

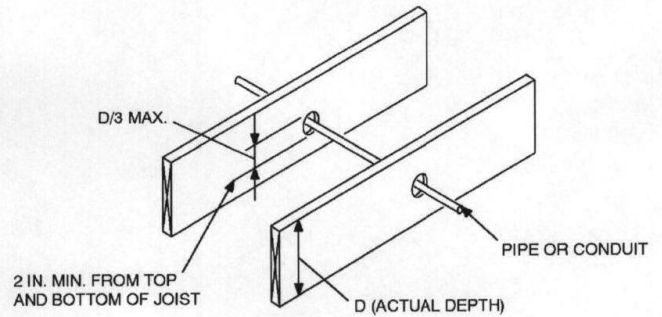
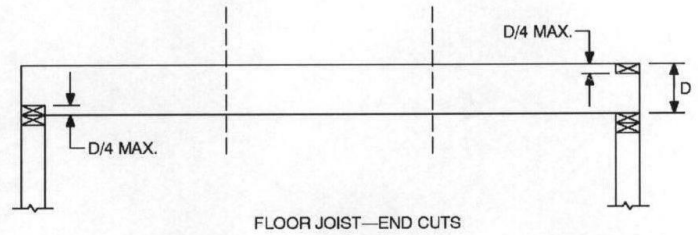
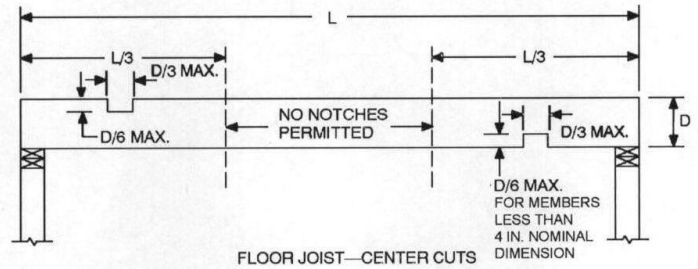
# DRILLING & NOTCHING

## WOOD FLOOR FRAMING

**R502.8 Cutting, drilling and notching.** Structural floor members shall not be cut, bored or notched in excess of the limitations specified in this section. See Figure R502.8.

**R502.8.1 Sawn lumber.** Notches in solid lumber joists, rafters and beams shall not exceed one-sixth of the depth of the member, shall not be longer than one-third of the depth of the member and shall not be located in the middle one-third of the span. Notches at the ends of the member shall not exceed one-fourth the depth of the member. The tension side of members 4 inches (102 mm) or greater in nominal thickness shall not be notched except at the ends of the members. The diameter of holes bored or cut into members shall not exceed one-third the depth of the member. Holes shall not be closer than 2 inches (51 mm) 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 inches (51 mm) to the notch.

**R502.8.2 Engineered wood products.** Cuts, notches and holes bored in trusses, structural composite lumber, structural glue-laminated 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.



## WOOD ROOF AND CEILING FRAMING

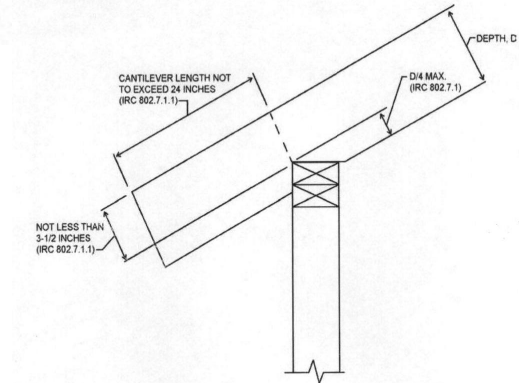
**R802.7 Cutting, drilling and notching.** Structural roof members shall not be cut, bored or notched in excess of the limitations specified in this section.

**R802.7.1 Sawn lumber.** Cuts, notches, and holes in solid lumber joists, rafters, blocking and beams shall comply with the provisions of R502.8.1 except that cantilevered portions of rafters shall be permitted in accordance with Section R802.7.1.1.

**R802.7.1.1 Cantilevered portions of rafters.** Notches on cantilevered portions of rafters are permitted provided the dimension of the remaining portion of the rafter is not less than 3 1/2 inches (89 mm) and the length of the cantilever does not exceed 24 inches (610 mm) in accordance with Figure R802.7.1.1.

