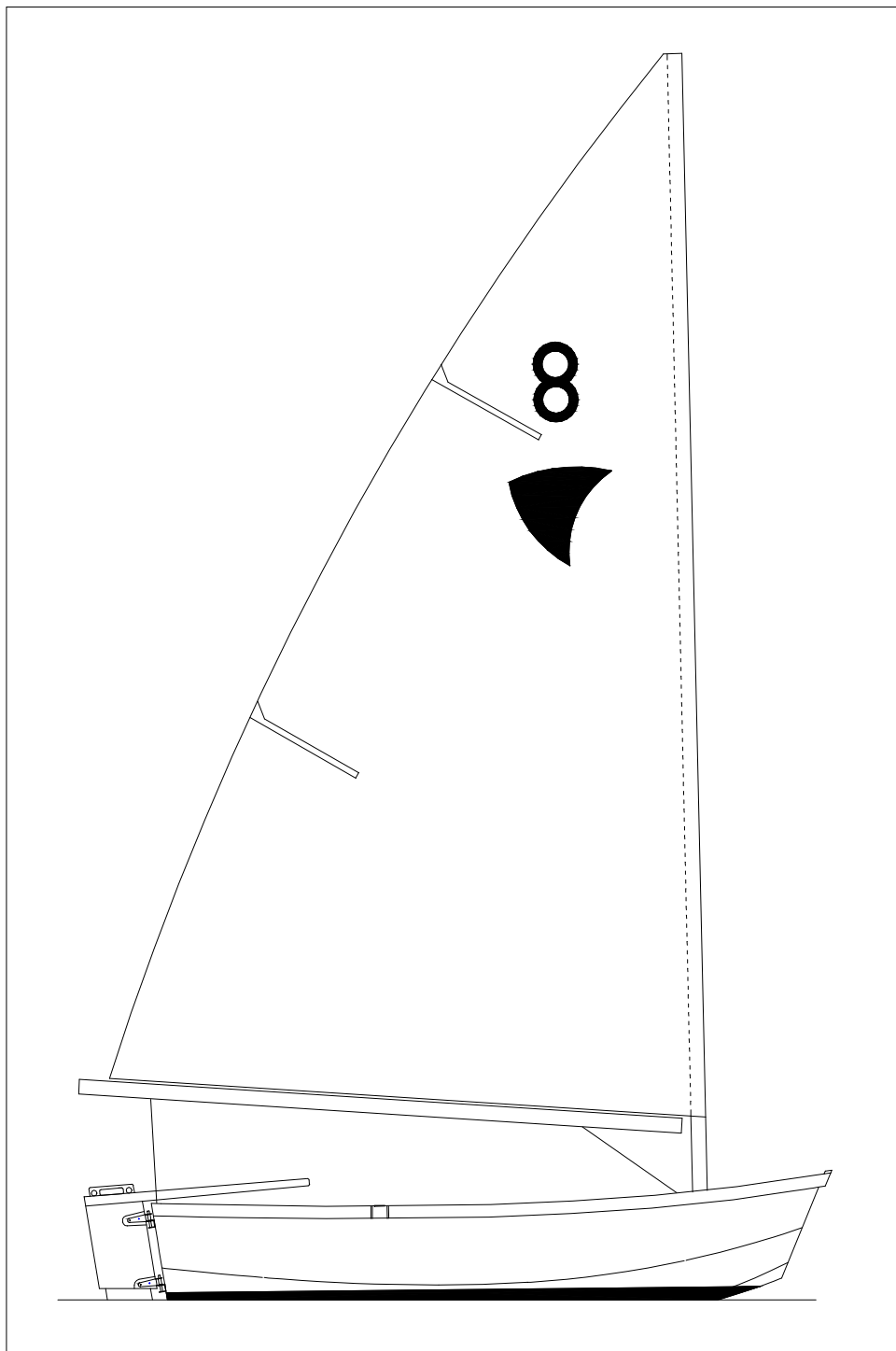


# THE PIPPIE TRAINER



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## **INTRODUCTION**

The Pippie Trainer is a simple little boat designed for 1 - 2 people, and can be easily constructed by one person without any special skills.

The Pippie Trainer is designed specifically for young children learning to sail, or for pottering around in a marine etc.

It can be built from four (4) sheets of plywood (3 x 6mm sheets and 1 x 9mm sheet) including the very simple jig that is used to construct it. All ply sheets are 1200mm x 2400mm in size and should be marine plywood.

The weight of the boat will vary depending on the type of ply used, but with medium weight ply should not exceed 55 - 60Kg. Heavier ply, such as Hoop Pine, will be a little heavier.

## **DISCLAIMER**

These plans have been carefully prepared, however the designer can take no responsibility for any amateur built boat built to these plans. The designer liability is limited to the price paid for the plans.

It is recommended that a good book be purchased on the subject of wood / epoxy boat construction, with particular reference to stitch / glue and tack / tape construction.

Recommended books are:

The Gougeon Brothers on Boat Construction (Gougeon Brothers)

Build the New Instant Boats (Harold 'Dynamite' Payson)

Devlin's Boat Building (Sam Devlin)

## **VIEWING AND PRINTING THIS E- PLAN**

This document is in PDF format and can be viewed directly on your computer. This may be adequate for reading the text portions of the document, however for viewing the drawings and obtaining quotes etc you will want to print the document. This can be done on any good quality laser or ink jet printer.

If you do not have a good quality printer (smaller, cheaper, home laser printers may not do the best job with the fine lines of the drawings), you can take the file to many printing shops (on a USB memory stick) and they will print it for you at a reasonable cost. Most Printers now print from PDF files.

If printing at home, make sure you have your printer set at best quality print, to ensure that the fine lines of the drawings are as clear as possible. They are drawn fine deliberately to provide quality of detail. Drawings are also set with narrow page margins, and on some printers you may receive a message advising that the documents content is outside the default margin settings for the printer. If asked to proceed, you should answer yes.

**Always ensure that your printer is set to A4 paper size**

This document may be viewed and printed, but may not be edited or altered in any way.

## BUILDING NOTES.

This boat is built in a series of fairly easy and straightforward steps.

STEP 1 - MARK OUT AND CUT THE PANEL COMPONENTS
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You will find a general guide for laying out the panels on the sheets of plywood on sheet #3 of the drawings. The actual dimensions for each panel are given on sheets #4, #5, #6, #7, #8, and #9. The easiest way is to cut out all your panels first and then assemble the boat. The following points are worth noting

1. On sheet 4 of the plans you will notice that the shapes for the bilge panels are indicated but no dimensions for these panels are actually given. One of the main problems with the tack and tape method of construction is that human error can creep in fairly easily if you are not careful, so it is unlikely that a precut bilge panel (which is the last to be fitted) will be a precise fit. This is easily overcome. Just cut ply strips 310mm in width, and later on during construction, you can simply lay the ply over the gap between bottom and topside panels, tape / weight it down so that it holds the shape, and then mark the inside with a pencil. This will give you the exact required panel shape, which you can then cut out.
2. On sheet 5 the bottom panel is cut as a single unit. Once you have the general shape, the slot which extends about halfway along the panel centerline from the front can be cut. This is easily marked with a flexible batten and then cut with a fine saw blade (a jig saw or a hacksaw blade in a holder). The slot is 7mm wide at the forward end, but reduces to a single cut from a point 1850mm from the aft end.
3. Transom panels should be cut first then beveled before assembly. Because the ply is very thin (9mm) and the bevels are very small, the join of hull panels to transoms are unlikely to be perfect, but thanks to the gap filling qualities of epoxy they will be fine if close enough.
4. The seat top panels on sheet # 8 are as per the plan drawings. Again, because of the possibility of small variations creeping in during construction, you may wish to cut these a little over sized at the ends, and fit them more precisely whilst installing.
5. On Sheet #10 Note that the forward top corners of the jig must be trimmed away a little otherwise they will interfere with the fitting of the bilge panel.

## STEP # 02 - CONSTRUCT THE BUILDING JIG

This boat is built on a simple jig. This is necessary because the tack and tape method requires the hull to be built over its own bulkheads (in this case the seat panels), unlike stitch and glue which does not require a jig at all for small boats. Tack and tape is however much easier than stitch and glue, and the method allows for much better control over the hull shape.

The jig is 4 simple panels of 9mm ply (Sheet #9). Cut them out and assemble them as shown on the plan drawing. Note:

1. The long side panels are stiffened with a 31mm x 31mm timber brace along the bottom edge on the outer side. This stiffens the panel and allows you to clamp the jig to a couple of saw horses. Make sure you do this on a dead flat surface to ensure the side panels are straight. Join the panels with 19mm x 19mm cleats in the corners.
2. Fit a couple of diagonal braces across the top to make sure the jig stays square. Make sure the assembly is done on an absolutely flat surface and that the box is absolutely square to start with.
3. The slots in the top edges of the panel sides are to hold the seat panels over which the hull is assembled. These panels are 6mm thick, so the slots should also be 6mm wide. The slots should be a reasonably tight push fit, but if they are a bit wide the seat panels can be secured with dry fitted timber blocks etc. (It is critical that the panels be fitted accurately and securely so they do not move during construction.)
4. Note that the aft end of the jig is sloping. The aft transom panel will be fitted to this later. The forward seat panel sits in a little lip at the forward end of the jig.

## STEP #03 - FIT SEAT PANELS AND AFT TRANSOM

The seat panels are fitted into their respective slots on the jig. You should have centerlines drawn on each of your seat panels and transoms (always mark your main reference lines on all panels) so these can be used as a guide.

Stretch a string down the exact centerline of the jig, from the mid positions on each jig end panel (run it under the diagonal braces) and use this as a guide. A secondary back up is to draw lines parallel to the centerline on each seat panel and 300mm out on either side. If your

jig is square then these lines should align with the outside of the jig side panels once the panel is installed. Don't permanently secure the panels at this stage (use small clamps etc if they are not tight fits in the slots)

The aft transom panel should be installed by simply clamping it to the back side of the jig aft panel. Fit the transom panel so that its lowest edge (the actual transom top) is 11 - 12mm above the bottom corner of the side panels, but again, just clamp it. You may need to adjust it later.

The forward seat panel sits in a slight notch at the front end of the jig, and is simply clamped or screwed to the front panel of the jig. Note that the front top corners of the jig will project a little above this panel. It should be marked and then trimmed away before the panel is secured, otherwise it will interfere with the fitting of the bilge panel.

**NOTE#** All those edges of the seat panels (but not the transoms) which will come in contact with hull panels must at this stage be taped with plastic tape. This is to prevent them being accidentally glued into the hull, as they must be removed later to allow the inside seams of the hull shell to be glass taped.

#### STEPS #4 and #5 - FIT TOPSIDE AND BOTTOM PANELS, AND BOW TRANSOM

These steps are treated together here because you can do them in any order, and you may wish to do the bottom panel first if your transverse seat panels are not all that secure. It is easier however, to do the topsides first, so make sure your seat panels are correctly aligned transversely, and secured.

#### TOPSIDE PANELS

It will be easier if you have a couple of willing hands to help here. With someone holding the front end up and in, secure the aft edge to the topside edge of the aft transom. Because the transom is 9mm thick, you can do this with small thin screws and packaging tape. Don't glue it at this stage.

Next, bend the bilge panels around the seat panels and secure them to the seat panels. Secure the bilge panels to the topside edges of the seat panels so that the topside / bilge edge of each panel (the uppermost edge on set up) is aligned with the topside chine angle on the panels. Because the play is thinner here, screws are difficult, but small thin brad nails can be used to tack them on (don't drive them right in) and once fitted, the panels can be secure to the seat panels with dry timber cleats and screws inside if necessary.

It is best to do both panels together, but as long as you don't use glue on anything you can easily make adjustments if something gets out of true.

## **BOW TRANSOM**

The bow transom is free floating. Fix it with dry screws and tape to the leading edge of one of the topside panels, then draw the two sides together and secure the other topside to the bow transom. Because the side panels are predefined in shape, the whole thing should come together within acceptable limits. This will be confirmed when the bottom panel is fitted.

To make sure that everything stays together at this stage, thoroughly tape up the joins between the topside panels and the transoms.

## **BOTTOM PANEL**

Start the bottom panel at the aft transom, and just secure it with some tape. Bend it forward over the seat panels to the point where the forward panel slot begins.

If your seat panels are correctly set up then the edges of the bottom panel should line up exactly with the lower chine angles on each seat panel. If they don't then either your panels are out of transverse alignment or you have not cut your panels accurately. Adjust as necessary until it is right.

Holding both pieces of the bottom panel front end (either side of the slot) bend the front end of the panel down until it fits to the forward transom. The panel will warp slightly as you pull it in to the bottom panel edges of the forward transom. If the fit to the forward transom is not precise, just move the transom a little until it fits.

Once you are sure everything fits and is square, remove the bottom panel and re-fit it using epoxy glue to secure it to the transoms only. The seat panels must remain unglued. At this stage you must secure the slot along the front of the bottom panel. The join should be reasonably close, with only a narrow slot all the way along. Place as much packaging tape as necessary along the slot to hold the slot sides in tightly. As long as the slot is no more than a few millimeters wide it is OK. If you find the slot will not stay closed with tape, insert the odd wire stitch wherever needed (to be removed later of course.)

Once the bottom panel is secured, remove the topside panels and re-fit them with glue at the transoms only.

The main body of your structure is now complete and should be fairly stable. Don't panic if it isn't accurate to the millimeter in all dimensions – no hand built boat ever is!

#### STEP #06 - MARK OUT AND CUT THE BILGE PANELS

As mentioned earlier, it is unlikely that precut panels would fit accurately here due to the method of construction. The way around this is to just cut strips from the ply sheet and lay them down over the hull shell so that they cover the gap between topside and bottom panels. Secure the panel with tape and weights to hold it down onto the hull.

Mark the ends on the outside of the transoms and along the inside of the topside and bottom panels. You can then remove the panel and cut to shape. Make sure you do each bilge panel separately as they are unlikely to be the exact same shape (even though the boat is identical on both sides).

#### STEP #07 - FIT AND SECURE THE BILGE PANELS

The bilge panels should now fit pretty neatly into place, since they were specifically cut to fit. Fit them just as for the other panels, with glue to the transoms and taping across the chine seams wherever necessary to hold the panels in place and shape.

If there is a hard spot along a seam (which there should not be, since you marked to shape) just run a hack saw blade along it to clean it up.

### SECURING THE HULL PANELS

This is where it gets interesting. The panels are secured with thickened epoxy glue (pre made or home made with epoxy resin and fillers) and this begins with what is called 'dollop' securing. At intervals along each chine seam, on the outside of the hull shell, squeeze a dollop of glue into the slight 'V' of the seam. Once you have done this along all 4 seams and allowed the dollops to dry and cure a little, the hull shell is now secure and your packaging tape can be removed from the hull.



## STEP #08 - FILL THE CHINE SEAMS

The first step here is to carefully tape the insides of the hull seams to prevent glue running through the gaps and away. If you have help you can carefully lift the shell of the jig and turn it over for this, but be very careful as the shell is still relatively unstable. If you choose to do this, leave the outer securing tape on until you are finished with the inside taping.

Otherwise, the inside can be taped by carefully taping over the seams between the seat panels. The tape needs to be fitted right into the angle (see sheet #13) to be effective.

Once the taping is done, turn the shell back over and trowel glue into the full length of each chine seam. Once the glue has gone off a little, sand it back so that the chine is smooth and slightly rounded.

NOTE# Before you fit the 'dollops' or fill the seams it is essential to coat the full length of each seam with epoxy resin. You don't need to do the whole hull shell at this stage, but it is essential to seal the ply edges inside the chine seams. If you do not do this, the dry timber will suck resin out of your epoxy glue, making the glue, and hence the chine, weaker.

Once the seams are completed, you are ready to sheath the outside of the hull

## STEP #09 - SHEATH THE HULL EXTERIOR

There are many of these little ply dingys that omit this step, but lets face it, if you don't want your tender to be torn to shreds every time you beach it you will need this.

