (plf)

Maximum Factored

Varical Load per Pair of Squash Blocks (lbs)

5,500 8,500

3-1/2" wide

1-1/8' Rim Board Flus 4,300 6,600

Provide lateral bracing per detail 1a or 1k

Minimum Depth**

5-1/2"

7-1/4*

5-1/2° wide

side of the double joint using this detail is 860 lbf/ft.
Verify double I-joint capacity.

| Flunge Size | Net Depth | Filler Block Size |
|-------------------|---------------------------------|--|
| 2-1/2*x 1-1/2* | 9-1/2" 11-7/6' 14' 16' | 2-1/8" x 6" 2-1/8" x 8" 2-1/6" x 10" 2-1/6" x 12" |
| 3-1/2*× 1-1/2* | 9-1/2" 11-7/8' 14' 16' | 3' x 6' 3' x 8' 3' x 10' 3' x 12' |
| 3-1/2°× | 11-7/6" 14" 16" | 3' x 7' 3' x 9' 3' x 11' |

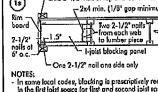
WEB STIFFENER INSTALLATION DETAILS

1/8"-1/4" Gap

-[4] 2-1/2" nails,

31 nails required

3-1/2" (lange widt)



In some local codes, blacking is prescriptively required in the first joist space (or first and second total space) nn the tirst joint space (or test and sector) joint space, next to the storter joint. Where required, see local code requirements for spacing of the blacking.

All nails are common spiral in this detail.

END BEARING

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

STIFFENER SIZE REQUIREMENTS Web Stiffener Size

1°x 2-5/16"

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

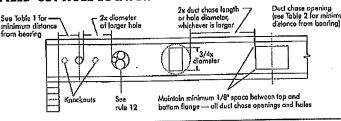
FIGURE 7

Depth

9-1/2"

ξ **Δ**"

FIELD-CUT HOLE LOCATOR



5. Never install a domoged Haist.



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

Never drift, cut or notch the flance, or over-cut the web

Holes in webs should be cut with a sharp sow

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

SAFETY AND CONSTRUCTION PRECAUTIONS



Do not walk on t-joists until fully fastened and braced, or



Never stock building motoriols over unsheathed Holists. Once sheathed, do not over-sires:

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

- AVOID ACCIDENTS BY FULLWRING IMEDE IMPORTANT GUIDBLINES:

 1. Brace and noil each Lipist on it is installed, using hangers, blacking panels, rim board, and/or cross-bridging at joist ends.

 When I-joist or opplied continuous over interior supports and a load-bearing wall is planned at that focation, blacking will be required at the interior support.

 2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary handing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover as the life.
- or buckling.

 * Temporary bracing or situits 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" noils instend to the top surface of each 1-joist. Noil the bracing to a lateral restaint at the and of each bay. Lop ands of edjoining bracing over at least two 1-joists.

 **Or, sheathing (temporary or permanent) can be noiled to the top flange of the first 4 feet of 1-joist at the end of the bay.

 For confidenced 1-joist, brace top and bustom flanges, and brace and so the latera pends, rim board, or cross-bridging.
- 4. Install and fully not permanent sheathing to each I-joist before placing leads on the floor system. Then, stack building smalerials over beams as walls only.
- Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic Lijoists, failure to follow allowable trole sizes and locations, or failure to use web stiffeners when required can result in zerious occidents. Follow these installation guidelines carefully.

7.X

PRODUCT WARRANTY

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

Parthermore, Chantiers Chibongaman warrants that our products, then utilized in accordance with our handling and installation instruction. will meet or exceed our specifications for the lifetime of the structure.

STANDARD MARKET MARKET MARKET MARKET MARKET

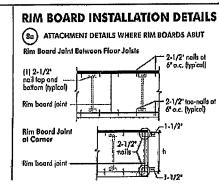
CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET



NOTE: Canadian softwood phywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Noil with 2-1/2" note of 6" o.c., top and bottom flange. Install with flace grain honzontal. Attach I-joist to plate of all supports per detail 1b. Verify reinforced I-joist copacity.

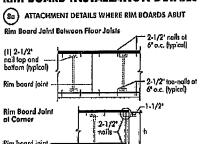
See the adjacent table for web stiffener size requirements

CONCENTRATED LOAD

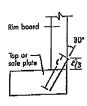


2-1/2"

3-1/2"







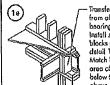
Maximum Factored Uniform Vertical Load* (plf) or Rim Joist 1-1/8" Rim Board Plus 8,090 *The uniform vertical load is limited to a rim board depth of 16 inches or less and to based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

One 2-1/2' wire or spirel noil at top and bottom flange 2-1/2'each side at bearing

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

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

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



Top- or face-mount

Filler block

Multiple I-loist header with full depth filler

block shown. Nordic tom or SCL headers may also be used. Verify double 1-joist

Socker black attached pe

noils, clinch when possible.

--- Insiall hanger per manufacturer's

Flange width 2-1/2" or 3-1/2"

(1b)

from above area of blocks below to post

For lyanger capacity see hanger manufacturer's

(1n)

tions. Verity double I-joist capacity to support

NOTE: Blocking required at

per defeil 1 b 2-1/2" nails 🕏 at 6" n.c.

NOTE: Unless hange

the top flange, bearing stiffeners shall be used

(both sides for face-

per detail 16

Glocking required over all interior supports under load-beging walls or when floor juists are not

Load bearing wall above shall align vertically

as offset bearing wells, are not covered by

with the bearing below. Other conditions, such

-Ni blocking panel per datail la

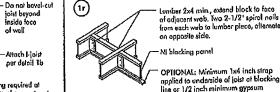
Double I-joist header Structural Composite Lumber (SCL)

> beoms, see the manufacturer's Too- or face-mount hanger

For nailing schedules for multiple

installed per monufacturer's

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



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

One 2-1/2" noil of top and bottom flange (15) -2x4 min, (1/8° gap minimum)

NORDIC STRUCTURES

COMPANY J9 1ST FLOOR Oct. 25, 2018 15:59 PROJECT J1 2ND FLOOR J1 2ND FLOOR

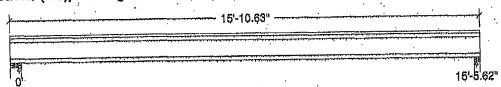
Design Check Calculation Sheet

Nordic Sizer - Canada 7.1

Loads:

| Load | Type | Dist | cibution | Pat- tern | Location Start | [ft] End | Magnitude Start Enc | Unit | |
|-------|--------------|--------------|--------------|--------------|-------------------|-------------|------------------------|------------|--|
| Load1 | Dead Live | Full Full | Area Area | | | | 20.00 40.00 | psf psf | |

Maximum Reactions (lbs), Bearing Resistances (lbs) and Bearing Lengths (in):



| | , O _f . | | 15'-5.62" |
|---|--|-------|---|
| Unfactored: Dead Live | 155 309 | | 155 309 |
| Factored: Total | 657 | | 657 |
| Bearing: Resistance Joist Support Des ratio Joist Support Load case Length Min req'd Stiffener KD KB support fcp sup Kzcp sup | 1893 7744 0.35 0.08 #2 4-3/8 1-3/4 No | E. FC | 3981 0.35 0.17 0.17 #2 2-3/8 1-3/4 No 1.00 769 1.09 |

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

Nordic 9-1/2" NI-40x Floor joist @ 12" o.c. Supports: Ali - Lumber Wali, No.1/No.2

Total length: 15'-10.63"; Clear span: 15'-3.86"; 5/8" nalled and glued OSB sheathing with 1/2" gypsum celling This section PASSES the design code check.

Limit States Design using CSA 086-14 and Vibration Criterion:

| • | | | المراج بترجزخ فركت وأوادا وبرياع والراسك استعادات فرحاء المستعدين | | PARTICIPATION - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - |
|---|--------------|----------------|---|--------|---|
| Ì | Criterion | Analysis Value | Design. Value . | Unit | Analysis/Design |
| Į | Shear | Vf = 657 | Vr = 1895 | lbs | Vf/Vr = 0.35 |
| | Moment (+) | Mf = 2542 | Mr = 4824 | lbs-ft | Mf/Mr = 0.53 |
| ì | Perm. Defl'n | 0.11 = < L/999 | 0.52 = L/360 | in | 0.22 |
| 1 | Live Defl'n | 0.22 = L/833 | 0.39 = L/480 | in. | 0.58 |
| Į | Total Defl'n | 0.33 = L/555 | 0.77 = L/240 | in | 0.43 |
| ١ | Bare Defl'n | 0.26 = L/715 | 0.52 = L/360 | in | 0.50 |
| ļ | Vibration | Lmax = 15'-5.6 | Lv = 16'-8.5 | ft | 0.93 |
| 1 | Deflin | = 0.033 | = 0.042 | l in | 0.79 |
| į | ~~~~ | | | | |

DWB NO . TAMZREO-19H STRUCTURAL

T-1902334

| | WoodWorks® Sizer | for NORDIC | STRUCTURES | |
|---|--|--|---|--|
| 1 2ND FLOOR | Nordic Sizer – | Canada 7.1 | \ | Page : |
| CRITICAL LOAD COMI Shear : LC # Moment(+) : LC # Deflection: LC # LC # LC # Bearing : Supp Load Types: D=de L=1.0 Load Patterns: 8 A11 Load Combine CALCULATIONS: | 2 = 1.25D + 1.5L 2 = 1.25D + 1.5L 1 = 1.0D (permanent) 2 = 1.0D + 1.0L (live) 2 = 1.0D + 1.0L (total) | groundwater E=eart corage, equipment) and in this span a Analysis output | | |
| Part 4, and the CSA C 2. Please verify that the 3. Refer to Nordio Stru 4. Nordio I-joists are li 5. Joists shall be later 6. The design assumiting incorrect information, | is and design are in accordance with the 186-14 Engineering Design in Wood state the default deflection limits are appropriated in CCMC evaluation report 13032-ally supported at supports and continuations and specifications have been prospections and specifications have been prospecifications, and/or designs furnished the supports and continuations and specifications have been prospecifications, and/or designs furnished the supports are specifications. | te for your application. allation guidelines and constant and constant and constant and constant and the correctness or the correctness of the cor | onstruction details. Ion edge. Iamages resulting from acouracy of this inform the building hor suitability of this fompone accouracy. | Lightly or parties of the control of |

