DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT Housing - Federal Housing Commissioner	STRUCTURAL ENGINEERING BULLETIN NO. 1131 Rev. 1 (Supercedes issue dated April 2, 2002)
TO: DIRECTORS, SINGLE FAMILY HOCs DIRECTORS, MULTIFAMILY HUBs	ISSUE DATE January 19, 2006
	REVIEW DATE January 19, 2009

SUBJECT: 1. **Item Description** NASCOR I-Joist (Series NJ, NJH, NJU)

2. **Name and address of Manufacturer** NASCOR Ltd.
1212 34th Avenue, SE
Calgary, Alberta, Canada T2G 1V7

This Structural Engineering Bulletin (SEB) should be filed with other SEBs and related Bulletins on materials or products as required by prescribed procedures.

1. General:

This Bulletin sets forth specific requirements under the Technical Suitability of Products Program for determining the eligibility of housing to be constructed under HUD mortgage insurance, or other HUD housing programs.

2. Scope:

This Bulletin applies only to the structural features of this method of construction. Final determination of eligibility is made by the appropriate HUD Field Office. Other factors considered by the Field Office will be valuation, location, architectural planning and appeal, mechanical equipment, thermal characteristics, and market acceptance. Consideration is also necessary to determine whether a specific property will qualify under the specific HUD program, when constructed according to the method outlined in this Bulletin, and where the structure is to be located.

3. Minimum Property Standards (MPS):

Compliance with HUD MPS will be determined by the HUD Field Office or Homeownership Center on the same basis as submissions involving conventional construction, except for the special features described in this Bulletin.

4. Inspection:

Field compliance inspections covering conventional items of construction and any special features covered in this Bulletin shall be made in accordance with prescribed procedures.

The appropriate HUD Field Office or Homeownership Center shall furnish a copy of a HUD field inspection report to Headquarters, FHA Standards, Office of Manufactured Housing Programs, when there is:

a. Evidence of noncompliance with portions of the system of construction described in this Bulletin.

b. Faulty shop fabrication, including significant surface defects.

c. Damage to shop fabricated items or materials due to improper transportation, storage, handling or assembly.

d. Unsatisfactory field workmanship or performance of the product or system.

e. Any significant degradation or deterioration of the product or evidence of lack of durability or performance.

Periodic plant inspections will be made by HUD Field Office, Homeownership Center, State Agency personnel, or a HUD designated representative in accordance with their prescribed procedures. Factory inspection reports shall be submitted to HUD Headquarters, upon request.

5. Certification

The manufacturer named in this Bulletin shall furnish the builder with a written certification stating that the product has been manufactured in compliance with the HUD Minimum Property Standards (MPS), except as modified by this Bulletin. The Builder shall endorse the certification with a statement that the product has been erected in compliance with the HUD MPS except as modified by this Bulletin, and that the manufacturer's certification does not relieve the Builder, in any way, of responsibility under the terms of the Builder's Warranty required by the National Housing Act, or under any provisions applicable to any other housing program. This certification shall be furnished to the HUD Field Office upon completion of the property.

OUTLINE DESCRIPTION, CATEGORY II CONSTRUCTION

GENERAL:

This Bulletin provides for the use of NASCOR NJ, NJH & NJU I-Joists, an all wood product, developed by NASCOR Ltd., for floor and roof spans up to 34 feet and 7 inches.

PRODUCT DESCRIPTION:

The NASCOR NJ Series I-joists manufactured wood I-joists are available in depths of $9^1/_4$ inches (235 mm), $9^1/_2$ inches (241 mm), and $11^7/_8$ inches (302 mm). Their flanges are composed of one-piece or fingerjoined nominal 2 x 3 inch (51 x 76 mm), No. 2 or better spruce-pine-fir (SPF) solid sawn lumber oriented with their 3x dimension in the vertical direction. The webs are $^3/_8$ inch (9.5 mm) thick oriented strand board (OSB), graded to exceed the requirements of Exposure 1, Structural 1 rated, performance rated panels (APA PRP-108) United States Department of Commerce (DOC) PS-2 and/or Canadian Standards Association (CSA) Standard CSA 0325. The flanges are routered to accept the web and the section is joined by a qualified adhesive.

The NASCOR NJH Series I-joists are similar to the NJ Series I-joist except that their flanges are oriented with their 3x dimension in the horizontal. NJH Series I-joists are available in depths of $9^1/_2$ inches (241 mm), $11^7/_8$ inches (302 mm), 14 inches (356 mm), and 16 inches (406 mm).

The NASCOR NJU Series I-joists are similar to the NJ Series I-joist except that their flanges are 2 x 4 inch (51 x 102 mm), No. 2 or better spruce-pine-fir (SPF) solid sawn lumber oriented with their 4x dimension in the horizontal. NJU Series I-joists are available in depths of $9^1/_2$ inches (241 mm), $11^7/_8$ inches (302 mm), 14 inches (356 mm), 16 inches (406 mm), and 18 inches (457 mm).

Flange members, web members, and water-resistant glue are fed into a machine that assembles the finished product on a continuous basis. The I-joist is cut to the desired length as it leaves the machine and is stored in a controlled environment to allow the adhesive to cure.

MANUFACTURING PROCESS FOR NASCOR I-JOIST:

The I-joists are manufactured in a continuous process with the following steps:

1. Web sections are glued and end-jointed to form a continuous web.

2. Flange material is grooved for the web joint.

3. While applying a constant uniform flow of glue to the joint, the flanges and web are brought together through a series of vertical and horizontal rollers which apply continuous pressure to form the beam.

Finished I-joist are bundled and wrapped with weatherproof material and stored in such a manner as to prevent excessive weathering, glue line breakdown or deterioration of the wood components.

DESIGN AND ERECTION:

Design and erection of NASCOR I-Joists shall be in accordance with Attachment "A". A hole chart defining the maximum size and corresponding positions of permissible holes in web members is also including in Attachment "A". When I-joists are used as simple-span members, the design shear is equal to the end reaction.

LOAD TABLES:

Tables showing allowable loads due to stress and deflection limitations are presented for size of I-joist as a function of span. Load tables are available from NASCOR Ltd. on request.

MANUFACTURING PLANTS:

Components covered under this Bulletin will be produced in the following plant:

NASCOR Ltd.
1212 34th Avenue SE
Calgary, Alberta T2G 1V7
Canada

ACUJOIST
9455 Haldane Road
Kelowna, British Columbia V4V 2K5
Canada

ALL-FAB Building Components
Joist Division
P. O. Box 189
7 Highway Propellant Road
Stony Mountain, Manitoba R0C 3A0
Canada

G.E. Fabrications Inc.
269 Walnut Street Road
Salem, NJ 08079

NASCOR Plus
4220 Marcel Lacasse
Boisbriad, Quebec J7H 1N3
Canada

NASCOR Systems (Kott Lumber Company)
P. O. Box 11401 Stn. H
Nepean, Ontario K2H 7V1
Canada

Southern Truss Inc.
105 Small Street
Harrisburg, IL 62946

The appropriate HUD Field Office or Homeownership Center in whose jurisdiction the manufacturing plants are located, or HUD designated representatives will inspect these plants in accordance with prescribed procedures.