The hull sheathing is simply 200 gsm woven glass cloth. Other than securing the outside of the chines the sheathing is not strictly structural. For this reason it can be laid transversely, and it is not critical that the joins between cloth panels be overlapped. Make sure however that they are tightly butted, as the cloth also acts as the external tape for the chine seams.

If you intend your tender for some hard knocks it is recommended you be a bit more secure about it, albeit at the expense of greater work required. In this case you might like to run 50mm wide glass cloth along each seam before you sheath the hull.

Another alternative, and a preferable one for a boat intended for hard knocks, is to lay the glass panels lengthways, with a join along the centerline. Trim the glass at the gunwales later.

This creates unbroken sheathing along the chines and with less fairing, but will use up a bit more glass. You can use the remnant to cut tapes for the interior work later.

Laying the glass cloth is straight forward. Coat the entire outside of the hull with epoxy resin and allow it to go a little tacky. This will hold your glass in place while you work on it. Lay the cloth onto the hull and thoroughly wet out. Once the resin has started to go off, trim the gunwale edges etc .

At the transoms, the glass should be run over the edges and about 50 mm onto the transoms. Sheath each transom first, and run the bottom sheathing over the joins. The transoms will require a bit of fairing later. Add a bit more resin anywhere you think it needed to fill weave or where the cloth appears resin starved.

Lastly, use epoxy filler to fair anywhere it is necessary (tape joins and overlaps).

#### STEP #10 - FIT AND SHEATH THE SKEG.

The skeg is in two parts, the skeg itself and the hardwood keel plate along its bottom edge.

The skeg is simply cut to shape by sitting the timber over the inverted hull shell and marking the bottom panel curve onto the timber. Then cut to shape and glue it to the bottom panel.

The keel plate is simply glued to the top of the skeg timber. Not that at the forward end there is a slight curve and you might need to cut a few kerfs into the strip to make it curve neatly. Also the hull bottom starts to 'V' here so make sure the plate strip is well bedded. Secure the plate with a few screws.

Run good and large fillets of high density epoxy filler along both sides of the skeg to round out the corner and then clean it up.

Lastly, the skeg must be sheathed with two layers of 200 gsm glass cloth, extending at least 50mm onto the hull bottom on each side. Finish as for the sheathing of the hull.

You can now turn your shell over to work on the interior.

## STEP # 11 - FILLET AND TAPE THE CHINE SEAM INTERIORS

Remove the shell from the jig, turn it over and remove the seat panels. Before you do this carefully mark with a pencil the exact location of each seat panel as you will be re-installing them later. Coat the entire inside surface of the boat with epoxy resin.

Remove the tape from the interior of each chine seam. If you did your taping correctly and well there should be a minimum of clean up from epoxy seeping through from outside.

Run a nice wide fillet of epoxy filler along each seam inside the boat (chines and transoms), to fill any gaps and round out the angles. Lay 75mm wide tape along ALL interior joins and seams. You can make this tape easily by carefully cutting strips from your cloth. If you want a really need job you might want to use pre-cut tapes, but it is not strictly necessary.

NOTE# Many small dingys use 50mm wide tape here, but the general rule of thumb is 9 times the ply thickness for each leg of the join, so for 6mm ply that equals 108mm for the tape width. This is clearly excessive in a little boat like this, but 75mm is better than 50mm.

## STEP #12 - RE-FIT THE SEAT PANELS.

The tape covering the edges of the seat panels should now be removed, and the edges trimmed. Each panel will require just a little sanding and trimming especially at the chines, where you will have to make allowance for the thickness of the chine fillets and tapes. Just do it with a sanding block via. trial and error.

Once each seat panel is fitted, secure it back in place with a few dollops of epoxy glue. Once the dollops are cured you can run high density epoxy fillets all the way around the hull / panel joins, on both sides of the seat panel.

Note that on the inside (of the seat) of each seat panel, the epoxy fillets should end about 20mm from the top edge of the panel, otherwise they will get in the way when you fit the framing for the seat tops.

Glass tape is not necessary for the seat panel joins. High density fillets should be more than enough as long as they are done carefully.

## STEP #13 - FIT GUNWALES AND BOW BUMPER

### GUNWALES

The Gunwales are the stiffening timber for the top edges of the hull shell sides. Each gunwale is two strip of 12mm x 42mm timber glued to the outside of the topside along the top edge, and secured with clamps until the glue cures. It is easier to do each of the two layers separately. Note that the gunwales fit over the hull sheathing.

At the position of the oar rowlocks, glue a third short layer to form a block for the row lock plates.

If you want to clear finish the gunwales you need to be very careful to get everything even and straight, as imperfections will be obvious. Personally I recommend fill, sand and paint. This is intended to be a work horse, and many sailors will want to fit rubber bumpers etc over these anyway.

### BOW BUMPER

This is simply a curved 19mm x 42mm timber strip fitted across the top of the bow transom. Cut it to the transom top curve from a piece of 68mm wide timber and glue it in position. Fill / sand / paint.

## STEPS #14 and 15 - COMPLETING THE SEATS.

The centerboard case should be installed before completing the mid seat. See below

The framing in the top of the seats is shown on sheet 16 of the drawings, and is fairly self explanatory. Note the 68mm wide centerline members in the forward seat (to support the mast if you add one tater) and the center seat (to support the rower.)

Framing cross pieces should be housed slightly into the seat panel top framing, and secured with glue and screws.

The ply seat top panels are simply glued / screwed down onto the framing. Note that it is easier to fit each panel in two halves, with a join on the centerline, if you need to adjust the fit at all.

The center seat panel can be fitted in three pieces, and the center piece hinged and latched to form a locker in the center seat. If you do this, the center 68mm timber support can be omitted.

The fore and aft seats must be finished water tight (no exceptions) and each should be fitted with a small inspection port in the seat vertical panel, to allow ventilation when the boat is out of the water.

Note# fit the 'U' bolt in the bow transom before you fit the forward seat top.

## **CENTERBOARD CASE**

Build your centerboard before the case, and adjust the case width as necessary to ensure that the board is an easy but snug fit.

The centerboard case is a simple box with 2 plywood sides (6mm) and end packing timbers, fitted into the hull between the fore and aft panels of the mid seat. Do this before finishing off the mid seat top. (You may also like to do this jib before installing the mid seat panels, just to make sure the case will fit neatly.)

Construct the case as per the plans. Note that the side panels are sheathed in glass on the inside before the case is assembled. The end timbers are nominally 19mm x 21mm wide, and you can cut these from 31mm wide timber. Check your centerboard thickness first however, and adjust the width of the packers if necessary.

The case is fitted right through the hull. Cut a slot to the exact width and length of the case, and bevel the hole a little on the inside of the hull. Note that the slot is offset to port to clear the skeg.

Fit the case in position so that its bottom edge is flush with the bottom of the hull. With the case supported by clamps at the top to the seat panels, fill the slot with epoxy around the case and build up a good fillet along both sides of the case. The ends of the case should be glued to the seat panels at the same time, of course. Once the fillet has started to go off, fit a little glass tape on either side to cover the fillets. Turn the hull over and clean up/ fill/ fair/sand the bottom of the case, then cover the join with glass tape and finish off.

NOTE#, when you are glassing the case in, make sure you do not accidentally compress the sides of the case so that the internal slot ends up smaller than intended.

## **CENTER BOARD**

The center board is a simple laminate of three thickness' of 6mm ply. Cut them to shape and glue them together on a flat surface. Once the glue is dry, you can shape the board to a foil shape. Draw a line across the blade at the point where it would exit the bottom of the

centerboard case, and only shape the foil below the line. Leave the top part of the board square so that it will sit neatly in the case.

The top of the board may be fitted with a slot handhold if desired, and also rubber stoppers to prevent it from falling right through the case. Another option is a timber retainer glued to the top edge, and a small handle screwed on to lift the board.

Once the board is shaped, it should be glassed all over and then filled / faired / finished.

## **RUDDER BLADE**

The construction of the rudder blade is exactly as for the center board.

## **RUDDER BOX AND TILLER**

The rudder box is basically just a simple box with ply sides and end packers. Construction is as for the center board case.

On either side of the box glue plywood packers to bring the width out to that required by the rudder gudgeon fittings. These packers also add extra thickness for the fitting of the gudgeons.

NOTE# the best way to securely fit the gudgeons is with small flat head s. steel bolts fitted from the inside of the box. To do this you may wish to do a dry fit before closing up the box, to allow you to locate and drill holes and countersinks for these bolts. Cut your bolts short to the required length and they should be easily inserted once the case is closed.

The tiller is simply two pieces of timber glued / screwed to the top of the box and then bent in to glue to each other forward. These are then shaped to an easy hand hold. Some timbers will bend easily, but if yours is particularly stiff you can bed it by soaking it for a while in boiling water. Just make up a simple trough with some bricks and sheet plastic, put in your timber and pour on boiling water. When they have soaked well, clamp them to shape on the box and then allow them to dry out completely before gluing.

## **MAST STEP**

The mast step is a simple structure at the base of the forward seat panel in the centerline of the boat. It is simply a laminate of 4 pieces of ply, three of which have holes cut for the mast, and one of which is solid. (see sheet 20). The mast step is seated and held level by two small pieces of 19mm thick timber which are set into the hull 'V' underneath it. These are shaped to fit and glued in place, then the step pad glued / screwed down on top.

## MAST COLLAR

At the forward seat, a hole is drilled with a hole cutter, 52mm in diameter, through the seat ply and the 69mm timber king plank underneath it. A further collar ring of 9mm ply is fitted on the top of the seat, to provide a firm brace for the mast tube.

## FINISHING THE BOAT

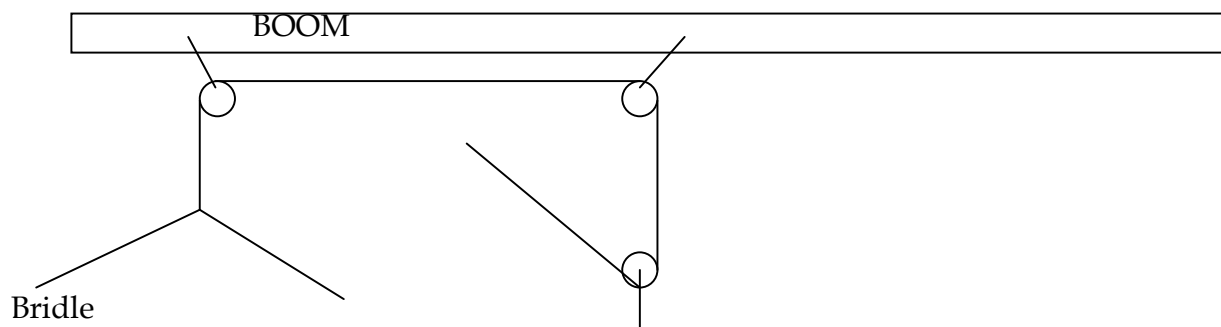
To finish the boat, you need to finish the transom. Fit the transom brace (19mm x 42mm) across the top, and fit the motor bracket. To do this, pack the transom out behind the bracket with two layers of 9mm ply, then fit a 6mm layer of ply over all, as shown on sheet 17.

Now all that is left is to fill, sand and paint the boat. How well you wish to do this is entirely up to you.

## FITTING OUT

A basic fitting out list is provided. Because this boat has only a mainsail and no stays, rigging is a simple exercise. Points to note are.

- The mast must be secured in place. This can be a thin bolt through the mast step and the base of the mast, but an easier way to do it is to fit a couple of small saddles to the forward seat panel or the forward seat top. Put a couple more on the mast just a bit above these, and then secure the mast by simply lacing it in.
- The main sheet system is up to the builder, but the fittings will provide a simple system as follows. The bridle can be attached to the transom with small saddles bolted through the transom brace.



## **MATERIALS LIST**

This list will provide sufficient materials to build the Pippie 8 trainer if built to plan.

### **PLYWOOD**

6mm ply                    3 sheets 2400mm x 1200mm  
9mm ply                    1 sheet 2400mm x 1200mm

### **TIMBER**

#### **Softwood**    (Oregon or Hoop Pine)

12 mm x 31mm        2 meters  
12mm x 42mm        10 meters  
19mm x 19mm        10 meters  
19mm x 31mm        2.5 meters  
19mm x 42mm        3.2 meters  
19mm x 68mm        1 meter  
19mm x 93mm        1.1 meters  
31mm x 31mm        4 meters

#### **Hardwood**

19mm x 19mm    1.5 meters

### **WOVEN GLASS CLOTH**

200 gsm w.g.c.        10 Meters<sup>2</sup>

### **EPOXY MATERIALS**

Resin                    10 liters  
Fillers etc              These differ depending on the type of resin - discuss with your supplier.

Various glassing tools and volatiles – discuss your needs with your supplier.

### **ALLOY TUBE**

50mm o.d. x 3mm wall thickness              6.5 metre length



## FITTINGS

The fittings required for the Pippie are minimal.

Rowlock / rowlock plate sets (2)	Ronstan PNP77 or similar
'U' bolt	Ronstan RF541 or similar
Oars (2) (if required) or paddles (2)	
Plastic inspection port (2)	Ronstan RF530 or similar
Rudder Gudgeons (2)	Ronstan RF239 or similar
Rudder Pintles (2)	Ronstan RF255 or similar
Rudder retainer clip (1)	Ronstan PNP55 or similar
Boom gooseneck (1)	Ronstan RF562 or similar
Boom Vang saddle (1)	Ronstan RF134 or similar
Mainsheet boom hangers (2)	Ronstan RF181 or similar
Boom Vang (1)	Ronstan RF185 & RF341 or similar

The suggested mainsheet system is one using a bridle at the stern to clear the mast (rope bridle will do, and a simple mainsheet leading up to the boom, along to the mid point, and down to a block on the mid seat or floor. You will need the following blocks etc for this.

Ronstan RF1250 or similar (2)  
Ronstan RF1478 or similar (1)  
Ronstan RF1475 or similar (1)

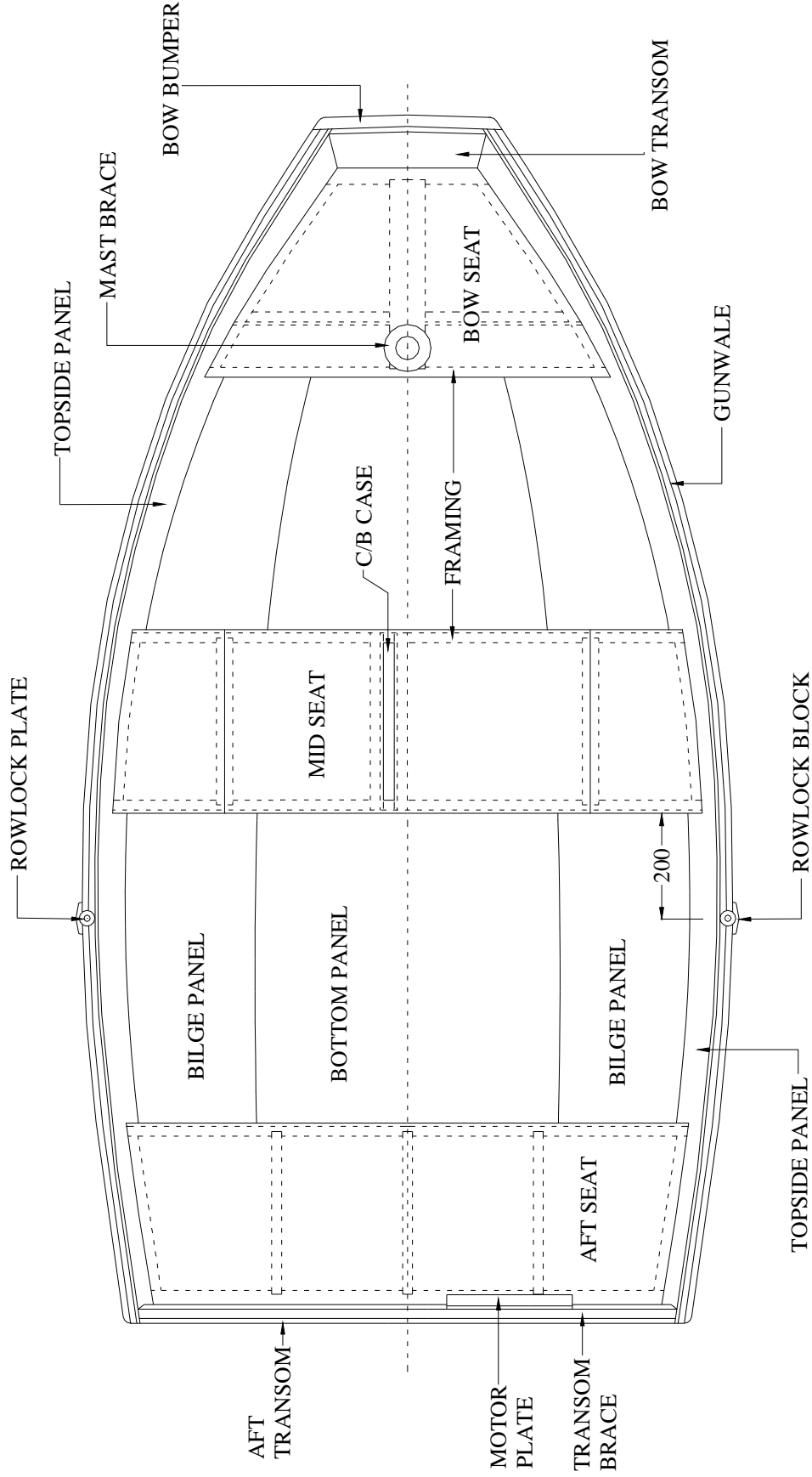
Mainsheet and bridle rope 10mm dia 6 meters

You will also need, depending on how you set up your boat, various shackles, saddles etc. These can be used for such things as mast tie down, vang/mast attachment, mainsail boom outhaul, mainsheet bridle attachment etc. Buy these as/if you need them.



