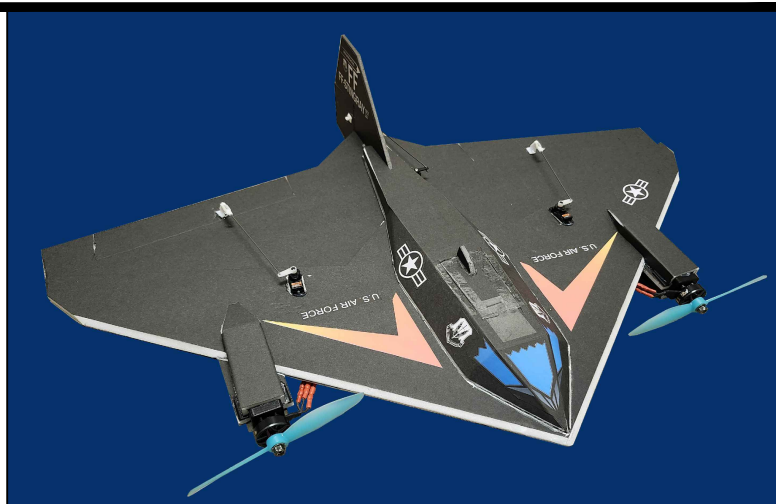




FOAM, GLUE, TAPE AND A LITTLE IMAGINATION....



(RC Model Airplane Construction Plans)

rcFoamFighters

FF-STINGRAY

(Original Design & CAD Drawing by Paul Petty - Oct. 2024)

Template Plan Release Ver. 1.0

THIS PLAN IS FOR PERSONAL USE ONLY
FREE PLAN - NOT TO BE SOLD!!!

(Copyright, rcFoamFighters 2024)

rcFoamFighters

FF-STINGRAY Template Plan

(CAD Plans by Paul Petty - Rev. 1.0, October 2024)

(Plan Release 1.0 - Copyright rcFoamFighters 2024)

(Contact rcFoamFighters at: admin@rcfoamfighters.net)

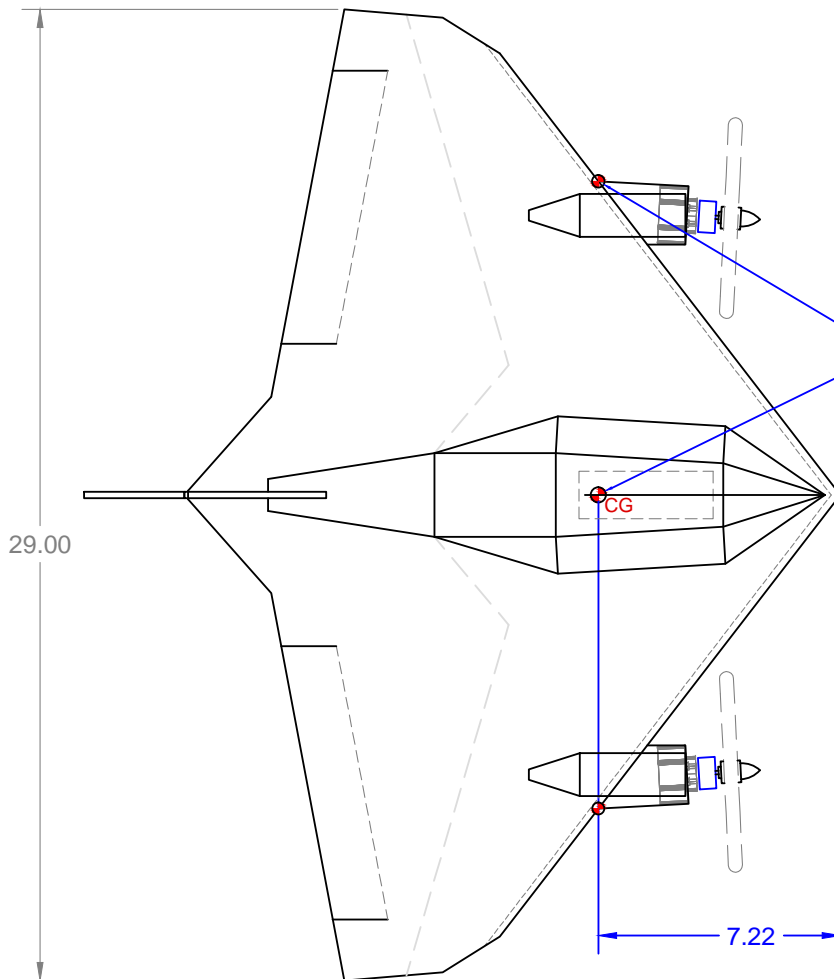
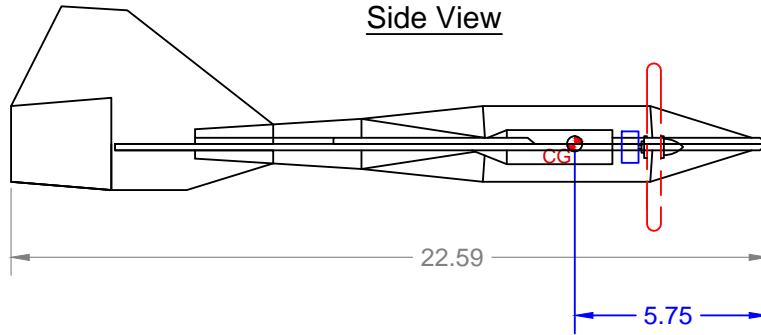
(Please Visit Our Blog at: <https://www.rcfoamfighters.net>)

Basic Specs as built by rcFoamFighters:

Wingspan:	29.0 Inches (73.66cm)
Length:	22.59 Inches (56.38cm)
All Up Weight:	21.5oz. (637.9gms)
Top Speed:	70+mph (112.7+kph)

Note, weight and top speed may vary depending on materials, motor, battery and electronics used. The weight given here is based on the model rcFoamFighters made using Readiboard brand Foamboard.

Side View



Approximate CG is a little less than 7-1/4 inches back from the tip of the nose. It is also the same point where the motor mount extension and main wing meet. You can balance the plane by placing your fingers under these two points. (Metric measurement = 18.34cm)

Top View

PARTS LISTED BELOW ARE WHAT WAS USED IN THE RCFOAMFIGHTERS TEST PLANE:

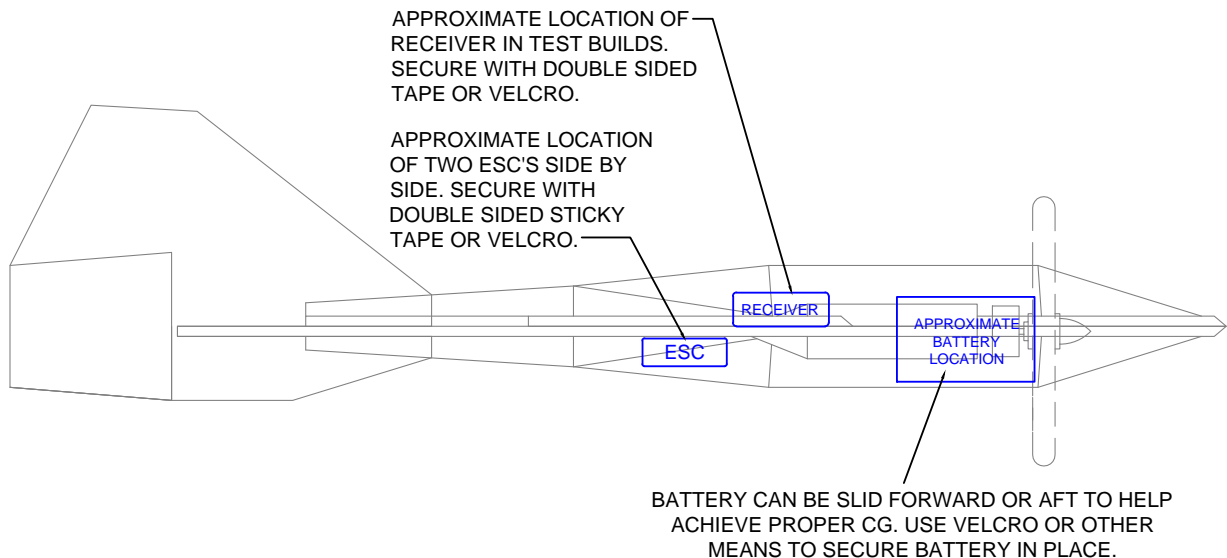
BASIC SETUP (70+mph)

Motors:	Two Drone F-40 1950kv T-Motors
ESC:	Two 30A Brushless ESCs
Battery:	4S 1500mA To 1800mA LIPO (40C or better)
Servos:	3 Mini Metal Gear Servos, 12gm (With optional Rudder)
TX/RX:	Any 6-channel or better with Delta Mixing

Plane was originally designed to be made from 20x30 inch Sheets of DollarTree Foamboard. Depron or FanFold Foam with Carbon Spars may be used. Using different parts or materials is OK, but may result in changed weight and performance.

Disclaimer (Please Read):

- This is a design template for a high performance, high speed RC aircraft. This plane should only be built and flown by experienced pilots with adequate skill to fly fast, maneuverable planes.
- **DO NOT fly this plane where it can endanger people, livestock or property.**
- **ANY PERSONS DECIDING TO BUILD AND FLY THIS PLANE DOES SO AT HIS/HER OWN RISK AND LIABILITY. RCFOAMFIGHTERS ASSUMES NO RESPONSIBILITY FOR THE PERFORMANCE OF THE PLANE YOU BUILD!**
- This model should only be hand launched by holding the bottom rear of the fuselage, where the sides are flat, with your hand clear and far away from the props. It can cause **EXTREME BODILY HARM** if any hand or body part comes into contact with the fast spinning Propeller Blades!
- All minors should fly under the supervision of an adult or guardian.



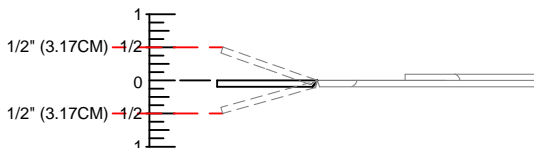
CONTROL SURFACE SETTINGS:

BELOW ARE THE BASIC SETTINGS I USED ON THE TEST PLANES. IF YOU HAVE DUAL OR TRIPLE RATES ON YOUR TRANSMITTER, YOU CAN SET YOUR ADDITIONAL RATES ACCORDINGLY TO GIVE MORE ACTIVE OR MORE RELAXED FLIGHT CHARACTERISTICS. I ALSO USUALLY ADD 40 TO 60 PERCENT EXPO ON BOTH AILERON & ELEVATOR.

AILERON THROWS

RECOMMENDED AILERON THROWS:

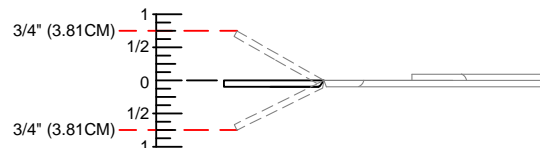
SET YOUR AILERON THROWS TO ABOUT 1/2 INCH (1.3CM) UP AND DOWN. MEASURE AT VERY TIP OF THE CONTROL SURFACE.



ELEVATOR THROWS

RECOMMENDED ELEVATOR THROWS:

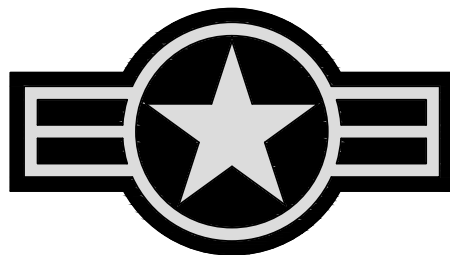
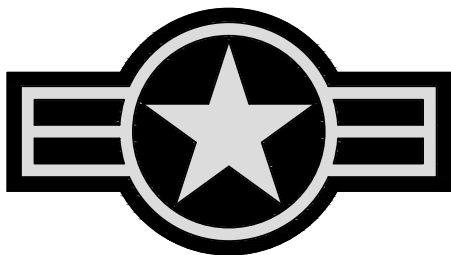
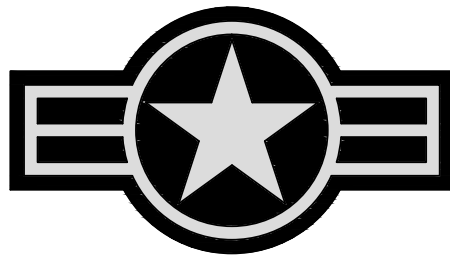
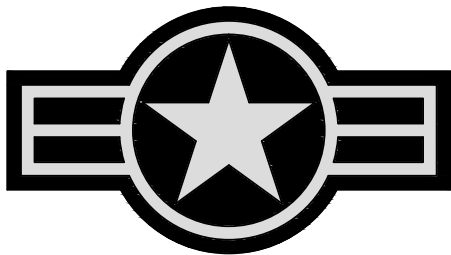
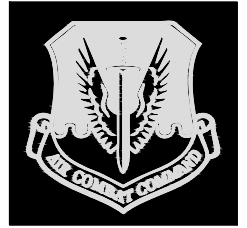
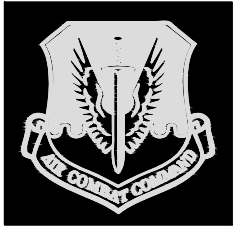
SET YOUR ELEVATOR THROWS TO ABOUT 3/4 INCH (1.9CM) UP AND DOWN. MEASURE AT VERY TIP OF THE CONTROL SURFACE.



