**TABLE R602.3(1)**
**FASTENER SCHEDULE FOR STRUCTURAL MEMBERS**

| DESCRIPTION OF BUILDING ELEMENTS | NUMBER AND TYPE OF FASTENER[a,b,c,d] | SPACING OF FASTENERS |
|---|---|---|
| Joist to sill or girder, toe nail | 3-8d | — |
| 1" x 6" subfloor or less to each joist, face nail | 2-8d<br>2 staples, 1 3/4 | —<br>— |
| 2" subfloor to joist or girder, blind and face nail | 2-16d | — |
| Sole plate to joist or blocking, face nail | 16d | 16" o.c. |
| Top or sole plate to stud, end nail | 2-16d | — |
| Stud to sole plate, toe nail | 3-8d or 2-16d | — |
| Double studs, face nail | 10d | 24" o.c. |
| Double top plates, face nail | 10d | 24" o.c. |
| Sole plate to joist or blocking at braced wall panels | 3-16d | 16" o.c. |
| Double top plates, minimum 48-inch offset of end joints, face nail in lapped area | 8-16d | — |
| Blocking between joists or rafters to top plate, toe nail | 3-8d | — |
| Rim joist to top plate, toe nail | 8d | 6" o.c. |
| Top plates, laps at corners and intersections, face nail | 2-10d | — |
| Built-up header, two pieces with 1/2" spacer | 16d | 16" o.c. along each edge |
| Continued header, two pieces | 16d | 16" o.c. along each edge |
| Ceiling joists to plate, toe nail | 3-8d | — |
| Continuous header to stud, toe nail | 4-8d | — |
| Ceiling joist, laps over partitions, face nail | 3-10d | — |
| Ceiling joist to parallel rafters, face nail | 3-10d | — |
| Rafter to plate, toe nail | 2-16d | — |
| 1" brace to each stud and plate, face nail | 2-8d<br>2 staples, 1 3/4 | —<br>— |
| 1" x 6" sheathing to each bearing, face nail | 2-8d<br>2 staples, 1 3/4 | —<br>— |
| 1" x 8" sheathing to each bearing, face nail | 2-8d<br>3 staples, 1 3/4 | —<br>— |
| Wider than 1" x 8" sheathing to each bearing, face nail | 3-8d<br>4 staples, 1 3/4 | —<br>— |
| Built-up corner studs | 10d | 24" o.c. |
| Built-up girders and beams, 2-inch lumber layers | 10d | Nail each layer as follows: 32" o.c. at top and bottom and staggered. Two nails at ends and at each splice. |
| 2" planks | 2-16d | At each bearing |
| Roof rafters to ridge, valley or hip rafters:<br>toe nail<br>face nail | 4-16d<br>3-16d | —<br>— |
| Rafter ties to rafters, face | 3-8d | — |
| **Wood structural panels, subfloor, roof and wall sheathing to framing, and particleboard wall sheathing to framing** | | |
| 7/16-1/2 | 6d common nail (subfloor, wall)<br>8d common nail (roof)[f] | 6<br>6 | 12[g]<br>12[g] |
| 19/32 -1 | 8d common nail | 6 | 12[g] |
| 1 1/8-1 1/4 | 10d common nail or 8d deformed nail | 6 | 12 |

*(continued)*

**TABLE R602.3(1)—continued**
**FASTENER SCHEDULE FOR STRUCTURAL MEMBERS**

| DESCRIPTION OF BUILDING MATERIALS | DESCRIPTION OF FASTENER[b,c,d,e] | SPACING OF FASTENERS: Edges (inches)[i] | SPACING OF FASTENERS: Intermediate supports[c,d] (inches) |
|---|---|---|---|
| **Other wall sheathing[h]** | | | |
| 1/2" regular cellulosic fiberboardsheathing | 1 1/2" galvanized roofing nail 6d common nail staple 16 ga., 1 1/2 long | 3 | 6 |
| 1/2 structural cellulosic fiberboard sheathing | 1 1/2" galvanized roofing nail 8d common nail staple 16 ga., 1 1/2 long | 3 | 6 |
| 25/32 structural cellulosic fiberboard sheathing | 1 3/4 galvanized roofing nail 8d common nail staple 16 ga., 1 3/4 long | 3 | 6 |
| 1/2 gypsum sheathing | 1 1/2 galvanized roofing nail; 6d common nail; staple galvanized, 1 1/2 long; 1 1/4 screws, Type W or S | 4 | 8 |
| 5/8 gypsum sheathing | 1 3/4 galvanized roofing nail; 8d common nail; staple galvanized, 1 5/8 long; 1 5/8 screws, Type W or S | 4 | 8 |
| **Wood structural panels, combination subfloor underlayment to framing** | | | |
| 3/4 and less | 6d deformed nail or 8d common nail | 6 | 12 |
| 7/8-1 | 8d common nail or 8d deformed nail | 6 | 12 |
| 1 1/8-1 1/4 | 10d common nail or 8d deformed nail | 6 | 12 |

