

# Wik-E-Cargo Bike long Master Drawing. Aaron Moore

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5mm tolerance on length of all mortices  
Assume 18mm plywood is 18.5mm thick

Tools Needed  
Access to a laser cutter to cut aluminium  
Access to a CNC Router to cut full sheets of plywood  
4mm x 20mm router cutter (to fit dog-bones in cutting file)  
Hacksaw  
Files  
Metal vice  
Spanners and sockets  
Allen keys  
Tap Wrench  
M10 x1 tap and clearance drill  
G clamps 8pcs x 150mm  
Pillar drill and assorted bits.

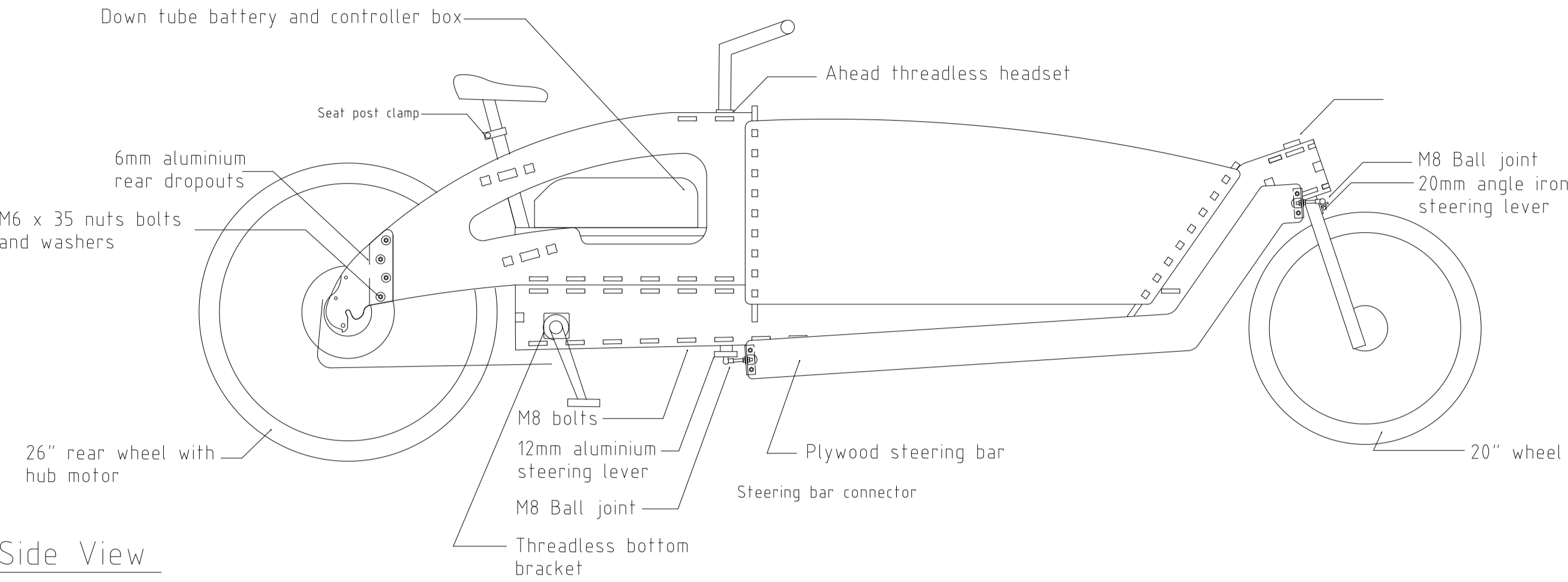
Materials  
1 sheet 2440 x 1220 x 18 birch/marine plywood main frame.  
1 sheet 2440 x 1220 x 12 birch/marine plywood (cargo bucket).