OWB NU. TAM 20200 18H

STRUCTURAL

COMPONENT ONLY

T. Gazzell

NORDIC STRUCTURES

COMPANY J9 1ST FLOOR Oct. 25, 2018 16:01

PROJECT J1 1ST FLOOR J1 1ST FLOOR

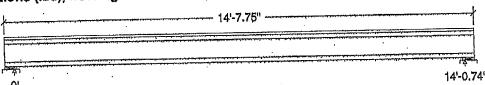
Design Check Calculation Sheet

Nordio Sizer - Canada 7.1

Loads:

| Load | Туре | Distribution | Pat- tern | Location Start | [ft] End | Magnitud Start | le End | Unit | |
|-------|--------------|------------------------|--------------|-------------------|-------------|-------------------|--|------------|---|
| Load1 | Dead Live | Full Area Full Area | | | | 20.00 40.00 | P. 11 - 12 - 12 - 12 - 12 - 12 - 12 - 12 | psf psf |] |

Maximum Reactions (lbs), Bearing Resistances (lbs) and Bearing Lengths (in):



| • | 0, . | 14'-C |).74" |
|--|---------------------|--------------------|--|
| Unfactored: Dead Live | 141 281 | | 141 281 |
| Factored: | 598 | | 598 |
| Total | 330 | | ************************************** |
| Bearing: Resistance Joist Support | 1893 7744 | | 1893 |
| Des ratio | 0.32 0.08 | FRIOTESS, ON A. | 0.32 |
| Support Load case Length | | | #2 4-3/8 1-3/4 |
| Min req'd Stiffener | 1-3/4 No | C. M. S. | No 1.00 |
| KD KB support | 1.00 | | 1.00 769 |
| fcp sup Kzcp sup | 769 1.15 | To the contract of | 1.15 |

Nordic 9-1/2" Ni-40x Floor joist @ 12" o.c. Supports: All - Lumber Sill plate, No.1/No.2

Total length: 14'-7.75"; Clear span: 13'-10.99"; 5/8" nalled and glued OSB sheathing This section PASSES the design code check.

Limit States Design using CSA 086-14 and Vibration Criterion:

| Limit States pesign daily our contribution | | | | | | | | |
|--|---|--|--|--|--|--|--|--|
| Criterion Shear | Analysis Value | Design Value Vr = 1895 | Unit lbs | Analysis/Design Vf/Vr = 0.32 | | | | |
| Moment(+) Perm. Defl'n | Mf = 2101 0.08 = < L/999 | Mr = 4824 $0.47 = L/360$ | 1bs-ft in | Mf/Mr = 0.44 0.17 0.44 | | | | |
| Live Defl'n Total Defl'n | 0.16 = < L/999 0.23 = L/723 | $\begin{array}{cccc} 0.35 &=& L/480 \\ 0.70 &=& L/240 \\ 0.47 &=& L/360 \end{array}$ | in in in | 0.33 | | | | |
| Bare Defl'n Vibration | $0.18 = 1./934$ $L_{max} = 14'-0.8$ $= 0.030$ | $\begin{array}{cccccccccccccccccccccccccccccccccccc$ | ft | 0.86 0.63 | | | | |
| nefl'n | . = 0.030 | | The the section of the section is a section in the section is a section in the section in the section is a section in the section in the section is a section in the sectio | the same of the sa | | | | |

UNUNO. TAM 226618 H STRUCTURAL COMPONENT ONLY

T-1902335

NORDIC STRUCTURES

J1 1ST FLOOR

Nordic Sizer - Canada 7.1

Page 2

| Additional FACTORS: Vr Mr+ EI CRITICAL L | f/E 1895 4824 | 1.00 illion NATIONS | 1.00 1.00 | KZ | KL - 1.000 | KT - - | KS - | KN | LC# #2 #2 #2 | | |
|---|--|--|--|---|--|------------------|------------------|--------|-----------------------|--|--|
| Shear Moment(+ Deflecti | : LC #2) : LC #2 .on: LC #1 .C #2 .C #2 | = 1.25 = 1.25 = 1.00 = 1.00 = 1.00 = 1.00 | D + 1.51 D + 1.51 D + 1.0L D + 1.0L D + 1.0L D + 1.0L C #2 = | L anent) (live (tota (bare 1.25D + | il) s joist) + 1.5L | : | | | | | |
| Load Typ Load Pat All Load CALCULAT | Suppo pes: D=dea L=liv tterns: s= d Combinat | ort 2 - I id W=wir ve(use,or vs/2 L=I ions (LC | dC #2 = d S=sn. ccupancy L+Ls _= Cs) are | ow Heele Ls=1 no patt listed | + 1.5L earth,grou live(stora tern load in the An K= 4.94e l non-dead | in thi alysis | s span output | t | • | | |

Design Notes:

CONFORMS TO DBG 2012

- 1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
- 2. Please verify that the default deflection limits are appropriate for your application.

- Please verify that the default deflection limits are appropriate for your application.
 Refer to Nordic Structures technical documentation for installation guidelines and construction details.
 Nordic I-joists are listed in CCMC evaluation report 13032-R.
 Joists shall be laterally supported at supports and continuously along the compression edge.
 The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their incorrect information. responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design oriteria and loadings shown.

STRUCTURAL COMPONENT ONLY

T. 1902335CM



PASSED

1ST FLOOR FRAMING\Flush Beams\B1(1788)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report Bulld 6475

Job name:

Customer:

Address:

City, Province, Postal Code: ST ... NES

CCMC 12472-R

File name:

TH7C.mmdl

1ST FLOOR FRAMING\Flush Beams\B1(i788) Description:

Specifier: Designer:

Company:

| Code reports: | CCMC 12472-R | Company. | |
|--|--|--|--|
| | | | |
| | | the state of the s | The second secon |
| STATE AND DESCRIPTION OF THE PARTY OF THE PA | | THE RESERVE THE PROPERTY OF THE PARTY OF THE | The state of the s |
| | | | |
| Mark College Hole De Burgo | | | |
| 以及他们的 对数据 | The state of the s | | |
| | . • | | |
| | | 18-00-04 | B2 |

B1

Total Horizontal Product Length = 16-00-04.

| Reaction Sumn | nary (Down / I | Jplift) (lbs) | A | Wind |
|---------------|----------------|---------------|----------|--------|
| Manufua | Liva | Dead | Snow | AAIIIG |
| B1, 4-3/8" | 167/0 | 122/0 | | |

122/0 B2, 4-3/8" 167/0

| | | | | | | | | Live | Dead | Show | AAIUØ: | Indutary |
|-------|--------------------|-------------------|-------------|----------|----------|------|---|------|------|------|--------|----------------|
| Loa | d Summary | Land Tune | Ref. | Start | End | Loc. | | 1.00 | 0.65 | 1.00 | 1.15 | - |
| Tag | Description | Load Type | | 00-00-00 | 16-00-04 | Ton | | | б | | | 00-00-00 |
| , (A) | Self-Weight | Unf. Lin. (lb/ft) | L | 40.4 | | • | | | .40 | _ | | n\a |
| u | | that the /lb/A) | ı | 00-00-00 | 16-00-04 | Top | • | 21 | าบ | | | 11124 |
| 4 | FC1 Floor Material | Unf. Lin. (lb/ft) | - | 00 04 00 | | ٠, | | | | | | |

| Controls Summary | Factored Demand | Factored Resistance | Demand/ Resistance | Case | Location |
|-----------------------|------------------|---------------------|-----------------------|------|----------|
| Pos. Moment | 1,494 ft-lbs | 11,610 ft-lbs | 12.9% | 1 | 08-00-02 |
| | 345 lbs | 5.785 lbs | 6.0% | 1 | 01-01-14 |
| End Shear | L/1.009 (0.183") | n\a | 23.8% | 4 | 08-00-02 |
| Total Load Deflection | L/999 (0.106") | n\a | n\a | 5 | 08-00-02 |
| Live Load Deflection | | · n\a | n\a | · 4 | 08-00-02 |
| Max Defl. | 0.183" | 1100 | | | |
| Snan / Depth | 19.5 | | | | |

| | we in isan | Demand | Demand/ Resistance Support | Demand/ Resistance Member | Material |
|--|--|--------------------|----------------------------------|---------------------------------|----------------------------|
| Bearing Supports B1 Wall/Plate B2 Wall/Plate | Dim. (LxW) 4-3/8" x 1-3/4" 4-3/8" x 1-3/4" | 403 lbs 403 lbs | 12.3% 12.3% | 4.3% 4.3% | Unspecified Unspecified |

Notes

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

CONFORMS TO OBC 2012

Calculations assume member is fully braced. Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

WOLEBO.ON

Disclosure

Use of the Bolse Cascade Software is subject to the terms of the End User License Agreement (EULA).

