

Fast and Accurate Wall Framing



Master Carpenter



Mike Norton grew up figuring out how to make things work. His father was a carpenter/builder, and the family lived in an antique home that needed to be completely restored. That is where his education began.

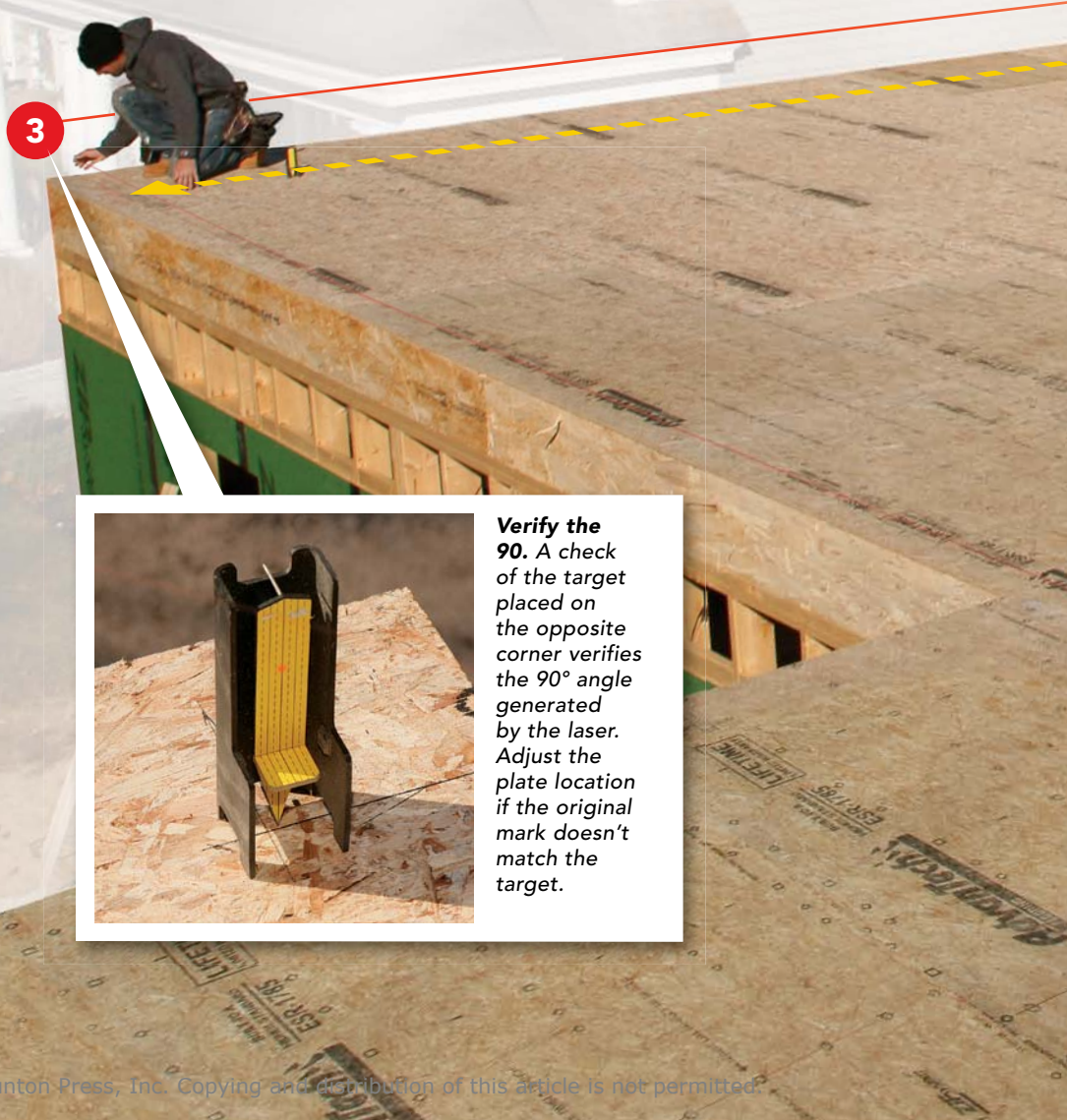
Mike went to a vocational high school and took carpentry classes for four years. Before graduating, he landed a job with a builder through a co-op program offered by the school. He switched jobs to work for a framer on nearby Cape Cod, taking less money than he could have made elsewhere in exchange for on-the-job training. "That was the best career move I've ever made," he says. Since then, he has built a framing crew of his own and has branched out into finish carpentry and furniture building, skill sets that give him a unique perspective on tight frames.

An experienced builder's no-nonsense approach to the bones of a house

BY MIKE NORTON

If there's a glamorous job in carpentry, it's not framing. It might be finish work; everything looks so good after that final piece of molding is nailed in place and the job is complete. Framing, on the other hand, is called "rough," and it requires an experienced imagination to see the finished product in its earliest stage. But framing embodies the physics of the structure, and if you don't get it right, the house will fail. You'll also have a hard time nailing your fancy trim where there is no blocking.