QUALITY CONTROL:

The appropriate HUD Field Office or Homeownership Center in whose jurisdiction the manufacturing plants are located, or the State Agency (in Category III states) shall review and approve plants fabrication procedures and quality control program, to ensure compliance with approved plans and specifications. The quality control program shall include field erection or supervision by NASCOR Ltd.

RECORD OF PROPERTIES:

The manufacturer shall provide HUD a list of the first ten properties in which the component or system described in this Bulletin is used. The list shall include the complete address, or description of location, and approximate date of installation or erection. Failure of the manufacturer to provide HUD with the above information may result in cancellation of this Bulletin.

NOTICE OF CHANGES:

The manufacturer shall inform HUD in advance of changes in production facilities, transportation, field erection procedures, design, or materials used in this product. Further, the manufacturer must inform HUD of any revision to corporate structure, change of address or change in name or affiliation of the prime manufacturer. Failure of the manufacturer to notify HUD of any of the above changes may result in cancellation of this Bulletin.

EVALUATION:

This SEB is valid for a period of three years from the date of initial issuance or most recent renewal or revision, whichever is later. The holder of this SEB shall apply for a renewal or revision 90 days prior to the Review Date printed on this SEB. Submittals for renewal or revision shall be sent to:

U. S. Department of Housing and Urban Development
FHA Standards, Office of Manufactured Housing Programs
451 Seventh Street, SW, Room 9168
Washington, DC 20410-8000

Appropriate User Fee shall be sent to:

U. S. Department of Housing and Urban Development
Miscellaneous Income – Technical Suitability of Products Fees
Bank of America
P. O. Box 198762
Atlanta, GS 30384-8762

The holder of this SEB may apply for revision at any time prior to the Review Date. Minor revisions may be in the form a supplement.

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate User Fee for a revision will need to be submitted in accordance with Code of Federal Regulations 24 CFR 200.934, "User Fee System for the Technical Suitability of Products Program", and current User Fee Schedule.

CANCELLATION:

Failure to apply for a renewal or revision shall constitute a basis for cancellation of the SEB. HUD will notify the manufacturer that the SEB may be canceled when:

. conditions under which the document was issued have changed so as to affect production of, or to compromise the integrity of the accepted material, product, or system,

2. the manufacturer has changed its organizational form without notifying HUD, or

3 the manufacturer has not complied with responsibilities it assumed as a condition of HUD's acceptance.

However, before cancellation, HUD will give the manufacturer a written notice of the specific reasons for cancellation, and the opportunity to present views on why the SEB should not be canceled. No refund of fees will be made on a canceled document.

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This Structural Engineering Bulletin is issued solely for the captioned firm and is not transferable to any person or successor entity.

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ATTACHMENT 'A'

TABLE 1 – DESIGN PROPERTIES FOR NASCOR JOISTS [1,2,3]

Joist Type	Depth (inches)	Weight (lb./ft.)	Allowable Moment (ft-lbs.)	Allowable Shear (lbs)	EI (lb.-in.^{2} x 10^6)	Shear Constant, K (lbs x 10^6)
NJ925	9 ¼	2.1	2,200	950	123	11.83
NJ10	9 ½	2.2	2,320	970	136	12.70
NJ12	11 7/8	2.4	2,850	1,070	243	14.50
NJH925	9 ¼	2.2	2,300	975	162	10.91
NJH10	9 ½	2.3	2,420	1,000	175	11.60
NJH12	11 7/8	2.7	3,400	1,140	298	14.50
NJH14	14	3.0	5,000	1,350	430	15.08
NJH16	16	3.3	5,940	1,510	584	16.93
NJU10	9 ½	2.7	3,040	1,000	240	11.11
NJU12	11 7/8	2.9	4,200	1,140	406	13.75
NJU14	14	3.2	5,600	1,350	594	15.76
NJU16	16	3.4	6,900	1,510	807	17.15
NJU18	18	3.6	8,400	1,600	1,054	20.04

Notes on Table 1:

1. Mid-span deflection of simply supported joists shall be calculated using the following equations:

$$\Delta = \frac{5\,W\,L^4}{384\,EI} + \frac{W\,L^2}{K}$$ for Uniform Loads

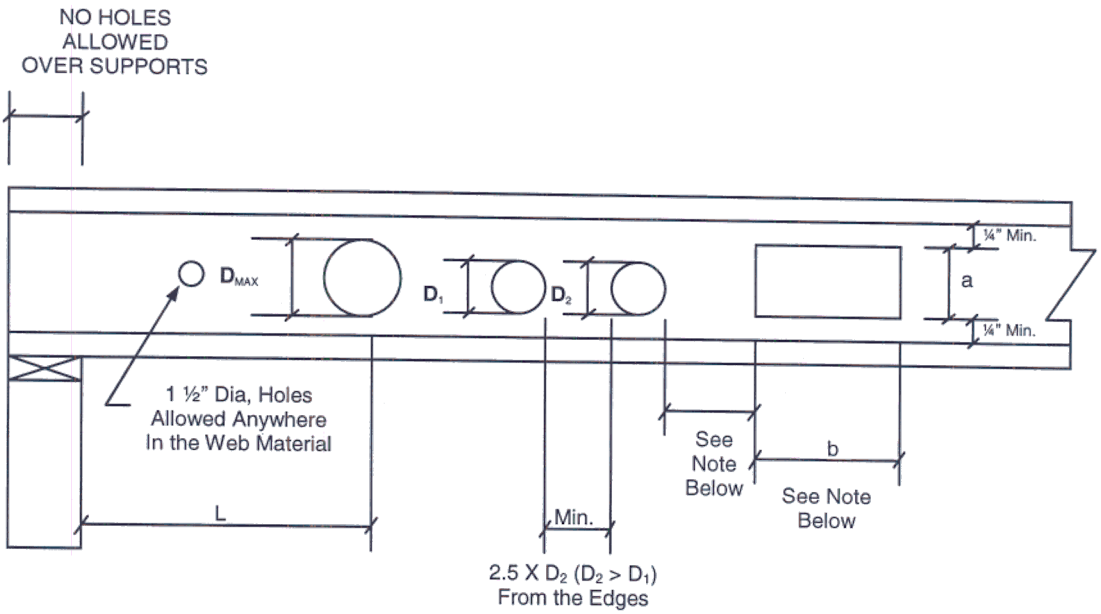
$$\Delta = \frac{PL^3}{48EI} + \frac{2PL}{K}$$ for Concentrated Loads at mid-span

Where: W = Uniform load in pounds per linear inch
P = Concentrated load in pounds
L = Span in inches
EI = Joist Stiffness in lbs-in^2 from (table 1)
K = Shear deflection shear constant in pounds (from table 1)

2. Allowable shear may be further limited by the allowable end reaction, depending on the joist type and bearing length selected.
3. Joist flanges are No. 2 or better SPF. Web material is 3/8 inch thick OSB.

