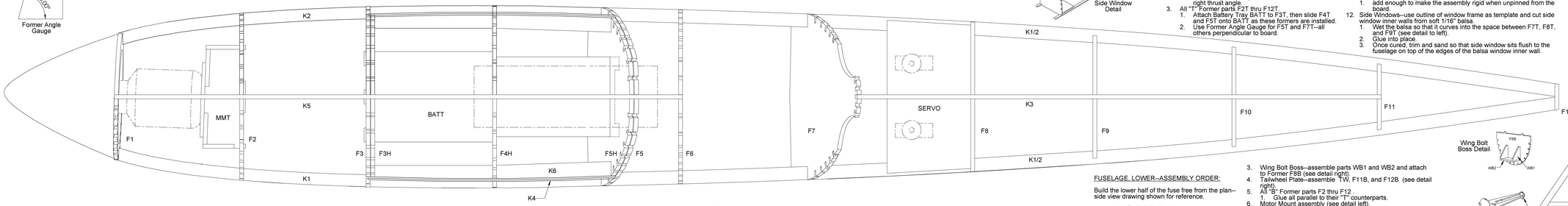
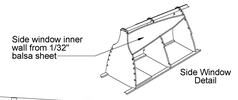




FUSELAGE, UPPER--ASSEMBLY ORDER:

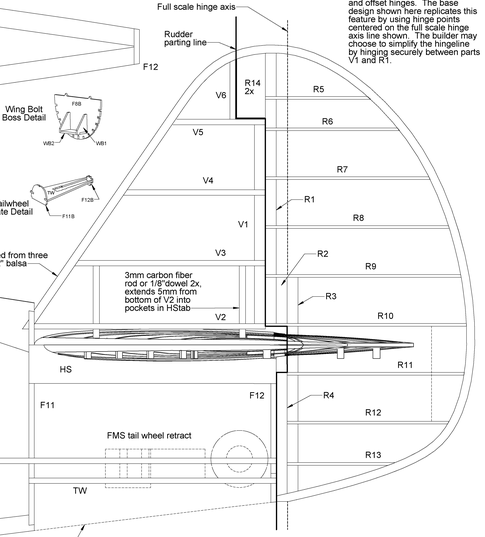
Build the top half of the fuse over the plan.

1. Preassemble Formers F3T, F3B, F4B, F5T thru F9T.
2. Keels K1 and K2--glue ends together and pin to plan.
   1. K1 and K2 use the same back end but are not interchangable--they set former F1 to the motor right thrust angle.
3. All "T" Former parts F2T thru F12T.
   1. Attach Battery Tray BATT to F3T, then slide F4T and F5T onto BATT as these formers are installed.
   2. Use Former Angle Gauge for F5T and F7T--all others perpendicular to board.
4. Servo tray SERVO.
5. Keel K3--tie F7T thru F11T together.
6. Lower Hatch Rails K4--glue to F3T, F4T, and F5T.
7. Hatch Formers F3H, F4H, and F5H--set into place--do not glue.
8. Keel K5--tie F2T thru F6T including the H Formers together.
9. Upper Hatch Rails K6--slide into place and glue to F3H, F4H, and F5H.
10. Horizontal Stabilizer Supports HS.
11. Stringers--all fuselage stringers are 1/8" x 3/16" balsa.
    1. add enough to make the assembly rigid when unpinned from the board.
12. Side Windows--use outline of window frame as template and cut side window inner walls from soft 1/16" balsa.
    1. Wet the balsa so that it curves into the space between F7T, F8T, and F9T (see detail to left).
    2. Glue into place.
    3. Once cured, trim and sand so that side window sits flush to the fuselage on top of the edges of the balsa window inner wall.

TAIL GROUP ASSEMBLY

Sheeting the fin and horizontal stabilizer and covering the rudder and elevators as open frameworks provides durability with a scale appearance.

