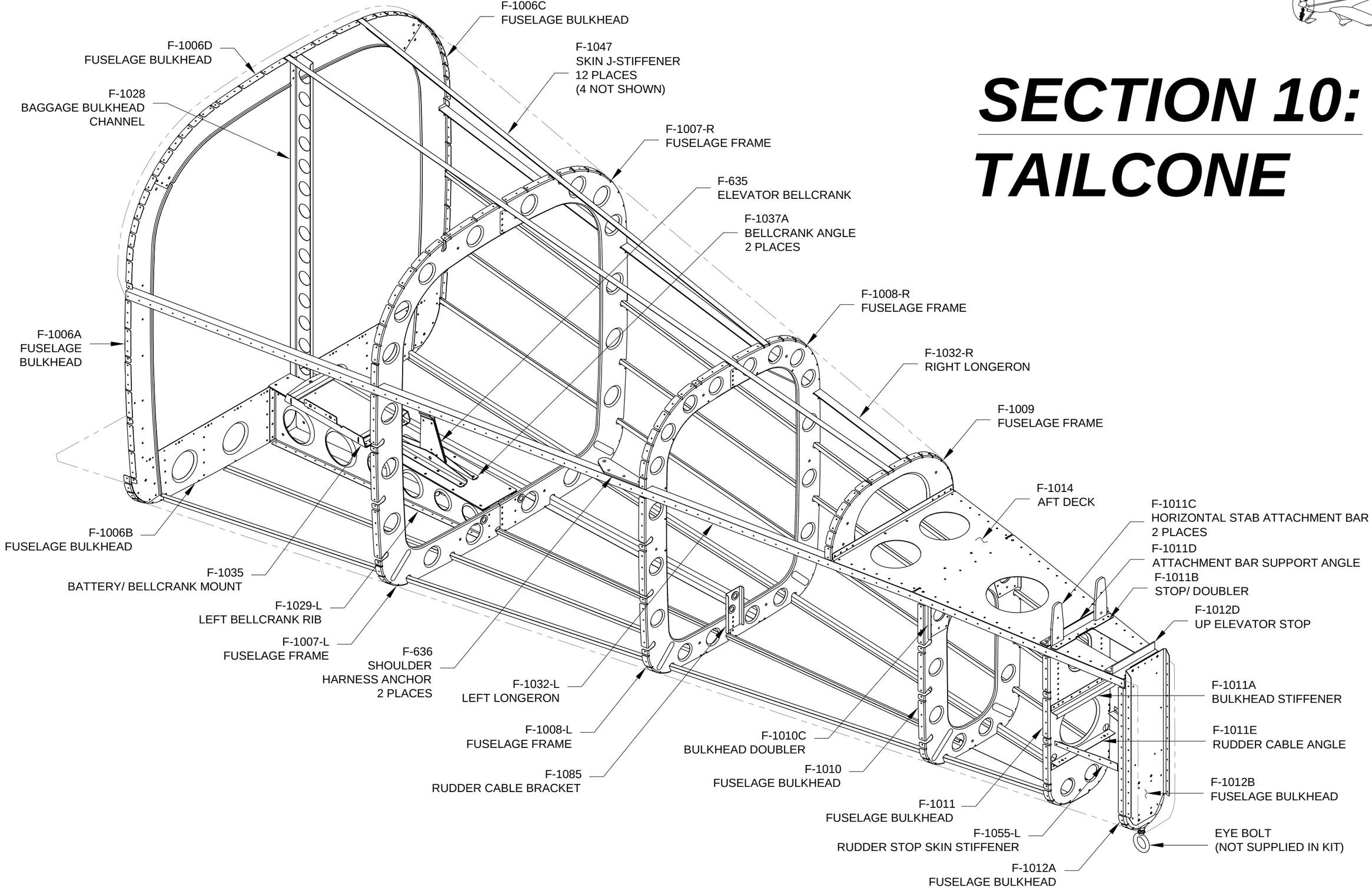
SECTION 10:
TAILCONE



Step 1: Make the F-1012E Tie Down Bar from the length of AEX TIE DOWN X 7.500 provided in the kit. Trim to size, then tap as shown in Figure 1.

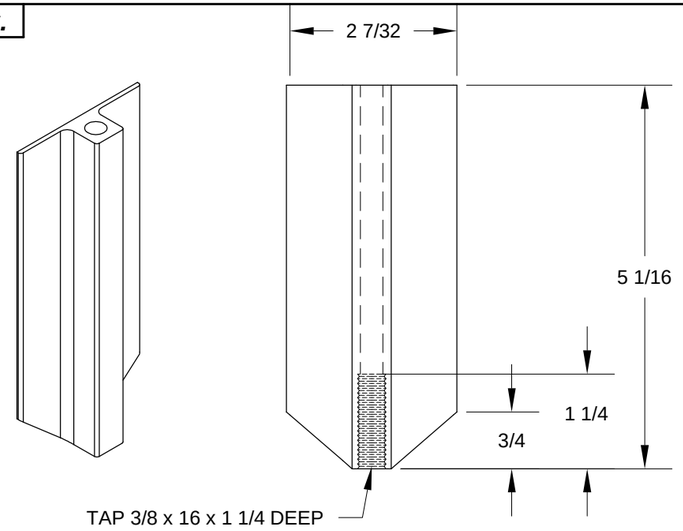


FIGURE 1: F-1012E TIE DOWN BAR

Step 2: Remove the vinyl from the F-1012A & B Fuselage Bulkheads, deburr, then cleco them together as shown in Figure 2. However, don't install any clecos in the holes that are associated with the F-1012E Tie Down Bar.

Step 3: Draw lines along the top and side of the aft face of the F-1012E Tie Down Bar using the dimensions in Figure 2.

Center these lines in the appropriate holes in the F-1012A & B Fuselage Bulkheads then clamp the tie down bar into position.

Match-Drill the four 3/32" holes of the bulkheads into the tie down bar with a #30 drill, cleco these holes, then match-drill the 3/16" holes with a 3/16" drill.

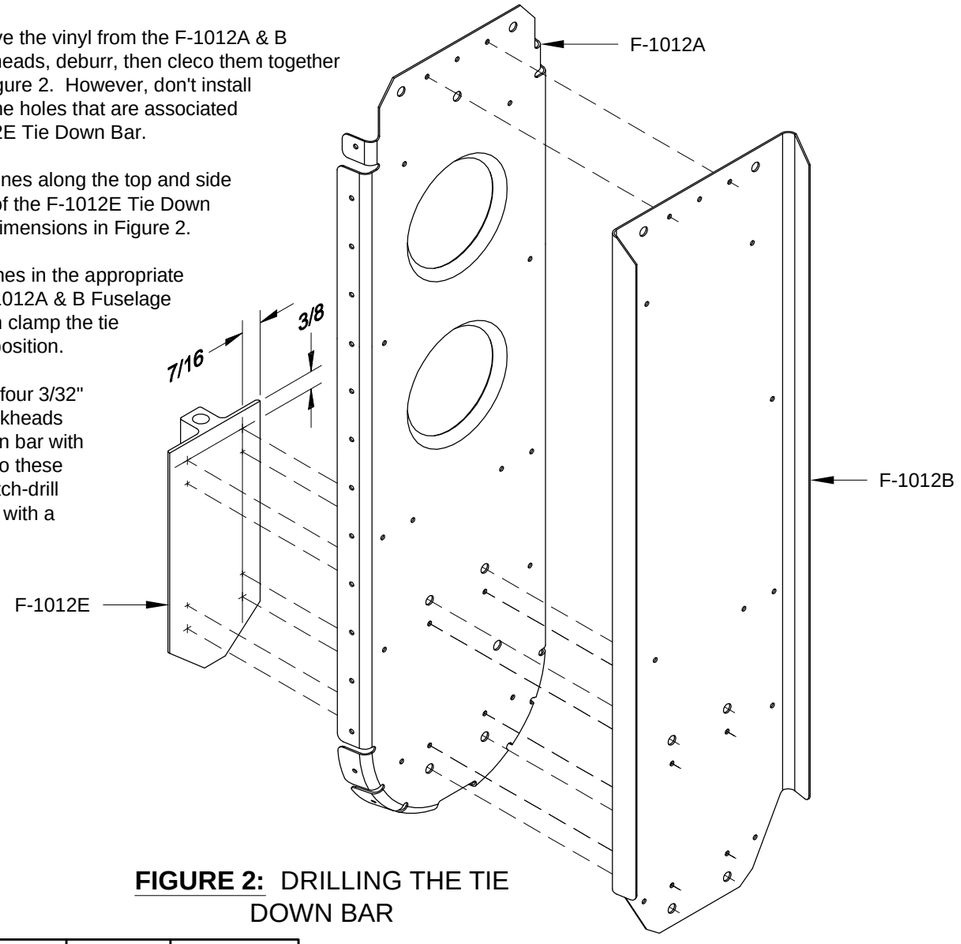


FIGURE 2: DRILLING THE TIE DOWN BAR

Step 4: Make the F-1011E Rudder Cable Angle, as shown in Figure 3, from the length of AA6-063 x 3/4 x 3/4 provided in the kit.

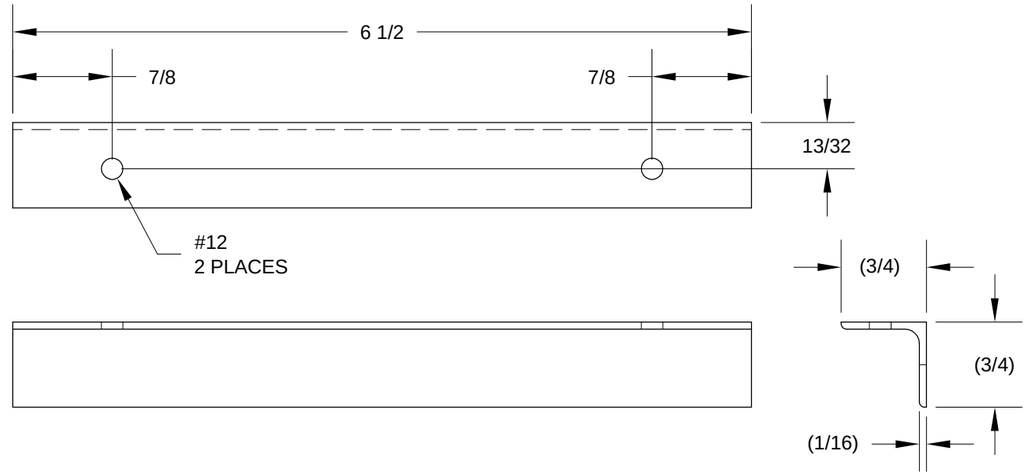


FIGURE 3: F-1011E RUDDER CABLE ANGLE

Step 5: Match-Drill the nutplate rivet holes into the F-1011E Rudder Cable Angle as shown in Figure 4. The nutplates can be temporarily held in place with AN3 bolts while the holes are drilled. Match-Drill one rivet hole and cleco it before drilling the second. This will prevent the nutplate from rotating before the second hole is match-drilled.

Machine countersink the rivet holes in the rudder cable angle for 3/32" flush rivets. Do not rivet the nutplates into place yet.

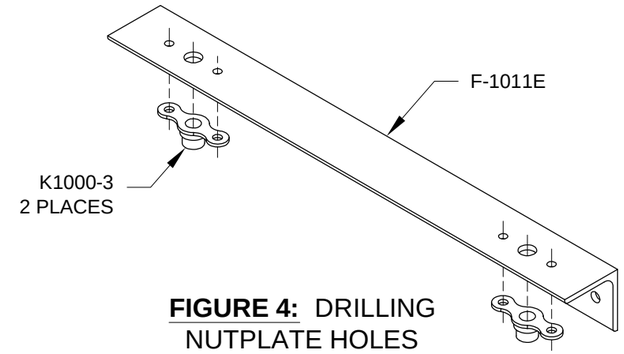


FIGURE 4: DRILLING NUTPLATE HOLES

Step 6: Cut the F-1011A Bulkhead Stiffener, using the dimension shown in Figure 5, from one of the six foot lengths of J-channel provided in the kit. Deburr the edges.

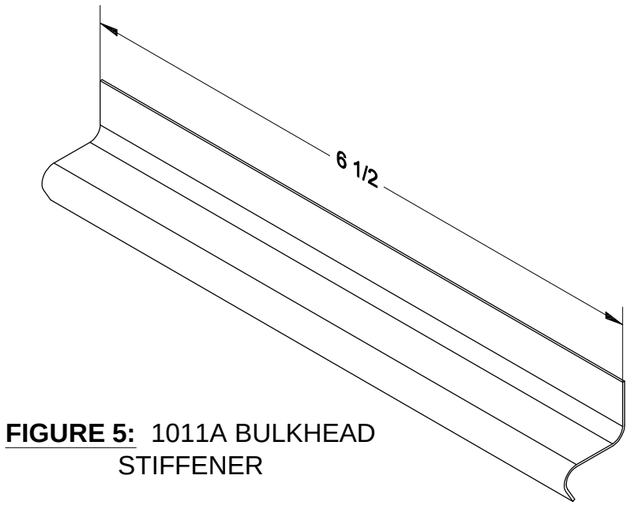


FIGURE 5: 1011A BULKHEAD STIFFENER

NOTE: The two F-1011C Horizontal Stabilizer Attachment Bars are most likely bowed due to the punching operation used during their manufacture. This bow will have to be removed.

Step 1: Place one of the F-1011C Horizontal Stabilizer Attachment Bars in a padded vice (padded with wood, aluminum, plastic, ...) near one of the ends. Pre load the free end of the attachment bar in the direction required to straighten it and, using a rubber mallet, firmly strike the bar one time near the vice. Slide the bar further into the vice, pre load, and strike the bar again. Repeat this sequence until the bar is straight within a 1/16" along its entire length.

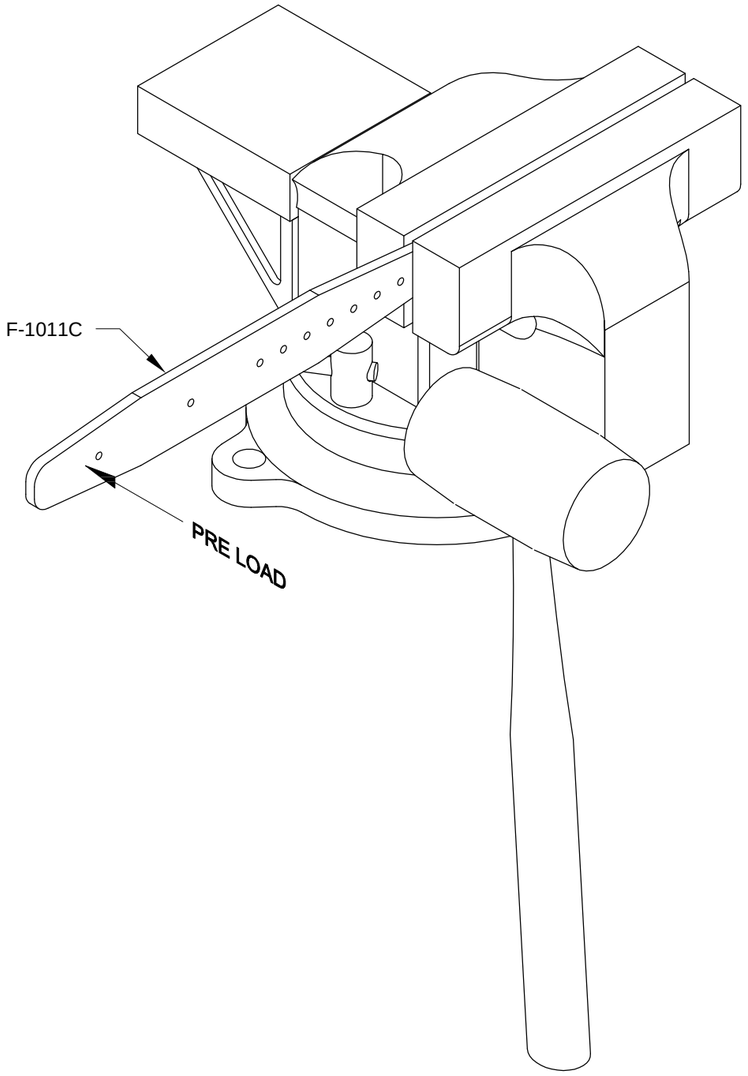


FIGURE 1: STRAIGHTENING THE HORIZONTAL STABILIZER ATTACHMENT BARS

Step 2: Finish the edges of the two F-1011C Horizontal Stabilizer Attachment Bars, then cleco them to the front of the F-1011 Bulkhead as shown in Figure 2. Except for the bottom hole in each attachment bar (the hole shared with the F-1011A Bulkhead Stiffener), final-drill the holes common to the attachment bar and bulkhead using a #30 drill.

Step 3: Place the F-1011A Bulkhead Stiffener on the back of the F-1011 Bulkhead as shown in Figure 2. Center the stiffener between the sides of the bulkhead with the top of the stiffener flange a quarter inch above the holes in the bulkhead as depicted in Figure 3.

Clamp the stiffener in place, then match-drill the holes of the bulkhead (and the bottom hole in the F-1011C Attachment Bars) into the stiffener with a #30 drill. Install clecos while drilling.

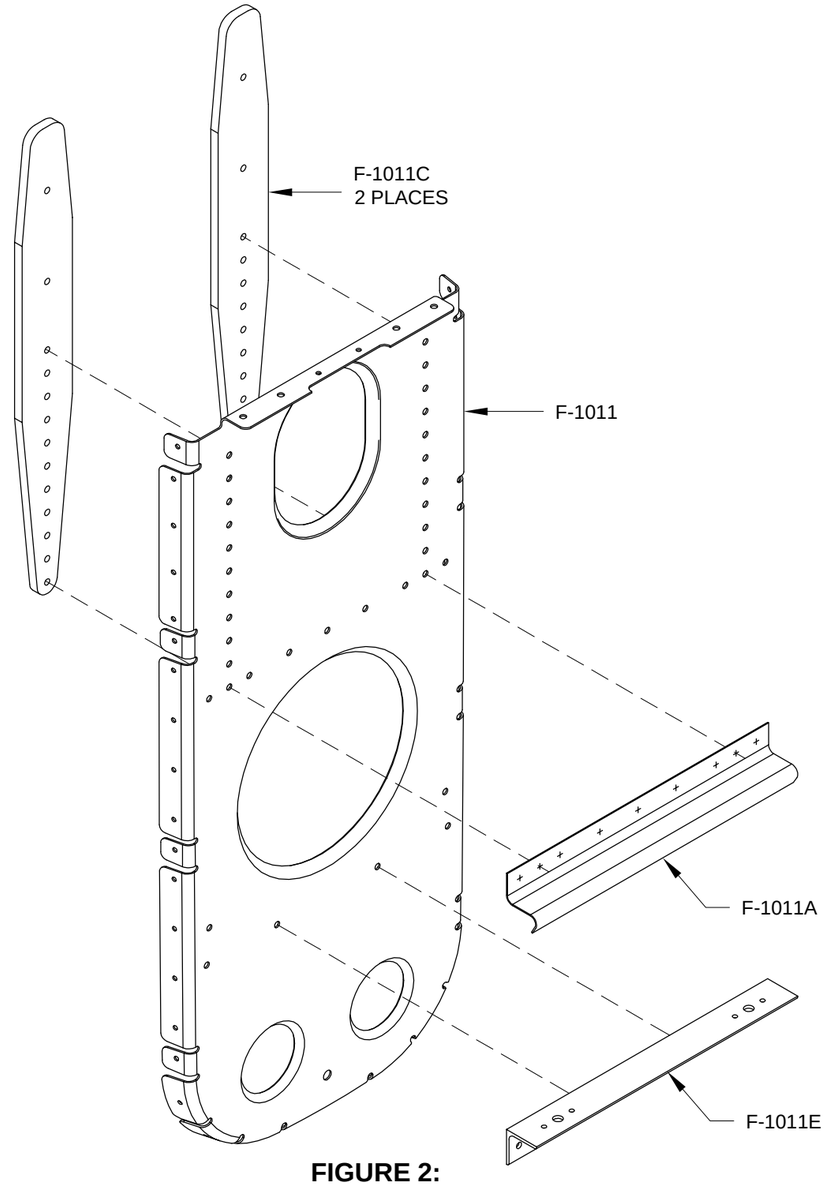


FIGURE 2:
POSITIONING F-1011 BULKHEAD PARTS

Step 4: Drill the two 1/8" holes indicated in Figure 3 to 5/8" using a Unibit step drill.

Step 5: Repeat Step 3 for locating and drilling the four holes used to attach the F-1011E Rudder Cable Angle. The top of the rudder cable angle is located 7/16" above the holes in the F-1011 Bulkhead as shown in Figure 3.

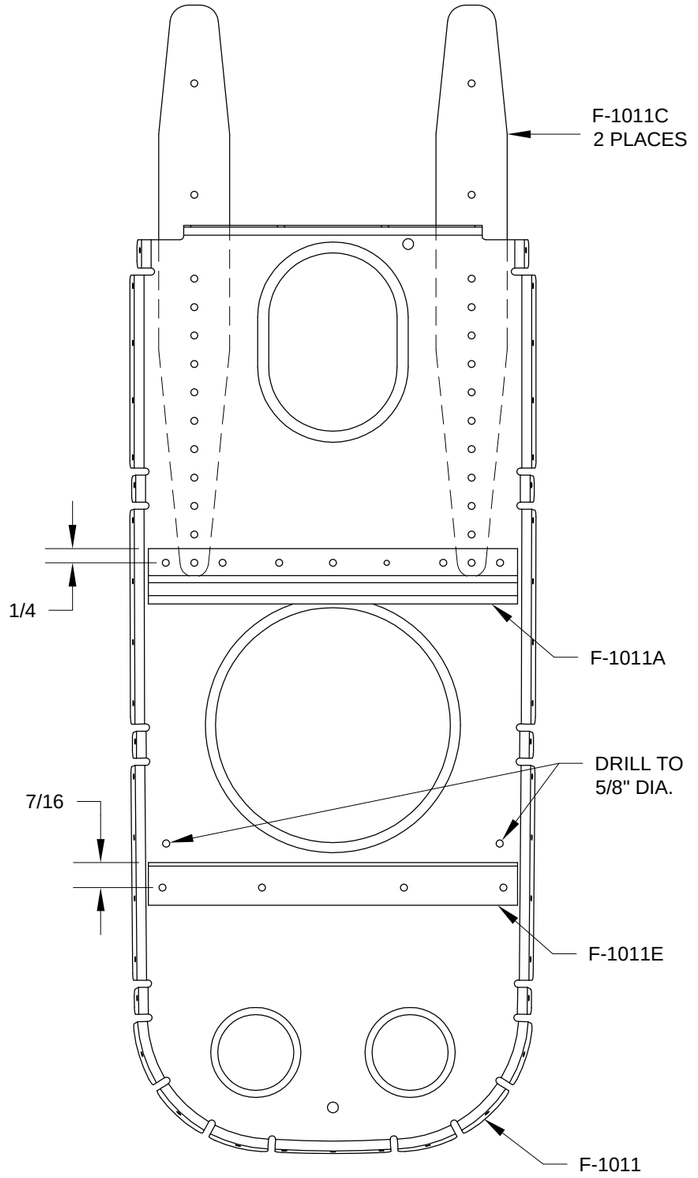


FIGURE 3: POSITIONING F-1011 BULKHEAD PARTS

Step 1: Make the F-1010A Horizontal Stabilizer Attachment Angle from the length of AA6-125X1X1 angle supplied in the kit and the dimensions in Figure 1.

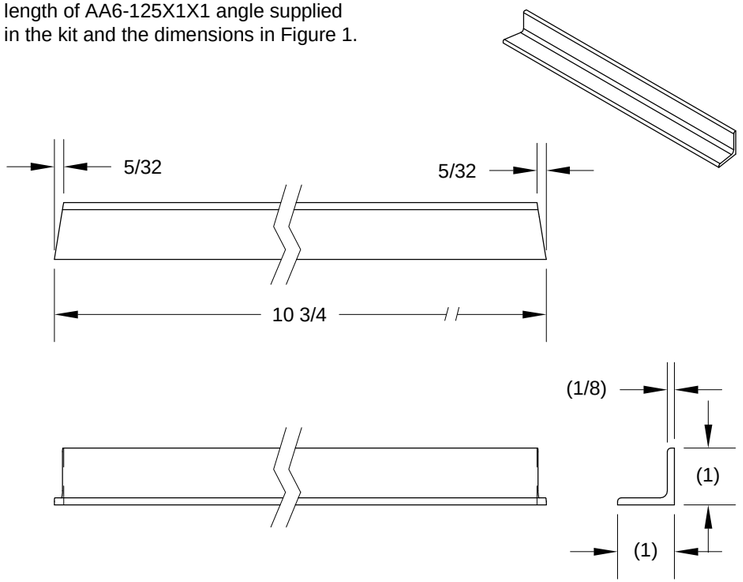


FIGURE 1: F-1010A HORIZONTAL STABILIZER ATTACHMENT ANGLE

Step 2: Separate the F-1010C Bulkhead Doubler into left and right parts by removing the shaded areas shown in Figure 2.