TABLE 2 - RIM JOISTS

Joist Type	Allowable Axial Compressive Load (plf)
NJ925	2000
NJ10	2000
NJ12	2000
NJH925	2000
NJH10	2000
NJH12	1500
NJH14	1200
NJH16	1100
NJU10	2000
NJU12	1500
NJU14	1200
NJU16	1100
NJU18	1000



A. MULTIPLE HOLES

The spacing required between the edges of round holes must be a minimum of 2-1/2 times the diameter of the largest hole.
The spacing required between the edges of rectangular holes must be a minimum of 5 times the width (distance parallel to flange) of the largest rectangular hole.
The spacing required between the edges of a round hole and a rectangular hole must be 5 times the width of the largest rectangular hole or 5 times the diameter of the round hole, whichever is greater.

B. ROUND HOLES (Refer to Tables 5 - 10 for locations and spans)

A 1 ½" diameter hole can be drilled anywhere in the web except over a support.
All holes must leave a minimum of ¼" of uncut web above and below the hole.

C. RECTANGULAR HOLES (Refer to Tables 5 - 10 for locations and spans)

The holes must be centered vertically in the web.
Cutting a radius on the corners of a rectangular hole is recommended.
The maximum allowable hole width (distance parallel to the flanges) shall be 1-1/2 times the hole depth.

D. GENERAL

No holes are allowed over a support.
Do not cut or nick the flanges when cutting holes in web.
A minimum distance of ¼" is required between the edge of the hole and the flange.
Valid for simply supported spans where uniform distributed loads do not exceed 40 psf live and 25 psf dead.
Multiple maximum size holes may not be possible for some joist types. Check required distance from edge of nearest support to hole and the required spacing between holes.

FIGURE 1 WEB HOLE SPECIFICATIONS FOR NASCOR JOISTS

TABLE 3 - ALLOWABLE BEARING CAPACITY (in Pounds) FOR NASCOR JOISTS

Joist Type	End Bearing Length				Interior Bearing Length			
	1-1/2 inches		2-1/2 inches		3-1/2 inches		5-1/2 inches	
	Without Stiffeners	With Stiffeners	Without Stiffeners	With Stiffeners	Without Stiffeners	With Stiffeners	Without Stiffeners	With Stiffeners
NJ925	950	----	950	----	1900	----	1900	----
NJ10	960	----	970	----	1940	----	1940	----
NJ12	960	----	1070	----	2000	----	2140	----
NJH925	950	975	975	975	1950	1950	1950	1950
NJH10	960	1000	1000	1000	2000	2000	2000	2000
NJH12	1000	1140	1140	1140	2200	2280	2280	2280
NJH14	1100	1350	1300	1350	2200	2700	2500	2700
NJH16	1100	1500	1400	1510	2200	2700	2500	3020
NJU10	900	900	1000	1000	1500	2000	2000	2000
NJU12	900	900	1100	1100	1500	2280	2280	2280
NJU14	1200	1200	1350	1350	1500	2500	2500	2700
NJU16	1200	1200	1400	1400	1500	2500	2500	3020
NJU18	1200	1200	1400	1400	1500	2500	2500	3200

TABLE 4 - ALLOWABLE SPANS (ft-in) FOR NASCOR JOISTS [1,2,3,4,5,6& 7]

Joist Type	Floor Load (psf)				Floor Load (psf)			
	Live = 40		Dead = 10		Live = 40		Dead = 20	
	Joist Spacing (inches)				Joist Spacing (inches)			
	12	16	19.2	24	12	16	19.2	24
NJ925	17' - 5"	15' - 11"	15' - 0"	13' - 8"	17' - 5"	15' - 4"	14' - 0"	12' - 6"
NJ10	18' – 0"	16' - 5"	15' - 6"	14' - 1"	18' - 0"	15' - 9"	14' - 4"	12' - 10"
NJ12	21' - 7"	19' - 1"	14' - 5"	15 - 7"	20' - 1"	17' - 5"	15' - 11"	14' - 3"
NKH925	19' - 0"	17' - 2"	15' - 8"	14' - 0"	18' - 1"	15' - 8"	14' - 3"	12' - 9"
NJH10	19' - 5"	17 - 7"	16 - 1"	14' - 4"	18' - 6"	16' - 1"	14 - 8"	13' - 1"
NJH12	23' - 1"	20' - 10"	19' - 0"	17' - 0"	22' - 0"	19' - 0"	17' - 4"	15' - 6"
NJH14	25' -11"	23' - 7"	22' - 3"	20' - 8"	25' -11"	23' - 1"	21' - 1"	18' -10"[5]
NJH16	28' - 7"	26' - 0"	24'- 6"	22' -6"[5]	28' - 7"	25' -2"	23' - 0"[5]	20' - 7"[5]
NJU10	21'-6"	19'-7"	18'-0"	16'-1"	20'-9"	18'-0"	16'-5"	14'-8"
NJU12	25'-5"	23'-2"	21'-2"	18'-11"[5]	24'-5"	21'-2"	19'-4"[5]	17'-3"[5]
NJU14	28'-9"	26'-2"	24'-5"	21'-10"	28'-3"	24'-5"	22'-4"	19'-11"
NJU16	31'-9"	28'-10"	27'-2"	24'-3"[5]	31'-4"	27'-2"	24'-9"	22'-2"[5]
NJU18	34'-7"	31'-6"	29'-8"	26'-9"[5]	34'-7"	29'-11"	27'-4"[5]	23'-3"[5]

Notes on Table 4:

1. Table is applicable for single span, simply supported joists subjected to the uniform loads indicated in the table.
2. Spans are based on composite action of glued and nailed sheathing. Spans must be reduced by 12 inches where sheathing is nailed only.
3. Live load deflection is limited to L/360 and total load deflection limited to L/240.
4. Minimum bearing length of 1½ inches is required, unless otherwise noted.
5. Minimum bearing length of 2½ inches is required.
6. Web holes are permitted as outlined in Figure 1.
7. 7% repetitive member increase is included.