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THE PIPPIE 8 TENDER IS A SIMPLE NUTSHELL STYLE DINGY BUILT FROM PLY USING THE TACK / TAPE / STITCH / GLUE TECHNIQUE. TO BUILD THE BOAT JUST FOLLOW THE BUILDING STEPS.



## PLAN VIEW

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DESIGN: PIPPIE 8 TRAINER  
CLIENT: STOCK PLAN  
SHEET NO: 1 OF 22

SCALE: 1:15

SUBJECT: GENERAL PLAN DRAWING

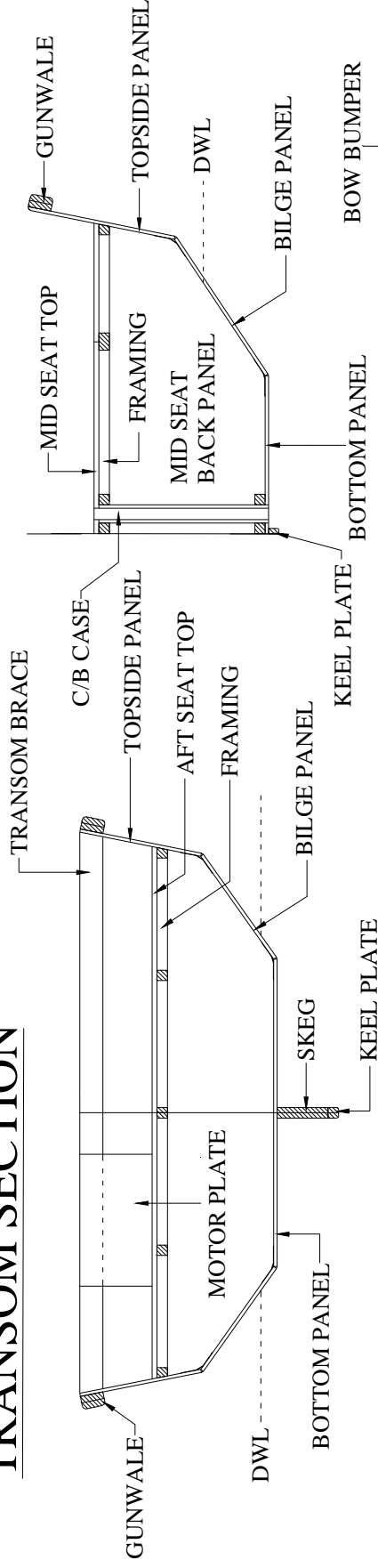
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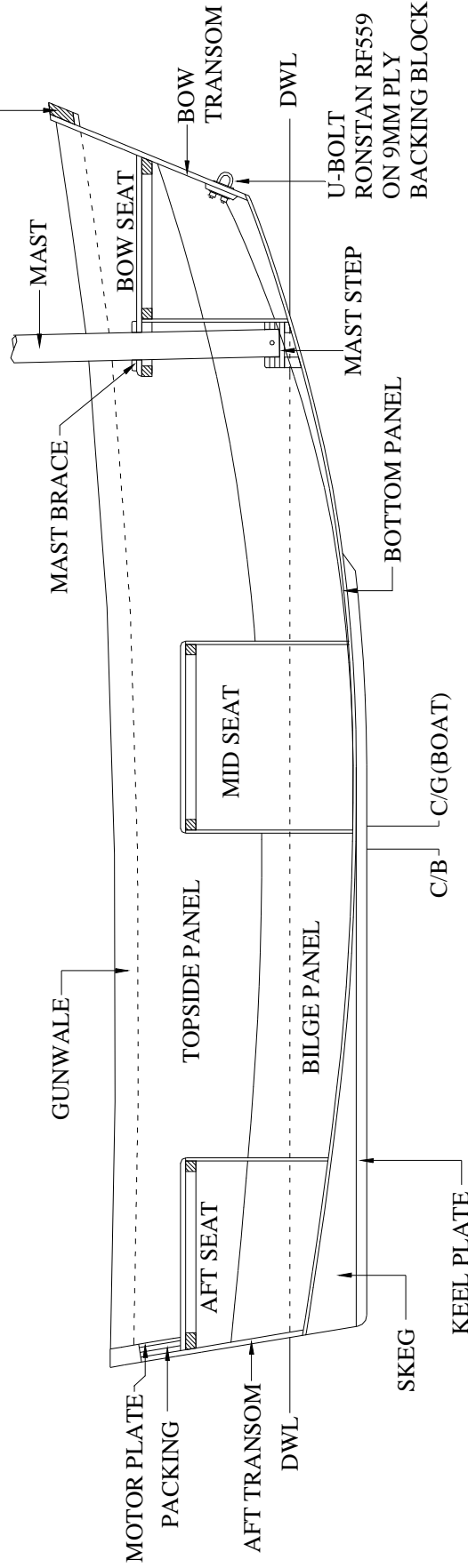
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NOTE THE TRANSOM SECTION IS VIEWED SQUARE TO THE TRANSOM PANEL, AND NOT SQUARE TO THE WATERLINE

## TRANSOM SECTION



## MIDSHIPS SECTION



## CENTERLINE PROFILE

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DESIGN: PIPPIE 8 TRAINER  
CLIENT: STOCK PLAN  
SHEET NO: 2 OF 22 SCALE: 1:15

SUBJECT: GENERAL PROFILE / SECTIONS

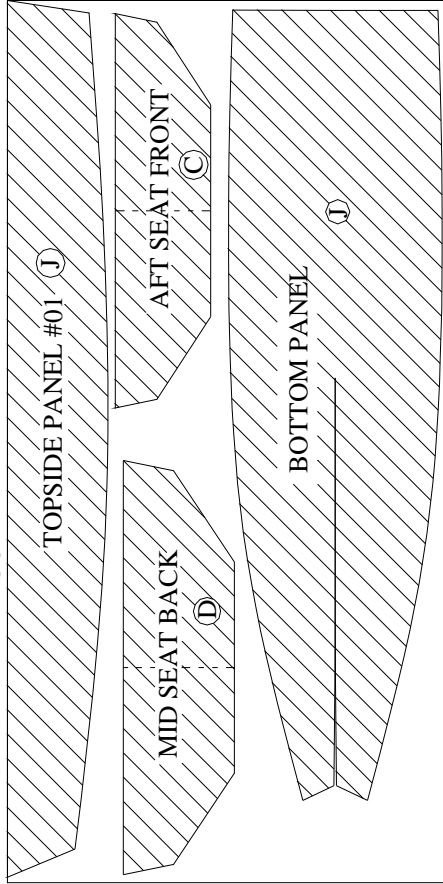
ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS



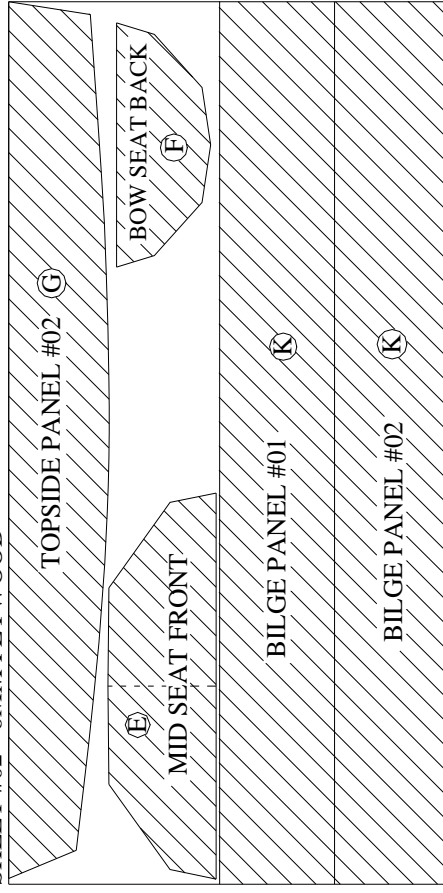
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THIS DINGY CAN BE BUILT FROM 4 SHEETS OF PLY (3 X 6MM AND 1 X 9MM) THIS PLAN SHEET SHOWS THE RECOMMENDED LAYOUT FOR CUTTING THE COMPONENTS FROM THE PLY SHEETS. NOTE THAT TO AVOID CLUTTER, THE DIMENSIONS OF EACH COMPONENT ARE NOT SHOWN HERE. DIMENSIONS FOR EACH PIECE, PLUS NOTES FOR MARKING OUT, ARE SHOWN ON SEPARATE SHEETS.

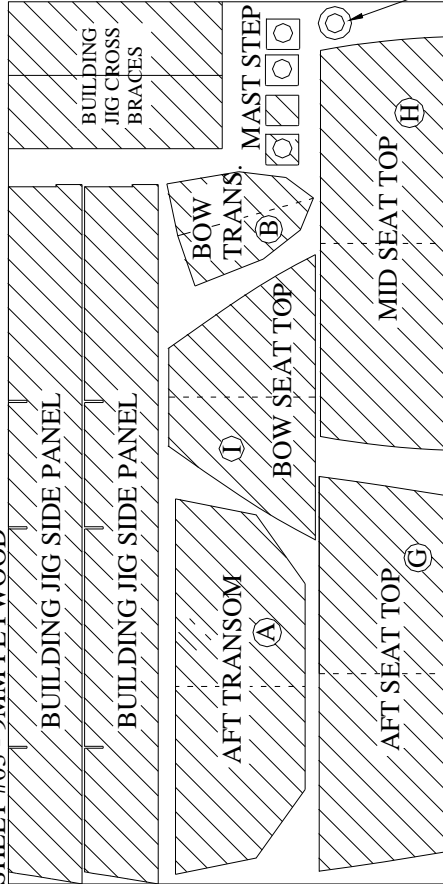
### SHEET #01 - 6MM PLYWOOD



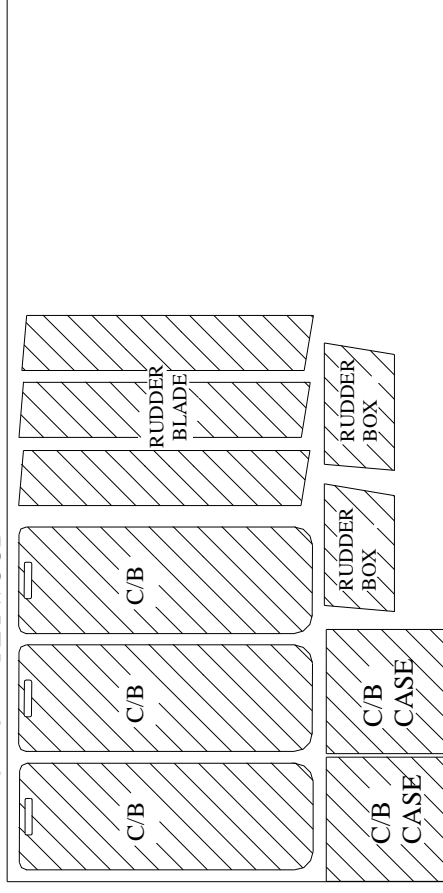
### SHEET #02 - 6MM PLYWOOD



### SHEET #03 - 9MM PLYWOOD



### SHEET #04 - 6MM PLYWOOD



**1** CONSTRUCTION STEP #01 - MARK OUT AND CUT ALL PLY COMPONENTS.

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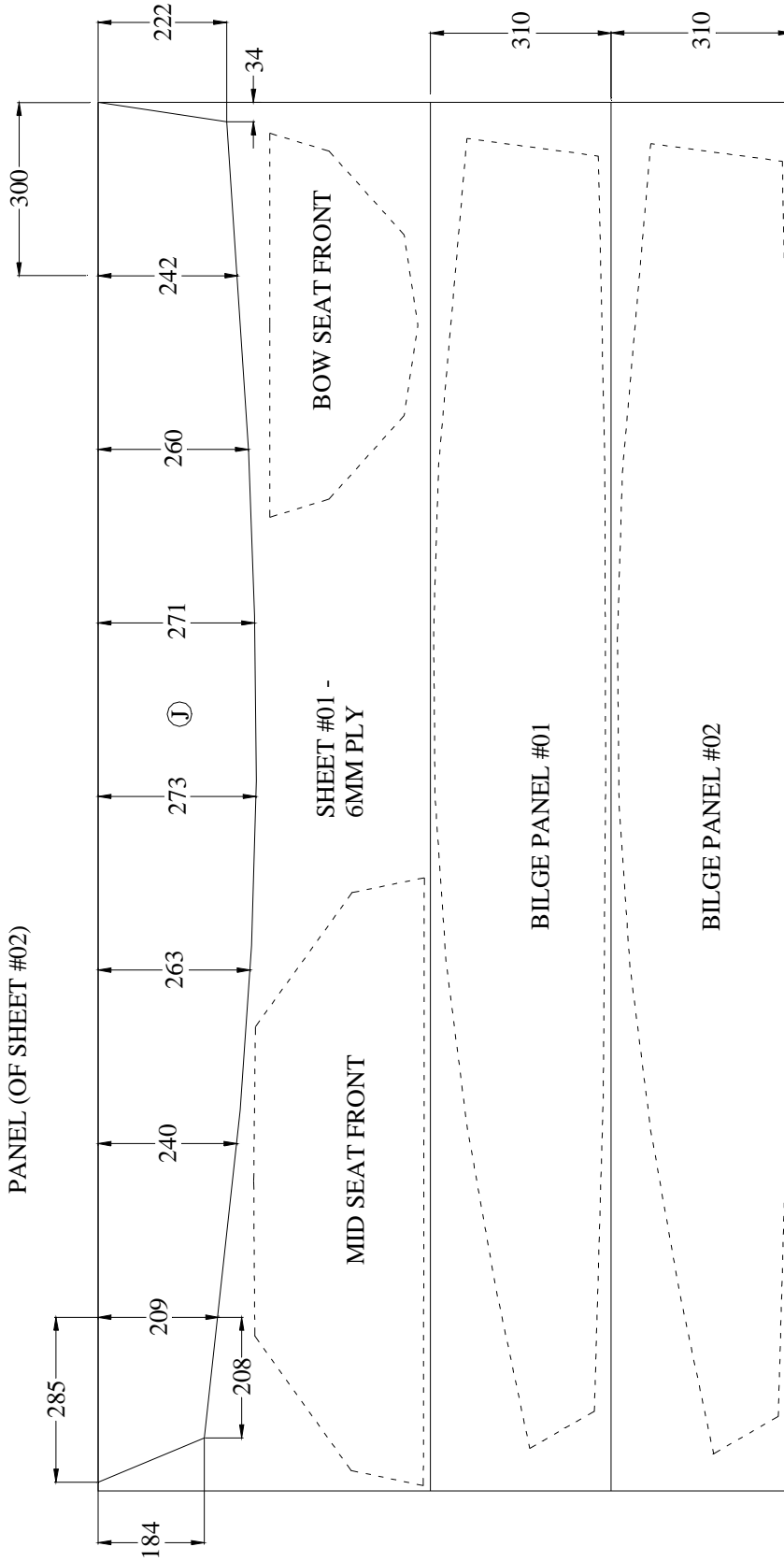
DESIGN: PIPPIE 8 TRAINER  
CLIENT: STOCK PLAN  
SHEET NO. 3 OF 22 SCALE: 1:25  
SUBJECT: PLY COMPONENTS LAYOUT

ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS



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TO MEASURE TOPSIDE PANEL #01, ALL DIMENSIONS ARE FROM THE EDGE OF THE PLY PANEL. DRAW THE ENTIRE SHAPE AND THEN CUT USING A FINE BLADED SAW. USE THE PANEL AS THE TEMPLATE FOR THE SECOND TOPSIDE PANEL (OF SHEET #02)



BECAUSE OF THE HUMAN ERROR AND VAGARIES OF THE CONSTRUCTION METHOD, THE BILGE PANELS ARE MARKED DIRECTLY FROM THE JOB, TO ENSURE AN EXACT FIT. ONCE THE TOPSIDE AND BOTTOM PANELS ARE ON, CUT A PLY STRIP AS SHOWN HERE AND TAPE IT OVER THE HULL GAP, THEN DRAW THE EXACT SHAPE FROM THE INSIDE, AND CUT TO FIT

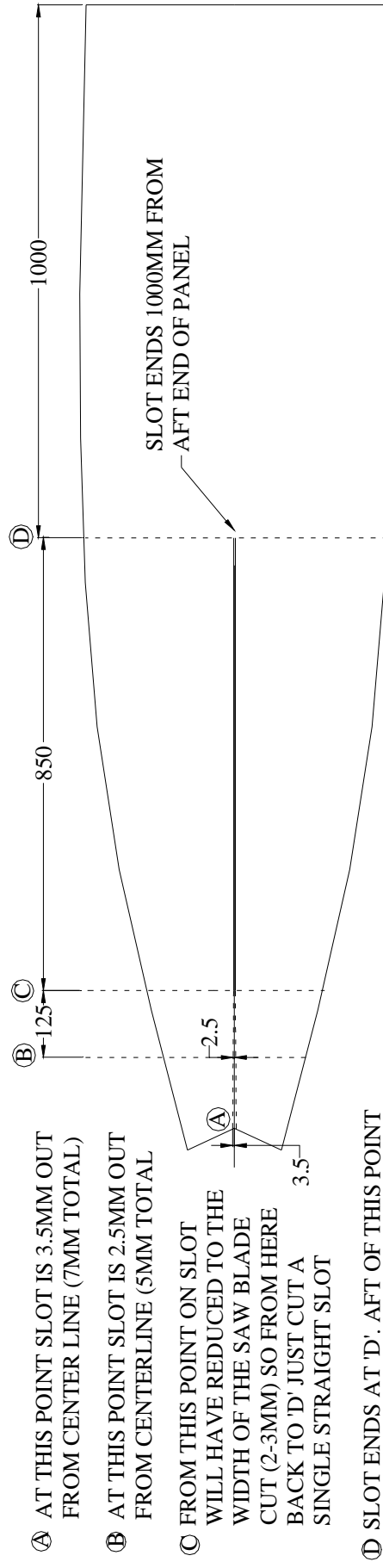
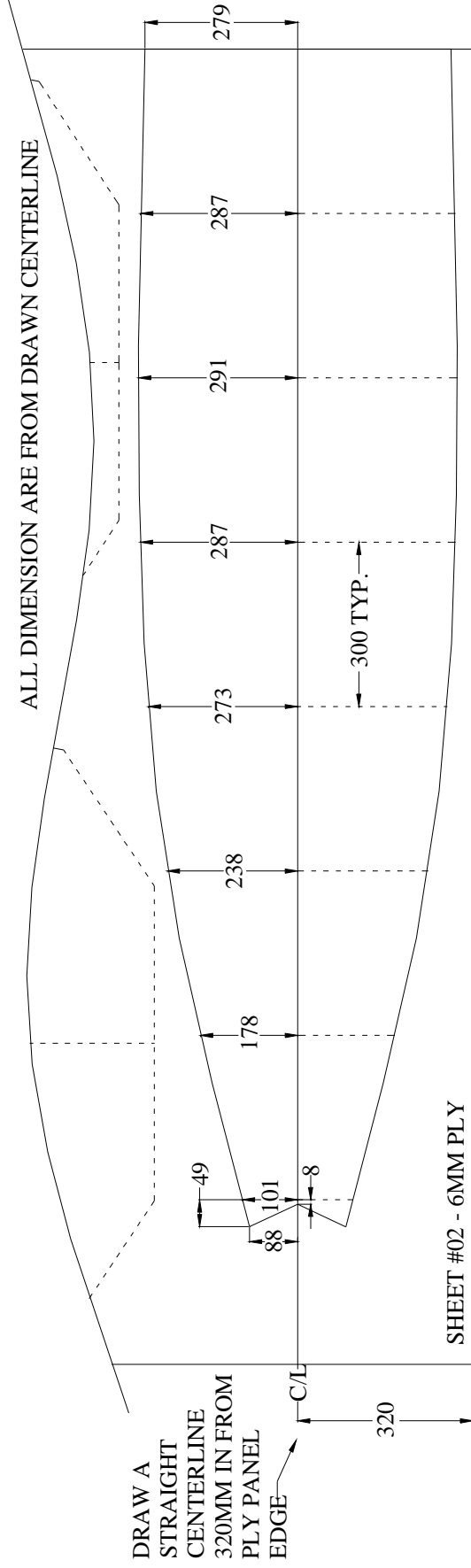
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DESIGN: PIPPIE 8 TRAINER  
CLIENT: STOCK PLAN  
SHEET NO. 4 OF 22 SCALE: 1:15  
SUBJECT: PANEL DIMENSIONS #1



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CUT THE BOTTOM PANEL AS A SINGLE PANEL WITH THE CENTERLINE DRAWN DOWN THE MIDDLE. AFTER CUTTING, CAREFULLY MARK AND CUT THE SLOT IN THE FORWARD PART OF THE PANEL.



- Ⓐ AT THIS POINT SLOT IS 3.5MM OUT FROM CENTER LINE (7MM TOTAL)
- Ⓑ AT THIS POINT SLOT IS 2.5MM OUT FROM CENTERLINE (5MM TOTAL)
- Ⓒ FROM THIS POINT ON SLOT WILL HAVE REDUCED TO THE WIDTH OF THE SAW BLADE CUT (2-3MM) SO FROM HERE BACK TO 'D' JUST CUT A SINGLE STRAIGHT SLOT
- Ⓓ SLOT ENDS AT 'D'. AFT OF THIS POINT THE BOTTOM PANEL IS A SINGLE FULL WIDTH SHEET

NOTE USE A FINE SAW BLADE TO CUT THE SLOT (EG - HACKSAW)

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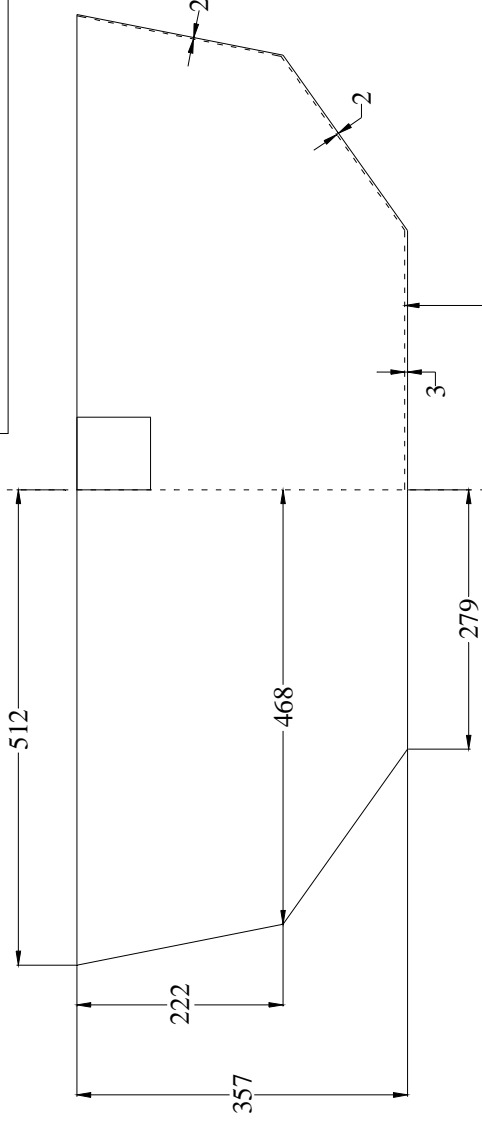
DESIGN: PIPPIE 8 TRAINER  
CLIENT: STOCK PLAN  
SHEET NO. 5 OF 22 SCALE: 1:15  
SUBJECT: PANEL DIMENSIONS #2

ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

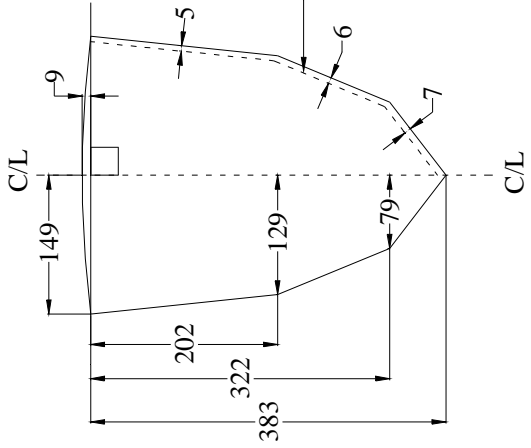


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## AFT TRANSOM **(A)**



BOTH TRANSOM PANELS ARE CUT FULL SIZE AND THEN CAREFULLY BEVELED.



BEVELS ON BOW TRANSOM ARE ON FORWARD SIDE

## BOW TRANSOM **(B)**

BOTH PANELS ARE CUT FROM 9MM PLY (PLYWOOD SHEET #03)

BEVELS ON AFT TRANSOM ARE ON AFT SIDE

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DESIGN: PIPPIE 8 TRAINER  
CLIENT: STOCK PLAN

SHEET NO: 6 OF 22 SCALE: 1:10

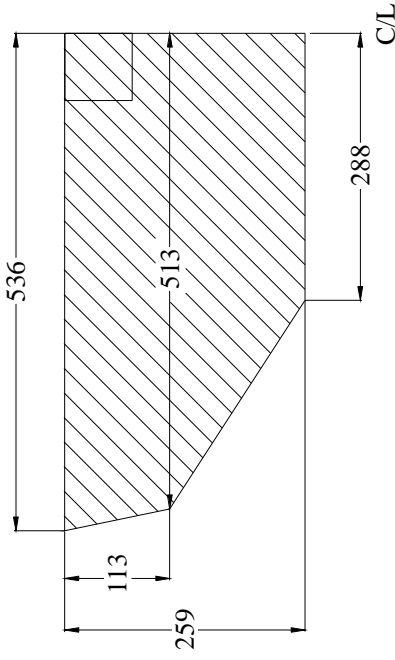
SUBJECT: PANEL DIMENSIONS #3

ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

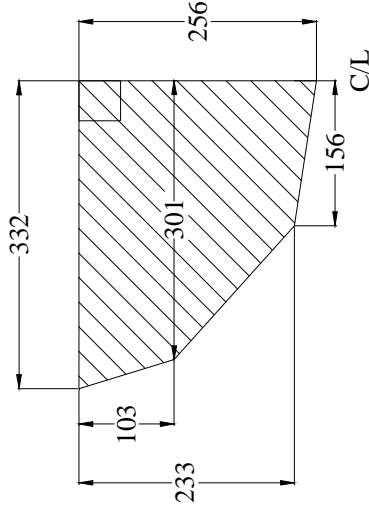


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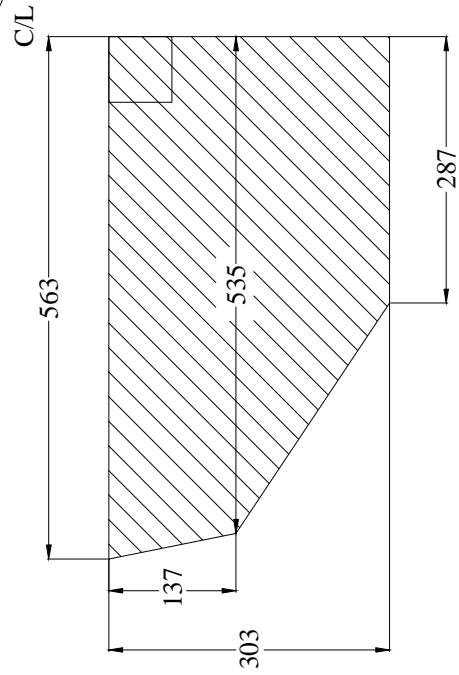
## AFT SEAT FRONT PANEL C



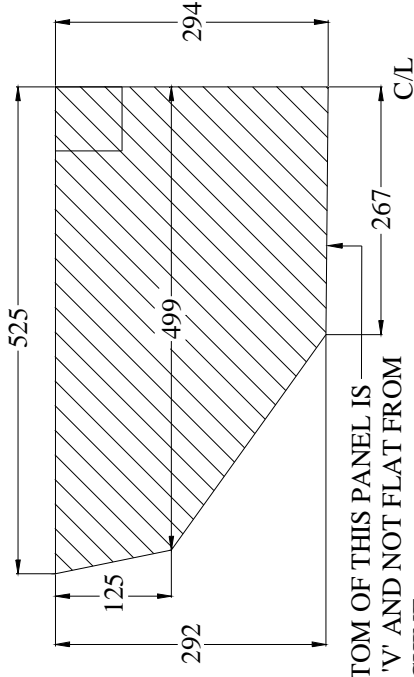
## BOW SEAT BACK PANEL F



## MID SEAT BACK PANEL D



## MID SEAT FRONT PANEL E



NOTE BOTTOM OF THIS PANEL IS  
SLIGHTLY 'V' AND NOT FLAT FROM  
CHINE TO CHINE

THESE PANELS ARE ALSO USED AS PART OF THE MOLD FOR THE HULL SHELL

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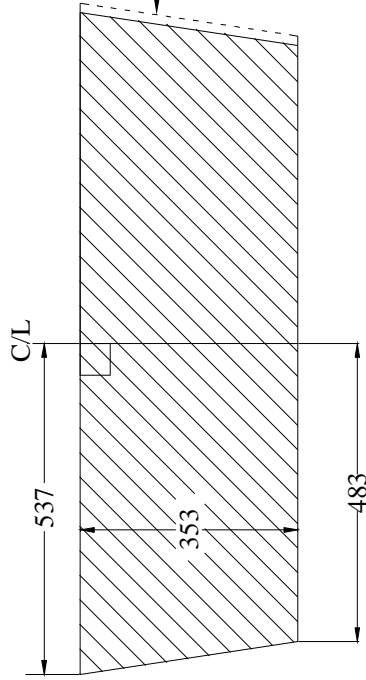
DESIGN: PIPPIE 8 TRAINER  
CLIENT: STOCK PLAN  
SHEET NO. 7 OF 22 SCALE: 1:10  
SUBJECT: PANEL DIMENSIONS #4