Whether the plans call for traditional stick framing or optimum-value engineering, the skills are relatively simple: straight and square cuts, a good hammer technique, economy of motion, and a strong back. There are a few tricks, however, that make the job easier and the



Verify the 90. A check of the target placed on the opposite corner verifies the 90° angle generated by the laser. Adjust the plate location if the original mark doesn't match the target.

GET SQUARE AND PARALLEL WALLS WITH A LASER

A key step in laying out walls is to establish square corners and parallel walls, a task streamlined with the use of a laser. Once square corners have been set, the plate layout lines can be snapped.

TOOL OF THE TRADE



A good laser makes layout faster and more accurate. The author uses a laser that fires a constant beam in five directions that is visible in daylight (Pacific Laser Systems; PLS-5 kit, \$400). The first step is to mark the plate width in all corners, set the laser, and aim it toward the first target.

Hit the bull's-eye. Placed on the next corner over the plate mark, the target indicates when the laser is lined up.

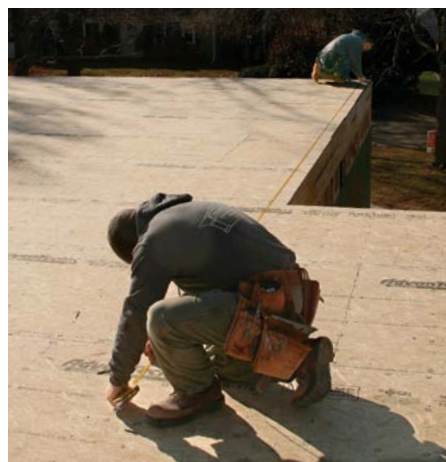
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Establish parallel lines. From the corners verified by the laser, measure and mark the opposite wall-plate positions (4). Snap layout chalklines for the plates (5).



LAY OUT THE PLATES ONCE

It's usually easiest to build walls on the deck and then lift them into place. The first step is to mark out stud, window, and door openings on the plates.

TRICK OF THE TRADE

An ounce of prevention.

A length of metal packing strap nailed to the plate and deck is good insurance against a wall dropping off the deck's edge as it's raised.



Toe the plate. Lay the bottom plate on edge, and align it with the chalkline. Toenail it to the deck, nailing every 2 ft. or so. Once the wall is built, the completed structure is anchored to the deck and is less likely to move as it's raised.



No math, just mark. When laying out a plate, it's faster to mark the edge of the first stud, drive a nail into the first mark, and then pull 16-in. intervals from there.



Efficient layout. For a quick layout, place the top plate behind the bottom plate, and mark both at the same time. This temporary placement also keeps deck clutter to a minimum.

results more professional. Here, I'll explain some of the methods I've picked up, using a simple exterior wall as an example.

Layout is critical

Even though you're probably the one who laid the sill plates and framed the deck, it's still a good idea to make sure that the deck is square before framing the walls. The simplest method to use is to check the corners by measuring a 3/4/5 triangle and then extend-

ing the angle with a reference chalkline. I've found it faster, however, to use a laser that shoots two lines at 90°. Two people can square up a deck in about 10 minutes, and there's less chance for error. If the deck isn't square, it's usually within a 1/4-in. tolerance that we can correct by moving the plate location marks out beyond the deck edge or inward toward the center of the deck.

After squaring up the deck, we snap lines for the plates. While we're at it, we also snap

a reference centerline across the deck so that we can check that walls are parallel or, when it's snapped to represent the ridgeline, use it to lay out a gable wall.

We frame the walls flat on the deck by first toenailing the bottom plates down on edge along the chalklines. After double-checking the window and door schedule, we mark these locations on the plates. I also figure out where the partitions intersect the wall and mark the location of the backers. If there's

PRODUCTION-STYLE ASSEMBLY

Assigning one carpenter the task of cutting parts at the chopsaw station means that the rest of the crew can keep nailing.

TRICK OF THE TRADE

If there are a number of identical windows, it's faster for the cut man to make parts and assemble the windows as units.



An organized list. After assigning each window a letter designation and listing the parts' measurements, cut and stack the parts in discrete piles.



Always check for square. After the wall has been nailed together, measure both diagonals to make sure the wall is square before starting to sheathe.



Easier on the ground. It's safer, faster, and neater to cut out the window openings with a circular saw as the sheathing is installed.

a conflict between the partition's placement and the eventual locations of interior trim, I usually call the architect before making the necessary adjustments.

Framing layout is a critical part of the process, so I always double-check my measurements. I cut the bottom plate to length first, then the top plates. I usually wait to install the second top plate until adjoining walls are raised so that the plate ties the walls together.

With the bottom and top plates placed together temporarily, I start marking the layout from the left and go right. After I mark the first stud on the bottom plate, I drive a nail at the line and pull 16 in. from there, marking the X beyond the line that indicates the stud location. At the same time, I transfer the layout to the top plate.

If I have a straight wall and a simple floor frame above, I mark the floor-joist layout onto the second top plate's face so that we don't have to do it after we lift the wall.