COCKPIT GLASS AND DECALS TEMPLATE

INSTRUCTIONS:

PRINT TO 8.5X11 AVERY LABEL STICKER (#8165) OR PLAIN PAPER AND USE GLUE TO ADHERE TO PLANE. CLEAR TAPE CAN BE USED OVER DECALS ONCE PRINTED TO MAKE MORE WATER RESISTANT.



U.S. AIR FORCE

U.S. AIR FORCE

VERTICAL STABILIZER AND WING DECAL TEMPLATES

INSTRUCTIONS:

PRINT TO 8.5X11 AVERY LABEL STICKER (#8165) OR
PLAIN PAPER AND USE GLUE TO ADHERE TO PLANE.
CLEAR TAPE CAN BE USED OVER DECALS ONCE
PRINTED TO MAKE MORE WATER RESISTANT.



TILED SHEET TEMPLATE ASSEMBLY KEY PLAN

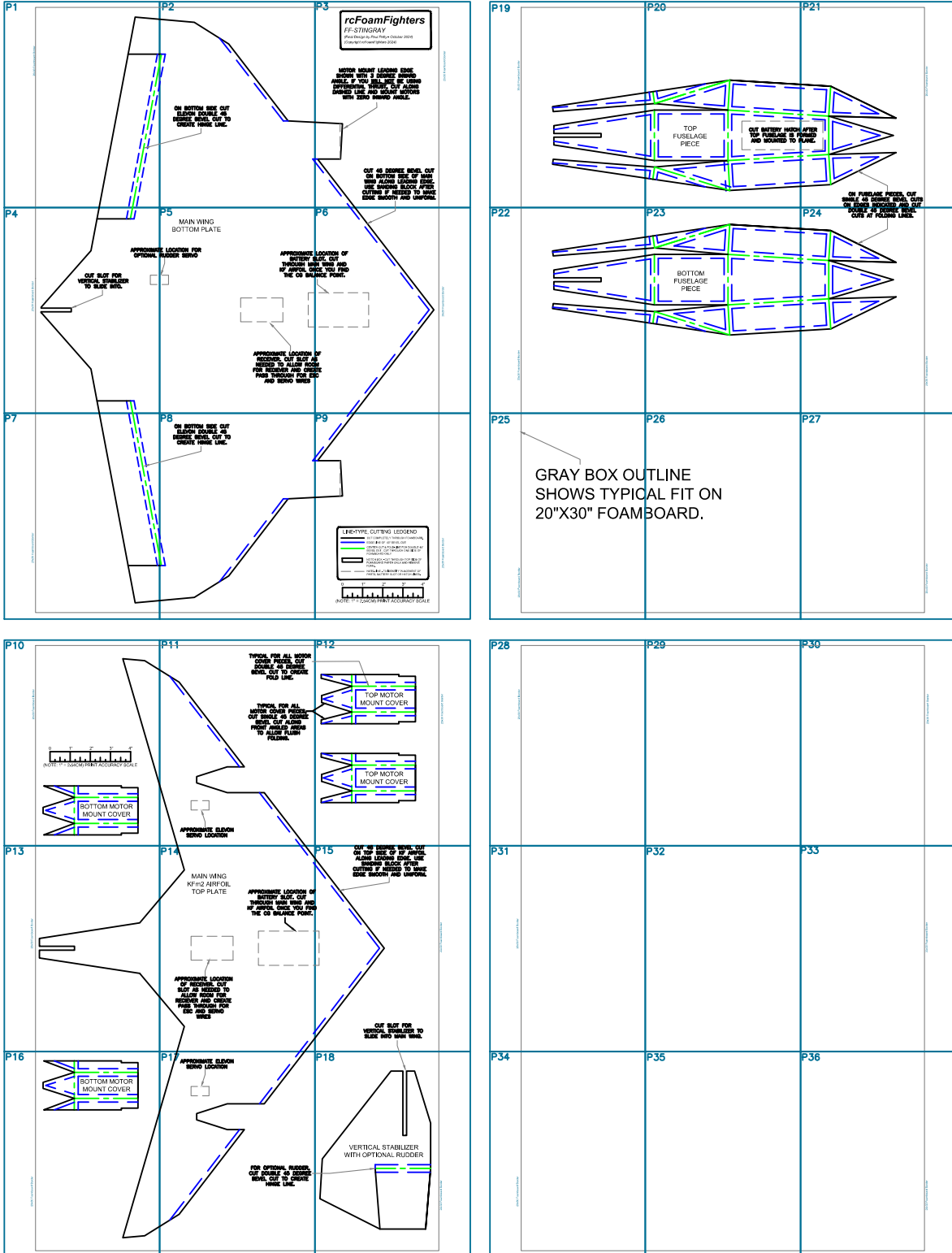
rcFoamFighters

FF-STINGRAY

(Design by Paul Petty - Oct. 2024)

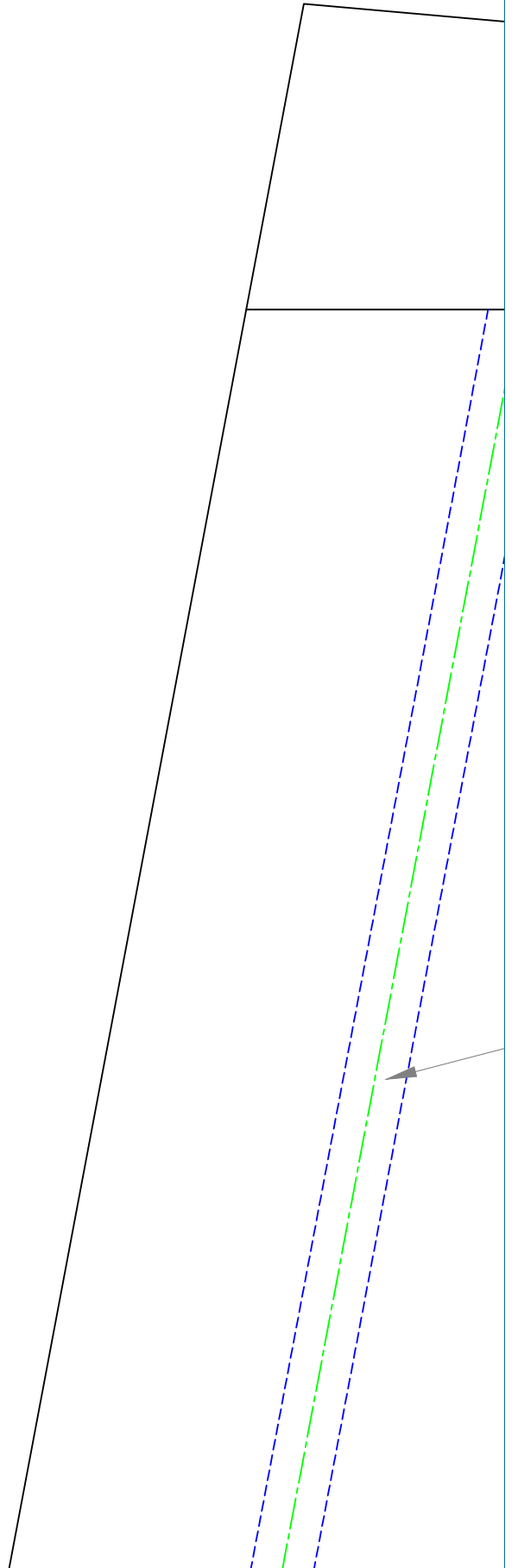
INSTRUCTIONS:

PRINT ALL TEMPLATE SHEETS. CUT AND ASSEMBLE AS SHOWN BELOW. USE SCOTCH TAPE TO SECURE SHEETS TOGETHER.

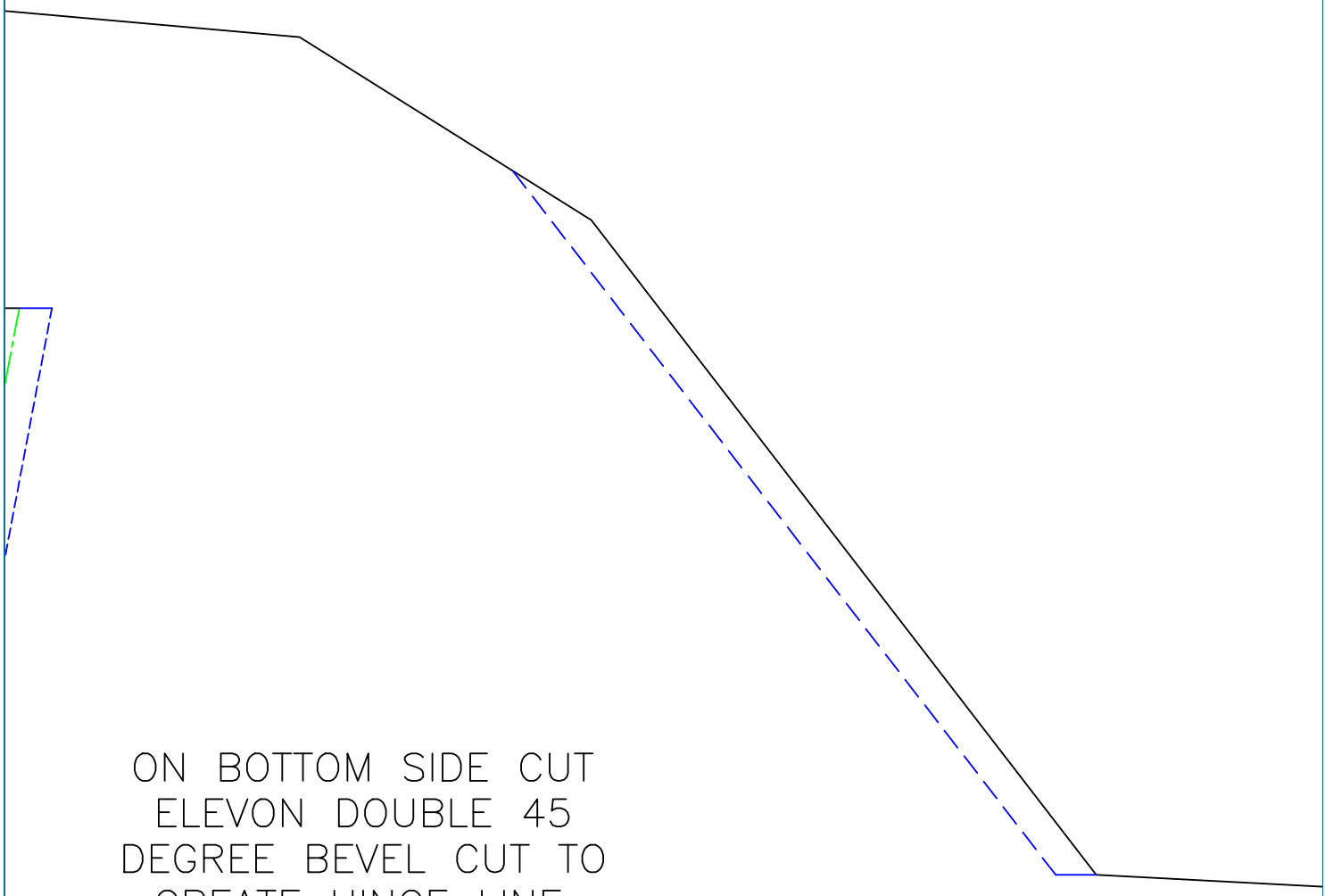


P 1

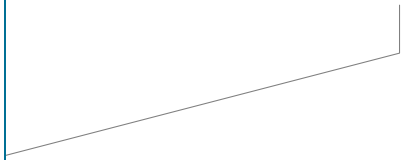
20x30 Foamboard Border



P2



ON BOTTOM SIDE CUT
ELEVON DOUBLE 45
DEGREE BEVEL CUT TO
CREATE HINGE LINE.



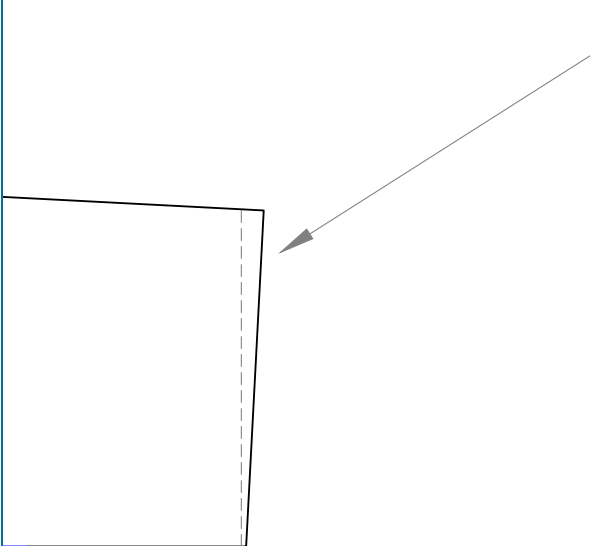
rcFoamFighters

FF-STINGRAY

(Final Design by Paul Petty - October 2024)

(Copyright rcFoamFighters 2024)

MOTOR MOUNT LEADING EDGE SHOWN WITH 3 DEGREE INWARD ANGLE. IF YOU WILL NOT BE USING DIFFERENTIAL THRUST, CUT ALONG DASHED LINE AND MOUNT MOTORS WITH ZERO INWARD ANGLE.