1pc. 350 x 28.6 x 16 Seat tube (seat tube)  
1pc. 660 x 28.6 x 16 Seat tube (inner steering tube)  
1pc. 375 x 37 x 16 Head tube (handle bar steering tube)  
1pc. 116 x 37 x 16 Seat tube (seat tube)  
1pc. 130 x 318 x 1.5 Headstock sleeve tube (bottom sleeve)  
1pc. 150 x 318 x 1.5 Headstock sleeve tube (top sleeve)  
1pc. 160 x 25 x 25 x 3 m/s angle iron (top steering lever)  
2pc. 65 x 20 x 20 x 3 m/s angle iron (steering bar connectors)  
1pc. 300 x 300 x 6 aluminium plate (laser cut rear drop outs).  
1pc. 200 x 200 x 12 aluminium plate (laser cut rear steering lever and bottom bracket plate).  
1pc. 12mm dia. stainless steel rod (kick stand pivot).  
1pc. 25 x 25 x 3 x 360 angle section mild steel (kick stand foot).  
1pc.. 5M 10mm bungee cord (acts as spring for kick stand)  
1pc. 210mm x 6mm rod (keeps seat post from rotating)

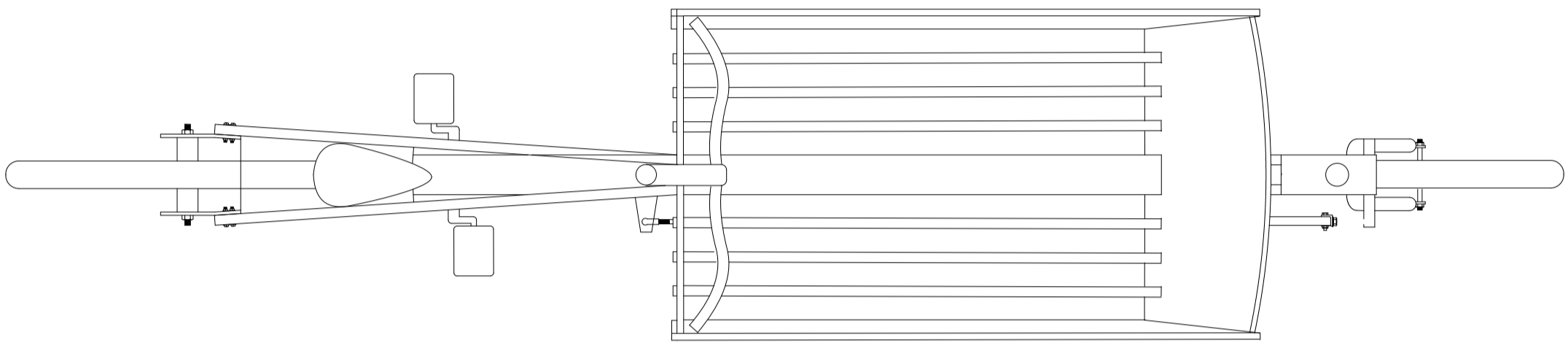
Waterproof wood glue.  
Yacht varnish.  
Sandpaper plus optional Orbital sander.

Bicycle Parts  
2pcs. A-head, threadless headsets 1 1/8.  
1pc. thread-less bottom bracket (for use with hub motor version).  
1pc. Seat.  
1pc. Seat clamp for 28.6 seat-post.  
20 $\times$  fork with attachment for disk brake and 130mm long steerer tube.  
20 $\times$  front wheel with attachment for disk brake.  
26 $\times$  rear wheel with hub motor, compatible battery and controller.  
7 speed derailier mechanism.  
2 sets of mechanical disk brakes (with extra long cable for front brake).  
1 set of cranks with pedals.  
1pc. 40 tooth chain wheel.  
1pc. handlebar stem.  
1pc. Handlebar.  
1 pair handlebar grips.

