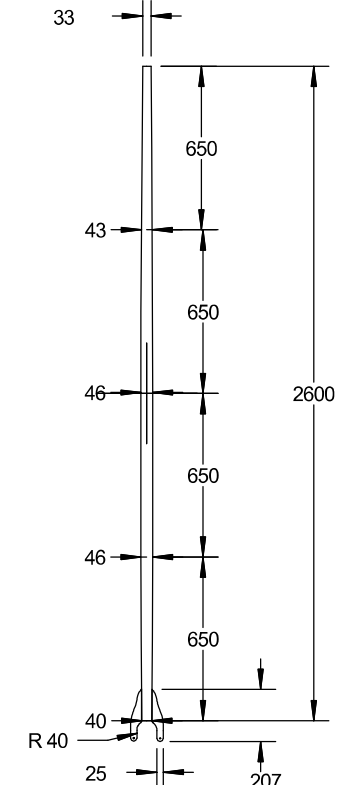
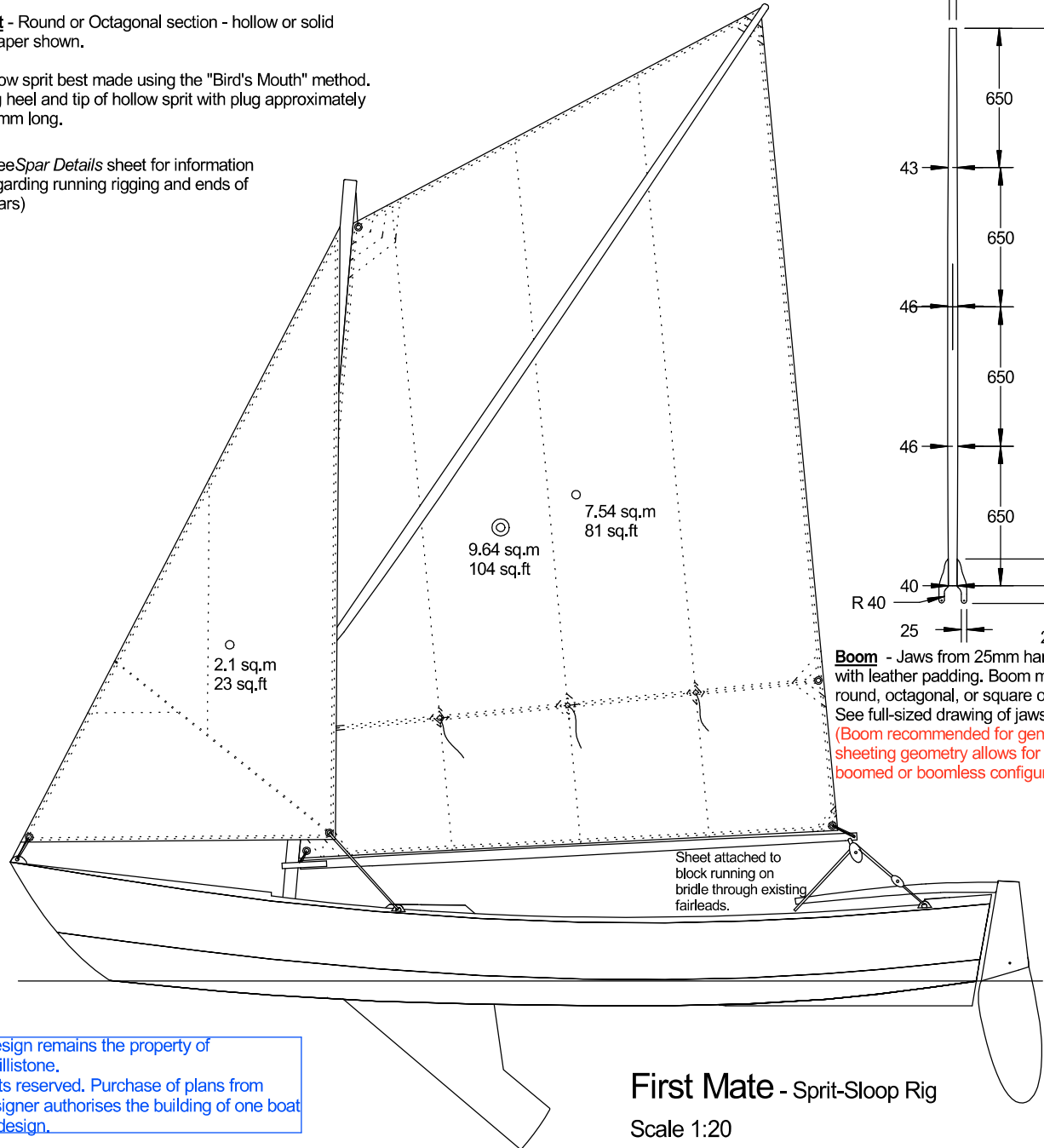


**Sprit** - Round or Octagonal section - hollow or solid on taper shown.  
 Hollow sprit best made using the "Bird's Mouth" method. Plug heel and tip of hollow sprit with plug approximately 100mm long.  
 (See *Spar Details* sheet for information regarding running rigging and ends of spars)