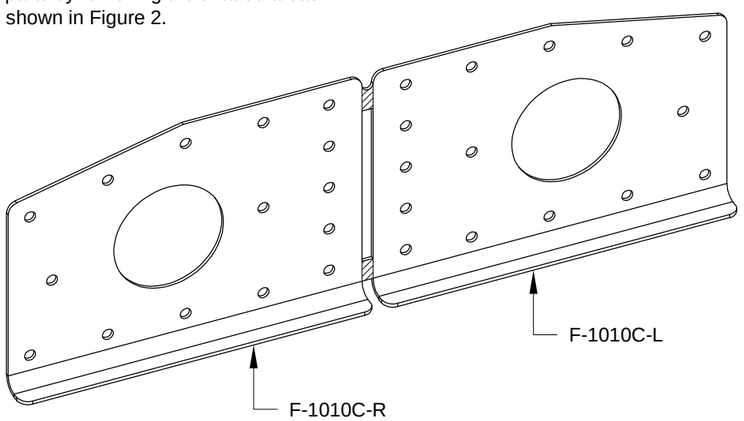


FIGURE 2: SEPARATING THE F-1010C BULKHEAD DOUBLER

Step 3: Deburr the F-1010 Bulkhead, then cleco in place the F-1010C-L & -R Bulkhead Doublers as shown in Figure 3. Do not place any clecos in the top row of holes.

Step 4: Position the F-1010A Horizontal Stabilizer Attachment Angle on the front side of the F-1010 Bulkhead as shown in Figure 3. Center the angle between the side flanges of the bulkhead, place the top flange of the angle an 1/8" above the top edge of the bulkhead as shown in the blowup, then clamp the angle to the bulkhead and to the F-1010C-L & -R Bulkhead Doublers.

Match-Drill the top row of holes (thirteen holes) in the bulkhead and bulkhead doublers into the angle with a #30 drill. Install clecos while drilling.

Step 5: Final-Drill #30 the remaining holes common between the F-1010 Bulkhead and F-1010C-L & -R Bulkhead Doublers.

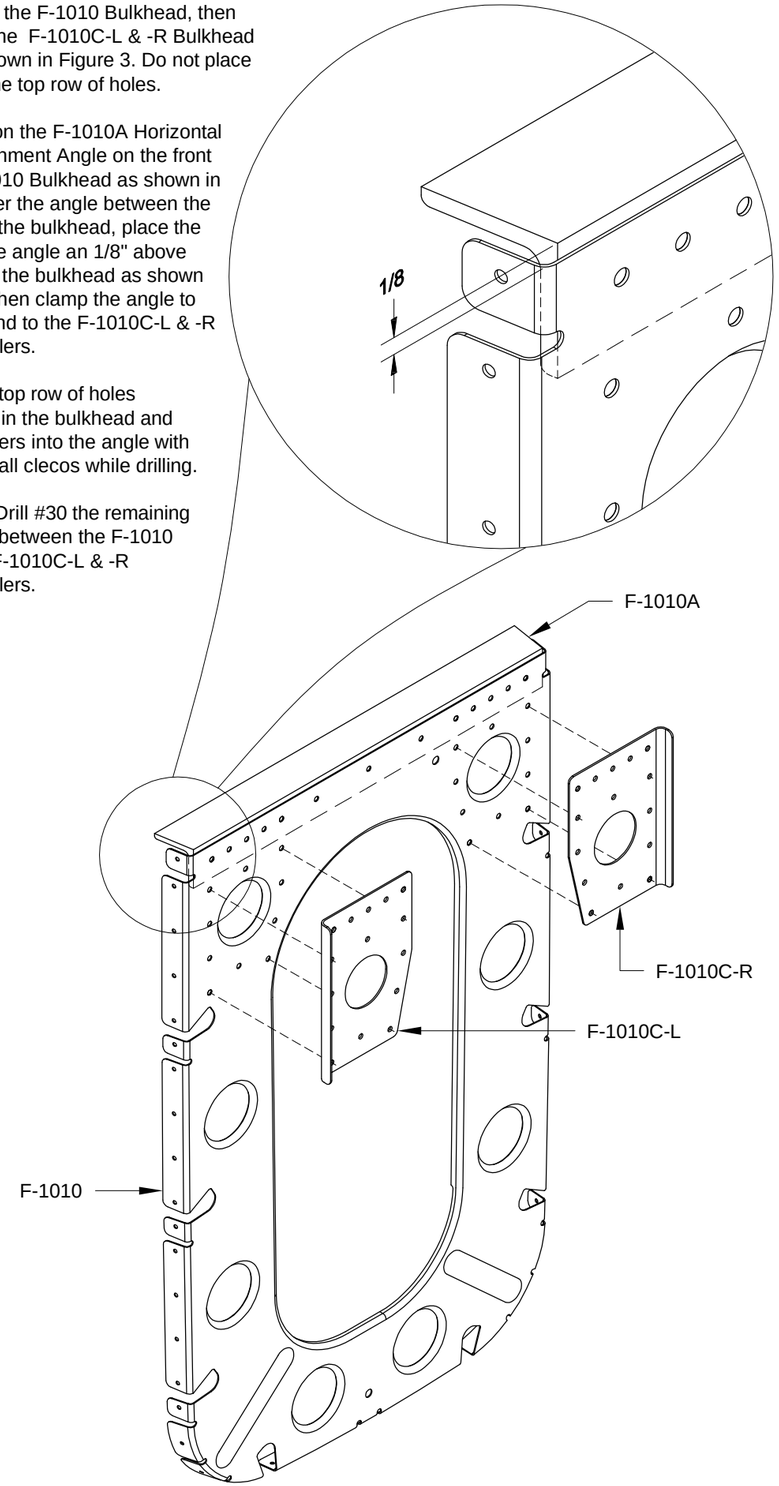


FIGURE 3: DRILLING THE HORIZONTAL STABILIZER ATTACHMENT ANGLE

Step 3: Deburr and flute (if necessary) the F-1008-L & -R Frames, then cleco them and the F-1085 Rudder Cable Bracket together as shown in Figure 3. Note that the left frame is positioned in front of the right.

Final-Drill the common holes of the three parts using a #30 drill.

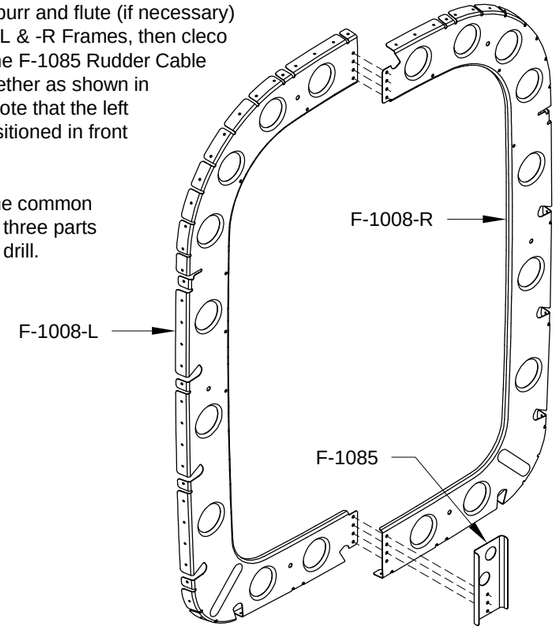


FIGURE 4: ASSEMBLING THE F-1008 FRAME

Step 4: Deburr and flute the F-1007-L & -R Frames, then cleco them together as shown in Figure 4. Again, the left frame is positioned in front of the right.

Final-Drill the common holes using a #30 drill.

Step 5: Final-Drill the two 3/16" holes, indicated in Figure 4, to 5/8" using a Unibit step drill.

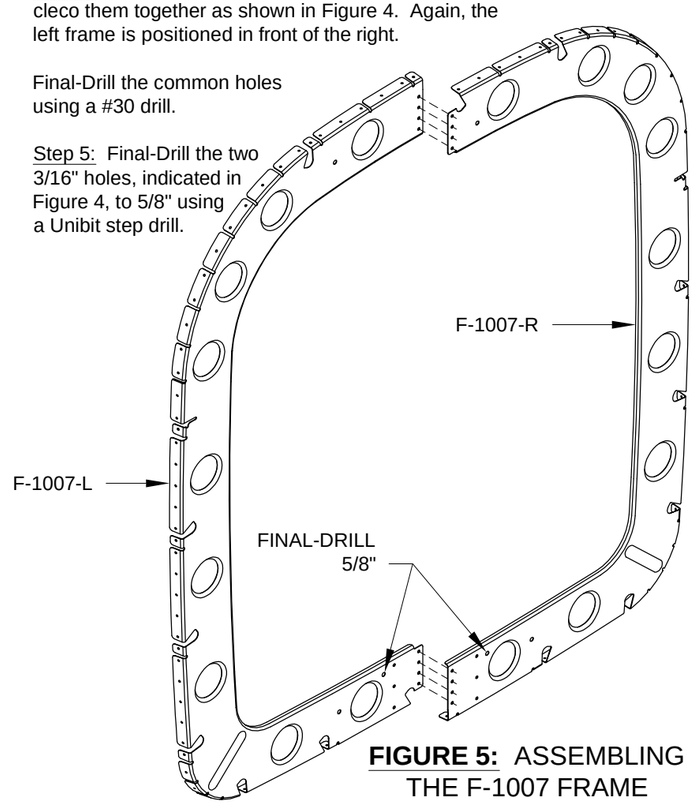


FIGURE 5: ASSEMBLING THE F-1007 FRAME

Step 1: Deburr and, if necessary, flute the F-1006A, B, C, and D Bulkheads, then cleco them together as shown in Figure 1.

Final-Drill the holes common to only the F-1006A, C, and D Frames using a #30 drill.
Do not drill any holes common to the F-1006B Frame at this time.

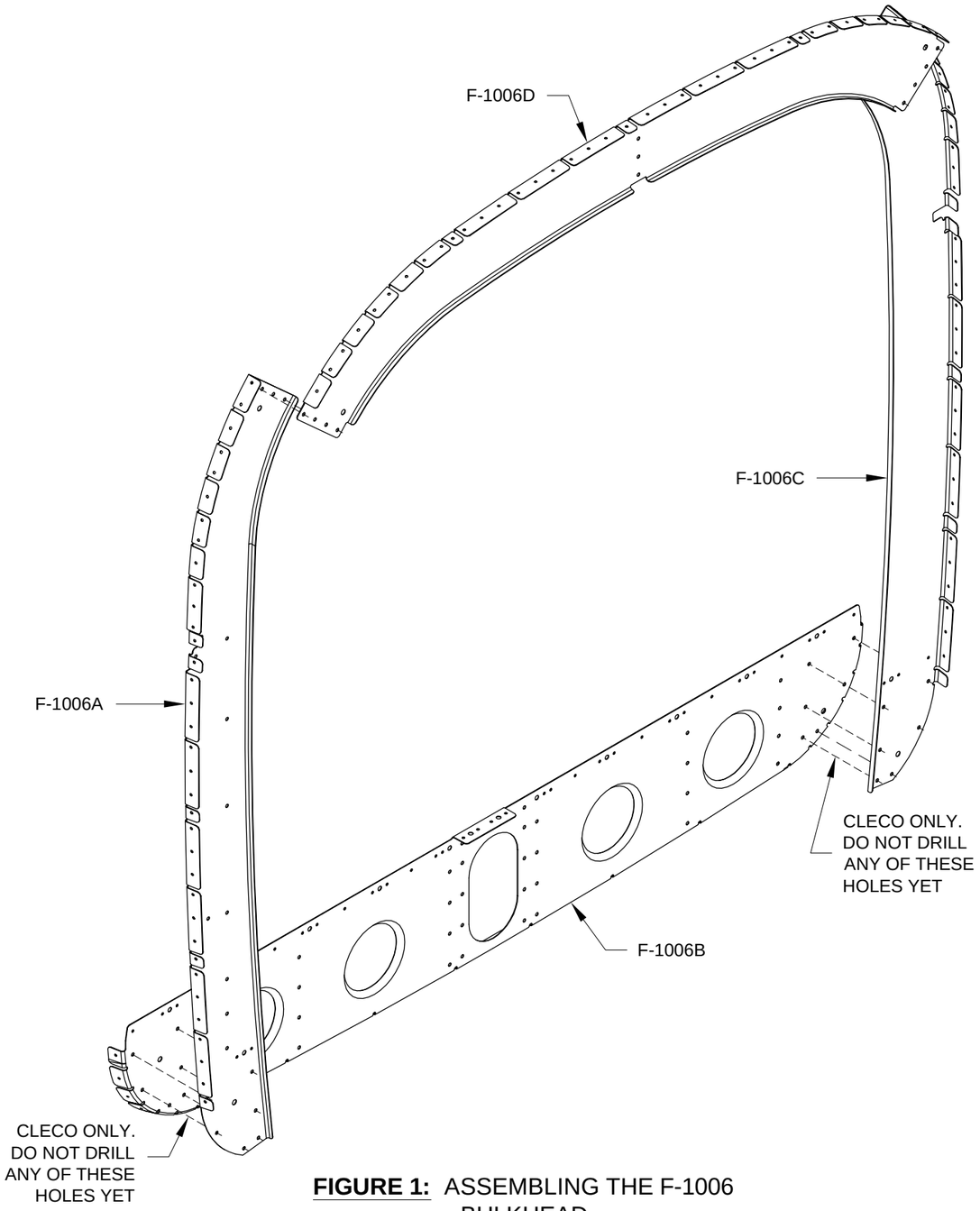
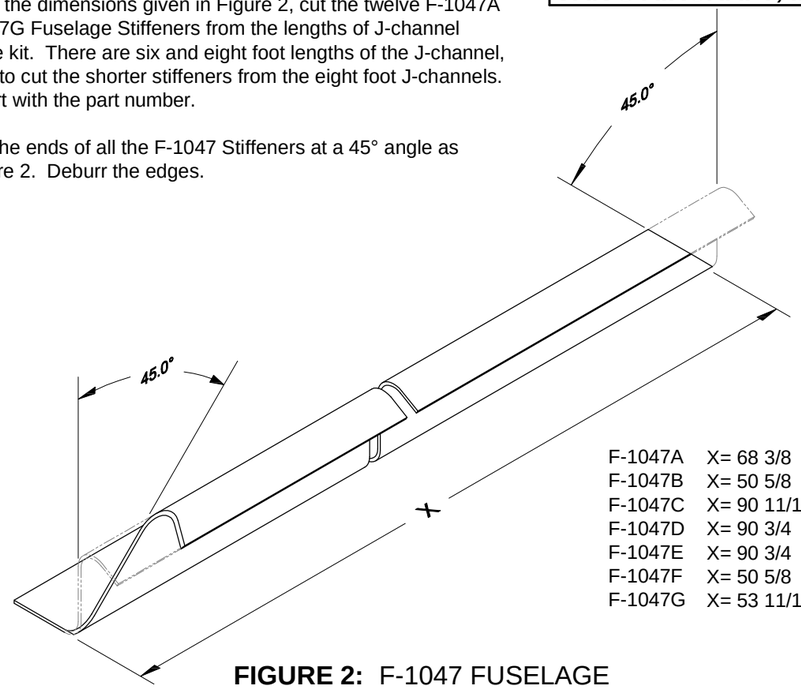


FIGURE 1: ASSEMBLING THE F-1006 BULKHEAD

Step 2: Using the dimensions given in Figure 2, cut the twelve F-1047A through F-1047G Fuselage Stiffeners from the lengths of J-channel provided in the kit. There are six and eight foot lengths of the J-channel, be careful not to cut the shorter stiffeners from the eight foot J-channels. Mark each part with the part number.

Step 3: Trim the ends of all the F-1047 Stiffeners at a 45° angle as shown in Figure 2. Deburr the edges.



F-1047A	X= 68 3/8	1 EACH
F-1047B	X= 50 5/8	2 EACH
F-1047C	X= 90 11/16	2 EACH
F-1047D	X= 90 3/4	2 EACH
F-1047E	X= 90 3/4	2 EACH
F-1047F	X= 50 5/8	2 EACH
F-1047G	X= 53 11/16	1 EACH

FIGURE 2: F-1047 FUSELAGE STIFFENERS

Step 4: Remove the vinyl from the side of the F-1047 Fuselage Stiffeners which will rest against the skins as shown in Figure 3. (Leave the vinyl on the other side; it will make it easier to slide the stiffeners through the bulkheads and frames later.)

Draw a rivet hole centerline along the entire length of each stiffener 5/16" from the edge as shown in the Figure 3.

Mark all the stiffeners 3/16" from both ends as shown in the figure. (Ultimately, only the mark on one of the ends is used to locate each stiffener on the skins. Marking both ends keeps the left and right stiffeners symmetrical. They can therefore be used on either side of the tailcone until drilled.)

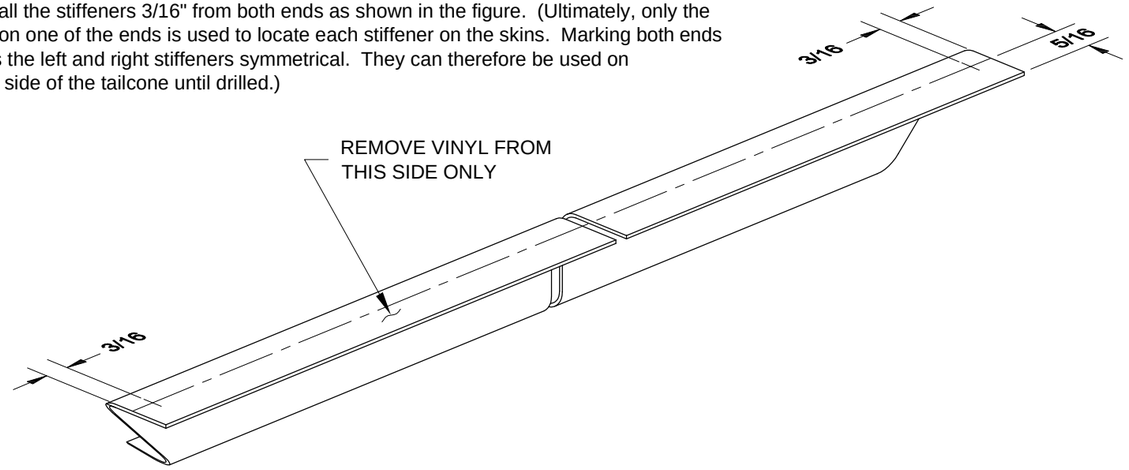
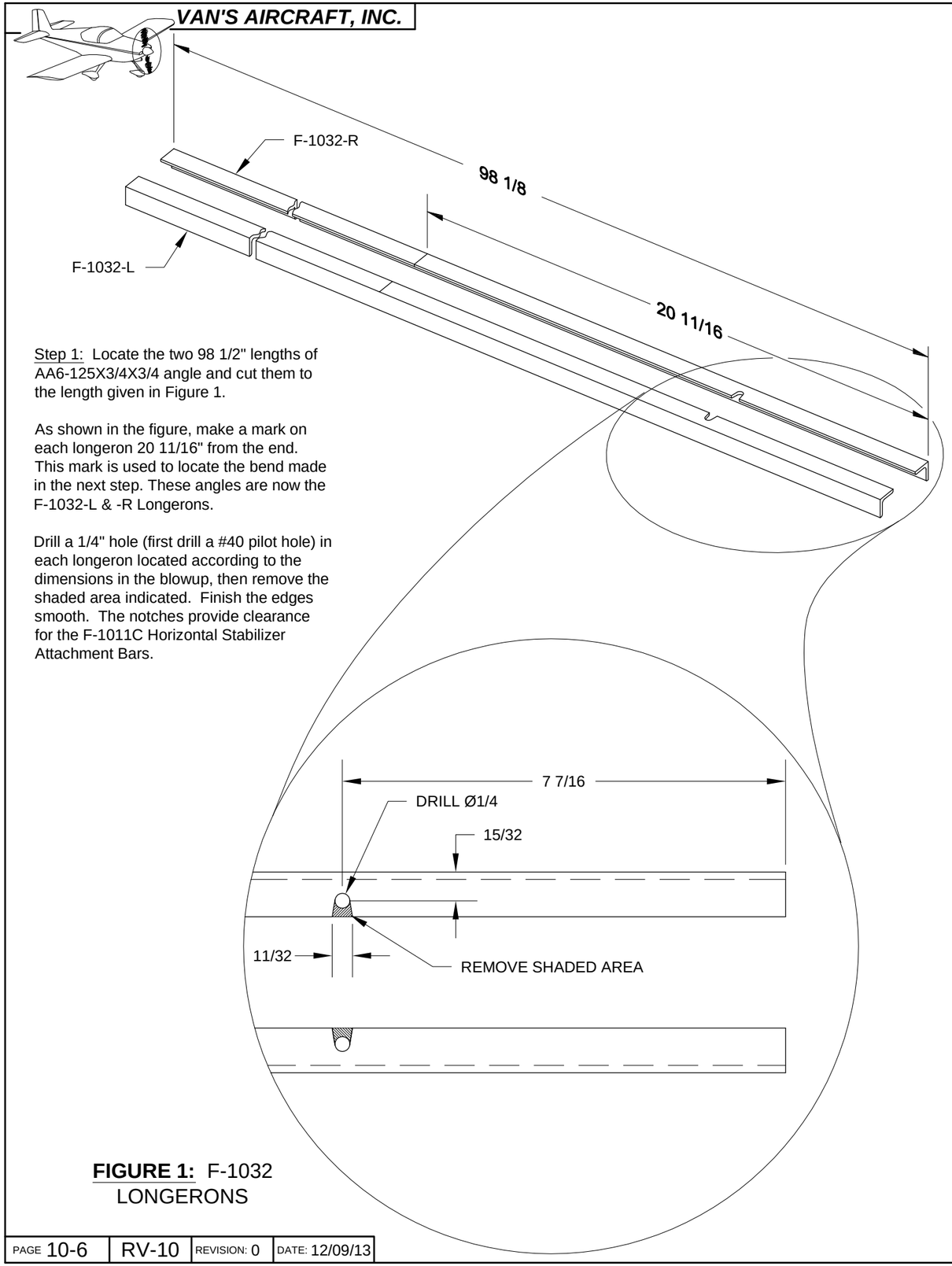


FIGURE 3: MARKING THE FUSELAGE STIFFENERS

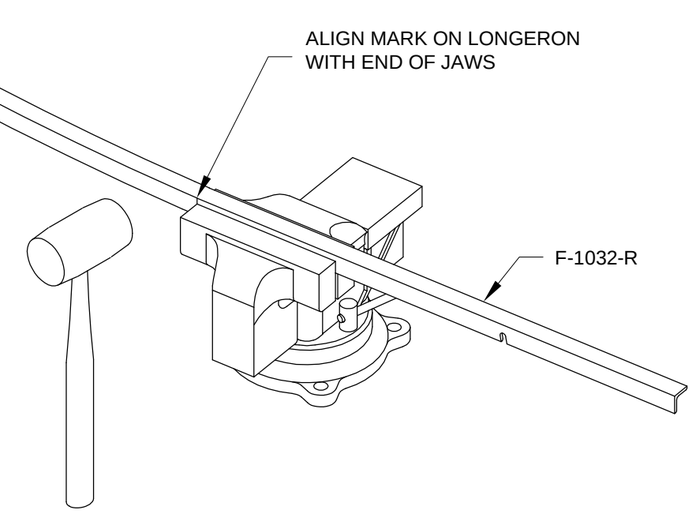


Step 1: Locate the two 98 1/2" lengths of AA6-125X3/4X3/4 angle and cut them to the length given in Figure 1.

As shown in the figure, make a mark on each longeron 20 11/16" from the end. This mark is used to locate the bend made in the next step. These angles are now the F-1032-L & -R Longerons.

Drill a 1/4" hole (first drill a #40 pilot hole) in each longeron located according to the dimensions in the blowup, then remove the shaded area indicated. Finish the edges smooth. The notches provide clearance for the F-1011C Horizontal Stabilizer Attachment Bars.

FIGURE 1: F-1032 LONGERONS



Step 2: The front of the longerons need to be bent down just under 2° at the mark made in step 1.

Place the F-1032-R Longeron in an aluminum padded vice, as shown in Figure 2, with the mark at the end of the jaws. Pre load the longeron in the direction shown (sideways in the figure, but down when the longeron is in the plane) and, using a rubber mallet, strike the longeron firmly near the bend mark.

Check the angle against the F-1073-R Skin, as shown in Figure 3, and adjust if necessary.

Bending an angle can also cause it to bend in a direction 90° to the intended bend direction. If this is the case for the longeron, place it back in the vice and straighten out the unwanted bend. Make sure the intended bend angle hasn't changed.

Step 3: Repeat Step 2 for the F-1032-L Longeron, and make sure to bend it in the correct direction. Check it against the F-1073-L Skin as shown in Figure 3.