Cutting duplicate components all at once is faster

I've found that it's more efficient to have one of the crew designated as the cut man at a chopsaw. (Mounted on a stand with adjustable stops, the saw makes production work simple and accurate.) Wall studs, headers, window and door parts, and other duplicates all get cut there.

If the house has many of the same windows, I put together a cut list so that we can cut the legs below the window and the cripples above at the same time as the headers and sills. On the list, I group the windows with the same header length so that the cut man can cut everything without having to adjust his jig.

It's usually easier for the cut man to cut and assemble the headers, jacks, sills, legs, and other pieces into door and window units that we then can incorporate into the frame. If they're all various sizes, we assemble the doors or the windows as part of the wall. When the houses are fairly complicated and have different wall heights and large windows of different sizes, I have someone ready on the deck to cut all the legs and cripples as we frame the wall. Because the width of the header stock can vary by 1/4 in. from one 2x10 to another, most times we cut the cripples to

RAISE AND STRAIGHTEN THE WALLS

As walls are completed, lift them into a standing position, lean them outward an inch or so, and brace them temporarily. Before setting rafters or floor joists, straighten the top plates with springboards, and check them with a taut stringline that's stretched along the top plate.

TRICK OF THE TRADE

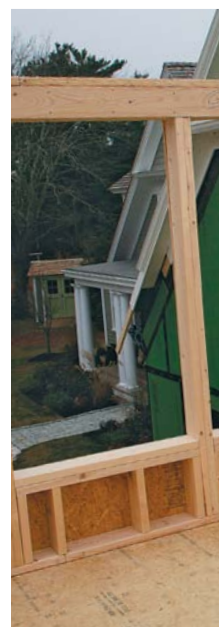
Lift in stages. It's sometimes easier and safer to pull up the wall to just above the crew's knees, rest it on sawhorses, then shift hand positions to push up the wall the rest of the way.



Set the springboards. With the wall braced, start the straightening process by nailing one end of a pine 1x8 to the underside of the top plate or to a header.



Tack the bottom. While one carpenter pushes down on the board, the other checks the string with a 2x gauge. The trick is to increase the tension by overbending the board so that it pulls the wall into the string. The first carpenter then tacks the springboard end to the deck and releases the tension on the board.



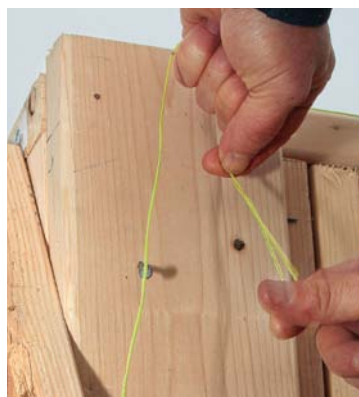


Online members can watch this *Master Carpenter* video at FineHomebuilding.com/extras.



TRICK OF THE TRADE

Use this foolproof nonslip knot to stretch the stringline taut when straightening walls.



Pull the string tight, make a loop around your finger, and twist it.



Anchor the loop on the lower nail, and pull up on the string.



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Pull the wall. One carpenter pushes a shorter leg into the underside of the springboard, bringing the top plate back toward the string. When the gauge indicates that the top plate is straight, the other carpenter nails the leg to the springboard, locking it and the wall into place.



While keeping tension on the string, pull down hard to compress the wraps on the loop. Loosen the tension on the string, and the knot comes undone.

length, install them, and then cut the jacks to the corresponding length. The rough opening's height may decrease by a fraction of an inch, but as long as the window fits in the rough opening, it's OK.

Sheathing layout is important

Once we've assembled a wall on the deck and measured its diagonals to make sure it's square, we begin sheathing. We pay careful attention to the engineer's plans, including the nailing pattern on the sheathing and the location of vertical sheets of plywood to hold down the corners of the house. If a wall is over a certain height or the engineer requires longer sheets for a hold-down, we install blocking across the wall at the point where the seams meet.

We often use 4x8 plywood sheets to span from the mudsill to about a foot under the top plate of the wall. We then can use 4x10 sheets to span from that point to the second top plate of the second-floor wall. We also cut out windows and doors as we sheathe the walls, rather than doing so after we stand them up. It's safer, faster, and more precise.

Bracing and straightening

After we've raised a wall, we nail the plates to the deck and temporarily brace the wall with 2x6s so that it's pushed outward slightly. This makes it easier to raise an adjacent wall; it's also easier to pull the wall straight than to push it.

To straighten the walls, we nail a 2x block to each end of a wall at the top plate, then run a taut line between the two. Next, we install roughsawn 1x8 springboards at 8-ft. intervals. We cut them to length so they can span a 45° angle from the top plate to the deck, then we nail one end to the underside of the top plate. While one person checks the string with a 2x block, another flexes the board downward and tacks the lower end to the deck.

We jam a short length of board between the deck and the middle of the springboard and push it away from the wall until the gauge block shows that the wall is straight. Then we tack the short board to the springboard and the deck, locking the wall in. □

Mike Norton lives in Middleboro, Mass. His website is frametechns.com. Photos by Charles Bickford.