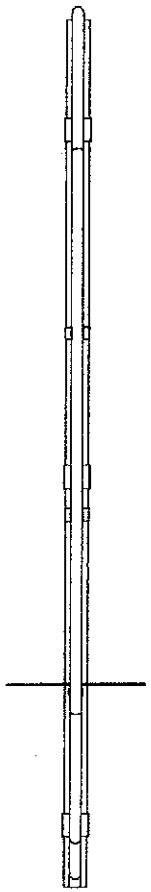
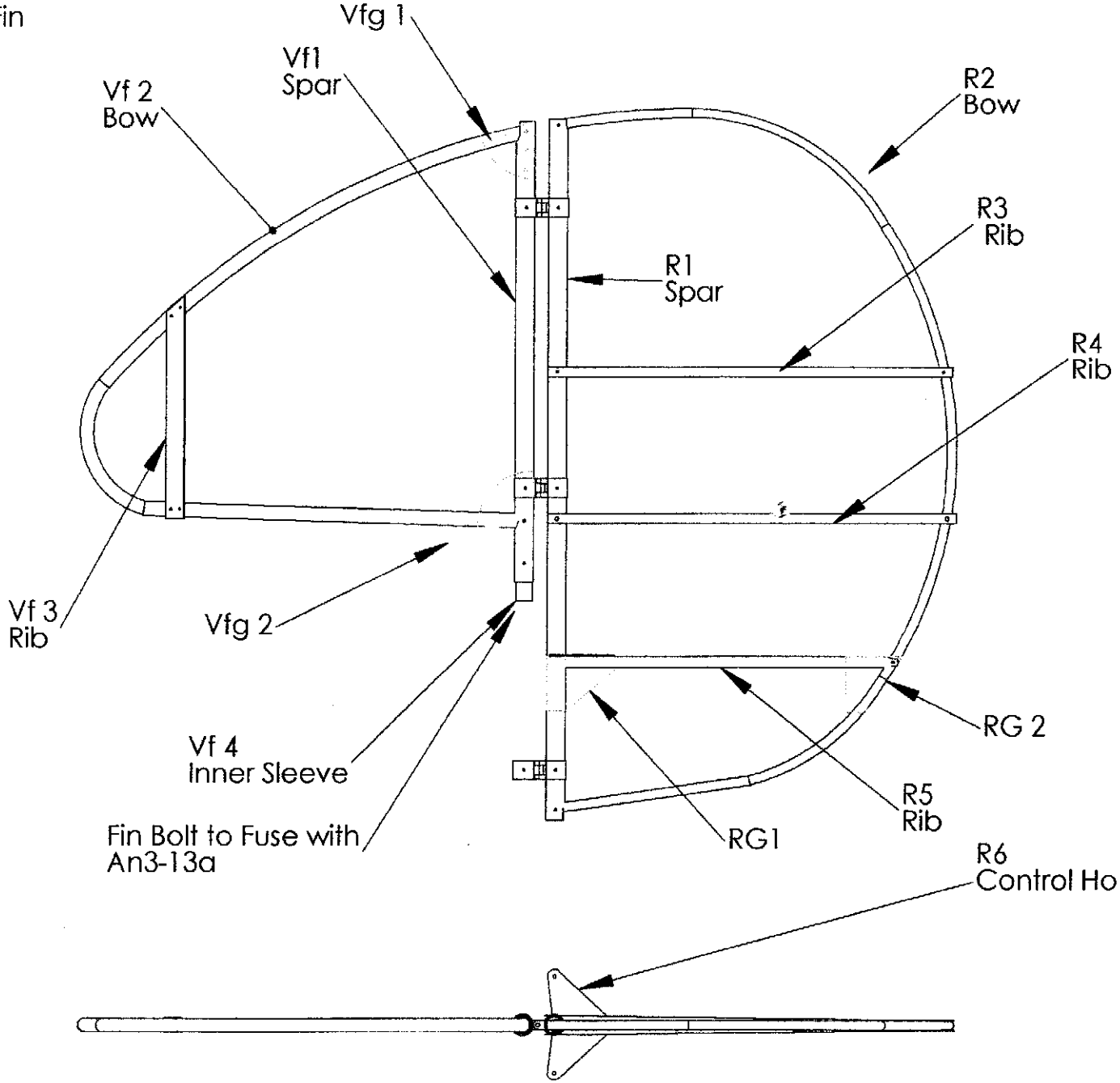
Camel
Rudder & Fin





Fin is wire braced to Hori stab
with two VF 5 Tangs
using An3-15 A

Sopwith Camel Rudder

R2 bow fits into
rear wall of Spar
at top & bottom

R3 & R4 are bent
sheet metal ribs

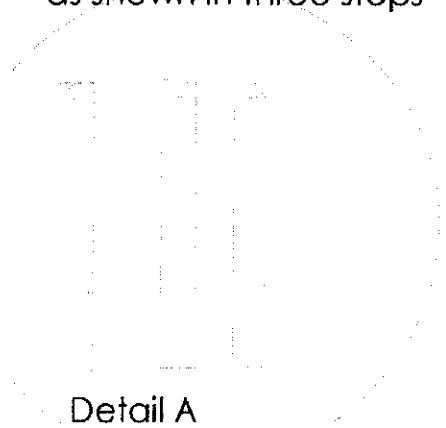
R5 is tubing with a dowel rod inserted into the front end 3" Then unit t will insert into the rear wall of R1

R6 control horn will bolt to R5 with two An3-10 bolts

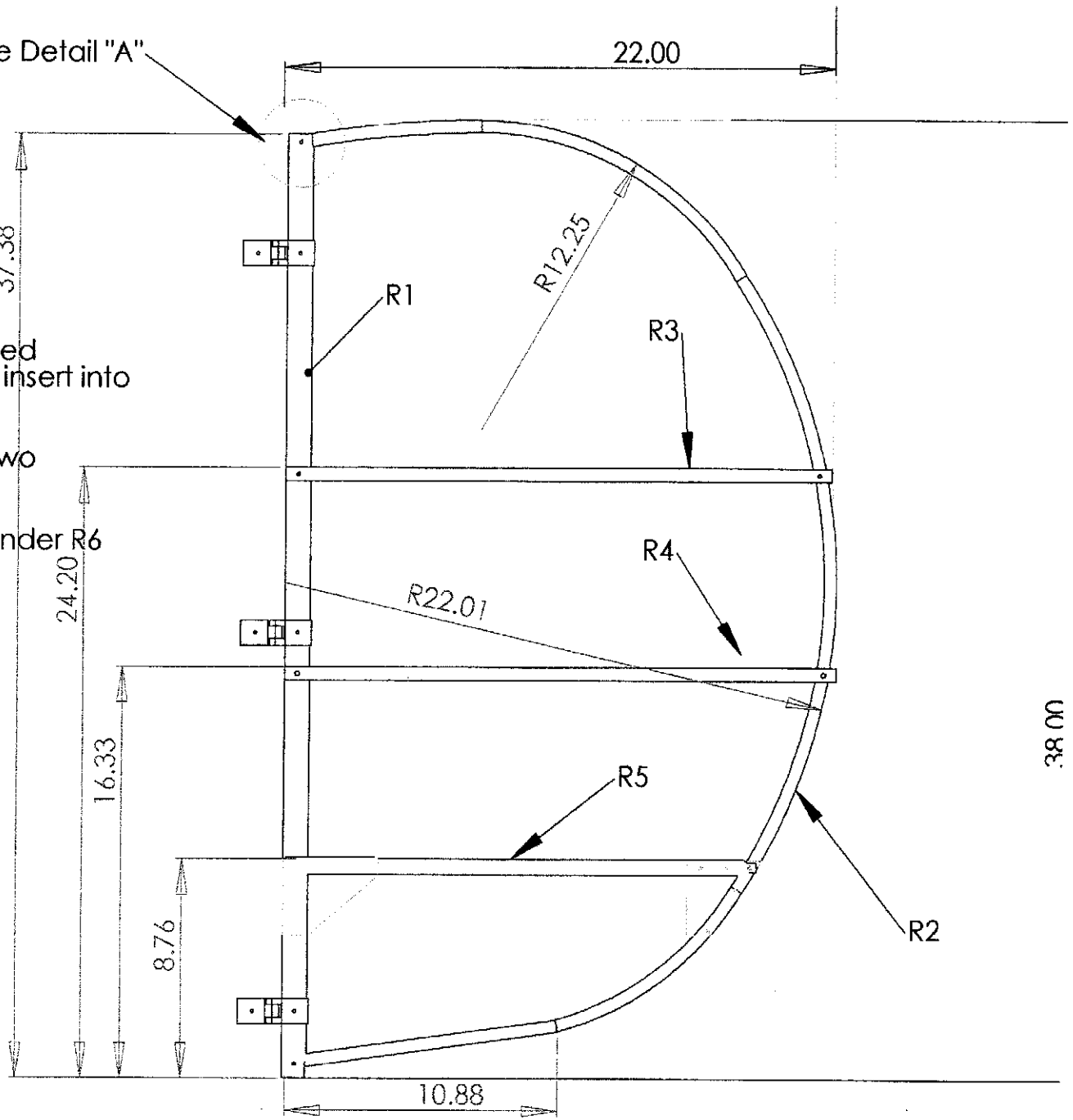
Rg1 gusset will wrap around spar under R6 for support

Hinges must be installed before rudder bow is fitted

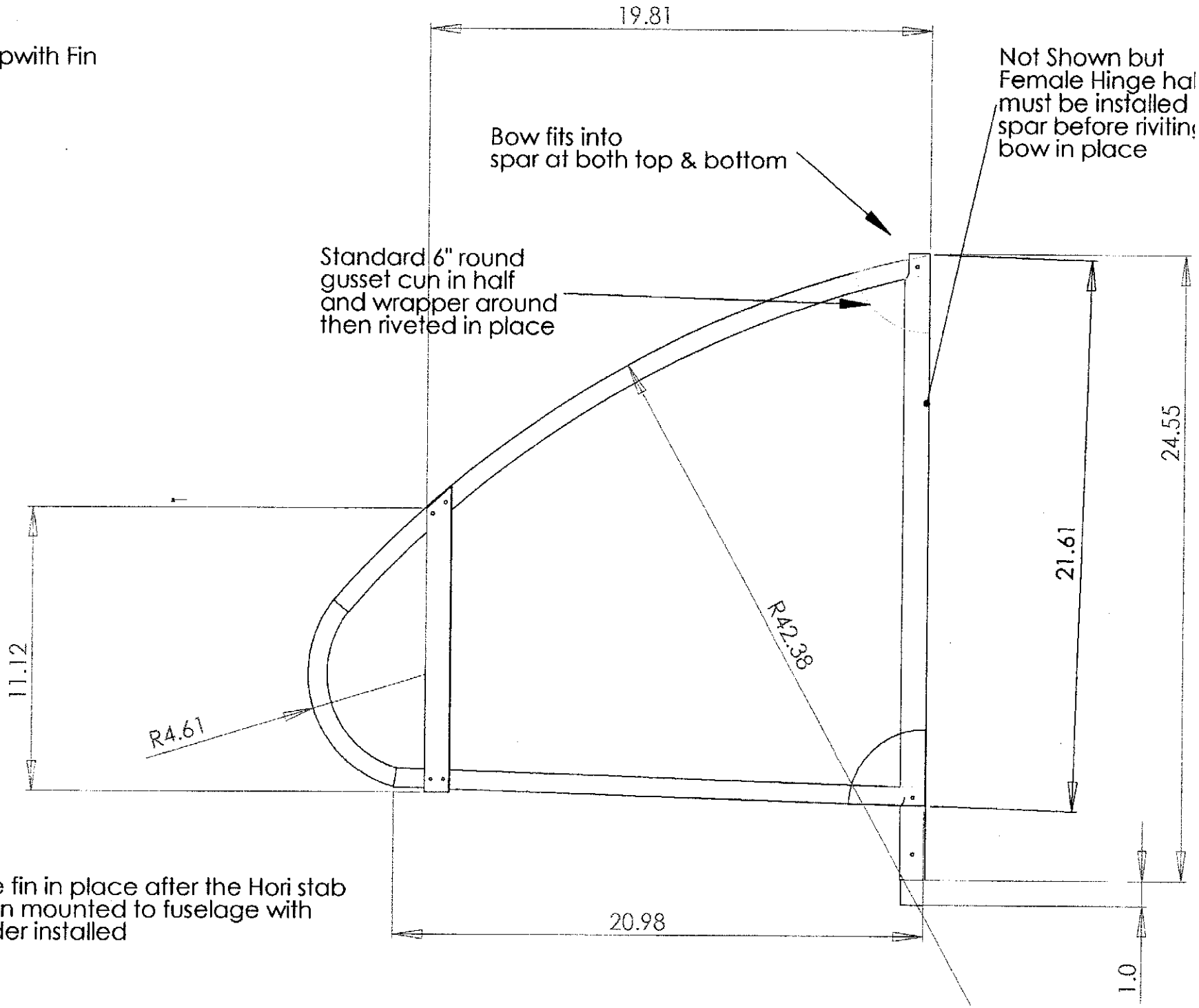
Drill .50 hole
Trim away edges
form around bow
as shown in three steps



Detail A

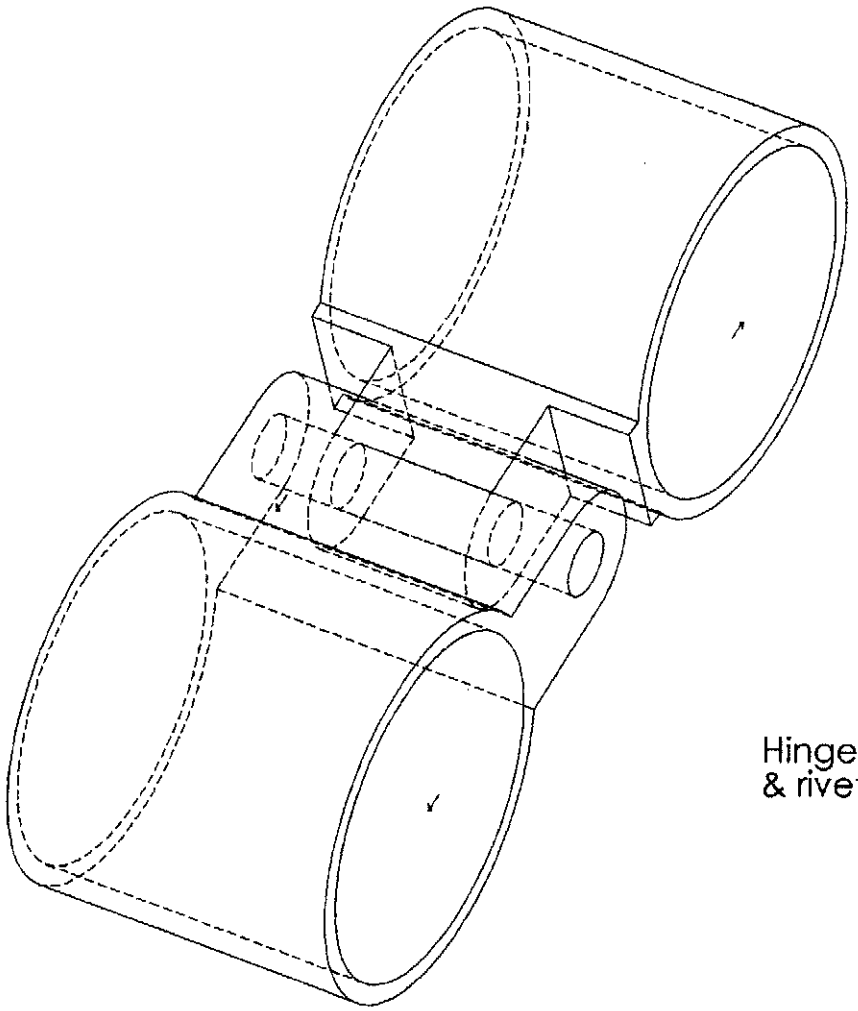


Sopwith Fin



Build the fin in place after the Hori stab has been mounted to fuselage with the rudder installed

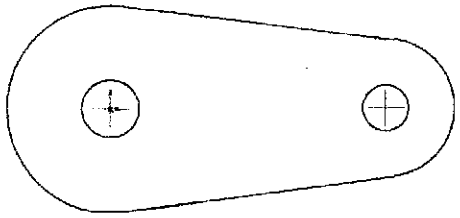
Hinge



Hinge Slides over tubing
& rivets in place with .187 rivet

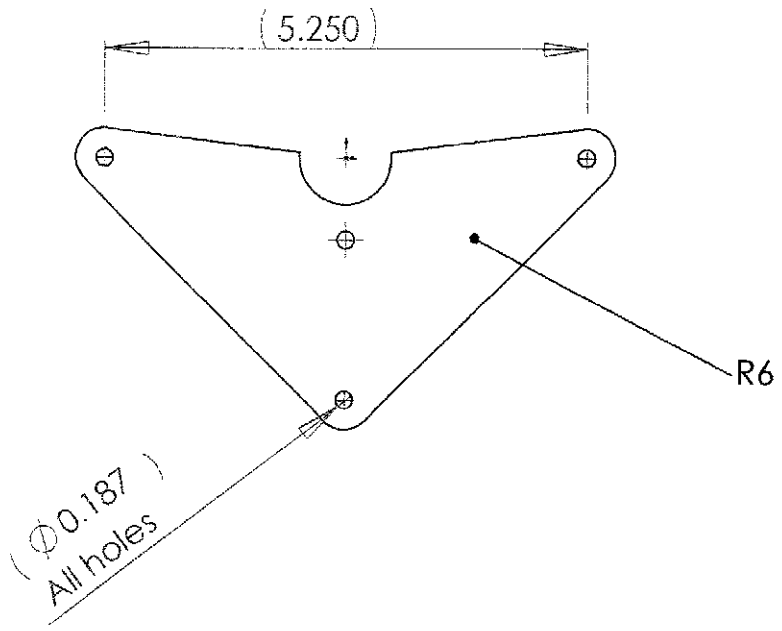
Camel VF5

4 Req

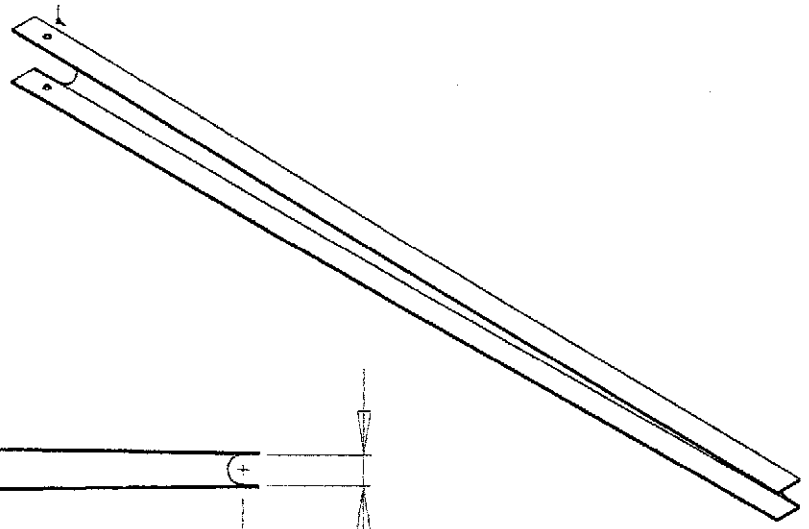


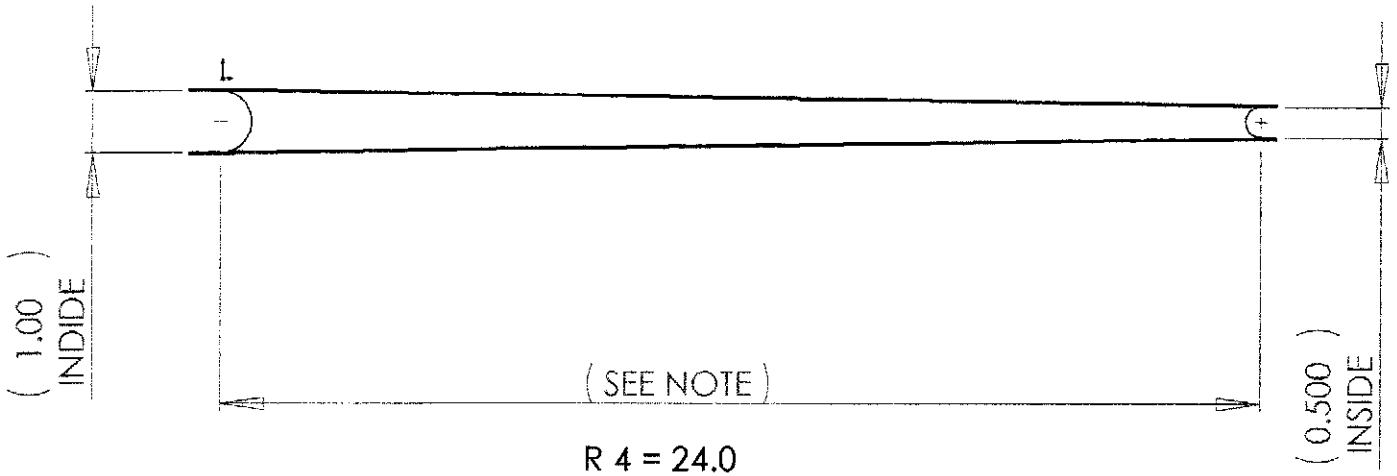
This tang will bolt to fin at the top hings
and wire brace to hori stab with
3/32" wire

Camel Rudder Control Horn



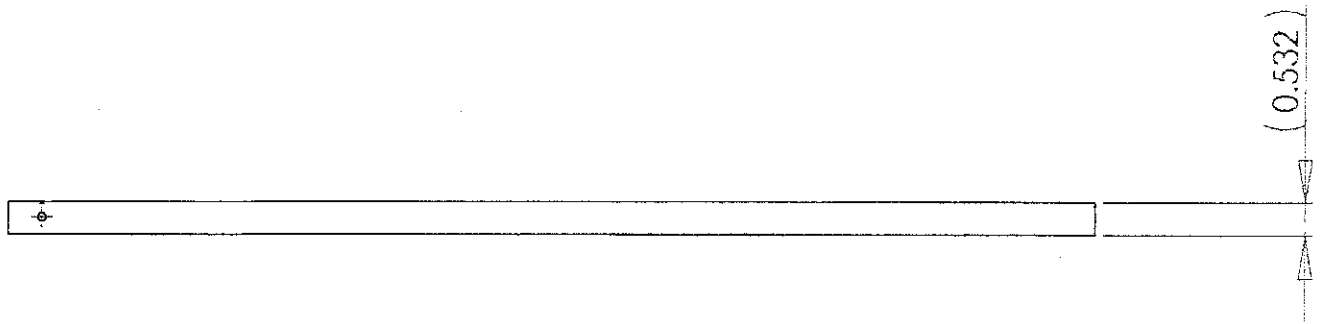
Camel sheet metal rib





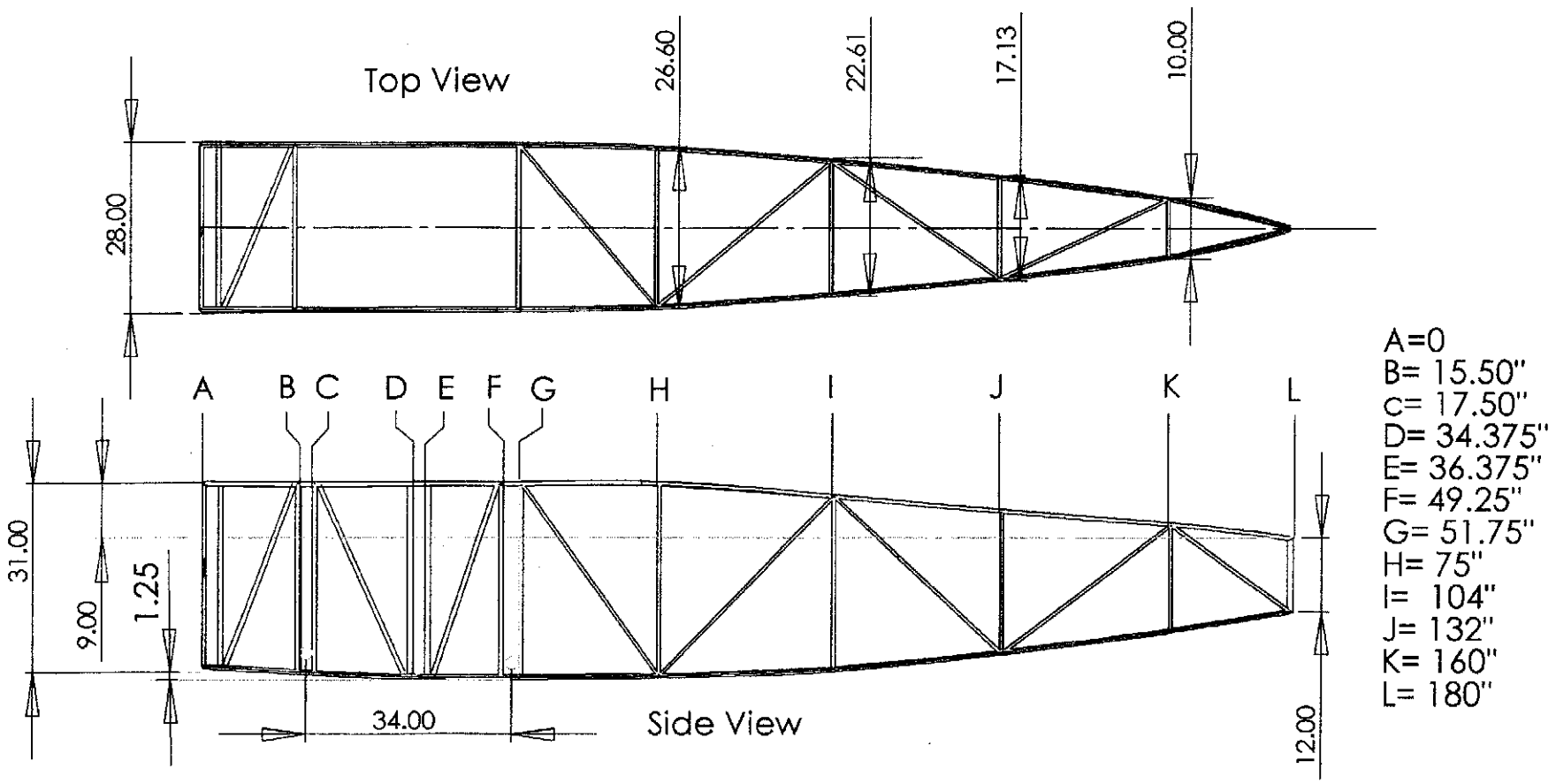
R 4 = 24.0
R5 = 24.0

VF 3 rib built in same manner however it would have a 3/4' hole at both ends



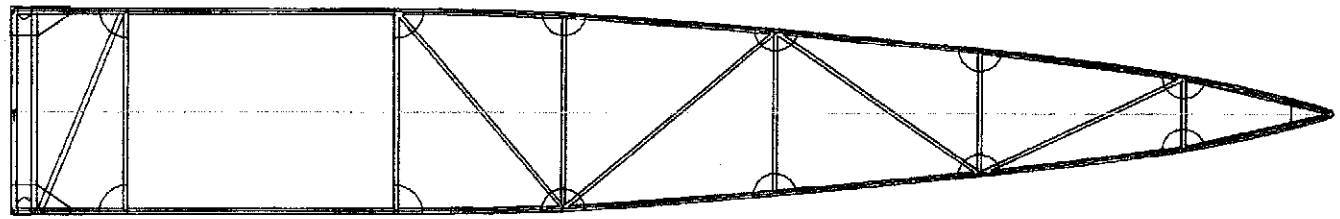
Camel Fuselage
Top View
Side View
Bottom View
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F13
F14
F15
F16
F17
F18
F19
F20
F21
F22
F23
F24
F25
F26
F27
F28
F29
F30
F31
F32
F33
F34
F35
F36
F37
F38
F39
F40
F41
F42
F43
F44
F45
F46

