Setting the Stage for Wall Framing

Stack the deck to ensure efficiency by cutting and preassembling the parts you need

BY JIM ANDERSON

The cutlist for a house that I frame today could have 50 different header sizes (not to mention multiples of the same size) with 200 cripples in 15 different lengths. To do good work on increasingly complex projects in a reasonable amount of time, I've had to get organized. Regardless of size, though, every project has its own web of problems, and being better organized can only make my work flow more smoothly.

I've also found that the job site is neater as I become better organized. I once landed a framing job because the customer liked the clean job site. Being smart about keeping debris and stacks of lumber off the floor yields fewer accidents and reduces a lot of the bending that makes my joints ache.

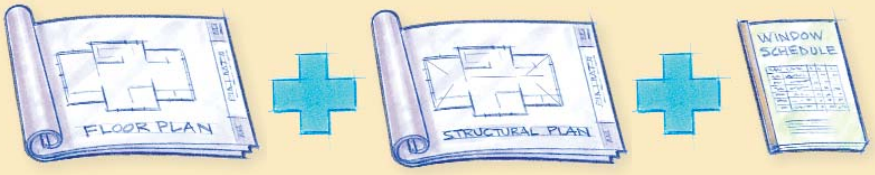
Double-check the floor plan to avoid making any mistakes

In a world where all floor plans were perfect, I could, without checking the floor plan to verify its accuracy, simply transfer all of its measurements to the cutlist. Just because the drawings look right, however, doesn't mean that they are.

I double-check my floor plan against two other documents, the structural plan and the window schedule. The structural plan spells out the type and depth of headers as well as the size of the posts that support them (for example, two 2x4s). Checking the floor plan against the window schedule and the structural plan roots out any hidden problems. Once all the details about framing members have been checked and transferred to the floor plan, I use the new marked-up version to create a cutlist. The list includes dimensions for every piece of wall framing that needs to be cut except the trimmers, or jack

RULE OUT FLOOR-PLAN ERRORS

1. Compare the floor plan to the structural plan and the window schedule. Header types and sizes are listed on the structural plan, and window types and rough openings are listed on the window schedule. Make sure everything matches.



Drawings: Dan Thornton

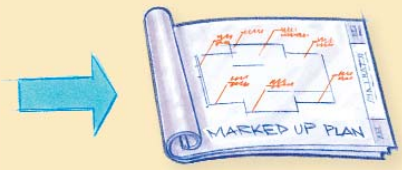
Nonbearing headers

Medicine cabinets

Long cripples

Sills

2. Mark up the floor plan with details about each door and window opening.



3. Transfer the framing details to the cutlist.

4. Use your well-organized cutlist to group wall components on the floor for easy identification.

ORGANIZE YOUR WORK IN ASSEMBLY-LINE FASHION

Whenever possible, measure and mark, then cut and pre-assemble more than one piece at a time.

studs. I scribe and cut those last to account for any discrepancies in header widths.

Organize the cutlist with the largest framing members first

I begin the cutlist with headers and arrange them in descending order from widest to narrowest. I cut the list in the same order for two reasons: It gets the biggest pieces out of the way first, and in case someone on the crew is ready to move on to framing the outside walls before the cutlist is finished, the big headers will be cut and ready to go in the outside walls, where many of them are needed.

Starting at one corner of the plan, I circle around until I've accounted for all the headers. I double-check by counting the number of headers on my list, then count the openings that require headers. If the numbers match, I'm done, and I go on to check the sills using the same method.

After listing the headers and sills, I list the lengths for special studs (other than precut wall studs), interior headers, all cripples, and medicine-cabinet rough openings, which we preassemble.

Everything is listed in order of descending length. Cutting the longest stock first means that if I make a mistake, it can be chopped into shorter stock for use later in the list. (I still haven't saved enough money for one of those board stretchers.) Then I type the list into the computer and print it out so that no one has to waste time deciphering my not-so-perfect penmanship.

Cut and assemble headers at a comfortable height

Because there's a lot of bending and lifting of heavy material in the course of a day, I set up my miter saw and cut as much material as possible at a comfortable working height.