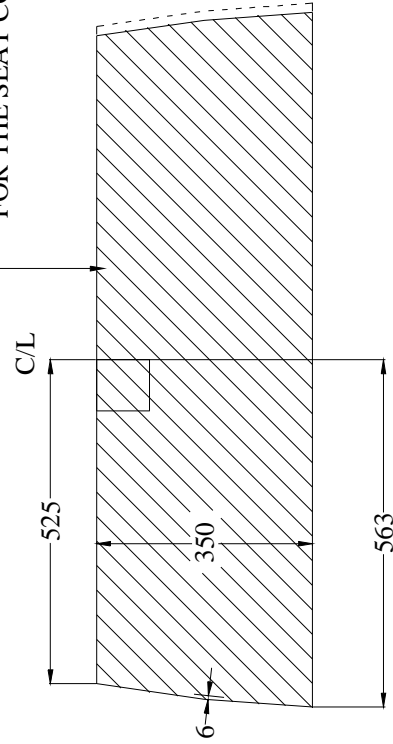
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## AFT SEAT TOP PANEL **G**

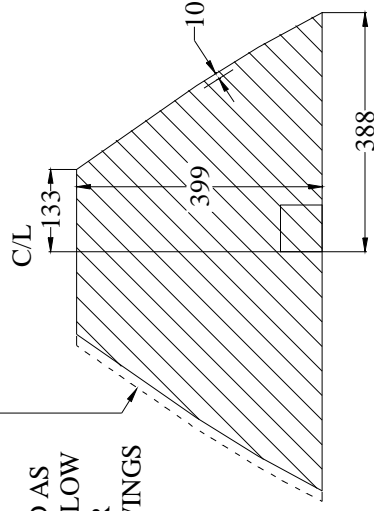


NOTE BECAUSE BUILDING BOATS BY STITCH / TAPE AND GLUE CAN LEAD TO SMALL VARIATIONS IN DIMENSIONS, THERE IS A GOOD CHANCE THESE PANELS MAY NOT BE EXACT FITS IN YOUR HULL SHELL. THIS IS NOT A PROBLEM, AS THE GAPS CAN BE FILLED AND FILLETED, BUT IF YOU HAVE ANY DOUBTS, YOU CAN FIT EACH PANEL IN 2 PIECES. CUT EACH OUTER EDGE 15MM OUTSIDE THE MARKED BOUNDARY LINE, AND THEN CUT THE PANEL DOWN THE CENTERLINE. FIT EACH PIECE AGAINST THE HULL AND MARK AND TRIM AS NECESSARY, THEN FIT EACH PIECE IN PLACE JOINING ON A CENTER LINE FRAMING TIMBER.

THE MID SEAT TOP MAY BE FITTED AS SEVERAL SEPARATE PIECES TO ALLOW THE FITTING OF A LIFTING LID FOR INTERNAL ACCESS. SEE THE DRAWINGS FOR THE SEAT CONSTRUCTION.



## MID SEAT TOP PANEL **H**



## BOW SEAT TOP PANEL **I**

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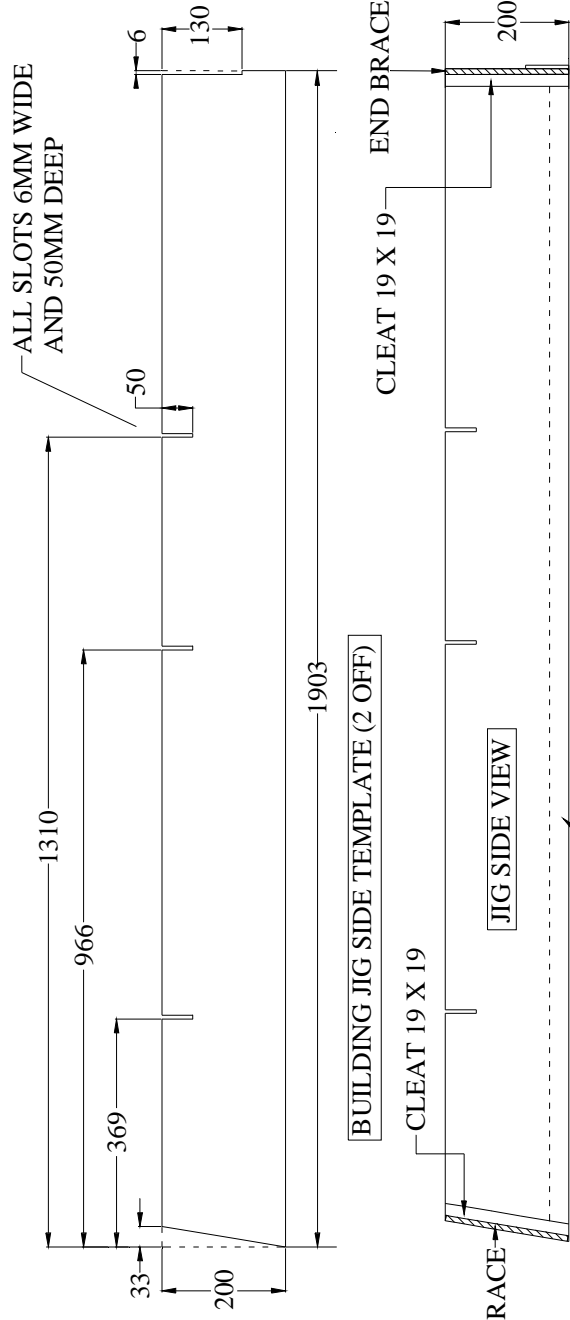
DESIGN: PIPPIE 8 TRAINER  
CLIENT: STOCK PLAN  
SHEET NO: 8 OF 22  
SCALE: 1:15

SUBJECT: PANEL DIMENSIONS #5

ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

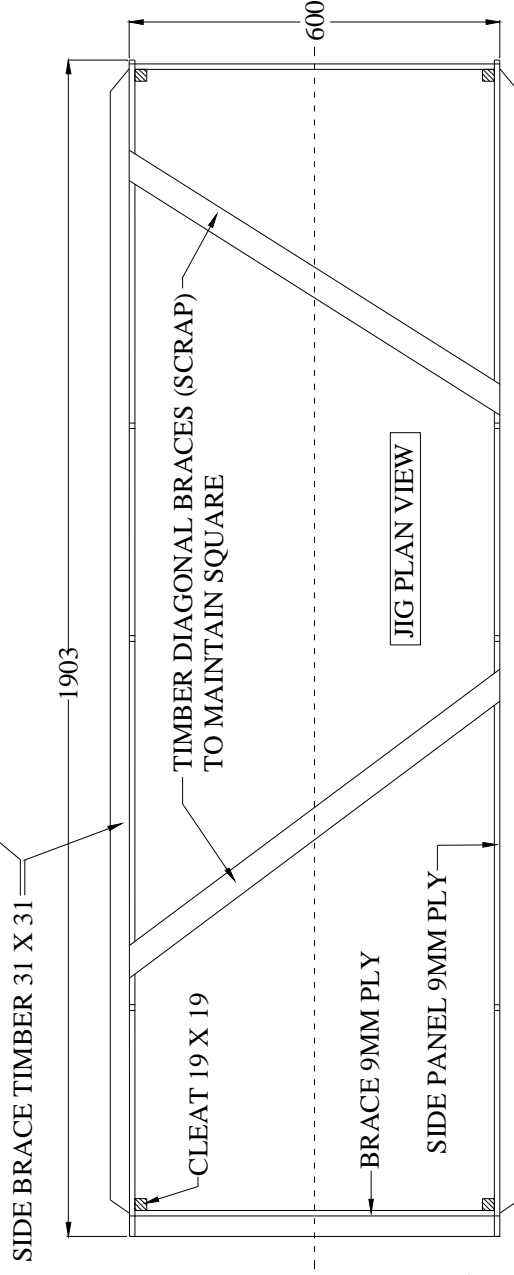


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### END BRACE TEMPLATE (2 OFF)

THE BUILDING JIG IS 4 PIECES (2 SIDES AND TWO BRACES) GLUED AND SCREWED IN A BOX SHAPE WITH TIMBER CORNER CLEATS. - MAKE SURE IT IS EXACTLY SQUARE - CLAMP WHILE GLUING TO ENSURE THIS. -FIT TIMBER BRACES ON OUTSIDE OF EACH SIDE AT BASE TO PROVIDE STIFFNESS AND ALLOW CLAMPING TO WORK HORSES. DOUBLE CHECK ALL MEASUREMENTS AND MAKE SURE SLOTS ARE EXACT IN DEPTH AND SPACING.



## 2

### CONSTRUCTION STEP #02 - CONSTRUCT BUILDING JIG.

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DESIGN: PIPPIE 8 TRAINER  
CLIENT: STOCK PLAN  
SHEET NO: 9 OF 22 SCALE: 1:15  
SUBJECT: BUILDING JIG

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SEAT PANELS ARE FITTED IN TIGHT SLOTS  
IN JIG, WITH DRY CLEATS AS REQUIRED  
FOR STABILITY

BOTTOM PANEL IS SECURED TO  
TRANSOMS (GLUED ETC.) AND SEAT  
PANELS. (DRY FITTED)

BILGE PANELS ARE FITTED LAST  
BETWEEN TOPSIDE AND BOTTOM  
PANELS

TOPSIDE PANELS ARE SECURED  
TO SEAT PANELS AND TRANSOMS,  
ALIGNING THE TOPSIDE EDGE WITH  
THE CHINE ANGLES ON THE  
PANELS. TRANSOMS ARE GLUED  
ETC., SEAT PANELS MUST BE DRY  
FITTED.

TRIM FRONT  
CORNER OF JIG TO  
CLEAR PANEL

PANEL (F)

PANEL (D)

PANEL (E)

PANEL (C)

TRANSOM (A)

DRY CLEATS  
AS REQUIRED

TRANSOM (A)

TRANSOM  
PANEL IS DRY  
CLAMPED TO  
AFT BRACE  
PANEL.

CLAMP THE JIG SIDE BRACES TO THE  
SAWHORSES TO ADD STABILITY

SAWHORSES

FORWARD TRANSOM IS  
FITTED BETWEEN ENDS OF  
TOPSIDE AND BOTTOM  
PANELS AFTER THEY ARE  
FITTED

TO WORK AT AN EASY HEIGHT, THE BUILDING JIG CAN BE SET UP ON SAW HORSES  
OR ANY SUITABLE SUPPORT.

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DESIGN: PIPPIE 8 TRAINER  
CLIENT: STOCK PLAN

SHEET NO: 10 OF 22

SCALE: 1:15

SUBJECT: GENERAL CONSTRUCTION

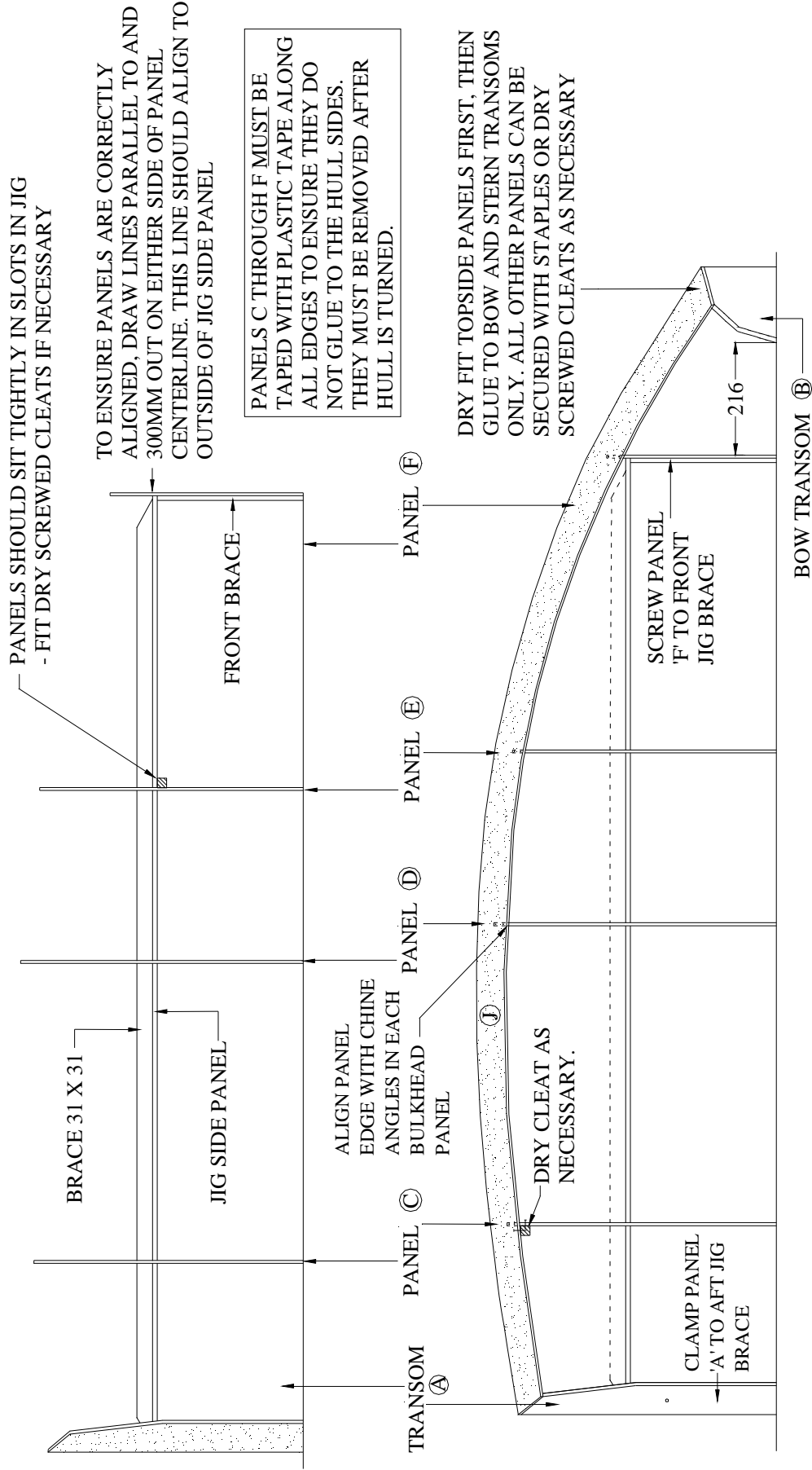
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3

CONSTRUCTION STEP #03 - SET UP AFT TRANSOM AND SEAT PANELS.



4

CONSTRUCTION STEP #04 - FIT TOPSIDE PANELS AND BOW TRANSOM.