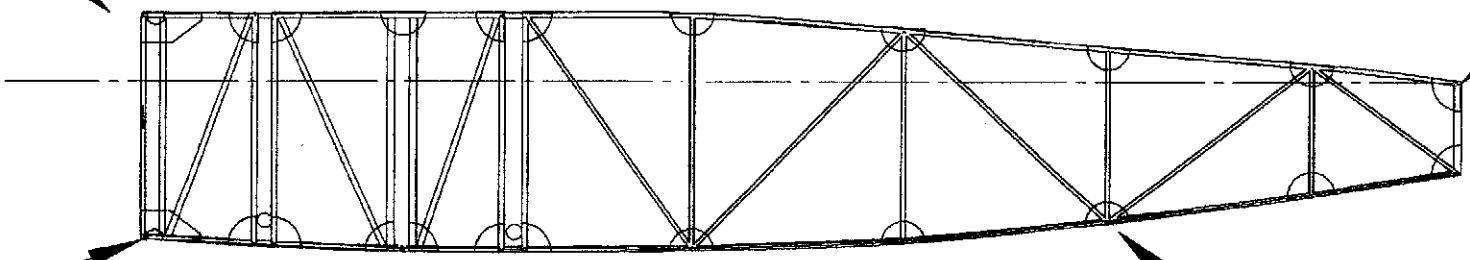
Camel Fuselage



Camel Fuselage Gussets

Top View





Fg1
6 Req

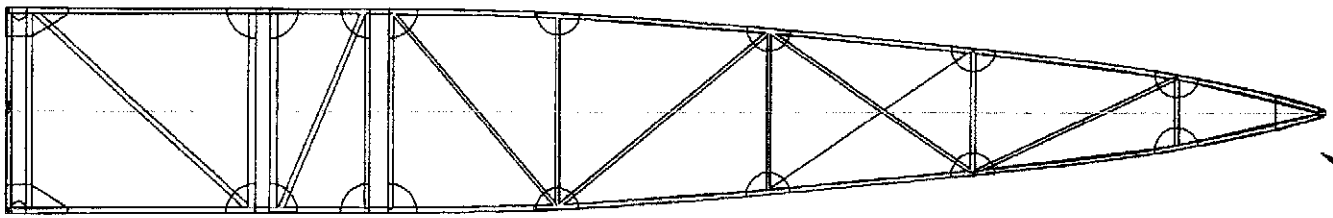
Fg2
2 Req

Fg4
2 Req

Fg5
2 req

Fg7
18 req

Side View



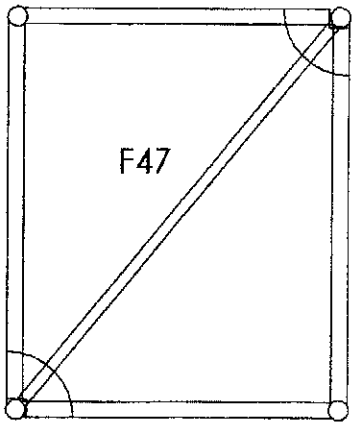
Fg3
32 Req

Fg6
2 req

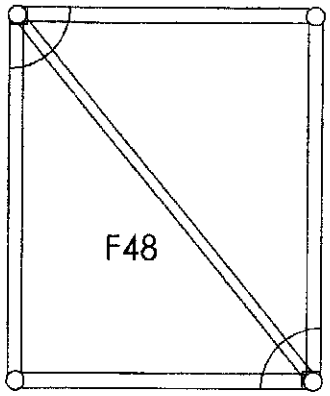
Bottom View

Camel Fuselage
Section view

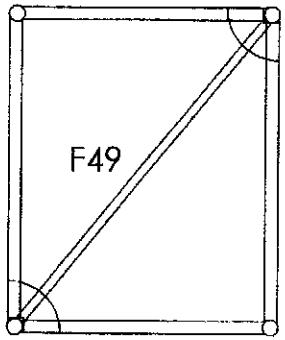
Section "A"



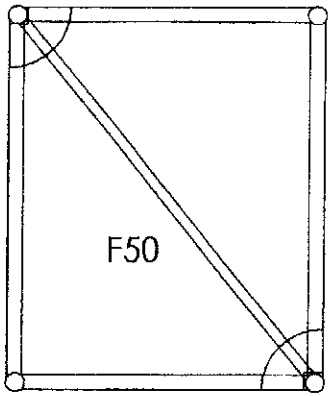
Section "G""



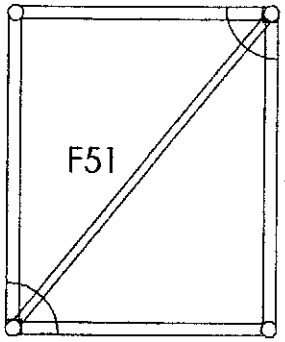
Section "H"



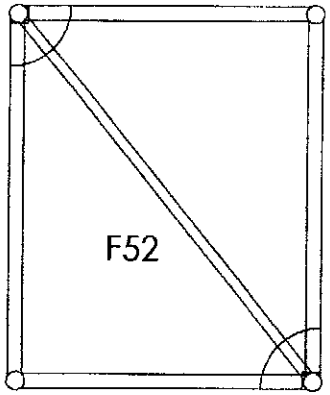
Section "I""



Section "J""

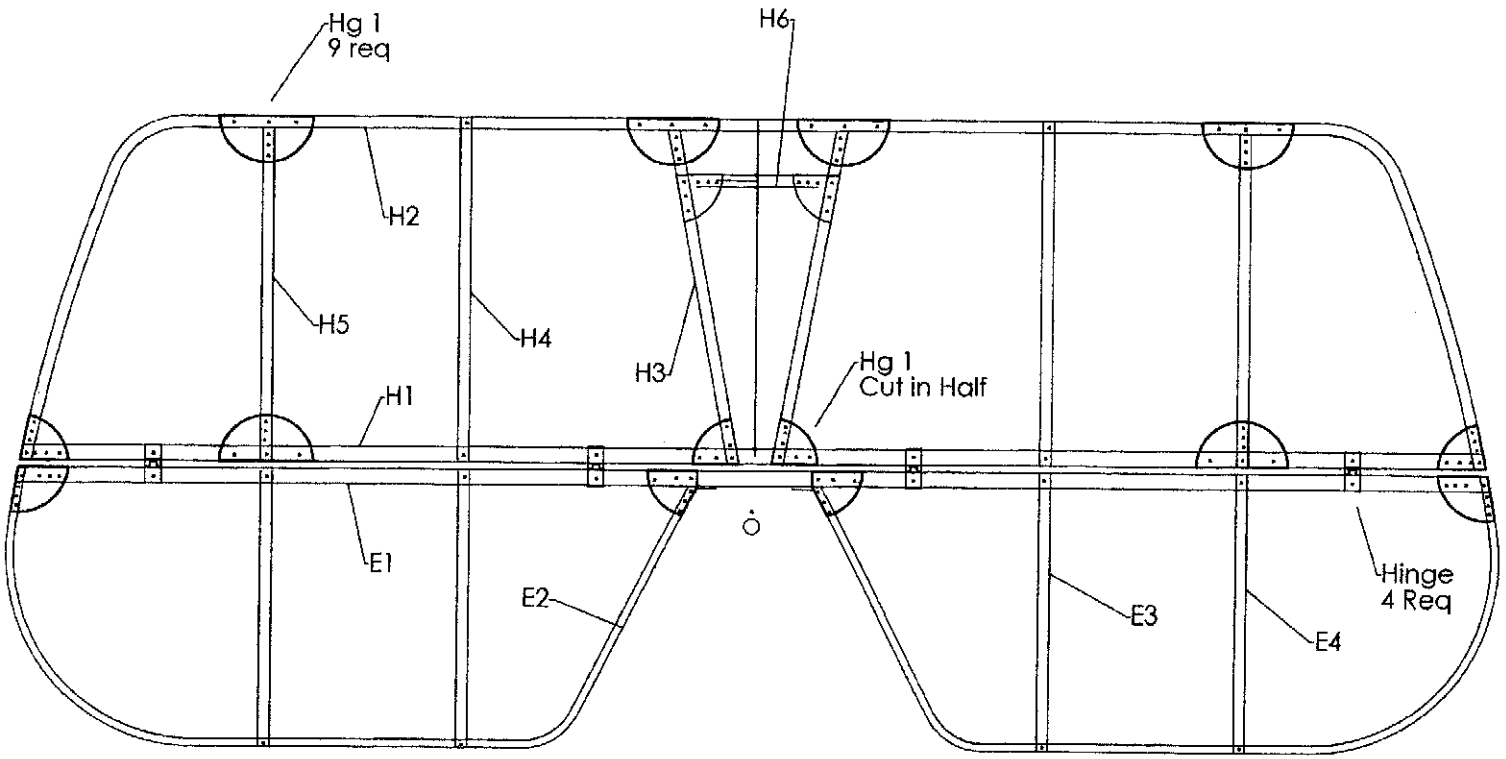


Section "K""