TABLE 5 - ALLOWABLE RECTANGULAR HOLE LOCATION (ft-in.) for NJ SERIES [1,2,3,4,5,6]

Joist Type	Joist Span (ft-in.)	Hole Height (inches)										
		2	2 ½	3	3 ½	3 ¾	4	4 ½	5	5 ½	6	6 3/8
		Allowable Hole Location (ft-in)										
NJ925	6 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0						
	8 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0						
	10 – 0	1 - 0	1 - 0	1 - 6	2 - 0	2 - 0						
	12 – 0	1 - 6	2 - 0	2 - 6	3 - 0	3 - 0						
	13 – 2	1 - 0	1 - 0	1 - 6	2 - 6	2 - 6						
	14 – 0	1 - 0	1 - 0	1 - 0	1 - 6	1 - 6						
	15 - 5	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0						
NJ10	6 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0					
	8 - 0	1 - 0	1 - 0	1 - 0	1 - 6	1 - 6	1 - 6					
	10 - 0	1 - 6	1 - 6	2 - 0	2 - 6	2 - 6	2 - 6					
	12 - 0	2 - 6	2 - 6	3 - 0	3 - 6	3 - 6	3 - 6					
	12 - 4	2 - 6	3 - 0	3 - 0	3 - 6	3 - 6	3 - 6					
	13 - 8	2 - 0	2 - 6	3 - 0	3 - 0	3 - 6	3 - 6					
	14 - 0	1 - 0	1 - 6	2 - 0	2 - 6	2 - 6	2 - 6					
	14 - 6	1 - 0	1 - 6	2 - 0	2 - 6	2 - 6	3 - 0					
	15 -11	1 - 0	1 - 0	1 - 0	1 - 6	1 - 6	1 - 6					
NJ12	6 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6
	8 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	1 - 6	2 - 0	2 - 0
	10 – 0	1 - 0	1 - 0	1 - 0	1 - 6	1 - 6	1 - 6	2 - 0	2 - 6	2 - 6	3 - 0	3 - 0
	12 – 0	1 - 0	1 - 6	2 - 0	2 - 6	2 - 6	2 - 6	3 - 0	3 - 6	3 - 6	4 - 0	4 - 0
	13 – 8	2 - 0	2 - 6	2 - 6	3 - 0	3 - 6	3 - 6	4 - 0	4 - 0	4 - 6	5 - 0	5 - 0
	14 – 0	1 - 0	1 - 0	1 - 0	2 - 0	2 - 6	2 - 6	3 - 0	3 - 6	4 - 0	4 - 0	4 - 6
	15 – 3	1 - 0	2 - 0	2 - 6	3 - 0	3 - 0	3 - 6	3 - 6	4 - 0	4 - 6	5 - 0	5 - 0
	16 – 0	1 - 0	1 - 0	1 - 6	2 - 0	2 - 6	2 - 6	3 - 0	3 - 6	4 - 0	4 - 6	4 - 6
	16 – 9	1 - 0	1 - 0	2 - 0	2 - 6	3 - 0	3 - 0	3 - 6	4 - 0	4 - 6	5 - 0	5 - 0
	18 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	2 - 0	2 - 6	3 - 0	3 - 6	4 - 0
	19 - 2	1 – 0	1 - 0	1 - 0	1 - 0	1 - 6	2 - 0	2 - 6	3 - 0	4 - 0	4 - 6	4 - 6

Notes on Table 5:

1. Table is based on a maximum uniform floor loading of 40 psf live and 25 psf dead load.
2. Table is applicable for joist spacings of 24 inches on center or less.
3. Joist span is based on the clear span, distance from inside of the end supports.
4. Hole location is the distance measured from the inside face of the nearest support to the edge of the hole.
5. The maximum hole depth must leave ¼ inches minimum of web material between the top and bottom of the hole and the flange.
6. The maximum allowable hole width (distance parallel to flange) shall be 1-1/2 times the hole depth.

TABLE 6 – ALLOWABLE ROUND HOLE LOCATION (ft-in) FOR NJ SERIES [1,2,3,4,5]

Joist Type	Joist Span (ft-in.)	Hole Diameter (inches)										
		2	2 ½	3	3 ½	3 ¾	4	4 ½	5	5 ½	6	6 3/8
		Allowable Hole Location (ft –in)										
NJ925	6 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0						
	8 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0						
	10 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6						
	12 – 0	1 - 0	1 - 6	2 - 0	2 - 0	2 - 6						
	13 – 2	1 - 0	1 - 0	1 - 0	1 - 6	1 - 6						
	14 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0						
	15 - 5	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0						
NJ10	6 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0					
	8 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0					
	10 - 0	1 - 0	1 - 0	1 - 0	1 - 6	1 - 6	1 - 6					
	12 - 0	1 - 0	1 - 6	2 - 0	2 - 6	2 - 6	2 - 6					
	12 - 4	1 - 6	1 - 6	2 - 0	2 - 6	2 - 6	3 - 0					
	13 - 8	1 - 0	1 - 0	1 - 6	2 - 0	2 - 0	2 - 6					
	14 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6					
	14 - 6	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	1 - 6					
	15 -11	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0					
NJ12	6 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0
	8 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0
	10 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	2 - 0
	12 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	2 - 0	2 - 6	3 - 0
	13 – 8	1 - 0	1 - 0	1 - 0	1 - 6	1 - 6	1 - 6	2 - 0	2 - 6	3 - 0	3 - 6	3 - 6
	14 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	2 - 0	2 - 6
	15 – 3	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	1 - 6	1 - 6	2 - 6	3 - 0	3 - 0
	16 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	2 - 0	2 - 6
	16 – 9	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	2 - 0	3 - 0
	18 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6
	19 – 2	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0

Notes on Table 6:

1. Table is based on a maximum uniform floor loading of 40 psf live and 25 psf dead load.
2. Table is applicable for joist spacings of 24 inches on center or less.
3. Joist span is based on the clear span, distance from inside of the end supports.
4. Hole location is the distance measured from the inside face of the nearest support to the centerline of the hole.
5. The maximum hole depth must leave ¼ inches minimum of web material between the top and bottom of the hole and the flange.