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

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

STRUCTURAL COMPONENT ONLY

T-1902310





PASSED

1ST FLOOR FRAMING\Flush Beams\B2(i803) Dry | 1 span | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report Bulld 6475

Job name:

Address:

City, Province, Postal Code: ST ... NES

Customer: Code reports:

GCMC 12472-R

File name: Description:

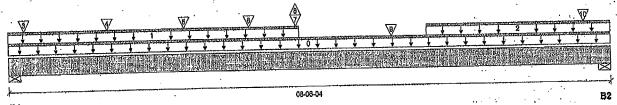
TH7C.mmdl

Wind

1ST FLOOR FRAMING\Flush Beams\B2(i803)

Specifier: Designer:

Company:



B1

Total Horizontal Product Length = 08-06-04 Snow

| Reaction Summary | / (Down / U | plift) (lbs) |
|-----------------------|-------------|--------------|
| Bearing | Live | Deau |
| Bearing B1, 5-1/2" | 2,549 / 244 | 1,347 / 0 |
| B2, 7-1/4" | 2,965 / 217 | 1,537 / 0 |

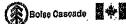
| Los | d Summary | | Ref. | Start | End | Loc. | Live 1.00 | Dead 0.65 | \$now 1.00 | Wind 1.15 | Tributary |
|-----|--------------------|--------------------------------|------------------------|------------|----------------|------|--|--------------|--|---------------|--------------|
| Tag | Description | Load Type Unf, Lin. (lb/ft) | Noi. | 00-00-00 | 08-06-04 | Top | ************************************** | 10 | ///////////////////////////////////// | | 00-00-00 |
| 0 , | Self-Weight | | 1 | 00-00-00 | 04-01-06 | Top | 22 | 11 | | | n\a |
| 1 | FC1 Floor Material | Unf. Lin. (lb/ft) | 1 1 | 05-11-00 | 08-06-04 | αοT | 226 | 118 | • | | · n\a |
| · 2 | Smoothed Load | Unf. Lin. (lb/ft) | L. I | 00-02-12 | 00-02-12 | Top | 1,564 | 935 | | • | n\a |
| 3 | E4(1291) | Conc. Pt. (lbs) | 1 | 01-05-00 | 01-05-00 | Top | 120 | 60 | | | n \ a |
| 4 . | J5(1725) | Conc. Pt. (lbs) | i. | 02-06-00 | 02-06-00 | qoT | 141 | 71 | | • | n\a |
| 5 | J7DJ(i718) | Conc. Pt. (lbs) | i,. I | 03-05-00 | 03-05-00 | Top | 114 | 57 | | | . n\a |
| 6 | J5(1742) | Conc. Pt. (lbs) | · he | 04-00-14 | 04-00-14 | Top | 990 | 265 | | | . n∖a |
| 7 | | Conc. Pt. (lbs) | 1 h | 04-00-14 | 04-00-14 | Top | -461 | ٠. | 7. | win a la | n\a |
| 8 | | Conc. Pt. (lbs) | 1 | 05-05-00 | 05-05-00 | goT | 24.4 | 107 | THE WAY | SES ON | n\a |
| 9 | J4DJ(1734) | Conc. Pt. (lbs) | . H | 08-01-12 | 08-01-12 | | 1,682 | 980/s | A STATE OF THE PARTY OF | NC VERNING IN | n\a |
| 10 | 2(1307) | Conc. Pt. (lbs) | L- | UQ-Q1-12 | 00-01-12 | | ***** | B 341 | Ray S | 1310/19 | 136 |
| Co | ntrols Summary | Factored Demand | Factored Resistance | Dem Res | and/ stance | Case | Location | Esta S | Southerness. | MOK | No. |

| Controls Summary | Factored Demand | Factored Resistance | Demand/ Resistance | Case | Location |
|-----------------------------------|--------------------------|------------------------|-----------------------|------|----------|
| Controls Surfation | 5,434 ft-lbs | 23,220 ft-lbs | 23,4% | 1 | 03-11-10 |
| Pos. Moment | | -23,220 ft-lbs | 1.7% | 4 | 03-11-10 |
| Neg. Moment | -388 ft-lbs 1,994 lbs | 11.571 lbs | 17.2% | 1 | 07-01-08 |
| End Shear | L/999 (0.071") | n\a | n\a | 6 | 04-02-05 |
| Total Load Deflection | L/999 (0.051") | n\a | n\a | . 8 | 04-02-05 |
| Live Load Deflection Max Defl. | 0.071" | n\a · | n\a | 6 | 04-02-05 |
| Span / Depth | 9.6 | | | | |

| ** | . O maneto | Marine (Landill | Demand | Demand/ Resistance Support | Demand/ Resistance Member | Material |
|---------------|------------------------|-------------------------------|-----------|----------------------------------|---------------------------------|-------------|
| Bearing B1 | Supports Wall/Plate | Dim. (LxW) 6-1/2" x 3-1/2" | 5,507 lbs | 67.0% | 23.5% | Unspecified |
| B2 | Wall/Plate | · 7-1/4" x 3-1/2" | 6,369 lbs | 58.8% | 20.6% | Unspecified |

STRUCTURAL COMPONENT ONLY

T-1902337





PASSED

1ST FLOOR FRAMING\Flush Beams\B2(1803)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report Bulld 6476

Job name:

Address: City, Province, Postal Code: ST ... NES

Customer:

File name:

TH7C,mmdl

1ST FLOOR FRAMING\Flush Beams\B2(i803) Description:

Specifier:

Designer:

Code reports:

CCMC 12472-R

Company:

Notes

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

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

Calculations assume member is fully braced.

CONFORMS TO OBC 2012 Resistance Factor phi has been applied to all presented results per CSA Q86.

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

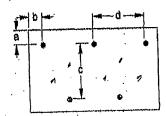
Design based on Dry Service Condition.

importance Factor : Normal Part code : Part 9

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.

Connection Diagram: Full Length of Member



a minimum = #" b minimum = 3".

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. → Nalls Connectors are:

ARDUX SPIRAL



Disclosure

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

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

STRUCTURAL COMPONENT ONLY

T-1902337(2)





PASSED

1ST FLOOR FRAMING\Flush Beams\B3(i790)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report

Bulld 6475 Job name:

Address:

City, Province, Postal Code: ST ... NES

Customer:

Code reports:

CCMC 12472-R

File name:

TH7C,mmdl

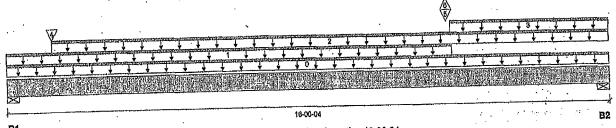
08-07-03

1ST FLOOR FRAMING\Flush Beams\B3(I790) Description:

Spedfier:

Designer:

Company:



B1

Total Horizontal Product Length = 16-00-04

| | | (Oppl Horizon | | - | | |
|------------------|-------------------|---------------|------|------|--|---|
| Reaction Summary | / (Down / Uplift) | (lbs) Dead | Snow | Wind | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | |
| B1, 4-3/8" | 992/9 | 679 / 0 | | • | | |
| B2. 4-3/8" | 1,815 / 26 | 1,000/0 | | | | • |

| | | | | • • • | | Live | Doad | Snow | Wind | Tributary |
|---|--|----------------------------|----------------|----------------------|------------|----------------------|----------------|--|----------------|--|
| Load Summary | t and Turns | Ref. | Start | End | Loc. | 1,00 | 0.66 | 1.00 | 1.15 | |
| Tag Description O Self-Weight | Load Type Unf. Lin. (lb/ft) | L | 00-00-00 | 16-00-04 11-10-04 | Top Top | 26 | 10 13 | | | 00-00-00 n/a |
| 1 FC1 Floor Material 2 FC1 Floor Material | Unf. Lin. (lb/ft) Unf. Lin. (lb/ft) | . L | 01-02-14 | 16-00-04 | Top | · 18 | 9 | | | n\a n\a |
| 3 STAIR | Unf. Lin. (lb/ft) | ·L I | 11-09-11 | 16-00-04 01-02-14 | Top Top | 240 346 | 120 173 | منتنائعه | - esten | m". n\a |
| 4 J6(1800) 5 B4(1786) | Conc. Pt. (lbs) Conc. Pt. (lbs) | Ļ | 11-08-08 | 11-08-08 | Top | 843 -36 | 442 | 10 May 10 | AOFESS | - 12 % |
| 6 B4(1786) | Conc. Pt. (lbs) | L. | 11-08-08 | 11-08-08 | Тор | 500 | Í | S. C. | ZSBIO | |
| Controls Summary | Factored Demand | Factored Resistance | Resi | and/ stance | Case | Location 11-08-08 | 98 | Š p | : VEC | K Bl |
| Pos. Moment End Shear | 10,634 ft-lbs 3,311 lbs | 23,220 ft-lb 11,671 lbs | s 45.8 28.6 | | 1 | 14-10-06 | and the second | | ,_,,,,, | 75/ |
| Total Load Deflection | L/316 (0.585") | n\a n\a | 76.9 72.3 | • • | 6 8. | 08-07-03 08-07-03 | | MA | No real trees | and the state of t |
| Live Load Deflection | L/498 (0.371") | 11/03 | | | | 00.07.02 | | 400 | 1.30 68 13 30. | and the state of t |

n\a

| namine Cunnari | S Dim. (LxW) | Demand | Demand/ Resistance Support | Demand/ Resistance Member | Material |
|---|-----------------|------------------------|----------------------------------|---------------------------------|----------------------------|
| Bearing Support B1 Wall/Plate B2 Wall/Plate | 4-3/8" x 3-1/2" | 2,212 lbs 3,973 lbs | 33.8% 60.7% | 11.8% 21.3% | Unspecified Unspecified |

n\a

Max Defl.

Span / Depth

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

0.585"

19.5

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

Calculations assume member is fully braced. Resistance Factor phi has been applied to all presented results per CSA O86. CONFORMS TO DBC 2012

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA Q86.