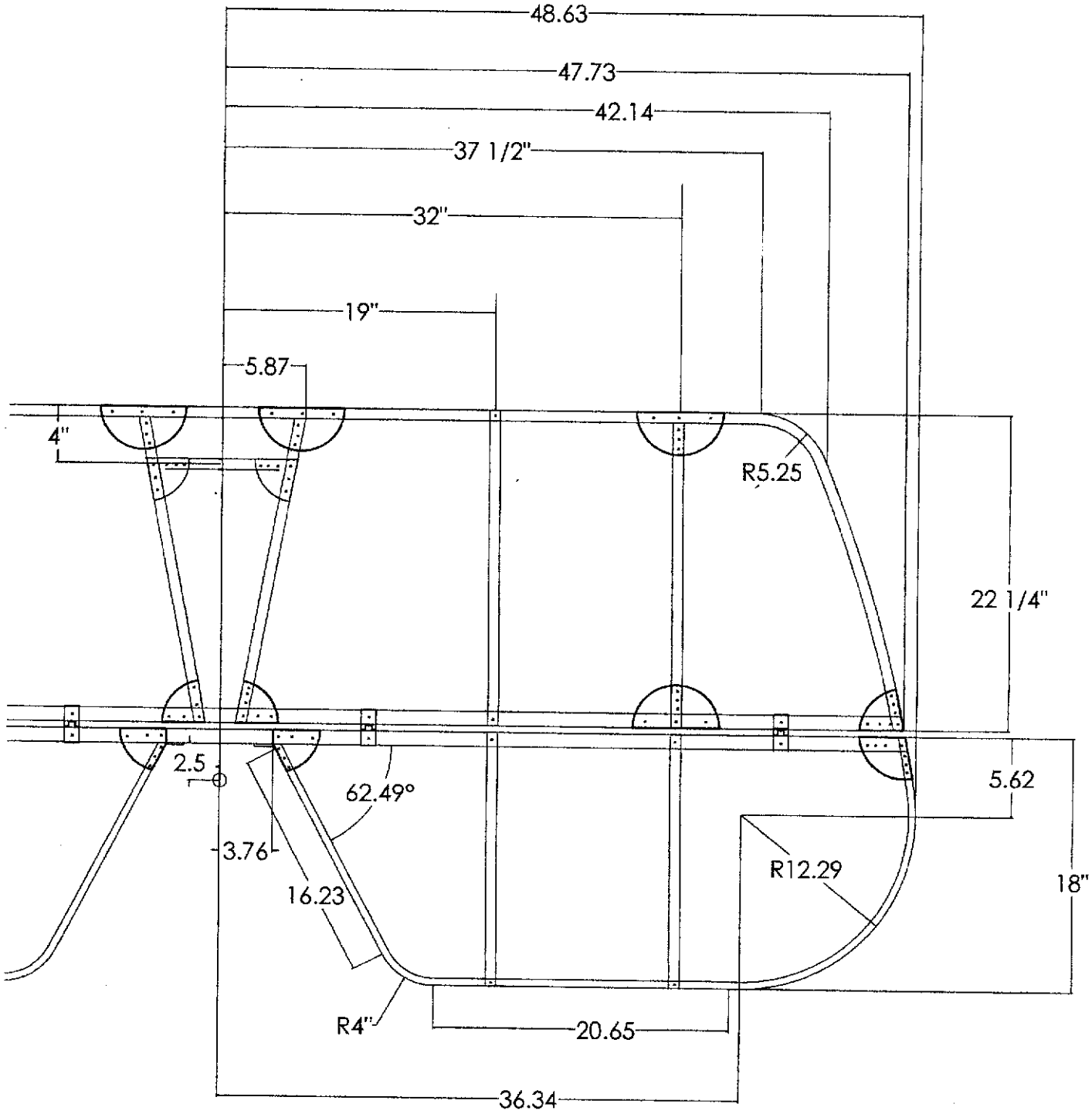


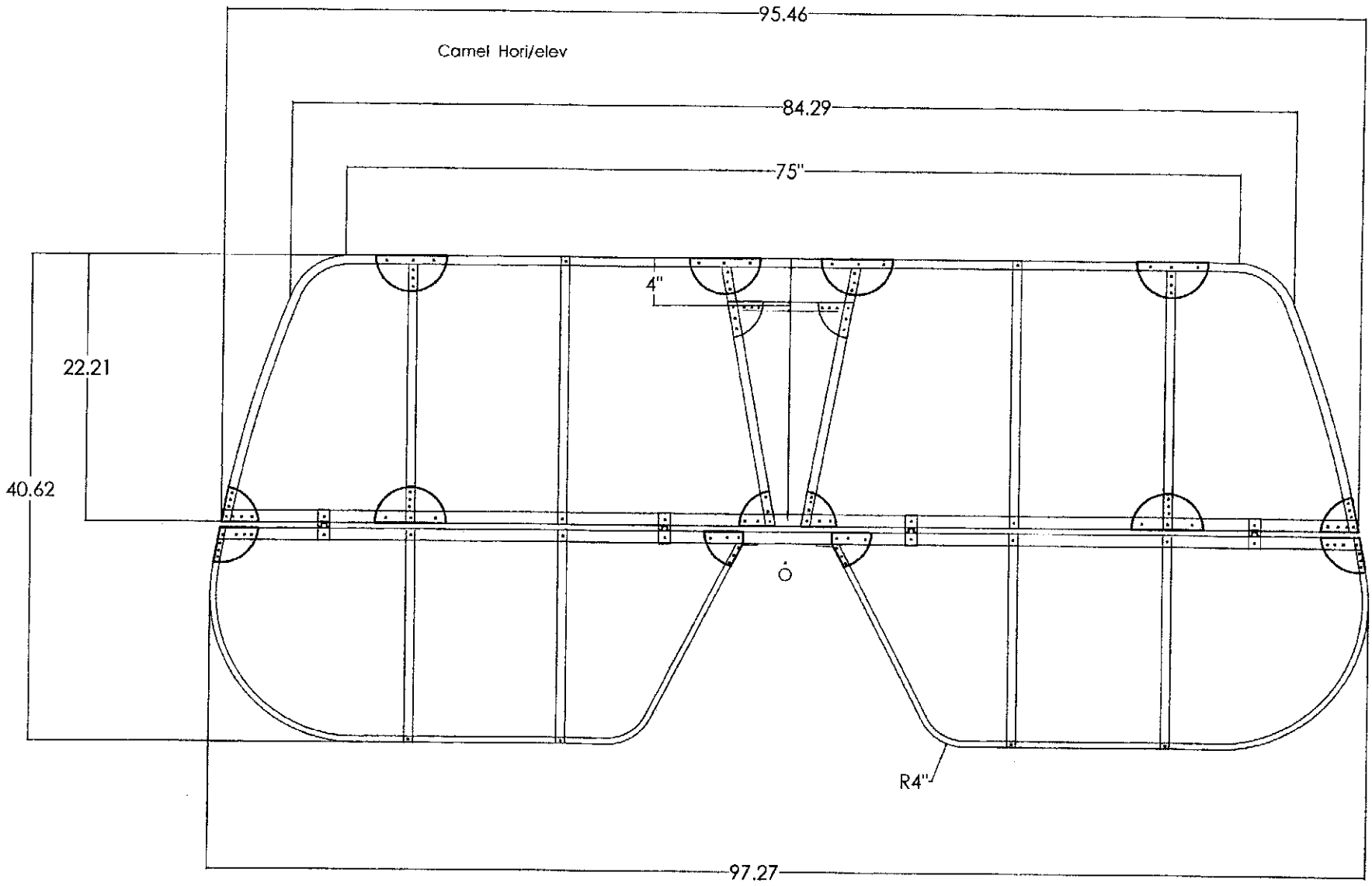
Fg8
12 req

Camel Hori/elev

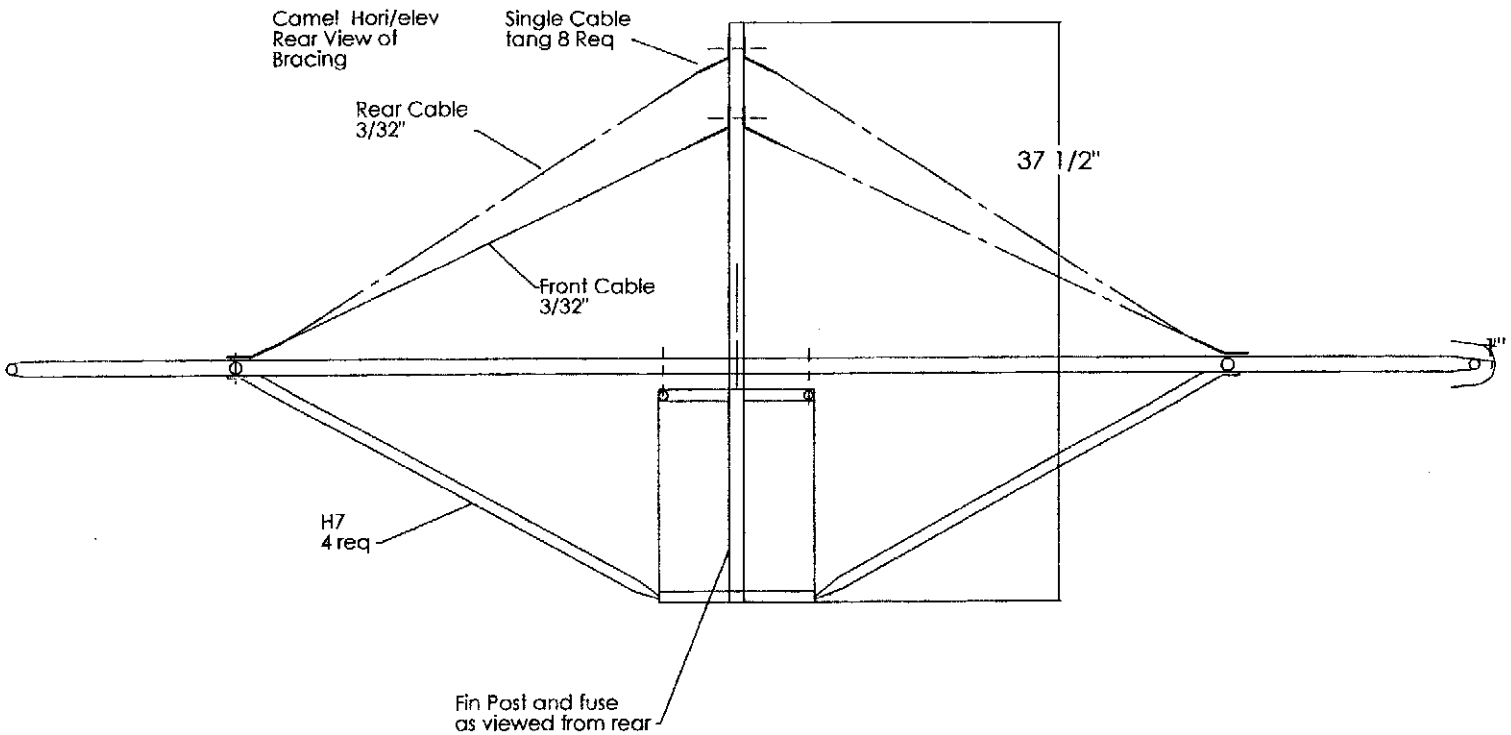


Camel Hori/elev



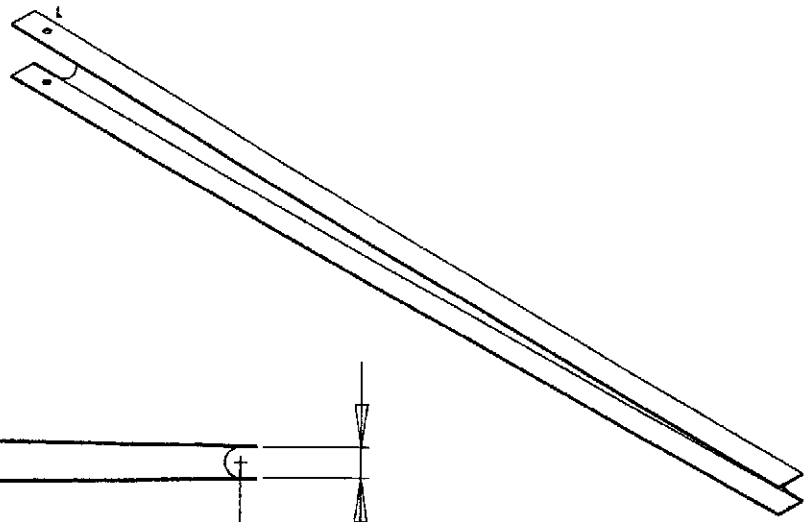

95.46
Camel Hori/elev
84.29
75"
4"
22.21
40.62
R4"
97.27

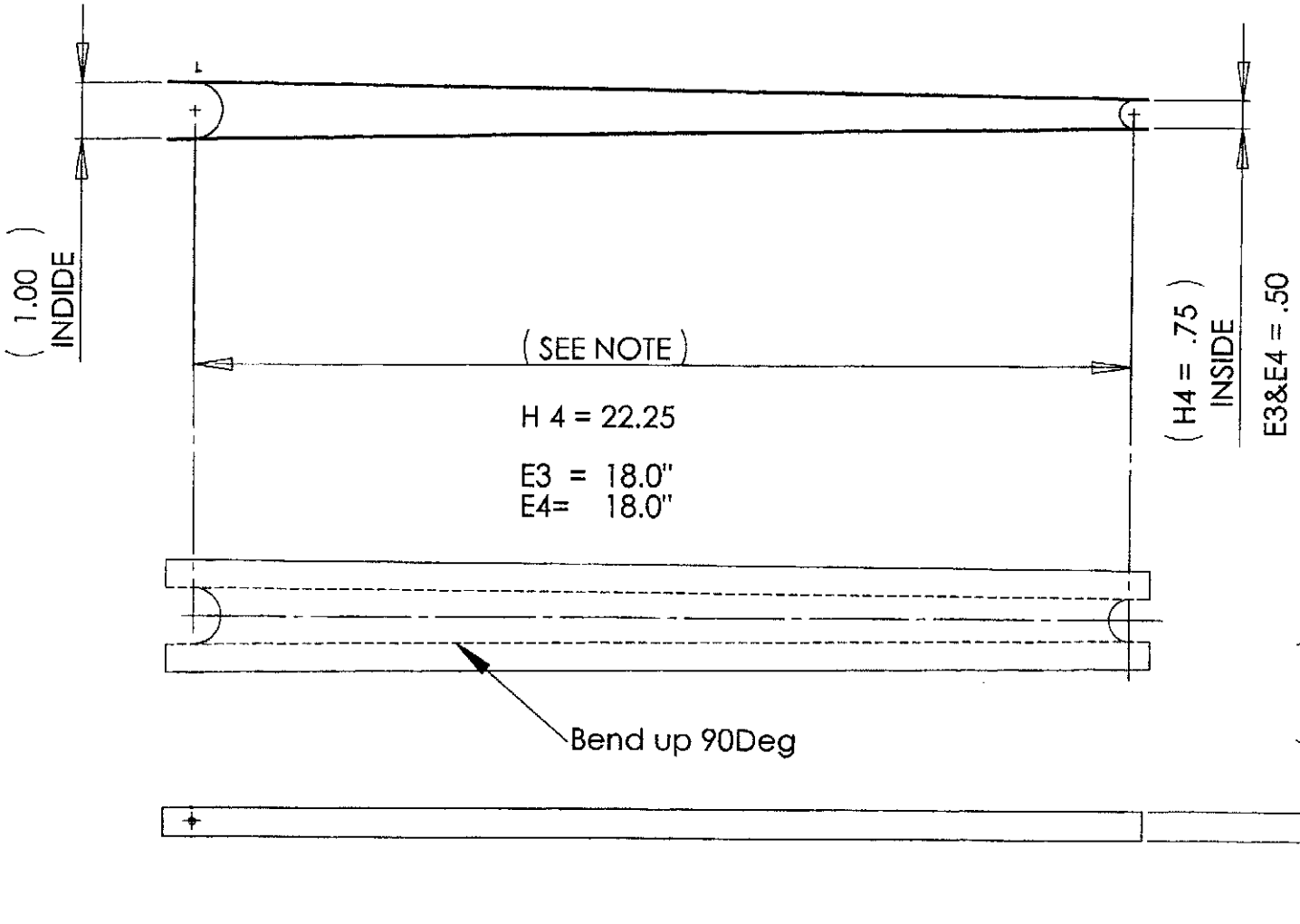
Camel Hori/elev



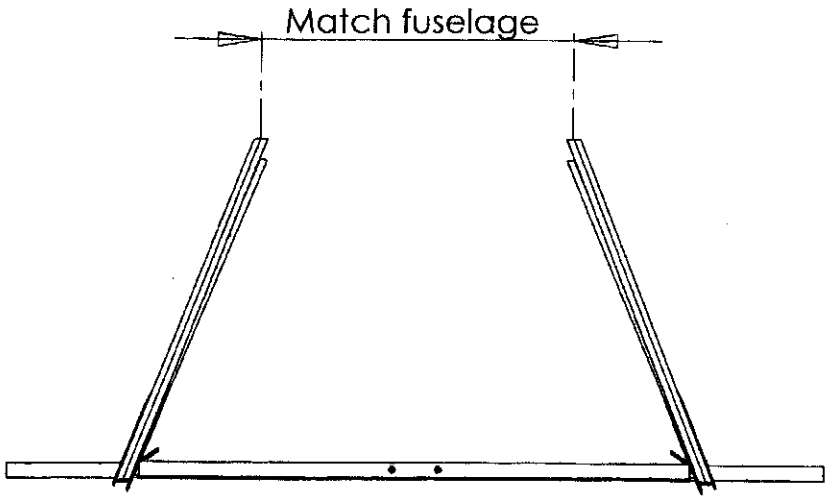
Camel sheet metal rib

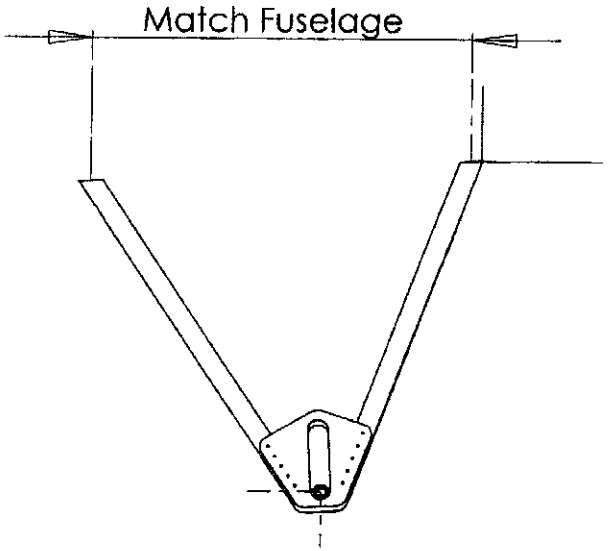
H4 2 Req
E3 2 Req
E4 2 Req

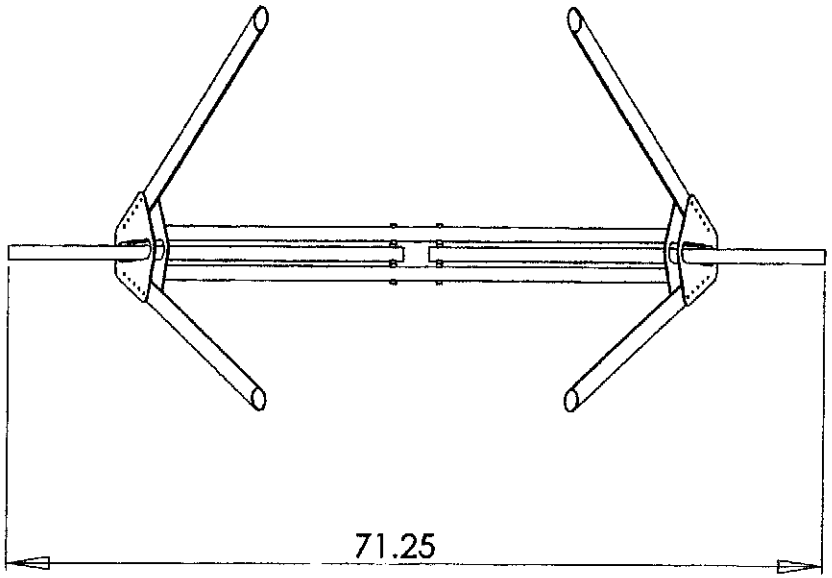




Camel L gear layout

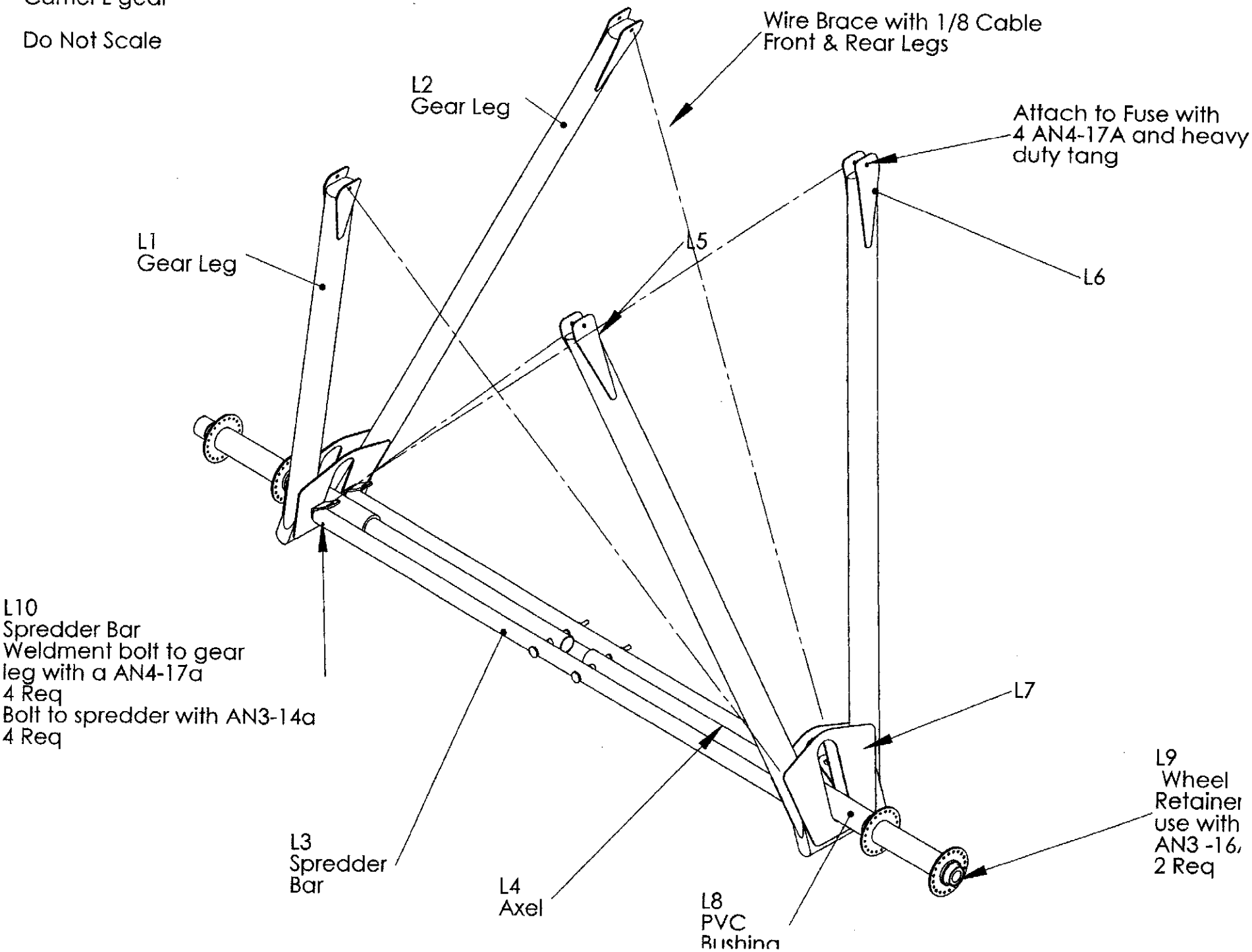




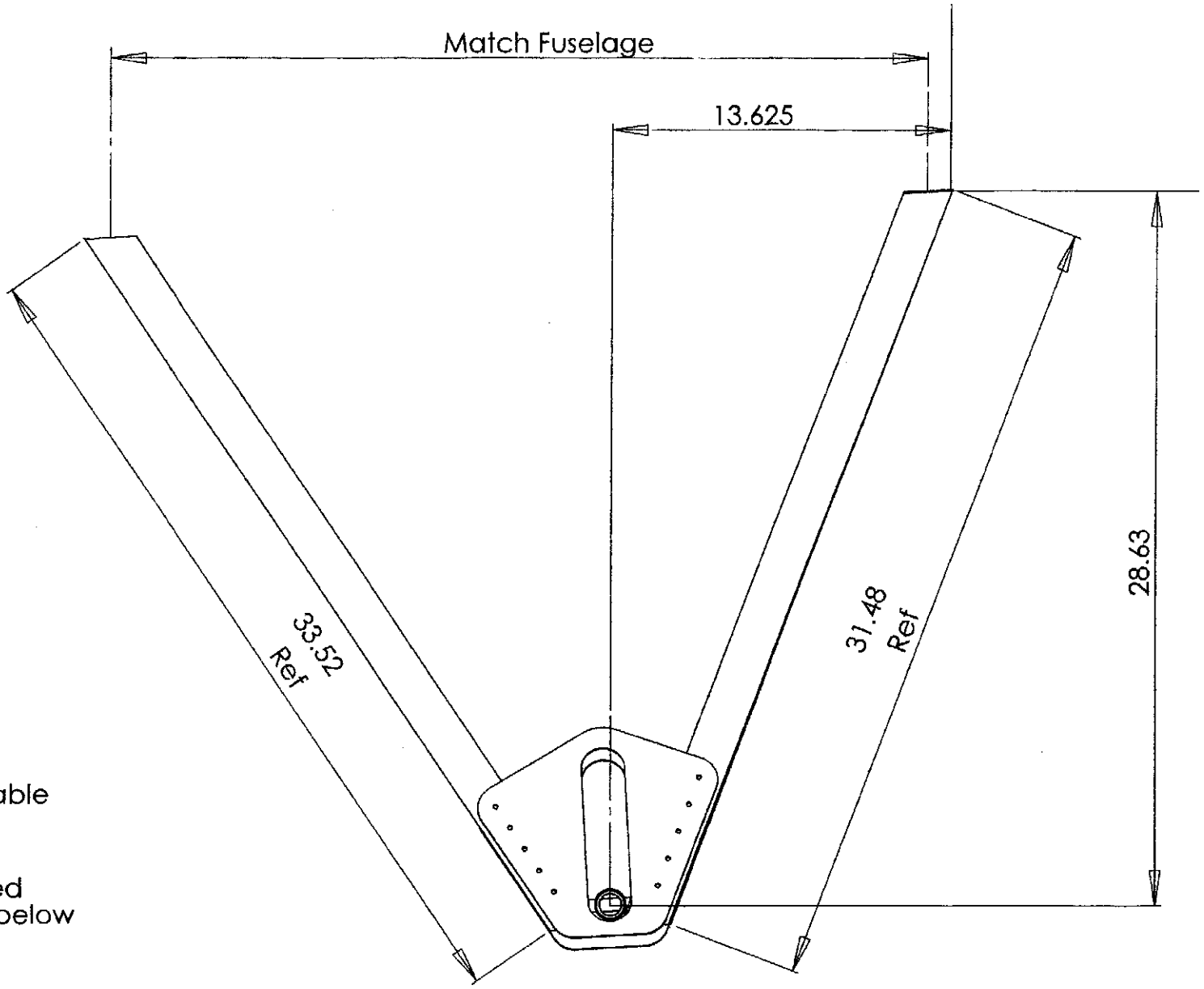


Camel L gear

Do Not Scale



Camel Lgear leg
Right side shown



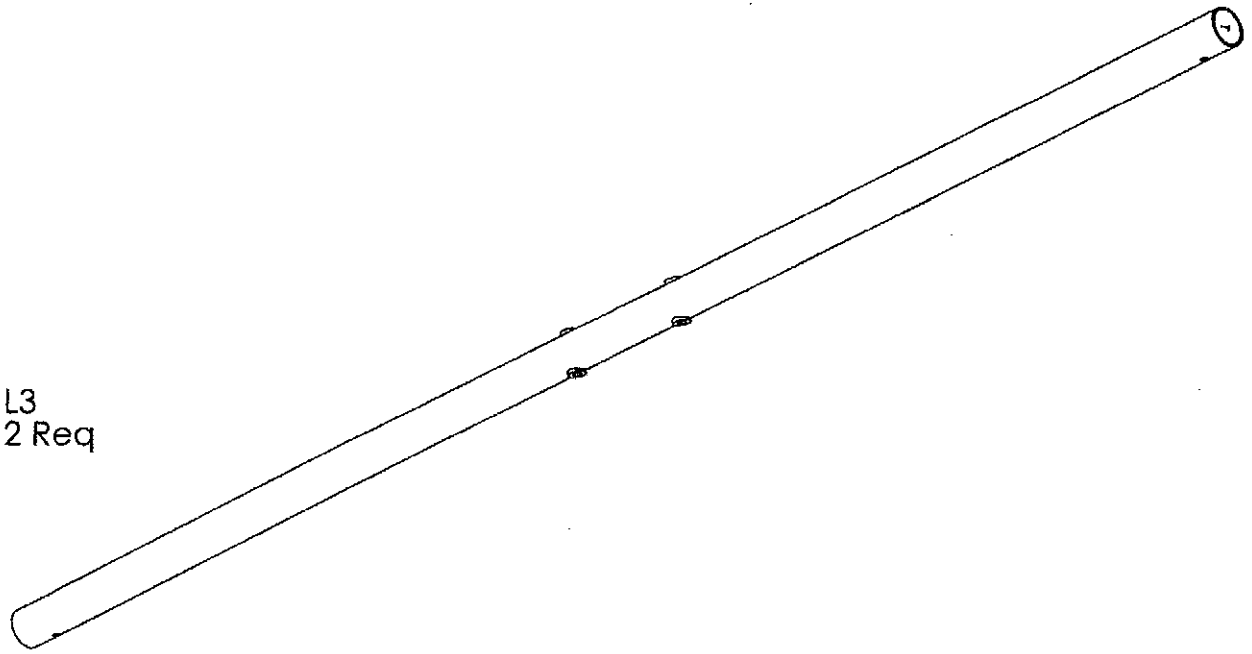
Build gear leg Flat on table
then install on aircraft

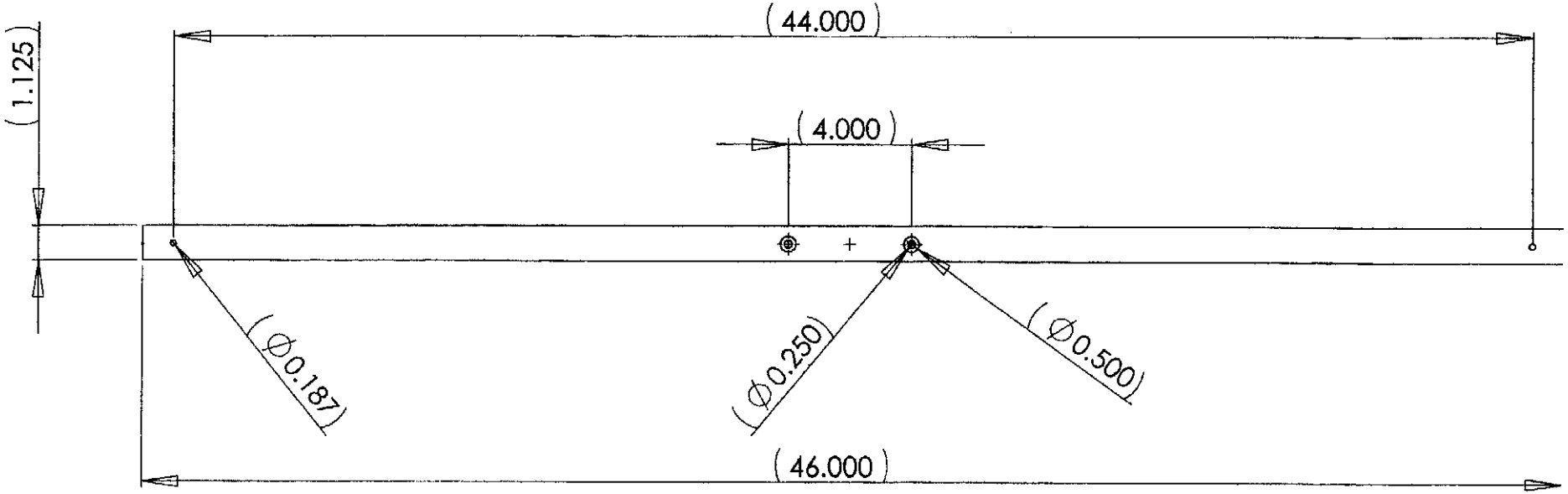
The axel must be located
13 5/8 " aft of & 28 5/8 below
longeron at firewall

If building an Aluminum Fuselage rivet
L5 - L6 - L7 Plates in place with
3/16" rivets omit L5-L6 on 4130 fuselage

