



HOW-TO BOOKLET #3052

DIVIDER WALLS



TOOL & MATERIAL CHECKLIST

- Framing Lumber (1x6s, 2x3s, 2x4s)
- Wall Finishing Materials
- 16d Common Nails
- 12d Common Nails
- Construction Adhesive
- Chalk/Chalkline Plumb Bob
- Caulking Gun
- Hammer
- Saw
- Square Level
- Wooden Shims

Read This Entire How-To-Booklet for Specific Tools and Materials Not Noted in The Basics Listed Above.

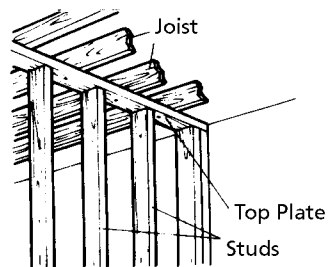
If you can take and read measurements and swing a hammer, you can build a divider wall in your garage, basement, attic, or any other room that you want to make into two to three (or even more) rooms. A divider wall also is known as a partition wall or a framed wall. **The instructions detailed here are for a non-load-bearing wall**, which is a wall that doesn't support house weight.

Meeting the Ceiling Across Joists. If the joists in the ceiling run perpendicular to the new wall, the new wall is nailed across the joists at each joist (**Fig. 1**). If the ceiling is finished, fix the top plate to the joists by nailing up through the ceiling. The top plate between of the new wall and ceiling can be concealed by molding or trim strips.

Meeting the Ceiling Along Joists. If the new wall falls along a joist, nail the top plate through the ceiling to the bottom of the joist along its length (**Fig. 2**). Check the joist at both ends of the new wall and see if it runs true along the lines you mark for the wall. If not, try positioning the wall so that you have a sound nailing surface against the joist at both ends. Mark the top plate so that the nails go into the center of the joist.

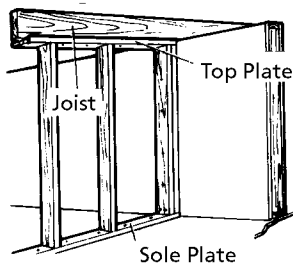
Meeting the Ceiling Between Joists. If the new wall will run parallel to, but between joists, nailing blocks must be added between the joists so the top plate can be nailed to them. If the finish ceiling material has been removed, toenail the blocks into the joists from below, high enough to attach a 1x6 nailer below them. The 1x6 attached to the blocking will provide a nailing surface on both sides of the new wall for installing wallboard to the ceiling later. The bottom of the 1x6 should be flush with the bottom of the joists (**Fig. 3**).

Fig. 1



Across joists

Fig. 2



Along joists

If the finish ceiling material is not being removed, and provided you have access to an unfinished room above the installation, the blocking can be installed between the joists from above. If there is no access to the joists from above, the blocking must be installed from below, as follows:

- 1 Cut 3" wide openings along the finish ceiling. Locate the openings so that they will be covered by the new wall (Fig 4).
- 2 Cut 2x4 blocks the width of the joist cavity.
- 3 Insert the blocks through the openings, turn them perpendicular to the joists, and secure them by driving flathead screws up through the ceiling material.
- 4 Fill the screw heads. The openings can remain untouched; the new wall top plate will cover them completely.

Meeting a Wall at a Stud. First, locate the studs in adjoining walls, if the walls are finished (Fig. 5). If a new wall meets an adjoining wall at stud,

remove sections of the trim above and below and attach the new wall to the stud directly through the old wall's surface. On an open wall, just nail the new wall to the stud.

Meeting a Wall Between Studs. If the new wall meets an adjoining wall between studs, and the wall is finished, proceed as follows:

- 1 Strip away the wall surface approximately 6" on either side of the new wall location.
- 2 Nail 8" lengths of 2x2 lumber to the exposed sole and top plates.
- 3 Nail a 2x6 stud to the 2x2 pieces to create a nailing surface for the new wall framing.
- 4 Center the new wall framing on the 2x6 nailer and nail the end stud to it (Fig. 6).

Hanging a Stud Wall. The height of the wall will determine the choice of lumber. You may use 2x3s for walls up to 8' high, 2x4s for walls higher than 8' (Fig. 7). Or you may wish to use larger lumber to improve soundproofing.

You will need one or more studs at each end of the wall, depending on how you tie it to old walls and studs every 16" on center. When planning a material's purchase, account for any double studding needed around a door or other opening within the wall.