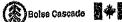
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

STRUCTURAL COMPONENT OHLY

T-190233}





PASSED

1ST FLOOR FRAMING\Flush Beams\B3(1790)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report

Bulld 6476

Job name:

Customer:

Code reports:

Address: City, Province, Postal Code: ST ... NES

CCMC 12472-R

File name:

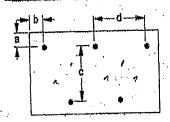
1ST FLOOR FRAMING\Flush Beams\B3(i790) Description:

TH7C.mmdi

Specifier: Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = # b minimum = 3" c = 1-1/2" d = 18 B



Disclosure

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

DWO NO . TAM 2564-18H STRUCTURAL COMPONENT ONLY

-T- (90338h)





PASSED

1ST FLOOR FRAMING\Flush Beams\B4(i786)

Dry | 2 spans | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report

Bulld 6475

Job name:

Address: City, Province, Postal Code: ST ... NES

File name:

TH7C.mmdl

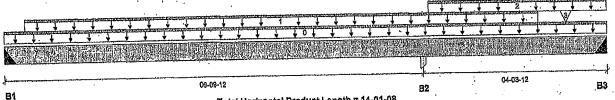
1ST FLOOR FRAMING\Flush Beams\B4(I786) Description:

Specifier: Designer:

Customer: CCMC 12472-R Code reports:

Company:

Wind



Total Horizontal Product Length = 14-01-08

Reaction Summary (Down / Uplift) (lbs) Dead Snow Bearing B1, 2" <u>Live</u> 450 / 0 855 / 33 1,542 / 0 2,891 / 0 B2, 3-1/2" 895 / 466 216/0 B3, 2"

| | | | | , | | | | Live | Dead | Snow | Wind | Tributary | |
|-----|---------------|---|-------------------|--------------------|----------|----------|------|-------|------|------|------|-----------|--|
| | ad Summary , | : | Load Type | Ref. | Start | End | Loc. | 1.00 | 0.65 | 1.00 | 1.15 | | |
| Tag | | | Unf. Lin. (lb/ft) | 1 | 00-00-00 | 14-01-08 | Top | | 10 | | | 00-00-00 | |
| 0 | Self-Weight | | | , " " ' | 00-06-00 | 12-06-00 | Top | 237 | 118 | | | n\a | |
| 1 | Smoothed Load | | Unf. Lin. (ib/ft) | <u> </u> | ** * - | • | | 240 | 120 | | | n\a | |
| 2 | STAIR | | Unf. Lin, (lb/ft) | L | 09-11-08 | 14-01-08 | Top | • | | ٠. | | n\a | |
| 3 | 13(811) | | Conc. Pt. (lbs) | Ļ | 13-02-00 | 13-02-00 | Тор | - 300 | 150 | | | inc | |

| Controls Summary | Factored Demand | Factored Resistance | Demand/ Resistance | Case | Location |
|-------------------------------|-------------------------------|------------------------|-----------------------|------|----------|
| Pos. Moment | 4.116 ft-lbs | 23,220 ft-lbs | 17.7% | 2 | 03-10-00 |
| Neg. Moment | -4,959 ft-lbs | -23,220 ft-lbs | 21.4% | 1 | 09-09-12 |
| · · · · · · | 1.833 lbs | 11.571 lbs | 15.8% | 2 | 00-11-08 |
| End Shear | 2.761 lbs | 11,571 lbs | 23.9% | 1 | 08-10-08 |
| Cont. Shear | L/999 (0.083") | n\a | h\a | 9 | 04-06-00 |
| Total Load Deflection | L/999 (0.056") | n\a | n\a | 12 | 04-06-00 |
| Live Load Deflection | [_/999 (-0.009 _n) | n\a | n\a | 9 | 11-05-08 |
| Total Neg. Defl. Max Defl. | 0,083" | n\a | n\a | 9 | 04-06-00 |
| Span / Depth | 12,3 | • | | | |

| Bearing | Supports | Dim. (LxW) | Demand | Demand/ Resistance Support | Demand/ Resistance , Member | Material |
|----------------|----------------------------|---|-------------------------------------|----------------------------------|-----------------------------------|-----------------------------------|
| B1 B2 B3 | Hanger Column Hanger | 2" x 3-1/2" 3-1/2" x 3-1/2" 2" x 3-1/2" | 1,845 lbs 6,264 lbs 1,612 lbs | n\a 78.7% n\a | 21.6% 41.9% 18.9% | HGUS410 Unspecified HGUS410 |
| B3 B3 | Uplift | 2, 10-112 | 504 lbs | | | |

Cautions

Uplift of 504 lbs found at span 2 - Right. SIMPSON HOUS410@01.83, Hanger B3 cannot handle uplift of -504 lbs.

Header for the hanger HGUS410 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Header for the hanger HGUS410 at B3 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

DWEND, TAM 2765*18 H STRUCTURAL COMPONENT ONLY

PHOTESSION

Acia pa es

T. 190238



PASSED

1ST FLOOR FRAMING\Flush Beams\B4(i786)

Dry | 2 spans | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report

Bulld 6475. Job name:

Address:

City, Province, Postal Code: ST ... NES

Customer: Code reports:

CCMC 12472-R

File name:

TH7C,mmdl

1ST FLOOR FRAMING\Flush Beams\B4(1786) Description:

Specifier: Designer:

Company:

Notes

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

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

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

Hanger Manufacturer: Unassigned

CONFORMS TO DDC 2012

Resistance Factor phi has been applied to all presented results per CSA O86. BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

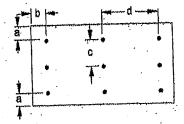
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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.

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 2-3/4" 6" d = 🐠

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: , Nalls



Disclosure

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

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

HWENU TAN 2265 STRUCTURAL COMPONENT ONLY

T-1902329(5)



PASSED

2ND FLOOR FRAMING\Flush Beams\B10(1779)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report **Build 6475**

Job name:

Address: City, Province, Postal Code: ST ... NES

File name:

TH7C.mmdl

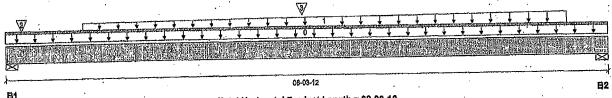
2ND FLOOR FRAMING\Flush Beams\B10(i779) Description:

Specifier: Designer:

Customer: Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 08-03-12

| | mmary (Down / Up | Dead | Snow | Wind |
|-----------------------|------------------|---------|------|------|
| Bearing B1, 5-1/2" | 1,564 / 0 | 896 / 0 | | |
| B2 4-3/4" | 1,638 / 0 | 894 / 0 | | |

| _ | | | | • | | | Live | Dead | Snow | Wind | Tributary |
|-----|---------------|---------------------|------|------------|----------|-------|---|-------------|-------|------|-----------|
| | ad Summary | Load Type | Ref. | Start | End | Loc. | 1.00 | 0.65 | 1.00 | 1.15 | |
| Tag | Description | Unf, Lin. (lb/ft) | | 00-00-00 | 08-03-12 | Top | 444444444444444444444444444444444444444 | 10 | , , , | . , | 00-00-00 |
| 0 ' | Self-Weight | | 1 | 01-01-00 | VP 17 1- | Top | 112 | 56 . | | , | n\a |
| 1 | Smoothed Load | Trapezoidal (lb/ft) | L. | 0 1-0 1-00 | | -i QQ | | | | | |
| • | • • | | | • | 07-09-00 | | 191 | 95 | , | | |
| | FOOMEON | Conc. Pt. (lbs) | L | 00-02-12 | 00-02-12 | Тор | | 37 . | • | | n\a |
| 2 | .E20(1620) | | ï | 04-01-04 | 04-01-04 | Top | 2,149 | 1.147 | | | n\a |
| 3 | B12((816) | Conc. Pt. (lbs) | h- | 04-01-04 | 04-01-94 | 104 | -, | ., | | | |

| Controls Summary | Factored Demand | Factored Resistance | Demand/ Resistance | Case | Location |
|--|-----------------|------------------------|-----------------------|------|----------|
| Pos. Moment | 11,229 ft-lbs | 23,220 ft-lbs | 48.4% | 1 | 04-01-04 |
| | 3,552 lbs | 11,571 lbs | 30,7% | 1 | 07-01-08 |
| End Shear | L/656 (0.139") | n\a | 36.6% | 4 | 04-01-04 |
| Total Load Deflection Live Load Deflection | L/999 (0.09") | n\a | n\a | 5 | 04-01-04 |
| Max Defl. | 0,139" | n\a | n\a | 4 | 04-01-04 |
| Span / Depth | 9.6 | | | | · . |

Demand/ Demand/

| Rearing | Supports | Dim. (LxW) | Demand | Support | Member | Material |
|---------|------------|-----------------|-----------|----------------|----------------|----------------------------------|
| B1 | Wali/Plate | | | 42.1% 50.3% | 14.8% 17.6% | Material Unspecified Unspecified |
| B2 | Wall/Plate | 4-3/4" x 3-1/2" | 3,575 lbs | 50.576 | 17.070 | Ottoboomod |

Notes

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

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

CONFORMS TO OBG 2012

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA Q86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA Q86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Concentrated side-load exceeds allowable magnitude for connection design. Please consult a technical representative or Professional Engineer for the design of the connection, or with Al Alune



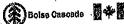
PROVIDE FROWS OF 312" ARDOX SPIRAL NAILS @ 6 "O/C FOR MULTI-PLY NAILING, MAINTAIN A MIN. 1" LUMBER EDGE/END DISTANCE DO NOT USE AIR NAILS

STRUCTURAL COMPONENT ONLY

<u>Disclosure</u>

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

BC CALCO, BC FRAMER®, AJSTM ALL JOIST®, BC RIM BOARD™, BCI® BOISE GLULAM™, BC FloorValue® VERSA-LAM®, VERSA-RIM PLUS®





PASSED

2ND FLOOR FRAMING\Flush Beams\B9(i313)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report

Build 6475

Job name:

Address: City, Province, Postal Code: ST ... NES

File name: TH7C.mmdl
Description: 2ND FLOOR FRAMING\Flush Beams\B9(i313)

Specifier: Designer:

Customer: CCMC 12472-R Code reports:

Company:

| | • | | | | | |
|---|--|--|--|--|--|--|
| | CONTRACTOR CTT | | • | | | THE RESERVE OF THE PARTY OF THE |
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| • | l | | | 00.40.00 | | |
| | 4 | and the second | and the second second | 08-10-00 | | 62 |
| | | | | | | |