Camel Spredder bar

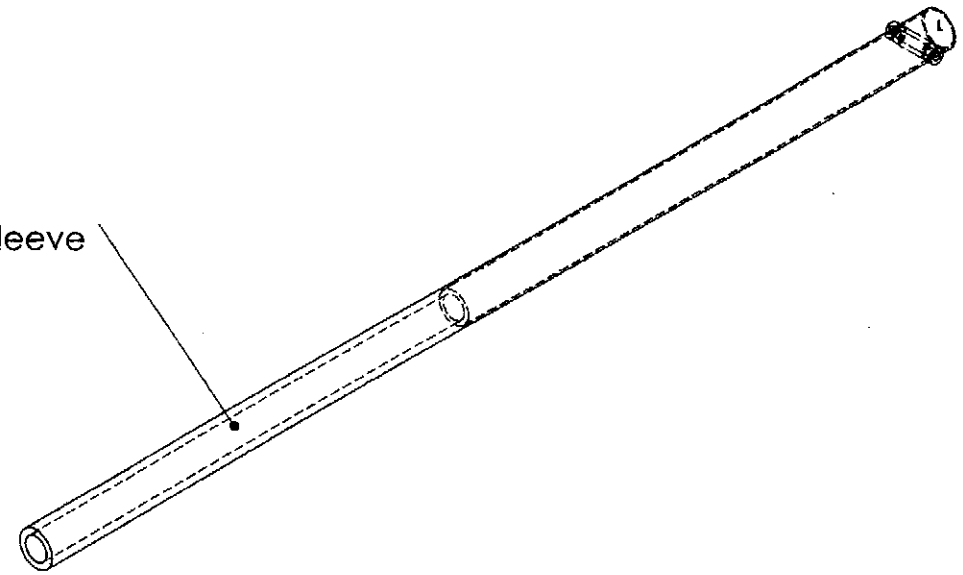
L3
2 Req

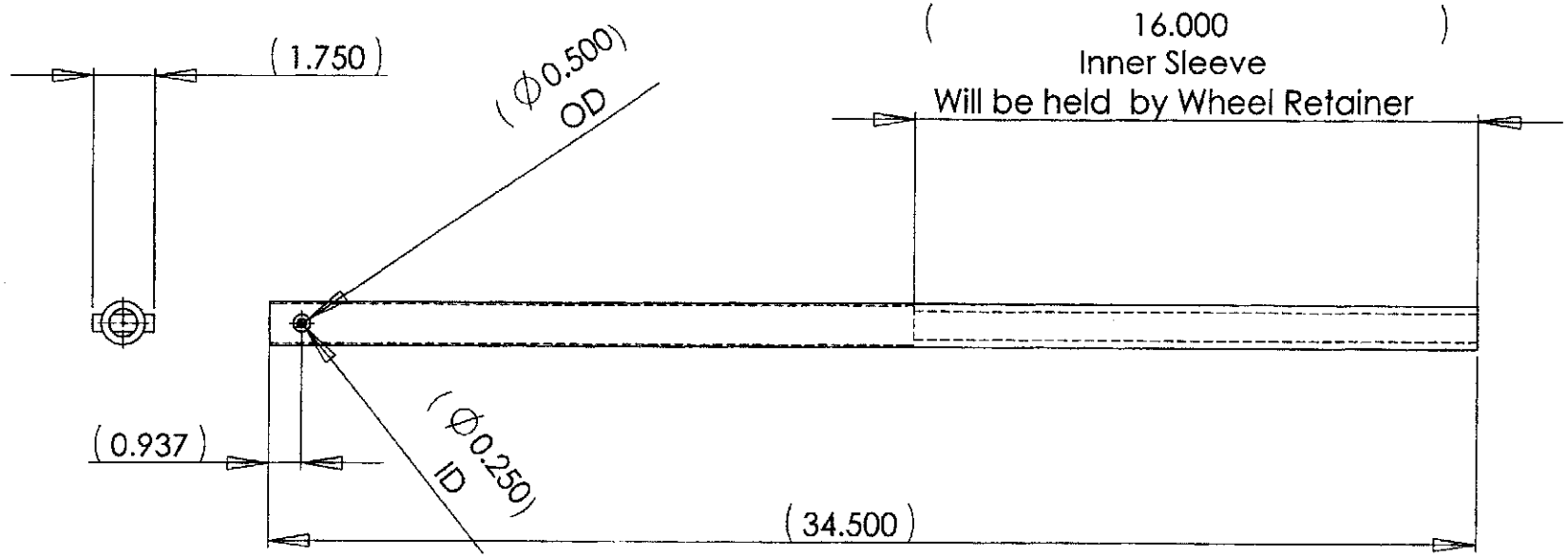




Camel

L4
AXEL
2 REQ

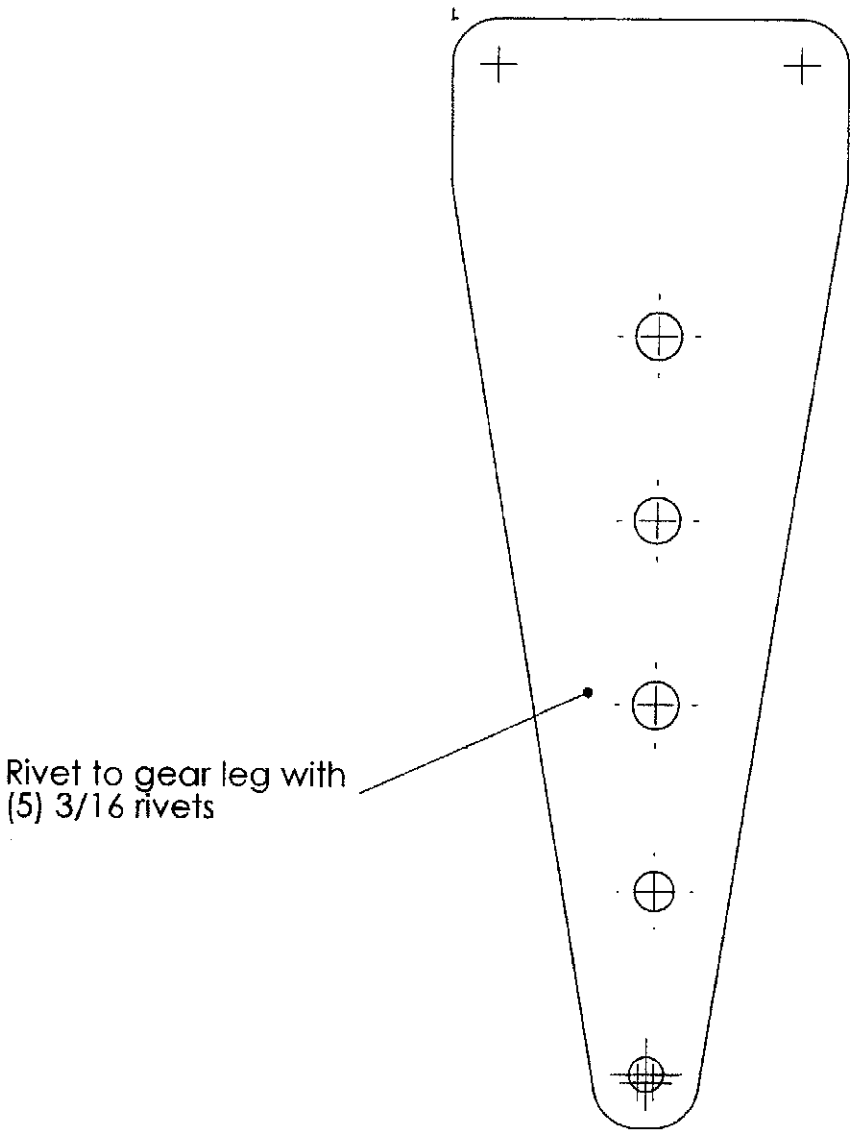




Camel

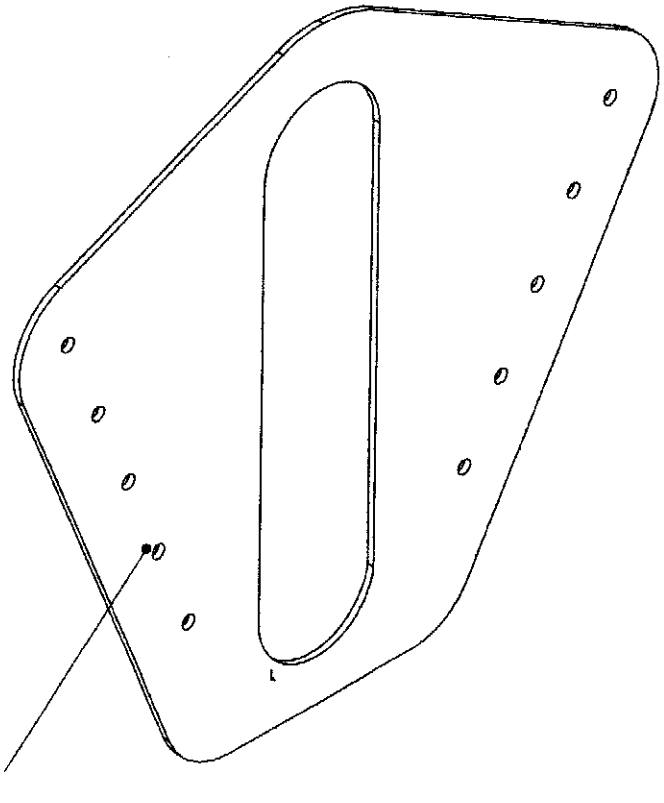
L5 (4) req

L6 (4) req



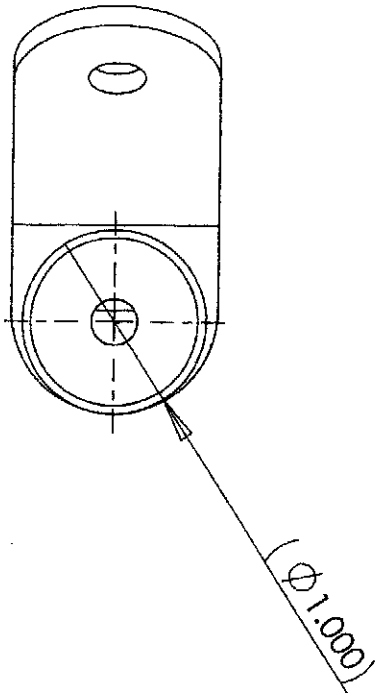
Camel

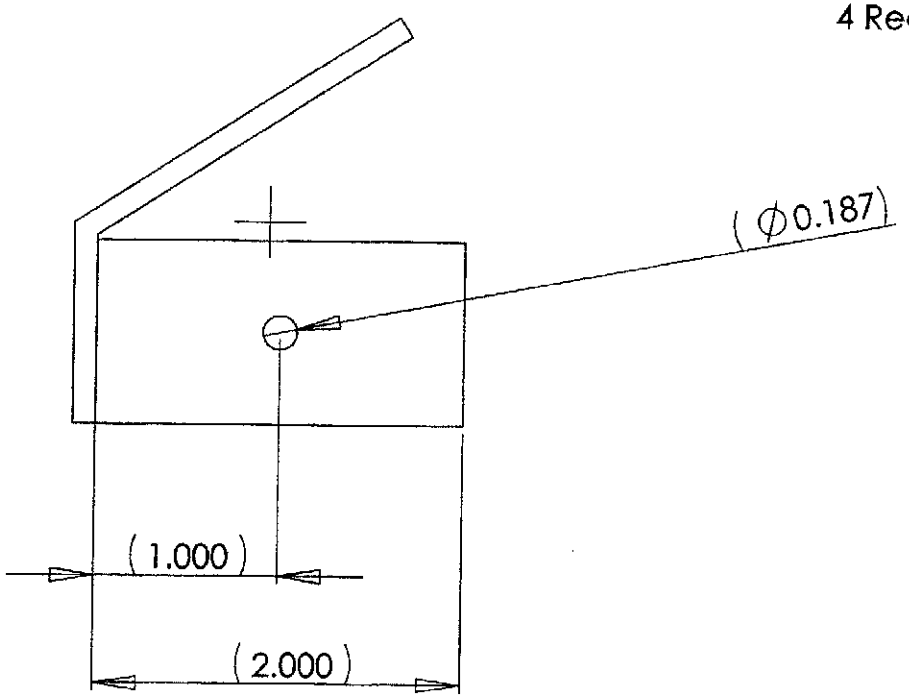
L7 lower gear plate
4 Req

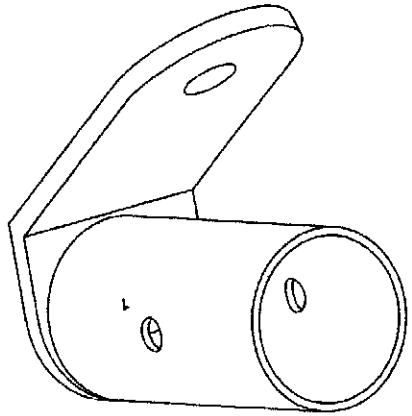


Camel

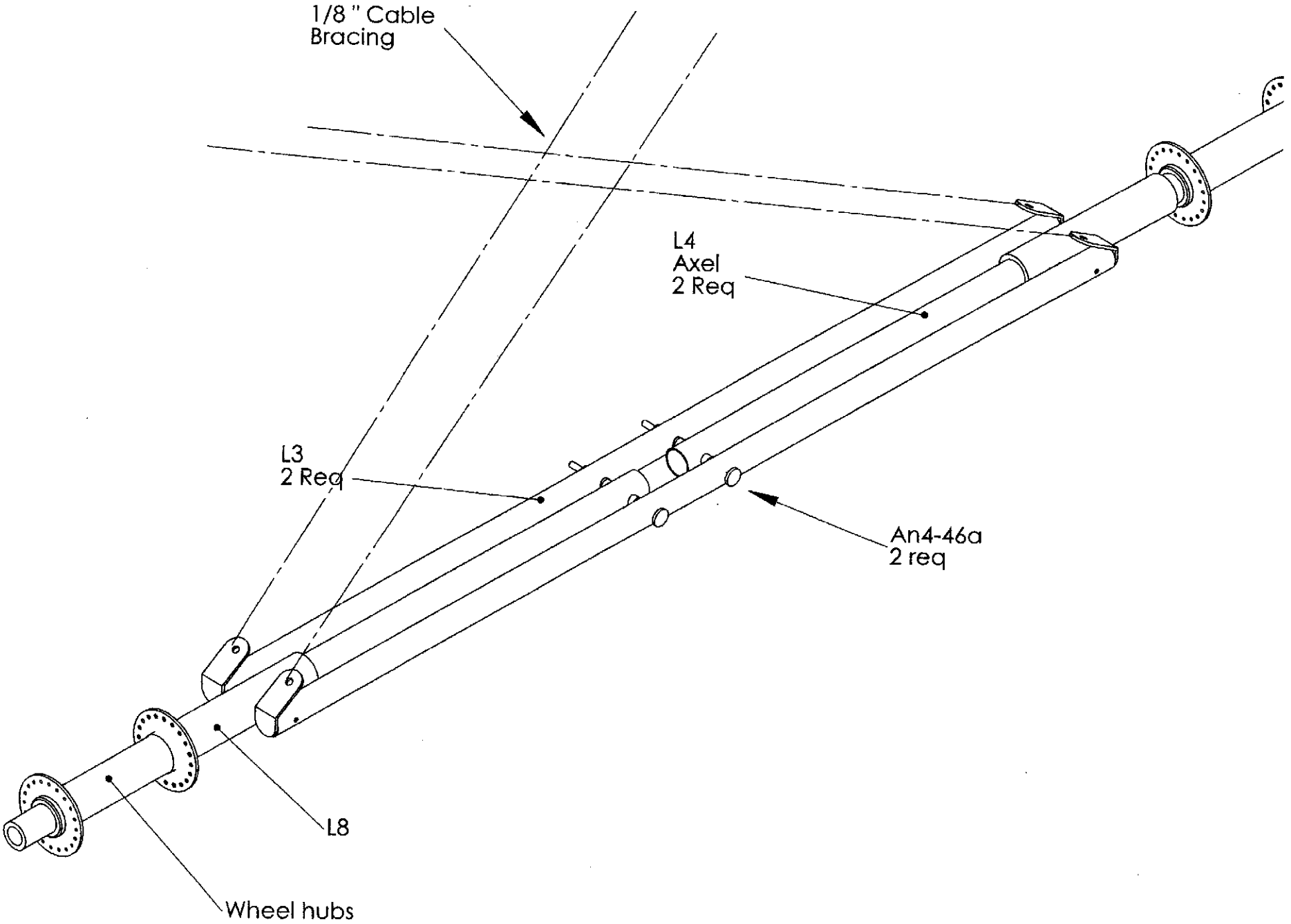
L10
Weldment
4 Req



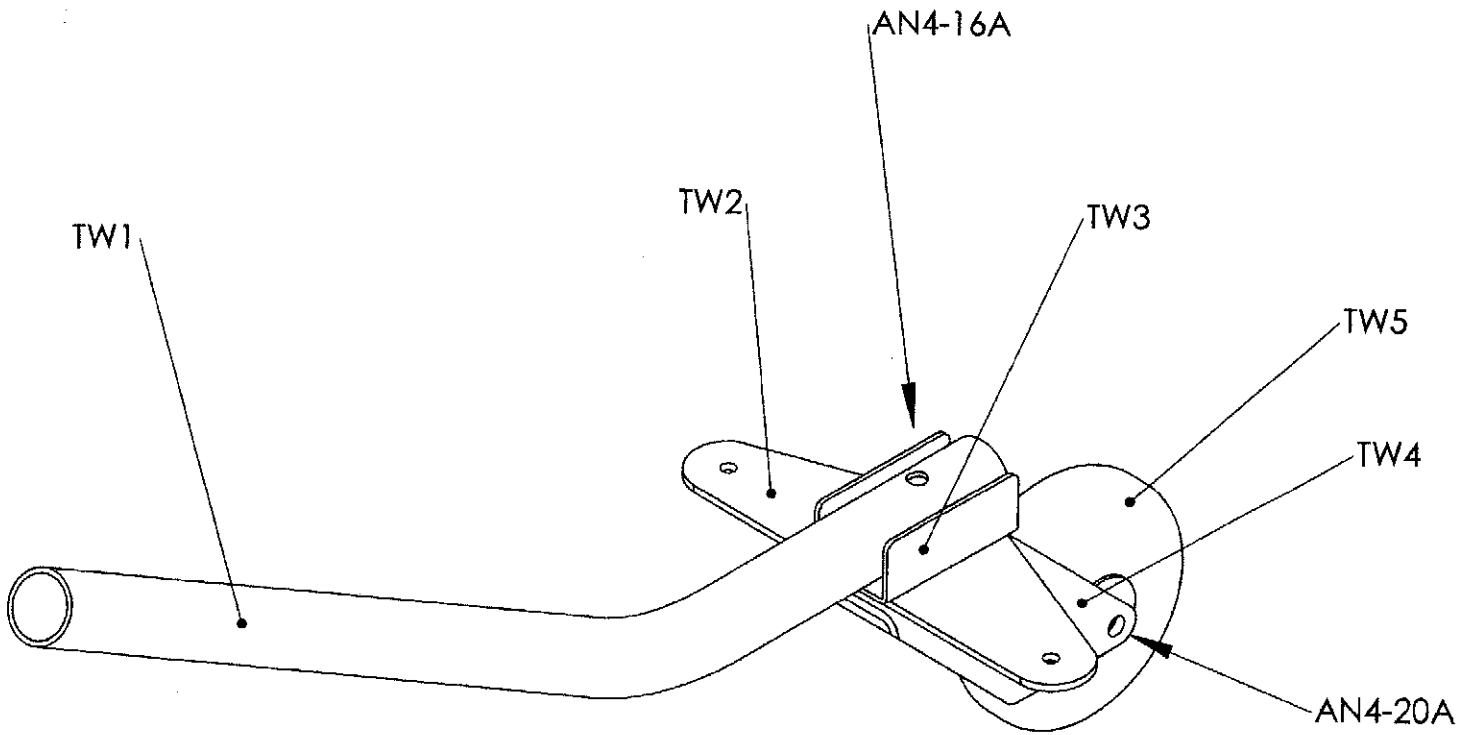




Camel Spredder Bar Iso View

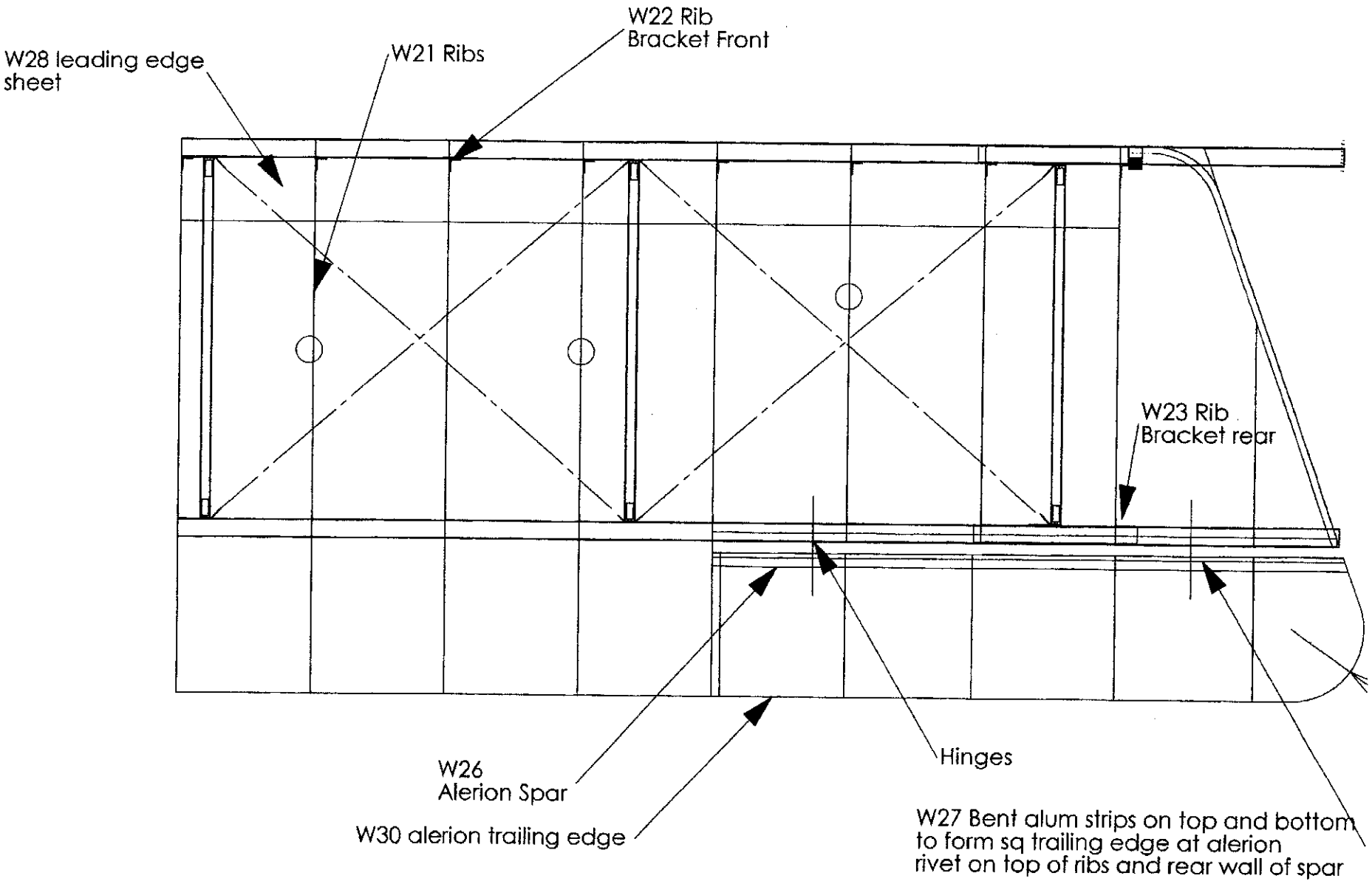


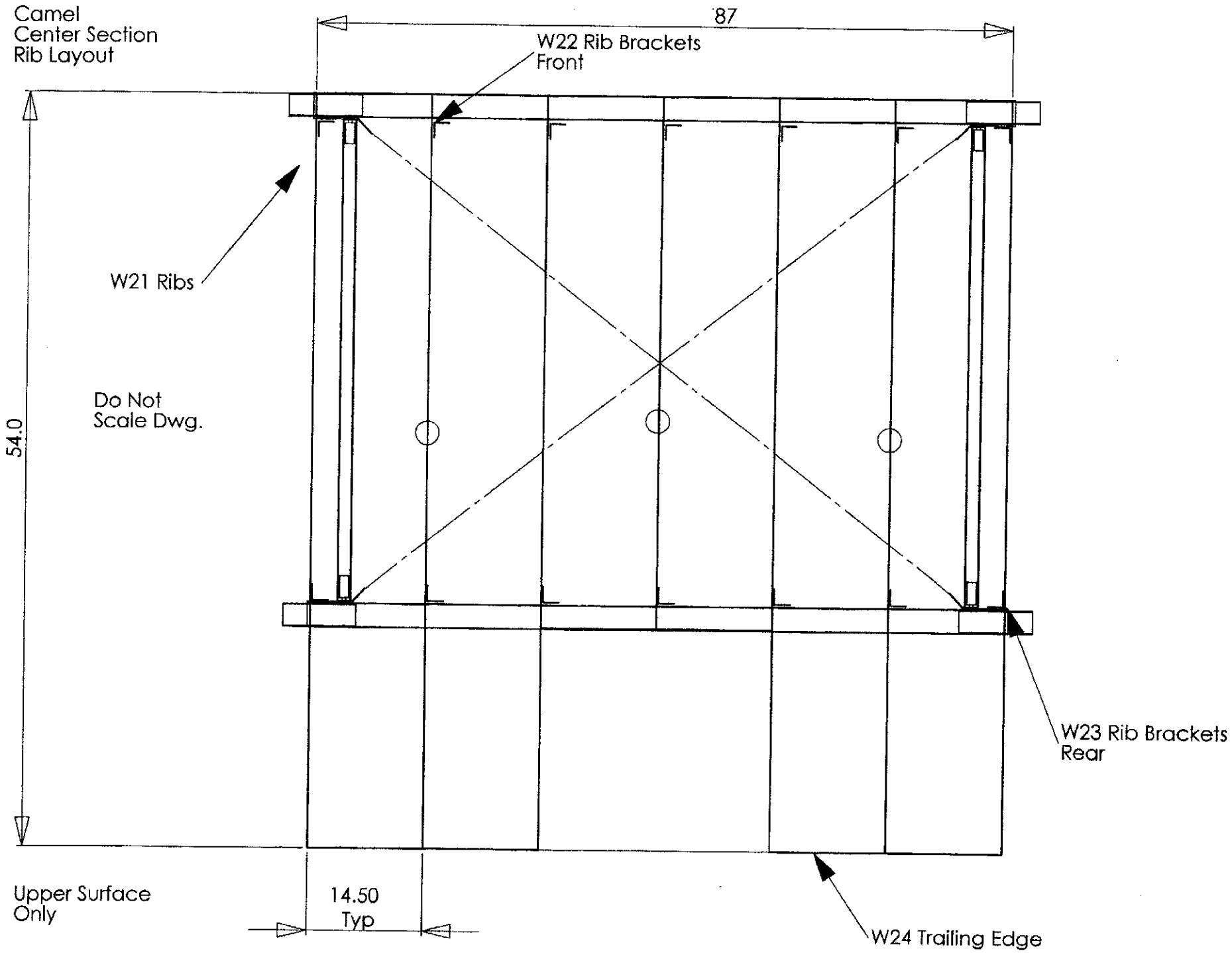
Tailwheel



Camel upper wing panel
Rib Layout

2 Req Rt Shown

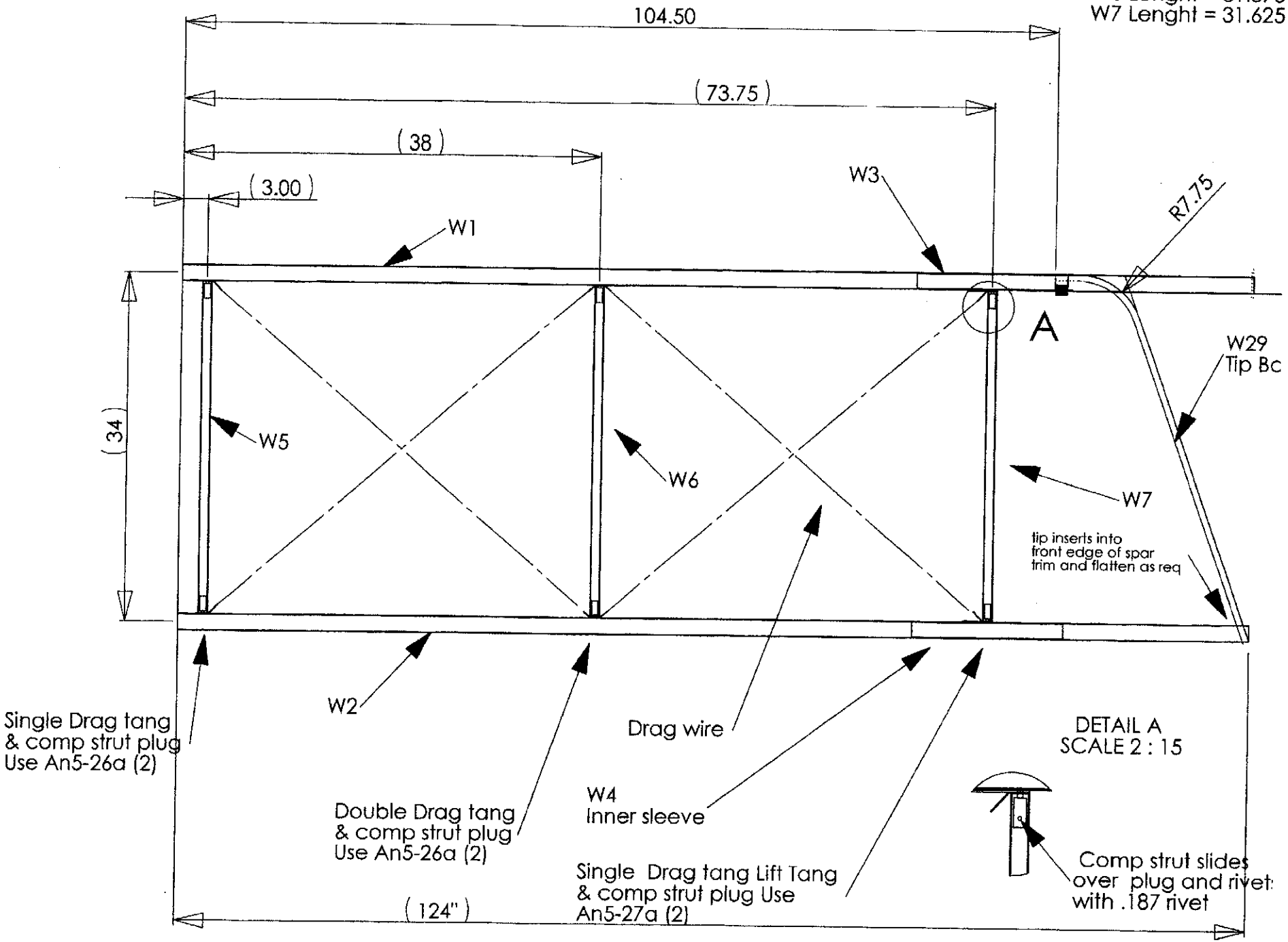



Camel
Center Section
Rib Layout
87
W22 Rib Brackets
Front
W21 Ribs
Do Not
Scale Dwg.
54.0
W23 Rib Brackets
Rear
⊙ Upper Surface
Only
14.50
Typ
W24 Trailing Edge

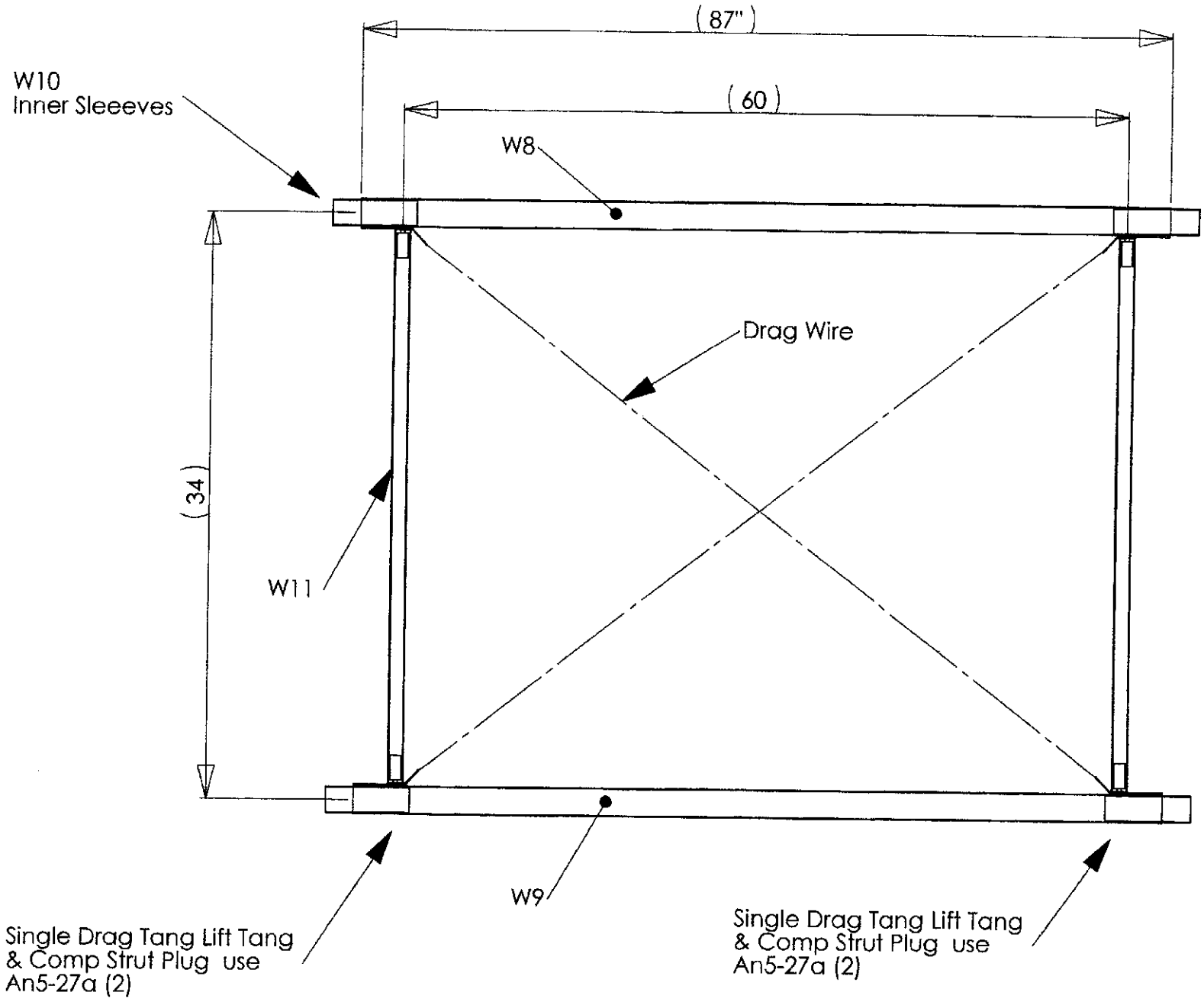
Camel upper wing panel

2 Req Rt Shown

W5 lenght = 31.875
W6 Lenght = 31.875
W7 Lenght = 31.625



Camel Upper Wing
Center Section

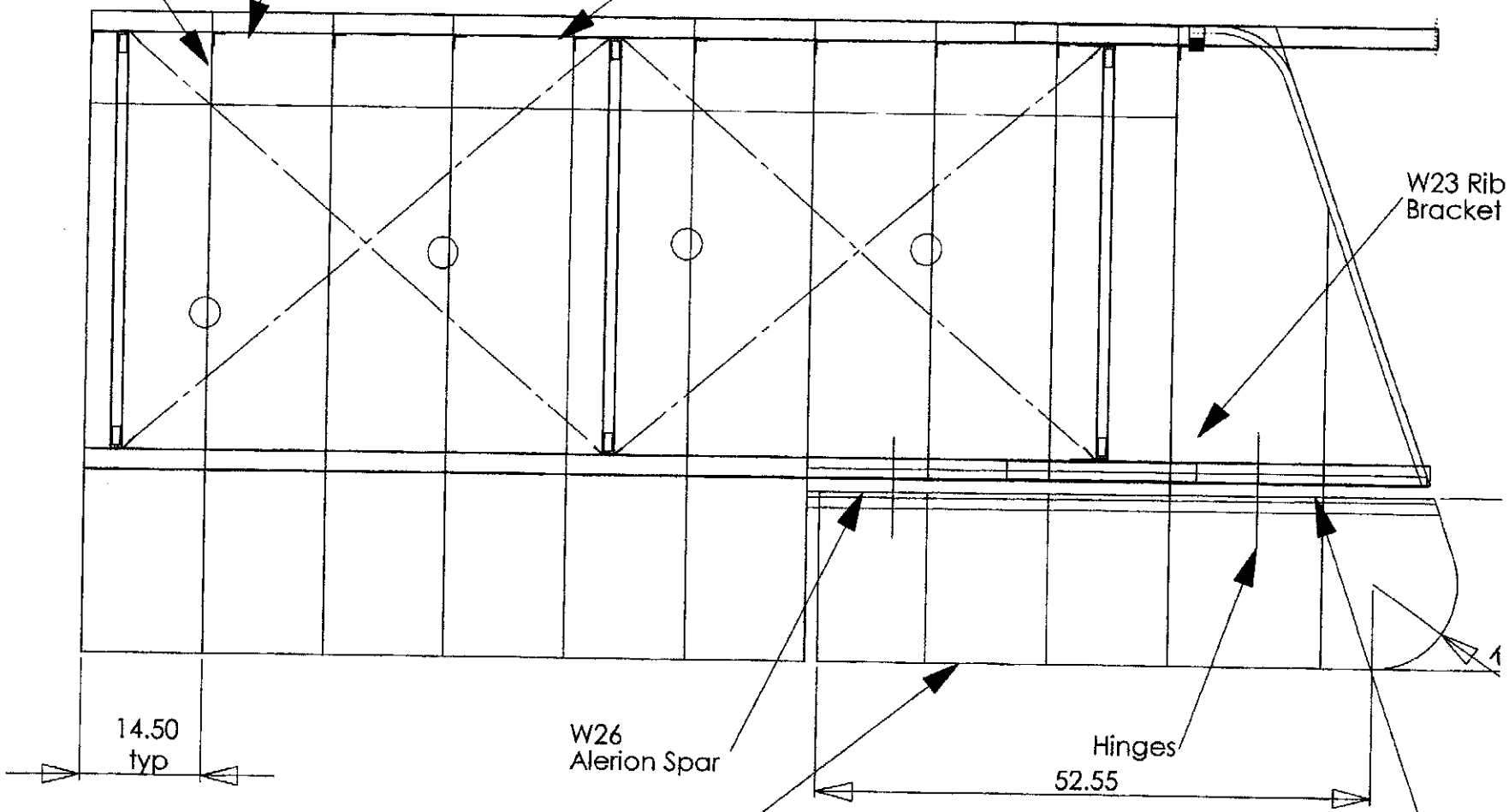


Camel lower wing panel
Rib Layout

2 Req Rt Shown

Do Not Scale

○ = upper surface only



Alerion is built as part of wing
Install alerion hinges and spar
in wing before installing ribs
after the alerion is complete
cut ribs & trailing edge to allow unit
to hinge then install W27 strips

