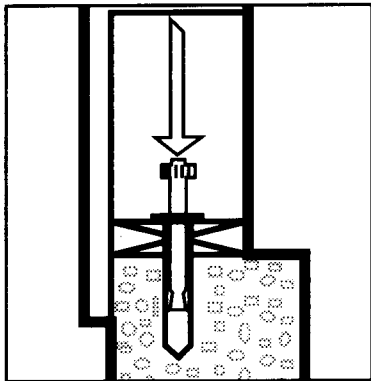


ESP FOCUS



ADD FOUNDATION BOLTS



WHY

Protect your biggest investment!

Major and moderate earthquakes such as the magnitude-7.5 Landers and magnitude-5.9 Whittier Narrows temblors have again demonstrated the importance of securing older homes to their foundations.

In an earthquake, houses that are not secured to the foundation can slip, damaging the structure and its contents. Houses that slip off their foundation can also rupture the gas line and ignite a fire.

Most, but not all, houses built since 1960 are secured to their foundation. Many houses built before then probably haven't been properly secured.

You can determine whether your house has been secured by calling the local building department to determine when codes requiring the bolting of houses to their foundation were adopted or by looking at the sill plate for bolts that tie your house to the foundation.

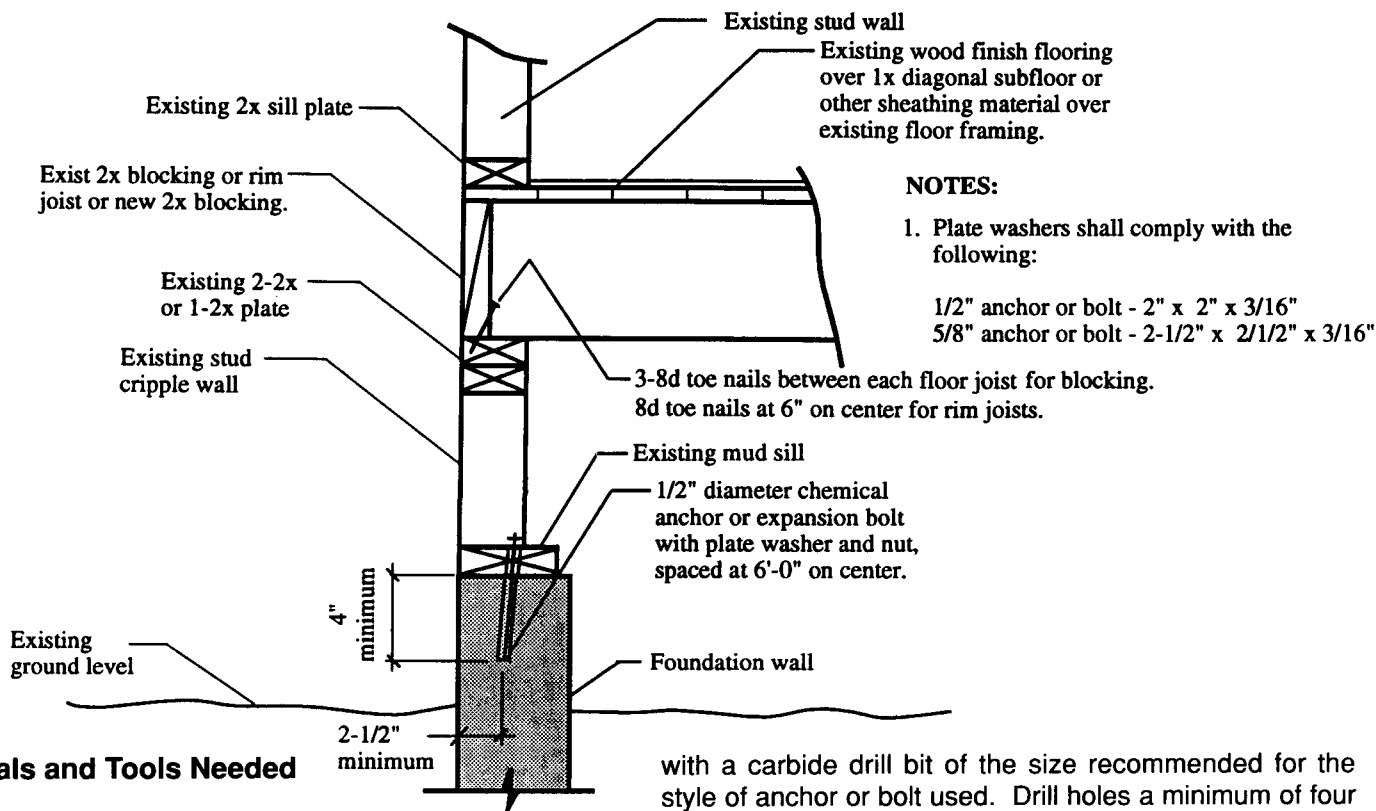
If the sill plate is not bolted to the foundation, you can hire a professional to do the job or do the job yourself by following the instructions provided on the reverse side of this Focus Sheet.