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 1.609 km/h.

a. All nails are smooth-common, box or deformed shanks except where otherwise stated.

b. Staples are 16 gage wire and have a minimum 7/16-inch on diameter crown width.

c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.

d. Four-foot-by-8-foot or 4-foot-by-9-foot panels shall be applied vertically.

e. Spacing of fasteners not included in this table shall be based on Table R602.3(1).

f. For regions having basic wind speed of 110 mph or greater, 8d deformed nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet, up to 35 feet maximum.

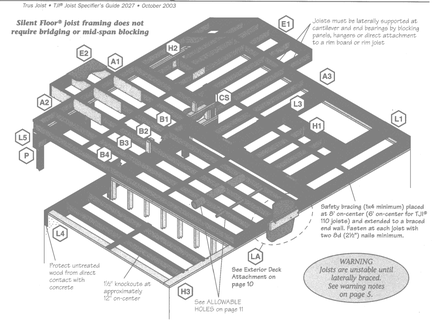
g. For regions having basic wind speed of 100 mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6 inches on center When basic wind speed is greater than 100 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall framing.

h. Gypsum sheathing shall conform to ASTM C 79 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to either AHA 194.1 or ASTM C 208.

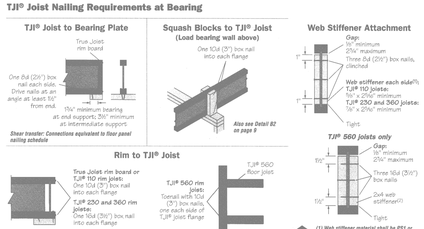
i. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and at all floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and at all roof plane perimeters. Blocking of roof or floor sheathing panel edges perpendicular to the framing members shall not be required except at intersection of adjacent roof planes. Floor and roof perimeter shall be supported by framing members or solid blocking.



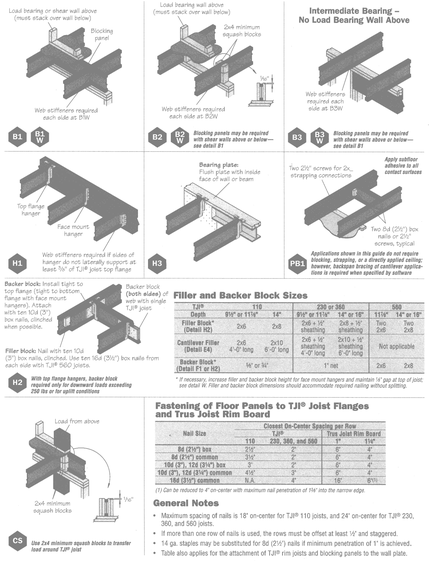
**Silent Floor® joist framing does not require bridging or mid-span blocking**




## TJI® Joist Nailing Requirements at Bearing






### Filler and Backer Block Sizes

| TJI® Depth | 110: 9¼" or 11⅞" | 110: 14" | 230 or 360: 9¼" or 11⅞" | 230 or 360: 14" or 16" | 560: 11⅞" | 560: 14" or 16" |
|---|---|---|---|---|---|---|
| Filler Block* (Detail H2) | 2x6 | 2x8 | 2x6 + ½" sheathing | 2x8 + ½" sheathing | Two 2x6 | Two 2x8 |
| Cantilever Filler (Detail E4) | 2x6 4'-0" long | 2x10 6'-0" long | 2x6 + ½" sheathing 4'-0" long | 2x10 + ½" sheathing 6'-0" long | Not applicable | |
| Backer Block* (Detail F1 or H2) | ¾" or ¾" | | 1" net | | 2x6 | 2x8 |

* If necessary, increase filler and backer block height for face mount hangers and maintain ¼" gap at top of joist; see detail W. Filler and backer block dimensions should accommodate required nailing without splitting.