1. Begin tail group assembly by laminating outlines from three strips of 1/16" x 1/2" balsa around a form.
2. Pin the cured outlines into place over the plan.
3. Install the tail framework parts in numerical order.
4. Separate the Rudder from the Fin and the Elevators from the Horizontal Stabilizer by cutting through the outlines where shown.
5. Sheet the upper Fin and Stabilizer with 1/16" balsa while pinned flat to the board.
6. Unpin and remove the support feet from the bottom of the tail group parts.
7. Sheet the lower Fin and the Stabilizer.
8. Sand to shape and install hinges.



Note: The leading edge of the P-40 rudder had a complex shape and offset hinges. The base design shown here replicates this feature by using hinge points centered on the full scale hinge axis line shown. The builder may choose to simplify the hingeline by hinging securely between parts V1 and R1.

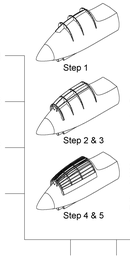
PROTOTYPE SPECIFICATIONS	
Wingspan	60"
Length	50.4"
Weight	79oz
Wing Area	591 sq in
Power	FMS 4258-650kV
Propellor	14x8 3-blade
Battery	4S 3800mAh

MOTOR MOUNT:

When assembled as shown below, the motor mount will provide 2 degrees of right and down thrust:

SPINNER AND DETAIL PARTS:

STL files for a 3D printed spinner, exhaust stacks, and instrument panel are available on Thingiverse.com



CHIN SCOOP--ASSEMBLY ORDER:

1. Dry fit center Scoop Rail C1 and Scoop Formers C2 thru C4--this works well if the fuselage stringers are in place
   1. Fit the assembly closely to the underside of the fuselage and pin into place
   2. Once aligned, glue the scoop parts together
2. Scoop Dividers C5--not shown on plan for clarity
3. Scoop Lip parts C6 and C7--preassemble, install
4. Side Panels C8--bevel upper edges to blend into fuselage
5. Stringers
6. Unpin finished assembly and sand scoop opening to shape
7. Cover fuselage, attach scoop, and then cover scoop

FUSELAGE, LOWER--ASSEMBLY ORDER:

Build the lower half of the fuse free from the plan--side view drawing shown for reference.

1. Attach F1 to front Keels.
2. Wing pin WP--reinforce pin hole in F4B.
3. Wing Bolt Boss--assemble parts WB1 and WB2 and attach to Former F8B (see detail right).
4. Tailwheel Plate--assemble TW, F11B, and F12B (see detail right).
5. All "B" Former parts F2 thru F12 .
   1. Glue all parallel to their "T" counterparts.
6. Motor Mount assembly (see detail left).
7. Keels K7 and K8.
8. Wing Saddles WS--wet outer surface of these parts and they will curve into place.
9. Stringers--finish 'em off and then cut the battery hatch free where shown.

BELLY PAN--ASSEMBLY ORDER:

Build the pan directly over the wing/fuselage assembly after fitting the wing to the fuselage.

1. Glue front Former B2 perpendicular to keel B1.
   1. Pin this assembly to back of Fuse Former F4 and to the centerline of the wings (see detail).
2. Formers B3 thru B6--perpendicular to B1 and flush to wing.
3. Plank from B2 thru B6 with 1/16" balsa.
4. Belly Pan can be made removable with a pin at the front and magnets at the rear.

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INFIELD ENGINEERING™ by Paul Kohlmann

Title: 60" Curtiss P-40C Tomahawk
Plans No. 1143

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Laser cut kit with plastics available from Manzano Laser Works
www.manzanolaser.com

Size: Y | Dwg. No: Curtiss P40C.drw | Rev: A
Scale: 1:1 | Weight: 4.5-5.5lbs | Sheet 1 of 4

WING FILLET

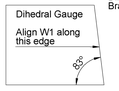
Use the templates to the right to make the fillet parts:

1. Wing Platform--cut from 1/16" balsa or 1/32" ply.
   1. Fit Platform to upper wing surface
   2. Glue the Platform to the bottom edge of the Wing Saddle WS.
2. Bottom--cut from 1/8" balsa
   1. Epoxy to back edge of Wing Platform and fuselage.
3. Side Panels--cut from 1/16" balsa or thick cardstock.
   1. Wet each Panel and gently shape to fit.
   2. Work from the Rear to the Front.
   3. Glue to Wing Platform and fuselage.
   4. Add bracing from scrap balsa as needed.

