

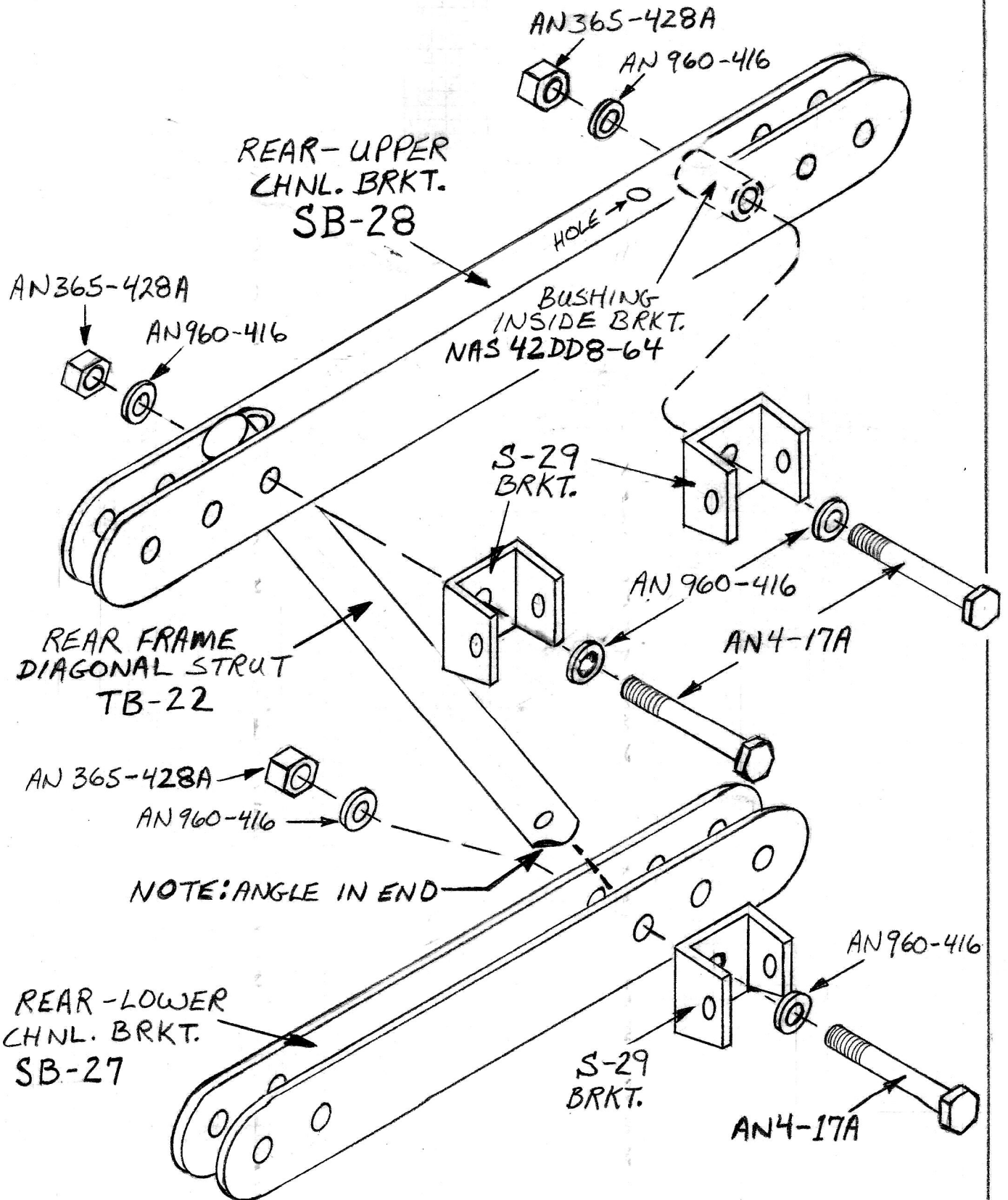
# **KASPERWING**

## **180-C**

### **ASSEMBLY INSTRUCTIONS**

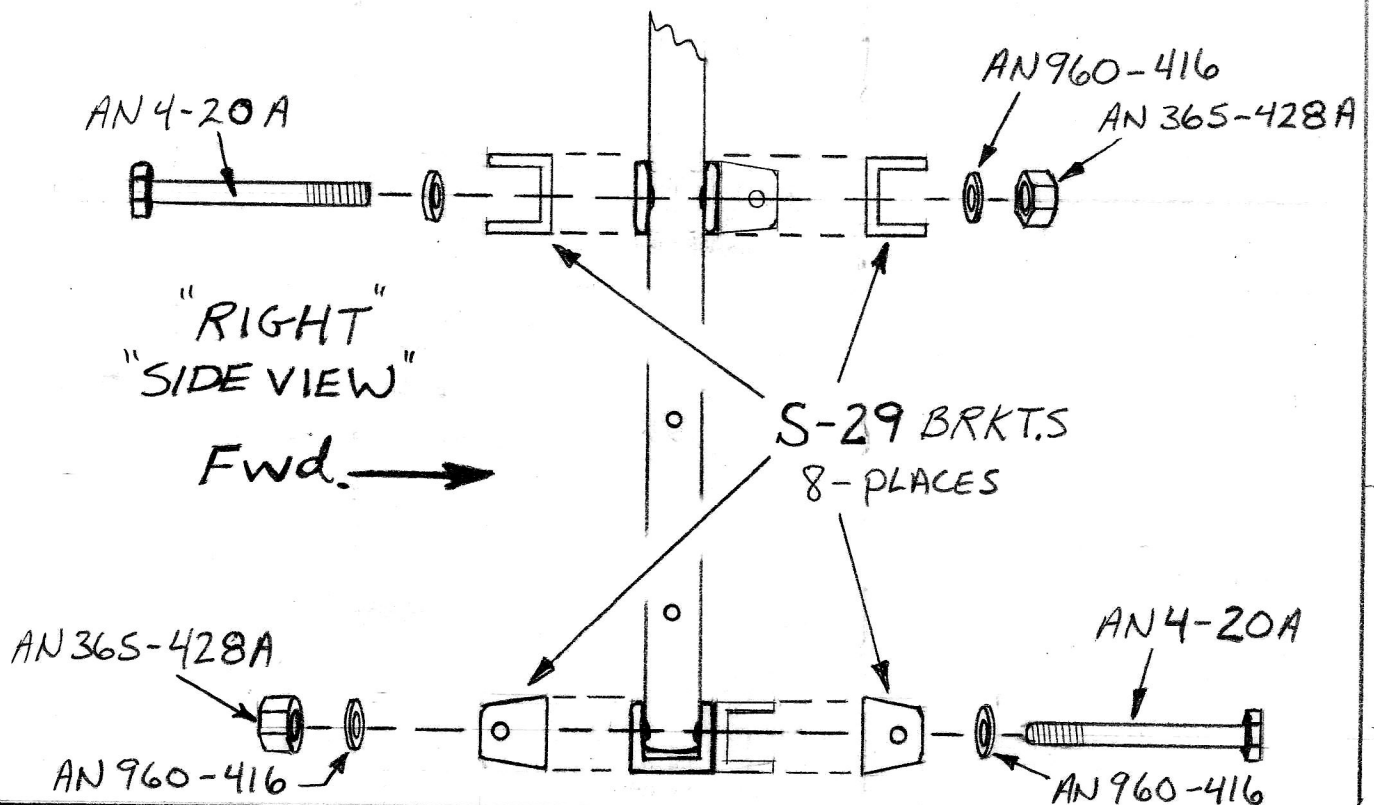
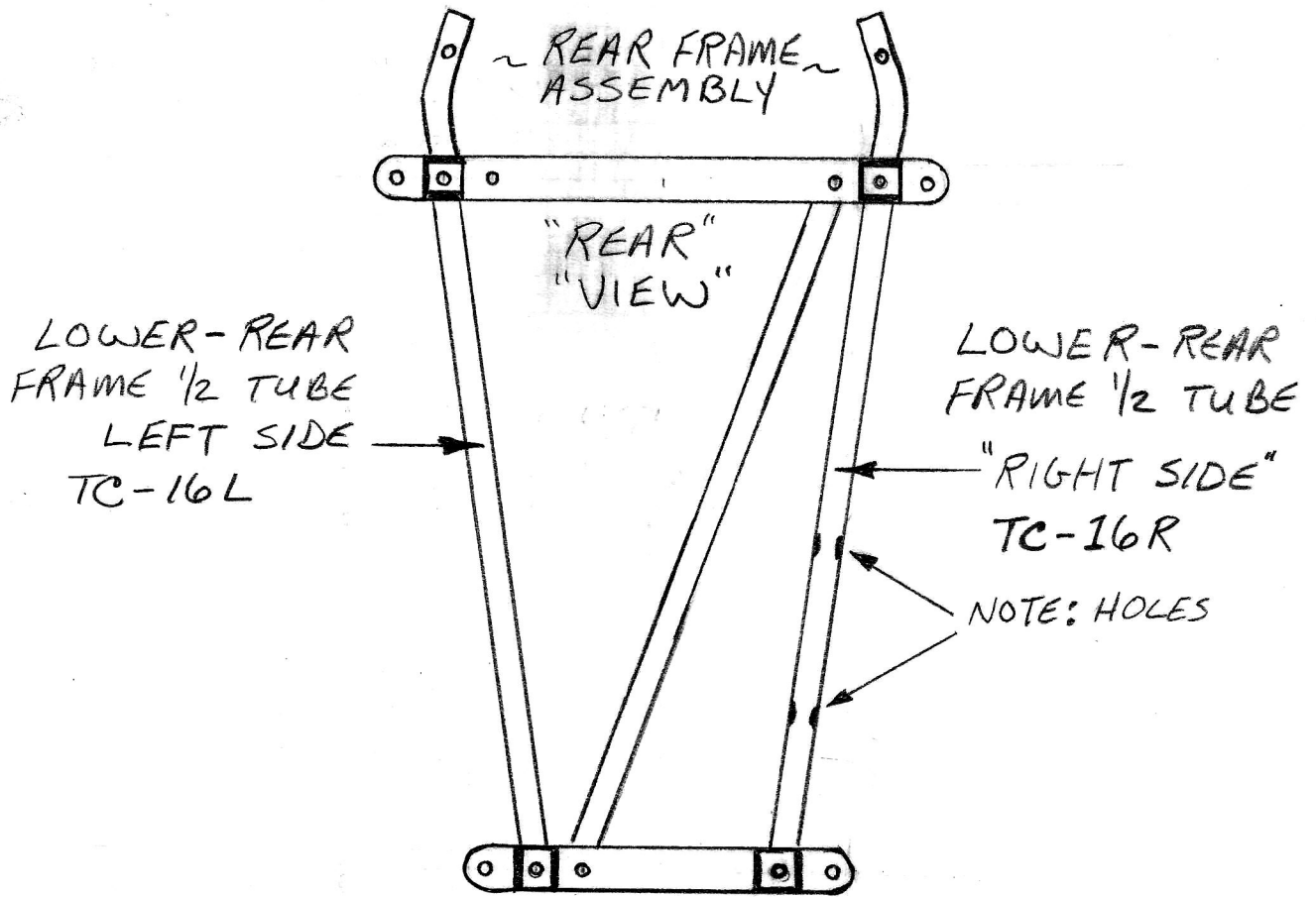
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**1.1** BEGIN WITH CONSTRUCTION OF LOWER-REAR FRAME ASSEMBLY BY ATTACHING CHANNEL BRKTS. AND REAR FRAME DIAGONAL TOGETHER. LEAVE ALL NUTS A LITTLE LOOSE FOR NOW.

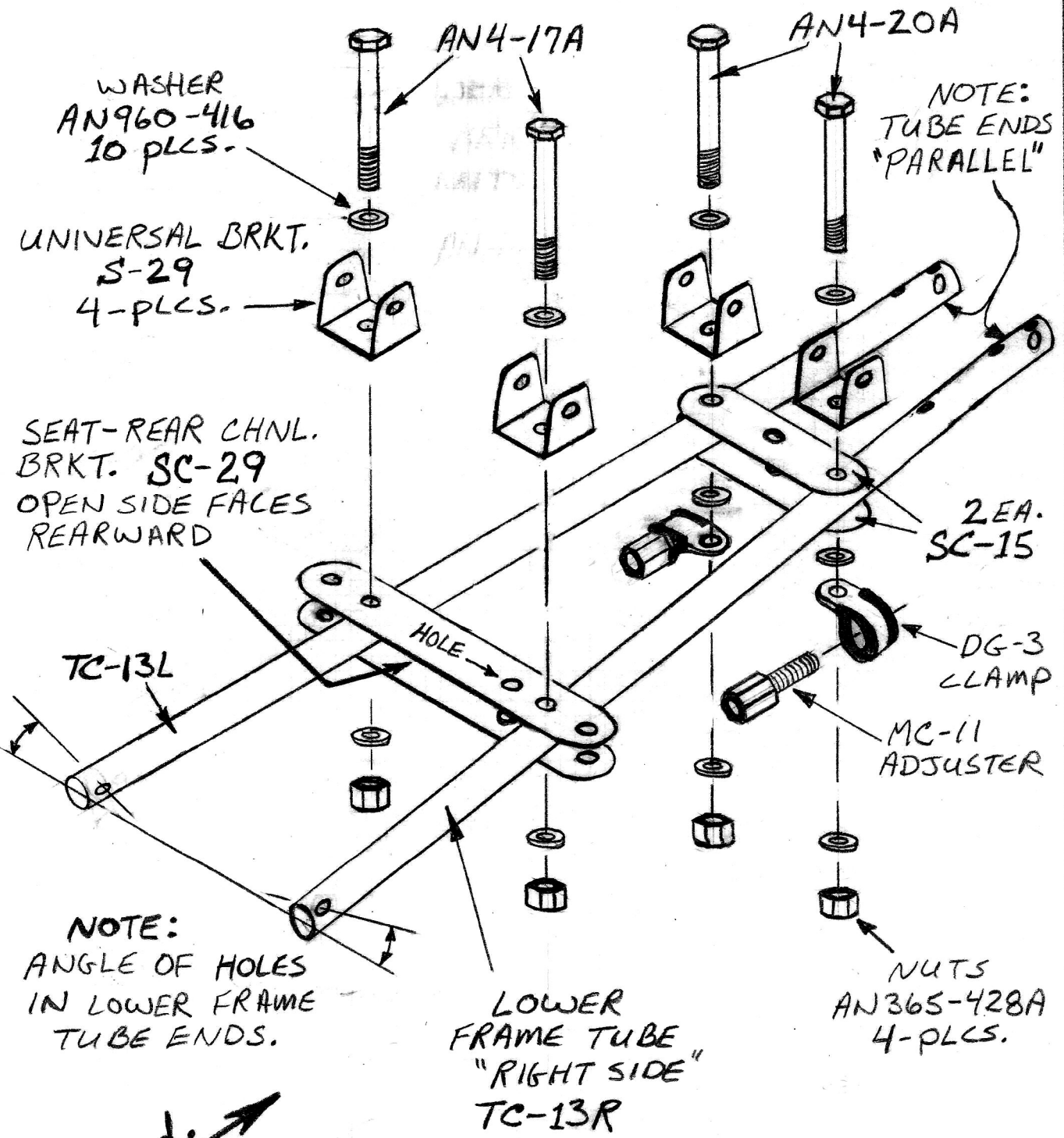




1.2 ATTACH LOWER-REAR FRAME HALF TUBES TO REAR FRAME ASSEMBLY WITH PROPER BRKTS AND HDWR. AS SHOWN. LEAVE NUTS A LITTLE LOOSE.

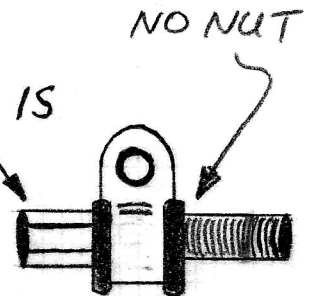


1.3 MAKE UP A LOWER FRAME ASSEMBLY BY ATTACHING TUBES AND BRKTS TOGETHER WITH PROPER HARDWARE. LEAVE ALL NUTS A LITTLE LOOSE FOR NOW.

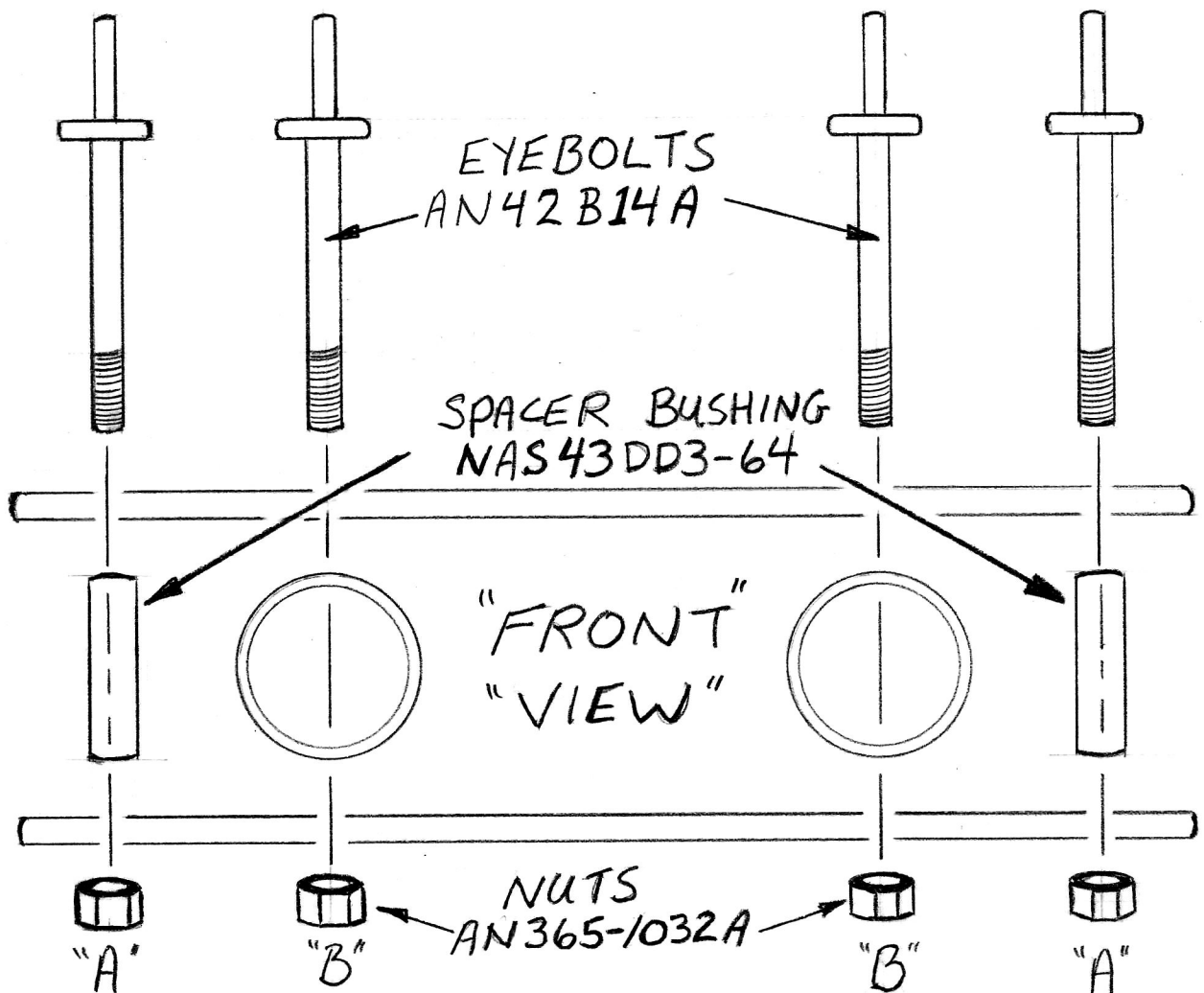
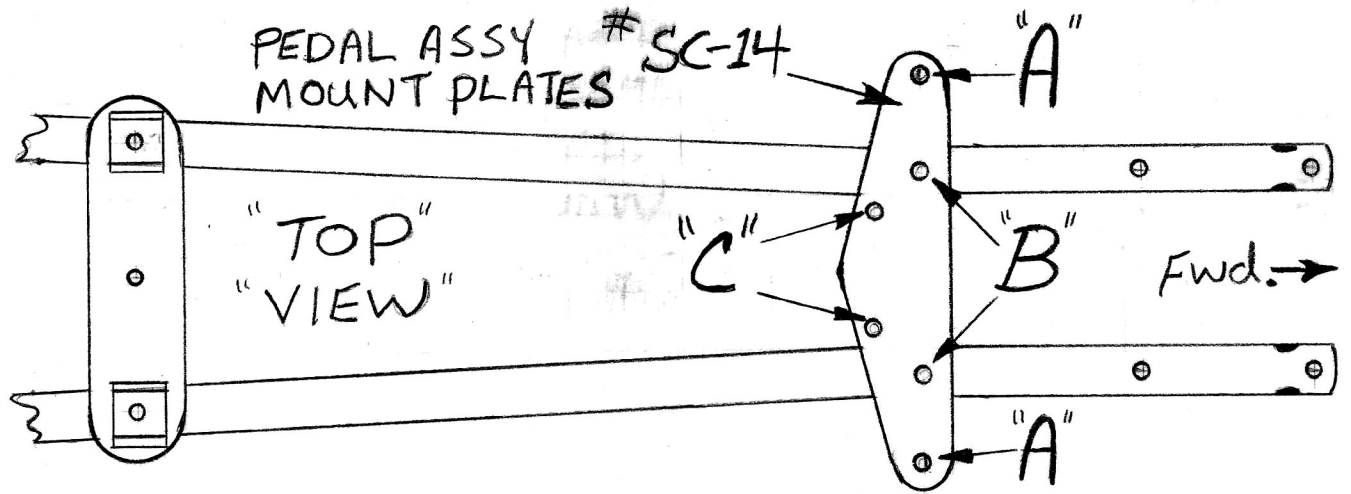


Fwd. →

BE SURE CABLE ADJUSTER IS FULLY INSERTED IN CLAMP BEFORE ATTACHING TO FRAME

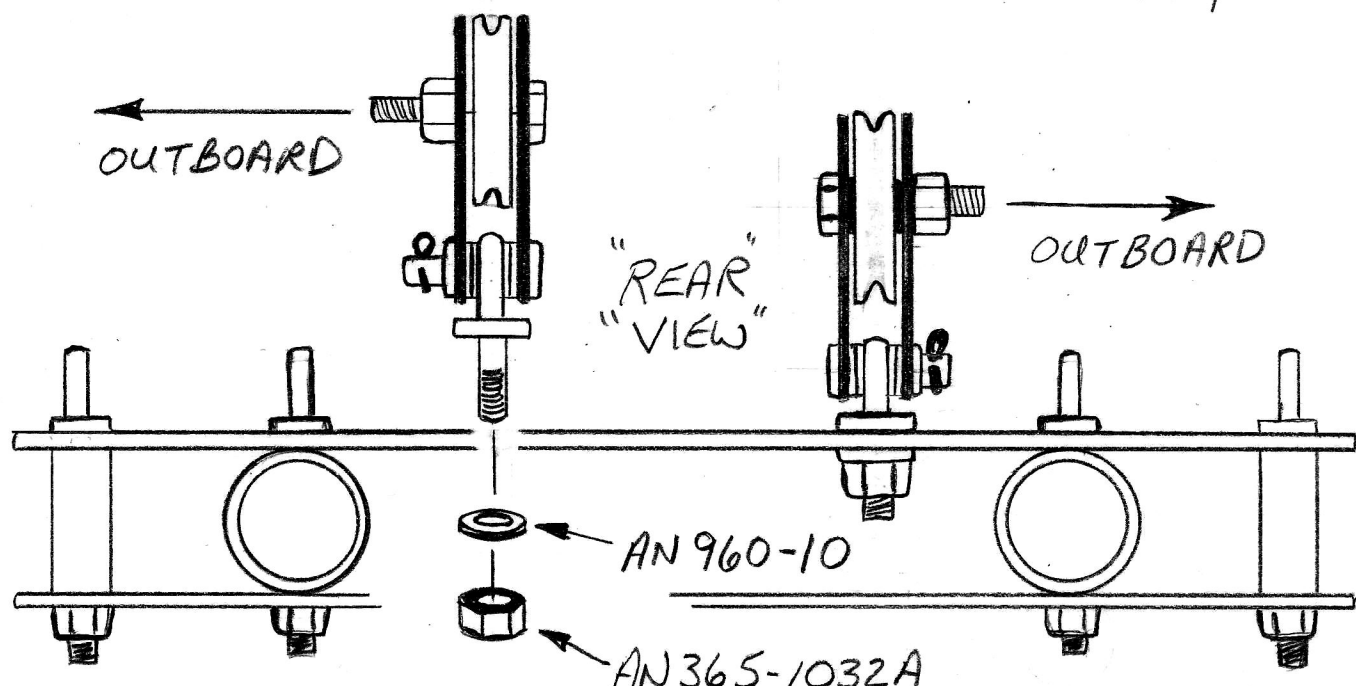
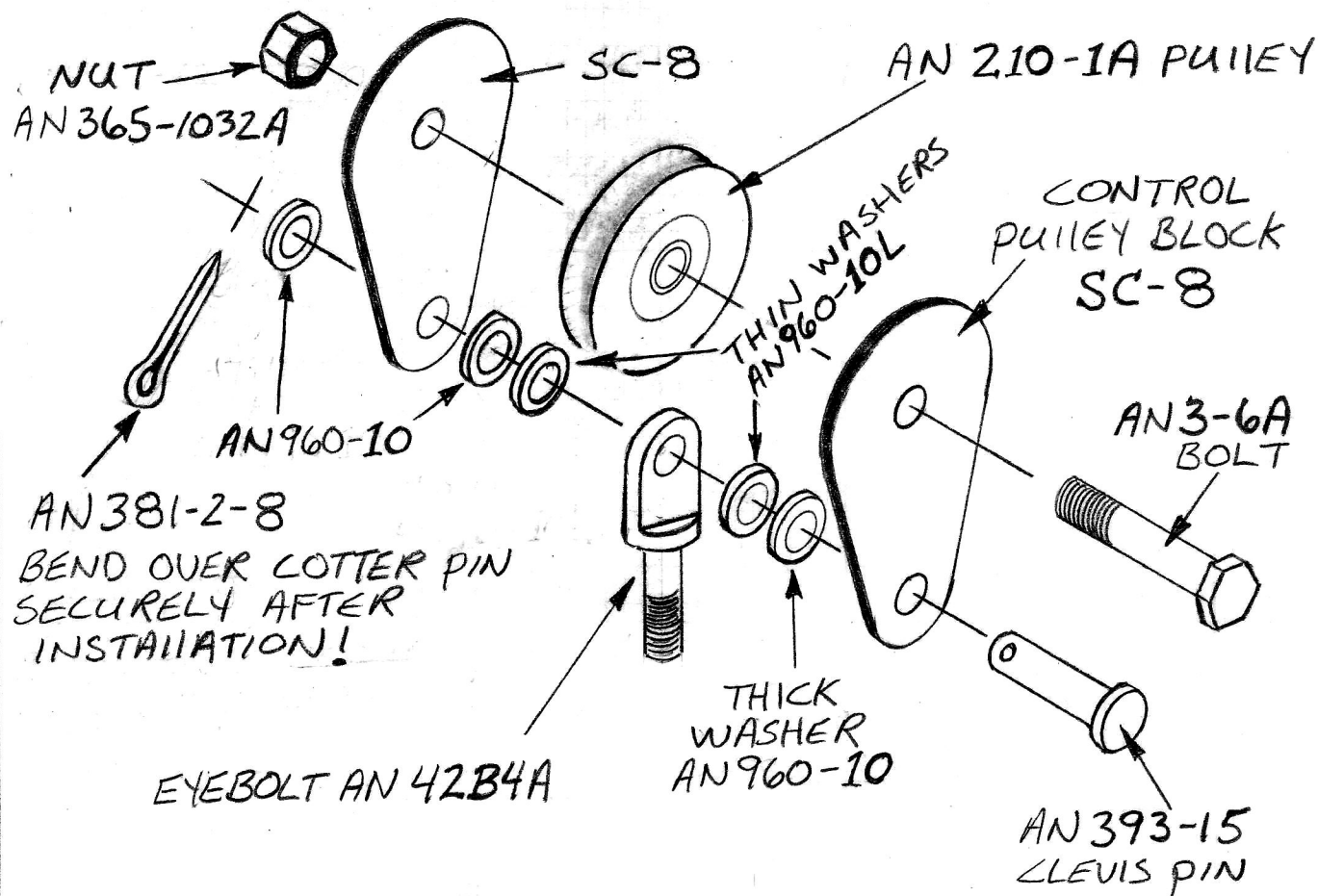


1.4 ATTACH PEDAL ASSEMBLY MOUNT PLATES TO FRONT OF LOWER FRAME TUBES. SECURE WITH EYEBOLTS AT HOLES A, B AS SHOWN.



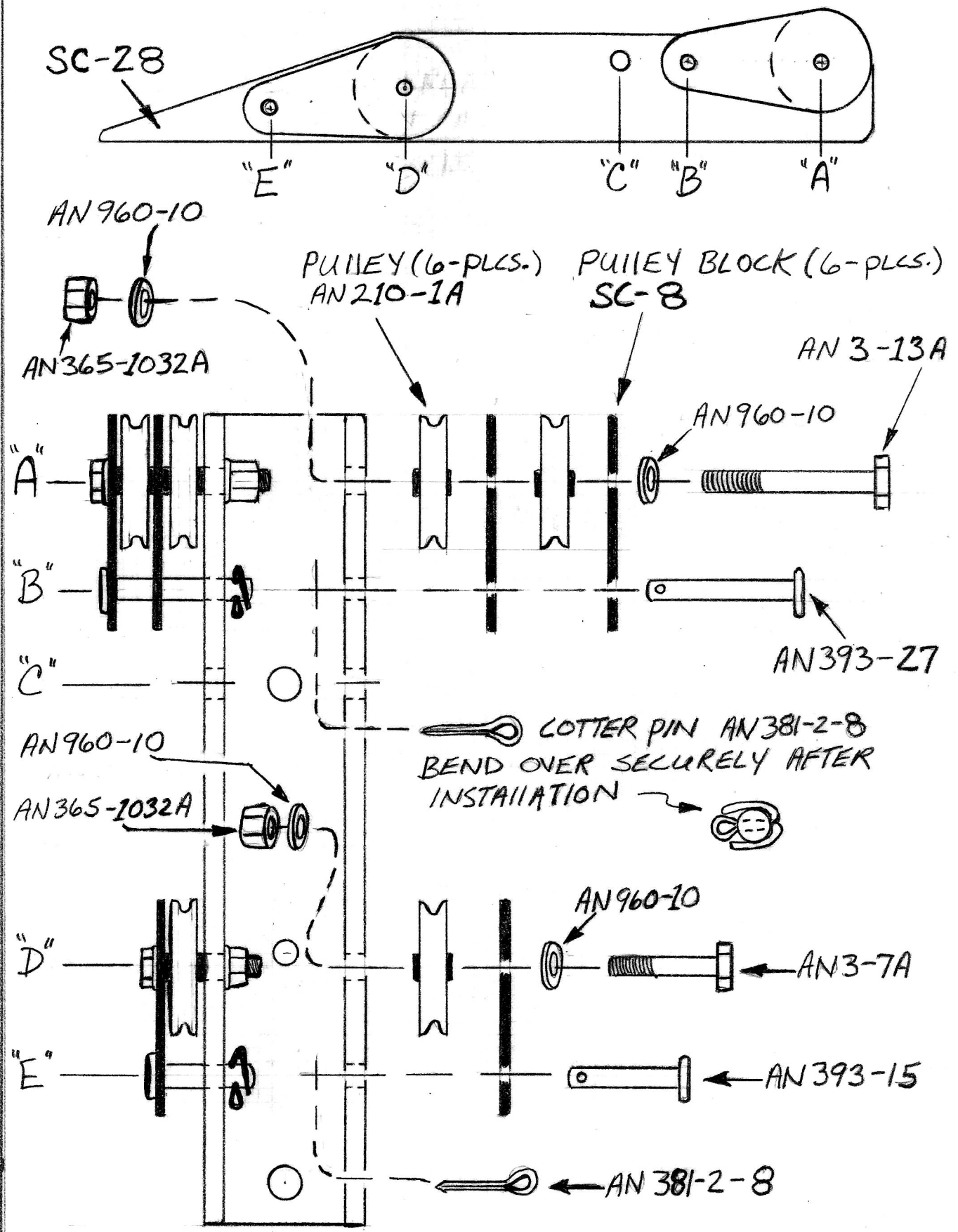
TIGHTEN EYEBOLTS SNUG, BUT LEAVE LOOSE ENOUGH FOR LATER ROTATION AND ALIGNMENT.

1.5 MAKE UP A PAIR OF LOWER-SPOILER CONTROL PULLEYS AND ATTACH TO HOLE "C" IN PEDAL MOUNT PLATES. TIGHTEN ALL NUTS SECURELY, BUT LEAVE EYEBOLTS LOOSE ENOUGH TO ROTATE FIRMLY FOR ADJUSTMENT.

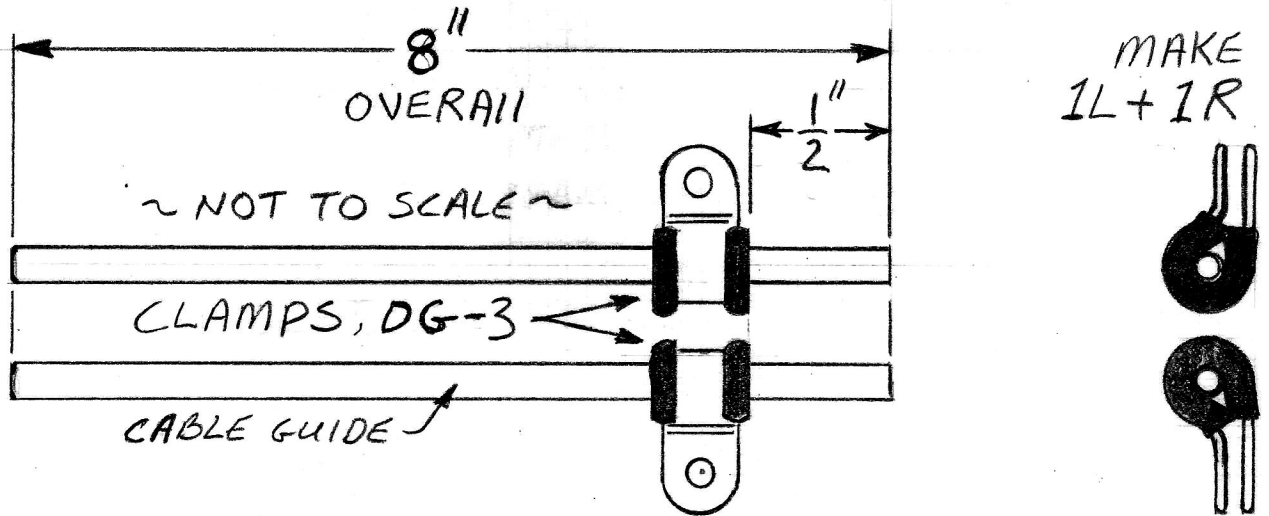


BE SURE BOLTS AND PINS IN PULLEYS POINT OUTBOARD, AWAY FROM EACH OTHER!

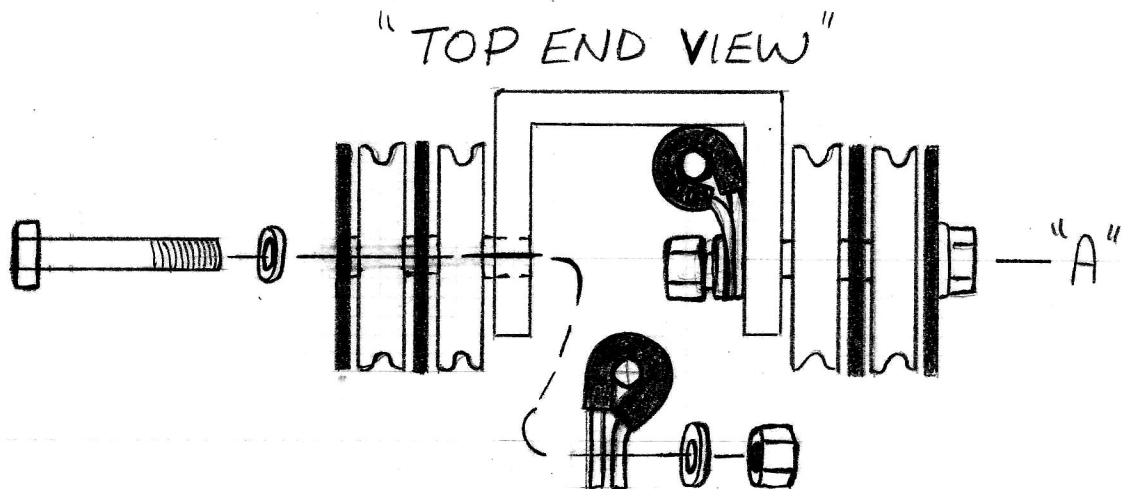
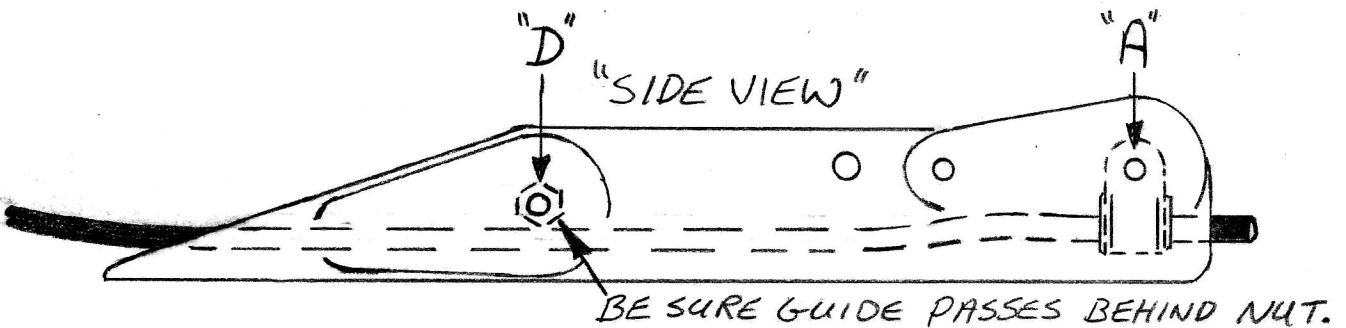
1.6 MAKE UP AN UNDERCARRIAGE - CONTROL PULLEY TRIAD/CHANNEL BRKT ASSEMBLY. TIGHTEN NUTS FINGER TIGHT ONLY FOR NOW.



1.7 MAKE UP A PAIR OF SPOILER CABLE GUIDES BY CUTTING 2-PIECES OF M-12 CABLE CASING TO LENGTH SHOWN AND INSERT IN CLAMPS.



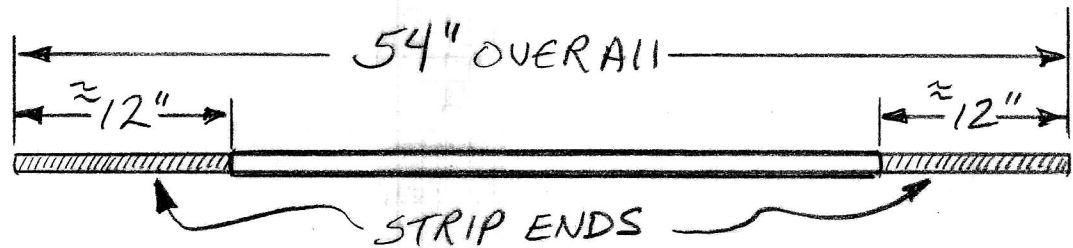
INSTALL THE LONG END OF THE CABLE GUIDE, DOWN THROUGH THE CENTER OF THE PULLEY TRIAD/CHANNEL BRKT AND ATTACH THE DG-3 CLAMPS AS SHOWN.



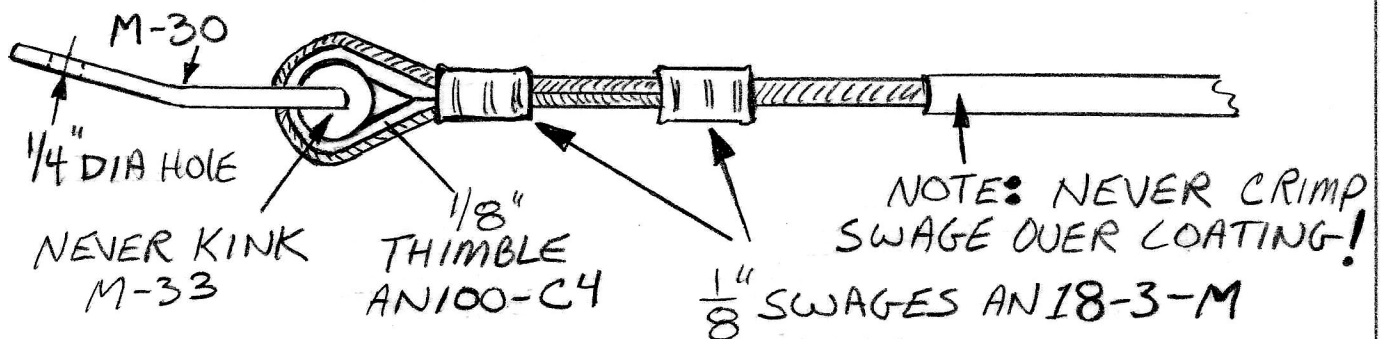
PERMANENTLY TIGHTEN THE LOWER PULLEY BOLTS AT HOLE "D" BUT LEAVE BOLTS AT HOLE "A", FINGER TIGHT!



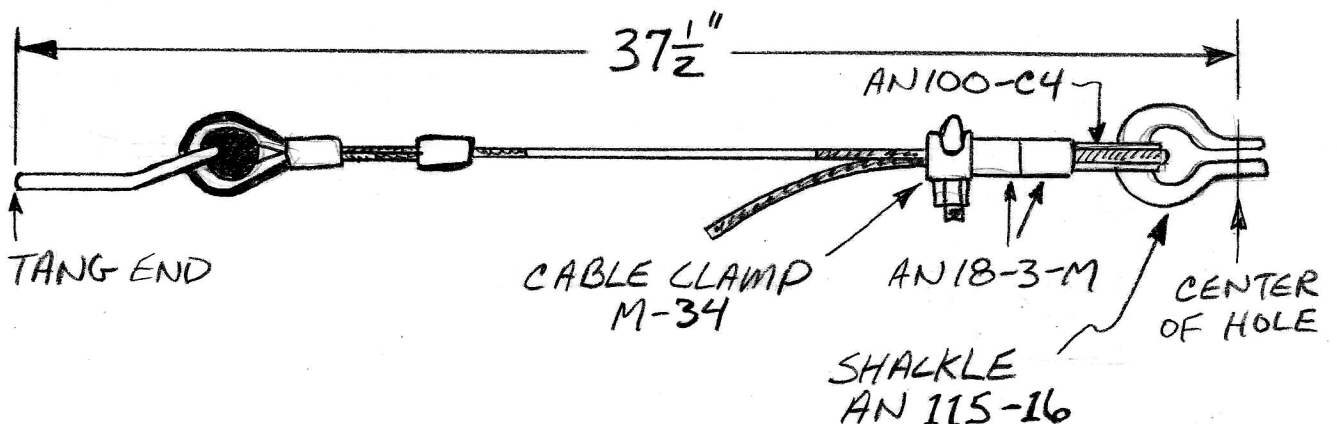
**1.8 ASSEMBLE MAINSTRUT/NOSEWIRE CABLE.**  
 BEGIN BY CUTTING A PIECE OF  $\frac{1}{8}$ " DIA. COATED  
 CABLE, 54" LONG FROM ROLL PROVIDED IN THE KIT.  
 STRIP COATING FROM ENDS AS SHOWN.



PERMANENTLY SWAGE ONE END TO BENT TANG.

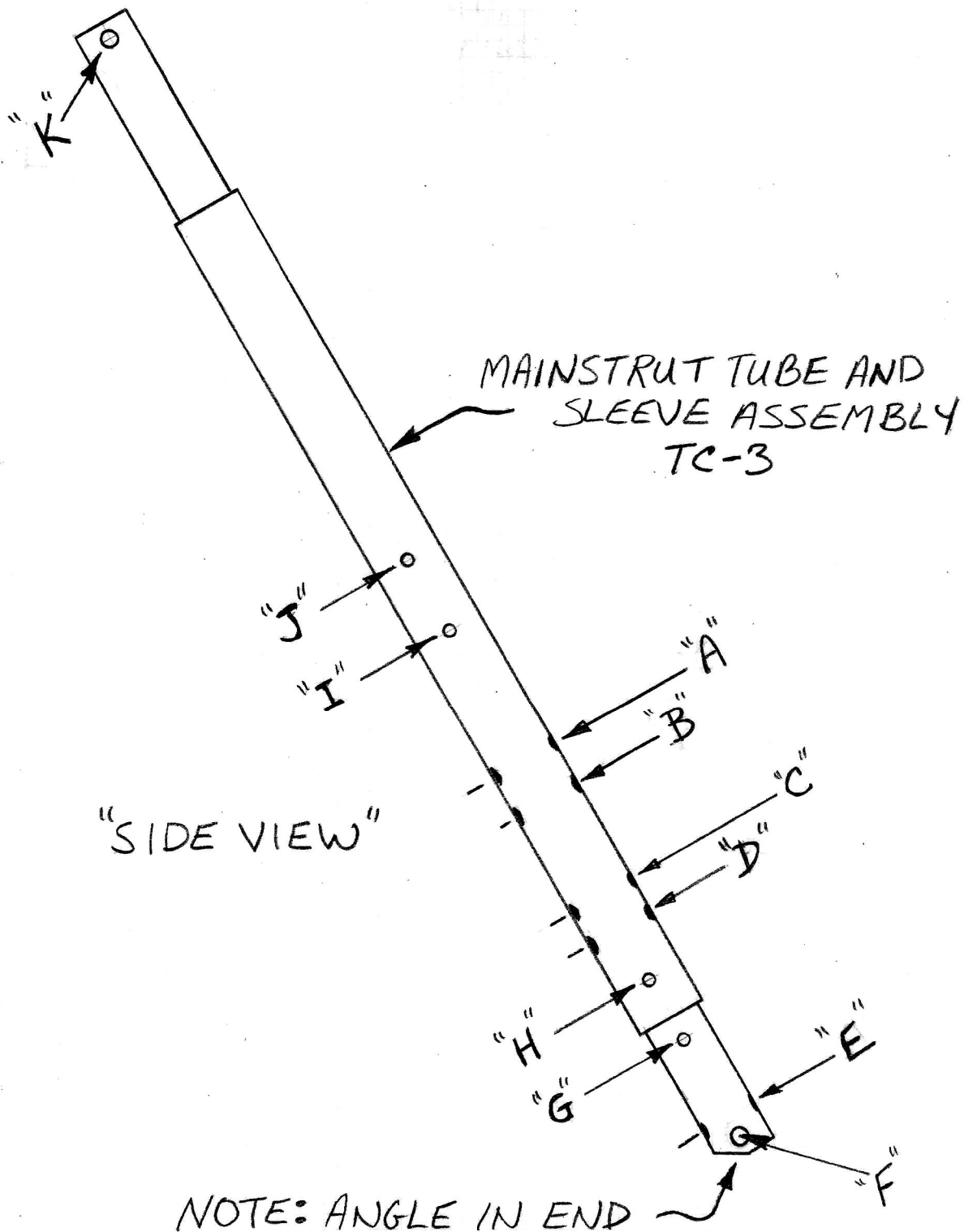


INSTALL CABLE CLAMP AND HARDWARE ON OTHER END  
 AND ADJUST TO LENGTH SHOWN.



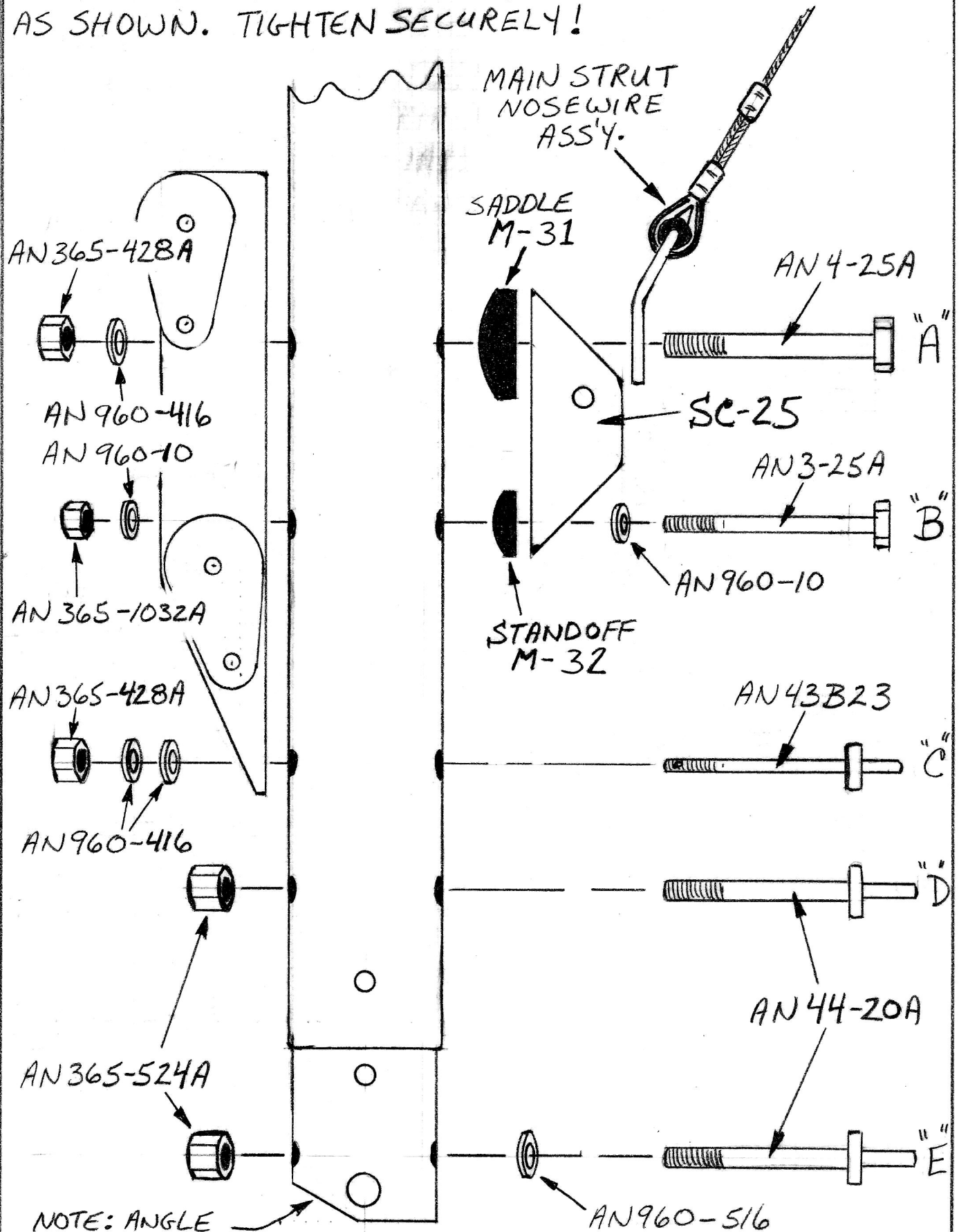
MEASURE AND ADJUST THE DISTANCE FROM THE END  
 OF THE TANG TO THE CENTER OF THE  $\frac{3}{16}$ " DIA. HOLE  
 IN THE END OF THE SHACKLE. TIGHTEN THE CLAMP  
 JUST TIGHT ENOUGH TO HOLD PARTS IN POSITION.  
 CABLE LENGTH WILL BE RE-ADJUSTED LATER PRIOR  
 TO PERMANENT SWAGING.

1.9 LOCATE THE 55 $\frac{1}{4}$ " LONG MAINSTRUT TUBE (PART NO# TC-3) SUPPLIED IN YOUR KIT. LAY THE PART ON A WORKTABLE, ETC. AND OBSERVE THE LOCATION OF ALL PRE-DRILLED HOLES. LABEL EACH PAIR OF HOLES WITH A PENCIL OR MARKING PEN AS SHOWN.

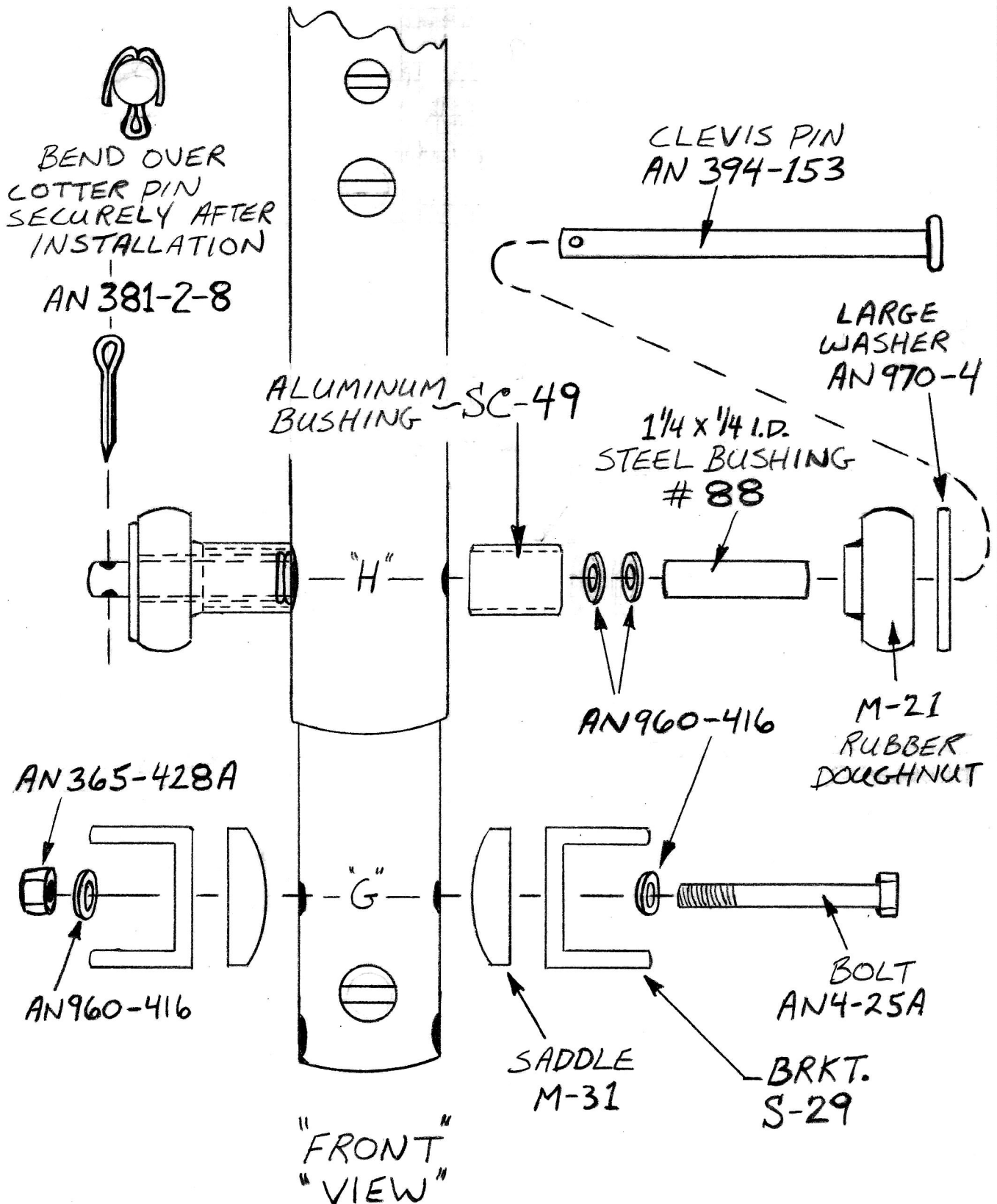




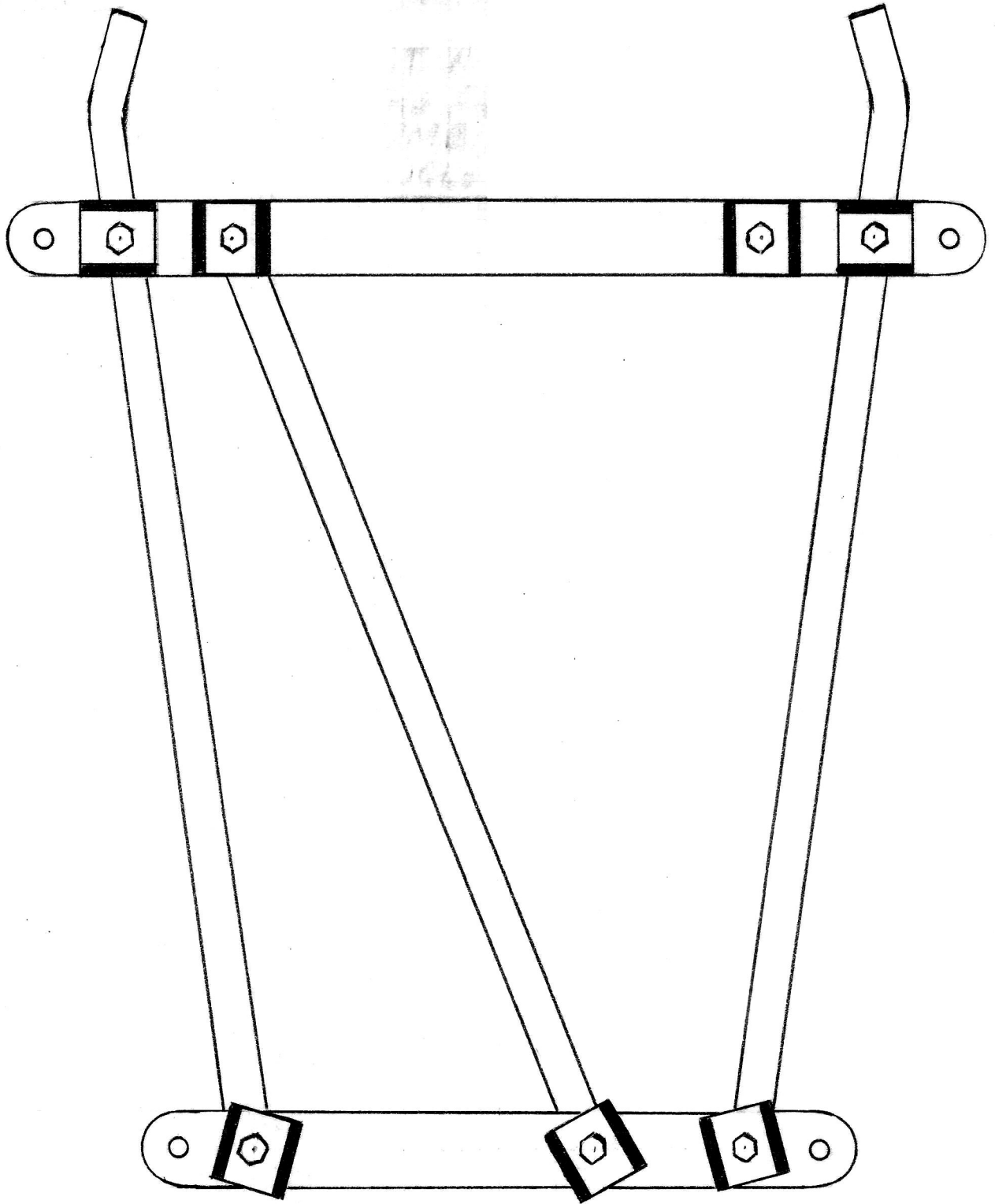
**1.10** BEGIN BOLTING TOGETHER MAIN STRUT ASS'Y BY ATTACHING PULLEY TRIAD, NOSE STRUT BRKT AND MISCELLANEOUS HARDWARE TO LOWER END OF STRUT AS SHOWN. TIGHTEN SECURELY!



**1.11** ATTACH THE FINAL HARDWARE TO THE BOTTOM OF THE MAINSTRUT ASSEMBLY. TIGHTEN AN4-25A BOLT SNUG ONLY TO ALLOW S-29 BRKTS TO ROTATE.

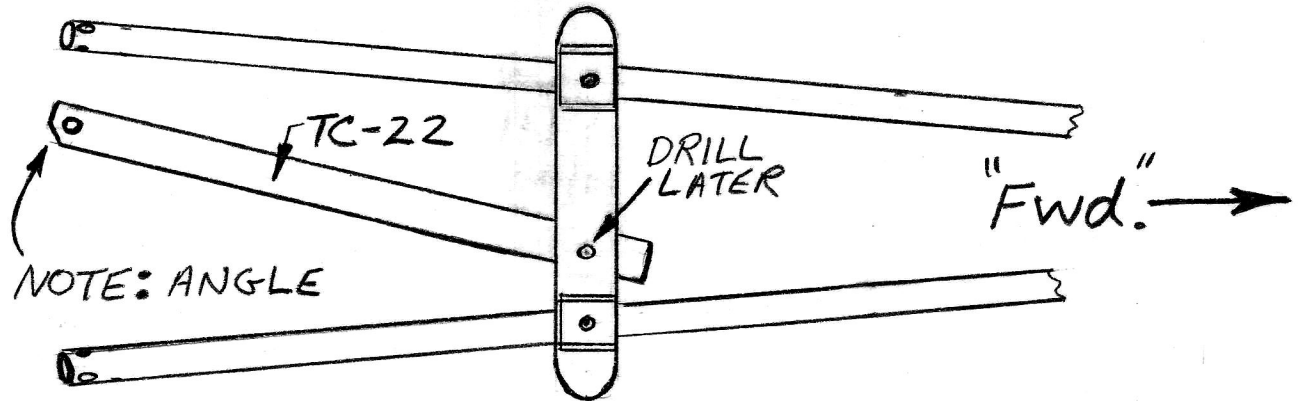


1.12 BE SURE THAT ALL SEVEN OF THE S-29 BRKTS WHICH MOUNT TO THE FRONT SIDE OF THE LOWER REAR FRAME ASSEMBLY ARE ALIGNED AT THE APPROXIMATE ANGLES SHOWN.

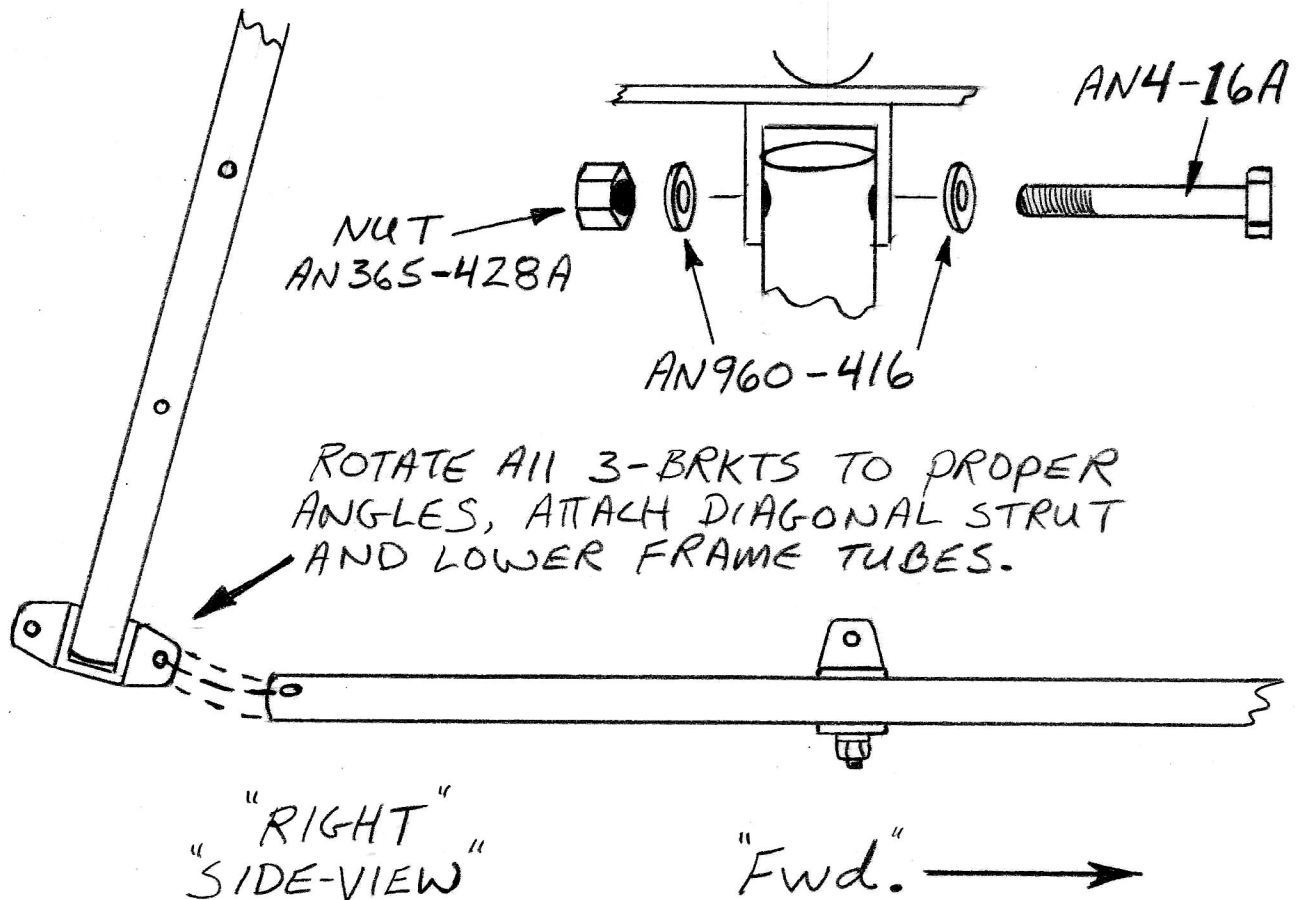


"FRONT VIEW"

1.13 PLACE LOWER FRAME DIAGONAL, TC-22 IN POSITION IN LOWER FRAME TUBE ASS'Y AS SHOWN. DO NOT DRILL HOLE THROUGH UNDRILLED END AT THIS TIME.

