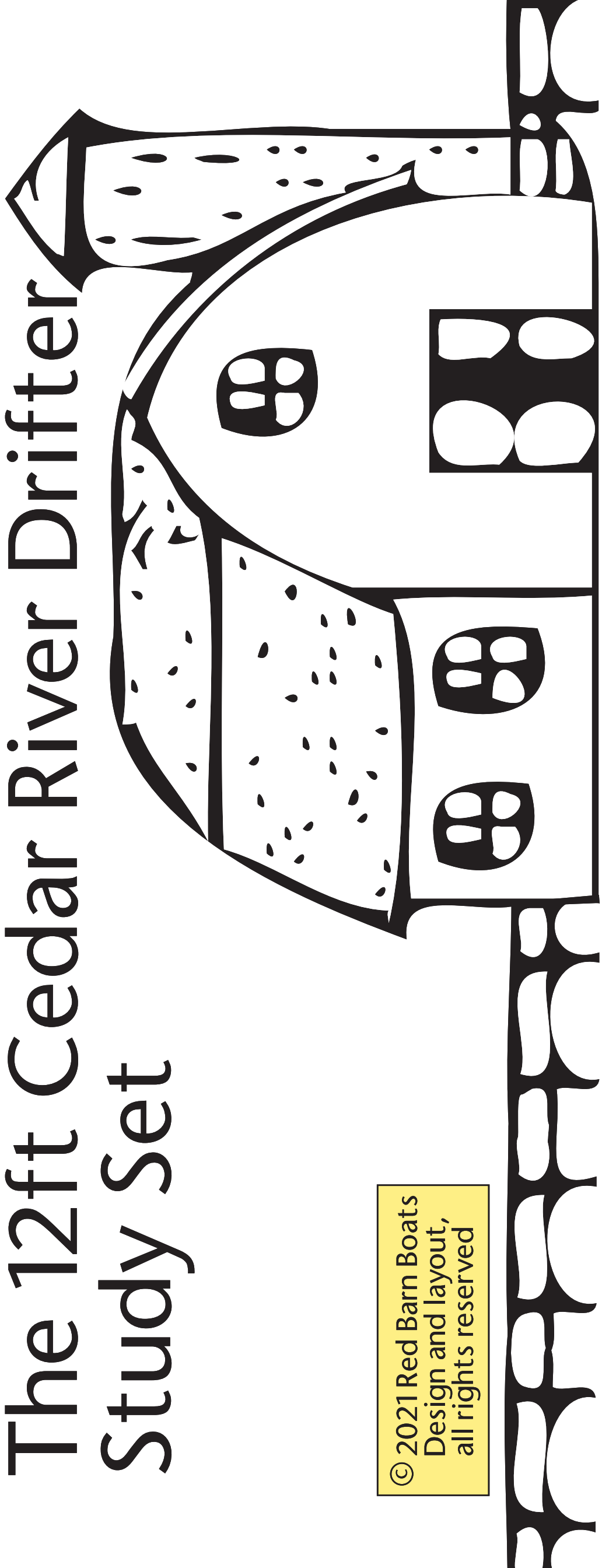


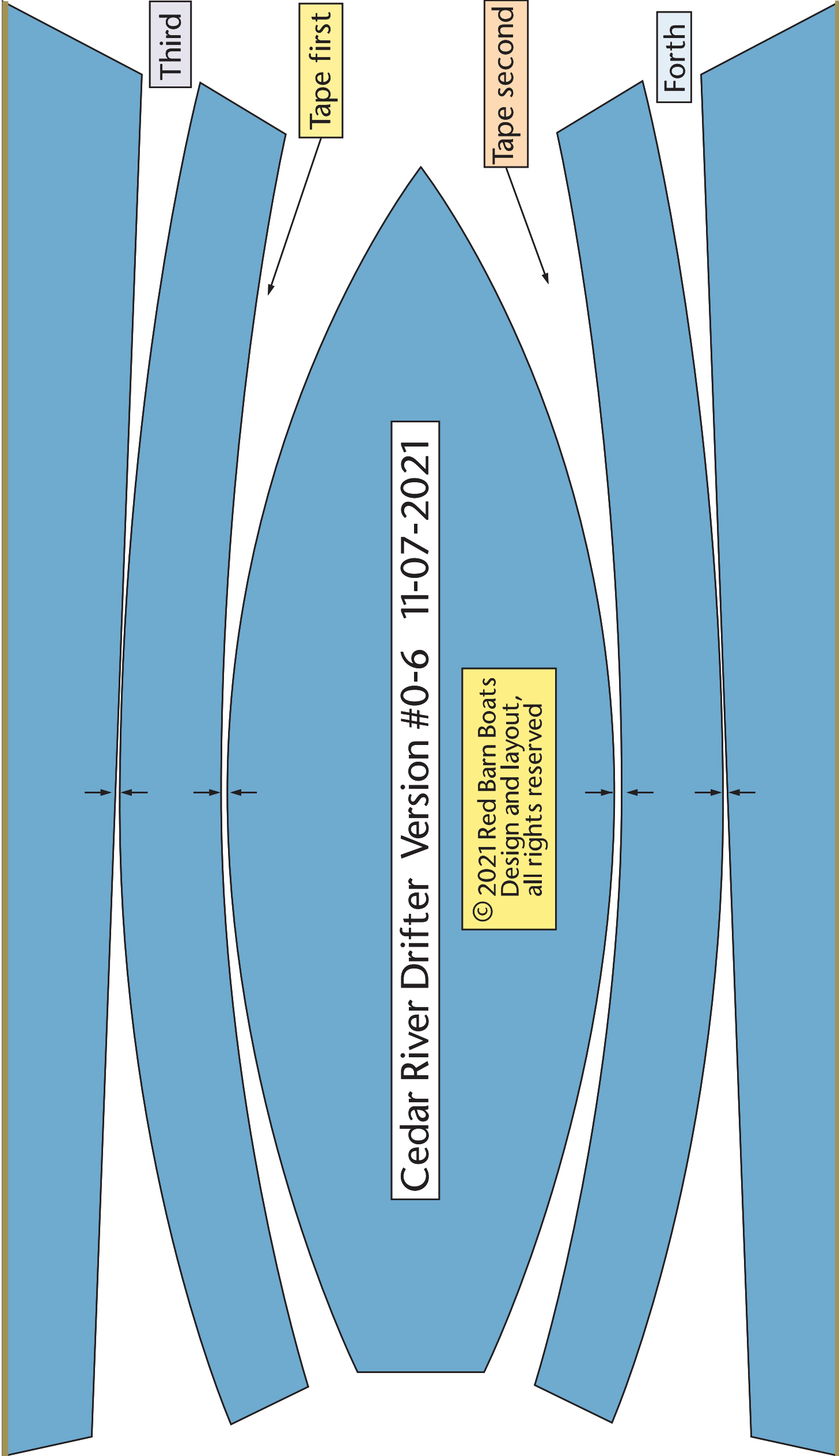
RED BARN BOATS

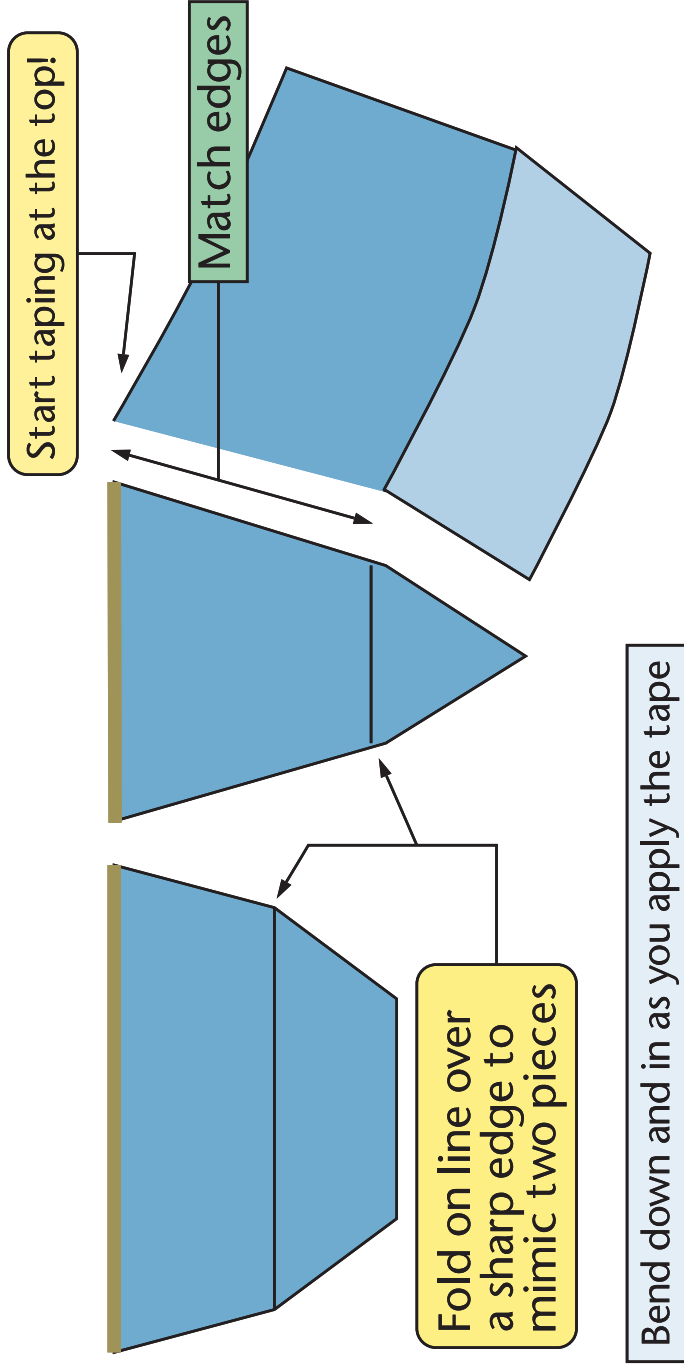
The 12ft Cedar River Drifter Study Set

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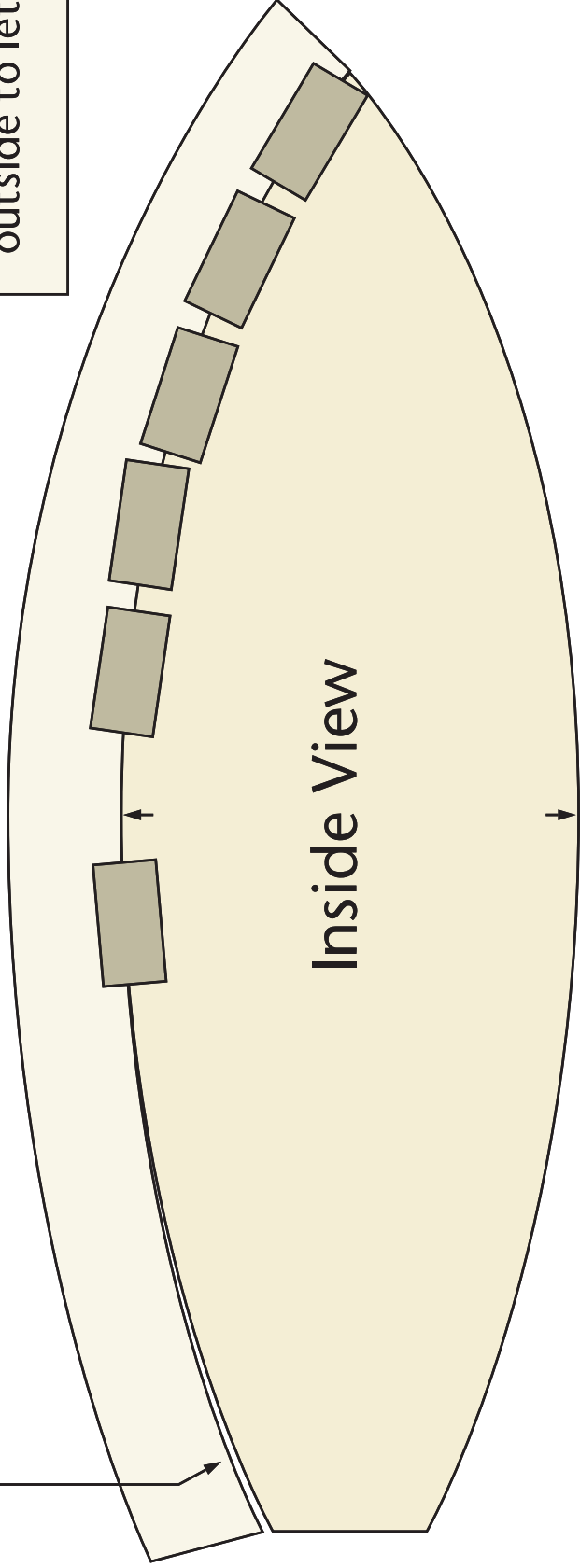


www.youtube.com/redbarnboats





Bend down and in as you apply the tape



To assemble the model.

Glue print outs to light cardboard

Cutout the hull panels- stay outside the lines!

Use masking tape on the inside to join the panels.

Line up the "arrows" of each panel with the

matching arrow of the other panel.

Start by taping the bottom and lower side panel

together at the arrows, and go in either direction as

you pull the edges together to where they are

touching. Then apply the masking tape.

Tape to the ends of the matching panels, and

then do the same with the other panels.

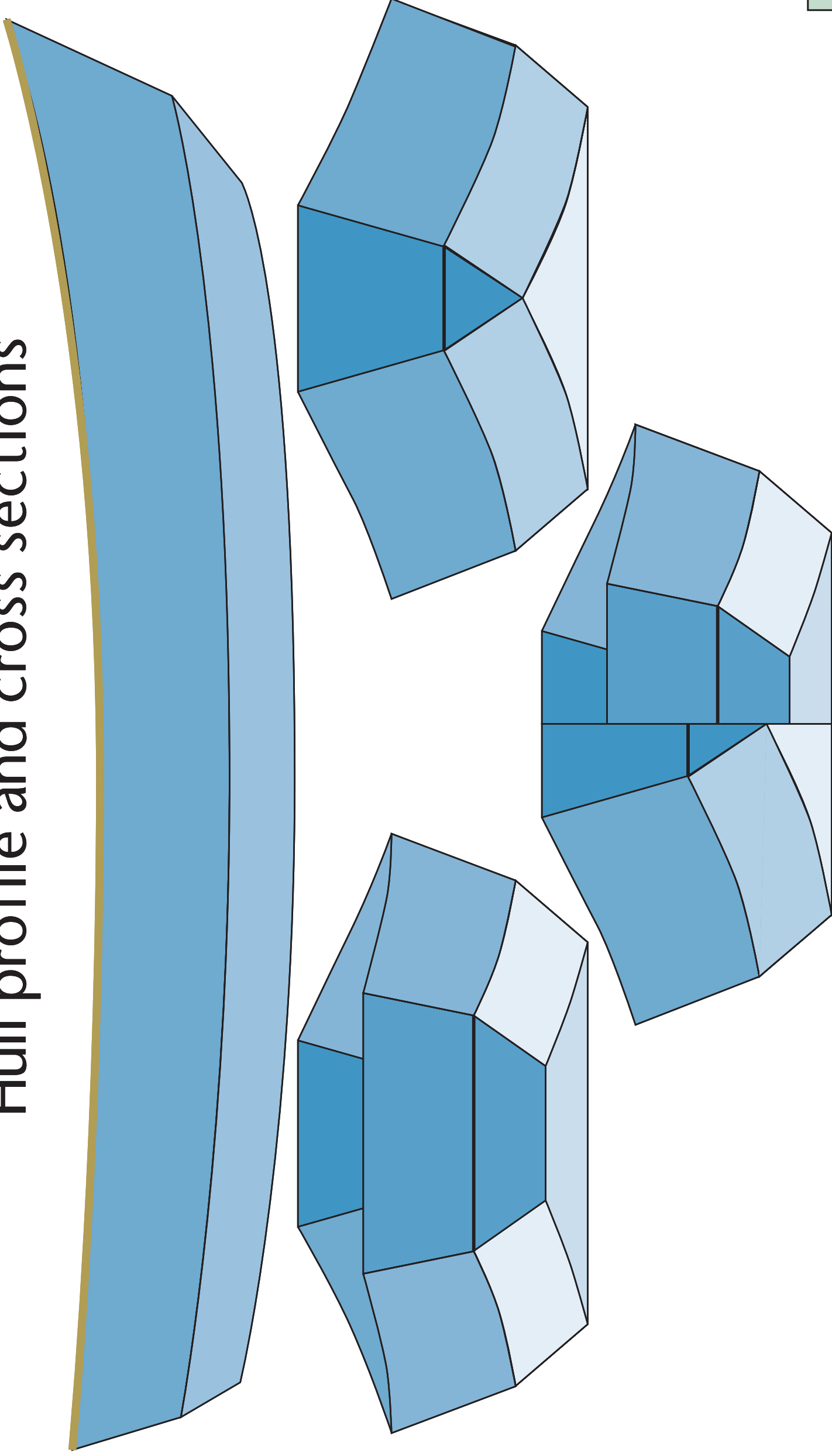
Add the bow and transome panels last, and

tape them to the side panels starting at the top

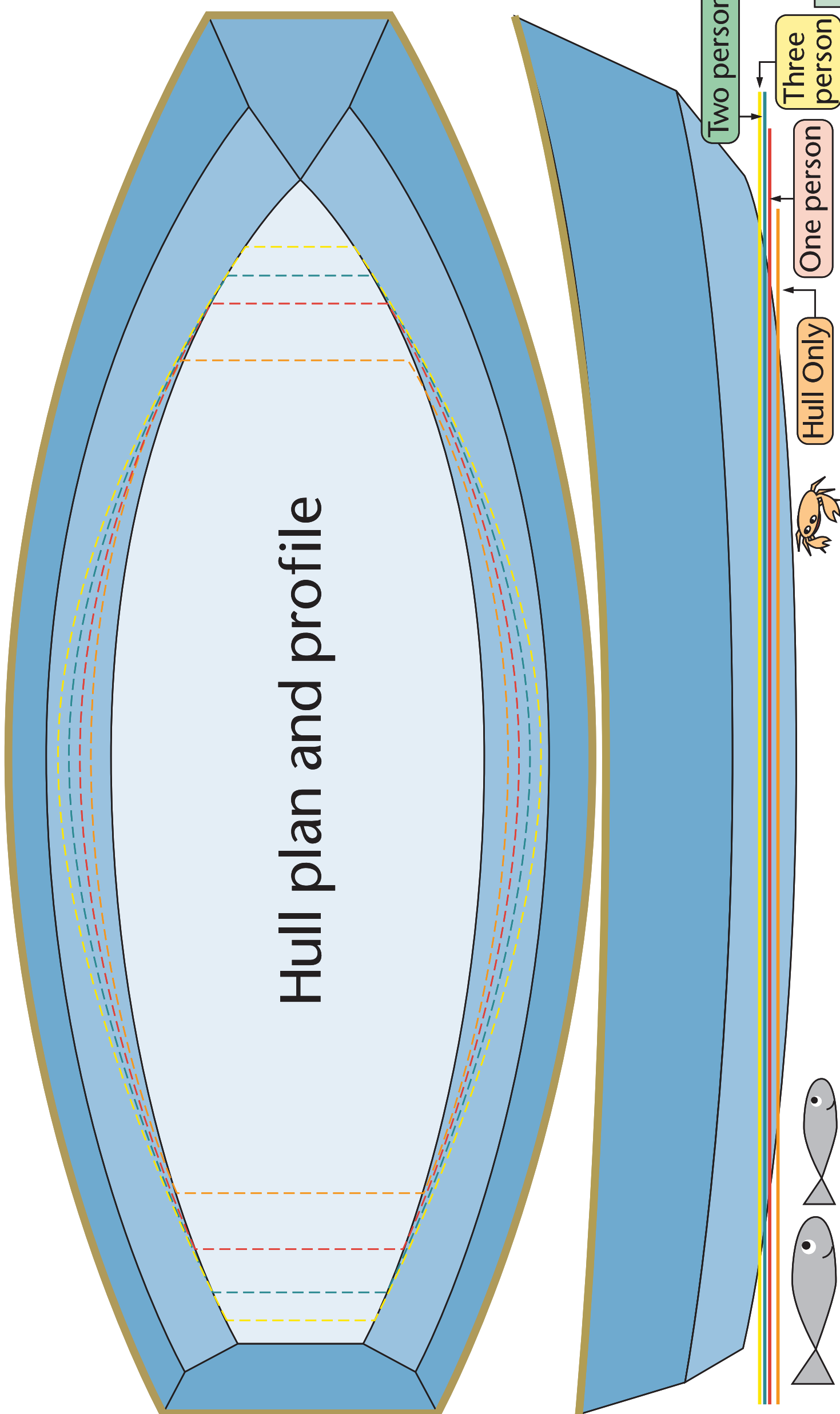
and working down. Use "clear tape" on the

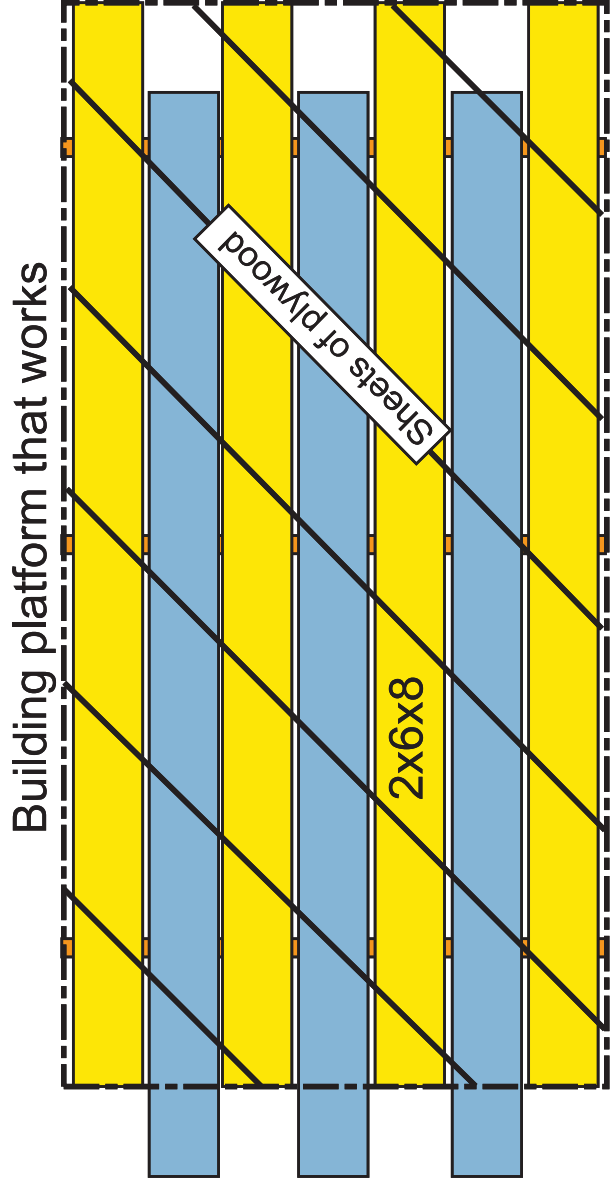
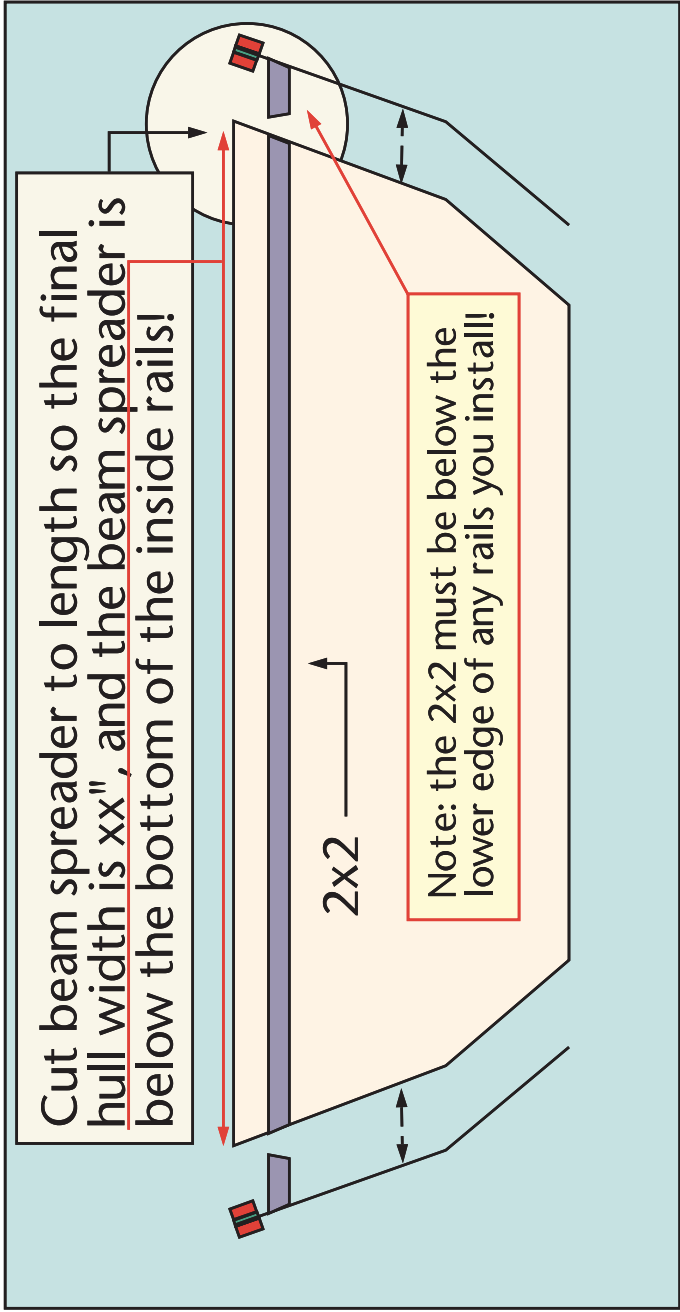
outside to let the hull color show through.