DIHEDRAL

The dihedral is set by installing center wing rib W1 at the angle provided by the Dihedral Gauge.

Completed wing assembly should measure 3.5"/88mm from board to bottom of W10 when wings are level and supported by W1.



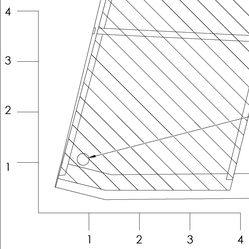
Dihedral Brace

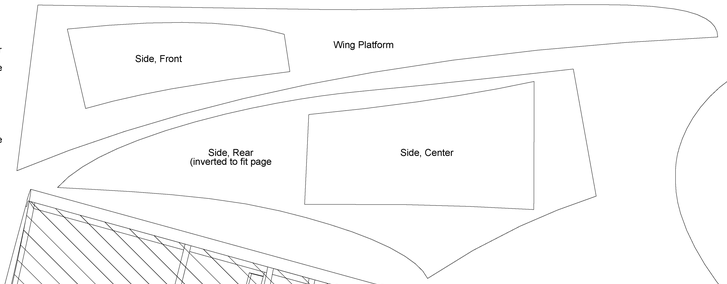
Sheet center section and leading edge with 1/16" balsa top and bottom

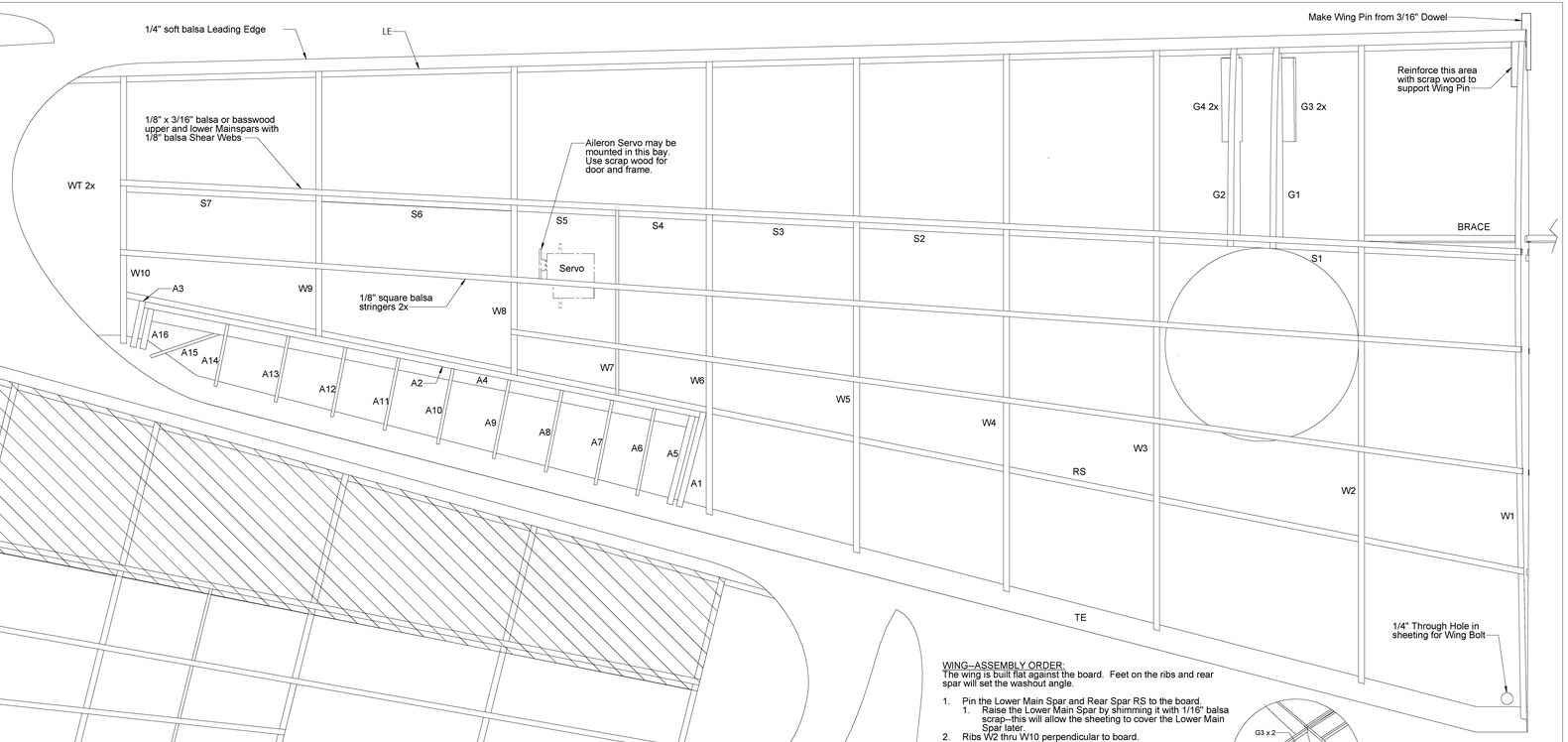
Extend sheeting to this area on underside only with 1/16" balsa to create wheel opening