FIGURE 2: BENDING THE LONGERONS

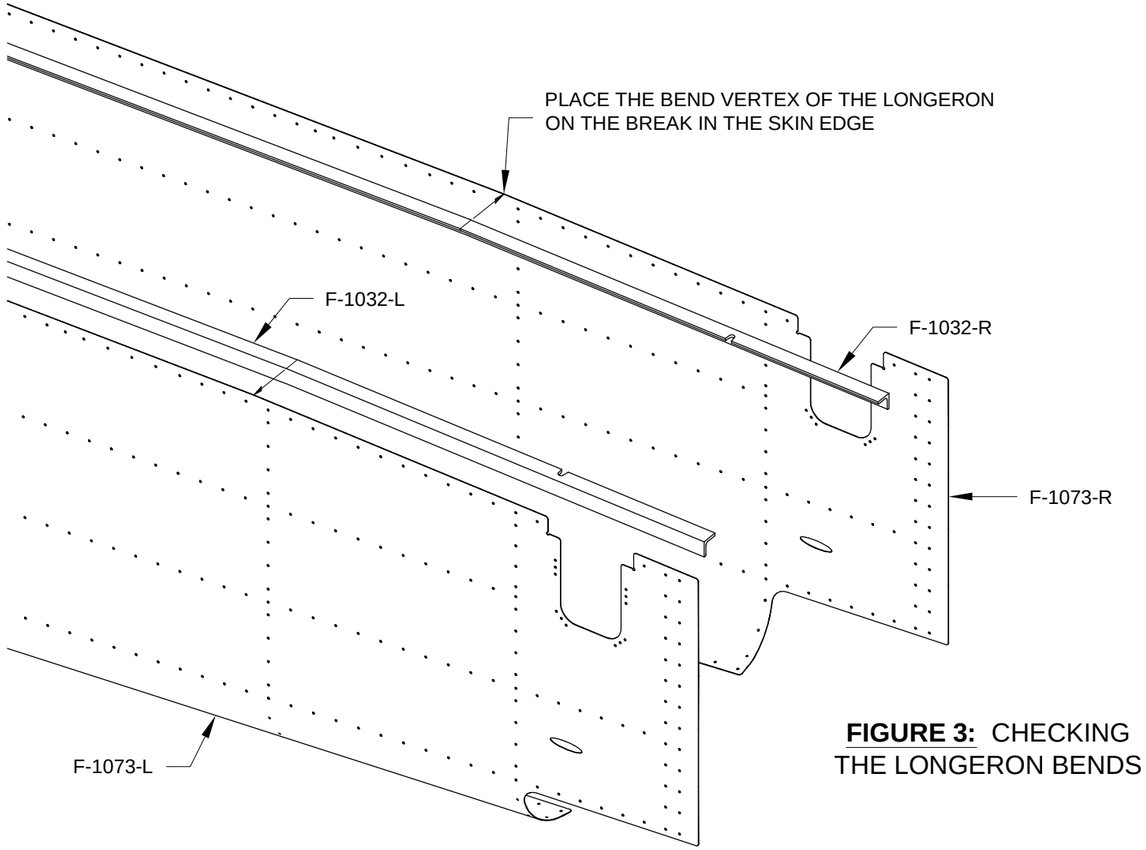


FIGURE 3: CHECKING THE LONGERON BENDS

Step 1: Place the F-1078 Forward Bottom Skin upside down across two sawhorses which are at least 38" tall. As shown in Figure 1, cleco the F-1007 and F -1008 Frames and the F-1010 Bulkhead to the skin. If the stiffeners formed along the side edges of the forward bottom skin interfere with notches in the frames, either the stiffeners can be bent or the notches in the frames can be enlarged slightly until the stiffeners clear. Locate the forward sawhorse just aft of the F-1007 Frame.

Step 2: Slide the two F-1047F Stiffeners through the notches in the frames as shown in Figure 1. The aft end of the stiffeners should be captured between the F-1008 Frame tabs and the F-1078 Forward Bottom Skin.

Center the forward end marks and the rivet hole centerlines (see Page 10-5, Step 3) of both stiffeners in the indicated holes in the F-1078 Forward Bottom Skin, then match-drill the holes into the stiffeners using a #40 drill. Keeping the rivet hole centerline visible through the holes in the skin, match-drill the remaining holes into the stiffeners using the same drill. Once drilled, the stiffeners become dedicated left and right parts.

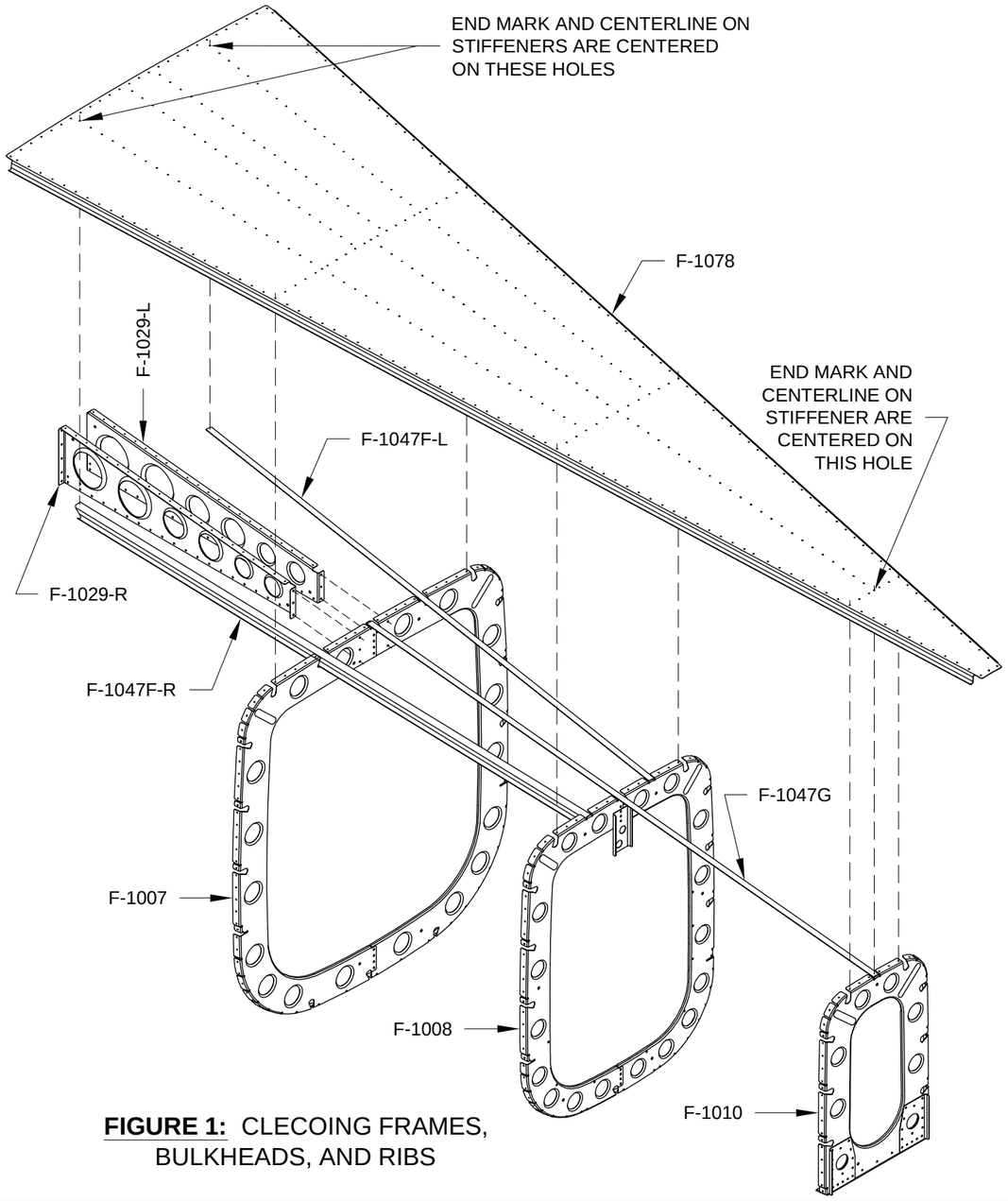


FIGURE 1: CLECOING FRAMES, BULKHEADS, AND RIBS

Step 3: Slide the F-1047G Stiffener through the notches in the frames as shown in Figure 1. The ends of the stiffener should be captured between the frame tabs and F-1078 Forward Bottom Skin.

Center the aft end mark and the rivet hole centerline of the stiffener on the indicated hole in the forward bottom skin. Match-Drill the skin holes into the stiffener in the same manner as the F-1047F Stiffeners were drilled.

Step 4: Cleco the F-1029-L & -R Bellcrank Ribs to the F-1078 Forward Bottom Skin and to the F-1007 Frame, as shown in Figure 1, then final-drill #30 the six holes common to the bellcrank ribs and frame.

Step 5: Slide the assembly to the left side of the sawhorses, then position one of the two F-1047C, D, and E Stiffeners in the frame and bulkhead notches as shown in Figure 2.

Step 6: Cleco the F-1073-R Side Skin to the frames and bulkheads and to the F-1078 Forward Bottom Skin.

Step 7: Center the forward end marks and the rivet hole centerlines of the F-1047C, D, and E Stiffeners on the indicated holes in the F-1073-R Side Skin. Match-Drill #40 the skin holes into the stiffeners in the same manner as the previous stiffeners. These stiffeners are now dedicated right parts.

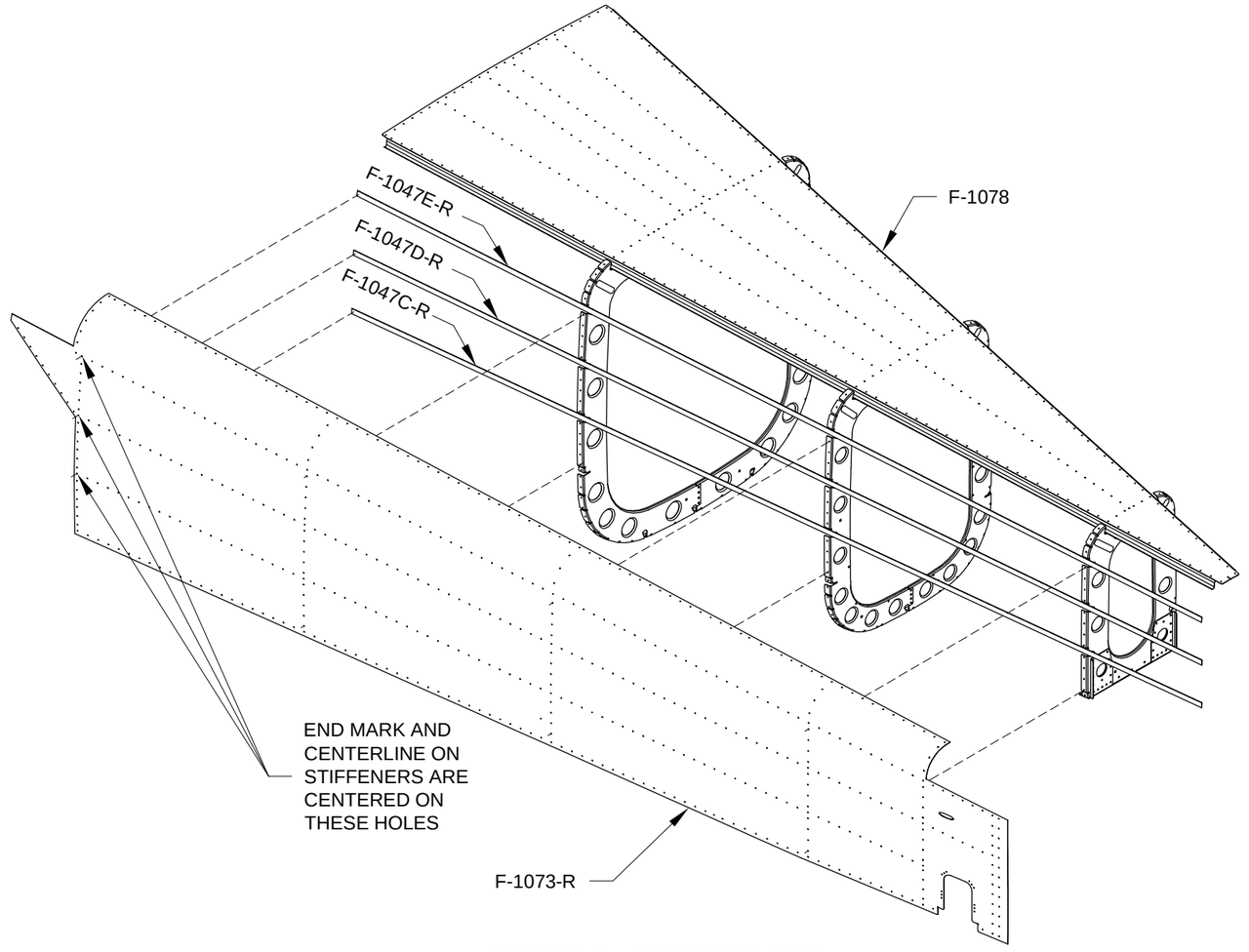


FIGURE 2: CLECOING THE RIGHT SIDE SKIN

Step 1: Flip the tailcone over on the sawhorses. Cleco the F-1011 Bulkhead and the F-1079 Aft Bottom Skin to the F-1078 Forward Bottom Skin and the F-1073-R Side Skin as shown in Figure 1. Cleco the F-1012A & B Bulkheads to the aft bottom skin and the side skin.

Step 2: Position the remaining F-1047C, D, and E Stiffeners in the notches of the frames and bulkheads, then cleco the F-1073-L Side Skin to the frames and bulkheads, to the F-1078 Forward Bottom Skin, and to the F-1079 Aft Bottom Skin.

Step 3: In the same manner as the F-1047C-R, D-R, and E-R Stiffeners on the F-1073-R Side Skin were located and match-drilled, locate and match-drill the F-1047C, D, and E Stiffeners on the F-1073-L Side Skin. These stiffeners are now dedicated left parts.

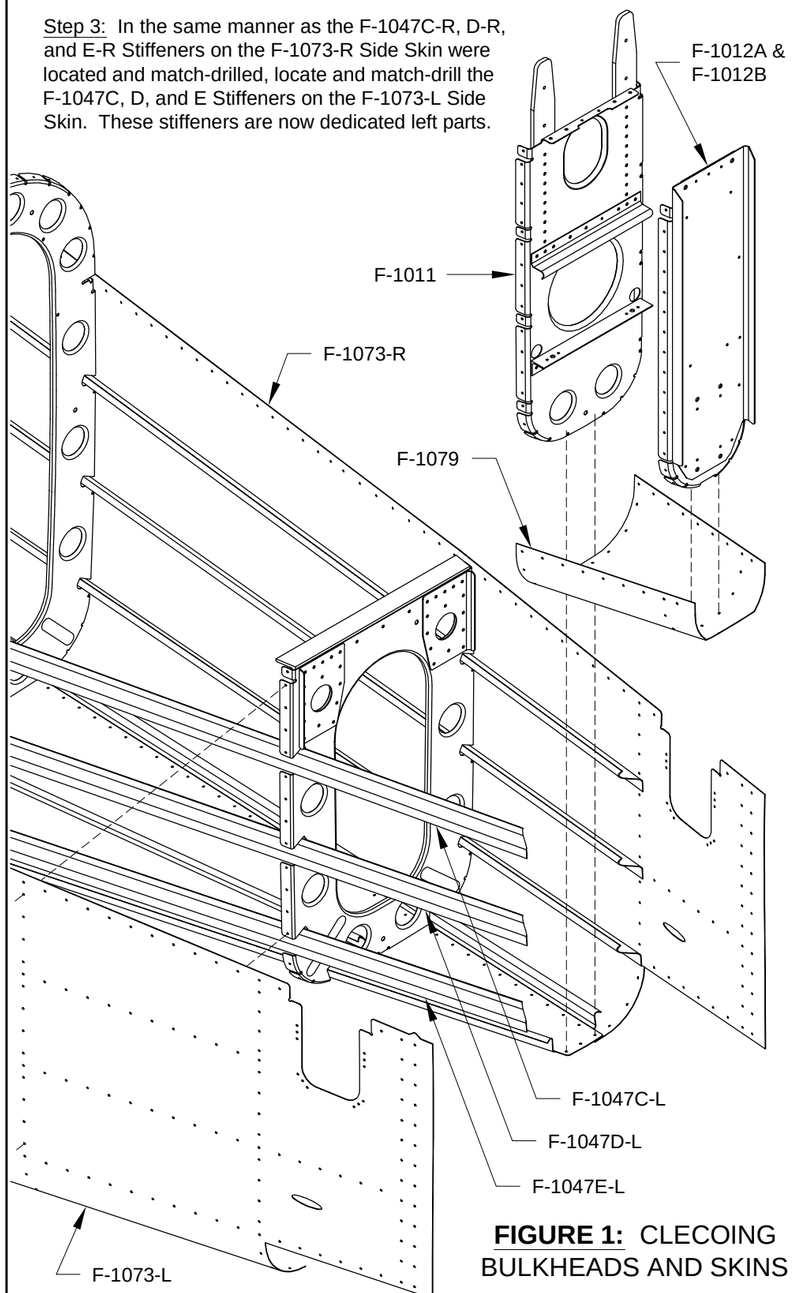


FIGURE 1: CLECOING BULKHEADS AND SKINS

Step 4: Locate the F-1055 Rudder Stop Skin Stiffener and split it between the notches to form the individual parts shown in Figure 2.

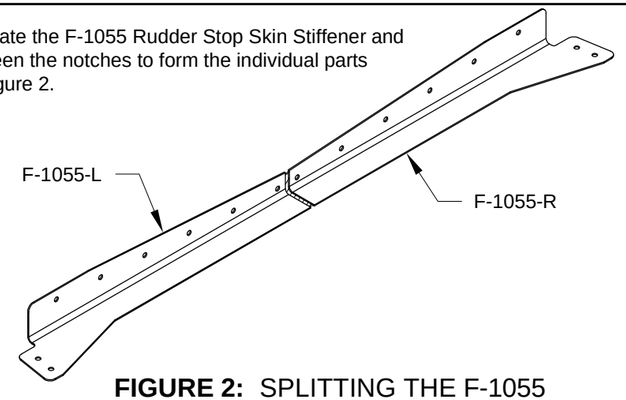


FIGURE 2: SPLITTING THE F-1055 RUDDER STOP SKIN STIFFENER

Step 5: Cleco the F-1055-R & -L Rudder Stop Skin Stiffeners to the F-1073-R & -L Side Skins respectively as shown in Figure 3.

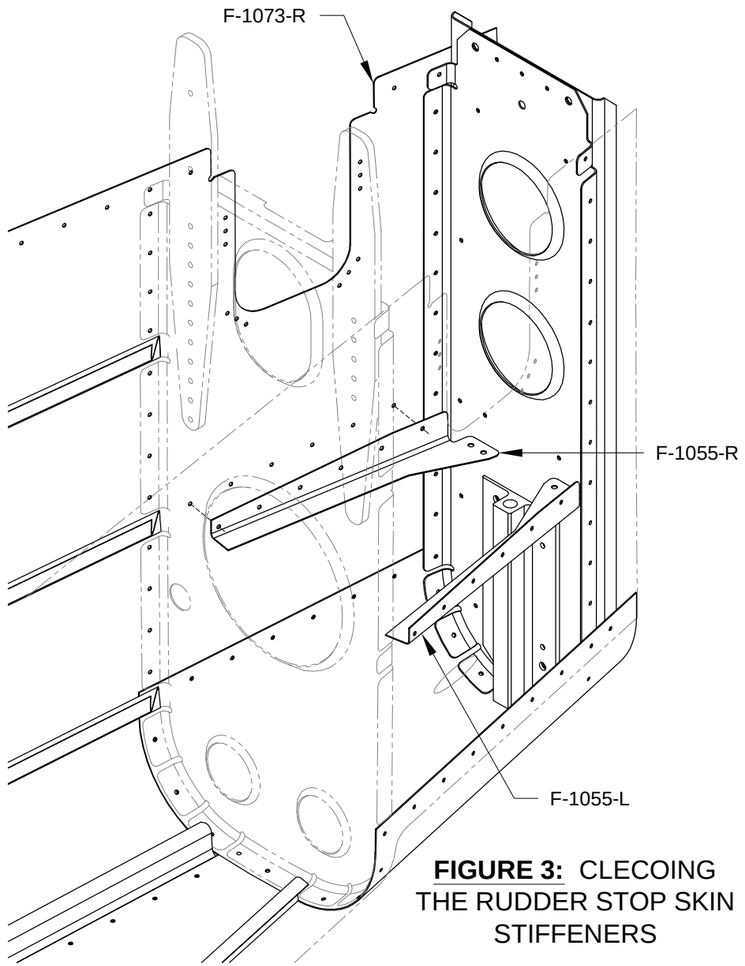


FIGURE 3: CLECOING THE RUDDER STOP SKIN STIFFENERS

Step 6: Make the F-1056 Rudder Stop Brace from a length of AA6-063 x 3/4 x 3/4 angle using the dimensions in Figure 4.

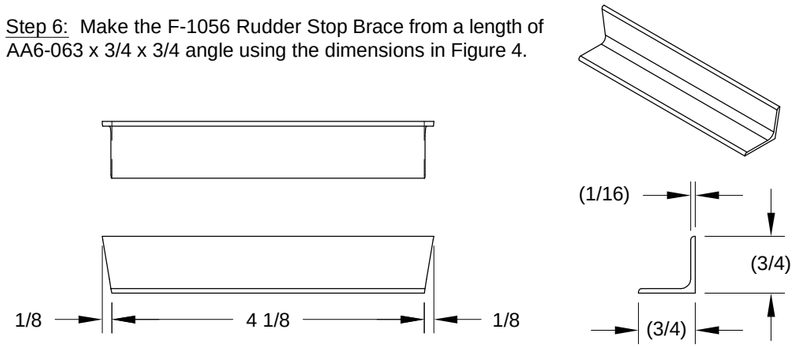


FIGURE 4: F-1056 RUDDER STOP BRACE

Step 7: Position the F-1056 Rudder Stop Brace against the F-1012A Bulkhead web, centered between the two F-1055 Rudder Stop Skin Stiffeners as shown in Figure 5. The angled flange of the brace rests under the flanges of the stiffeners.

Make sure the tailcone is not twisted by placing a level across the top of the F-1073 Side skins in two places (near the front of the side skins and at the F-1012 Bulkhead), then clamp the brace to the stiffeners. Hold the brace against the bulkhead, then match-drill the four holes of the bulkhead into the brace (watch your fingers!) using a #40 drill. Cleco as you drill. Remove the brace, deburr the holes and clear away any chips, then cleco the brace back into position. Match-Drill the two holes in each stiffener into the brace using a 12" long #30 drill.

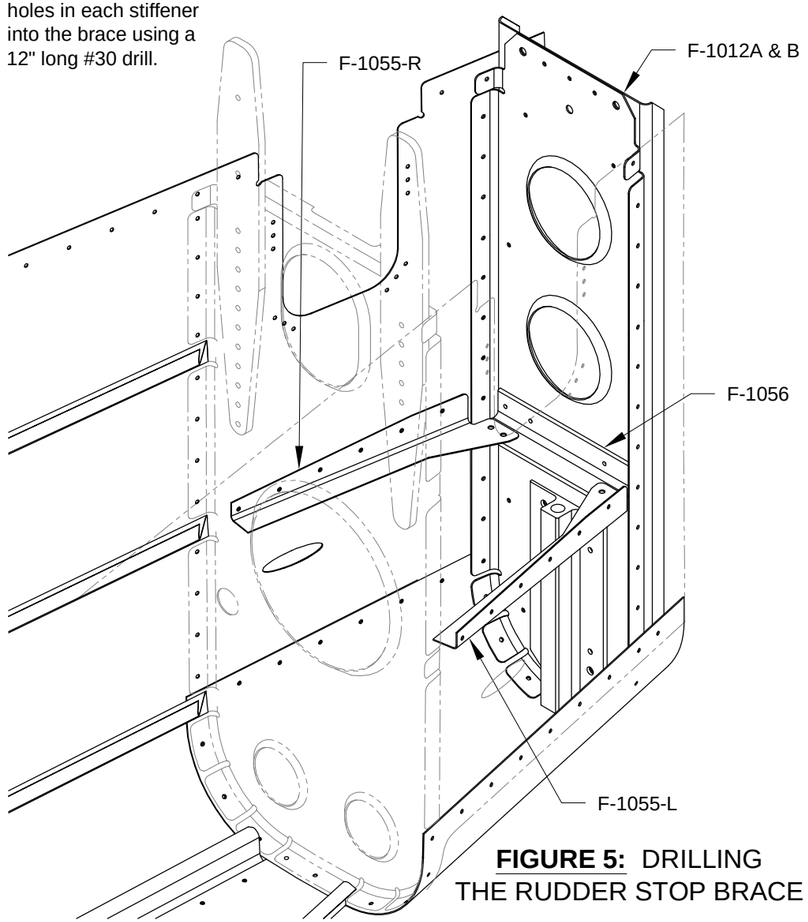


FIGURE 5: DRILLING THE RUDDER STOP BRACE

Step 1: Cleco the F-1006 Bulkhead to the F-1073-L, F-1073-R, and F-1078 Skins and to the F-1029-L & -R Bellcrank Ribs as shown in Figure 1. The F-1032 Longerons, the F-1073-L Side Skin, and the F-1047 Stiffeners attached to the side skin are not shown for clarity.

Final-Drill the holes common to the bulkhead and bellcrank ribs using a #30 drill. DO NOT drill any holes common to the bulkhead and skins; these are drilled when the tailcone is joined to the forward fuselage.

Step 2: Cleco the F-1028 Baggage Bulkhead Channel to the F-1029-R Bellcrank Rib and to the F-1006 Bulkhead, then final-drill the top holes, which are common to the bulkhead, with a #30 drill. The four bottom holes, which are common to the bellcrank rib, are drilled later.