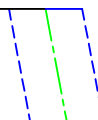
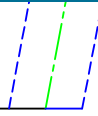
CUT 45 DEGREE BEVEL CUT ON BOTTOM SIDE OF MAIN WING ALONG LEADING EDGE. USE SANDING BLOCK AFTER CUTTING IF NEEDED TO MAKE EDGE SMOOTH AND UNIFORM.

P4

20x30 Foamboard Border

CUT SLOT FOR
VERTICAL STABILIZER
TO SLIDE INTO.

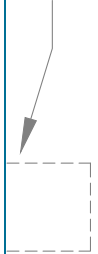
APPROXIMATE
OPTIONAL



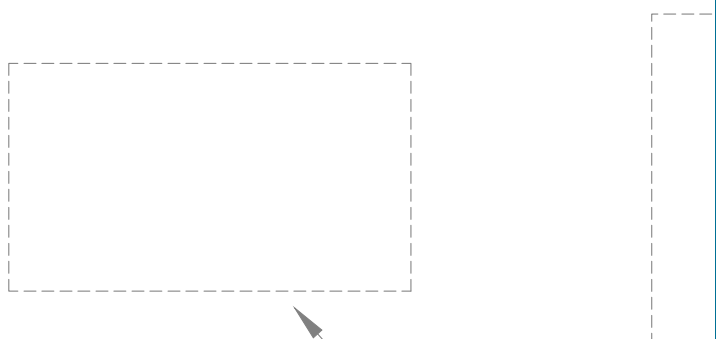
P5

MAIN WING BOTTOM PLATE

APPROXIMATE LOCATION FOR
RUDDER SERVO



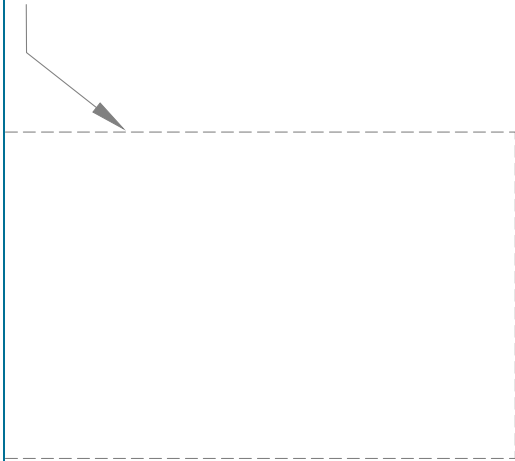
APPROXIMATE
BATTERY SLOT
THROUGH MAIN
KF AIRFOIL ON
THE CG BALANCE



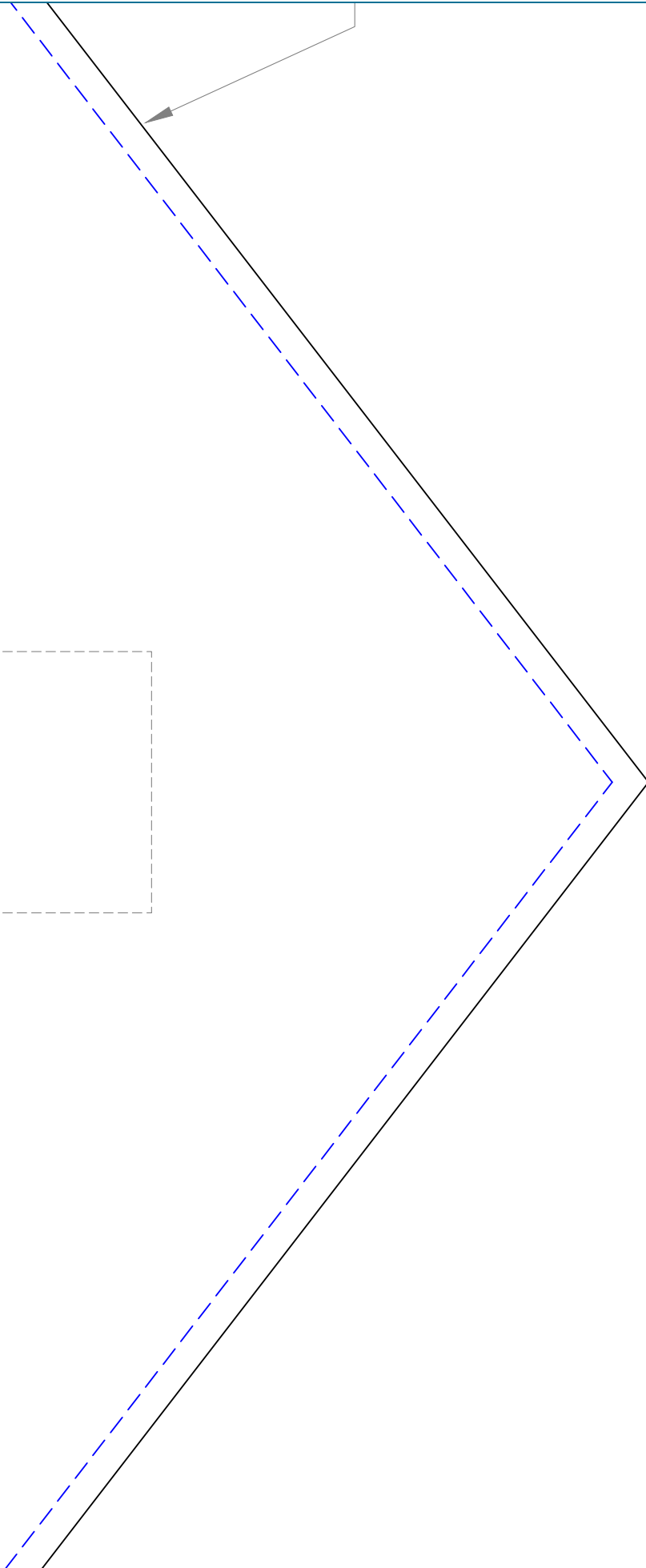
APPROXIMATE LOCATION
RECEIVER. CUT SLOT AS
NEEDED TO ALLOW ROOM
FOR RECEIVER AND CREATING
PASS THROUGH FOR ESC
AND SERVO WIRES

P6

LOCATION OF
SLOT. CUT
IN WING AND
PLACE YOU FIND
PUNCH POINT.



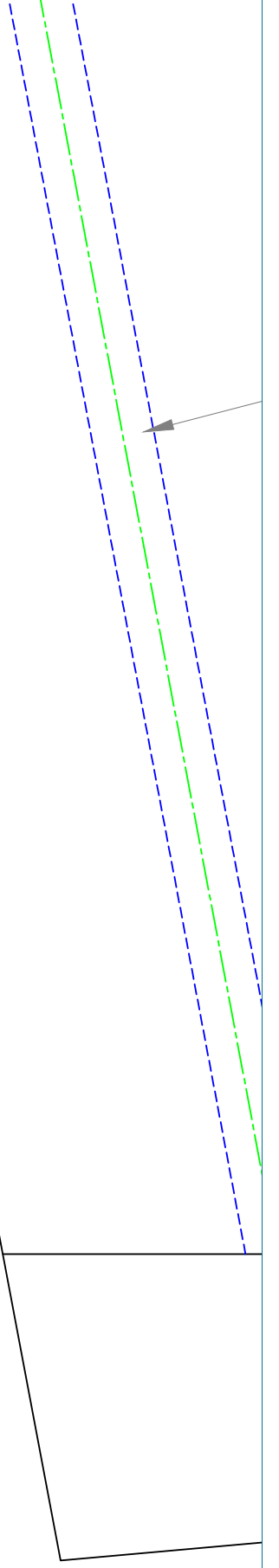
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20x30 Foamboard Border

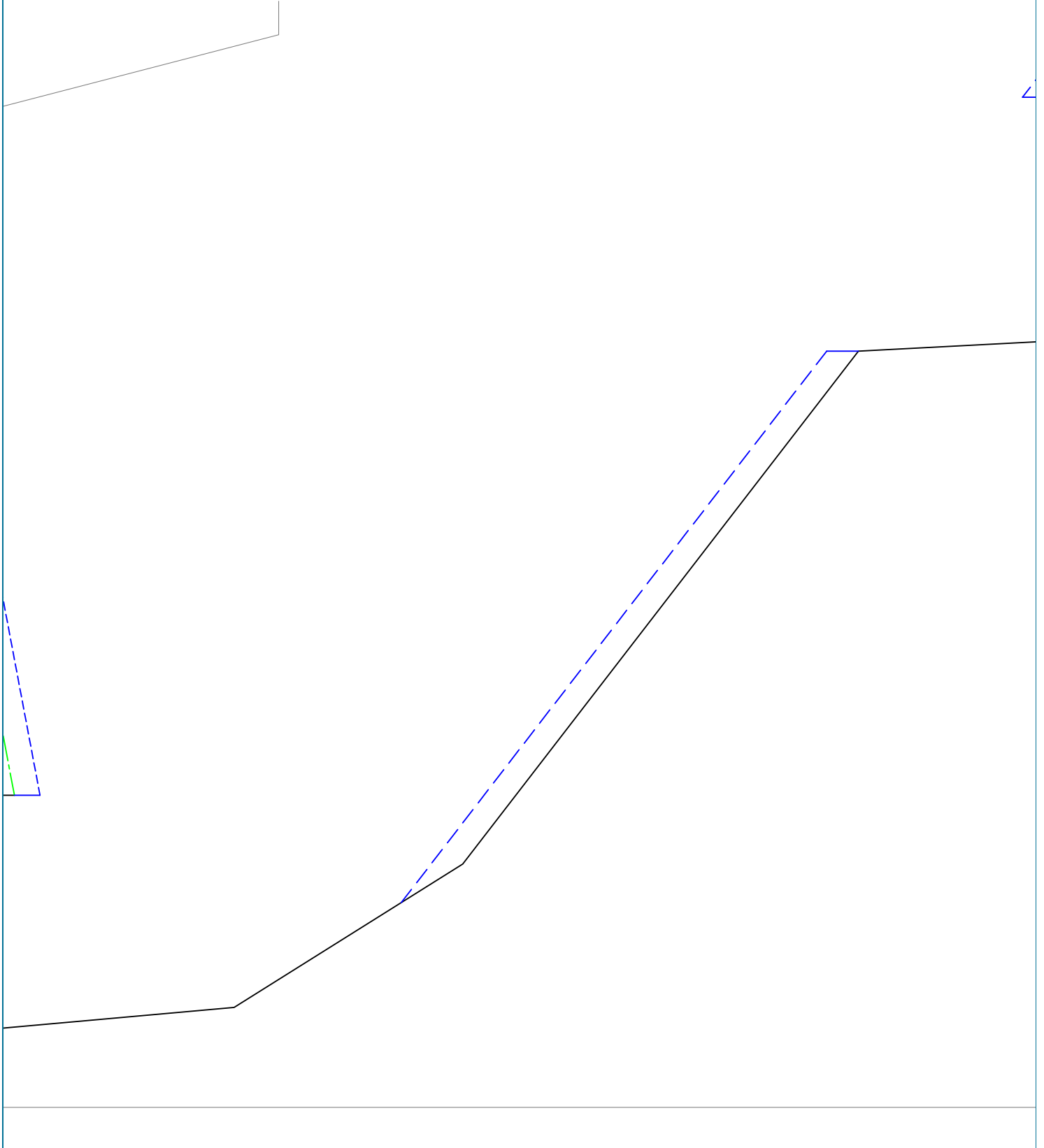
P7

20x30 Foamboard Border

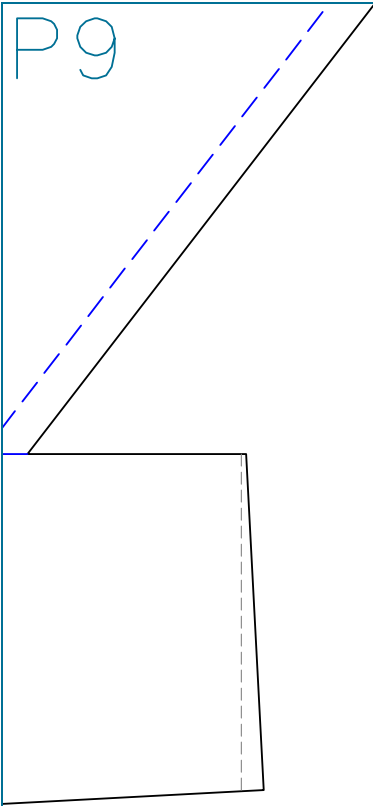


P8




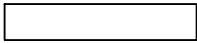

ON BOTTOM SIDE CUT
ELEVON DOUBLE 45
DEGREE BEVEL CUT TO
CREATE HINGE LINE.



P9



LINE-TYPE, CUTTING LEDGEND

-  CUT COMPLETELY THROUGH FOAMBOARD.
-  EDGE LINE OF 45° BEVEL CUT
-  CENTER CUT & FOLD-LINE FOR DOUBLE 45° BEVEL CUT , CUT THROUGH ONE SIDE OF FOAMBOARD ONLY
-  NOTCH BOX - CUT THROUGH TOP SIDE OF FOAMBOARD PAPER ONLY AND REMOVE FOAM.
-  NOTE-LINE - TO IDENTIFY PLACEMENT OF PARTS, BATTERY SLOT OR HATCH LINES.