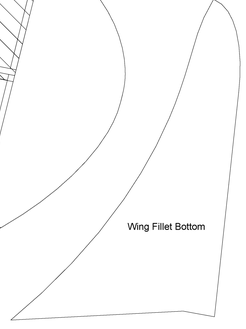
Landing gear opening in bottom sheeting

1/4" Through Hole in sheeting for Wing Bolt





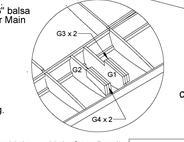




WING--ASSEMBLY ORDER:

The wing is built flat against the board. Feet on the ribs and rear spar will set the washout angle.

1. Pin the Lower Main Spar and Rear Spar RS to the board.
   1. Raise the Lower Main Spar by shimming it with 1/16" balsa scrap--this will allow the sheeting to cover the Lower Main Spar later.
2. Ribs W2 thru W10 perpendicular to board.
3. Rib W1--set angle with Dihedral Gauge.
4. Trailing Edge TE.
5. Upper Main Spar, and Shear Webs S1 thru S7.
6. Upper Stringers.
7. Aileron parts in numerical order.
   1. Glue A2 to RS only!
   2. A2 is a doubler to RS.
8. Wing Tip WT--stack two together and then attach to wing.
9. Unpin assembly from board and epoxy S2 into place.
10. Retract Ribs G1 and G2--epoxy to S1 and Main Spars.
11. Leading Edge LE.
12. Upper Sheeting--return assembly to board and sheet from Main Spar to LE to lock in the washout.
13. Lower Sheeting--unpin assembly and remove feet first.
14. Retract Bosses--stack two G3's and two G4's together.
    1. Epoxy each assembly firmly to Retract Rib and wing sheeting.
15. 1/4" Soft balsa leading edge.
16. Join wings with ply Dihedral Brace.
17. Install a wing pin from 3/16" dowel where marked on ribs W1.