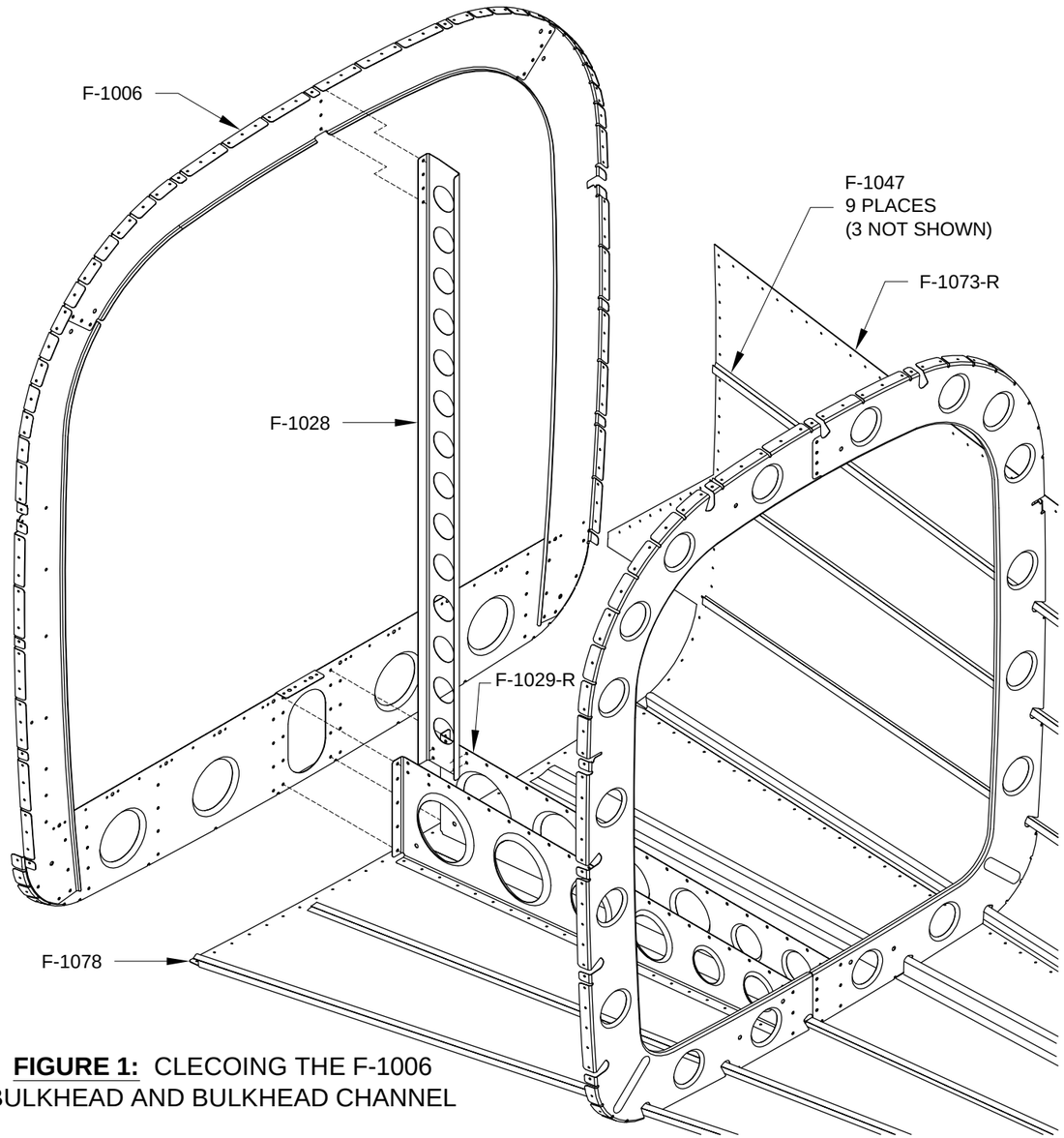


FIGURE 1: CLECOING THE F-1006 BULKHEAD AND BULKHEAD CHANNEL

Step 3: Separate the F-1037 Bellcrank Rib Angle into the individual parts shown in Figure 2.

Step 4: Final-Drill the 3/32" nutplate attachment rivet holes in both the F-1037B & C Bellcrank Rib Angles using a #40 drill. Machine countersink these holes flush for 3/32" rivets on the side indicated in the blowup of Figure 2.

Step 5: Final-Drill the four 3/16" holes in both F-1037A Bellcrank Rib Angles and the two indicated 3/16" holes in the F-1037B & C Bellcrank Rib Angles using a #12 drill.

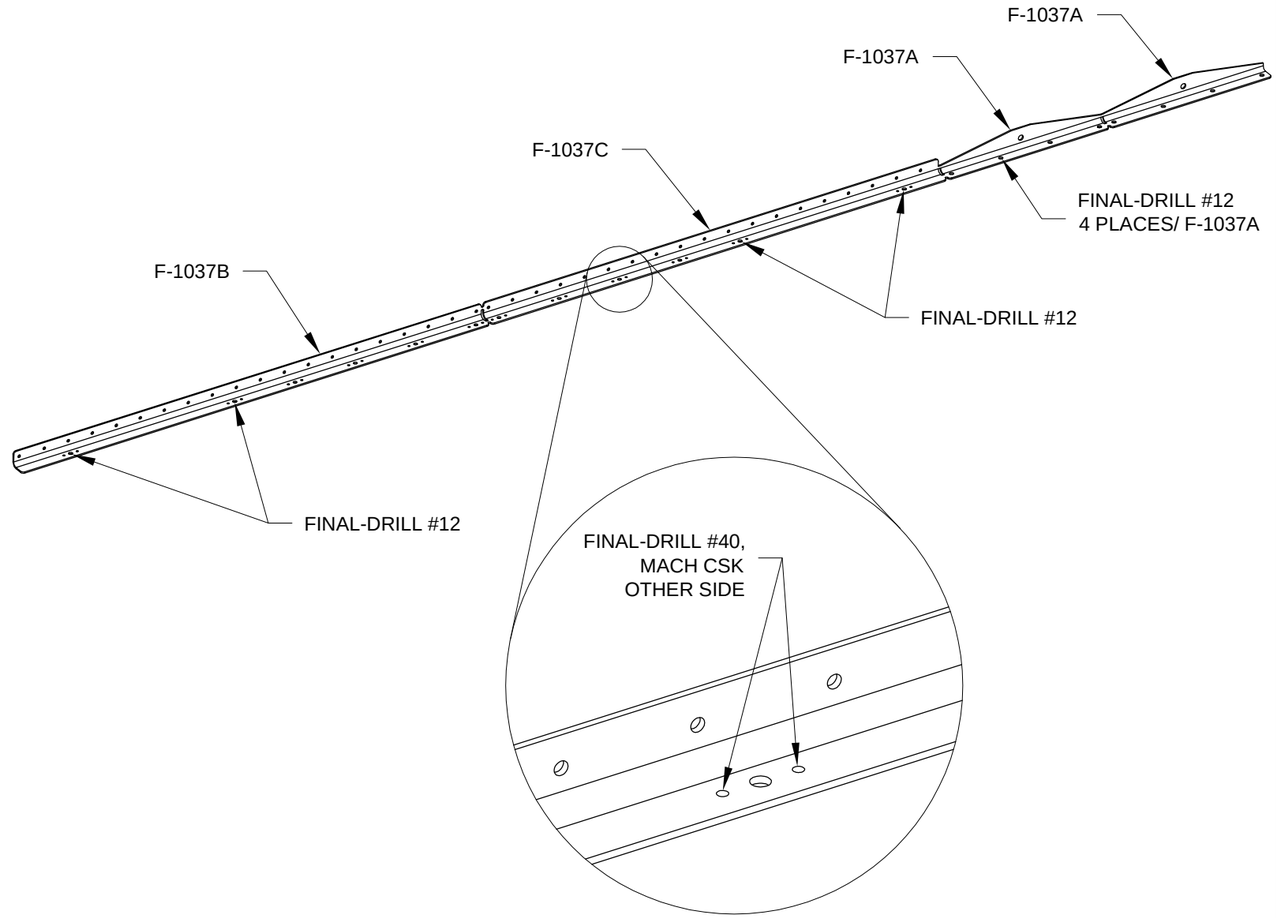


FIGURE 2: F-1037 BELLCRANK RIB ANGLES

Step 1: Cleco the F-1037B and F-1037C Bellcrank Angles to the F-1029-L & -R Bellcrank Ribs as shown in Figure 1. The first hole in the F-1037C Bellcrank Angle (this angle is a little shorter than the right angle) is clecoed to the second hole in the F-1029-L Bellcrank Rib (see figure). Once again, for clarity, the F-1073-L Skin and the F-1047 Stiffeners attached to it are not shown.

Step 2: Finish-Drill #30 all the holes common to the F-1037 Bellcrank Angles and F-1029 Bellcrank Ribs and the four holes of the F-1028 Baggage Bulkhead Channel.

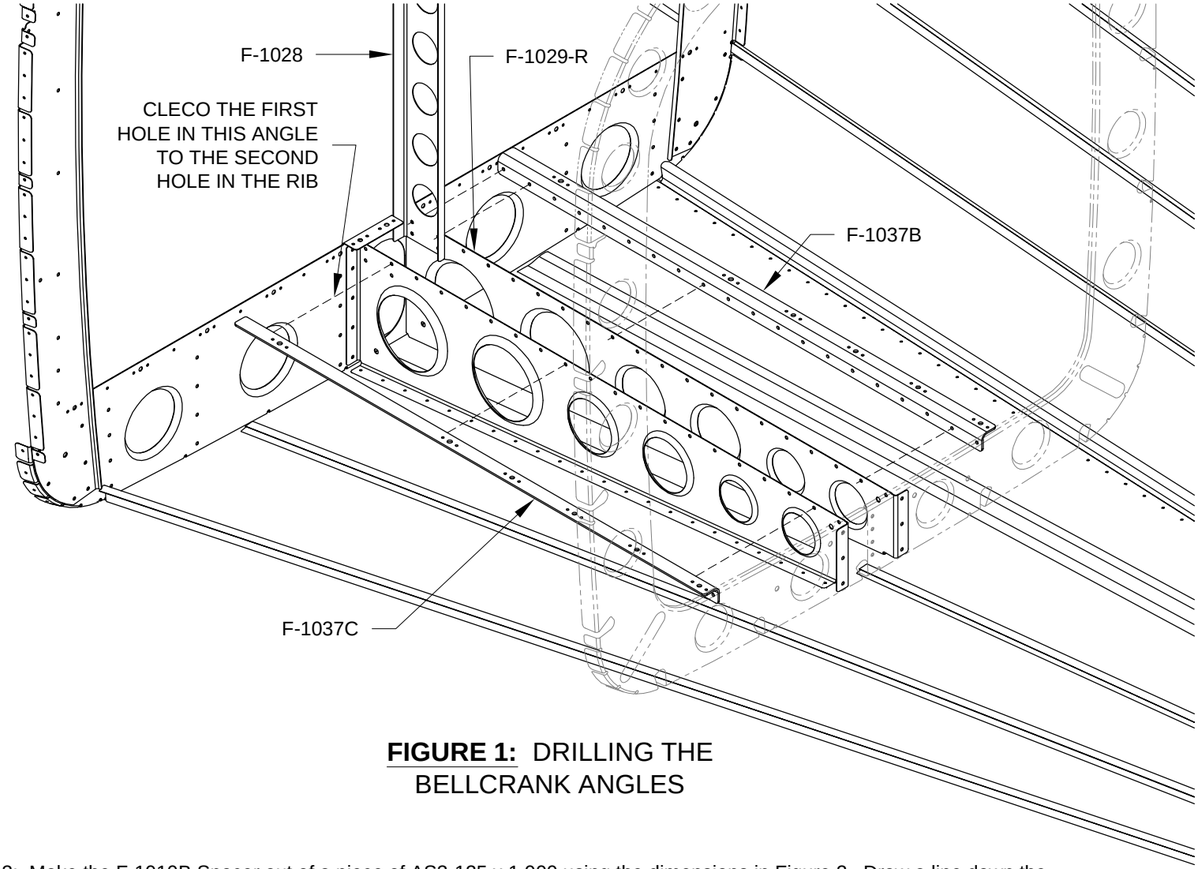


FIGURE 1: DRILLING THE BELLCRANK ANGLES

Step 3: Make the F-1010B Spacer out of a piece of AS3-125 x 1.000 using the dimensions in Figure 2. Draw a line down the middle of the part as shown in the Figure 2.

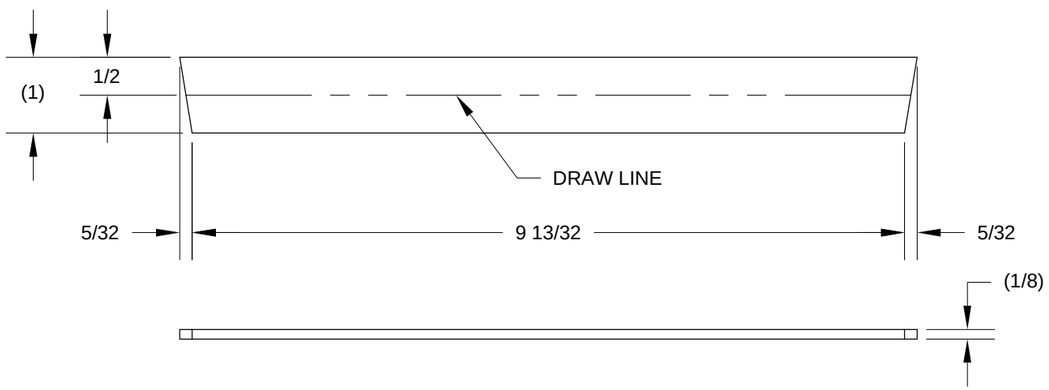


FIGURE 2: F-1010B SPACER

Step 4: Uncleco the F-1073-L & -R Side Skins enough to insert the F-1032-L & -R Longerons into the notches of the frames and bulkheads as shown in Figure 3. The bend in the longerons should be located at the break in the side skin edges, and the aft end of the longerons should be very close to touching the web of the F-1012A Bulkhead. If the longerons don't fit into the notches in the sides of the F-1007 & -1008 Frames, the notches can be filed slightly until the longerons do fit.

Step 5: Center the F-1010B Spacer on the F-1010A Horizontal Stabilizer Attachment Angle as shown in Figure 3. Temporarily secure the spacer to the angle with carpet tape (thin double sticky-back tape that can be picked up at almost any hardware store).

Step 6: Cleco the F-1014 Aft Deck and the F-1011B Stop/ Doubler to the F-1011 Bulkhead, then cleco the aft end of the deck to the F-1012A & B Bulkheads as shown in the figure.

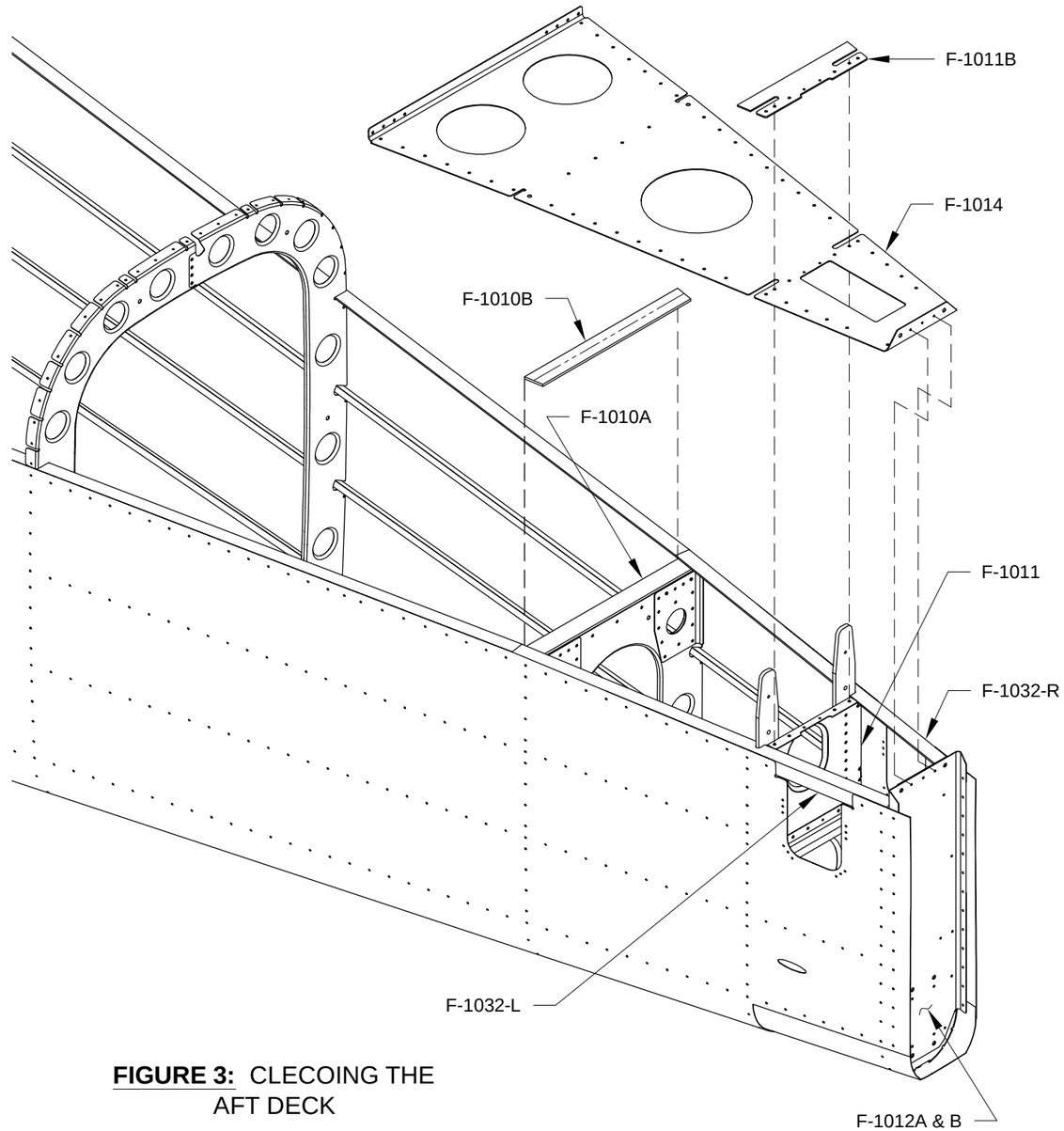
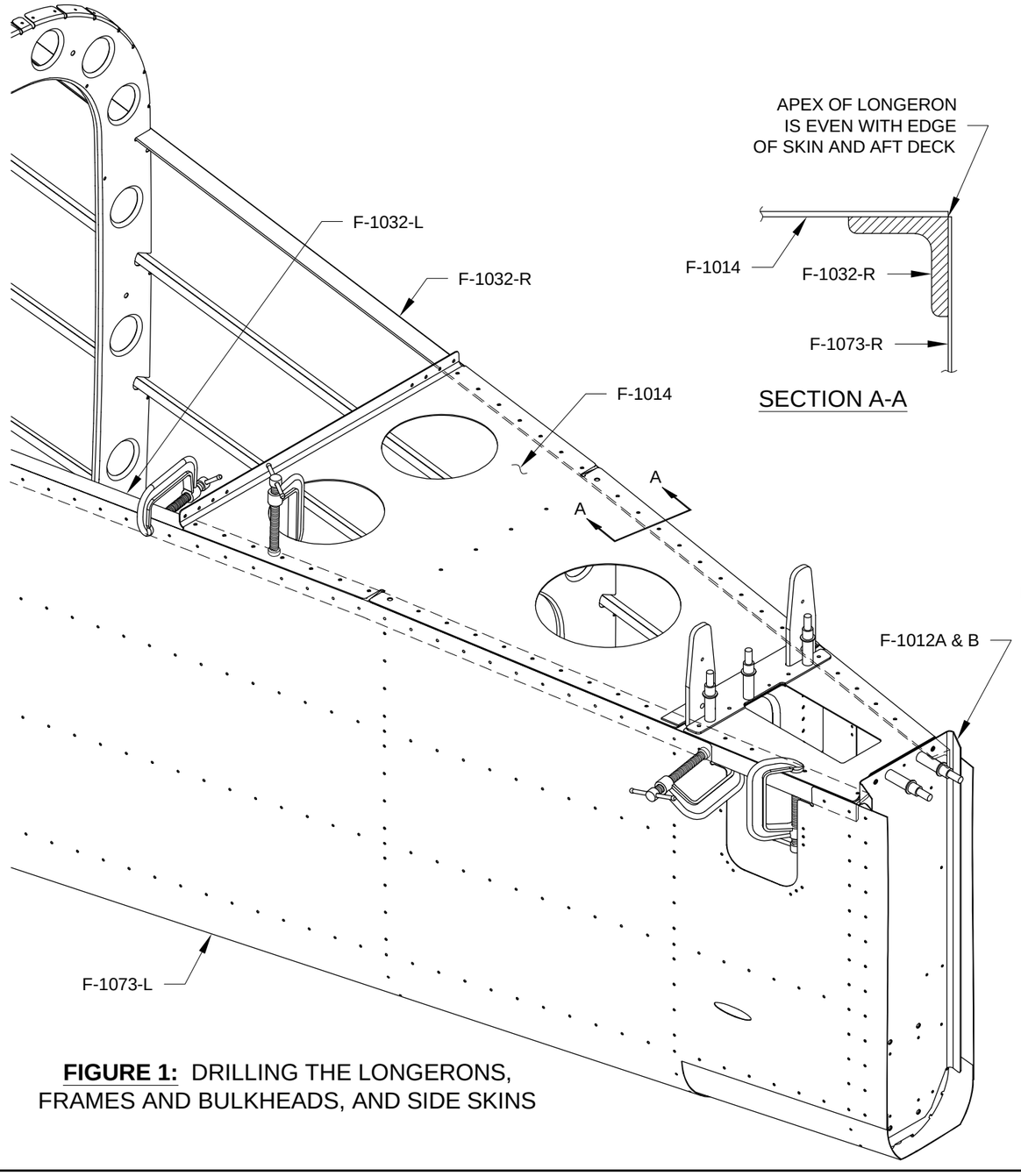


FIGURE 3: CLECOING THE AFT DECK

Step 1: Make sure the bend in the F-1032 Longerons is still located at the break in the F-1073 Side Skins, then clamp the longerons to the F-1014 Aft Deck and the side skins as shown in Figure 1 (only one side is shown clamped). For proper alignment, the apex (corner) of the longerons must be clamped even with the edges of the skins over their entire length. They must also be clamped even with the side edges of the F-1014 Aft Deck. See section A-A in Figure 1.

Step 2: Match-Drill all the common holes of the F-1073 Side Skins into the F-1032 Longerons using a 3/32" drill. Since the longerons are relatively thick, be sure to drill square to the skins (use the reflection of the drill in the skins as a guide). An angled hole will cause the rivets to "lean over" when installed, and will make it more difficult to hit the blind, punched hole in the frame and bulkhead tabs behind the longerons. DO NOT match-drill any holes of the F-1014 Aft Deck into the longerons at this time.



SECTION A-A

FIGURE 1: DRILLING THE LONGERONS, FRAMES AND BULKHEADS, AND SIDE SKINS

Step 3: Match-Drill #40 the holes of the F-1073-L & -R Side Skins into the flanges of the F-1012B Bulkhead, then final-drill #40 all the remaining skin to frame and skin to bulkhead holes on each side of the tailcone. Again, DO NOT drill any holes associated with the F-1006 Bulkhead.

Step 4: Final-Drill #40 all the 3/32" holes which are common to the F-1012A & B Bulkhead webs and the three holes at the top of the bulkhead webs which are common to the F-1014 Aft Deck.

Step 5: Final-drill all the skin to frame and bulkhead holes (except the F-1006 Bulkhead) on the bottom of the tailcone using a #40 drill.

Using the same drill, final-drill the common holes along the edges of the F-1073 Side Skins and the F-1078 and F-1079 Bottom Skins.

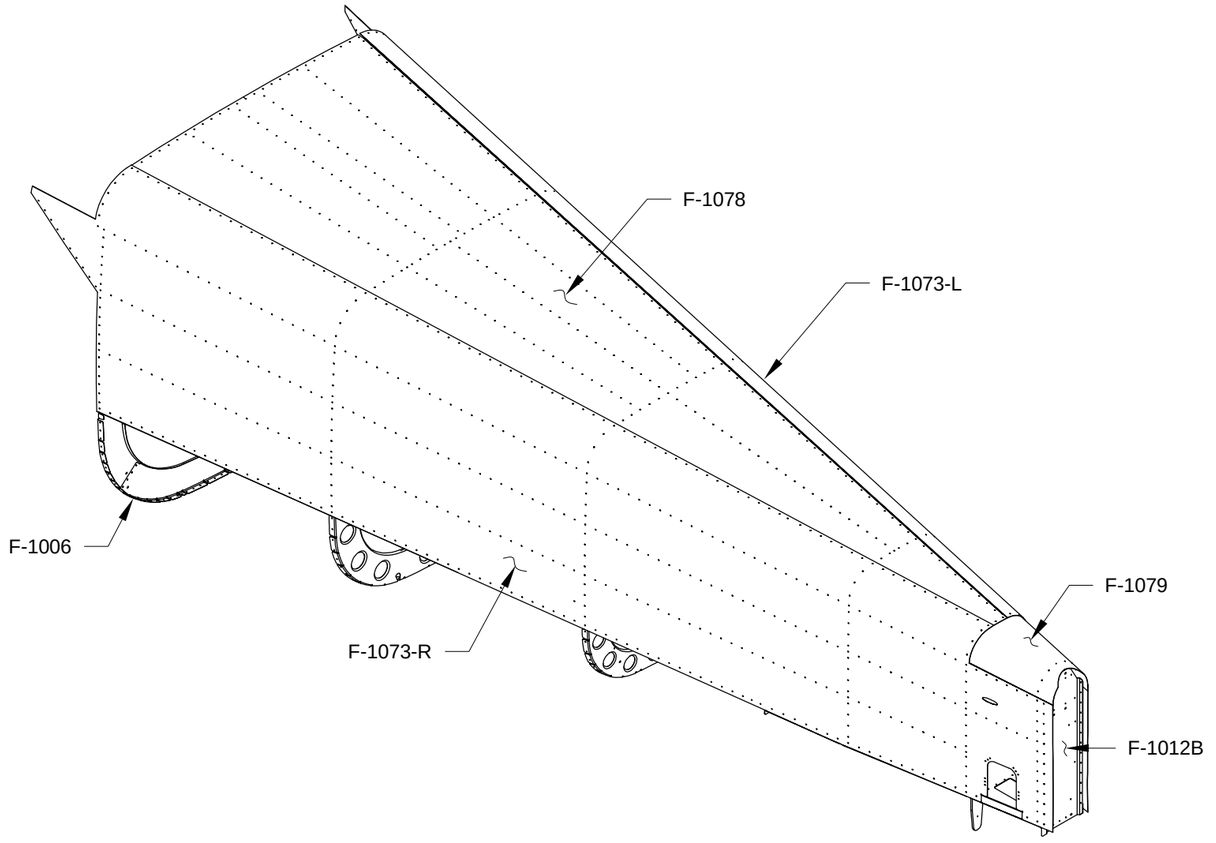


FIGURE 2: DRILLING THE BOTTOM SKINS, SIDE SKINS, AND FRAMES AND BULKHEADS

Step 1: Separate the narrow strip from the F-1074 Forward Top Skin, then finish the edges of both parts. Set the strip aside; It will be used when the tailcone is joined to the forward fuselage.