W27 Bent alum strips on top and bottom
to form sq trailing edge at alerion
rivet on top of ribs and rear wall of spar

Cabine Side View Camel

Install lower wing carry thru in fuselage with lift tangs
set rear carry thru 1.5 Deg lower than front
use An5-40a on front & An5-45a on rear

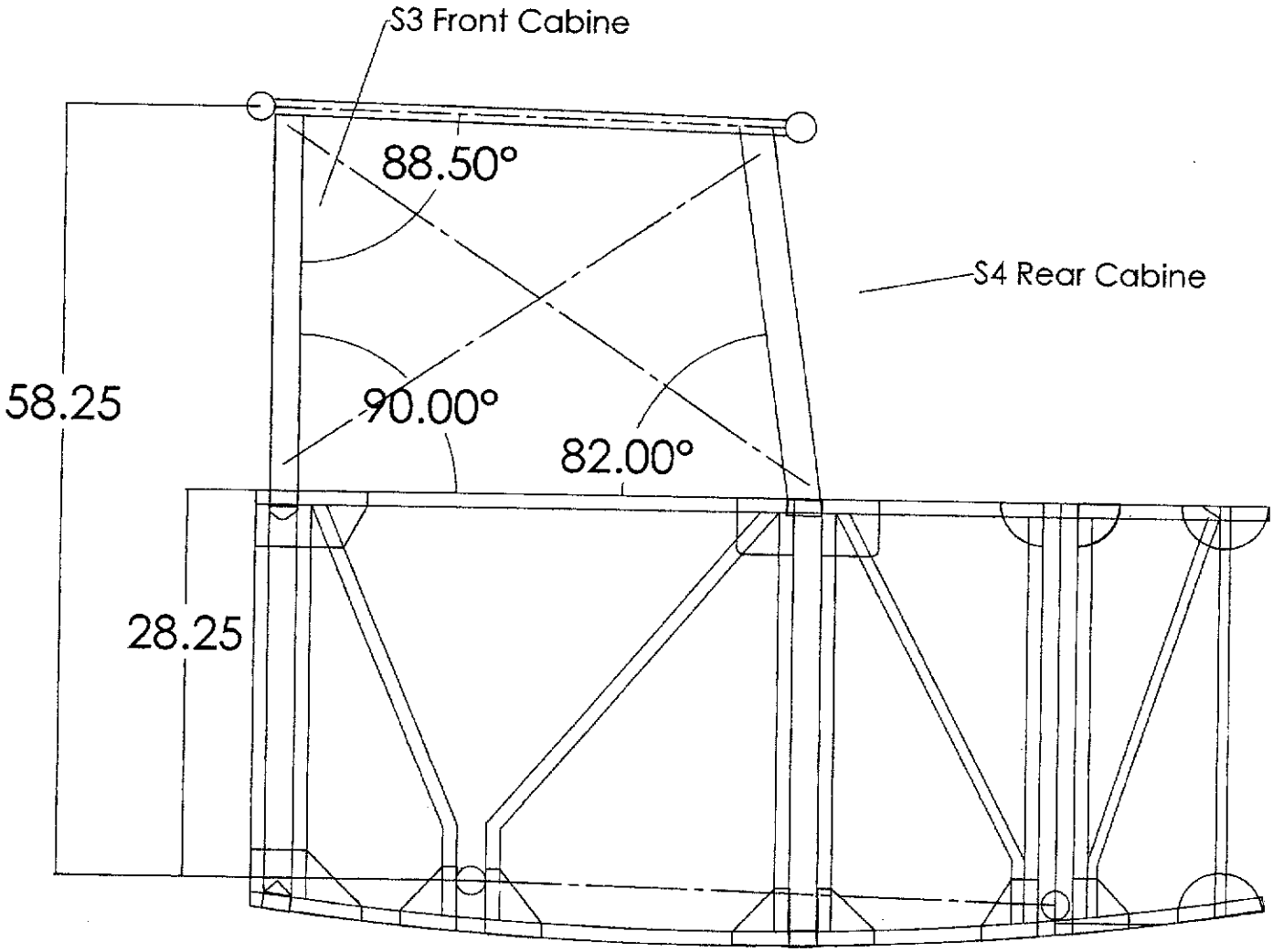
Then mount upper wing center section

front cabine must be square to top longeron All center section bracing is 3/32" cable with drag tang and An3-17a bolts

Bolt Cabine struts to fuse & compression strut with An3-16a

After Center section is mounted and in rig then install outer wing panels

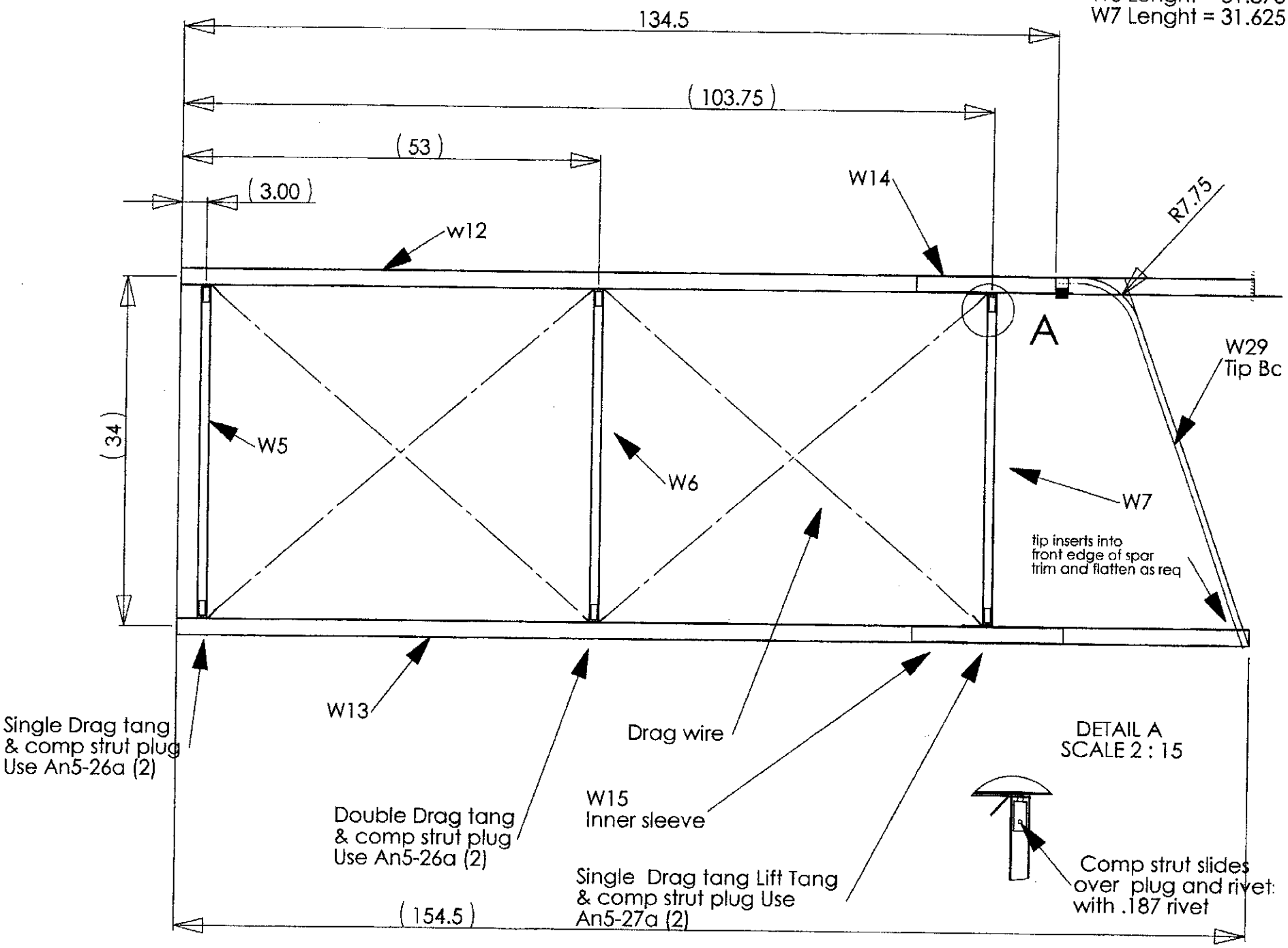
All compression struts need to be parallel to each other and wings need 3 Deg of dihedral



Camel lower wing panel

2 Req Rt Shown

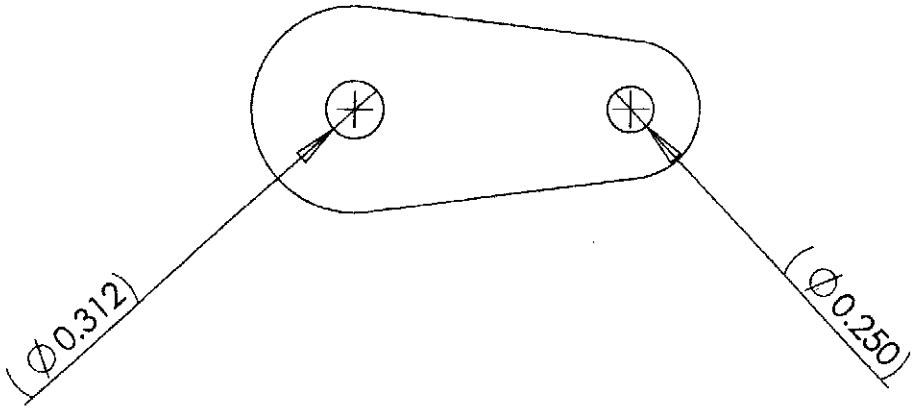
W5 lenght = 31.875
W6 Lenght = 31.875
W7 Lenght = 31.625



Camel

20 Req

W 16

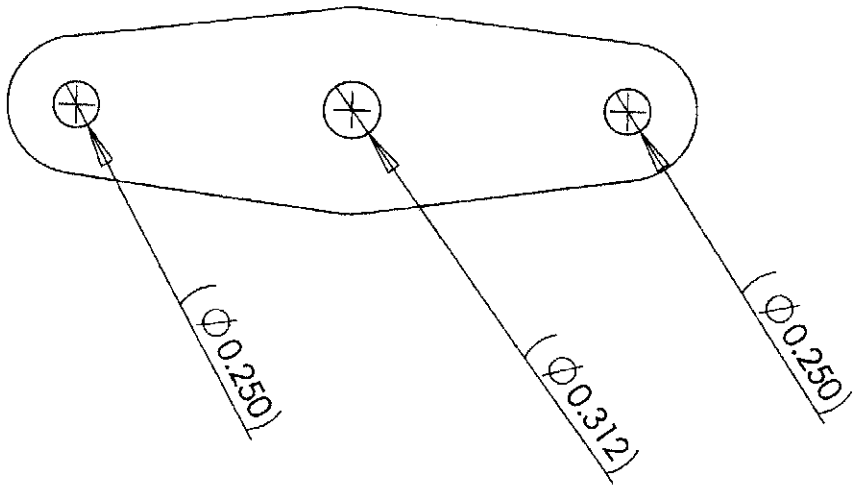


This tang will bolt to spars under the Comp strut bend as required install 3/32" drag anti drag wires in all wing panels

Camel
Wing

W17

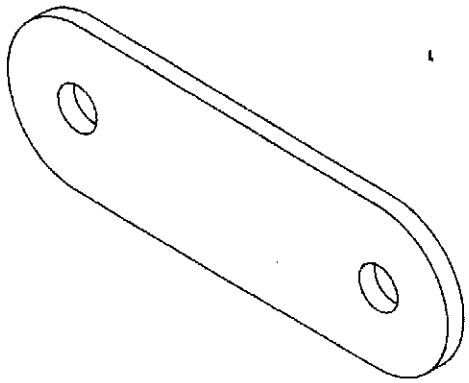
8 Req



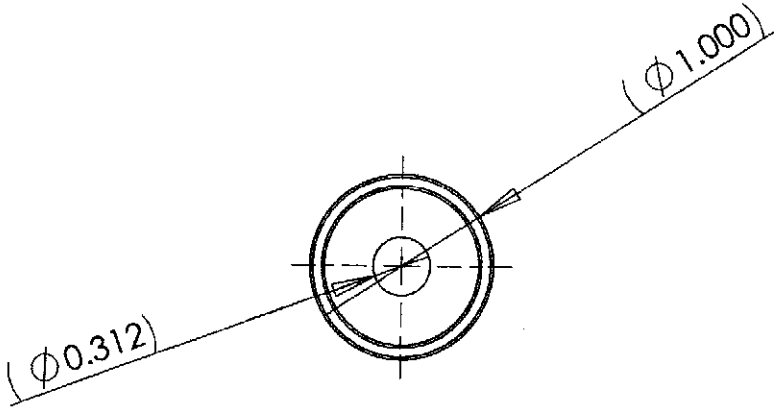
Double drag tang

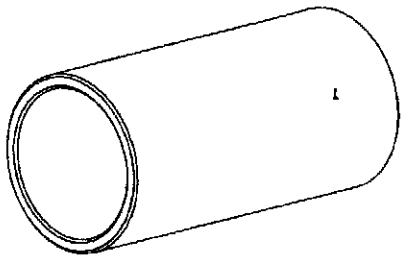
Install on (4) inner comp strut for 3/32" drag wire in all panels

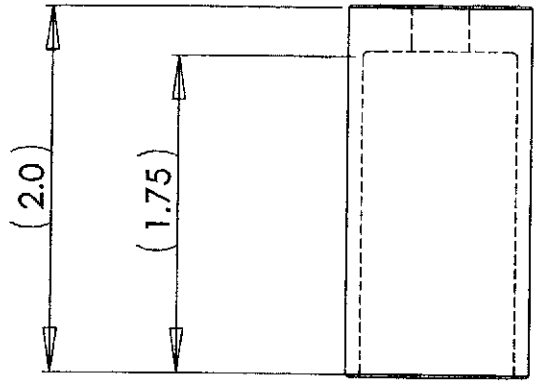
W25 Lift Tang
16 req



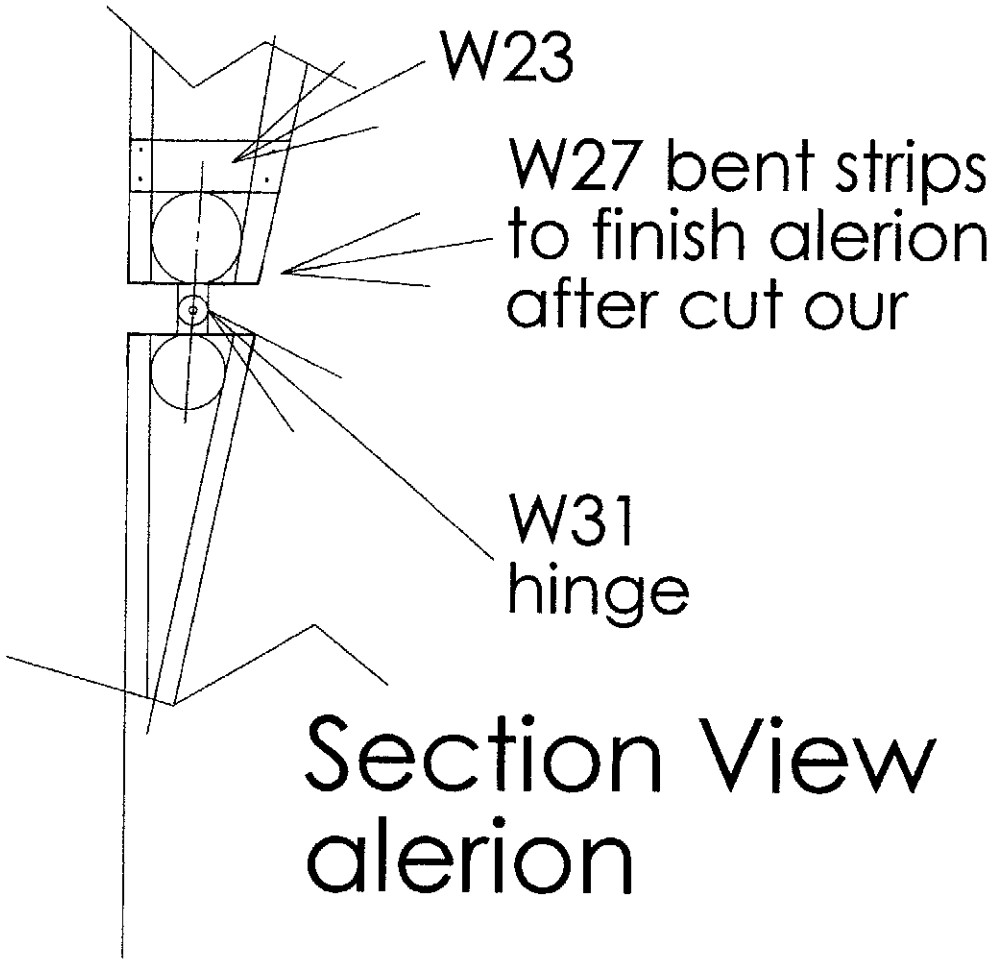
Camel Compression strut plug



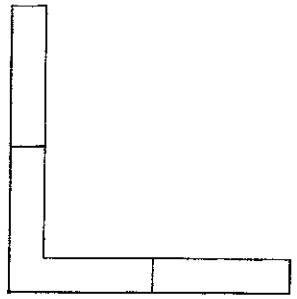


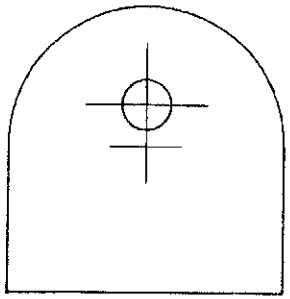


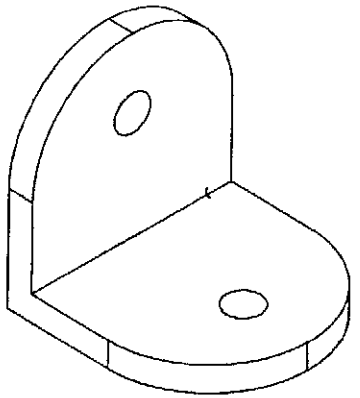
W10
28 req

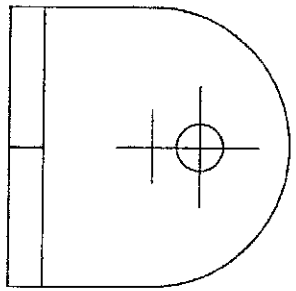


Section View alerion









Use An4-20-a hinge to alerion (4) req
Use An4-24-a Hinge to Rear Spar (4) req
Use An3-5a to act as hinge pin (8) req

W31
16 req

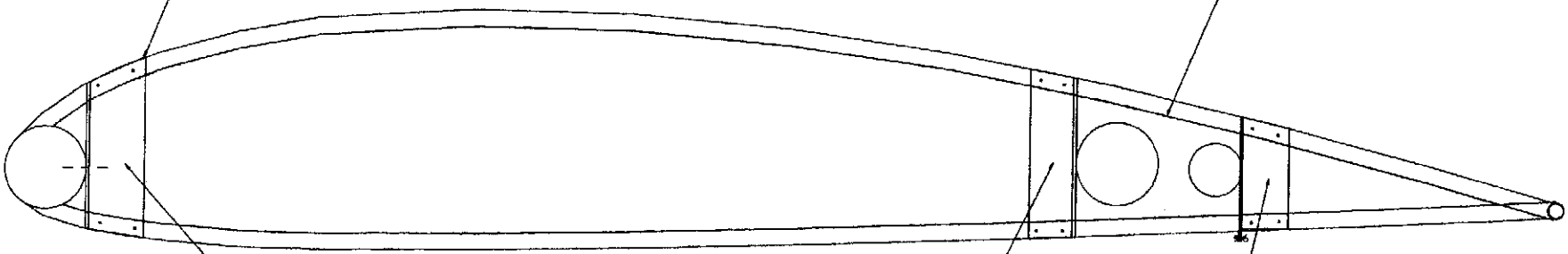
See Full Size Templates for upper and lower airfoil shapes

Do not scale Drawing

Camel
Rib
attachment

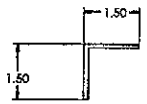
Build wing then cut out
alerion and install trim strips to form
rear edge of wing & front edge of alerion

Use 1/8" rivets
6 req Ea.



W22
47 Req

W23
47 Req

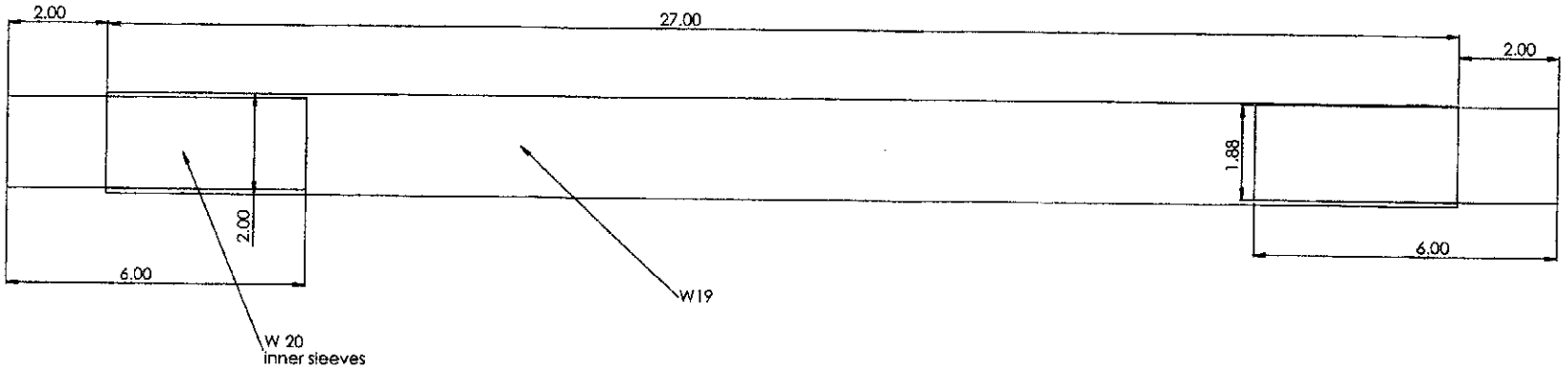


Top view of gussett

.032 Bent 90 Deg up
and trimed as required

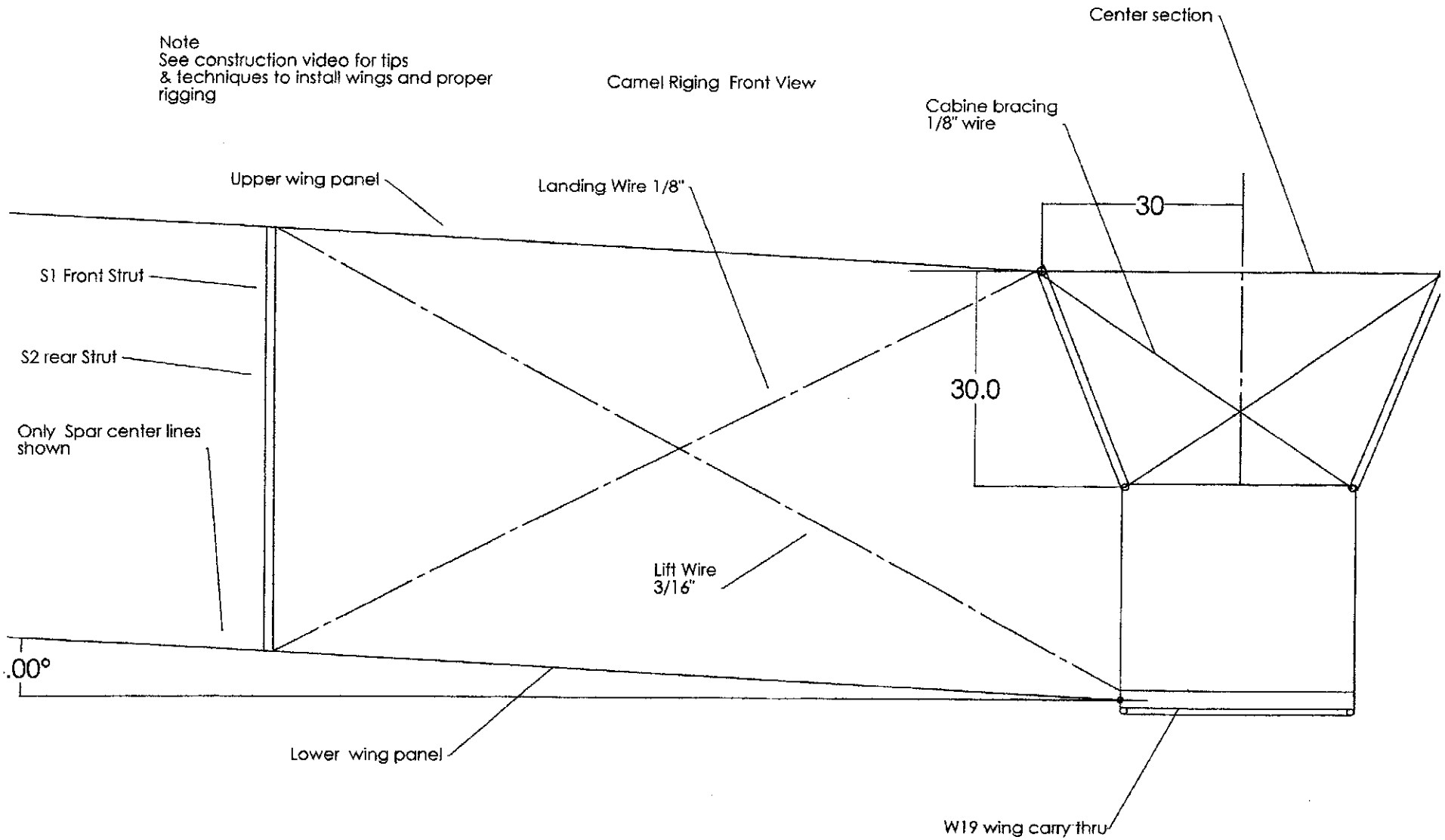
W32
20 Req

W19
lower wing carry thru
2 Req

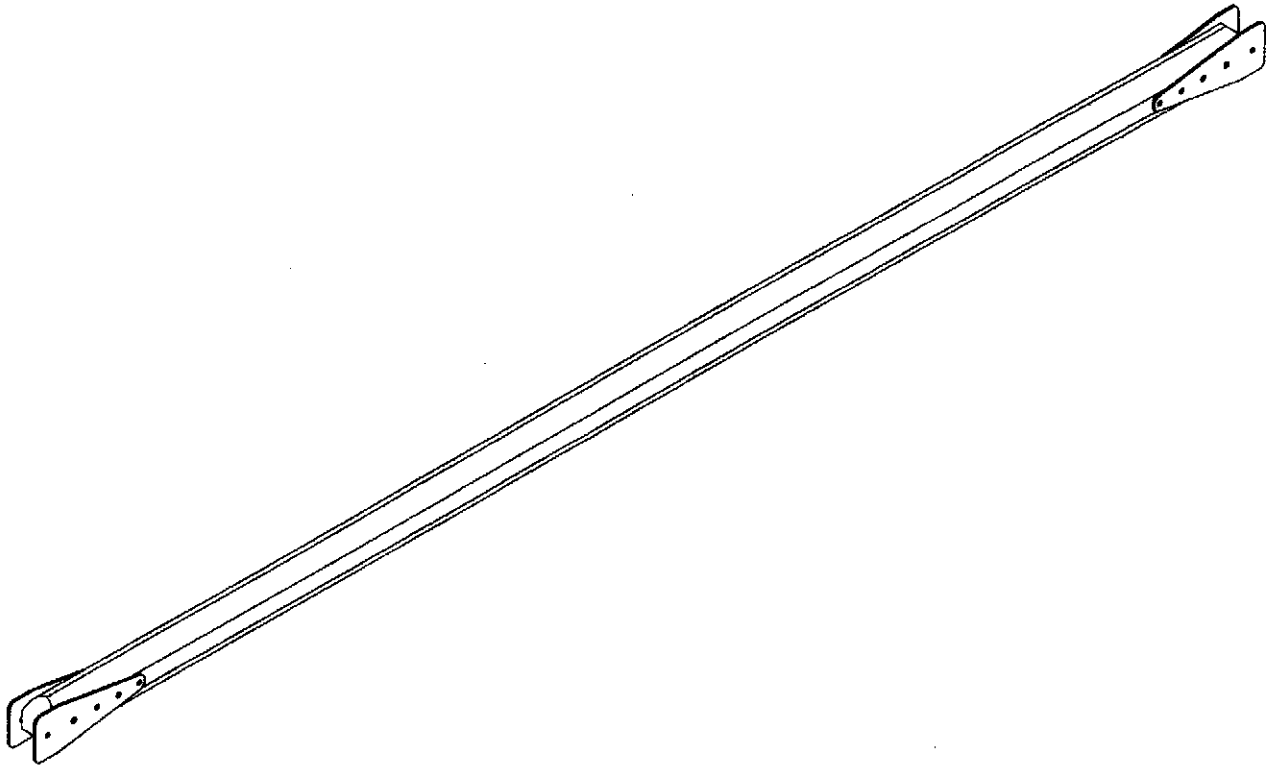


Note
See construction video for tips
& techniques to install wings and proper
rigging