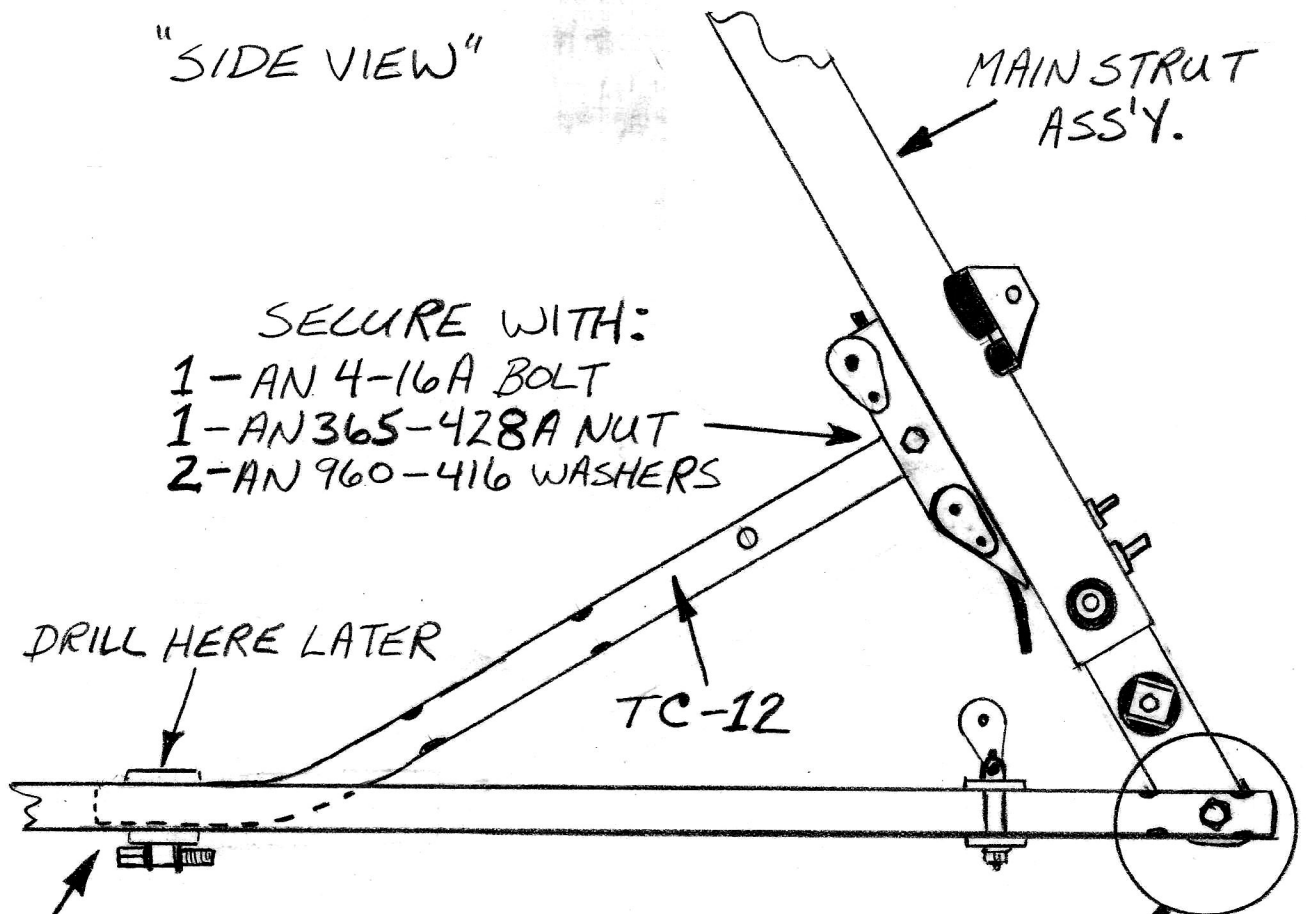


ROTATE BRKTS ON LOWER-FRONT SIDE OF REAR FRAME ASS'Y TO PROPER ANGLES AND ATTACH LOWER FRAME AND REAR FRAME ASSEMBLIES TOGETHER USING PROPER HARDWARE. TIGHTEN BOLTS ONLY FINGER TIGHT FOR NOW.



**1.14** PLACE FRONT-INNER FRAME STRUT, TC-12  
 IN POSITION BETWEEN PEDAL MOUNT PLATES  
 OF THE LOWER FRAME ASSEMBLY. ATTACH  
 MAINSTRUT ASSY TO LOWER FRAME TUBES AND  
 INNER FRAME STRUT AS SHOWN. LEAVE BOLTS  
 LOOSE FOR NOW.

"SIDE VIEW"



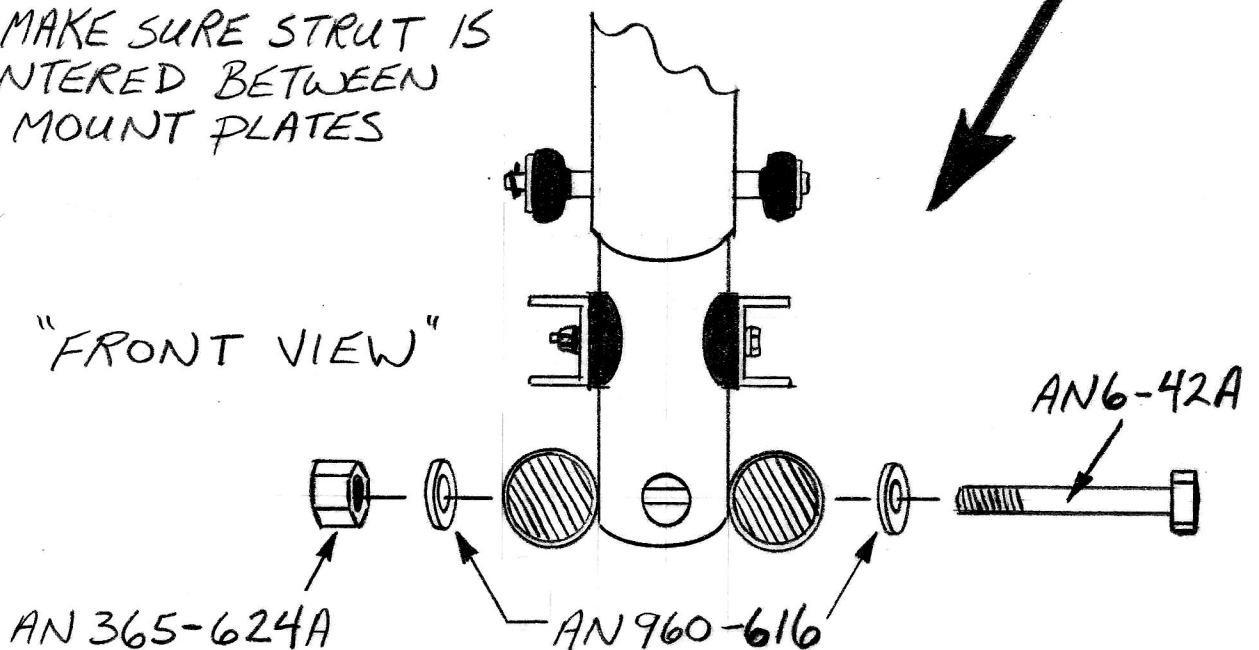
SECURE WITH:  
 1-AN 4-16A BOLT  
 1-AN 365-428A NUT  
 2-AN 960-416 WASHERS

DRILL HERE LATER

TC-12

MAKE SURE STRUT IS  
 CENTERED BETWEEN  
 THE MOUNT PLATES

"FRONT VIEW"

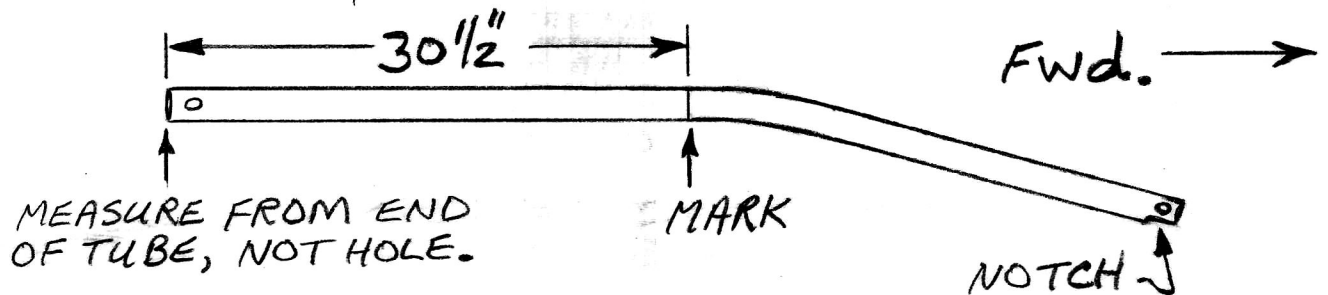


AN 365-624A

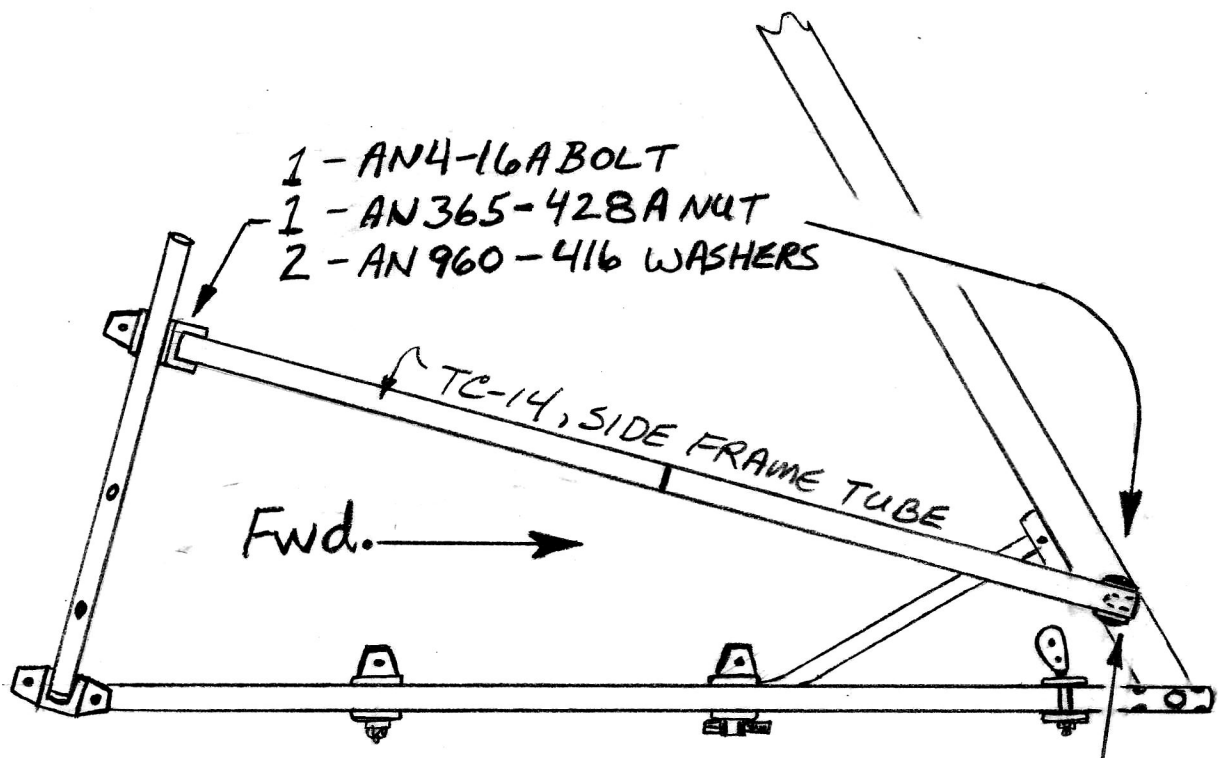
AN 960-616

AN 6-42A

**1.15** LOCATE THE PAIR OF 61 $\frac{1}{2}$ " LONG X 1" DIA. SIDE FRAME TUBES, TC-14. LAY THE TUBES ON A FLAT SURFACE. MEASURE FROM THE AFT END OF THE TUBE (FRONT END HAS NOTCH) FORWARD, 30 $\frac{1}{2}$ " AND PLACE A PENCIL MARK ALL THE WAY AROUND THE TUBE AT THIS LOCATION. DO THIS TO BOTH TUBES. BE SURE THE LINE YOU DRAW AROUND THE TUBE IS AS STRAIGHT AS POSSIBLE.

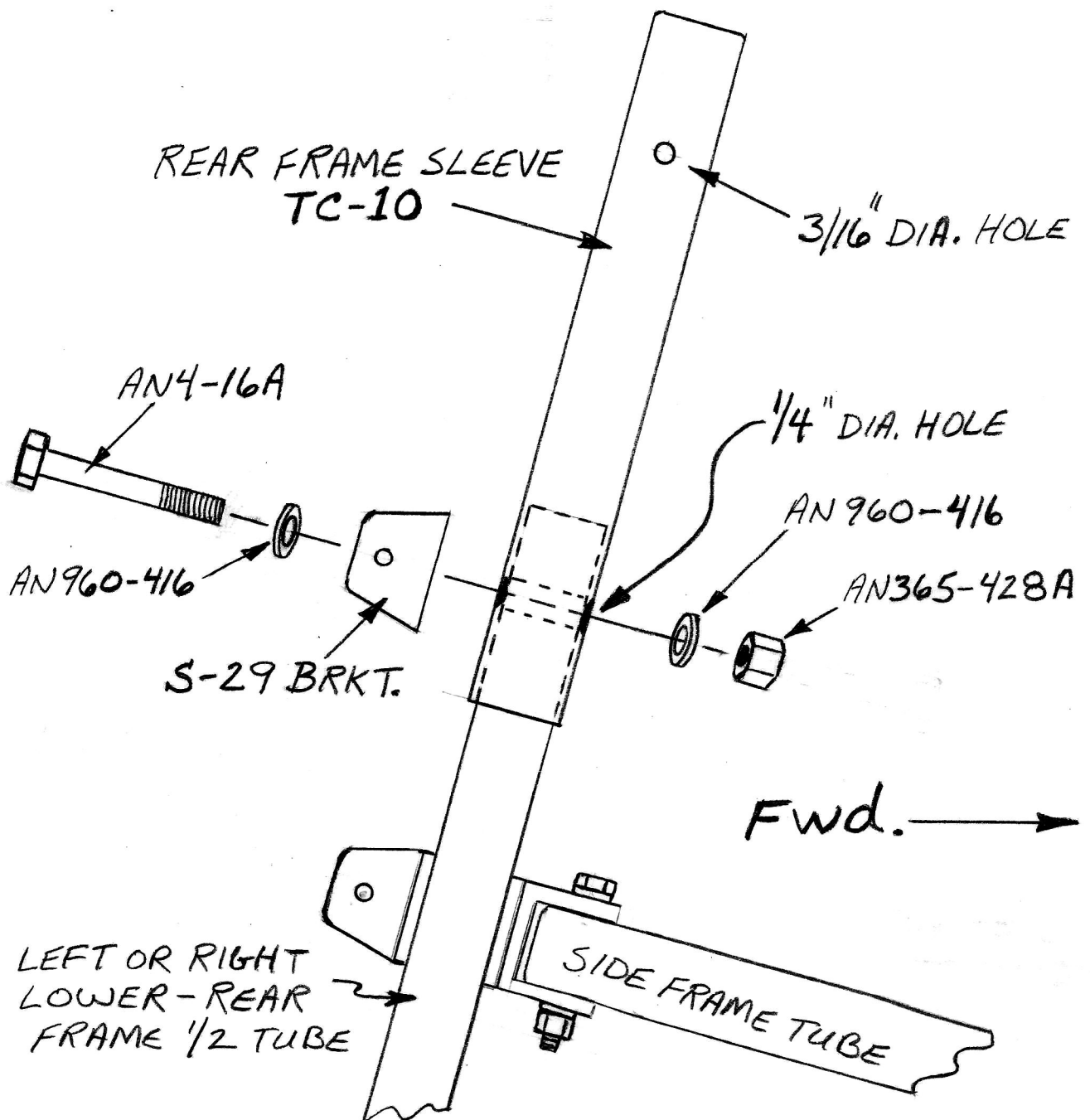


ATTACH SIDE FRAME TUBES TO UNDERCARRIAGE ASSY WITH PROPER HARDWARE AS SHOWN. LEAVE BOLTS FINGER TIGHT FOR NOW.



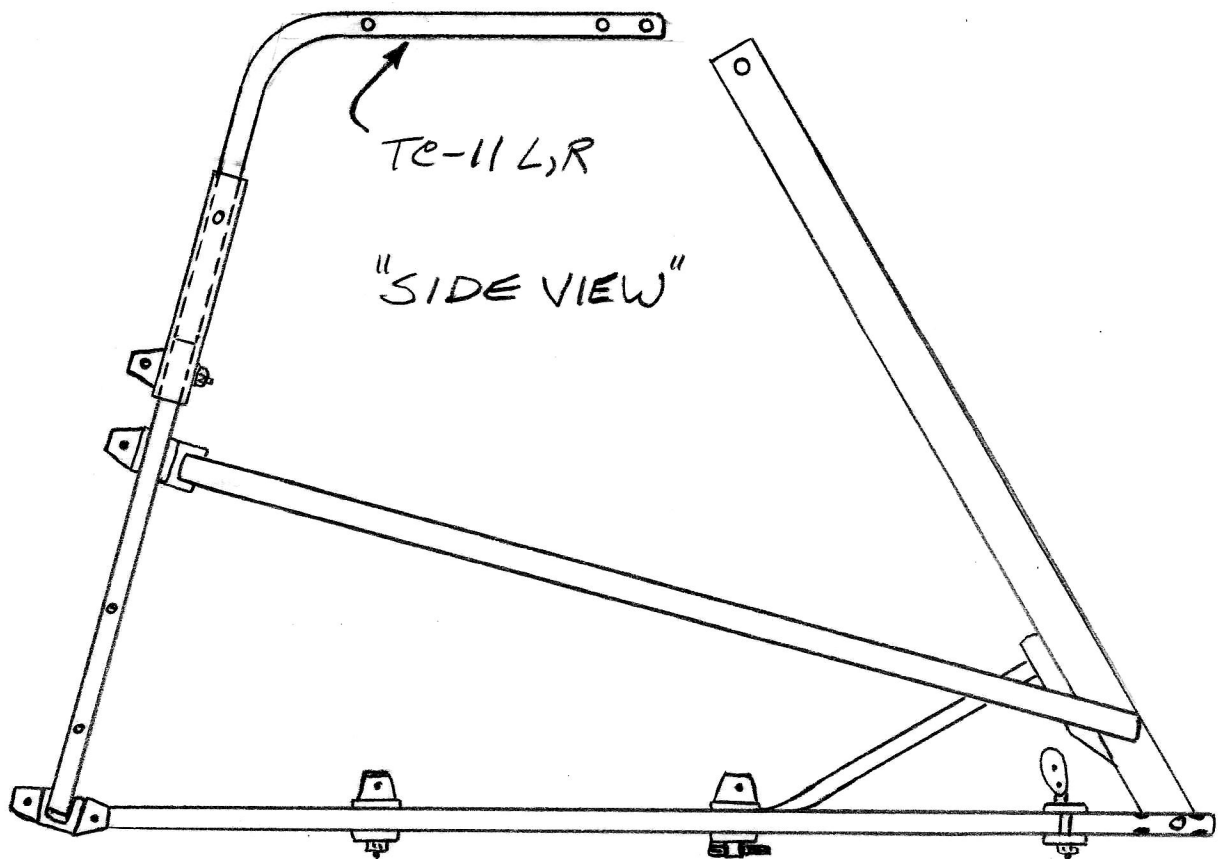
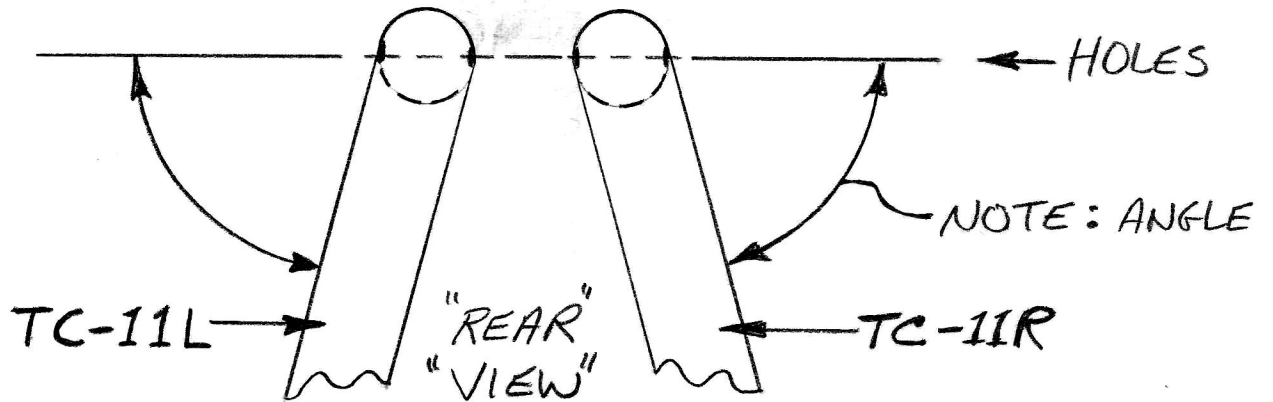
NOTE: NOTCHED END OF TC-14 GOES Fwd. AFT END FITS IN OUTSIDE PAIR OF BRKTS ON REAR FRAME ASSY. INSTALL BOLTS POINTING DOWN!

1.16 SLIDE THE PAIR OF 14<sup>3</sup>/<sub>4</sub>" LONG X 1<sup>1</sup>/<sub>8</sub>" DIA. REAR FRAME SLEEVES, TC-10, DOWN INTO POSITION OVER ENDS OF LOWER REAR FRAME <sup>1</sup>/<sub>2</sub> TUBE ASSEMBLIES FORMING THE REAR OF THE UNDERCARRIAGE. ROTATE THE SLEEVES UNTIL THE <sup>1</sup>/<sub>4</sub>" DIA. HOLE NEAR THE BOTTOM OF THE SLEEVE, ALIGNS WITH THE <sup>1</sup>/<sub>4</sub>" DIA. HOLE IN THE REAR FRAME <sup>1</sup>/<sub>2</sub> TUBE. INSTALL BRKTS AND HARDWARE AS SHOWN. TIGHTEN BOLTS SNUG BUT LEAVE LOOSE ENOUGH SO THAT BRKTS CAN BE ROTATED FOR LATER ALIGNMENT.



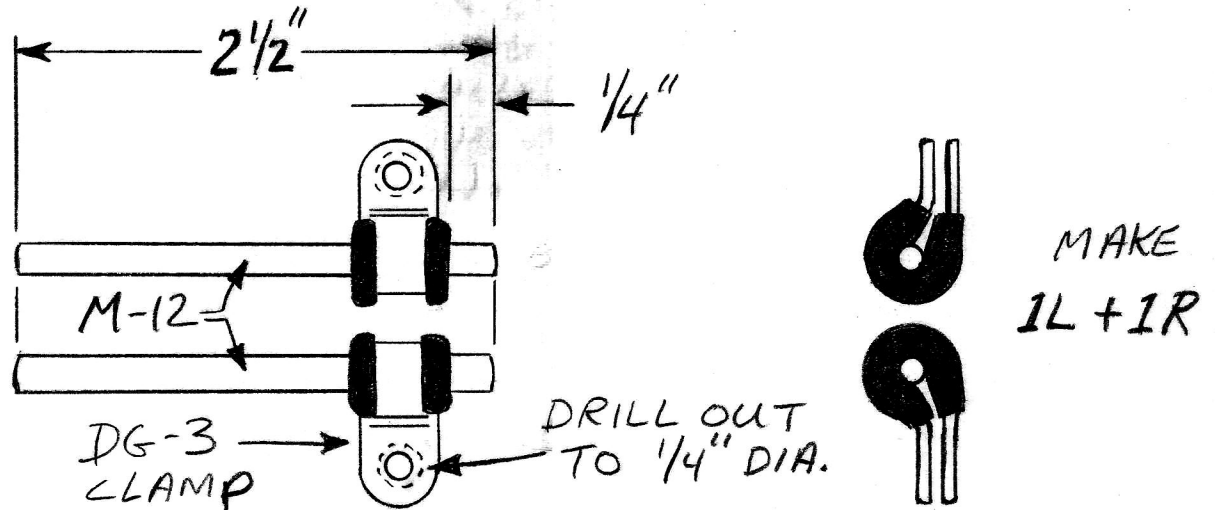


**1.17** SLIDE THE LEFT AND RIGHT, UPPER-REAR FRAME  $\frac{1}{2}$  TUBES, TC-11, INTO POSITION INSIDE REAR FRAME SLEEVES AS SHOWN. BE SURE TUBES BOTTOM OUT INSIDE SLEEVES. DETERMINE LEFT OR RIGHT SIDE TUBES BY NOTING THE ANGLES IN WHICH THE HOLES ARE DRILLED. ALL HOLES SHOULD LINE UP.

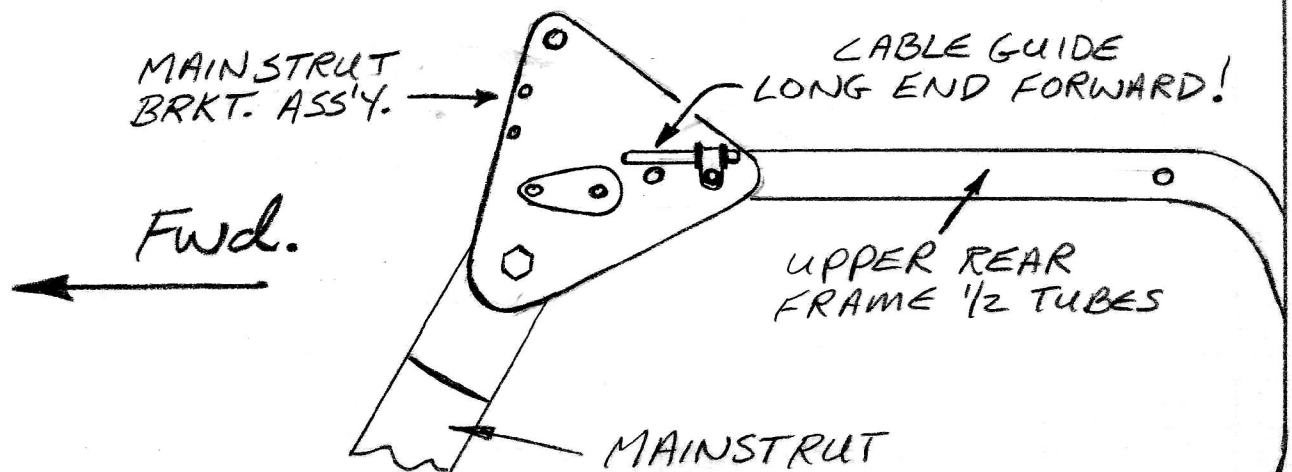


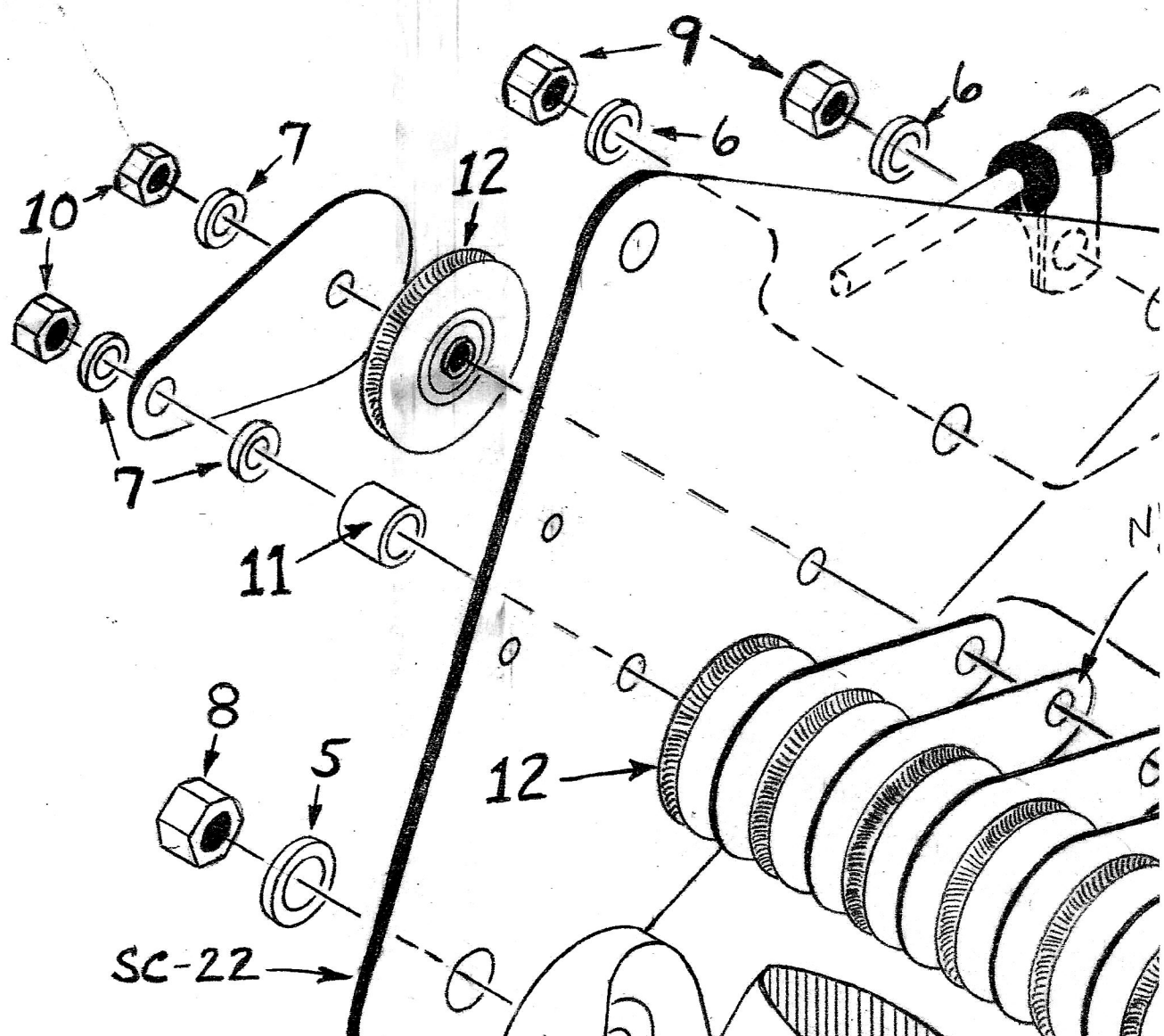


**1.18** MAKE UP A PAIR OF LEFT AND RIGHT, RUDDER CABLE GUIDES. GENTLY HOLD CLAMPS IN A VICE AND CAREFULLY DRILL OUT  $3/16$ " DIA. HOLES TO  $1/4$ " DIA. AND REMOVE BURRS. INSTALL CABLE CASING IN CLAMPS AS SHOWN.



ATTACH RUDDER CABLE GUIDES, MAINSTRUT BRKTS AND ALL RELATED HARDWARE TO TOP OF MAINSTRUT AND REAR FRAME  $1/2$  TUBES. BE SURE TO NOTE ORIENTATION OF PULLEY BLOCKS (SC-8) AND SPACER WASHERS, BUSHINGS, ETC. AS SHOWN BY THE EXPLODED VIEW ON THE FOLLOWING PAGE. LEAVE EVERYTHING LOOSE AS YOU INSTALL ALL THE PIECES IN THE PROPER PLACE, TIGHTENING NUTS ONLY FINGER TIGHT AS YOU GO. INSTALL THE TWO  $1/4$ " BOLTS AND ONE  $5/16$ " BOLT SECURING THE BRKTS TO THE FRAME TUBES, THEN INSTALL THE TWO OUTSIDE AND SIX INSIDE CONTROL PULLEYS AND BLOCKS. REFER FREQUENTLY TO THE EXPLODED VIEW.





# # STEP 1.18

## ~KEY~

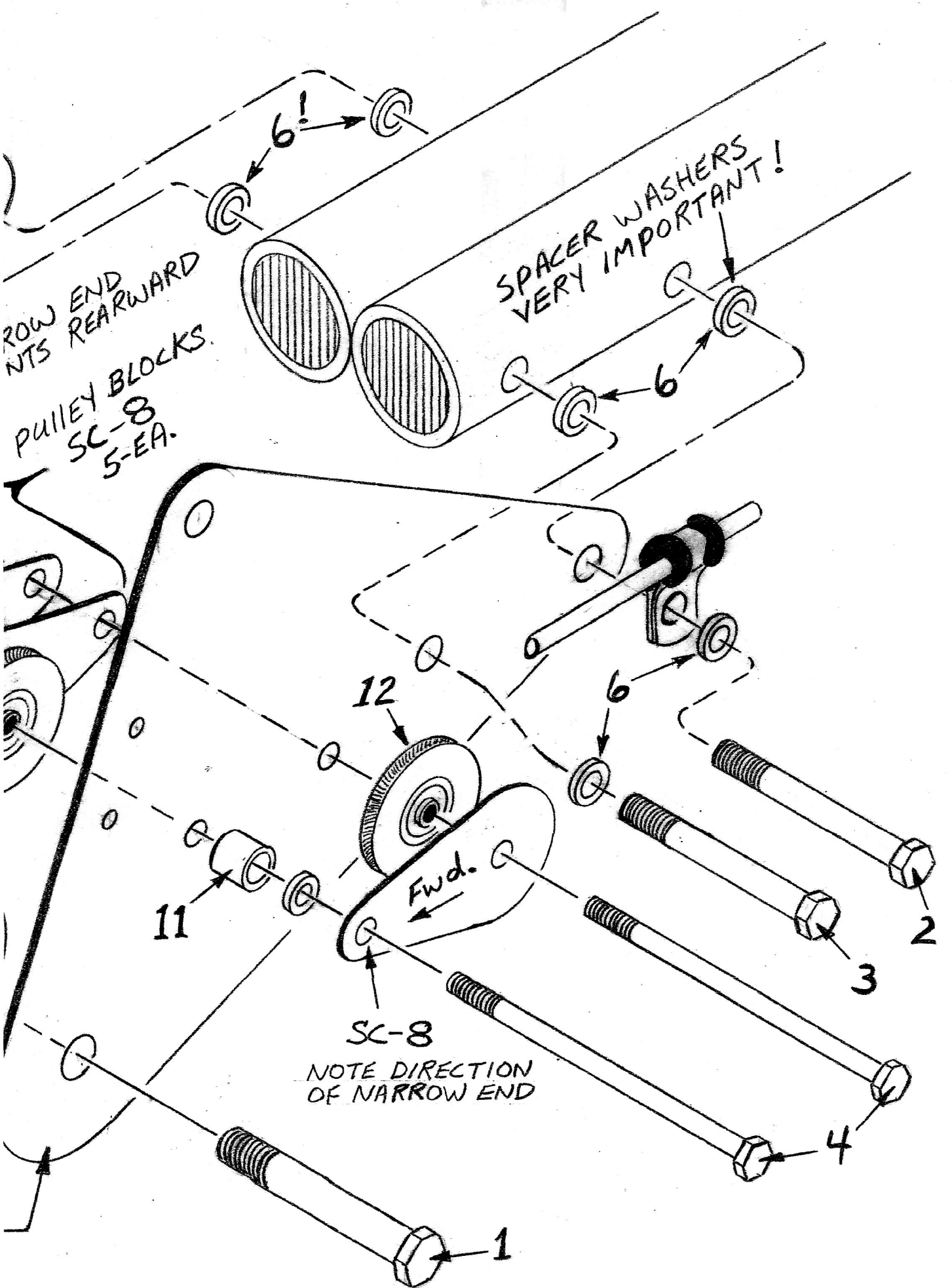
1. AN5-26A BOLT
2. AN4-30A "
3. AN4-27A "
4. AN3-33A "
5. AN960-516 WASHER
6. AN960-416 "
7. AN960-10 "
8. AN365-524A NUT
9. AN365-428A "
10. AN365-1032A "
11. NAS43DD3-15 BUSHING
12. AN210-1A PULLEY

SADDLE  
M-31

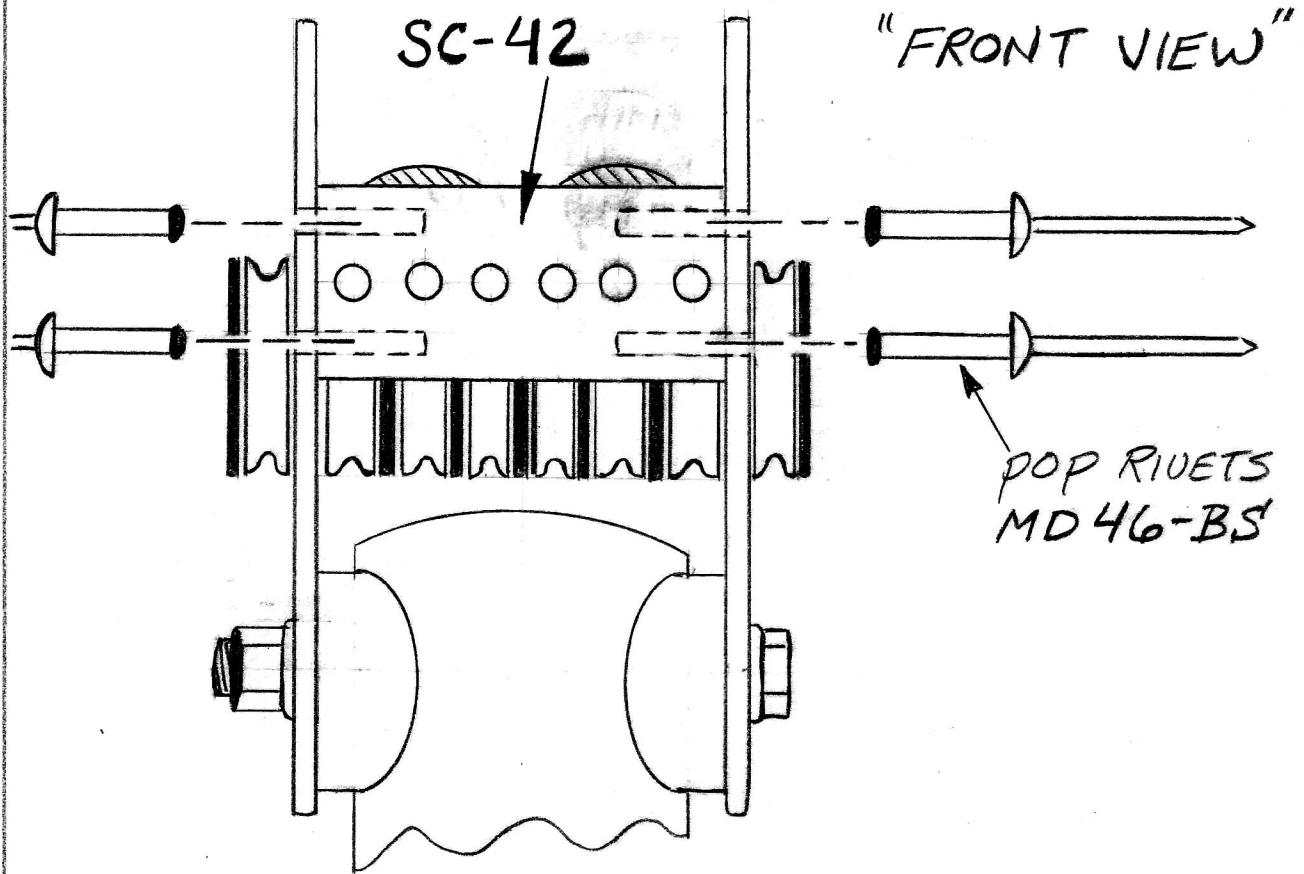
MAINSTRUT BRK  
SC-22

ROW END  
NTS REARWARD  
PULLEY BLOCKS  
SC-8  
5-EA.

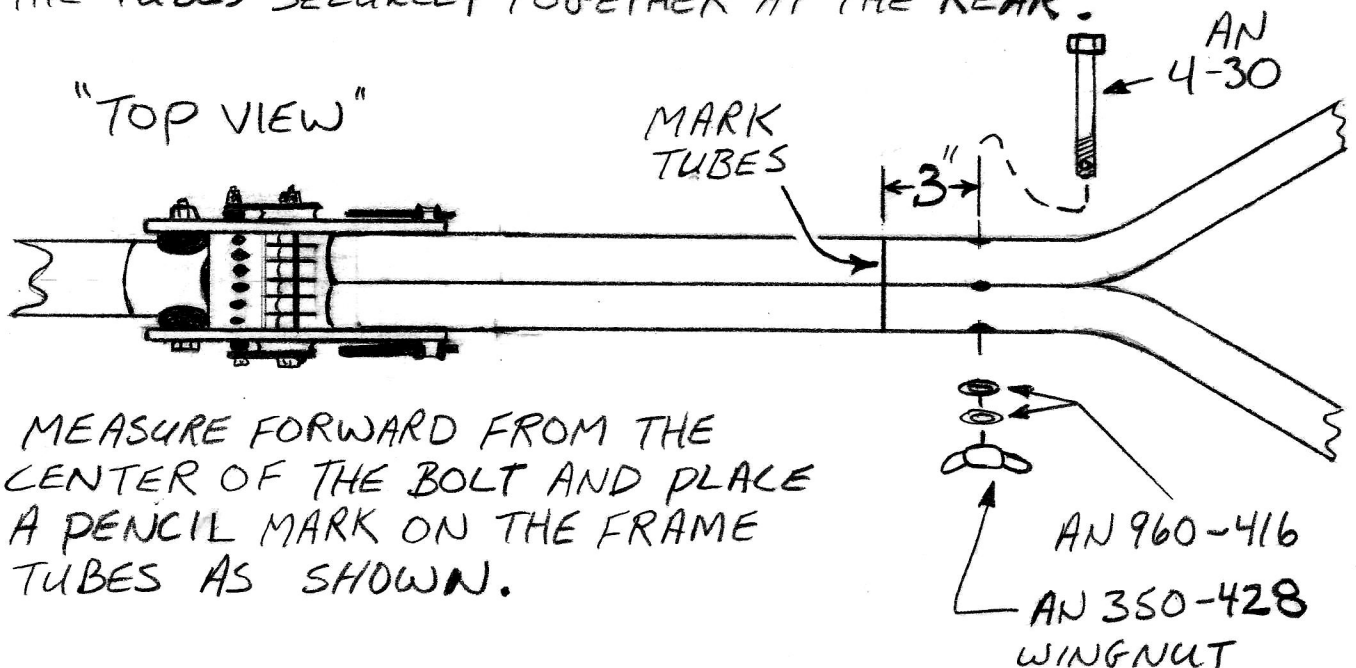
SPACER WASHERS  
VERY IMPORTANT!



**1.19** POP-RIVET MAINSTRUT CABLE GUIDE, SC-42  
 IN POSITION AND PERMANENTLY TIGHTEN ALL  
 BOLTS IN THE MAINSTRUT BRKT ASSEMBLY.

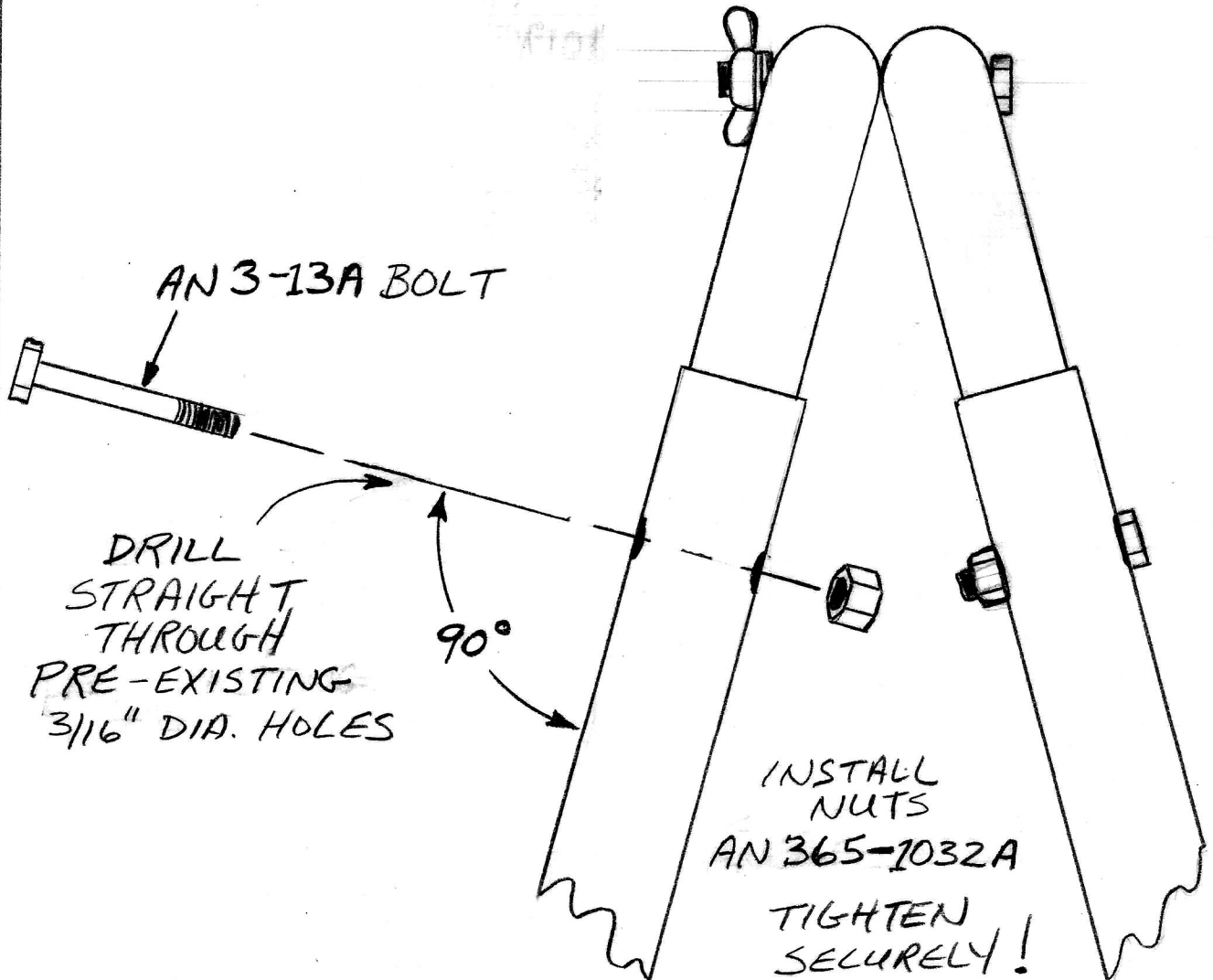


TEMPORARILY INSTALL ONE, AN 4-30 BOLT IN THE  
 REAR HOLE OF THE UPPER-REAR FRAME 1/2 TUBES AS SHOWN.  
 TIGHTEN THE WINGNUT JUST TIGHT ENOUGH TO PINCH  
 THE TUBES SECURELY TOGETHER AT THE REAR.



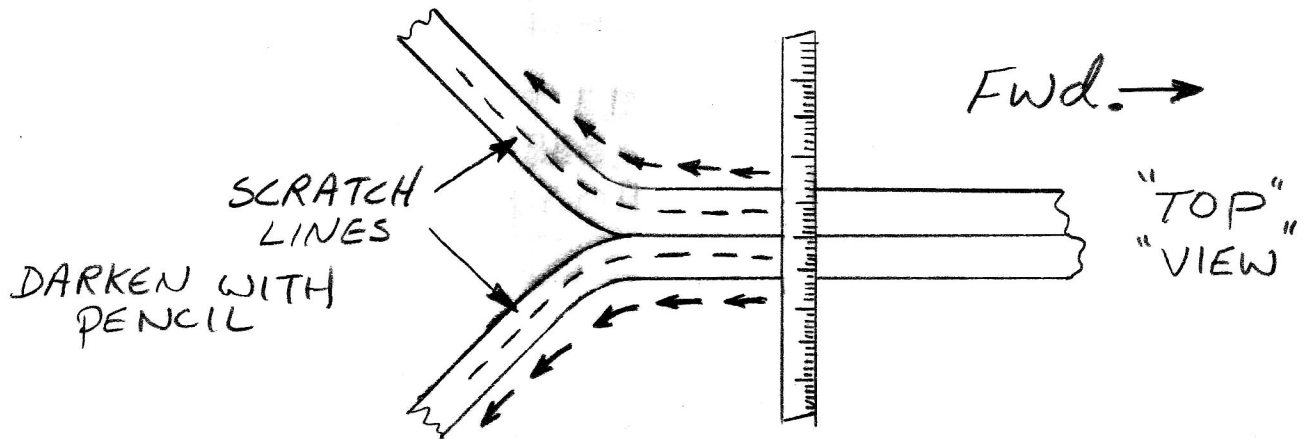
MEASURE FORWARD FROM THE  
 CENTER OF THE BOLT AND PLACE  
 A PENCIL MARK ON THE FRAME  
 TUBES AS SHOWN.

**1.20** DRILL  $3/16$ " DIA. HOLES THROUGH EXISTING HOLES IN REAR FRAME SLEEVES AND INSTALL HARDWARE AS SHOWN. BE CAREFUL TO DRILL ACCURATELY, STRAIGHT THROUGH THE TUBES, AND REMOVE ANY BURRS PRIOR TO INSTALLING BOLTS. BEFORE DRILLING, BE SURE THAT THE UPPER-REAR FRAME  $1/2$  TUBES ARE COMPLETELY "SEATED" OR "BOTTOMED OUT" INSIDE THE SLEEVES.

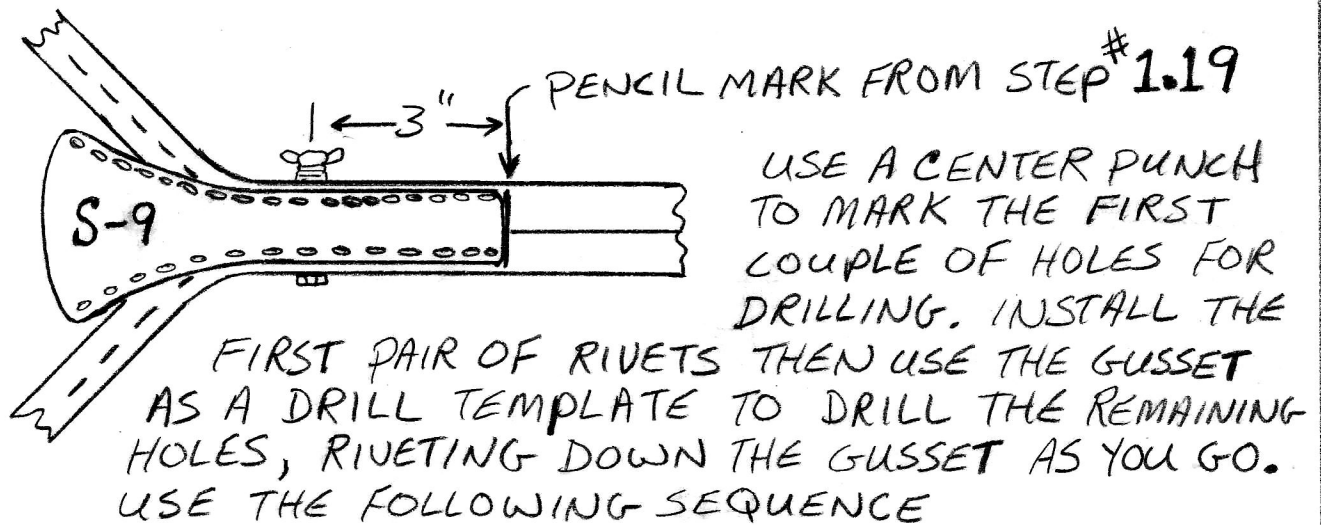


"REAR VIEW"

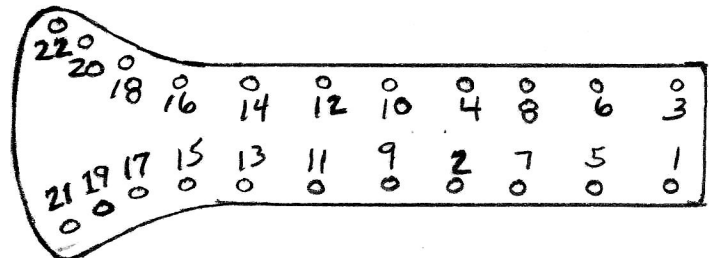
1.21 LAY A STRAIGHT EDGE ACROSS THE TOP OF BOTH FRAME TUBES. RUB BACK AND FORTH UNTIL YOU RUB A COUPLE OF LINES ON THE TUBES AS SHOWN.



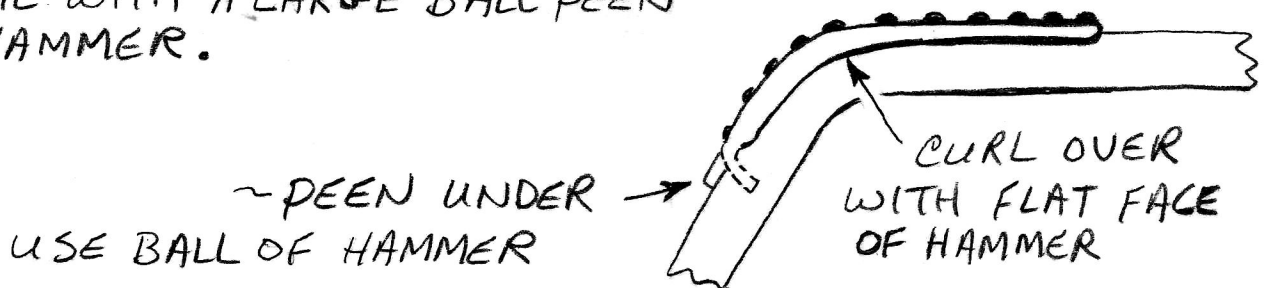
ALIGN GUSSET S-9, SO THAT HOLES ARE CENTERED OVER MARKS PLACED ON TUBES WITH STRAIGHT EDGE.



DRILL HOLES TO  
 $\frac{1}{8}$ " DIA.  
 SECURE WITH  
 MD43-B5 POP RIVETS



AFTER INSTALLING RIVETS, CURL OVER SIDES AND TAIL WITH A LARGE BALL PEEN HAMMER.





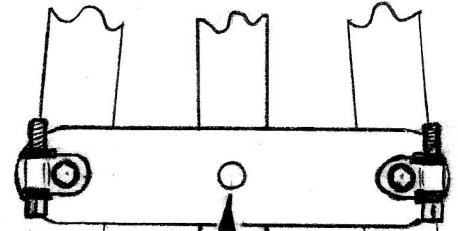
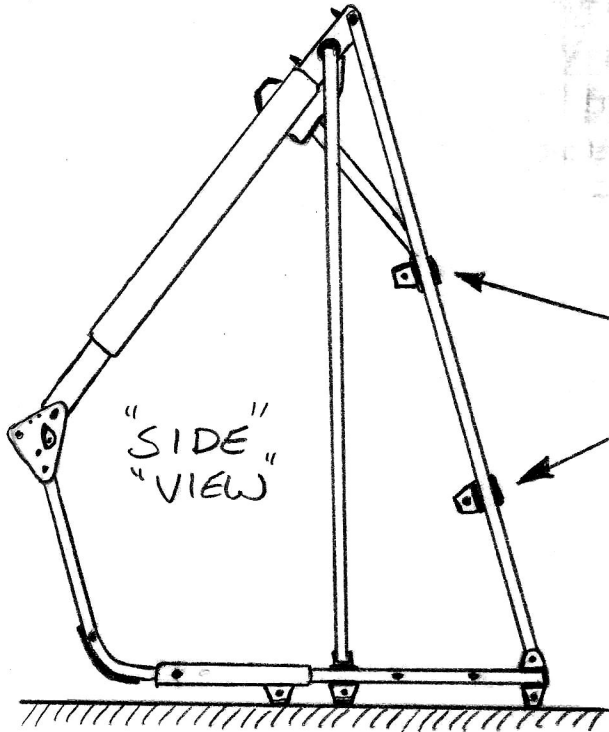
**1.22** NOW THAT YOU HAVE THE BASIC UNDER-CARRIAGE NEARLY COMPLETED, GO BACK OVER EVERY BOLT AND NUT YOU INSTALLED IN THE PREVIOUS 21 STEPS AND DOUBLE CHECK TO BE SURE EVERYTHING IS PERMANENTLY AND SECURELY TIGHTENED. IF YOU HAVE ACCESS TO A TORQUE WRENCH, REFER TO THE TABLE ON PAGE # FOR THE PROPER TORQUE VALUES. IF YOU DON'T HAVE A TORQUE WRENCH, JUST BE SURE EVERYTHING IS SECURELY FASTENED. TRY NOT TO OVERTIGHTEN ANY NUTS WHICH MAY CAUSE THE THREADS ON THE BOLTS TO STRIP, WEAKENING THE BOLT OR POSSIBLY CRUSHING THE PART WHICH THE BOLT ATTACHES.

DOUBLE CHECK TO BE SURE YOU HAVE TIGHTENED EVERYTHING WITH THE EXCEPTION OF:

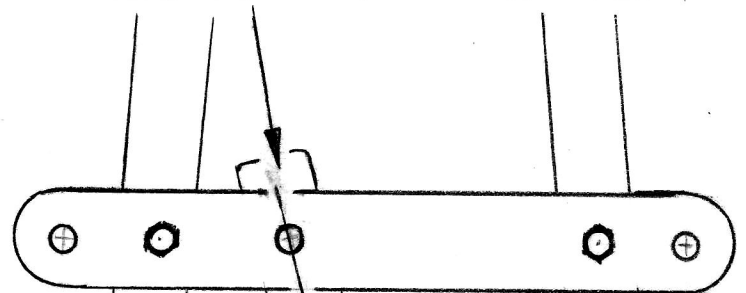
- A. THE  $\frac{3}{16}$ " DIA. PULLEY BOLT IN HOLE "A" - SEE STEP # 1.7
  - B. THE  $\frac{1}{4}$ " DIA. BOLT LOCATED IN THE REAR HOLE OF THE UPPER REAR FRAME  $\frac{1}{2}$  TUBES - SEE STEP # 1.19
- MORE PARTS WILL BE INSTALLED AT THESE LOCATIONS SO THEY SHOULD REMAIN FINGER TIGHT FOR NOW.

CHECK THE BOLTS WHICH MOUNT THROUGH THE CENTER OF ANY INDIVIDUAL S-29 BRKT WHICH DOESN'T ALREADY HAVE A TUBE ATTACHED. ON THE REAR FRAME ASSY THERE ARE SIX FACING REARWARD AND TWO FACING FORWARD. ON THE LOWER FRAME TUBE ASSY THERE ARE FOUR BRKTS WHICH FACE UPWARD. THE BOLTS WHICH HOLD THESE BRKTS THROUGH THEIR CENTER SHOULD BE PROPERLY TIGHTENED, BUT SHOULD ALLOW THE BRKTS TO ROTATE FIRMLY WITHOUT BENDING OR DISTORTION FOR LATER ALIGNMENT. INSERT A  $\frac{1}{4}$ " ROD OR PHILIPS SCREWDRIVER THROUGH EACH BRKT. APPLY A FIRM TWISTING FORCE TO THE PART. IF THE BRKT WILL NOT ROTATE WITHOUT FLEXING OR DISTORTING, LOOSEN ITS MOUNT BOLT JUST ENOUGH TO ALLOW IT TO ROTATE A LITTLE. BE CAREFUL NOT TO PERMANENTLY DAMAGE THE PART. TIGHTEN EVERYTHING ELSE COMPLETELY!

**1.23** PLACE THE SEMI-COMPLETE UNDERCARRIAGE FRAME ASSEMBLY ON A WORKTABLE OR FLOOR AS SHOWN. DRILL  $\frac{1}{4}$ " DIA. HOLES AND PERMANENTLY INSTALL BOLTS IN LOWER DIAG. STRUT AND FRONT-INNER FRAME STRUT. REMOVE BURRS BEFORE INSERTING BOLTS.



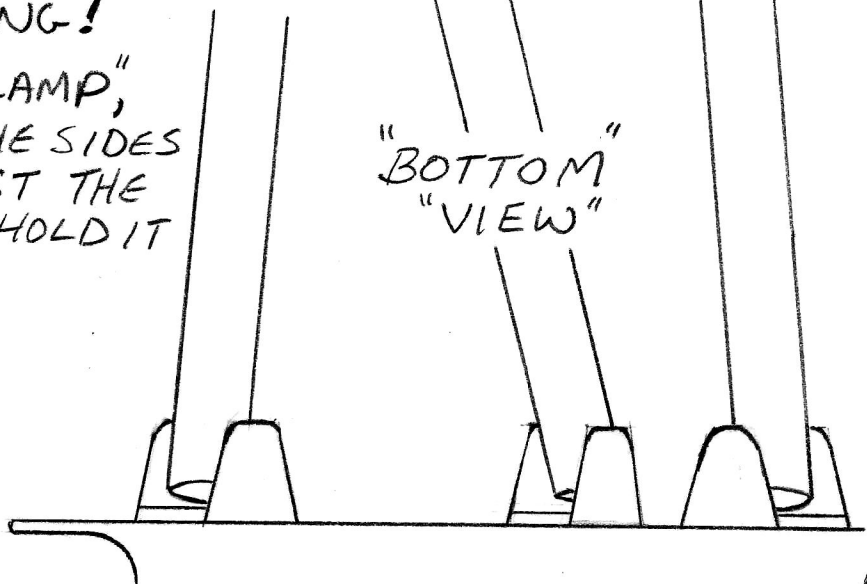
DRILL  $\frac{1}{4}$ " DIA. HOLES  
 SECURE WITH:  
 AN 4-16A BOLTS  
 AN 365-428A NUTS  
 AN 960-416 WASHERS



MAKE SURE THE TUBE ENDS ARE "CENTERED" BENEATH THE HOLES IN THE MOUNT BRKTS PRIOR TO DRILLING!

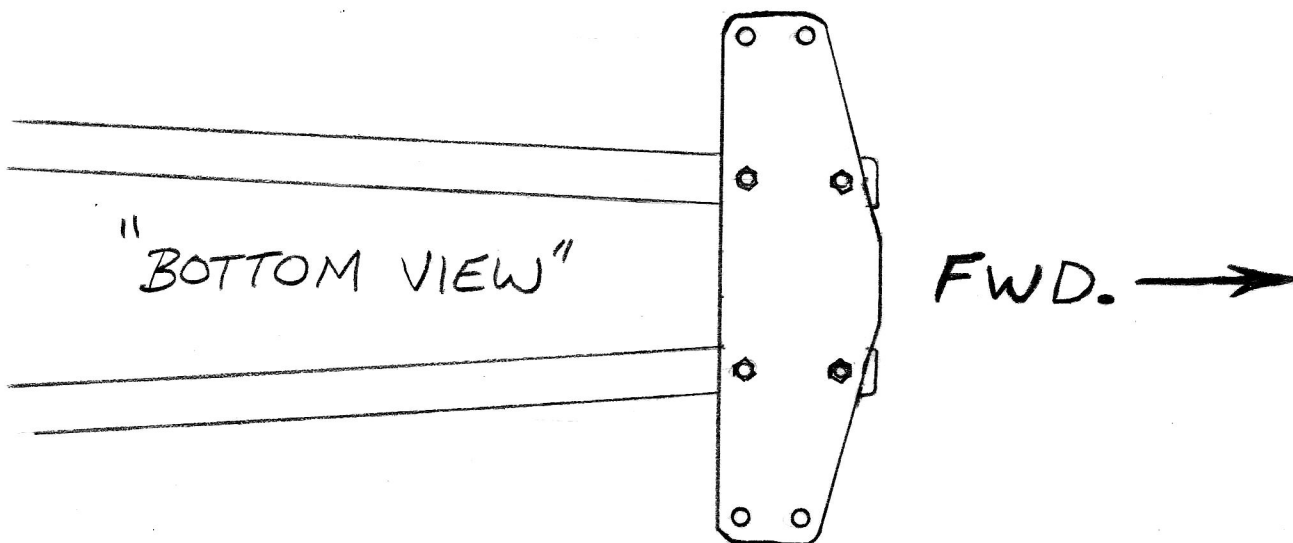
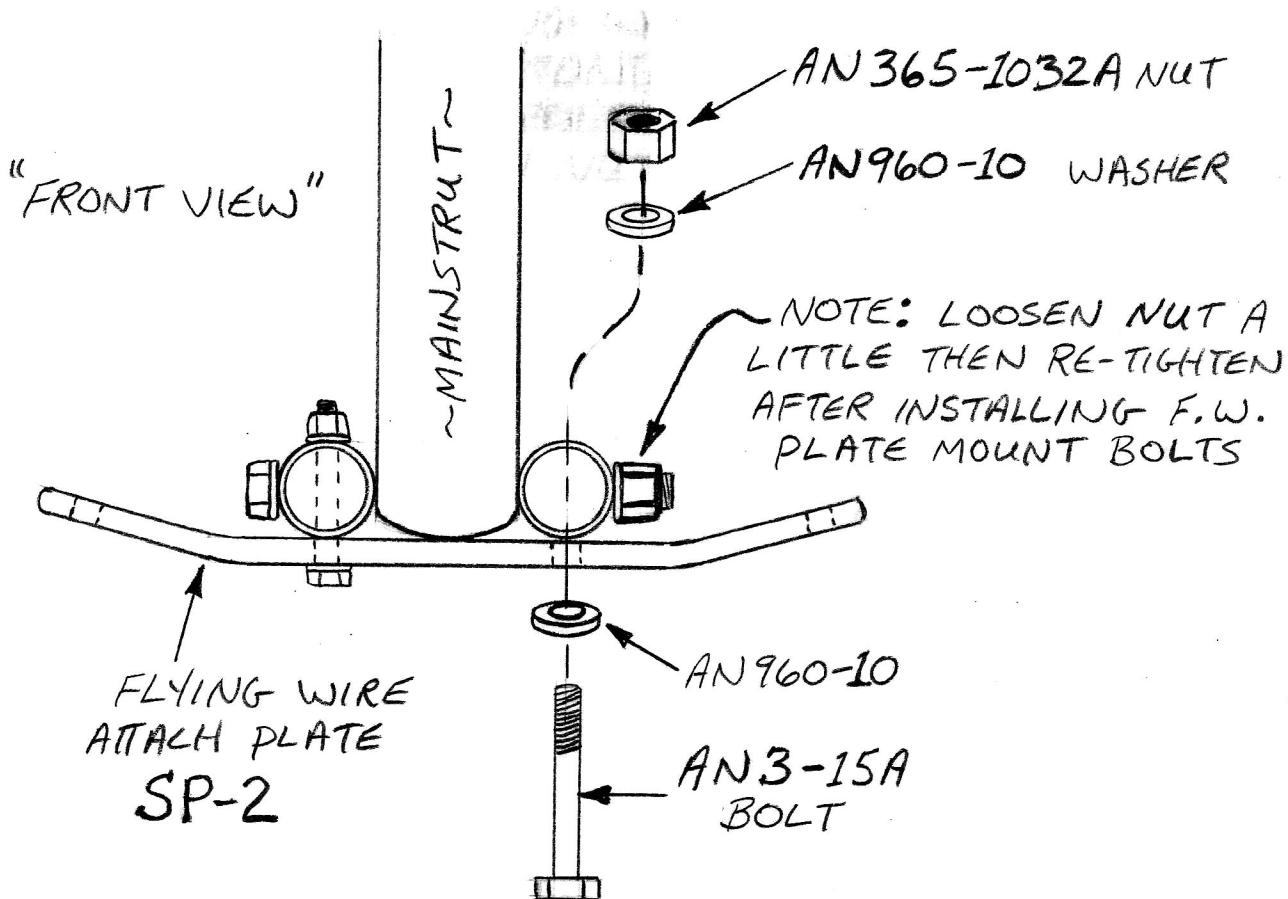
IF YOU HAVE A "C-CLAMP", USE IT TO PINCH THE SIDES OF THE BRKT AGAINST THE TUBE END TO HELP HOLD IT IN POSITION.