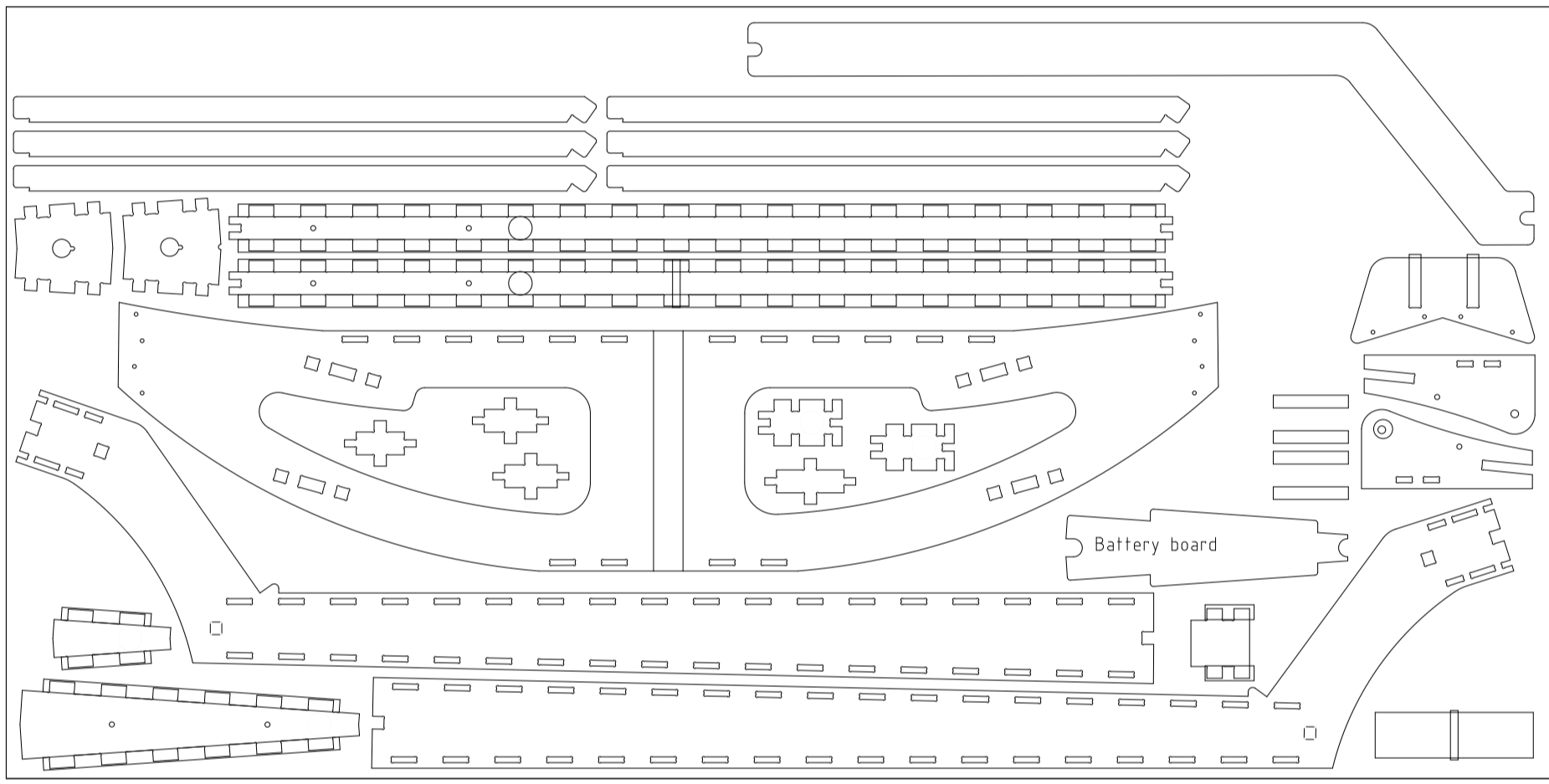
Fixings  
8pcs. 35 x M6 nuts bolts and penny washers (to secure rear dropouts to frame).  
1pc, 50 x M6 nuts bolts and washer (to secure bottom steering lever).  
1pc, 40 x M6 nuts bolts and washer (to secure top steering lever).  
2pcs. 100 x M8 threaded rod ( to attach steering levers to steering bar).  
6pcs M8 nuts and washers (for steering lever assembly).  
3pcs. 250 x M8 nuts bolts and washer (to secure main frame to rear frame).  
2pcs. Jubilee clips (to secure seat post to to rear frame).  
4pcs. 35 x M6 nuts bolts and washers (to secure foot to kick stand).  
4pcs. 30 x M6 nuts bolts and washers (to secure connectors to steering bar).  
2pcs. 12mm penny washers.  
Split pin (to secure kick stand pivot)