Camel Rigging Front View

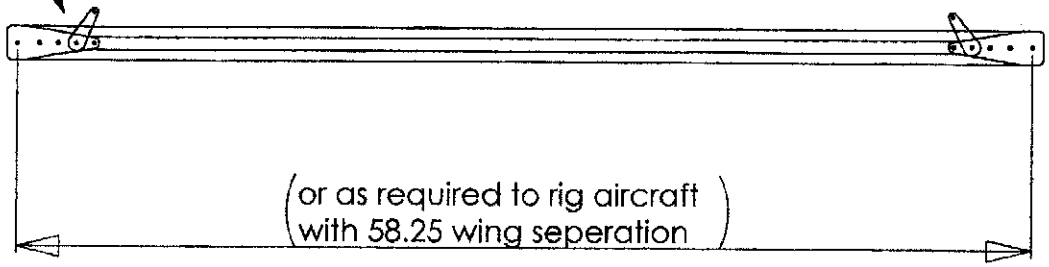


Camel strut
S1 & S2 (2) ea

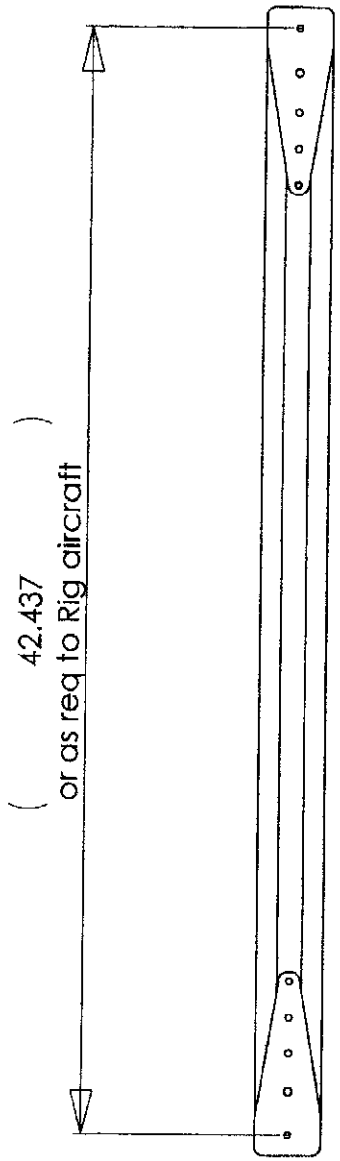


S5 plate
Use 3 .187 rivets & one bolt for wire tang

S6 cable tangs

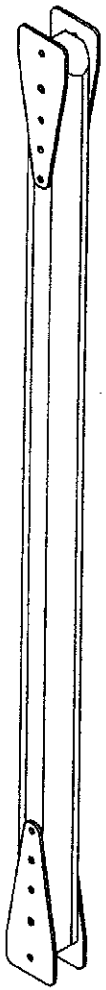


Camel S3 & S4
2 Ea



When building S3 the upper wing center section must set 30. 0" above fuselage when measured vertical from The center line of the fuselage longeron to the C/L of the compression strut

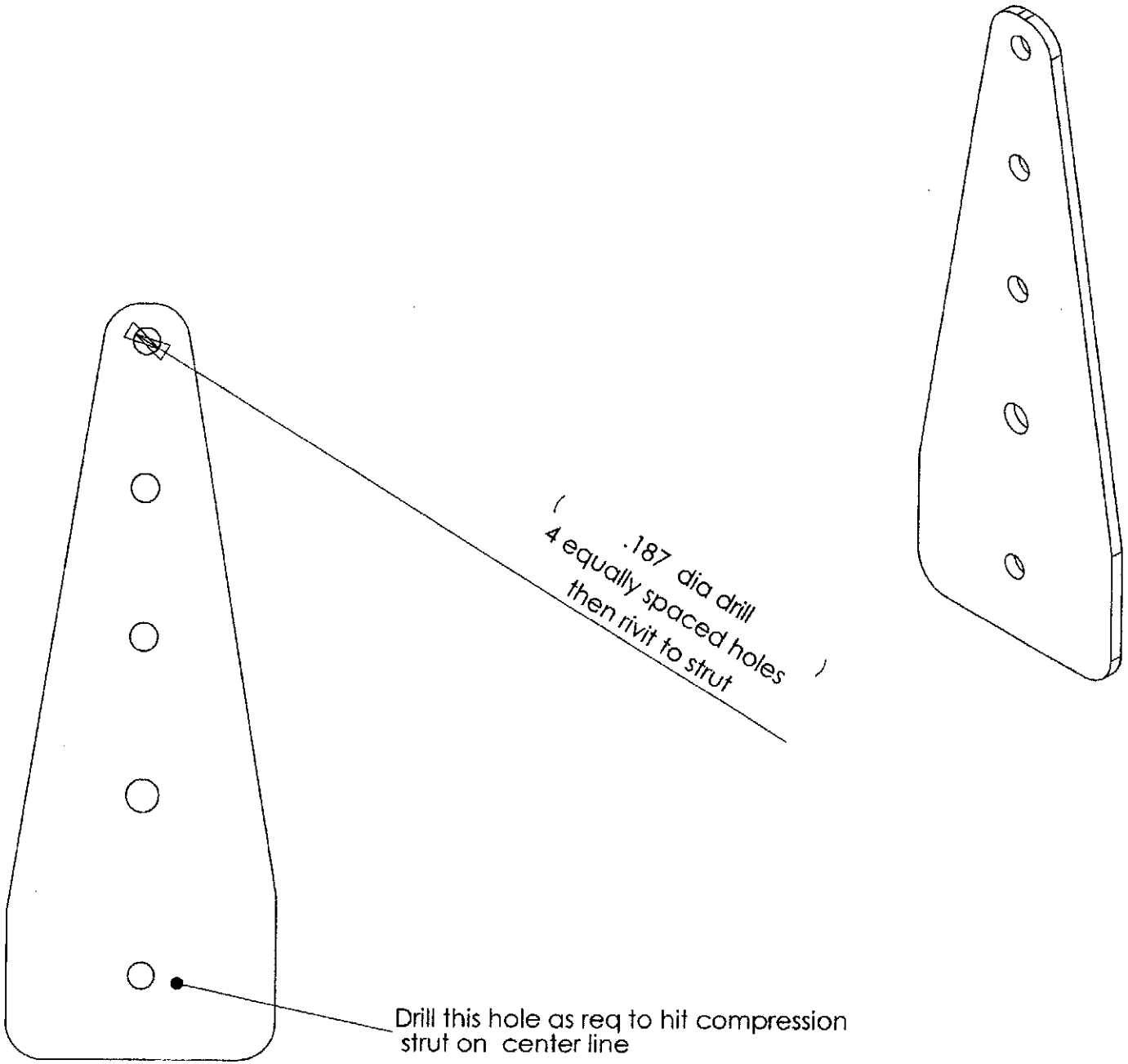
S4 will be built shorter to set angel of incindence



S5 plate
use 3 .187 rivets
& An3-17a for
Wire tang(not Shown)

Camel

S5 plates
32 req



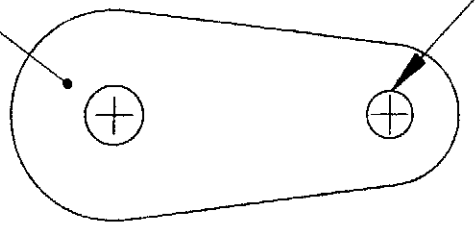
Camel

Use this tang for the side of the cabines and
the outer struts

S6
Single Tang
(16) req

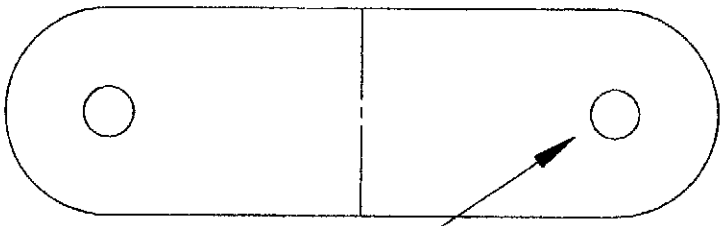
Large end bolts to strut
small end to cable

Drill holes as req



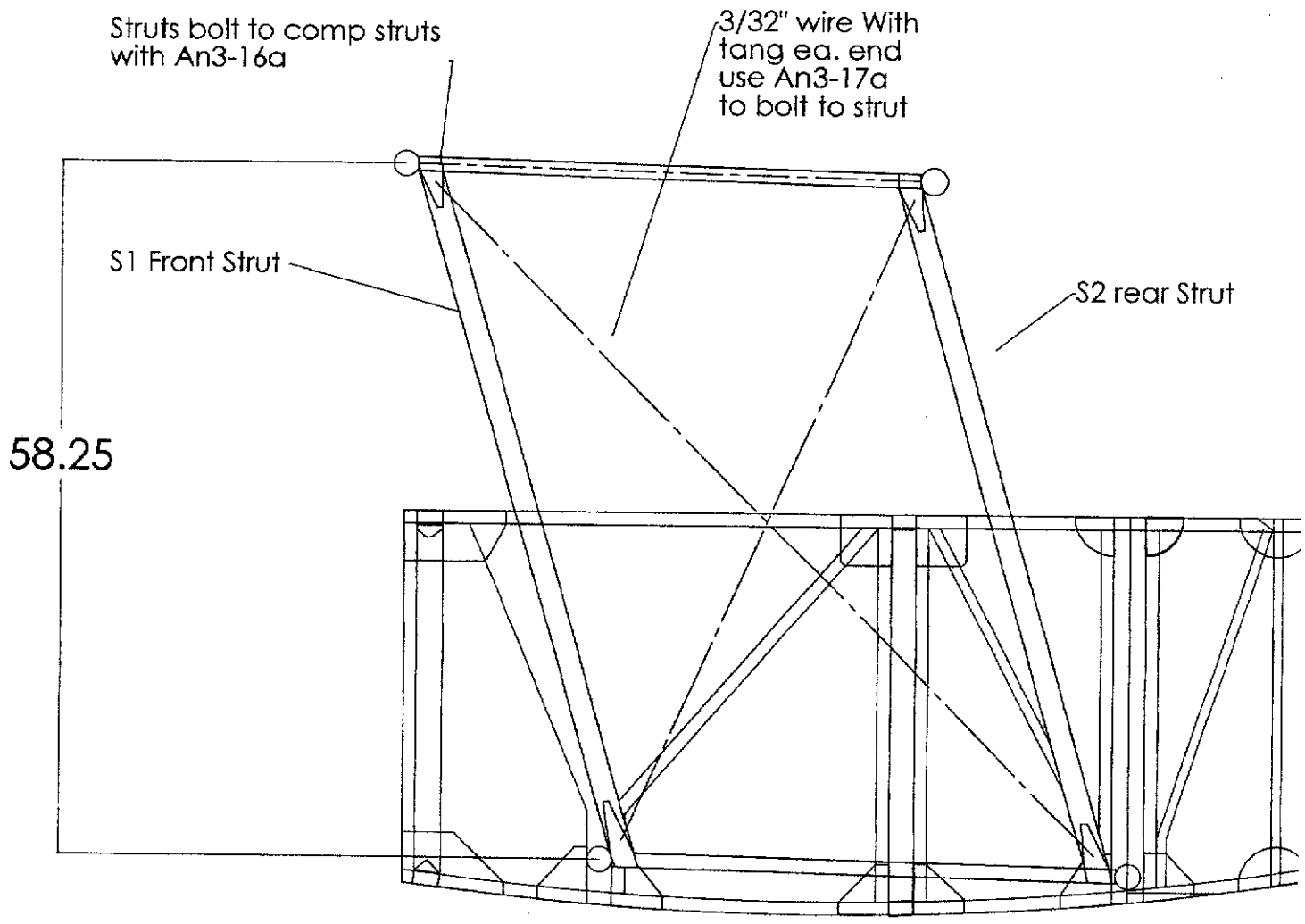
S7 4 req

Use Heavy tang for cross bracing in the front of the cabines

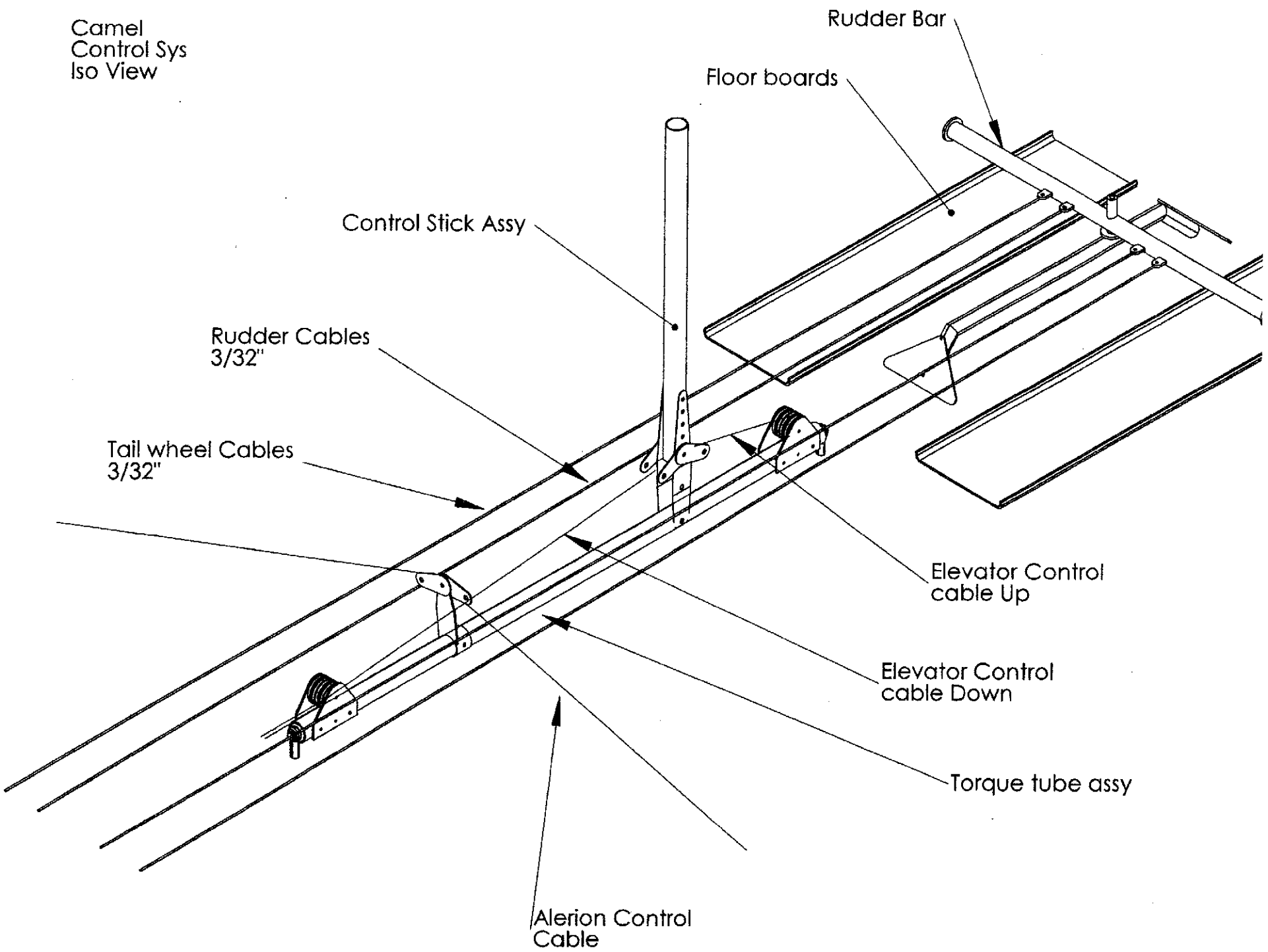


Lower end of this tang bolts thru longeron 7
Cabine strut with An4-17a and retains
engine mount plug The upper tang bolts thru the cabine strut
& the compression strut plug with An4-17a

Camel outer struts side view

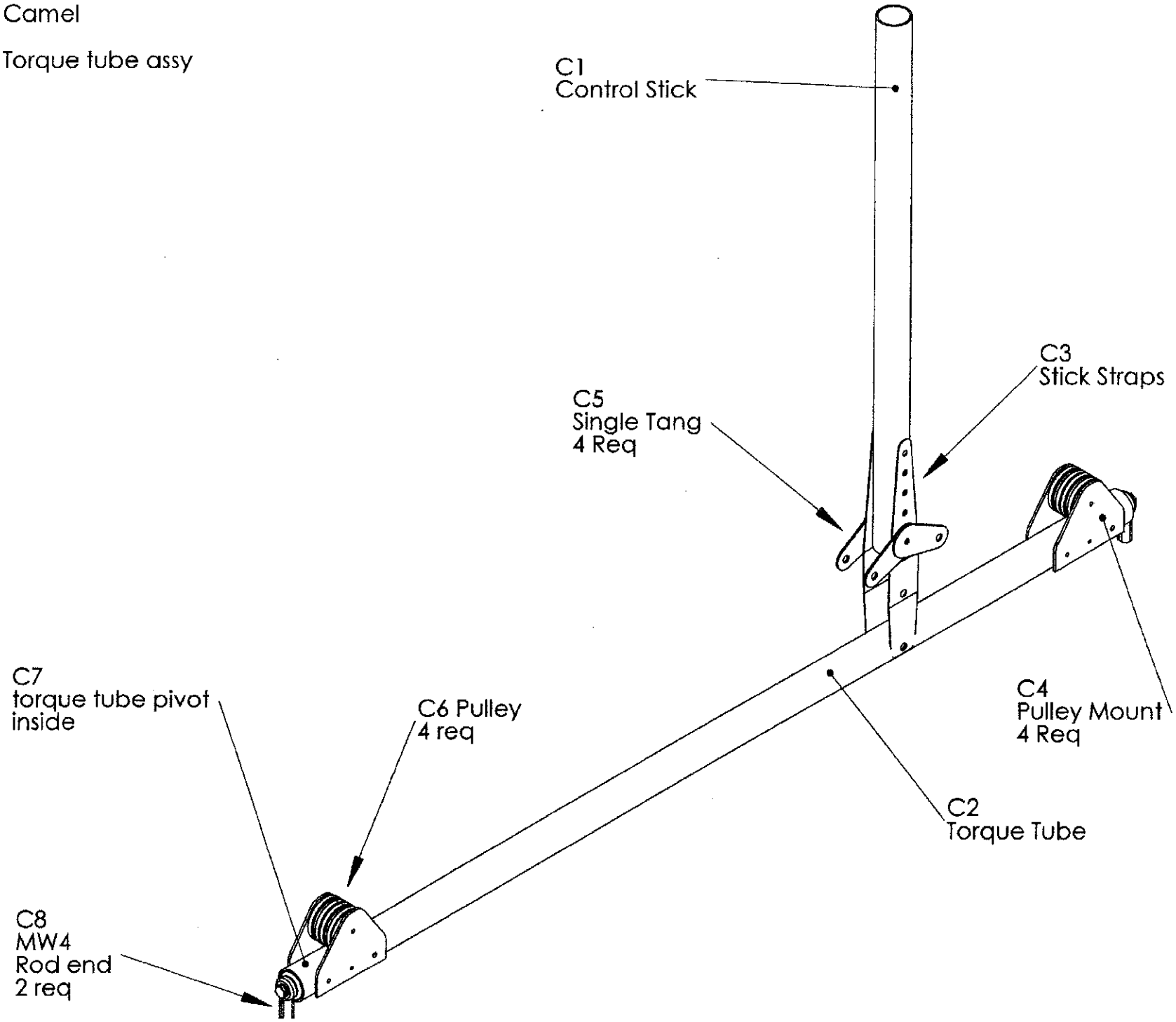


Camel
Control Sys
Iso View



Camel

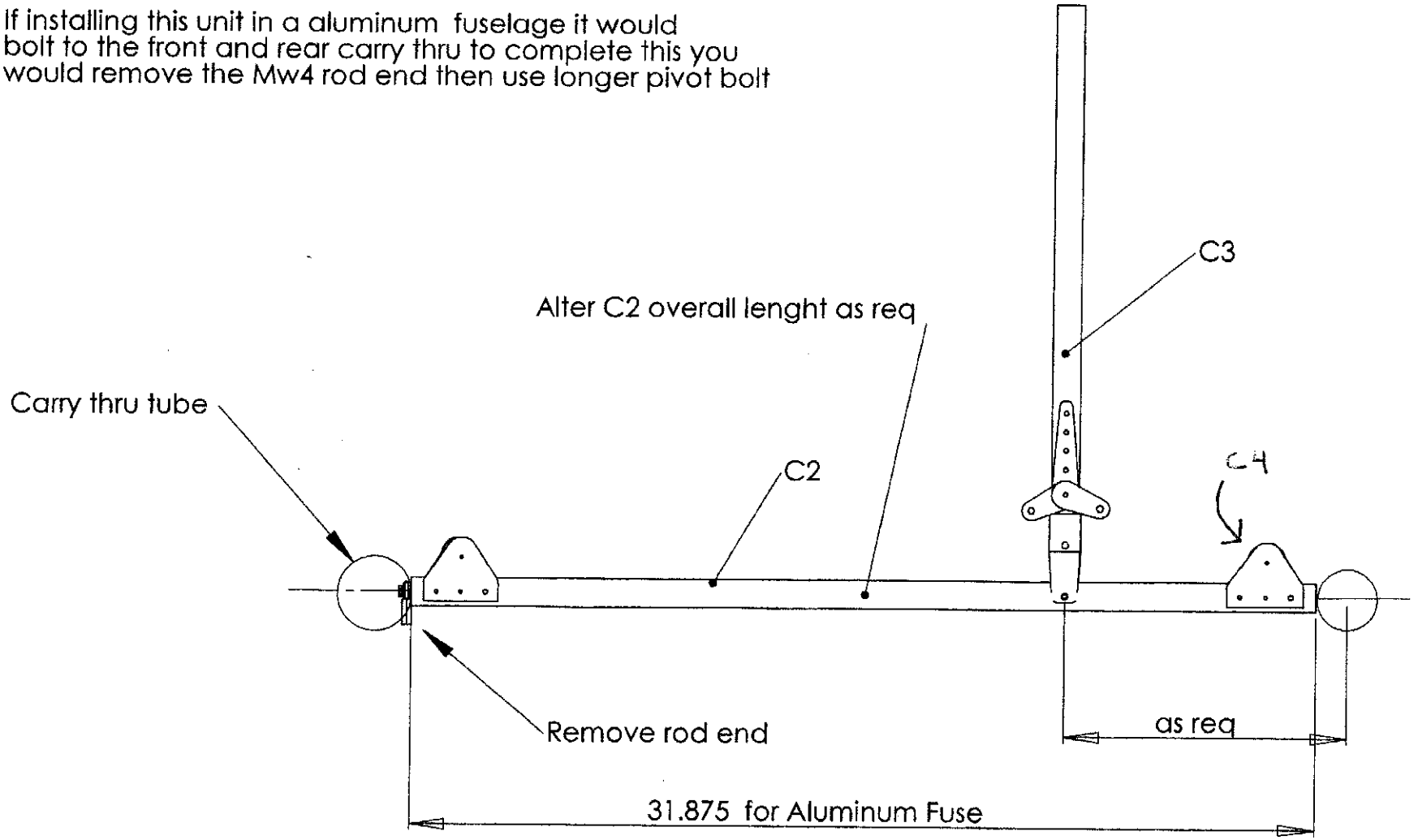
Torque tube assy



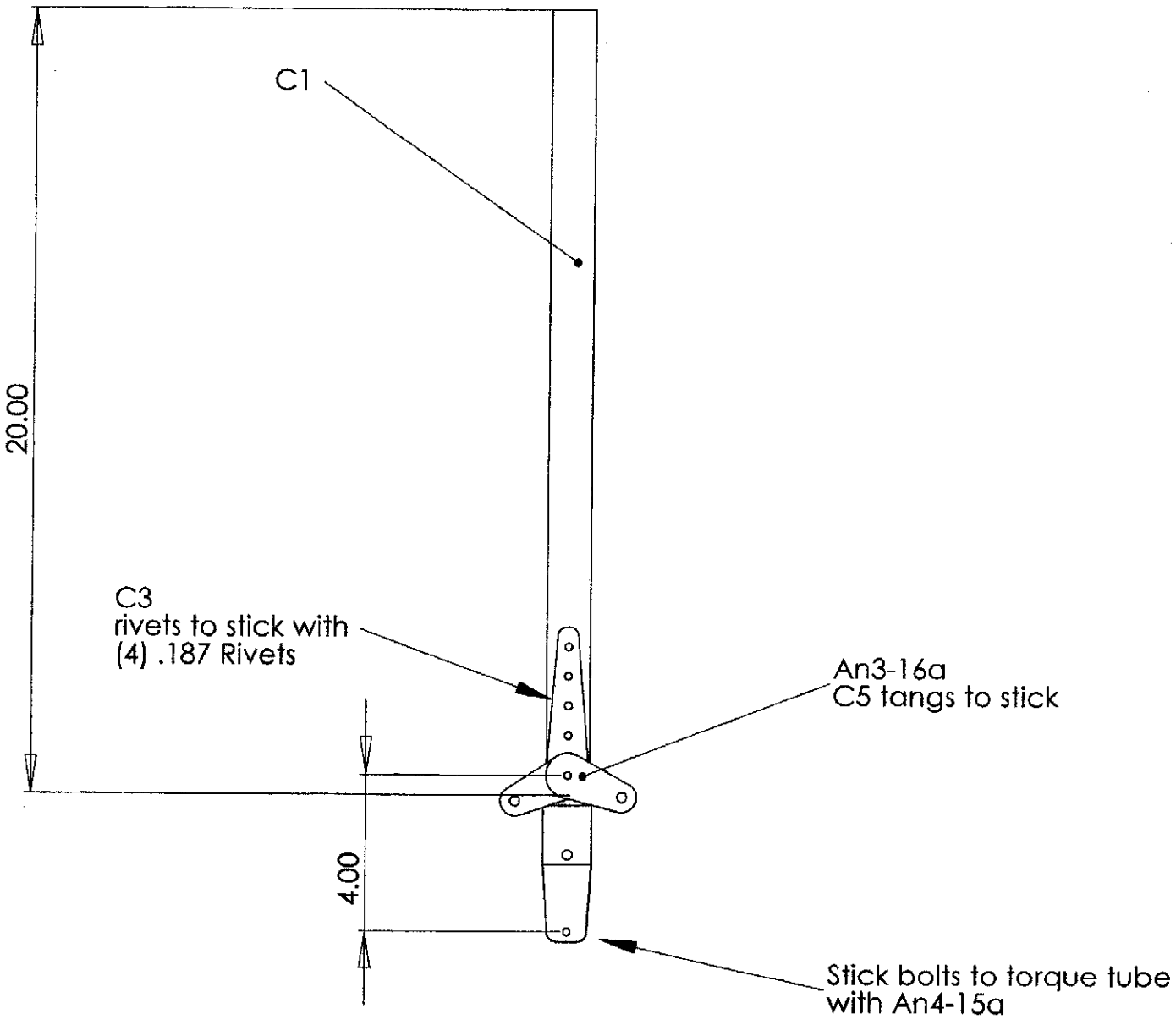
Torque tube assembly shown in for referance