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DESIGN: PIPPIE 8 TRAINER  
 CLIENT: STOCK PLAN  
 SHEET NO: 11 OF 22 SCALE: 1:15  
 SUBJECT: CONSTRUCTION STEPS 3 - 4

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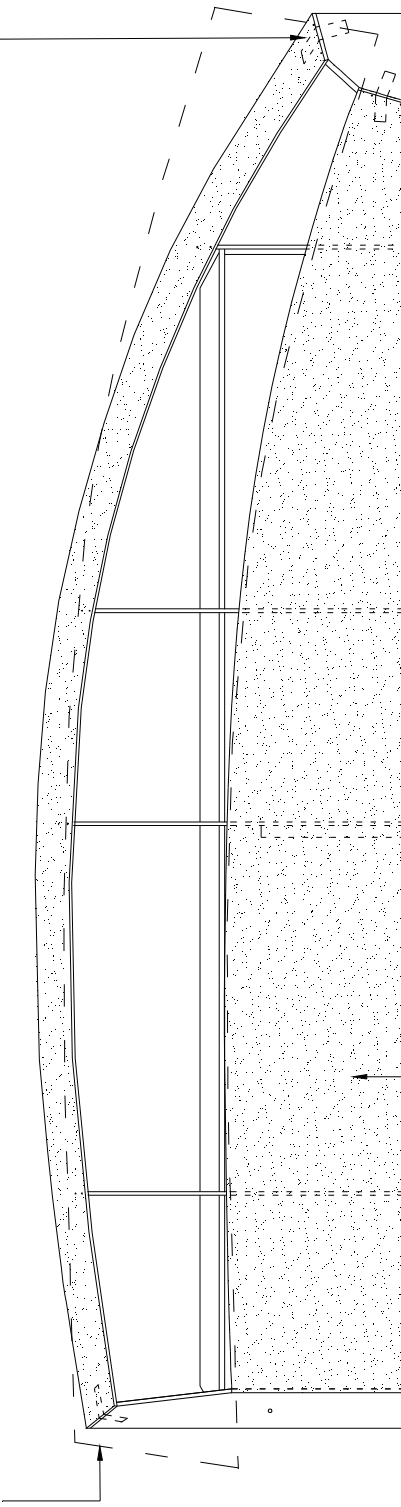


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### 6 CONSTRUCTION STEP #06 - MARK OUT BILGE PANEL SHAPE

PLY FOR BILGE PANELS IS LAID OVER THE GAP BETWEEN BOTTOM AND TOPSIDE PANEL, HELD DOWN TIGHTLY WITH TAPE AND WEIGHTS, MARKED ACCURATELY FROM THE INSIDE, THEN CUT TO SHAPE.

TO GLUE PANELS AT TRANSOMS, YOU CAN USE GOOD QUALITY PLASTIC MARKING TAPE TO HOLD THE PANEL IN PLACE WHILE THE GLUE DRIES. IF THE TAPE WILL NOT HOLD (SOME PLY TYPES FLEX EASIER THAN OTHERS) YOU CAN INSERT A COPPER WIRE STITCH WHERE NECESSARY, OR INSERT A SMALL AND THIN SCREW INTO THE PLY EDGE CAREFULLY. HOLES CAN BE FILLED LATER. TRANSOMS ARE 9MM PLY AND SMALL THIN SCREWS CAN BE USED WITH CARE.



THE BOTTOM PANEL IS FITTED ONTO THE TRANSOM (GLUED ETC.) AND THE SEAT PANELS (DRY FITTED) TO SUIT, ALIGNING IT BETWEEN THE LOWER CHINE ANGLES ON EACH PANEL. IF IT DOES NOT FIT PRECISELY (TO WITHIN A MILL OR 2) THEN EITHER YOUR PANELS ARE NOT ALIGNED CORRECTLY ACROSS THE JIG, THE JIG IS NOT SQUARE, OR YOU HAVE CUT THE BOTTOM PANEL INACCURATELY. IF BUILT TO PLAN THE FIT SHOULD BE SUFFICIENTLY GOOD TO CONTINUE.

### 5 CONSTRUCTION STEP #05 - FIT BOTTOM PANEL

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DESIGN: PIPPIE 8 TRAINER  
CLIENT: STOCK PLAN  
SHEET NO: 12 OF 22 SCALE: 1:15  
SUBJECT: CONSTRUCTION STEPS 5-6

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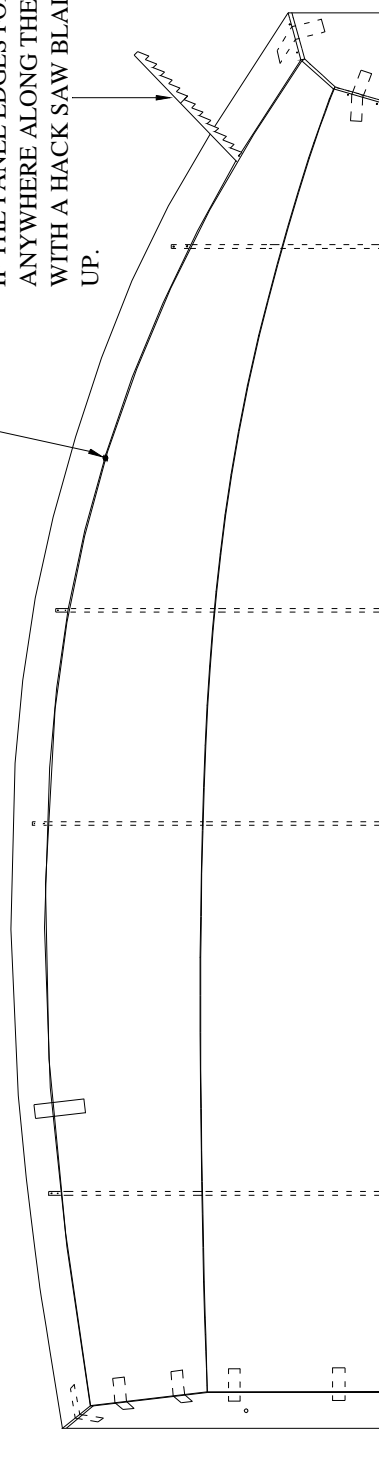
7

### CONSTRUCTION STEP #07 - FIT AND SECURE BILGE PANELS

ONCE THEY ARE CUT TO SHAPE THE BILGE PANELS ARE FITTED AS FOR THE OTHER SKIN PANELS. USE MASKING TAPE TO DRAW THE CHINE SEAMS TOGETHER, ADDING A WIRE STITCH WHEREVER NECESSARY

AT INTERVALS ALONG EACH CHINE SEAM, INSERT A SMALL DOLLOP OF EPOXY GLUE TO SECURE THE SEAM. ONCE THESE ARE CURED THE TAPE AND STITCHES CAN BE REMOVED.

IF THE PANEL EDGES FORM A 'HARD' SPOT ANYWHERE ALONG THE SEAM, RUN THROUGH WITH A HACK SAW BLADE TO FREE THE SEAM UP.



FILL THE SMALL ANGLE GROOVE ALONG EACH CHINE SEAM WITH THICKENED EPOXY GLUE. WHEN THIS HAS CURED, THE SEAM IS SANDED SMOOTH ON THE OUTSIDE, READY FOR THE HULL SHEATHING GLASS.

ON THE INSIDE OF THE HULL SHELL, CAREFULLY COVER THE CHINE SEAMS (AND THE CENTERLINE SEAM FORWARD) WITH TAPE, TO PREVENT GLUE FROM RUNNING THROUGH

SCALE 1:2

8

### CONSTRUCTION STEP #08 - FILL CHINE SEAMS

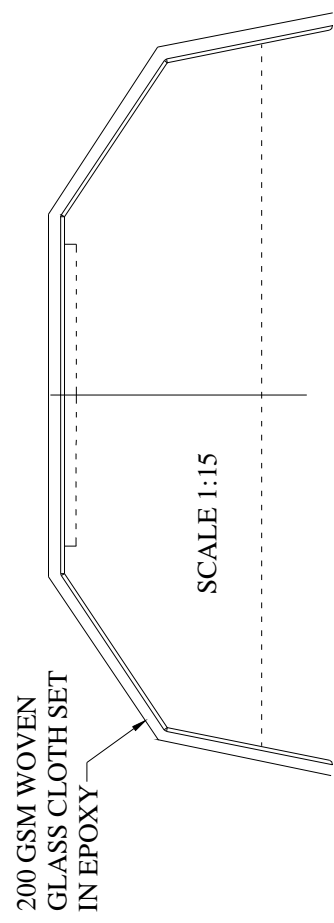
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CLIENT: STOCK PLAN  
SHEET NO: 13 OF 22 SCALE: 1:15  
SUBJECT: CONSTRUCTION STEPS 7 - 8



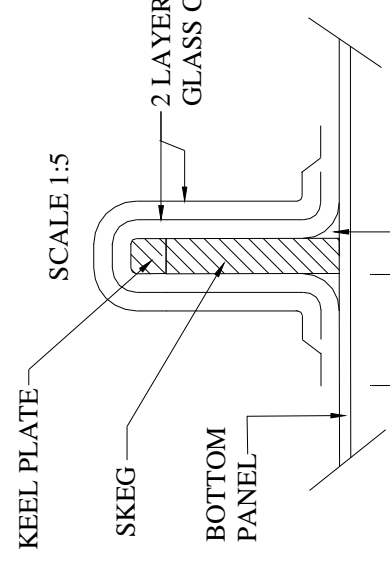
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**9 CONSTRUCTION STEP #09 - SHEATH HULL EXTERIOR**



SCALE 1:15

NOTE, GLASS SHEATHING IS PROTECTIVE BUT NOT STRUCTURAL. THE EASIEST WAY TO SHEATH IS THEREFORE TO RUN THE GLASS TRANSVERSELY WITH BUTT SEAMS. THIS WILL SAVE FAIRING AND SANDING LATER ON.



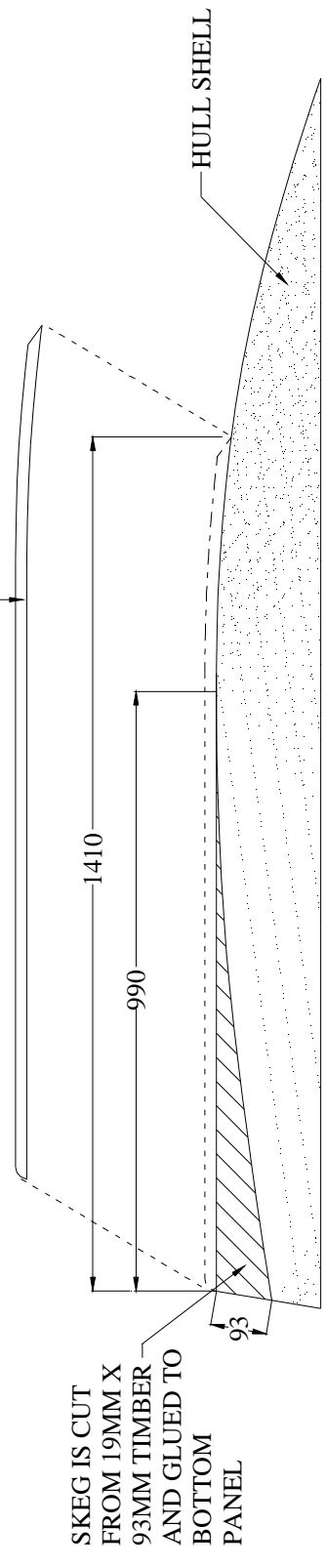
SCALE 1:5

2 LAYERS OF 200 GSM WOVEN GLASS CLOTH

SKEG IS SECURED TO BOTTOM WITH HIGH DENSITY EPOXY FILLETS ON BOTH SIDES

50MM MIN.

KEEL PLATE IS 19MM X 19MM HARDWOOD AND IS GLUED TO SKEG / BOTTOM PANEL. KURFING MAY BE NECESSARY AT THE FRONT END



SCALE 1:15

SKEG IS CUT FROM 19MM X 93MM TIMBER AND GLUED TO BOTTOM PANEL

HULL SHELL

**10 CONSTRUCTION STEP #10 - FIT AND SHEATH SKEG**

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 CLIENT: STOCK PLAN  
 SHEET NO: 14 OF 22 SCALE: AS SHOWN  
 SUBJECT: CONSTRUCTION STEPS 9 - 10



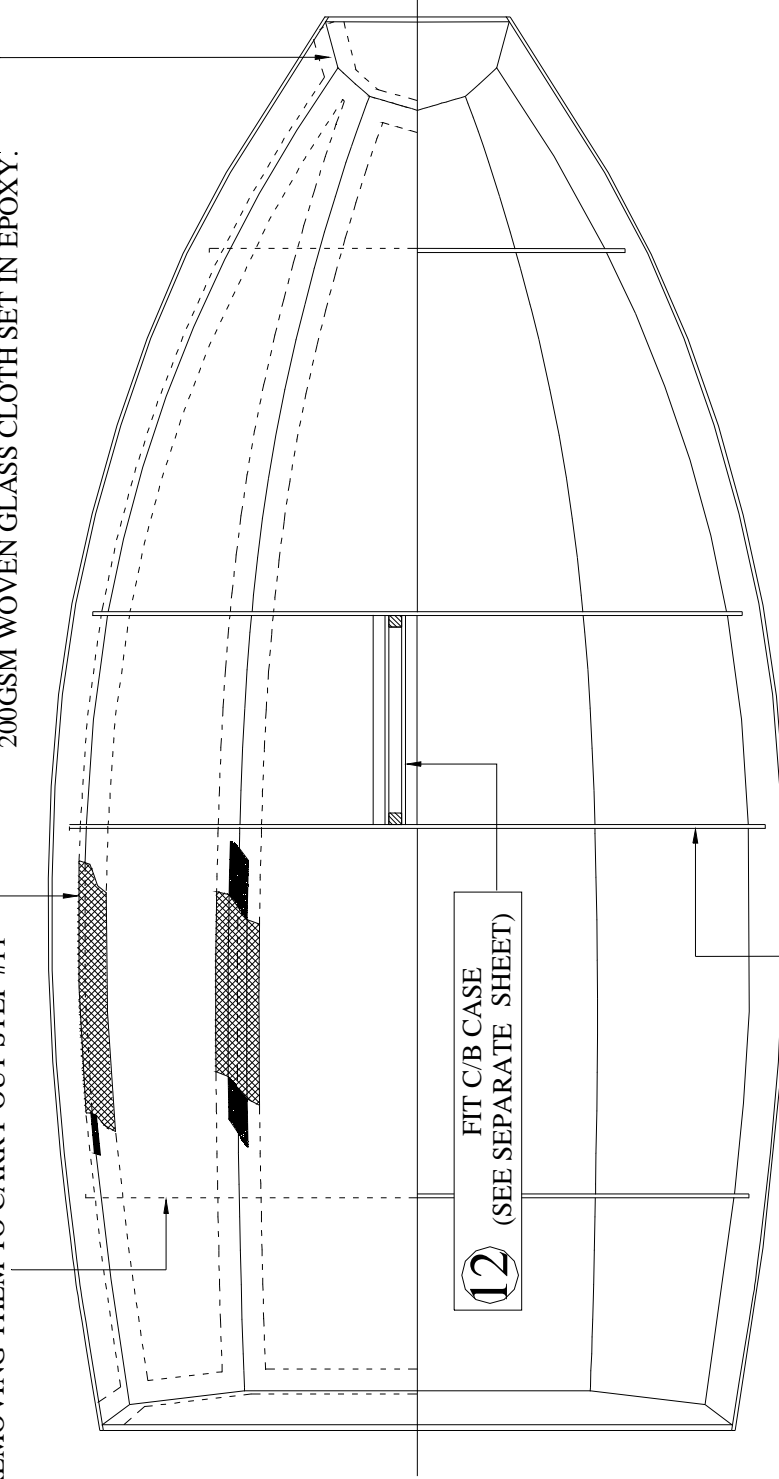
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**11**

**CONSTRUCTION STEP #11 - FILLET AND TAPE INTERIOR JOINS**

NOTE WHEN YOU TURN THE HULL SHELL OFF THE JIG MARK THE LOCATION OF EACH SEAT PANEL BEFORE REMOVING THEM TO CARRY OUT STEP #11

ALL INTERIOR SEAMS OF HULL PANELS AT CHINES AND FORWARD CENTERLINE, AND AT FORE AND AFT TRANSOMS, ARE FILLETED WITH HIGH DENSITY EPOXY, AND TAPED WITH 75MM WIDE TAPE - 200GSM WOVEN GLASS CLOTH SET IN EPOXY.



**12**  
FIT C/B CASE  
(SEE SEPARATE SHEET)

TAPE IS REMOVED FROM SEAT PANELS AND EDGES SANDED ETC. TO FIT OVER INTERNAL FILLETS AND TAPES. PANELS ARE THEN GLUED BACK IN PLACE AND SECURED WITH HIGH DENSITY EPOXY FILLETS ON EITHER SIDE.

NOTE SAVE MONEY AND CUT THE INTERIOR TAPES FROM GLASS CLOTH LEFT OVER FROM EXTERNAL SHEATHING.

