

FRAMING



Layout Lines for Exterior Walls

Get everything straight and square now to avoid headaches later

BY MATTHEW ANDERSON

A couple of years ago, I wrote a two-part article on how my crew squares up a new foundation, sets mudsills, and installs the first-floor deck (“Mudsill Layout for a Complex Foundation,” May/14, and “First Floor Deck for a Complex Foundation,” Jul/14). The next step is laying out for wall plates.

Once we have put down floor sheathing and set the Lally columns, the crew sets up to build the first-floor walls. We make lists of all the framing “parts” we’ll need—headers, cripples, sills, studs, and jacks—and crew members begin cutting, labeling, and assembling those parts, as well as building corners and partition backers. While “the framing factory” jumps into action, two lead carpenters begin the process of laying out the walls on the first-floor deck.

ESTABLISH A BASELINE

The house that we’ll use to explain the layout process has a fairly simple design, created by Patriot Builders, based in Harwich, Mass. The back wall of the house is straight and uninterrupted. It meets the back of a two-car garage (which we will leave out of the layout discussion for now).

The front wall of the house makes three jogs to create three different planes. The first jog forms a short wall that continues from the front wall of the garage. The second jog creates the longest section of the facade, and the third jog completes the facade.

The end wall that the house shares with the garage is uninterrupted, while the wall at the opposite end of the house jogs in slightly and

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continues uninterrupted except for a small fireplace bump-out.

The first thing we do in the layout process is mark the inside edge of the longest exterior wall—in this case, the back wall of the house. We cut layout blocks out of 2x6 plate stock about 16 inches long. Then, using a framing square, we line up the block with the rim joist to make sure that the block is perfectly in line with the deck framing **(1)**. We mark both sides of the corners at either end of the wall **(2)**. This first wall is the baseline, or reference, for laying out the rest of the walls on the deck.

Next, we mark out the other corners of the house. For most houses, we usually just go around with the 2-by block, mark the other

corners, and then check diagonal measurements. But because of the jogs in this house, we altered our strategy slightly.

PARALLELS AND PERPENDICULARS

We started by marking the corner of the first jog. Holding the block at the overall length of the end wall shared by the garage, we again marked along the inside edge of the block **(3)**. As before, we also marked the other side of that corner.

At the opposite end of the house, we measured up from the baseline and marked the same distance. Because of the jog on that end of the house, that measurement actually fell in the fireplace bump-



out. After determining the exact length of our baseline wall, we measured over that distance from the first jog to create a second “corner,” again using our block to make the marks **(4)**.

Those corners along with the baseline corners gave us the largest rectangle on the deck to check for square. Measuring diagonally from corner to corner, we adjusted the positions of our second set of corners until the diagonal measurements were exactly the same **(5)**. In this case, the positions shifted toward the garage about $\frac{1}{4}$ inch, which is well within expectations for a typical deck frame **(6)**. These adjusted marks positioned the perpendicular walls so that they would be absolutely square to the back wall of the house.

SNAPPING CHALK LINES

With those corners verified, we snapped chalk lines for the walls we had established, starting with the baseline wall **(7)**. We always snap permanent layout lines in black chalk; it seems to stand up better than other colors to weather and to all the activities and traffic that take place during the wall-building process.

After snapping out the baseline wall, we snapped lines for the two perpendicular end walls that we had laid out as well, making sure that we hit the adjusted marks. That gave us layout lines for the wall shared by the garage, as well as for the perpendicular wall with the jog at the opposite end of the house. At that end, we



extended the line all the way through the fireplace bump-out (8), which would help with the next steps in the layout process.

WORKING AROUND THE PERIMETER

The crew members could now work off those three snapped lines to lay out the shorter walls. Because we were still working on the end of the house with the fireplace bump-out, we measured off that perpendicular line (9), and then we snapped a line that gave us the layout line for the last wall section on that end of the house (10).

At that point, we had not yet snapped the line parallel to the baseline that formed our original rectangle, so we snapped that

line across the entire deck (11). That line served a number of purposes. First, it permanently marked the corner, which set the length of the perpendicular wall. Also, it gave us the layout line for the parallel wall of the first jog, and most importantly, it provided a secondary baseline (parallel to the first one), which made it easier for us to lay out the other parallel walls on the front of the house. Working off that line, we marked the lengths for the remaining parallel walls (12), and then snapped lines for those walls (13).

Lines for the shorter perpendicular walls were next. We didn't have a perpendicular line close by for laying out the adjacent wall of the first jog, so we measured over from the shared garage wall and



projected the layout line up. We started by marking out the length of the wall at the jog corner, and again at a point farther down the shared wall (14). Holding the end of the chalk line at that point and extending it through the corner mark to the next jog, we snapped the layout line for that wall.

Extra lines on the deck can be confusing, so we used a great trick for snapping a shorter line. After stretching the line taut, a crew member places his foot on the line to hold it in place at the end of the wall. Another crew member can then snap a shorter line (15).

For the perpendicular wall of the second jog, we measured from the wall on the opposite end of the house and snapped that line.

FINISHING UP

The only exterior walls left to lay out were the short parallel walls for the fireplace bump-out and the jog at that end of the house. For the fireplace area, we simply held our layout blocks in place to mark out the wall positions (16). These smaller areas are where we are most likely to find variations in dimensions, as well as corners that might not have been framed square. To fix discrepancies, we choose the larger of the two measurements and adjust both walls to that measurement. For example, if the depth of the fireplace bump-out is supposed to be 24 inches, but one side measures 23½ inches and the other 24½ inches, we would make

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both sides 24 $\frac{1}{2}$ inches to reflect the larger measurement. This adjustment helps keep the area as square and true as possible as the walls are framed, which makes framing the roofs for those small sections much easier.

The position of the short jog wall on that end was determined by the length of the perpendicular wall. So we marked that length from the original baseline (17). Because these walls were just 2 feet long, it was easier to draw the lines with a framing square instead of snapping chalk lines (18). The last wall to lay out was the bearing wall near the middle of the house. This wall happened to align with the short jog that we just laid out, so we simply made the same measure-

ment from the baseline along the shared garage wall and snapped a line between the two marks (19).

Measuring, squaring, and snapping all the layout lines for exterior walls for this house took less than 30 minutes, a fraction of the time that it took to describe the process in words. The key is to work methodically, taking precise measurements and snapping accurate lines. This careful layout will reward you as the rest of the house frame fits together much more precisely.

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