For walls up to 12' long, use a single 2x4 for each plate. For longer walls use two pieces for each plate with no piece shorter than 4' and with splices at opposite ends of the walls.

Mark the Exact Location of the Wall. Use a carpenter's square and chalkline. If the wall is square, lay one leg of the square against it and have a helper line up the chalkline on the other. Then snap the line.

ERECTING THE PARTITION WALL

There are three methods for building a non-bearing divider wall. When using any of the three methods, be sure to include any openings, such as doorways, in your layout.

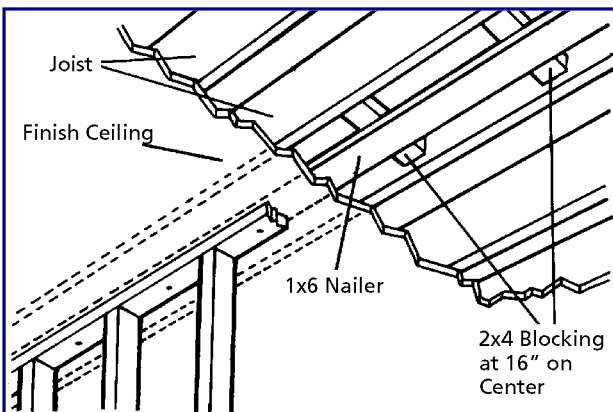


Fig. 3

Between joists

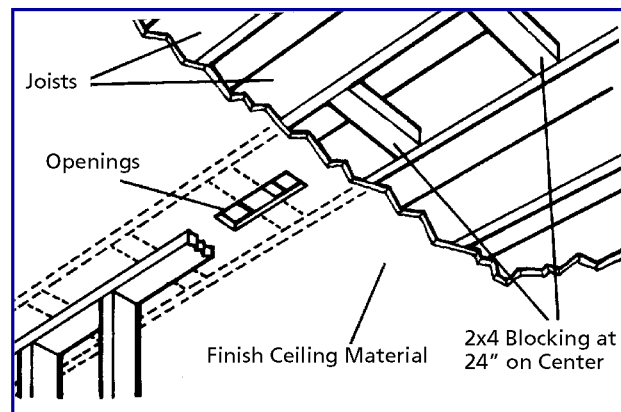


Fig. 4

Blocking from Below

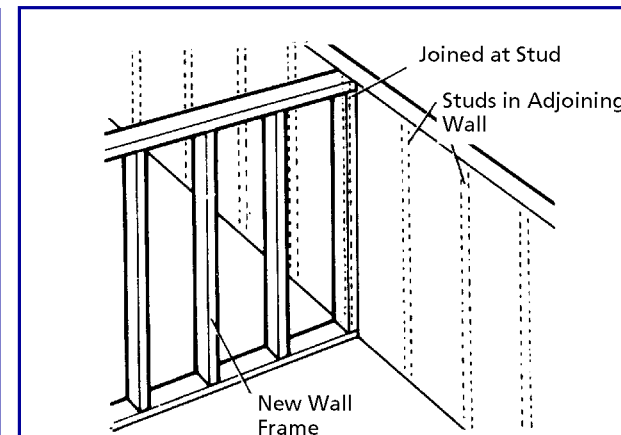
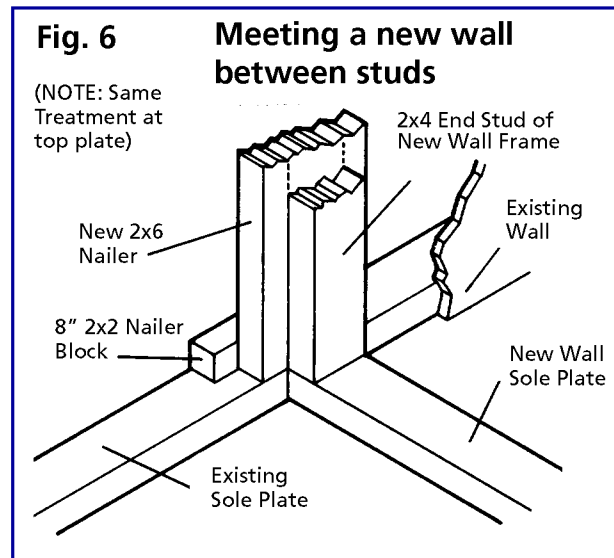


Fig. 5

Meeting at a stud

Method #1. To build the wall in place, use the following procedure:

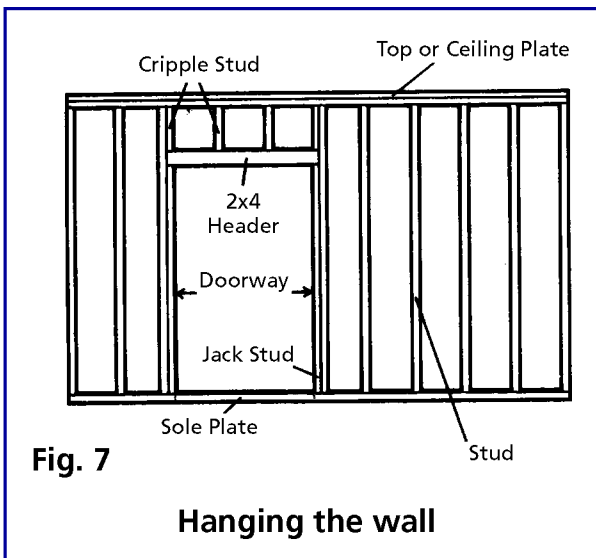
- 1 Measure the full length of the new wall across both the ceiling and the floor.
- 2 Cut the top plate equal to the measured length along the ceiling. Then cut the sole plate equal in length to the floor measurement.
- 3 Toenail the top plate to the ceiling rafters (**Fig. 8**).
- 4 Drop a plumb bob to find the location of the bottom plate (**Fig. 9**). Move along the top plate, mark the floor at the other end, and check it at the middle.
- 5 Mark the position of the studs at 16" or 24" on center on the top plate, and outline the stud ($3/4$ " from the center on either side). Use these lines to position the studs on the bottom plate.
- 6 If the floor is concrete attach the sole plate using a pin shooter, construction or subfloor adhesive, or masonry nails. If the floor is wood, the sole plate can be attached with 16d nails.



- 7 Measure from a stud location on the top plate to the corresponding point on the bottom plate and cut a stud to that length. The fit should be snug, but not so tight that the stud bows out in any way.
- 8 Place a stud on the marks and toenail it at the top and bottom with 16d nails. Start a nail on either end before raising the stud. Drive each nail at a 45-degree angle into the middle of the stud face until it just breaks the surface of the wood on the end.
- 9 Complete the attachment by toenailing into the opposite stud face at the top and bottom. Use a spacer block cut to the exact distance between the edges of the studs; this will provide a solid nailing base (**Fig. 10**). Use three nails per stud: two on one side and one on the opposite side.

Method #2. This procedure involves building part of the wall on the floor, raising it into place, then completing the wall.

- 1 Measure and cut the top and sole plates as described in Method #1.



- 2 Place the top and sole plates on top of one another on the floor where the wall will be located. Lay out the stud locations and measure between the plates and the ceiling for each stud.
- 3 Cut the studs to length and nail them to the top plate only.
- 4 Tilt the wall up into place and slide the sole plate beneath the dangling studs.
- 5 Attach the top plate to the ceiling and nail the sole plate to the floor.
- 6 Toenail all the studs to the sole plate, making sure each one is plumb.

Method #3. If space is available for assembly and there is no risk of damaging the finished ceiling, the entire wall can be built on the floor and raised into place.

- 1 Measure and cut the top and sole plates as described in Method #1.
- 2 Set the plates side by side. Measuring from one end of the plates, mark for studs at 16" centers (**Fig. 11**). Some codes permit studs