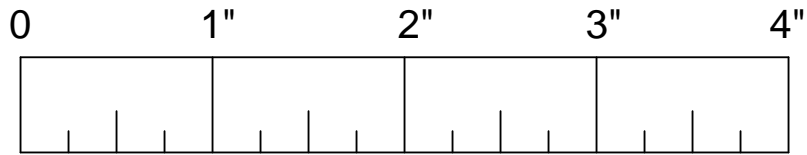
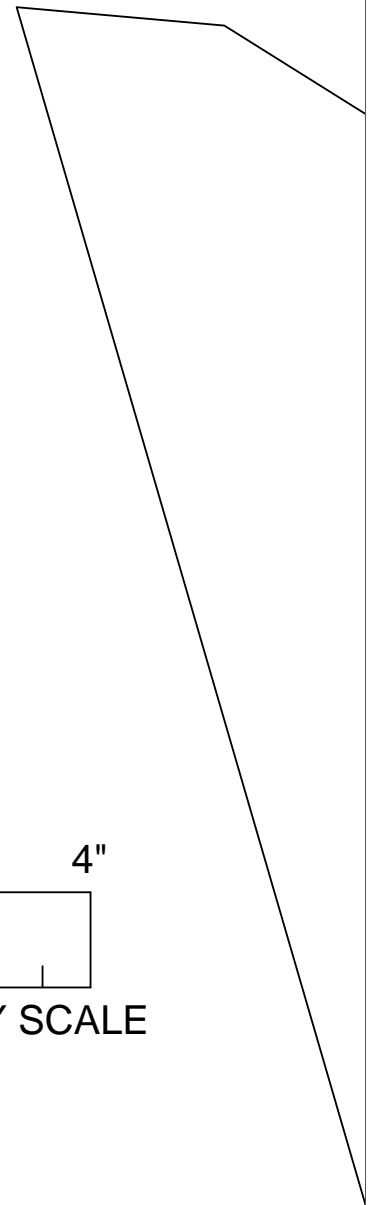
0 1" 2" 3" 4"



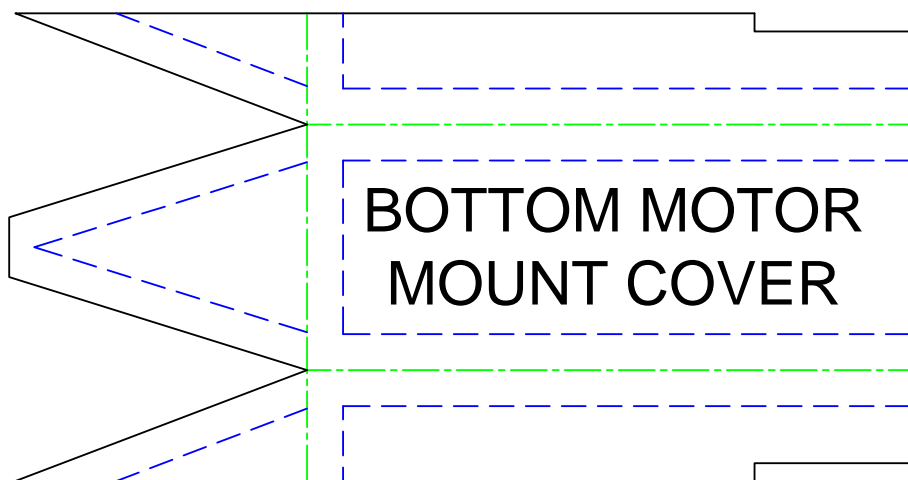
(NOTE: 1" = 2.54CM) PRINT ACCURACY SCALE

20x30 Foamboard Border

20x30 Foamboard Border

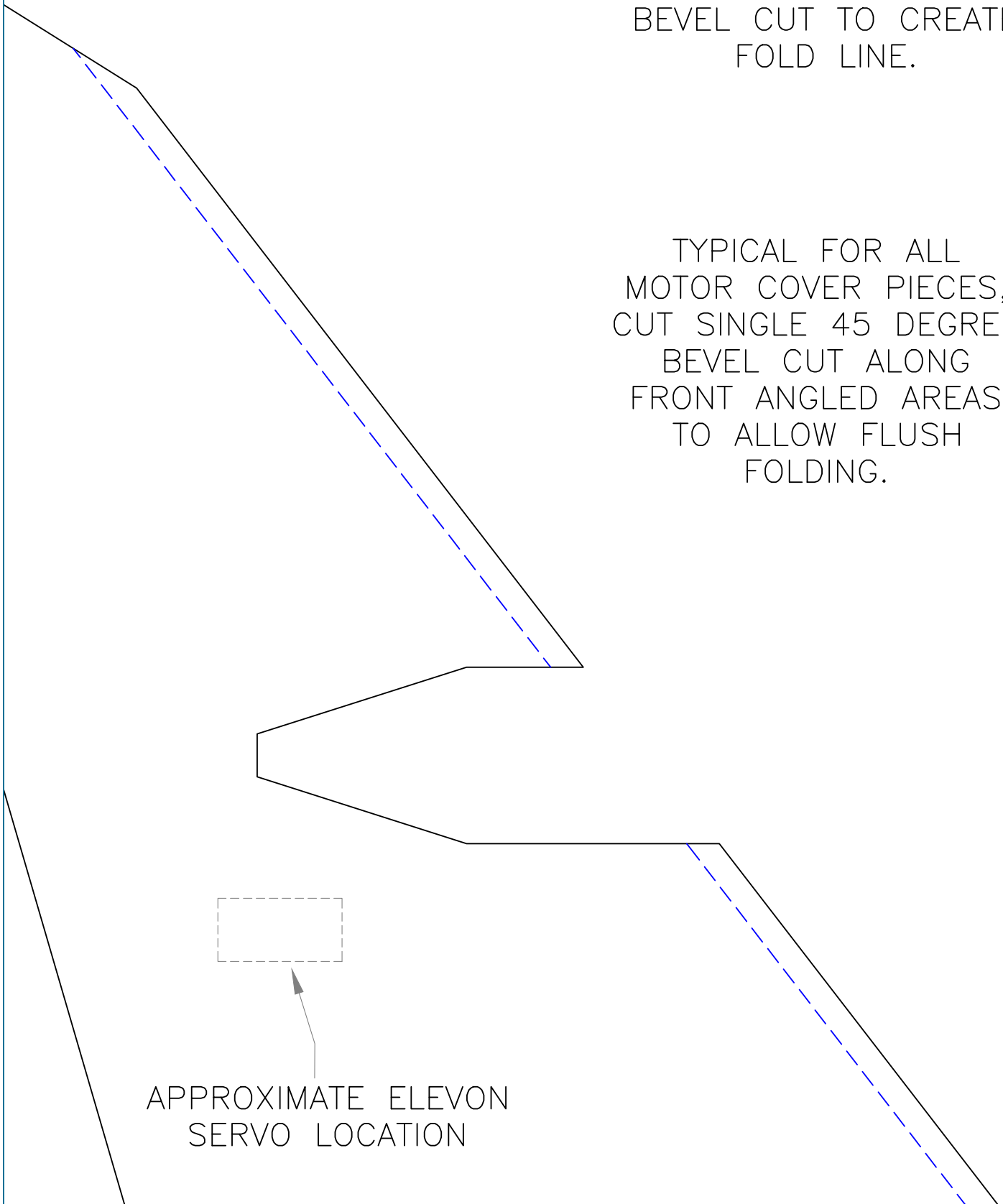


(NOTE: 1" = 2.54CM) PRINT ACCURACY SCALE

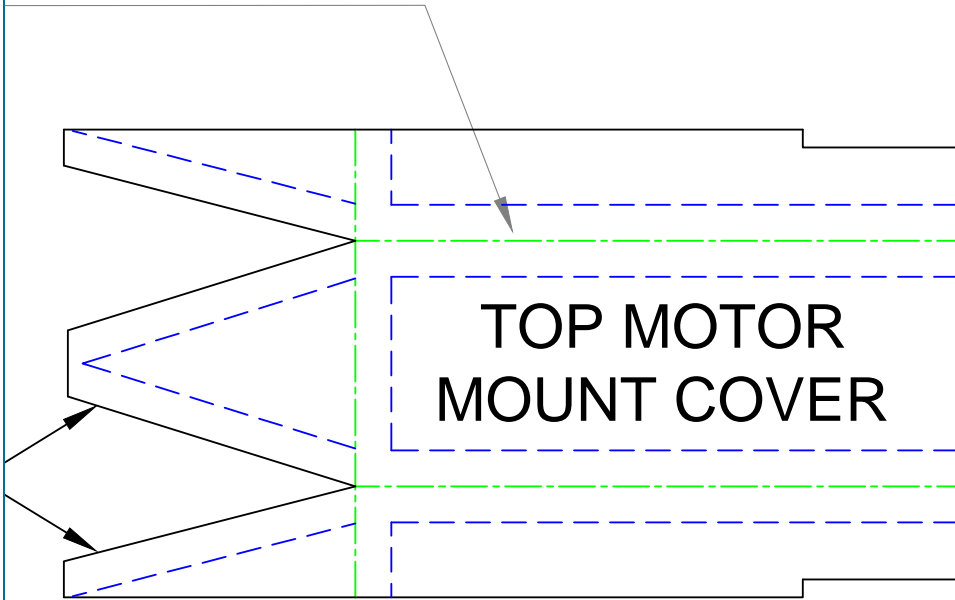


TYPICAL FOR ALL MOTOR COVER PIECES, CUT DOUBLE 45 DEGREE BEVEL CUT TO CREATE FOLD LINE.

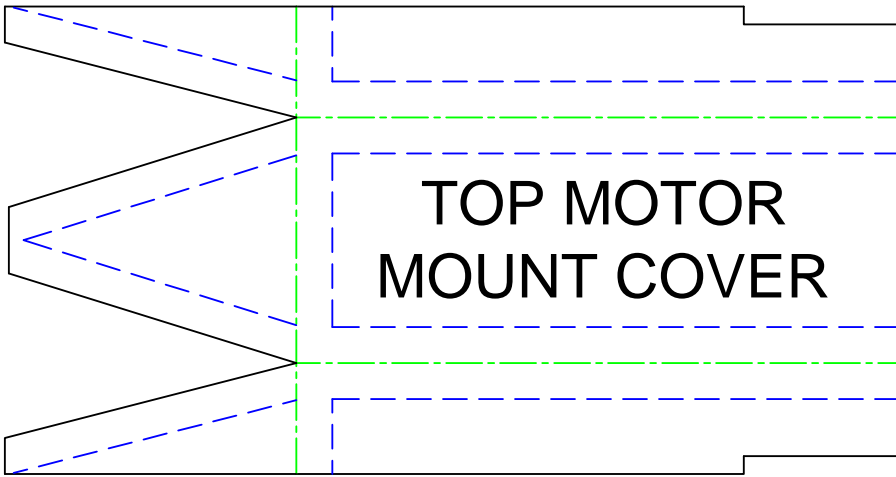
TYPICAL FOR ALL MOTOR COVER PIECES, CUT SINGLE 45 DEGREE BEVEL CUT ALONG FRONT ANGLED AREAS TO ALLOW FLUSH FOLDING.