Hull profile and cross sections

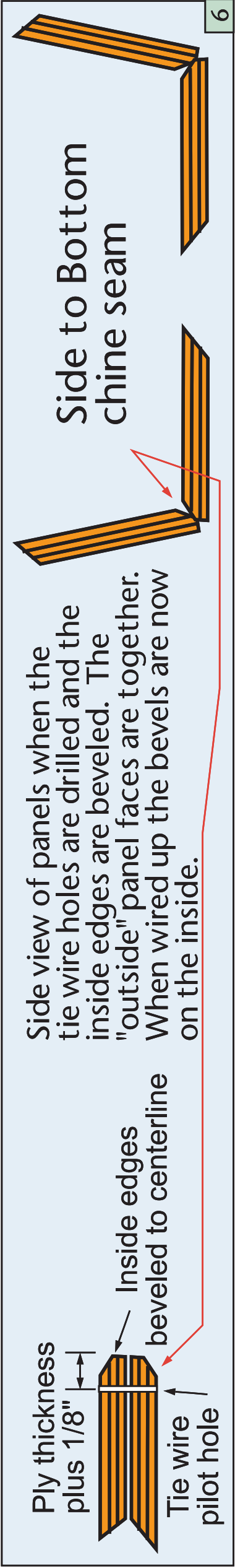
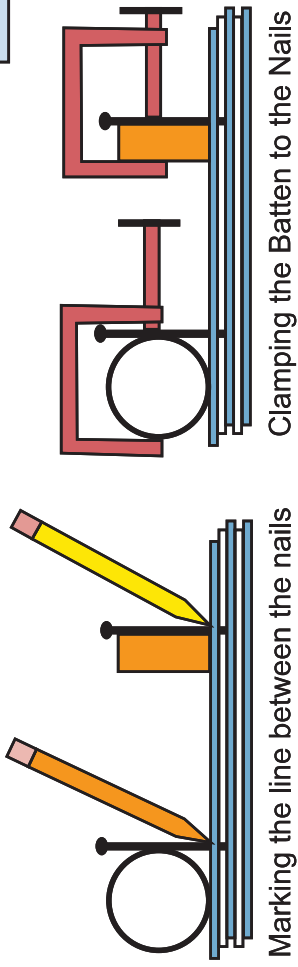
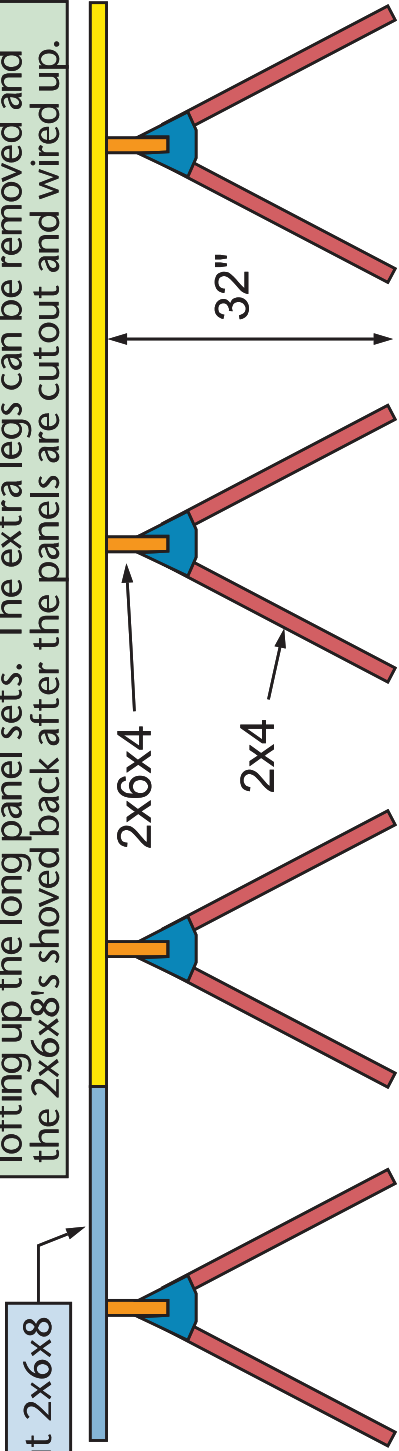


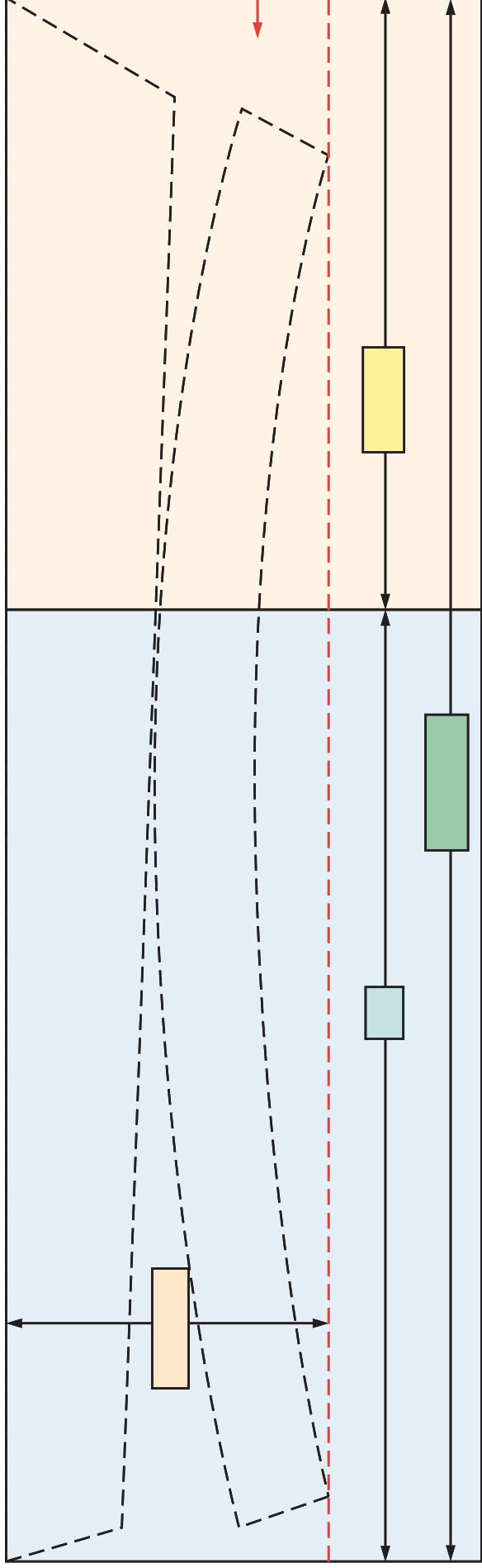
Hull plan and profile





Extra legs and 2x6x8 supports can be used while scarfing and lofting up the long panel sets. The extra legs can be removed and the 2x6x8's shoved back after the panels are cutout and wired up.

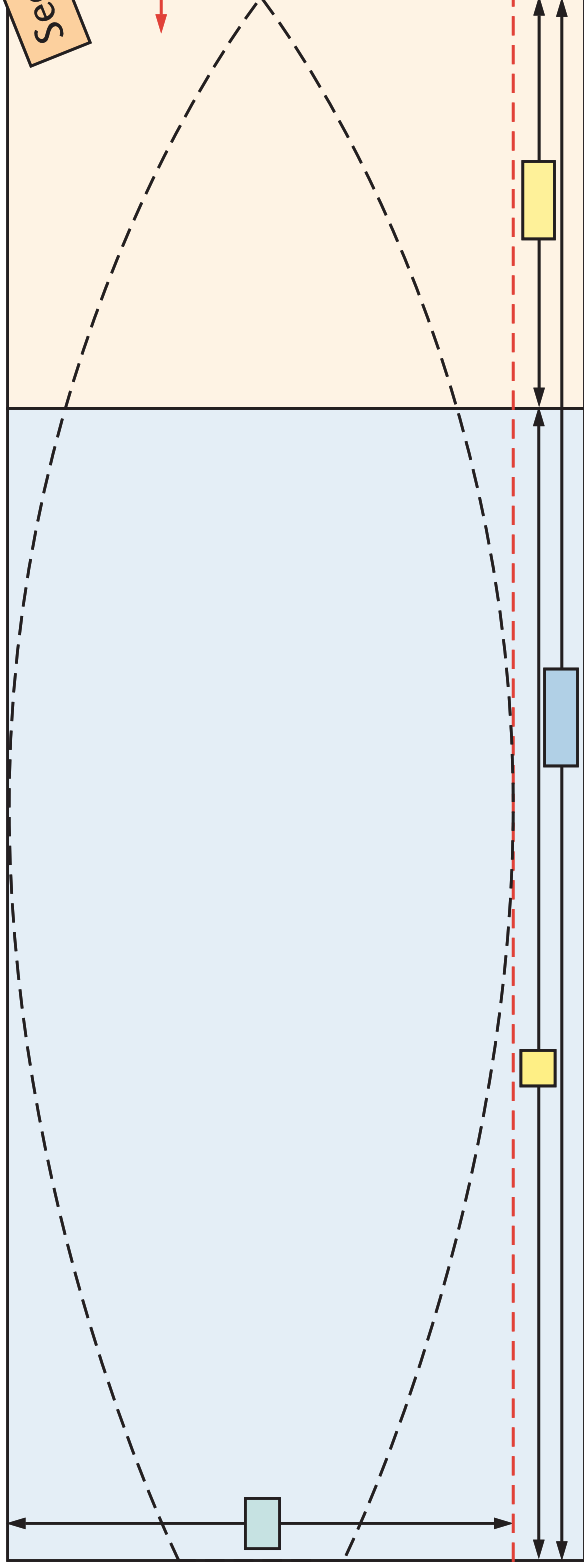


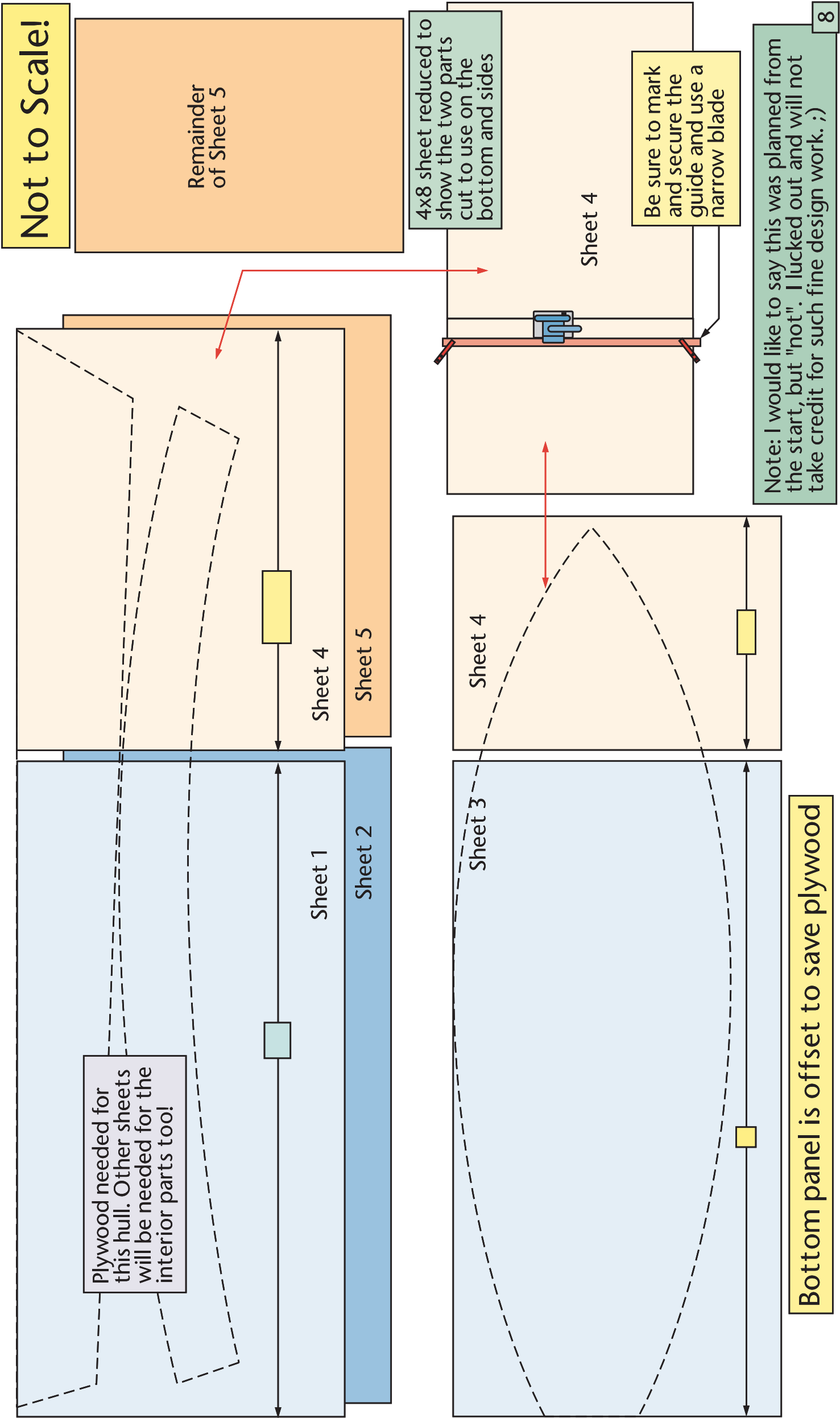


Outline of the hull panels for this hull to show the "cut size" of the plywood for these parts of the hull.

Note: The short panel for the sides plus the short panel for the bottom equals XX". So the bow part can come from the leftover of one of the two side panel sheets!

See next page

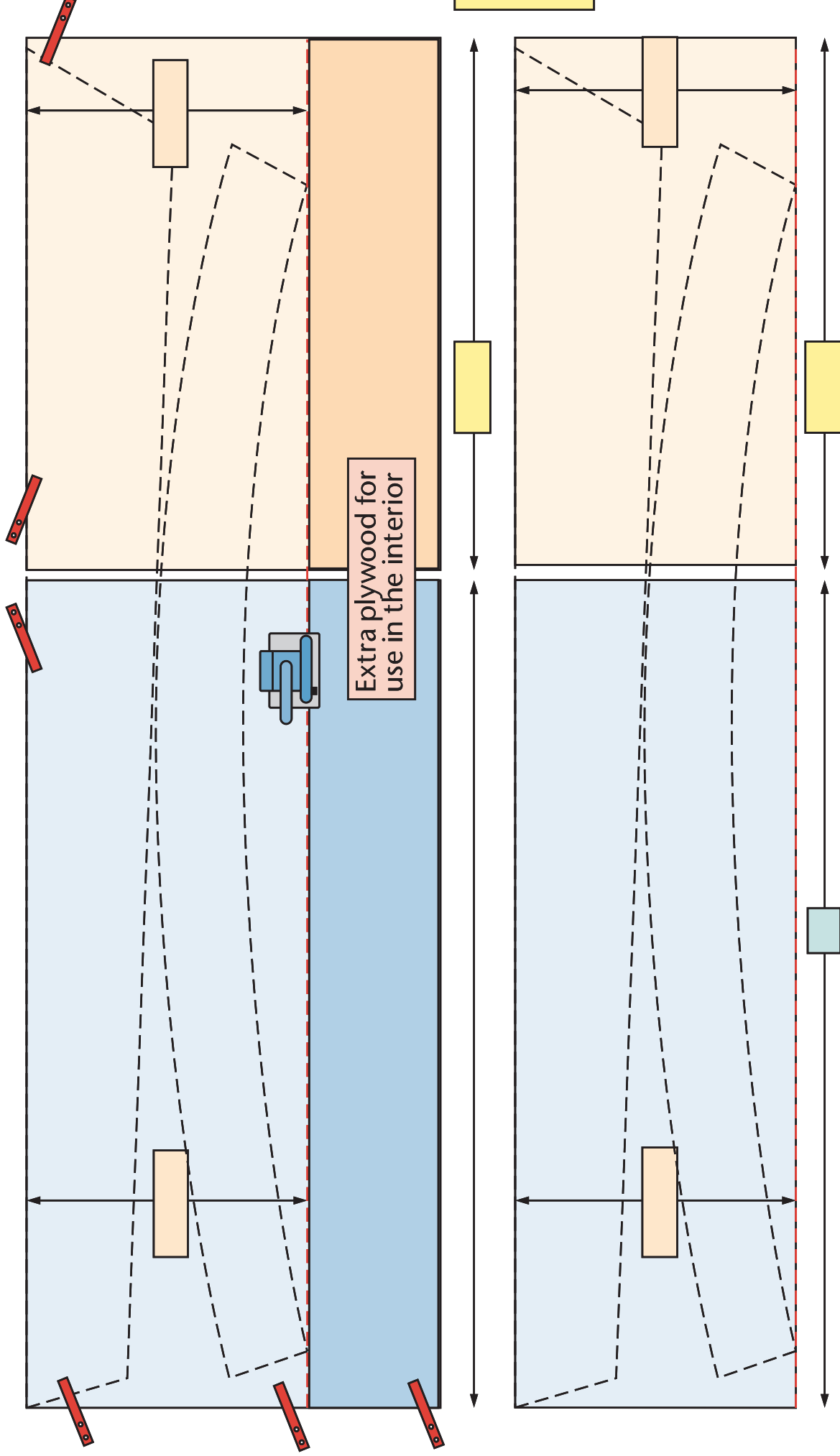




Not to Scale!

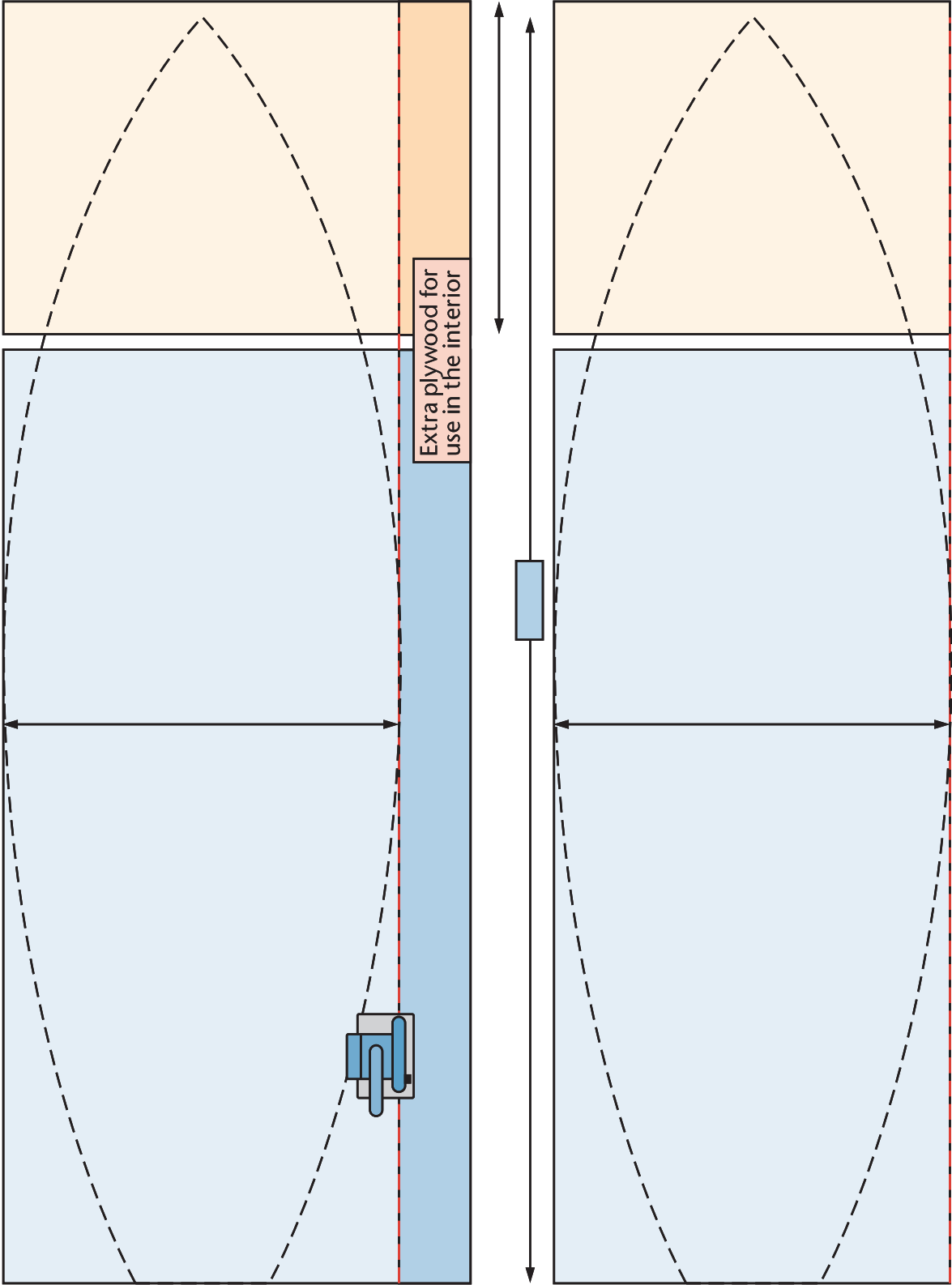
Note: Best to cut both sheets at the same time to be sure you have matched sets!

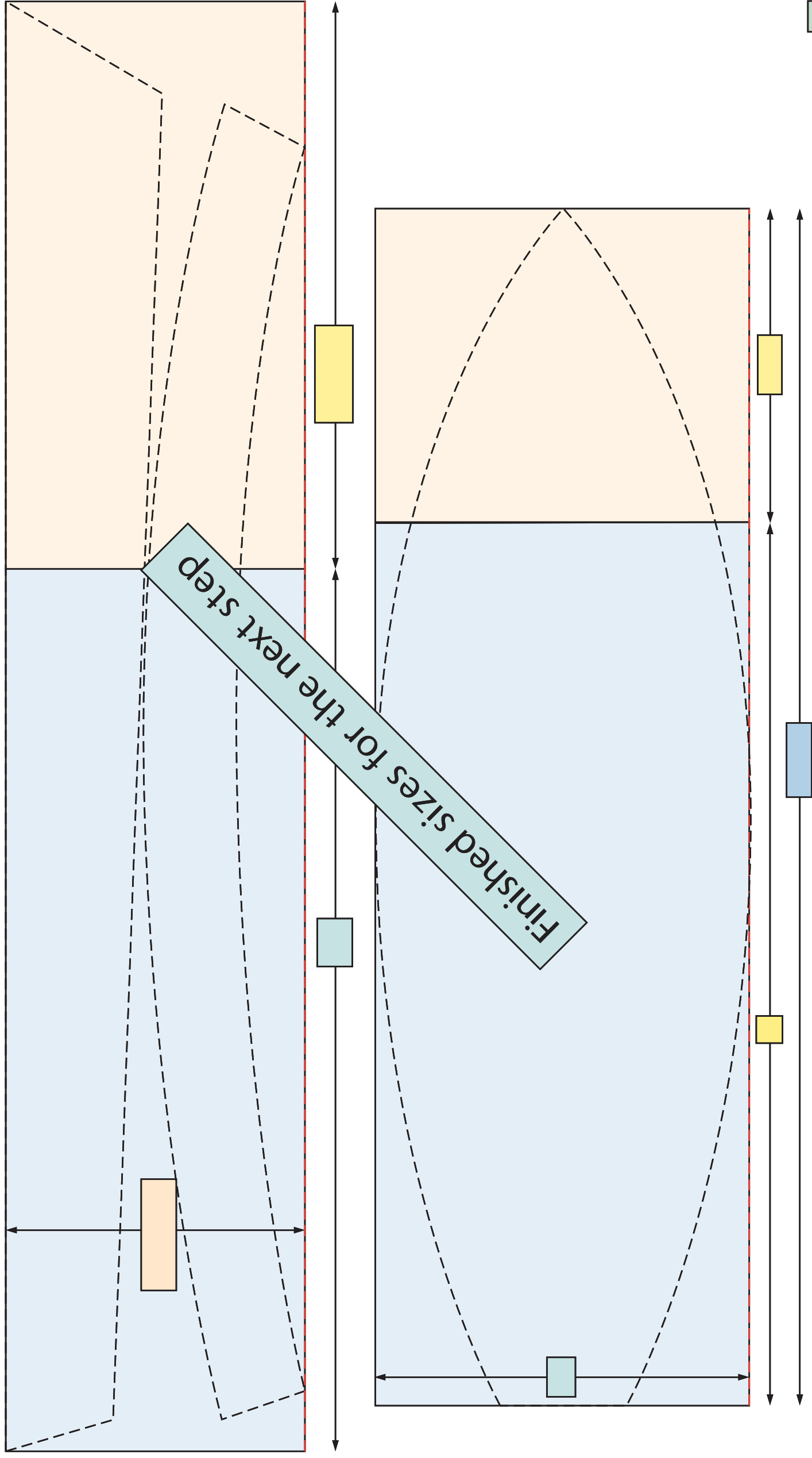
Cut down the sheets as shown on this page to make them ready for the next step.