Building materials usually arrive in bundles. If the LVLs (laminated-veneer lumber) and wide 2x material are on top of a bundle of plywood, I have the bundle delivered fairly close to where I'm setting up. If the LVLs arrive bundled separately, I move them onto a pair of sawhorses nearby. Either way, they're off the ground at a good height for cutting and assembling.

I measure and mark all headers to length before cutting. With common dimensional lumber, usually Douglas fir or hem-fir, I stack all the lumber with crowns facing away. With LVLs, I square one end as

Don't mark one board at a time. *The author uses a framing square to strike lines for cripples across the tops of eight headers at once. Lying within easy reach, the cripples will be nailed to the headers at a comfortable height atop the plywood; then the headers will be stacked on the floor nearby.*

"Using a miter saw doubled my speed the first day"

Leave your square and tape measure in your tool belt. *Once the adjustable stops are secured the proper distance from the blade, cutting multiples with the miter saw is fast and accurate.*

I stack them. Then I go down the cutlist, marking measurements and the crown direction with a large arc on the common lumber. The longer I stick with one task, measuring everything, then marking and cutting, the faster I get it done.

I mark the longest headers first, but if I can get more than one header out of a piece of material, I mark shorter headers at the same time. After marking everything, I cut the headers to length and stack them for assembly.

For many houses, I need to join a pair of 1¾-in.-thick LVLs to make a single long header. I glue together each pair with three beads of construction adhesive, then hammer a couple of nails every 4 ft. or so to draw them tightly together before finishing the assembly with a nail gun.

The nails and construction adhesive don't necessarily add strength, but they improve adhesion between the two pieces. One rainy spring, some LVL headers cupped badly when their outer portions absorbed water faster than the interiors. Construction adhesive is cheap insurance against unnecessary repair.

Pairs of dimensional headers are nailed together similarly except they have ½-in. oriented strand board (OSB) spacers between them so that they'll match the thickness of a 2x4 wall. I rip several 3-in.-wide strips for spacers using the base of my circular saw to gauge the width. Then I chop a bunch of them on the miter saw to lengths ½ in. less than the width of their corresponding headers (8¾ in. for a double 2x10 header). Before nailing headers together, I place OSB spacers every 16 in. These 3-in.-wide spacers can be used with headers as small as 3½ in. wide. For the 3½-in. headers, I run the spacers lengthwise.

I clearly mark each header's measurement on one face of the header and stack them side by side (with measurements facing up) in order

For 14 years, I used a tape measure and a square for marking all the pieces on a cutlist—up to 200 pieces on complicated framing jobs. I worked as efficiently as possible, but it still took a long time to get everything cut and stacked.

Eight years ago, I started using a miter saw, and its ability to cut two pieces at once doubled my speed the first day. Now, I have a miter-saw stand with adjustable stops. I set the stop to the length that I want and start feeding lumber, often cutting three pieces at a time.

I've also scribed often-used lengths, too short for the adjustable stops, onto the surface of the saw table or highlighted the fence with a red marker. Now the only mark that I make on the lumber is the length and a note indicating whether it's a sill, a cripple, or a header.

I've heard other framers complain that it takes too long to set up the miter saw and stand each day. I'd argue that it takes only a little longer than pulling out the circular saw and cord, and that the time is made up easily from the increased speed, accuracy, and capacity of the saw—even more so when it comes to repetitive cuts.

ASSEMBLE AND RAISE THE WALL FROM WELL-ORGANIZED PARTS

SHEATHE THE WALL AS IT LIES FLAT

A router removes exterior sheathing at window and door openings. *To follow the framing around the opening, you need a plunge-cutting straight bit with a bearing beneath the cutter.*

By stopping only to cut the trimmer studs at the end, the wall goes together quickly, and there's

of descending width and length. This process allows any of us on the crew to read and grab what we need quickly. There's no need to use a tape measure or to dig through a pile for the header that is always on the bottom.

Cut and label 2x4 headers, sills, and cripples

Now it's time to cut the little pieces: 2x4 stock including sills, cripples, nonbearing headers, medicine-cabinet frames, and special-length studs. With multiple pieces of the same size to cut, rather than using a square and pencil and cutting with a circular saw, I set the adjustable stops to the correct length and make repetitive cuts on my miter saw (sidebar, p. 79). I position the saw stand close to the lumber pile and cut the longest pieces first—special studs and long sills—from the straightest stock available. I save the more twisted or crooked stock for shorter sills and cripples.