APPROXIMATE ELEVON SERVO LOCATION

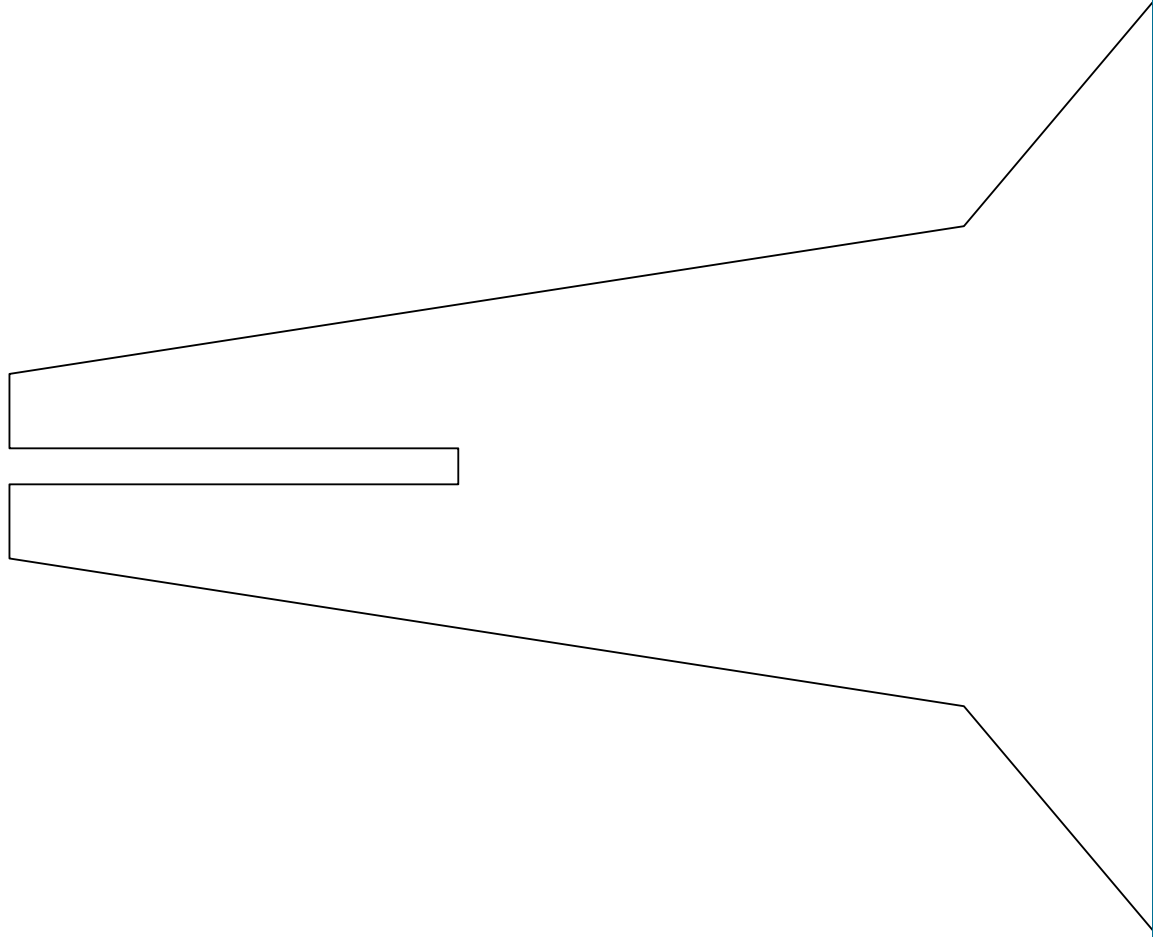


20x30 Foamboard Border



P13

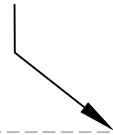
20x30 Foamboard Border



P14

MAIN WING KFm2 AIRFOIL TOP PLATE

APPROXIMATE LOCATION OF
BATTERY SLOT. CUT
THROUGH MAIN WING AND
KF AIRFOIL ONCE YOU FIND
THE CG BALANCE POINT.

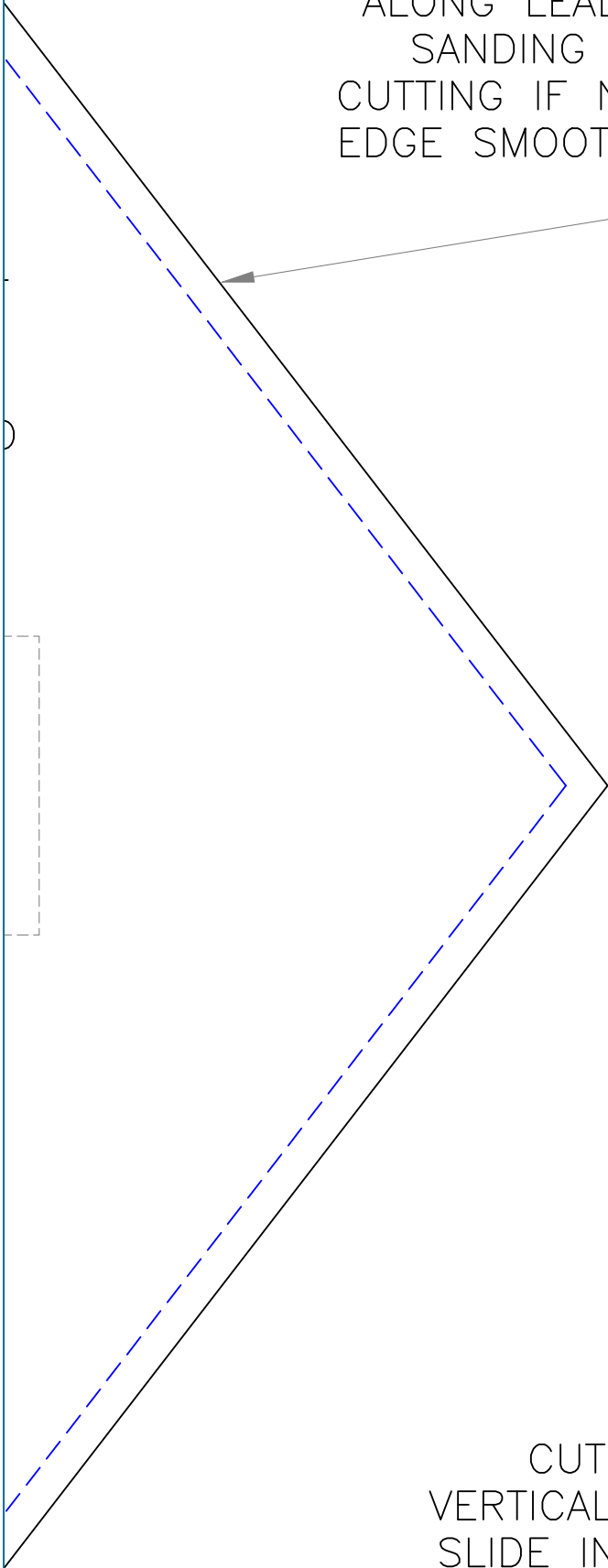


APPROXIMATE LOCATION
OF RECEIVER. CUT
SLOT AS NEEDED TO
ALLOW ROOM FOR
RECEIVER AND CREATE
PASS THROUGH FOR
ESC AND SERVO
WIRES



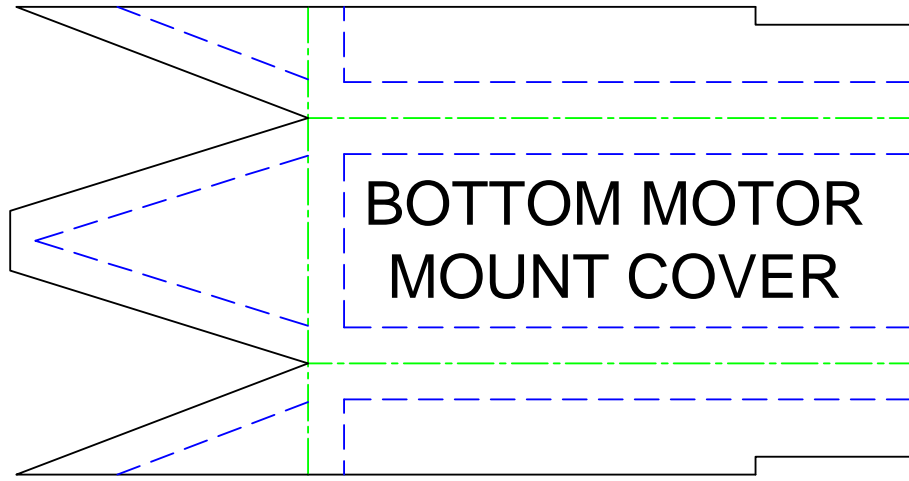
P15

CUT 45 DEGREE BEVEL CUT
ON TOP SIDE OF KF AIRFOIL
ALONG LEADING EDGE. USE
SANDING BLOCK AFTER
CUTTING IF NEEDED TO MAKE
EDGE SMOOTH AND UNIFORM.

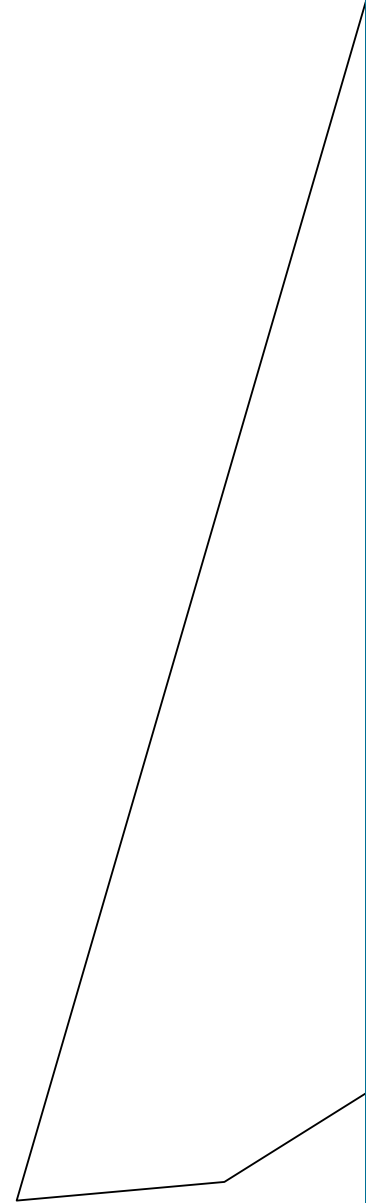


CUT SLOT FOR
VERTICAL STABILIZER TO
SLIDE INTO MAIN WING.