Not to Scale!

Cut down the sheets as shown on this page to make them ready for the next step.





Making the Payson Joint

Use the "factory" straight edges for the top edges!

Wet out each layer of glass cloth with epoxy. Let set for a couple hours to "turn green" and then use the utility knife to trim the tape off the edges!

Inside face of panels

Install a dual layer of glass cloth on the inside seams. First a layer of 8" wide cloth and then a layer of 14" wide cloth.

Note: Remember to cover work platform with plastic to keep the panels from bonding to it!

14" wide

Inside of panel faces!

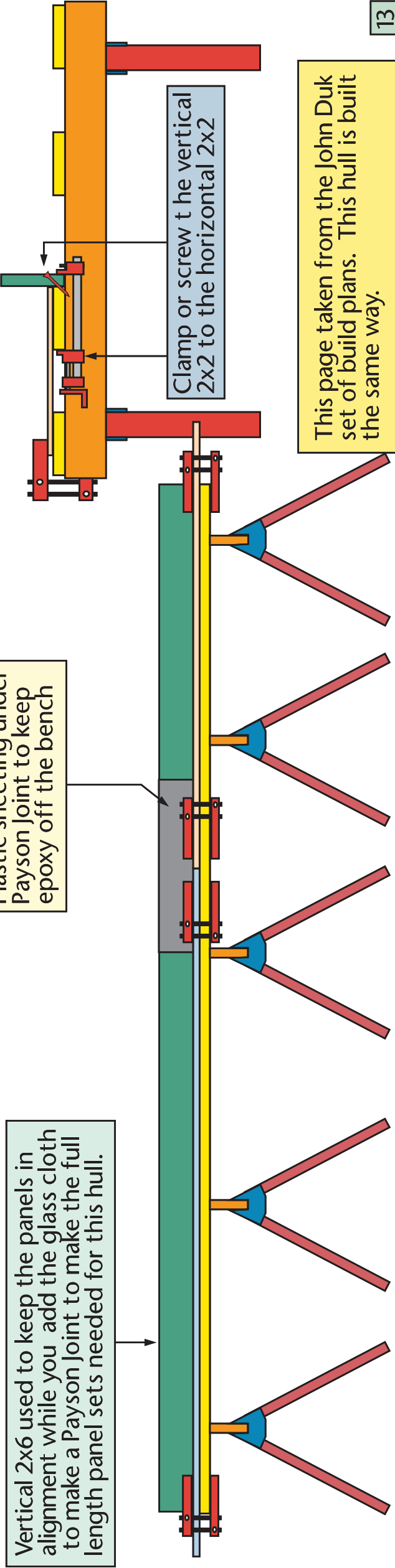
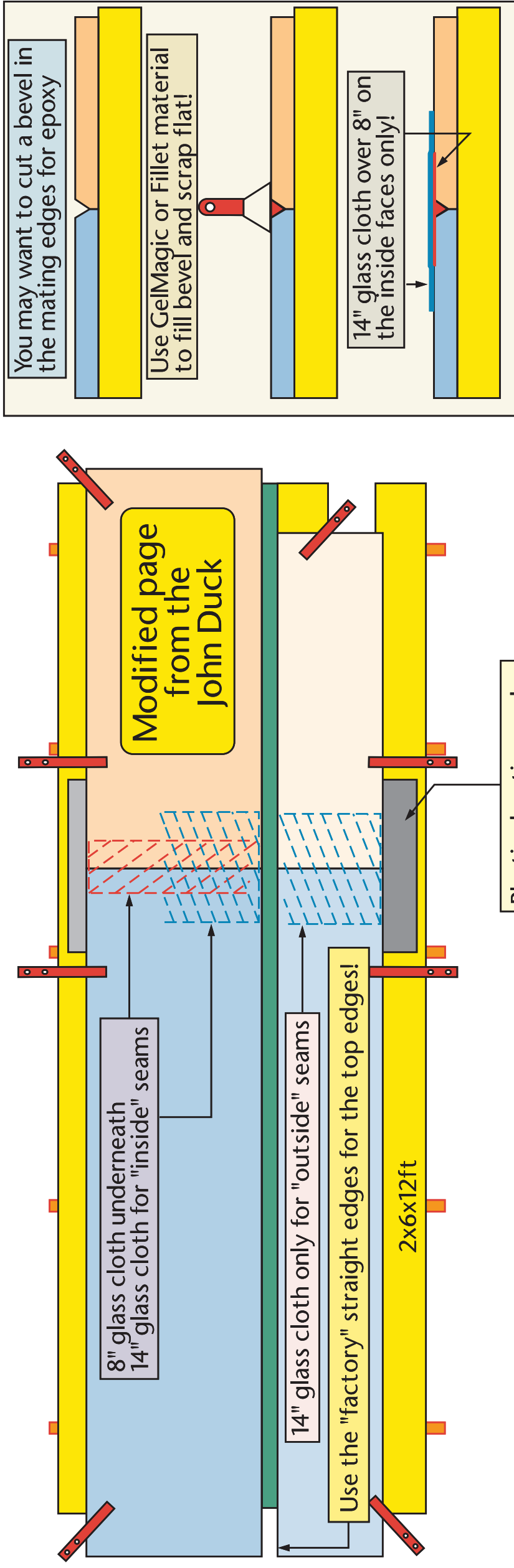
Note: The bottom panel is joined in the same way as the side panels, with the same glass cloth widths of 8" and 14" on the inside and 14" on the outside of the panels.

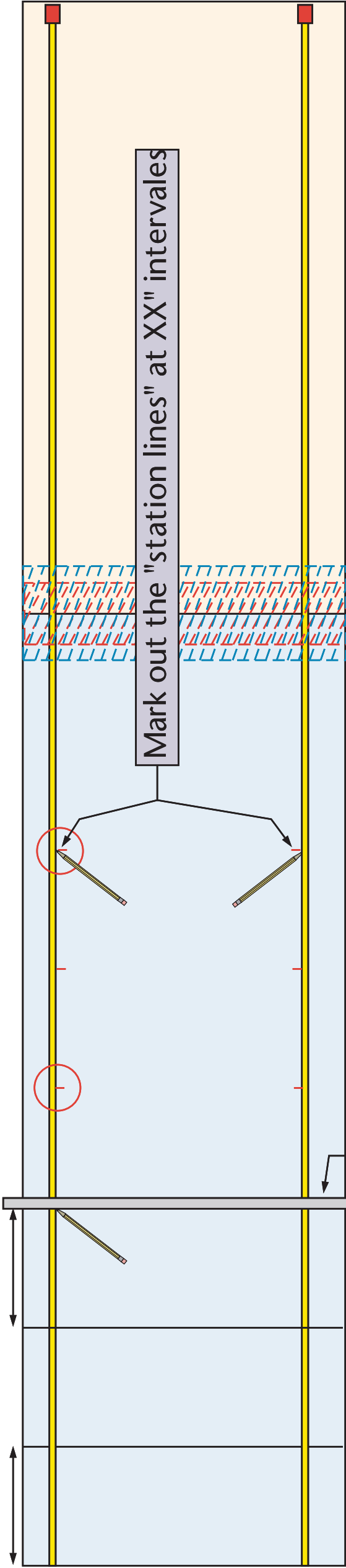
The outside face will have a layer of glass cloth too.

14" wide

Outside face of panels

Single layer





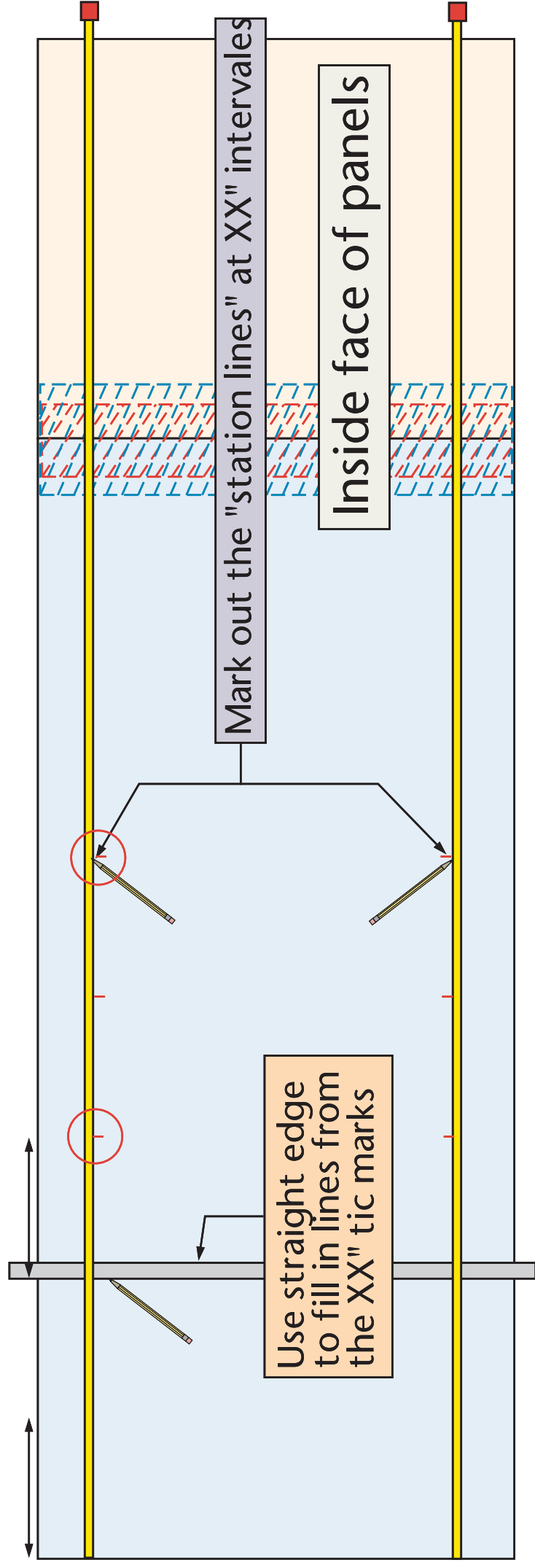
Mark out the "station lines" at XX" intervals

Use straight edge to fill in lines from the 12" tic marks

Only the top panel set needs to be marked

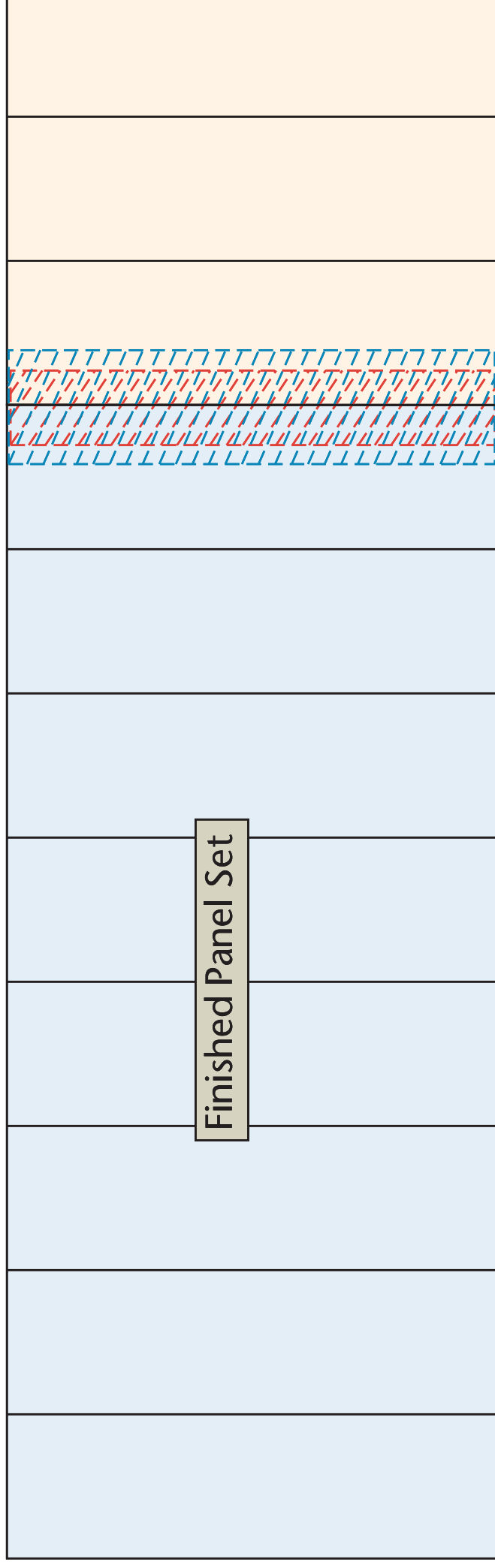
Inside face of panels

Finished Panel Set

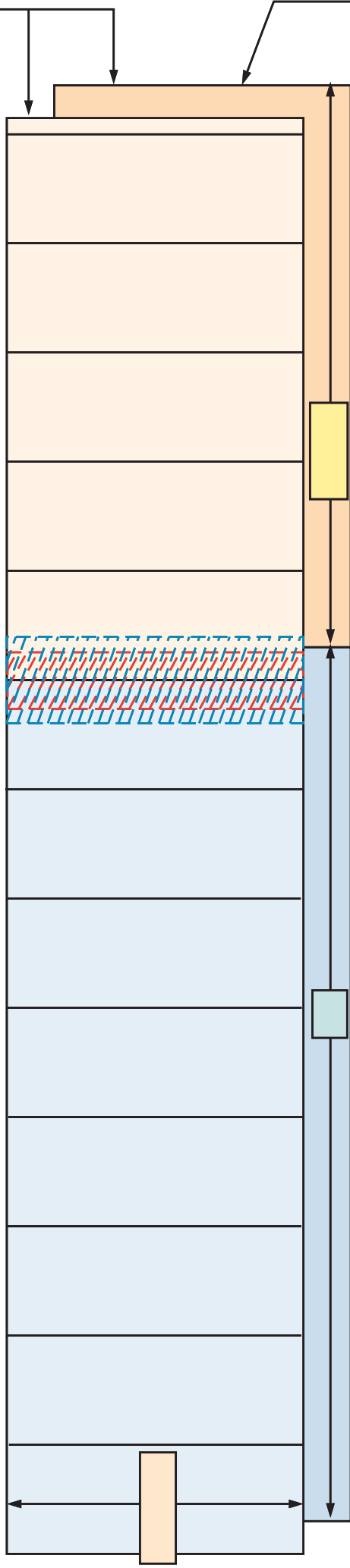


Mark out the "station lines" at XX" intervals

Inside face of panels



Double setup for
the bottom panel



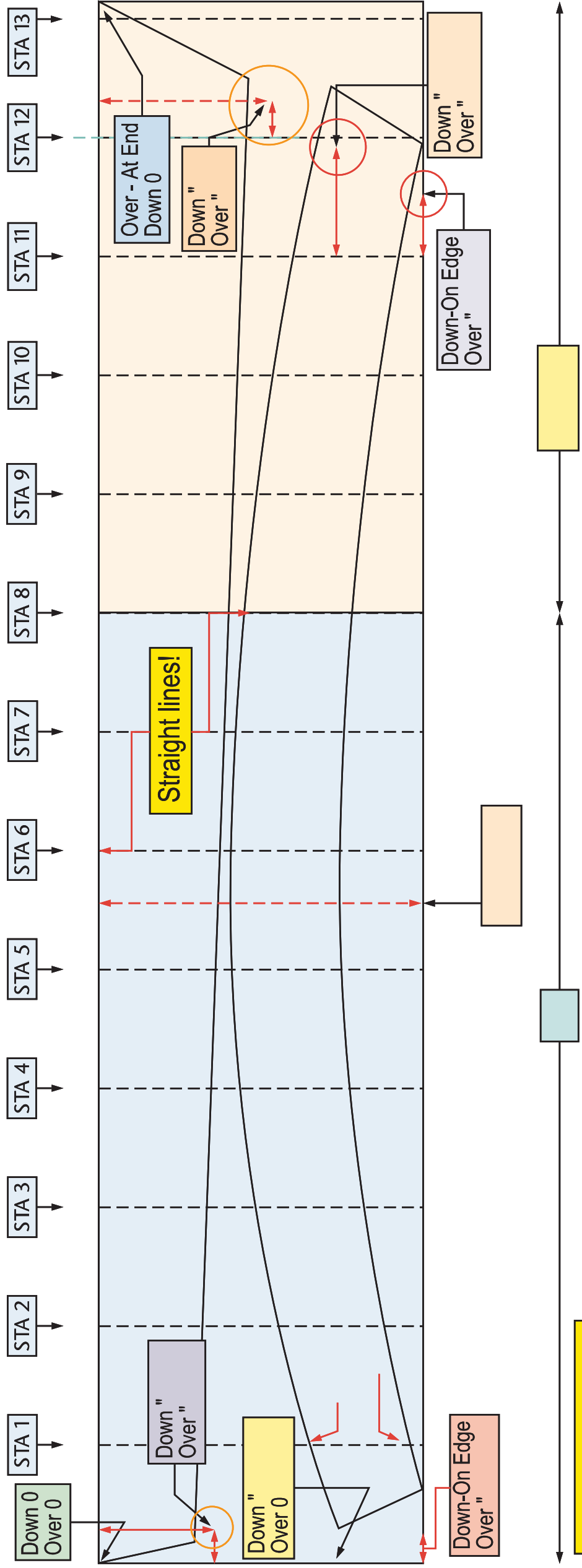
Finished Panel Sets
ready to loft the offsets

Bottom set
not marked!

Not to Scale!

