

# PLATFORM CONSTRUCTION

## Materials needed

1 - 4'x8' sheet of plywood

5 - 8' 2x4s

12 - 3.5" hex bolts

12 - Nuts

24 - Washers

3" wood screws

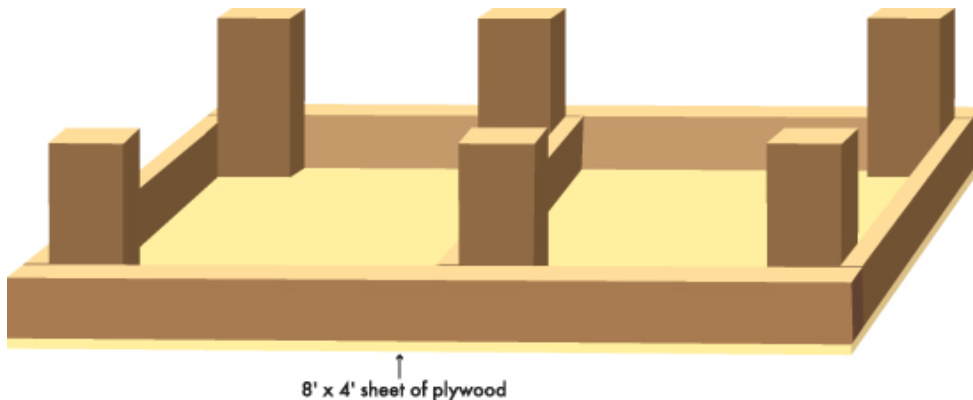
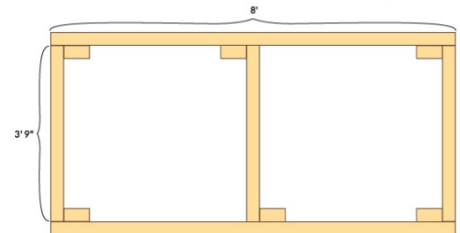
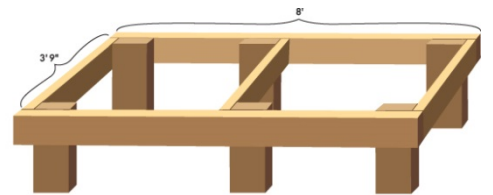
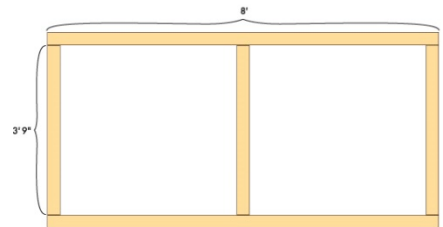
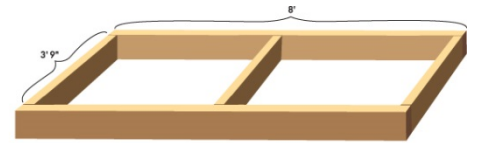
Begin by cutting your 2x4s to the necessary lengths. Now, using the 8' boards and two 3'9" boards, form the outline of your frame and secure it together with wood screws. Attach the third 3'9" board to support the center of the frame.

Next, clamp the six 2' boards into place in each interior corner of the frame. These are the legs for your platform. Be sure to attach them so that the 4" sides of the legs meet the 4" side of the 8' frame board. This will give you a large area to drill your holes for the bolts.

Next, you'll do just that. Drill two holes through each leg and through the frame. Be sure to drill the holes at a diagonal. This will reduce or eliminate any chance of wobbly legs once they are secured to the platform. The holes you drill will need to be just big enough for your bolts to fit through and no larger, so make sure you are using a drill bit that matches the size of your bolts.

Fun fact: A 2x4 is not truly 2 inches by 4 inches.

Actual dimensions are roughly 1.5" by 3.5". So, as the 2x4s that are used for the legs and those that make up the framing will be attached face to face, the bolts will actually be threaded through only 3 inches of lumber. Thus, 3.5" hex bolts are the perfect size.