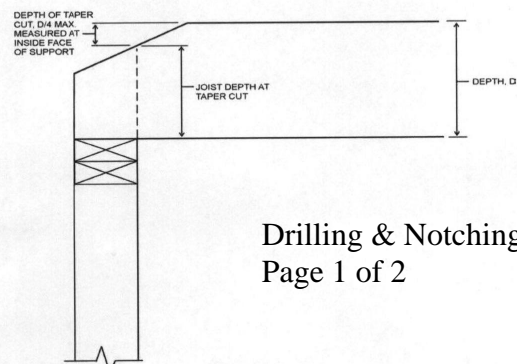
**R802.7.1.2 Ceiling joist taper cut.** Taper cuts at the ends of the ceiling joist shall not exceed one-fourth the depth of the member in accordance with Figure R802.7.1.2.

**R802.7.2 Engineered wood products.** Cuts, notches and holes bored in trusses, structural composite lumber, structural glue-laminated 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.



5.4 mm.

FIGURE R802.7.1.1  
RAFTER NOTCH



# DRILLING & NOTCHING *(continued)*

**R602.6 Drilling and notching of studs.** Drilling and notching of studs shall be in accordance with the following:

**1. Notching.** Any stud in an exterior wall or bearing partition may be cut or notched to a depth not exceeding 25 percent of its width. Studs in nonbearing partitions may be notched to a depth not to exceed 40 percent of a single stud width.

**2. Drilling.** Any stud may be bored or drilled, provided that the diameter of the resulting hole is no more than 60 percent of the stud width, the edge of the hole is no more than 5/8 inch (16 mm) 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 percent and up to 60 percent shall also be doubled with no more than two successive doubled studs bored. See Figures R602.6(1) and R602.6(2).

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

**R602.6.1 Drilling and 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 percent of its width, a galvanized metal tie not less than 0.054 inch thick (16 ga) and 1 1/2 inches (38 mm) wide shall be fastened across and to the plate at each side of the opening with not less than eight 10d (0.148 inch diameter) having a minimum length of 11/2 inches (38 mm) at each side or equivalent. The metal tie must extend a minimum of 6 inches 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.