Single setup for
the bottom panel

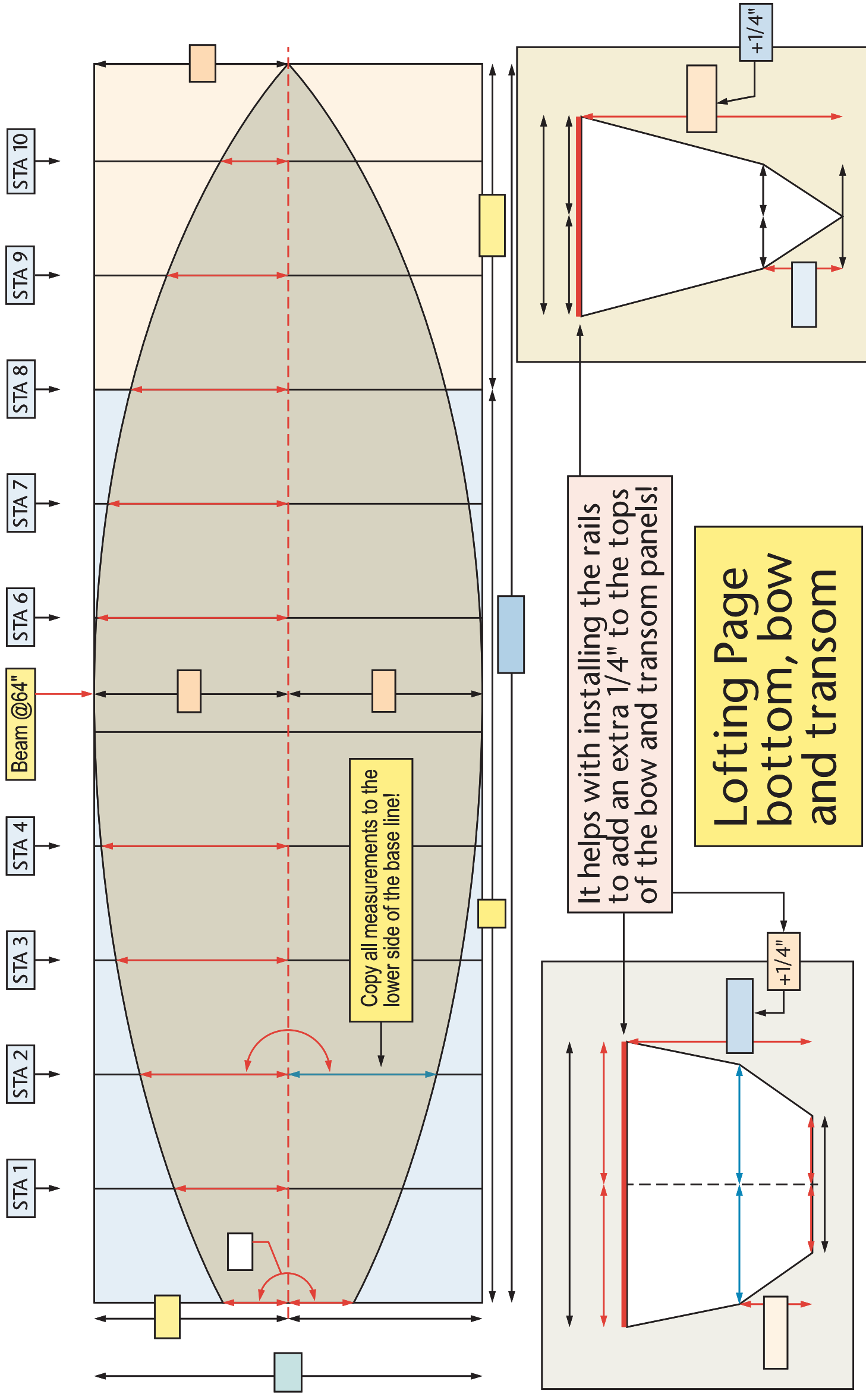


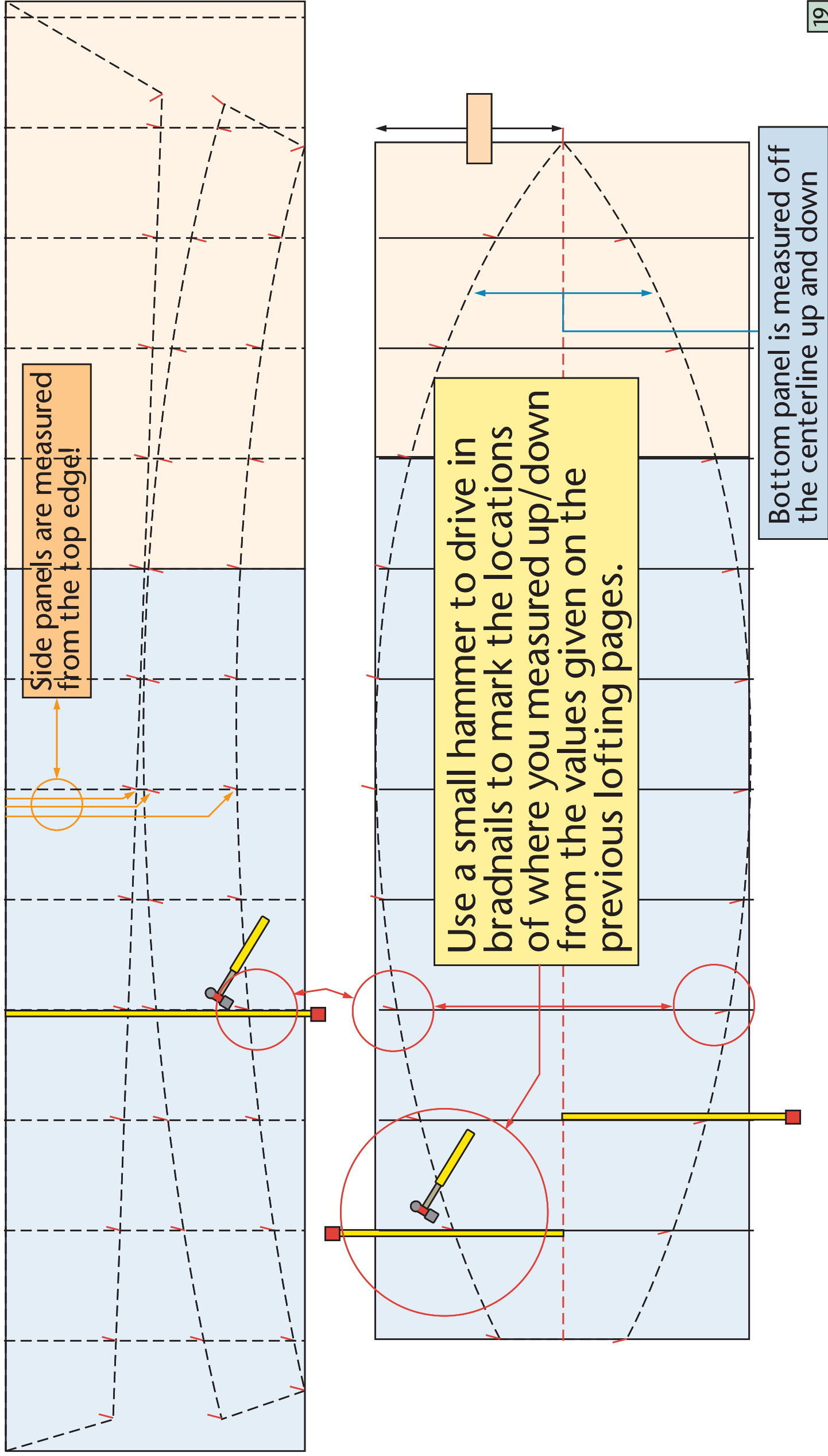


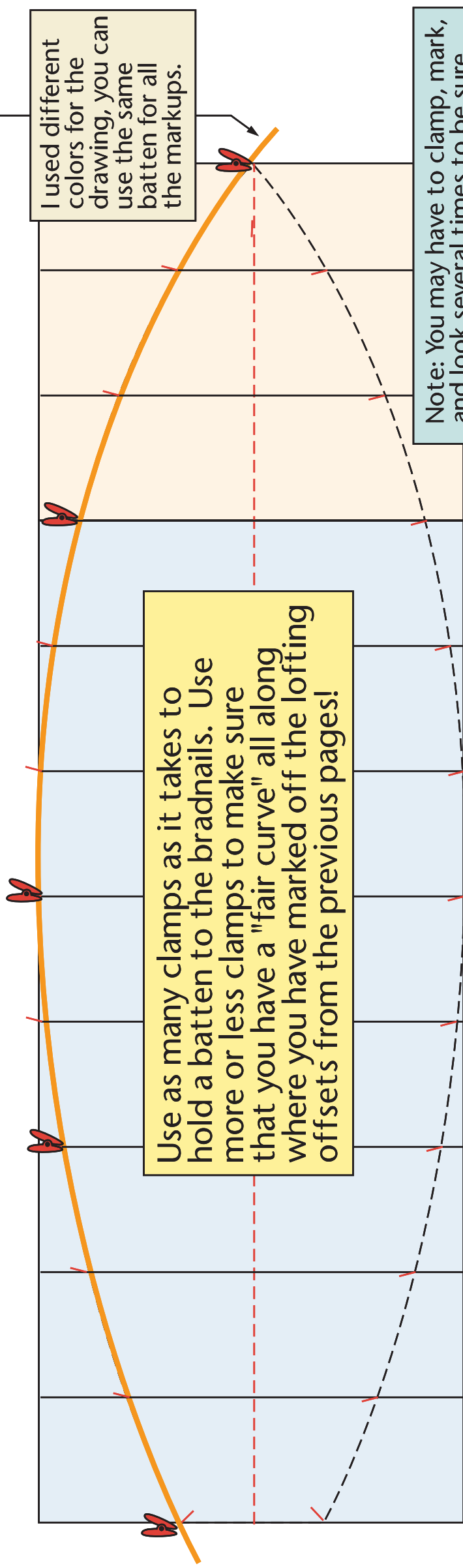
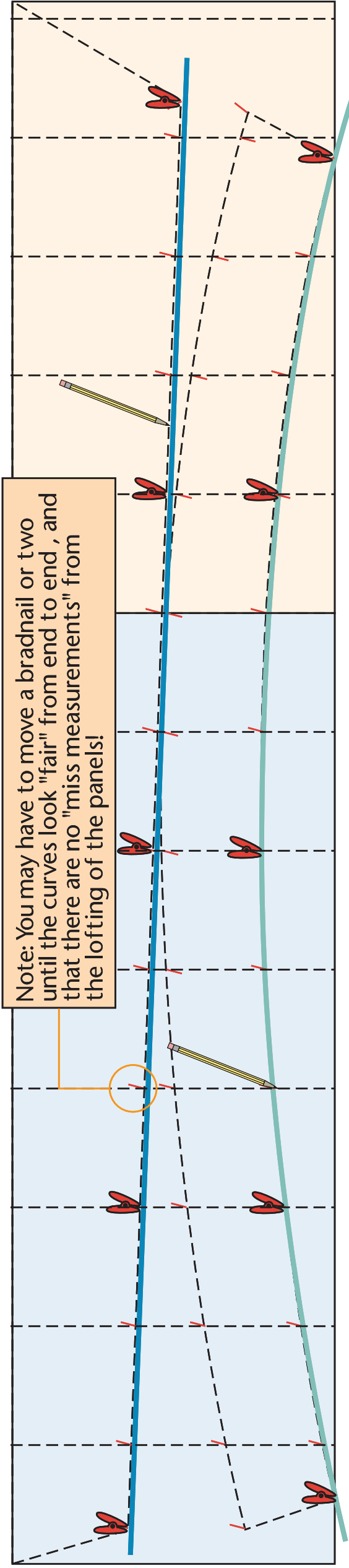
Lofting Page
upper and lower
side panels

Only the top panel set
needs to be marked

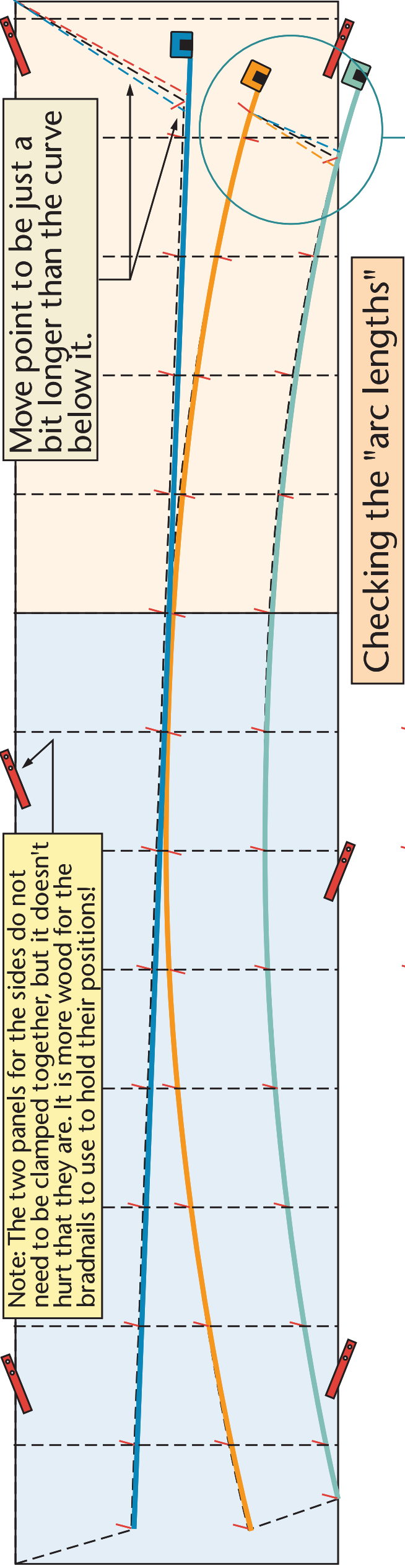
Downs are measured from
the top edge of the plywood
and the overs from the left
side of the plywood set or
the station line to the left!





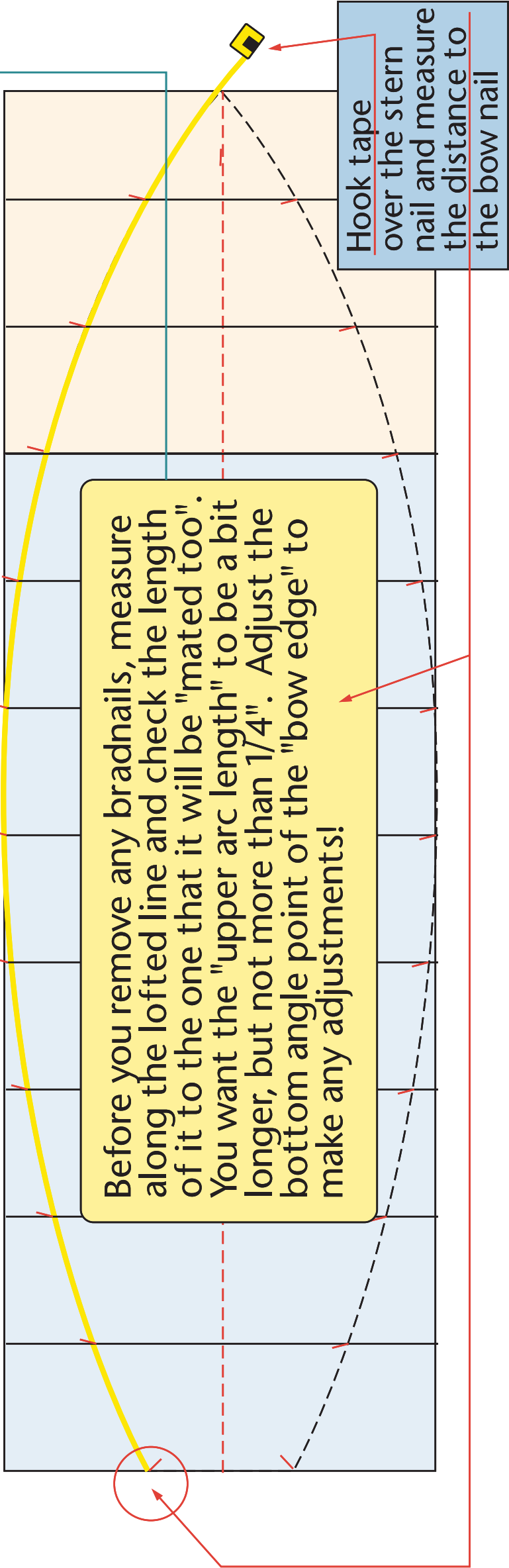


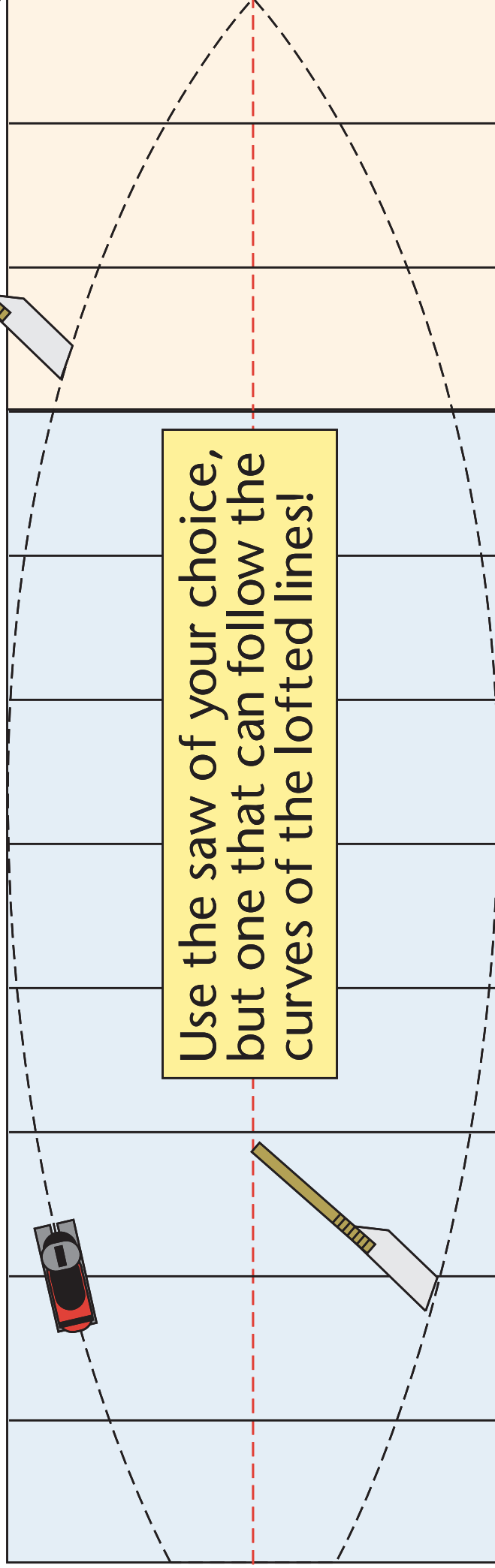
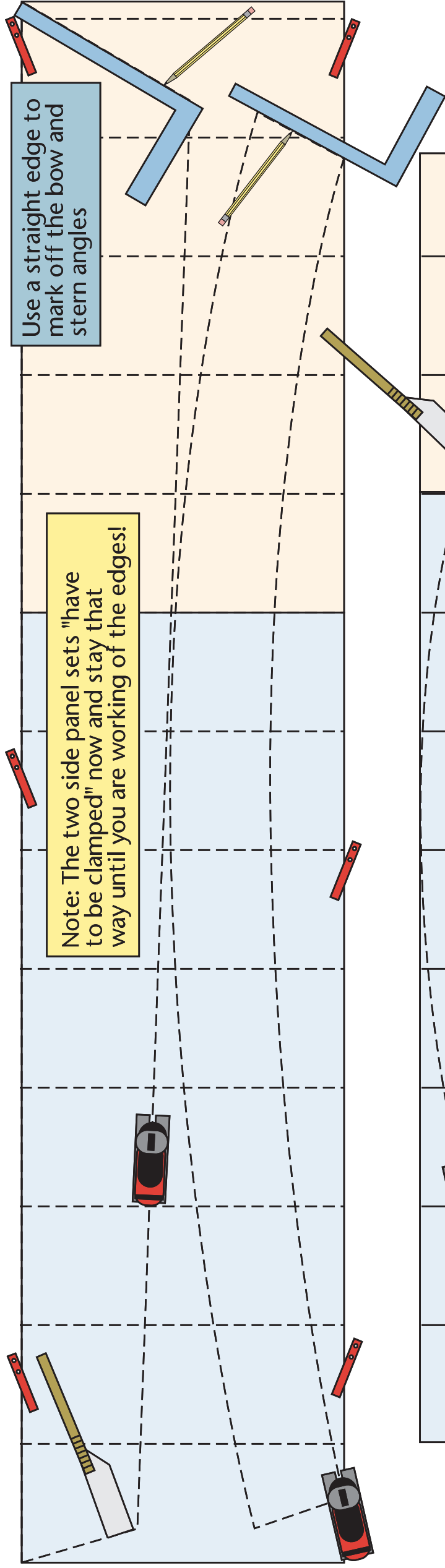
Note: The two panels for the sides do not need to be clamped together, but it doesn't hurt that they are. It is more wood for the bradnails to use to hold their positions!



Checking the "arc lengths"

Before you remove any bradnails, measure along the lofted line and check the length of it to the one that it will be "mated too". You want the "upper arc length" to be a bit longer, but not more than 1/4". Adjust the bottom angle point of the "bow edge" to make any adjustments!



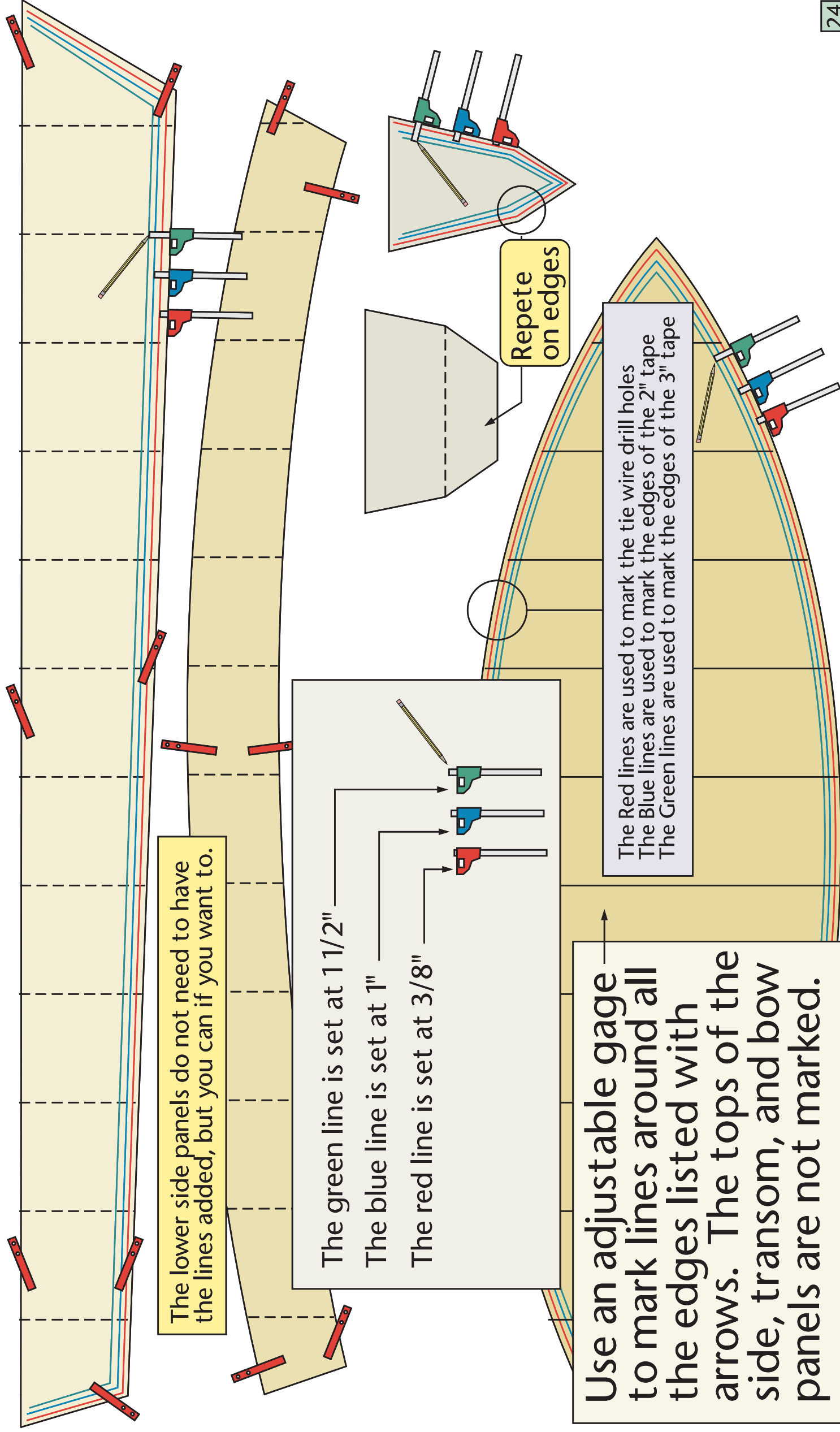


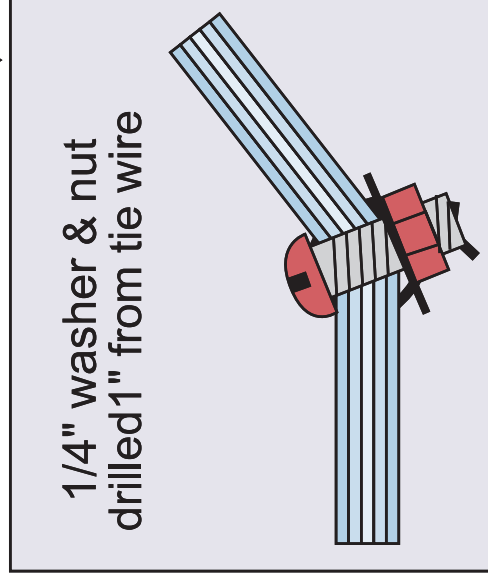
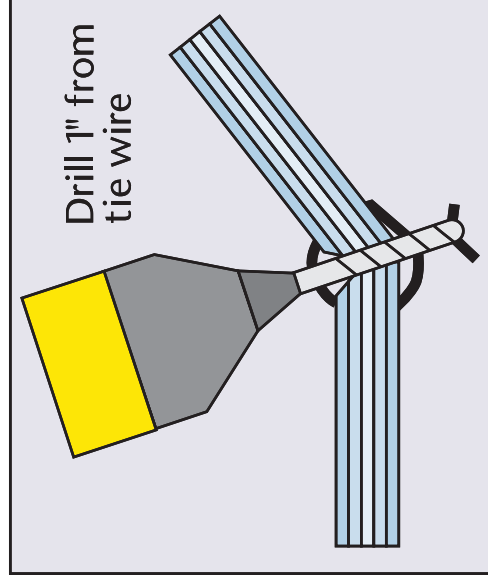
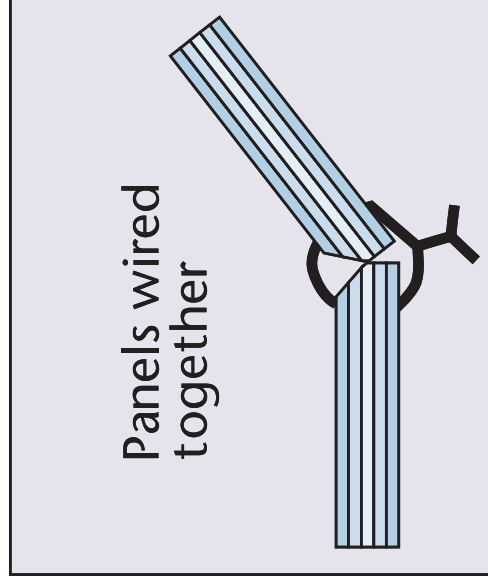
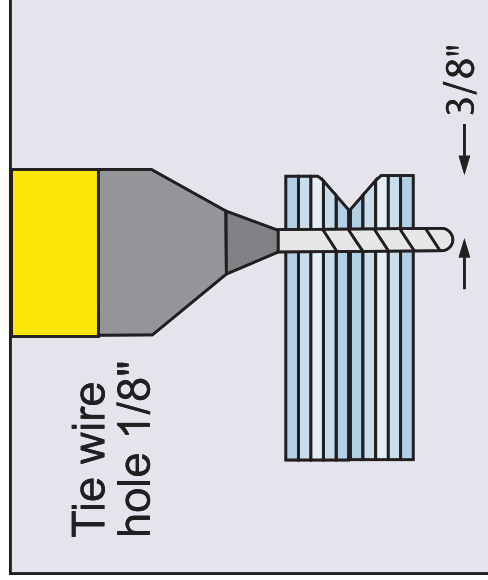
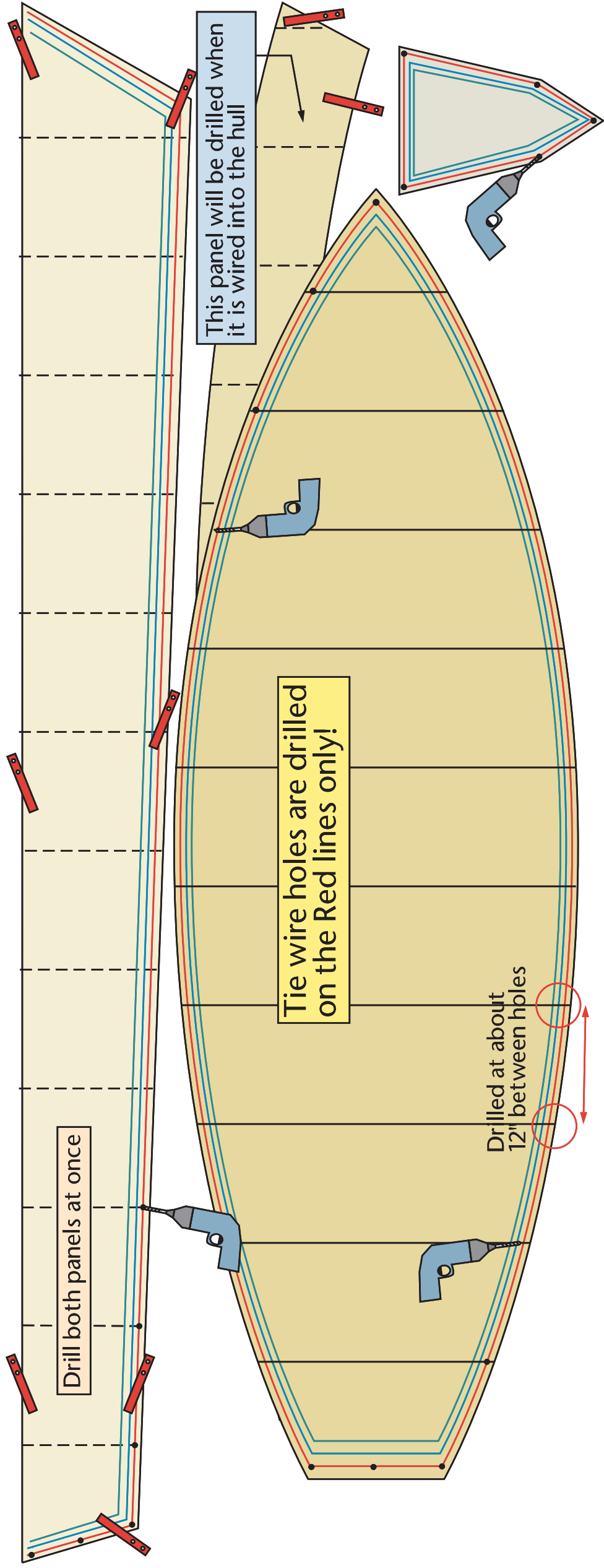
Before you unclamp the top side panel set, take a saw and make a 1/8" cut at each of the station lines. These will be the "station line cut marks" that will be referred to in the "build plans". They are used to line up all the interior parts so it's all square!