**Boom** - Jaws from 25mm hardwood with leather padding. Boom may be round, octagonal, or square on taper shown. See full-sized drawing of jaws sheet 26-A3 (Boom recommended for general use, but sheeting geometry allows for change between boomed or boomless configuration at will)

**Mast** - Round or Octagonal section - hollow or solid on taper shown.

Hollow mast is best made using the "Bird's Mouth" method, and must include a solid plug in both heel and tip. The heel plug needs to extend above the partners (i.e. deck level) and should finish with an internal v-shaped cut out to prevent an abrupt change in stiffness. Tip plug approximately 100mm long. Blue numbers in brackets refer to the width of a Bird's Mouth stave of 16.3mm thickness. This will yield a hollow mast with a minimum wall thickness of 20%. Extend as shown in blue dotted lines and plane to the drawn taper after the solid base plug has been glued into position.

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**First Mate - Sprit-Sloop Rig**  
 Scale 1:20

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**Mast** - Round or Octagonal section - hollow or solid on taper shown.

Hollow mast is best made using the "Bird's Mouth" method, and must include a solid plug in both heel and tip. The heel plug needs to extend above the partners (i.e. deck level) and should finish with an internal v-shaped cut out to prevent an abrupt change in stiffness. Tip plug approximately 100mm long.

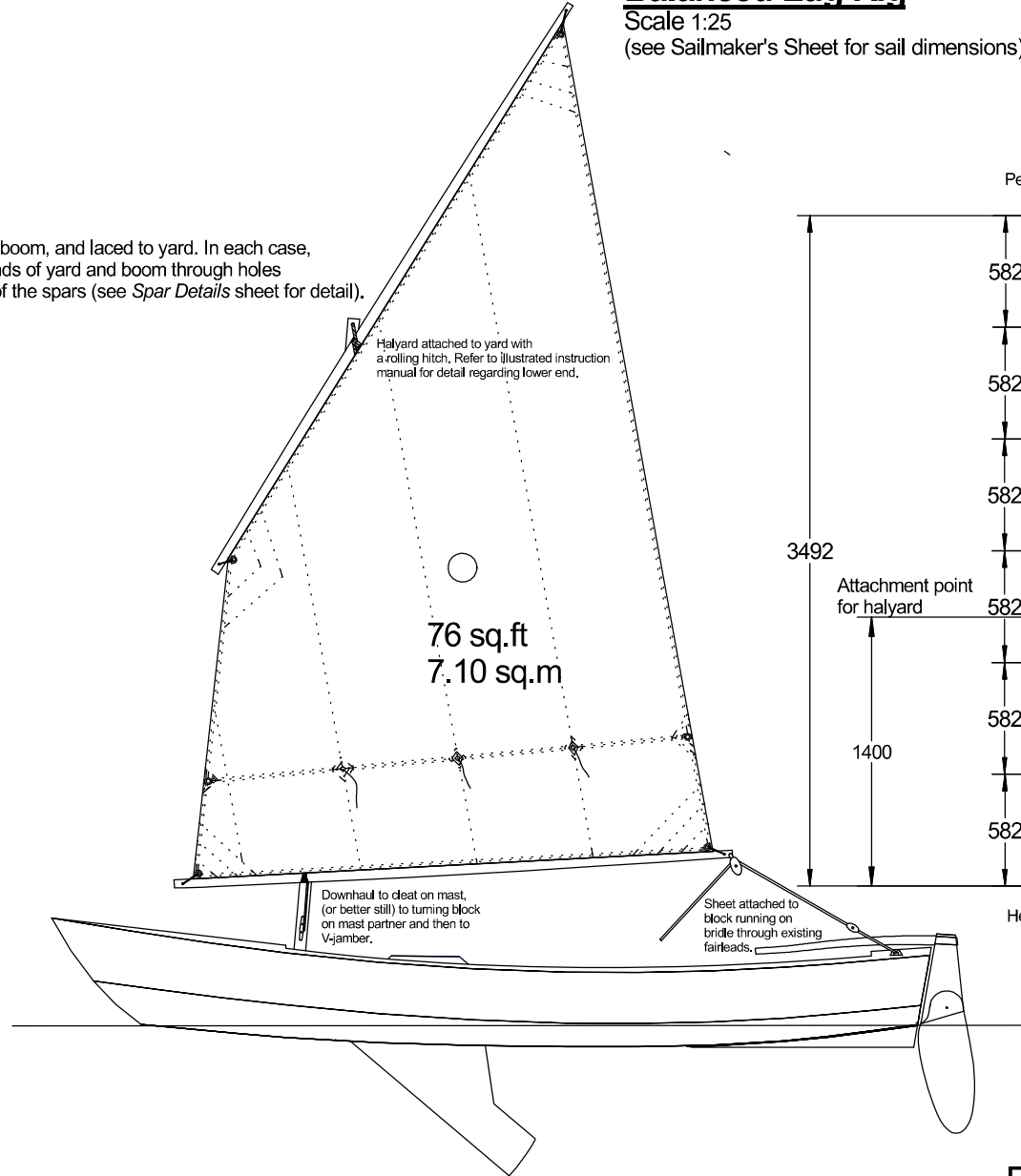
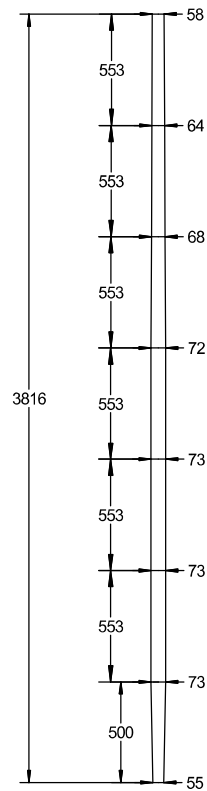
Drill hole across mast head to carry halyard. Refer to detail of mast head on *Spar Details* sheet for size, but drill hole at right angles to the centreline of the boat instead of parallel to the centreline as is used in the case of the sprit rig.