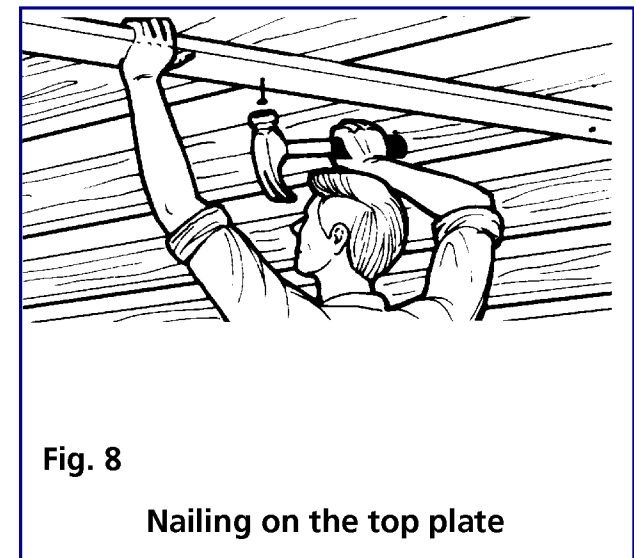
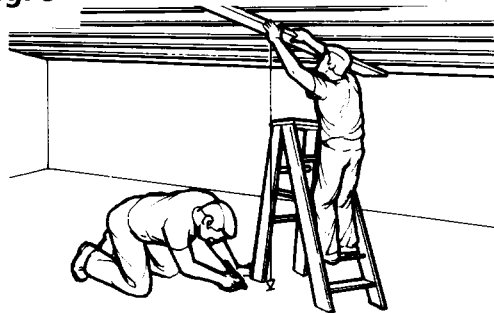
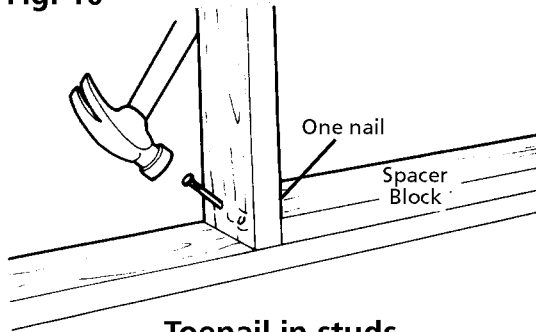


Fig. 9



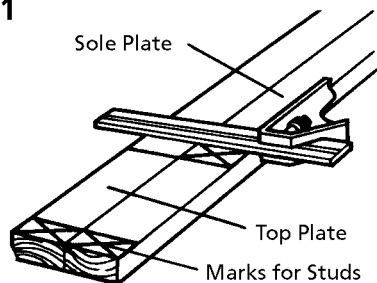
Mark ceiling-to-floor positions

Fig. 10



Toenail in studs

Fig. 11



Mark plates

on 24" centers. Don't worry if the spacing is not exactly 16" or 24" on center at the other end. Also, remember to account for doorways in your measurements.

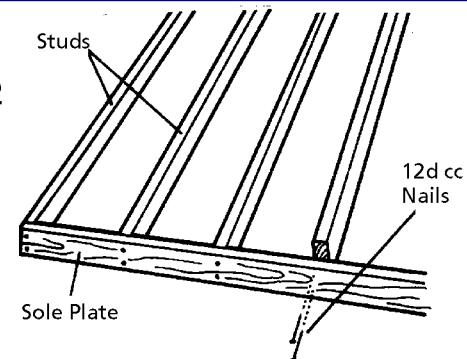
- 3 Set the plates on edge, separated by the height of the wall, with the marks facing each other.
- 4 Put the studs in position and attach them top and bottom by driving two 12d nails through the plates into the ends of each stud (Fig. 12). Use the marks to align the studs precisely so the frame will be true; double-check all measurements.
- 5 Before raising the frame, put marks on the floor and ceiling joists or nails to ensure proper alignment. Lift the frame into place; the studs are short enough to clear (Fig. 13).
- 6 Fill the space between the top plate and the ceiling with wooden shims, then nail the top plate in place.
- 7 Use a carpenter's level to check that the frame is plumb (vertical level). Check several studs on both the inside and outside faces.
- 8 Make any necessary adjustments then nail the sole plate to the floor with 16d nails as explained in Step 6 of Method 1.

Making a Corner. At a corner, you must add an extra stud to provide a nailing surface for the wall covering (drywall or gypsum wallboard). One method of turning the corner involves making an "L" by nailing spacers between two studs, then butting the end stud of the adjacent wall to this triple-width stud (Fig. 14).

FINISHING THE PARTITION

Finishing procedures include drywall (gypsum wallboard) or wood panel, trim, and moldings. Install any plumbing and wiring in the wall frame before the framing is covered and the covering finished with paint, wallpaper, or wood panel.

Fig. 12



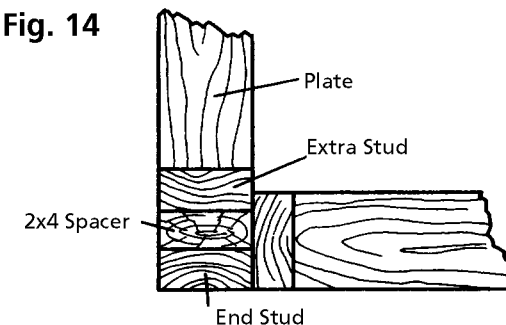
Build frame

Fig. 13



Raise frame

Fig. 14



Building an "L"