Making the "station line cut marks"

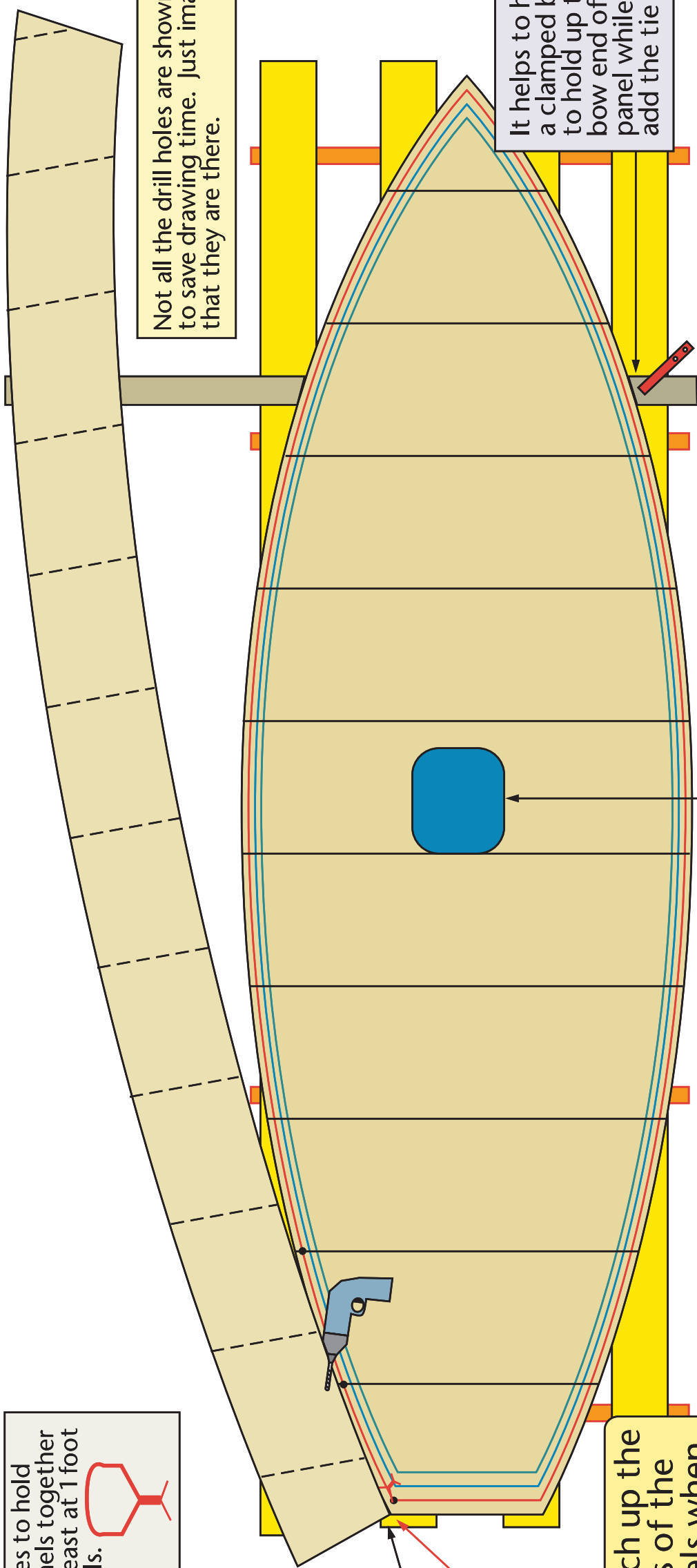
Finished panel sets with the grid lines showing on the top panels only. The upper panels will need to "stay clamped" until the following steps are completed.

Panels offset to show that there are two of them. Think of them as being one behind the other.





Tie wires to hold the panels together set at least at 1 foot intervals.



Not all the drill holes are shown to save drawing time. Just imagine that they are there.

It helps to have a clamped board to hold up the bow end of the panel while you add the tie wires

Sand bag to hold down bottom panel while wiring up

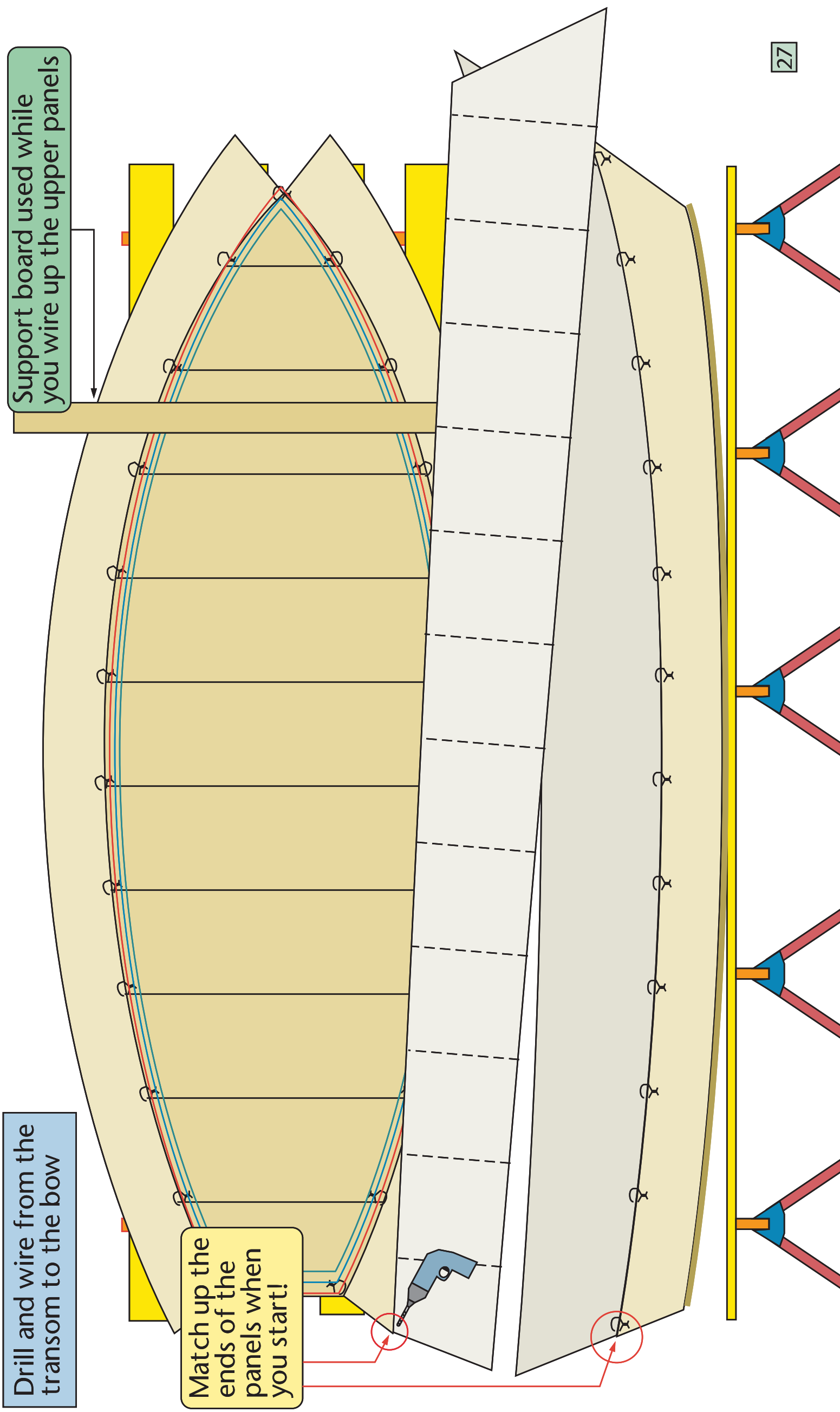
Match up the ends of the panels when you start!

Pads to hold up ends for wiring together

Drill and wire from the transom to the bow

Support board used while you wire up the upper panels

Match up the ends of the panels when you start!



If you checked and fixed any "arc length" errors, this should not happen, but if it does, you can fix it now.

Not all the tie wires or nuts and bolts are shown in the drawing to keep down the clutter. Read the text instructions and you look at the build drawings to see what needs to be done!

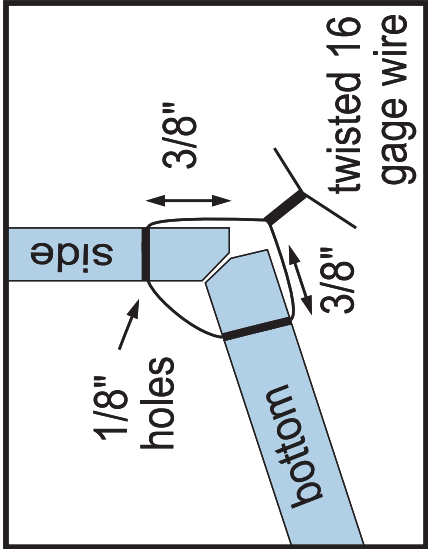
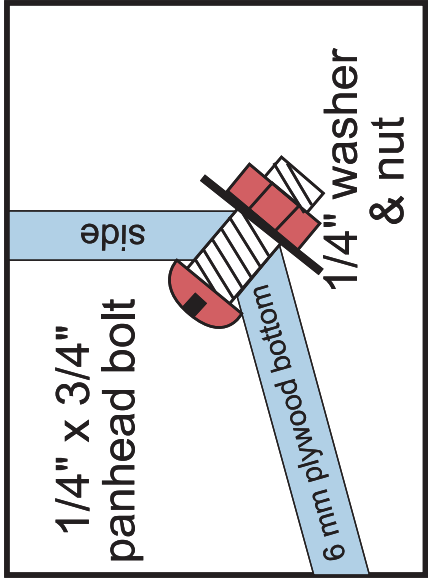
The transom and bow on this hull are flat panels, so make any adjustments now so it fits in a "straight line" with the aft end of the two side panels! Adjust the ends of the top to lower side panel corners!



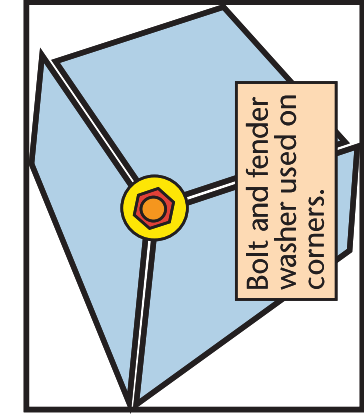
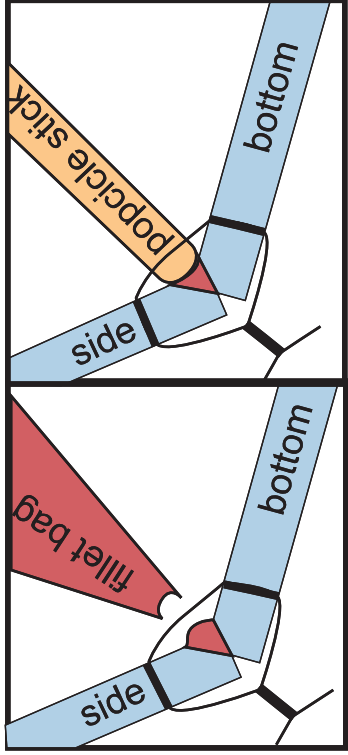
Drill bolt holes 1" aft of wires!

Make sure the "transom" edges are even!

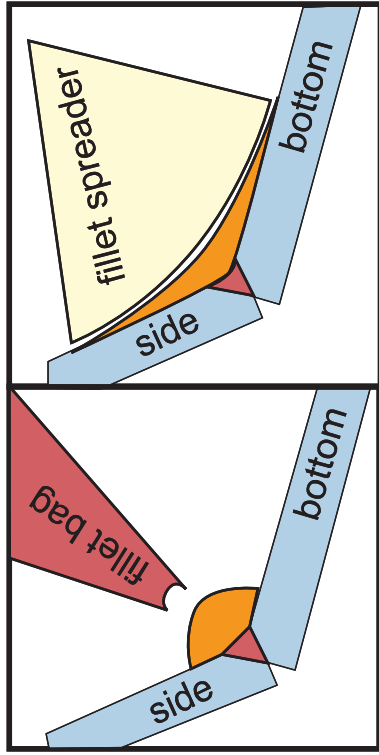
See the next page for details on this



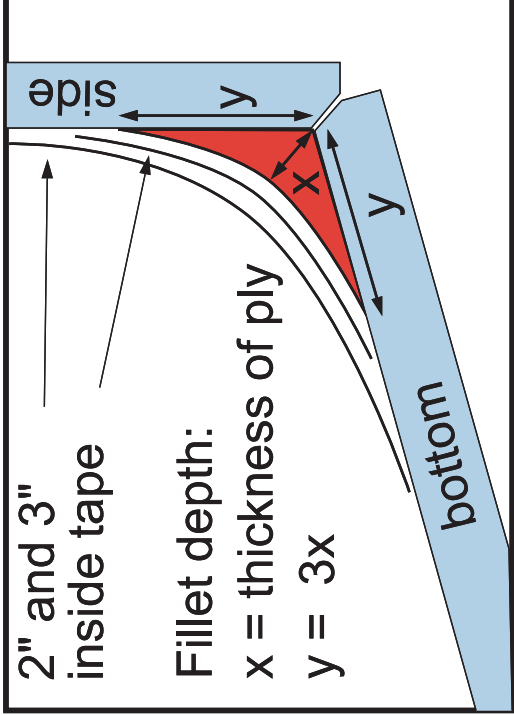
Wiring and bolting the panel sections together



Jump Stitch

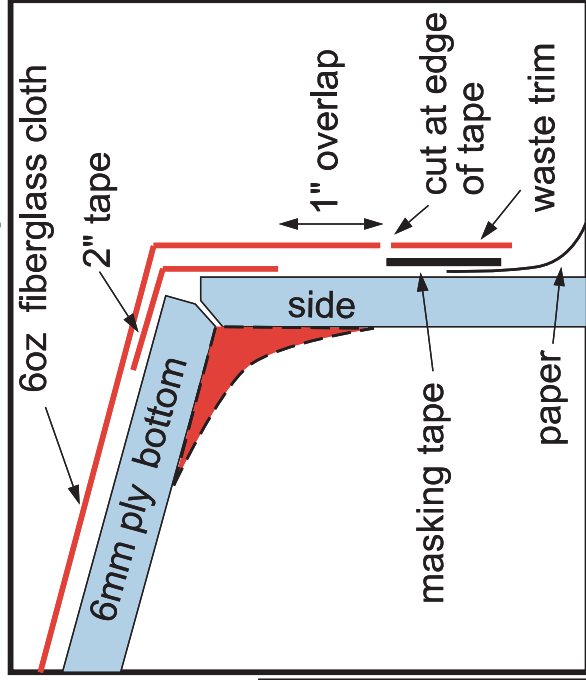


Applying and Spreading the Fillet

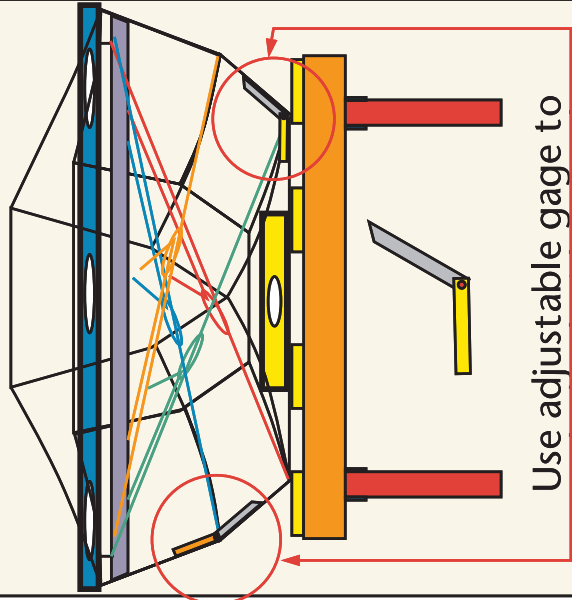
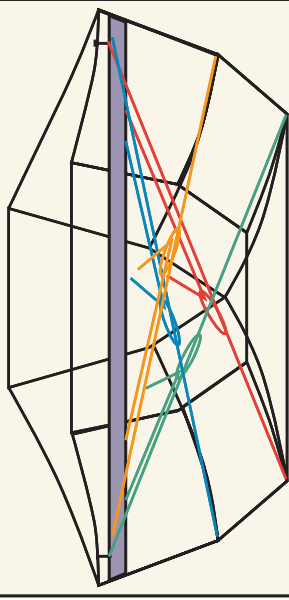
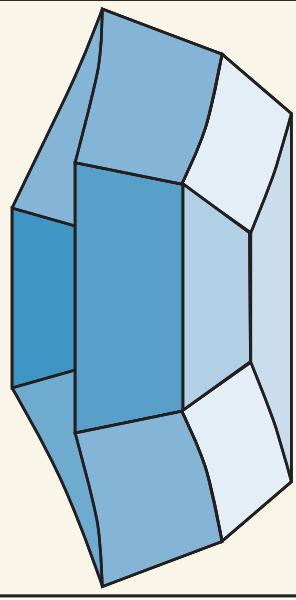


Cross section of taped seam

Bottom outside edge details



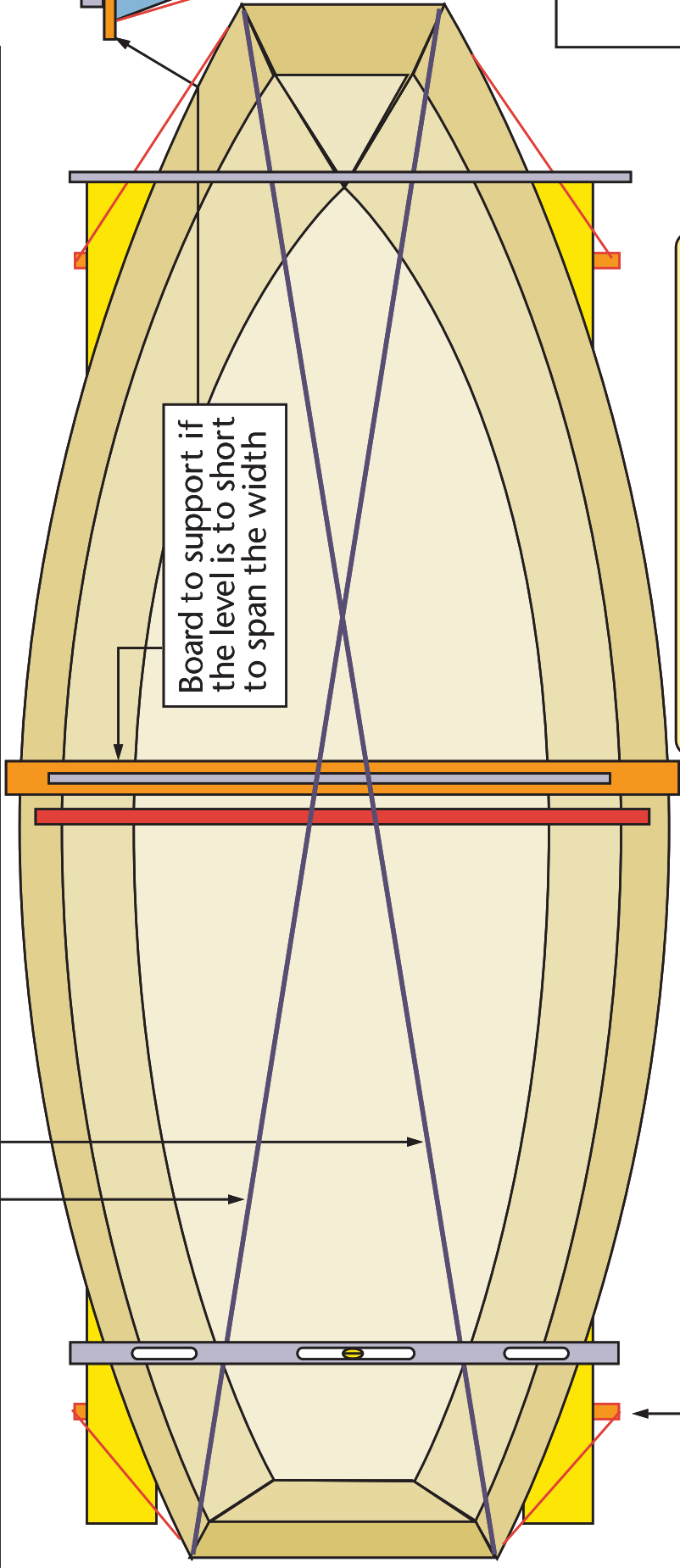
Read the instructions as you study these drawings. Each picture tells a story. Use the cardboard model you made to visualize the directions.



Use adjustable gage to make both sides equal to the level bottom of the hull.

Squaring up the hull

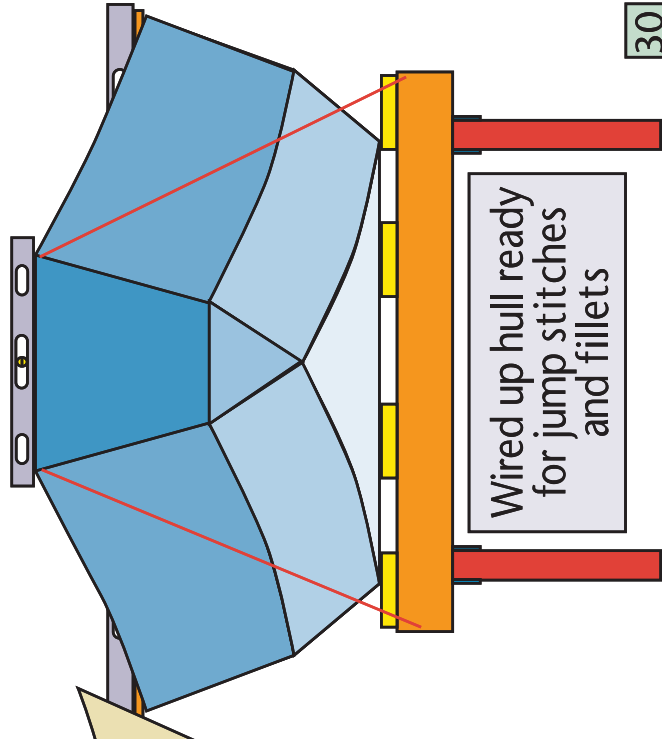
Cross hull tension lines used to "square up" the hull. Adjust until the "cross hull distances" are the same!



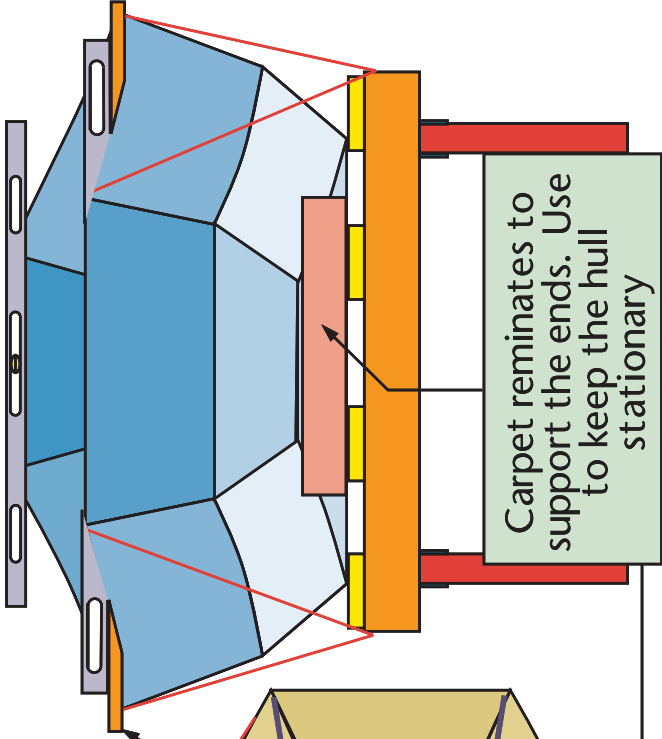
Board to support if the level is to short to span the width

Squaring up the hull

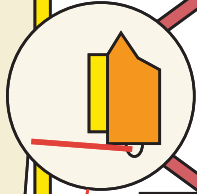
Leveling tie down cords



Wired up hull ready for jump stitches and fillets



Carpet remnantes to support the ends. Use to keep the hull stationary



Large staple or eye screw in end of 2x6

Level the hull prior to doing the "jump stitch" and seam fillets!