Sail set loose-footed on boom, and laced to yard. In each case, lash corners of sail to ends of yard and boom through holes drilled across the ends of the spars (see *Spar Details* sheet for detail).

## Balanced Lug Rig

Scale 1:25

(see Sailmaker's Sheet for sail dimensions)



First Mate - Balanced Lug Rig

Scale 1:25

# Bermudian Sloop Rig

Scale 1:25  
(see *Sailmaker's Sheet* for sail dimensions)

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1. Chainplates such as Ronstan RF488. Attach to hull using 316 Stainless Steel bolts. Glue reinforcing doubler to inside face of planking to distribute loads into hull and deck. Shape doubler to suit hull and deck - Approximate dimensions 140mm x 75mm x 19mm. Location shown should be close to a deck knee, to which the block can also be glued. Position 1825mm aft of face of stem, measured with a tape i.e. marked on the deck as a radius centred on the top of the face of the stem. The chainplates are on the outside of the planking, protruding through a slot cut in the gunwales and deck.

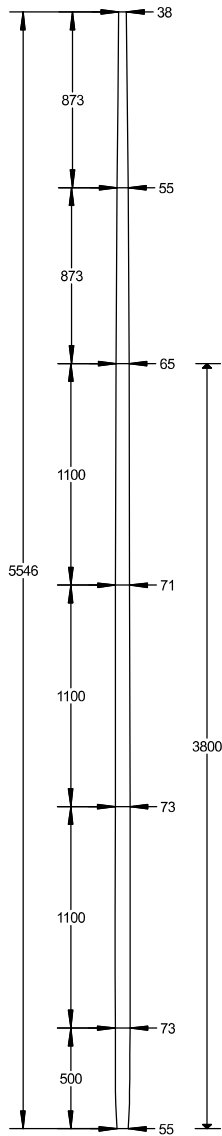
2. Jib sheet fairleads positioned approximately 593mm aft of chainplate, measured along deck. Location will have to be adjusted to suit set of sails. Fairleads mounted on adjustable track are ideal.