**13**

**CONSTRUCTION STEP #13 - FIT SEAT PANELS**

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DESIGN: PIPPIE & TRAINER  
CLIENT: STOCK PLAN  
SHEET NO: 15 OF 22 SCALE: 1:15  
SUBJECT: CONSTRUCTION STEPS 11 - 12

ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS





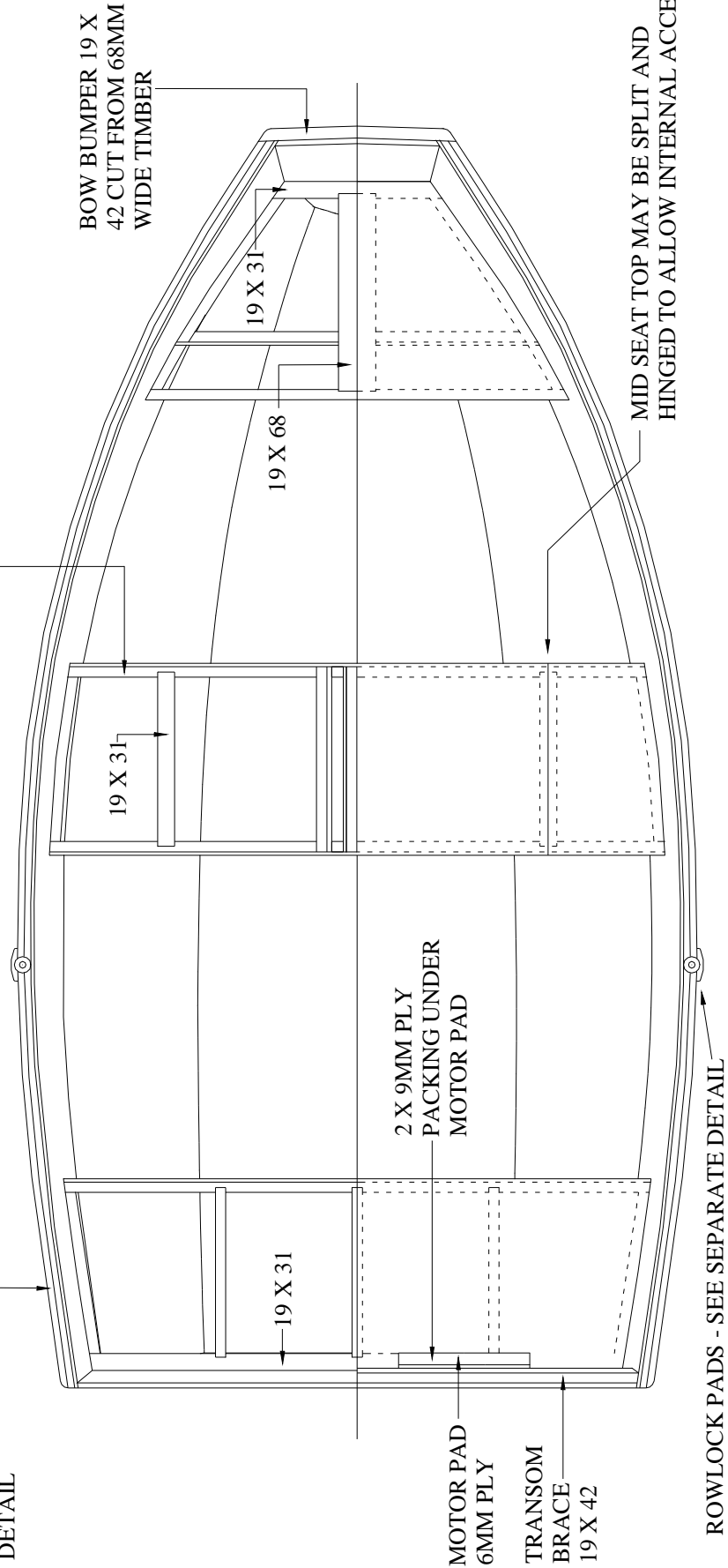
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**14 CONSTRUCTION STEP #14 - FIT SEAT FRAMING**

**13 CONSTRUCTION STEP #13 - FIT GUNWHALES AND BOW BUMPER**

ALL SEATS ARE FRAMED AROUND THE TOP EDGE. ALL FRAMING 19MM X 19MM EXCEPT AS MARKED. GLUE AND SCREW.

GUNWHALES ARE 2 X 12MM X 42MM - SEE SEPARATE DETAIL



**15 CONSTRUCTION STEP #14 - FIT SEAT TOPS, TRANSOM FRAMING AND ROWLOCK PADS**

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DESIGN: PIPPIE & TRAINER  
 CLIENT: STOCK PLAN  
 SHEET NO: 16 OF 22 SCALE: 1:15

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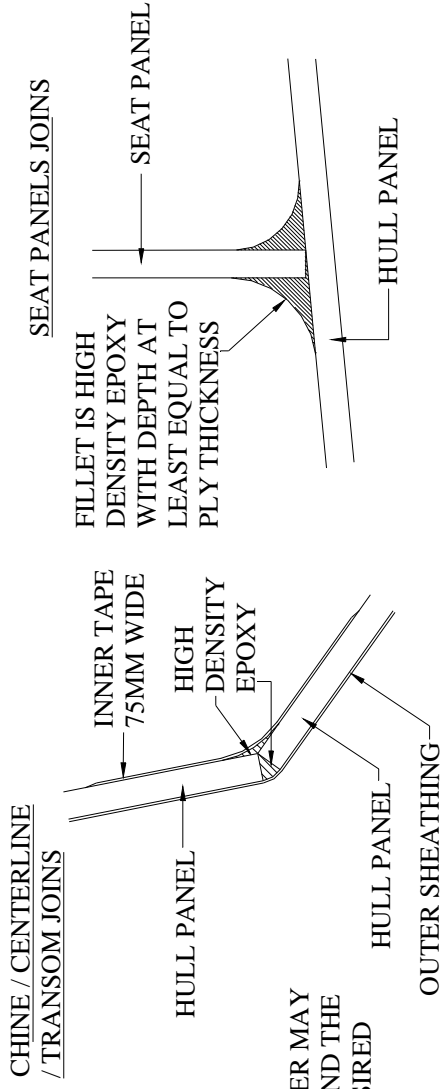
SUBJECT: CONSTRUCTION STEPS 14 - 15

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## FILLET JOINS

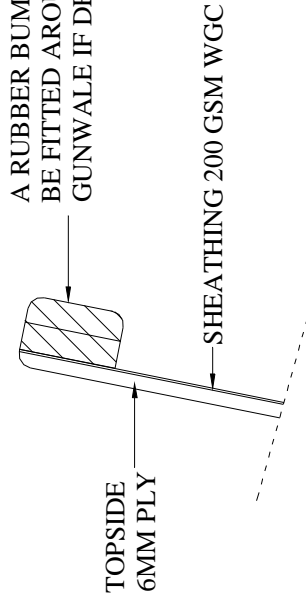
SCALE 1:2



## GUNWALE

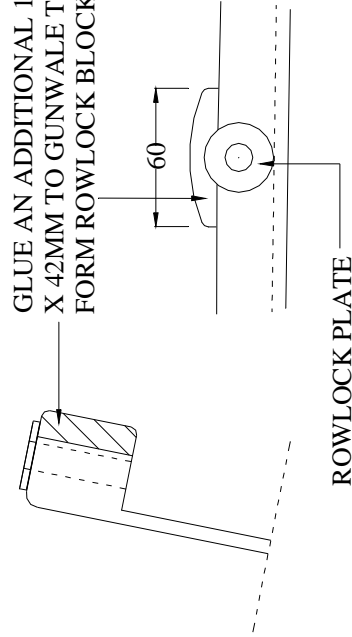
SCALE 1:4

THE GUNWALE IS SIMPLY 2 LAYERS OF 12M X 42MM GLUED, SCREWED IN POSITION ON EACH TOPSIDE PANEL TOP EDGE, AND THEN SMOOTHED OVER AND FILLED.

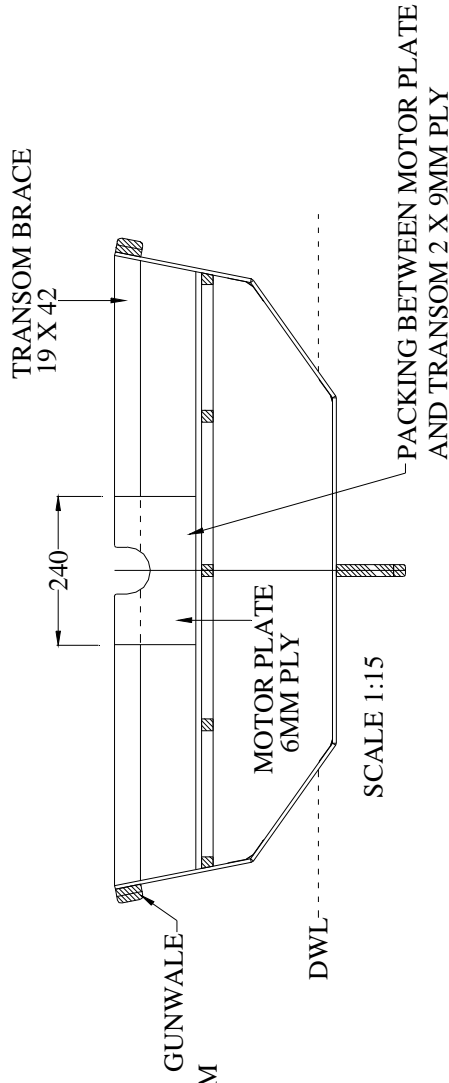


## OAR ROWLOCK BLOCK

SCALE 1:4



## TRANSOM SECTION



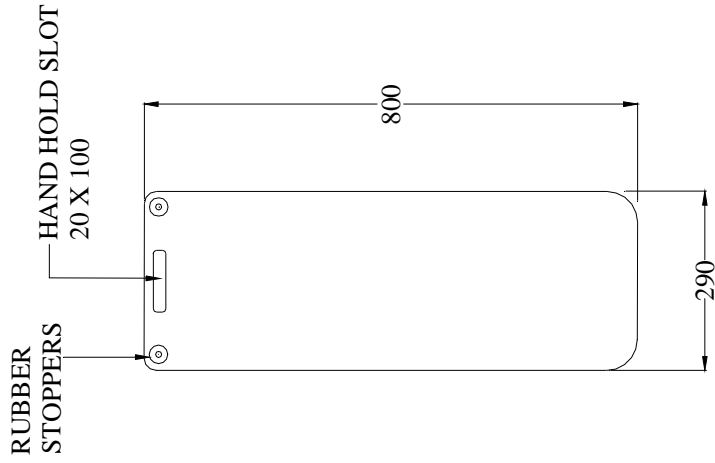
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	ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS	



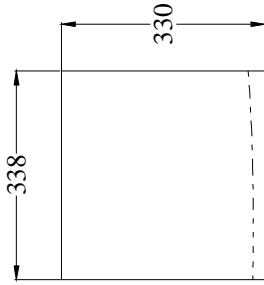
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## CENTERBOARD

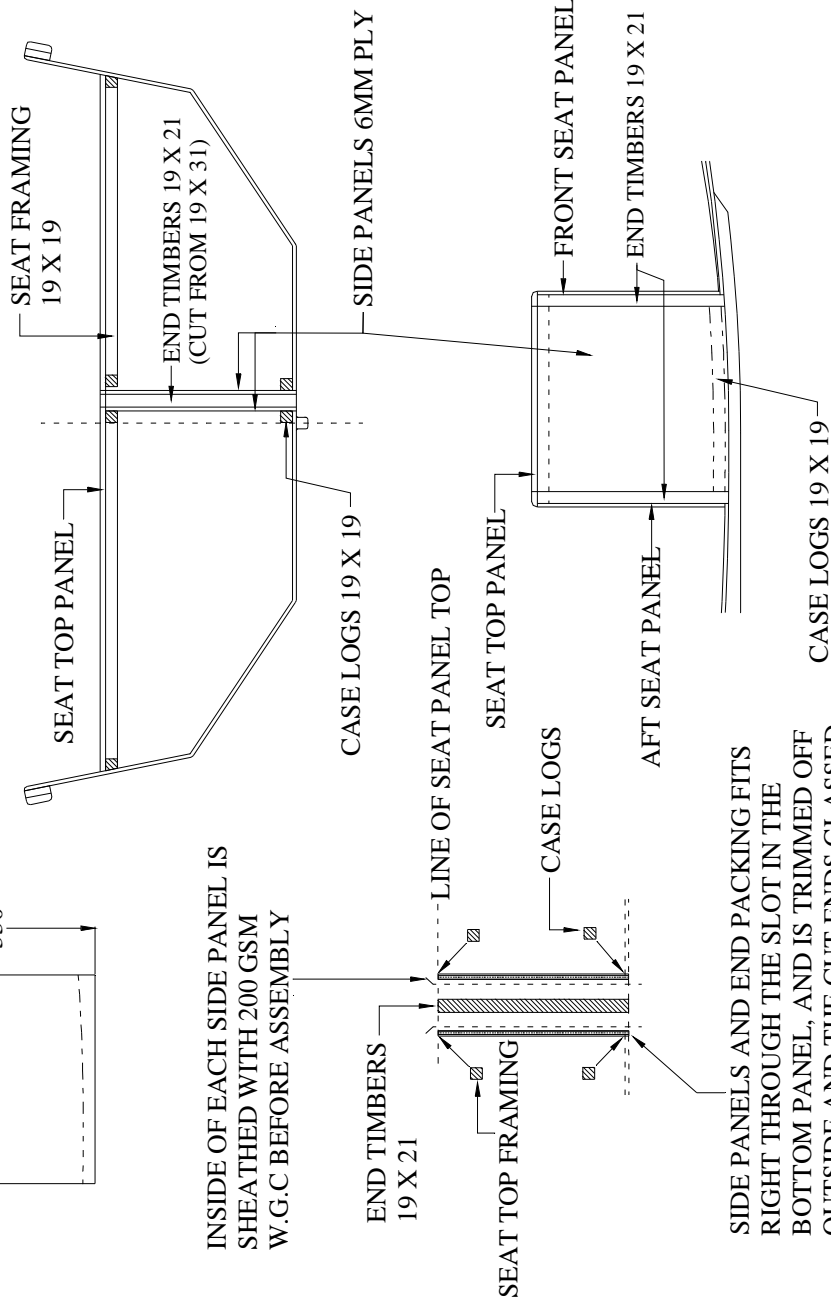
THE CENTERBOARD IS THREE LAYERS OF 6MM PLY LAMINATED TOGETHER, SHAPED AS DESIRED TO A FOIL, AND SHEATHED WITH 200 GSM W.G.C.



TEMPLATE FOR CASE SIDES (6MM PLYWOOD)



THE C/B CASE IS A SIMPLE BOX WITH 6MM PLY SIDES AND 19MM X 21MM SPACERS FITTED FORE AND AFT. IT IS FITTED BETWEEN THE CENTER SEAT PANELS AFTER THEY HAVE BEEN INSTALLED. NOTE THAT THE BOX IS FITTED 20MM TO PORT (LEFT) OF THE CENTERLINE (WHICH SHOULD BE MARKED ON THE BOAT) IN ORDER TO CLEAR THE SKEG



BUILD YOUR CENTERBOARD FIRST, THEN THE CASE. MAKE SURE THE BOARD FITS THE CASE BEFORE YOU FIT THE CASE INTO THE HULL.