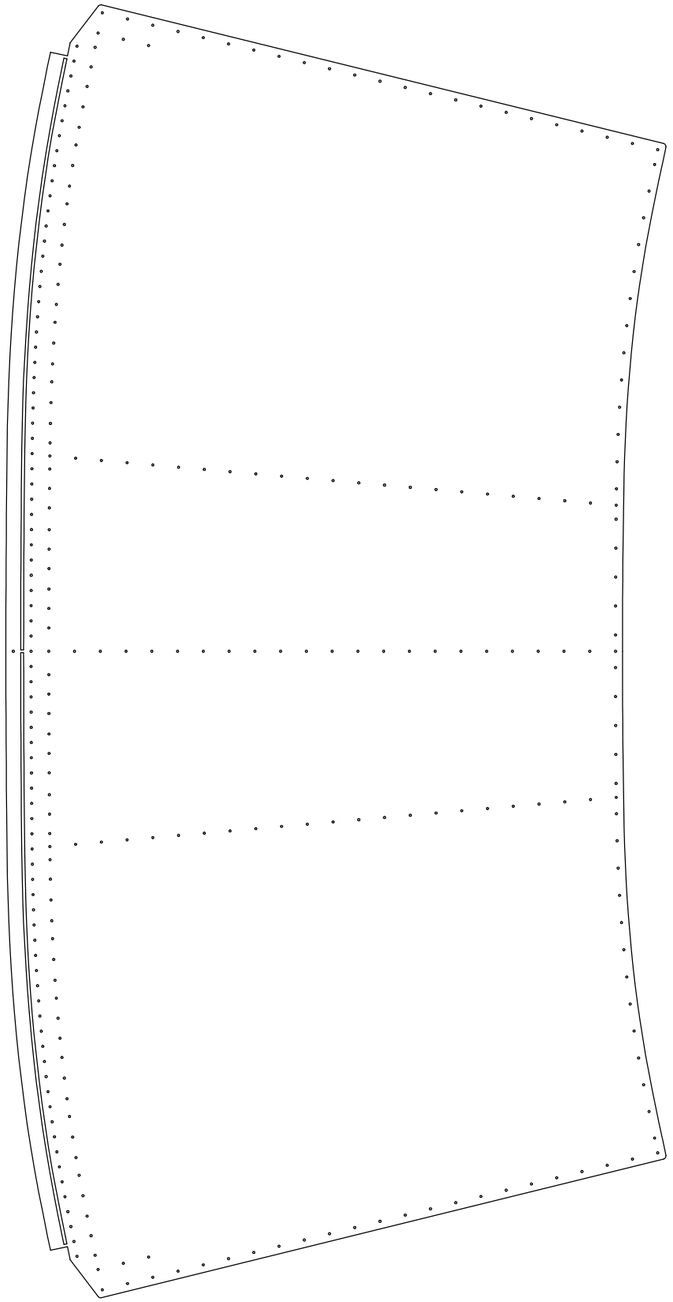


FIGURE 1: F-1074 FORWARD TOP SKIN

Step 2: Flip the tailcone over, then cleco the F-1009 Frame to the forward end of the F-1014 Aft Deck as shown in Figure 2. (For clarity, the F-1073-R Side Skin, the F-1047 Stiffeners that are attached to it, and the F-1032-R Longeron are not shown.)

Final-Drill the eight holes common to the F-1014 Aft Deck and the F-1009 Bulkhead using a #30 drill.

Step 3: The flange along the top of the F-1006 Bulkhead and the F-1007, -1008, and -1009 Frames is comprised of tabs with either one, two, or three punched holes. In preparation for clecoing on the F-1074 & -1075 Top Skins, heavily flute the tabs of the bulkhead and frames which have two punched holes.

Step 4: Insert the F-1047A and the two F-1047B Stiffeners into the notches of the frames and bulkheads as shown in Figure 2.

Step 5: Cleco the F-1075 Aft Top Skin to the F-1007, F-1008, and F-1009 Fuselage Frames and the F-1073 Side Skins. Start clecoing at the top center of the skin, then work toward the sides.

Step 6: Center the aft end marks and the rivet hole centerlines of the F-1047A and the two F-1047B Stiffeners in the indicated holes in the F-1075 Aft Top Skin, then match-drill all of the skin stiffener holes into the stiffeners using a #40 drill.

Step 7: Cleco the F-1074 Forward Top Skin to the F-1006 Bulkhead, the F-1007 Frame, the F-1075 Aft Top Skin, the F-1073 Side Skins, and the F-1032 Longerons.

Step 8: Match-Drill the holes of the F-1074 Forward Top Skin into the F-1047 Stiffeners using a #40 drill.

Step 9: Final-Drill #40 the rest of the holes associated with the F-1074 and F-1075 Top Skins (including the holes along the side skins and the emp fairing attach nutplate holes in the aft top skin, see figure). DO NOT, however, drill any holes associated with the F-1006 Bulkhead or the line of holes along the forward edge of the forward top skin.

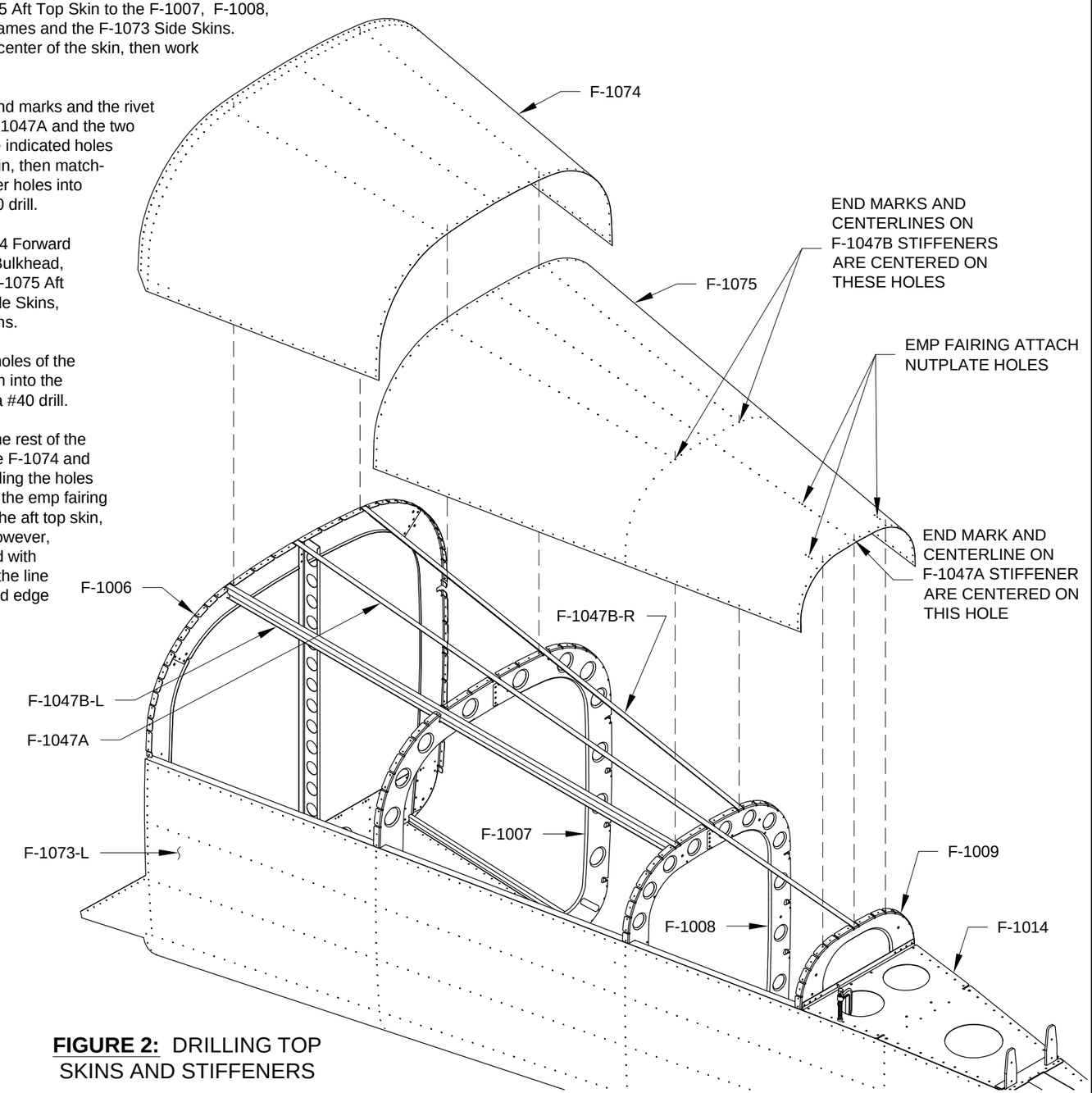


FIGURE 2: DRILLING TOP SKINS AND STIFFENERS

Step 1: Make the F-1011D Horizontal Stabilizer Attachment Bar Support Angle from a length of AA6-125X3/4X3/4 angle using the dimensions in Figure 1. The part is symmetrical about the center-line.

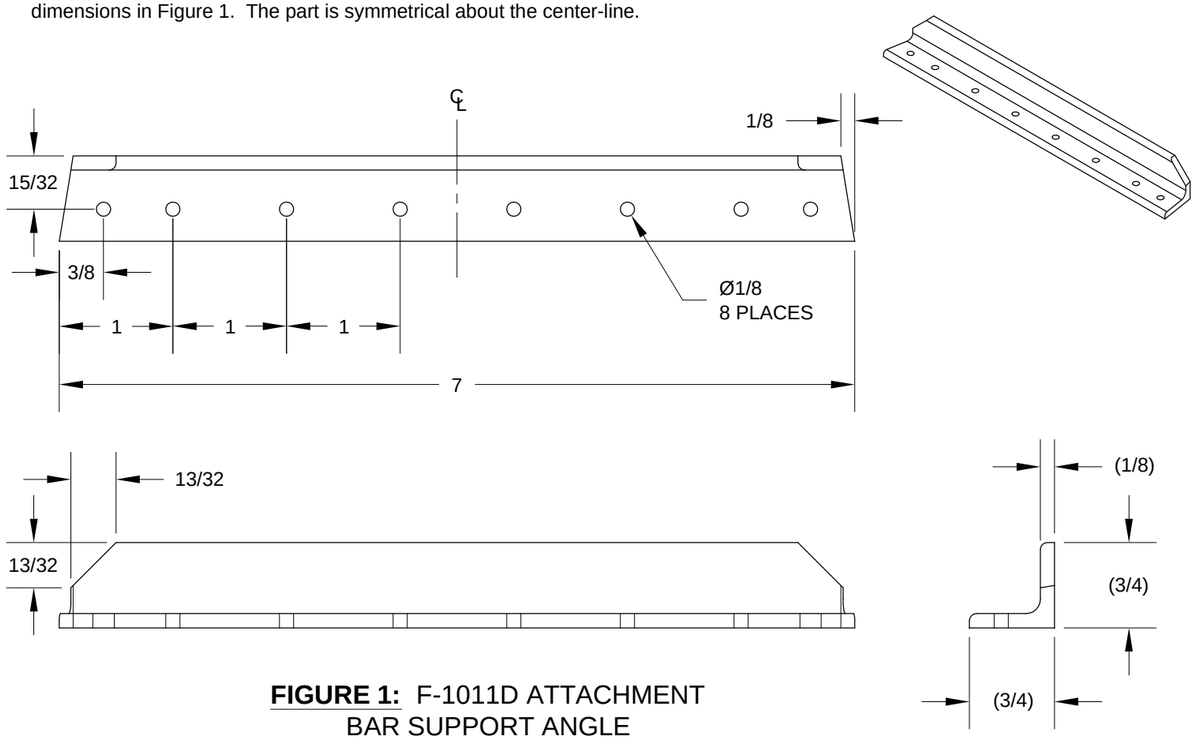


FIGURE 1: F-1011D ATTACHMENT BAR SUPPORT ANGLE

Step 2: Make the F-1012D Up Elevator Stop from a length of AA6-125X3/4X3/4 angle using the dimensions in Figure 2. The part is symmetrical about the center-line.

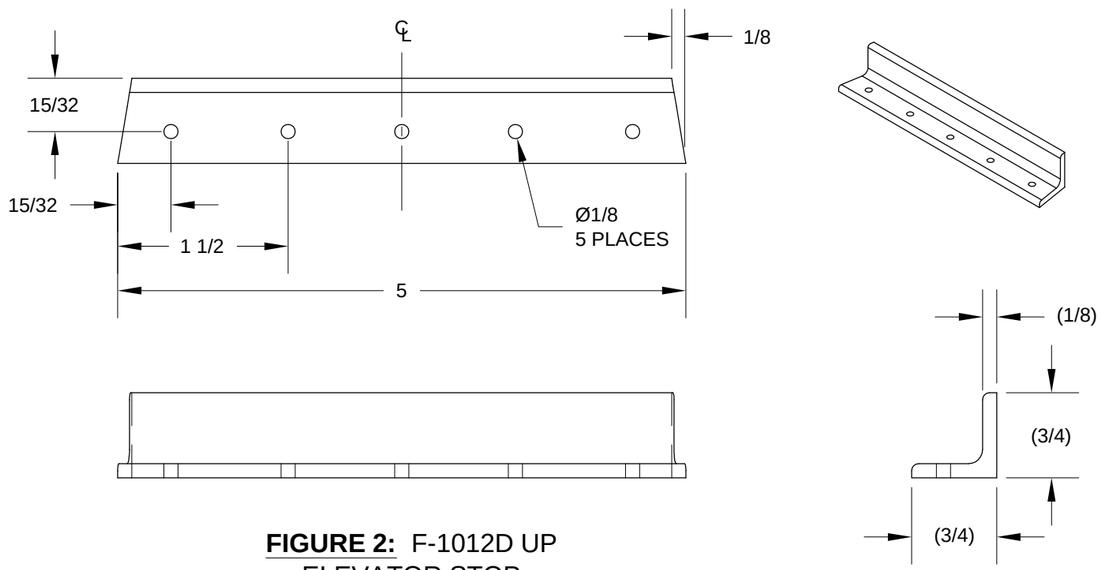


FIGURE 2: F-1012D UP ELEVATOR STOP

NOTE: With the top skins in position, the tailcone is torsionally rigid. It is now safe to drill the F-1014 Aft Deck to the underlying structure. The F-1075 Aft Top Skin will tend to pull the F-1032 Longerons outward, therefore, make sure the clamps have kept the apex of the longerons even with the edge of the aft deck. If not, loosen the clamps and reposition the longerons.

Step 3: Make sure that the line drawn on the F-1010B Spacer (see Page 10-10, Step 3) is centered in the holes in the F-1014 Aft Deck, then match-drill the four holes of the aft deck into the spacer and the F-1010A Horizontal Stabilizer Attachment Angle using a #30 drill. Be sure to cleco.

Step 4: Match-Drill all the side holes of the F-1014 Aft Deck (including the outboard holes in the F-1011B Stop/ Doubler) into the F-1032 Longerons with a #30 drill. Drill square to the aft deck.

Final-Drill the two holes (see figure) common to the aft deck, longerons, and F-1010A Horizontal Stabilizer Attachment Angle using a #12 drill.

Step 5: Final-drill the four 1/8" holes of the F-1011B Stop/ Doubler (common to the F-1014 Aft Deck and F-1011 Bulkhead) with a #30 drill, and the middle two 3/32" holes with a #40 drill.

Step 6: Center the F-1011D Attachment Bar Support Angle on the F-1011B Stop/ Doubler as shown in Figure 3, then clamp it to the two F-1011C Attachment Bars.

Match-Drill the holes of the support angle into F-1014 Aft Deck, the stop/ doubler, and the F-1032 Longerons with a #30 drill. Final-Drill the end holes into the longerons using a #12 drill.

Step 7: Center the F-1012D Up Elevator Stop on the F-1014 Aft Deck as shown in Figure 3. Position the horizontal flange of the elevator stop even with the edge of the cutout in the aft deck, then clamp it in place.

Match-Drill the holes of the elevator stop into the aft deck and F-1032 Longerons with a #30 drill. Final-Drill the end holes into the longerons with a #12 drill.

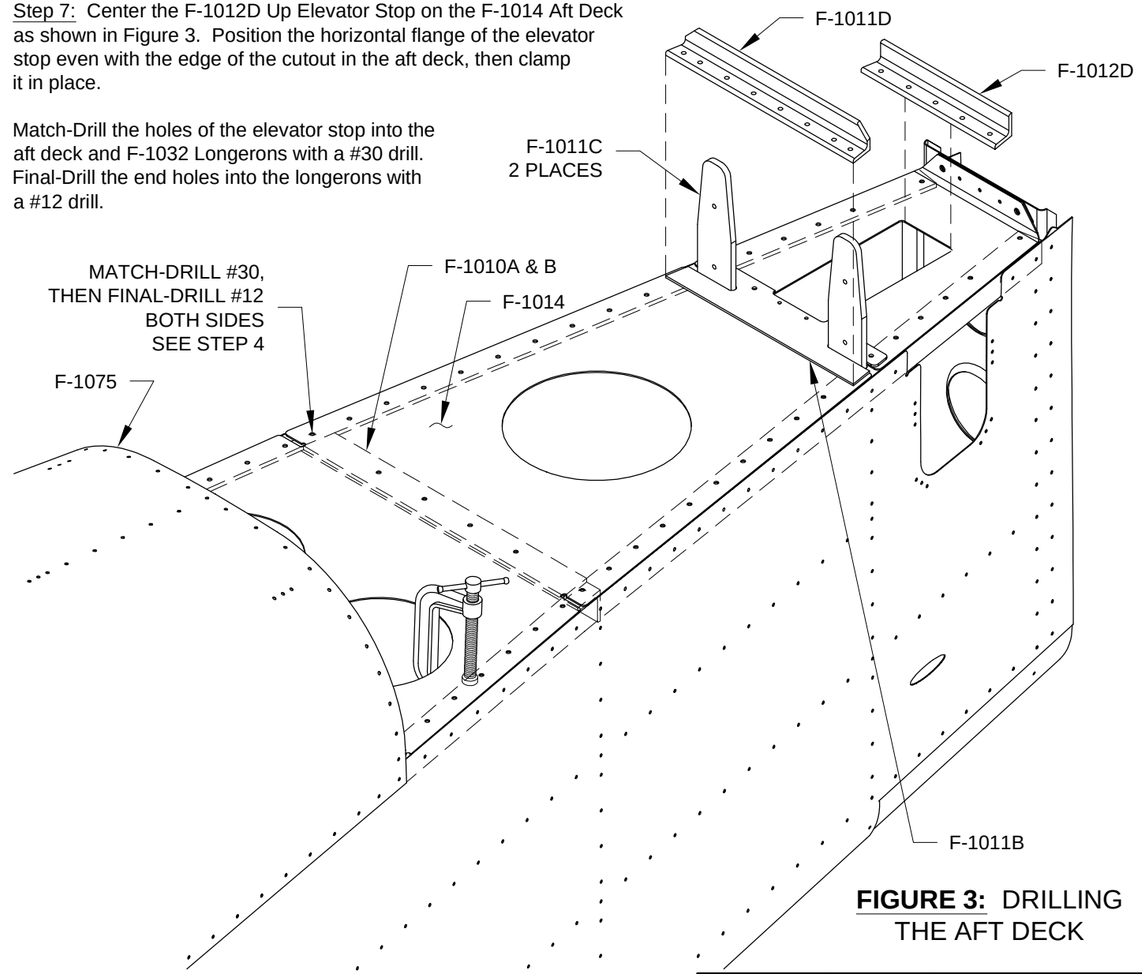


FIGURE 3: DRILLING THE AFT DECK

Step 1: Remove the F-1074 and F-1075 Top skins and the F-1047 Stiffeners which are attached to them.

Step 2: Position one of the two F-636 Shoulder Harness Anchors on the F-1032-L Longeron (just forward of the F-1008 Frame) using the dimensions in the blowup of Figure 1. Clamp the anchor into position, then, using a #12 drill, match-drill the three holes of the anchor into the longerons.

Repeat this step for the second anchor on the F-1032-R Longeron.

Step 3: Drill the hole (indicated in the blowup) for the static source in both the F-1073-L & -R Side Skins using a #30 drill. If you didn't choose the Static Kit option, the two holes can be dimpled and filled with flush rivets.

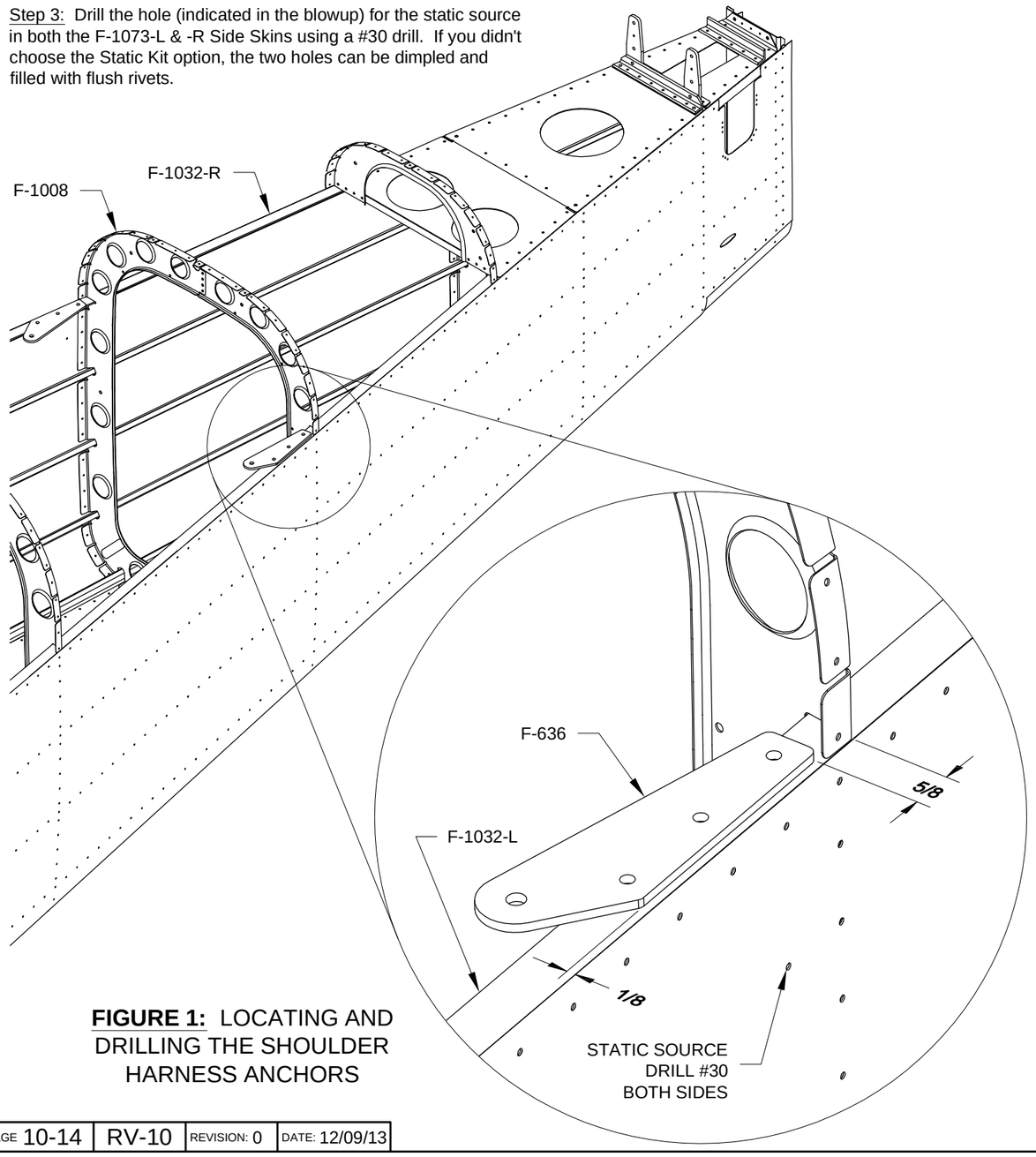


FIGURE 1: LOCATING AND DRILLING THE SHOULDER HARNESS ANCHORS

Step 4: Final-Drill the four attachment holes, shown in Figure 2, in the two F-824B Cover Plates and the corresponding holes in the F-1073 Side Skins using a #28 drill.

Step 5: Final-Drill the eight nutplate attachment rivet holes (see figure) in both F-1073 Side Skins using a #40 drill.