3. Forestay attached to pad eye bolted through deck and kingplank, or to a chainplate bolted to face of stem.

4. Commercial hound and tangs such as Ronstan RF604/RF347, or Riley RM77/RM89.

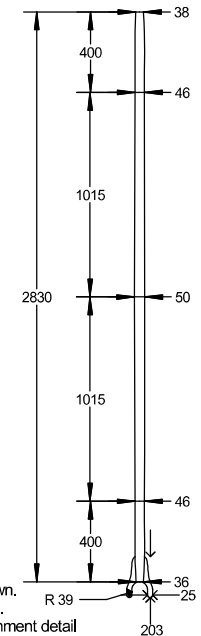
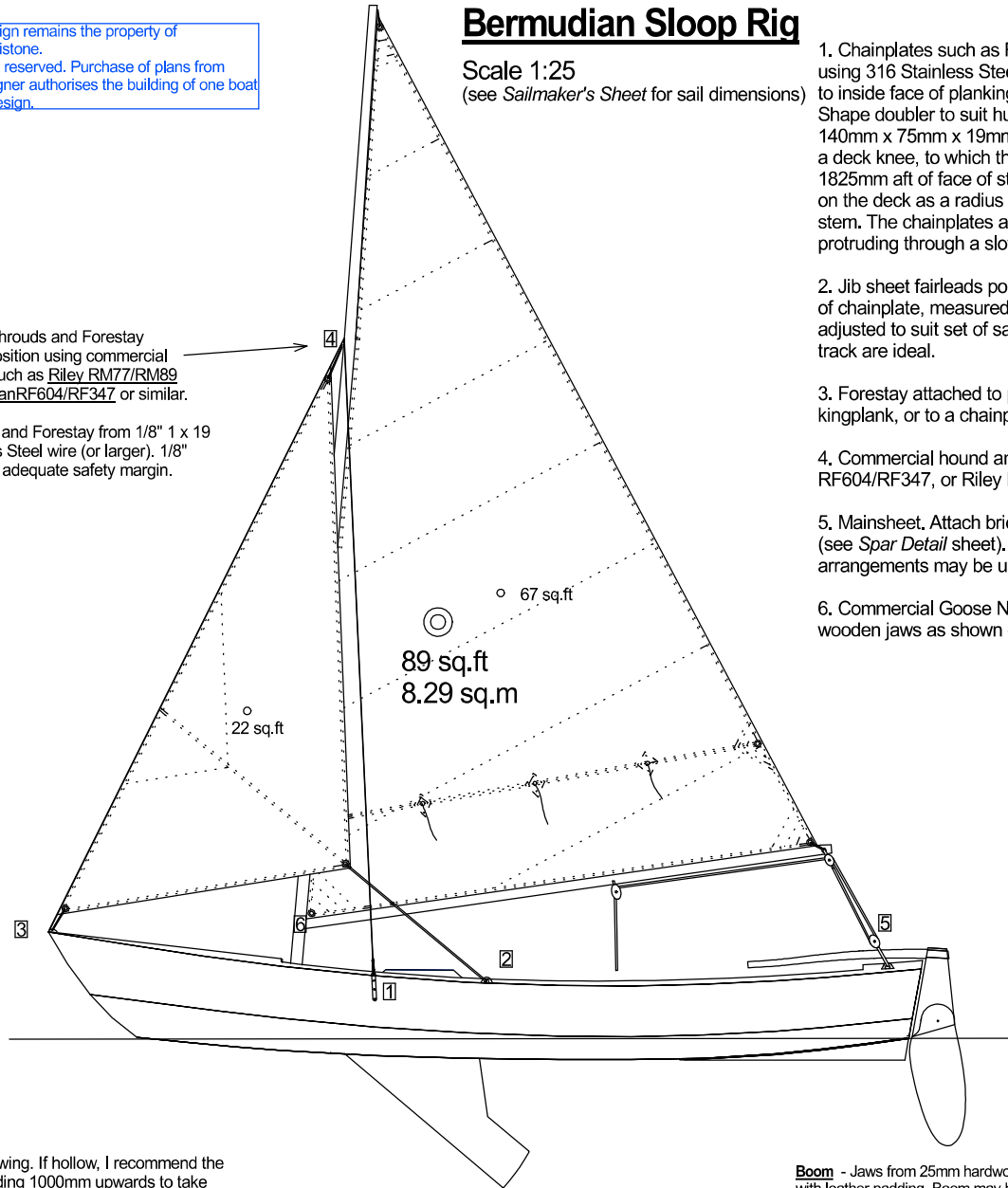
5. Mainsheet. Attach bridle through fairleads used for standard rig, (see *Spar Detail* sheet). Suggestion only - many different sheeting arrangements may be used. See illustrated instruction manual.

6. Commercial Goose Neck such as Riley RM84/RM103, or wooden jaws as shown on boom drawing below and *Boom Jaw* sheet



Attach Shrouds and Forestay at this position using commercial Hound such as Riley RM77/RM89 or Ronstan RF604/RF347, or similar.

Shrouds and Forestay from 1/8" 1 x 19 Stainless Steel wire (or larger). 1/8" provides adequate safety margin.



**Mast** may be made hollow or solid to diameters noted on drawing. If hollow, I recommend the 'Bird's Mouth' method, with a solid insert from the heel extending 1000mm upwards to take loads from the partners and the boom jaws. Also place a solid insert in the region of the stay and shroud attachment point (hounds). Make this insert about 350mm long.

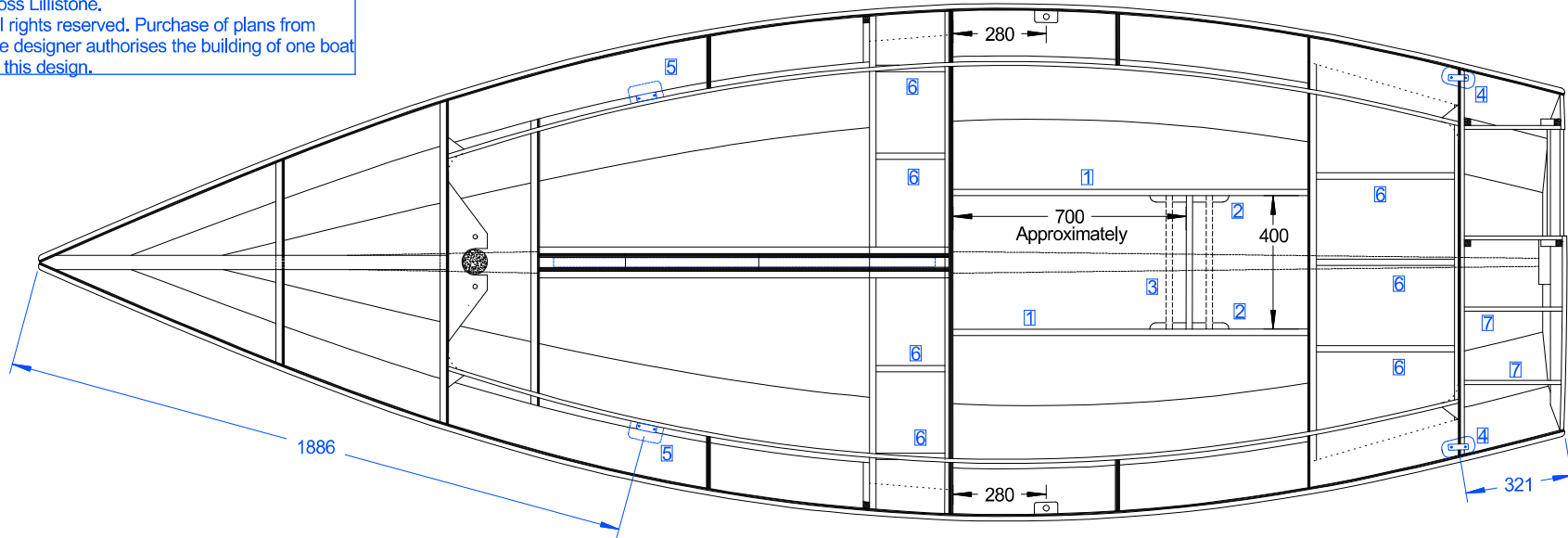
Sail may be set in luff groove, or commercially-made track.