B1

Total Horizontal Product Length = 08-10-00

| | mary (Down / U) | olift) (IDS) Dead | Snow | · Wind | } |
|--------------------|-----------------|----------------------|---------|--------|--------------|
| Bearing B1, 6-1/2" | 737 / 0 | 789 / 0 | 636 / 0 | | |
| B2. 3" | 196 / 0 | 153 / 0 | 28 / 0 | • | |

| | - 1 | | | | | Live | Dead | Snow | Wind | Lunutara | • |
|----------------------|--------------------------------|-------|----------|----------|------|------|------|------|------|----------|----|
| Load Summary | Land Time | Ref. | Start | End | Loc. | 1,00 | 0.66 | 1:00 | 1,15 | | |
| Tag Description | Load Type Unf. Lin, (lb/ft) | 1,011 | 00-00-00 | 08-10-00 | Тор | | 10 | | | 00-00-00 | |
| 0 Self-Weight | Unf. Lin. (lb/ft) | Ī. | | 00-06-08 | Top | | 81 | | | n\a | |
| 1 E31(1630) | Unf. Lin. (lb/ft) | Ę. | 00-00-00 | 00-06-08 | Тор | 19. | | | | n\a | : |
| 2 FC3 Floor Material | Unf. Lin. (lb/ft) | ī | 00-06-08 | 08-10-00 | Top | 40 | 20 - | • | | n/a | ٠. |
| 3 FC3 Floor Material | Conc. Pt. (lbs) | ĩ | 00-08-12 | 00-08-12 | Top | .591 | 642 | 664 | | n\a | |

| Controls Summary | Factored Demand | Factored Resistance | Demand/ Resistance | Case | Location |
|-----------------------------------|--------------------------|------------------------|-----------------------|----------|-------------------------------|
| Pos. Moment | 1,259 ft-lbs | 23,220 ft-lbs | 5.4% | 1 | 03-07-03 |
| End Shear | 1,090 lbs | 11,571 lbs | 9.4% | า 35 | 01-03-00 04-03 - 13 |
| Total Load Deflection | L/999 (0.024") | n\a | n\a n\a | 55 51 | 04-03-10 |
| Live Load Deflection Max Defl. | L/999 (0.015") 0.024" | n\a n\s | n\a | 35 | 04-03-13 |
| Span / Depth | 10.4 | | • | | |

| | | • | | Demand/ Resistance | Demand/ Resistance | Bh-faulal |
|-----------|------------|-----------------|-----------|-----------------------|-----------------------|-------------------------|
| Bearing S | upports | Dim. (LxW) | Demand | Support | Member | Material Unspecified |
| | /all/Plate | 5-1/2" x 3-1/2" | 2,728 lbs | | 11.6% | HGUS410 |
| Bo H | ander | 3" x 3-1/2" | 513 lbs | n\a | 4.0% | NGUG4 IV |

Header for the hanger HGUS410 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1,7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been enalyzed for adequate capacity.

STRUCTURAL COMPONENT ONLY

T-190234





PASSED

2ND FLOOR FRAMING\Flush Beams\B9(i313)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report

Build 6475

Job name: Address:

City, Province, Postal Code: ST ... NES

Customer: Code reports:

CCMC 12472-R

TH7C.mmdl File name:

2ND FLOOR FRAMING\Flush Beams\B9(i313) Description:

Specifier:

Designer: Company:

Notes

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

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

Hanger Manufacturer: Unassigned

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86, Unbalanced snow loads determined from building geometry were used in selected product's

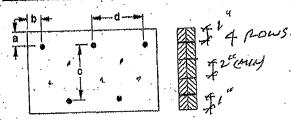
verification.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9 Connection design assumes point load is top-loaded. For connection design of side-loaded point loads,

please consult a technical représentative or professional of Record.

Connection Diagram: Full Length of Member



a minimum = 4" b minimum = 3".

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.

. ; Nails .



Disclosure

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STRUCTURAL COMPONENT ONLY

BC CALCO, BC FRAMERO, AJSTM ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®.

T-1902841(V)



PASSED

2ND FLOOR FRAMING/Flush Beams/B11(1805)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

Wind

Snow

Tributary

00-00-00 n\a n\a n\a

n\a

MOLESSION !

BC CALC® Member Report

Bulld 6475

Job name:

Customer:

Code reports:

Address: City, Province, Postal Code: ST ... NES

CCMC 12472-R

File name:

TH7C.mmdl

Wind

2ND FLOOR FRAMING\Flush Beams\B11(i805) Description:

Specifier:

Designer: Company:

16-01-06 **B2**

Total Horizontal Product Length = 16-01-06

Snow

Reaction Summary (Down / Uplift) (lbs) Dead

608/0 427 / 0 B1, 4-3/8 1,079 / 0 1,450,70 B2, 5-1/2"

| | | | | | | | Ļĺve | Dead | |
|-----|--------------------|-------------------|----------|----------|----------|------|-------|-------|--|
| | ad Summary . | Load Type | Ref. | Start | End | Lov. | 1.00 | 0.65 | |
| Tag | Self-Weight | Unf. Lin. (lb/ft) | L L | 00-00-00 | 16-01-06 | Тор | | 10 | |
| 4 | FC3 Floor Material | Unf. Lin. (lb/ft) | L | 00-00-00 | 11-11-14 | Top | 22 . | 11 | |
| 2 | WALL | Unf. Lin. (lb/ft) | i. | 11-10-07 | 16-01-06 | Top | | 60 | |
| | FC3 Floor Material | Unf. Lin. (lb/ft) | L | 11-11-14 | 15-07-14 | Top | 20 | -10 . | |
| 3 | B12(i816) | Conc. Pt. (lbs) | . L | 11-10-02 | 11-10-02 | Top | 1,718 | 926 | |
| | | | Factored | Dem | and/ | | | • | |

| Controls Summary | Factored Demand | Factored Resistance | Demand/ Resistance | Case | Location |
|-----------------------------------|-----------------|------------------------|-----------------------|------|----------|
| Pos. Moment | 12,544 ft-lbs | 23,220 ft-lbs | 54.0% | 1 | 11-10-02 |
| End Shear | 3,378 lbs | 11,571 lbs | 29.2% | 1 | 14-10-06 |
| Total Load Deflection | L/300 (0,618") | n\a | 80.1% | 4 | 08-10-01 |
| | L/497 (0.373") | n\a | 72.5% | 5 | 08-10-01 |
| Live Load Deflection Max Defl. | 0.618" | n\a | n\a | 4 | 08-10-01 |
| Span / Depth | 19.5 | • | | | |

| LxW) | Demand | Demand/ Resistance Support | Demand/ Resistance Member | Material |
|----------|-----------|----------------------------------|---------------------------------|-------------|
| x 3-1/2" | 1,445 lbs | 22,1% | 7,7% | Unspecified |
| x 3-1/2" | 3,524 lbs | 42.9% | 15.0% | Unspecified |

Notes

B1

B2

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

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

4-3/8"

5-1/2"

CONFORMS TO OBG 2012

Calculations assume member is fully braced.

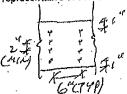
Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Concentrated side-load exceeds allowable magnitude for connection design. Please consult a technical representative or Professional Engineer for the design of the connection. But with Majuration



Bearing Supports Dim. (L

Wall/Plate

Wall/Plate

PROVIDE FROWS OF 3½" ARDOX SPIRAL NAILS @ 6." O/C FOR MULTI-PLY NAILING, MAINTAIN A MIN. I "LUMBER EDGE/END DISTANCE, DO NOT USE AIR NAILS DWG NO. TAM 22

STRUCTURAL

COMPONENT ONLY

Disclosure

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

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

T-19028492_





PASSED

2ND FLOOR FRAMING/Flush Beams/B12(1816)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report Build 6475

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: ST ... NES

CCMC 12472-R

File name:

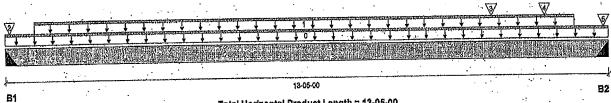
TH7C.mmdl

2ND FLOOR FRAMING\Flush Beams\B12(i816) Description:

Specifier:

Designer:

Company!



Total Horizontal Product Length = 13-05-00

Reaction Summary (Down / Uplift) (lbs) Bearing 1,714/0 925/0 B1, 2" 1,148 / 0 2,162/0 B2, 2"

| | | | • | | | | | Live | Dead | Snow | Wind | Tributary | • |
|---------|--------------------|------------|-------------------|----------|----------|----------|------|------|------|------|------|-----------|---|
| | Summary escription | | Load Type | Ref. | Start | End | Loc. | 1.00 | 0.65 | 1.00 | 1.15 | | |
| | elf-Welght | ********** | Unf. Lin. (lb/ft) | L | 00-00-00 | 13-05-00 | Top | | 10 | | | 00-00-00 | |
| | moothed Load | | Unf. Lin. (lb/ft) | L | 00-08-00 | 12-08-00 | Top | 238 | 118 | | | n\a | |
| - | | | Conc. Pt. (lbs) | ī | 00-01-04 | 00-01-04 | Top | 177 | 89 | • | | n\a | |
| | 3(1472) | | Conc. Pt. (lbs) | ĩ | 10-10-00 | 10-10-00 | Top | 485 | 252 | • | | n\a · | |
| | 13(1317) | | | <u> </u> | 12-00-00 | 12-00-00 | Top | . 98 | 49 | | | n\a | |
| . 4 . J | 7(1347) | | Conc. Pt. (lbs) | I | 13-03-12 | | | 247 | 123 | | | n\a | |
| 5 . * | | | Conc. Pt. (lbs) | L | 10-03-12 | 10-00-12 | i ob | 477 | IAW | | | | |

| Controls Summary | Factored Demand | Factored Resistance | Demand/ Resistance | Case | Location |
|---|-----------------|------------------------|-----------------------|------|------------|
| Pos. Moment | 12,796 ft-lbs | 23,220 ft-lbs | 55.1% | 1 | 06-08-00 |
| End Shear | 4.128 lbs | 11,571 lbs | 35.7% | 1 | 12-05-08 |
| | L/276 (0.574") | n\a | 87.0% | 4 | - 06-08-00 |
| Total Load Deflection Live Load Deflection | L/424 (0.374") | n\a | 84.8% | · 5 | 06-08-00 |
| Max Defl. | 0.674" | n\a | n\a | . 4 | 06-08-00 |
| Span / Depth | 16.7 . | • | | | |

| | | • . | | Demand/ Resistance | Demand/ Resistance | Blukovitet | |
|--------------|-----------------|-----|-----------|-----------------------|-----------------------|------------|--|
| Bearing Supp | ports Dim. (LxV | V) | Demand | Support | Member | Material | |
| B1 Hange | | | 3,727 lbs | n∖a | 43.6% | HGUS410 | |
| Di nanad | ,. | | • | \. | 54.6% | HGUS410 | |
| B2 Hange | er 2º x 3-1/2 | 2" | 4,664 lbs | n\a · | 04,070 | LICOCOMIO | |

Cautions

Header for the hanger HGUS410 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Header for the hanger HGUS410 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

WOLESS, ON

1148 NO . TAW 2269-18H STRUCTURAL COMPONENT ONLY

T-1902843





PASSED

2ND FLOOR FRAMING\Flush Beams\B12(i816)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report

Bulld 6475 Job name:

Address:

Code reports:

City, Province, Postal Code: ST ... NES Customer.