Main Gear Detail

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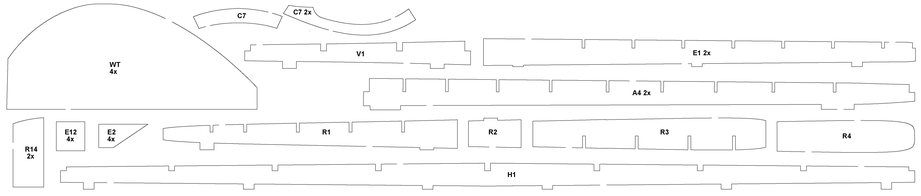
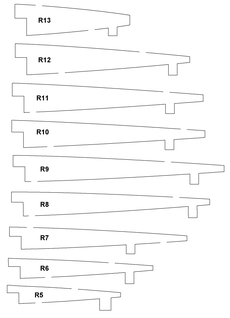
Size	Dwg. No.	Rev.
X	Curtiss P40C.drw	A

Scale: 1:1 | Weight: 4.5-5.5lbs | Sheet 2 of 4

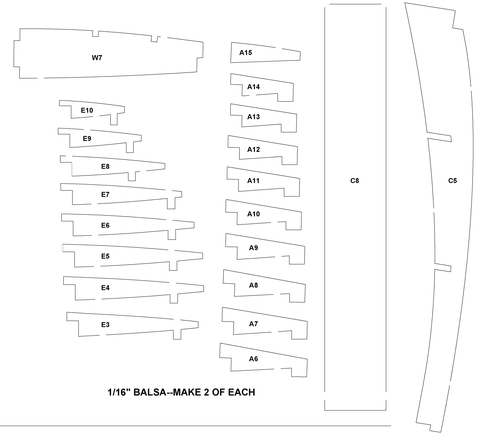
PARTS OUTLINES: THIS KIT WAS DESIGNED FOR LASER CUTTING FROM THE START. BUT FOR THOSE OF YOU WILLING TO CUT BY HAND, HERE ARE THE OUTLINES FOR ALL OF THE PARTS FROM THE SHORT KIT. PLEASE DISREGARD THE TABS IN THE OUTLINES THAT ARE USED BY THE LASER CUTTER.