20x30 Foamboard Border

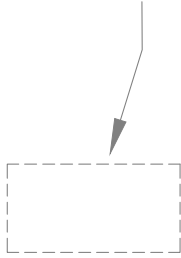


20x30 Foamboard Border

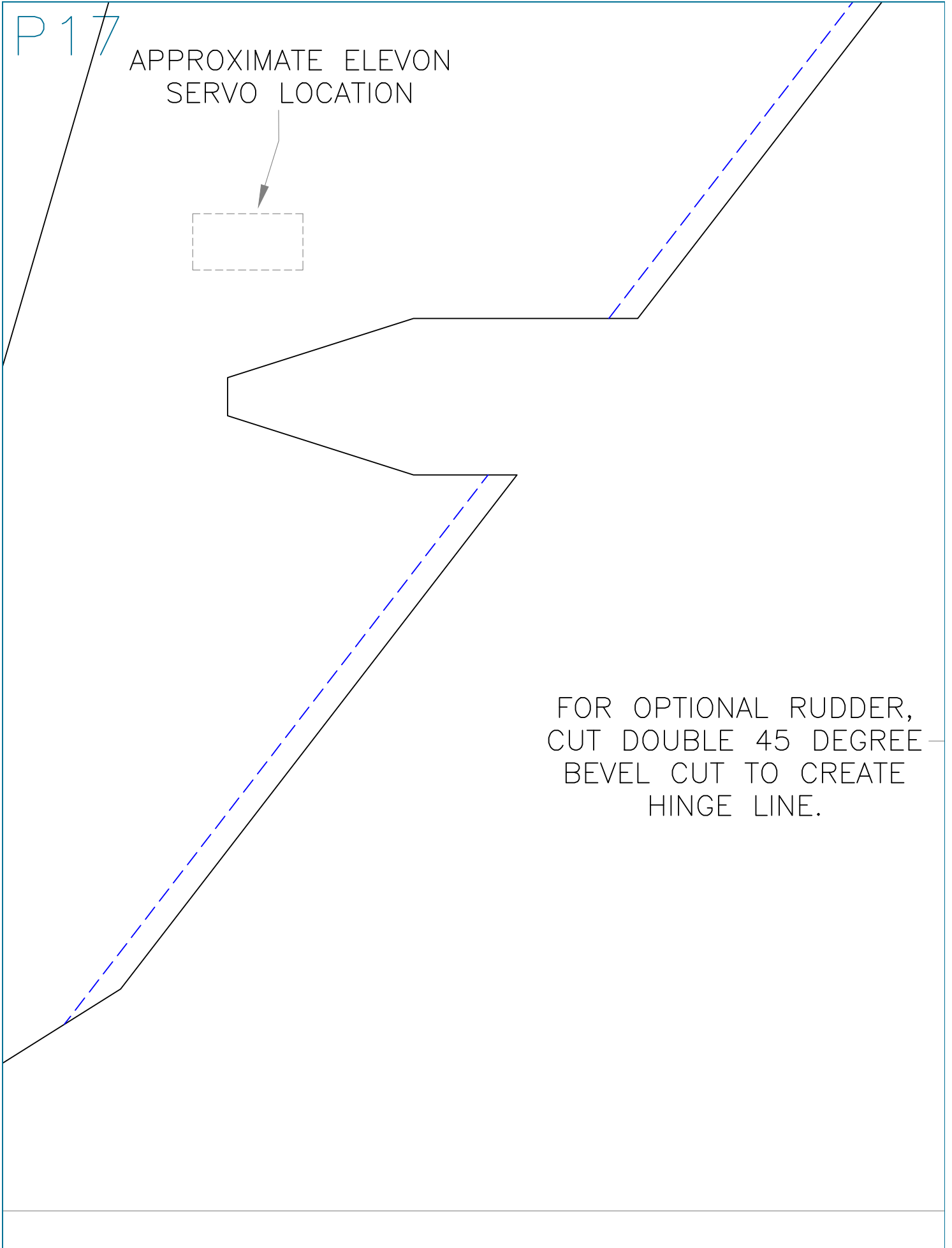


P 17

APPROXIMATE ELEVON
SERVO LOCATION



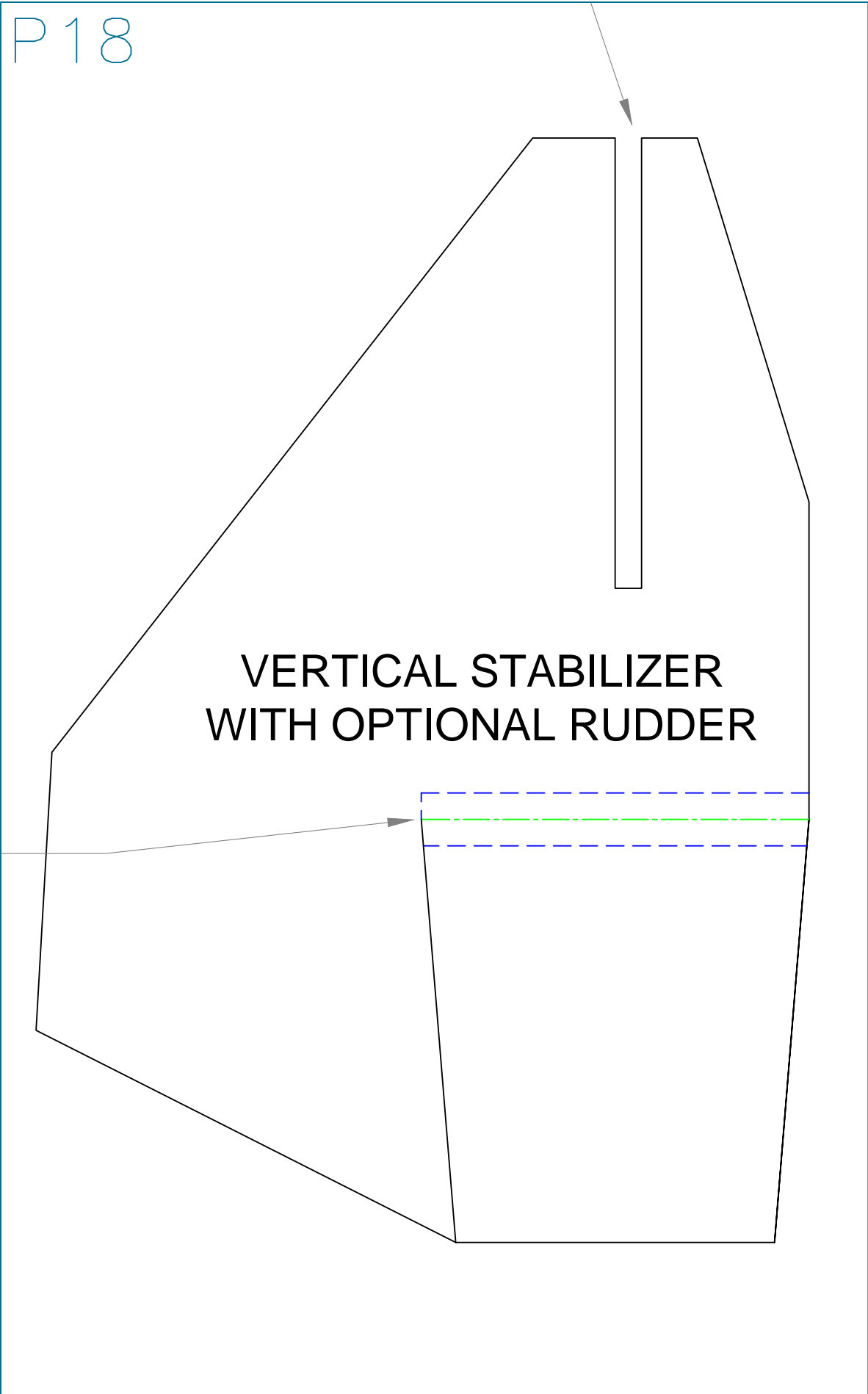
FOR OPTIONAL RUDDER,
CUT DOUBLE 45 DEGREE
BEVEL CUT TO CREATE
HINGE LINE.