"BOTTOM"  
 "VIEW"

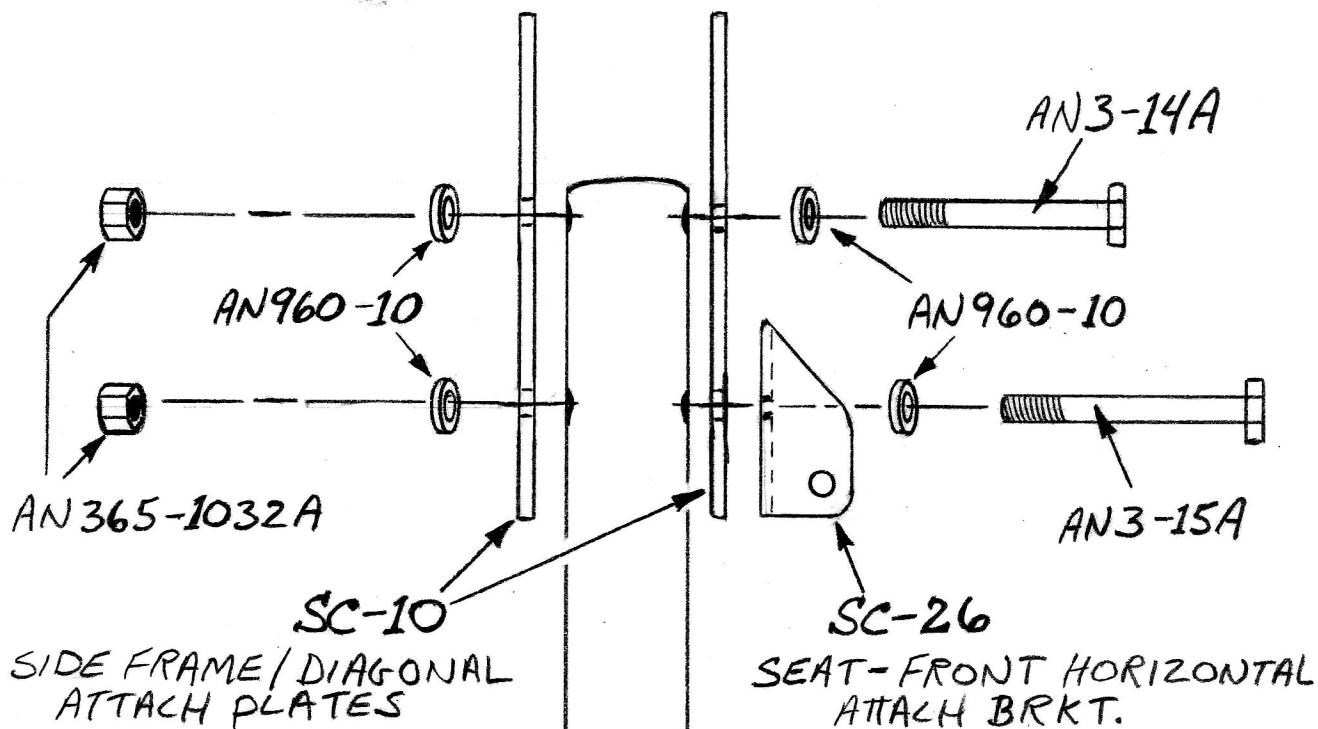
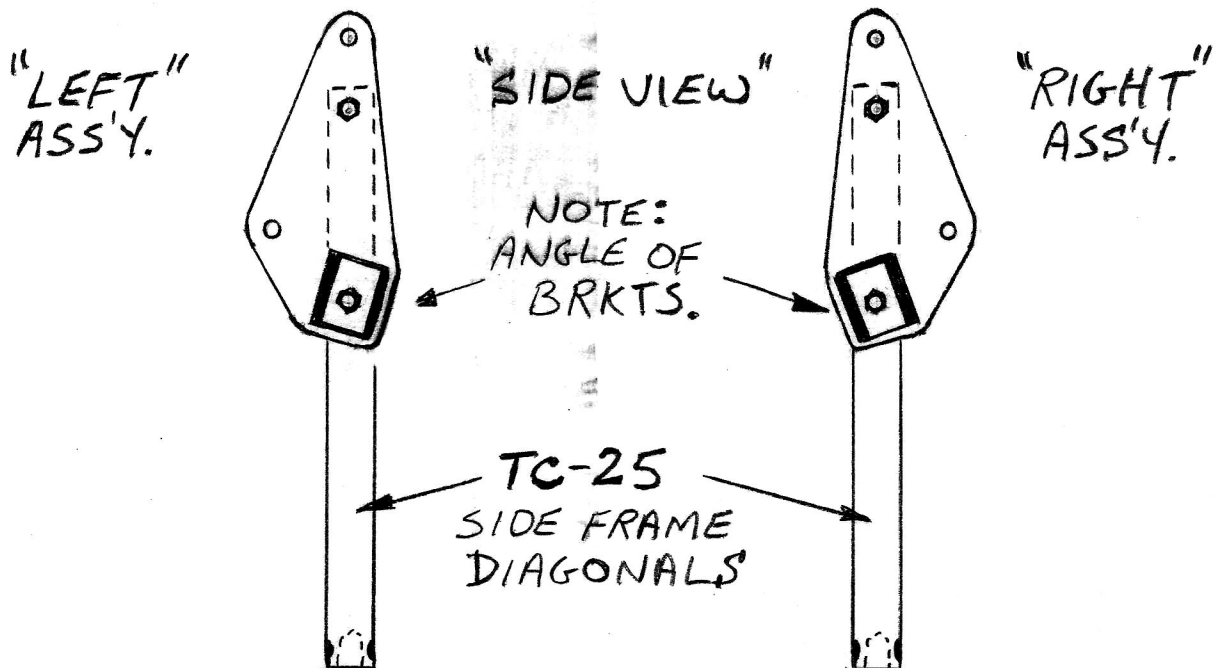




1.24 MOUNT FLYING WIRE ATTACH PLATE, SP-2 TO BOTTOM-FRONT END OF LOWER FRAME TUBES WITH FOUR BOLTS AND PROPER HARDWARE AS SHOWN. TIGHTEN NUTS PERMANENTLY AND SECURELY!



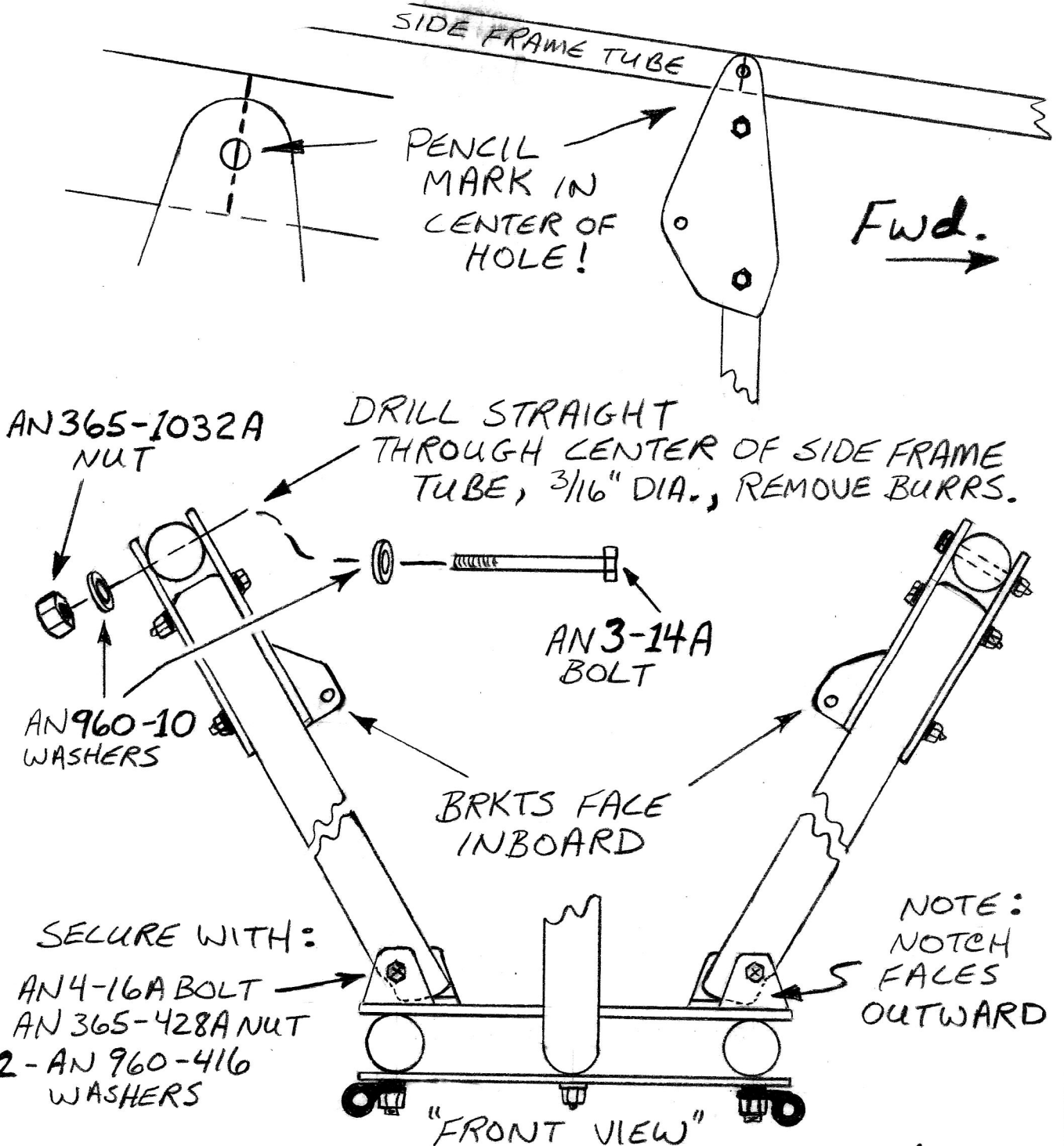
**1.25** MAKE UP A PAIR OF LEFT AND RIGHT, SIDE FRAME DIAGONAL ASSEMBLIES AS SHOWN. TIGHTEN ALL HARDWARE SECURELY.



NOTE: NOTCH IS ON SIDE OF TUBE OPPOSITE SC-26 BRKT.

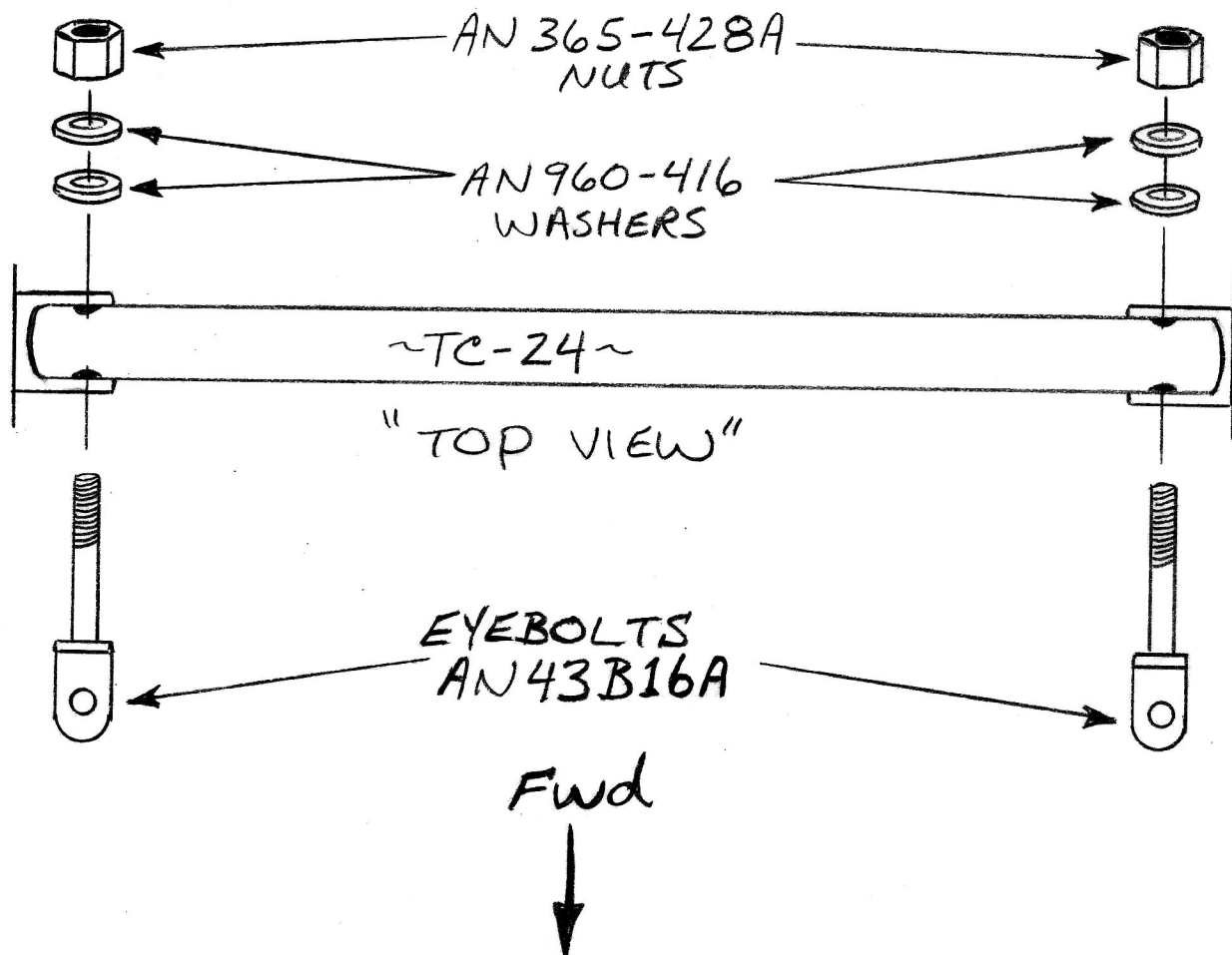
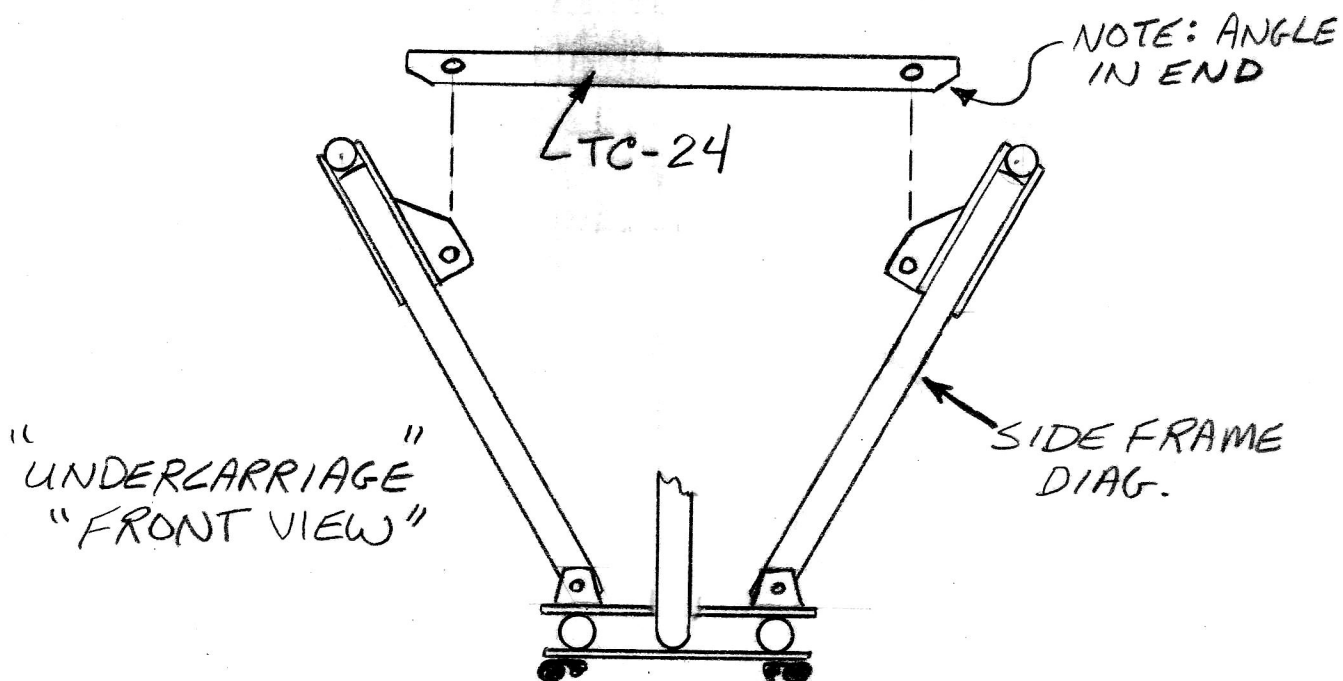
"FRONT VIEW"  
"LEFT ASSEMBLY"

**1.26** ROTATE S-29 LOWER FRAME BRKTS TO PROPER ANGLES AND ATTACH SIDE FRAME DIAGONALS. CENTER THE UPPER HOLES OF THE DIAGONAL ATTACH PLATES, DIRECTLY OVER THE PENCIL MARK PLACED ON THE SIDE FRAME TUBE IN STEP # 1.15. USE A "C-CLAMP" TO HOLD THE ASSY IN POSITION AND CAREFULLY DRILL A  $\frac{3}{16}$ " DIA. HOLE THROUGH PLATES AND SIDE FRAME TUBES.

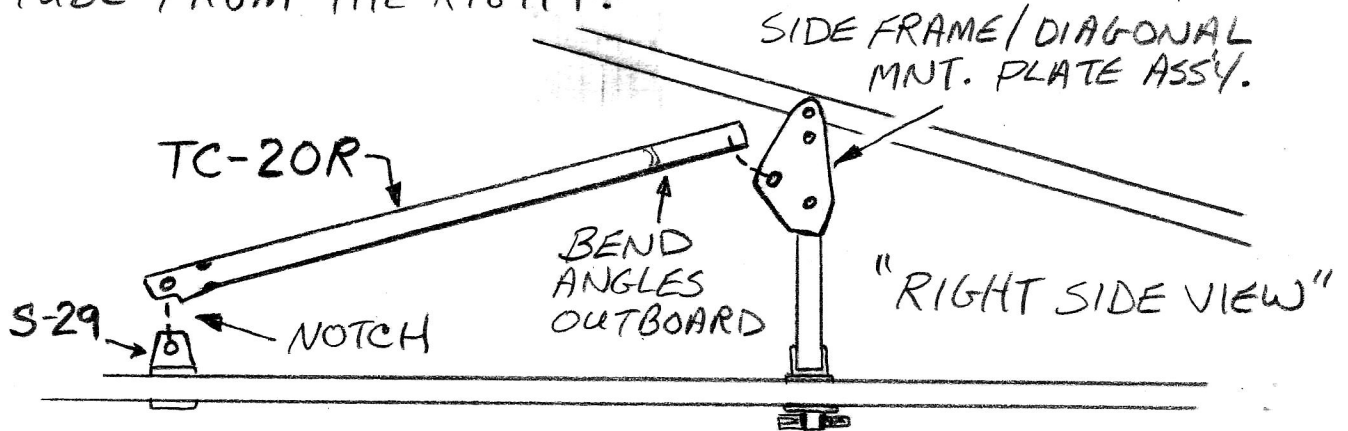


TIGHTEN ALL HARDWARE SECURELY!

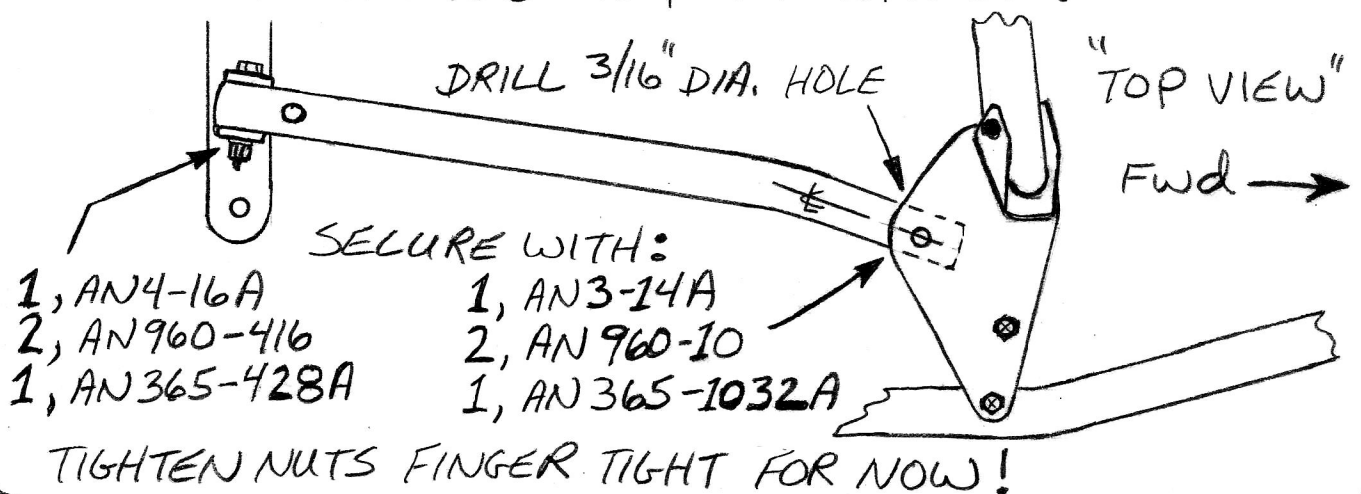
1.27 ROTATE BRKTS TO PROPER ANGLES AND  
INSTALL SEAT-FRONT HORIZONTAL STRUT, TC-24  
AS SHOWN. TIGHTEN NUTS FINGER TIGHT ONLY  
FOR NOW.



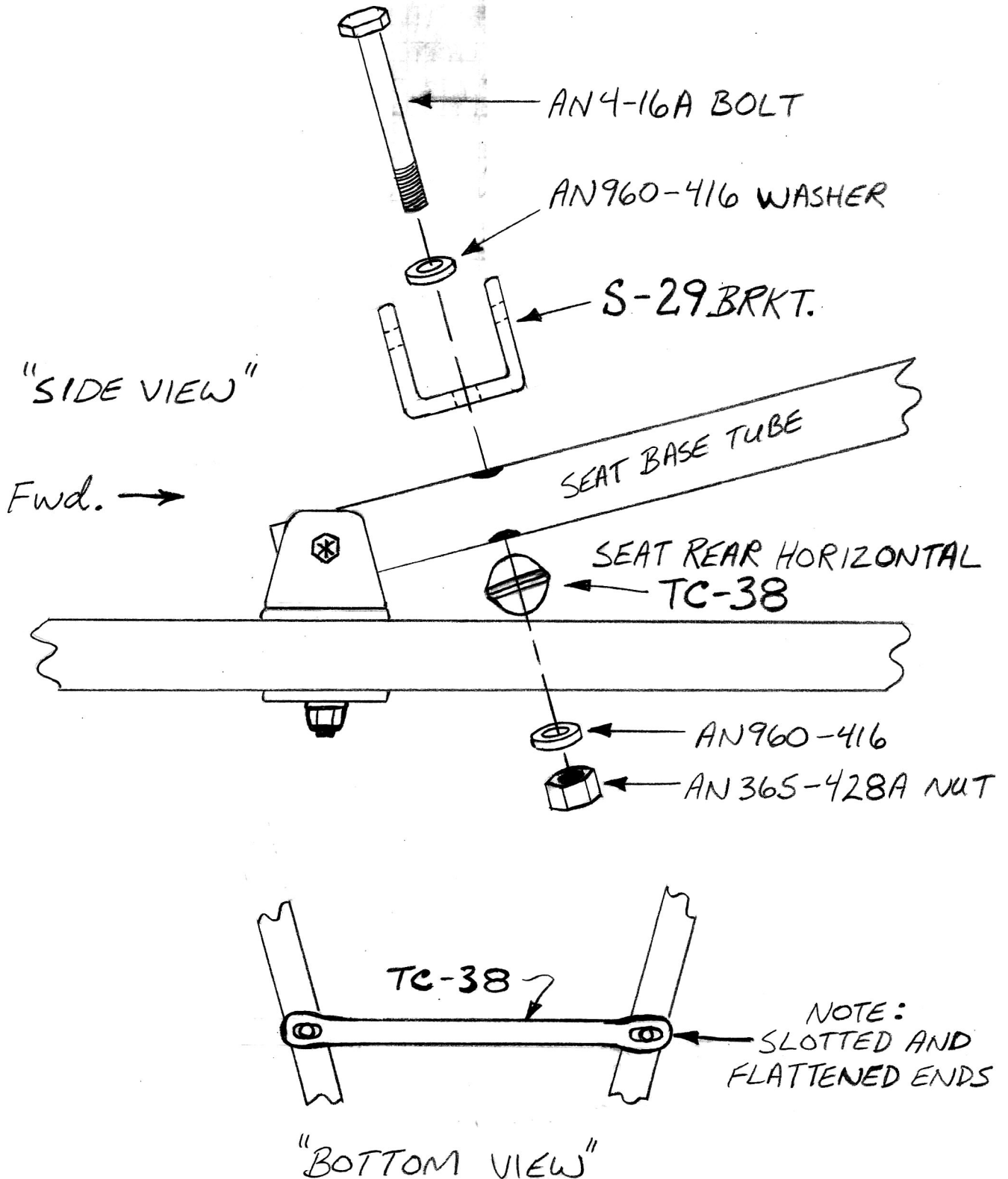
**1.28** CAREFULLY ROTATE S-29 BRKTS ON REAR HALF OF LOWER FRAME TUBE ASSY AND ATTACH LEFT AND RIGHT SEAT BASE TUBES, TC-20L AND R. THE FRONT END OF EACH BASE TUBE HAS A SLIGHT BEND AND THE REAR END HAS TWO HOLES AND A NOTCH. THE NOTCH FACES DOWNWARD AND THE BEND ANGLES OUTWARD, DISTINGUISHING THE LEFT TUBE FROM THE RIGHT.



PLACE THE FRONT (BENT) END OF THE SEAT FRAME TUBE "CENTERED" BETWEEN THE REAR HOLES OF THE SIDE FRAME/DIAGONAL ASSY MOUNT PLATES THEN ALIGN THE S-29 BRKTS AND INSERT THE REAR END OF THE TUBE, NOTCH DOWNWARD. TEMPORARILY SECURE WITH ONE AN4-16A BOLT. MAKE SURE THAT THE FRONT END OF THE TUBE IS DIRECTLY CENTERED IN THE MOUNT PLATE HOLES, THEN PINCH THE PLATES TOGETHER WITH A "C-CLAMP TO HOLD THE TUBE IN POSITION. DRILL A 3/16" DIA. HOLE THROUGH THE TUBE END USING THE PRE-DRILLED HOLES IN THE PLATES AS A GUIDE. REMOVE BURRS AND TEMPORARILY SECURE WITH ONE, AN3-14A BOLT, WASHERS AND NUT. BOLTS POINT OUTWARD!



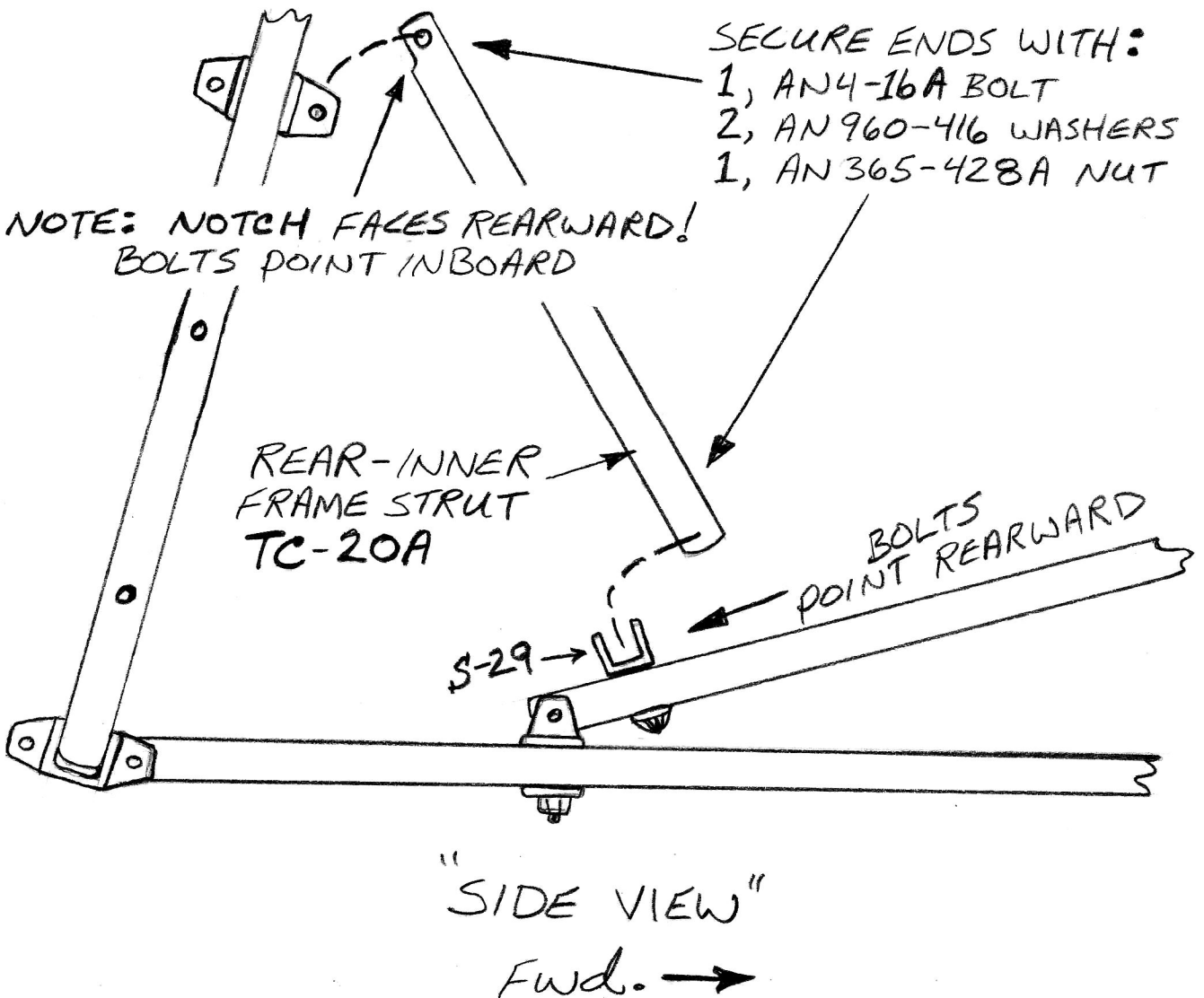
**1.29** INSTALL A PAIR OF S-29 BRKTS IN THE REAR HOLE OF THE SEAT BASE TUBES. PLACE THE SEAT REAR HORIZONTAL TUBE, TC-38 (1/2" DIA. X 7 3/4" LONG) IN POSITION AND TIGHTEN THE BOLTS SECURELY BUT LEAVE LOOSE ENOUGH TO ALLOW BRKTS TO ROTATE FIRMLY FOR LATER ALIGNMENT.



**1.30** ATTACH REAR-INNER FRAME STRUT TUBES TO THE INBOARD PAIR OF S-29 BRKTS LOCATED ON THE REAR FRAME ASSEMBLY. TEMPORARILY REMOVE THE REAR END OF THE SIDE FRAME TUBES FROM THE OUTBOARD BRKTS AND INSTALL THE REAR FRAME STRUT BOLTS POINTING INBOARD. TIGHTEN THE NUTS SNUG AND RE-CONNECT THE SIDE FRAME TUBE ENDS.

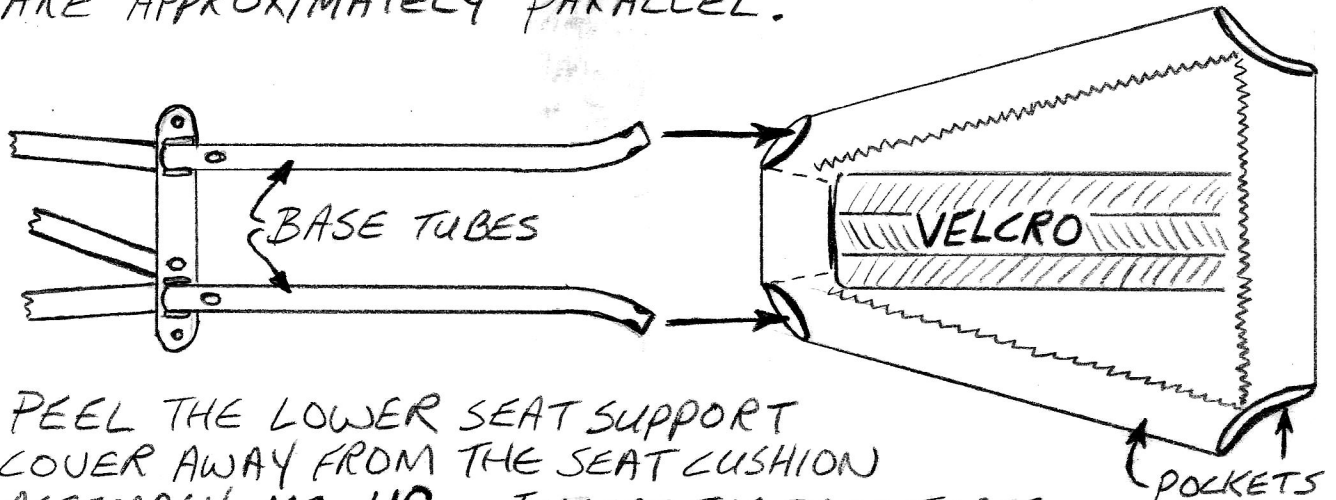
ROTATE THE LOWER S-29 BRKTS ON THE REAR OF THE SEAT BASE TUBES TO THE PROPER ANGLES AND INSERT THE UNDRILLED END OF THE REAR FRAME STRUT INTO THE S-29 BRKTS. WITH THE S-29 BRKTS PROPERLY ALIGNED AND THE STRUT END DIRECTLY CENTERED BETWEEN THE HOLES OF THE BRKT, DRILL A 1/4" DIA. HOLE THROUGH THE TUBE END USING THE HOLES AS A GUIDE. REMOVE BURRS AND INSTALL HARDWARE AS SHOWN.

LEAVE NUTS FINGER TIGHT.





**2.1 SEAT ASSEMBLY** ~ REMOVE THE 1" DIA. SEAT FRONT HORIZONTAL AND 1/2" DIA. REAR HORIZONTAL STRUTS FROM THE FRAME. DIS-CONNECT THE BOTTOM END OF THE REAR-INNER FRAME STRUTS AND REMOVE THE S-29 BRKTS FROM THE SEAT BASE TUBES. DIS-CONNECT THE FRONT OF THE BASE TUBES AND SWING THE ENDS INWARD, TOWARD EACH OTHER UNTIL THE BASE TUBES ARE APPROXIMATELY PARALLEL.



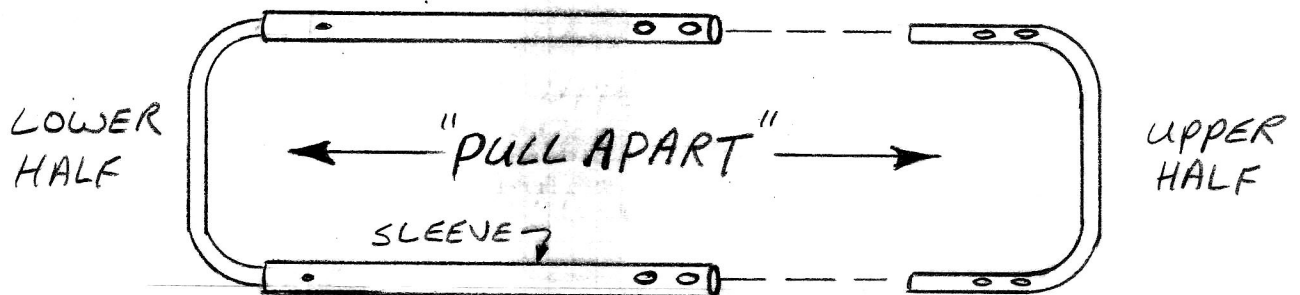
PEEL THE LOWER SEAT SUPPORT COVER AWAY FROM THE SEAT CUSHION ASSEMBLY, MC-48. INSERT THE BASE TUBES INTO THE COVER POCKETS AND SLIDE THE COVER BACK INTO POSITION. BE SURE THE VELCRO SIDE OF THE COVER FACES UPWARD! RE-ATTACH THE FRONT OF THE BASE TUBES AND RE-INSTALL THE S-29 BRKTS AT THE REAR. INSERT THE REAR HORIZONTAL TUBE INTO THE REAR COVER POCKET AND SECURE TO MOUNT BOLTS AS BEFORE. STRETCH THE COVER FORWARD AS FAR AS POSSIBLE, WORKING THE COVER MATERIAL ALONG THE SIDES OF THE BASE TUBES WITH YOUR HANDS AS YOU PULL. INSERT THE FRONT HORIZONTAL TUBE INTO THE FRONT COVER POCKET AND PLACE ONE END INTO ITS ATTACH BRKT. TRY TO PULL OR PRY THE OTHER END OF THE STRUT INTO POSITION.

THIS OPERATION MAY REQUIRE TWO PEOPLE IF YOU AREN'T EQUIPPED WITH STRONG ARMS AND HANDS AS THE COVER FITS EXTREMELY TIGHT. USE OF A LARGE SCREWDRIVER TO PRY THE TUBE INTO PLACE WHILE YOU PULL MAY HELP.

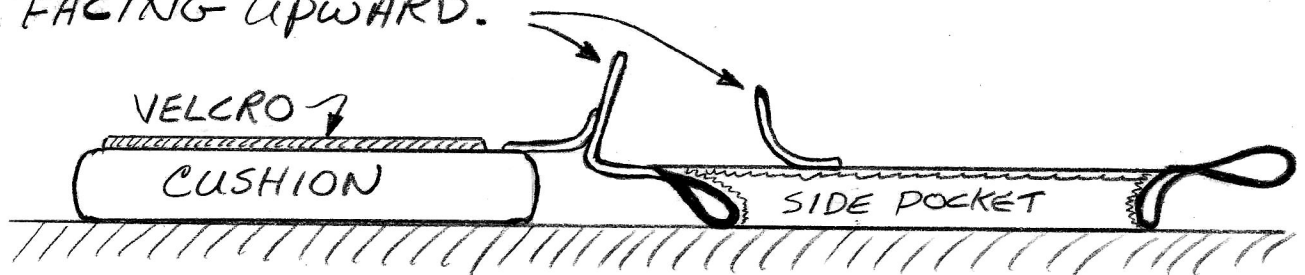
AFTER THE COVER AND APPROPRIATE TUBES ARE IN THEIR PLACE, RE-INSTALL THE REAR INNER FRAME STRUTS. TIGHTEN ALL MOUNT BOLTS OR HARDWARE INSTALLED IN STEPS # 1.25 TO 2.1, SECURELY AND PERMANENTLY!



2.2 SEPARATE THE UPPER AND LOWER HALVES OF THE SEAT/BACKREST FRAME ASS'Y, TC-36, BY PULLING THEM APART.

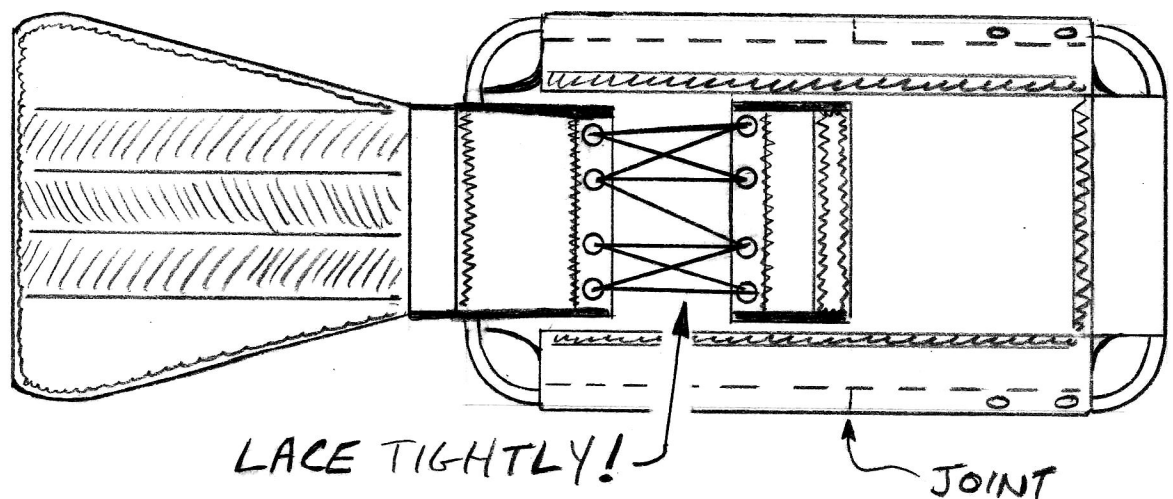


LAY THE SEAT CUSHION ASSEMBLY, FACE DOWN ON A FLAT SURFACE WITH THE GROMMET FLAPS FACING UPWARD.



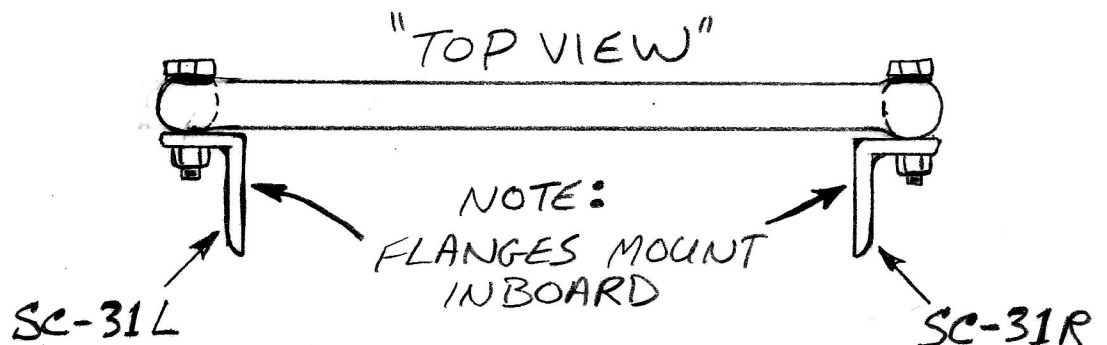
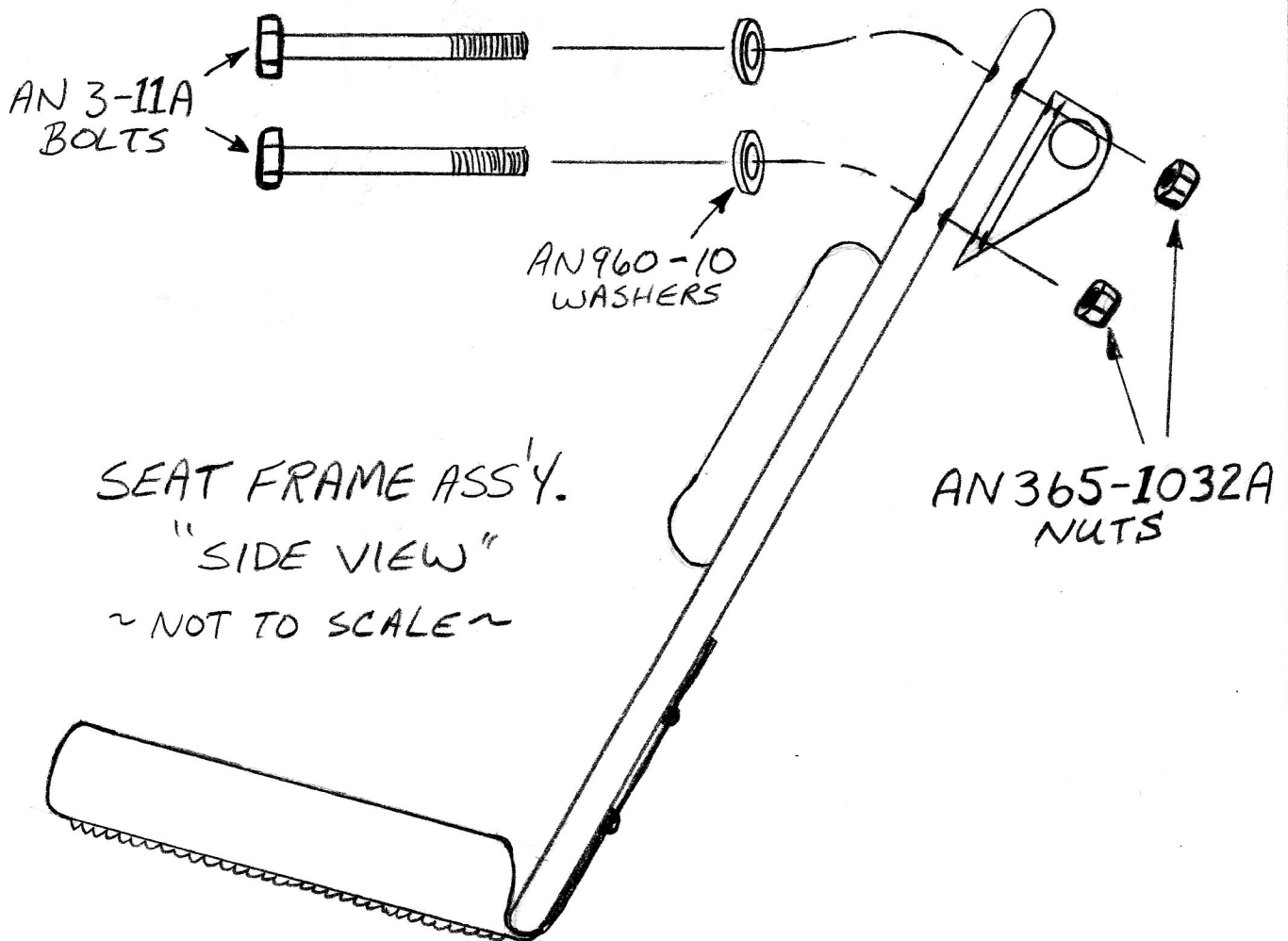
WORK THE UPPER BACKREST FRAME HALF INTO THE COVER, BEGINNING AT THE LOWER END, UNTIL THE FRAME IS PROPERLY POSITIONED, THEN SLIDE THE LOWER FRAME HALF INTO THE SIDE POCKETS UNTIL THE TWO HALVES JOIN. BE SURE THE UPPER FRAME HALF IS COMPLETELY "BOTTOMED OUT" IN THE SLEEVES OF THE LOWER FRAME.

PULL THE LOWER GROMMET FLAP AROUND THE BOTTOM OF THE FRAME AND LACE TIGHTLY TO THE UPPER FLAP.



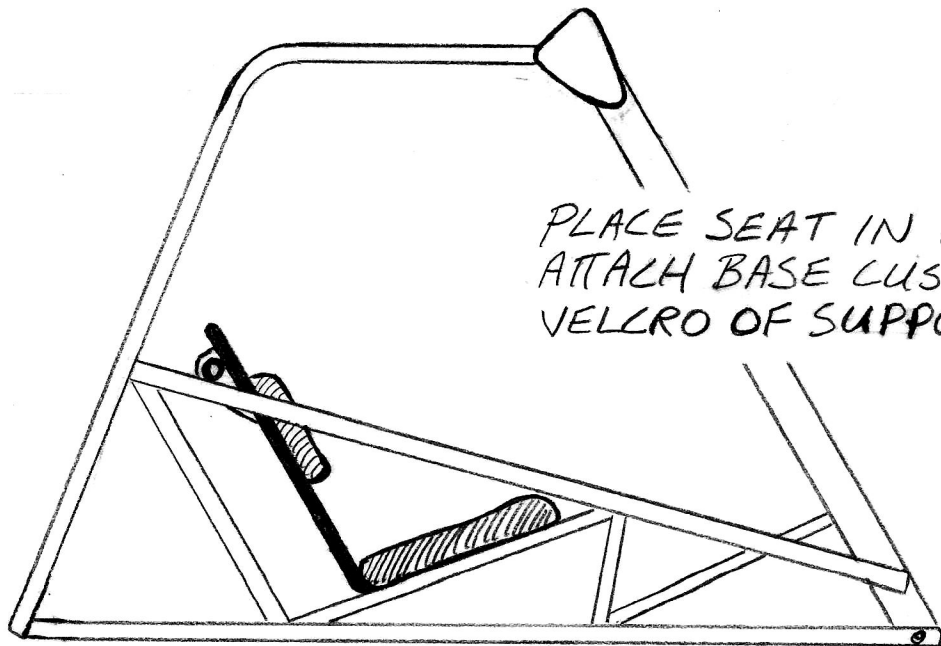
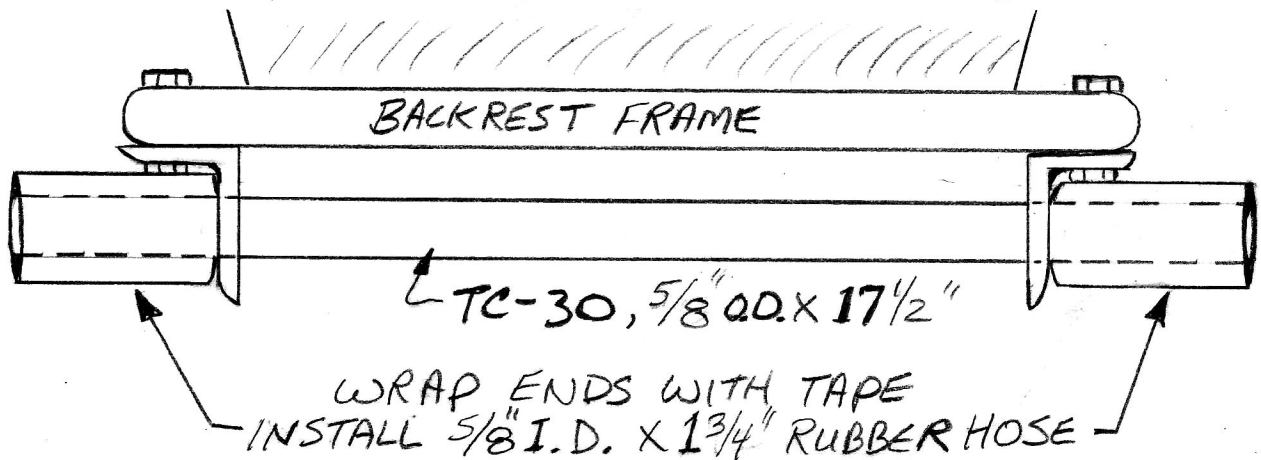
**2.3** USE A HOT KNIFE OR OTHER HEAT CUTTING TOOL, SOLDERING GUN, ETC, TO CAREFULLY CUT OR MELT AWAY THE BACKREST COVER MATERIAL FROM AROUND THE FOUR HOLES IN THE UPPER BACKREST FRAME. REMOVE JUST ENOUGH MATERIAL TO ALLOW BOLTS TO PASS THROUGH THE HOLES.

ATTACH LEFT AND RIGHT SEAT BACKREST MOUNT BRKTS, SC-31L AND R, TO THE UPPER-REAR SIDE OF THE BACKREST FRAME AS SHOWN. TIGHTEN BOLTS SECURELY!



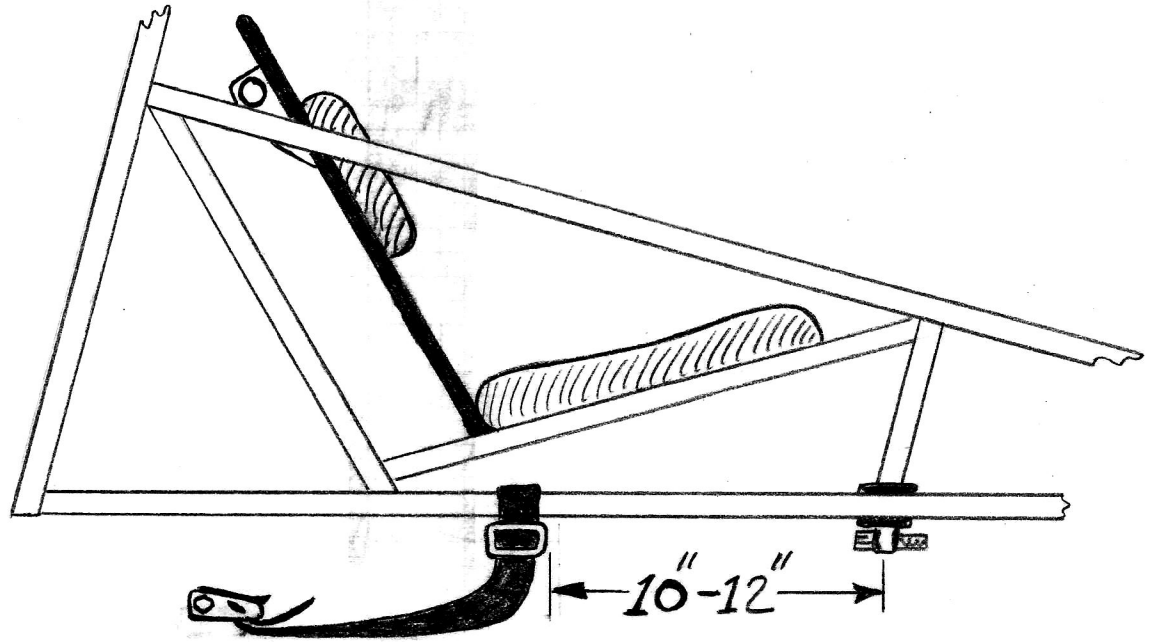
**2.4** LOCATE THE SEAT BACKREST CROSSTUBE, TC-30. WRAP ONE END WITH 5 OR 6 WRAPS OF  $\frac{3}{4}$ " WIDE MASKING TAPE. ALSO SUPPLIED IN THE KIT IS A 3" LONG PIECE OF  $\frac{5}{8}$ " I.D. RUBBER HOSE, MC-57. CUT THE 3" PIECE INTO 2-EQUAL PIECES,  $1\frac{1}{2}$ " LONG. SLIDE ONE OF THE PIECES OVER THE TAPED CROSSTUBE END. THE RUBBER PIECE SHOULD NOT GO ON EASILY AS IT WILL COME OFF AGAIN IF IT DOES, SO WRAP THE TUBE END WITH ENOUGH TAPE TO HOLD THE RUBBER SECURELY IN PLACE!

SLIDE THE UN-TAPED END OF THE CROSSTUBE THROUGH THE BRKTS ON THE SEAT BACKREST. WRAP THE OTHER END SECURELY WITH TAPE AND INSTALL THE OTHER PIECE OF  $1\frac{1}{2}$ " LONG RUBBER HOSE.

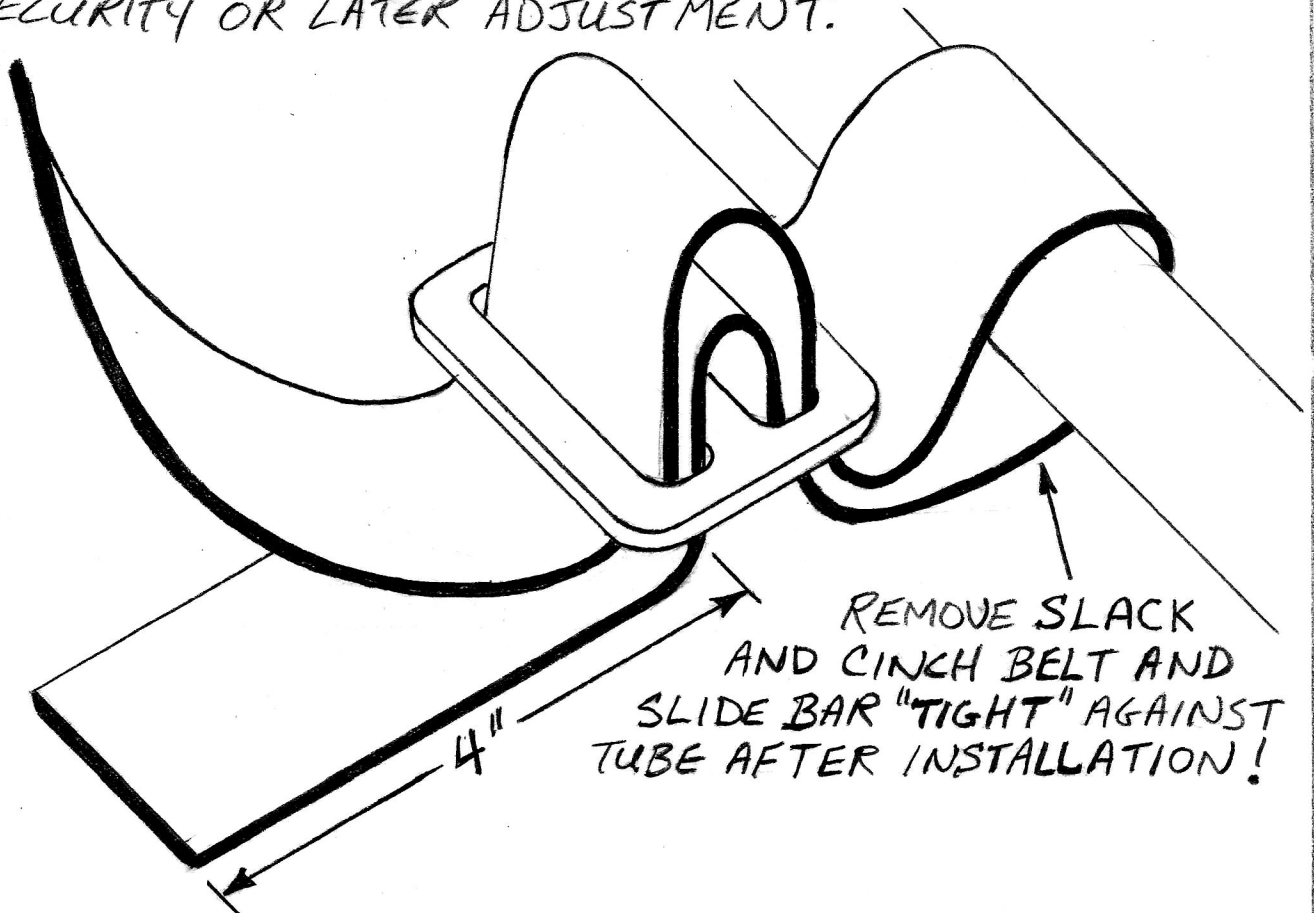


PLACE SEAT IN FRAME.  
ATTACH BASE CUSHION TO  
VELCRO OF SUPPORT COVER.

2.5 ATTACH SEAT BELT ASSEMBLY, C-1500-3, TO THE UNDERCARRIAGE LOWER FRAME TUBES AT THE POSITION SHOWN.

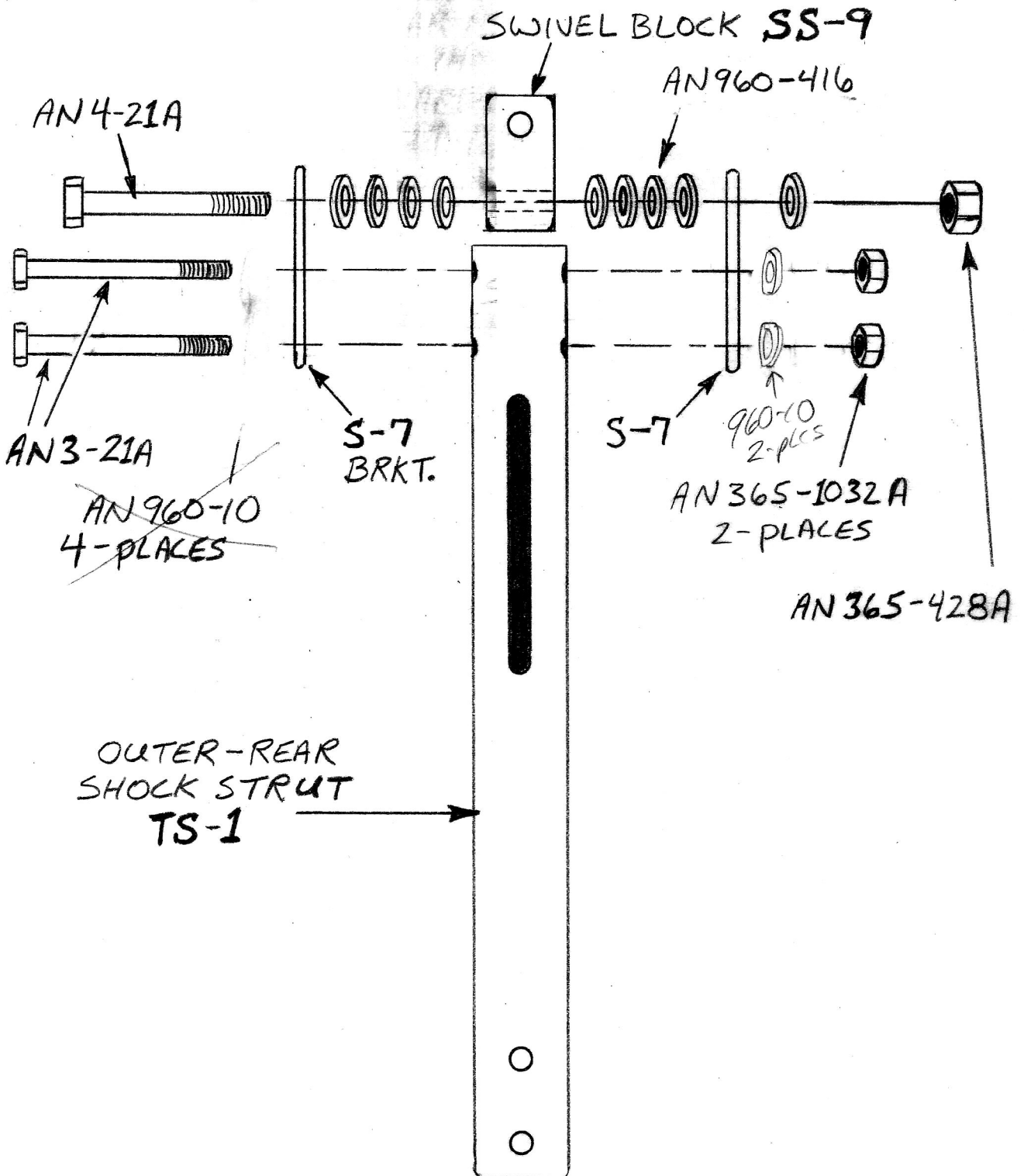


LOOP THE BELT THROUGH THE SLIDE BAR ADJUSTER, AROUND THE FRAME TUBE AND BACK THROUGH THE SLIDE BAR AGAIN. LEAVE ABOUT 4" OF "EXCESS" FOR SECURITY OR LATER ADJUSTMENT.