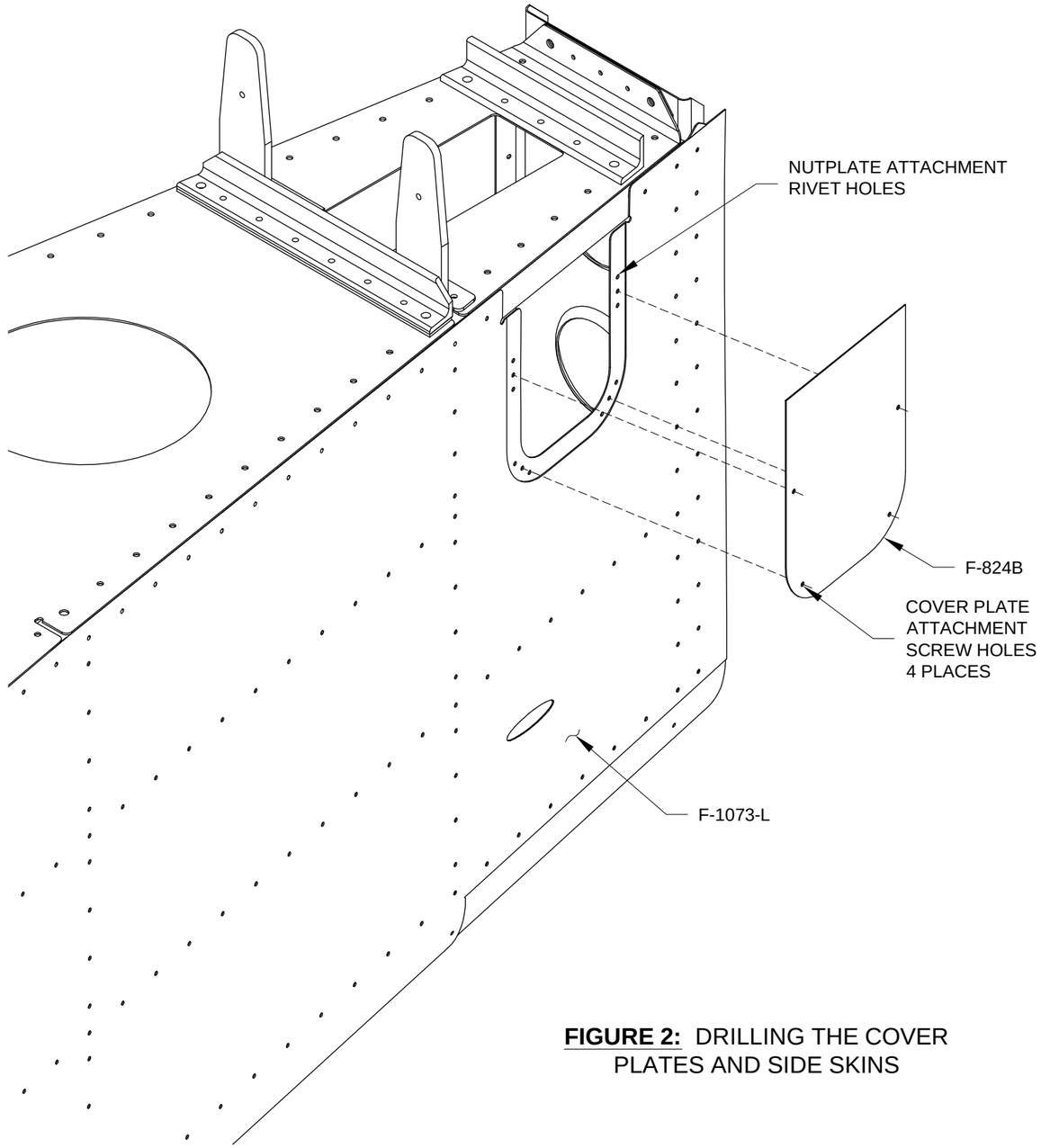


FIGURE 2: DRILLING THE COVER PLATES AND SIDE SKINS

Step 1: The triangular portion on the forward end of the F-1073-R Side Skin needs to be trimmed in Step 3. At this point, draw a trim line on the side skin as shown in Figure 2. Make sure the trim line clears the F-1006B Bulkhead flange.

Step 2: Completely disassemble the remainder of the tailcone while marking parts as necessary.

Step 3: Trim the triangular portion from the F-1073-R Side Skin which was marked in Step 1. TRIM ONLY THE RIGHT SKIN!

Step 4: Deburr the holes and any unfinished edges of all the tailcone parts.

Step 5: Dimple the holes which are used to attach the F-1006D Bulkhead to the F-1006A (not shown in Figure 1) and F-1006C Bulkheads. Dimple the holes which are used to attach the F-1028 Baggage Bulkhead Channel to the F-1006D Bulkhead. Dimple for 1/8" rivets, flush on the forward side (see Figure 2). The rivets are flush to accommodate the F-1006E & F Baggage Bulkhead Corrugations installed later.

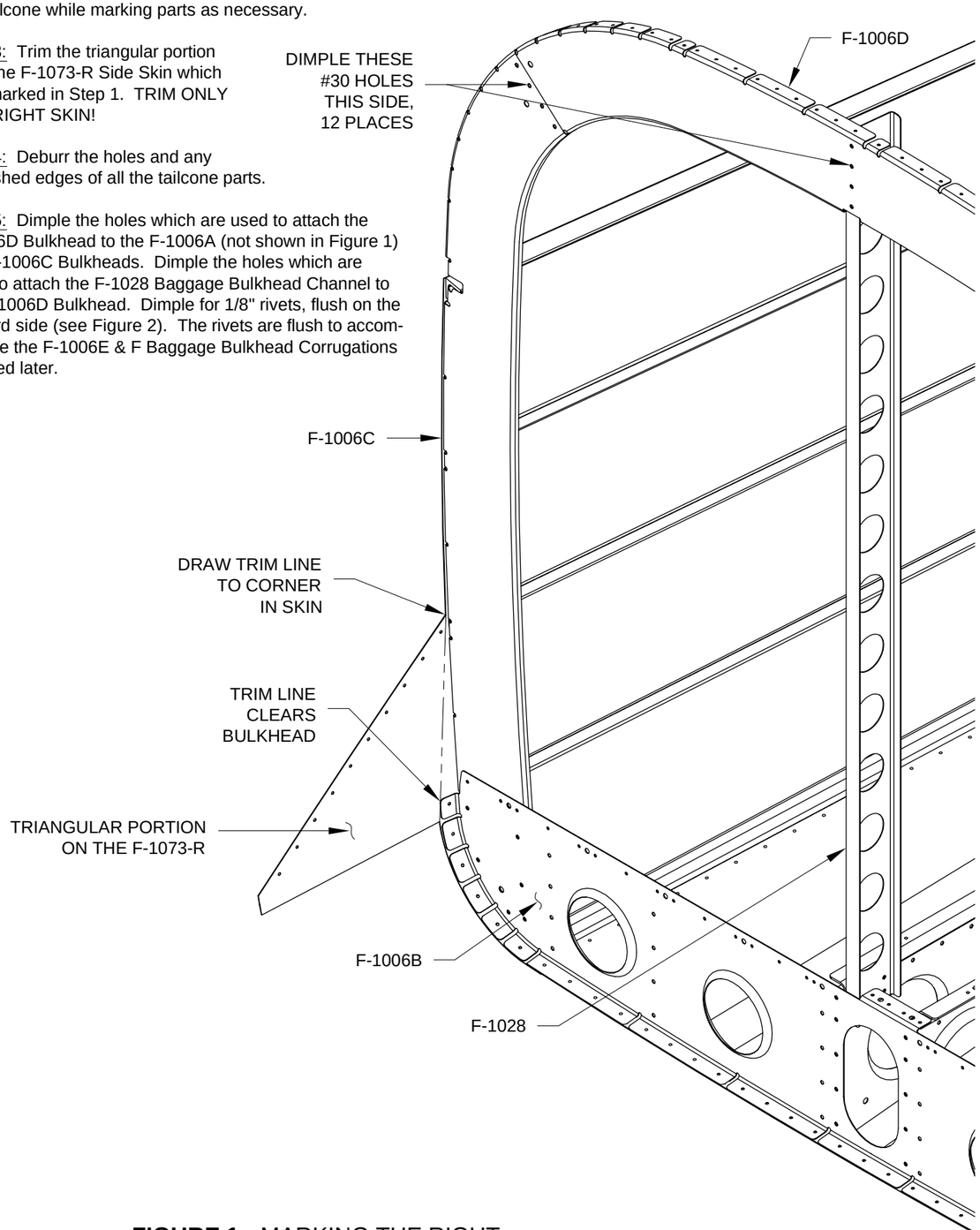


FIGURE 1: MARKING THE RIGHT SIDE SKIN FOR TRIMMING

Step 6: Final-Drill the hole indicated in Figure 2 to 11/16 using a Unibit step drill. This hole provides clearance for the tie down eyebolt.

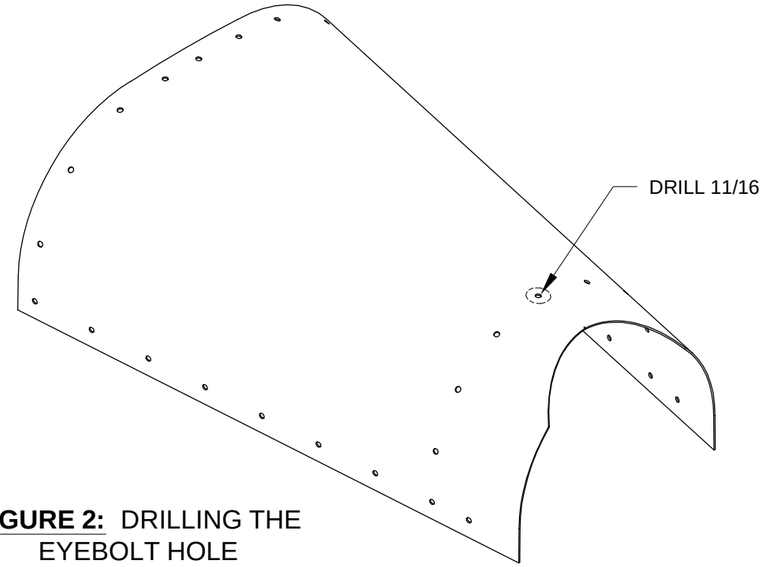


FIGURE 2: DRILLING THE EYEBOLT HOLE

Step 7: Dimple all the #40 holes in the F-1012B Bulkhead for 3/32" flush rivets and the four #30 holes (common to the F-1012E Tie Down Bar) for 1/8" flush rivets. The rivets are flush on the aft side of the bulkhead as shown in Figure 3. DO NOT dimple the six 3/16" holes.

Dimple the F-1012A Bulkhead for the dimples of the F-1012B Bulkhead.

Dimple the three holes in the flange of the F-1014 Aft Deck for the dimples of the F-1012A Bulkhead.

Step 8: Machine countersink the four #40 holes in the F-1056 Rudder Stop Brace and the four #30 holes in the F-1012E Tie Down Bar deep enough for the dimples in the F-1012A Bulkhead.

Step 9: Dimple the six #40 holes in the flange of the F-1055 Rudder Stop Skin Stiffeners (see Page 10-8, Figure 3).

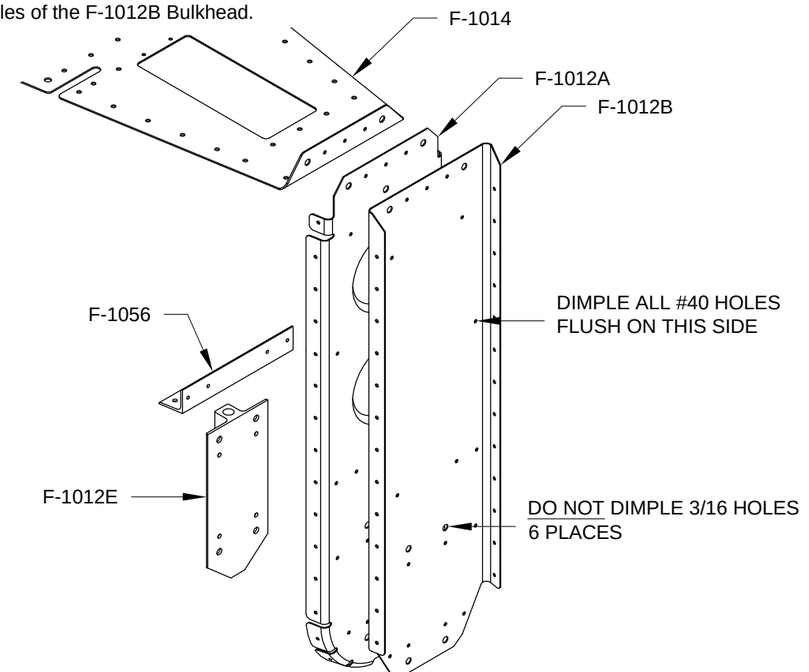


FIGURE 3: DIMPLING THE F-1012 BULKHEAD AND RELATED PARTS

NOTE: Steps 1-4 describe dimpling and countersinking the holes of the longerons, skins, frames and bulkheads, and stiffeners. Tape over the holes indicated in these steps which do not require dimpling or countersinking.

Step 1: Machine countersink all the skin holes in the F-1032 Longerons except for the holes in the aft end of the longerons which are used to secure the F-1094 Empennage Gap Cover. These holes are indicated on Page 10-25, Figure 1.

Step 2: Dimple the holes in the two F-824B Cover Plates (see Page 10-14, Figure 2) for #6 screws. Dimple the corresponding holes in the F-1073 Side Skins for the dimples in the cover plates.

Step 3: Dimple all the #40 holes in the skins except for the following: the holes used to secure the F-1094A & B Empennage Gap Covers and Fairing (see Page 10-25, Figure 1); the holes associated with the F-1006 Bulkhead; the holes in the triangular portion of the F-1073-L Side Skin; the 1/8" holes in both side skins which are used for the static source (see Page 10-14, Figure 1); and the center (screw) hole of the three sets of empennage fairing attachment nutplate holes in the F-1075 Aft Top Skin (see Page 10-12, Figure 2).

Step 4: Dimple the #40 holes in the flanges of all the frames and bulkheads except for the following: any of the holes in the flanges of the F-1006 Bulkhead; the single hole in the tabs of the frames or bulkheads which lie behind the F-1032 Longerons (the longerons are machine countersunk); the top hole in both flanges of the F-1012B Bulkhead (used to attach the empennage fairing); and the holes in the flange of the F-1011 Bulkhead which supports the F-1014 Aft Deck.

Step 5: Dimple the #40 holes in all of the F-1047 Stiffeners. However, do not dimple the center (screw) hole of the empennage fairing attachment nutplate holes in the F-1047A Stiffener (see Page 10-12, Figure 2).

Step 6: Separate the F-1036 Battery Channel (shown unbent for clarity) into the parts indicated in Figure 1. The blowup in the figure shows the material which needs to be removed to separate the parts. Be careful not to remove the small tab on both sides of the F-1036B Channels.

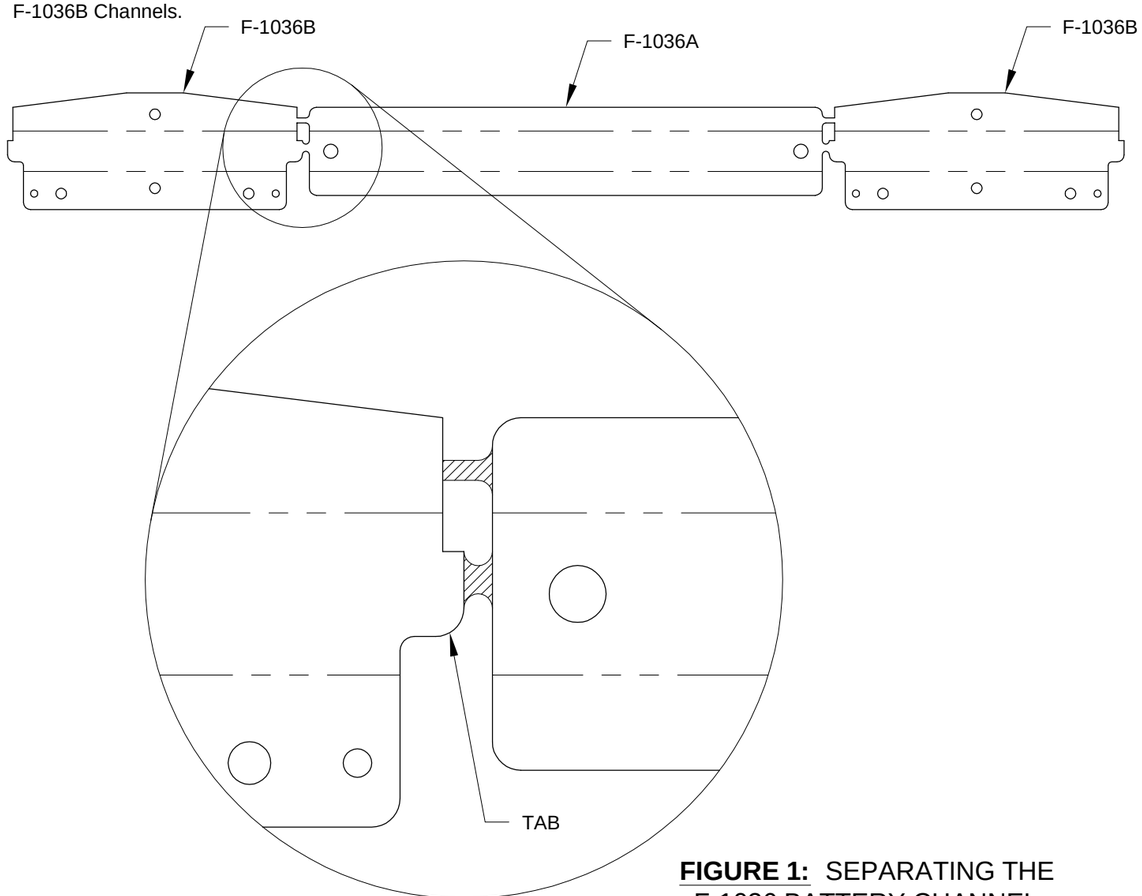


FIGURE 1: SEPARATING THE F-1036 BATTERY CHANNEL

Step 7: Final-Drill the holes of both F-1036B Battery Channels according to Figure 2, then deburr the holes and edges.

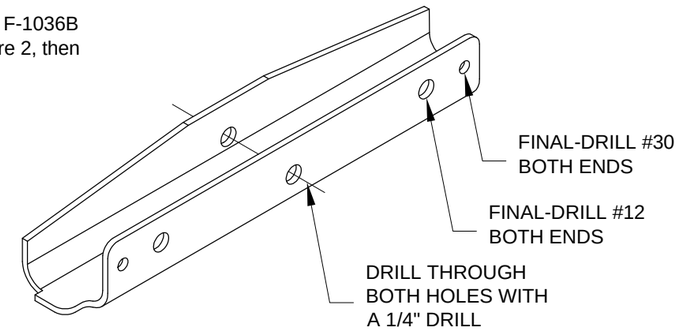


FIGURE 2: FINAL-DRILLING THE F-1036B BATTERY CHANNELS

Step 8: Final-Drill the 3/32, 1/8, and 3/16 holes of the F-1035 Battery/ Bellcrank Mount with a #40, #30, and #12 drill respectively as shown in Figure 3. The #19 holes along the sides and at the front of the mount and the four 1/4 holes do not need drilling. Machine countersink the #40 holes flush on the sides indicated.

Deburr the holes and finish all edges.

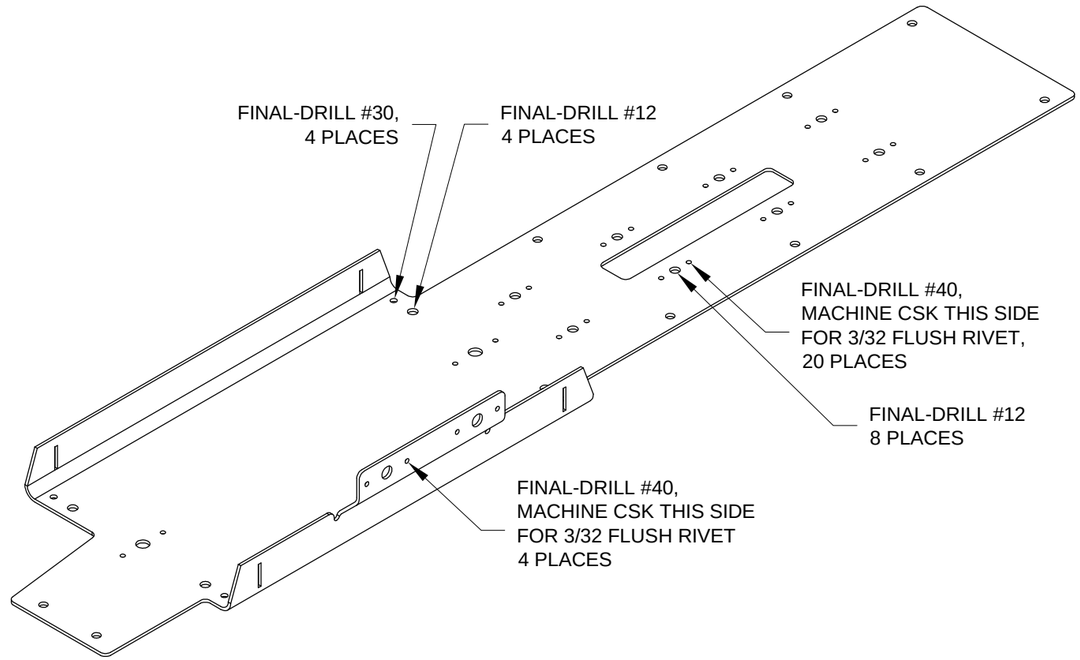


FIGURE 3: FINAL-DRILLING THE F-1035 BATTERY/ BELLCRANK MOUNT

Step 1: Separate the F-635 Bellcrank into individual parts by removing the shaded areas shown in Figure 1.

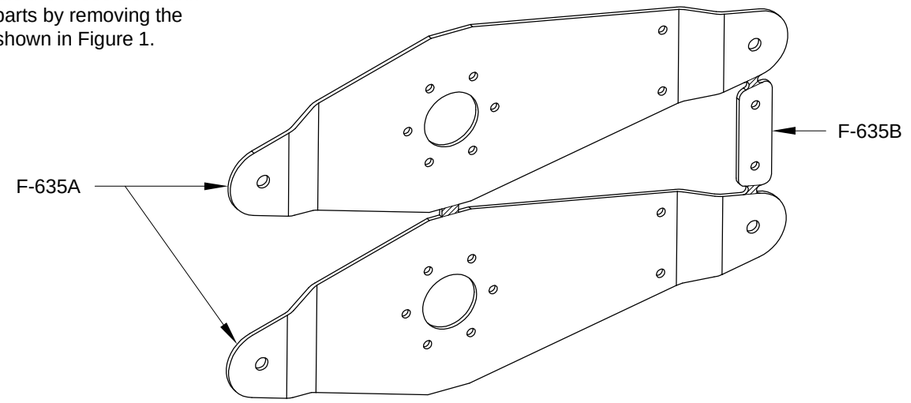


FIGURE 1: SEPARATING THE F-635 BELLCRANK

Step 2: Cleco together the F-635 Elevator Bellcrank Assembly from the parts shown in Figure 2.

Final-Drill all of the 1/8" holes using a #30 drill. Final-Drill the 3/16" holes at both ends of the bellcrank assembly with a #12 drill.

Disassemble, then deburr the holes and edges.

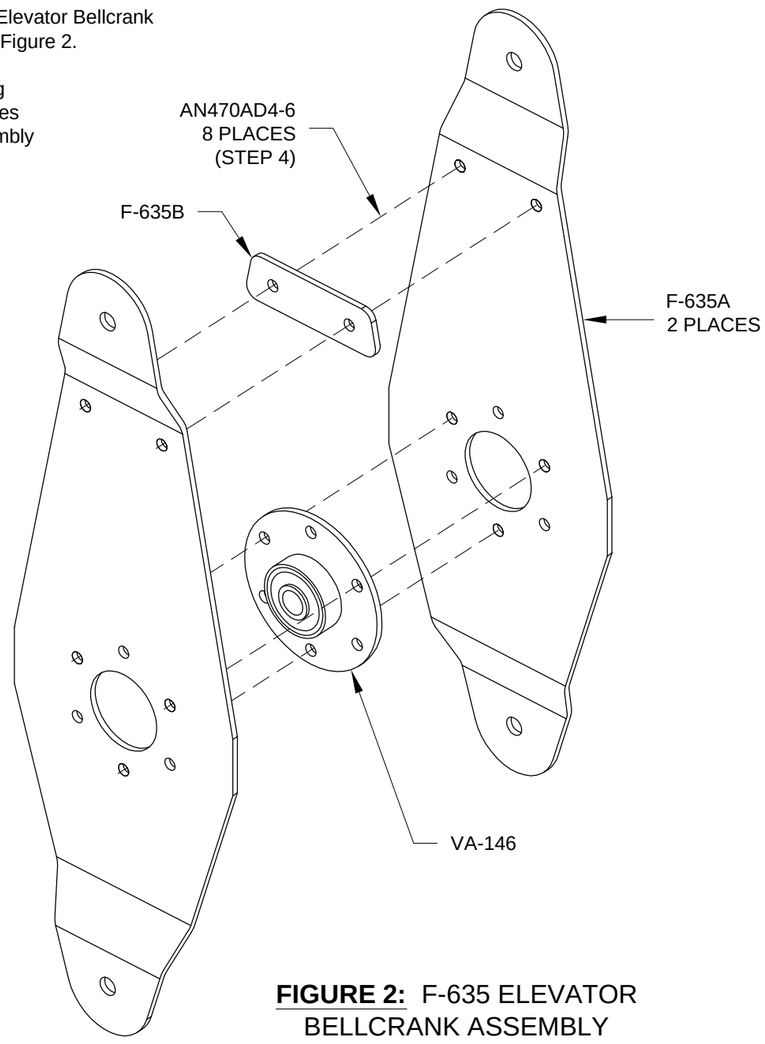


FIGURE 2: F-635 ELEVATOR BELLCRANK ASSEMBLY

Step 3: Prime the tailcone parts, if desired, in preparation for final assembly.