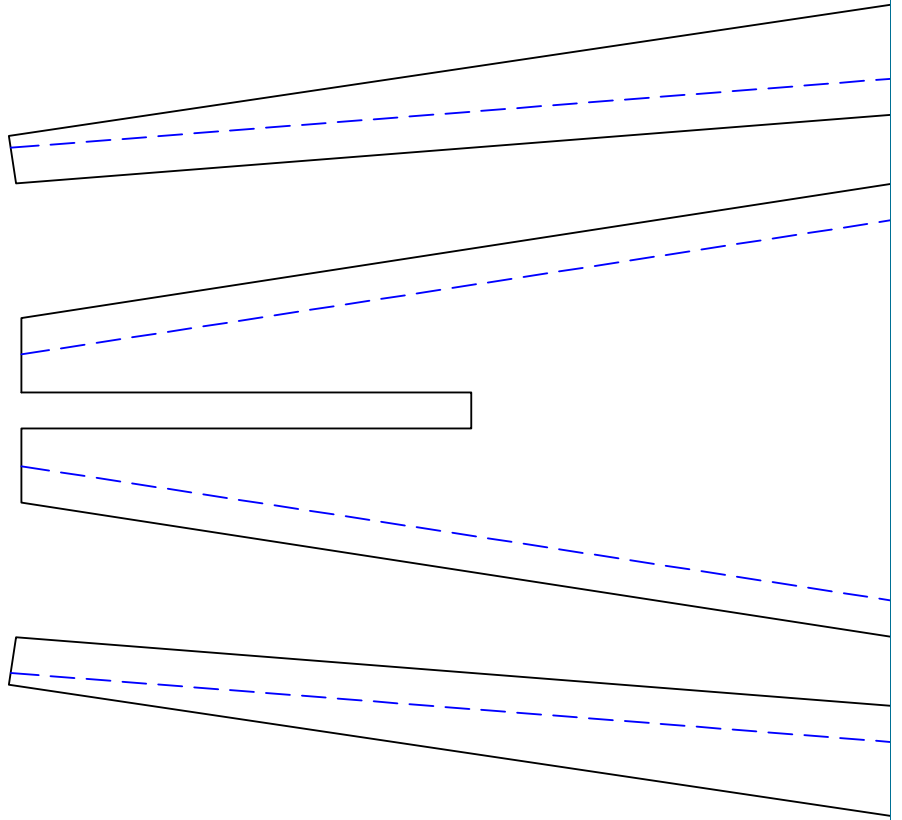
P18

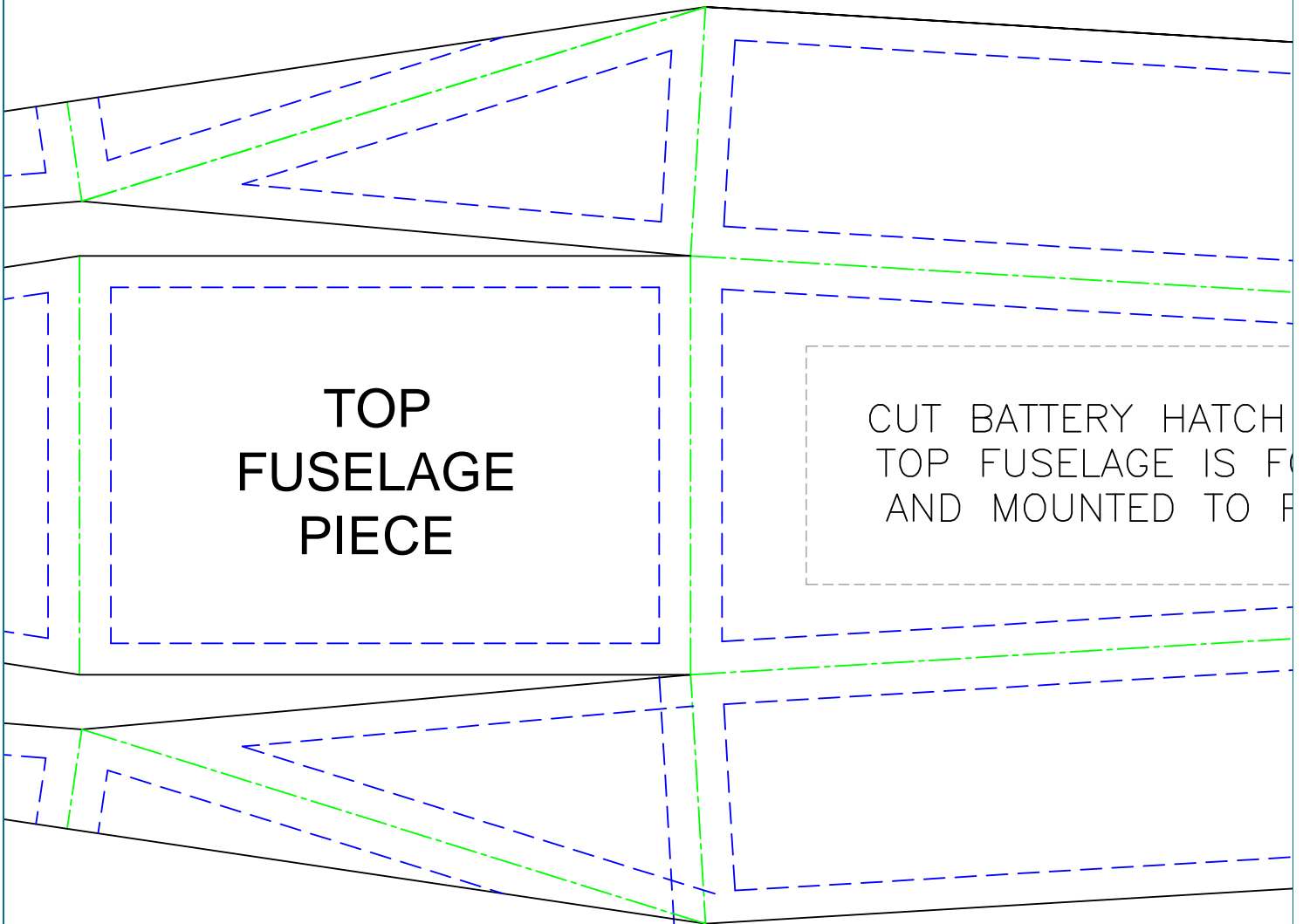
**VERTICAL STABILIZER
WITH OPTIONAL RUDDER**

20x30 Foamboard Border



20x30 Foamboard Border

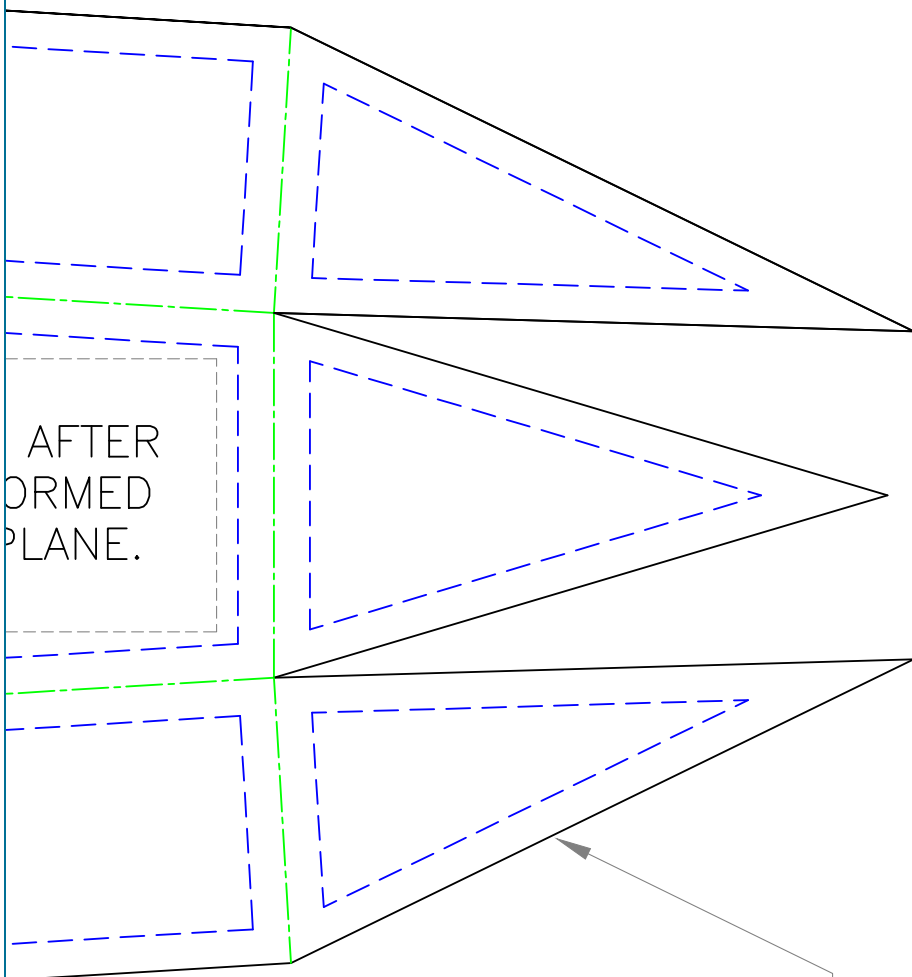




**TOP
FUSELAGE
PIECE**

CUT BATTERY HATCH
TOP FUSELAGE IS FOR
AND MOUNTED TO

P21



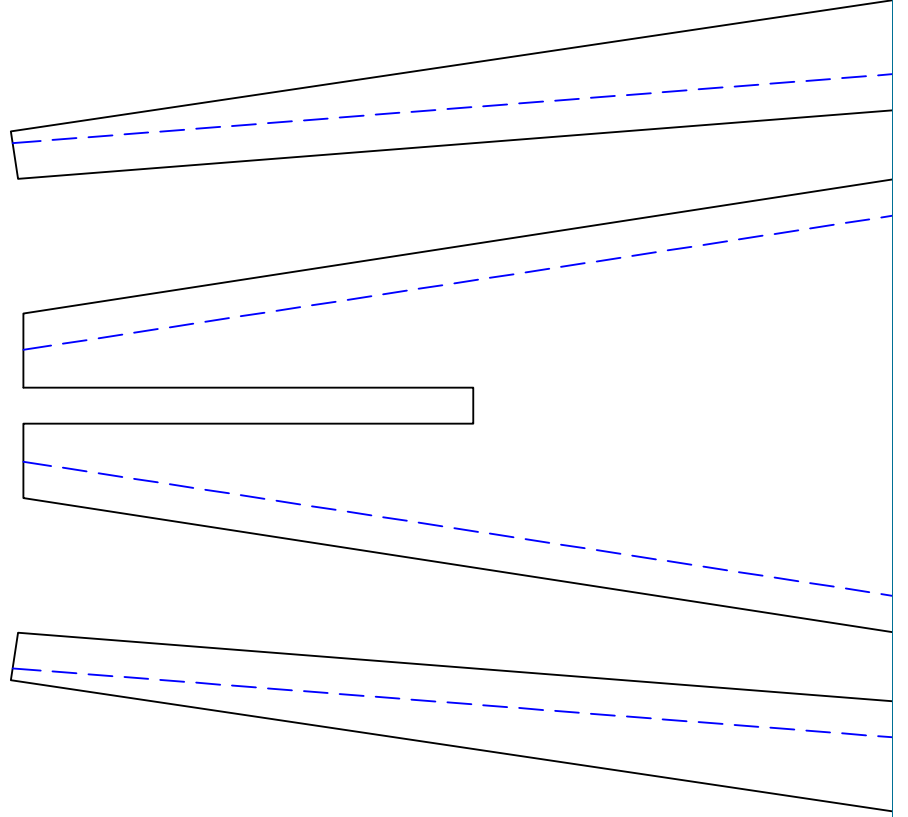
AFTER
FORMED
PLANE.

ON FUSELAGE PIECES, CUT
SINGLE 45 DEGREE BEVEL CUTS
ON EDGES INDICATED AND CUT

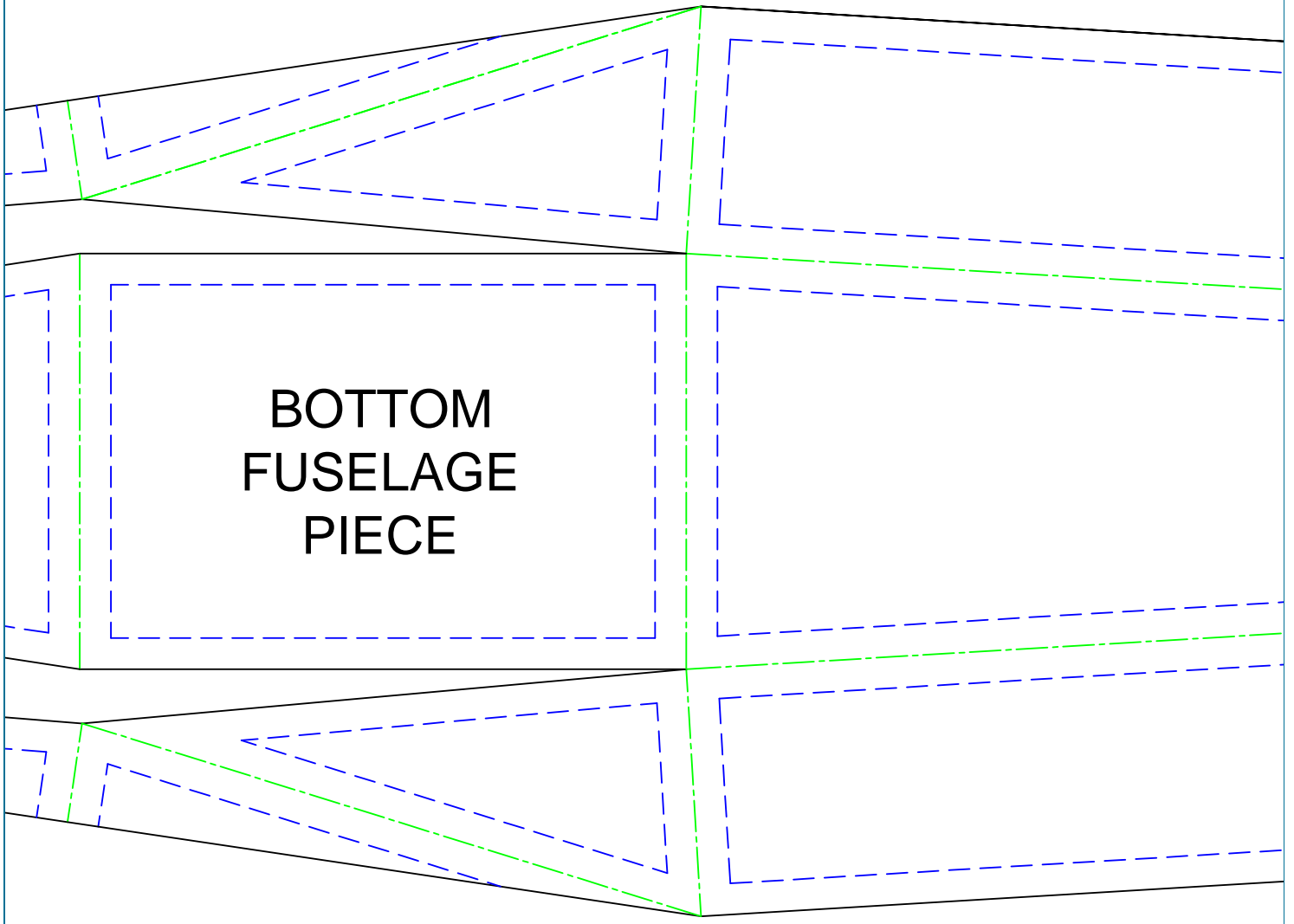
20x30 Foamboard Border

P22

20x30 Foamboard Border



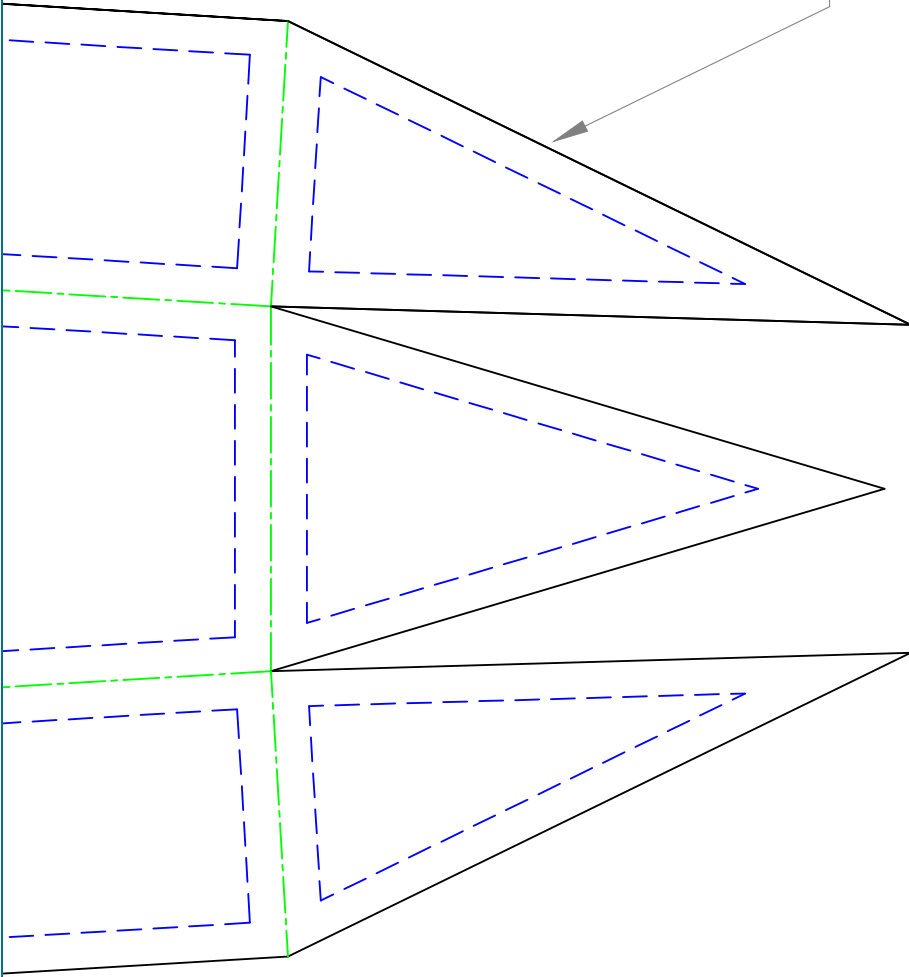
P23



**BOTTOM
FUSELAGE
PIECE**

P24

DOUBLE 45 DEGREE BEVEL
CUTS AT FOLDING LINES.



20x30 Foamboard Border

Print to 30x42
Architectural Size
Sheet.

rcFoamFighters
FF-STINGRAY
(Final Design by Paul Petty - SEPTEMBER 2024)
(Copyright rcFoamFighters 2024)

MOTOR MOUNT LEADING EDGE SHOWN WITH 3 DEGREE INWARD ANGLE. IF YOU WILL NOT BE USING DIFFERENTIAL THRUST, CUT ALONG DASHED LINE AND MOUNT MOTORS WITH ZERO INWARD ANGLE.

ON BOTTOM SIDE CUT ELEVON DOUBLE 45 DEGREE BEVEL CUT TO CREATE HINGE LINE.

**MAIN WING
BOTTOM PLATE**

CUT SLOT FOR VERTICAL STABILIZER TO SLIDE INTO.

APPROXIMATE LOCATION FOR OPTIONAL RUDDER SERVO

APPROXIMATE LOCATION OF BATTERY SLOT. CUT THROUGH MAIN WING AND KF AIRFOIL ONCE YOU FIND THE CG BALANCE POINT.

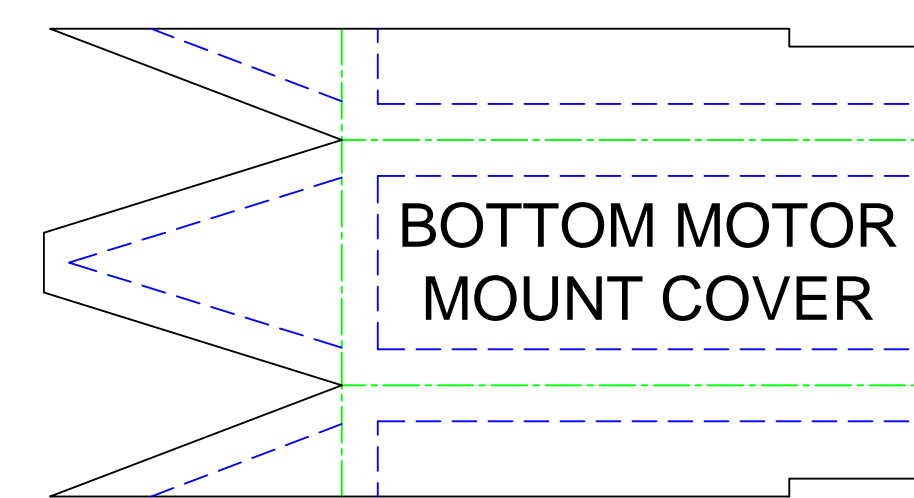
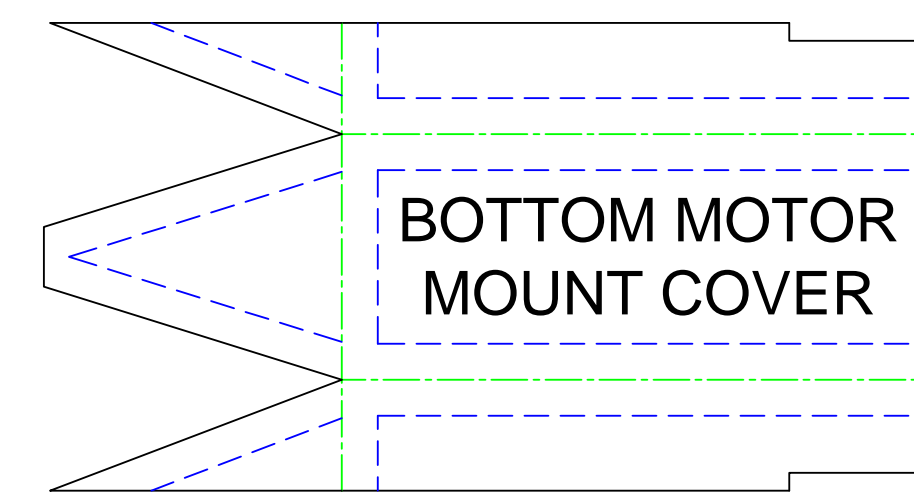
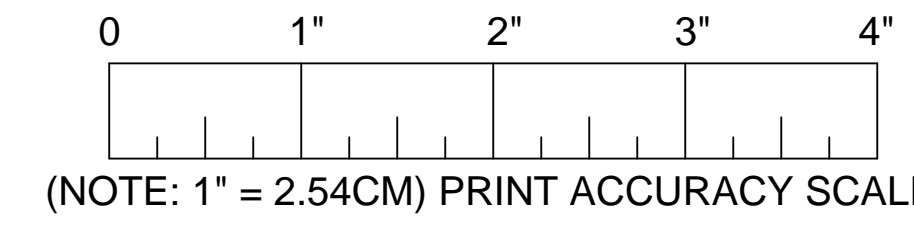
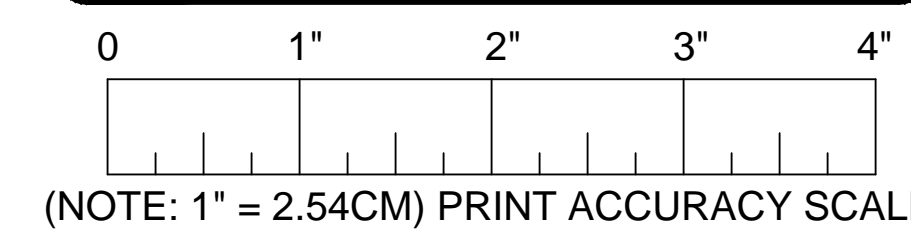
APPROXIMATE LOCATION OF RECEIVER. CUT SLOT AS NEEDED TO ALLOW ROOM FOR RECIEVER AND CREATE PASS THROUGH FOR ESC AND SERVO WIRES

ON BOTTOM SIDE CUT ELEVON DOUBLE 45 DEGREE BEVEL CUT TO CREATE HINGE LINE.