CCMC 12472-R

File name:

TH7C.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B12(1816)

Specifier: Designer:

Company:

Notes

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

CONFORMS TO OBG 2012

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

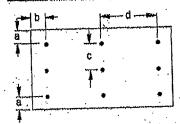
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA Q86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

Connection Diagram: Full Length of Member





a minimum = 2" b mlnimum = 3" c = 2-3/4" 6 d = 🐠

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.

Nails Connectors are:

ARDOX SPIRAL



Disclosure

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

T-1902436)



PASSED

B2

PNOFESSION A

January 29, 2019 12:32:39

2ND FLOOR FRAMING\Flush Beams\B13(i317)

BC CALC® Member Report

Bulld 8475

Job name:

B1

B1, 2"

.2

B2, 2-3/4"

Address: City, Province, Postal Code: ST ... NES

Dry | 1 span | No cant.

TH7C,mmdl File name:

2ND FLOOR FRAMING\Flush Beams\B13(i317) Description:

Specifier: Designer:

Company:

Customer: Code reports:

CCMC 12472-R

03-10-12

466/0

Total Horizontal Product Length = 03-10-12

Reaction Summary (Down / Uplift) (lbs) Wind 263/0 607 / O

243/0

Wind Tributary Live Dead Snow **Load Summary** 1.00 0.66 Tag Description Load Type 00-00-00 5 Unf. Lin. (lb/ft) 00-00-00 03-10-12 Top Self-Weight n∖a 03-08-00 Top 240 120 00-00-00 Unf. Lin. (lb/ft) STAIR n\a 25 12 00-00-00 03-08-00 Top Unf. Lin. (lb/ft) FC3 Floor Material

| Controls Summary | Factored Demand | Factored Resistance | Demand/ Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-----------------------|------|----------|
| Pos: Moment | 934 ft-lbs | 11,610 ft-lbs | 8.0% | 1 | 01-11-00 |
| End Shear | 545 lbs | 5.785 lbs | 9.4% | 1 | 00-11-08 |
| | L/999 (0,006") | n\a | n\a | 4 | 01-11-00 |
| Total Load Deflection | L/999 (0.004") | n\a | n\a | 5 | 01-11-00 |
| Live Load Deflection | • | n\a | n\a | À. | 01-11-00 |
| Max Defi. | 0.006" | 1110 | 1110 | | * |
| Snan / Denth | 4.6 | • | | | |

Demand/ Demand/ Resistance Resistance Member Support Bearing Supports Dim. (LxW) Demand HUS1.81/10 1,090 lbs n∖a 25.5% 2" x 1-3/4" B1 Hanger Unspecified 17.1% 48.8% 1,002 lbs Wall/Plate 2-3/4" x 1-3/4" **B2**

Header for the hanger HUS1.81/10 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure

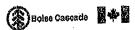
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BC CALCO, BC FRAMER®, AJSTM ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®;

DWG NO. TAMZIZAO.. 18 H STRUCTURAL COMPONENT OHLY

CONFORMS TO OBC 2012

T.1902844



PASSED

Tributary 00-00-00 n\a n\a

> nla n\a n\a n\a n\a n\a

2ND FLOOR FRAMING/Flush Beams/B6(1308)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report

Bulld 6475

Job name:

Address:

City, Province, Postal Code: ST ...NES

Customer: Code reports:

CCMC 12472-R

File name:

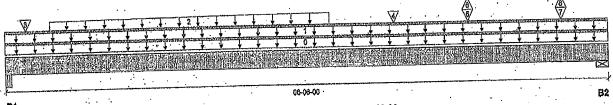
TH7C.mmd

Wind

2ND FLOOR FRAMING\Flush Beams\B6(i308) Description:

Specifier: Designer:

Company:



Total Horizontal Product Length = 06-06-00

Reaction Summary (Down / Uplift) (lbs)

Snow Bearing B1, 4-1/2" 444/0 743/0 685/1 435/0 809/0 783 / 13 B2, 5-1/2"

| Load Summary | | | | Pt. J | Los | Live 1.00 | Dead 0.65 | Snow 1.00 | Wind 1.15 | |
|--|---|---------------------|--|--|--------------------------|-------------------------------------|-----------------------|----------------------|----------------|-----|
| Tag Description O Self-Weight 1 E28(l624) 2 Smoothed Load | Loed Type Unf. Lin. (lb/ft) Unf. Lin. (lb/ft) Trapezoidal (lb/ft) | Ref. L L L | 00-00-00 00-00-00 00-06-00 | 06-06-00 08-08-00 03-06-00 | Тор | 66 147 196 | 10 141 73 98 | 126 | And the second | |
| 3 E28(1624) 4 B9(1313) 5 J1(1411) 6 J1(1411) 7 J1(1417) 8 J1(1417) | Conc. Pt. (lbs) | | 00-02-12 04-02-04 05-00-00 06-00-00 06-00-00 | 00-02-12 04-02-04 05-00-00 05-00-00 06-00-00 | Top Top Top Top | 15 208 143 -7 158 -7 | 160 68 76 | 29 31 29 31 | ESSION | 9 4 |

| Antrolo Cummani | Eastered Demand | Factored Resistance | Resistance | Case | Location |
|---|--|--|-------------------------------------|-----------------------|--|
| Controls Summary Pos. Moment End Shear Total Load Deflection Live Load Deflection Max Defl. | Factored Demand 3,403 ft-lbs 1,792 lbs L/999 (0.032") L/999 (0.019") 0.032" | 23,220 ft-lbs 11,571 lbs n\a n\a n\a | 14.7% 15.5% n\a n\a n\a | 1 1 58 85 58 | 03-00-00 05-03-00 03-02-11 03-02-11 |
| Span / Depth | 7.3 | | | | |

| | | | Demand/ Resistance | Demand/ Resistance | | |
|-------------|-----------------------|-----------|-----------------------|-----------------------|----------------------|----------|
| Bearing Sup | ports Dim. (LxW) | Demand | Support | Member 12,5% | Material Unspecified | <u>.</u> |
| B1 Beam | 4-1/2" x 3-1/2" | 5 | 35.7% 31.9% | 11.2% | Unspecified | |
| B2 Wall/f | Plate 5-1/2" x 3-1/2" | 2,621 lbs | \$1.570 | 11.5070 | #11=h++++++ | |

DWB NO . TAM 2527 1-18 H STRUCTURAL COMPONENT ONLY

T. 1902345



BC CALC® Member Report

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

PASSED

2ND FLOOR FRAMING\Flush Beams\B6(i308)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

Bulld 6475

Job name:

Address: City, Province, Postal Code: ST ... NES

Customer:

TH7C.mmdi File name:

Description: 2ND FLOOR FRAMING\Flush Beams\B6(i308)

Specifier: Designer:

Company: CCMC 12472-R Code reports:

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. CONFORMS TO USG 2012

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA Q86. Unbalanced snow loads determined from building geometry were used in selected product's

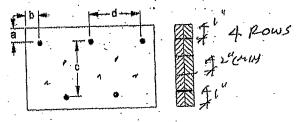
verification.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

Connection Diagram: Full Length of Member



à minimum = 🗗 b minimum = 3"

c=\$-1/2" d=\$25 6

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

Connectors are:

8%" ARDOX SPIRAL



<u>Disclosure</u>

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BY CALCO, BC FRAMERO, AJSTA, ALLJOISTO, BC RIM BOARDTA, BCIO, BOISE GLULAMTA, BC FloorValueO, VERSA-LAMO, VERSA-RIM PLUSO, STRUCTURAL COMPONENT ONLY

T-190274561



PASSED

2ND FLOOR FRAMING/Flush Beams/B7(1309)

Dry | 1 span | No cant. **BC CALC® Member Report**

January 29, 2019 12:32:39

Bulld 6475

Job name:

Customer:

Code reports:

Address:
City, Province, Postal Code: ST ...NES

CCMC 12472-R

File name: TH7C.mmdi
Description: 2ND FLOOR FRAMING\Flush Beams\B7(i309)

Specifier: Designer:

Company:

| _ | | |
|---|----------|--|
| | | e socialisticalismos de la companione de |
| | | |
| | 04-00-08 | |

Total Horizontal Product Length = 04-00-08

| Reaction Sumi | mary (Down / L | Jplift) (lbs) | | , Addin al | |
|--------------------|----------------|---------------|-----------|---------------|--|
| Bearing | Live | Dead | Snow | Wind | - Pro-Carlotte - Control - Carlotte - Carlot |
| B1, 4-1/2" | 408 / 0 | 439 / 0 | 281 / 0 . | | • |
| B2 3 ¹¹ | 384/0 | 422 / 0 | 246 / 0 . | | |

| 1 | | | | | | | Livo | Dead | Snow | wing | triontary |
|------|---------------|---------------------|--------------------|----------|----------|------|------|------|------|------|------------------|
| | d Summary | Load Type | Ref. | Start | End | Loc. | 1.00 | 0.65 | 1.00 | 1.15 | |
| Tag. | | Unf. Lin. (lb/ft) | - Lau - | 00-00-00 | 04-00-08 | Top | | 10 | , | | 00-00-00 |
| Ų | Self-Weight | Unf. Lin. (lb/ft) | Ĺ | 00-05-08 | 04-00-08 | Top | 66 | 141 | 126 | | n∖a _. |
| 1 | E30(1619) | Trapezoldal (lb/ft) | Ī. | 00-06-00 | | Top | 147 | 73 . | | | n\a |
| .5 | Smoothed Load | Haheronay (min) | | 00 00 00 | 03-06-00 | | 196 | 98 | • | • | • |
| | | Conc. Pt. (lbs) | t | 00-02-12 | 00-02-12 | qoT | 40 | 60 | 76 | | n\a |
| 3 | E33(1635) | Cour. Lr. (Ing) | h-1 | 00.00.1 | 04 0 | . 46 | | | - | | |

| Controls Summary | Factored Demand | Factored Resistance | Demand/ Resistance | Case | Location |
|--|-----------------|---------------------|-----------------------|------|----------|
| Pos. Moment | 1,248 ft-lbs | 23,220 ft-lbs | 5.4% | 1 | 02-00-00 |
| • • • • • | 1,148 lbs | 11,571 lbs | 9.9% | 1 | 01-02-00 |
| End Shear | L/999 (0.004") | n\a | n\a | - 35 | 02-01-02 |
| Total Load Deflection Live Load Deflection | L/999 (0.003") | n\a | n\a | 51 | 02-01-02 |
| Max Defi. | 0.004" | n\a | n\a | - 35 | 02-01-02 |
| Span / Depth | 4.5 | | | .' | |