TABLE 7 - ALLOWABLE RECTANGULAR HOLE LOCATION (ft-in) FOR NJH SERIES [1,2,3,4,5,6]

Joist Type	Joist Span (ft-in)	Hole Height (inches)												
		2	3	4	5	6 ¼	7	8 3/8	9	10	10 ½	11	12	12 ½
		Allowable Hole Location (ft-in)												
NJH925	10 - 0	1 - 6	2 - 0	3 - 0	3 - 6									
	12 - 0	2 - 6	3 -0	4 - 0	4 - 6									
	12 -4	2 - 6	3 - 6	4 - 0	4 - 6									
	13 - 9	2 - 0	3 - 0	4 – 0	4 - 6									
	14 - 0	1 - 0	2 -0	3 - 6	4 – 0									
	15 - 1	1 - 6	2 - 6	4 - 0	4 - 6									
	16 - 0	1 - 0	1 - 0	2 - 6	3 - 6									
NJH10	10 - 0	1 - 0	1 - 6	2 - 6	3 - 0									
	12 - 0	2 - 0	2 - 6	3 - 6	4 - 0									
	12 -7	2 - 0	3 - 0	4 - 0	4 - 6									
	14 - 0	1 - 6	2 - 6	3 - 6	4 - 6									
	14 - 1	1 - 6	2 - 6	3 - 6	4 - 6									
	15 - 5	1 - 0	2 - 0	3 - 6	4 - 6									
	16 - 0	1 - 0	1 - 0	1 - 6	3 - 6									
	17 - 3	1 - 0	1 - 0	2 - 0	4 - 0									
NJH12	10 - 0	1 - 0	1 - 0	2 - 0	2 - 6	3 - 6	3 - 6	4 - 0						
	12 - 0	1 - 0	2 - 0	3 - 0	3 - 6	4 - 6	4 - 6	5 - 0						
	14 - 0	2 - 0	3 - 0	4 - 0	4 - 6	5 - 6	5 - 6	6 - 0						
	14 -11	2 - 0	3 - 6	4 - 0	5 - 0	6 - 0	6 - 0	6 - 6						
	16 - 0	1 - 6	2 - 6	3 - 6	4 - 6	5 - 6	6 - 0	6 - 6						
	16 - 8	1 - 6	3 - 0	4 - 0	5 - 0	6 - 0	6 - 6	7 - 0						
	18 - 0	1 - 0	2 - 0	3 - 6	4 - 6	6 - 0	6 - 6	7 - 0						
	18 - 3	1 - 0	2 - 6	3 - 6	5 - 0	6 - 0	6 - 6	7 - 6						
	20 -0	1 - 0	1 - 0	2 - 6	4 - 0	5 - 6	6 - 0	7 - 0						
	20 - 6	1 - 0	1 - 0	2 - 6	4 - 0	5 - 6	6 - 6	7 - 6						
NJH14	12 - 0	1 - 0	1 - 0	1 - 6	2 - 6	3 - 0	3 - 6	4 - 6	5 - 0	5 - 0	5 - 6			
	14 - 0	1 - 0	1 - 6	2 - 6	3 - 6	4 - 0	4 - 6	5 - 6	6 - 0	6 - 0	6 - 6			
	16 - 0	1 - 6	2 - 6	3 - 6	4 - 6	5 - 0	5 - 6	6 - 6	7 - 0	7 - 0	7 - 6			
	18 - 0	2 - 6	3 - 6	4 - 6	5 - 6	6 - 0	6 - 6	7 - 6	8 - 0	8 - 0	8 - 6			
	18 - 1	2 - 6	3 - 6	4 - 6	5 - 6	6 - 0	6 - 6	7 - 6	8 - 0	8 - 0	8 - 6			
	19 - 9	1 - 0	2 - 6	3 - 6	5 - 0	6 - 0	6 - 6	7 - 6	8 - 0	8 - 6	8 - 6			
	20 – 0	1 - 0	1 - 0	2 - 6	3 - 6	5 - 0	6 - 0	7 - 0	7 - 6	8 - 0	8 - 6			
	21 – 0	1 - 0	1 - 6	3 - 0	4 - 0	5 - 6	6 - 0	7 - 6	8 - 0	8 - 6	9 - 0			
	22 – 0	1 - 0	1 - 0	1 - 0	2 - 6	4 - 0	5 - 0	6 - 0	7 - 6	8 - 0	8 - 6			
	23 - 1	1 - 0	1 - 0	1 - 0	3 - 0	4 - 6	6 - 0	7 - 6	8 - 0	8 - 6	9 - 0			
NJH16	12 - 0	1 - 0	1 - 0	1 - 0	2 - 0	3 - 0	3 - 6	4 - 6	5 - 0	5 - 0	5 - 6	5 - 6	5 - 6	5 - 6
	14 - 0	1 - 0	1 - 0	2 - 0	3 - 0	4 - 0	4 - 6	5 - 6	6 - 0	6 - 0	6 - 6	6 - 6	6 - 6	6 - 6
	16 - 0	1 - 0	1 - 6	3 - 0	4 - 0	5 - 0	5 - 6	6 - 6	7 - 0	7 - 0	7 - 6	7 - 6	7 - 6	7 - 6
	18 - 0	1 - 6	2 - 6	4 - 0	5 - 0	6 - 0	6 - 6	7 - 6	8 - 0	8 - 0	8 - 6	8 - 6	8 - 6	8 - 6
	19 - 9	2 - 6	3 - 6	4 - 6	5 - 6	7 - 0	7 - 6	8 - 6	8 - 6	9 - 0	9 - 0	9 - 6	9 - 6	9 - 6
	20 - 0	1 - 0	2 - 0	3 - 6	4 - 6	6 - 0	6 - 6	7 - 6	8 - 0	8 - 6	9 - 0	9 - 0	9 - 0	9 - 0
	21 - 10	1 - 6	3 - 0	4 - 0	5 - 6	7 - 0	7 - 6	8 - 6	9 - 0	9 - 6	9 - 6	10-0	10-0	10-0
	22 - 0	1 - 0	1 - 0	2 - 6	4 - 0	6 - 0	6 - 6	8 - 0	8 - 6	9 - 0	9 - 6	9 - 6	10-0	10-0
	23 - 2	1 - 0	1 - 6	3 - 6	5 - 0	6 - 6	7 - 6	8 - 6	9 - 0	9 - 6	10-0	10-0	10-6	10-6
	24 – 0	1 - 0	1 - 0	1 - 0	2 - 6	5 - 0	6 - 0	7 - 6	8 - 6	9 - 0	9 - 6	9 - 6	10-0	10-0
	25 – 6	1 - 0	1 - 0	1 - 6	3 - 6	5 - 6	6 - 6	8 - 6	9 - 0	10-0	10-0	10-6	10-6	11-0

Notes on Table 7:

1. Table is based on a maximum uniform floor loading of 40 psf live and 25 psf dead load.
2. Table is applicable for joist spacings of 24 inches on center or less.
3. Joist span is based on the clear span, distance from inside of the end supports.
4. Hole location is the distance measured from the inside face of the nearest support to the edge of the hole.
5. The maximum hole depth must leave ¼ inches minimum of web material between the top and bottom of the hole and the flange.
6. The maximum allowable hole width (distance parallel to flange) shall be 1-1/2 times the hole depth.