Step 4: Rivet together the F-635 Elevator Bellcrank Assembly using the rivets called out in Figure 2.

Step 5: Rivet all the nutplates shown in Figure 3 using AN426AD3-4 flush rivets.

Step 6: Snap the tabs of the F-1036B Battery Channels into the notches of the F-1035 Battery/ Bellcrank Mount, then rivet the channels in place using the rivets called out in Figure 3.

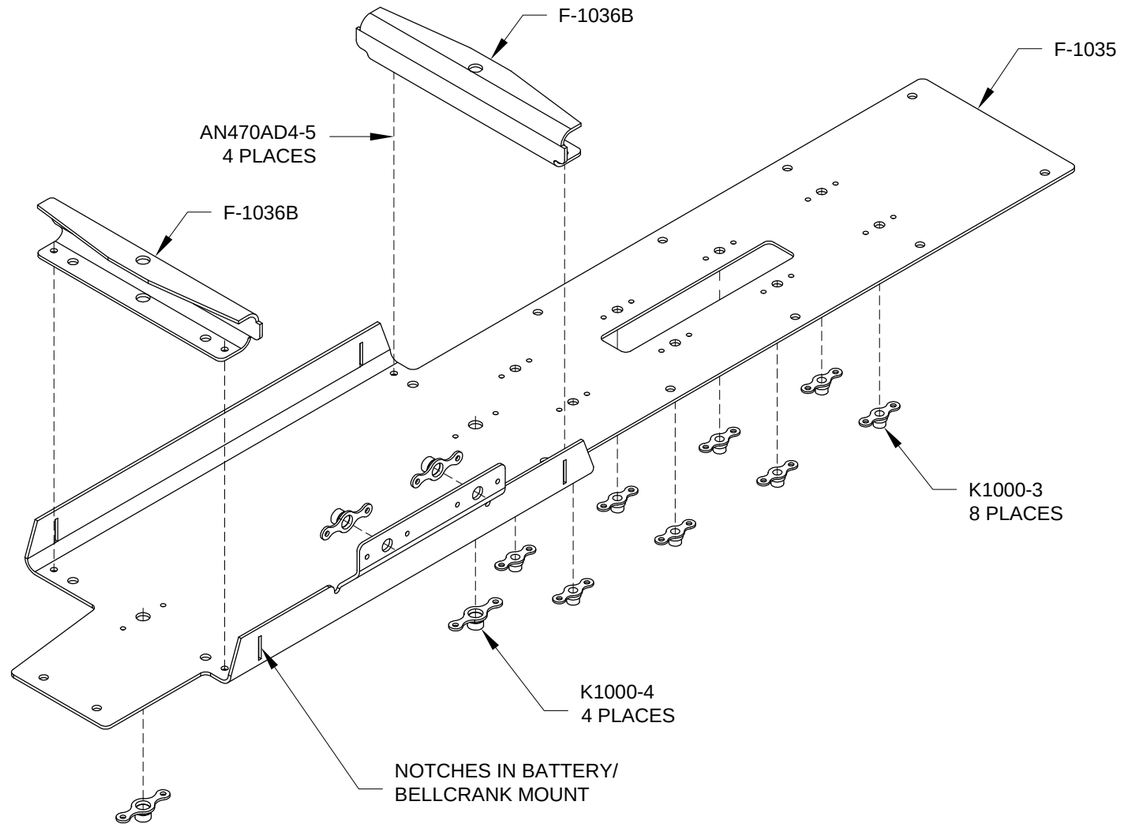


FIGURE 3: RIVETING THE BATTERY/ BELLCRANK MOUNT

Step 1: Rivet the F-1012A & B Bulkheads, the F-1056 Rudder Stop Brace, and the F-1012E Tie Down Bar using the rivets called out in Figure 1.

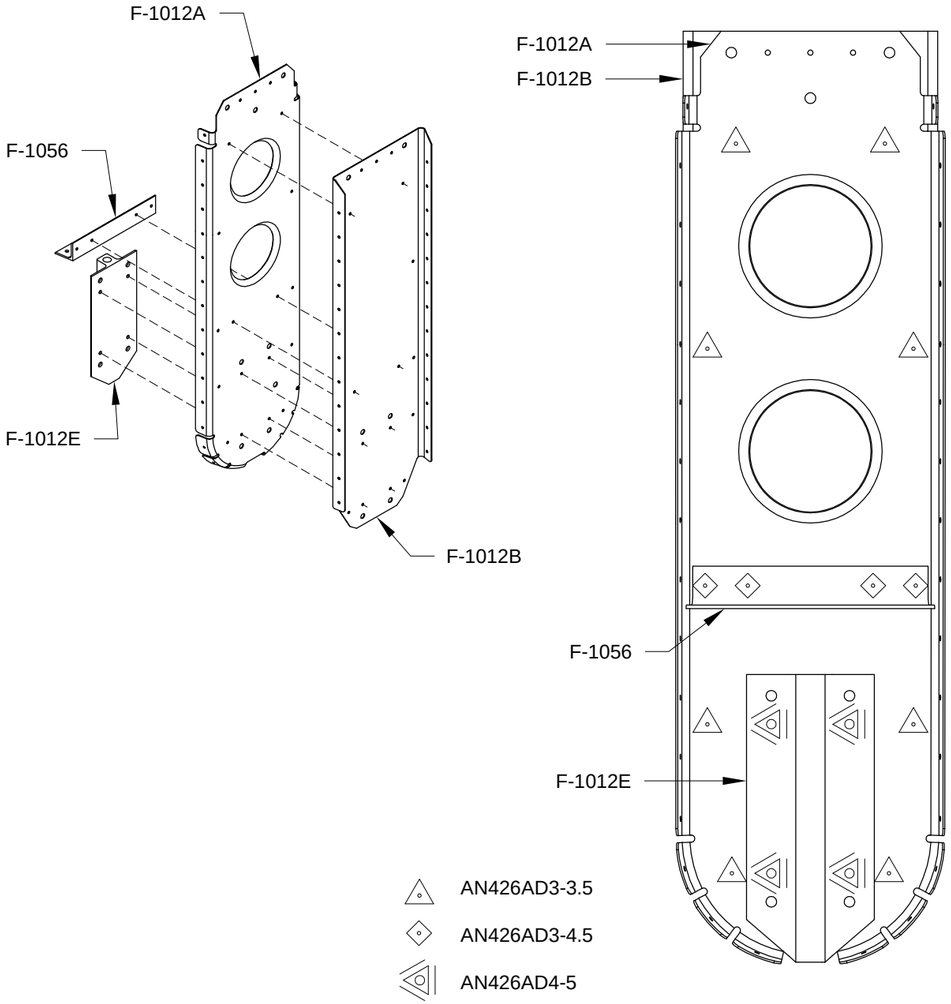


FIGURE 1: RIVETING THE F-1012 BULKHEAD AND PARTS

Step 2: Rivet the F-1011 Bulkhead, the F-1011A Bulkhead Stiffener, the F-1011C Horizontal Stabilizer Attachment Bars, and the F-1011E Rudder Cable Angle using the rivets called out in Figure 2.

Step 3: Rivet the nutplates shown on Page 10-2, Figure 4 to the F-1011E Rudder Cable Angle using AN426AD3-4 rivets.

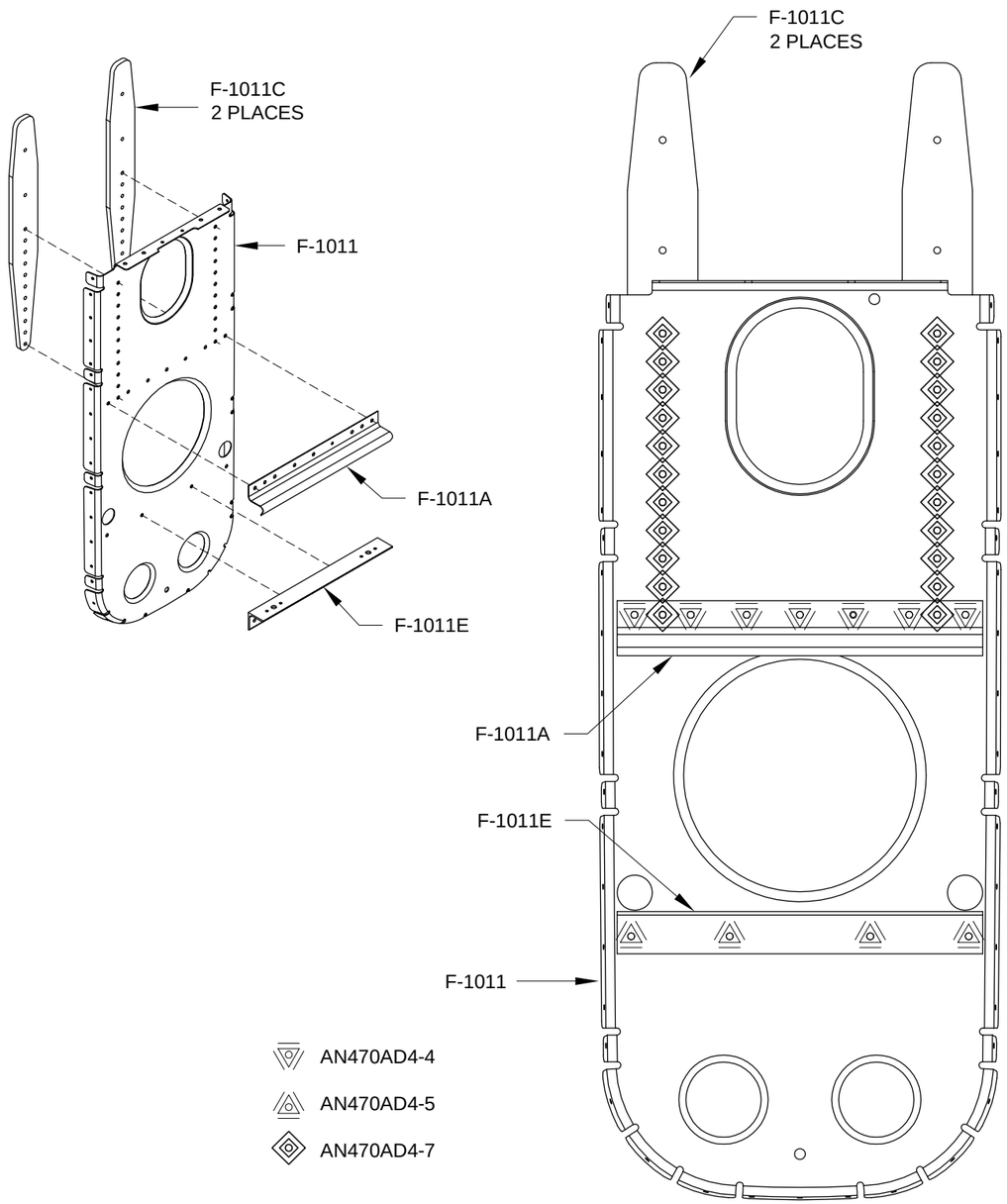


FIGURE 2: RIVETING THE F-1011 BULKHEAD AND PARTS

Step 1: Rivet the nutplates (used to attach the F-824B Cover Plates) called out in Figure 1 to both F-1073 Side Skins.

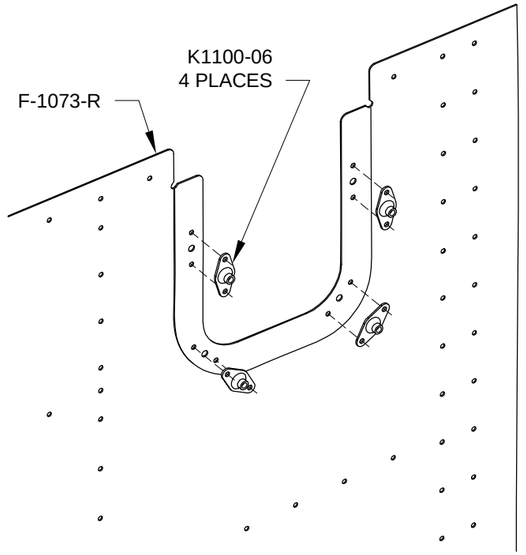


FIGURE 1: RIVETING THE COVER PLATE NUTPLATES

Step 2: Rivet the F-1010A Horizontal Stabilizer Attachment Angle and the F-1010C-L & -R Bulkhead Doublers to the F-1010 Bulkhead using the rivets called out in Figure 2.

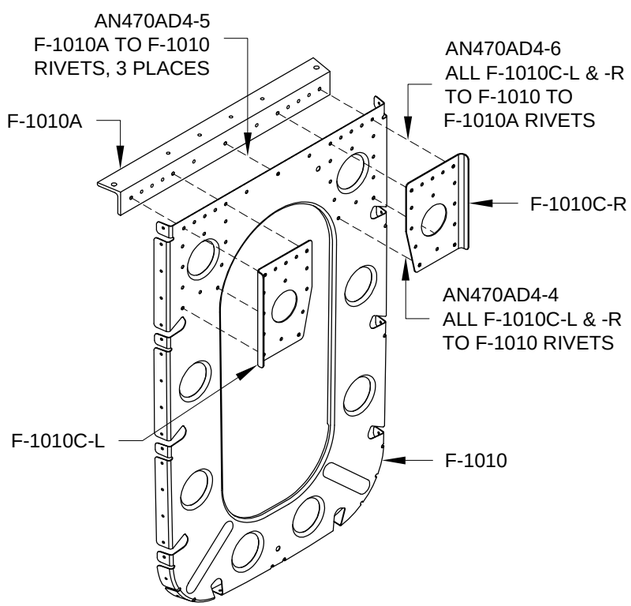


FIGURE 2: RIVETING THE F-1010 BULKHEAD

Step 3: Rivet together the F-1008-L & -R Frames and the F-1085 Rudder Cable Bracket using the rivets called out in Figure 3.

Step 4: Install the two snap bushings, called out in Figure 3, into the indicated holes of the F-1085 Rudder Cable Bracket.

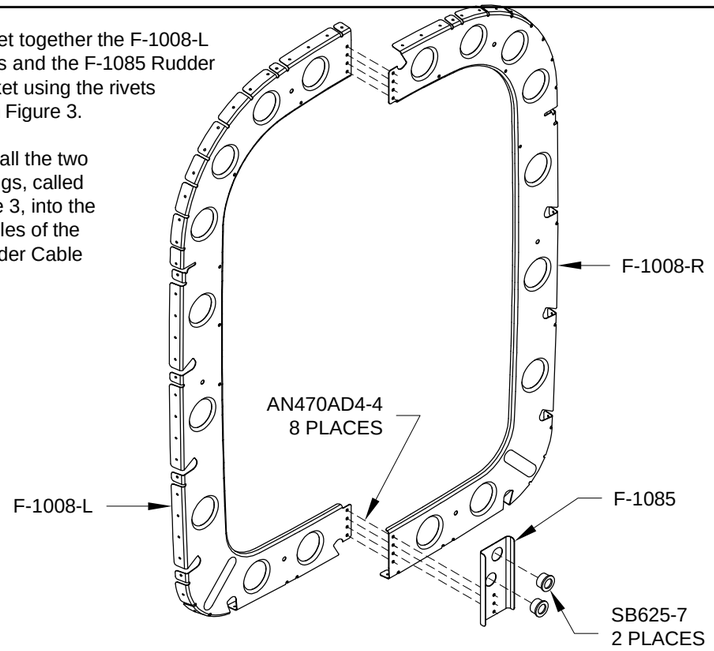


FIGURE 3: RIVETING THE F-1008 FRAMES

Step 5: Rivet the F-1007 Frames together using the rivets called out in Figure 4.

Step 6: Install the snap bushings, called out in Figure 4, into the indicated holes in the F-1007 Frames.

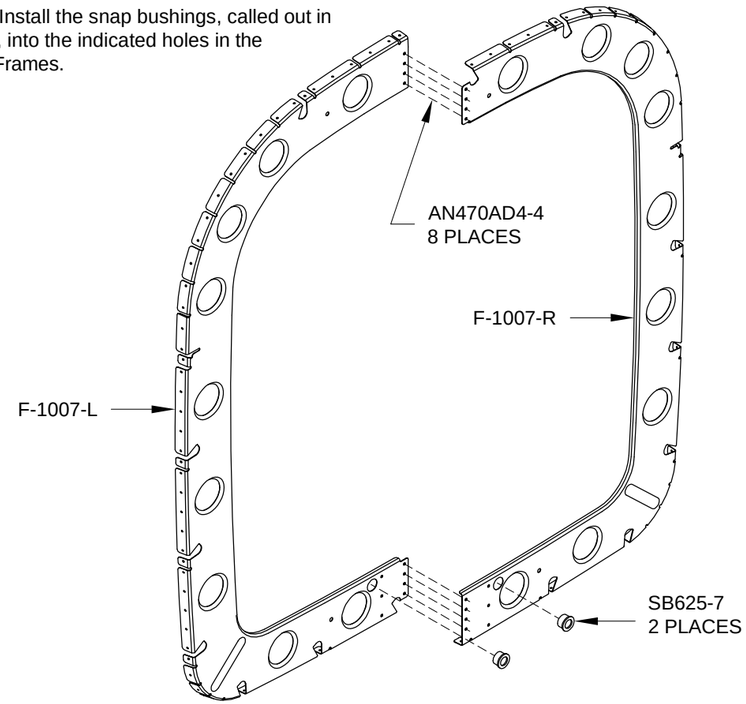


FIGURE 4: RIVETING THE F-1007 FRAMES

Step 7: Rivet the F-1006D Bulkhead to the F-1006A & C Bulkheads using the rivets called out in Figure 5.

Cleco the F-1006B Bulkhead to the F-1006A & C Bulkheads. The F-1006B Bulkhead is riveted when the tailcone is attached to the forward fuselage.

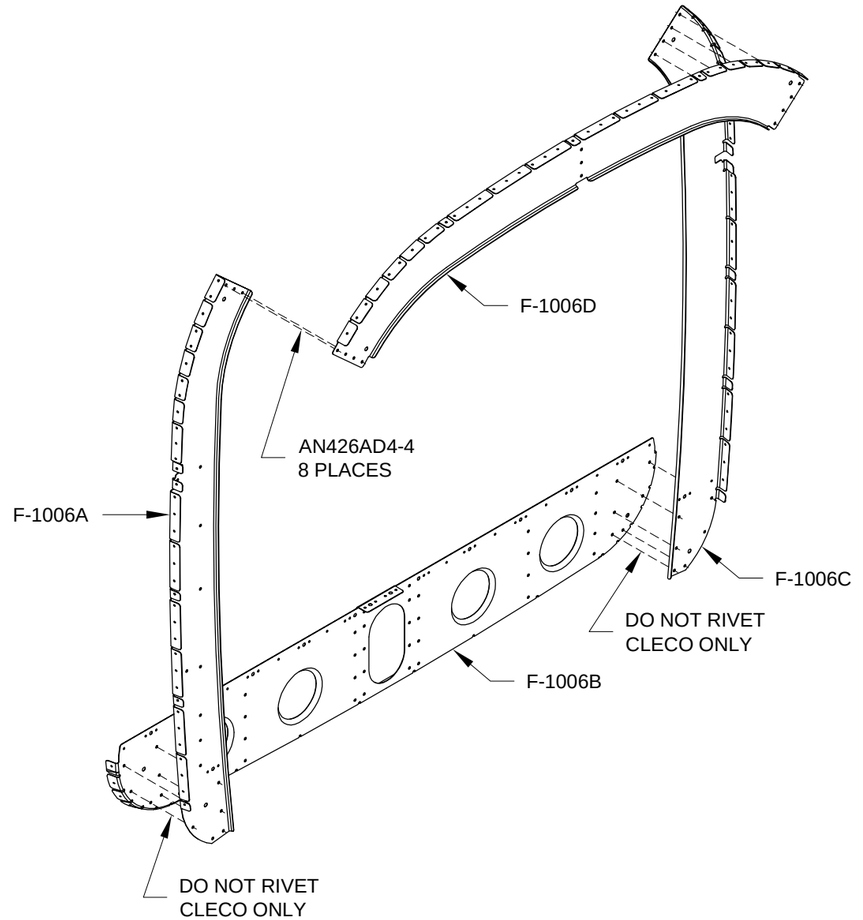


FIGURE 5: RIVETING THE F-1006 BULKHEAD

Step 1: As described on Pages 10-7 through 10-9, cleco together the portion of the tailcone shown in Figure 1 (for clarity, the F-1073-L Side Skin and the F-1047 Stiffeners attached to it are not shown). However, for now, don't cleco in place the F-1028 Baggage Bulkhead Channel or the F-1029 Bellcrank Ribs. (Leaving the bellcrank ribs out improves access to the F-1007 Frame when riveting it to the F-1078 Forward Bottom Skin.) Cleco both F-1032 Longerons to the skins, frames, and bulkheads.

NOTE: Now begins the task of riveting the skins. Any rivets associated with the skins can be found on Pages 10-25 and 10-26. DO NOT RIVET anything to the F-1006 Bulkhead while completing the remainder of this section. The F-1006 Bulkhead is riveted when the tailcone is attached to the forward fuselage in a later section.

Step 2: Rivet the F-1047 Stiffeners to the F-1073 Side Skins and to the F-1078 Forward Bottom Skin. When riveting the stiffeners to the skins, rivet the tabs of the frames and bulkheads which lie behind the stiffeners as well.

Step 3: Rivet both F-1073 Side Skins to the frames and bulkheads. Start riveting at the top of the skins (don't rivet the F-1032 Longerons), then work down and around the bottom radius of the skins.

Step 4: Rivet the F-1078 Forward Bottom Skin to the frames and bulkheads.

Step 5: Rivet the bottom edges of the F-1073 Side Skins to the F-1078 Forward Bottom Skin.

Step 6: Rivet the F-1079 Aft Bottom Skin to the F-1011 & -1012 Bulkheads, the F-1073 Side Skins, and to the F-1078 Forward Bottom Skin.

Step 7: Rivet the F-1055-L & -R Rudder Stop Skin Stiffeners to the F-1073 Side Skins. Rivet the stiffeners to the F-1056 Rudder Stop Brace using AN470AD4-4 rivets

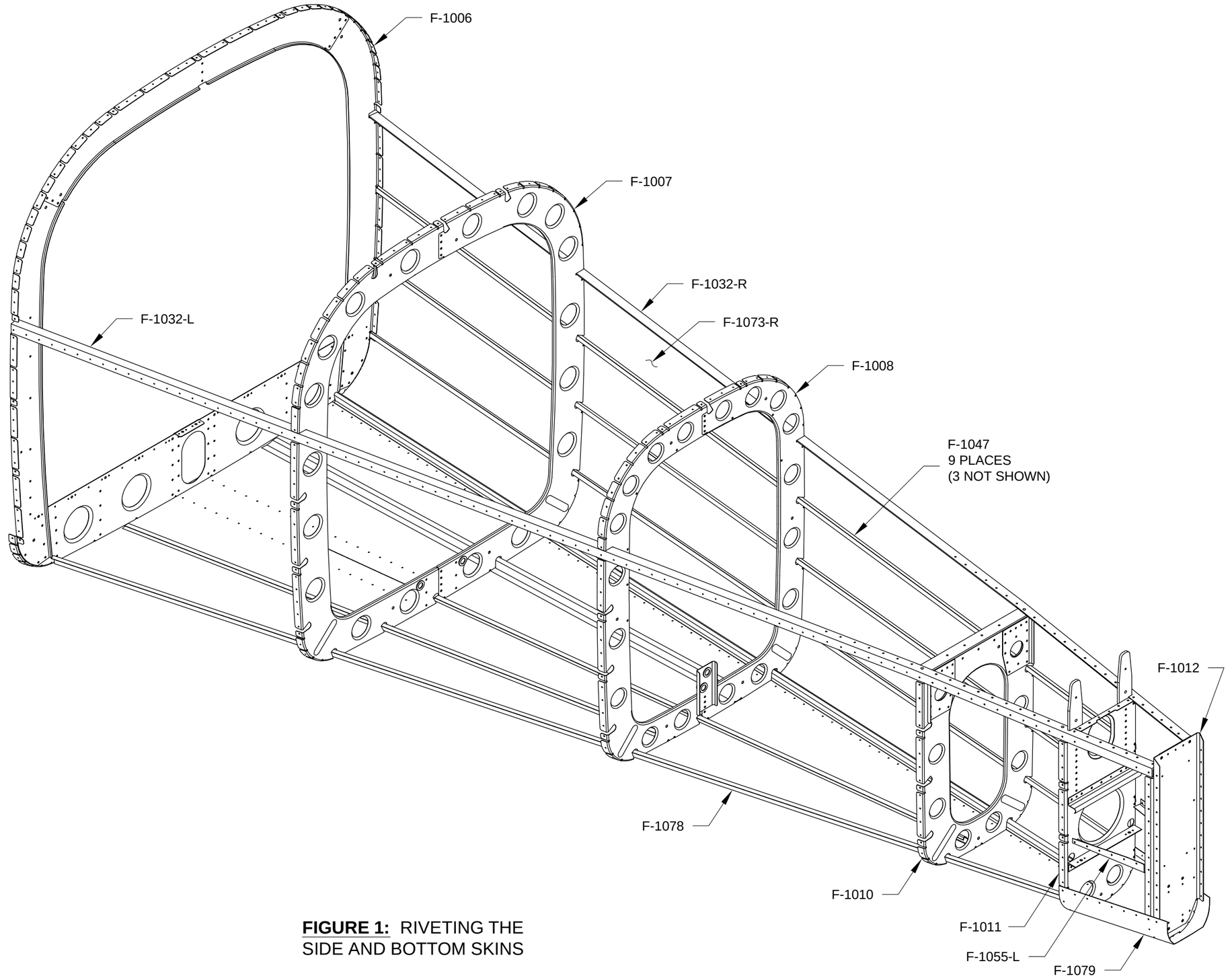


FIGURE 1: RIVETING THE SIDE AND BOTTOM SKINS

Step 1: Rivet the nutplates shown in Figure 1 to the F-1037B & C Bellcrank Rib Angles using the rivets called out.