CUT 45 DEGREE BEVEL CUT ON BOTTOM SIDE OF MAIN WING ALONG LEADING EDGE. USE SANDING BLOCK AFTER CUTTING IF NEEDED TO MAKE EDGE SMOOTH AND UNIFORM.

LINE-TYPE, CUTTING LEDGEND

- CUT COMPLETELY THROUGH FOAMBOARD. EDGE LINE OF 45° BEVEL CUT
- CENTER CUT & FOLD-LINE FOR DOUBLE 45° BEVEL CUT, CUT THROUGH ONE SIDE OF FOAMBOARD ONLY
- NOTCH BOX - CUT THROUGH TOP SIDE OF FOAMBOARD PAPER ONLY AND REMOVE FOAM.
- NOTE-LINE - TO IDENTIFY PLACEMENT OF PARTS, BATTERY SLOT OR HATCH LINES.



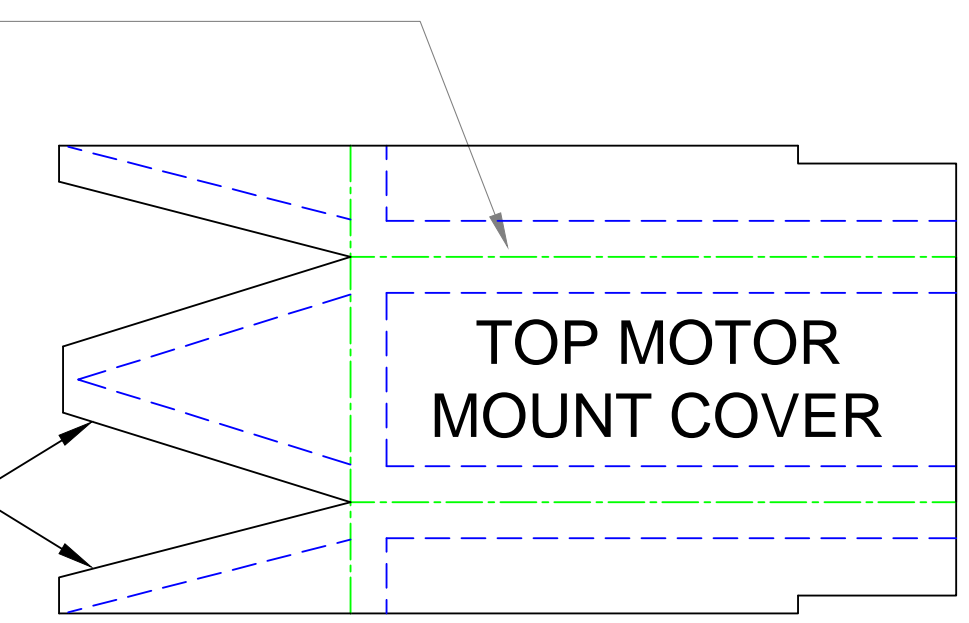
APPROXIMATE ELEVON SERVO LOCATION

**MAIN WING
KFm2 AIRFOIL
TOP PLATE**

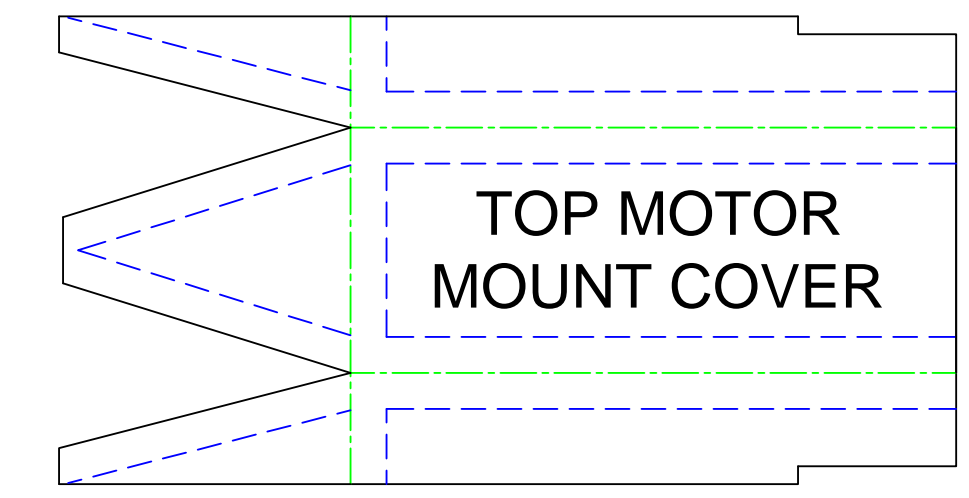
APPROXIMATE LOCATION OF RECEIVER. CUT SLOT AS NEEDED TO ALLOW ROOM FOR RECIEVER AND CREATE PASS THROUGH FOR ESC AND SERVO WIRES

APPROXIMATE ELEVON SERVO LOCATION

TYPICAL FOR ALL MOTOR COVER PIECES, CUT DOUBLE 45 DEGREE BEVEL CUT TO CREATE FOLD LINE.



TYPICAL FOR ALL MOTOR COVER PIECES, CUT SINGLE 45 DEGREE BEVEL CUT ALONG FRONT ANGLED AREAS TO ALLOW FLUSH FOLDING.



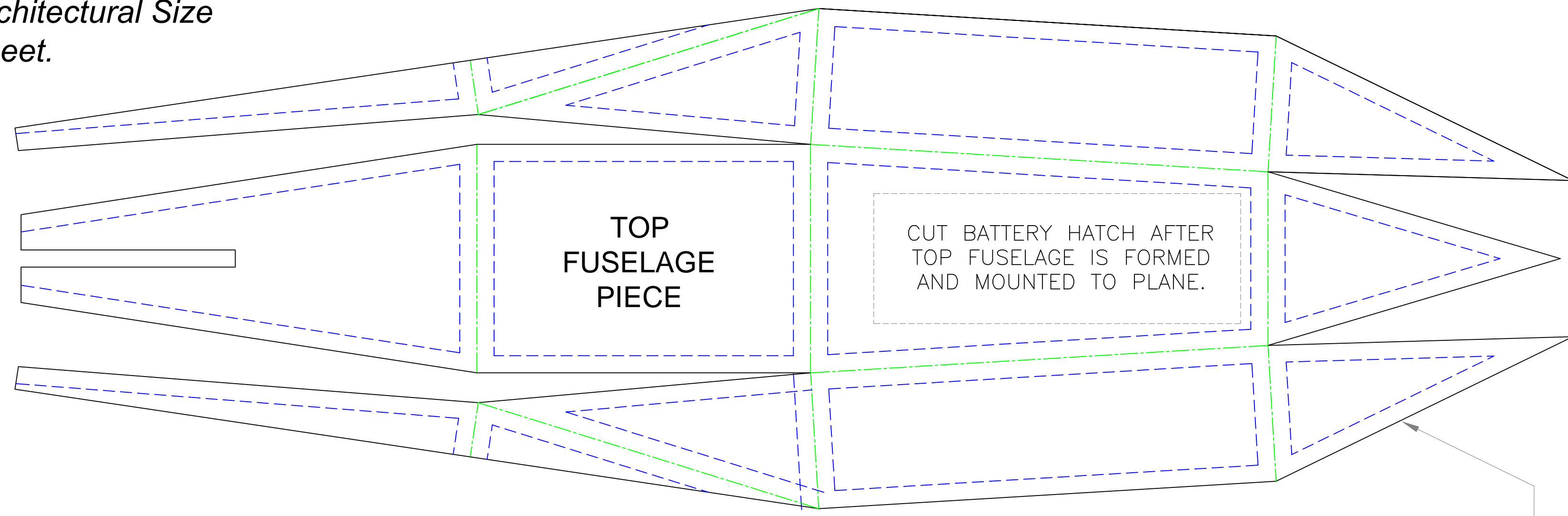
CUT 45 DEGREE BEVEL CUT ON TOP SIDE OF KF AIRFOIL ALONG LEADING EDGE. USE SANDING BLOCK AFTER CUTTING IF NEEDED TO MAKE EDGE SMOOTH AND UNIFORM.

APPROXIMATE LOCATION OF BATTERY SLOT. CUT THROUGH MAIN WING AND KF AIRFOIL ONCE YOU FIND THE CG BALANCE POINT.

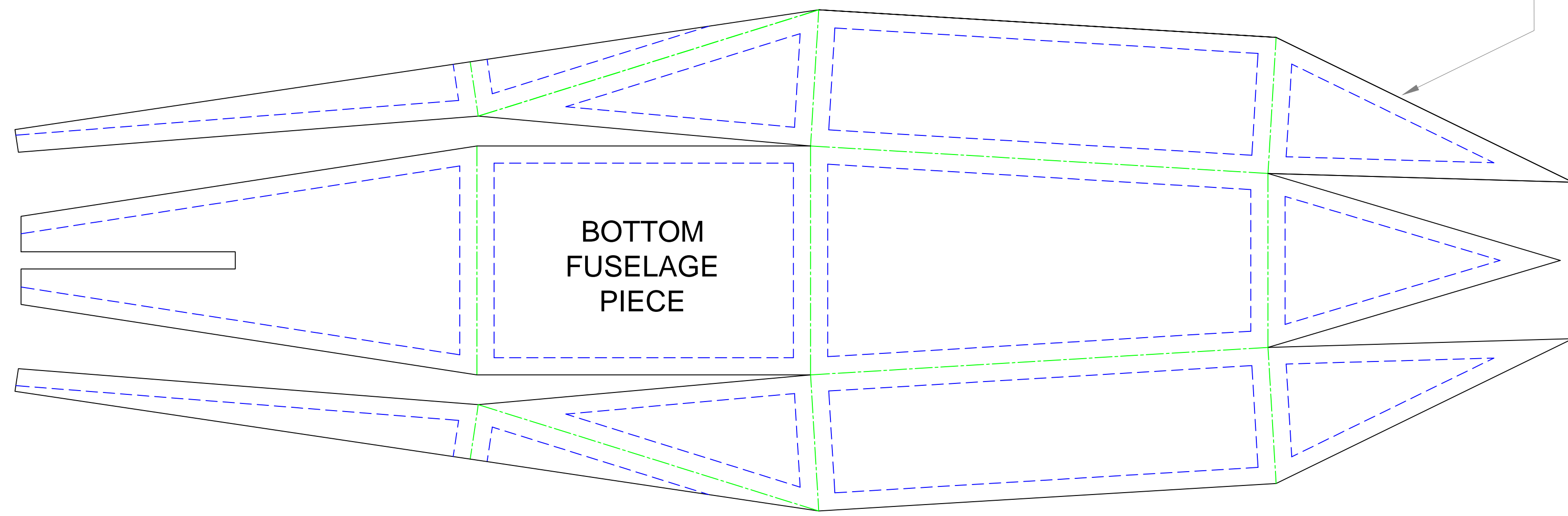
CUT SLOT FOR VERTICAL STABILIZER TO SLIDE INTO MAIN WING.

**VERTICAL STABILIZER
WITH OPTIONAL RUDDER**

FOR OPTIONAL RUDDER, CUT DOUBLE 45 DEGREE BEVEL CUT TO CREATE HINGE LINE.



ON FUSELAGE PIECES, CUT
SINGLE 45 DEGREE BEVEL CUTS
ON EDGES INDICATED AND CUT
DOUBLE 45 DEGREE BEVEL
CUTS AT FOLDING LINES.



ON FUSELAGE PIECES, CUT
SINGLE 45 DEGREE BEVEL CUTS
ON EDGES INDICATED AND CUT
DOUBLE 45 DEGREE BEVEL
CUTS AT FOLDING LINES.