Demand/ Demand/ Resistance Resistance Bearing Supports Dim. (LxW) Demand 1,442 lbs Unspecified Beam HGUS410 3" x 3-1/2" 1,349 lbs n\a Hanger B2

Header for the hanger HGUS410 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

DWB NO. TAN 2272184 STRUCTURAL COMPONENT ONLY



PASSED

2ND FLOOR FRAMING/Flush Beams/B7(I309)

Dry | 1 span | No cant.

January 29, 2019 12:32:39

BC CALC® Member Report

Bulld 6475

Job name:

Address:

City, Province, Postal Code: ST ... NES Customer: Code reports:

CCMC 12472-R

TH7C.mmdl File name: 2ND FLOOR FRAMING\Flush Beams\B7(i309)

Description:

Specifier: Designer:

Company:

Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. GONFORMS TO D8G 2012 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

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

verification.

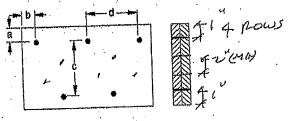
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads,

please consult a technical representative or professional of Record.

Connection Diagram: Full Length of Member



a minimum = #" b minimum = 3"

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. : Nalls Connectors are:

ARDOX SPIRAL



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engineered wood products must be in
accordance with current installation
Guide and applicable building codes. To
obtain installation Guide or ask questions, please call (800)232-0788 before installation.

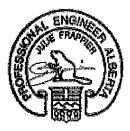
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®, DWE NO. FAM 2272.18H

STRUGTURAL COMPONENT ONLY

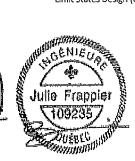
T-1902346(V)



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







| | | | Ba | are | | 1 | 1/2" Gyps | sum Ceiling | | |
|---------|--------|---------|----------------|-----------|-----|-------------------|-----------|-----------------|-----|--|
| Depth | Series | | On Centr | e Spacing | | On Centre 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 | |
| 4-1- | NI-40x | 18'-1" | 17'-0" | 16'-5" | N/A | 18'-9" | 17'-6" | 16'-11" | N/A | |
| | NI-60 | 18'-4" | 17'-3" | 16'-7" | N/A | 19'-0" | 17'-8" | 17'-1" | N/A | |
| 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 | |
| | N1-70 | 23'-6" | 21'-9" | 20'-9" | N/A | 24'-3" | 22'-5" | 21'-5" | N/A | |
| 16" | 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-Spar | n Blocking | | Mid-S | pan Blocking an | d 1/2" Gypsum | Ceiling |
|---------|--------|---------|----------|------------|-----|-------------------|-----------------|---------------|---------|
| Depth | Series | | On Centr | e 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 |
| | 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 |
| 11-7/8" | 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 |
| • 1 | 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 |
| | NI-70 | 27'-9" | 25'-8" | 24'-6" | N/A | 28'-5" | 26'-5" | 25'-2" | N/A |
| 16" | 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.

^{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.

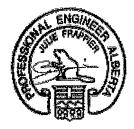
^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

^{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







| | | | Ba | ire | | | 1/2" Gyps | um Ceiling | | |
|----------|--------|---------|----------|-----------|---------|---------------------|-----------|------------|---------|--|
| Depth | Series | | On Centr | e Spacing | | On Centre Spacing | | | | |
| 20111 | •••• | 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" | |
| <i>b</i> | 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" | |
| | NI-60 | 19'-7" | 18'-2" | 17'-5" | 16'-9" | 20'-2" | 18'-9" | 17'-11" | 17'-2" | |
| 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" | |
| | 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" | |
| | N1-90x | 24'-1" | 22'-3" | 21'-2" | 20'-0" | 24'-8" | 22'-10" | 21'-9" | 20'-7" | |
| | NI-60 | 23'-9" | 22'-0" | 20'-11" | 19'-10" | 24'-6" | 22'-9" | 21'-8" | 20'-6" | |
| | NI-70 | 25'-1" | 23'-2" | 22'-0" | 20'-10" | 25' -9 " | 23'-10" | 22'-9" | 21'-6" | |
| 16" | 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-Spar | Blocking | | Mid-Span Blocking and 1/2" Gypsum (| | | |
|---------|------------------|-------------------|-----------------|-----------------|-----------------|-------------------------------------|------------------|--|---------|
| Depth | Series | On Centre Spacing | | | | On Centre Spacing | | | |
| Осраг | 301103 | 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" |
| | NI-40x | 18'-8" | 17'-2" | 16'-3" | 15'-2" | 18'-10" | 17'-2" | tre Spacing 19.2" | 15'-2" |
| 9-1/2" | NI-60 | 18'-11" | 17'-6" | 16'-6" | 15'-5" | 19'-2" | 17'-6" | | 15'-5" |
| J-1/2 | NI-70 | 20'-0" | 18'-7" | 17'-9" | 16'-7" | 20'-5" | 18'-11" | | 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" |
| | N1-40x | 21'-10" | 20'-4" | 19'-4" | 17'-8" | 22'-5" | 20'-6" | re Spacing 19.2" 14'-6" 16'-3" 16'-6" 17'-10" 18'-2" 17'-5" 19'-4" 19'-8" 21'-2" 22'-0" 21'-9" 22'-4" 23'-9" 24'-1" 24'-8" 24'-9" 26'-1" | 17'-8" |
| | NI-60 | 22'-1" | 20'-7" | 19'-7" | 187-4" | 22'-8" | 20'-10" | 19'-8" | 18'-4" |
| 11-7/8" | NI-50 NI-70 | 23'-4" | 21'-8" | 20'-8" | 19'-7" | 23'-10" | 22'-3" | re Spacing 19.2" 14'-6" 16'-3" 16'-6" 17'-10" 18'-2" 17'-5" 19'-4" 19'-8" 21'-5" 22'-0" 21'-9" 22'-4" 23'-9" 24'-1" 24'-8" 24'-9" 26'-1" | 19'-9" |
| | NI-70 | 23'-7" | 21'-11" | 20'-11" | 19'-9" | 24'-1" | 22'-6" | | 20'-0" |
| | NI-80 NI-90x | 24'-3" | 22'-6" | 21'-6" | 20'-4" | 24'-8" | 23'-0" | | 20'-9" |
| | NI-90X NI-40x | 24'-5" | 22'-9" | 21'-8" | 19'-5" | 25'-1" | 23'-2" | | 19'-5" |
| | NI-40X NI-60 | 24'-10" | 23'-1" | 22'-0" | 20'-10" | 25'-6" | 23'-8" | 22'-4" | 20'-10' |
| 4 411 | | 26'-1" | 24'-3" | 23'-2" | 21'-10" | 26'-8" | 24'-11" | e Spacing 19.2" 14'-6" 16'-3" 16'-6" 17'-10" 18'-2" 17'-5" 19'-4" 19'-8" 21'-5" 22'-0" 21'-9" 22'-4" 23'-9" 24'-8" 24'-9" 26'-1" 26'-5" | 22'-4" |
| 14" | NI-70 | 26'-6" | 24'-7" | 23'-5" | 22'-2" | 27'-1" | 25'-3" | | 22'-9" |
| | NI-80 | . 27'-3" | 25'-4" | 24'-1" | 22'-9" | 27'-9" | 25'-11" | | 23'-4" |
| | NI-90x | 27'-3" | 25'-5" | 24'-2" | 22'-10" | 28'-0" | 26'-2" | | 23'-1" |
| | NI-60 | 27 -3 28'-8" | 26'-8" | 25'-4" | 23'-11" | 29'-3" | 27'-4" | | 24'-8" |
| 16" | N1-70 | | 20 -8 27'-0" | 25'-9" | 24'-4" | 29'-8" | 27'-9" | 14'-6" 16'-3" 16'-6" 17'-10" 18'-2" 17'-5" 19'-4" 19'-8" 21'-2" 21'-5" 22'-0" 21'-9" 22'-4" 23'-9" 24'-1" 24'-8" 24'-8" | 25'-0" |
| | NI-80 | 29'-1" | | 25 -9 26'-6" | 24 -4 25'-0" | 30'-6" | 27'-5" 28'-5" | | 25'-8" |
| | NI-90x | 29'-11" | 27'-10" | 20-6 | Z3 •V | 30.00 | 20 -3 | | |

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

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

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

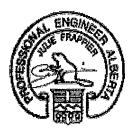
^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