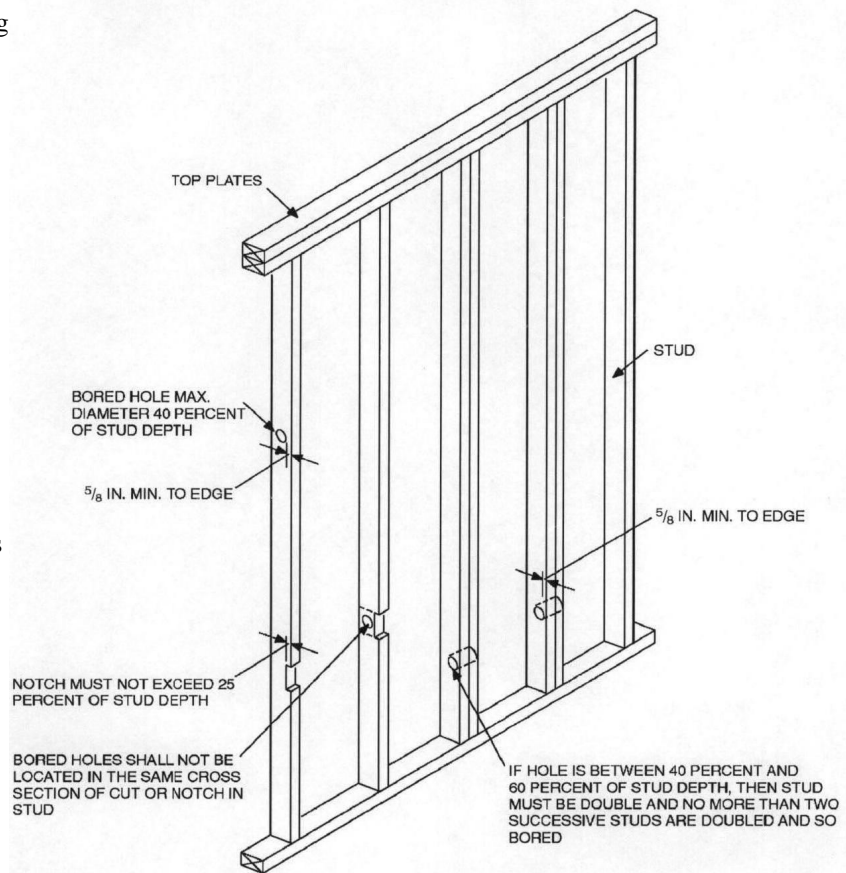


FIGURE R602.6(1)  
NOTCHING AND BORED HOLE LIMITATIONS FOR EXTERIOR WALLS AND BEARING WALLS

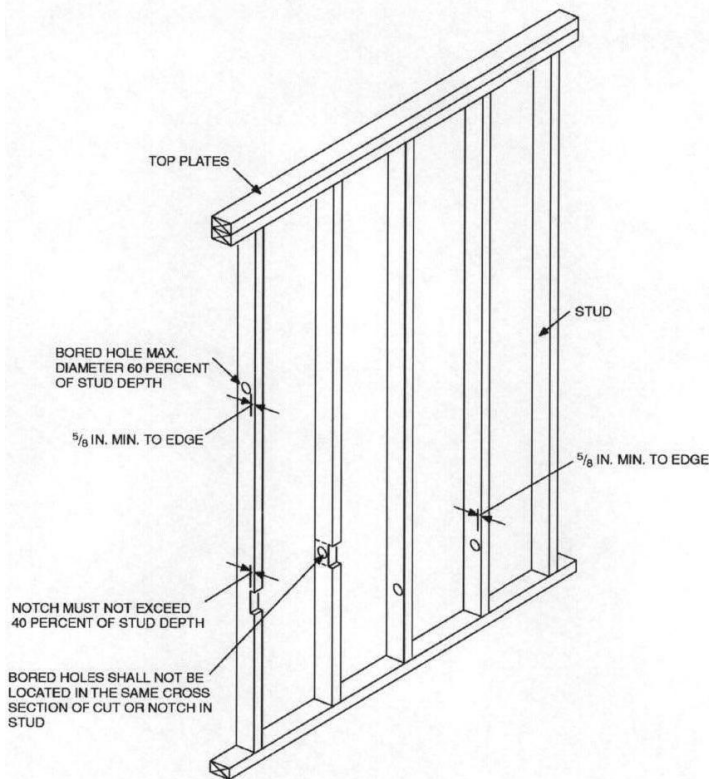


FIGURE R602.6(2)  