Special studs and sills are marked for length and stacked neatly in descending order. Sills get a line beneath the measurement. Longer cripples are marked for length, and then they're stacked adjacent and perpendicular to the bearing headers.

After cutting nonbearing headers and shorter cripples to length, I mark them and stack them on sawhorses or on a pile of nearby sheathing to be assembled.

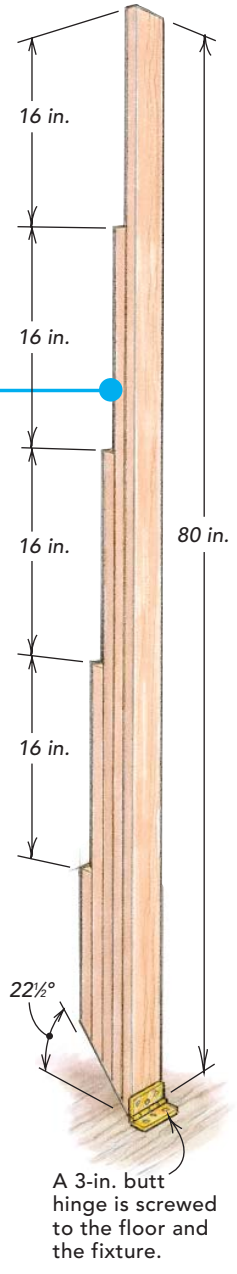
Add cripples to nonbearing headers when you build them

Because everything is now cut to length and within easy reach (except trimmer studs), it makes sense to assemble the interior headers. All the double 2x4 headers are assembled at this time with an OSB spacer laid lengthwise between them. As the headers are built, I mark locations for cripples by grouping several of them together, and using a framing square, I mark 16-in.-o.c. layout lines along their tops. Referring back to the cutlist, I locate the proper cripples and then toenail them to the corresponding header.

I assemble all the nonbearing headers at this time for a couple of reasons. I think that it's easier to nail the cripples to the headers on a waist-high table rather than bent over or up on a ladder. And when I'm stocking the wall with parts rather than grabbing a header and then looking for a matching handful of cripples, I can lay the whole assembly in place. For the nonbearing headers, I don't

SHEATHED WALLS ARE HEAVY

A simple wall-raising fixture made of overlapping 1x4s supports the rising wall, allowing hands to get a better grip.



less cutoff debris lying around on the floor.

worry about aligning their cripples with the 16-in.-o.c. wall layout. After building and attaching the cripples, I mark the length of each header on the bottom and stack them in descending order (length facing up) next to the long cripples that are on the side opposite the bearing headers.

Nonbearing headers that are shorter than 35 in. are made of a 2x4 laid flat. They have three cripples, each nailed through the header: one cripple on each end and one in the center. I mark the length on each and stack them next to the other nonbearing headers with the length visible, facing up.

I also assemble medicine-cabinet frames. They consist of two 16-in. blocks with a 24-in. block between them, nailed together in a U-shape. I label the frames *MC* and stack them next to the nonbearing headers with the label facing up.

With studs and headers assembled, building the wall is a snap

While one of my helpers finishes the cutlist, I finish installing the wall plates and work my way around, marking them up with information from the floor plan. Then we begin stocking the first wall with studs and components from the stack. If we come to a window opening that reads 54 2x10 5/20 on the plate, that means the opening calls for a 54-in. 2x10 with 5-in. cripples above the header and 20-in. cripples below the sill.

For the exterior walls, all that's left is to cut the trimmer studs. I nail the headers to the king studs and scribe the trimmers to fit, which accounts for any inconsistency in the header stock. Because I stop only to cut the trimmers at the end, the wall goes together quickly, and there's less cutoff debris lying around.

As I nail the wall together, I start at one end, with a corner if there is one, and continue nailing every stud or cripple along the bottom of the wall. Then I nail the studs and cripples to the top plate in the same way, starting at one end and working my way to the other end. Finally, I add the second plate to the top plate. Nailing in this way is orderly, so it's easier for me to keep track of what has been nailed, making it less likely that I'll forget to nail something. □

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