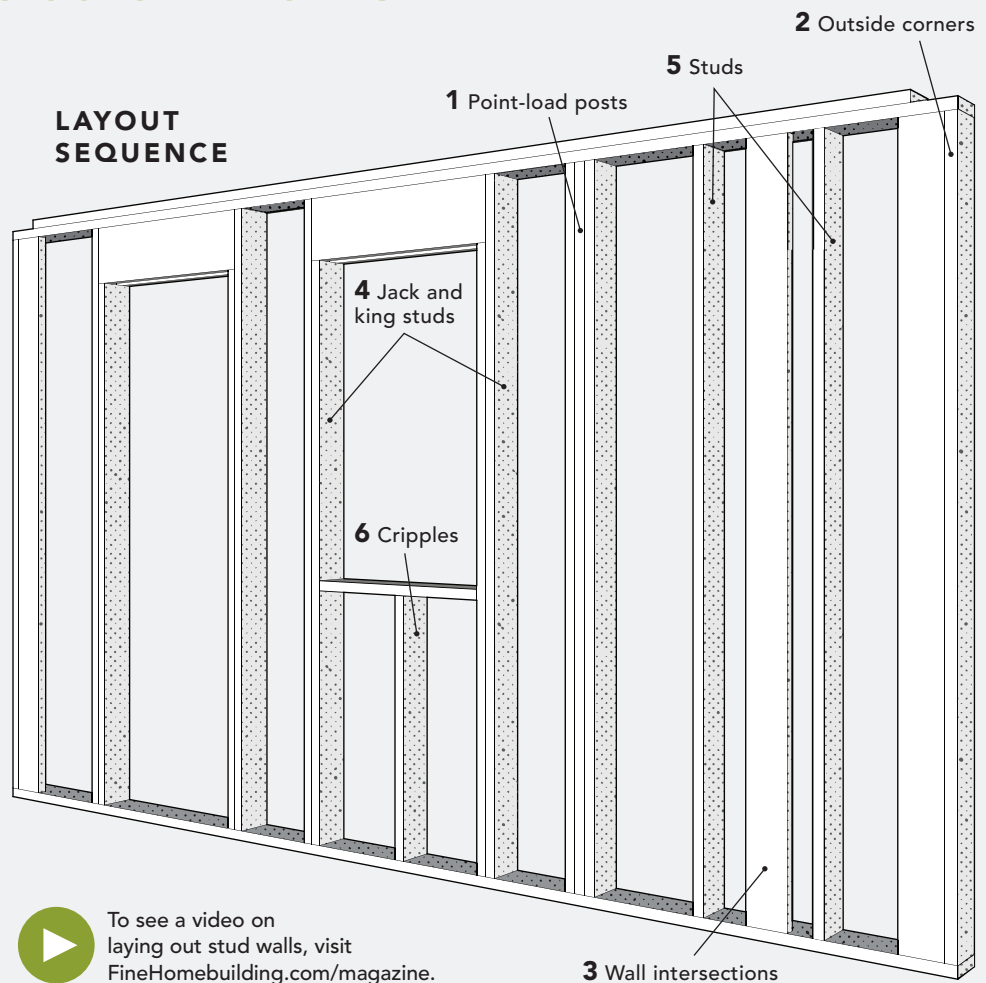


## Laying out stud walls

**H**ow you lay out the stud locations in a wall affects everything that comes after, from sheathing, to hanging drywall, to plumbing and HVAC rough-in, to trimming the interior. The stud layout is marked on the plates—the horizontal members at the top and bottom of a wall. It's worth taking the time to find straight, long stock for the plates, and to cut them accurately to length. The blueprints will rarely, if ever, specify the location of every stud, so the carpenter is expected to understand framing principles well enough to get the layout right regardless of the level of detail on the plans.

There are four things to consider when laying out a wall. The first is load path. Loads are the weight of rafters, floor joists, and beams that bear on the wall from above. Each of these needs at least one stud below it; often more than one in the case of beams and headers, which transfer loads around openings. The locations of these point loads—below beams, for example—as well as the number of studs required below each, should be called out on the plans. These studs are usually nailed together into a post before installation. The studs of any wall above the first floor of a



To see a video on laying out stud walls, visit [FineHomebuilding.com/magazine](http://FineHomebuilding.com/magazine).



**1** **Mark the point loads first.** With the plates laid next to each other, mark the edge of all the studs in point-load posts using dimensions from the blueprints.



**X marks the spot.** Every standard-height stud is marked on the plates with an X. With the two plates next to each other, you can quickly mark an X on each by making two Cs, one backward.





**2 Outside corners get two studs.** Nailed together in an L-shape, one stud is the outside nailer for sheathing, while the inner one will extend one stud thickness past the intersecting wall to serve as a drywall nailer.



**3 Be careful at intersections.** Mark both edges of midplate wall intersections. For intersecting 2x4 walls, mark the plates to receive a 2x6 on the flat. The wider stud will extend past each side of the intersecting 2x4 to provide drywall nailing.



**4 Kings and jacks mark windows and doors.** There's one full-height king stud on each side of an opening. Jack studs (marked with a jay) are the header depth shorter than kings and form the inside of the opening. Wider openings usually have two or more jacks on each side.



**5 Regular studs follow a regular layout.** The highlighted numbers on the tape—usually in red—indicate the common 16-in.-on-center spacing, but layout requires the edges be marked, not the centers. To mark the edge of a 1½-in. stud, subtract ¾ in., and mark an X to the right.



**6 Fill in with cripples.** Short studs called cripples support windows' rough sills. When a header doesn't completely fill the space below the top plate, cripples are used there, as well. Cripples fall on the stud layout, but are marked with a C.

house should stack on the joists and studs below to form a load path all the way to the foundation. This isn't just a load-path consideration; stacked framing makes the job of the mechanical trades—running ducts, pipes, and wire—much easier.

The next consideration is the location of intersecting walls. When laying these out, be careful that you're measuring their position from the location indicated on the plans—it's very

easy to mark the wrong side of an intersecting wall on a plate and inadvertently change a room dimension. Pay particular attention to places such as alcoves for tubs, whose dimensions have no flexibility.

Next are window and door openings and the king and jack (or trimmer) studs that outline their rough openings. These should also be called out on the plans. Finally we have the common studs, which are

spaced primarily to accommodate the wall sheathing edges, but also those of the drywall. This is where the layout marks on the tape measure come into play. Whether the framing is on 24-in. centers, 16-in. centers (usually highlighted in red on the tape), or 19.2-in. centers (highlighted with small black diamonds), these numbers represent the stud centers, whereas you'll be marking a stud edge, which is ¾ in. to one side or the

other of the stud center. For a 16-in.-on-center stud layout, for example, it doesn't matter whether you make a mark at 15¼ in. or 16¾ in., as long as you indicate to which side of your mark the stud should be located so that the center of the stud ends up 16 in. from the stud to either side.

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