Additional information about foundation bolting and cripple wall bracing is available in the step-by-step how-to video "An Ounce of Prevention...Strengthening Your Wood Frame Home for Earthquake Safety" and the accompanying handbook with the same title. Contact your local library, Office of Emergency Services, or building department to borrow a copy.

Courtesy of

County of Los Angeles - Office of Emergency Management

MARCH



- NOTES:**
1. Plate washers shall comply with the following:
 1/2" anchor or bolt - 2" x 2" x 3/16"
 5/8" anchor or bolt - 2-1/2" x 2-1/2" x 3/16"

Materials and Tools Needed

1/2"-diameter chemical anchors or expansion bolts of a style acceptable to the local building department. The length of the bolt will be determined by depth of the hole, the thickness of the sill plate, and projection of not less than 1" above the sill plate.

Masonry drill bit with a carbide tip. The size will be determined by the size and style of the anchor or bolt.

Electric rotary impact drill or heavy-duty drill

Short-handled sledge hammer or carpenter's hammer for setting the bolts

3/8" in diameter plastic tubing

12" long adjustable wrench

Chalk or lumber crayon

Measuring tape

Eye protection

Noise protection

Dust mask

Installation Instructions

1. Lay out bolt locations. Bolts should be spaced no more than six (6) feet apart. Begin the layout no less than nine (9) inches or more than 12 inches from the end of any section of sill plate.
2. Drill holes through the sill plate and into the foundation

with a carbide drill bit of the size recommended for the style of anchor or bolt used. Drill holes a minimum of four (4) inches into the foundation wall.

3. After drilling a hole, clean out the concrete dust by inserting the 3/8-inch diameter plastic tubing into the hole and blowing out the dust.

4. Place a 2"x2"x3/16" plate washer over the bolt so it rests on the top of the sill plate. When using an expansion bolt, insert the bolt into the hole until it stops. Place the nut on the bolt and turn until the top of the nut is even with the top of the bolt. Using the sledge hammer or carpenter's hammer, strike the top of the bolt until it is firmly set at the bottom of the hole.

5. Using a crescent wrench, tighten the nut as tightly as you can against the washer.

Note: Blocking is necessary for installing cripple wall bracing when the depth of the studs is different from the width of the sill plate, such as 2x4 studs attached to a 2x6 sill. In addition, cripple walls must be adequately braced.

Bolting sill plates to foundations and bracing cripple walls require building permits. Be sure to contact your local building department for local code provisions.

This action sheet was developed as part of the Earthquake Survival Program (ESP). ESP is an awareness campaign designed to increase earthquake preparedness at home and work. It was developed by the County of Los Angeles. The Governor's Office of Emergency Services and representatives from Imperial, Inyo, Kern, Los Angeles, Mono, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura counties assist in development of campaign materials and in coordination of the campaign.