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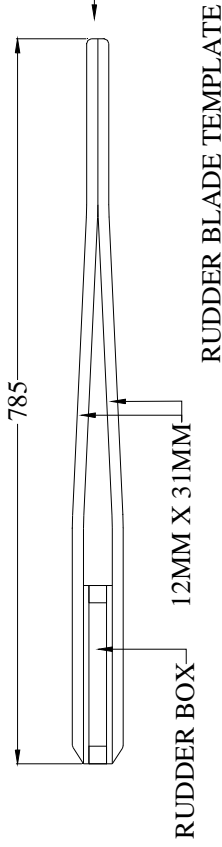
DESIGN: PIPPIE & TRAINER  
 CLIENT: STOCK PLAN  
 SHEET NO: 18 OF 22 SCALE: 1:15

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SUBJECT: CENTERBOARD AND CASE

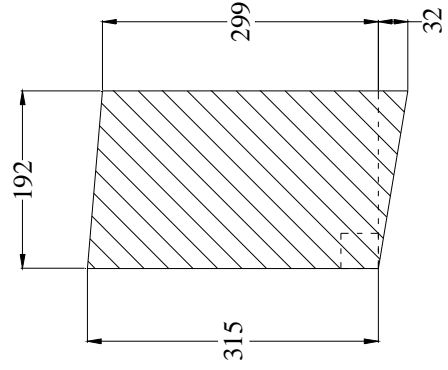


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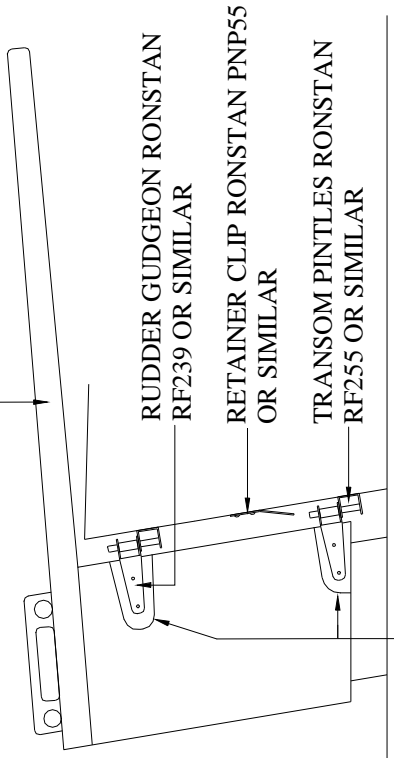


THE RUDDER BLADE IS 3 X 6MM PLY LAMINATED, SHAPED AND SHEATHED WITH 200 GSM W.G.C.

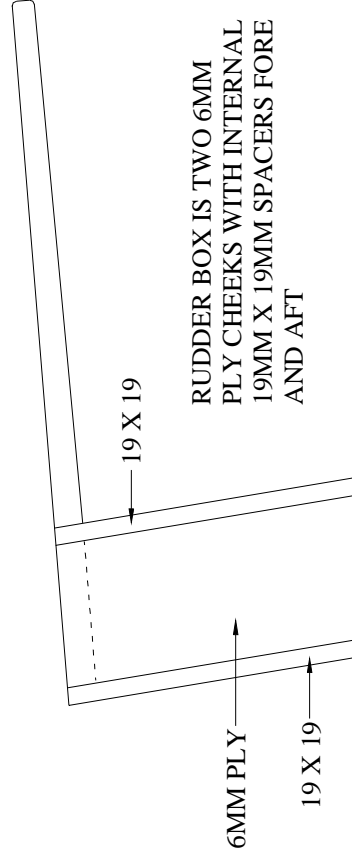
RUDDER BOX CHEEK TEMPLATE



TILLER IS TWO PIECES OF 12MM X 31MM TIMBER FITTED AS SHOWN. LEADING END CAN BE TAPERED TO TOTAL 24MM X 24MM



ON THE OUTSIDE OF THE BOX, 9MM PLY PACKERS ARE FITTED EITHER SIDE TO PACK THE WIDTH OUT TO TAKE THE RUDDER GUDGEONS



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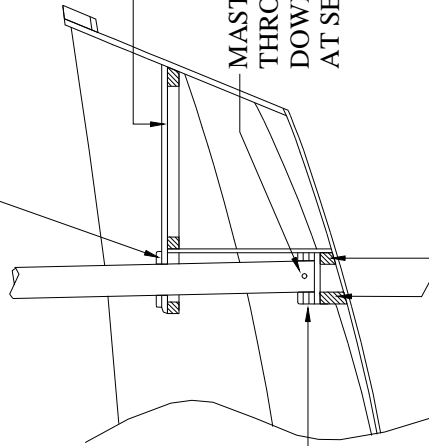
DESIGN: PIPPIE 8 TRAINER  
 CLIENT: STOCK PLAN  
 SHEET NO: 19 OF 22 SCALE: 1:10  
 SUBJECT: RUDDER

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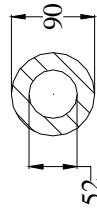
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MAST BRACE RING - 9MM PLY

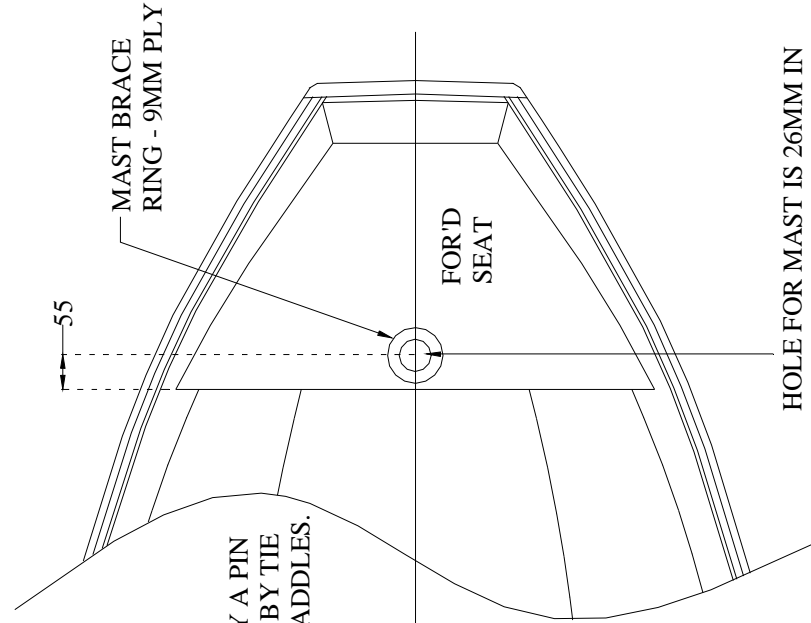


MAST STEP BLOCK IS 4 LAYERS OF 9MM PLY. THE UPPER THREE LAYERS HAVE A HOLE DRILLED FOR THE MAST, THE BOTTOM LAYER IS SOLID.

MAST STEP BLOCK IS SUPPORTED ON TWO PIECES OF 19MM TIMBER SHAPED TO FIT IN HULL AND SECURED WITH GLUE AGAINST THE FOR'D SEAT PANEL. TOP OF TIMBERS SHOULD BE 20MM ABOVE THE BOTTOM OF THE PANEL.



TEMPLATE - MAST BRACE RING  
 9MM PLYWOOD  
 SCALE 1:10

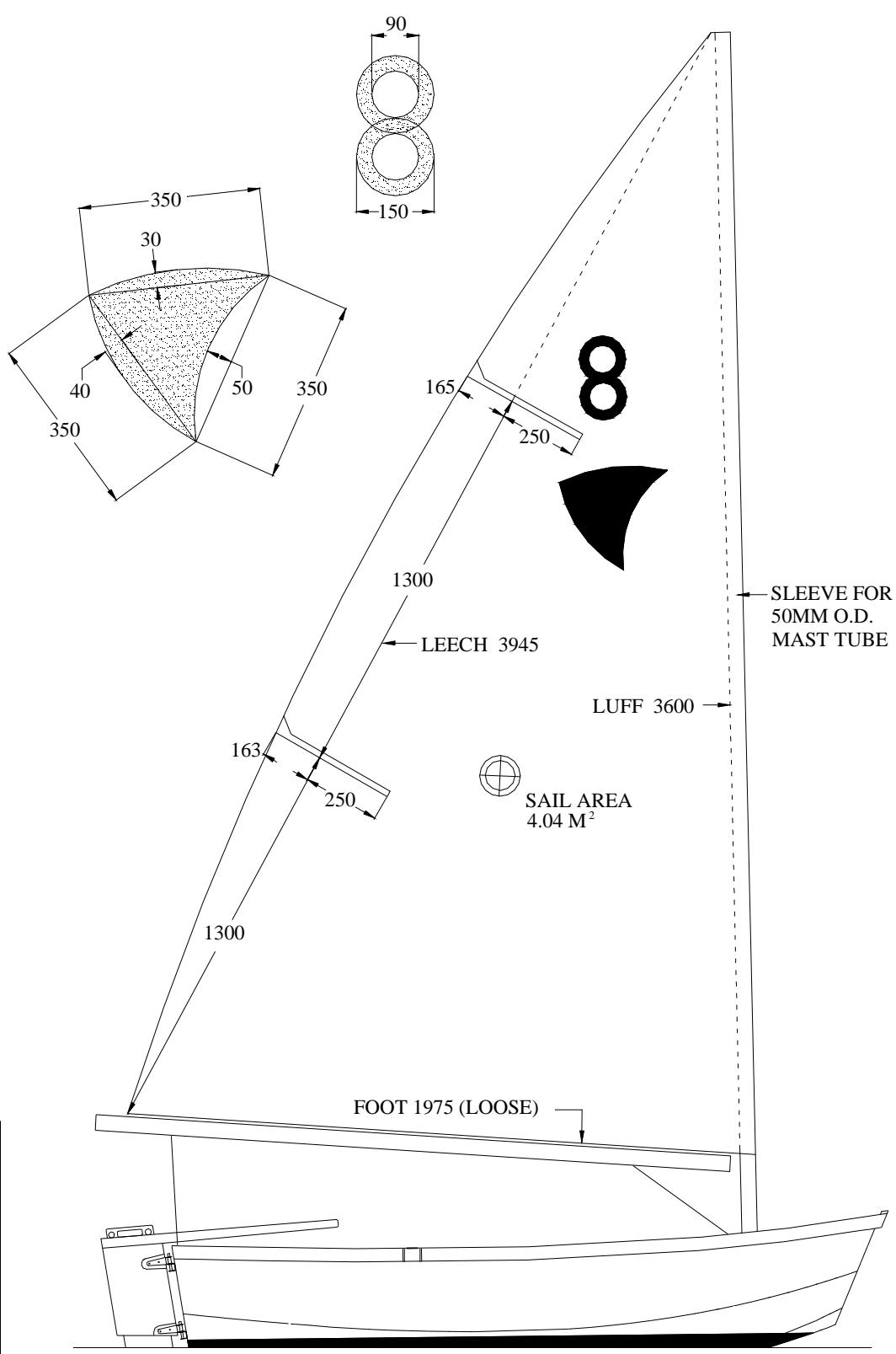


HOLE FOR MAST IS 26MM IN RADIUS (52MM DIA) AND IS CENTERED 55MM BACK FROM AFT EDGE OF SEAT TOP



TEMPLATE - MAST STEP BLOCK  
 9MM PLYWOOD SCALE 1:10

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DESIGN: PIPPIE 8 TRAINER  
 CLIENT: STOCK PLAN  
 SHEET NO: 21 OF 22 SCALE: 1:25  
 SUBJECT: SAIL PLAN

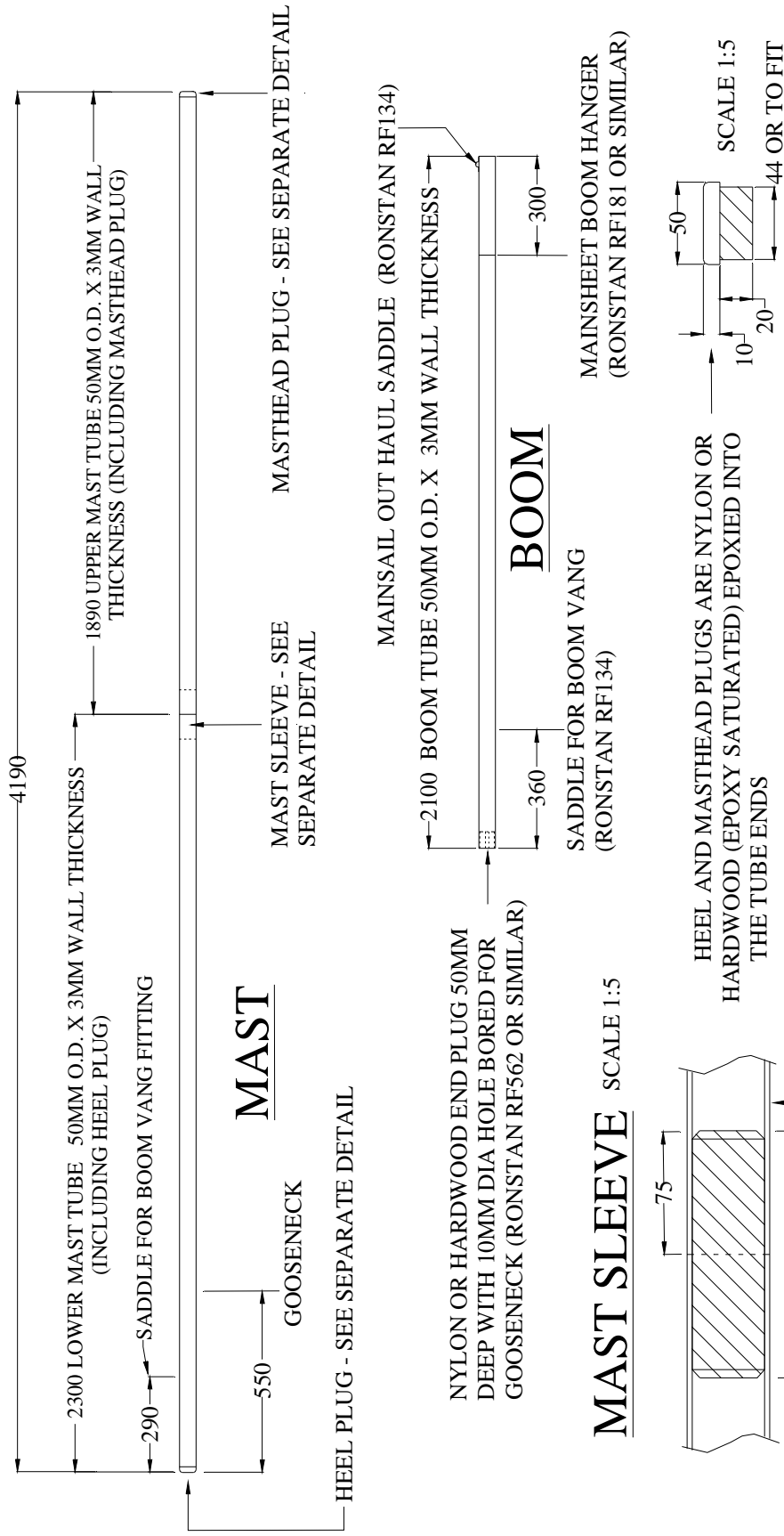
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MAST IS AN ALLOY TUBE 50MM O.D. X 3MM WALL THICKNESS. THIS SECTION NORMALLY COMES IN LENGTHS OF 6.5 METERS, SO IT IS POSSIBLE TO MAKE THE MAST AS A SINGLE LENGTH IF YOU WISH TO AVOID MAKING THE JOIN SLEEVE UNIT, HOWEVER BREAKING THE TUBE INTO 2 SECTIONS WILL ALLOW FOR EASY TRANSPORT.. MAST AND BOOM CAN BE MADE FROM A SINGLE 6.5 METER LENGTH



MAST SLEEVE IS A SOLID BLOCK FROM NYLON OR HARDWOOD (EPOXY SATURATED) ROUNDED DOWN TO A TIGHT FIT INSIDE THE MAST TUBES. BLOCK IS EPOXIED / RIVETED INTO THE TOP SECTION, AND MUST BE A TIGHT FIT INTO THE LOWER SECTION.

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DESIGN: PIPPIE'S TRAINER  
CLIENT: STOCK PLAN

SHEET NO. 22 OF 22 SCALE: 1:10 / 1:5

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SUBJECT: SPARS