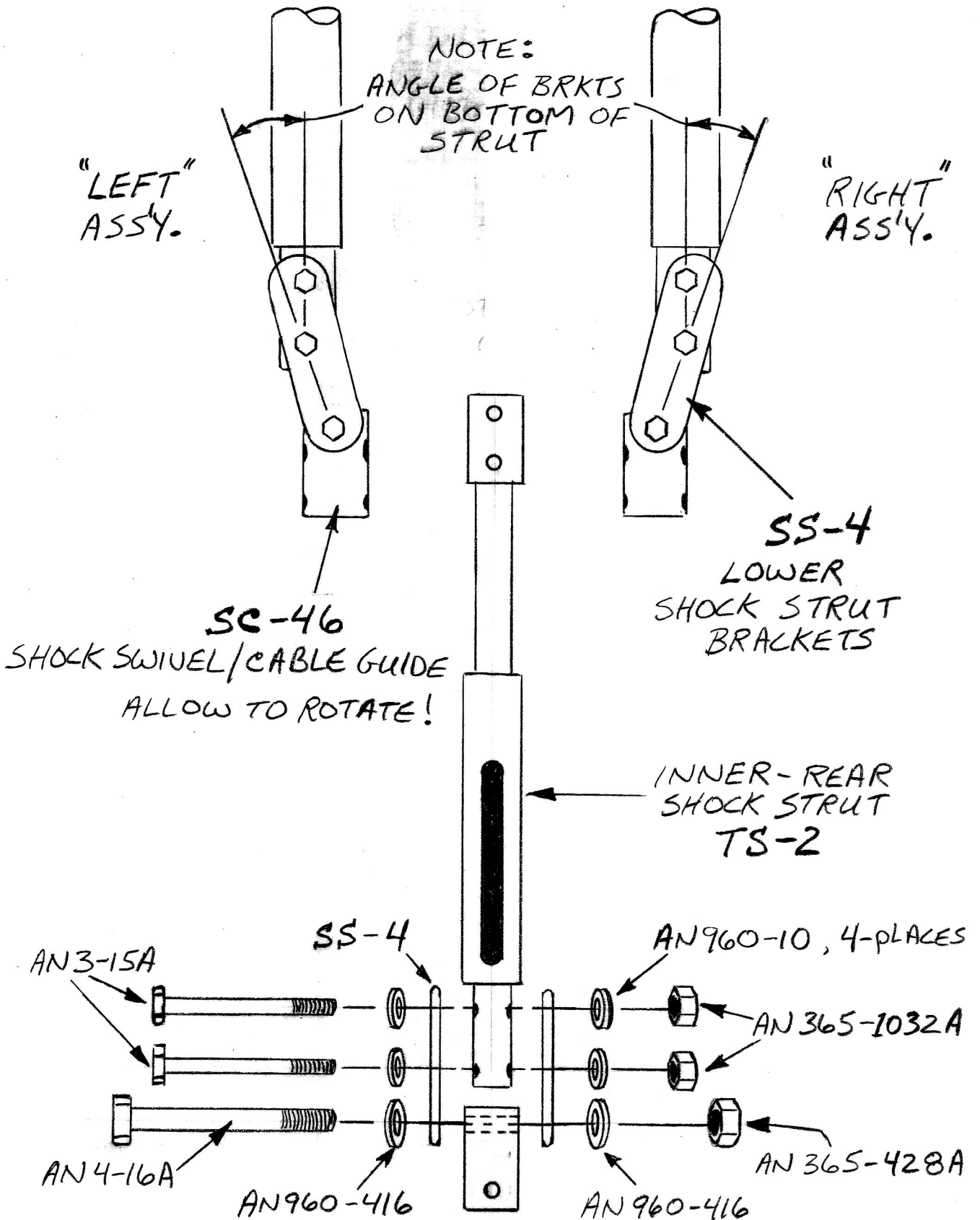


# 3.1 LANDING GEAR INSTALLATION

BEGIN SHOCK GEAR ASSEMBLY BY ATTACHING BRKTS TO THE UPPER END OF THE OUTER REAR SHOCK STRUT, TS-1, WITH PROPER HARDWARE AS SHOWN. TIGHTEN NUTS SECURELY BUT ALLOW SWIVEL BLOCK TO ROTATE EASILY.

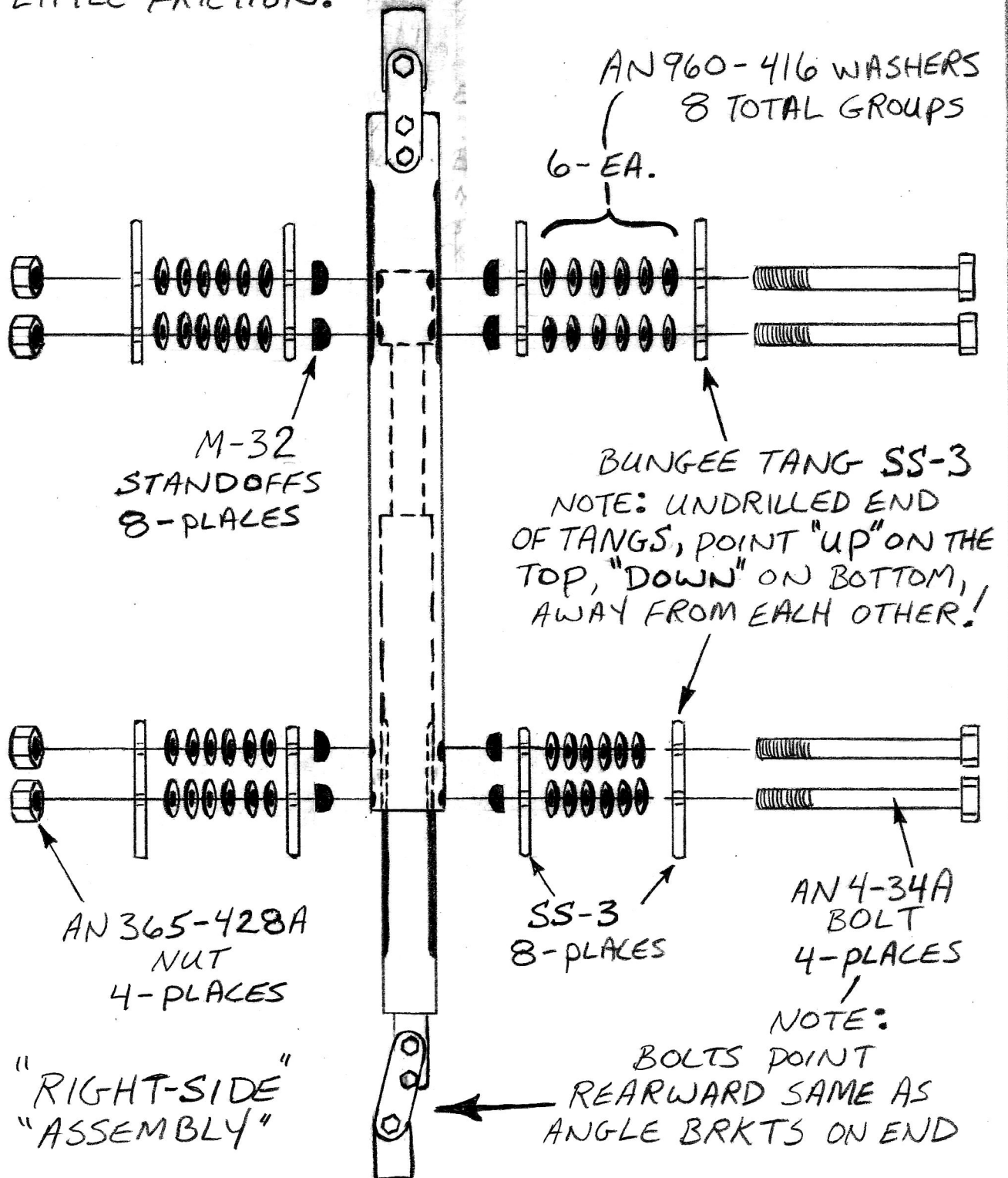


### 3.2 MAKE UP A PAIR OF LEFT AND RIGHT INNER-REAR SHOCK STRUT ASSEMBLIES BY ATTACHING HDWR AS SHOWN. TIGHTEN SECURELY!

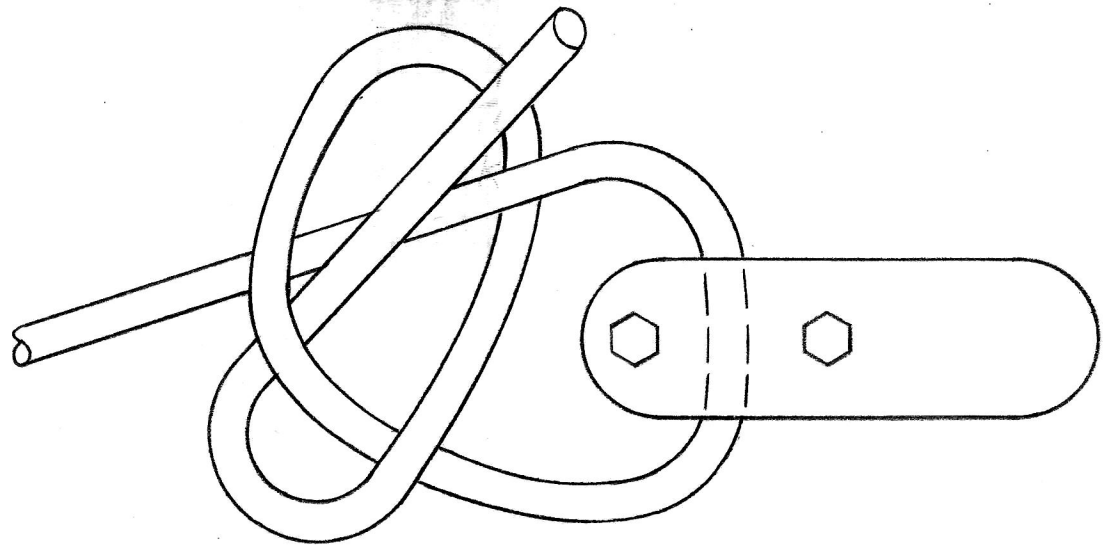




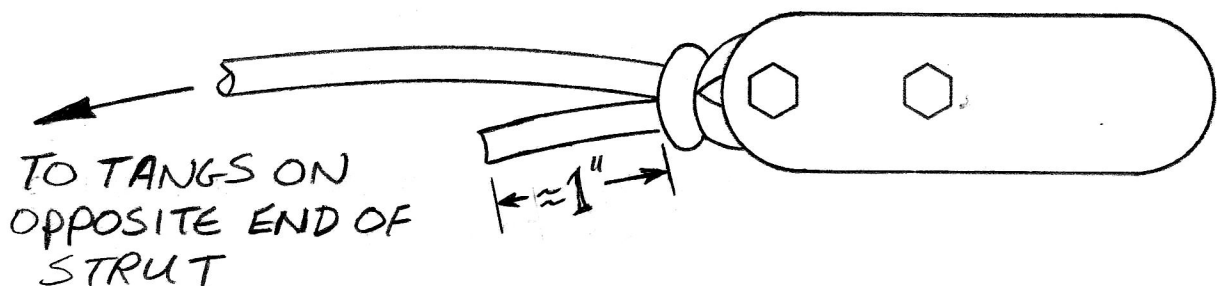
3.3 SLIDE INNER-REAR STRUT INSIDE OUTER STRUT AND SECURE WITH PROPER BOLTS AND HARDWARE AS SHOWN. TIGHTEN BOLTS SECURELY BUT LEAVE JUST LOOSE ENOUGH TO ALLOW INNER STRUT TO SLIDE UP AND DOWN EASILY INSIDE OUTER STRUT. YOU SHOULD ALSO BE ABLE TO ROTATE THE SWIVEL BLOCKS ON THE STRUT ENDS EASILY BY HAND WITH A LITTLE FRICTION.



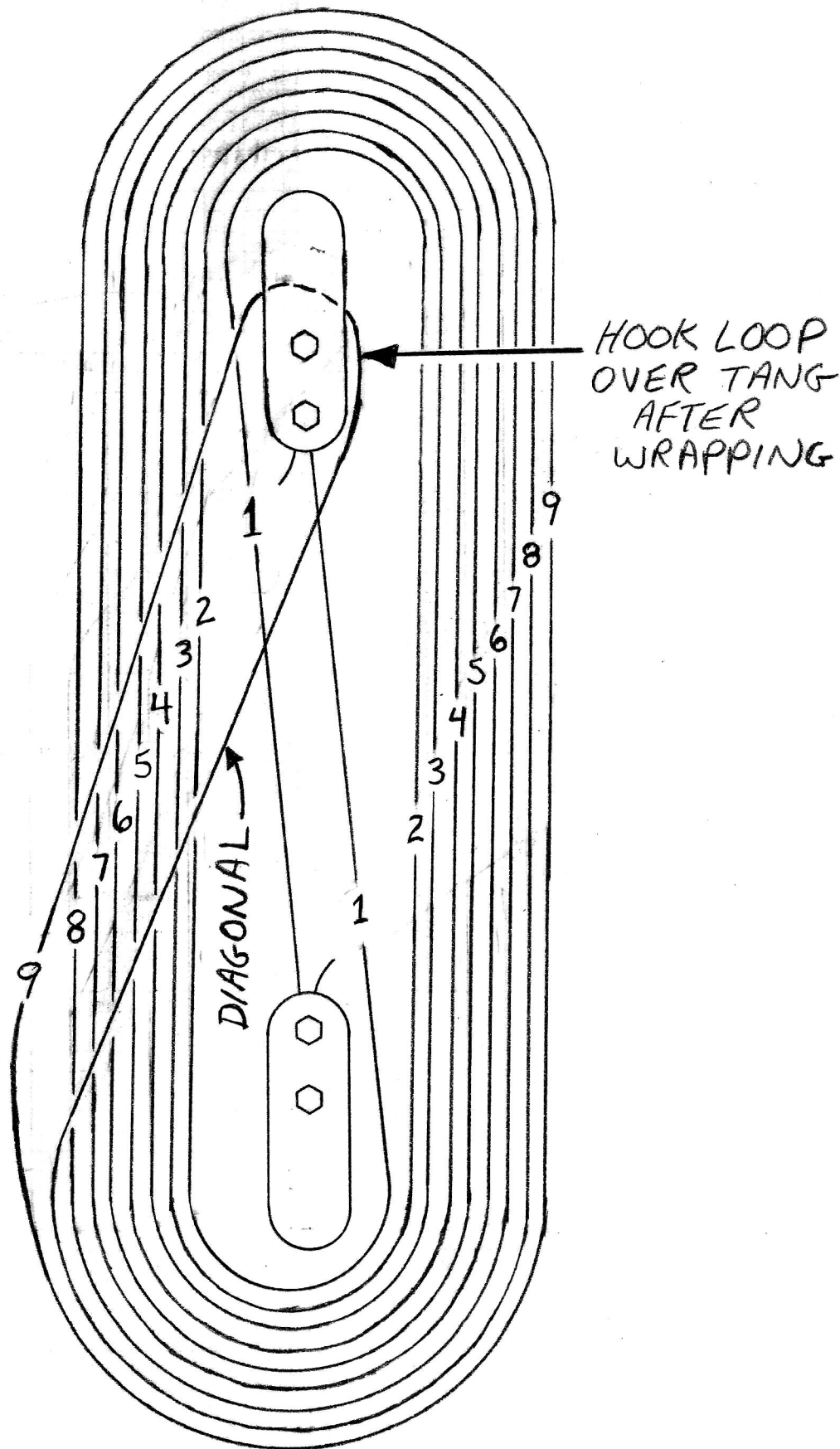
3.4 INCLUDED IN THE KIT IS A LARGE ROLL OF  $5/16$ " DIA. BUNGEE CORD, M-6. FROM THIS ROLL CUT FOUR INDIVIDUAL 22-FOOT LONG PIECES. SEAL THE ENDS WITH A HOT KNIFE ETC. PASS ONE END OF EACH CORD THROUGH SLOT BETWEEN THE SHOCK STRUT TANGS AND TIE A SLIP KNOT AS SHOWN.



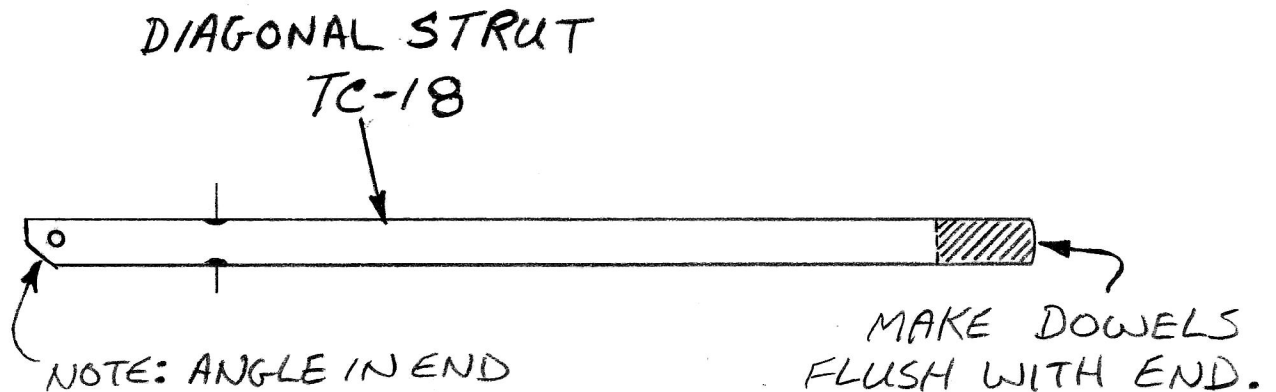
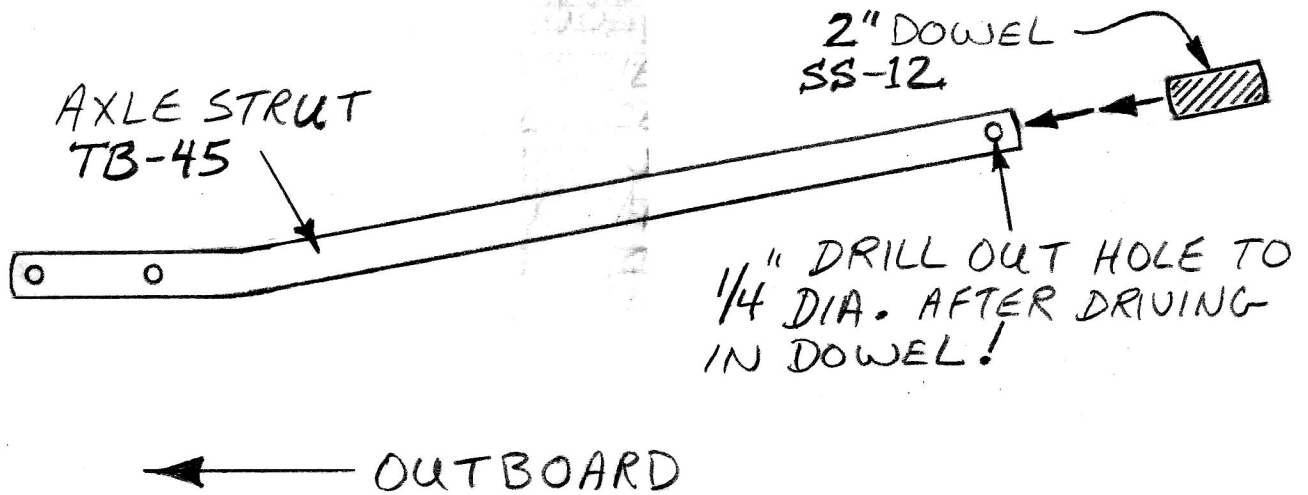
TAKE UP THE SLACK IN EACH KNOT, LEAVING A PIGTAIL APPROXIMATELY 1" LONG. TIE THE OTHER END OF THE BUNGEE THROUGH THE TANGS ON THE OPPOSITE STRUT END IN THE SAME MANNER.



**3.5** WRAP THE ENTIRE LENGTH OF BUNGEE AROUND THE TANGS, STRETCHING EACH STRAND ABOUT 2" UNTIL YOU HAVE 9-STRANDS PER SIDE AND 1-DIAGONAL. REPEAT ON OTHER SIDE OF SHOCK STRUT.

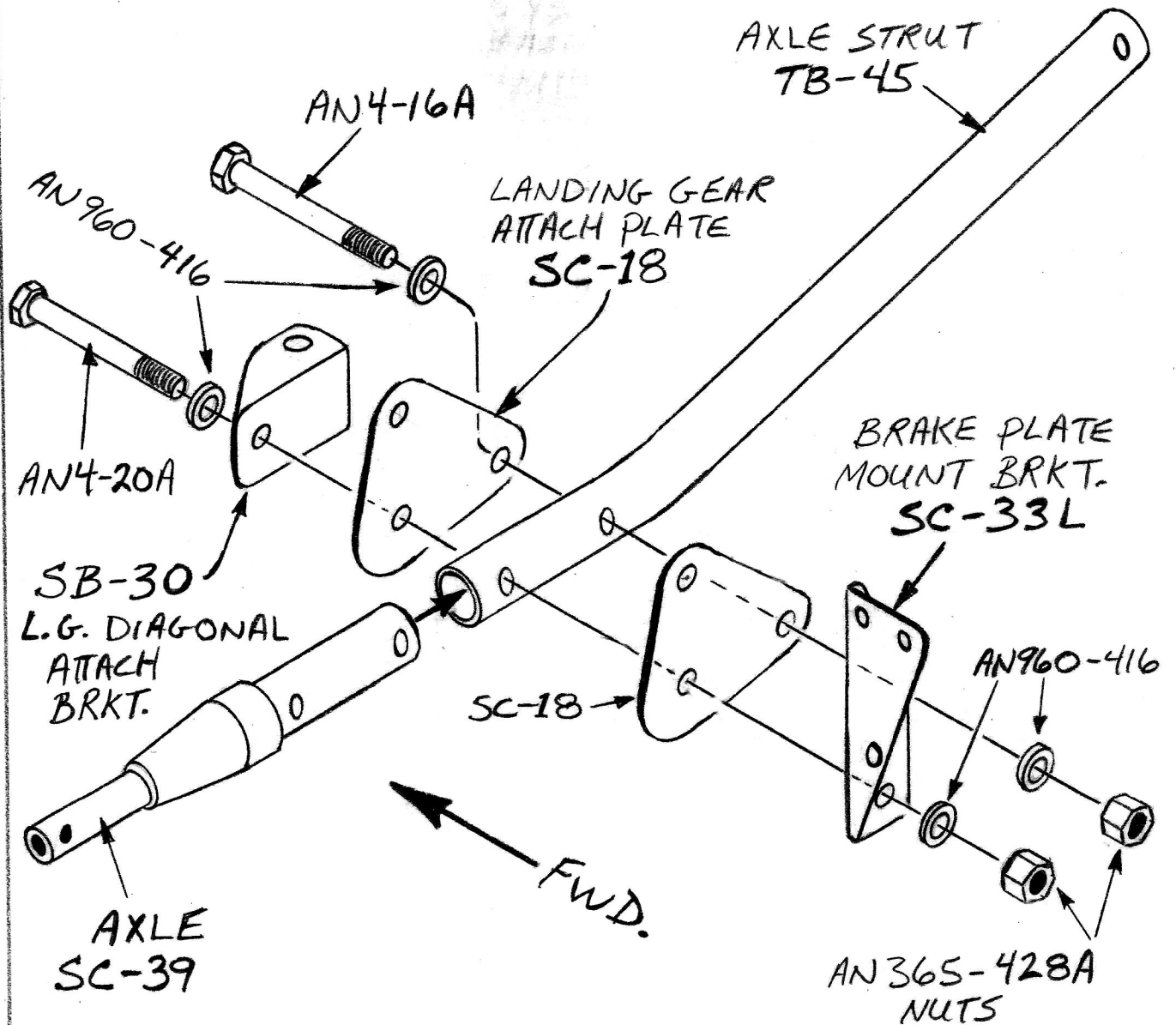


3.6 LOCATE THE 2-PAIRS OF LANDING GEAR AXLE AND DIAGONAL STRUTS. INSTALL WOODEN DOWELS (SS-12) IN THE STRUT ENDS AS SHOWN. IF THE DOWELS HAVE DRIED OUT AND SHRUNK A LITTLE PROVIDING A LOOSE FIT, WRAP THEM WITH MASKING TAPE TO OBTAIN A PROPER "TIGHT" FIT AND DRIVE IN WITH A HAMMER UNTIL THE DOWEL IS FLUSH WITH THE END OF THE TUBE.



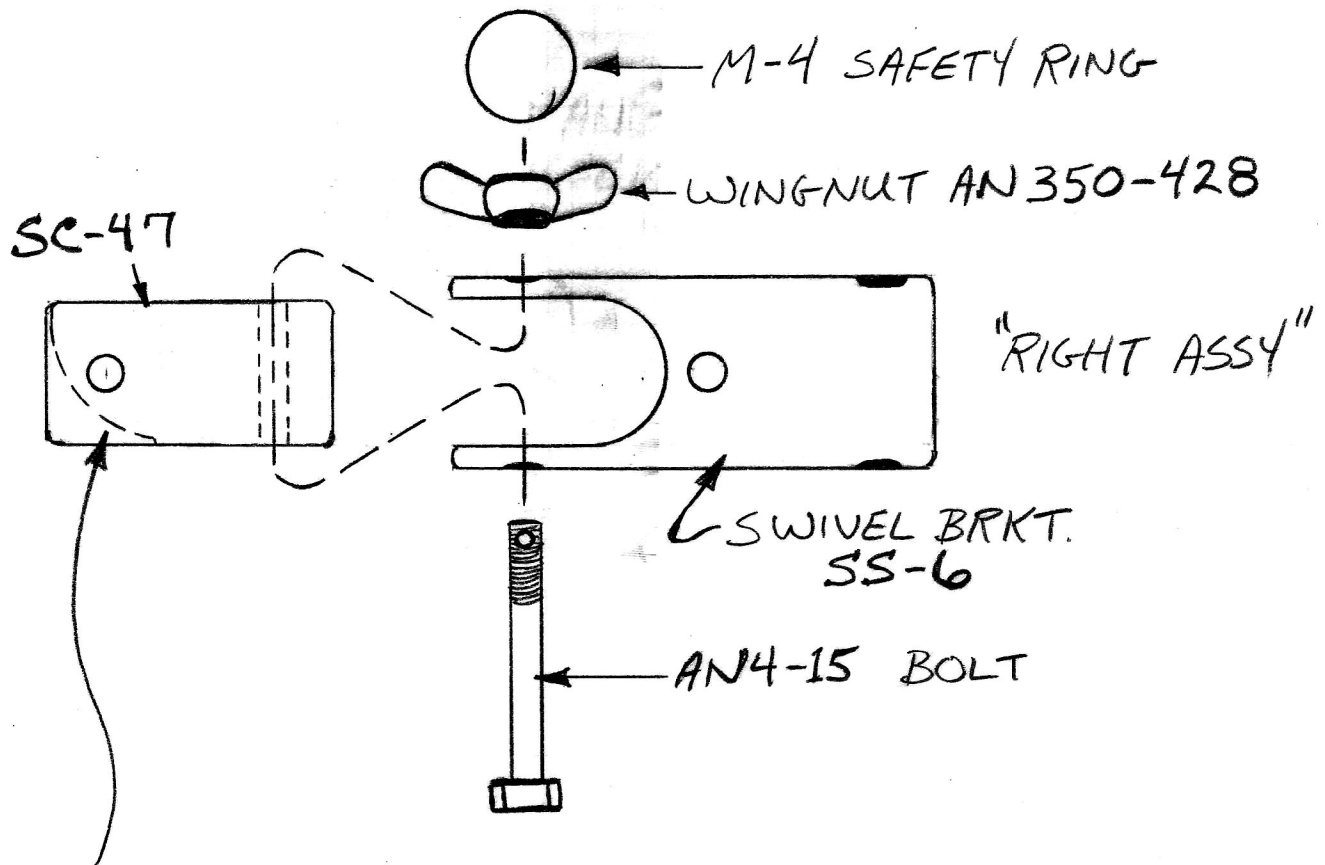
INSTALL DOWELS IN INBOARD END OF STRUTS ONLY, AS SHOWN.

**3.7** ASSEMBLE A LEFT AND RIGHT PAIR OF REAR AXLE STRUT ASS'YS BY INSERTING AXLES INTO STRUT ENDS AND ATTACHING BRKTS AND HARDWARE AS SHOWN. TIGHTEN NUTS SNUG ONLY FOR NOW.



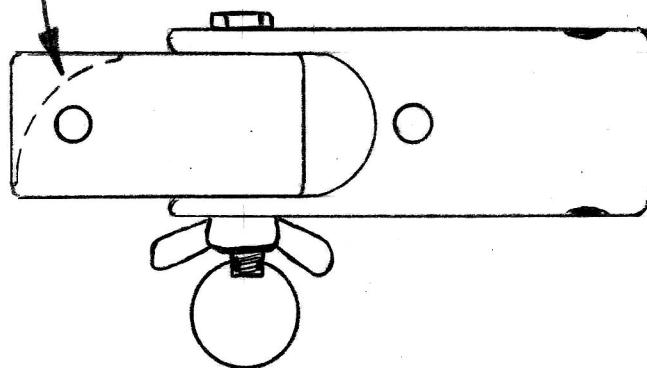
LEFT ASSEMBLY SHOWN  
MAKE 1-LEFT, 1-RIGHT

### 3.8 MAKE-UP A LEFT AND RIGHT PAIR OF DIAGONAL STRUT SWIVEL ASSEMBLIES AS SHOWN.



NOTE: DIRECTION OF NOTCH IN END OF DIAGONAL STRUT SWIVEL / CABLE GUIDE, SC-47. NOTCH FACES IN OPPOSITE DIRECTION OF BOLT!

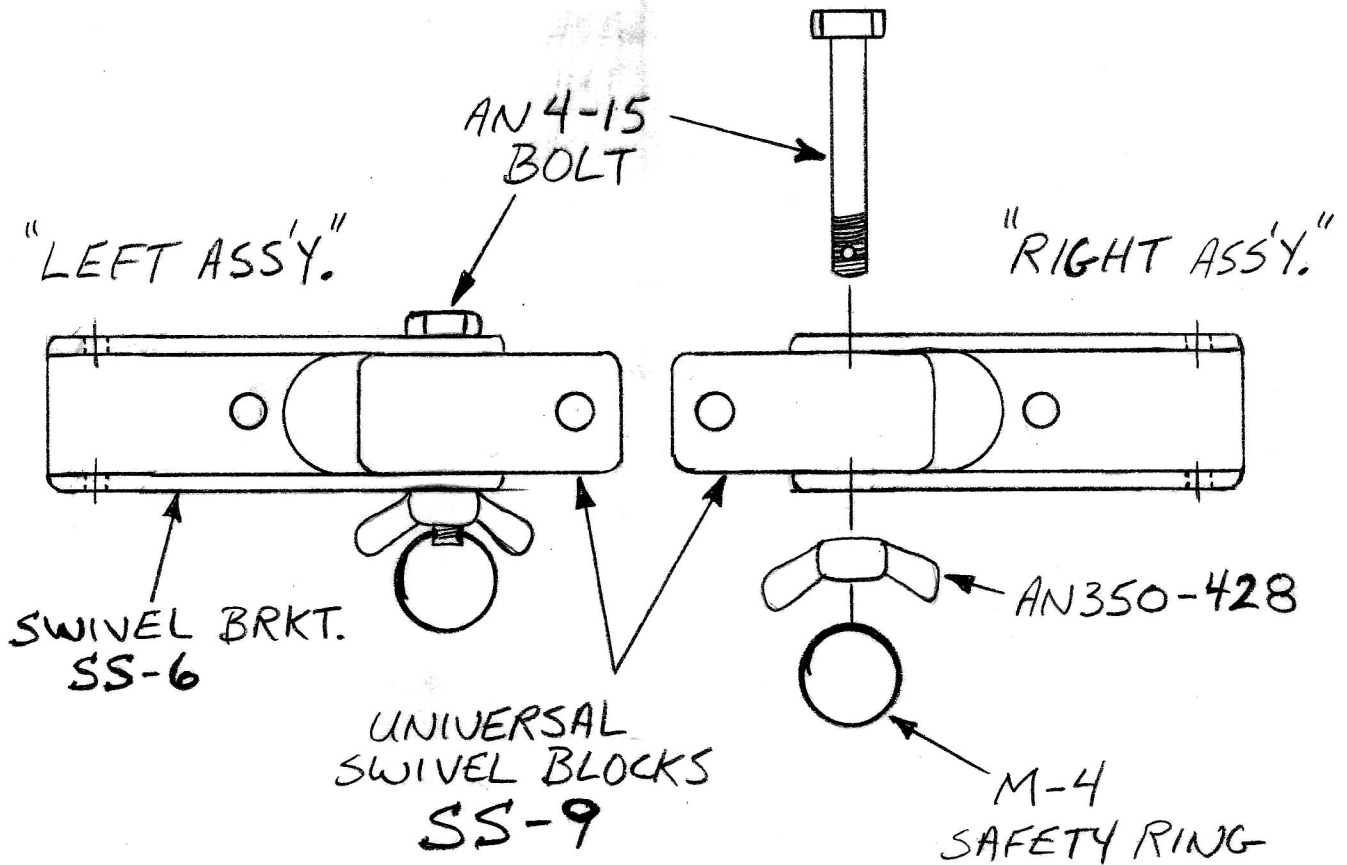
~ OPEN SIDE OF BRKTS FACE DOWNWARD ~



TIGHTEN WINGNUTS FINGER TIGHT!



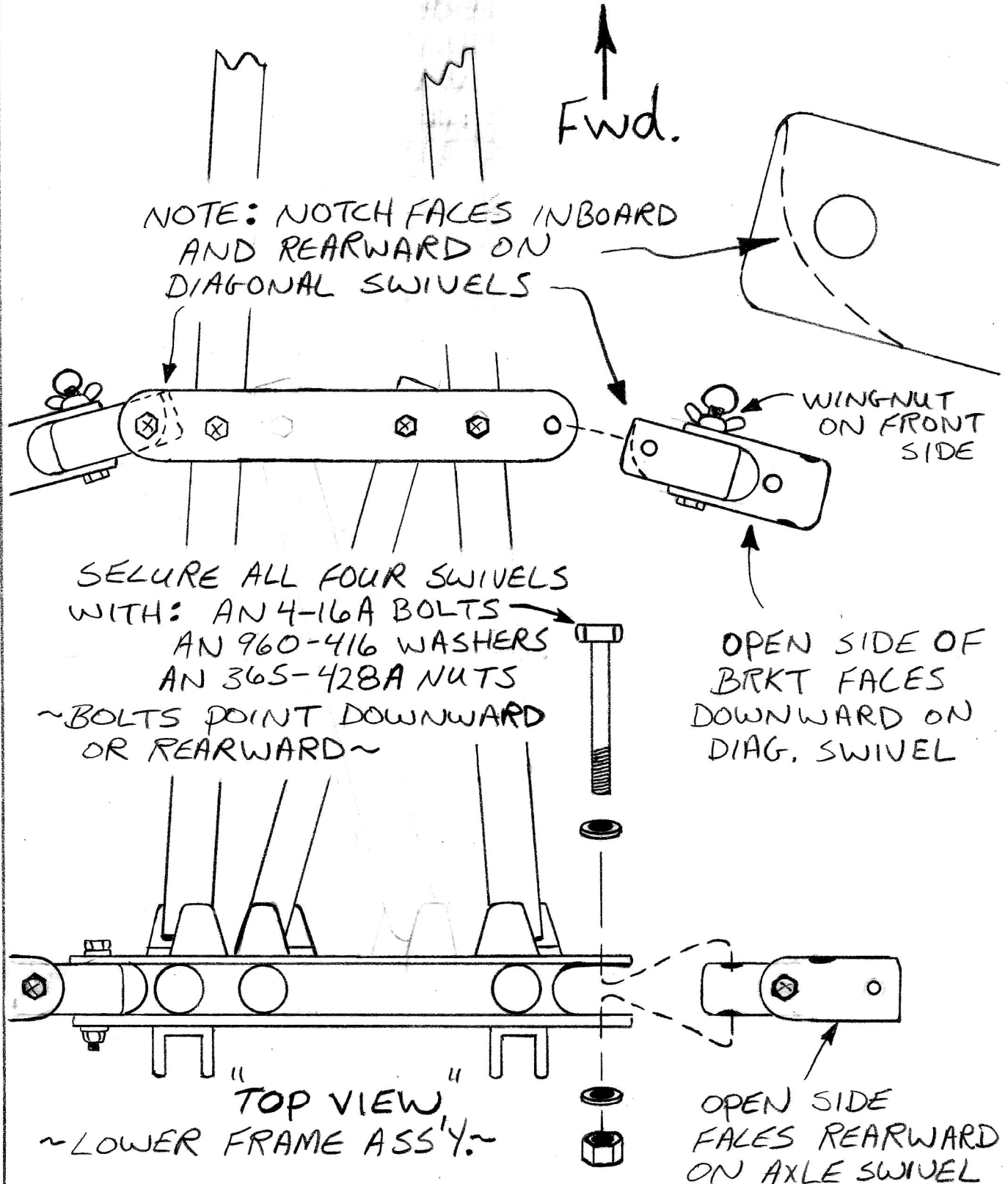
3.9 MAKE UP A PAIR OF LEFT AND RIGHT AXLE STRUT SWIVEL ASSEMBLIES AS SHOWN. TIGHTEN WINGNUTS FINGER TIGHT.



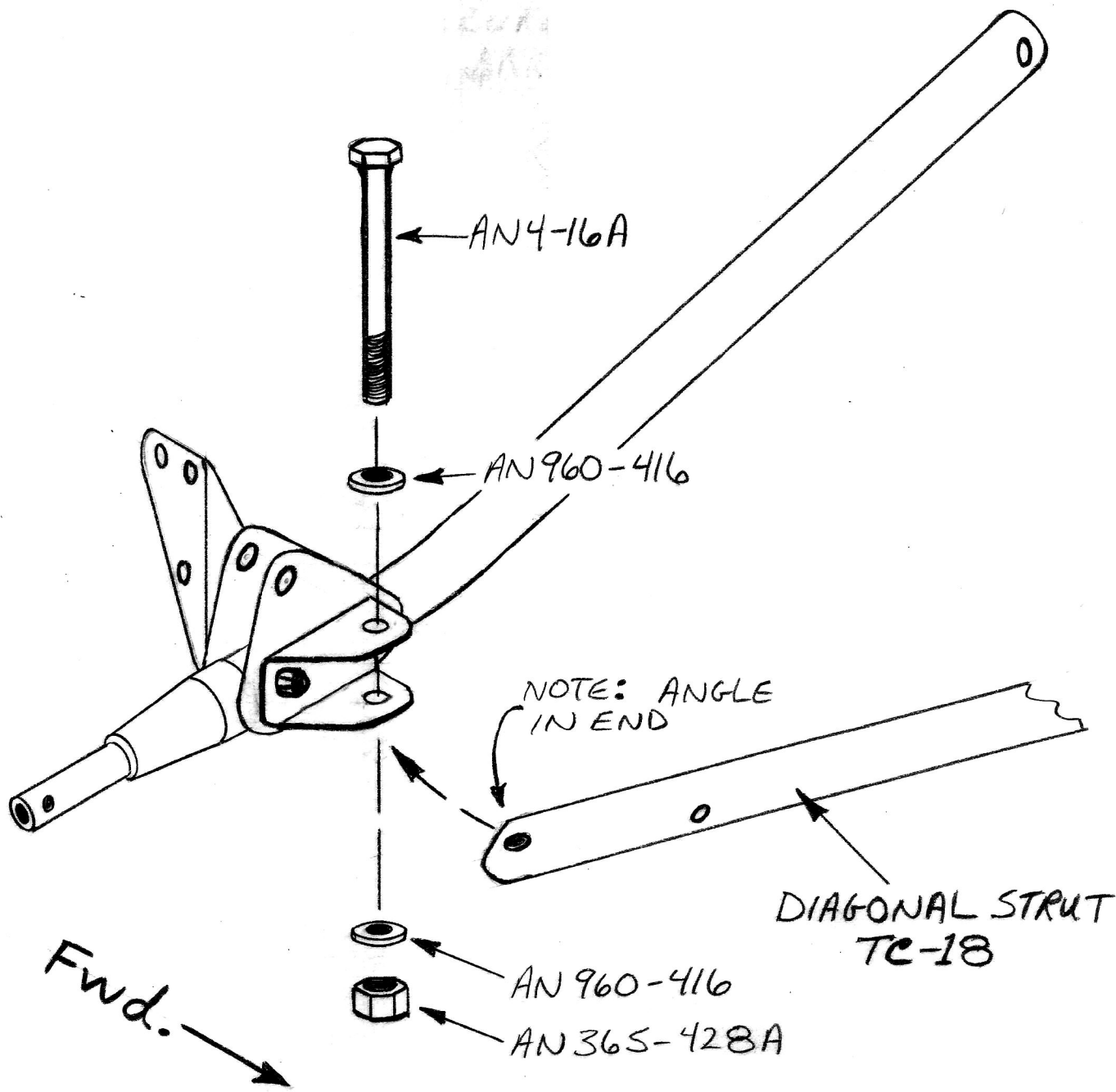
"TOP VIEW OF SWIVEL ASS'YS."

~ OPEN SIDE OF BRACKETS FACE UPWARD IN THIS VIEW. OPEN SIDE WILL FACE REARWARD WHEN INSTALLED ON FRAME ~

**3.10** ATTACH AXLE AND DIAGONAL STRUT SWIVEL BLOCK ASSEMBLIES TO LOWER FRAME BRKTS AS SHOWN. TIGHTEN NUTS SECURELY BUT LEAVE LOOSE ENOUGH TO ALLOW SWIVELS TO ROTATE A LITTLE WITH FIRM BUT GENTLE PRESSURE.



**3.11** ATTACH DIAGONAL STRUT, TC-18 TO AXLE STRUT ASSEMBLY AS SHOWN.  
TIGHTEN BOLTS SECURELY BUT ALLOW STRUT TO ROTATE A LITTLE IN BRKT FOR LATER ALIGNMENT.



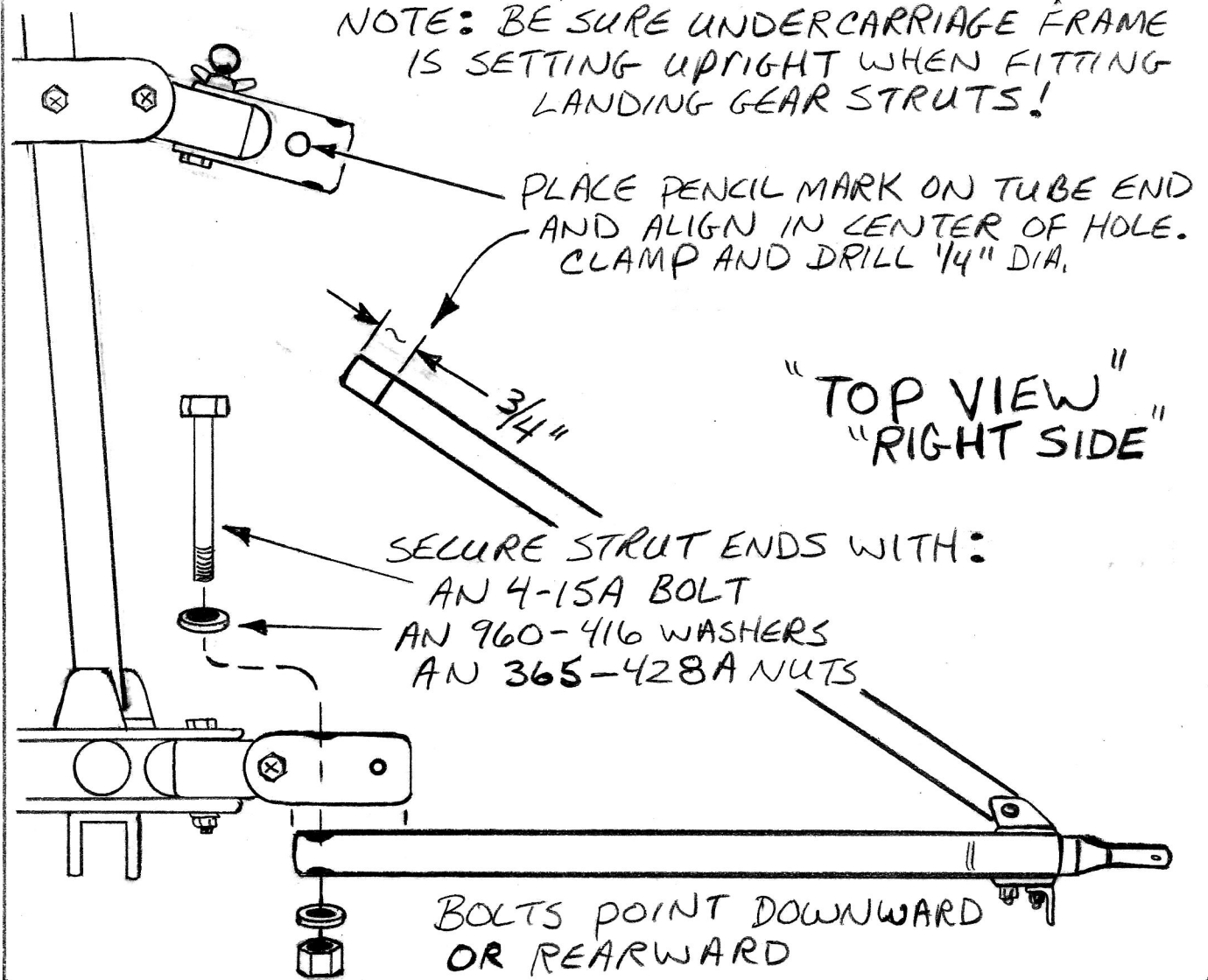
"AXLE / DIAGONAL STRUTS"  
"RIGHT SIDE ASSEMBLY"

**3.12** PLACE A PENCIL MARK ON EACH DIAGONAL STRUT,  $\frac{3}{4}$ " FROM THE INBOARD END AS SHOWN. PLACE THE ENDS OF THE AXLE/DIAGONAL ASSEMBLY IN THE SWIVEL BRKTS AND ALIGN THE PRE-DRILLED HOLE IN THE END OF THE AXLE STRUT WITH THE PRE-DRILLED  $\frac{1}{4}$ " DIA. HOLE IN THE AXLE SWIVEL BRKT. ATTACH WITH BOLT SHOWN AND TIGHTEN SECURELY.

ALIGN THE PENCIL MARK ON THE DIAGONAL STRUT END DIRECTLY IN THE CENTER OF THE  $\frac{1}{4}$ " DIA. HOLE IN THE DIAGONAL SWIVEL. USE A "C-CLAMP" TO HOLD THE STRUT END IN THE BRKT AND CAREFULLY DRILL A  $\frac{1}{4}$ " DIA. HOLE THROUGH THE TUBE END. REMOVE ANY BURRS AND PERMANENTLY ATTACH THE DIAGONAL STRUT TO THE SWIVEL WITH THE SAME BOLT, NUT AND WASHERS YOU USED TO SECURE THE AXLE STRUT TO ITS SWIVEL.

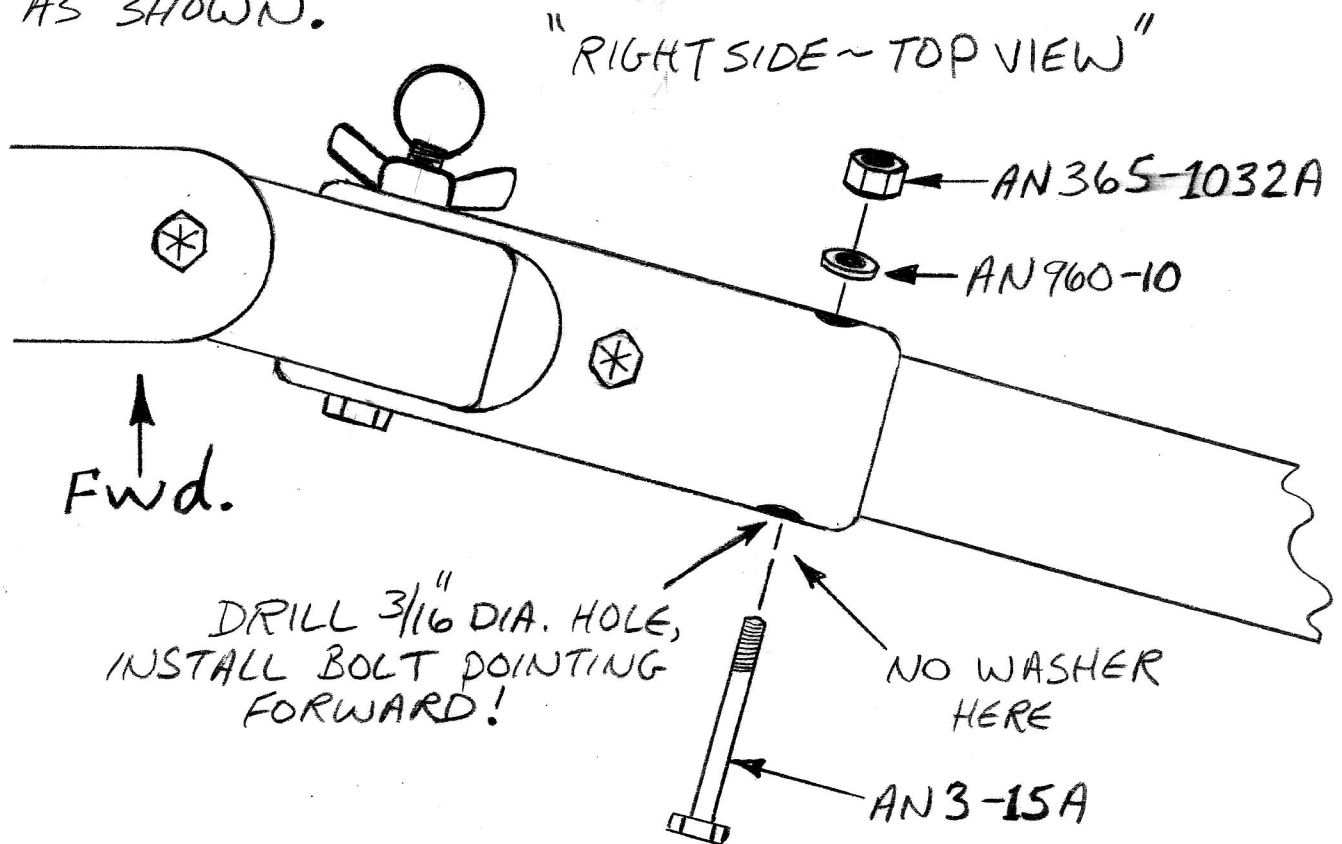
REPEAT THE PROCESS ON THE OTHER SIDE OF THE FRAME AND TIGHTEN ALL HARDWARE SECURELY!

NOTE: BE SURE UNDERCARRIAGE FRAME IS SETTING UPRIGHT WHEN FITTING LANDING GEAR STRUTS!



**3.13** THE FOUR SWIVEL BRKTS WHICH ATTACH THE LANDING GEAR STRUTS TO THE FRAME, EACH CONTAIN 3-HOLES. IN THE PREVIOUS SERIES OF STEPS YOU HAVE INSTALLED  $\frac{1}{4}$ " DIA. BOLTS IN TWO OF THEM. THE THIRD HOLE,  $\frac{3}{16}$ " DIA., IN EACH OF THE SWIVELS IS USED TO HELP TRANSMIT STRESS BETWEEN THE STRUT AND SWIVEL BRKT.

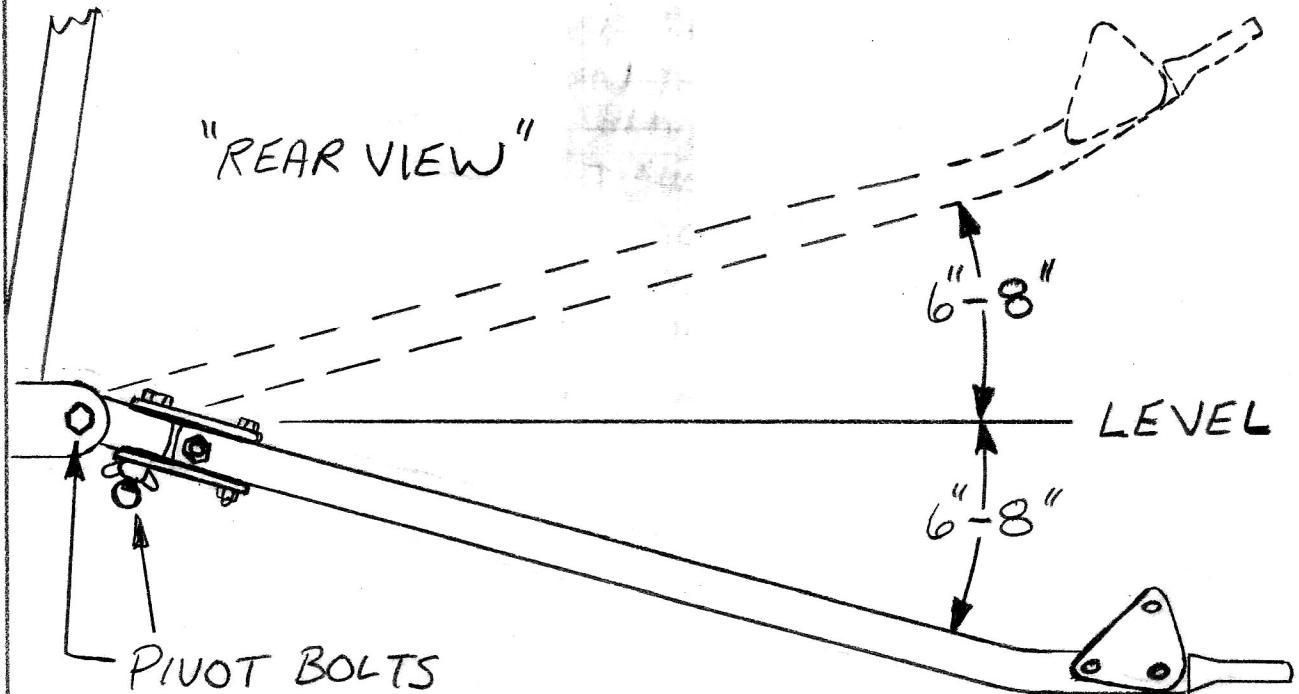
USING THE PRE-DRILLED  $\frac{3}{16}$ " DIA. HOLES IN THE SWIVEL BRKTS AS A GUIDE, CAREFULLY DRILL  $\frac{3}{16}$ " DIA. HOLES THROUGH THE BRKTS AND STRUT ENDS AND INSTALL HARDWARE IN EACH OF THE FOUR STRUT SWIVELS AS SHOWN.



NOTE: DOUBLE CHECK TO BE SURE ALL BOLTS IN THE DIAGONAL SWIVELS ARE POINTING "FORWARD" OR "DOWNWARD"! THIS WILL GUARANTEE THAT THE BRAKE CABLE WHICH WILL BE INSTALLED LATER WILL NOT "RUB" OR "CHAFE" ON THE BOLTS OR NUTS IN THE SWIVEL BRKTS. CHECK ALL THE SWIVEL BRKTS TO BE SURE ALL BOLTS HAVE BEEN PROPERLY INSTALLED AND ARE TIGHTENED SECURELY!

~ WINGNUTS SHOULD BE FINGER TIGHT ONLY ~

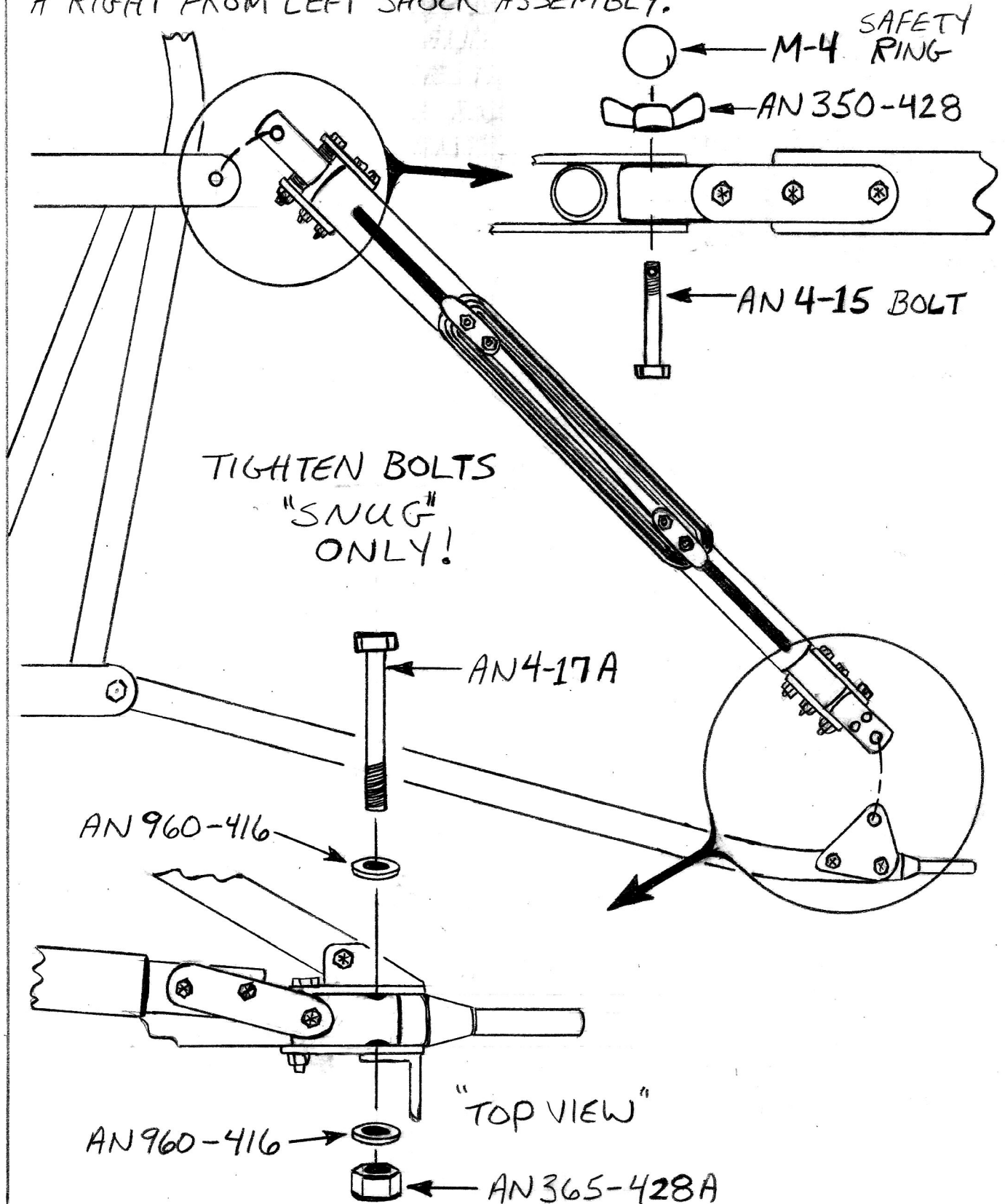
3.14 CHECK TO BE SURE THAT THE AXLE/DIAGONAL ASSEMBLY IS FREE TO PIVOT UP AND DOWN. IF NECESSARY, LOOSEN THE PIVOT BOLTS WHICH SECURE THE SWIVEL BLOCKS, JUST ENOUGH TO ALLOW THE STRUT ASSEMBLY TO SWING UP AND DOWN FREELY WITHIN THE RANGE SHOWN.



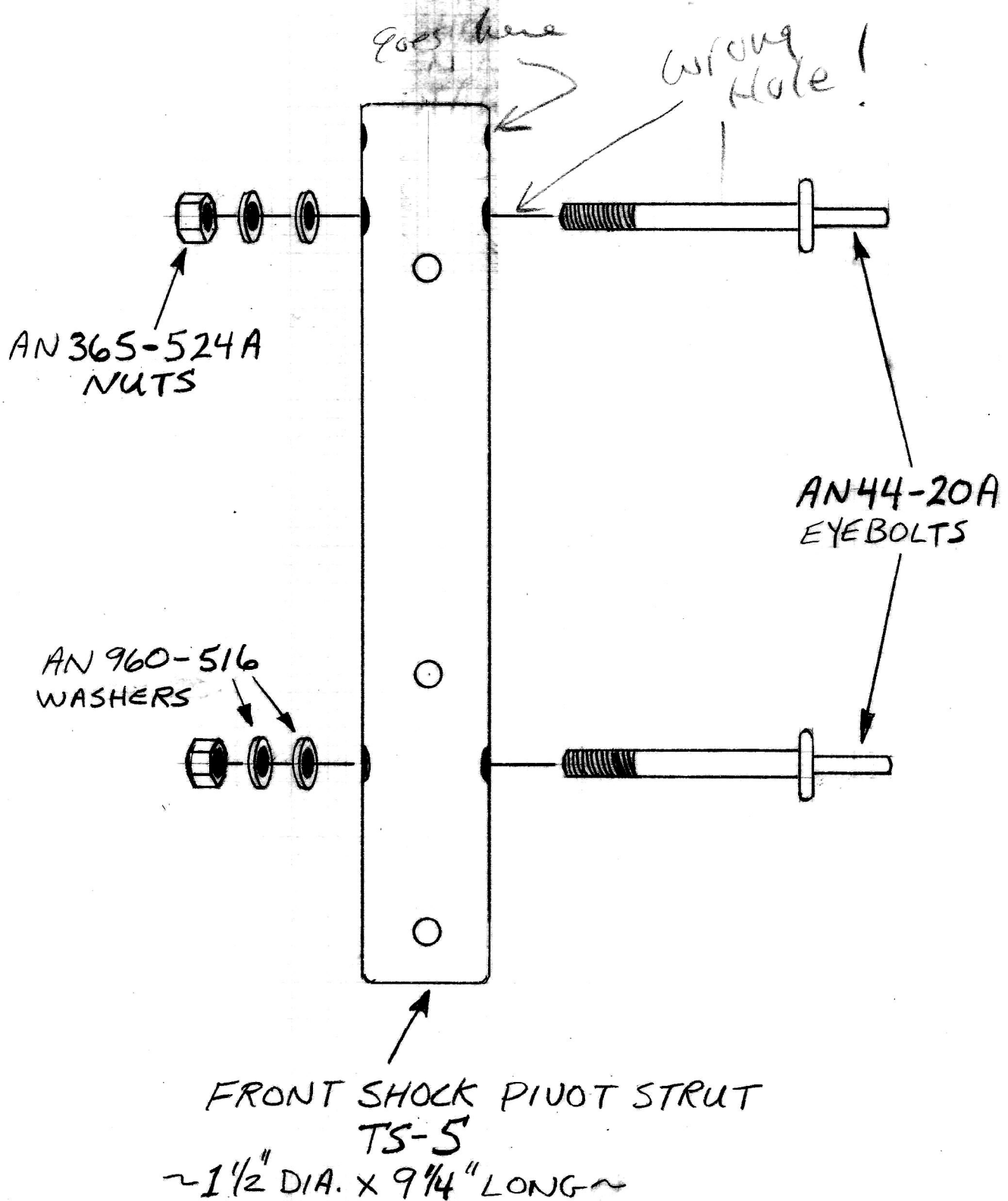
BEYOND THIS USEABLE OPERATING RANGE, THE STRUT SWIVELS WILL BEGIN TO BIND AND CARE SHOULD BE TAKEN NOT TO FORCE STRUTS TO PIVOT UP OR DOWN ANY FURTHER. FORCING THE STRUTS UP OR DOWN BEYOND THEIR DESIGN LIMITS MAY RESULT IN DAMAGE TO THE SWIVELS OR FRAME!



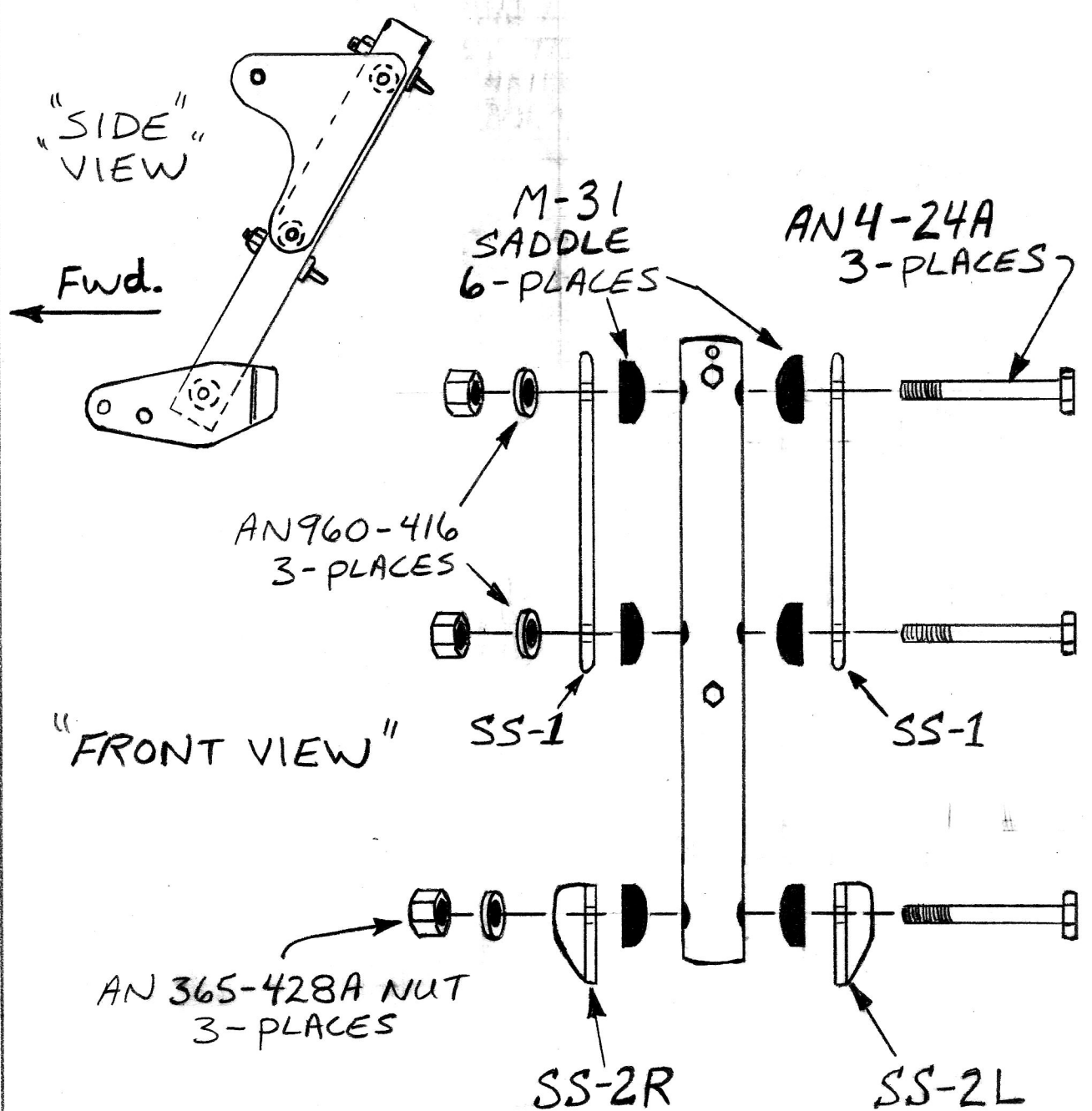
**3.15** ATTACH THE RIGHT AND LEFT REAR SHOCK ASS'YS TO THE FRAME AND LANDING GEAR STRUTS AS SHOWN. REMEMBER THAT THE BRKTS AT THE BOTTOM OF THE SHOCK AND THE BOLTS SECURING THE BUNGEE TANGS, ANGLE OR POINT REARWARD, DISTINGUISHING A RIGHT FROM LEFT SHOCK ASSEMBLY.