**Boom** - Jaws from 25mm hardwood with leather padding. Boom may be round, octagonal, or square on taper shown. See full-sized pattern on *Boom Jaw* sheet. See sheet *Spar Detail* sheet for sail attachment detail

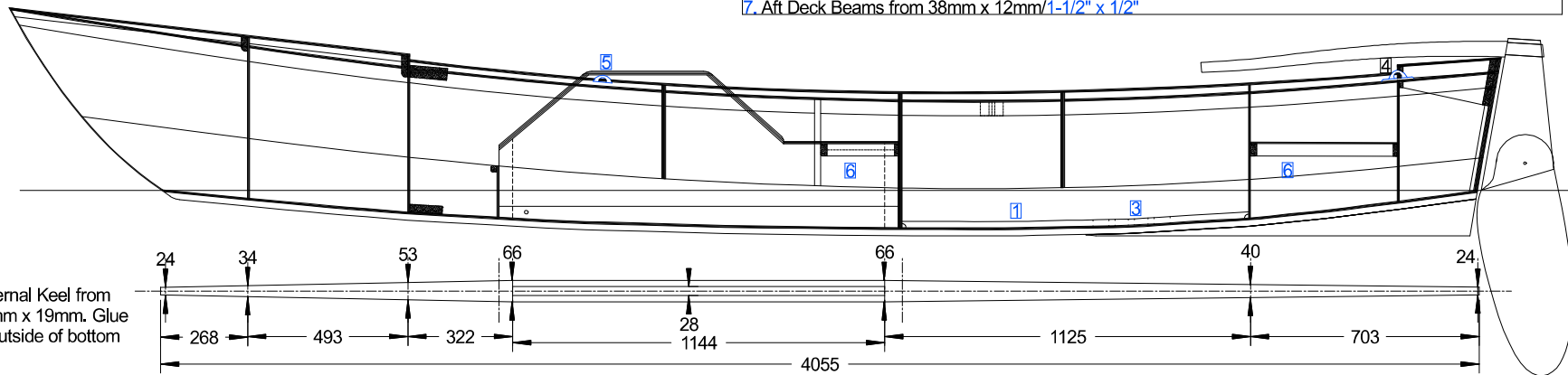
First Mate - Bermudian Sloop Rig

Scale 1:25

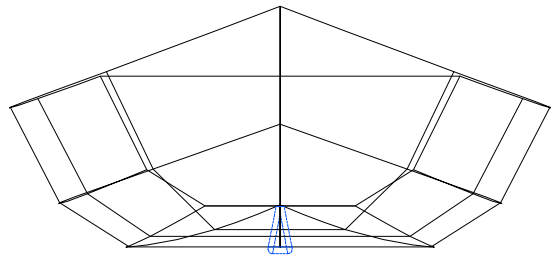
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6. Seat Framing from 32mm x 19mm/1-1/4" x 3/4". Butt against cross framing. Glue Seats/thwarts down well to provide support for the butt joint. Spacing is not critical, but should be similar to that shown on drawing.  
 7. Aft Deck Beams from 38mm x 12mm/1-1/2" x 1/2"