TABLE 8 – ALLOWABLE ROUND HOLE LOCATION (ft-in) FOR NJHS SERIES [1,2,3,4,5]

Joist Type	Joist Span (ft-in)	Hole Diameter (inches)												
		2	3	4	5	6 ¼	7	8 3/8	9	10	10 ½	11	12	12 ½
		Allowable Hole Location (ft-in)												
NJH925	10 - 0	1 - 0	1 - 6	2 - 6	2 - 6									
	12 - 0	2 - 0	2 - 6	3 - 6	3 - 6									
	12 –4	2 - 0	3 - 0	3 - 6	4 - 0									
	13 - 9	1 - 6	2 - 6	3 - 0	3 - 6									
	14 - 0	1 - 0	1 - 6	2 - 0	3 - 0									
	15 - 1	1 - 0	2 - 0	2 - 6	3 - 6									
	16 - 0	1 - 0	1 - 0	1 - 0	2 - 0									
NJH10	10 - 0	1 - 0	1 - 0	1 - 6	2 - 0									
	12 - 0	1 - 0	2 - 0	2 - 6	3 - 0									
	12 –7	1 - 6	2 - 0	3 - 0	3 - 6									
	14 - 0	1 - 0	1 - 6	2 - 6	3 - 0									
	14 - 1	1 - 0	1 - 6	2 - 6	3 - 0									
	15 - 5	1 - 0	1 - 0	2 - 0	2 - 6									
	16 - 0	1 - 0	1 - 0	1 - 0	1 - 0									
	17 - 3	1 - 0	1 - 0	1 - 0	1 - 6									
NJH12	10 - 0	1 - 0	1 - 0	1 - 0	1 - 6	2 - 0	2 - 6	3 - 0						
	12 - 0	1 - 0	1 - 0	1 - 6	2 - 6	3 - 0	3 - 6	4 - 0						
	14 - 0	1 - 6	2 - 0	2 - 6	3 - 6	4 - 0	4 - 6	5 - 0						
	14 -11	1 - 6	2 - 6	3 - 0	4 - 0	4 - 6	5 - 0	5 - 6						
	16 - 0	1 - 0	1 - 6	2 - 6	3 - 0	4 - 0	4 - 6	5 - 0						
	16 - 8	1 - 0	2 - 0	2 - 6	3 - 6	4 - 6	4 - 6	5 - 6						
	18 - 0	1 - 0	1 - 0	2 - 0	3 - 0	4 - 0	4 - 6	5 - 0						
	18 - 3	1 - 0	1 - 0	2 - 0	3 - 0	4 - 6	4 - 6	5 - 0						
	20 -0	1 - 0	1 - 0	1 - 0	1 - 6	2 - 6	3 - 6	4 - 6						
	20 - 6	1 - 0	1 - 0	1 - 0	1 - 6	3 - 0	3 - 6	4 - 6						
NJH14	12 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	3 - 0	3 - 6	4 - 6	5 - 0			
	14 - 0	1 - 0	1 - 0	1 - 0	1 - 0	2 - 0	2 - 6	4 - 0	4 - 6	5 - 6	6 - 0			
	16 - 0	1 - 0	1 - 0	1 - 6	2 - 0	3 - 0	3 - 6	5 - 0	5 - 6	6 - 6	7 - 0			
	18 - 0	1 - 0	1 - 6	2 - 6	3 - 0	4 - 0	4 - 6	6 - 0	6 - 6	7 - 6	8 - 0			
	18 - 1	1 - 0	1 - 6	2 - 6	3 - 0	4 - 0	4 - 6	6 - 0	6 - 6	7 - 6	8 - 0			
	19 - 9	1 - 0	1 - 0	1 - 0	2 - 0	3 - 6	4 - 0	5 - 6	6 - 6	7 - 6	8 - 0			
	20 - 0	1 - 0	1 - 0	1 - 0	1 - 0	2 - 0	2 - 6	4 - 6	5 - 6	7 - 0	7 - 6			
	21 - 0	1 - 0	1 - 0	1 - 0	1 - 0	2 - 6	2 - 6	5 - 0	6 - 0	7 - 6	8 - 0			
	22 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	3 - 0	4 - 6	6 - 0	7 - 0			
	23 - 1	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	3 - 6	5 - 6	6 - 6	7 - 6			
NJH16	12 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	1 - 6	2 - 6	3 - 0	3 - 6	4 - 0	4 - 0	4 - 6	4 - 6
	14 - 0	1 - 0	1 - 0	1 - 0	1 - 6	2 - 6	2 - 6	3 - 6	4 - 0	4 - 6	5 - 0	5 - 0	5 - 6	5 - 6
	16 - 0	1 - 0	1 - 0	1 - 6	2 - 6	3 - 6	3 - 6	4 - 6	5 - 0	5 - 6	6 - 0	6 - 0	6 - 6	6 - 6
	18 - 0	1 - 0	1 - 6	2 - 6	3 - 6	4 - 6	4 - 6	5 - 6	6 - 0	6 - 6	7 - 0	7 - 0	7 - 6	7 - 6
	19 - 9	1 - 6	2 - 6	3 - 6	4 - 0	5 - 0	5 - 6	6 - 6	7 - 0	7 - 6	7 - 6	8 - 0	8 - 6	8 - 6
	20 - 0	1 - 0	1 - 0	1 - 6	2 - 6	3 - 6	4 - 6	5 - 6	6 - 0	6 - 6	7 - 0	7 - 6	7 - 6	8 - 0
	21 -10	1 - 0	1 - 6	2 - 6	3 - 6	4 - 6	5 - 0	6 - 6	7 - 0	7 - 6	8 - 0	8 - 0	8 - 6	9 - 0
	22 - 0	1 - 0	1 - 0	1 - 0	1 - 6	3 - 0	4 - 0	5 - 6	6 - 0	6 - 6	7 - 0	7 - 6	8 - 0	8 - 0
	23 - 2	1 - 0	1 - 0	1 - 0	2 - 6	3 - 6	4 - 6	6 - 0	6 - 6	7 - 0	7 - 6	8 - 0	8 - 6	9 - 0
	24 – 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	2 - 0	4 - 0	4 - 6	5 - 6	6 - 0	6 - 6	7 - 6	7 - 6
	25 – 6	1 - 0	1 - 0	1 - 0	1 - 0	1 - 6	3 - 0	4 - 6	5 - 6	6 - 6	7 - 0	7 - 6	8 - 6	8 - 6

Table 8:
Table is based on a maximum uniform floor loading of 40 psf live and 25 psf dead load.
Table is applicable for joist spacings of 24 inches on center or less.
Joist span is based on the clear span, distance from inside of the end supports.
Hole location is the distance measured from the inside face of the nearest support to the centerline t
The maximum hole depth must leave ¼ inches minimum of web material between the top and bottom the flange.