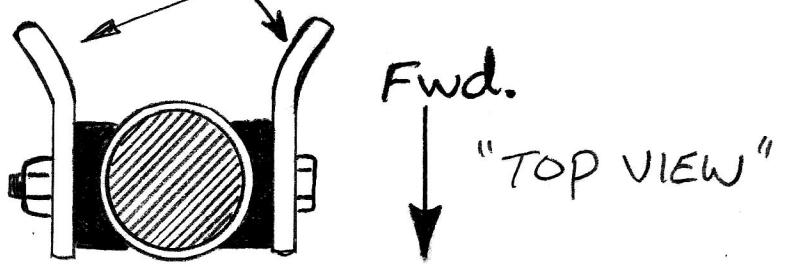
3.16 BEGIN ASSEMBLY OF FRONT SHOCK SYSTEM BY INSTALLING EYEBOLTS IN THE  $\frac{5}{16}$ " DIA. HOLES OF THE FRONT SHOCK PIVOT STRUT, TS-5, AS SHOWN. TIGHTEN NUTS SECURELY BUT LEAVE LOOSE ENOUGH TO ROTATE A LITTLE FOR LATER ALIGNMENT.



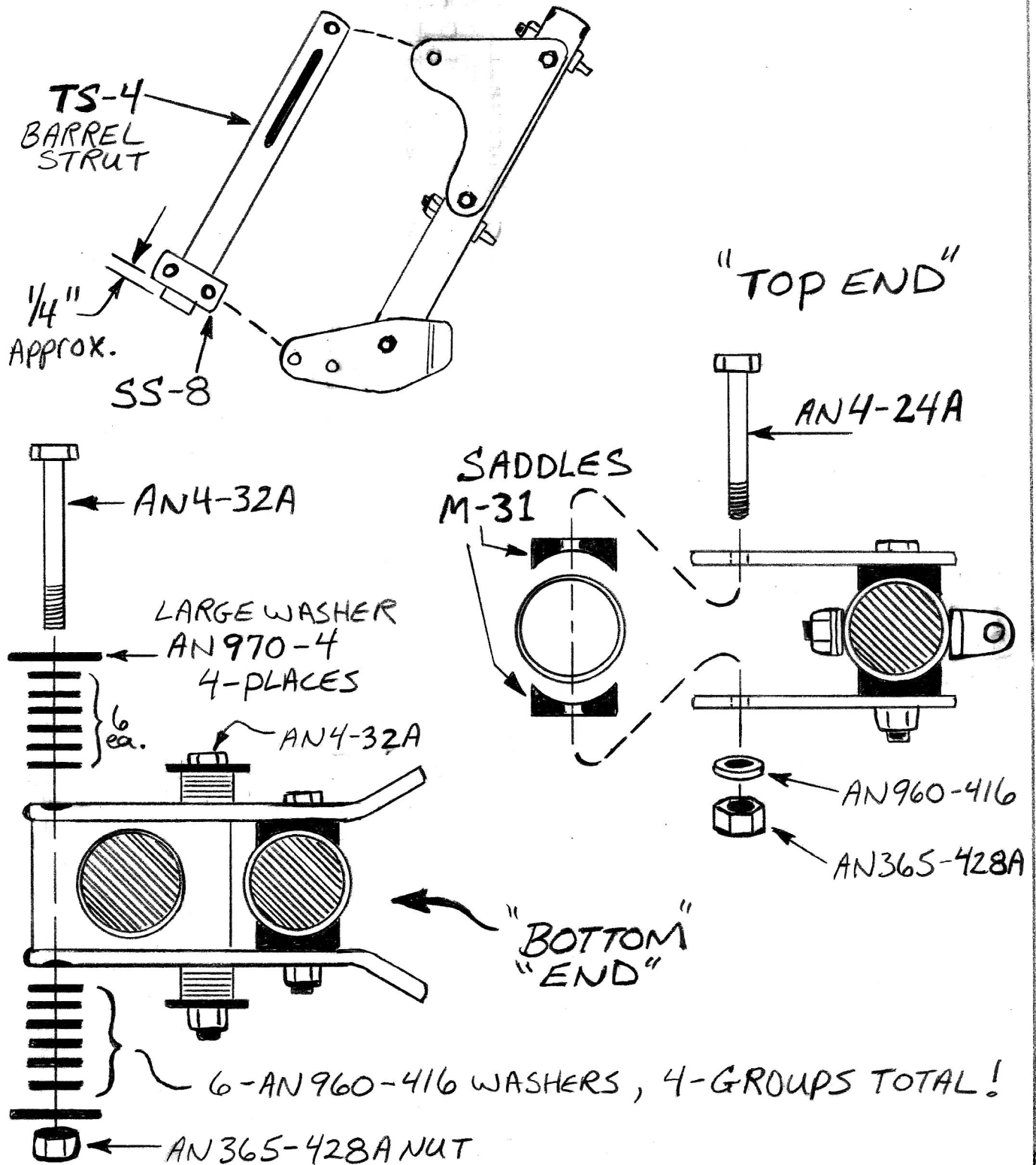
**3.17** ATTACH UPPER AND LOWER SHOCK MOUNT PLATES, SS-1 AND SS-2, TO PIVOT STRUT ASSEMBLY WITH PROPER BOLTS AND MISCELLANEOUS HARDWARE AS SHOWN. TIGHTEN BOLTS FINGER TIGHT FOR NOW.



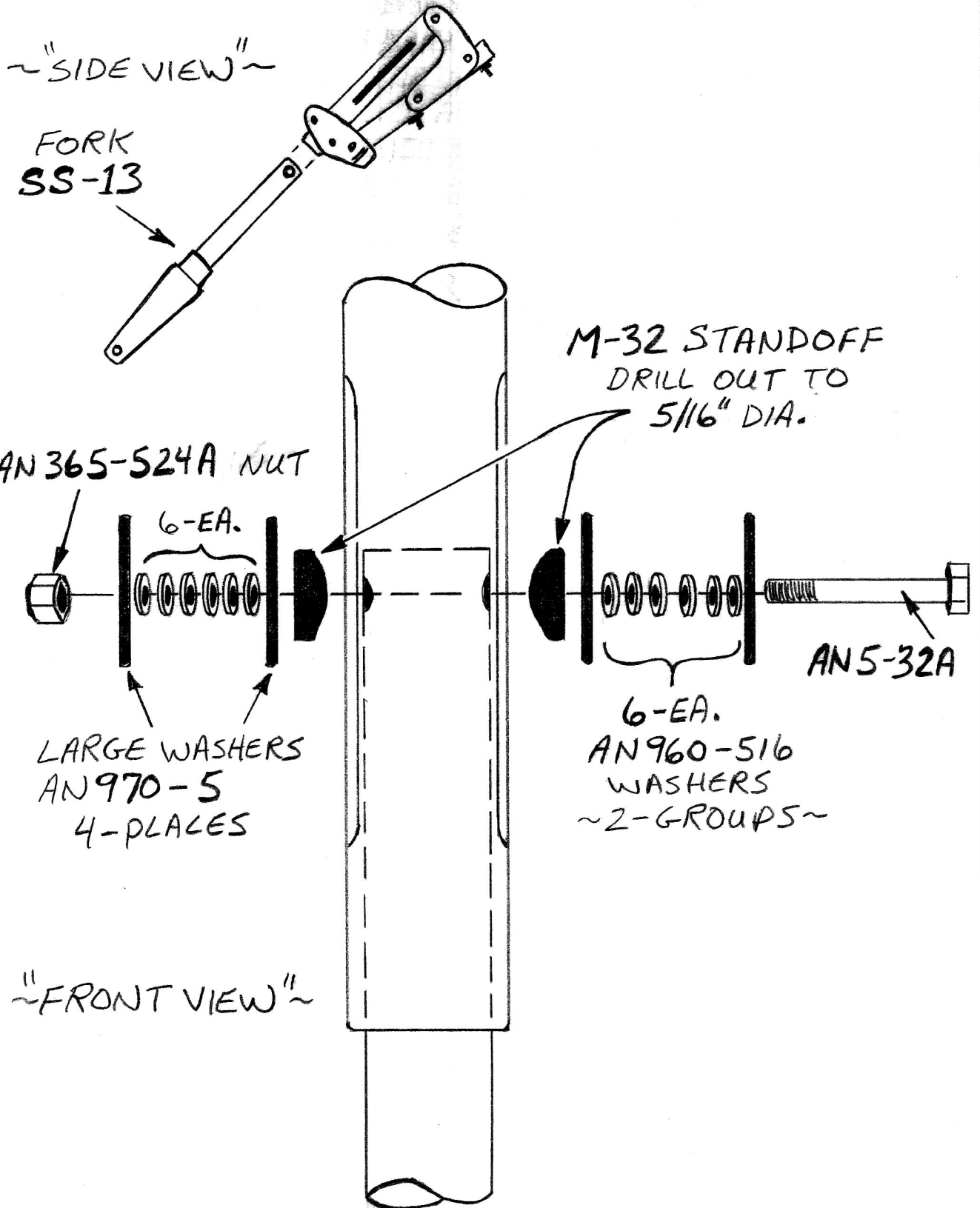
NOTE: ANGLE OF BENDS IN LOWER BRKTS!



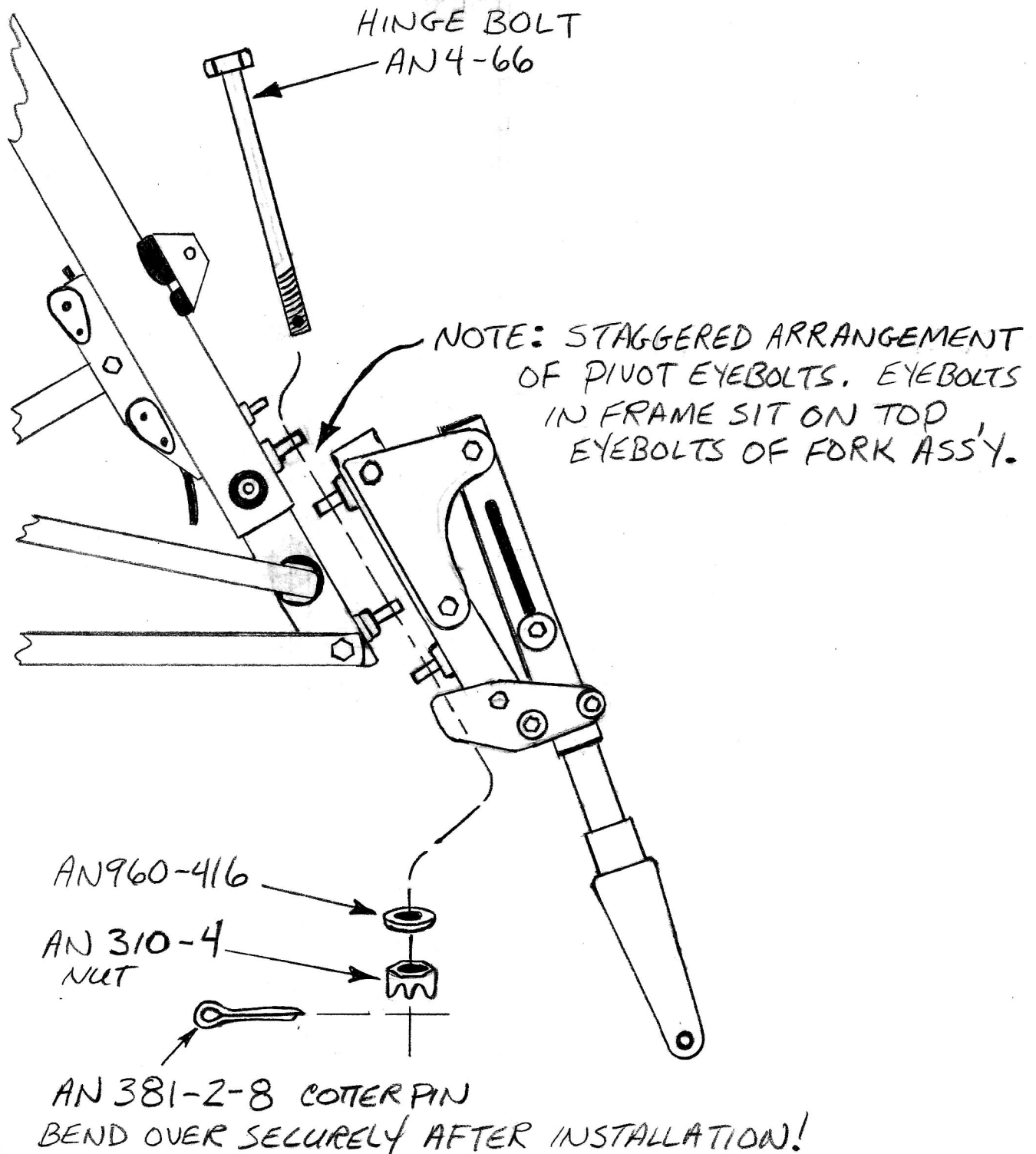
**3.18** INSERT BARREL STRUT, TS-4, INTO MOUNT BLOCK, SS-8, UNTIL ABOUT  $\frac{1}{4}$ " OF THE TUBE PROTRUDES OUT THE BOTTOM OF THE BLOCK. ALIGN THE SLOT OF THE TUBE PARALLEL WITH THE SIDE OF THE BLOCK CONTAINING THE 2-MOUNT HOLES. BOLT THE BARREL STRUT AND BLOCK TO THE PIVOT STRUT ASSEMBLY AS SHOWN. TIGHTEN ALL BOLTS AND HARDWARE, PERMANENTLY AND SECURELY!



3.19 SLIDE FRONT FORK ASSY, SS-13, INTO POSITION INSIDE PIVOT/BARREL STRUT ASSY AND SECURE AS SHOWN. TIGHTEN THE AN5-32A BOLT SECURELY BUT LEAVE LOOSE ENOUGH TO ALLOW THE FORK TO SLIDE EASILY UP AND DOWN INSIDE BARREL STRUT.



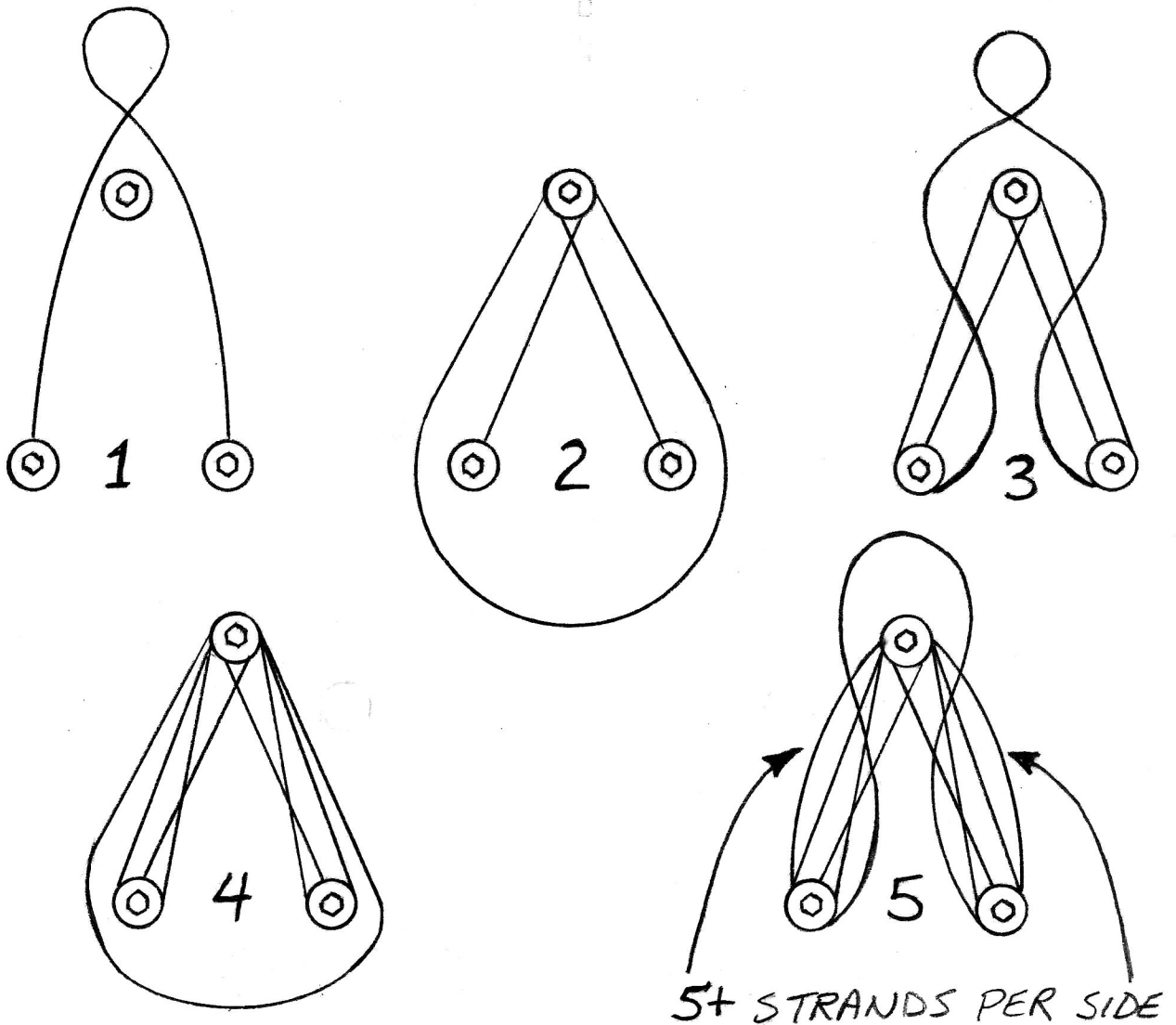
3.20 ATTACH FRONT SHOCK/FORK ASSEMBLY TO FRONT OF UNDERCARRIAGE FRAME AS SHOWN. CHECK TO BE SURE PIVOT EYEBOLTS ARE PROPERLY ALIGNED, THEN TIGHTEN NUT ON THE BOTTOM OF THE HINGE BOLT JUST BARELY SNUG AND INSTALL COTTER PIN. FORK ASSY SHOULD TURN FREELY FROM SIDE TO SIDE BUT SHOULD NOT SLOP UP AND DOWN.





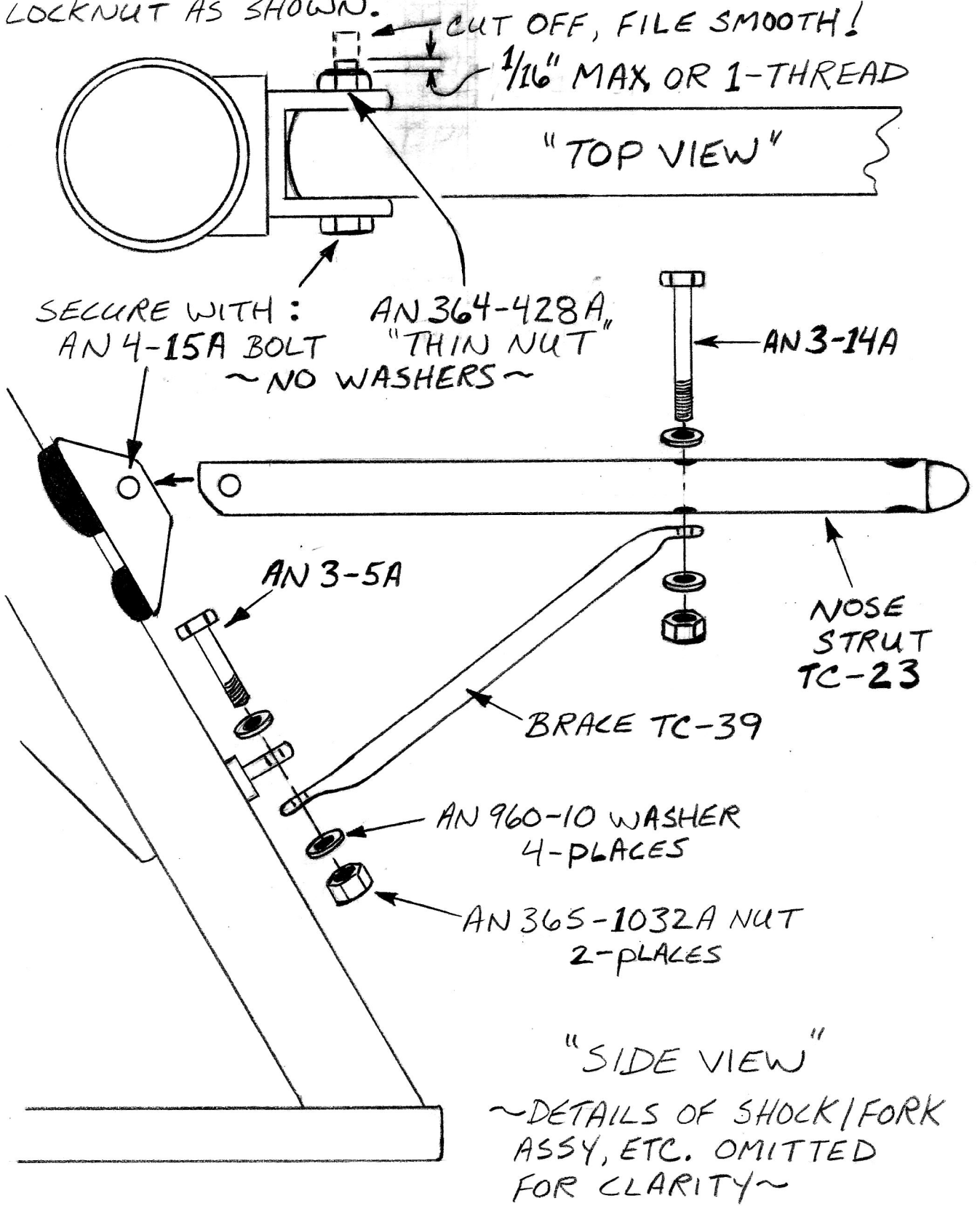
**3.21** SUPPORT THE FRONT OF THE UNDERCARRIAGE FRAME ON SOME BLOCKS ETC, SO THAT THE FRONT FORK IS HANGING AS LOW AS IT CAN, YET CLEAR OF THE GROUND.

CUT 2-EQUAL 48" LONG PIECES OF  $\frac{3}{16}$ " BUNGEE CORD, M-7, FROM THE ROLL PROVIDED IN THE KIT AND HEAT SEAL THE ENDS. TIE A SLIP KNOT IN THE END OF EACH CORD AS IN STEP #3.4 AND SECURE TO THE LOWER MOUNT BOLTS NEAR THE BOTTOM END OF THE BARREL STRUT. USE THE FOLLOWING SEQUENCE TO WRAP THE BUNGEE LOOPS AROUND THE 3-LARGE WASHERS ON EACH SIDE OF THE BARREL STRUT/FORK ASSY, STRETCHING EACH CORD JUST A LITTLE WITH EVERY WRAP.



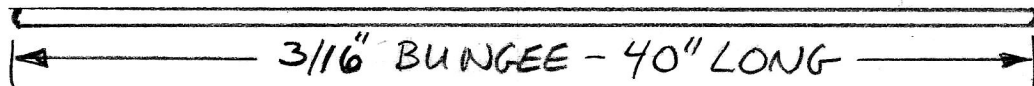
WHEN FINISHED YOU SHOULD HAVE AT LEAST FIVE STRANDS FROM EACH LOWER WASHER, MORE IF A STIFFER SUSPENSION IS DESIRED.

**3.22** ATTACH NOSE STRUT, TC-23, AND NOSE STRUT BRACE, TC-39, TO THE FRONT OF THE FRAME. AFTER ALL BOLTS HAVE BEEN SECURELY TIGHTENED, USE A HACKSAW TO CUT OFF THE THREADED PORTION OF THE AN4-15A BOLT WHICH PROTRUDES FROM THE THIN LOCKNUT AS SHOWN.

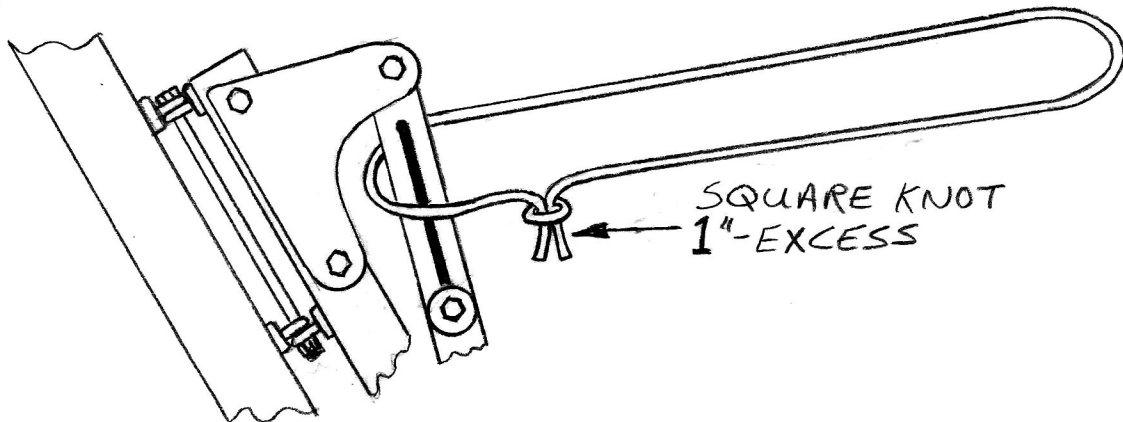


**3.23** MAKE UP A NOSE GEAR STEERING BUNGEE AND ATTACH IT FROM THE LARGE HOLE IN THE NOSE STRUT TO THE FRONT SHOCK ASSY AS SHOWN. THE BUNGEE WILL HELP TO KEEP THE NOSE WHEEL CENTERED DURING TAXI, TAKE-OFF AND LANDING.

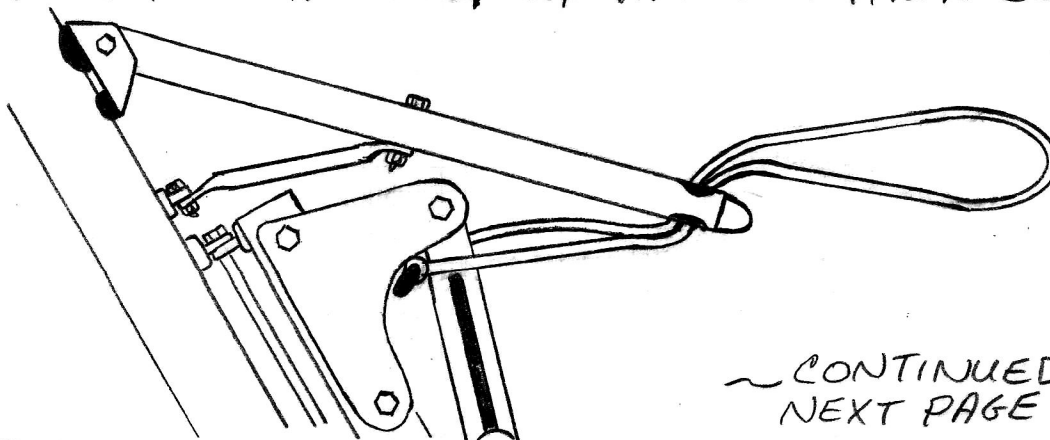
**3.23/1** CUT A PIECE OF  $3/16$ " BUNGEE CORD, M-7, 40" LONG, FROM THE ROLL PROVIDED IN THE KIT. HEAT SEAL THE ENDS.



**3.23/2** WRAP IT AROUND BEHIND THE BARREL STRUT AND TIE THE ENDS TOGETHER IN A SQUARE KNOT. LEAVE ABOUT 1" LONG TAILS BEHIND THE KNOT.

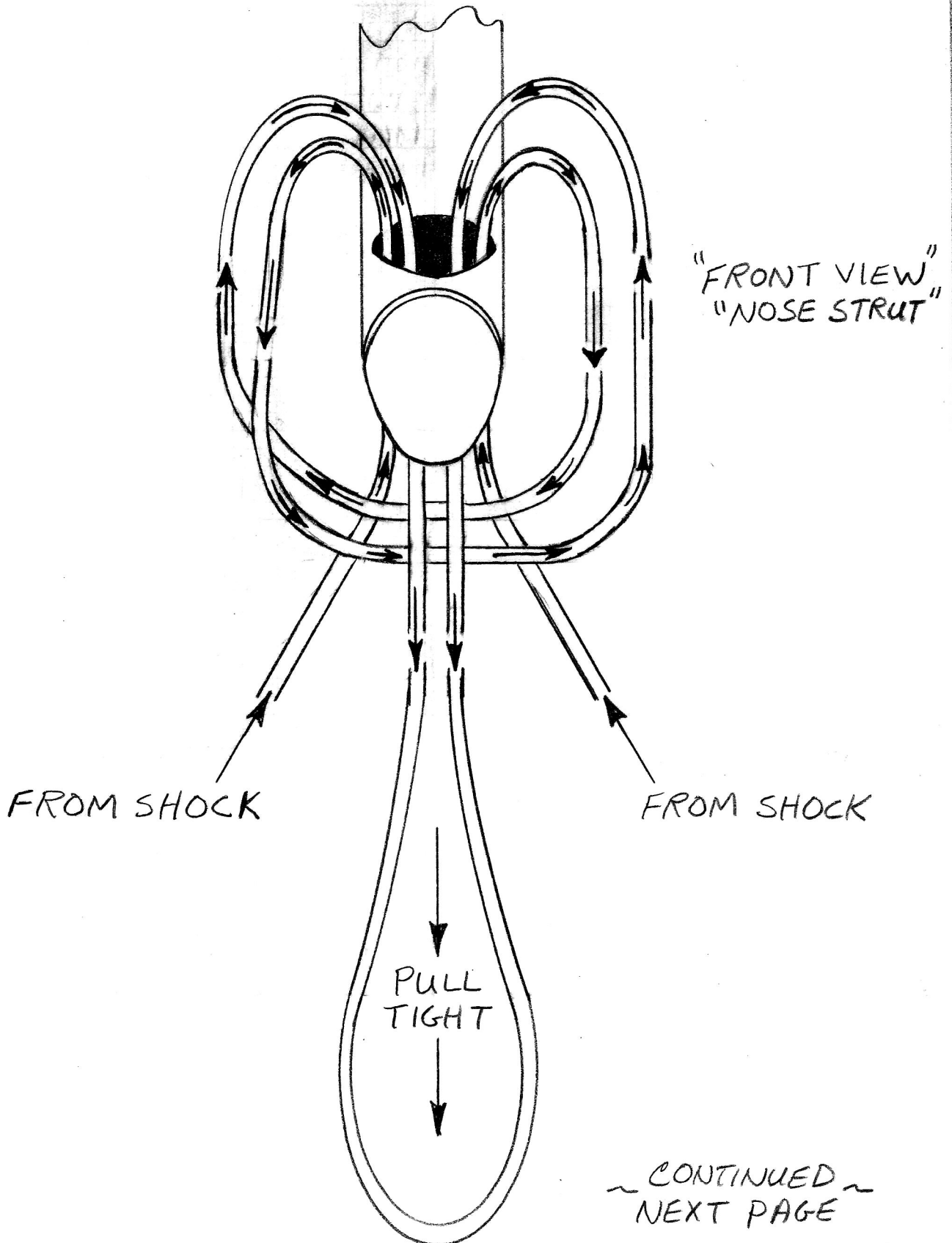


**3.23/3** POSITION THE KNOT DIRECTLY BEHIND THE TOP OF THE BARREL STRUT AND PASS THE FRONT OF THE LOOP UP THROUGH THE NOSE STRUT HOLE.

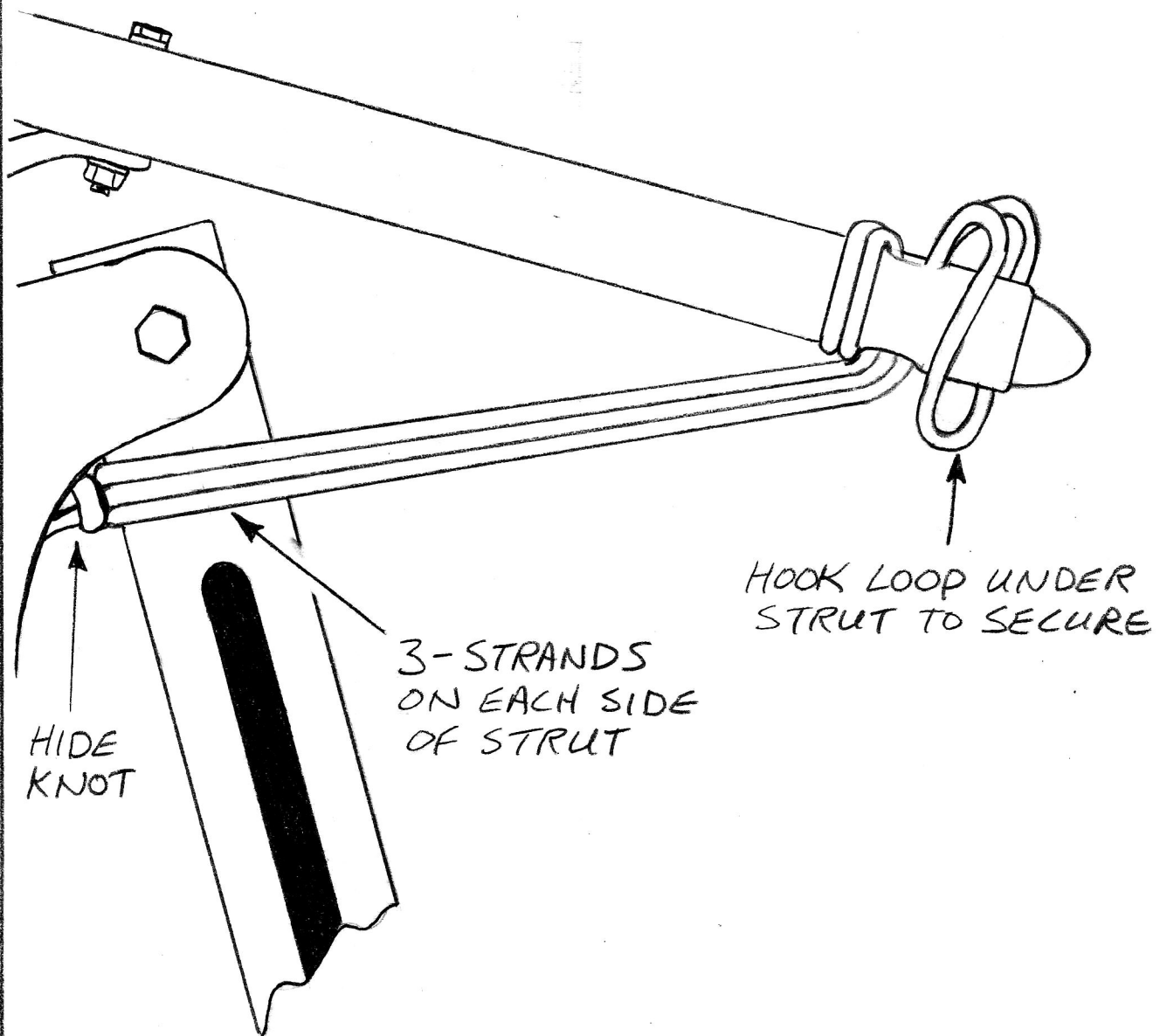


~ CONTINUED ~  
NEXT PAGE

3.23/4 PULL A LITTLE TENSION IN THE LOOP  
AND WRAP EACH CORD IN OPPOSITE  
DIRECTIONS COMPLETELY AROUND THE NOSE STRUT  
ONCE, THEN BACK DOWN THROUGH THE HOLE. HOLD  
A LITTLE TENSION DURING THE WHOLE PROCESS.

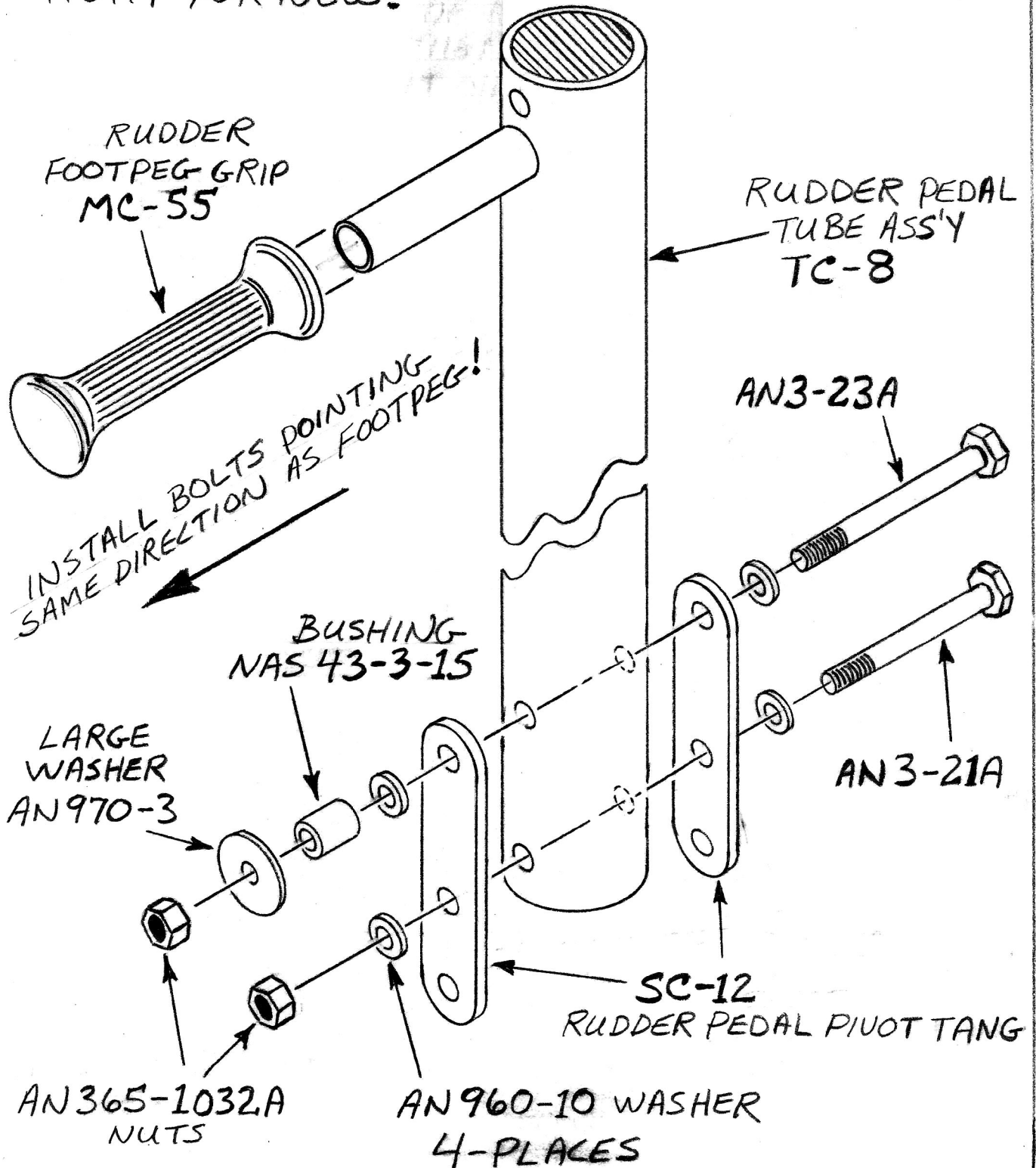


**3.23/5** STRETCH THE REMAINING BUNGEE LOOP, BACK AROUND THE BARREL STRUT AND PASS IT UP THROUGH THE HOLE IN THE NOSE STRUT ONE FINAL TIME. HOOK THE END OF THE LOOP BENEATH THE END OF THE NOSE STRUT, SECURING IT PERMANENTLY. WHEN YOU HAVE FINISHED, YOU SHOULD HAVE A NEAT STEERING BUNGEE INSTALLATION WITH 3-CORDS COMING FROM EACH SIDE OF THE FRONT SHOCK/FORK ASSEMBLY.



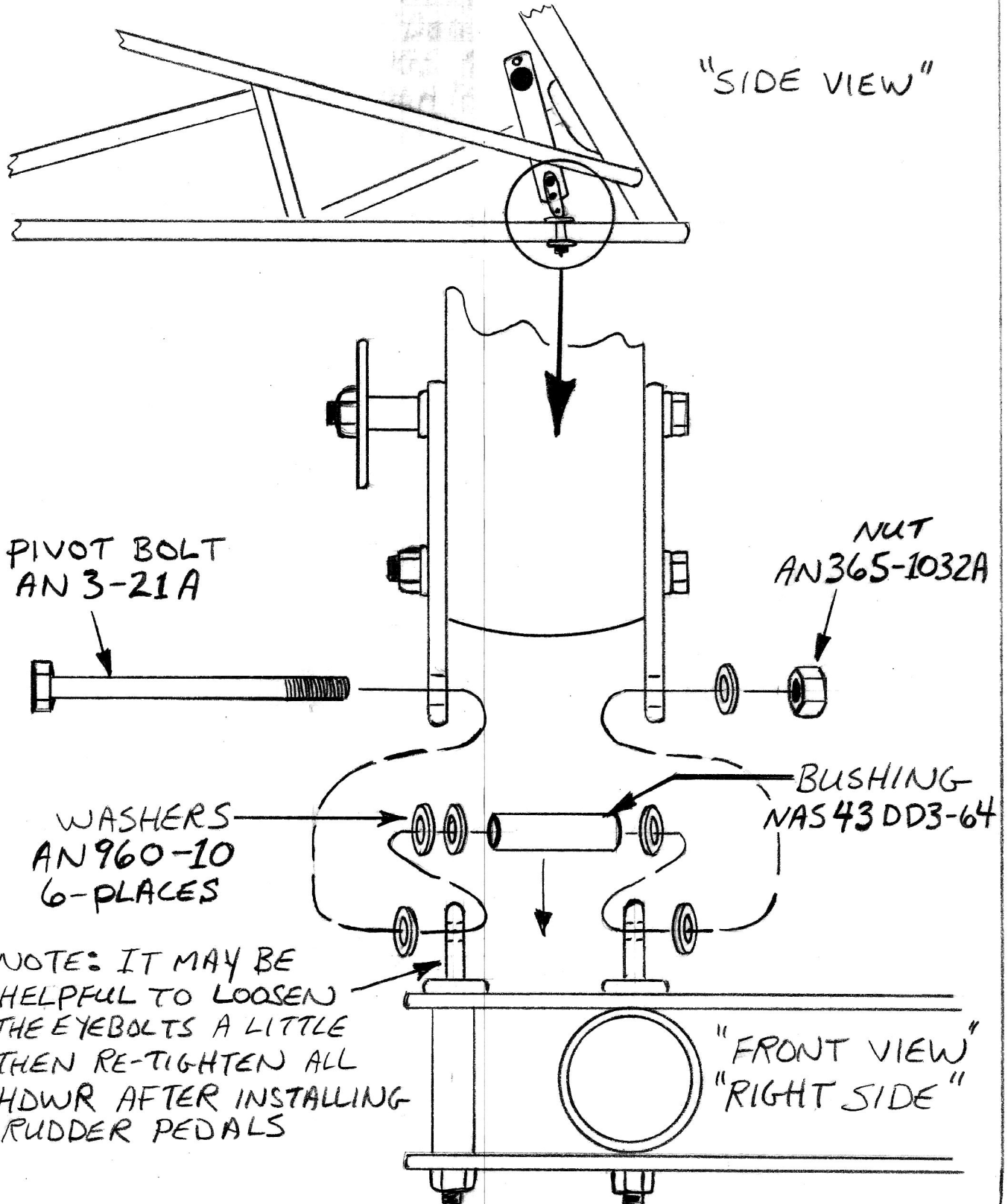
# 4.1 RUDDER/BRAKE-PEDAL INSTALLATION

MAKE UP A PAIR OF RUDDER PEDAL ASSEMBLIES BY BOLTING TOGETHER HARDWARE AS SHOWN. APPLY A LITTLE LIGHT OIL OR GREASE TO THE FOOTPEG TO ALLOW THE RUBBER GRIP TO SLIDE ON MORE EASILY. LEAVE ALL BOLTS AND HARDWARE FINGER TIGHT FOR NOW!

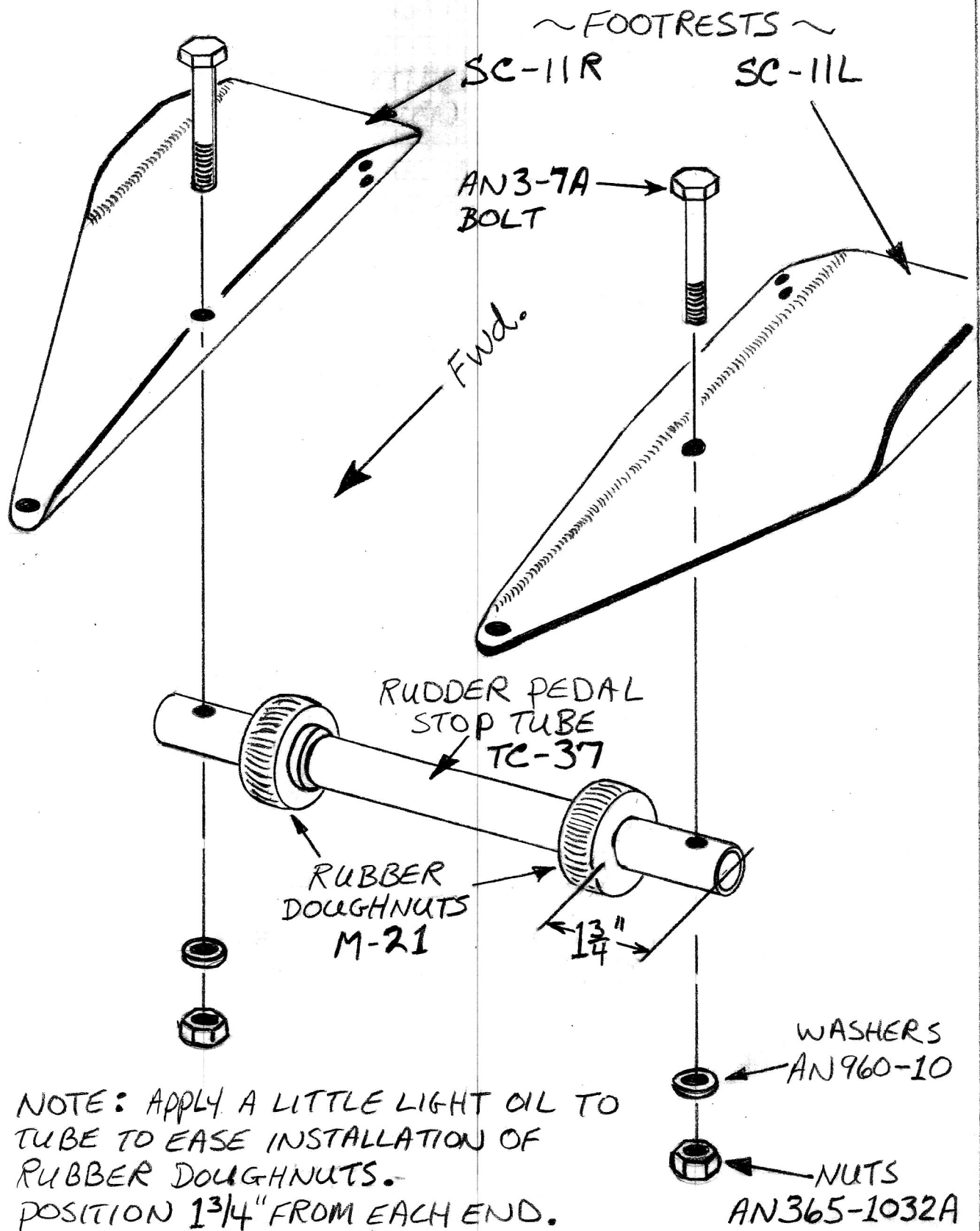




**4.2** INSTALL THE RUDDER PEDALS IN THE FRAME WITH THE FOOT PEGS POINTING OUTBOARD. ATTACH THE PIVOT TANGS TO THE EYEBOLTS IN THE PEDAL ASSY MOUNT PLATES AS SHOWN. TIGHTEN ALL BOLTS SECURELY BUT LEAVE THE PIVOT BOLT LOOSE ENOUGH TO ALLOW THE PEDAL TO MOVE EASILY.

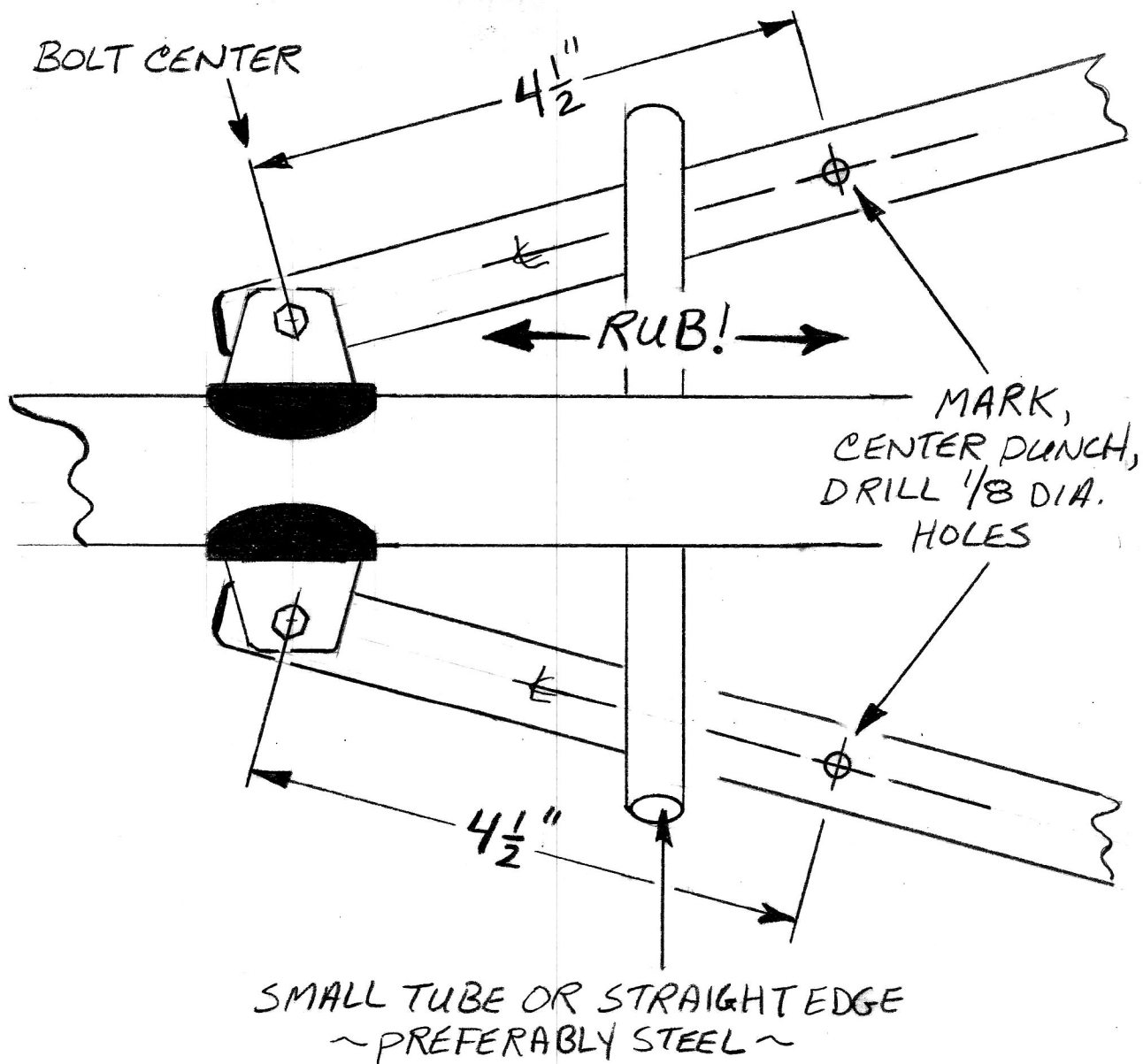


4.3 MAKE UP THE FOOTREST/RUDDER PEDAL STOP ASS'Y AS SHOWN. TIGHTEN BOLTS. SNUG ONLY FOR NOW!



NOTE: APPLY A LITTLE LIGHT OIL TO TUBE TO EASE INSTALLATION OF RUBBER DOUGHNUTS. POSITION 1 3/4" FROM EACH END. WIPE OFF EXCESS OIL!

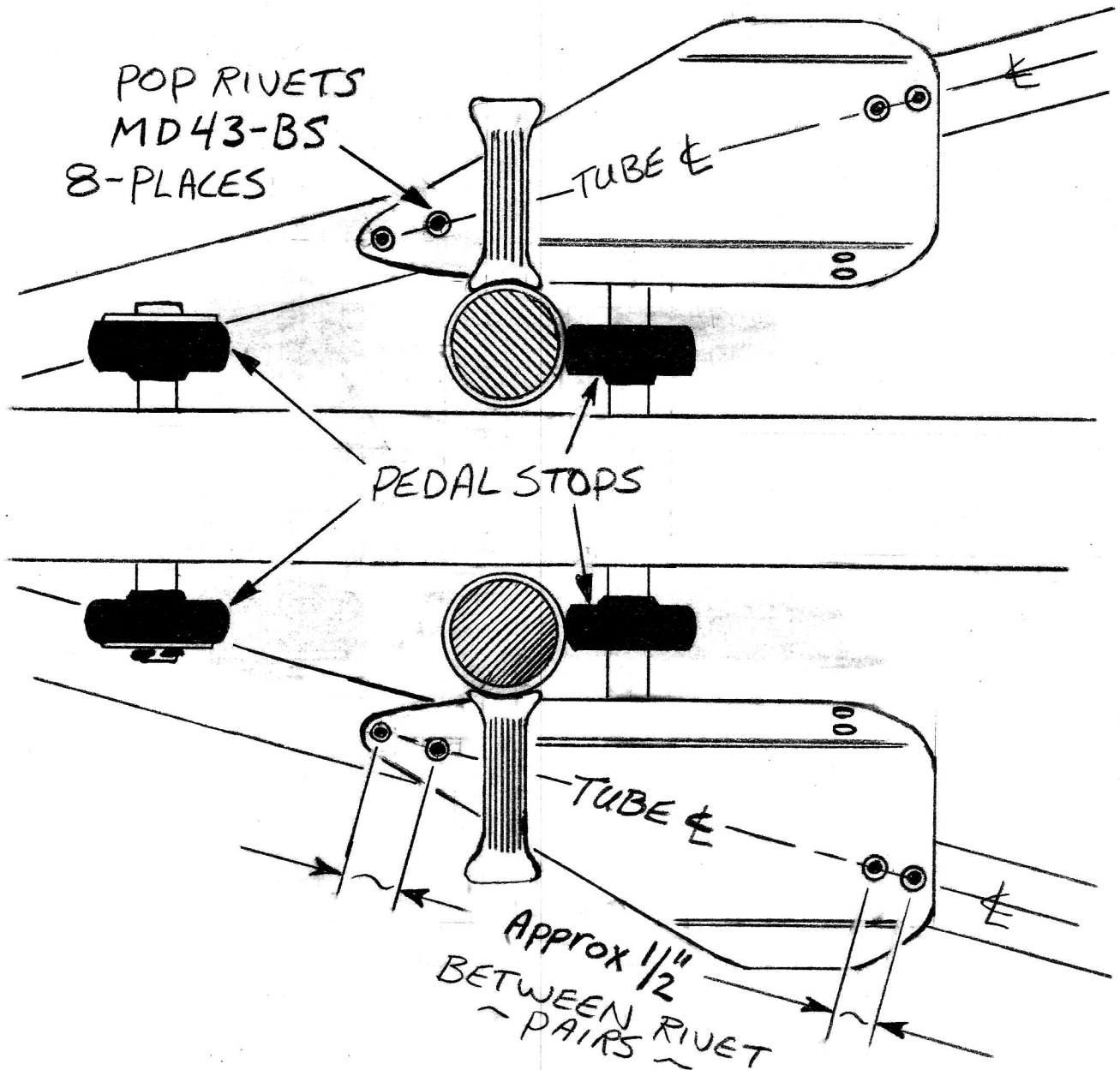
4.4 MEASURE REARWARD,  $4\frac{1}{2}$ " ALONG THE TOP OF EACH SIDE FRAME TUBE AND PLACE A PENCIL MARK. LAY A STRAIGHT EDGE, ETC ACROSS THE TOP OF BOTH SIDE FRAME TUBES AT THE SAME TIME, AND RUB FORE AND AFT UNTIL YOU HAVE SCRATCHED A LINE WHICH INTERSECTS WITH THE PENCIL MARK. CENTER PUNCH THE TUBES FOR DRILLING AND DRILL AN  $\frac{1}{8}$ " DIA. HOLE IN THE TOP OF EACH TUBE.



"TOP VIEW - MAINSTRUT/SIDE FRAME ASSY"

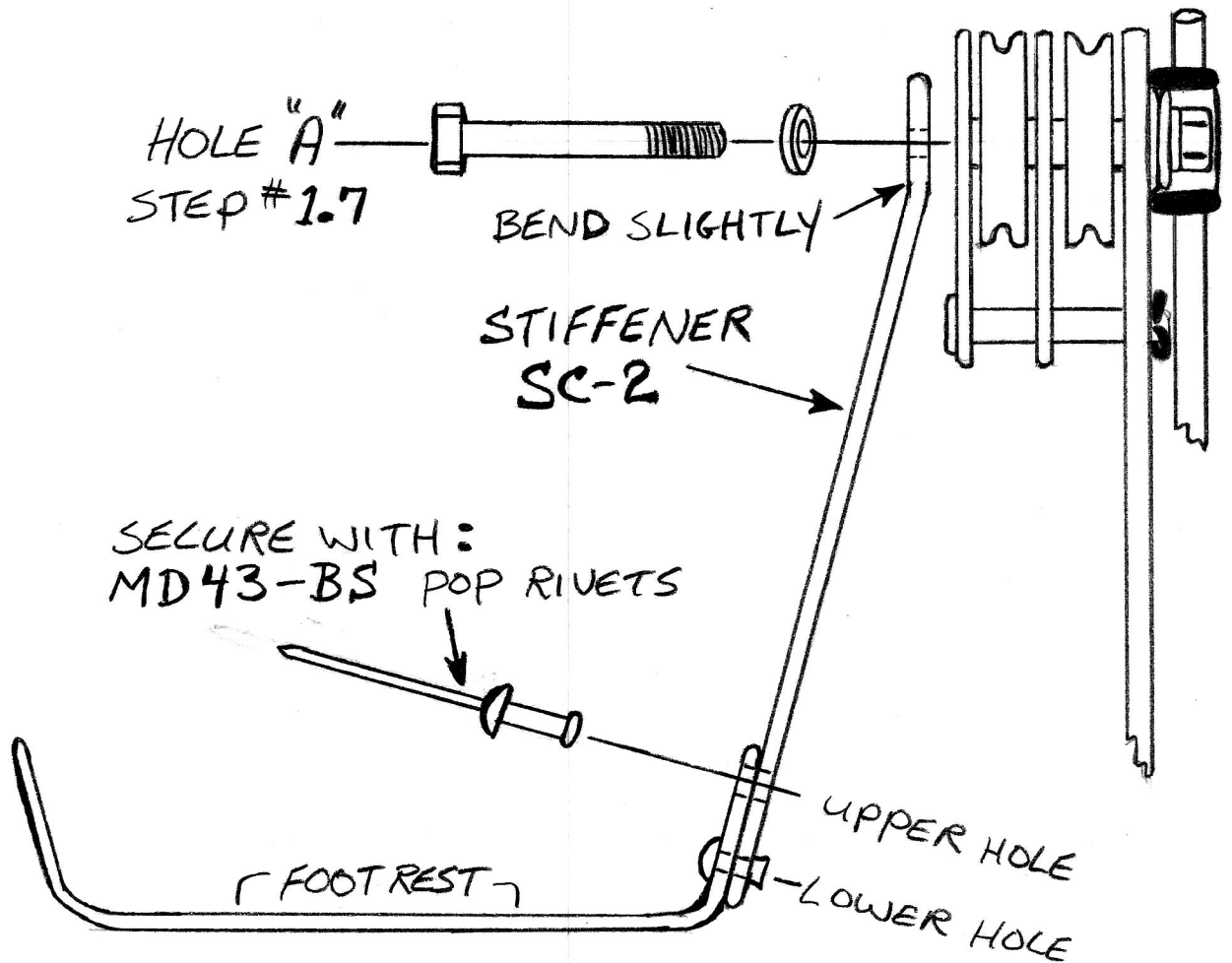
NOTE: DRILL HOLE THROUGH TOP OF TUBE ONLY, IT IS NOT NECESSARY TO DRILL COMPLETELY THROUGH TUBE!

4.5 PLACE FOOTREST ASS'Y ON TOP OF SIDE FRAME TUBES AND INSERT A PAIR OF POP RIVETS IN THE HOLES DRILLED IN STEP # 4.4. PERMANENTLY SQUEEZE AND INSTALL THE FRONT PAIR OF RIVETS. BE SURE THE FOOTRESTS ARE ALIGNED PARALLEL TO EACH OTHER, POINTING DIRECTLY FORE AND AFT! HOLD THE FOOTRESTS FLAT AGAINST THE SIDE FRAME TUBES WITH A "C-CLAMP", THEN DRILL AND INSTALL 3-MORE RIVETS IN EACH FOOTREST AS SHOWN.



4.6 REMOVE THE FINGER TIGHT BOLT FROM HOLE "A"  
IN THE PULLEY TRIAD/CHANNEL BRKT ASSEMBLY  
AND CONNECT THE FOOTREST STIFFENERS, REFER TO  
STEP #1.7. TIGHTEN THE BOLT SNUG TO TAKE UP  
SLACK AND TO ALLOW FOR ADJUSTMENT OF STIFFENER.

ALIGN THE HOLE IN THE BOTTOM OF THE STIFFENER  
WITH THE LOWER OF THE TWO HOLES LOCATED IN THE  
FOOTREST FLANGE AND PERMANENTLY SECURE WITH  
A POP RIVET. DRILL AN  $\frac{1}{8}$ " DIA. HOLE THROUGH  
THE STIFFENER USING THE PRE-DRILLED UPPER FOOT-  
REST HOLE AS A GUIDE AND PERMANENTLY INSTALL A  
SECOND POP RIVET. TIGHTEN THE BOLT IN HOLE "A"  
SECURELY!

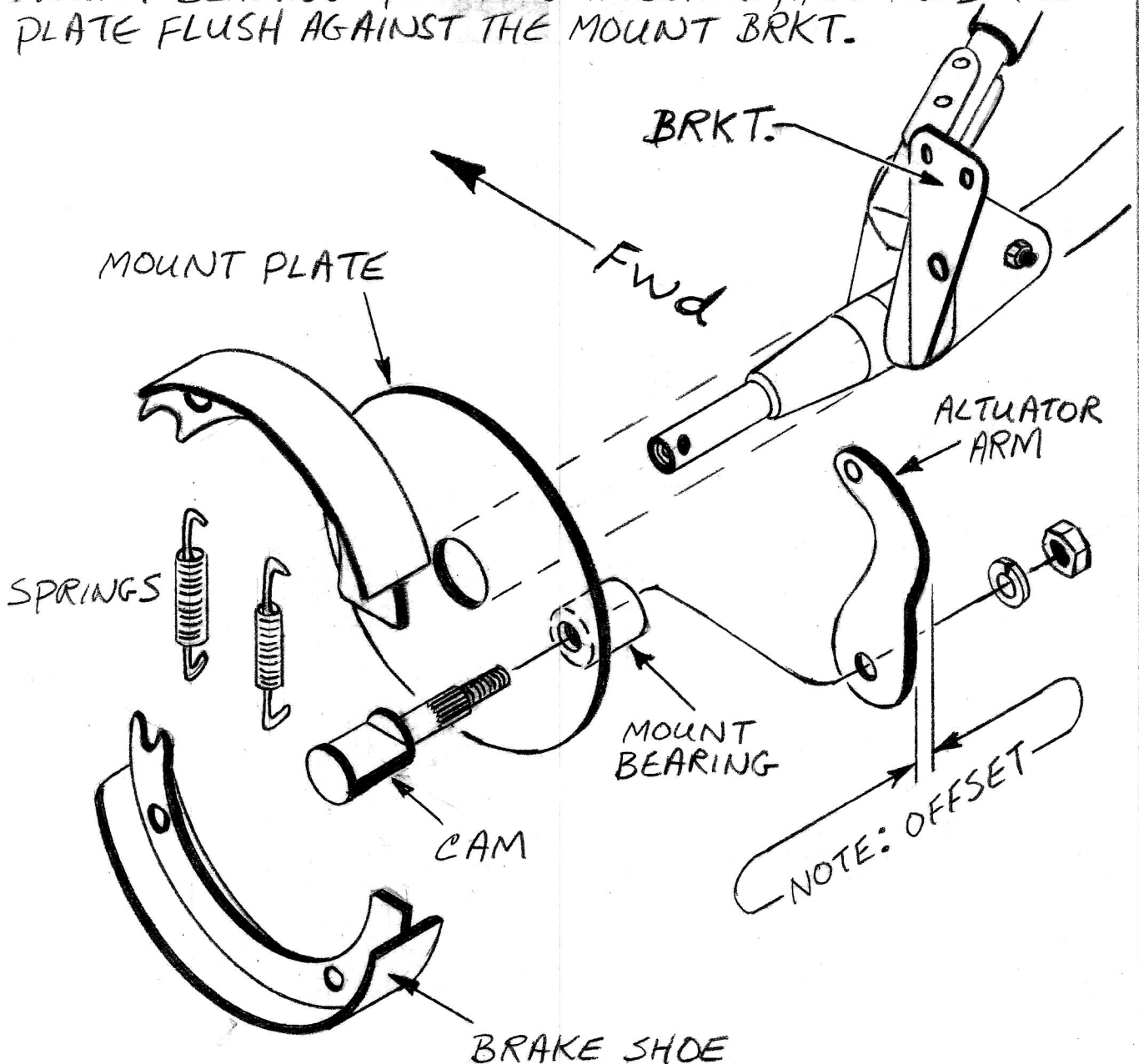


" REAR VIEW - LEFT SIDE "

# 4.7 LOCATE THE LEFT AND RIGHT BRAKE SHOE / MOUNT PLATE ASSEMBLIES, MC-52L AND MC-52R.

REMOVE THE SHOE AND SPRING ASSEMBLIES FROM THE PLATE WHILE PAYING CLOSE ATTENTION TO HOW THEY WERE ATTACHED. REMOVE THE NUT AND LOCKWASHER FROM THE END OF THE BRAKE SHOE CAM AND SEPARATE THE ACTUATOR ARM AND CAM FROM THE PLATE.