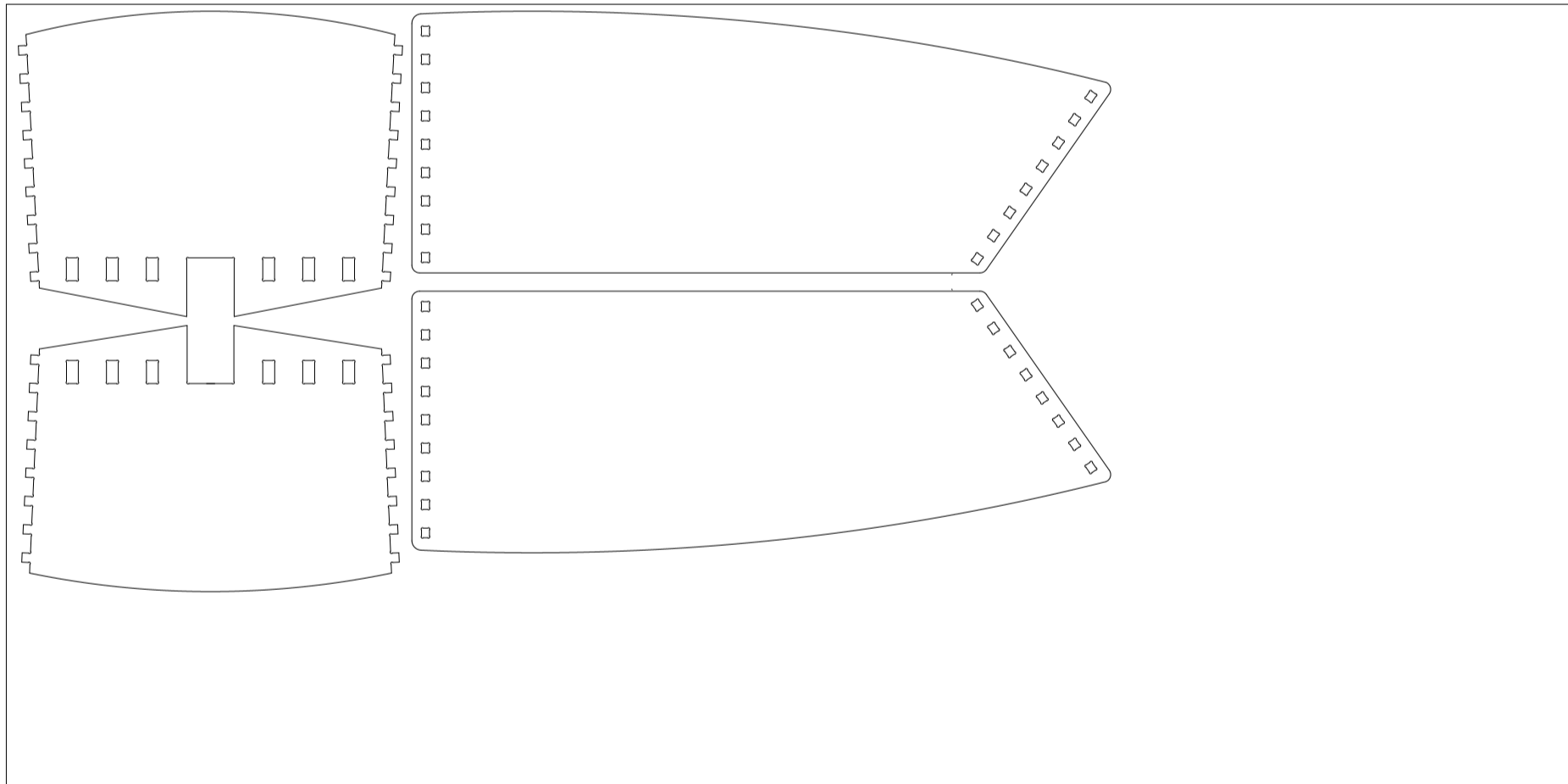
Side View



Top View



18mm Plywood Cutting File



12mm Plywood Cutting File