External Keel from 66mm x 19mm. Glue to outside of bottom

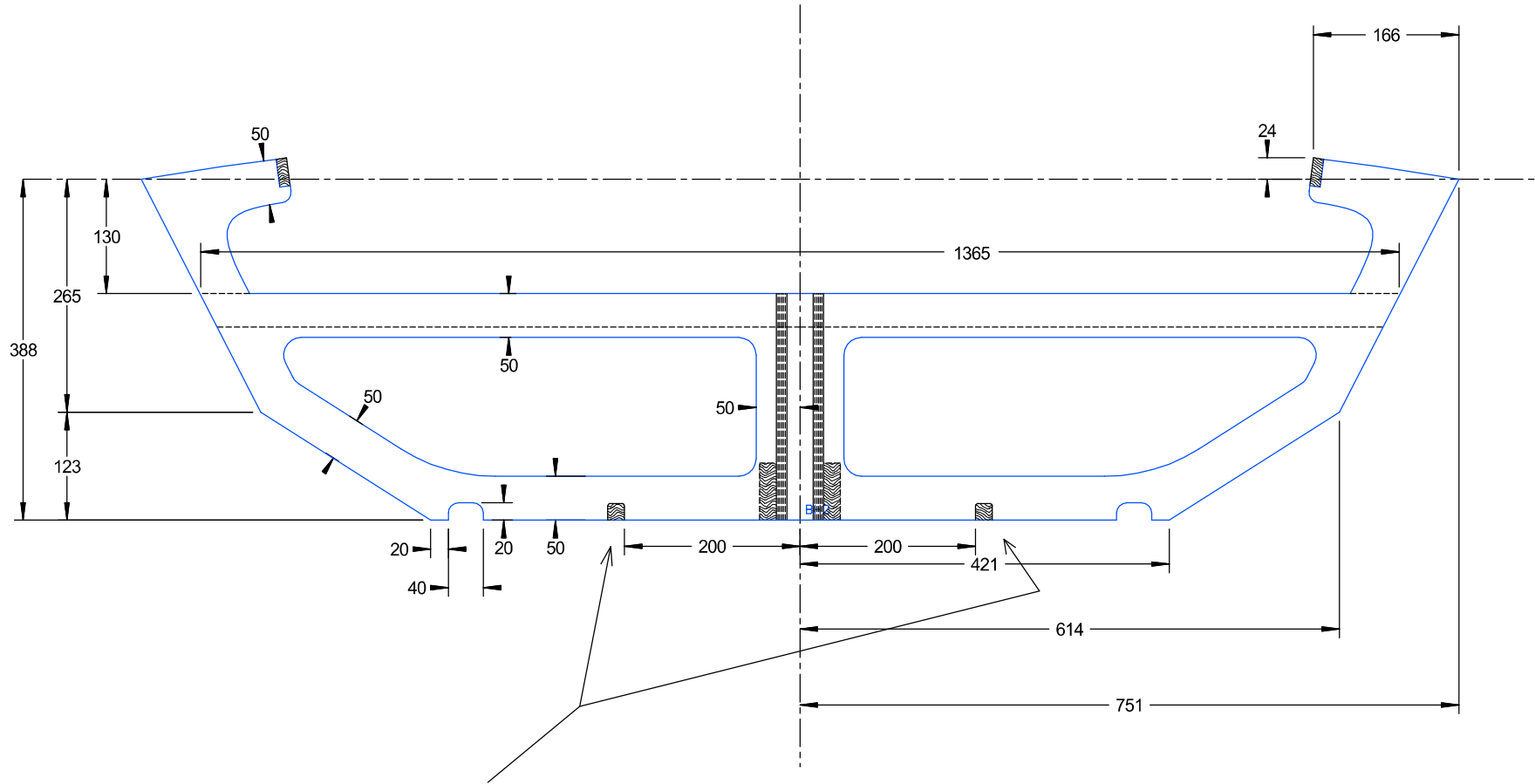


1. 19mm x 19mm (3/4" x 3/4") longitudinals glued to inside/bottom of boat, and to bulkheads 2 and 3. These act as stiffeners for the bottom panel, and as mounting points for adjustable rowing foot braces. Note the cut-outs at each end to allow the drainage of water.
2. Blocking glued to longitudinals and to bottom, with gaps left to allow foot braces to drop into place.
3. Foot Brace from 19mm x 19mm (3/4" x 3/4"), or similar. Drops into gaps between blocking 2. Adjust distance from bulkhead #2 to account for people of different sizes. 700mm (27-1/2") is a good starting point for an adult male. The drawing shows slots for alternative locations spaced about 60mm/2-3/8".
4. Locate mainsheet fairleads on pad of 100mm x 50mm x 6mm (4" x 2" x 1/4") plywood glued onto deck roughly as indicated. Position so that centre of fairlead hole is about 321mm (12-5/8") forward of the aft corner of the transom. Alter as required after trial.
5. Jib Sheet fairleads positioned approximately 1886mm (6' 2-1/4") aft of stem, close to inner edge of side deck. Reinforce deck underneath with 100mm x 50mm x 6mm (4" x 2" x 1/4") plywood pad. Alter as required after trial.