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

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



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







| | | | Ва | ire | | 1/2" Gypsum Ceiling | | | | |
|---------|--------|---------|----------|-----------|-----|---------------------|----------|--|-----|--|
| Depth | Series | | On Centr | e Spacing | | | On Centr | e Spacing | | |
| ССРИ | 50,100 | 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" | re Spacing 19.2" | N/A | |
| 9-1/2" | NI-60 | 16'-3" | 15'-4" | 14'-10" | N/A | 16'-8" | 15'-9" | | N/A | |
| J -/- | 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" | e Spacing 19.2" 13'-3" 15'-1" 15'-3" 15'-10" 16'-0" 16'-0" 16'-11" 17'-1" 17'-1" 18'-5" 18'-6" 18'-9" 19'-8" 20'-6" 20'-6" 21'-5" 21'-9" | 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" | 19.2" 13'-3" 15'-1" 15'-3" 15'-10" 16'-0" 16'-0" 16'-11" 17'-1" 17'-9" 17'-11" 18'-5" 18'-6" 19'-8" 20'-6" 20'-6" 21'-5" | N/A | |
| | NI-60 | 18'-4" | 17'-3" | 16'-7" | N/A | 19'-0" | 17'-8" | | N/A | |
| 11-7/8" | NI-70 | 19'-6" | 18'-0" | 17'-4" | N/A | 20'-1" | 18'-7" | | N/A | |
| | NI-80 | 19'-9" | 18'-3" | 17'-6" | N/A | 20'-4" | 18'-10" | | N/A | |
| | NI-90x | 20'-4" | 18'-9" | 17'-11" | N/A | 20'-10" | 19'-3" | | 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" | 19.2" 13'.3" 15'.1" 15'.1" 15'.10" 16'.0" 16'.0" 16'.11" 17'.1" 17'.11" 18'.5" 18'.6" 18'.9" 20'.6" 20'.6" 20'.6" 21'.5" 21'.9" | N/A | |
| 7-4 | 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" | e Spacing 19.2" 13'-3" 15'-1" 15'-3" 15'-10" 16'-0" 16'-0" 16'-11" 17'-1" 17'-1" 17'-11" 18'-5" 18'-6" 18'-9" 19'-8" 20'-6" 20'-6" 20'-6" 21'-5" 21'-9" | N/A | |
| | NI-60 | 22'-3" | 20'-8" | 19'-9" | N/A | 23'-1" | 21'-5" | On Centre Spacing 16" 19.2" 14'-1" 13'-3" 15'-7" 15'-1" 15'-9" 15'-10" 16'-6" 16'-0" 16'-6" 16'-0" 17'-6" 16'-11" 17'-8" 17'-1" 18'-7" 17'-9" 18'-10" 17'-11" 19'-3" 18'-5" 19'-4" 18'-6" 19'-7" 19'-8" 20'-11" 20'-0" 21'-6" 20'-6" 22'-5" 21'-5" 22'-10" 21'-9" | N/A | |
| | NI-70 | 23'-6" | 21'-9" | 20'-9" | N/A | 24'-3" | 22'-5" | | N/A | |
| 16" | NI-80 | 23'-11" | 22'-1" | 21'-1" | N/A | 24'-8" | 22'-10" | | N/A | |
| • | NI-90x | 24'-8" | 22'-9" | 21'-9" | N/A | 25'-4" | 23'-5" | 22'-4" | N/A | |

| | | | Mid-Span | Blocking | | Mid-Span Blocking and 1/2" Gypsum Ceiling | | | | |
|---------|--------|---------|----------|-----------|-----|---|-------------------|--|-----|--|
| Depth | Series | | On Centr | e Spacing | | | On Centre Spacing | | | |
| Бериі | 501100 | 12" | 16" | 19.2" | 24" | 12" | 16" | | 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" | 19.2" 13'-3" 15'-1" 15'-4" 16'-9" 17'-1" 16'-0" 17'-9" 18'-5" 20'-0" 20'-5" 21'-2" 19'-6" 21'-0" 22'-9" 23'-2" 23'-9" 23'-4" 25'-2" | N/A | |
| 9-1/2" | NI-60 | 18'-1" | 16'-4" | 15'-4" | N/A | 18'-1" | 16'-4" | | N/A | |
| J 2/2 | 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" | E Spacing 19.2" 13'-3" 15'-1" 15'-4" 16'-9" 17'-1" 16'-0" 17'-9" 18'-5" 20'-5" 21'-2" 19'-6" 21'-0" 22'-9" 23'-2" 23'-9" 23'-4" 25'-6" | 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" | tre Spacing 19.2" 13'-3" 15'-1" 16'-9" 17'-1" 16'-0" 17'-9" 18'-5" 20'-5" 21'-2" 19'-6" 21'-0" 22'-9" 23'-2" 23'-9" 23'-4" 25'-6" | N/A | |
| | NI-60 | 21'-4" | 19'-8" | 18'-5" | N/A | 21'-8" | 19'-8" | | N/A | |
| 11-7/8" | NI-70 | 22'-6" | 20'-10" | 19'-11" | N/A | 23'-0" | 21'-4" | | N/A | |
| | NI-80 | 22'-9" | 21'-1" | 20'-1" | N/A | 23'-3" | 21'-7" | | 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" | e Spacing 19.2" 13'-3" 15'-1" 15'-4" 16'-9" 17'-1" 16'-0" 17'-9" 18'-5" 20'-0" 20'-5" 21'-2" 19'-6" 21'-0" 22'-9" 23'-2" 23'-9" 23'-4" 25'-2" 25'-6" | N/A | |
| 14" | NI-70 | 25'-3" | 23'-4" | 22'-3" | N/A | 25'-10" | 24'-0" | | N/A | |
| 14 | 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" | e Spacing 19.2" 13'-3" 15'-1" 15'-4" 16'-9" 17'-1" 16'-0" 17'-9" 18'-5" 20'-0" 20'-5" 21'-2" 19'-6" 21'-0" 22'-9" 23'-2" 23'-9" 23'-4" 25'-6" | N/A | |
| | NI-60 | 26'-5" | 24'-6" | 23'-4" | N/A | 27'-2" | 24'-10" | 23'-4" | N/A | |
| | NI-70 | 27'-9" | 25'-8" | 24'-6" | N/A | 28'-5" | 26'-5" | 25'-2" | N/A | |
| 16" | NI-80 | 28'-2" | 26'-1" | 24'-10" | N/A | 28'-10" | 26'-9" | 19.2" 13'-3" 15'-1" 15'-4" 16'-9" 17'-1" 16'-0" 17'-9" 18'-5" 20'-5" 21'-2" 21'-0" 22'-9" 23'-2" 23'-9" 23'-4" 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.

^{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







| | | | Ba | are | | | | | |
|---------|--------|---------|----------|-----------|---------|---------|----------|--|---------|
| Depth | Series | | On Centr | e Spacing | | | On Centi | 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" | re Spacing 19.2" 13'-4" | 14'-3" |
| | N1-70 | 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" | re Spacing 19.2" 13'-4" 15'-5" 16'-7" 16'-9" 16'-0" 17'-11" 18'-10" 19'-6" 19'-6" 19'-11" 20'-10" 21'-2" 21'-9" 22'-9" 23'-1" | 15'-10" |
| 44 7/01 | NI-60 | 19'-7" | 18'-2" | 17'-5" | 16'-9" | 20'-2" | 18'-9" | | 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" | e Spacing 19.2" 13'.4" 15'-1" 15'-5" 16'-9" 16'-0" 17'-9" 17'-11" 18'-10" 19'-6" 19'-6" 19'-6" 19'-11" 20'-10" 21'-2" 21'-9" 23'-1" | 18'-6" |
| | NI-40x | 21'-5" | 19'-10" | 18'-11" | 17'-5" | 22'-1" | 20'-6" | 19'-6" | 17'-5" |
| | NI-60 | 21'-10" | 20'-2" | 19'-3" | 18'-2" | 22'-5" | 20'-10" | 19'-11" | 18'-10" |
| 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" | 13'-4" 15'-1" 15'-5" 16'-7" 16'-9" 16'-9" 17'-11" 18'-10" 19'-6" 19'-6" 19'-11" 20'-10" 21'-2" 21'-9" 22'-9" 23'-1" | 20'-6" |
| 1611 | N1-70 | 25'-1" | 23'-2" | 22'-0" | 20'-10" | 25'-9" | 23'-10" | | 21'-6" |
| 16" | 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" | e Spacing 19.2" 13'-4" 15'-1" 15'-5" 16'-9" 16'-0" 17'-9" 17'-11" 18'-10" 19'-6" 19'-6" 19'-6" 19'-11" 20'-10" 21'-2" 21'-9" 21'-8" 22'-9" | 22'-5" |

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

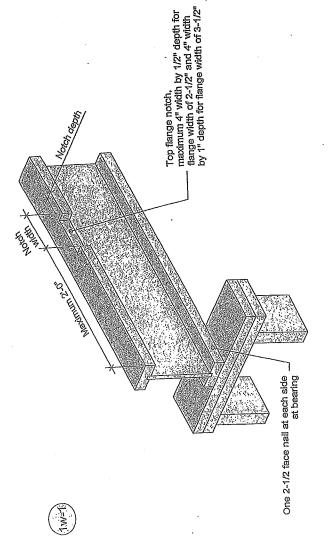
^{2.} Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall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

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

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

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

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



Maximum 1/2" depth for flange width of 2-1/2" and 1" depth for flange width of 3-1/2"

previous versions. If the document has been in effect for more than one year, consult nordic,ca or contact Nordic Struct of to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.128 Inch for 2.4[2-hoth nails, or 0.144 Inch for 3-lnch nails. Individual

STRUCTURES

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TITLE

Notch in I-joist for Heat Register

CATEGORY

I-joist - Typical Floor Framing and Construction Details

1 vv-1 DATE 2018-04-10

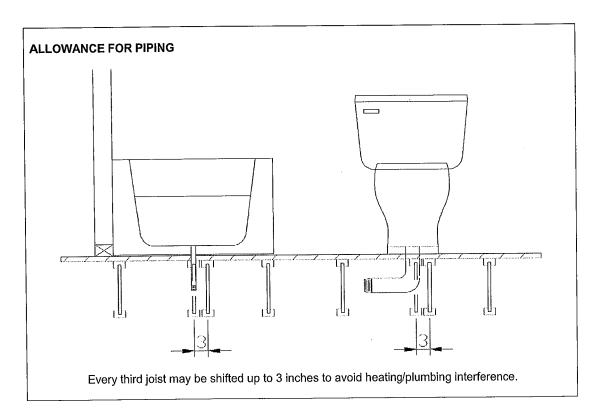


Allowance for Piping (Installation Notes)

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

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

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



Revised April 12, 2012