Note: Once the Gelmagic has cured you can remove the tie wires and all the nuts and bolts. I usually leave in the top tie wires in the corners until I am doing the glass taping.

Note: the bolts/nuts and tie wires are not shown to keep the drawing simple. The hull is still leveled and tied down!

I've had good luck using a ball on a stick to fair the fillets

Fillet material added to the panel seams. This is added to all the seams, but only shown here as one seam.

2" Glass tape added to the seams after the fillet material has cured.

3" Glass tape added to the seams. On top of or after the 2" tape has cured. Easier to do one at a time!

GelMagic applied to all the seams first. Then the fillets next, then the 2" and 3" glass tape.

See the details for each step on a previous page and read the instructions in the build text!

Note: Once the hull is completed there is not much difference in how a hull is finished off inside. Your idea of an ideal interior will be different from what some other boat builder will have in mind. So the following pages are just for reference to help you decide how you want to build your interior. Just remember that the empty hull balances at about the "beam point", which is about 70 inches from the transom. Your hull should also come in at about that point too. Just try to keep the hull balanced at that point when you are installing your interior. Try not to make either end heavier than the other with interior parts, fittings, or gear. Put a 2x2 or pipe under the hull every so often as you build it to see how the balance changes with each addition of the interior.

69"

This is the first spacer block set in the hull!

Use 69" for the Green River Drifter!

Try to make at least 6-8" long

Note: If you change the position of the seat in "your boat", you will need to reposition the location of the 12" oarlock spacer blocks and adjust the first "gaps and 3" blocks"!

Distance from transom to oarlock socket

Note!

Use the "station line cut marks" to make sure that the oarlock sockets are even in the hull!

Solid piece

Page from the Sol Duk Drifter

Measurements are for the Green River Drifter

Left over distance

Even block/space

3" space

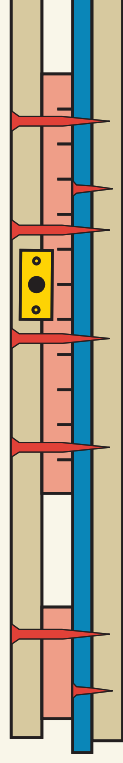
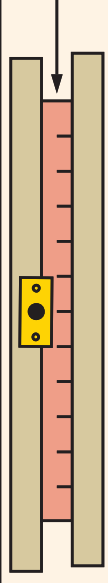
3" block

Filler Block

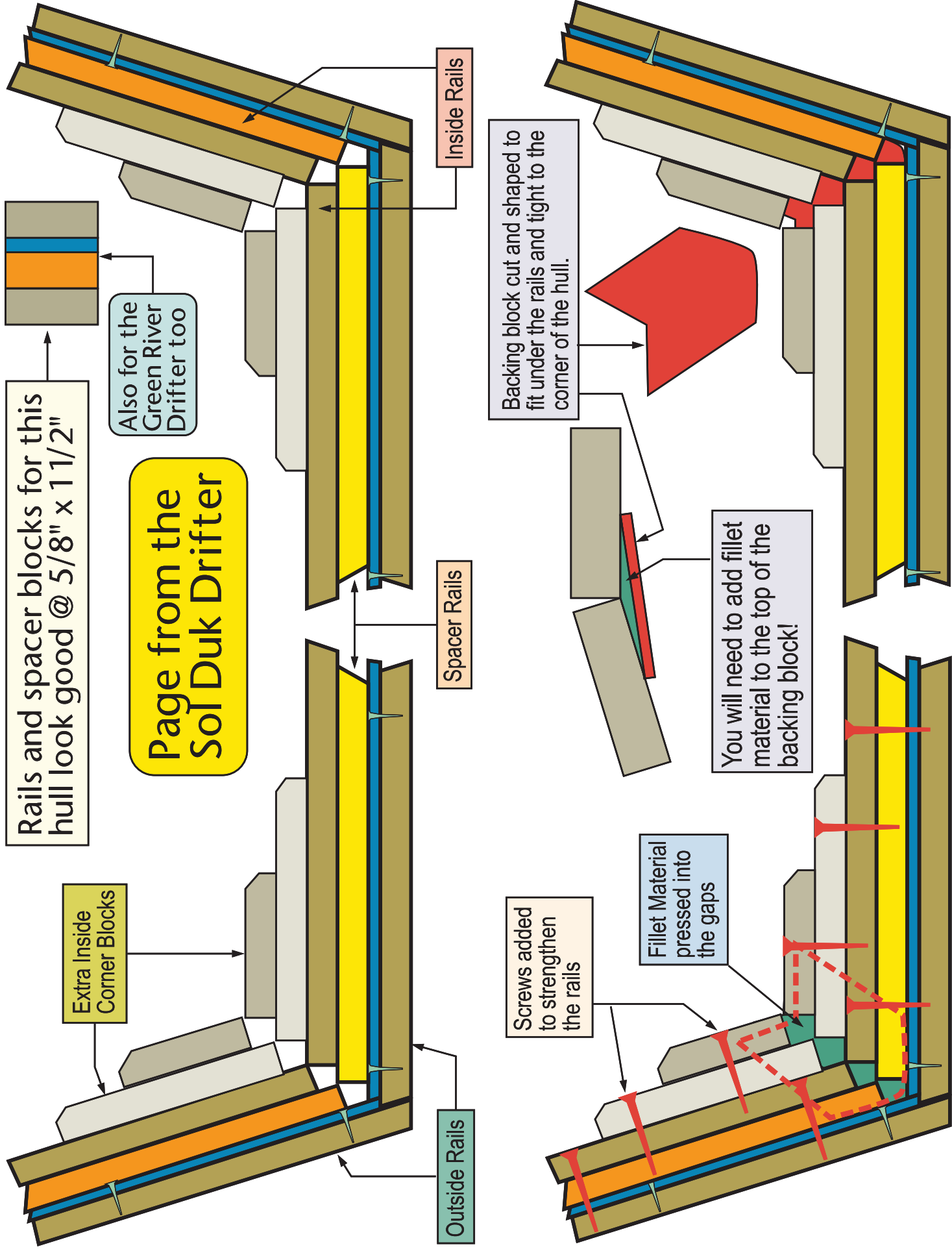
33

The oarlock spacer block sets the position of all the other blocks and spaces. Mount the oarlock block, then the first spaces on either side, then continue to the ends. After the last "even space", fill the rest of the distance with a "filler block" to meet the bow and transom rails.

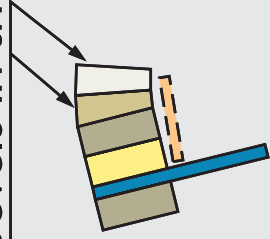
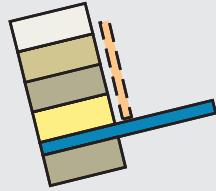
The 12" oarlock spacer block needs to have "cuts" placed ever 1" and half the depth of the spacer block. This lets the block bend to the hull and not distort the side panels. This must be done!



The small screws will be located at the station line cut marks, so mark their locations on the hull so you don't drill into them when you drill for the other screws. Place 4 screws along the oarlock block, and one at each of the smaller spacer blocks. Epoxy both sides of the blocks.

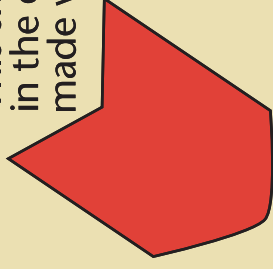


To keep the height of the blocks down, it helps to put bevels in the two smaller blocks.



Page from the
So! Duk Drifter

This shape will also work in the corners, and can be made wider if you want.



Plywood scrap glued to bottom of corner for added strength!

Wear plate for motor bracket inside and out!

Be sure your motor's bracket can span this width of rail!

Wood filled epoxy or EZ-Fillet used to fill and finish the gaps in the corners

Interior with center pyramid seat and a bow and stern compartment with hatches

76" from transom to oarlock sockets. This may change depending on how tall you are. Try to keep at least 12-16" between your belly button and the oarlock centerline.

Size to
your needs

One type of interior, another seat pyramid may be added to the hull

Bow U-bolt and backing plate.

Backing blocks for hatches

Compartments can be larger or smaller, but have them for extra flotation!

Interior with center seat and a bow and stern compartment with hatches

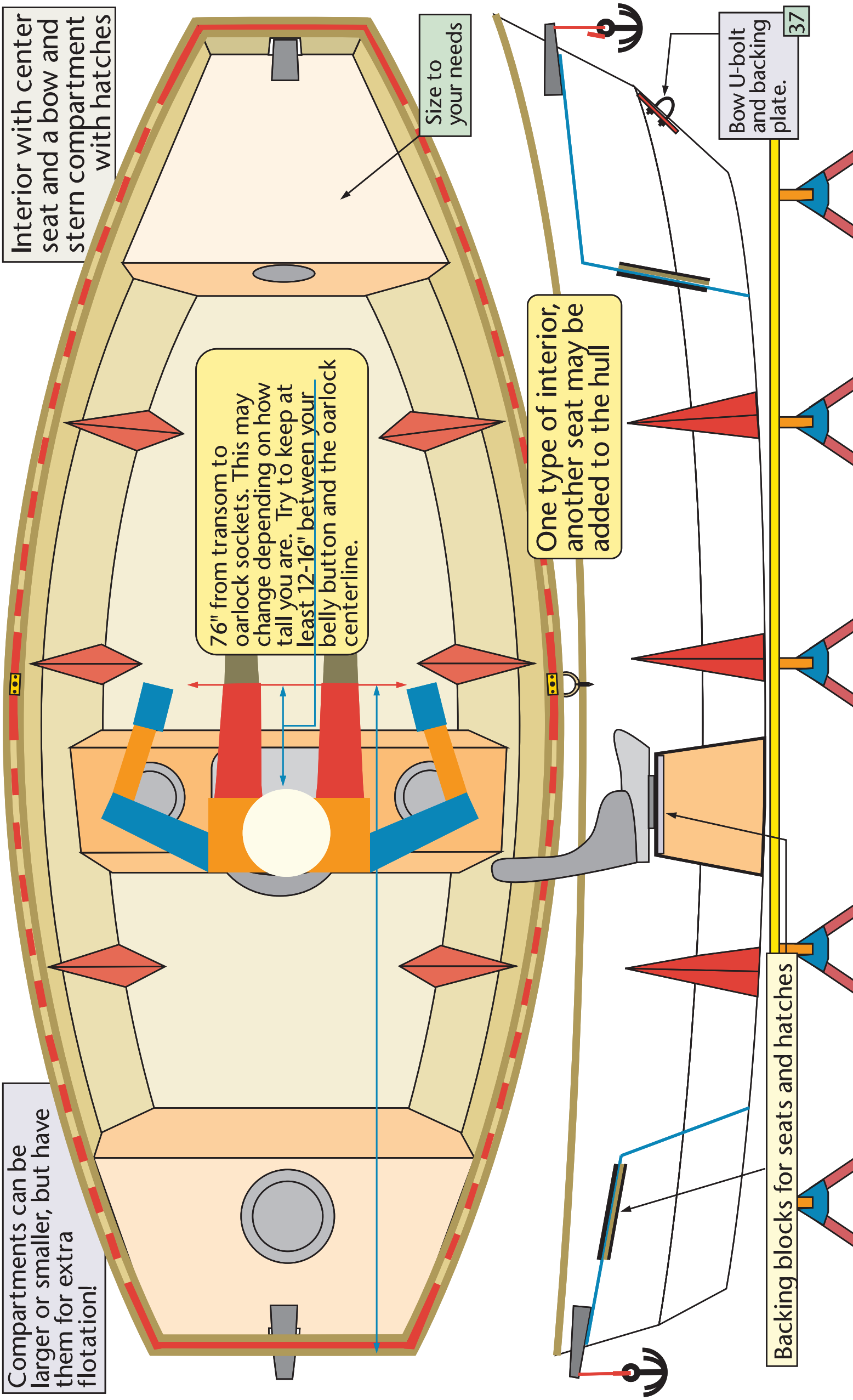
76" from transom to oarlock sockets. This may change depending on how tall you are. Try to keep at least 12-16" between your belly button and the oarlock centerline.

Size to your needs

One type of interior, another seat may be added to the hull

Bow U-bolt and backing plate.

Backing blocks for seats and hatches



Hatch with backing block
Make sure the block
clears the 2x2!

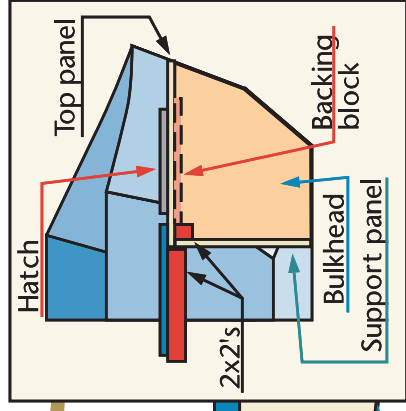
Adjust seat placement fore
and aft for hull balance!

You might want
to sit in the boat
before you make
it "permanent"

Cutout showing the 2x2
support under the tank
top cover plywood

Support 2x2 to epoxy
the plywood sheets to.

Bulkheads fitted to the
hull for support and to
provide more floatation!



Hatch with backing block
Make sure the block
clears the 2x2's!

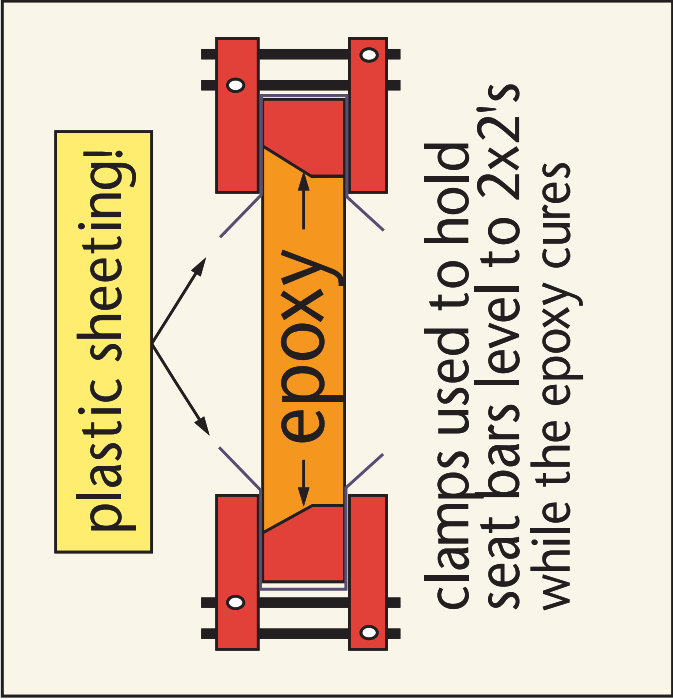
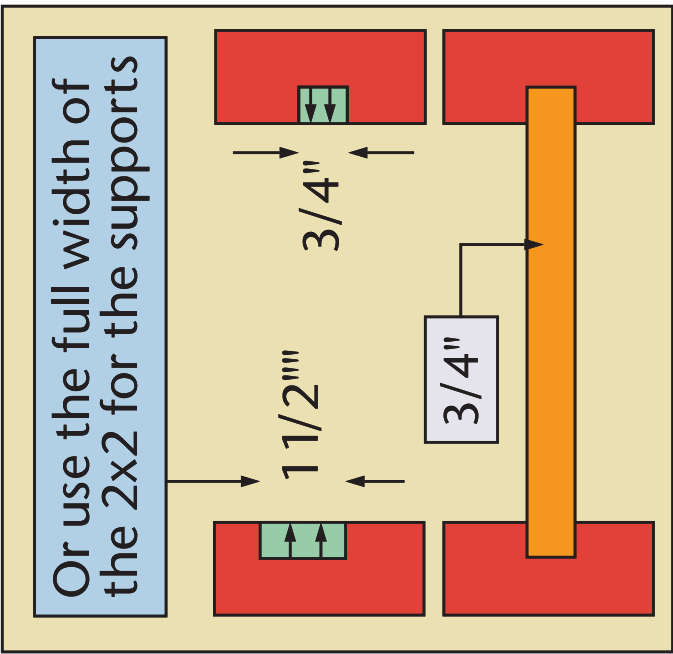
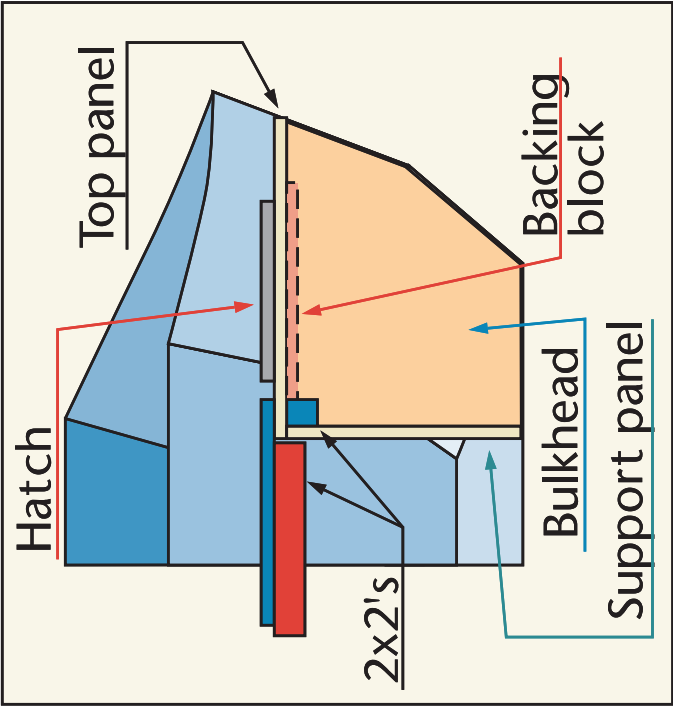
Interior seat support
2x2's installed to give
extra strenght to hull

Note: You may add more
bulkheads if you want, and
more support 2x2's. You
may also add or remove
hatches to your boat.

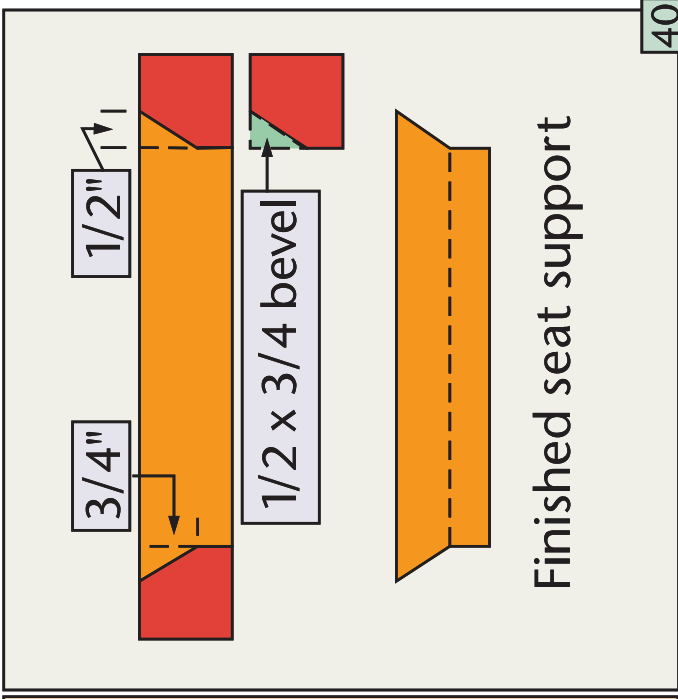
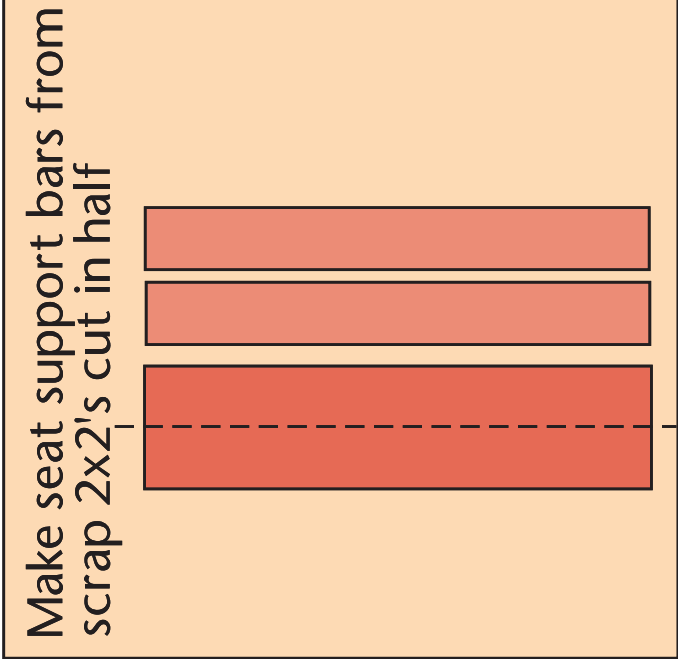
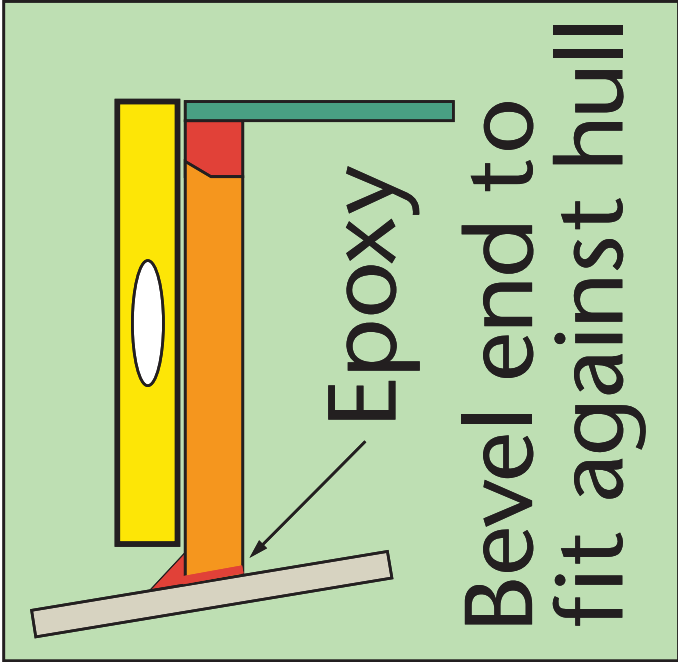
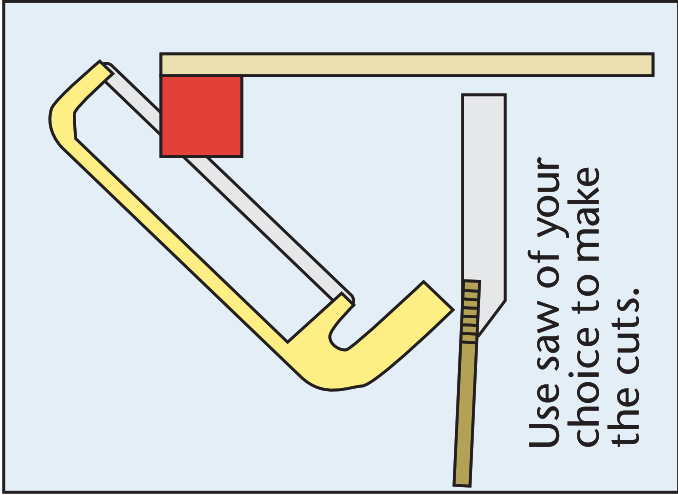
2x2's added to give
extra support to the
flat areas of the bow
and stern floatation
chambers.

Try to install all the 2x2 supports
before you add the tops to the
compartments. I would advise
to leave them off until you have
finished the epoxy work and have
painted the interior parts!

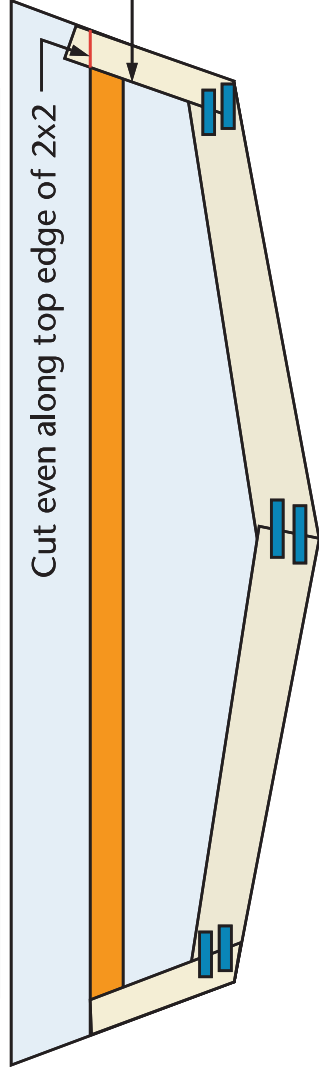
Note: Placement will depend on where you install the hatches in your hull! Try to place them evenly in the hull to get maximum support for the seats.