1/4" BALSA--MAKE 1 OF EACH UNLESS OTHERWISE NOTED

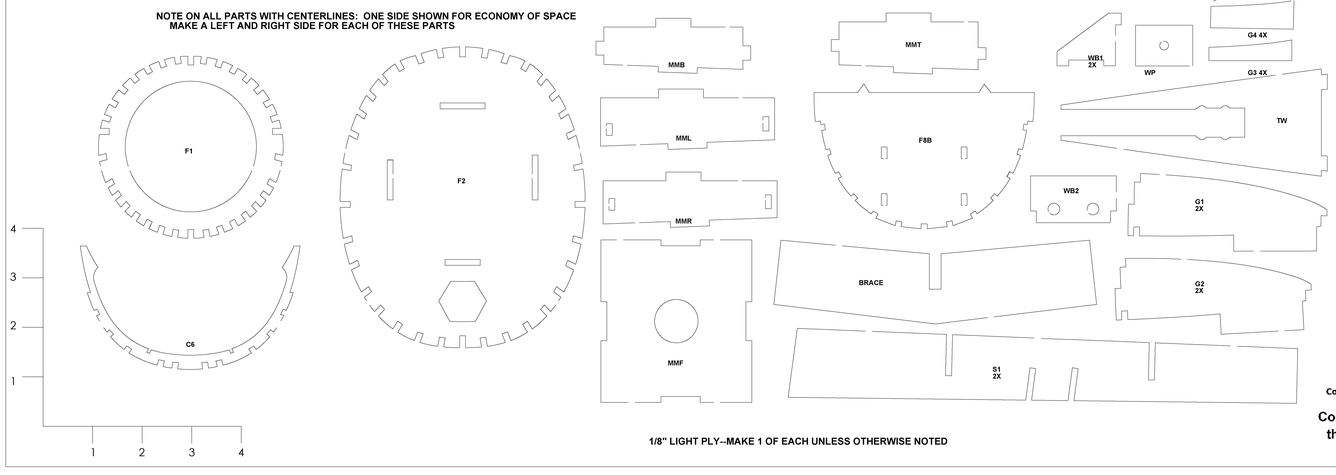


1/16" BALSA--MAKE 1 OF EACH



1/16" BALSA--MAKE 2 OF EACH

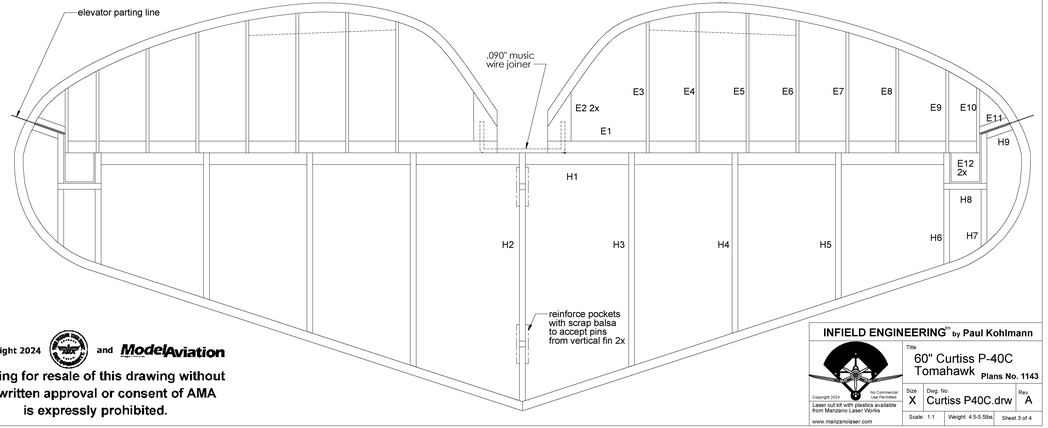
NOTE ON ALL PARTS WITH CENTERLINES: ONE SIDE SHOWN FOR ECONOMY OF SPACE MAKE A LEFT AND RIGHT SIDE FOR EACH OF THESE PARTS



1/8" LIGHT PLY--MAKE 1 OF EACH UNLESS OTHERWISE NOTED

HORIZONTALTAIL PLANE:

Follow Tail Group Assembly notes from page 1.



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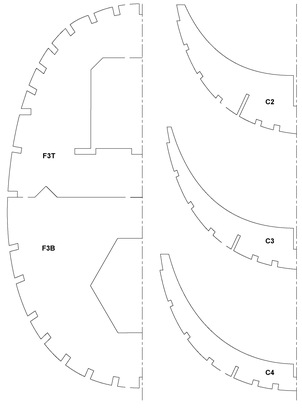

