Brace Cripple Walls

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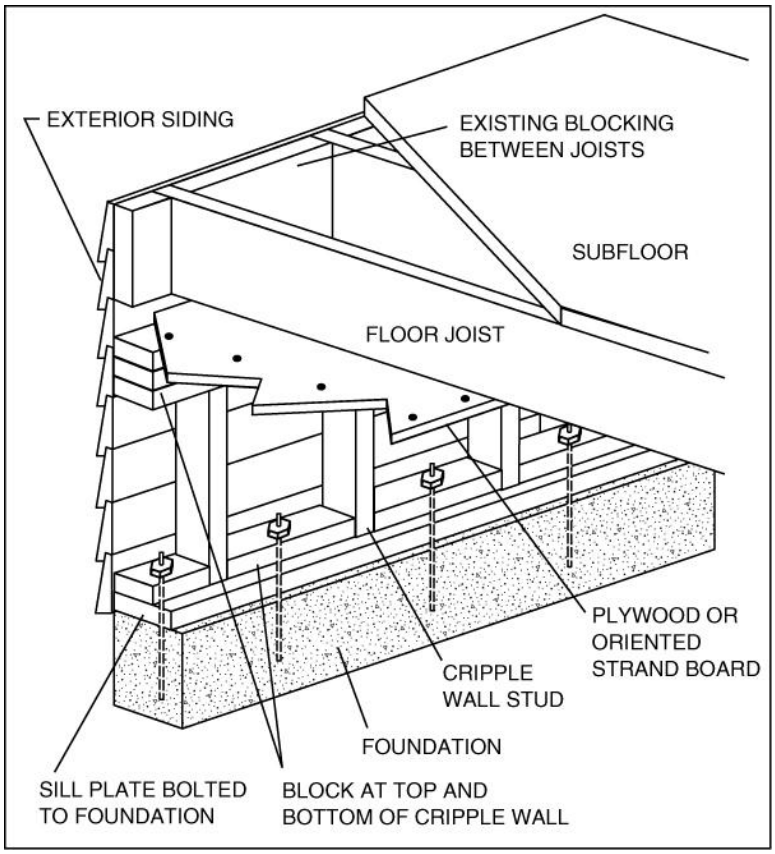
PROTECTING YOUR PROPERTY FROM EARTHQUAKES

Some structures are built on cripple walls. As shown in the figure, a cripple wall is a short wall that rests on the foundation and supports the floor and exterior walls. If the cripple wall is not braced, it can shift during an earthquake. When this occurs, there is a greater likelihood that the structure will be severely damaged and that you and others will be injured.

If your property is built on cripple walls, one way to increase its stability and reduce earthquake damage is to brace the cripple walls. In this method, horizontal sill blocking that consists of 2-inch by 4-inch boards is added between the vertical studs at the top and bottom of the cripple wall and, if necessary, at other locations between the studs. New vertical studs can also be added if necessary. Plywood or oriented strand board is then nailed to the interior face of the cripple wall. Also, nails are added through the existing blocking between floor joists to ensure that the floor is securely attached to the cripple wall.



BENEFITS OF UTILIZING THIS MITIGATION STRATEGY

- Helps to prevent a structure from shifting, which can result in severe damage
- Helps to prevent injuries to occupants

TIPS

Keep these points in mind when you brace cripple walls:

- ✓ Check with your local building officials to see if you need a permit to do this work.
- ✓ Before adding any bracing, check to see whether the sill plate below the cripple wall is bolted or otherwise anchored to the top of the foundation. If it is not, you should consider having bolts or anchors added. Any anchoring of the sill plate should be done before you add bracing. For more information, refer to the separate earthquake protection fact sheet titled “Bolt Sill Plates to Foundation.”

ESTIMATED COST

Bracing a 2-foot high cripple wall will cost approximately $1.50 per linear foot of wall. For example, a structure measuring 60 feet by 30 feet will have a perimeter of 180 feet. So the cost for that structure would be about $270. This figure covers only the materials you will have to buy and excludes the cost of any tools you use, building permit fees, and the value of your time. This figure also excludes the cost of having a contractor anchor your sill plates. Also, bracing higher cripple walls may require more lumber and therefore may be more expensive.

OTHER SOURCES OF INFORMATION

Bolt Sill Plates to Foundation Fact Sheet, FEMA, April 2008, http://www.fema.gov/plan/prevent/howto/index.shtm.

FEMA 74, *Reducing the Risks of Nonstructural Earthquake Damage: A Practical Guide*, Third Edition, September 1994, http://www.fema.gov/library/viewRecord.do?id=1574.

FEMA 232, *Homebuilders' Guide to Earthquake-Resistant Design and Construction,* June 2006, http://www.fema.gov/library/viewRecord.do?id=2103.

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