NOTCHING AND BORED HOLE LIMITATIONS FOR INTERIOR NONBEARING WALLS

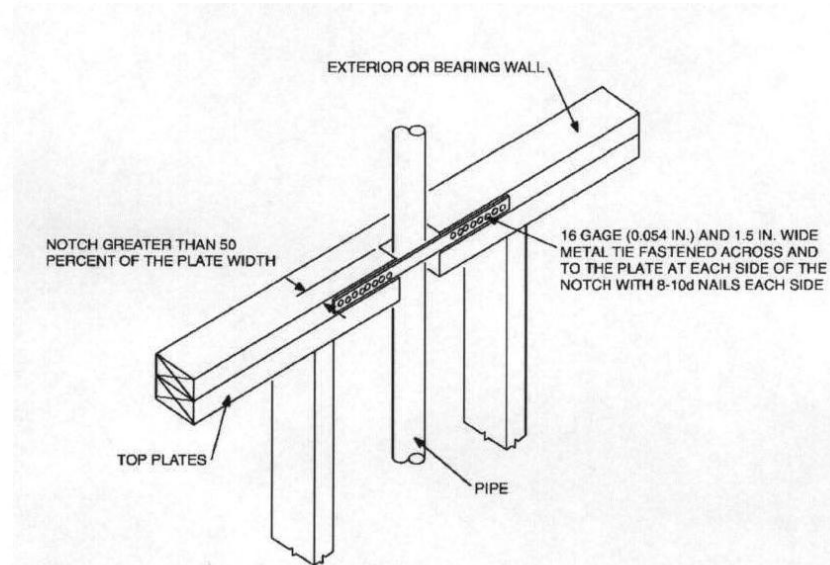
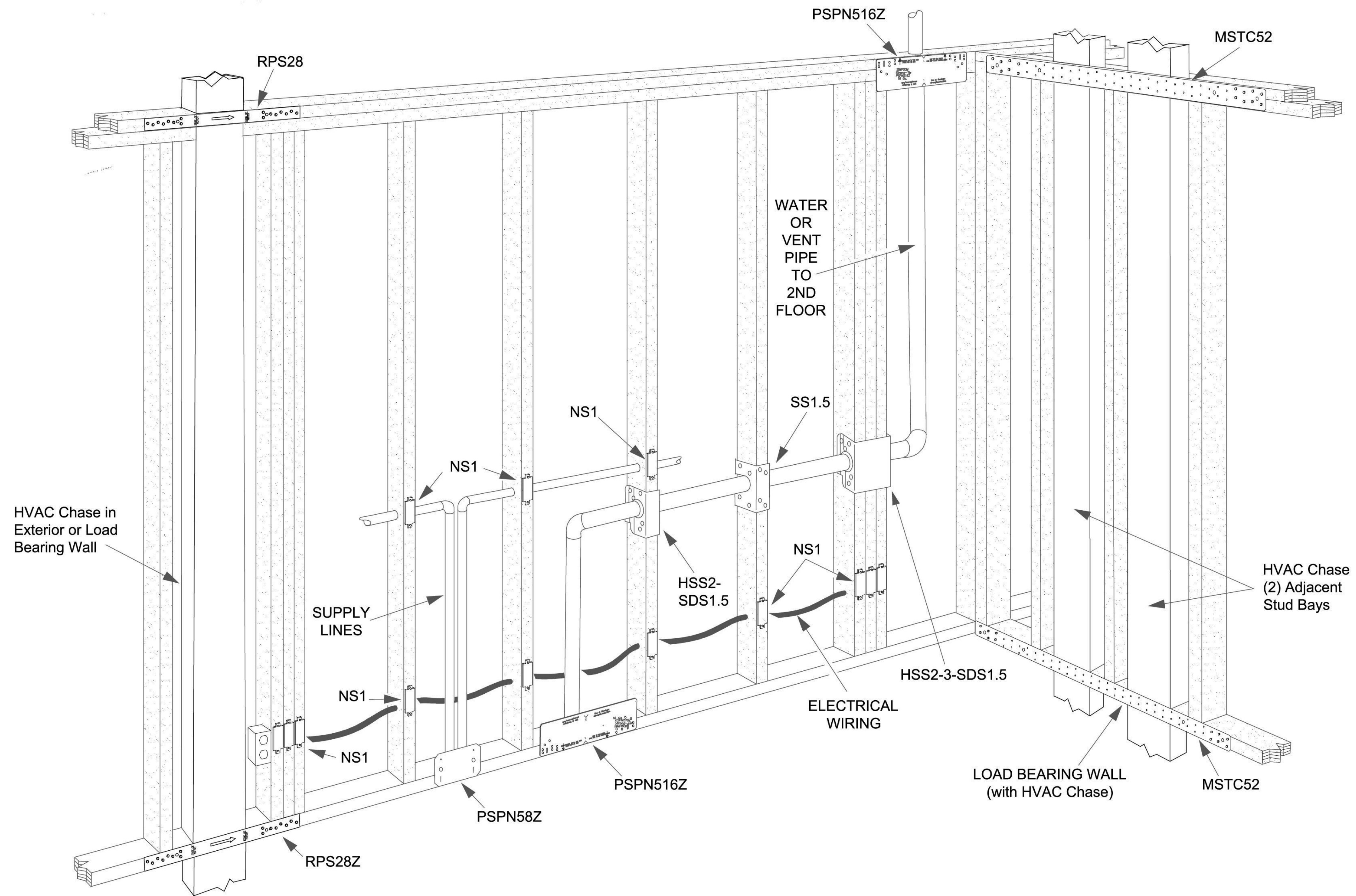


FIGURE R602.6.1  
TOP PLATE FRAMING TO ACCOMMODATE PIPING



TYP. PLUMBING WALL CONNECTIONS  
 N.T.S.