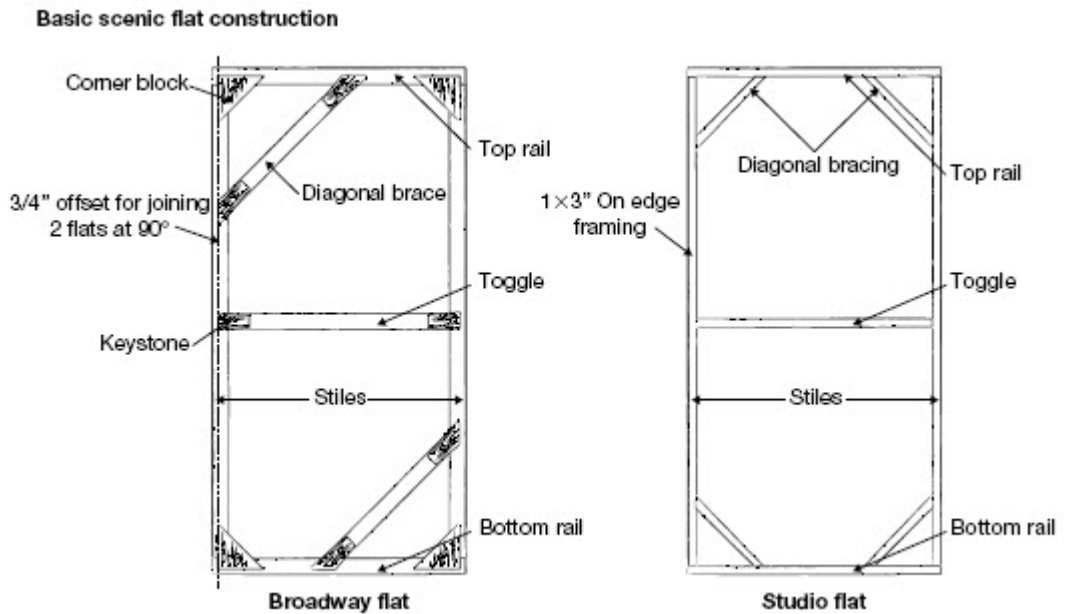


# FLAT CONSTRUCTION

## Theatre/Broadway

**Flats-** To build a 4'x8' standard flat, the two rails will measure 4', the two stiles will measure 7' 6-1/2" (8' minus the 2-3/4" widths of the two stiles), and the toggle will measure 3' 6-1/2". Lay the pieces out on a large even surface, as shown, with the nicest surfaces facing down (that will be the front, you will secure the pieces on the back side). Using a carpenter's square, make sure all the corners are square. If you

need to force anything into place, or fudge for a bad cut, that can be done as you glue and staple.



Apply wood glue to 4 corner blocks and two keystones, and lay them on the joints, making sure that the grain runs across the joint. Inset these pieces 3/4" from the outer edges of the flat, using a scrap of 1" lumber as a measuring tool (This is to allow another flat to be butted against it at a right angle, if necessary, without the quarter ply getting in the way). Use pneumatic staples or 3/4" screws in the pattern shown, to fasten them--Two screws on each side of a joint, making triangles (the shape with the most strength) where possible. Don't use more fasteners than shown, too many holes will weaken the wood.

**Studio Flats-** These are laid out in the same way, with the rails above and below the stiles, and the toggle(s) between the stiles. But, the lumber is laid on its side to give thickness. As such, the math is different. The stiles on an 8' tall flat are 7' 10-1/2", because the two rails are 3/4" thick, not 2-3/4". I only mention this because, it is easy to get confused on your cuts if you are using both kinds of flats in a show. If you cut dimensions for the wrong kind of flat, it will be too short or too tall.

To secure, glue and screw *through the sides* into the lumber. It is not necessary to have corner blocks etc., because TV flats are always skinned with wood, not muslin. The face serves as one giant corner block.