The following pages contain detail drawings of how to complete parts of the hull interior

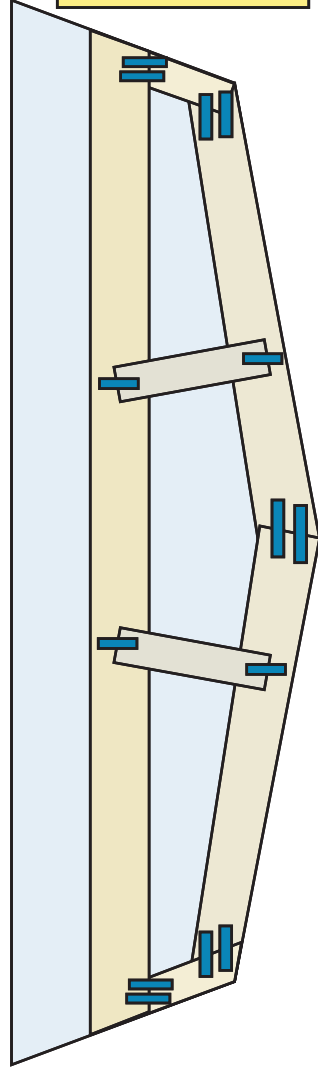


An easier way to fit the interior panels!

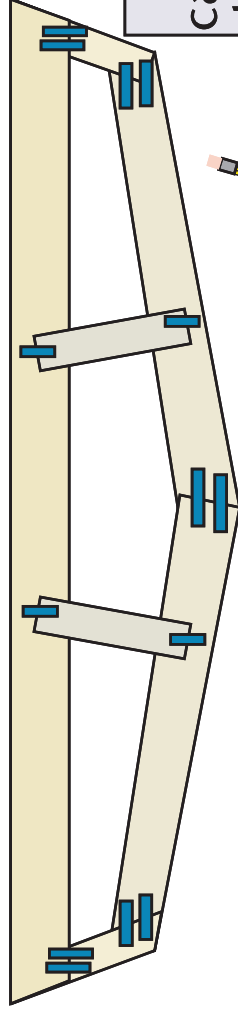
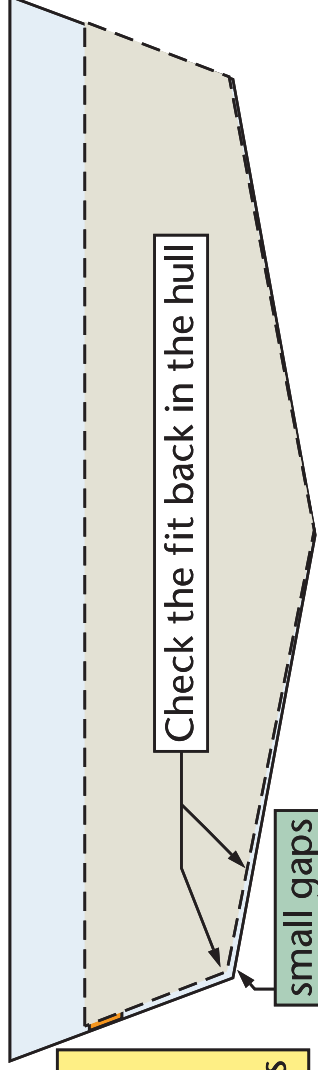


Cardboard strips sheet

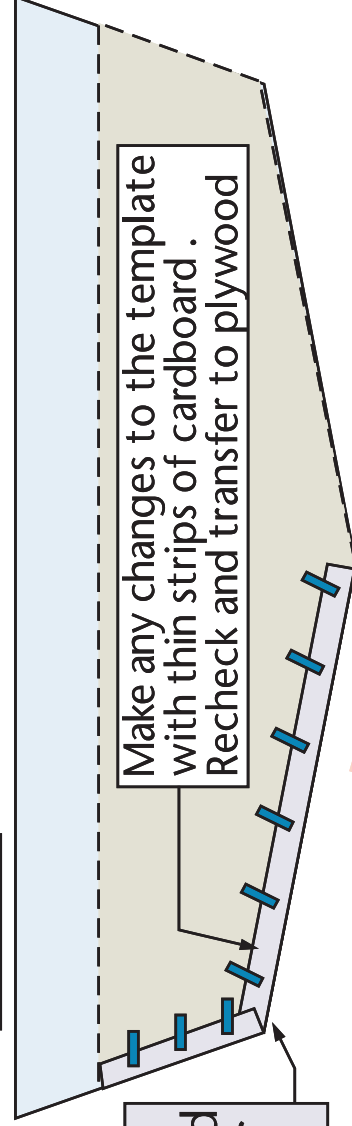
Note: Only and example of how to to this



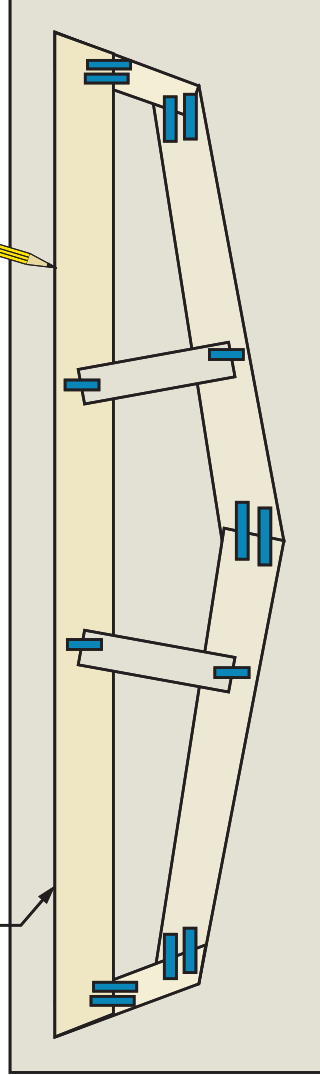
This is an alternative to using a spiling stick to find the dimensions to the interior panels



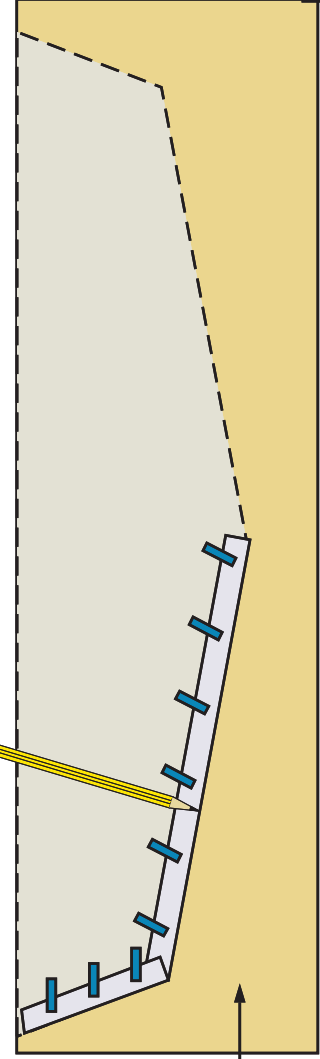
Use a pencil to outline the template you have taped together from the interior dimensions of your hull. Remember, all hulls will be different!

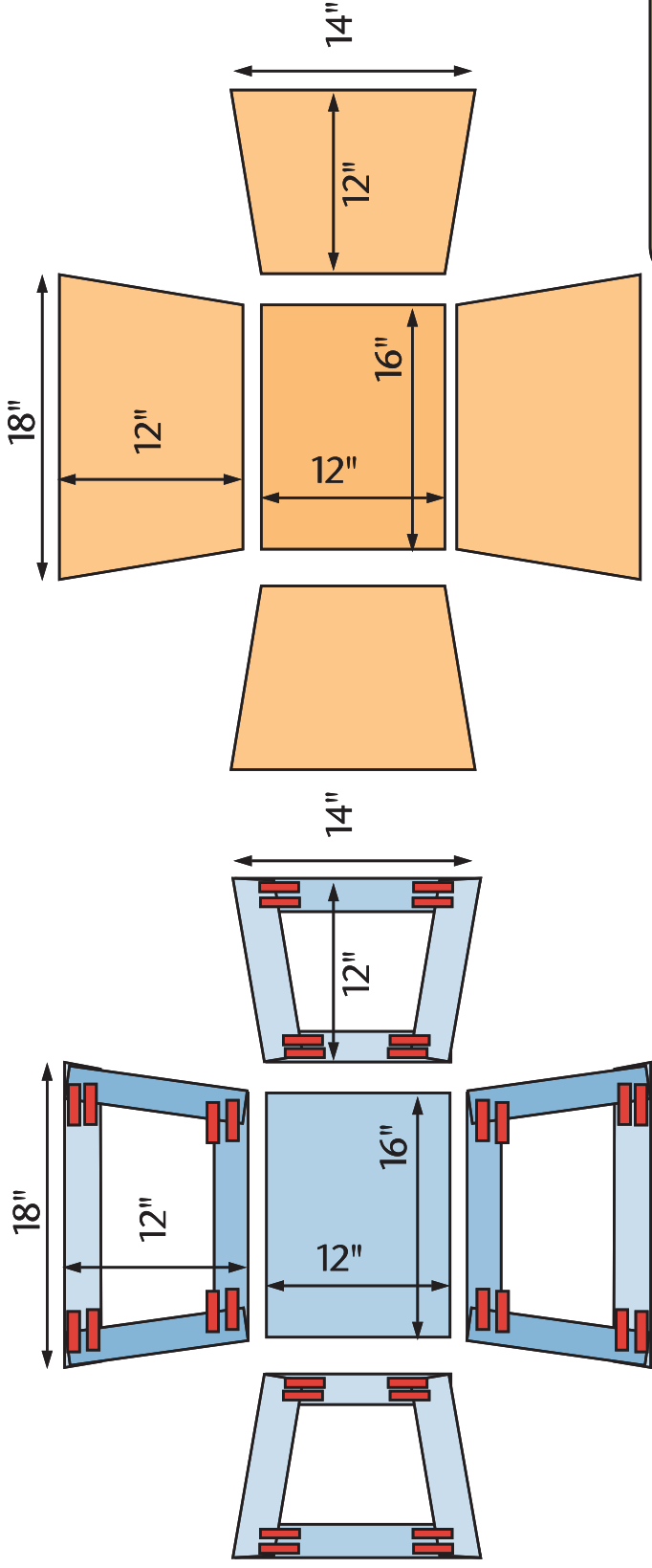


Light weight cardboard taped to template for a better fit



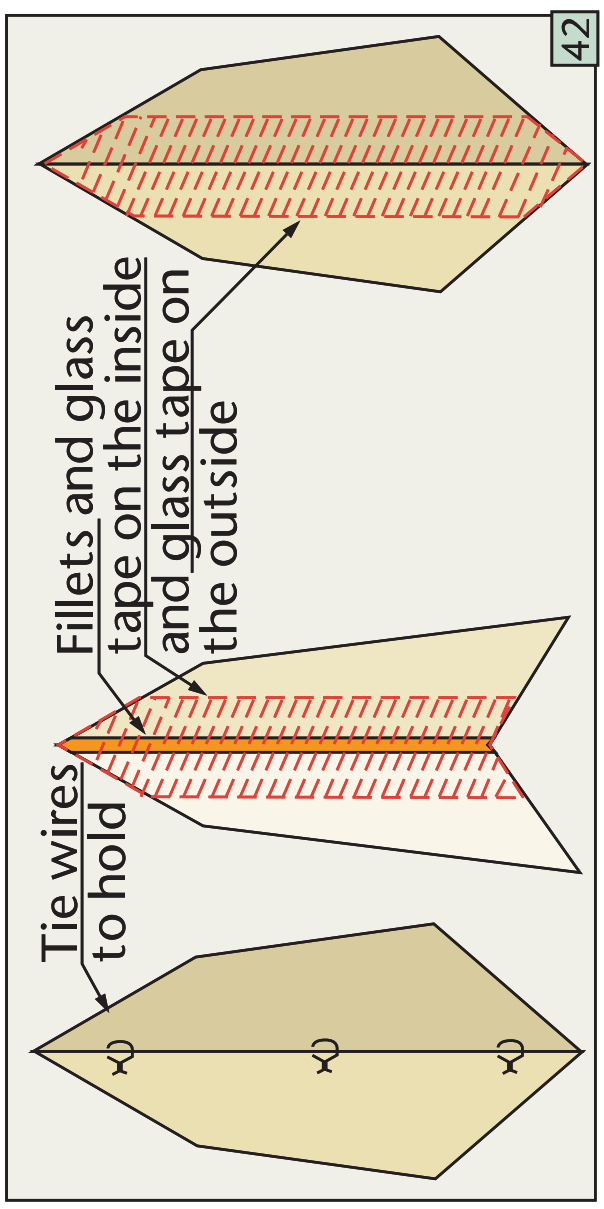
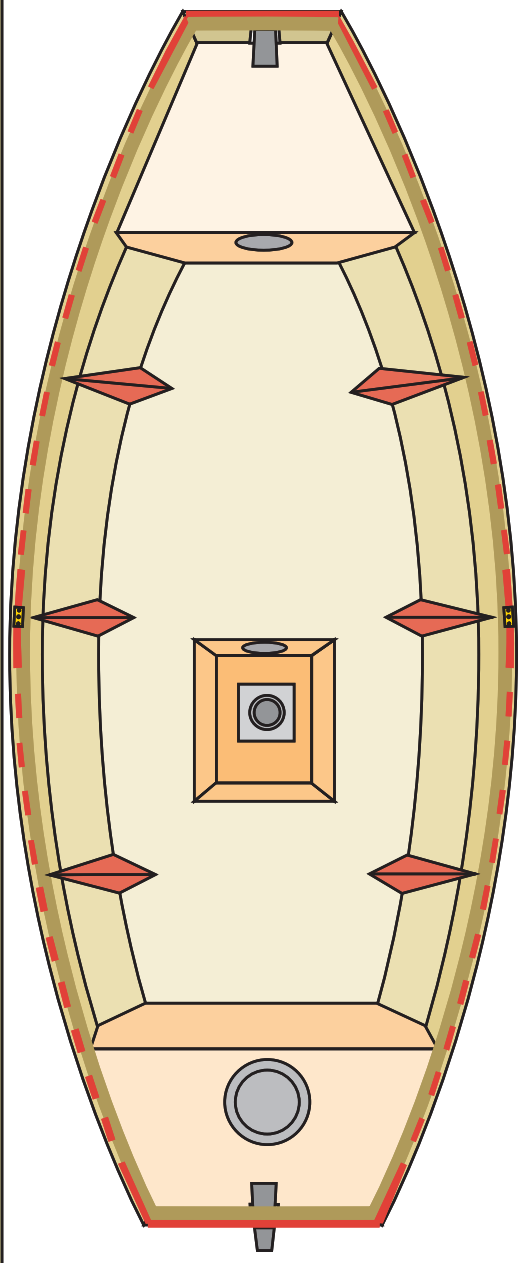
Plywood sheets

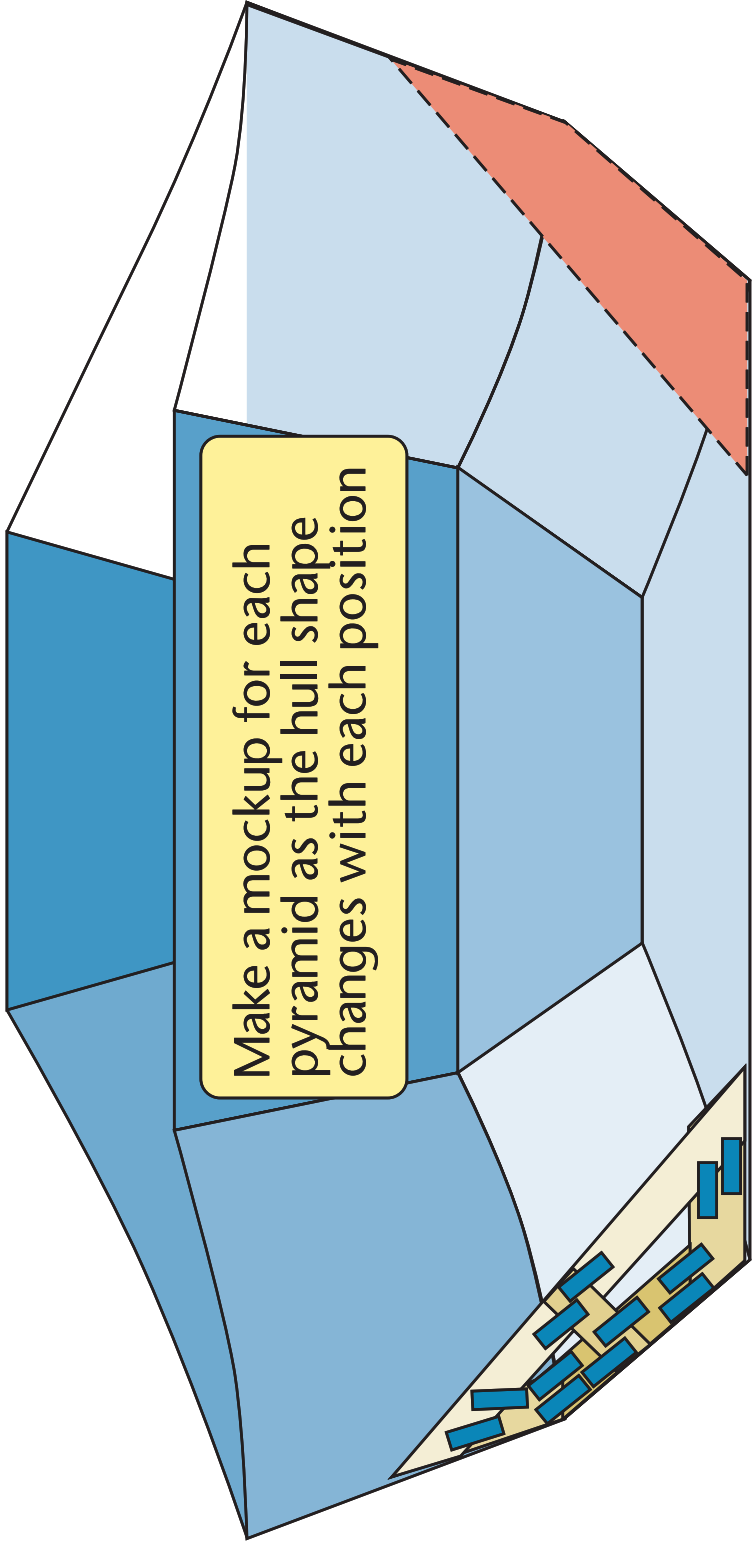




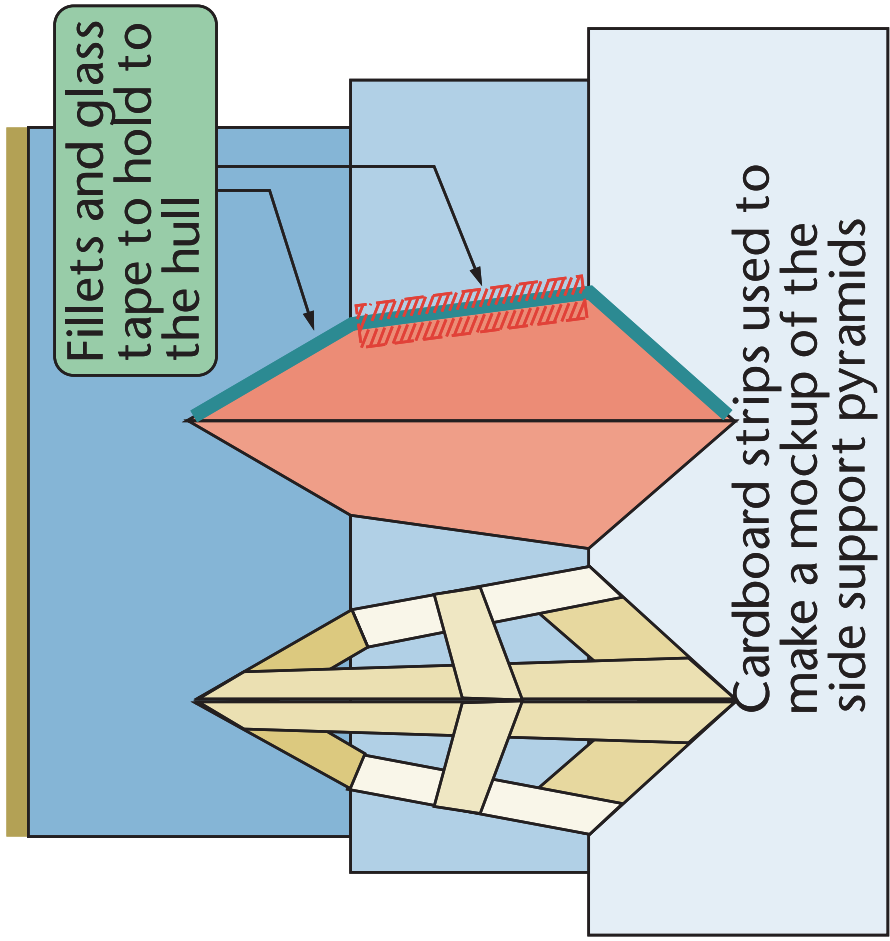
Page from the
SoI Duk Drifter

Use the information on the previous page to figure out the sizes for the seat panels in "your hull". I have found that this is the most accurate way to find the sizes of the seating panels and any other compartment panels on a hull!