SLIDE THE PLATE OVER THE AXLE WITH THE CAM MOUNT BEARING POINTING INBOARD, AND HOLD THE PLATE FLUSH AGAINST THE MOUNT BRKT.



LEFT AND RIGHT BRAKE ASSYS ARE DISTINGUISHED BY THE INBOARD OFFSET OF THE ARM. THIS DRAWING SHOWS A LEFT ASSEMBLY, MC-52L!



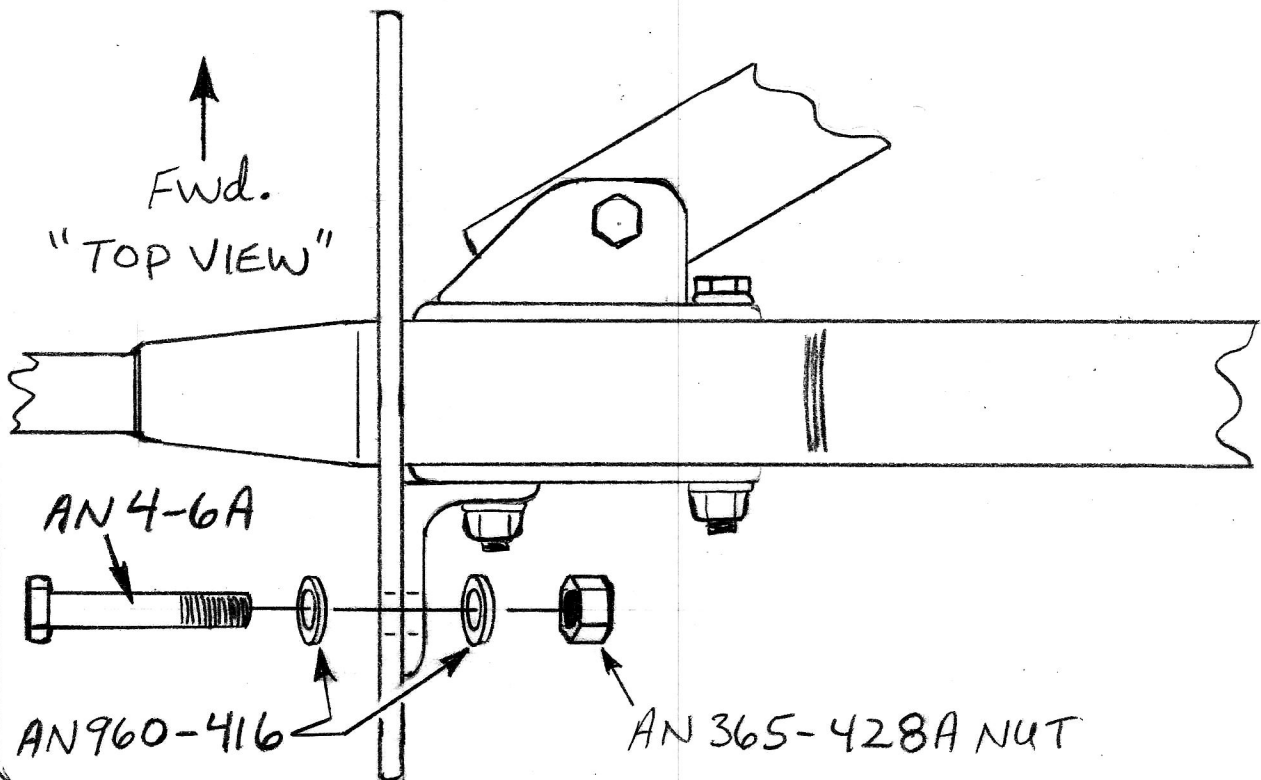
**4.8** WHILE HOLDING THE BRAKE MOUNT PLATE FLAT AGAINST THE MOUNT BRKT, ROTATE THE PLATE FORWARD AROUND THE AXLE UNTIL THE CAM BEARING FIRMLY CONTACTS THE LOWER REAR EDGE OF THE BRKT. USE A "C-CLAMP" TO HOLD THE TWO PARTS TOGETHER AND DRILL A  $\frac{1}{4}$ " DIA. HOLE IN THE PLATE, USING THE PRE-DRILLED HOLE IN THE BRKT AS A GUIDE. REMOVE ANY BURRS FROM THE HOLE AND PERMANENTLY BOLT THE PLATE TO THE BRKT AS SHOWN.

~ LEFT SIDE VIEW ~  
LOOKING OUTBOARD

DRILL  $\frac{1}{4}$ " DIA. HOLE  
USING BRKT AS  
A GUIDE

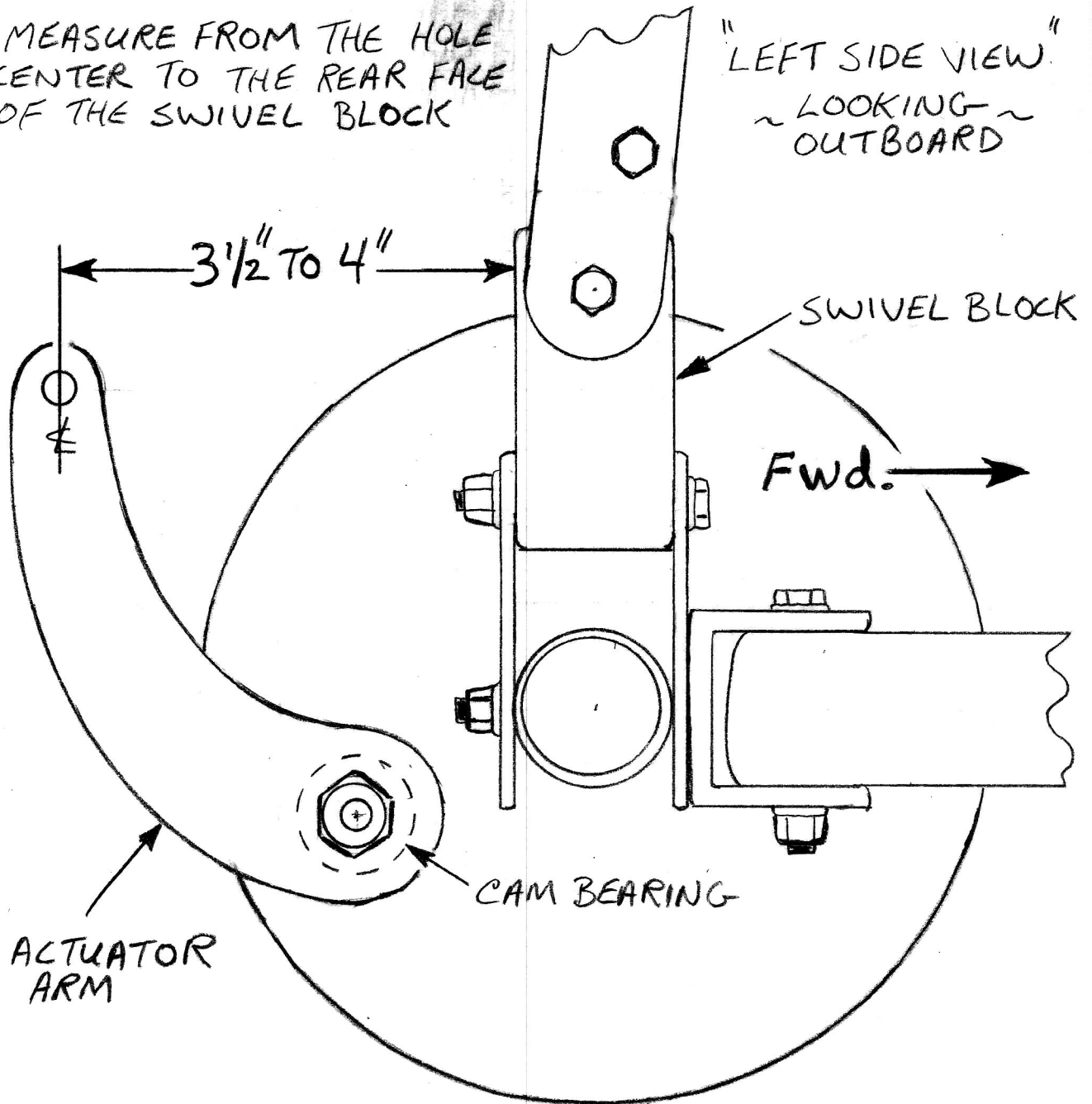
CAM BEARING

MAKE CONTACT  
BY ROTATING PLATE



4.9 APPLY A THIN COATING OF HEAVY GREASE TO THE INSIDE OF THE CAM BEARING AND RE-INSERT THE BRAKE CAM. WIPE OFF ANY EXCESS GREASE AND RE-ATTACH THE SHOES AND SPRINGS TO THE MOUNT PLATE ASSEMBLY. CAREFULLY RE-LOCATE THE ACTUATOR ARM ON THE CAM SPLINES IN THE POSITION SHOWN AND SECURE WITH THE LOCKWASHER AND NUT AS BEFORE.

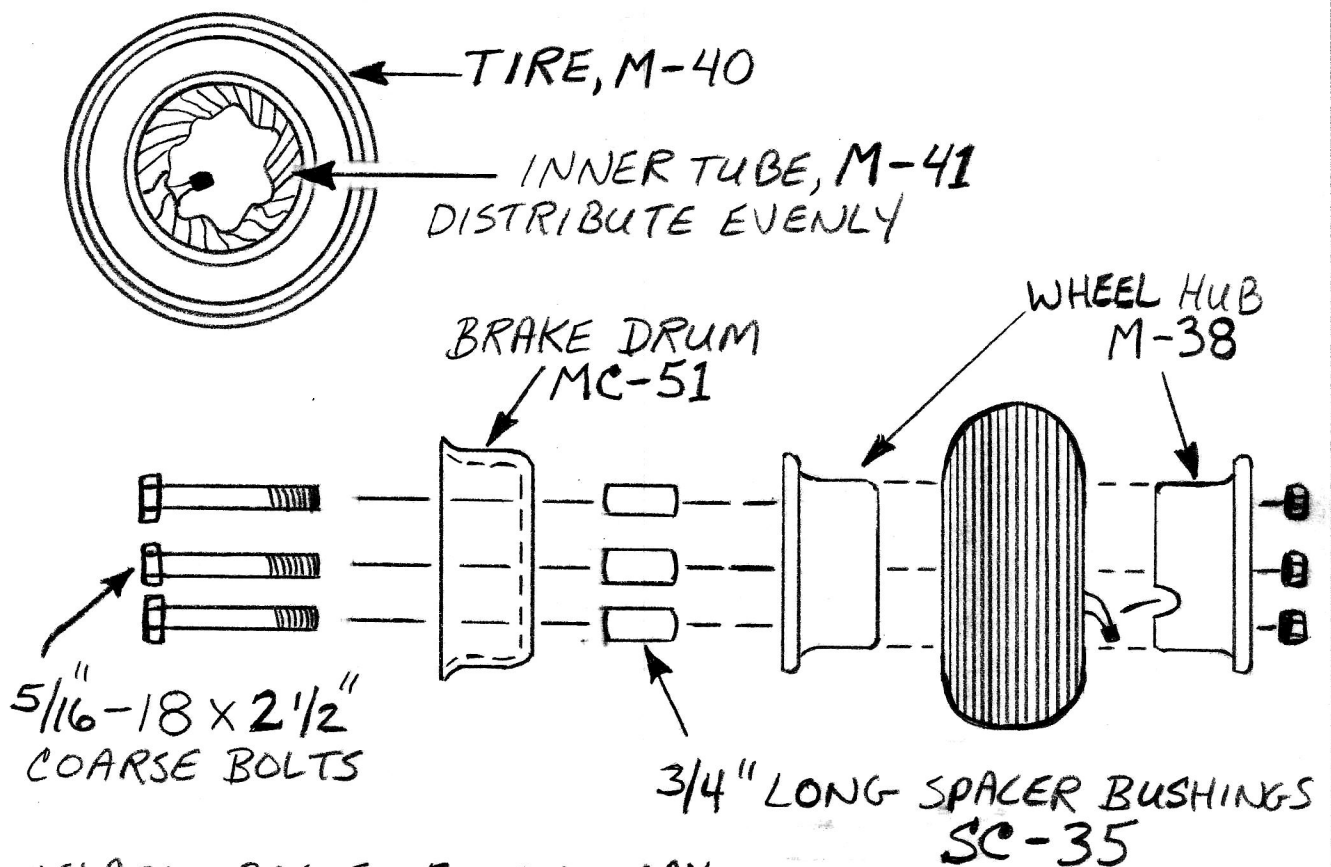
MEASURE FROM THE HOLE CENTER TO THE REAR FACE OF THE SWIVEL BLOCK



~ BRAKE PLATE MOUNT BRACKET, ETC.  
OMITTED FOR CLARITY ~

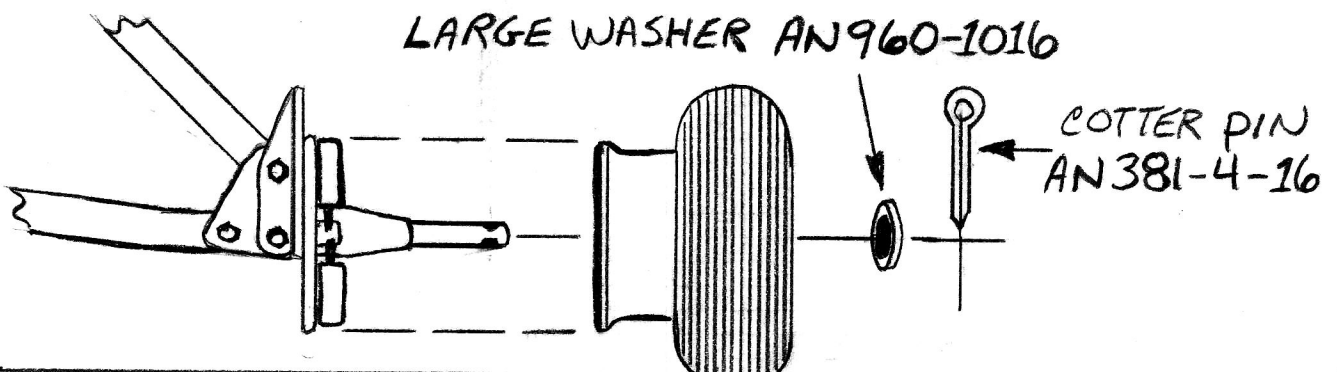
4.10 MAKE UP A PAIR OF REAR WHEEL / BRAKE DRUM ASSEMBLIES BY REMOVING THE SCREWS FROM THE PLASTIC WHEEL HUBS AND SEPARATING THE HALVES. POSITION THE INNER TUBE EVENLY INSIDE THE TIRE, ALIGN THE VALVE STEM WITH THE NOTCH IN THE WHEEL HUB AND RE-ASSEMBLE THE WHEEL HALVES, BRAKE DRUM AND SPACER BUSHINGS AS SHOWN.

NOTE: VALVE STEM SHOULD BE ON THE SIDE OF THE WHEEL OPPOSITE THE BRAKE DRUM. TRY NOT TO PINCH THE TUBE BETWEEN THE WHEEL HALVES CAUSING A LEAK! TIGHTEN BOLTS SECURELY.

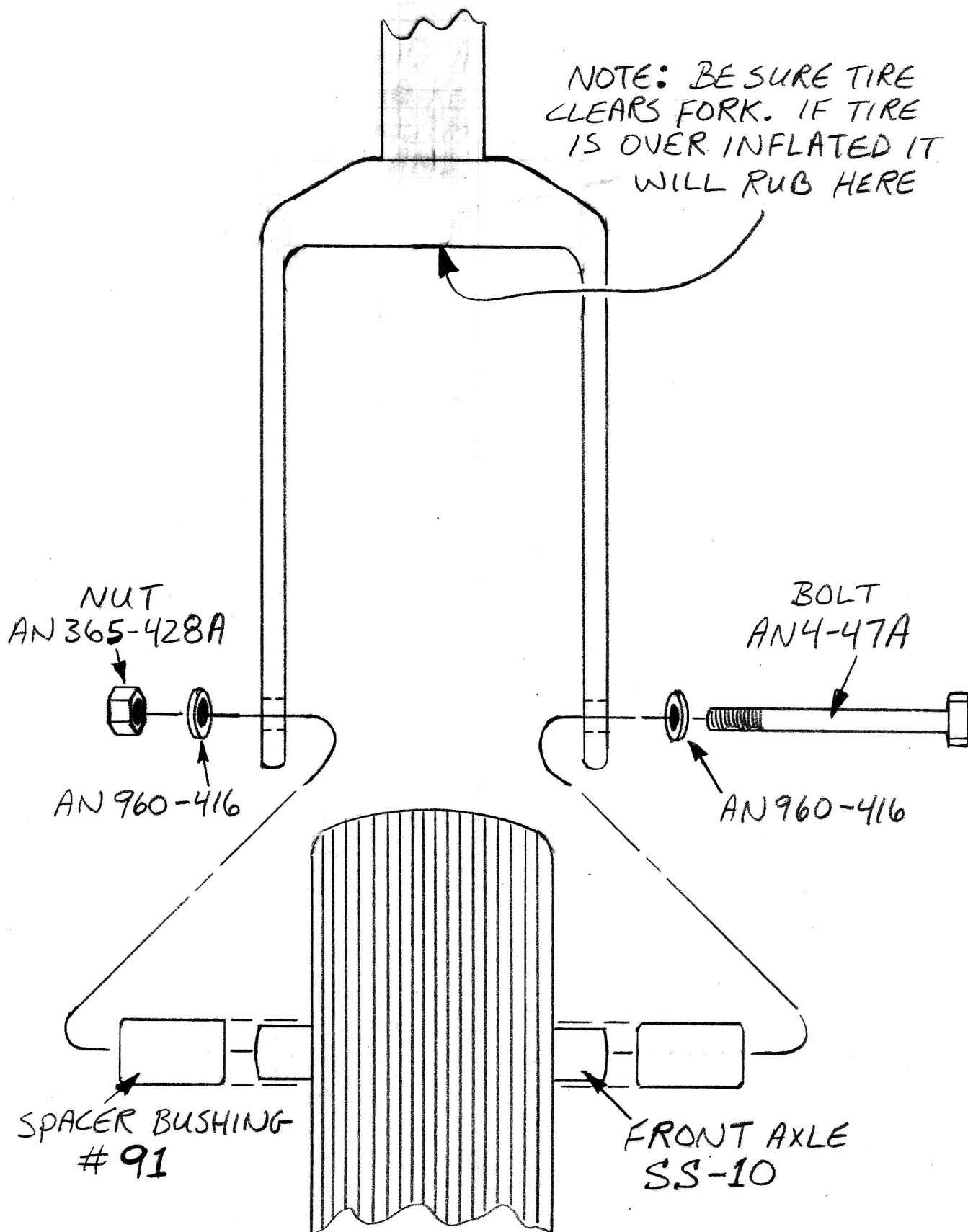


INFLATE TIRES TO 30 P.S.I. MAX.

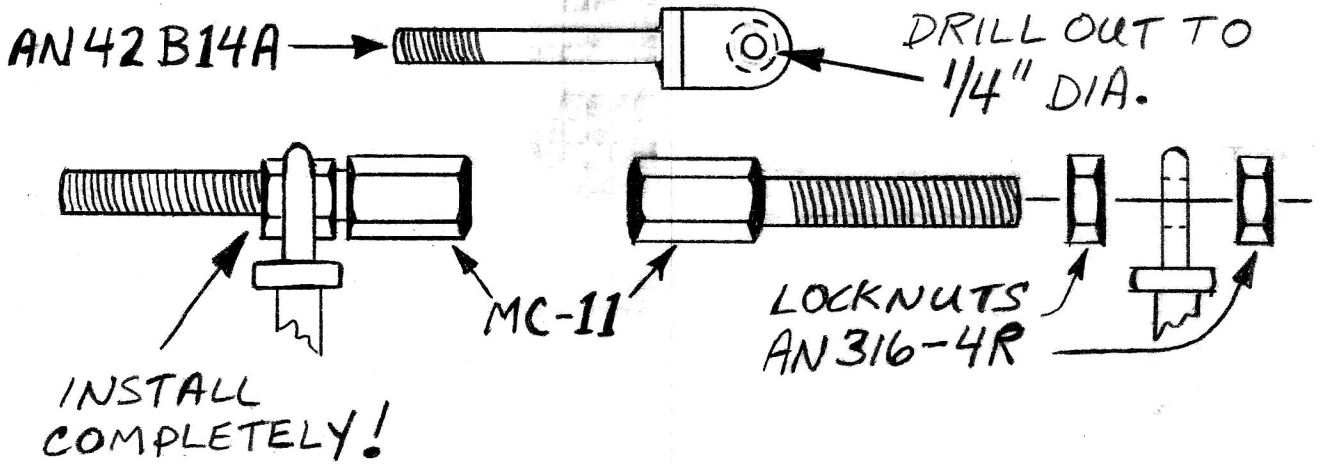
SLIDE THE WHEELS ONTO THE REAR AXLES AND INSTALL WASHER AND COTTER PIN. BEND OVER SECURELY!



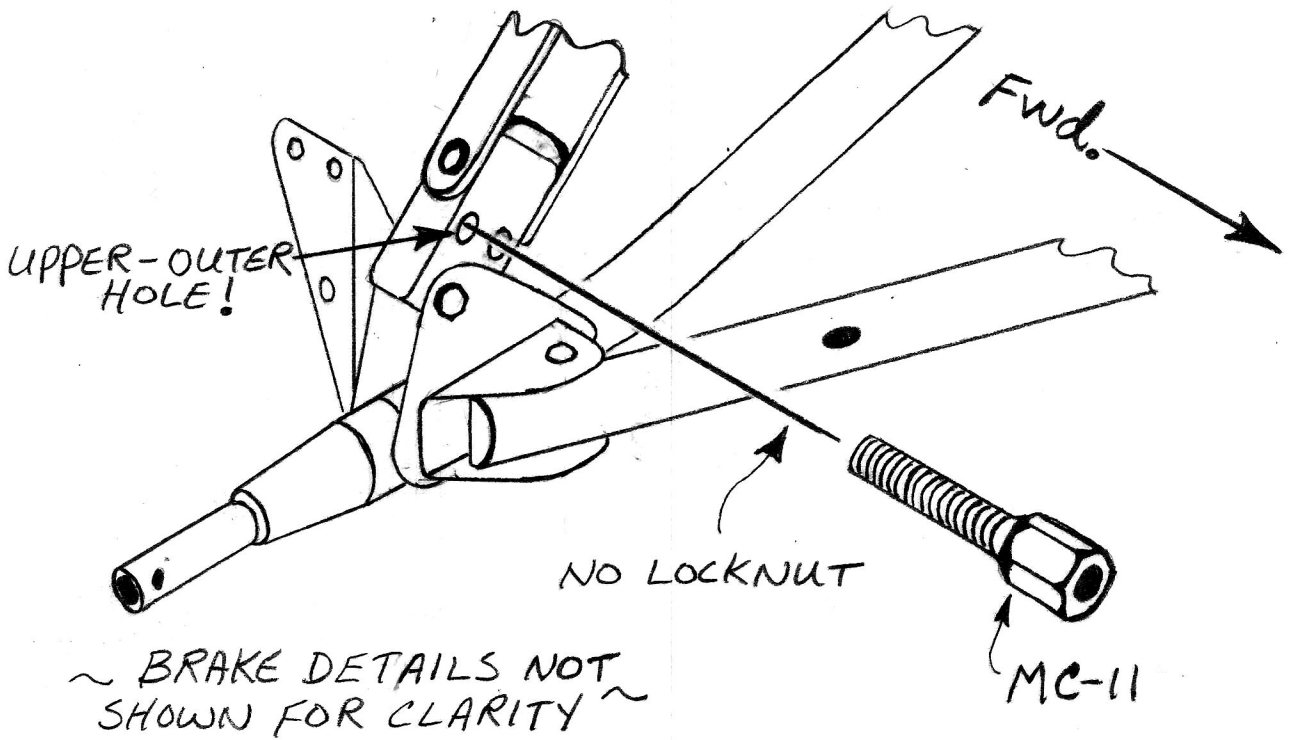
4.11 ASSEMBLE AND INFLATE THE FRONT WHEEL THE SAME AS THE REAR, BEING CAREFUL NOT TO PINCH THE TUBE. INSTALL THE FRONT WHEEL ON THE FORK ASSEMBLY AND TIGHTEN BOLT SECURELY!



**4.12** PLACE A PAIR OF AN 42 B14A EYEBOLTS IN A VICE. DRILL OUT THE  $\frac{3}{16}$ " DIA. HOLE IN THE EYE TO  $\frac{1}{4}$ " DIA. AND REMOVE BURRS WITH A FILE. INSTALL A CABLE ADJUSTER, MC-11, AND TWO LOCKNUTS IN EACH EYEBOLT AS SHOWN.

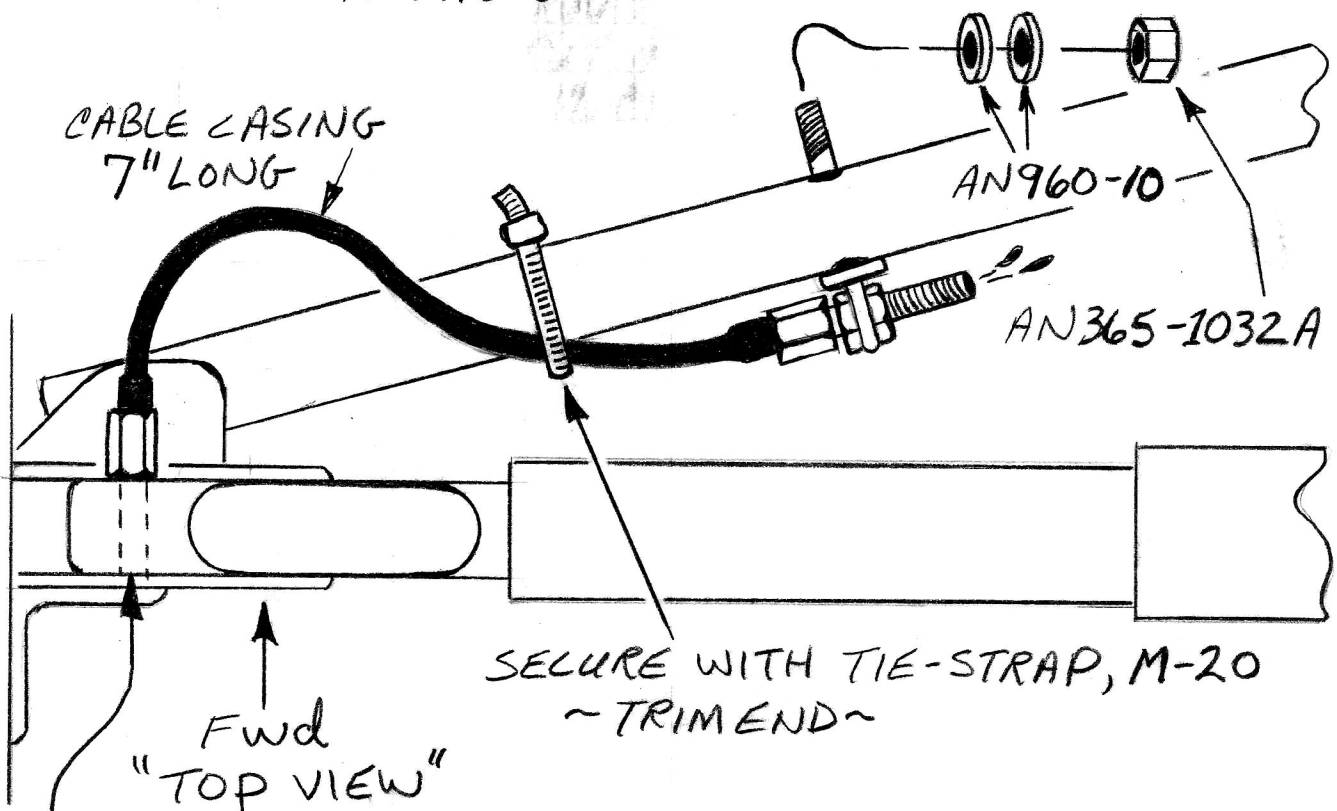


AT THE BOTTOM OF EACH REAR SHOCK ASSY, IS A SWIVEL/CABLE GUIDE WITH TWO UNUSED HOLES RUNNING FORE AND AFT. INSTALL A SINGLE CABLE ADJUSTER, MC-11, ON THE FRONT SIDE OF EACH SWIVEL, IN THE UPPER-OUTER HOLE AS SHOWN. IF NECESSARY, SCREW OR TAP THE ADJUSTER INTO THE SWIVEL AS FAR AS IT WILL GO.



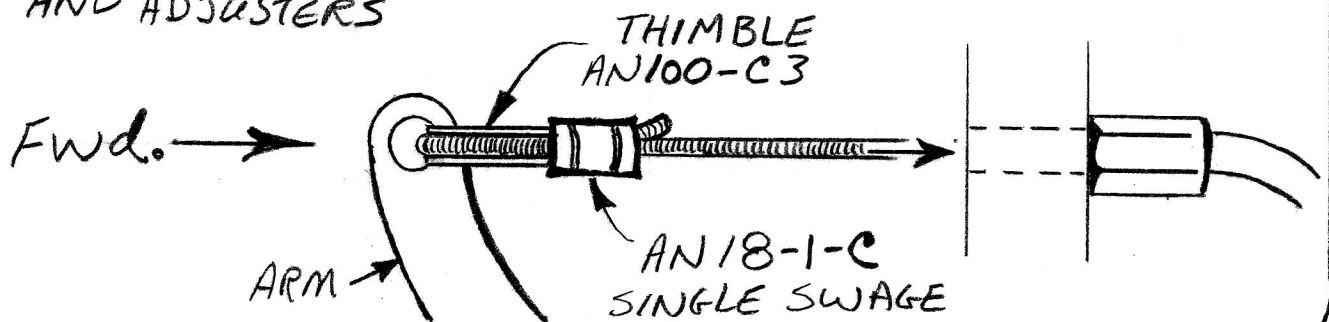
**4.13** INSTALL AN EYE BOLT WITH ADJUSTER IN THE BACK SIDE OF EACH LANDING-GEAR DIAGONAL STRUT AT THE HOLE PROVIDED. ALIGN THE ADJUSTER PARALLEL WITH THE STRUT AND TIGHTEN SECURELY.

CUT A PIECE OF M-12 CABLE CASING, 7" LONG. WRAP THE ENDS WITH A LITTLE TAPE TO PROVIDE A SNUG FIT AND INSTALL IN THE ENDS OF THE CABLE ADJUSTERS AS SHOWN.



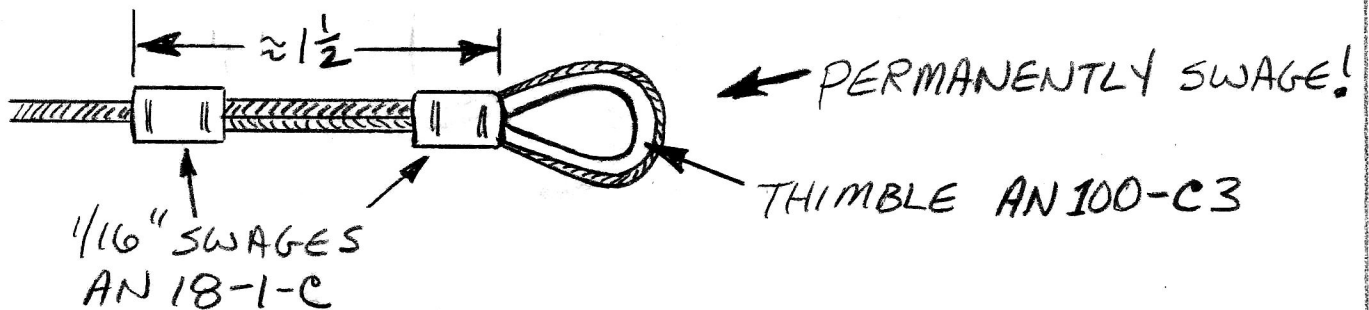
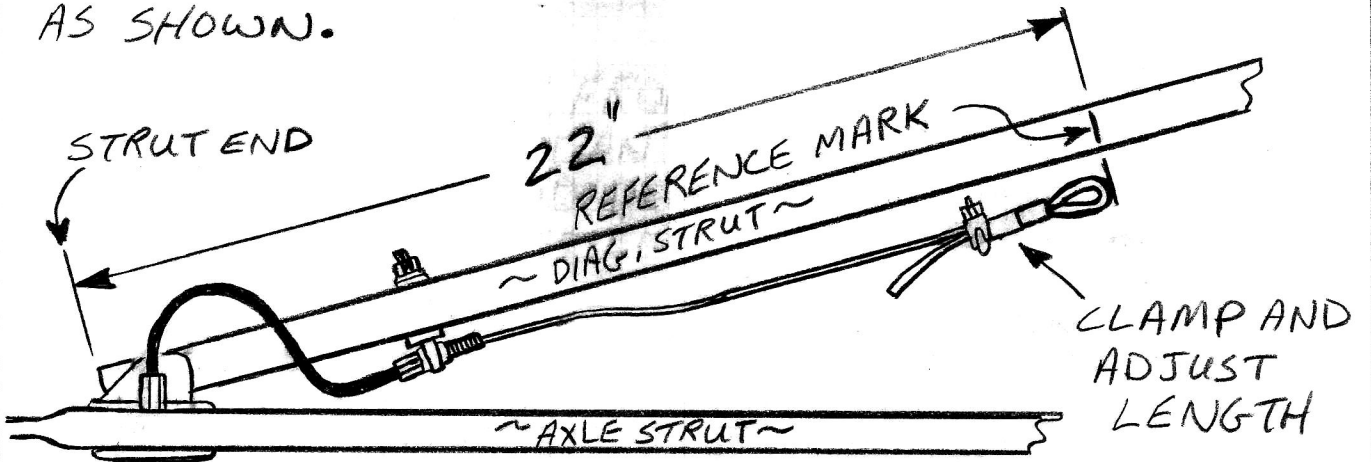
INJECT SOME W.D.40 OR OTHER LIGHT OIL INTO THE CABLE CASING UNTIL IT IS THOROUGHLY SATURATED, THEN WIPE OFF EXCESS OIL.

CUT A PIECE OF  $\frac{1}{16}$ " DIA. CABLE, M-35, 36" LONG. SWAGE ONE END TO THE BRAKE ACTUATOR ARM WITH A THIMBLE AND SINGLE SWAGE AS SHOWN, THEN FEED THE OTHER END FORWARD THROUGH THE CASING AND ADJUSTERS

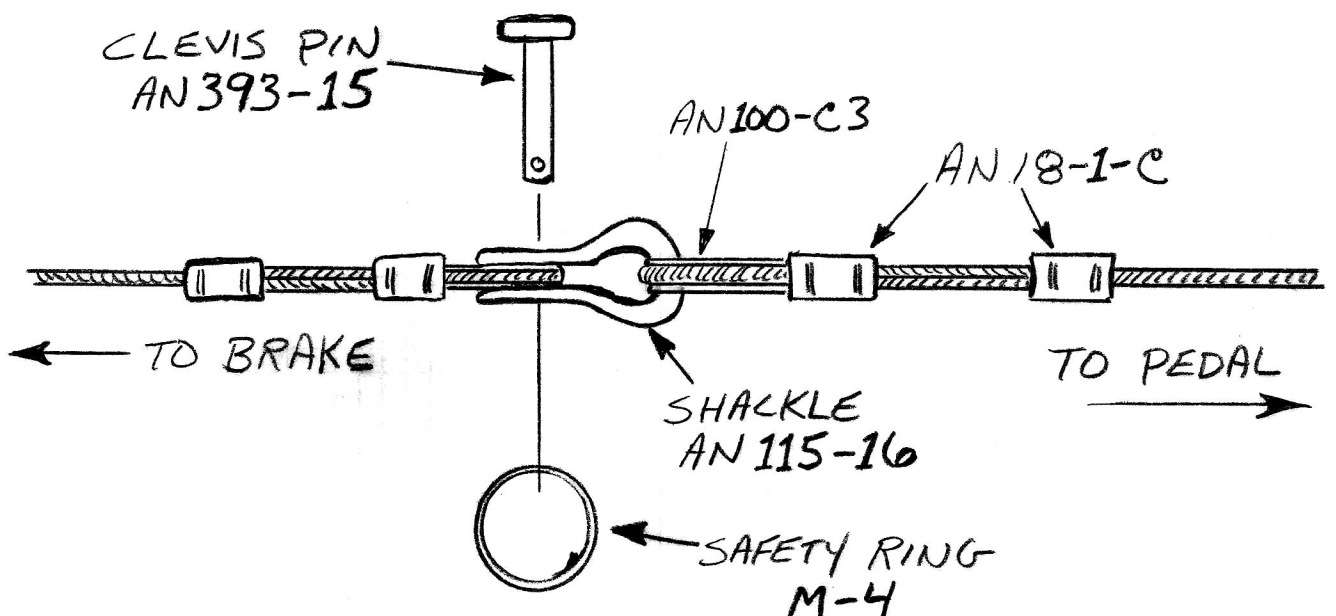




4.14 MEASURE 22" FROM THE OUTER END OF THE DIAGONAL STRUT AND PLACE A PENCIL MARK. CLAMP, ADJUST AND PERMANENTLY INSTALL SWAGES AND THIMBLE ON THE END OF THE BRAKE CABLE AS SHOWN. AS SHOWN.

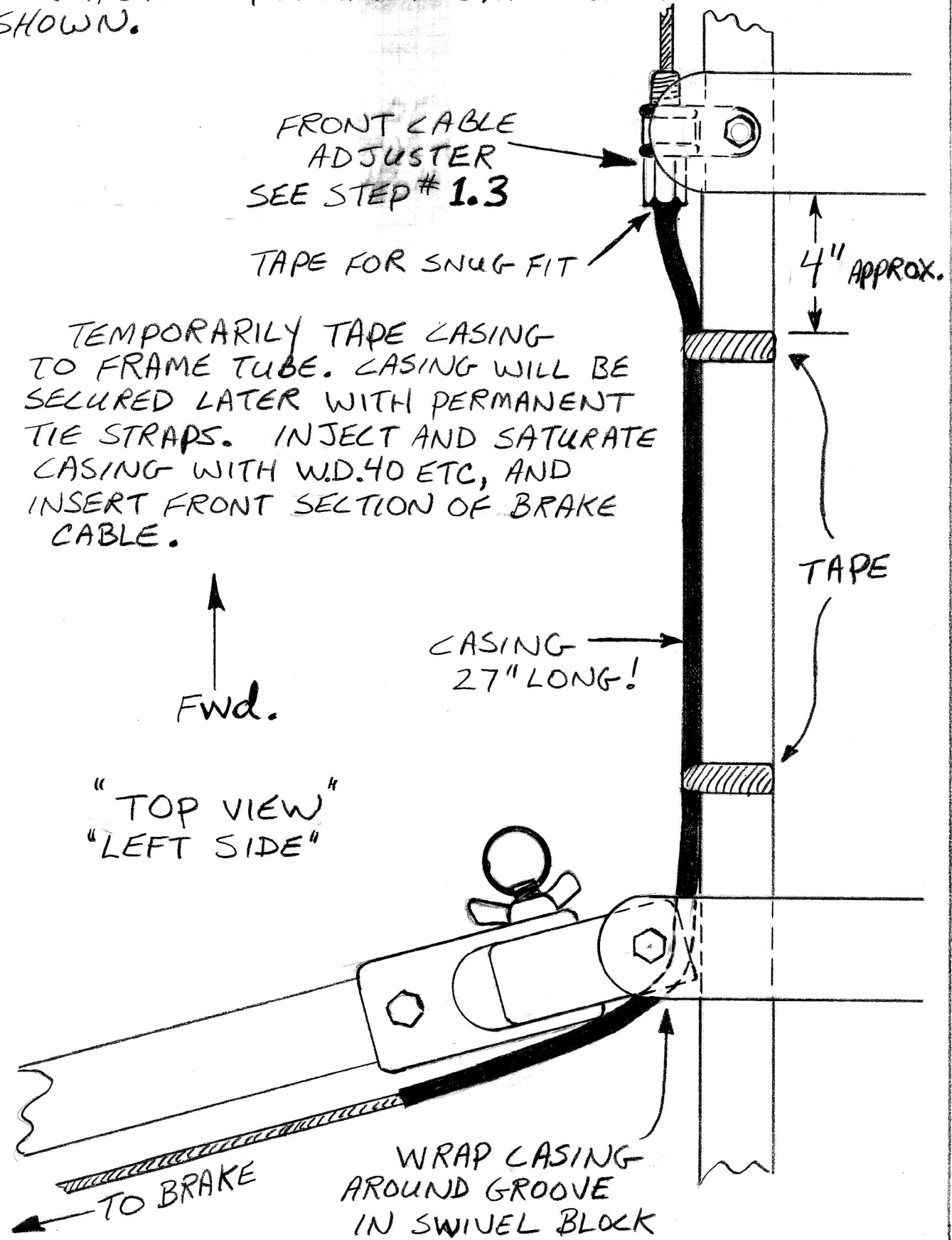


CUT ANOTHER PIECE OF 1/16" CABLE, 66" LONG. PERMANENTLY INSTALL AND CRIMP HARDWARE ON ONE END AND ATTACH TO BRAKE CABLE AS SHOWN.

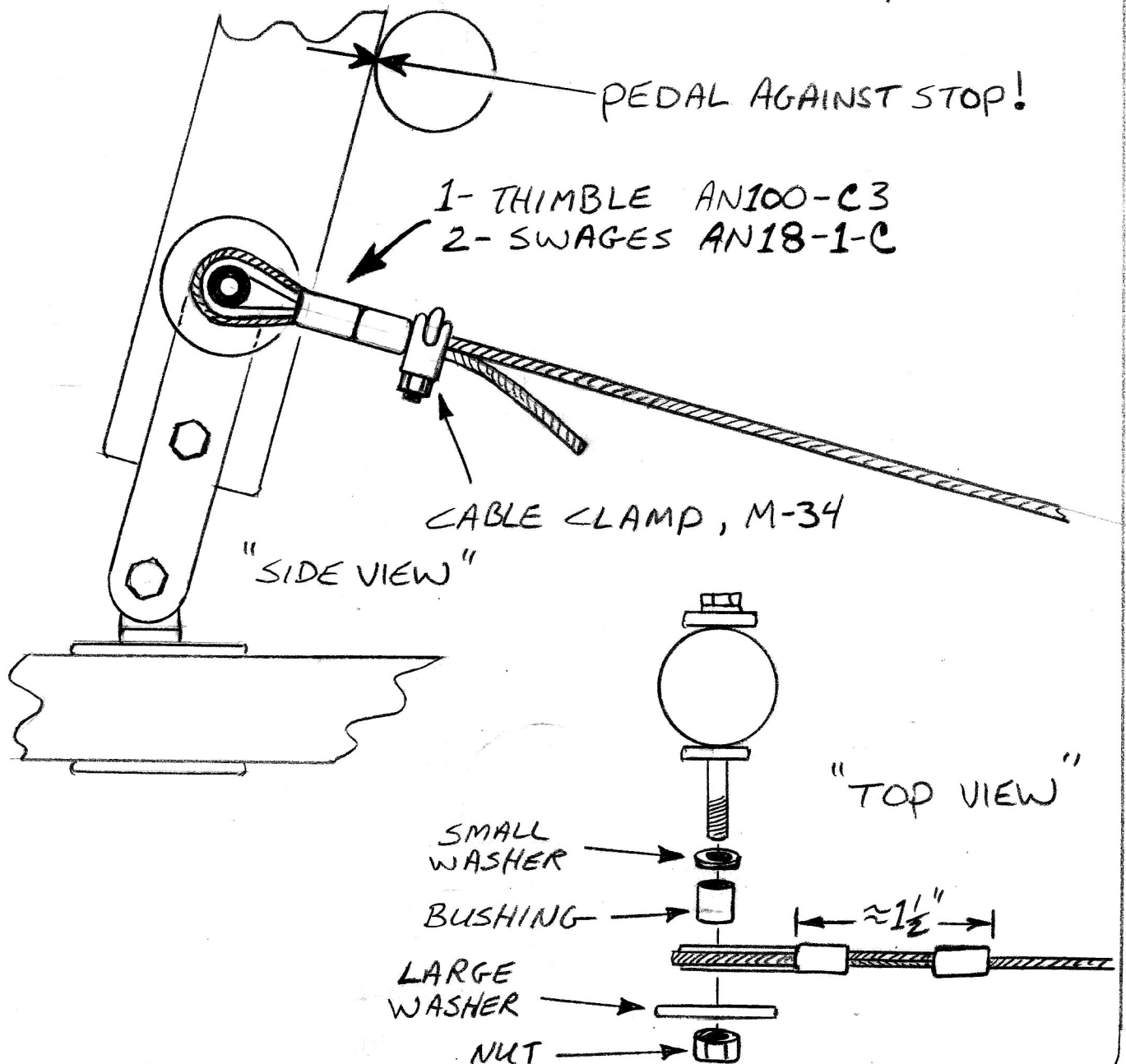




4.15 CUT A PIECE OF M-12 CABLE CASING, 27" LONG. WRAP ONE END WITH A LITTLE TAPE FOR A SNUG FIT AND INSTALL ON FRAME AS SHOWN.

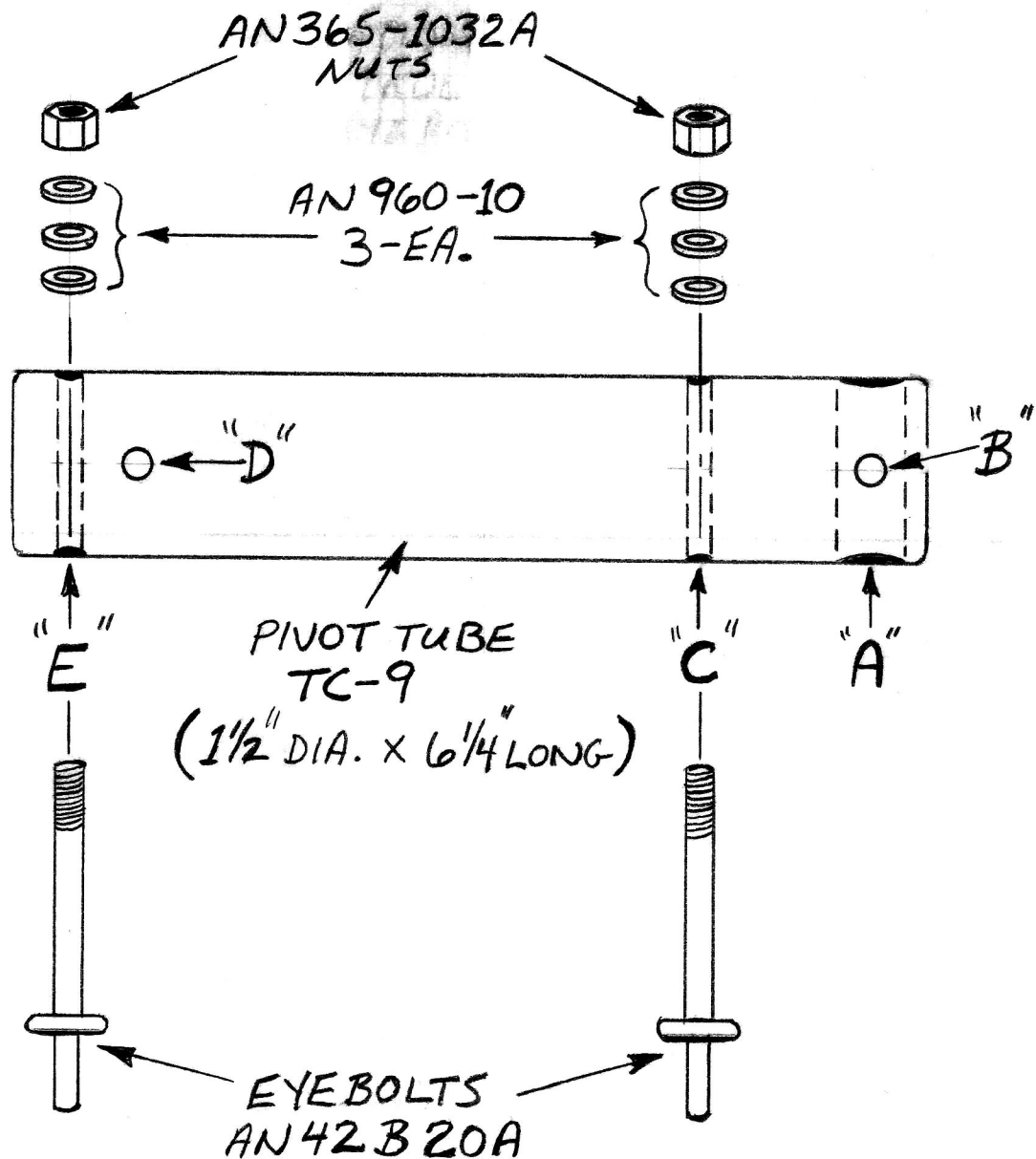


**4.16** CLAMP THE FRONT SECTION OF THE BRAKE CABLE TO THE RUDDER PEDAL AS SHOWN. BLOCK UP THE REAR WHEEL SO IT IS FREE TO TURN AND ADJUST SLACK FROM CABLE. MAKE SURE RUDDER PEDAL IS SEATED AGAINST THE REAR STOP, THEN PULL THE BRAKE CABLE AS TIGHT AS YOU CAN AND TIGHTEN THE CLAMP. AT THIS POINT THE CABLE SHOULD BE VERY TIGHT AND THE REAR WHEEL CAN NOT BE TURNED BY HAND. LOOSEN THE CABLE JUST ENOUGH TO ALLOW THE WHEEL TO SPIN FREELY, REMOVE THE CABLE FROM THE PEDAL, AND PERMANENTLY CRIMP SWAGES. RE-ATTACH CABLE WITH PROPER HARDWARE AND TIGHTEN SECURELY.

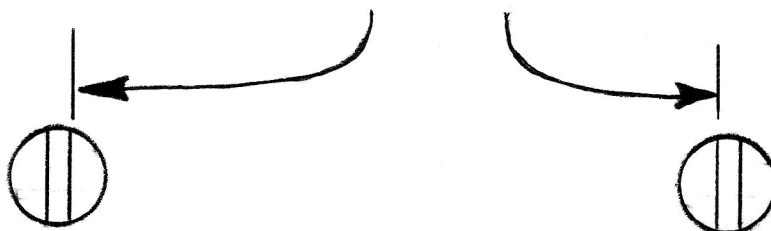


# 5.1~FLIGHT CONTROLS~

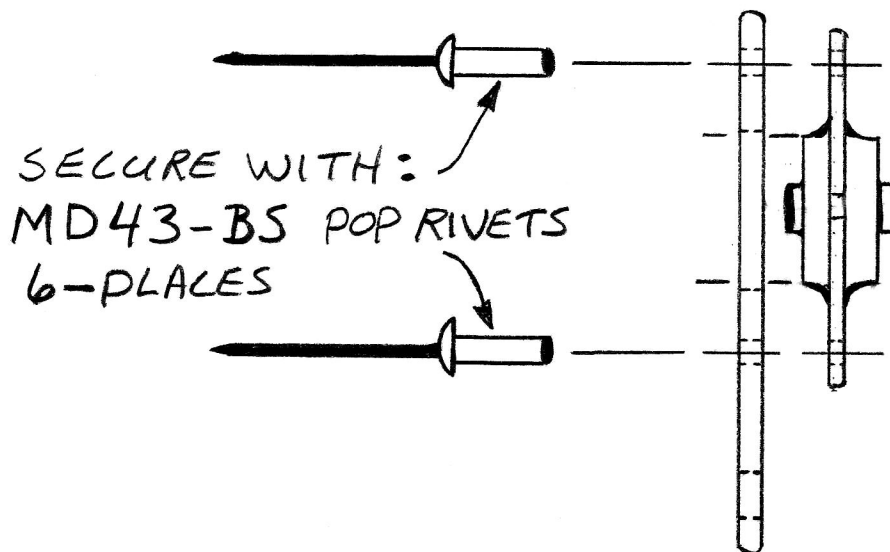
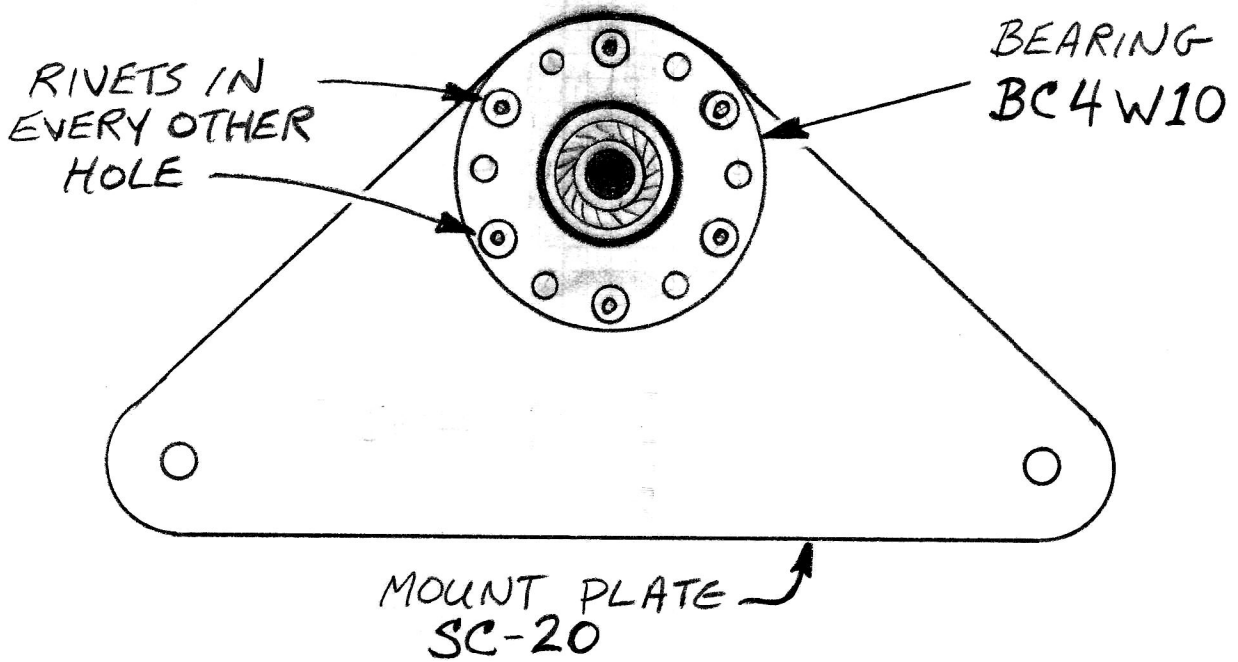
BEGIN INSTALLATION OF FLIGHT CONTROL ASS'YS  
BY LOCATING CONTROL STICK PIVOT TUBE, TC-9  
AND INSTALLING EYEBOLTS IN HOLES "C" AND "E"  
AS SHOWN. TIGHTEN SNUG ONLY FOR NOW.



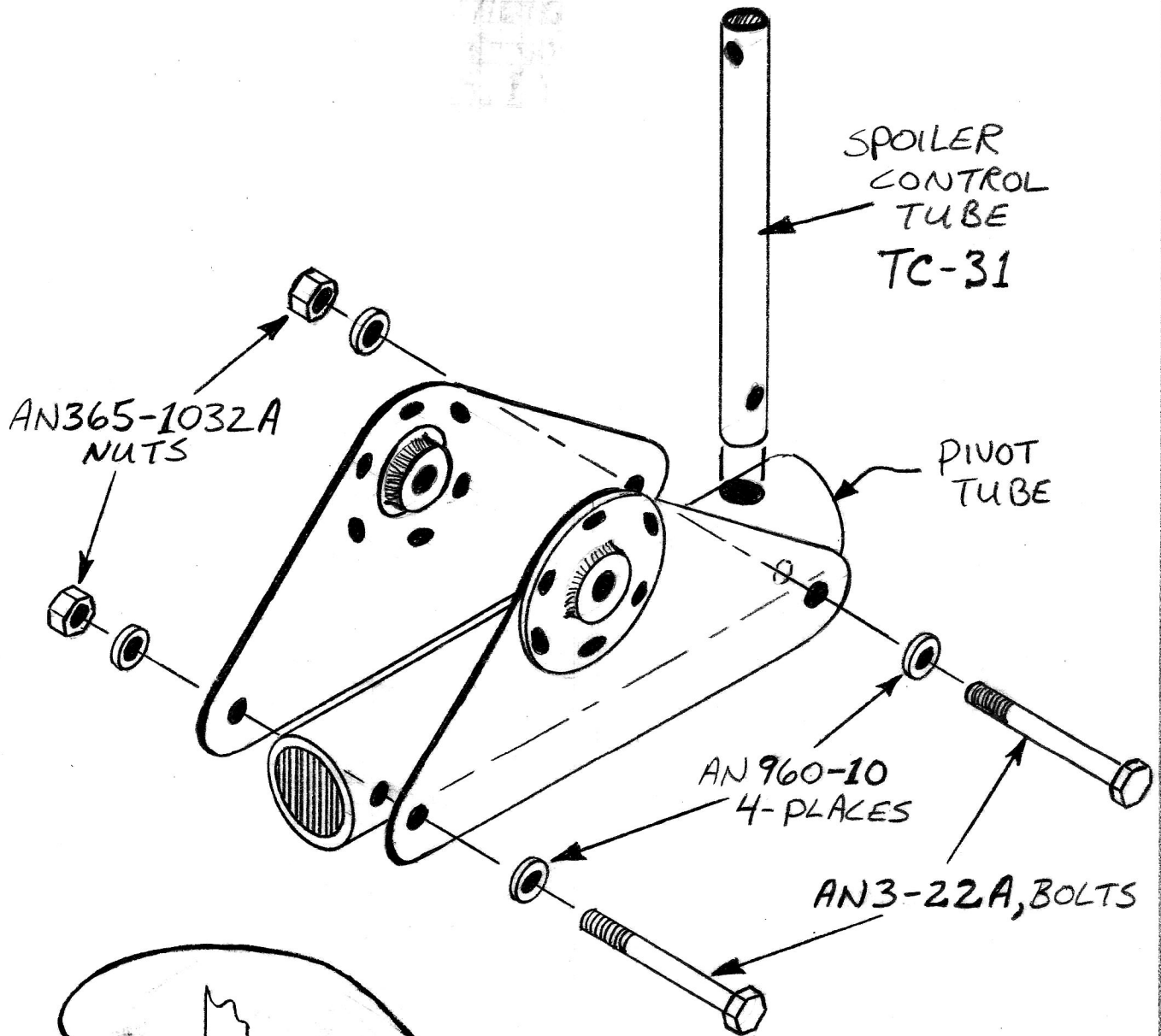
"ALIGN EYEBOLTS FACES PARALLEL"



5.2 PERMANENTLY INSTALL A BELLCRANK BEARING IN EACH CONTROL STICK MOUNT PLATE, SC-20 WITH SIX POP RIVETS AS SHOWN.

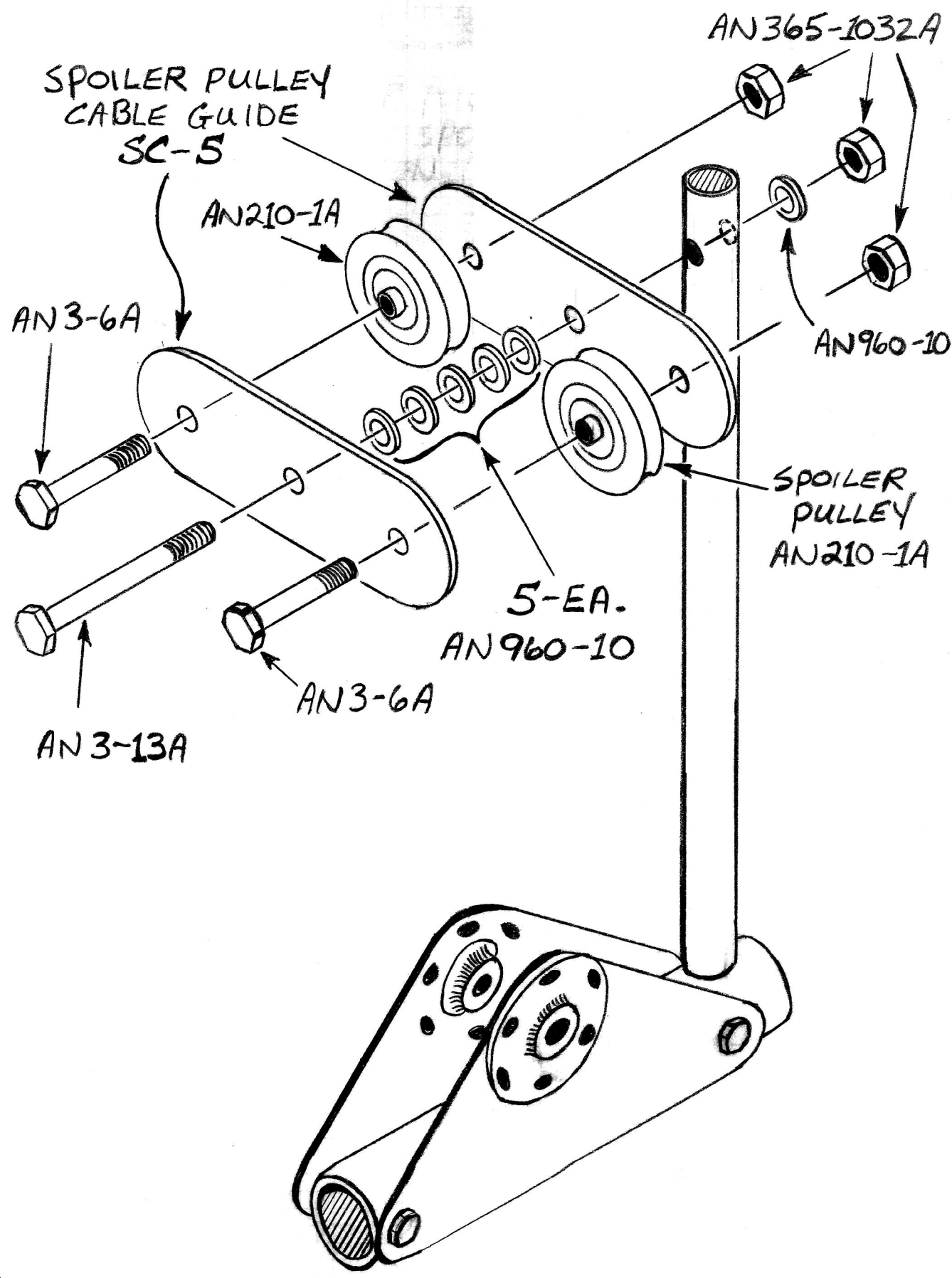


5.3 INSERT SPOILER CONTROL TUBE, TC-31 INTO THE LARGE HOLE AT THE REAR OF THE PIVOT TUBE ASSY. ALIGN THE HOLE IN THE BOTTOM OF THE SPOILER TUBE WITH HOLE "B" IN THE PIVOT TUBE (SEE STEP # 5.1). ATTACH THE MOUNT PLATE ASS'YS TO THE PIVOT TUBE AS SHOWN BUT LEAVE NUTS FINGER TIGHT FOR NOW.



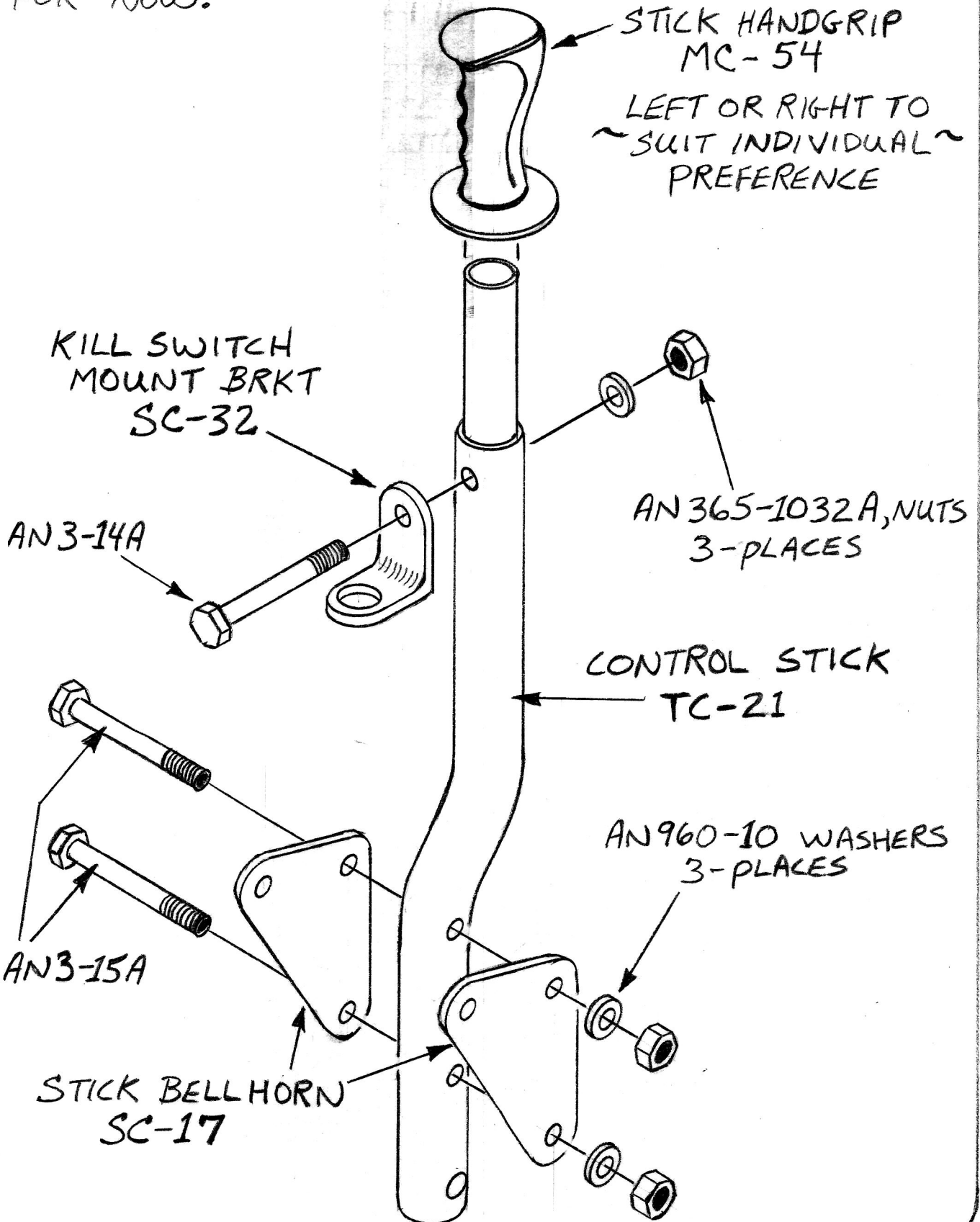
NOTE: FLANGE AND MAJOR PORTION OF BEARING GOES ON THE OUTBOARD SIDE OF THE MOUNT PLATES!

