



Waterloo Building Department
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DRILLING & NOTCHING

2015 IRC - R602.6 & R502.8

Exterior Walls & Bearing Partitions

Notching. Any stud in an exterior wall or bearing partition shall be permitted to be cut or notched to a depth not exceeding 25% of it's width.

Drilling. Any stud shall be permitted to be bored or drilled, provided that the diameter of the resulting hole is not more than 60% of the stud width, the edge of the hole is not more than 5/8" to the edge of the stud, and the hole is not located in the same section as a cut or notch. Studs located in exterior walls or bearing partitions drilled over 40% and up to 60% shall be doubled with not more than two successive doubled studs bored. See Figures R602.6(1).

Exception: Use of approved stud shoes is permitted where they are installed in accordance with the manufacturer's recommendations.

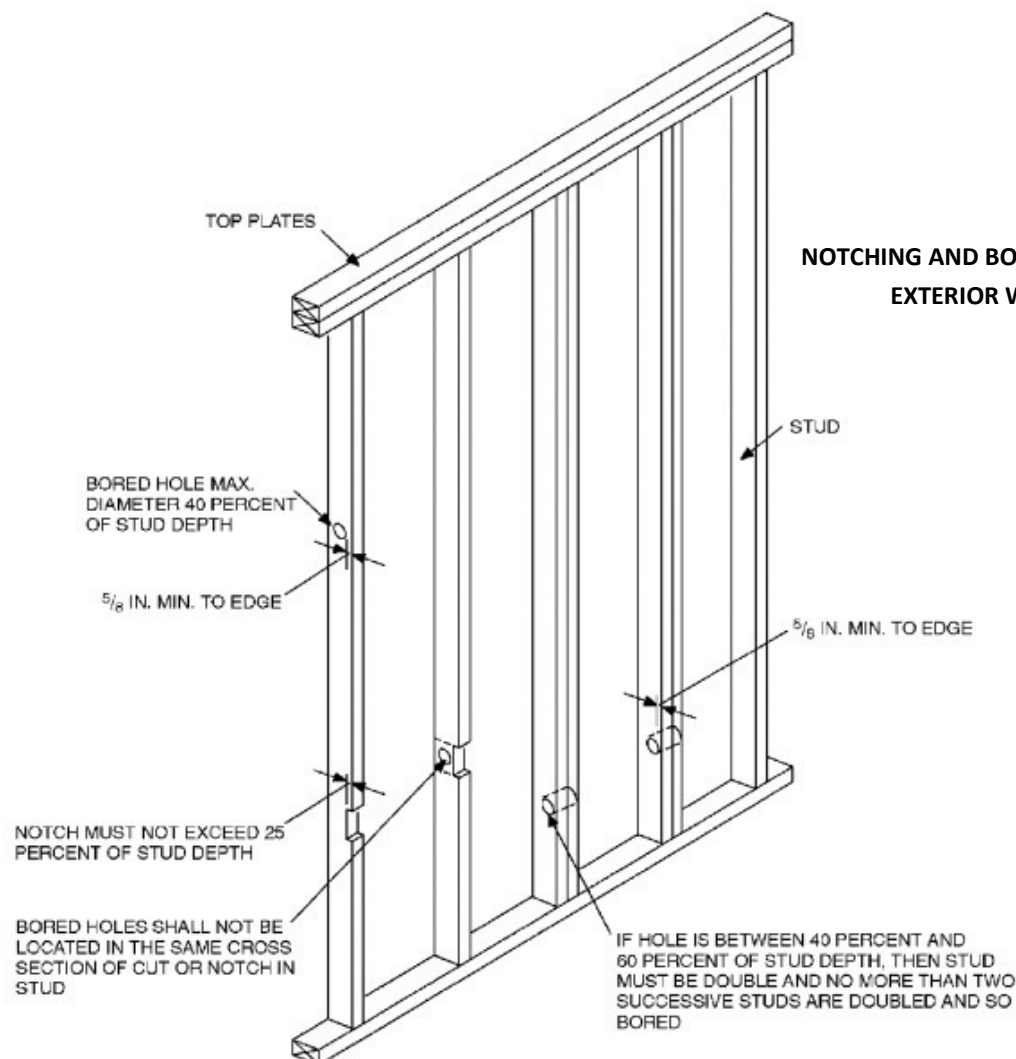


FIGURE R602.6.(1)

NOTCHING AND BORED HOLE LIMITATIONS FOR
EXTERIOR WALLS AND BEARING WALLS

*This brochure is intended to explain some of the requirements for Drilling & Notching.
If you have further questions, please contact the Waterloo Building Department.*

Drilling & Notching of Top Plate

When piping or ductwork is placed in or partly in an exterior wall or interior load-bearing wall, necessitating cutting, drilling or notching of the top plate by more than 50% of its width, a galvanized metal tie not less than 0.054" thick (16ga) and 1 1/2" wide shall be fastened across and to the plate at each side of the opening with not less than eight 10d nails having a minimum length of 1 1/2" at each side or equivalent. The metal tie must extend a minimum of 6" past the opening. See Figure R602.6.1

Exception: When the entire side of the wall with the notch or cut is covered by wood structural panel sheathing.

