

FRAME PLATE LAYOUT

One of the most important parts of laying out a frame is knowing how to read lumber, if you don't know; I have 5 pages in the Carpenter Book on how to do it. Good example is: Most **carpenters** call a wood I-beam (joist) a TJI and a wainscot a wayne's coat. 98% of the framers I know call the plate you nail on your studs a top plate, this is correct. Then they call the plate they nail on top of that one a top plate, Which is which? The plate you nail to the top plate is called a **cap plate**, cap goes on top. Not knowing the correct terms of construction makes it hard on everyone involved.

When I stock 2x's on a frame table for plates I stack them where that all of the crowns are away from me. (I stack the dead straight ones in a stack off by themselves on stickers and I cover them from the sun.) I stack the ones with a double crown (junk) in one stack, the ones with a $\frac{1}{4}$ " crown in a stack, and the ones with a $\frac{1}{2}$ " crown another stack. I cut up the ones with a $\frac{3}{4}$ " or 1" crown or twist (junk) in them for short plates. I do this because when you go to nail the **cap plate** (the plate on top of the **top plate**) and you have a top plate with a $\frac{1}{2}$ " crown, you need to find another with a $\frac{1}{2}$ " crown and nail it on with the crowns reversed, then when you pull these two together your top and cap plates will come out

straight (most of the time). I always lay out the plates where that the ones with the most crown are the bottom (sole) plate. You can straighten these out to the popped line you have, but it's hard when they are 8 or 10' in the air. If I have enough straight ones I use them for the top and cap.



The first thing you do is to get the two plates on the table and get them straight and flush at one end, then drive a 8 sinker in about the center of the plates you are going to cut, leave this nail until the plates get to the assembly area. Leave the head of the nail out about $\frac{1}{8}$ " so you can pull it.

The next step is to cut the plates. I absolutely never have understood how you can plumb a wall that has a longer plate on the top or bottom than the other plate. You can't. The frame plates have got to be **exactly** the same length.

This picture below shows me cutting the top plate and my saw is set for $1 \frac{5}{8}$ " depth and the blade marks the bottom plate with a small saw mark so the two

plates will be exactly the same length.



Cutting plates using this procedure is correct and accurate.



As the picture shows, just swing the top plate away from you and cut the bottom plate exactly following the saw blade mark.

I make holders for my markers and pencils with $\frac{1}{2}$ " ID braided plastic hose.



Look closely at how I am holding the pencil and marker and how I have it clamped to the tape at 6', centered. I only mark centers for stud layout. I know very well that everyone of you reading this article that can see that a stud is centered or not centered on a $\frac{1}{4}$ " red center line. This is twice as fast and is more accurate than two pencil lines and an X in the center of them. I see some carpenters marking with two lines and an X in the middle. Some mark a line then an X on the left or right. I have seen veteran carpenters, laying out and marking plates for, say a 36' wall, mark a line and an X and then halfway down they get to thinking about something else and start marking on other side of the line. I have seen this happen many times. Center marks are the most accurate and they are simple and everybody knows where the stud goes.

Absolutely the worst thing I see is when someone slides a framing square down a plate marking stud layouts and doesn't use a tape. The first marks I make on a plate are 2' or 16" center marks, and then I know the rock is going to hit a stud.

The carpenters that work for me know that when I walk through a house frame that we are framing I want to see a stud at every red center mark. I know that stud is setting on concrete or directly above an I-beam with a 2x6 nailed to the side of the I-beam to carry the load and that

a truss or ceiling joist and rafter will rest directly above the stud.

I don't frame out of a **frame circle**. I have 3 pages on this in the Carpenter Book.

If you do you will have collapsed flooring or cracked ceiling corners because they put a truss in between two studs that are on 24" centers. The studs in our interior walls perpendicular to the floor joist all set on top of the I-beams.

This is almost unheard of in today's framing frenzy.

Nearly all of the architects that I know give you the centers of doors and windows and openings.



So I take a 1x2 or better is a 1/4"x1 1/2", like the one above, and make layout sticks for the doors and windows if I have a bunch of the same size, like the one above, a 2-0 door. It has a center mark on it and the trimmer and stud marks on it.

This is a real time saver and saves a ton of mistakes, especially when you are trying to subtract 7'5" from 23'3/4" then calculate the center of a 41"

header, while a carpenter is asking you a question.