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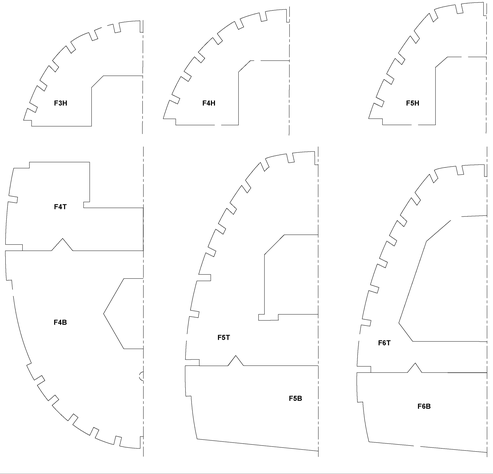
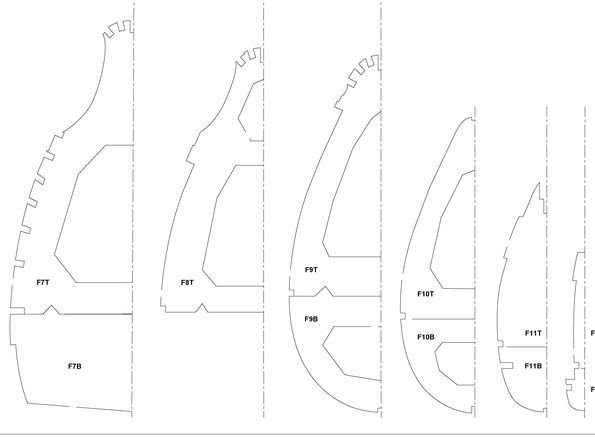
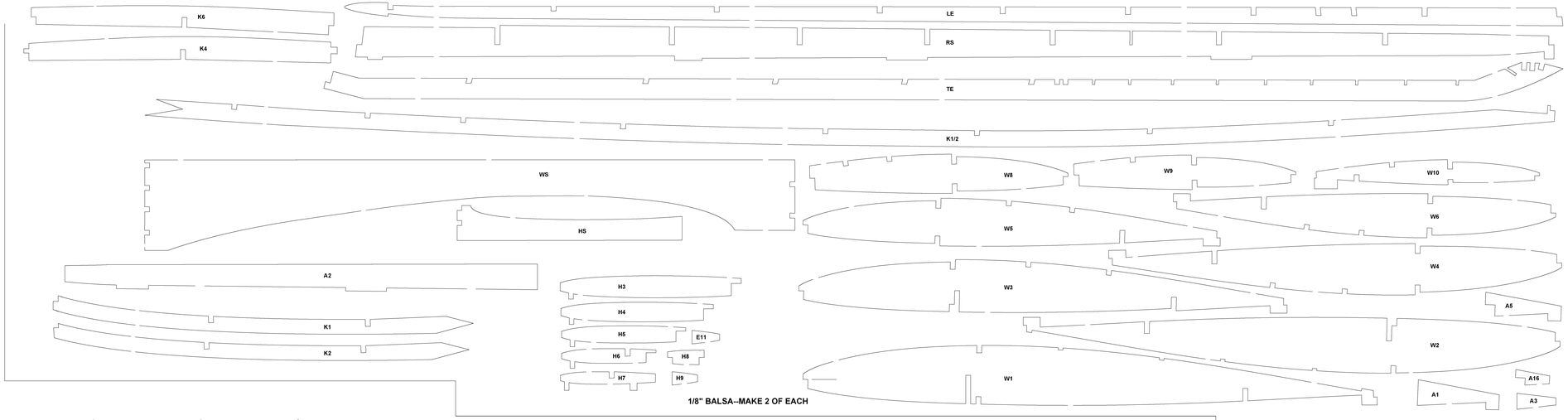
MAKE A LEFT AND RIGHT SIDE FOR EACH OF THESE PARTS

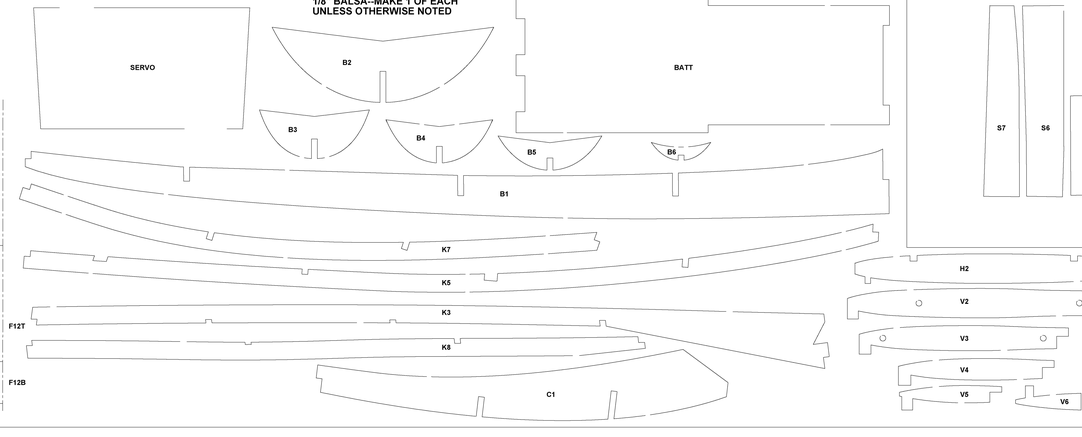






1/8" BALSA--MAKE 2 OF EACH

1/8" BALSA--MAKE 1 OF EACH
UNLESS OTHERWISE NOTED



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