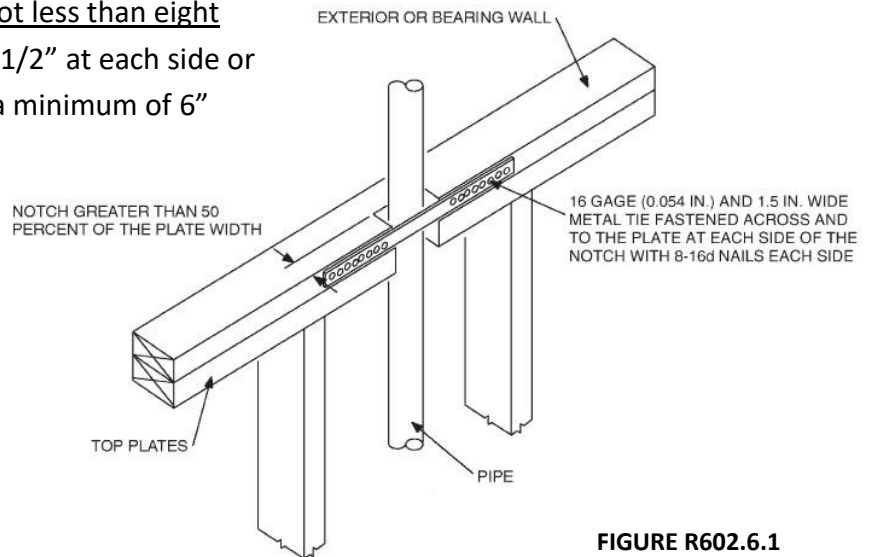


FIGURE R602.6.1

TOP PLATE FRAMING TO ACCOMMODATE PIPING

Interior & Non-bearing Walls

Notching. Studs in nonbearing partitions shall be permitted to be notched to a depth not to exceed 40% of a single stud.

Drilling. Any stud shall be permitted to be bored or drilled, provided that the diameter of the hole is not more than 60% of the stud width, the edge of the hole is not more than 5/8" to the edge of the stud, and the hole is not located in the same section as a cut or notch.

See Figure R602.6.(2)

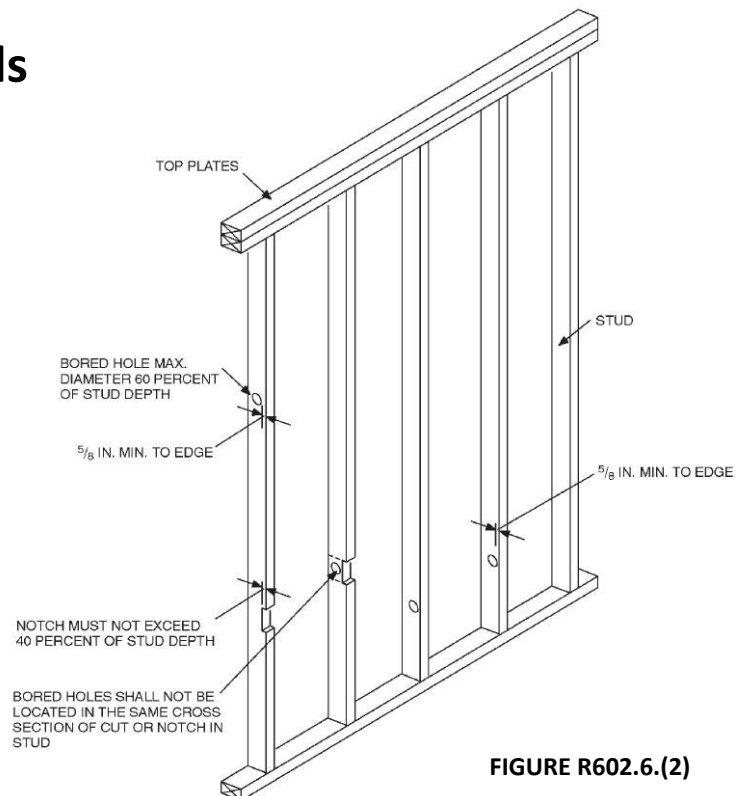


FIGURE R602.6.(2)

NOTCHING AND BORED HOLE LIMITATIONS FOR INTERIOR NONBEARING WALLS

Structural Floor Joists

Sawn Lumber

Notching. Notches in solid lumber joists, rafters and beams shall not exceed $1/6$ the depth of the member, shall not be longer than $1/3$ of the depth of the member and shall not be located in the middle $1/3$ of the span. Notches at the ends of the member shall not exceed $1/4$ the depth of the member. The tension side of the members 4" or greater in nominal thickness shall not be notched except at the ends of the members.