If installing this unit in a welded fuselage the front would bolt to f35 & F38 with Mw4 rod ends

If installing this unit in a aluminum fuselage it would bolt to the front and rear carry thru to complete this you would remove the Mw4 rod end then use longer pivot bolt

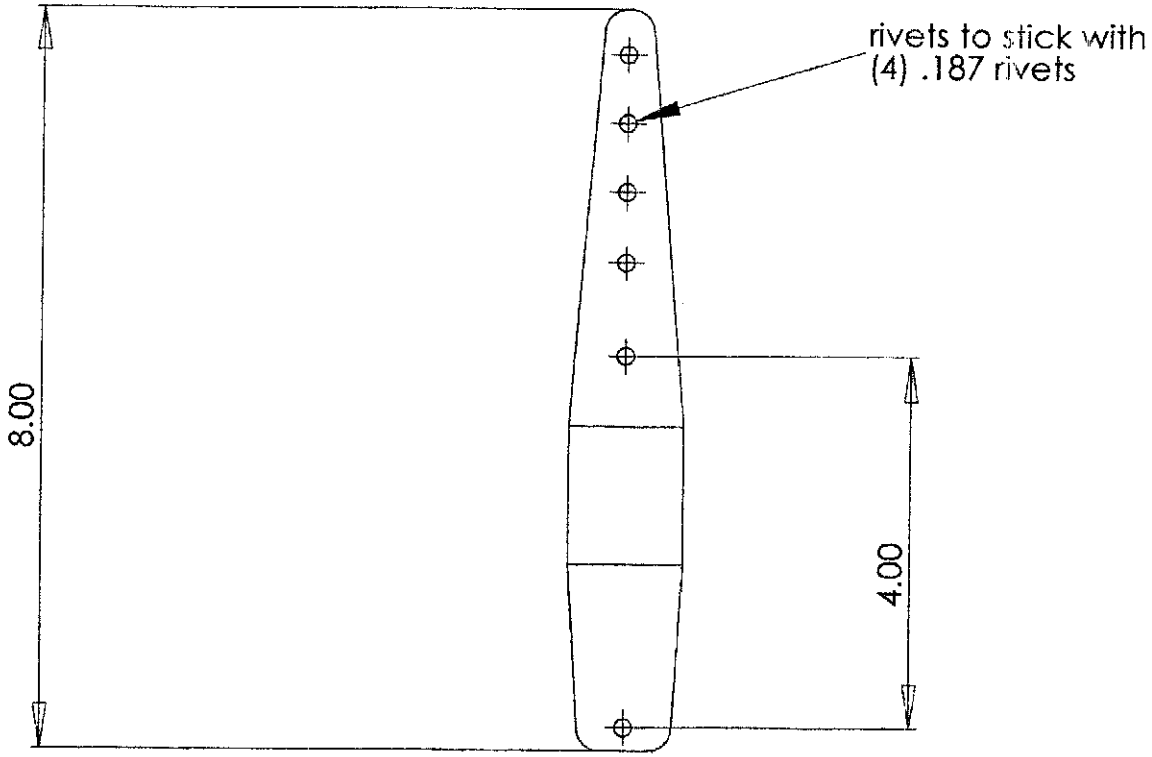


Camel control stick



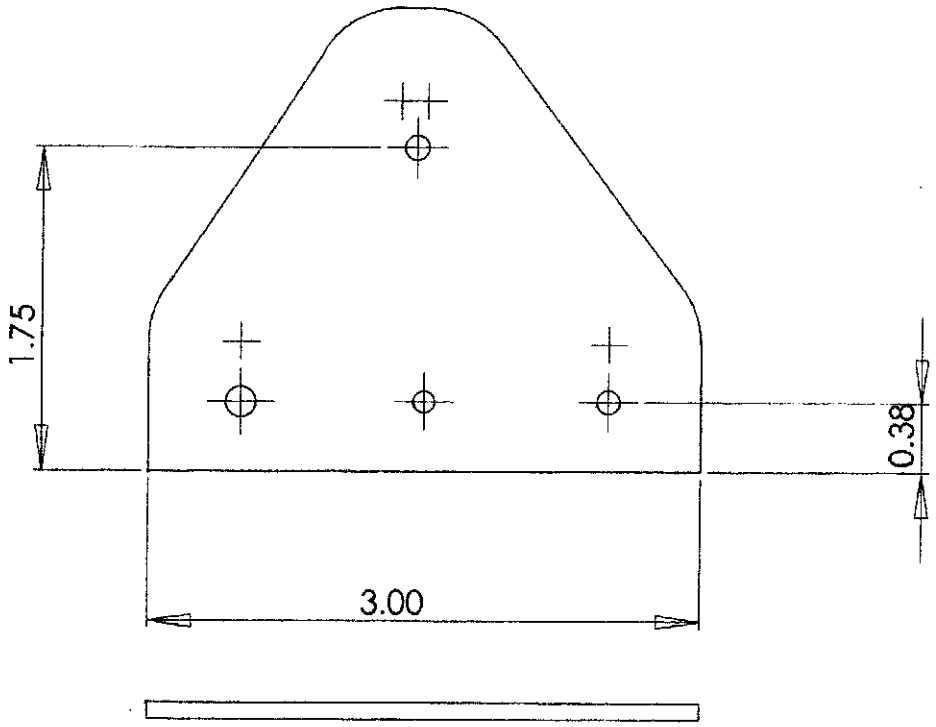
Camel

C3
Control stick straps



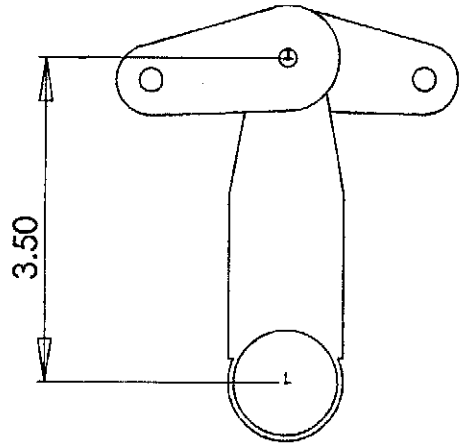
Camel

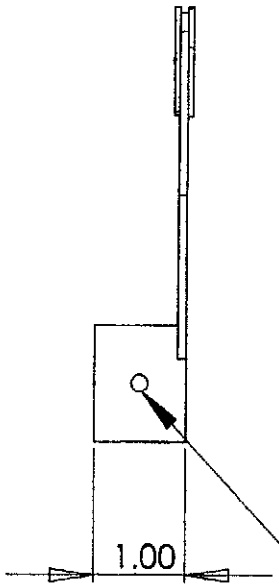
C4
4 Req

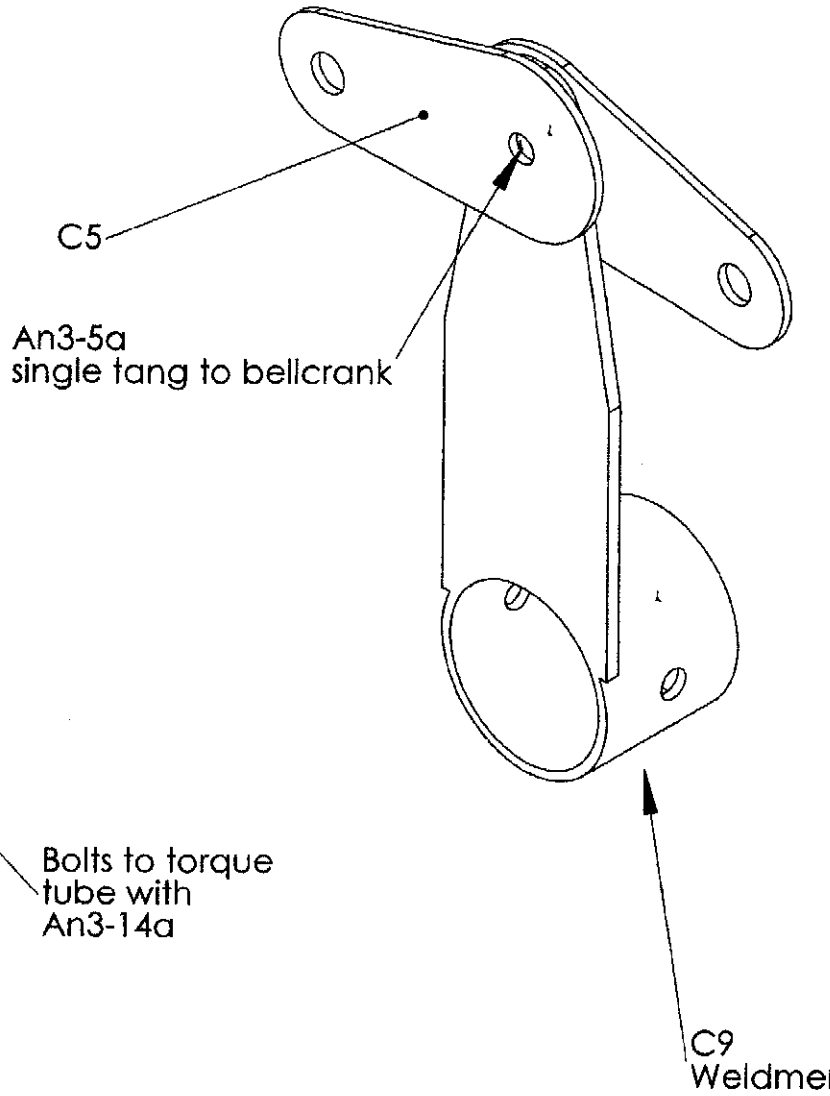


Rivet to torque
with(3) .187 rivets

Alerion Bellcank







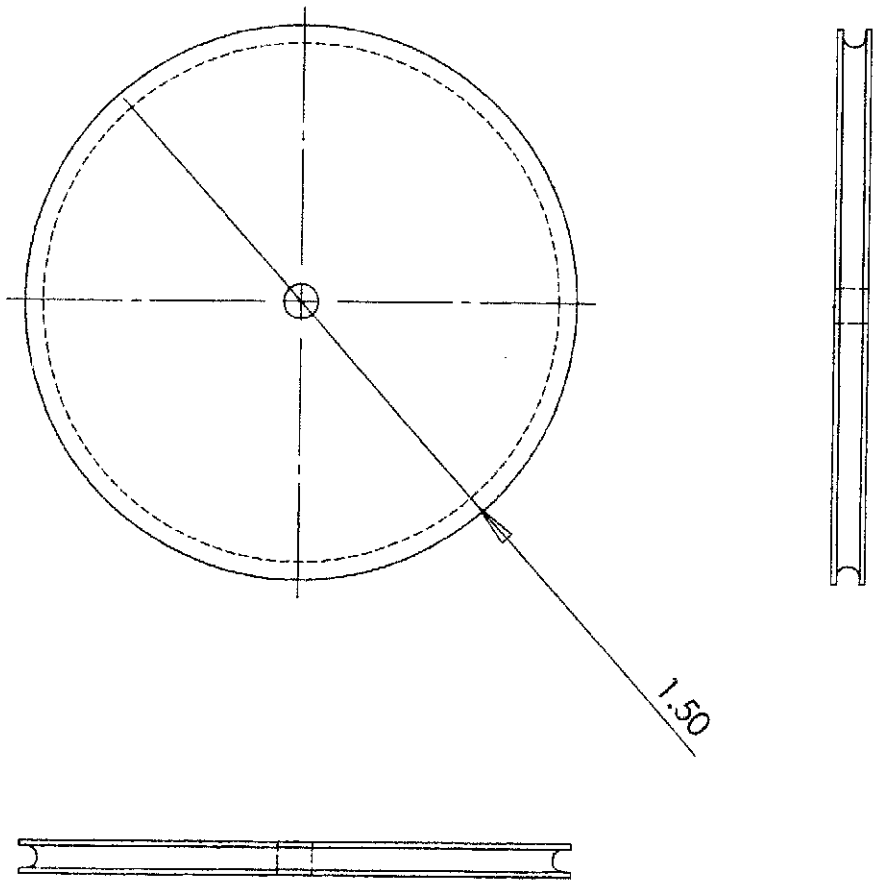
this unit will slide over torque tube and
be moved for and aft to best align
alerion control cables

Camel

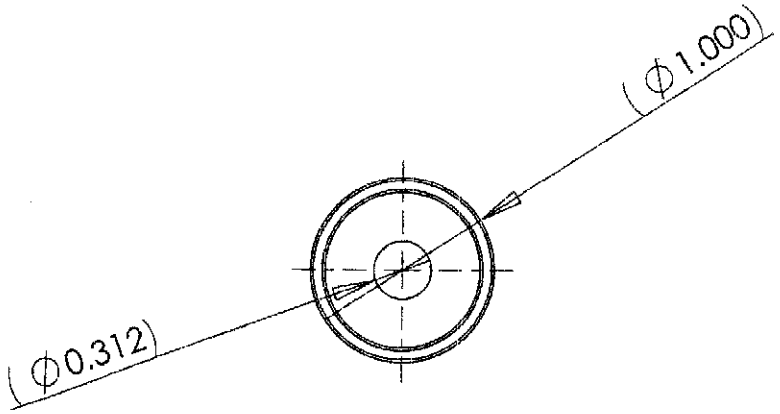
C6

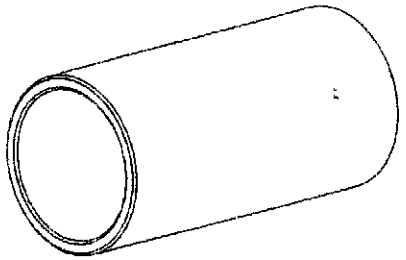
Elevator Control pully

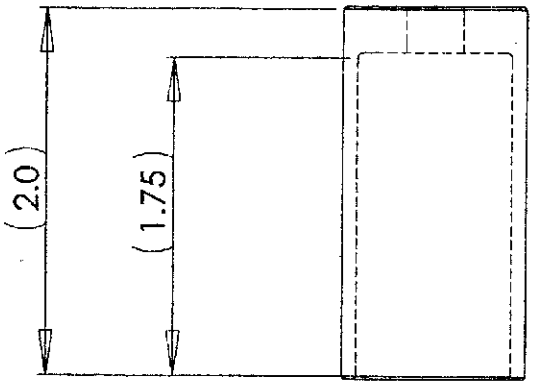
2 Req



Camel



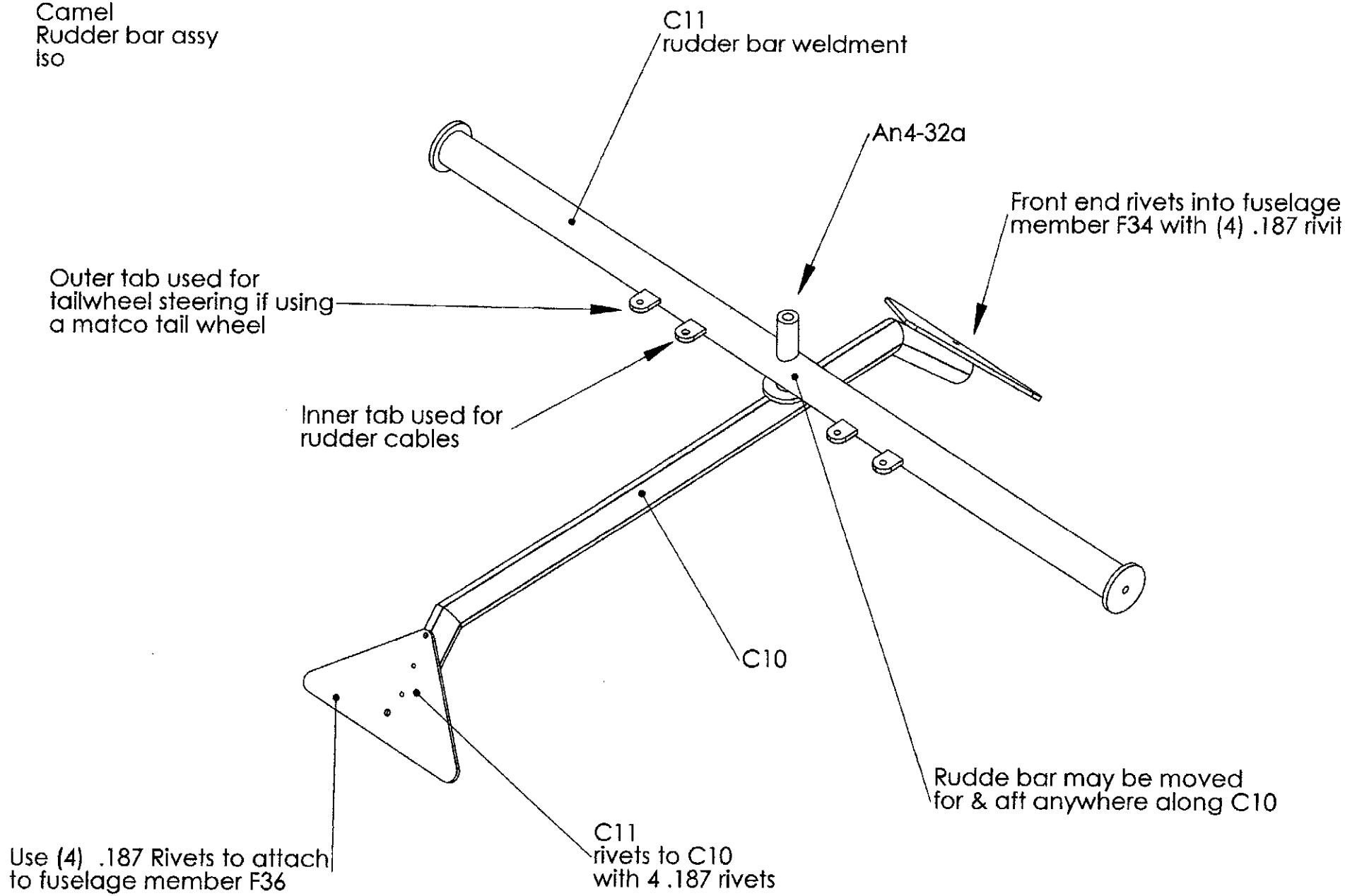




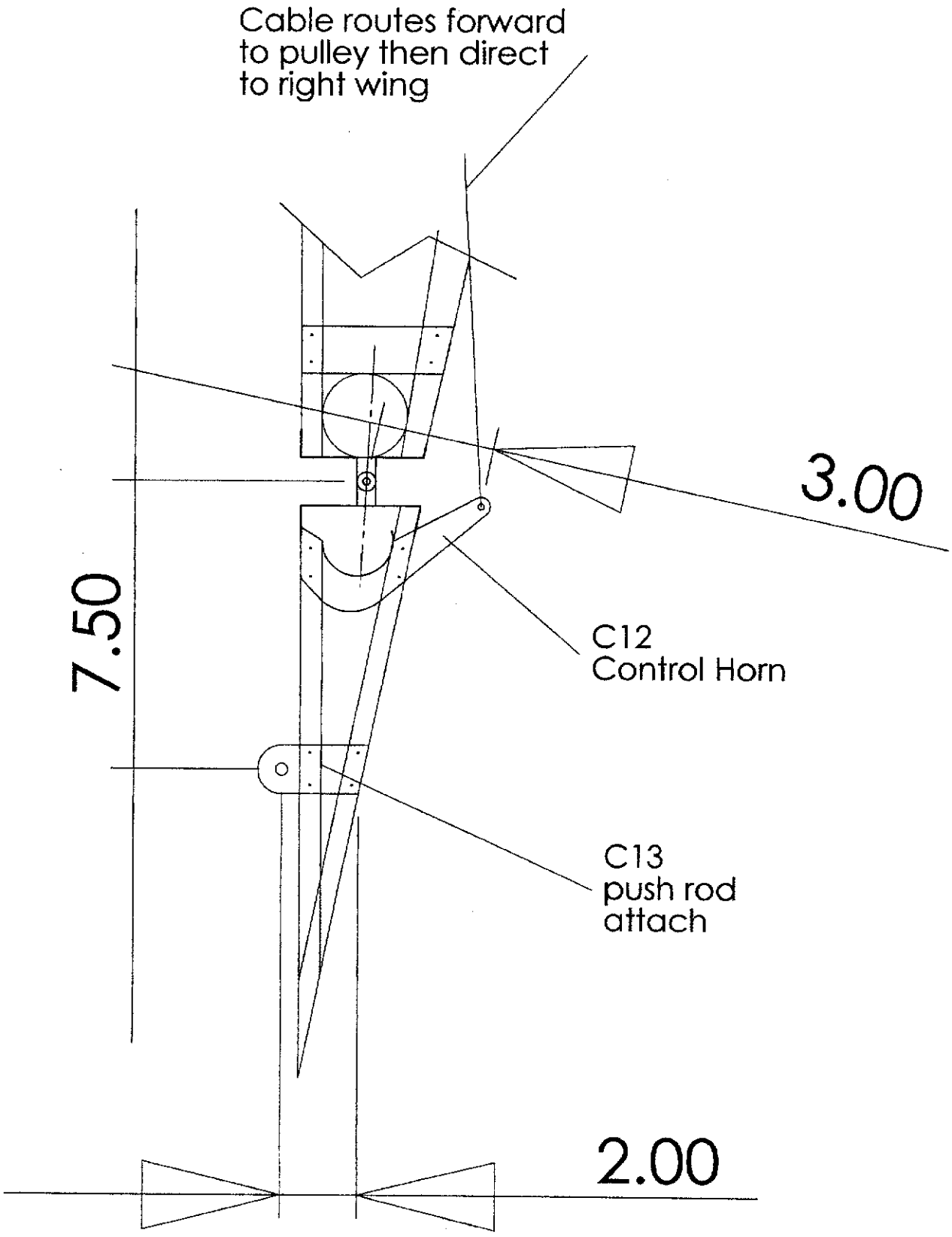
C7
2 req

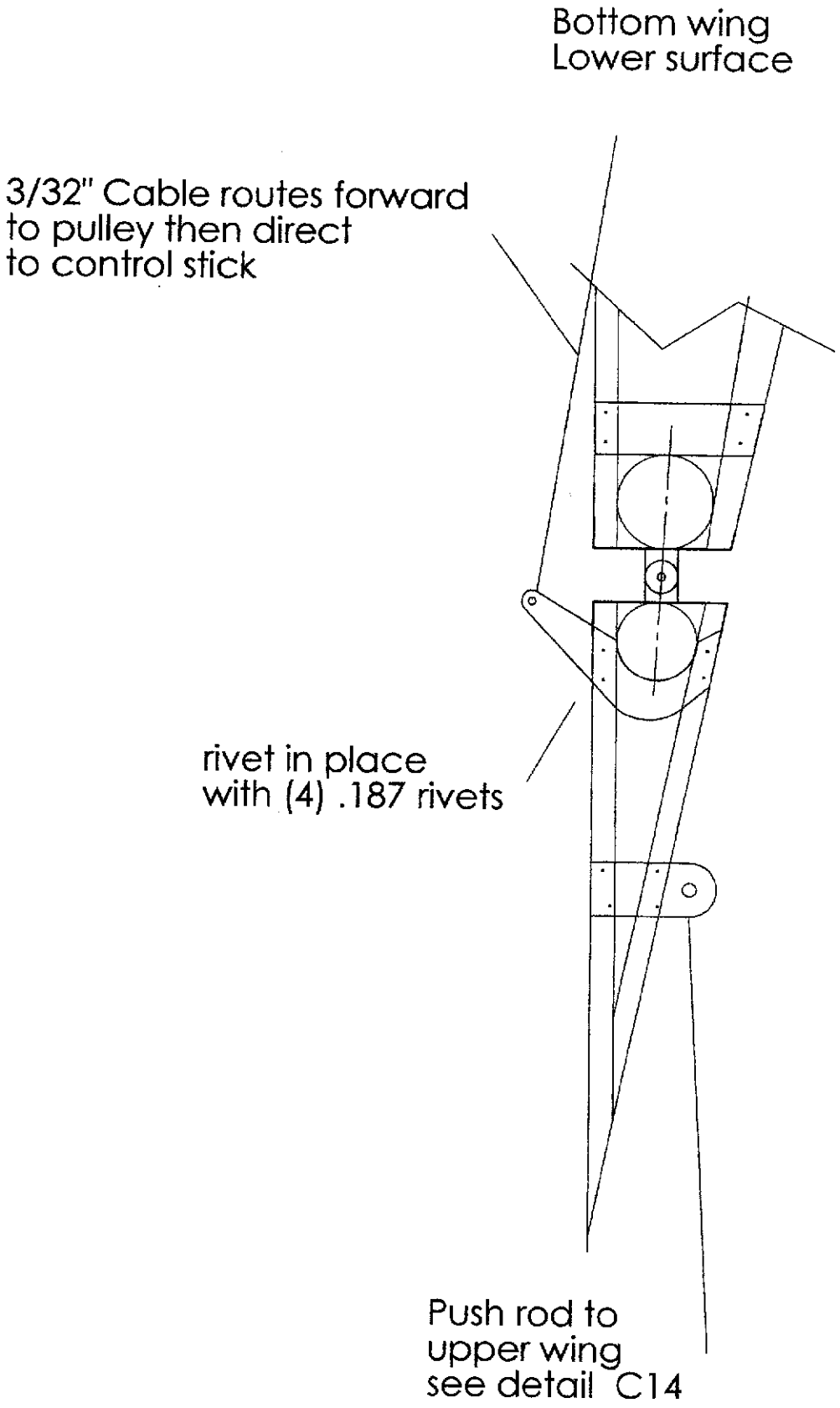
slid into C1 tube then
rivet in place with (4)
.187 rivets