TABLE 9 - ALLOWABLE RECTANGULAR HOLE LOCATION (ft-in) FOR NJU SERIES [1,2,3,4,5,6]

Joist Type	Joist Span (ft-in.)	Hole Depth (in.)											
		2	4	5	6	7	8-3/8	10	10-1/2	12	12-1/2	13	14-1/2
		Allowable Hole Location (ft-in.											
NJU10	12-0	2 - 0	3 - 6	4 - 0	4 - 6								
	14-0	3 - 0	4 - 6	5 - 0	5 - 6								
	14-1	3 - 0	4 - 6	5 - 0	5 - 6								
	15-9	2 - 6	4 - 6	5 - 6	6 - 0								
	16-0	1 - 0	3 - 6	4 - 6	5 - 6								
	17-3	1 - 6	4 - 6	5 - 6	6 - 0								
	18-0	1 - 0	3 - 0	4 - 0	5 - 0								
	20-0	1 - 0	4 - 0	5 - 0	6 - 0								
NJU12	14-0	2 -0	4 - 0	4 - 6	5 - 6	5 - 6	6 - 6						
	16-0	3 - 0	5 - 0	5 - 6	6 - 6	6 - 6	7 - 6						
	16-7	3 - 0	5 - 0	6 - 0	6 - 6	7 - 0	7 - 6						
	18-0	2 - 6	4 - 6	5 - 6	6 - 6	7 - 0	7 - 6						
	18-7	2 - 6	5 - 0	6 - 0	6 - 6	7 - 6	8 - 0						
	20-0	1 - 6	4 - 6	5 - 6	6 - 6	7 - 6	8 - 0						
	20-4	2 - 0	4 - 6	6 - 0	7 - 0	7 - 6	8 - 6						
	22-0	1 - 0	3 - 6	5 - 0	6 - 6	7 - 0	8 - 0						
	23-6	1 - 0	4 - 0	5 - 6	7 - 0	8 - 0	9 - 0						
NJU14	16-0	1 - 6	3 - 6	4 - 0	5 - 0	5 - 6	6 - 6	7 - 0	7 - 6				
	18-0	2 - 6	4 - 6	5 - 0	6 - 0	6 - 6	7 - 6	8 - 0	8 - 6				
	19-2	3 - 0	5 - 0	6 - 0	6 - 6	7 - 6	8 - 0	8 - 6	9 - 0				
	20-0	1 - 6	4 - 0	5 - 0	6 - 0	7 - 0	8 - 0	8 - 6	9 - 0				
	21-5	2 - 0	5 - 0	5 - 6	6 - 6	7 - 6	8 - 6	9 - 6	9 - 6				
	22-0	1 - 0	3 - 6	5 - 0	6 - 0	7 - 0	8 - 0	9 - 0	9 - 6				
	23-6	1 - 0	4 - 0	5 - 6	6 - 6	7 - 6	9 - 0	10 - 0	10 - 0				
	26-0	1 - 0	2 - 6	4 - 6	6 - 0	7 – 6	8 - 6	10 - 0	10 - 6				
	27-1	1 - 0	3 - 0	5 - 0	6 - 6	8 - 0	9 - 6	10 - 6	11 - 0				
NJU16	18-0	1 - 6	4 - 0	5 – 0	6 - 0	6 - 6	7 - 6	8 - 0	8 - 6	8 - 6	8 - 6		
	20-0	2 - 6	5 - 0	6 – 0	7 - 0	7 - 6	8 - 6	9 - 0	9 - 6	9 - 6	9 - 6		
	21-3	3 - 0	5 - 6	6 – 6	7 - 6	8 - 0	9 – 0	9 – 6	10 – 0	10 – 6	10 - 6		
	22-0	1 - 6	4 - 6	5 - 6	6 - 6	7 - 6	8 - 6	9 - 6	10 - 0	10 - 0	10 - 6		
	23-9	2 - 0	5 - 0	6 - 6	7 - 6	8 - 6	10 - 0	10 - 6	10 - 6	11 - 0	11 - 0		
	24-0	1 - 0	3 - 6	5 - 6	6 - 6	8 - 0	9 - 0	10 - 0	10 - 6	11 - 0	11 - 0		
	26-1	1 - 0	5 - 0	6 - 6	7 - 6	9 - 0	10 - 0	11 - 0	11 - 6	12 - 0	12 - 0		
	28-0	1 - 0	2 - 6	4 - 6	6 - 6	8 - 0	9 - 6	11 - 0	11 - 6	12 - 0	12 - 0		
	30-0	1 - 0	3 - 6	5 - 6	7 - 6	9 - 0	10 - 6	12 - 0	12 - 6	13 - 0	13 - 0		
NJU18	20-0	1 - 6	3 - 6	4 - 6	5 - 6	6 - 0	7 - 0	8 - 0	8 - 0	8 - 6	8 - 6	9 - 0	9 - 0
	22-0	2 - 6	4 - 6	5 - 6	6 - 6	7 - 0	8 - 0	9 - 0	9 - 0	9 - 6	9 - 6	9 - 6	10 - 0
	23-6	3 - 0	5 - 6	6 - 0	7 - 0	7 - 6	8 - 6	9 - 6	9 - 6	10 - 0	10 - 6	10 - 6	10 - 6
	24-0	1 - 0	3 - 6	4 - 6	6 - 0	6 - 6	8 - 0	9 - 0	9 - 0	10 - 0	10 - 0	10 - 0	10 - 6
	26-0	2 - 0	4 - 6	5 - 6	7 - 0	7 - 6	9 - 0	10 - 0	10 - 0	11 - 0	11 - 0	11 - 0	11 - 6
	26-3	2 - 0	4 - 6	6 - 0	7 - 0	8 - 0	9 - 0	10 - 0	10 - 6	11 - 0	11 - 0	11 - 6	11 - 6
	28-0	1 - 0	3 - 6	5 - 0	6 - 6	7 - 6	9 - 0	10 - 0	10 - 6	11 - 0	11 - 6	11 - 6	12 - 0
	28-9	1 - 0	4 - 0	5 - 6	6 - 6	8 - 0	9 - 0	10 - 6	11 - 0	11 - 6	11 - 6	12 - 0	12 - 0
	30-0	1 - 0	1 - 0	2 - 6	4 - 6	6 - 0	7 - 6	9 - 6	10 - 0	11 - 0	11 - 0	11 - 6	11 - 6

Notes on Table 9:

1. Table is based on a maximum uniform floor loading of 40 psf live and 25 psf dead load.
2. Table is applicable for joist spacings of 24 inches on center or less.
3. Joist span is based on the clear span, distance from inside of the end supports.
4. Hole location is the distance measured from the inside face of the nearest support to the edge of the hole.
5. The maximum hole depth must leave ¼ inches minimum of web material between the top and bottom of the hole and the flange.
6. The maximum allowable hole width (distance parallel to flange) shall be 1-1/2 times the hole depth.