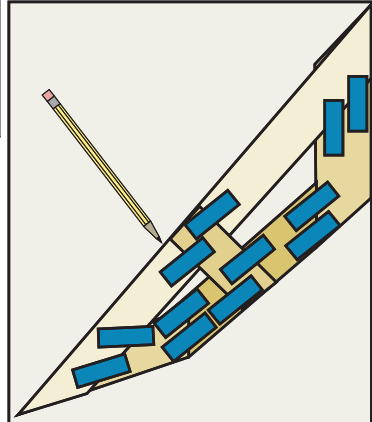


Make a mockup for each pyramid as the hull shape changes with each position

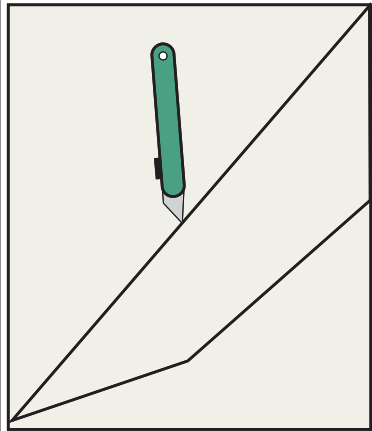


Fillets and glass tape to hold to the hull

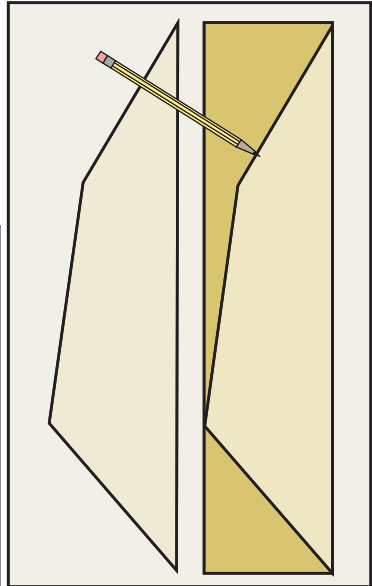
Cardboard strips used to make a mockup of the side support pyramids



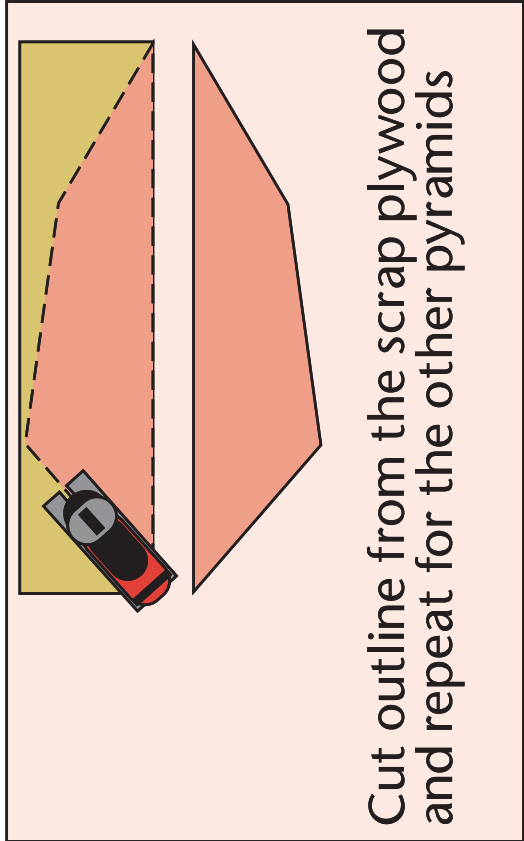
Make cardboard template of the pyramids and place on more cardboard



Trace outline of pyramid and cut with a sharp knife on a good piece of cardboard

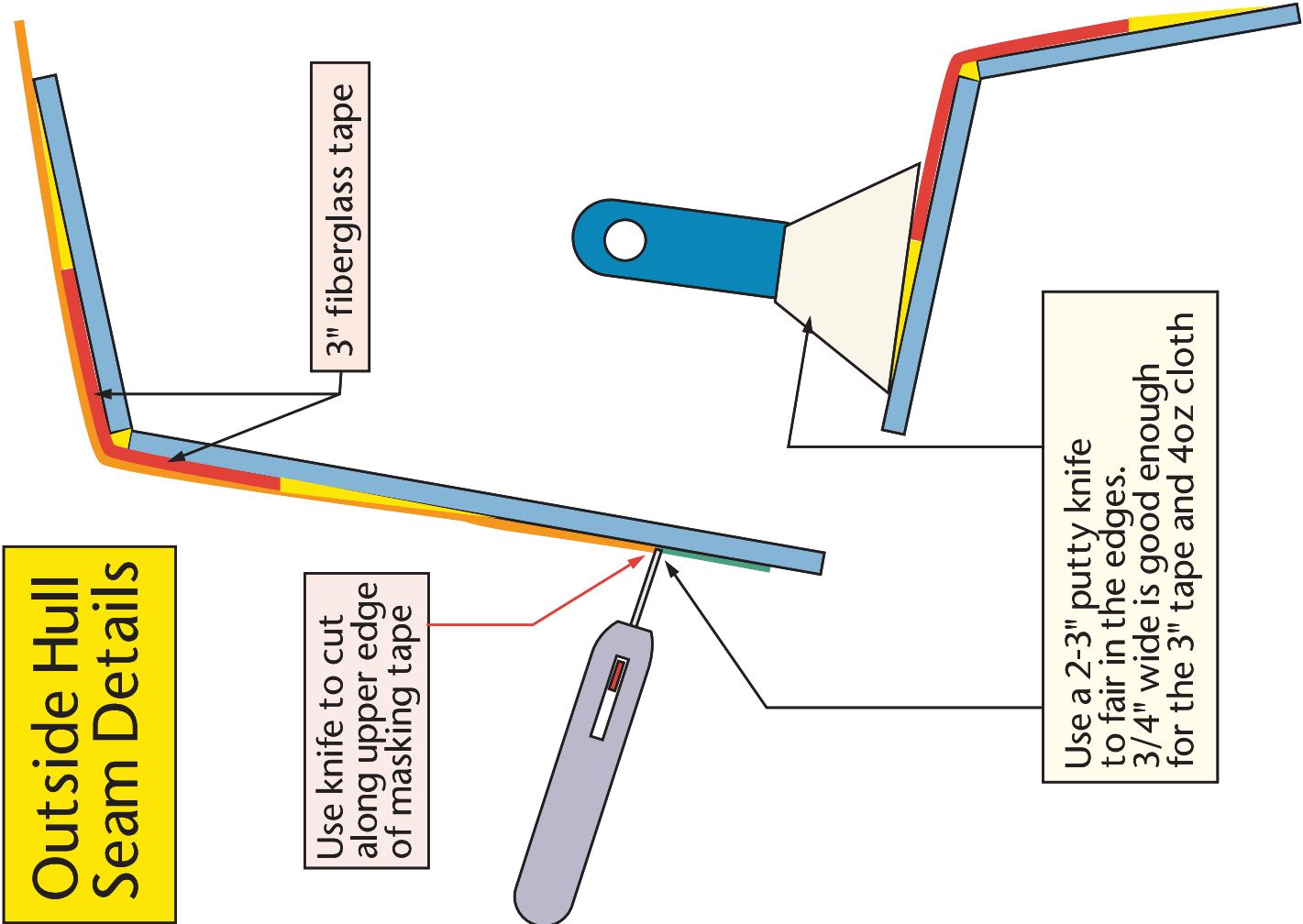


Place cardboard model on some scrap plywood and mark the outline with a pencil

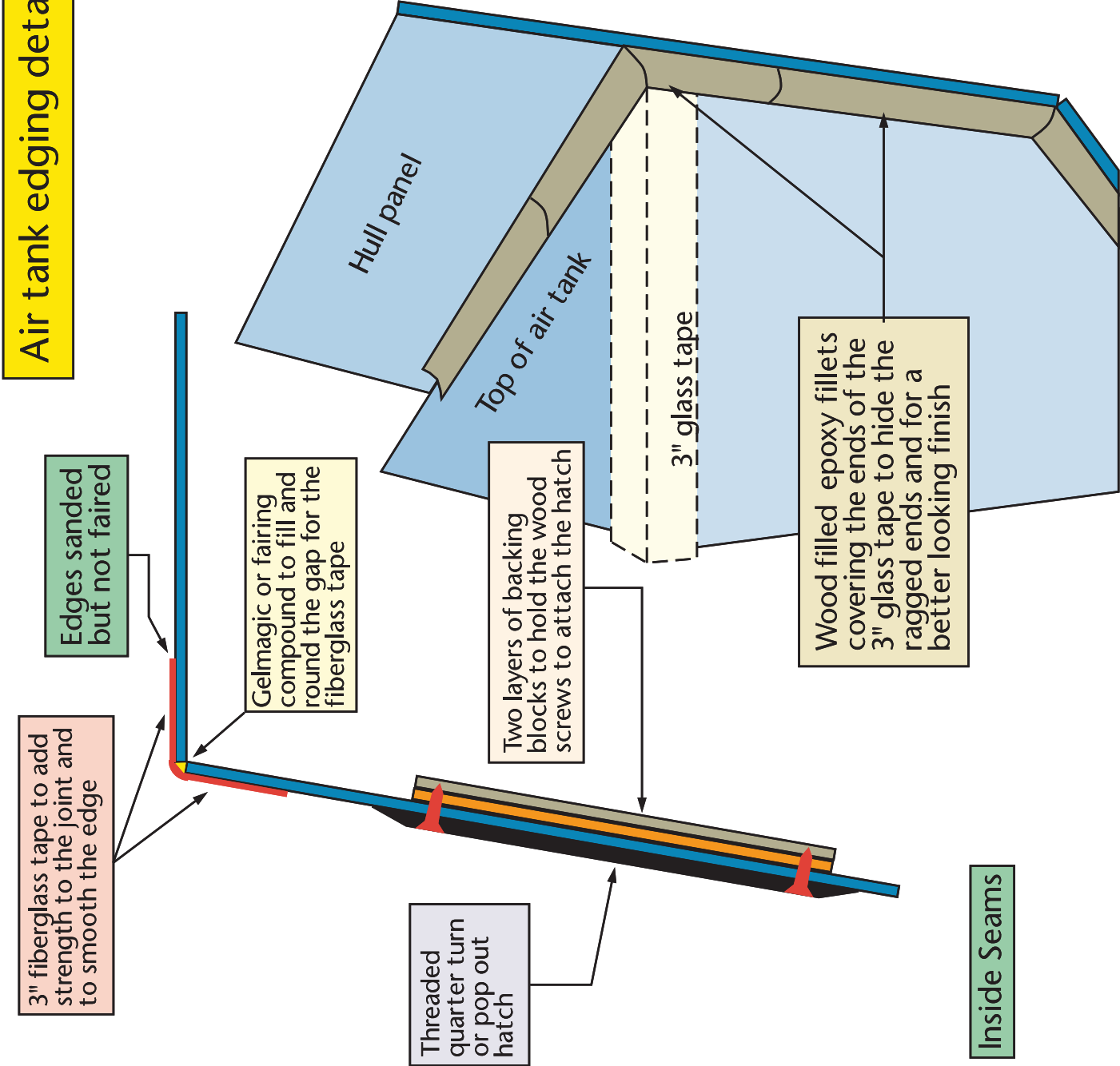


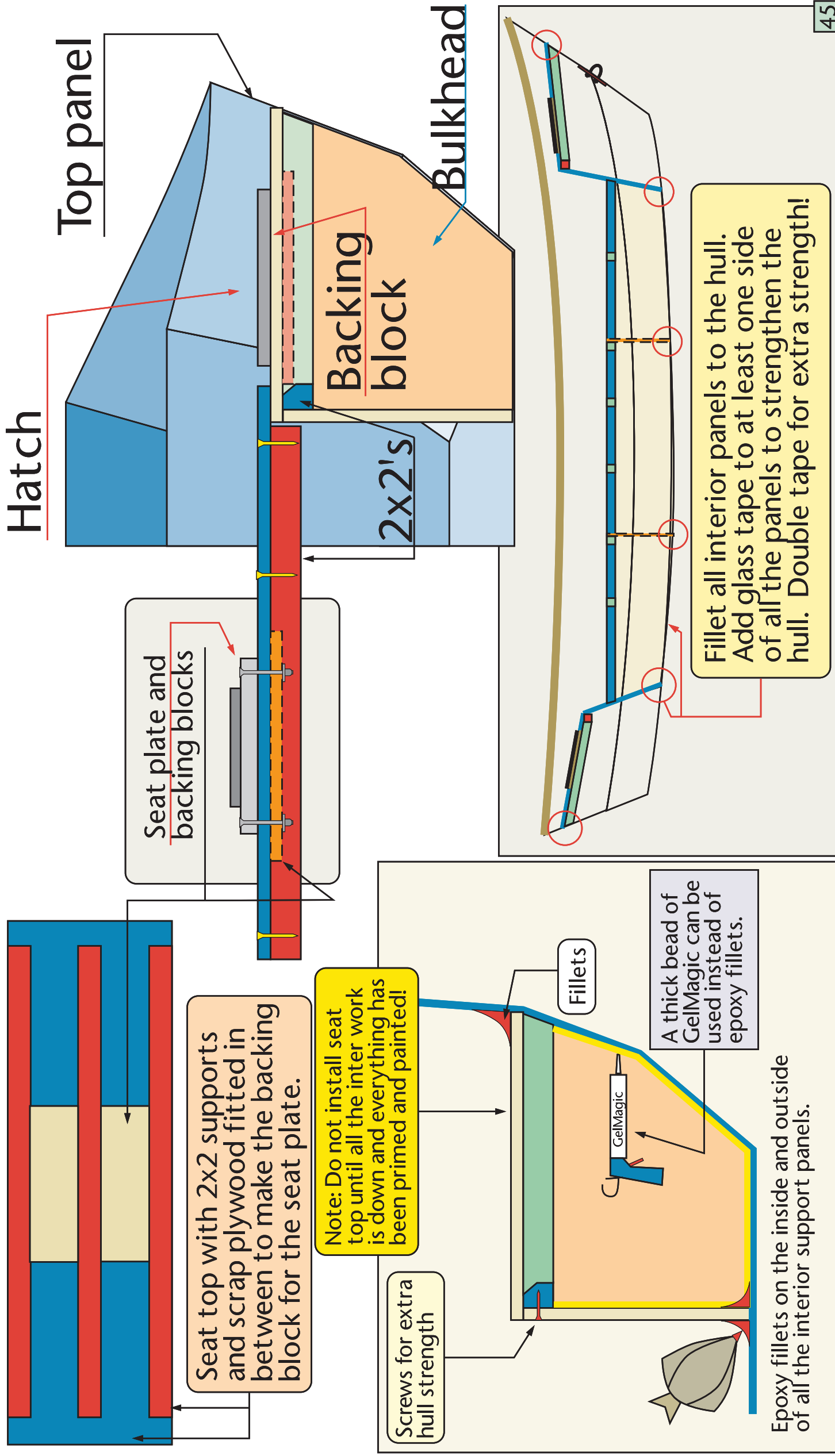
Cut outline from the scrap plywood and repeat for the other pyramids

Outside Hull Seam Details



Air tank edging details





Start with this first! Then the fillet material!

Thoroughly wet out the plywood edges at the seams with epoxy!

Fill all gaps with epoxy fillet material

Use a wide putty knife to smooth the fillet material into the groves. Make sure to keep most of the blade on the plywood to "fill the center" of the gap!

3" glass tape centered on all outside seams

After this, then this

Chine seam tape end cut to match

See page #31 for more details!

Trim tape ends to match the corner angles!

Page from the Sol Duk Drifter

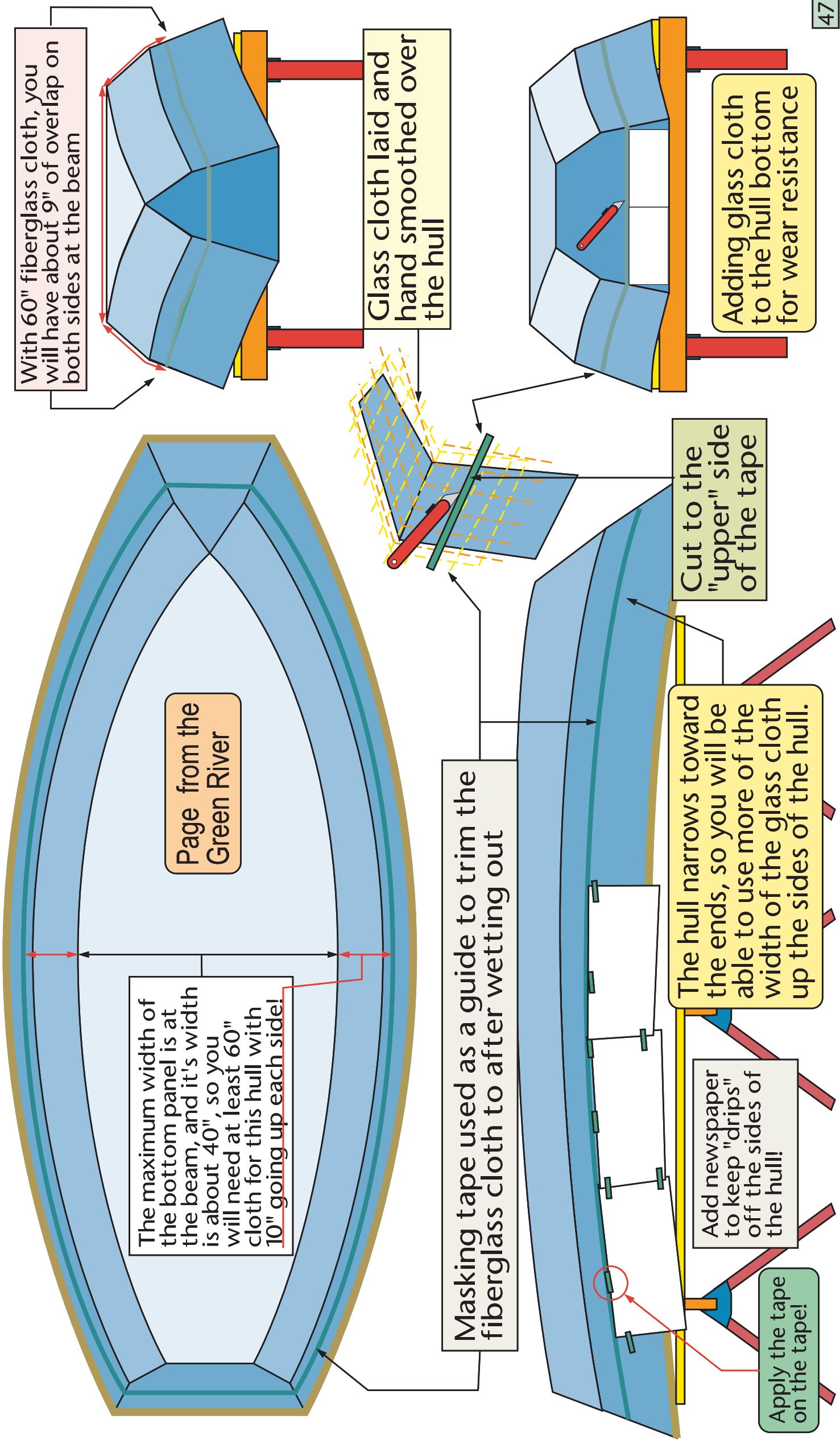
Single tape from transom to bow

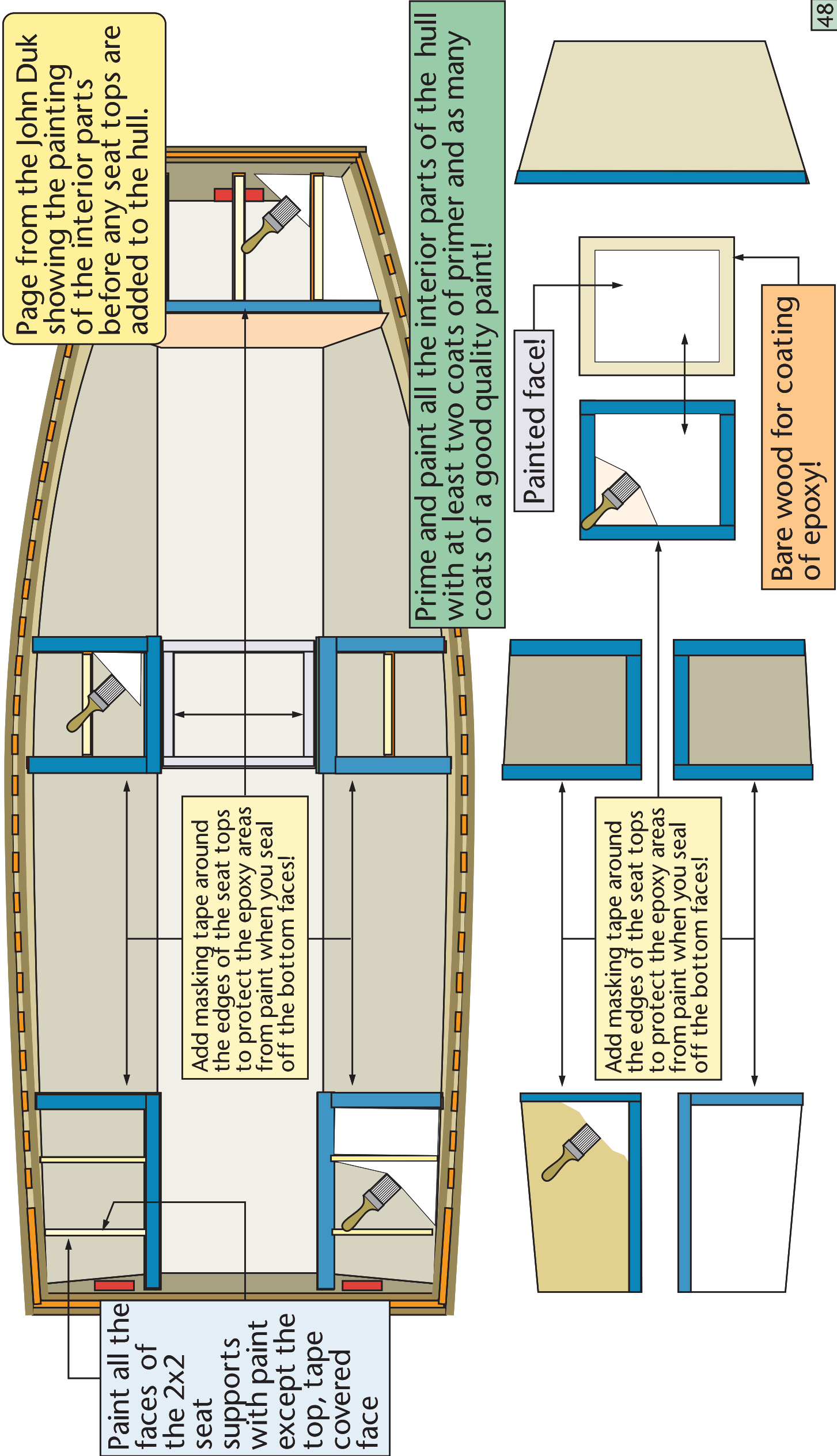
Or 2" tape if you used that on the inside of the hull

Note: You may need to add a 2x4 to support the hull!

Use fairing compound to smooth and hide the edges of the glass tape

Outside seam details





Page from the John Duk showing the painting of the interior parts before any seat tops are added to the hull.

Paint all the faces of the 2x2 seat supports with paint except the top, tape covered face

Add masking tape around the edges of the seat tops to protect the epoxy areas from paint when you seal off the bottom faces!

Prime and paint all the interior parts of the hull with at least two coats of primer and as many coats of a good quality paint!

Painted face!

Add masking tape around the edges of the seat tops to protect the epoxy areas from paint when you seal off the bottom faces!

Bare wood for coating of epoxy!

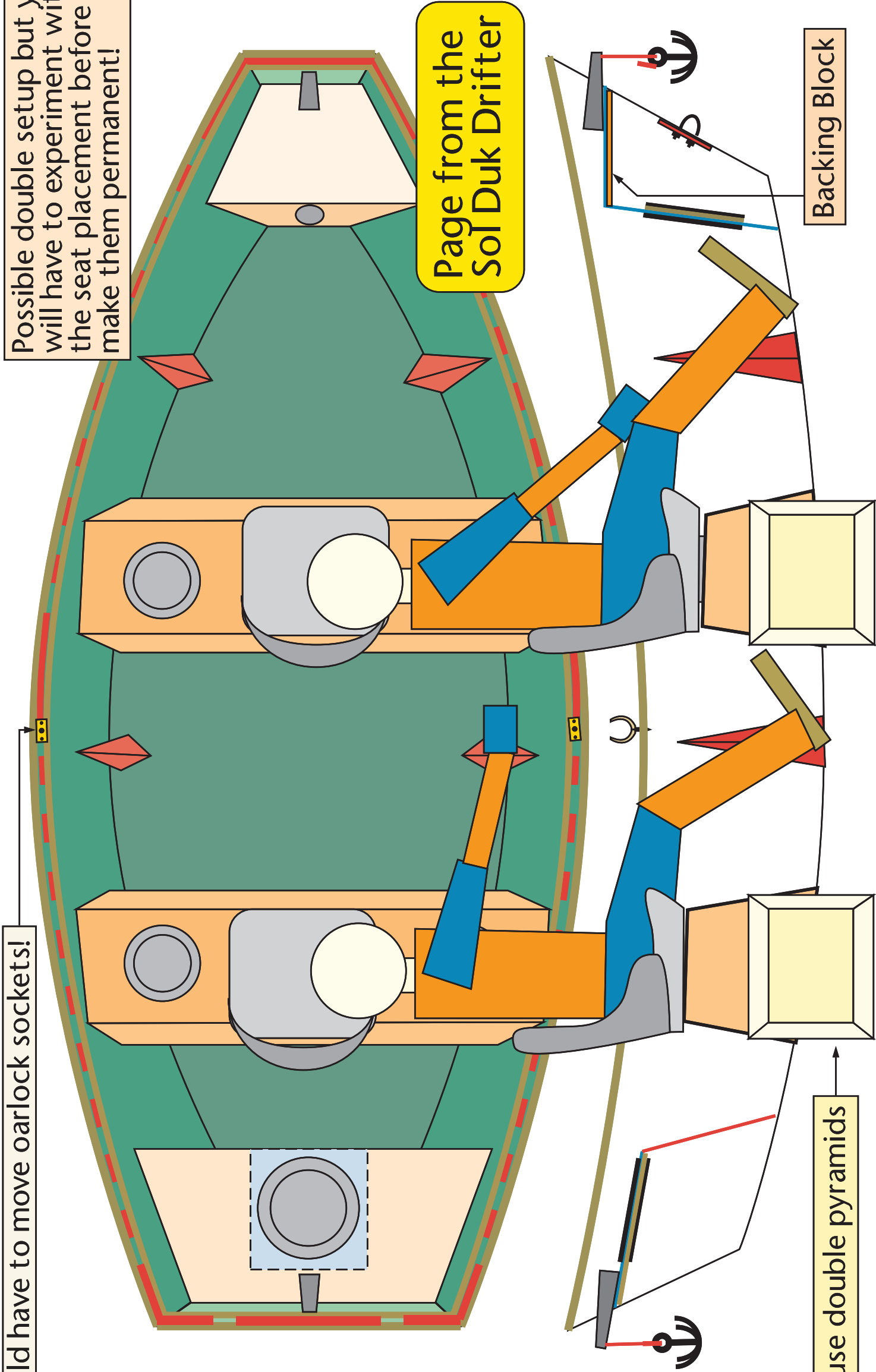
Would have to move oarlock sockets!

Possible double setup but you will have to experiment with the seat placement before you make them permanent!

Page from the
Sol Duk Drifter

Or use double pyramids

Backing Block



Adjust seat placement fore and aft for hull balance!