5.4 ATTACH SPOILER PULLEYS AND HARDWARE TO THE TOP OF THE SPOILER CONTROL TUBE AS SHOWN. TIGHTEN THE THREE NUTS SECURELY!



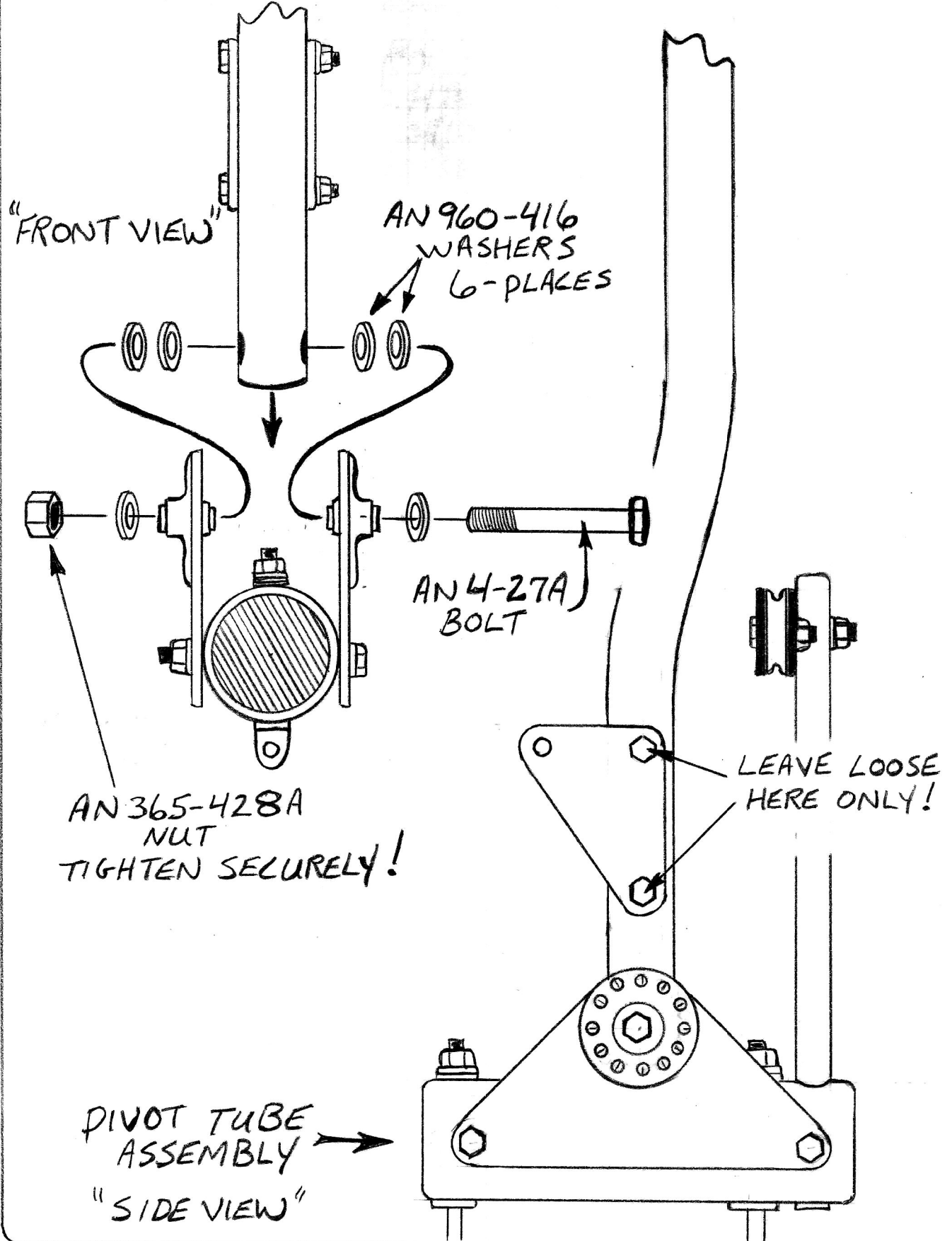
# 5.5-CONTROL STICK ASSEMBLY~

ATTACH HARDWARE TO CONTROL STICK AS SHOWN.  
TIGHTEN KILL SWITCH BRKT MOUNT BOLT SECURELY,  
BUT LEAVE STICK BELLHORN BOLTS FINGER TIGHT  
FOR NOW.

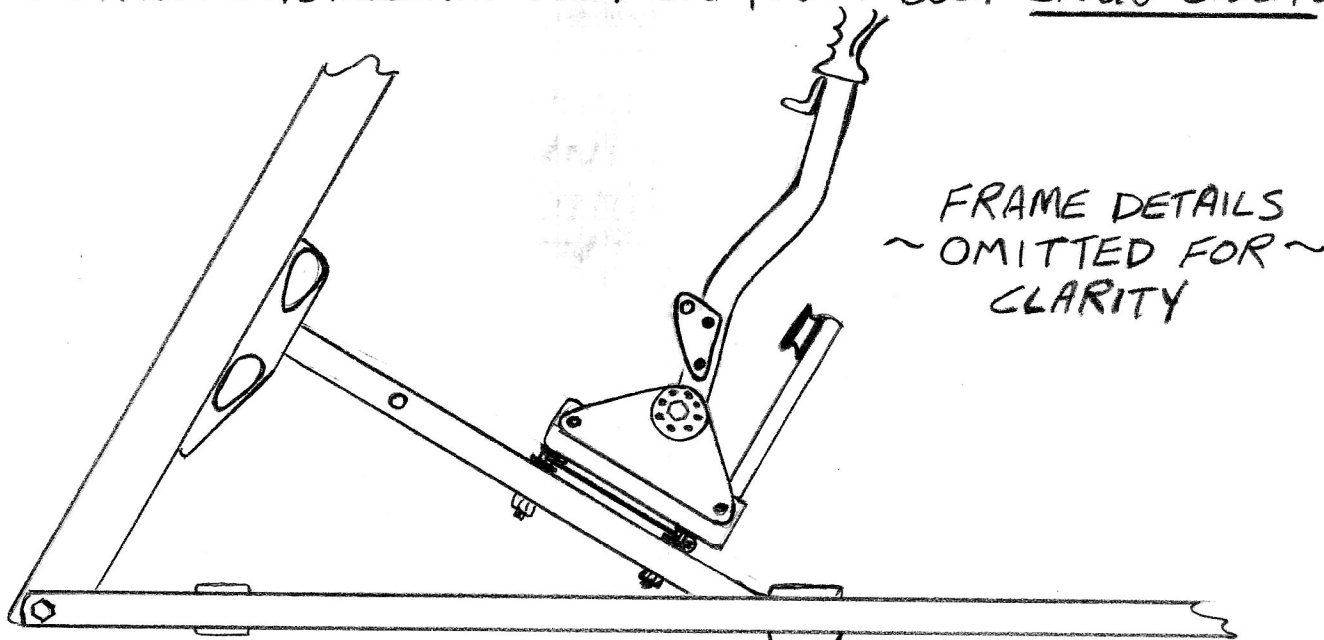




5.6 ATTACH CONTROL STICK TO PIVOT TUBE ASSY AS SHOWN. TIGHTEN ALL BOLTS SECURELY EXCEPT THE PAIR OF STICK BELLHORN BOLTS INSTALLED IN STEP #5.5.

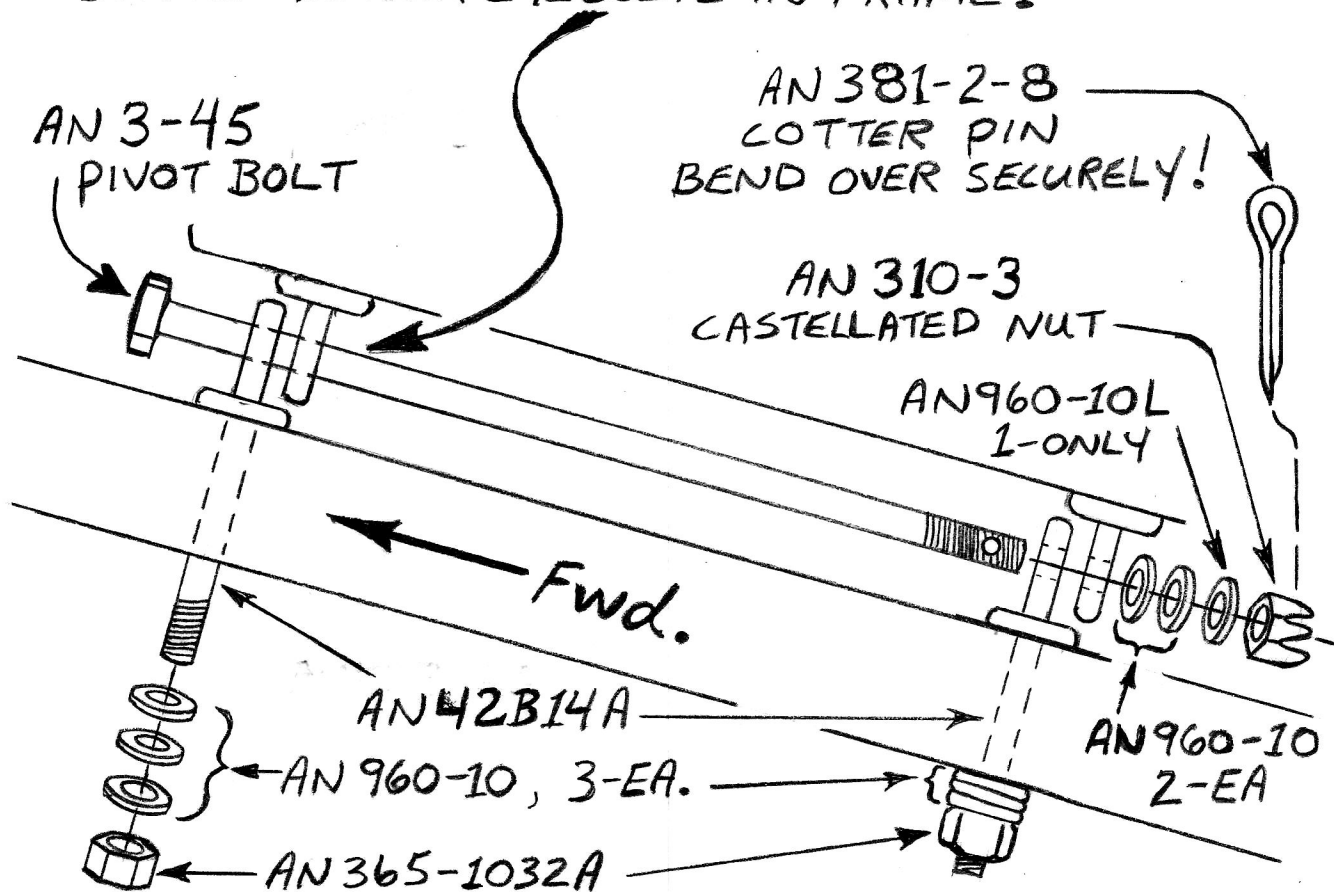


**5.7** INSTALL EYEBOLTS IN FRONT-INNER FRAME STRUT AND MOUNT CONTROL STICK ASSY IN FRAME AS SHOWN. TIGHTEN EYEBOLTS SECURELY BUT TIGHTEN CASTELLATED NUT ON PIVOT BOLT SNUG-ONLY!

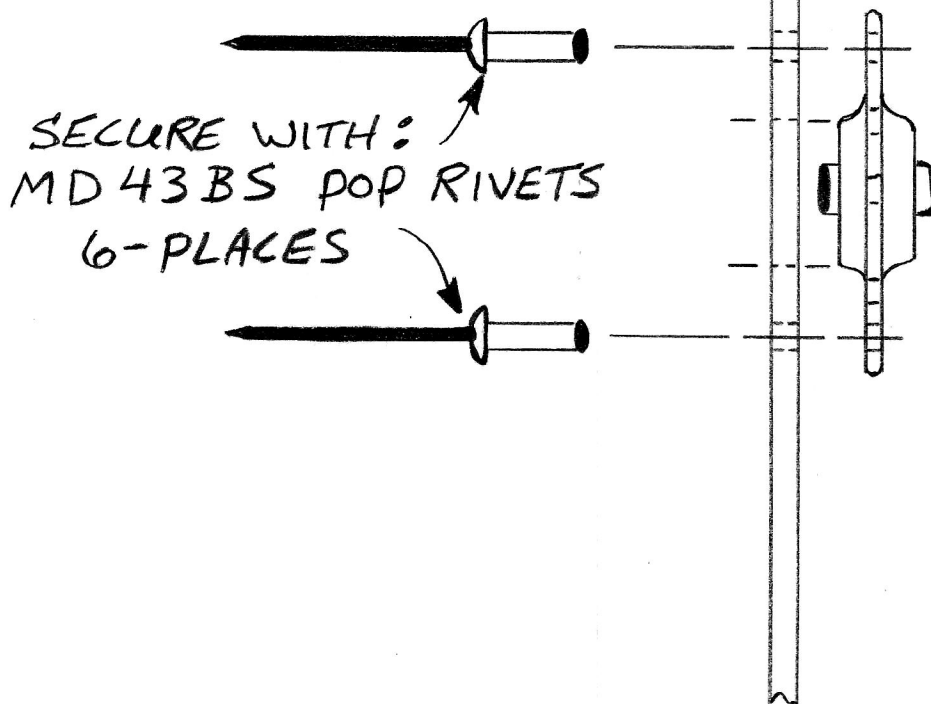
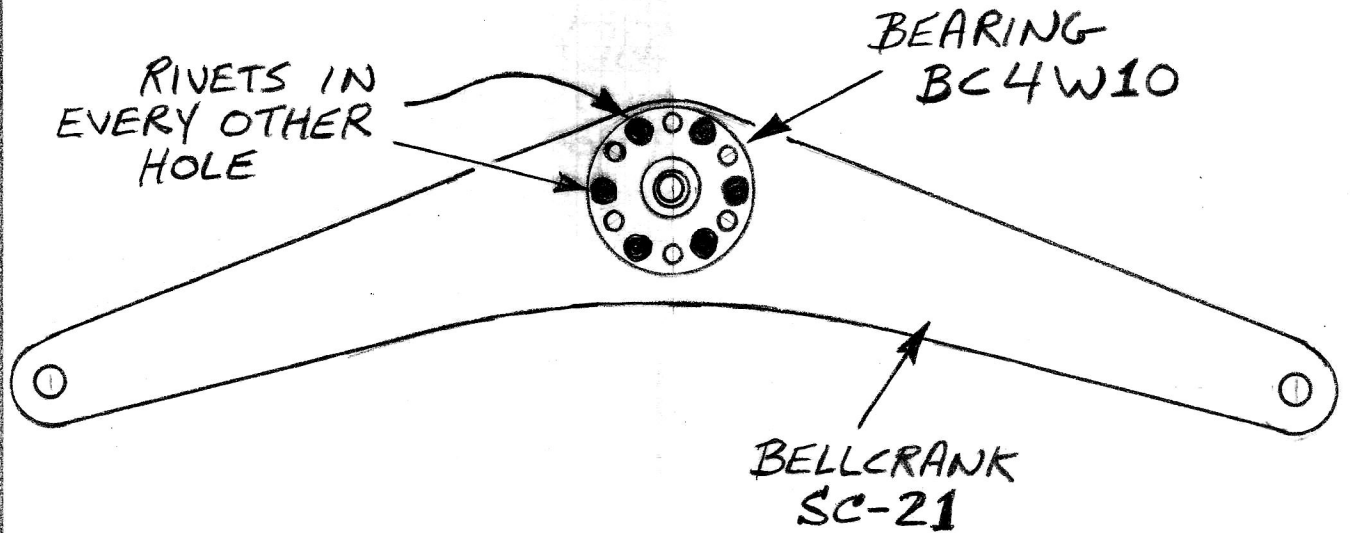


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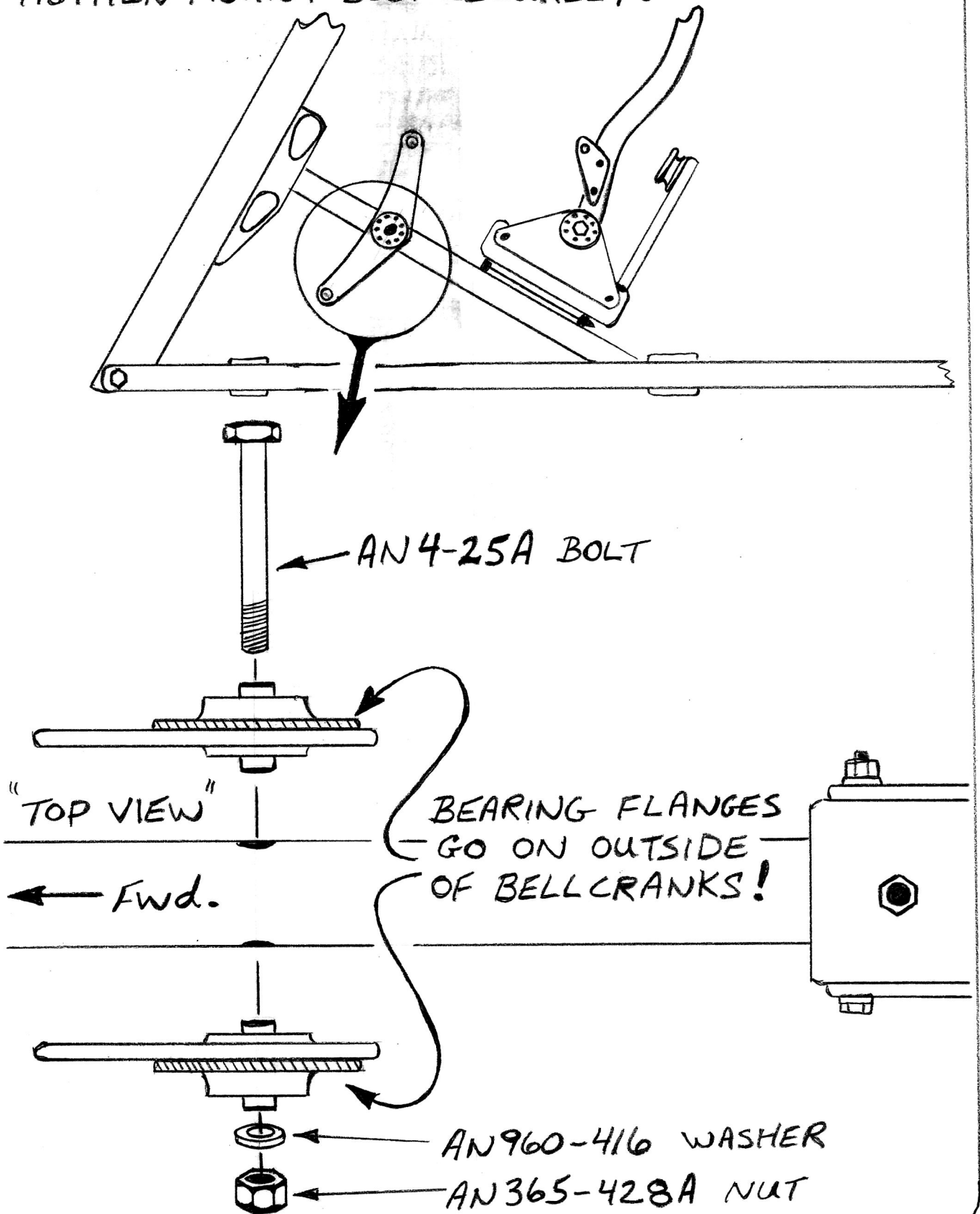
NOTE: BE SURE EYEBOLTS IN PIVOT TUBE MOUNT BEHIND LOWER EYEBOLTS IN FRAME!



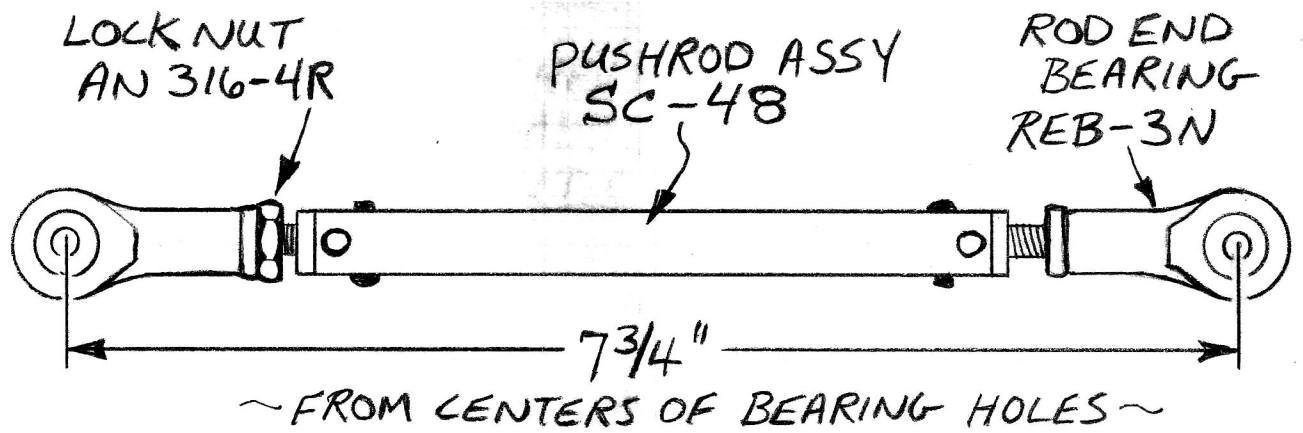
5.8 PERMANENTLY INSTALL A BELLCRANK BEARING  
IN THE PAIR OF CONTROL STICK BELLCRANKS,  
SC-21, WITH SIX POP RIVETS AS SHOWN.



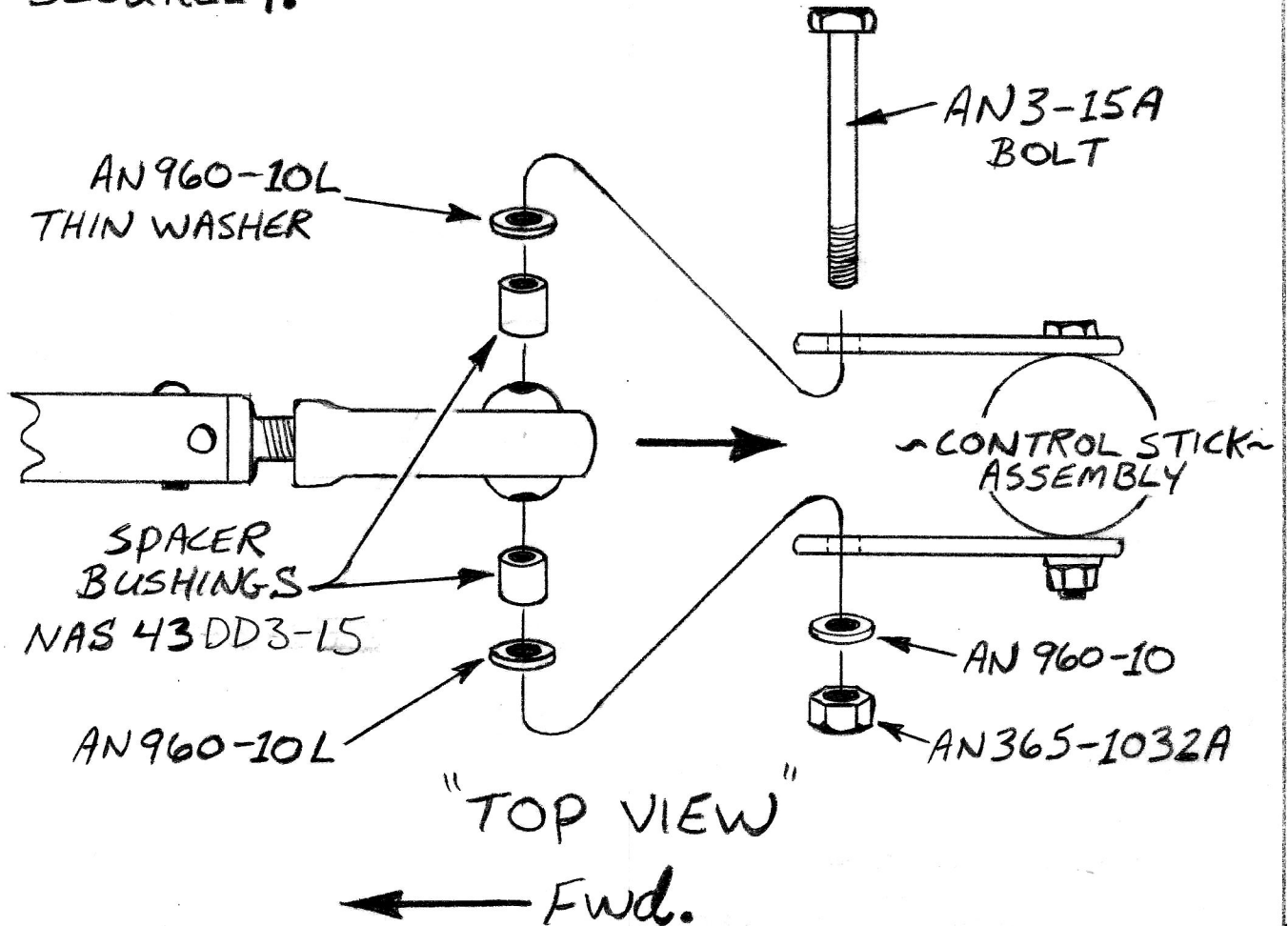
5.9 BOLT BELLCRANKS TO INNER FRAME STRUT WITH PROPER HARDWARE AS SHOWN. INSTALL THE BELLCRANKS SO THAT THE BEARING FLANGES ARE ON THE OUTSIDE, AWAY FROM THE FRAME STRUT. TIGHTEN MOUNT BOLT SECURELY!



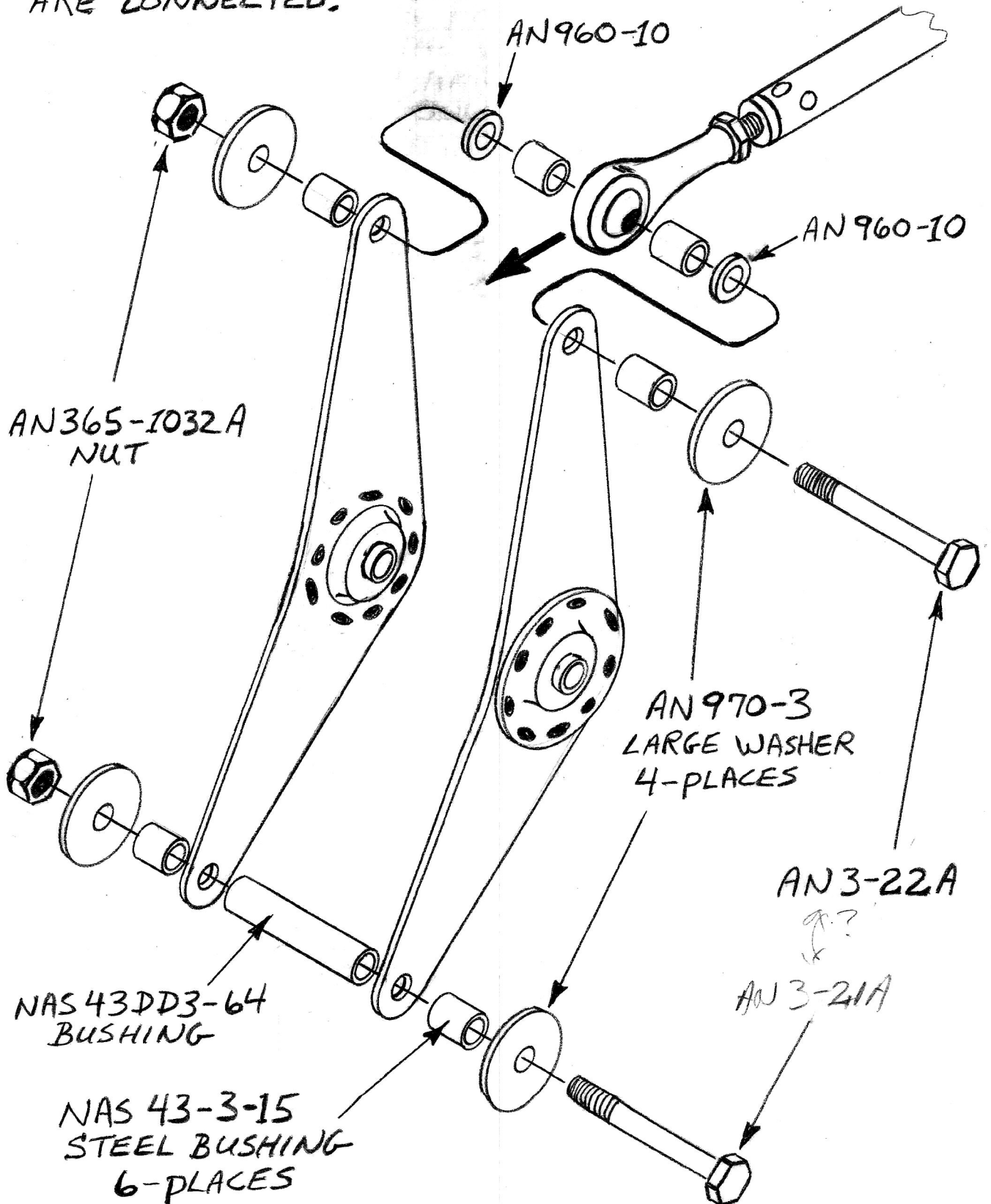
# 5.10 EQUALLY SCREW ROD ENDS ONTO PUSHROD ASSEMBLY AND ADJUST TO LENGTH SHOWN. TIGHTEN LOCKNUT ON ONE END SECURELY!



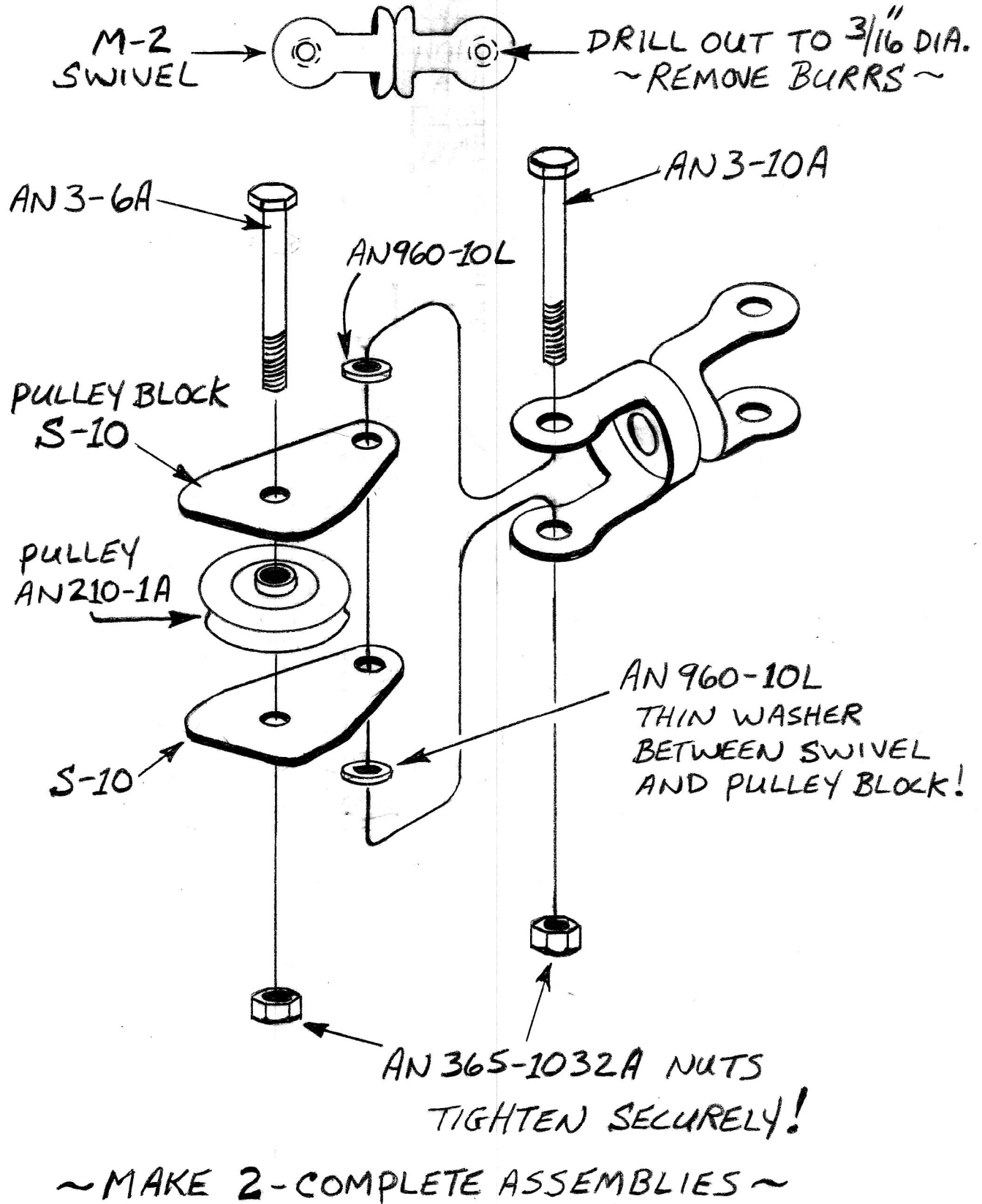
AFTER ADJUSTING, BE SURE THAT ROD END OPPOSITE LOCKNUT IS FREE TO ROTATE 1/4 TURN IN EITHER DIRECTION. CONNECT PUSHROD TO STICK BELLHORNS AND TIGHTEN ALL BOLTS SECURELY!



**5.11** CONNECT THE FRONT END OF THE PUSHROD ASSEMBLY TO THE PAIR OF CONTROL STICK BELLCRANKS WITH HARDWARE AS SHOWN. TIGHTEN BOLTS FINGER TIGHT ONLY FOR NOW AS THEY WILL BE REMOVED AGAIN LATER WHEN THE CONTROL CABLES ARE CONNECTED.

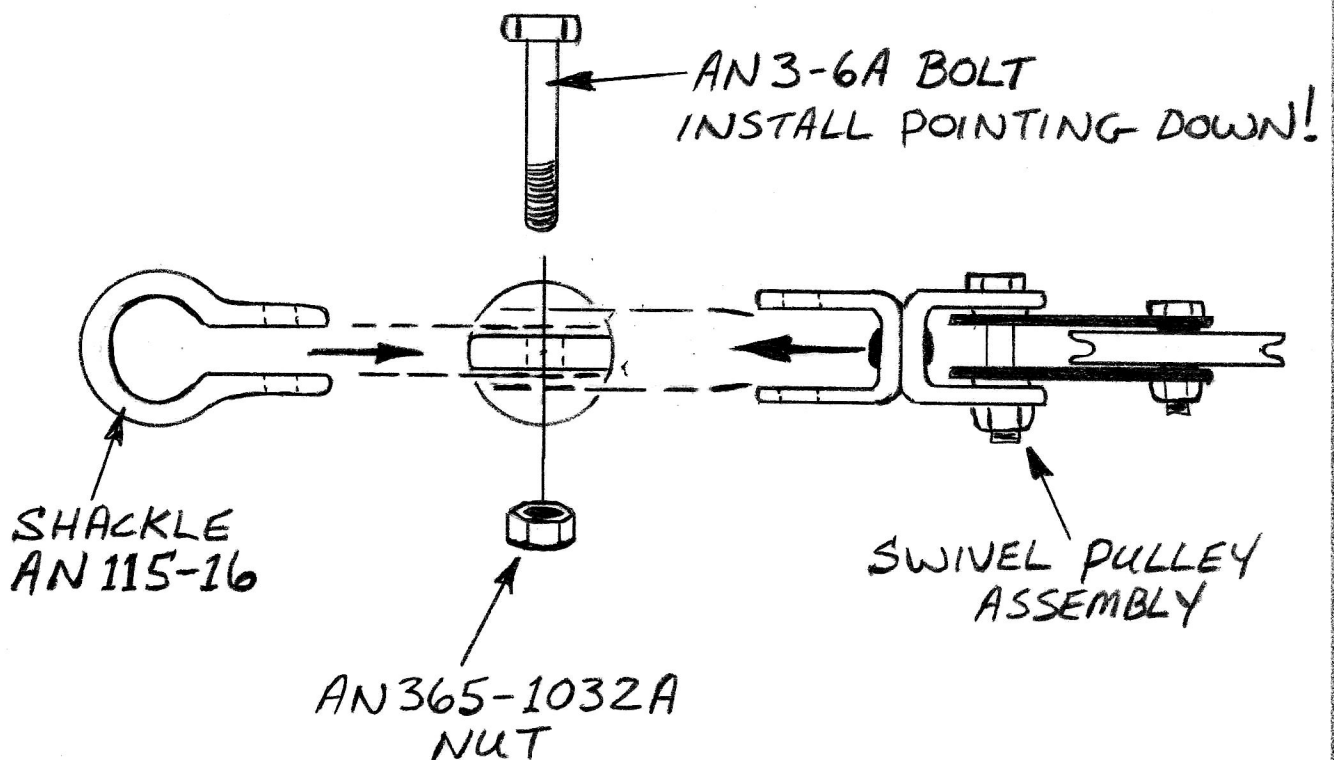
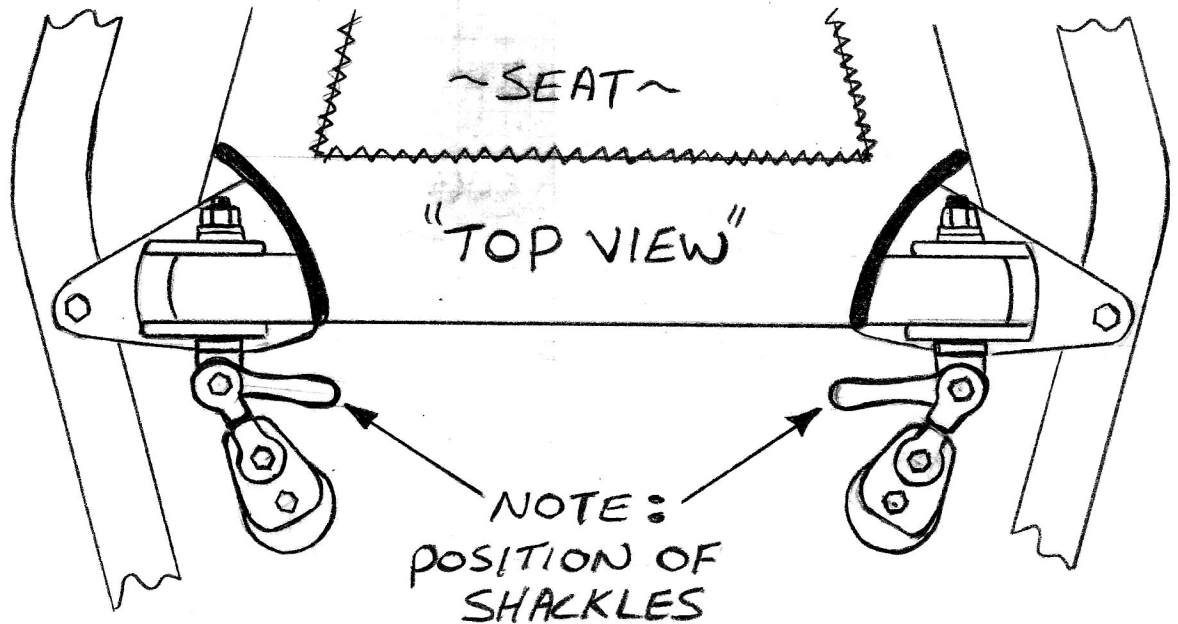


**5.12** PLACE A PAIR OF M-2 SWIVELS IN A VISE AND DRILL OUT HOLES TO  $\frac{3}{16}$ " DIAMETER. REMOVE BURRS WITH A FILE AND ASSEMBLE A PAIR OF SPOILER SWIVEL PULLEYS AS SHOWN. TIGHTEN BOLTS SECURELY!





**5.13** ATTACH SPOILER-SWIVEL PULLEY ASSY'S TO EYEBOLTS ON FRONT CORNERS OF SEAT HORIZONTAL TUBE AS SHOWN. TIGHTEN BOLTS FINGER TIGHT FOR NOW AS THEY WILL BE REMOVED LATER WHEN CONTROL CABLES ARE INSTALLED.

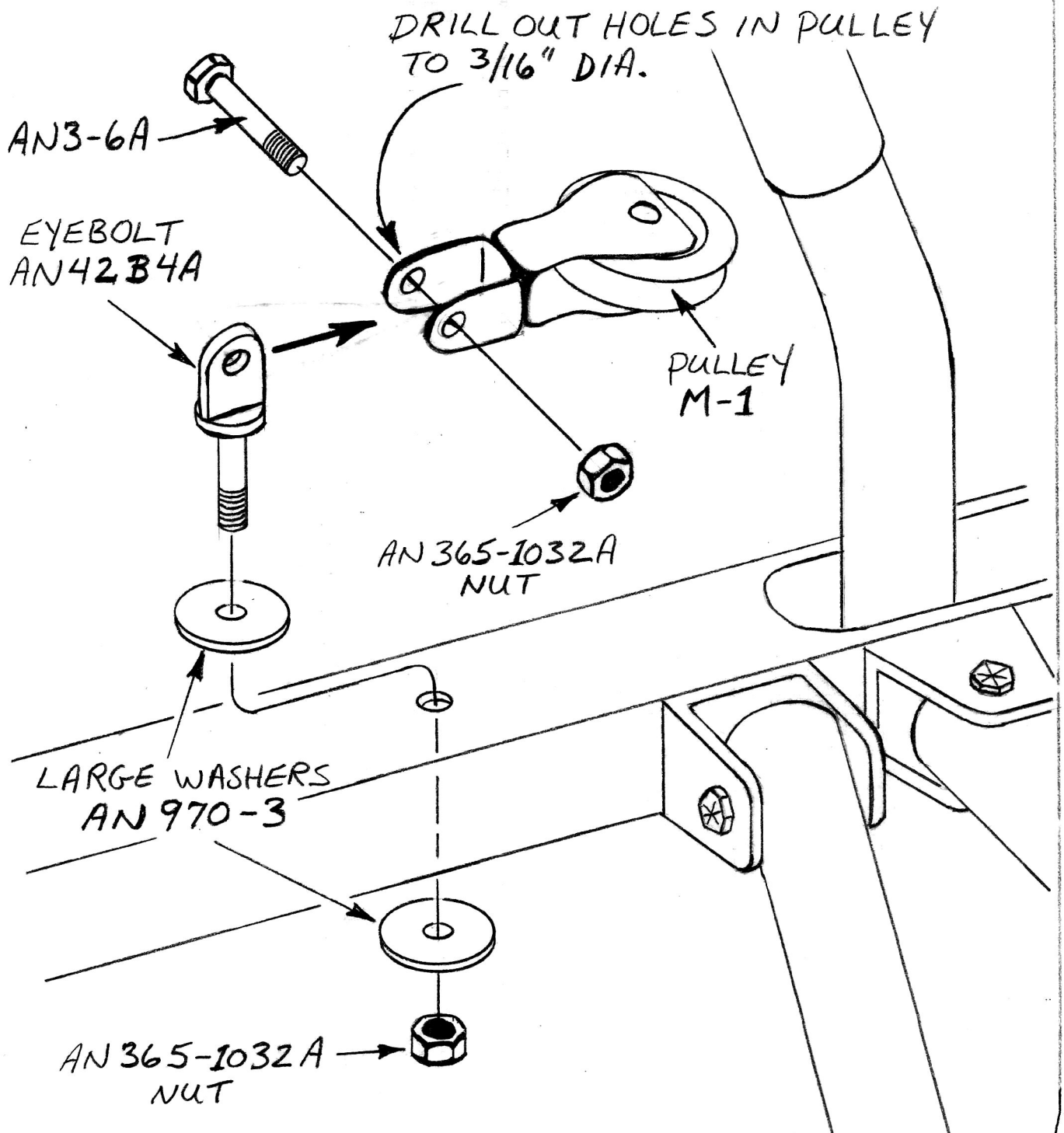


~SHACKLE GOES BETWEEN EYEBOLT AND SWIVEL~

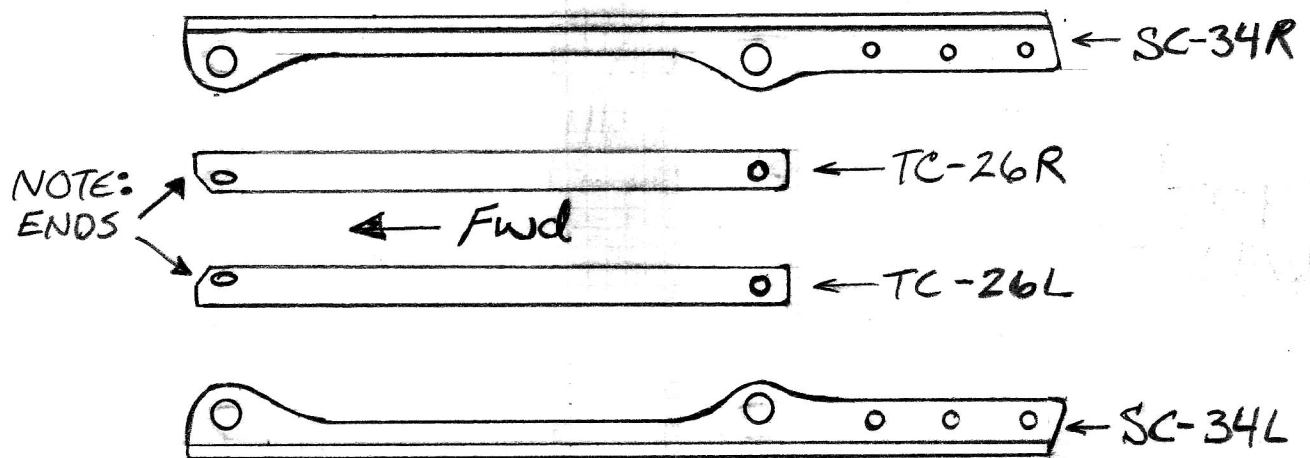
## 6.1~ENGINE INSTALLATION~

IF YOU HAVE ASSEMBLED THE FRAME PROPERLY, YOU WILL FIND A  $3/16$ " DIA. HOLE IN THE LEFT SIDE OF THE REAR-UPPER CHANNEL BRKT, (SEE STEP #1.1) LOCATED JUST BEHIND THE SEAT BACKREST.

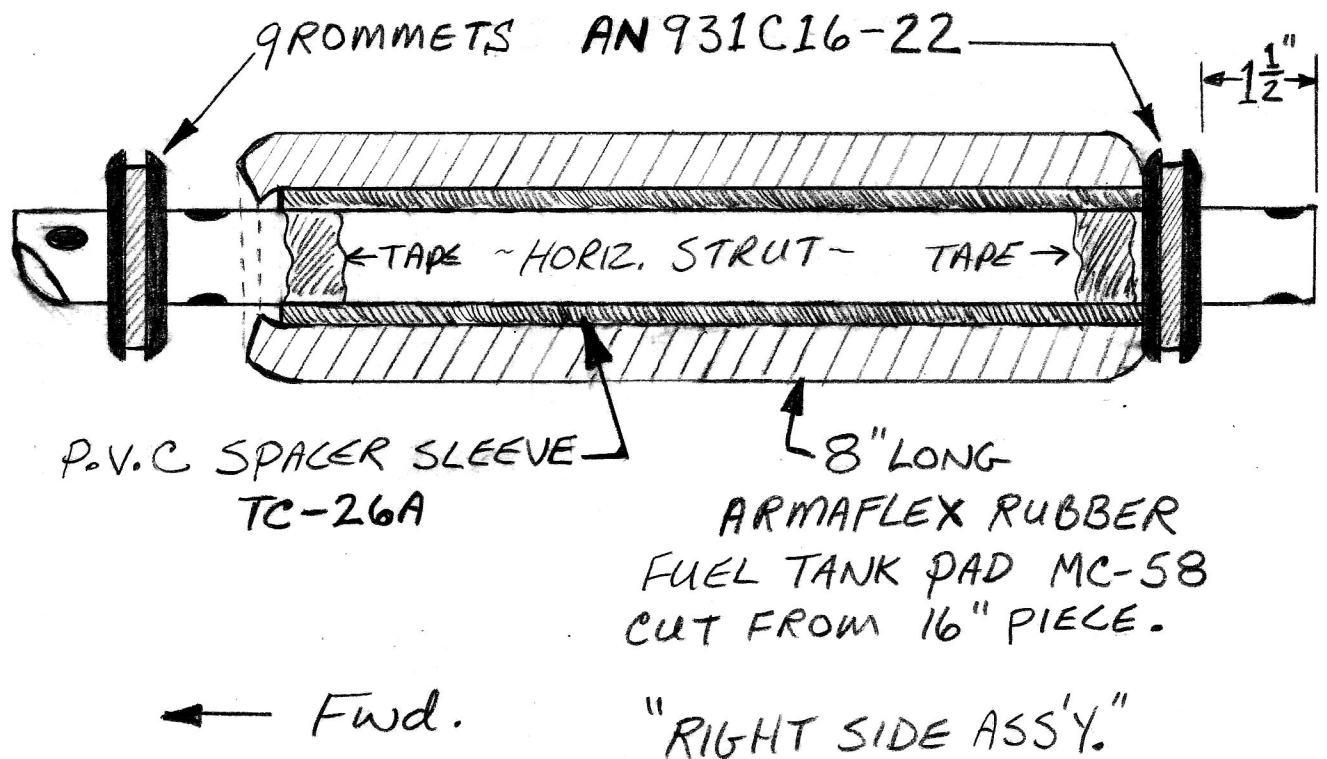
MAKE UP A PULL START PULLEY ASSEMBLY AND INSTALL IN THE HOLE AS SHOWN. TIGHTEN NUTS SECURELY BUT LEAVE LOOSE ENOUGH TO ALLOW ASSY TO ROTATE FREELY FOR ALIGNMENT.



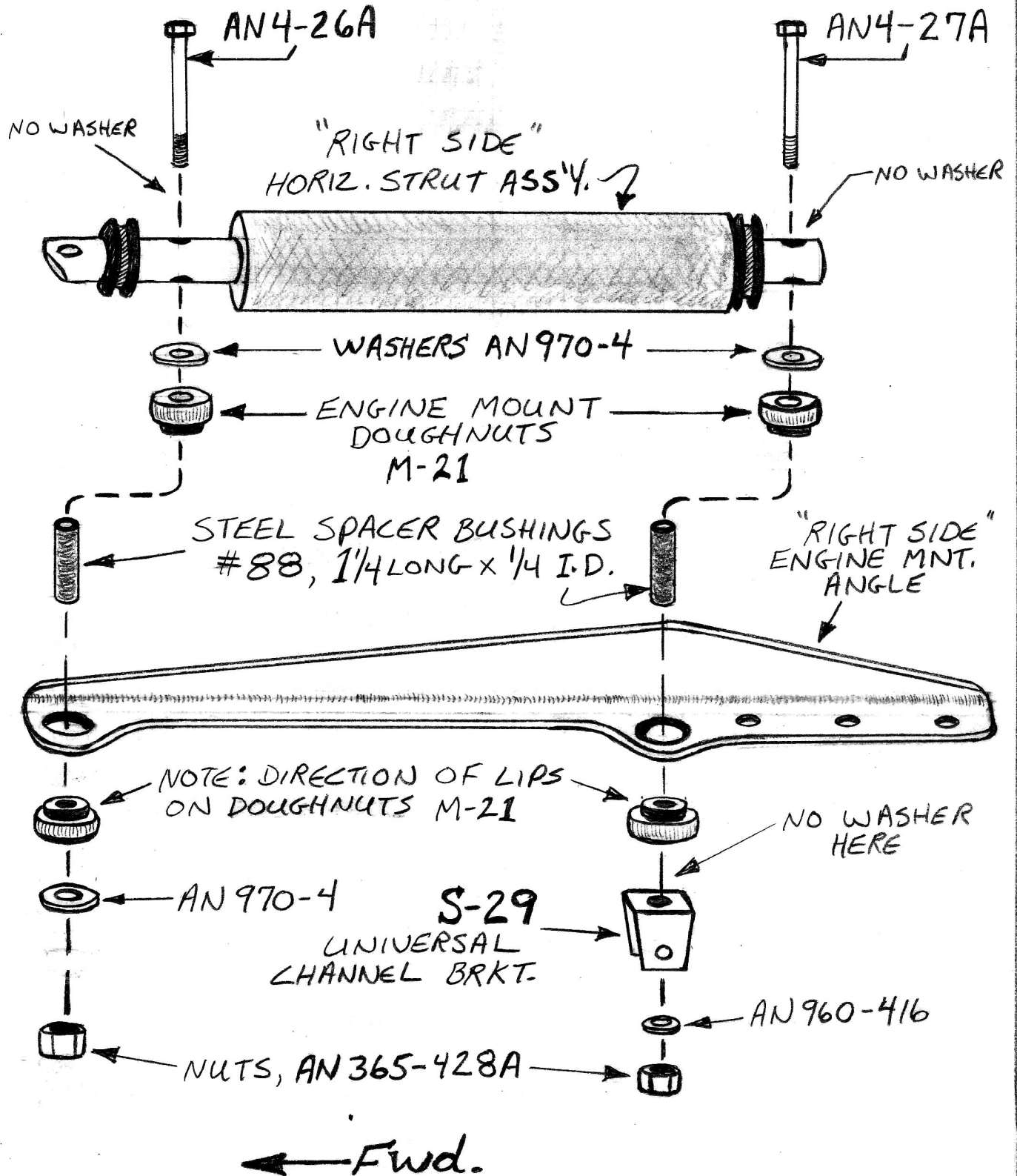
6.2 ~ LOCATE AND IDENTIFY ENGINE MNT. HORIZONTAL STRUTS AND ANGLES. SEPARATE INTO LEFT AND RIGHT PAIRS FOR LATER USE.



6.2/1 SLIDE 7 1/2" LONG P.V.C. SPACER SLEEVES, RUBBER ARMAFLEX PADS AND GROMMETS INTO POSITION ON ENGINE MNT. HORIZONTAL STRUTS AS SHOWN. WRAP STRUT TUBES WITH A LITTLE TAPE TO GIVE A SNUG FIT.

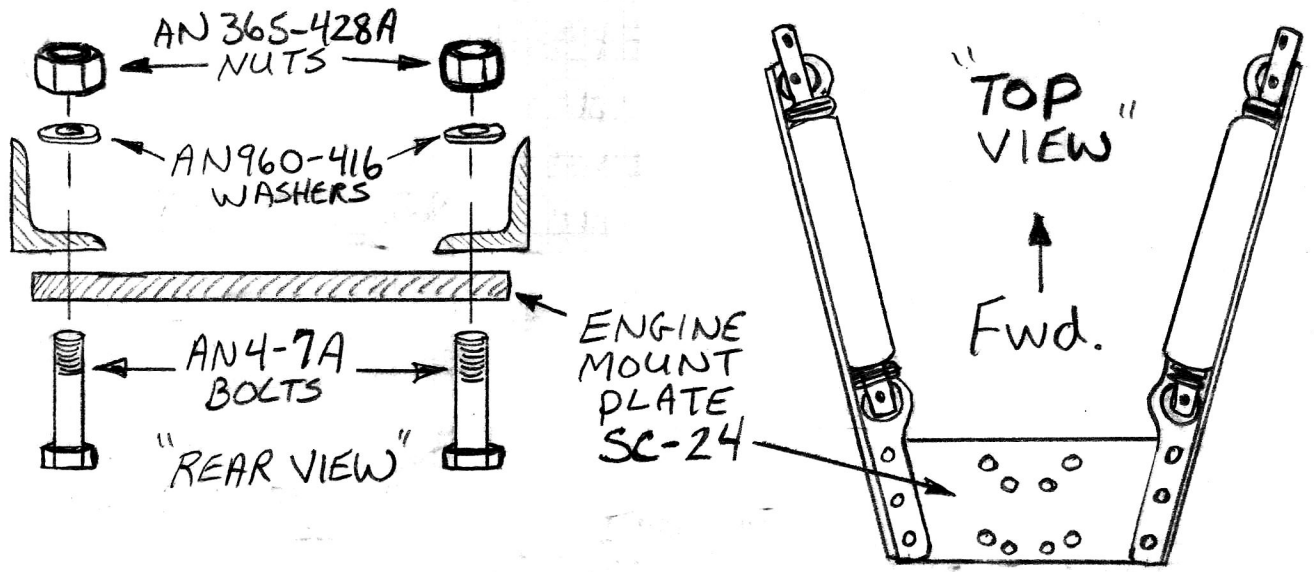


**6.3** ~ JOIN LEFT AND RIGHT HORIZONTAL STRUT ASSEMBLIES WITH APPROPRIATE ENGINE MOUNT ANGLE, BRACKETS AND HARDWARE AS SHOWN. TIGHTEN NUTS SECURELY!



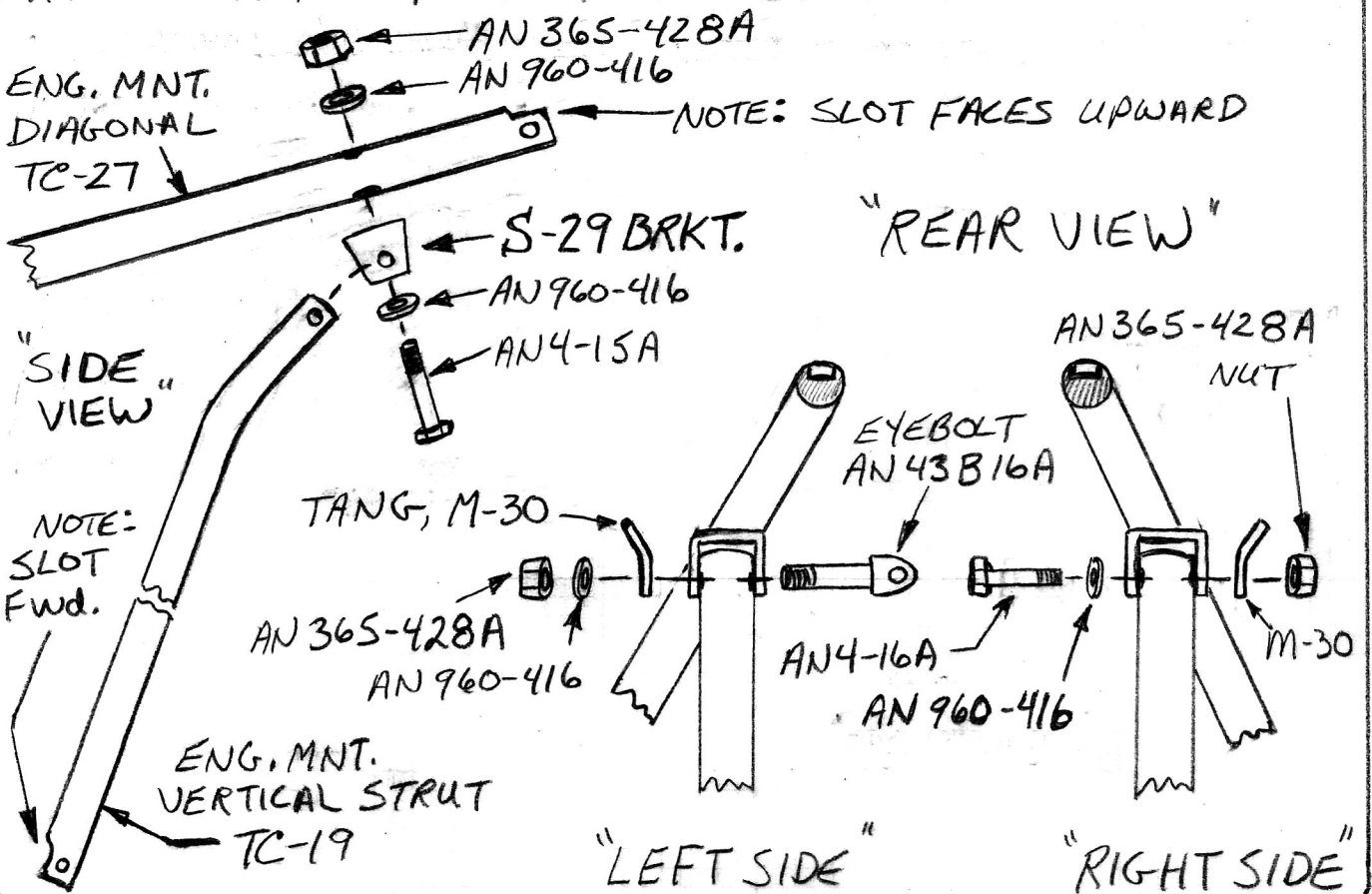
# 6.4

~ BOLT LEFT AND RIGHT ENGINE MNT. ANGLE ASSEMBLIES TO ENGINE MNT. PLATE. BE SURE ANGLES ARE ON TOP OF PLATE AS SHOWN. TIGHTEN THE SIX MOUNT BOLTS FINGER TIGHT ONLY FOR NOW.

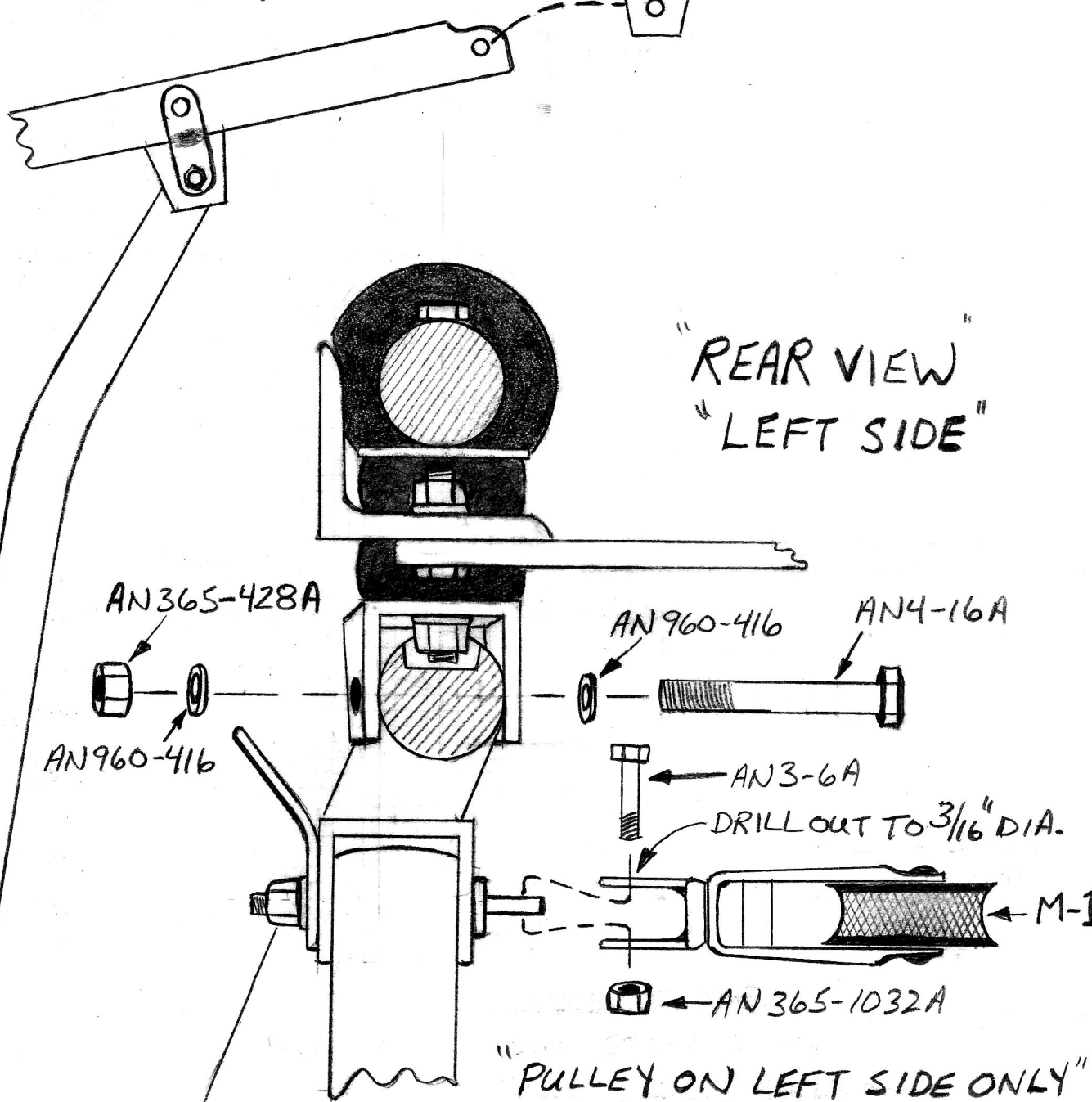
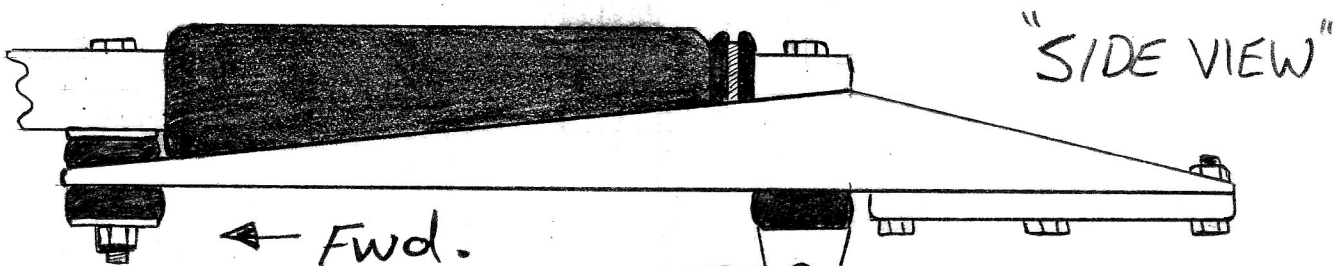


# 6.4/1

MAKE-UP LEFT AND RIGHT DIAGONAL/VERTICAL ENGINE MOUNT STRUT ASSEMBLIES. TIGHTEN NUTS SECURELY BUT LEAVE LOOSE ENOUGH SO THAT PARTS MAY BE ROTATED A LITTLE FOR LATER ALIGNMENT.