Camel
Rudder bar assy
Iso

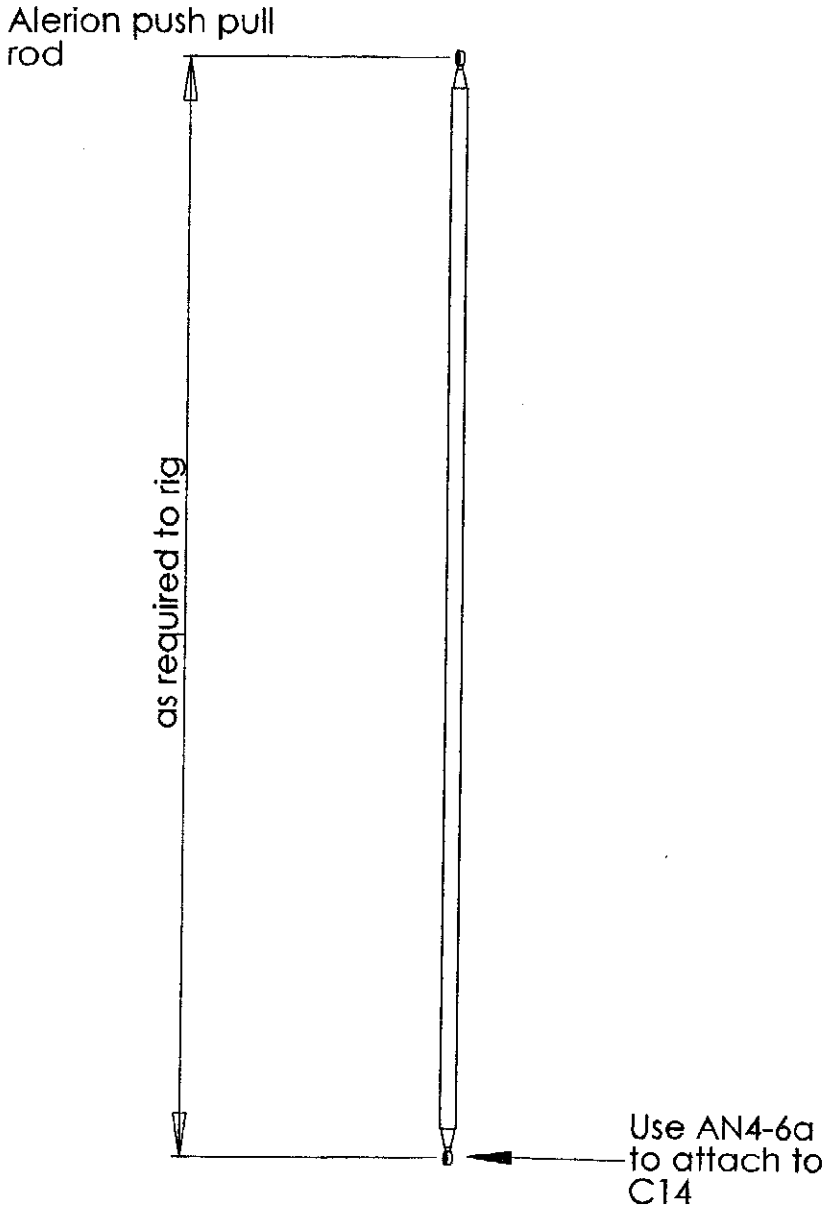


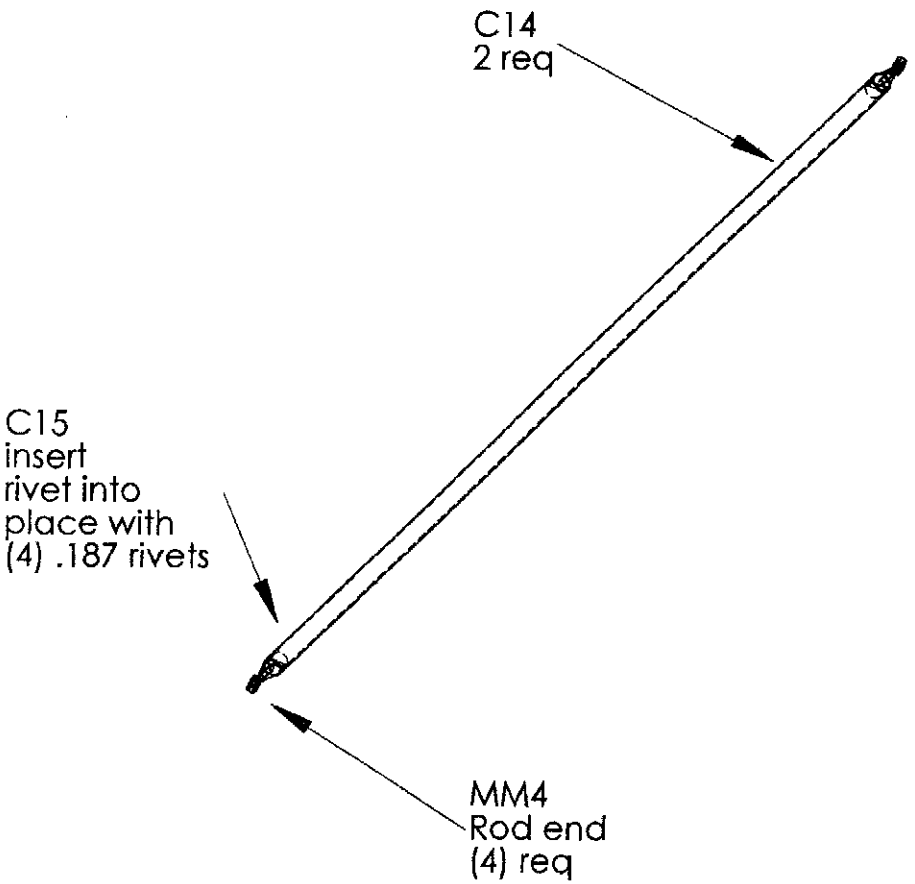
Top left wing
upper surface
shown



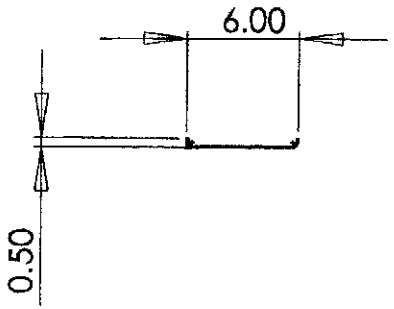

Bottom wing
Lower surface
3/32" Cable routes forward
to pulley then direct
to control stick
rivet in place
with (4) .187 rivets
Push rod to
upper wing
see detail C14

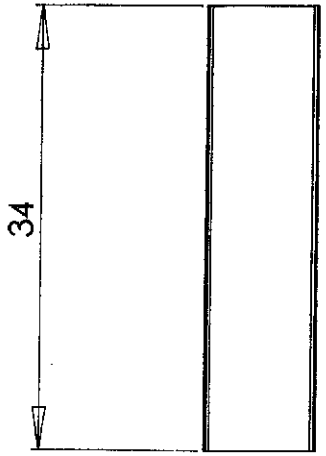
Camel

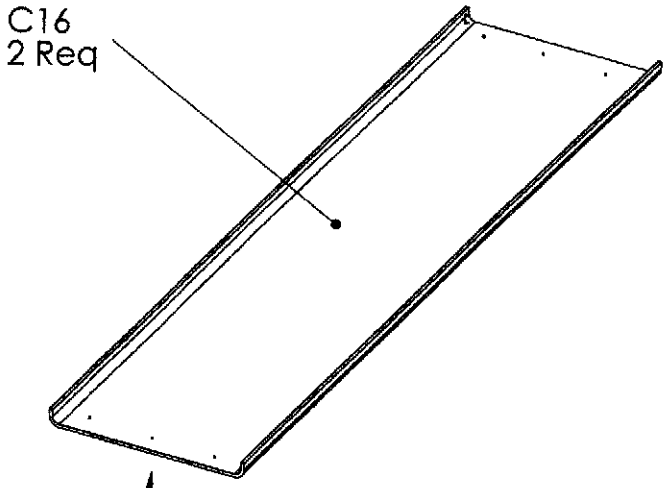

Alerion push pull rod
as required to rig
Use AN4-6a to attach to C14


C14
2 req
C15
insert
rivet into
place with
(4) .187 rivets
MM4
Rod end
(4) req

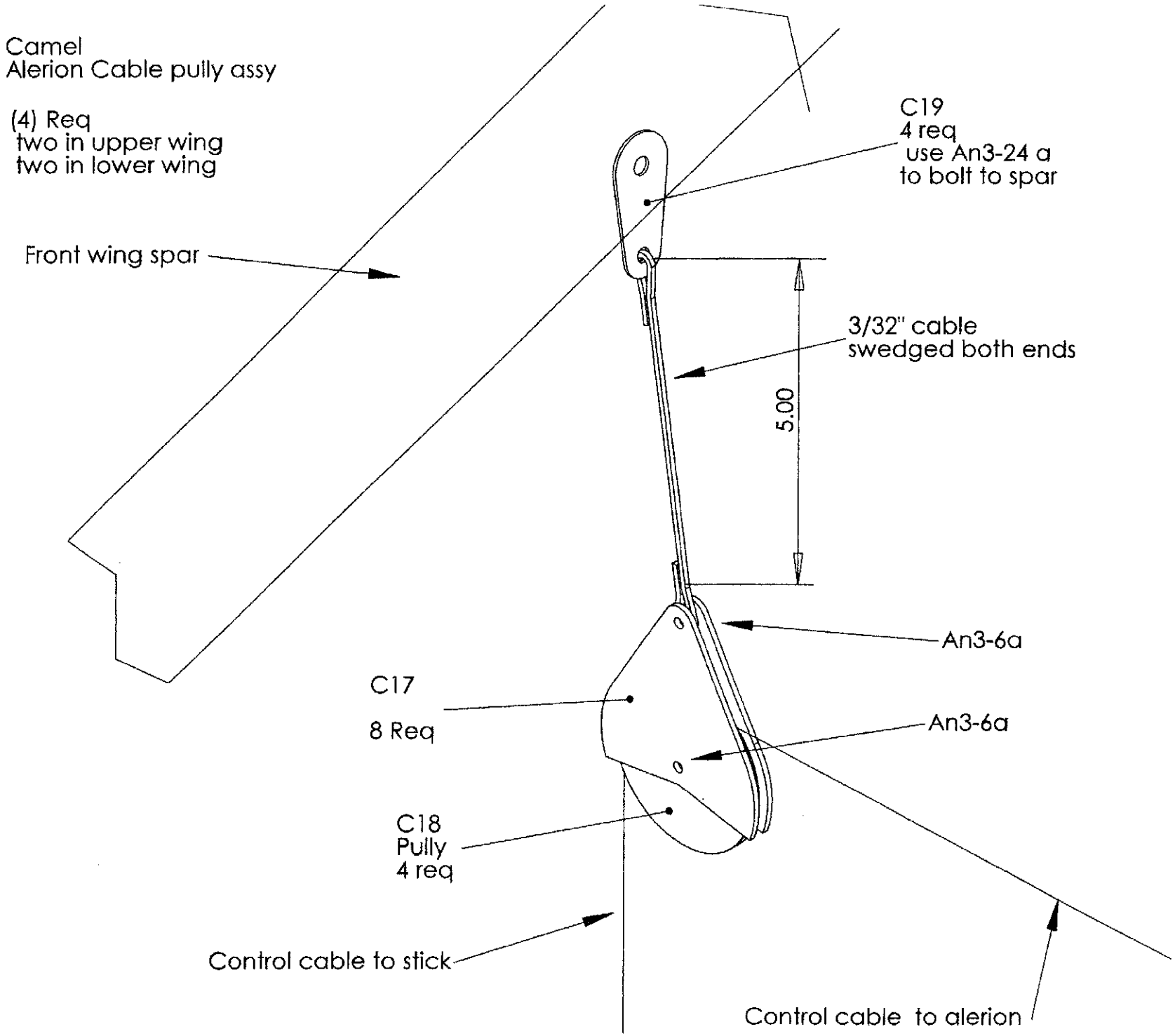
Camel
Floor Boards



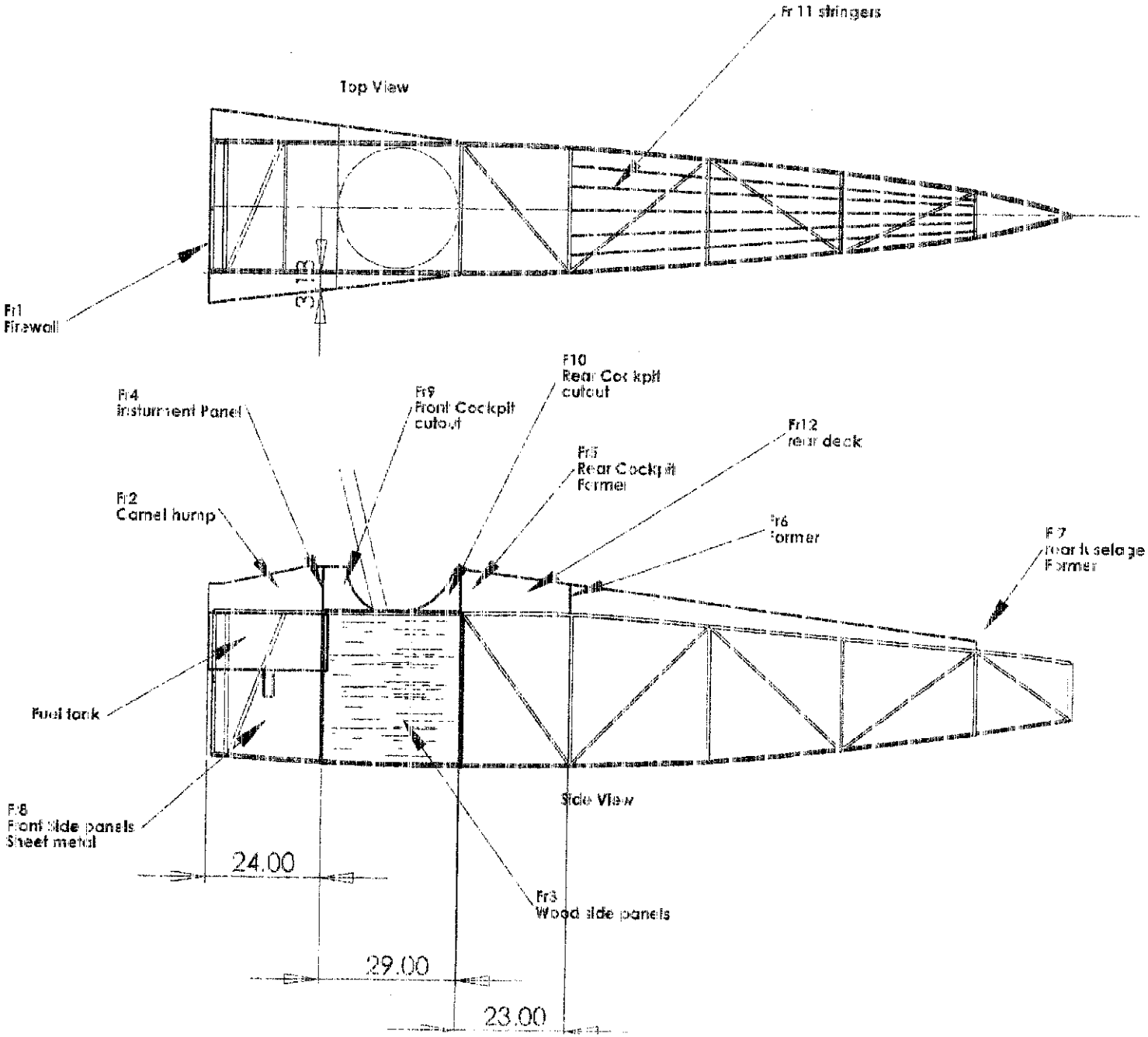




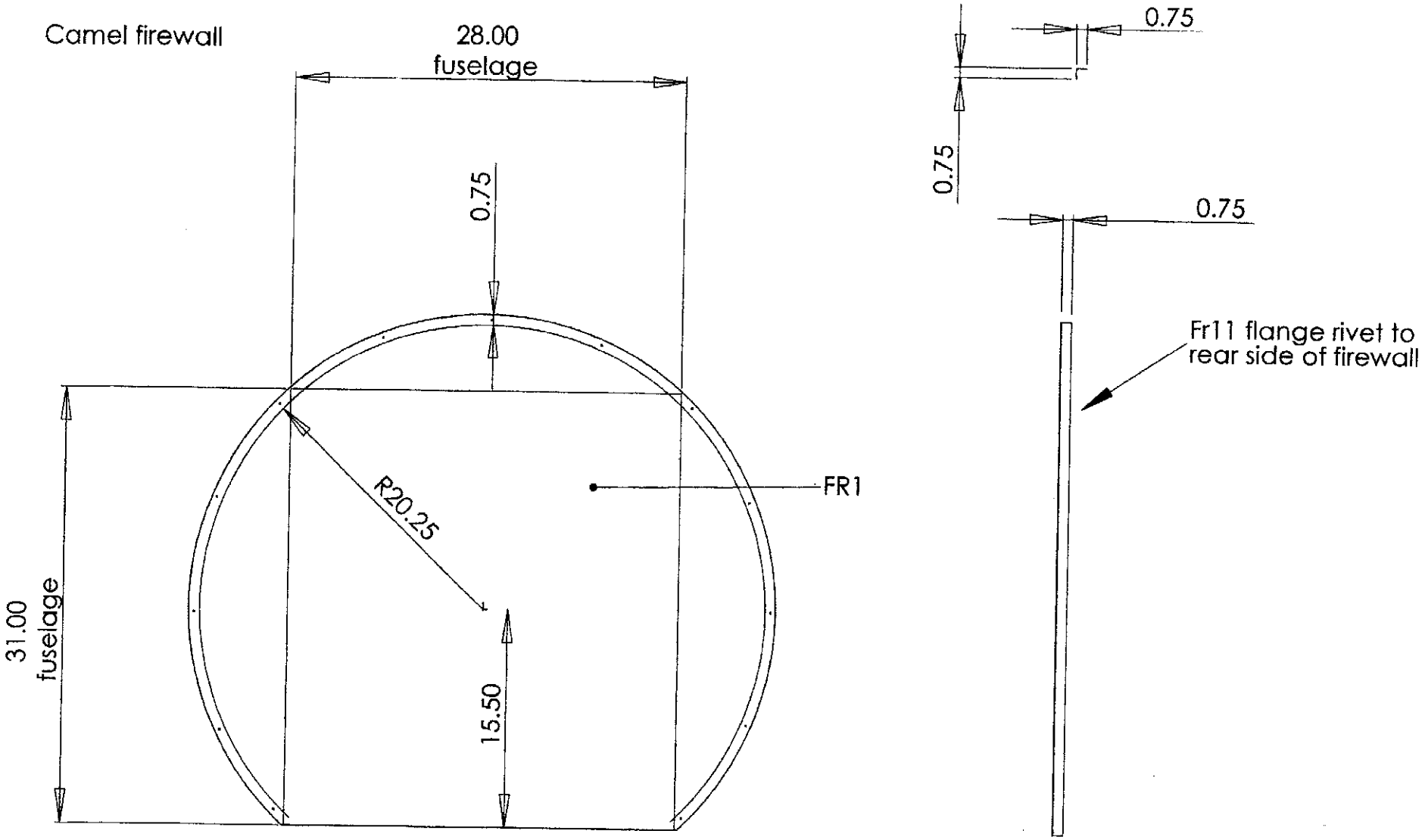
Rivets to fuselage cross members
with (8) .187 rivets


Camel
Alerion Cable pully assy
(4) Req
two in upper wing
two in lower wing
Front wing spar
C19
4 req
use An3-24 a
to bolt to spar
3/32" cable
swedged both ends
5.00
An3-6a
C17
8 Req
An3-6a
C18
Pully
4 req
Control cable to stick
Control cable to alerion

Cornel Firewall & Formers

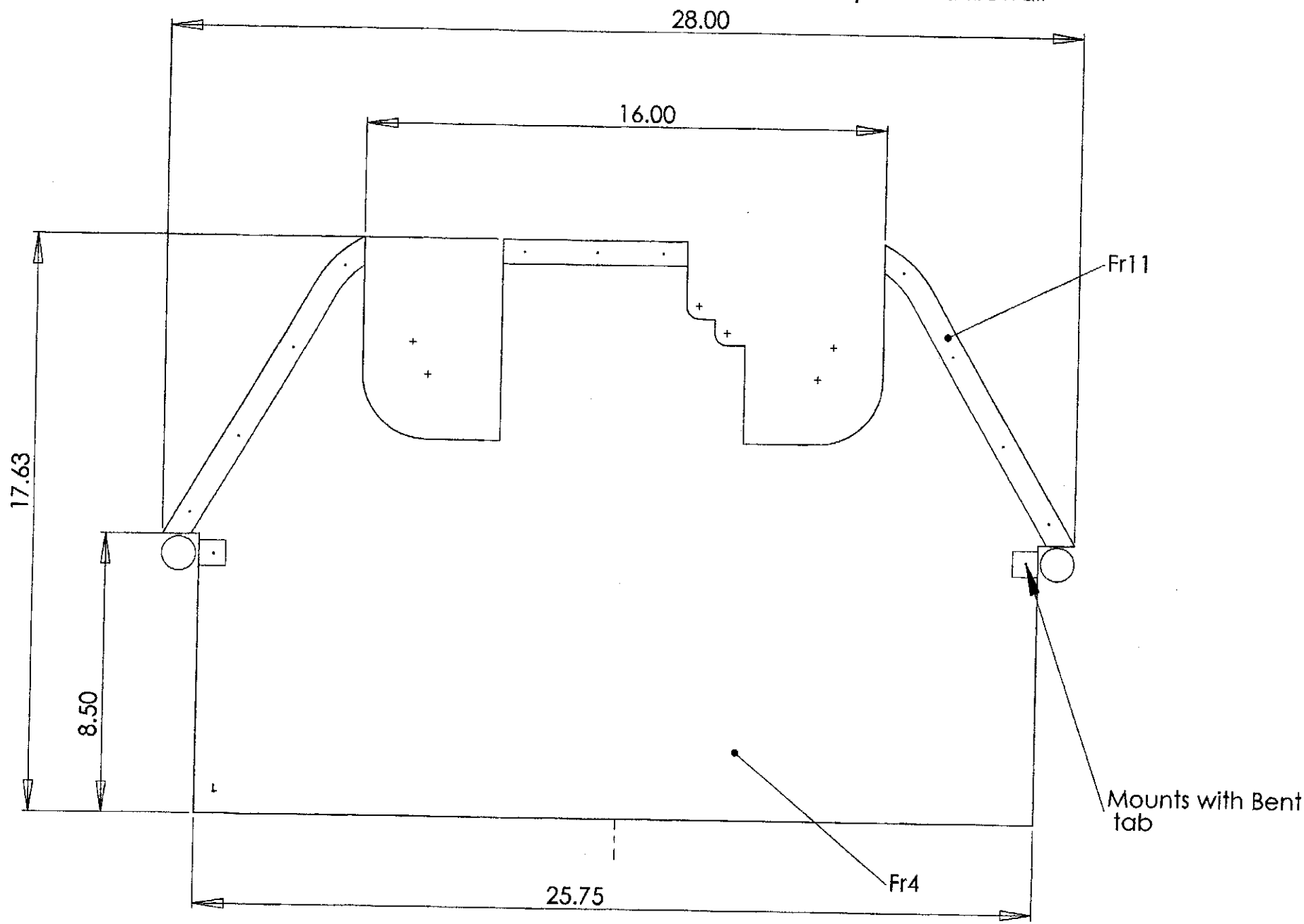


Camel firewall



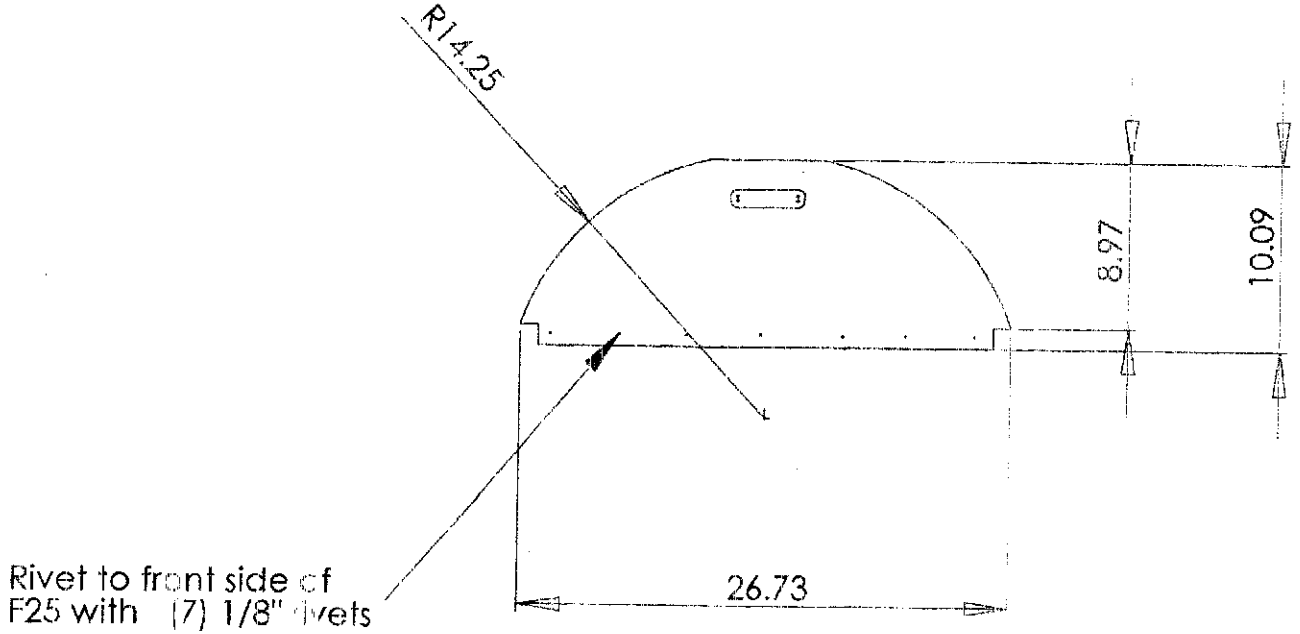
Camel insturment Panel

This panel locates
2 4" behind firewall



Carnel

FR5



Former behind cockpit

Steps for installing firewall and formers on Camel

This project is built in place the objective is to have nice visual lines the actual dimensions will have little to no effect on the flying quality of the aircraft this portion of the project should take around 32 hours to complete

First Install Firewall with two top edges tangent to longeron
This will allow firewall to extend 4.75 " above top of fuselage

Second install Instrument panel 24" behind firewall this will set 9.125 " above the fuselage

Third Install Fr5 Rear Cockpit former on F25 fuselage member

Fourth Install Fr6 former on F27 fuselage member

Fifth install Fr7 former ½" in front of horizanol stabilizer

Sixth install Fr11 stringers in between Fr6 an Fr7 formers be inserting a dowel rod inside the tubing then install a wood screw thru the former from the outside evenly space these strings on each end. Stringers will lie on top of Fr6 for support

Seventh Install Fr3 Wood Side formers The top, bottom & rear edge will fit flat on the fuselage the front will be pushed out by 3" allow top edge to run up above the longeron by 1"

Eighth install Fr8 front side panels also allow top edge to run up above the longeron by 1"

Ninth install Fr12 over the rear stringers and rivet in place

Tenth install Fr10 rear cockpit cutout rivet this on top of Fr12 and attach to side panels with small wood screws along the bottom edge The front edge of this part will end at the cabine strut.

Eleventh install Fr9 Front cockpit cutout rivet front edge to flange installed on instrument panel & lower edge to wood side panel

The final step is to make a 3D cardboard pattern of the camel hump then cut it so that it will lay flat use this flat pattern to make the final part. When this part is complete it will attach at the firewall then cap the instrument panel and lap over the side panels.