**First Mate - Construction Plan**  
 Scale 1:14

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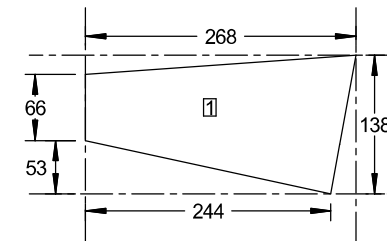
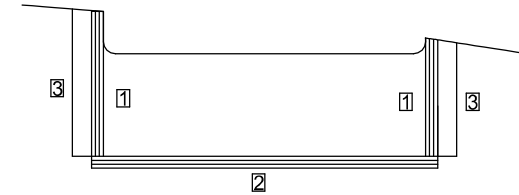
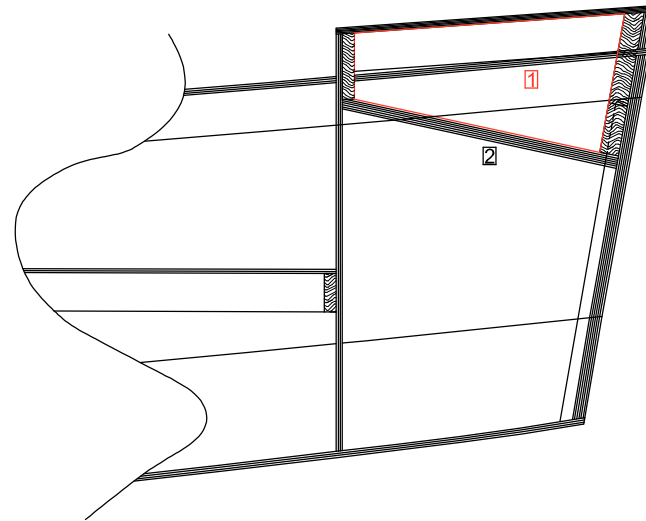
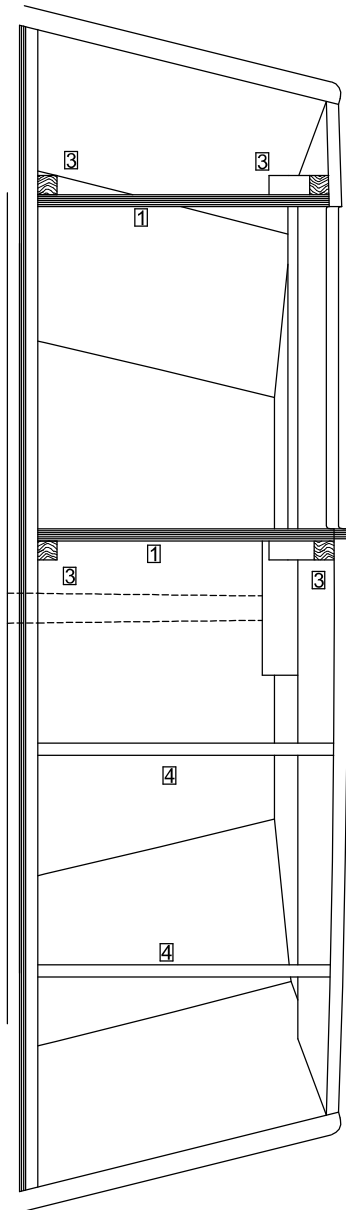
Midships Webframe cut from 12mm marine plywood, to outline shown in blue. Glue 38mm x 12mm crossbeam to for'd face of frame as shown by black hidden detail lines. Cut out openings approximately as shown, but ensure that the perimeter of the frame remains at least 50mm wide. Round-out the corners of the cutouts well to prevent stress concentrations. Position webframe so that for'd face of plywood lines up with frame position line on inside of hull. Centreboard case is glued and screwed to forward face of webframe. Notch out the upper, aft corner of the case to accommodate the crossbeam.



Ends of longitudinal foot-brace supports which are glued in after assembly of the hull. No need to cut out notches, as the supports just butt up against the frame. See *Construction Plan*.

**First Mate** - Midships Webframe  
Scale 5:1

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1. Outboard Well made from 12mm/1/2" plywood sides. Dimensions shown are Suggestions only - take actual shape from boat. The part shown is representative of the side closest to the centreline - the other one will be the same shape, but not as deep. Angles should be correct, but take measurements from boat before cutting. This size of well should take most 2 to 3 hp outboards, but check depth of well against your own motor.

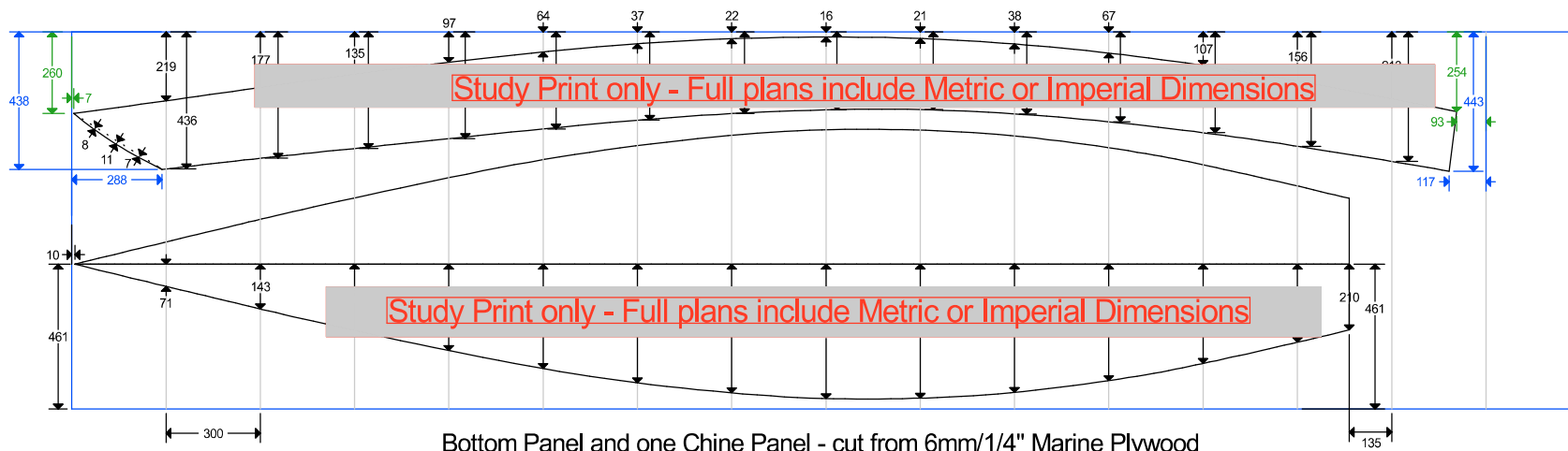
2. Floor of well from 9mm or 12mm/3/8" or 1/2" plywood. This relatively heavy thickness is so that the floor will take the weight of a person's foot, and will help strengthen the well assembly to take road trailering shocks when outboard left in place. 6mm/1/4" is probably sufficient if weight is a problem.