Drilling. The diameter of holes bored or cut into members shall not exceed $1/3$ the depth of the member. Holes shall not be closer than 2" to the top or bottom of the member, or to any other hole located in the member. Where the member is also notched, the hole shall not be closer than 2" to the notch.

Engineered Wood Products

Cuts, notches and holes bored into trusses, structural composite lumber, structural glue-laminated members, cross-laminated timber members or I-joists are prohibited except where permitted by the manufacturer's recommendations or where the effects of such alterations are specifically considered in the design of the member by a registered design professional.

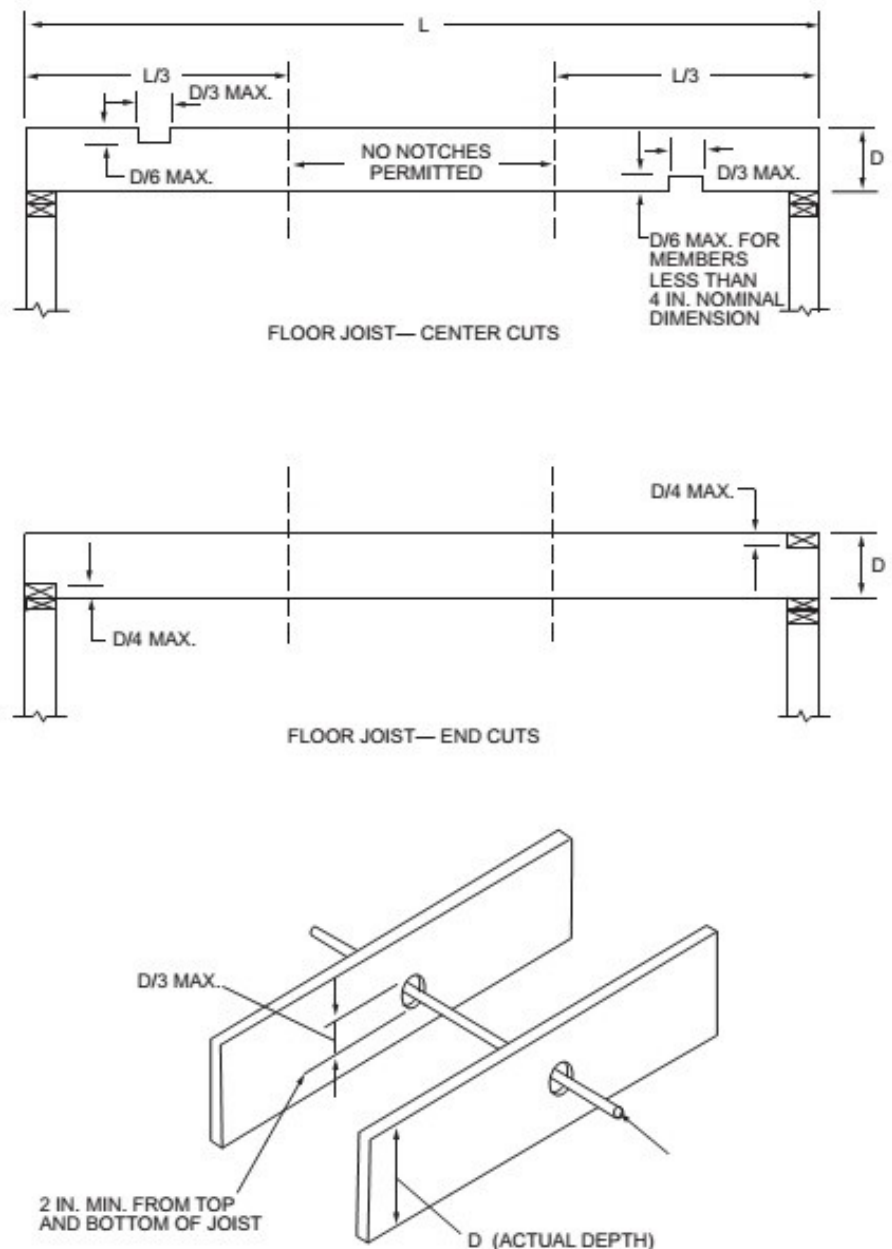


FIGURE R502.8

CUTTING NOTCHING AND DRILLING

Consult the following for further drilling and notching information:

E3402 Building Structure Protection

E3402.1 Drilling and notching.

E3402.2 Penetrations of fire-resistance-rated assemblies.

E3402.3 Penetrations of firestops and draftstops.

M1308 Mechanical Systems Installation

M1308.1 Drilling and notching.

M1308.2 Protection against physical damage.

M1308.2.1 Piping through bored holes or notches.

M1308.2.2 Piping in other locations.

M1308.2.3 Shield plates.

P2603 Structural and Piping Protection

P2603.1 General.

P2603.2 Drilling and notching.

P2603.2.1 Protection against physical damage.

P2603.3 Protection against corrosion.

P2603.4 Pipes through foundation walls.

P2603.5 Freezing.

P2603.5.1 Sewer depth.