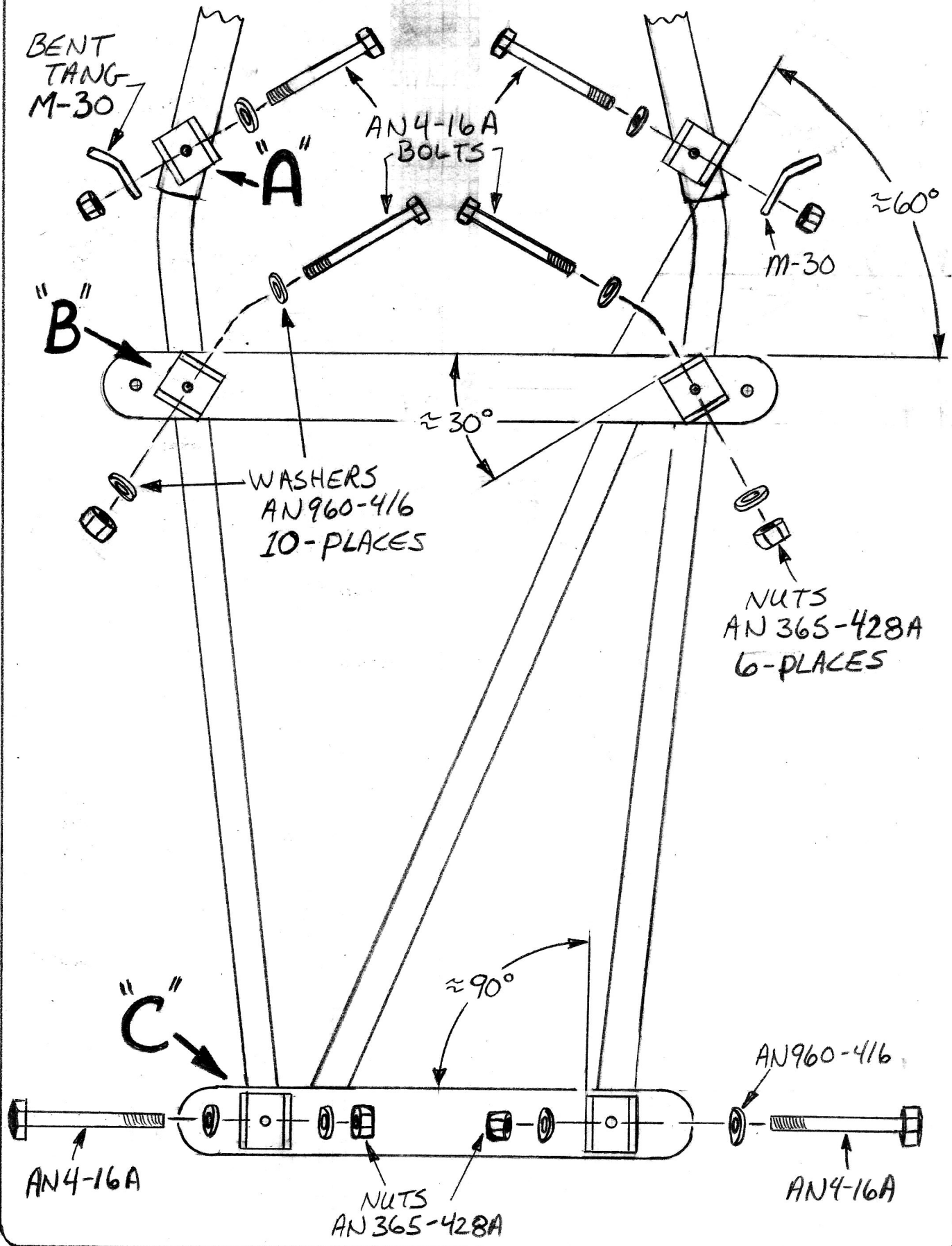


6.5 ~ ATTACH THE LEFT AND RIGHT SIDE  
DIAGONAL/VERTICAL STRUT ASSEMBLIES TO THE  
ENGINE MOUNT. ATTACH PULL START PULLEY TO EYEBOLT  
ON LEFT STRUT ASSEMBLY AS SHOWN.



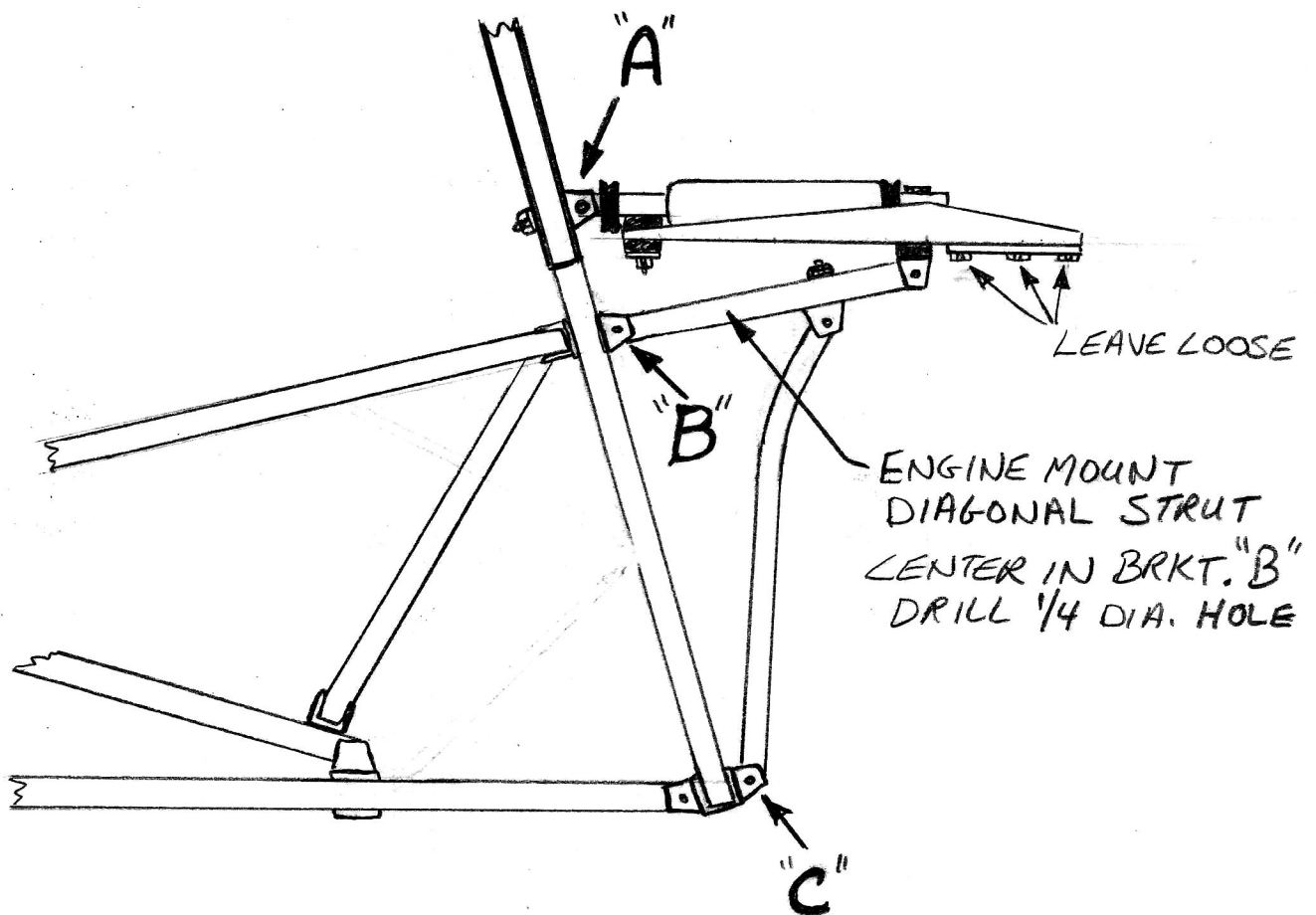


6.6 ~ ALIGN BRACKETS "ABC" ON REAR OF FRAME AT APPROXIMATE ANGLES SHOWN. INSTALL BUT DO NOT TIGHTEN ANY BOLTS OR HARDWARE.



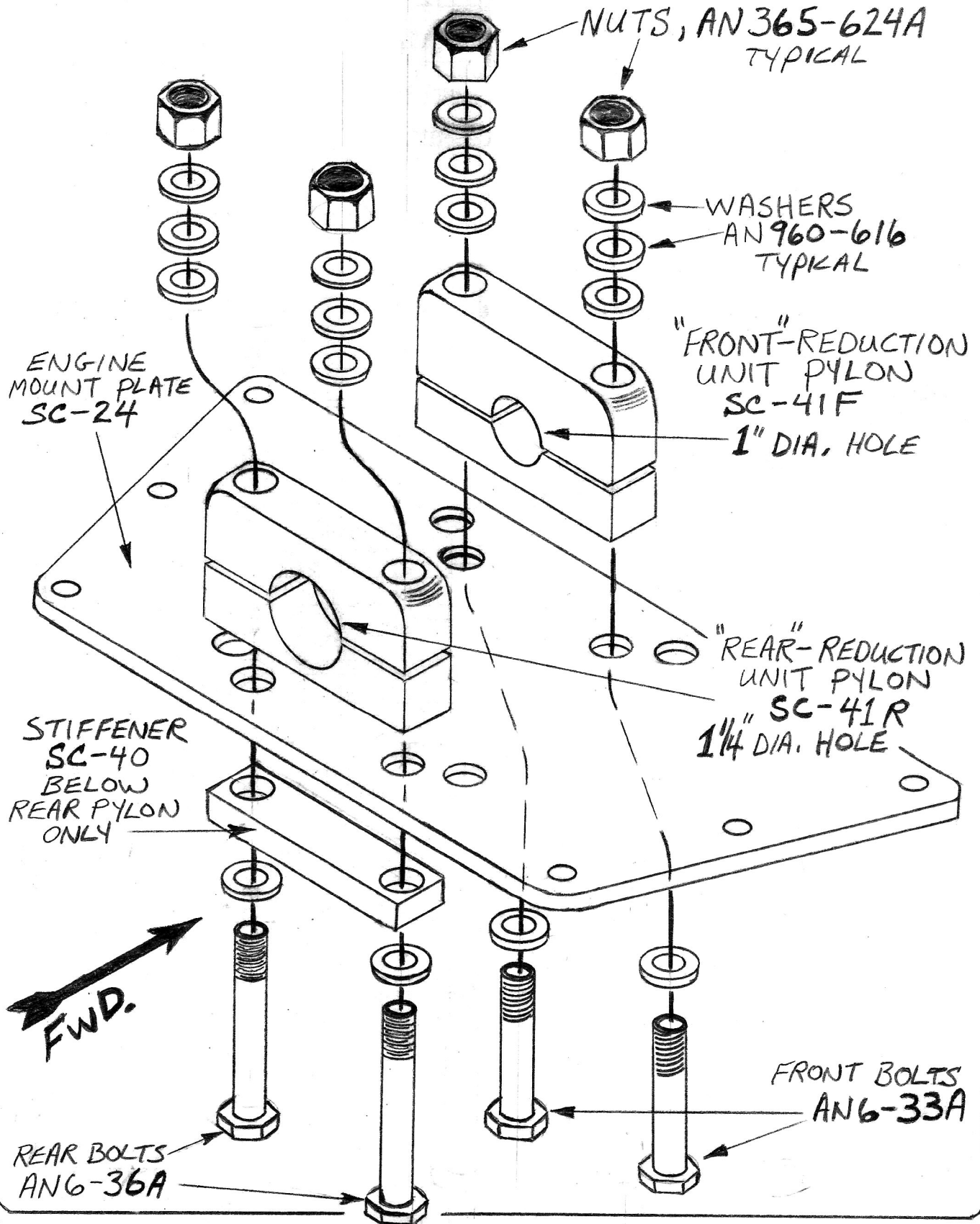


**6.7** REMOVE ALL AN HARDWARE FROM THE SIX ENGINE MOUNT BRACKETS ON THE REAR OF THE FRAME. PLACE ENGINE MOUNT ASSEMBLY IN POSITION AND USE A CENTER PUNCH OR  $\frac{1}{4}$ " PHILIPS SCREWDRIVER TO TWIST AND ALIGN BRACKETS UNTIL HOLES IN BRACKETS "A" AND "C" LINE UP WITH THE HOLES IN THE ENDS OF THE MOUNT TUBES. INSERT  $\frac{1}{4}$ " BOLTS THROUGH BRACKETS "A" AND "C" TO HOLD ASSEMBLY IN POSITION. MAKE SURE END OF ENGINE MOUNT DIAGONAL STRUT IS CENTERED IN BRACKET "B", THEN DRILL A  $\frac{1}{4}$ " DIA. HOLE THROUGH BRACKET AND TUBE END. REMOVE ANY BURRS AND PERMANENTLY BOLT ENGINE MOUNT TO REAR OF FRAME USING THE PROPER HARDWARE. BE SURE TANGS WHICH SECURE FUEL TANK BUNGEEES ARE POINTED UPWARD. DO NOT TIGHTEN THE SIX BOLTS HOLDING THE ENGINE MOUNT PLATE AT THIS TIME.

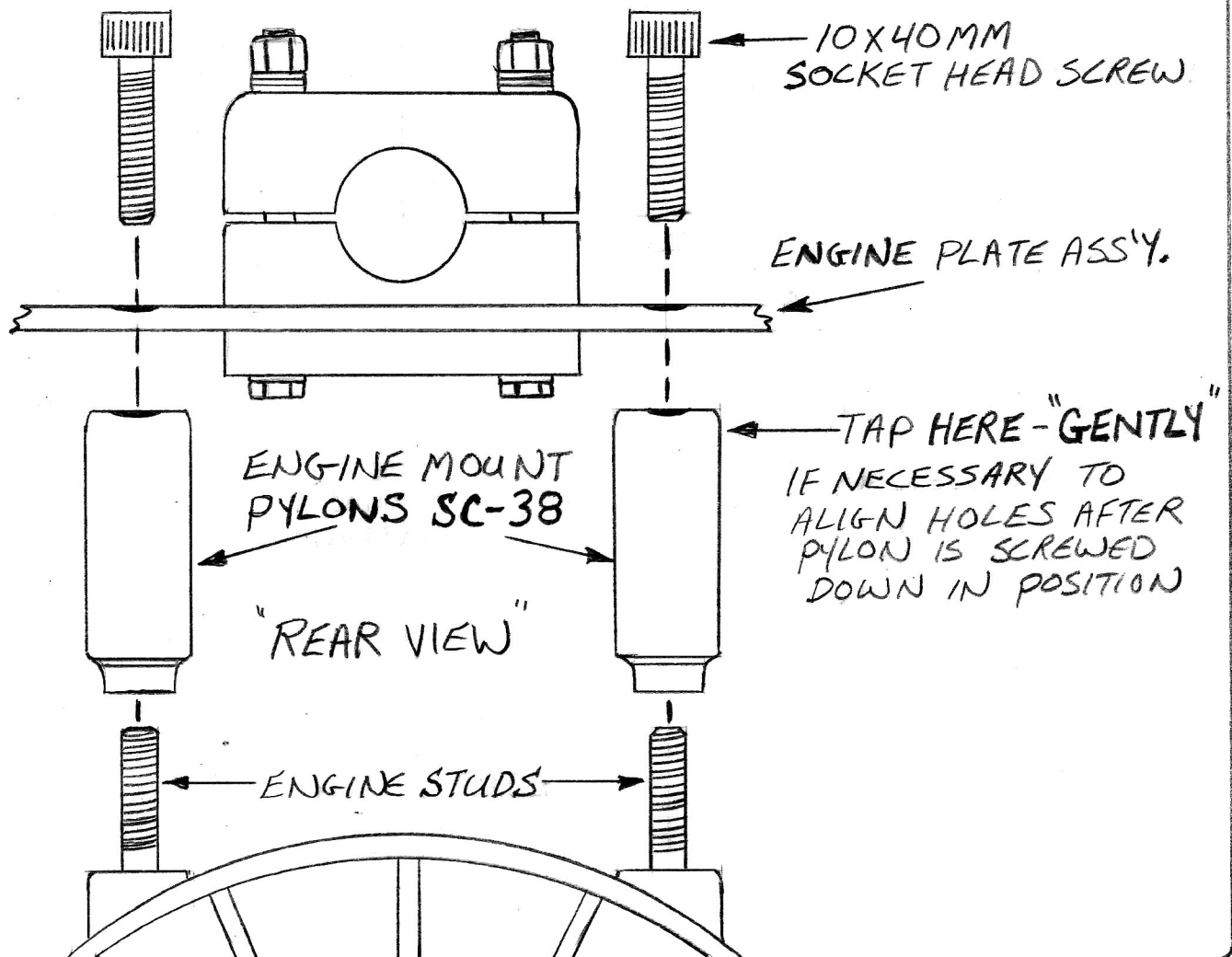


# 6.8

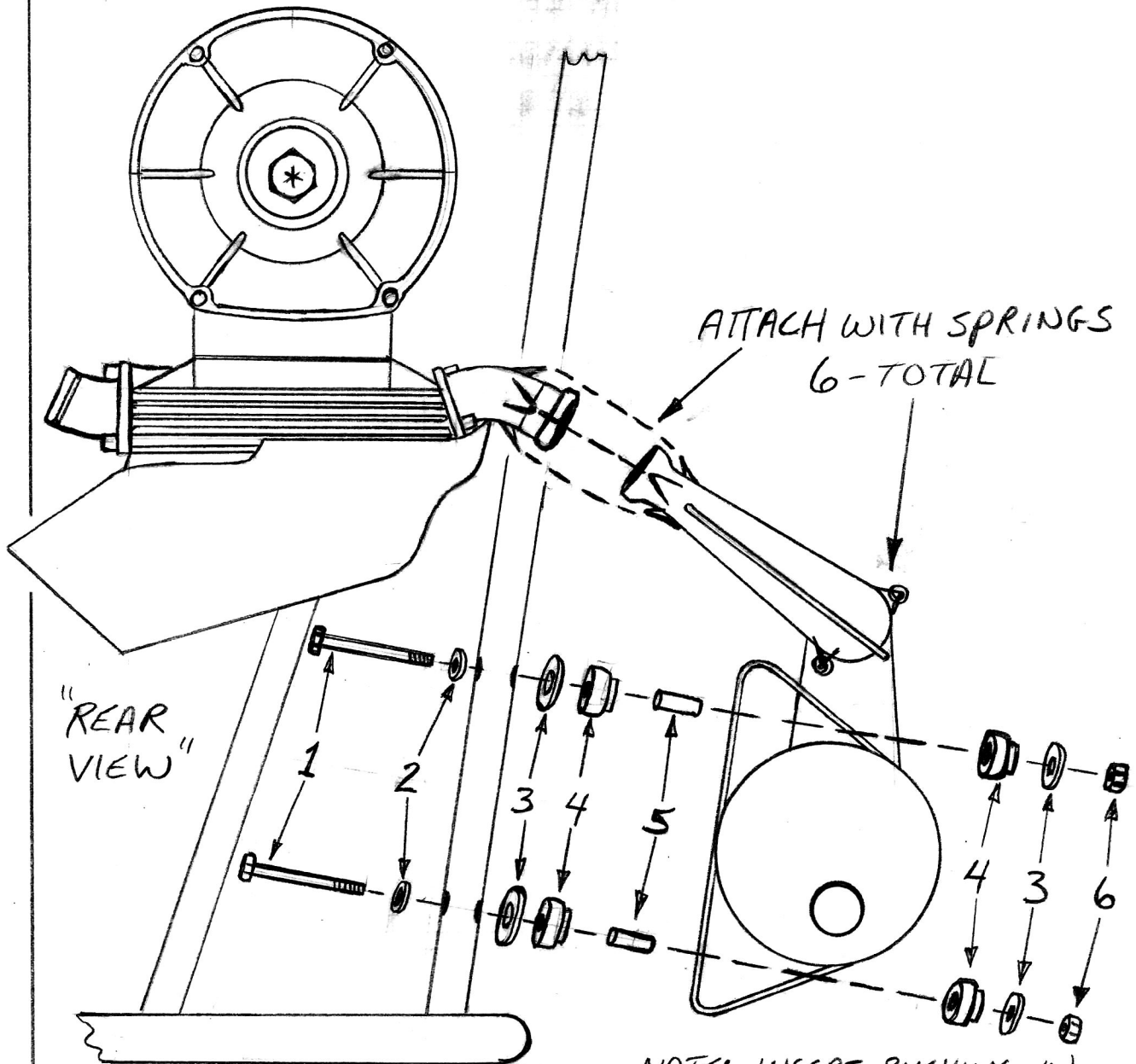
~ REMOVE ENGINE MOUNT PLATE FROM ASSEMBLY ON REAR OF FRAME. ATTACH REDUCTION UNIT PYLONS TO PLATE WITH HARDWARE AS SHOWN. TIGHTEN NUTS FINGER TIGHT ONLY FOR NOW.



**6.9** ~ CAREFULLY REMOVE THE ROTAX 277 ENGINE FROM ITS CONTAINER AND LAY IT UPSIDE DOWN ON A TABLE TOP OR FLAT SURFACE. USE SOME WOOD BLOCKS FOR SUPPORT OR HAVE A HELPER HOLD THE ENGINE STEADY WHILE YOU INSTALL THE ENGINE MOUNT PYLONS. SCREW THE PYLONS DOWN OVER THE STUDS UNTIL THEY BOTTOM OUT THEN TIGHTEN THEM SECURELY WITH A PAIR OF PLIERS. PLACE THE ENGINE MOUNT PLATE ASSY. IN POSITION ON TOP THE ENGINE PYLONS AND ATTACH PERMANENTLY WITH SOCKET HEAD SCREWS. IF ALL FOUR HOLES IN THE MOUNT PLATE DON'T EXACTLY LINE UP WITH HOLES IN END OF PYLONS, INSERT AS MANY SOCKET HEAD SCREWS AS POSSIBLE THEN GENTLY TAP THE TOP OF ONE PYLON SIDEWAYS, WITH A HAMMER UNTIL YOU CAN INSERT THE SCREW. WHEN YOU HAVE ALL FOUR SCREWS STARTED, TIGHTEN SECURELY WITH AN 8MM ALIEN WRENCH.

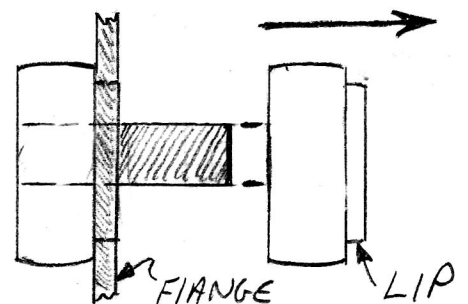


**6.10** ~ RE-ATTACH ENGINE ASSEMBLY TO BOTTOM OF ENGINE MOUNT ANGLES AND TIGHTEN BOLTS SECURELY! CONNECT EXHAUST ASSEMBLY TO ENGINE AND RIGHT SIDE LOWER REAR FRAME 1/2 TUBE WITH SIX SPRINGS AND PROPER AN HARDWARE AS SHOWN. BE SURE ALL SIX SPRINGS ARE CONNECTED BEFORE TIGHTENING EXHAUST MOUNT BOLTS.

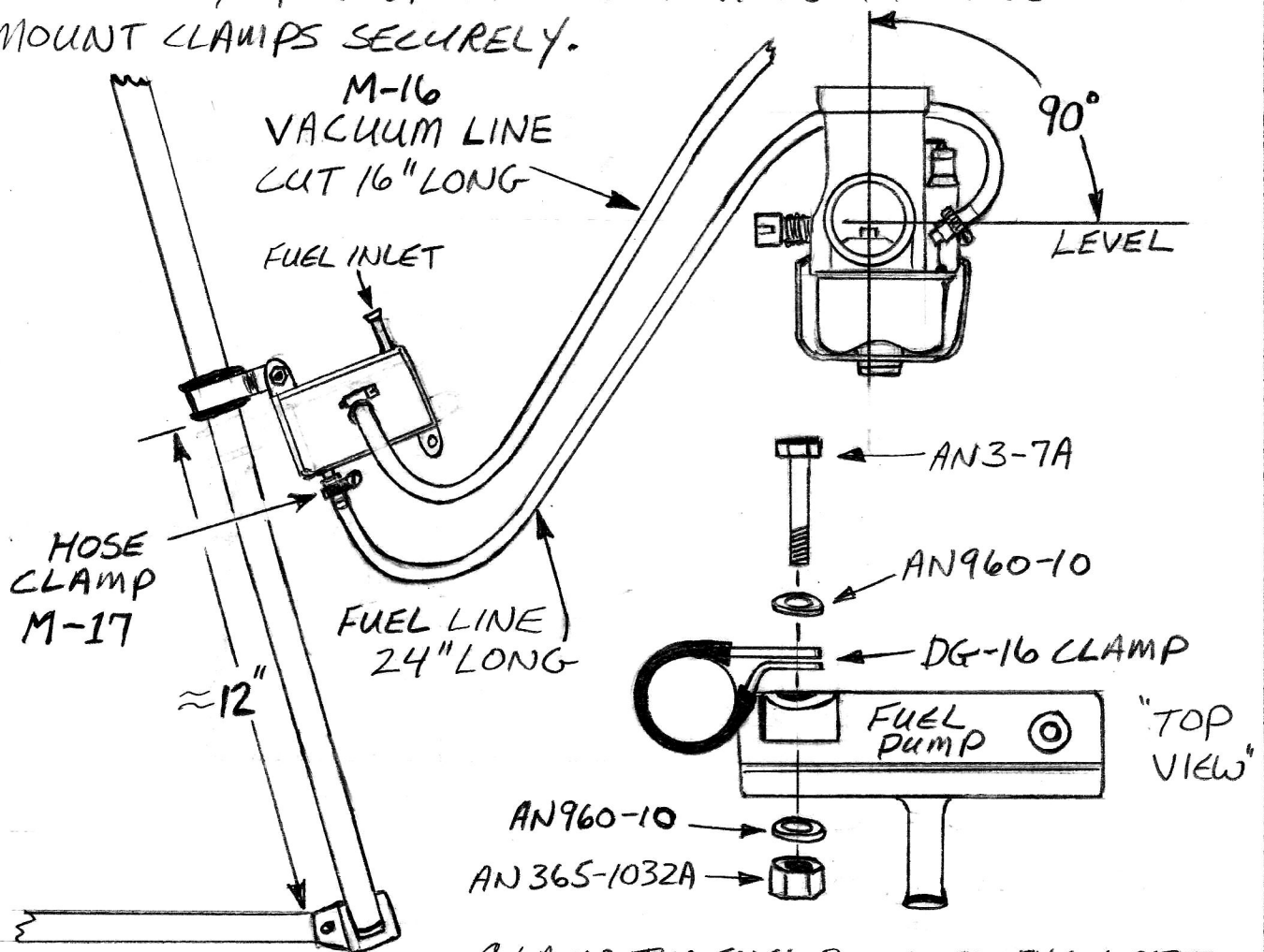


1. AN4-27A BOLT
2. AN 960-416 WASHER
3. AN 970-4 LARGE WASHER
4. RUBBER DOUGHNUT, M-21
5. STEEL BUSHING 1 1/4 x 1/4 I.D. (#88)
6. AN 365-428A NUT

NOTE: INSERT BUSHING IN DOUGHNUT, LIPS POINT OUTBOARD



**6.11** ~ UNSCREW THE TWO SCREWS FROM THE TOP OF THE CARBURETOR THROTTLE BODY AND REMOVE THE SLIDE ASSEMBLY. CLAMP THE CARBURETOR AND RUBBER INTAKE MANIFOLD TO THE ENGINE INTAKE IN THE MOST LEVEL POSITION POSSIBLE. SINCE THE RUBBER MANIFOLD HAS A SLIGHT BEND IN IT, ANGLE MANIFOLD AND CARB TOWARDS THE FRONT, BUT ALIGN THE THROTTLE BODY STRAIGHT UP AND DOWN. THIS WILL INSURE THAT THE CARBURETOR FLOAT WILL BE AS LEVEL AS POSSIBLE TO GUARANTEE PROPER OPERATION. TIGHTEN THE TWO LARGE MOUNT CLAMPS SECURELY.

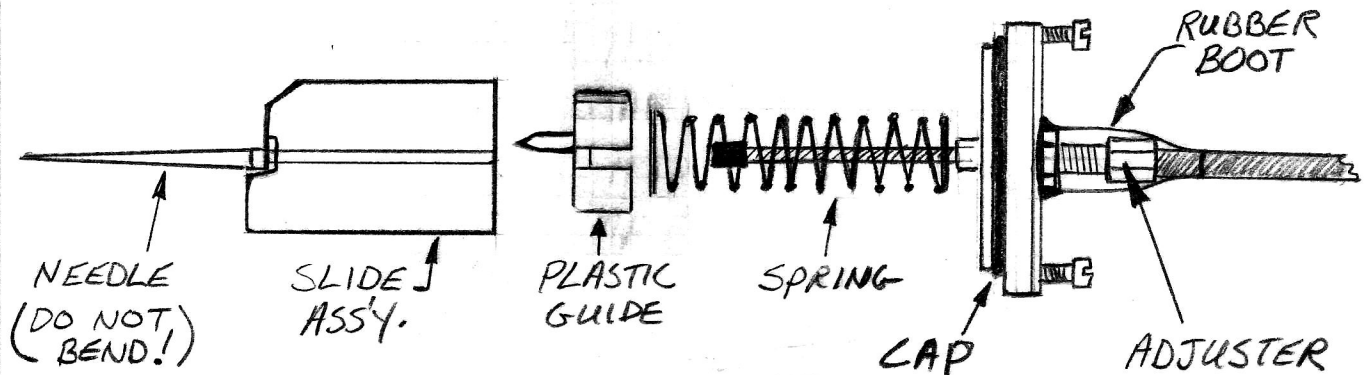


CLAMP THE FUEL PUMP TO THE LEFT SIDE OF THE FRAME AS SHOWN. CUT THE CLEAR PLASTIC FUEL AND VACUUM LINES TO LENGTH FROM THE PEICE SUPPLIED IN THE KIT AND ATTACH TO THE FUEL PUMP. ROUTE THE LINES AROUND BEHIND THE CARB AND ATTACH TO FUEL INLET AND ENGINE VACUUM PORT. WHEN PUMP AND LINES ARE PROPERLY POSITIONED, INSTALL AND TIGHTEN ALL CLAMPS SECURELY!

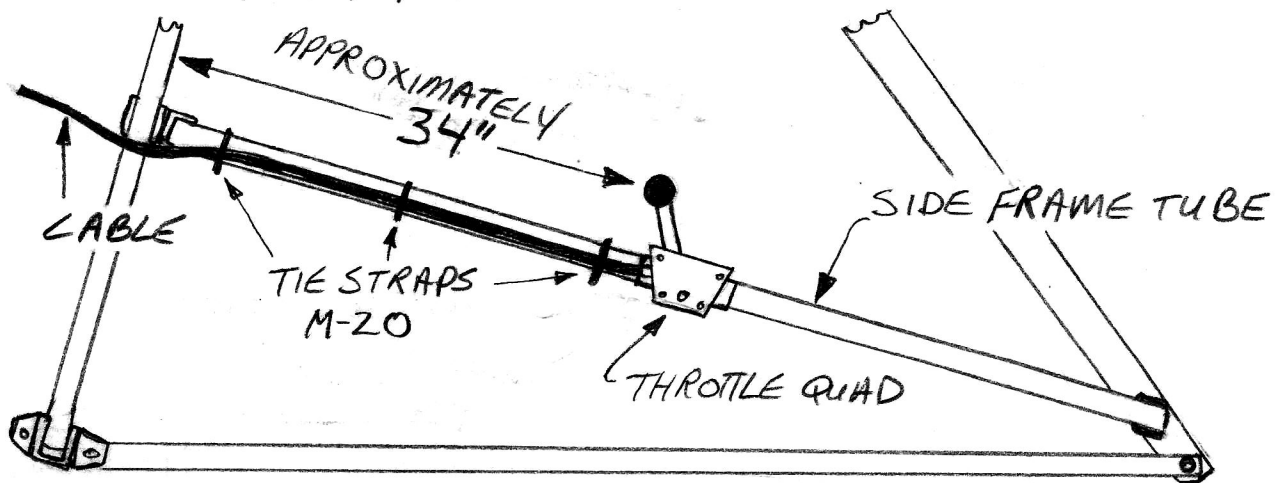


## 6.12

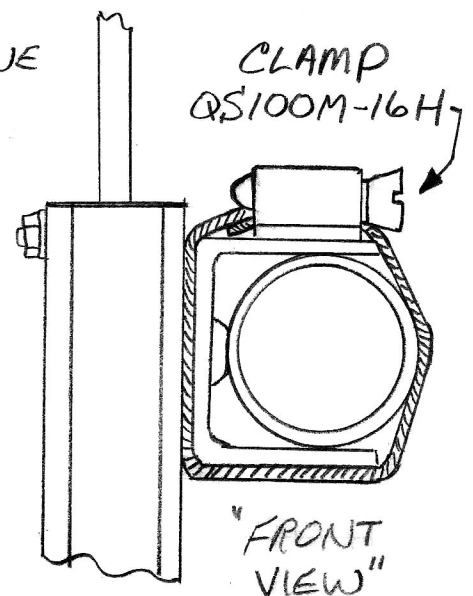
~ REMOVE THE SPRING, PLASTIC GUIDE AND THROTTLE CABLE FROM THE CARBURETOR SLIDE ASSEMBLY. UNSCREW THE ADJUSTER IN THE TOP OF THE THROTTLE BODY CAP AND SEPARATE THE CAP FROM THE CABLE.



ATTACH THE THROTTLE QUADRANT TO THE RIGHT-SIDE FRAME TUBE WITH CLAMP AS SHOWN.



USING THE SMOOTHEST, MOST GRADUAL CURVES POSSIBLE, ROUTE THE THROTTLE CABLE REARWARD ALONG THE FRAME, THROUGH THE ENGINE MOUNT AND PLATE ASSEMBLY, TO THE CARBURETOR. USE M-20, 7" TIE STRAPS TO HOLD THE CABLE IN PLACE ALONG THE TUBES. RE-ASSEMBLE THROTTLE BODY CAP/SLIDE ASSEMBLY AND CAREFULLY RE-INSERT INTO CARBURETOR. TIGHTEN SCREWS IN TOP OF CAP SECURELY.

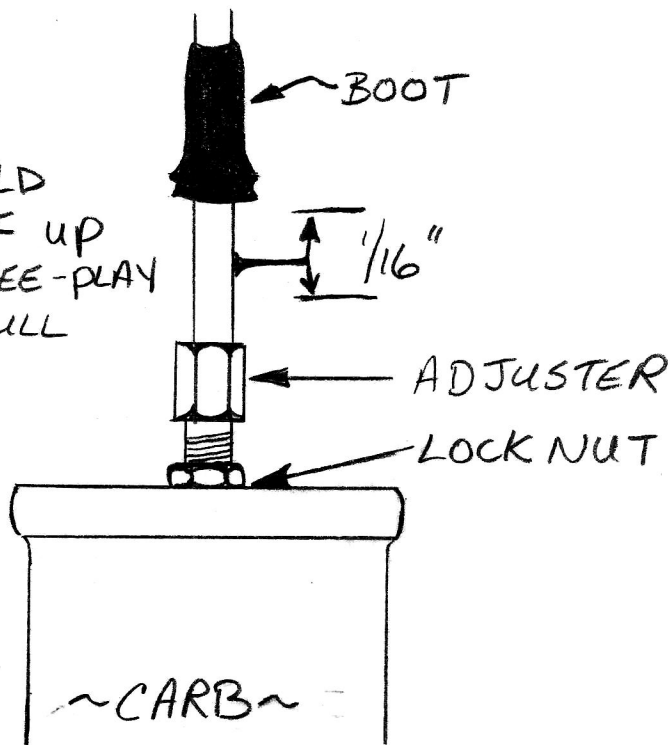


**6.13** OPEN THE THROTTLE LEVER FULLY AGAINST THE FRONT STOP AND CHECK FOR SLACK IN THE CABLE BY LOOSENING THE LOCKNUT AND TURNING THE SCREW ADJUSTER LOCATED IN THE TOP OF THE THROTTLE BODY CAP. WITH THE THROTTLE LEVER FULLY OPEN, AGAINST THE STOP, YOU SHOULD STILL BE ABLE TO LIFT THE THROTTLE SLIDE UP AND DOWN INSIDE THE CARB APPROXIMATELY  $\frac{1}{16}$ " BY PULLING UP ON THE CABLE HOUSING WHERE IT ENTERS THE ADJUSTER IN THE TOP OF THE CARB.

THIS WILL PREVENT OVER ADJUSTMENT AND UN-NECESSARY STRESS ON THE THROTTLE CABLE AND SLIDE ASSEMBLY. IF THERE ISN'T A LITTLE PLAY IN THE CABLE, YOU RISK PULLING THE STOP OFF THE CABLE END INSIDE THE CARB. THIS WILL CAUSE THROTTLE FAILURE AND ENGINE DAMAGE.

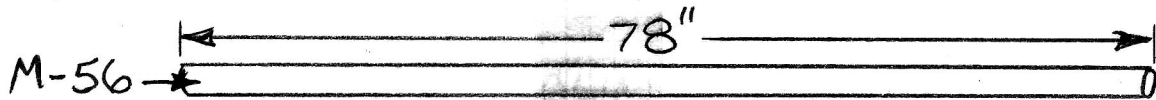
WHEN YOU HAVE SET THE ADJUSTER AND HAVE THE PROPER  $\frac{1}{16}$ " OF PLAY, TIGHTEN THE LOCKNUT AND RE-INSTALL THE RUBBER BOOT.

HOUSING SHOULD HAVE  $\approx \frac{1}{16}$ " OF UP AND DOWN FREE-PLAY WITH LEVER FULL OPEN!

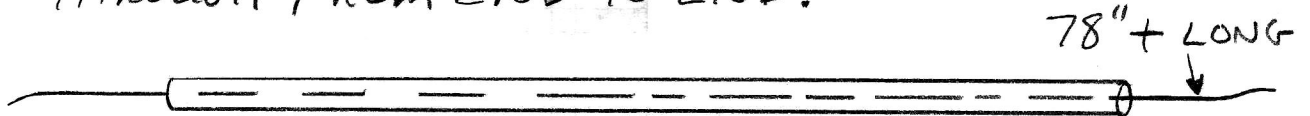




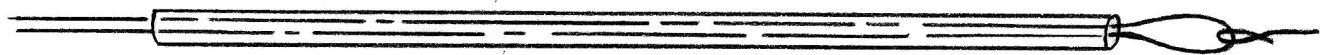
6.14 BEGIN ASSEMBLING IGNITION KILL SWITCH AND WIRES BY CUTTING A PIECE OF M-56, PLASTIC CHAFE TUBE, 78" LONG FROM THE ROLL PROVIDED IN THE KIT.



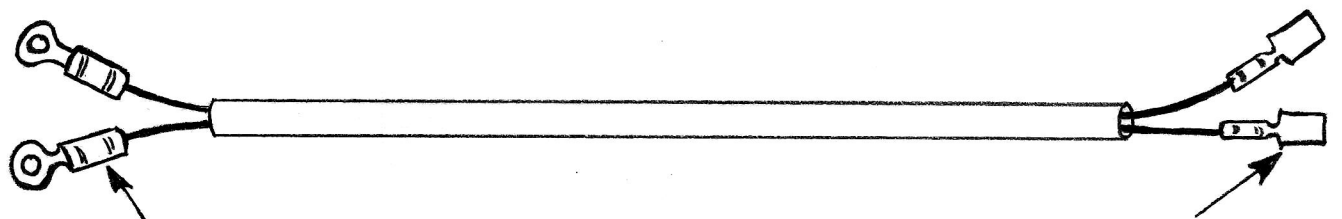
UNCOIL AND STRAIGHTEN THE TUBE AS WELL AS YOU CAN, THEN FEED A STIFF PIECE OF BAILING WIRE THROUGH FROM END TO END.



FOLD THE 15 FOOT LONG PIECE OF M-25 IGNITION WIRE FROM THE KIT IN HALF, ATTACH TO BAILING WIRE AND PULL THROUGH THE TUBE.



CUT THE WIRE INTO 2-EQUAL PIECES AND STRIP THE INSULATION FROM ALL 4-ENDS. CRIMP AND INSTALL TERMINAL ENDS AS SHOWN.



M-26  
SUPPLIED IN KIT

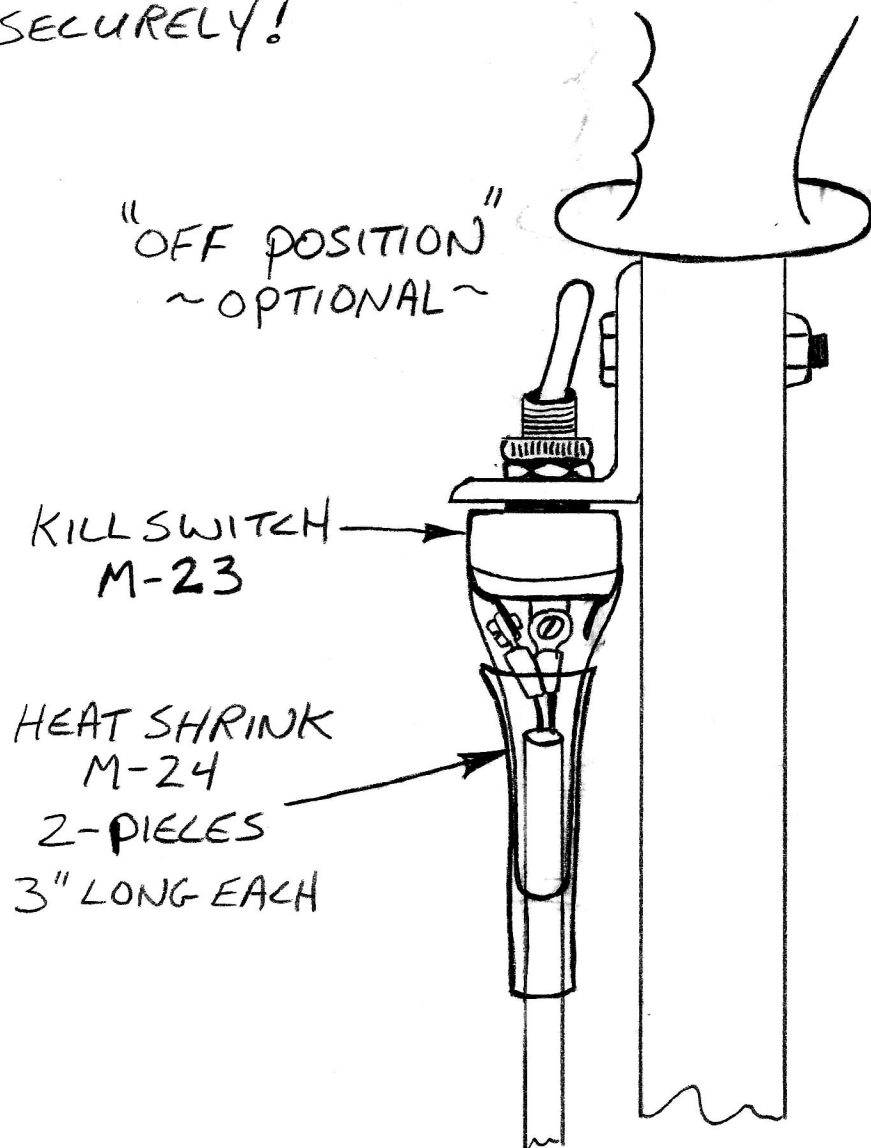
"SWITCH END"

RECTANGULAR MALE  
PLUGS ~ IN BOX WITH  
FUEL PUMP AND MISC.

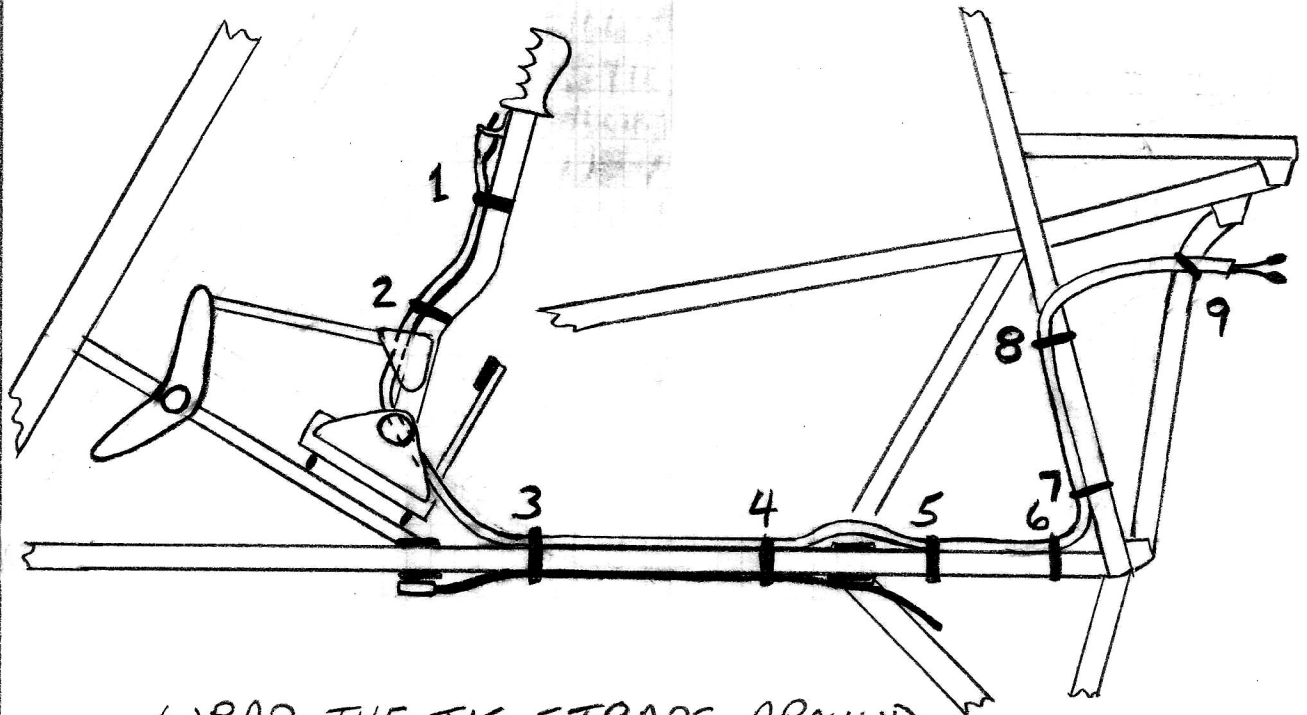
"ENGINE END"

BE SURE TO USE A PROPER ELECTRICAL CRIMPING TOOL - DO NOT USE PLIERS!

**6.15** CONNECT THE KILL SWITCH WIRES TO THE MIDDLE AND 1-OUTSIDE TERMINAL OF THE SWITCH. TIGHTEN THE SCREWS SECURELY AND THEN SLIDE THE PLASTIC CHAFE TUBE UP WITHIN ABOUT 1" OF THE TERMINALS. CUT A PIECE OF M-24 HEAT SHRINK TUBE, 3" LONG AND WORK IT UP OVER THE OUTSIDE OF THE SWITCH TERMINALS TO INSULATE THEM. SQUEEZE THE TERMINALS TOGETHER A LITTLE TO ALLOW THE HEAT SHRINK TO SLIDE OVER THEM BUT DO NOT ALLOW THEM TO MAKE CONTACT. USE A SMALL PROPANE TORCH OR CIGARETTE LIGHTER TO SHRINK THE HEAT SHRINK TUBE TIGHTLY OVER THE TERMINALS AND CHAFE TUBE. INSTALL AND HEAT A SECOND PIECE OF SHRINK TUBE OVER THE FIRST, AND PLACE KILL SWITCH IN MOUNT BRKT AT THE TOP OF THE CONTROL STICK AS SHOWN. TIGHTEN LOCKNUTS SECURELY!



**6.16** ROUTE THE KILL SWITCH WIRES DOWN THE FRONT OF THE STICK, BETWEEN THE PUSHROD BELLHORNS, BACK ALONG THE LEFT SIDE OF THE FRAME TO THE ENGINE AND SECURE WITH M-20 TIE STRAPS AS SHOWN.

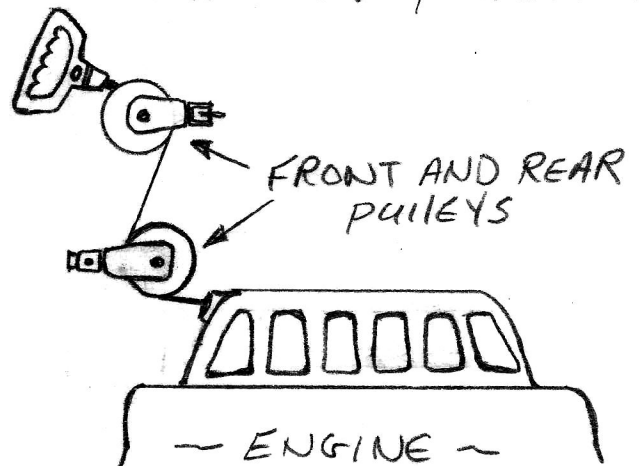
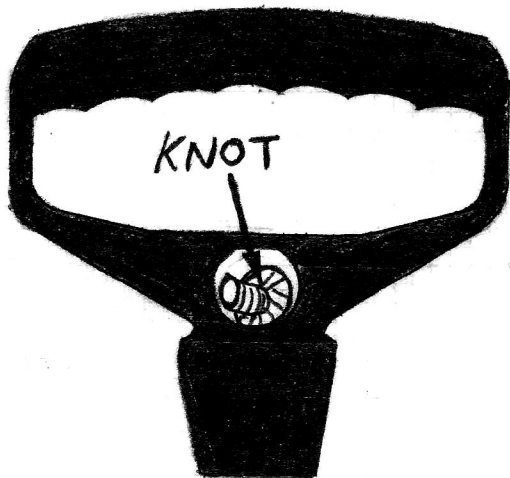


WRAP THE TIE STRAPS AROUND THE BRAKE CABLE HOUSING AT THE SAME TIME YOU SECURE THE KILL SWITCH WIRES TO THE LEFT SIDE OF THE FRAME. INSTALL ANOTHER PAIR OF TIE WRAPS ON THE RIGHT SIDE OF THE FRAME TO SECURE THE RIGHT BRAKE CABLE WHICH IS BEING TEMPORARILY HELD IN PLACE BY TAPE. SEE STEP #4.15

CONNECT THE TWO MALE PLUGS FROM THE KILL SWITCH TO THE BROWN AND BLACK ENGINE LEADS. BE SURE TO PROPERLY SECURE AND INSULATE THE PLUGS WITH PLASTIC SHEATHS OR ELECTRICAL TAPE TO PREVENT ACCIDENTAL GROUNDING AND SUDDEN ELECTRICAL SYSTEM OR IGNITION FAILURE!

**6.17** ~ PULL THE ENGINE PULL START HANDLE OUT FROM THE ENGINE AS FAR AS IT WILL GO AND TIE A LOOSE SLIP KNOT IN THE CORD SO THAT IT WILL NOT WIND BACK UP INSIDE THE ENGINE IF IT'S ACCIDENTALLY RELEASED. UNTIE THE KNOT FROM THE END OF THE CORD LOCATED INSIDE THE PULL START HANDLE AND REMOVE THE CORD FROM THE HANDLE. PASS THE CORD THROUGH BOTH PULL START PULLEYS AND RE-ATTACH THE HANDLE BY RE-TYING THE KNOT IN THE END OF THE CORD.

REMOVE THE SLIP KNOT AND ALIGN THE PULLEYS SO THAT THE ROPE PASSES DIRECTLY ALONG THE CENTER OF EACH PULLEY AS YOU PULL THE ENGINE THROUGH. IF NECESSARY, LOOSEN AND RE-ADJUST THE PULLEY MOUNT EYEBOLTS TO ALLOW COMPLETE AND IMMEDIATE ALIGNMENT OF PULLEYS AND CORD WHEN THE PULL START HANDLE IS PULLED.



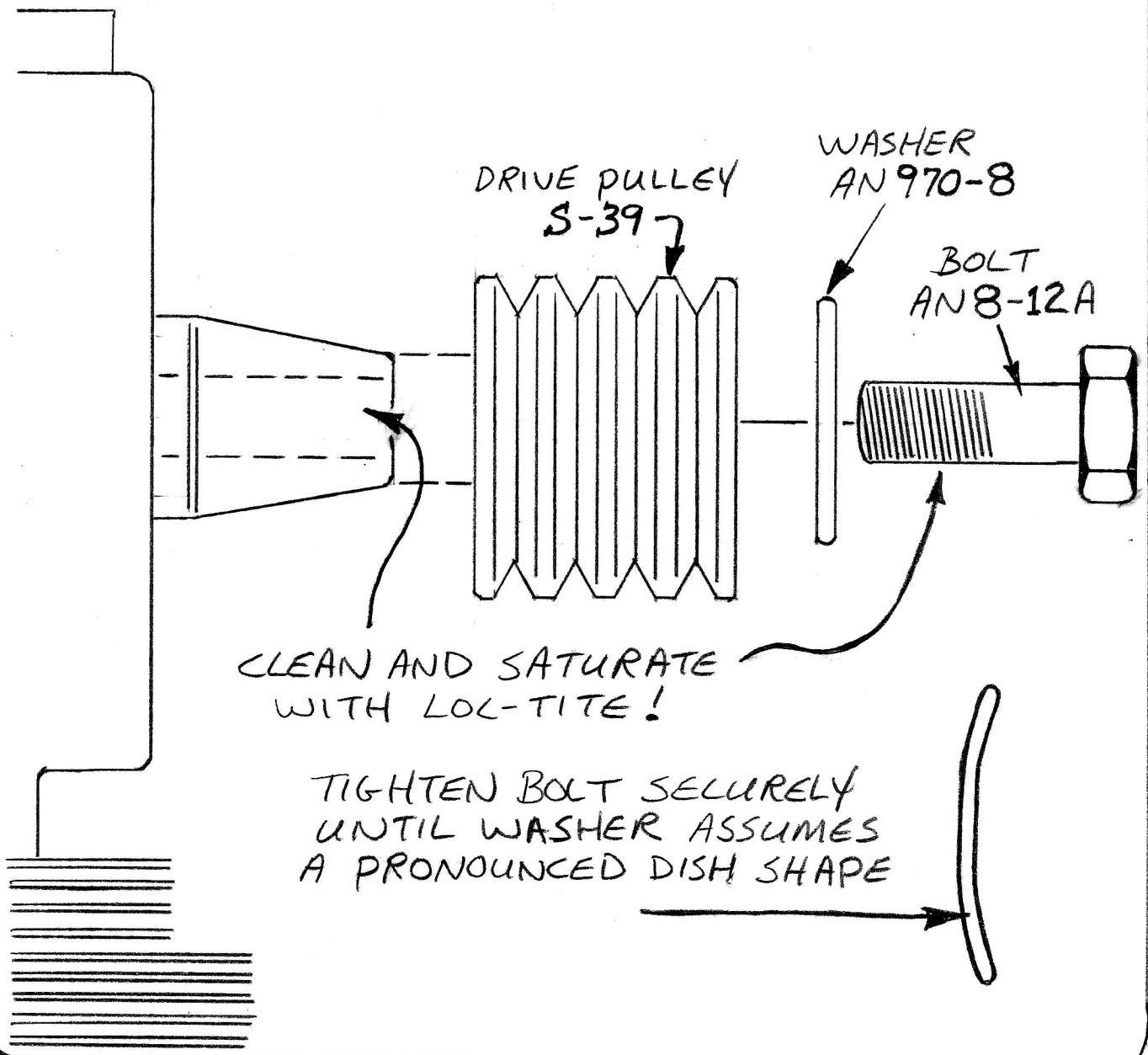
**6.17/1** ~ LOCATE THE SPARK PLUG. ATTACH IT TO THE IGNITION HIGH TENSION (COIL) LEAD AND GROUND IT BY HOLDING IT AGAINST THE ENGINES METAL CASE.

FLIP THE KILL SWITCH TO THE "ON" POSITION AND PULL THE ENGINE THROUGH TO CHECK FOR "SPARK". BE SURE THERE IS NO SPARK WITH THE SWITCH "OFF", GUARANTEEING PROPER KILL SWITCH FUNCTION.

**6.18** USE AN OLD TOOTHBRUSH ETC, AND SOME ACETONE OR PAINT THINNER TO THOROUGHLY CLEAN THE ENGINE OUTPUT SHAFT INSIDE AND OUT! WIPE OFF OR BLOW THE SHAFT CLEAN WITH COMPRESSED AIR AND INSTALL THE DRIVE PULLEY AS SHOWN.

SATURATE THE INSIDE OF THE SHAFT AND THE THREADS OF THE MOUNT BOLT WITH HIGH STRENGTH LOC-TITE OR THREAD LOCK PRIOR TO INSERTING MOUNT BOLT!

IF THE BOLT IS NOT SECURELY TIGHTENED AND LOCKED INTO THE END OF THE SHAFT, THE BOLT AND PULLEY MAY COME OFF DURING FLIGHT, CAUSING PROPELLER DAMAGE!





## 6.19 MOUNT REDUCTION UNIT (LARGE PULLEY) AND M-22 V-BELTS ~ SEE DRAWING #6.19/7 NEXT PAGE ~ IN THE FOLLOWING SERIES OF STEPS :

6.19/1 LOOSEN THE FOUR NUTS SECURING THE PYLON BLOCKS UNTIL ONLY 1 OR 2 THREADS ARE HOLDING THE NUTS TO THE TOP OF THE BOLTS.

6.19/2 INSERT THE REDUCTION UNIT SHAFT ABOUT HALF WAY INTO THE REAR PYLON BLOCK AT AN UPWARD ANGLE AND PLACE THE DRIVE BELTS INTO THE GROOVES OF BOTH PULLEYS.

6.19/3 PUSH DOWN ON THE FRONT OF THE SHAFT AND WIGGLE THE LARGE PULLEY FORWARD UNTIL THE FRONT END OF THE SHAFT IS THROUGH THE FRONT PYLON AND THE LARGE PULLEY IS AS FAR FORWARD AS POSSIBLE.

6.19/4 LIFT UP ON THE PROP FLANGE OF THE LARGE PULLEY WHILE YOU PUSH DOWN ON THE FRONT OF THE SHAFT UNTIL IT IS SEATED IN THE FRONT PYLON. SIGHT DOWN THE FRONT FACES OF THE 2-PULLEYS FROM ABOVE AND CHECK TO BE SURE THE LARGE PULLEY IS PROPERLY POSITIONED FORE AND AFT WITH THE BELTS TAUT. **NOTE:** THE LARGE PULLEY MUST BE DIRECTLY ABOVE THE SMALL ONE AND THE FRONT OF THE PULLEY FACES AND BELTS SHOULD BE IN EXACT ALIGNMENT.

6.19/5 IF THE PULLEYS ARE SLIGHTLY MIS-ALIGNED RELAX THE TENSION ON SHAFT AND BELTS AND USE A SOFT PIECE OF WOOD TO TAP OR WIGGLE THE LARGE PULLEY FORE OR AFT INTO PROPER POSITION.

6.19/6 SLOWLY AND EVENLY TIGHTEN THE FRONT PYLON BOLTS/NUTS UNTIL THE SHAFT IS COMPLETELY SEATED, THE NUTS ARE SNUG AND HAVE AN EQUAL NUMBER OF THREADS SHOWING THROUGH THEM. RE-CHECK THE ALIGNMENT OF THE LARGE PULLEY. WHEN SATISFIED IT IS CORRECT TIGHTEN ALL FOUR PYLON BOLTS/NUTS TO 150-175 INCH LBS. IF YOU DON'T HAVE A TORQUE WRENCH, TIGHTEN THE NUTS JUST SLIGHTLY MORE THAN SNUG BUT USE A TORQUE WRENCH IF POSSIBLE.

DO NOT OVERTIGHTEN NUTS AS DAMAGE MAY RESULT!

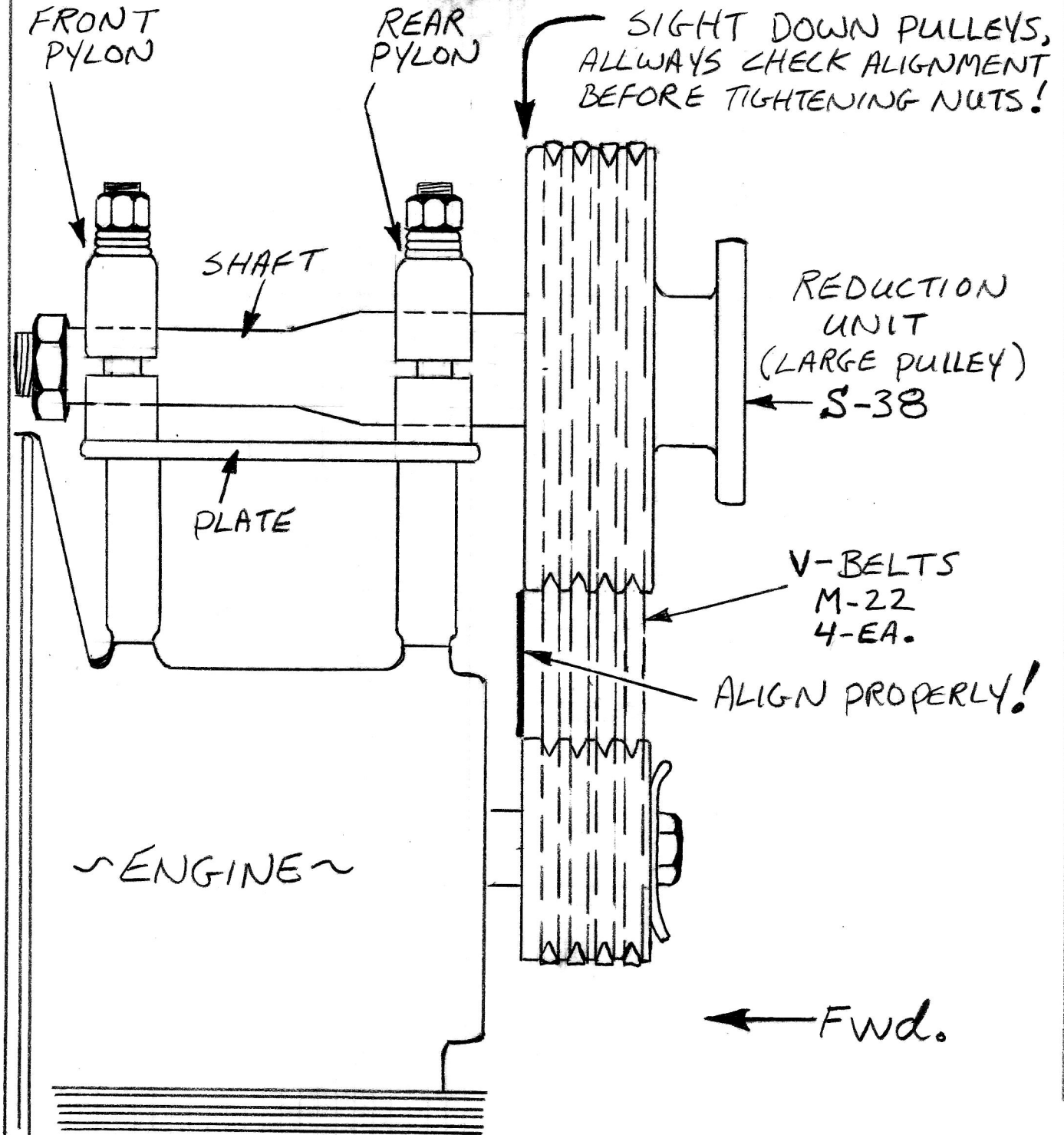
# 6.19/7 REDUCTION UNIT INSTALLATION

WHEN MOUNTING LARGE PULLEY:

~ALWAYS TIGHTEN FRONT PYLON FIRST~

WHEN REMOVING LARGE PULLEY:

~ALWAYS LOOSEN FRONT PYLON LAST~





## 6.20~BELT TENSION ADJUSTMENT~

DUE TO MANUFACTURING TOLERANCES, SLIGHT VARIATIONS IN BELT TENSION MAY OCCUR. CHECK THE INITIAL BELT TENSION BY PRESSING INWARD ON THE CENTER OF EACH BELT WITH YOUR THUMB.

APPLY ABOUT 10-12 LBS OF PRESSURE AND MEASURE THE AMOUNT OF BELT DEFLECTION. IF THERE IS MORE THAN  $\frac{1}{2}$ " , REMOVE THE REDUCTION UNIT AND INSTALL ONE SC-3 SHIM SPACER BETWEEN THE ENGINE MOUNT PLATE AND EACH REDUCTION UNIT PYLON. RE-INSTALL REDUCTION UNIT AND CHECK TENSION. REMOVE ONE PAIR OF WASHERS FROM THE TOP OF EACH PYLON WHEN A SHIM IS INSTALLED.