3. 19mm x 19mm/3/4" x 3/4" cleats glued and screwed to boat structure and well sides.

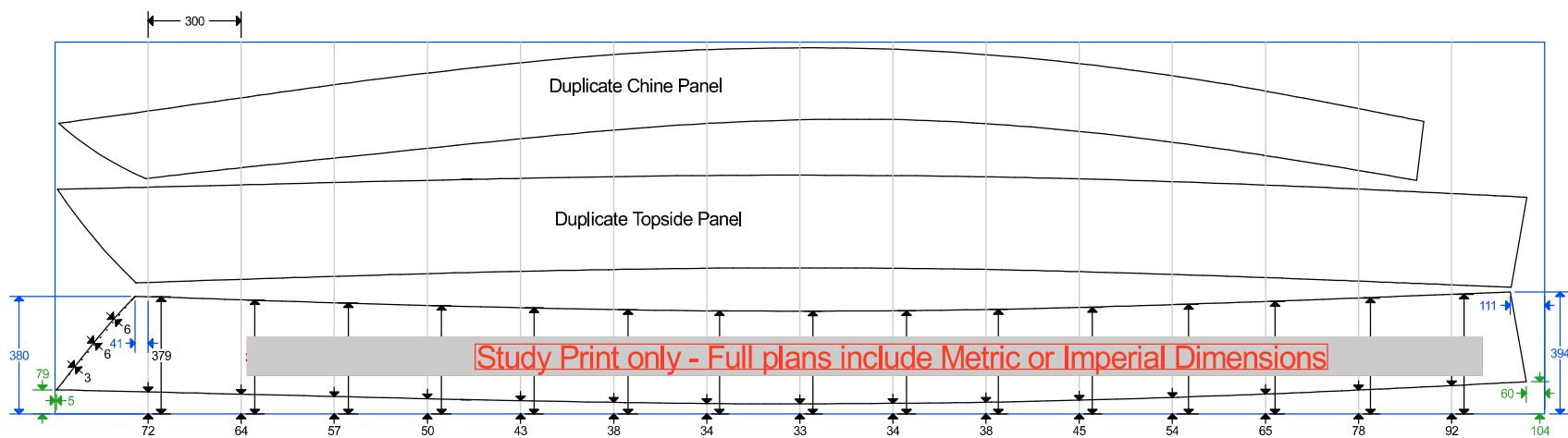
4. Aft Deck Beams from 38mm x 12mm/1-1/2" x 1/2" or similar

First Mate - Outboard Splash Well

Scale 1:5



**Bottom Panel and one Chine Panel** - cut from 6mm/1/4" Marine Plywood  
Grid Spacing - 300mm

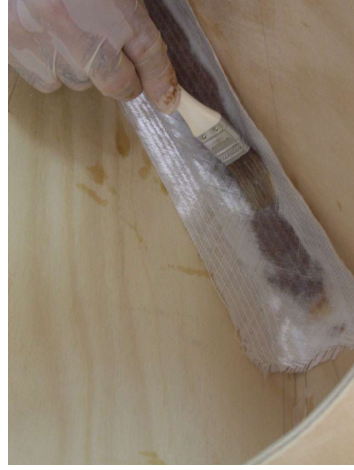


**Both Topside Panels and one Chine Panel** - cut from 6mm/1/4" Marine Plywood  
Trace around cut panels to produce duplicates as shown.  
Grid Spacing - 300mm

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large fillet. This is because large volumes of epoxy with a small surface area can build up heat rapidly during the curing chemical reaction. If doing it in a number of smaller runs, allow about an hour between each run – that way you will still get a chemical bond between each application, but the majority of the heat from the exothermic reactions will dissipate before the next lot goes into place.



**Figure 23**

**23.** While the surface of the epoxy fillet is still soft, lay on the first layer of 400gsm/12oz glass, and smooth into position with a brush.



**Figure 24**

**24.** You can see some resin soaking into the first layer of glass.



**Figure 25**

**25.** Apply the second layer of glass, overlapping the previous application so that you end up with a double layer in the middle, and single layers on each side.



**Figure 26**

**26.** Brush un-thickened epoxy through both layers until they are fully wet-out. Only put on enough resin to wet-out properly, but no more – you don't want puddling of epoxy, as the cloth can tend to 'float' in the liquid epoxy.



**Figure 27**