By the way, to calculate the header length of a door header, you take the call out of the door and add a handful of inches to the width. 2'0" door (24") $24+5=29$ " header.

To calculate the height from the finish floor to the bottom of the header you take your door call out and 2". 6'8" doors are almost a thing of past, about 98% of the interior doors today 6'9", this is from the door frame leg bottom to the bottom of the door frame header. The call out of a door is measured from the frame, not the panel. You add 2" to this and that is the height of your wall frame opening. For a 6'9" door the opening should be 83" (8 1 1/2") trimmer.

Window callouts are a thing of the past; you had better get a schematic and window schedule from the supplier, signed by the salesman. You wouldn't believe me if I told you how many windows I have reframed.



Look carefully at this picture; (expand your page to 150% if needed on the above tool bar).

I marked a center mark on the plates with a round semicircle C and a center line. Then I marked the studs and trimmers. Then I saw I had a stud in the layout of this door so I put a cripple C (<) on it. This denotes that a cripple stud goes above it. **A cripple stud is any stud that has even a 1/8" cut off of it.** Then you can put in the header area 29H so as the rackers (laborers that load a wall) won't have to measure it for the header size. Always mark your headers with their length.

If you have a wall that is going into a tee you need to put a **back stud** on the end that connects to the tee so that the top and bottom plates are against the existing wall plates, **tight up against them.**



This **back stud** goes **back** from the end of the plate about 1/4" so that when you nail the end of the wall to the tee or corner it will pull the plates up tight to the other plates. I cover this in detail in the Carpenter Book.

This also applies when you have two wall sections in a long wall, **back stud**, always. You have got to keep the top and bottom

plates tight against each other so you can plumb the walls.

Next picture is a tee lay out. Notice I hit a stud mark, so I marked a kill mark on the stud mark. Also notice that the block I nailed into the tee is down about 4" and that is recessed down about 1/8", so that the back stud will pull the plates tight up to the other plates.



You'll realize how important this is when you have some interior wall that are out of plumb and you see that the top plate is not touching the other top plate because the carpenters knocked the end stud out of the filler wall when they nailed it to the tee and the plates don't touch each other.

You need to know this forgotten framing callout, how to call out a tee. There is a 4x4 (all 2x4's), 6x4 (4" studs and 2x6 blocks), 6x6 (all 2x6's), and a 4x6 (2x6 studs and 2x4 blocks). This becomes important when you are making a list of tees for another carpenter to build. Ask the next framer you run into how he calls out a Tee. You will get some interesting answers.



This picture above is a California corner. 2 studs nailed together. Good corner, because you can insulate the corner of a wall. Some carpenters use blocked corners and it leaves you only 1" to nail rock to. This corner gives you a full 1½" to nail to.



This DN denotes that the corner goes down, just like the picture shows. Flush with the end of the plate and always use straight studs for your corners, always.



This shows the UP mark and the corner is up. A wall with a **back stud** is going to be nailed to it.

When you take your plates to the area to be framed the first thing you do is to nail your king/trimmers (a 8 1½" trimmer nailed to a 92 5/8" (104 5/8", 116 5/8" or a 140 5/8" stud) together and then nail the king/trimmers that are nailed together to the headers for windows and doors and then the end or corner studs, nail these to the plates first and the last thing you do is install the studs.

Almost every door salesman and framer I talk to says that they are installing 6-8 doors. It is almost impossible to find a 6'-8" door today. Some exterior doors are, but few. They are all usually 6-9 doors. This 6'9" measurement is the measurement of the jamb from the bottom to the header. The panel is 6'8" but the jamb is 6'9" plus the ¾" header is a total of about 82". This should tell you something, minimum clearance on any header today; from the floor to the bottom of the header should be 83", 8 1½" trimmers. Second time for this in this article because it is so misused today and even most of the door salesmen do not know it.

Cutting out the bottom of a header is a hard job.

I have given you my way of framing; there are hundreds of different ways to frame a wall. I have 75 pages on framing in the Carpenter Book. I didn't cover

all of it. I never could. No one can. You get it by framing walls and roofs. The one and only way to become a framer is to frame walls, a lot of them. Make mistakes, learn to correct them. Build bad walls and tear them down and build them correctly. There is no one who has made more mistakes than I have, I'm sure I hold some record. Take this information I have given you and use it or figure out another way to do it better and easier, more power to you. That's what I have done and you can do the same.

There is nothing you can't do if you set your mind to it.

<http://carpenterbooks.com>

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