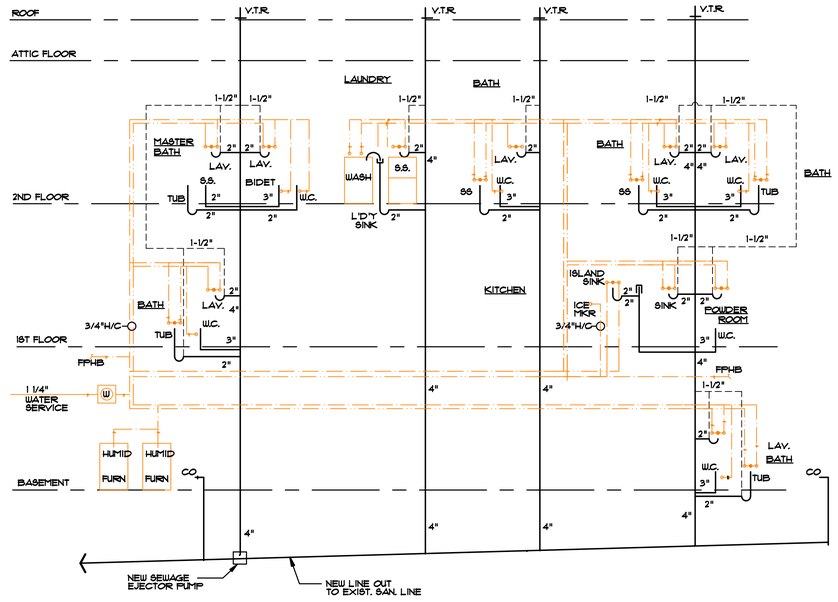
### Fastening of Floor Panels to TJI® Joist Flanges and Trus Joist Rim Board

| Nail Size | Closest On-Center Spacing per Row: TJI® 110 | TJI® 230, 360, and 560 | Trus Joist Rim Board: 1" | Trus Joist Rim Board: 1¼" |
|---|---|---|---|---|
| 8d (2½") box | 2½" | 2" | 6" | 4" |
| 8d (2½") common | 3½" | 2" | 6" | 4" |
| 10d (3"), 12d (3½") box | 3" | 2" | 6" | 4" |
| 10d (3"), 12d (3½") common | 4½" | 3" | 6" | 4" |
| 16d (3½") common | N.A. | 4" | 16" | 6"(1) |

(1) Can be reduced to 4" on-center with maximum nail penetration of 1¼" into the narrow edge.

### General Notes

- Maximum spacing of nails is 18" on-center for TJI® 110 joists, and 24" on-center for TJI® 230, 360, and 560 joists.
- If more than one row of nails is used, the rows must be offset at least ½" and staggered.
- 14 ga. staples may be substituted for 8d (2½") nails if minimum penetration of 1" is achieved.
- Table also applies for the attachment of TJI® rim joists and blocking panels to the wall plate.




NOTE:
ALL WATER LINES TO BATH GROUPS = 3/4"
ALL WATER LINES TO INDIV. FIXTURES = 1/2"

# PLUMBING RISER DIAGRAM

NOT TO SCALE — WITH WATER RISER INFO

HEINTZ & FIORE • LLC
ARCHITECTS • AIA
87 woodland road
short hills • new jersey • 07078
973•467•1240 fax 973•376•0963

GREENBERG RESIDENCE
244 LONG HILL DRIVE
MILLBURN, NJ

drawing title :
FRAMING DETAILS
PLUMBING RISER DIAGRAM

ROBERT B. HEINTZ • AIA
architect : NJ – C 4352
planner : NJ – LI 01553
DONALD R. FIORE • AIA
architect : NJ – AI 10410

job no. : 21137
date : 6-30-11
scale : AS NOTED
drawn by : JSK
drawing : A-9