Type	.)		4		6		Allowal	e Diamete 10 Hole L		in)	2	12-1/2	13	14-1/2
	12-0	1 - 0	2 - 6	3 - 0	3 - 6									
	14-0	2 - 0	3 - 6	4 - 0	4 - 6									
	14-1	2 - 0	3 - 6	4 - 0	5 - 0									
NJU10	15-9	1 - 6	3 - 0	4 - 0	4 - 6									
	16-0	1 - 0	2 - 0	3 - 0	4 - 0									
	17-3	1 - 0	2 - 6	3 - 6	4 - 6									
	18-0	1 - 0	1 - 0	2 - 0	3 - 0									
	20-0	1 - 0	1 - 6	3 - 0	4 - 0									
	14-0	1 - 6	2 - 6	3 - 6	4 - 0	4 - 6	5 - 0							
	16-0	2 - 6	3 - 6	4 - 6	5 - 0	5 - 6	6 - 0							
	16-7	2 - 6	4 - 0	4 - 6	5 - 6	6 - 0	6 - 0							
	18-0	1 - 6	3 - 6	4 - 0	5 - 0	5 - 6	6 - 0							
NJU12	18-7	2 - 0	3 - 6	4 - 6	5 - 0	5 - 6	6 - 0							
	20-0	1 - 0	3 - 0	4 - 0	4 - 6	5 - 6	6 - 0							
	20-4	1 - 0	3 - 0	4 - 0	5 - 0	5 - 6	6 - 6							
	22-0	1 - 0	1 - 0	2 -6	3 - 6	4 - 6	5 - 6							
	23-6	1 - 0	2 - 0	3 - 0	4 - 0	5 - 0	6 - 0							
	16-0	1 - 0	1 - 6	2 - 0	3 - 0	3 - 6	5 - 0	6 - 6	7 - 0					
	18-0	1 - 0	2 - 6	3 - 0	4 - 0	4 - 6	6 - 0	7 - 6	8 - 0					
	19-2	1 - 6	3 - 0	3 - 6	4 - 6	5 - 6	6 - 6	8 - 0	8 - 6					
	20-0	1 - 0	1 - 6	2 - 6	3 - 0	4 - 0	5 - 6	7 - 6	8 - 6					
NJU14	21-5	1 - 0	2 - 0	3 - 0	4 - 0	5 - 0	6 - 6	8 - 6	9 - 0					
	22-0	1 - 0	1 - 0	1 - 6	2 - 6	3 - 6	5 - 6	8 - 0	8 - 6					
	23-6	1 - 0	1 - 0	2 - 0	3 -6	4 - 6	6 - 6	8 - 6	9 - 6					
	26-0	1 - 0	1 - 0	1 - 0	1 - 6	3 - 0	5 - 0	8 - 0	9 - 0					
	27-1	1 - 0	1 - 0	1 - 0	1 - 6	3 - 6	5 - 6	8 - 6	9 - 6					
	18-0	1 - 0	2 - 6	3 - 6	4 - 0	4 - 6	5 - 6	6 - 6	7 - 0	7 - 6	7 - 6			
	20-0	1 - 6	3 - 6	4 - 6	5 - 0	6 - 0	6 - 6	7 - 6	8 - 0	8 - 6	8 - 6			
	21-3	2 - 6	4 - 0	5 - 0	5 - 6	6 - 6	7 - 6	8 - 6	8 - 6	9 - 0	9 - 6			
	22-0	1 - 0	2 - 6	3 - 6	4 - 6	5 - 6	6 - 6	7 - 6	8 - 0	8 - 6	9 - 0			
NJU16	23-9	1 - 0	3 - 6	4 - 6	5 - 6	6 - 6	7 - 6	8 - 6	9 - 0	9 - 6	10 - 0			
	24-0	1 - 0	1 - 6	2 - 6	4 - 0	5 - 0	6 - 6	7 - 6	8 - 0	9 - 0	9 - 6			
	26-1	1 - 0	2 - 6	3 - 6	5 - 0	6 - 0	7 - 6	8 - 6	9 - 0	10 - 0	10 - 6			
	28-0	1 - 0	1 - 0	1 - 0	3 - 0	4 - 0	6 - 0	7 - 6	8 - 0	9 - 6	10 - 0			
	30-0	1 - 0	1 - 0	2 - 0	4 - 0	5 - 0	7 - 0	8 - 6	9 - 0	10 - 6	11 - 0			
	20-0	1 - 0	1 - 0	1 - 6	2 - 0	2 - 6	3 - 6	4 - 6	5 - 0	6 - 0	6 - 6	7 - 0	8 - 0	
	22-0	1 - 0	2 - 0	2 - 6	3 - 0	3 - 6	4 - 6	5 - 6	6 - 0	7 - 0	7 - 6	8 - 0	9 - 0	
	23-6	1 - 6	2 - 6	3 - 0	3 - 6	4 - 6	5 - 0	6 - 6	6 - 6	8 - 0	8 - 6	8 - 6	10 - 0	
	24-0	1 - 0	1 - 0	1 - 0	1 - 6	2 - 6	3 - 6	5 - 0	5 - 6	7 - 0	7 - 6	8 - 0	9 - 6	
NJU18	26-0	1 - 0	1 - 0	2 - 0	2 - 6	3 - 6	4 - 6	6 - 0	6 - 6	7 - 6	8 - 6	9 - 0	10 - 6	
	26-3	1 - 0	1.11	2 - 0	2 - 6	3 - 6	4 - 6	6 - 0	6 - 6	8 - 0	8 - 6	9 - 0	10 - 6	
	28-0	1 - 0	1 - 0	1 - 0	1 - 0	2 - 0	3 - 6	5 - 0	5 - 6	7 - 6	8 - 0	8 - 6	10 - 6	
	28-9	1 - 0	1 - 0	1 - 0	1 - 6	2 - 6	4 - 0	5 - 6	6 - 0	7 - 6	8 - 6	9 - 0	11 - 0	
	30-0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	1 - 0	2 - 6	3 - 6	5 - 6	6 6	7 - 0	9 - 6	

Notes on Table 10:

1. Table is based on a maximum uniform floor loading of 40 psf live and 25 psf dead load.
2. Table is applicable for joist spacings of 24 inches on center or less.
3. Joist span is based on the clear span, distance from inside of the end supports.
4. Hole location is the distance measured from the inside face of the nearest support to the centerline of the hole.
5. The maximum hole depth must leave ¼ inches minimum of web material between the top and bottom of the hole and the flange