Step 2: Rivet the F-1037B & C Bellcrank Rib Angles to the F-1029-R & -L Bellcrank Ribs respectively using the rivets called out in Figure 1. Don't install rivets into the two forward holes of the F-1037B Bellcrank Rib Angle (see figure).

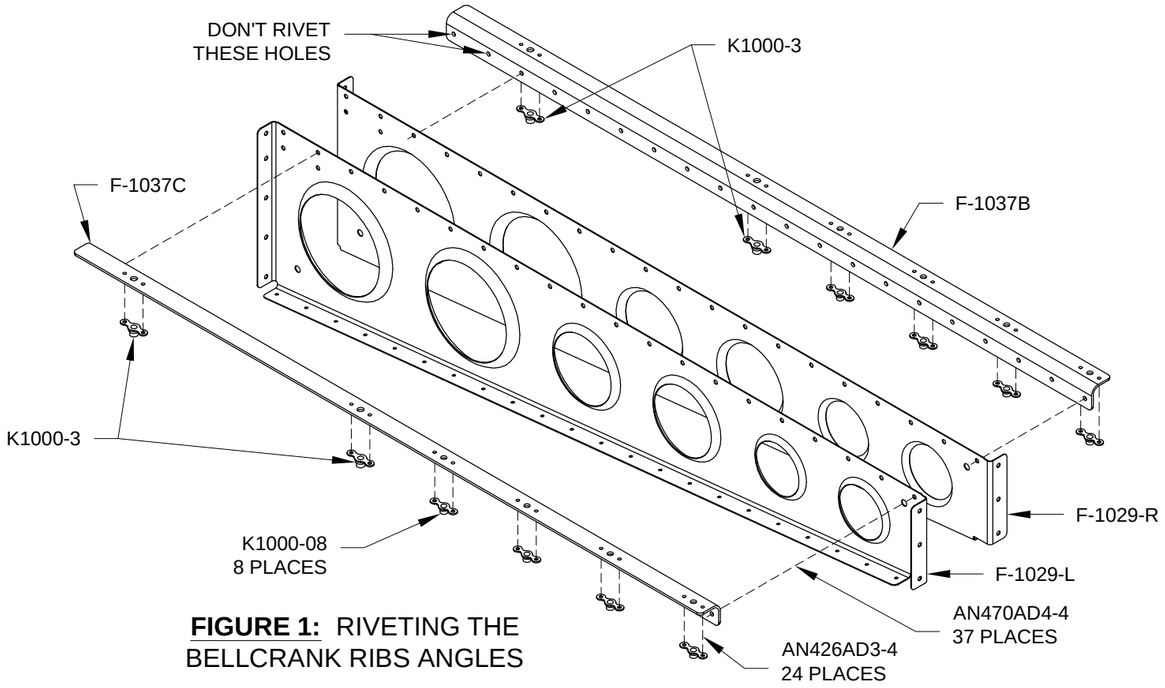


FIGURE 1: RIVETING THE BELLCRANK RIBS ANGLES

Step 3: Cleco the F-1029 Bellcrank Ribs to the F-1078 Forward Bottom Skin, the F-1006 Bulkhead, and the F-1007 Frame. Rivet the bellcrank ribs to the skin using the rivets called out on Page 10-25, Figure 1. Rivet the bellcrank ribs to the F-1007 Frame using AN470AD4-4 rivets. Do not rivet to the F-1006 Bulkhead.

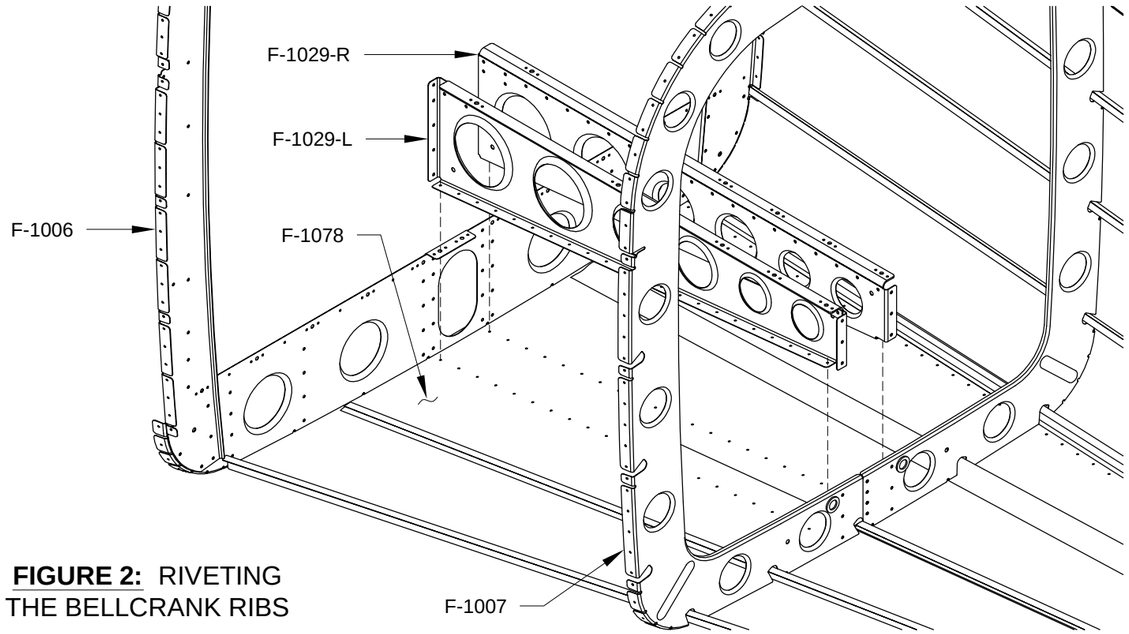


FIGURE 2: RIVETING THE BELLCRANK RIBS

Step 4: Using the rivets called out on Page 10-25, Figure 1, rivet the F-1073 Side Skins to the portion of the F-1032 Longerons under the F-1014 Aft Deck. The figure also points out the empennage fairing attachment screw holes make sure not to install any rivets in these holes.

Step 5: Cleco the parts shown in Figure 3, then, using the rivets called out, rivet them together. Leave the F-1009 Frame for last so it's not in the way while riveting the rest of the parts. As indicated in the figure, don't install any rivets in the F-1014 Aft Deck in the area of the F-1011 Bulkhead.

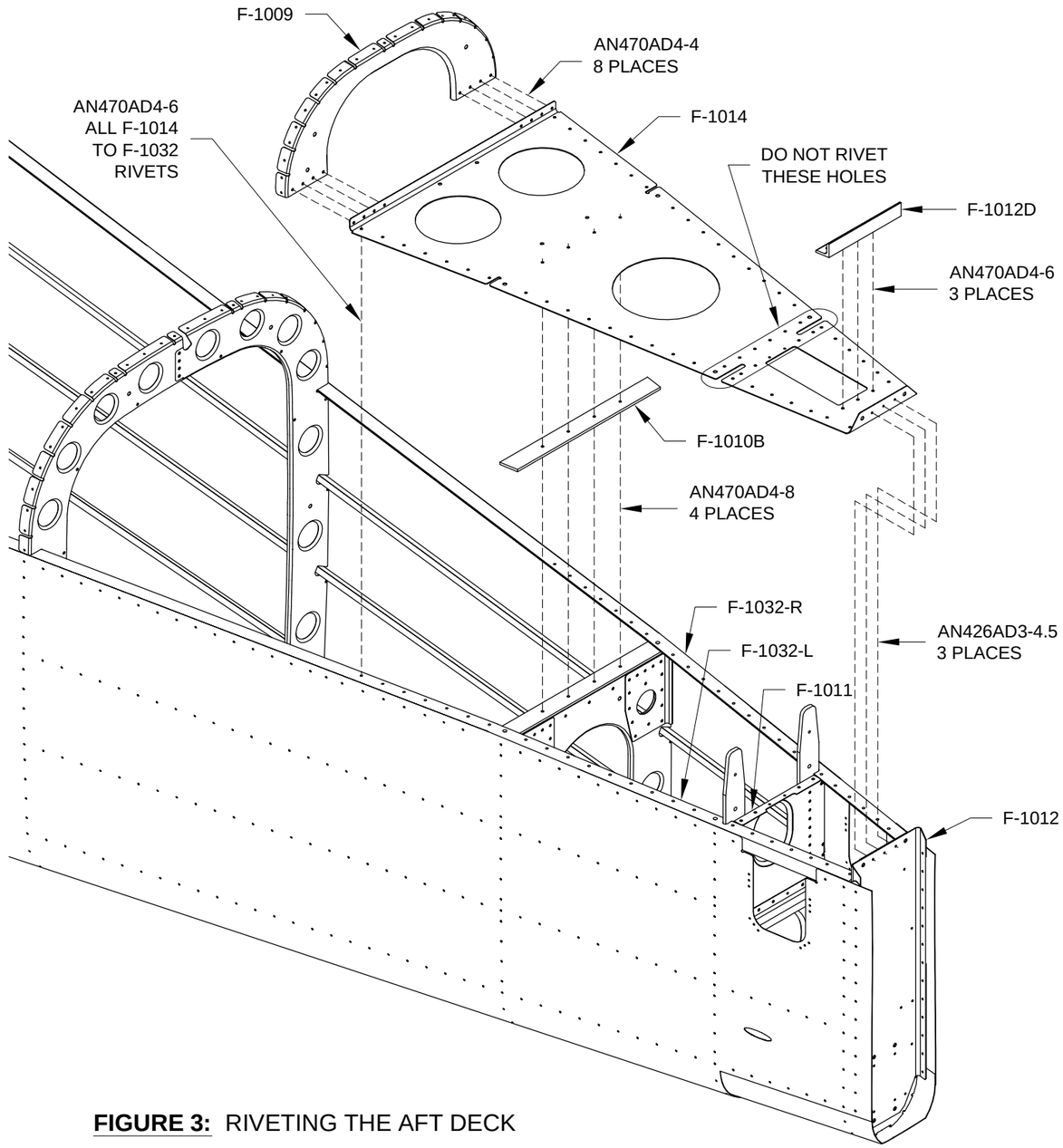


FIGURE 3: RIVETING THE AFT DECK

Step 1: Rivet the F-1011B Stop /Doubler to the F-1014 Aft Deck and the flange of the F-1011 Bulkhead using the rivets called out in Figure 1.

Step 2: Temporarily bolt the F-1011D Attachment Bar Support Angle to the F-1011B Stop /Doubler, the F-1014 Aft Deck, and the F-1032 Longerons using the hardware shown in Figure 2. (For clarity, the F-1073-L Side Skin is not shown in Figure 2.)

Match-Drill the two holes indicated in Figure 2 into the attachment bar support angle from the F-1011C Horizontal Stab Attachment Bar using a #30 drill. Final-Drill the holes using a #12 drill.

Remove the support angle, then deburr the holes in the support angle and the horizontal stab attachment bar.

Rivet the support angel to the stop /doubler and aft deck using the rivets called out in Figure 1.

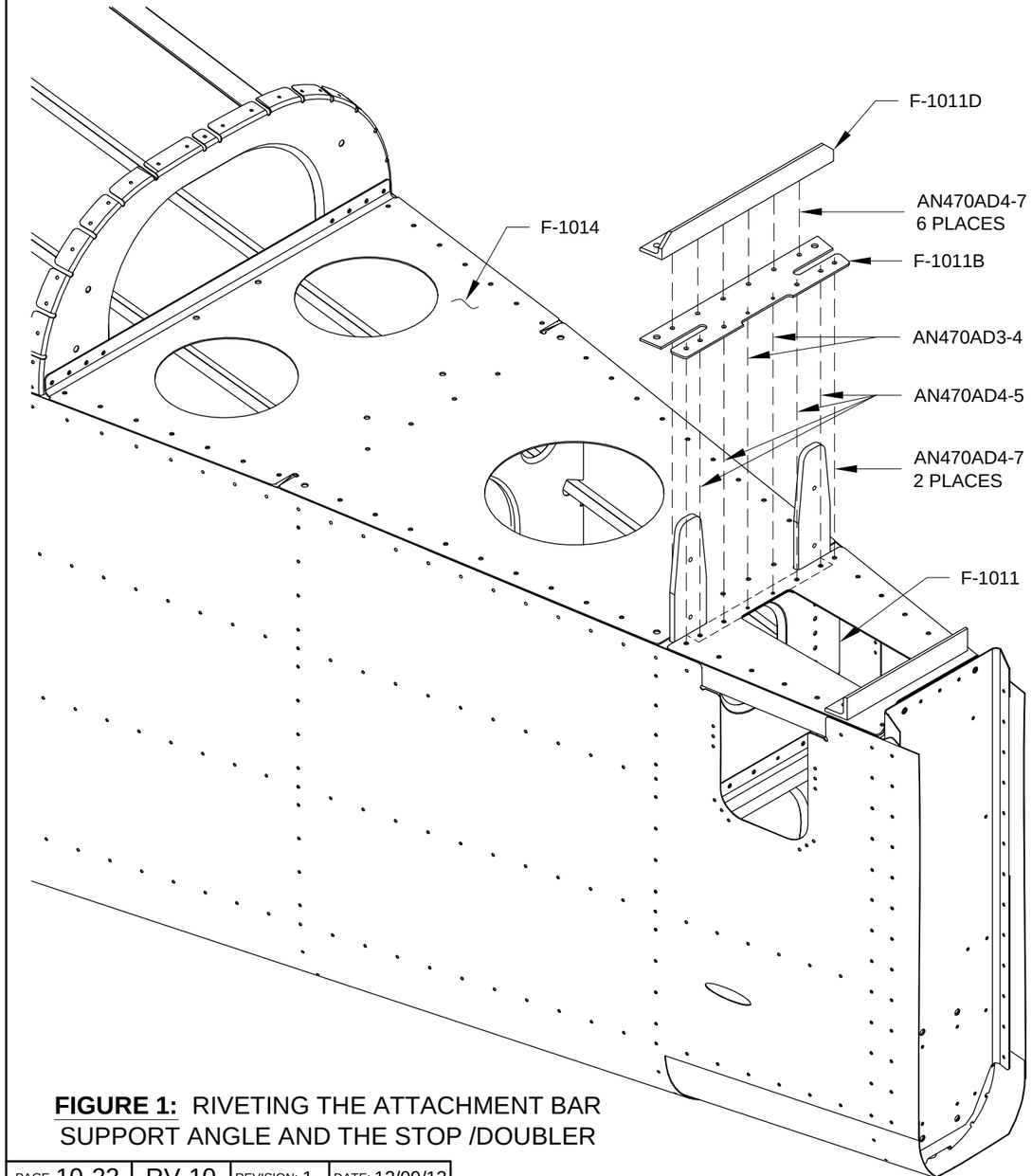


FIGURE 1: RIVETING THE ATTACHMENT BAR SUPPORT ANGLE AND THE STOP /DOUBLER

Step 3: Install the hardware shown in Figure 2. The optional eye bolt, which is screwed into the F-1012E Tie Down Bar, is not supplied in the kit, but can be purchased through Van's Aircraft.

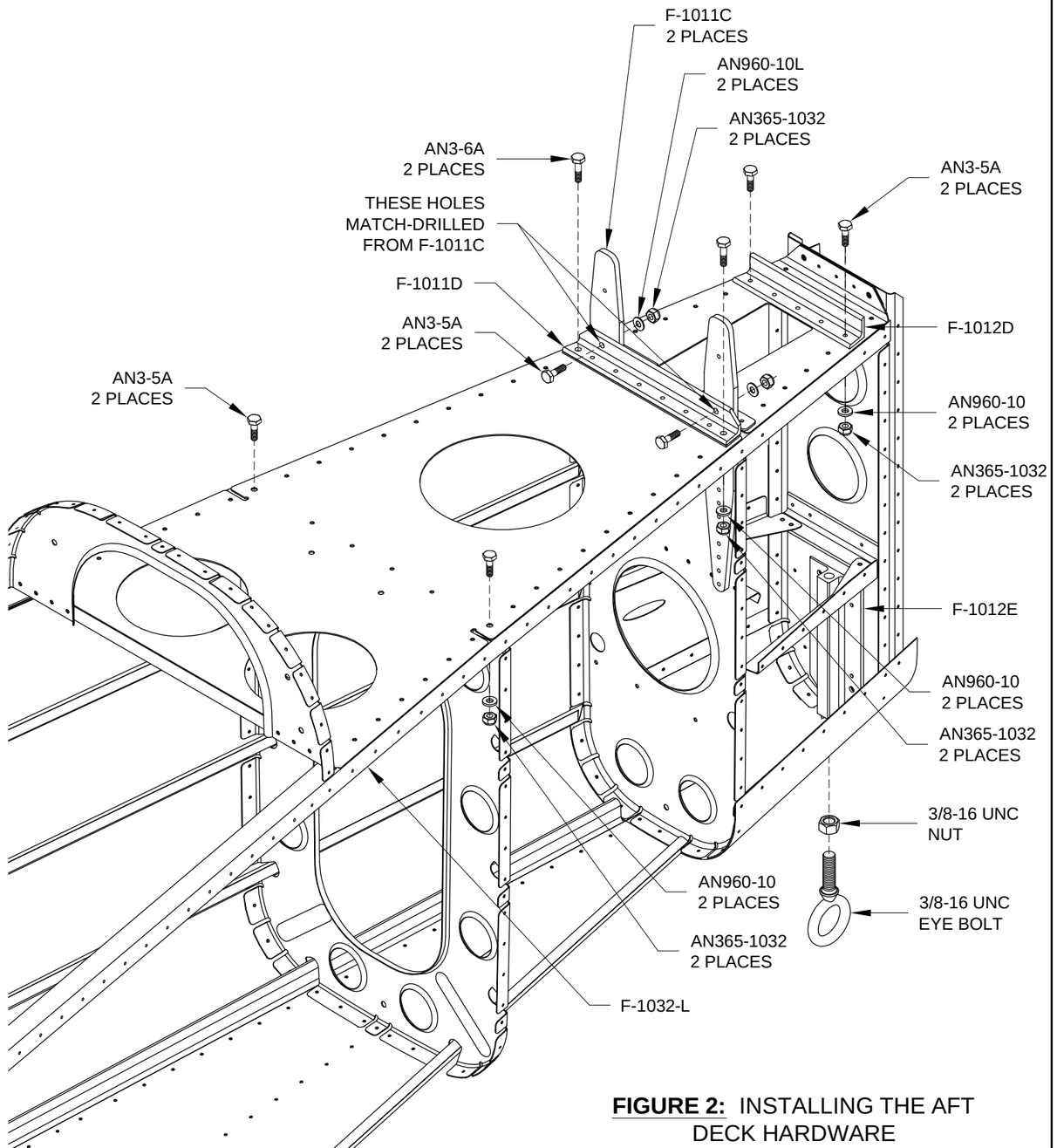


FIGURE 2: INSTALLING THE AFT DECK HARDWARE

Step 1: Lay the F-1047A, -1047B-L, and -1047B-R J-Stiffeners back in place in the notches of the frames and bulkheads as shown in Figure 1.

Step 2: Cleco the F-1075 Aft Top Skin in place.

Using the rivets called out on Page 10-26, Figure 1, rivet the aft top skin to the three F-1047 J-Stiffeners and to the F-1008 & -1009 Frames. When riveting to the frames, rivet from the center of the skins out to the sides. DO NOT rivet the skin to the F-1007 Frame. It will be riveted to the frame, along with the F-1074 Forward Top Skin, when the tailcone is attached to the forward fuselage.

Rivet the sides of the aft top skin to the F-1073 Side Skins and the underlying F-1032 Longerons using the rivets called out on Page 10-25, Figure 1. Do not rivet the front corner holes in the aft top skin which are common to the F-1007 Frame.

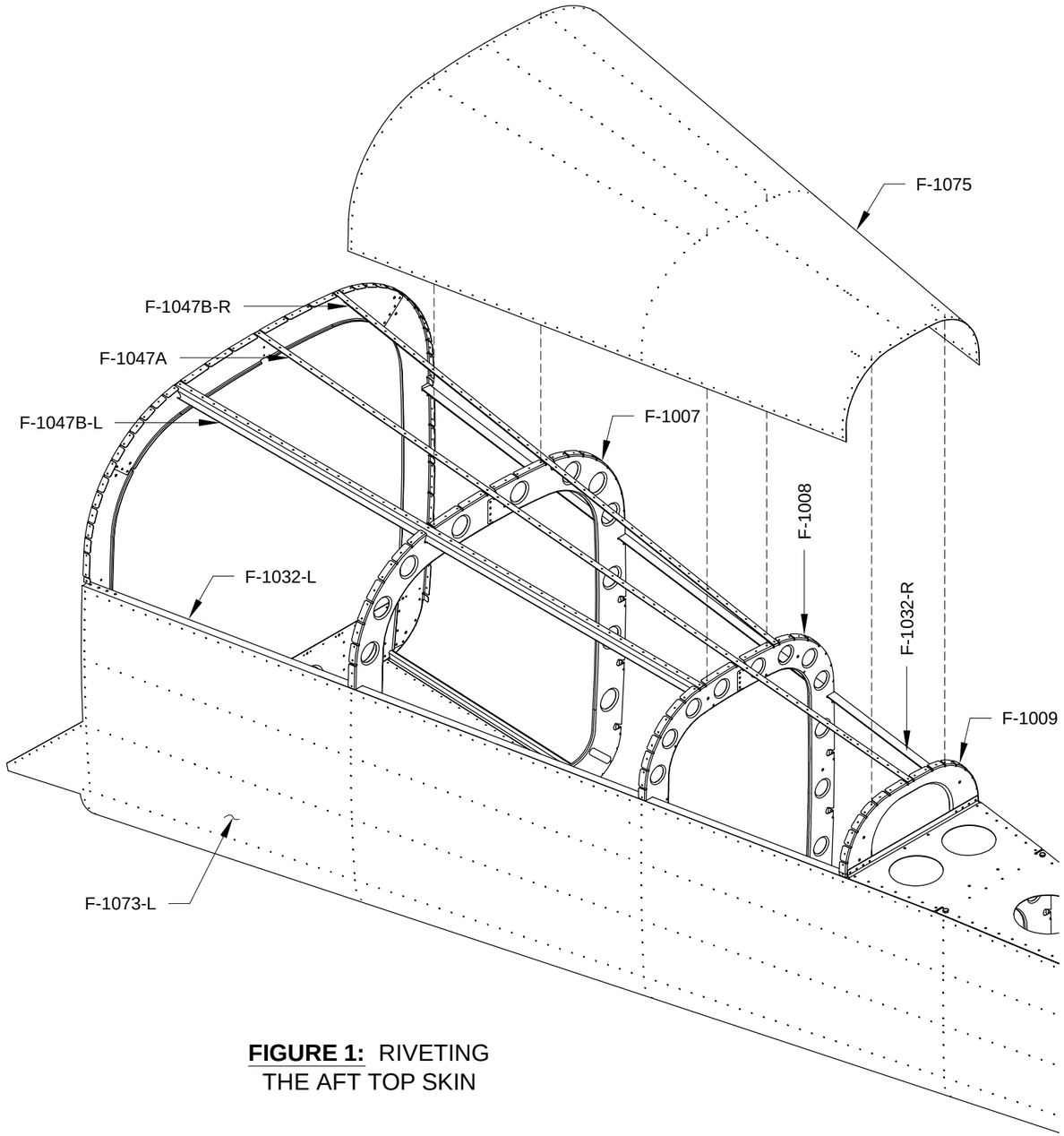


FIGURE 1: RIVETING THE AFT TOP SKIN

Step 3: Attach the F-635 Elevator Bellcrank to the two F-1037A Bellcrank Angles using the hardware called out in Figure 2.

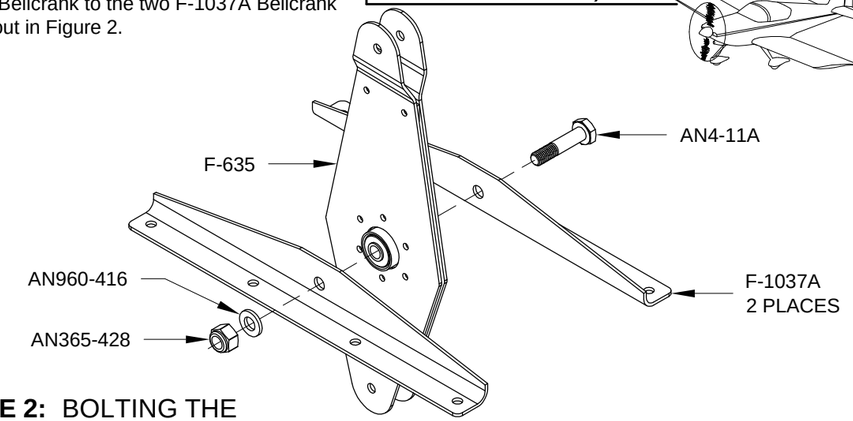


FIGURE 2: BOLTING THE ELEVATOR BELLCRANK

Step 4: Bolt the two F-1037A Bellcrank Angles to the F-1035 Battery /Bellcrank Mount using the hardware shown in Figure 3.

Step 5: Attach the F-1035 Battery /Bellcrank Mount to the F-1037B & C Bellcrank Rib Angles using the hardware shown in the Figure 3. Do not secure the fasteners in this step completely; the battery /bellcrank mount will have to be removed later.

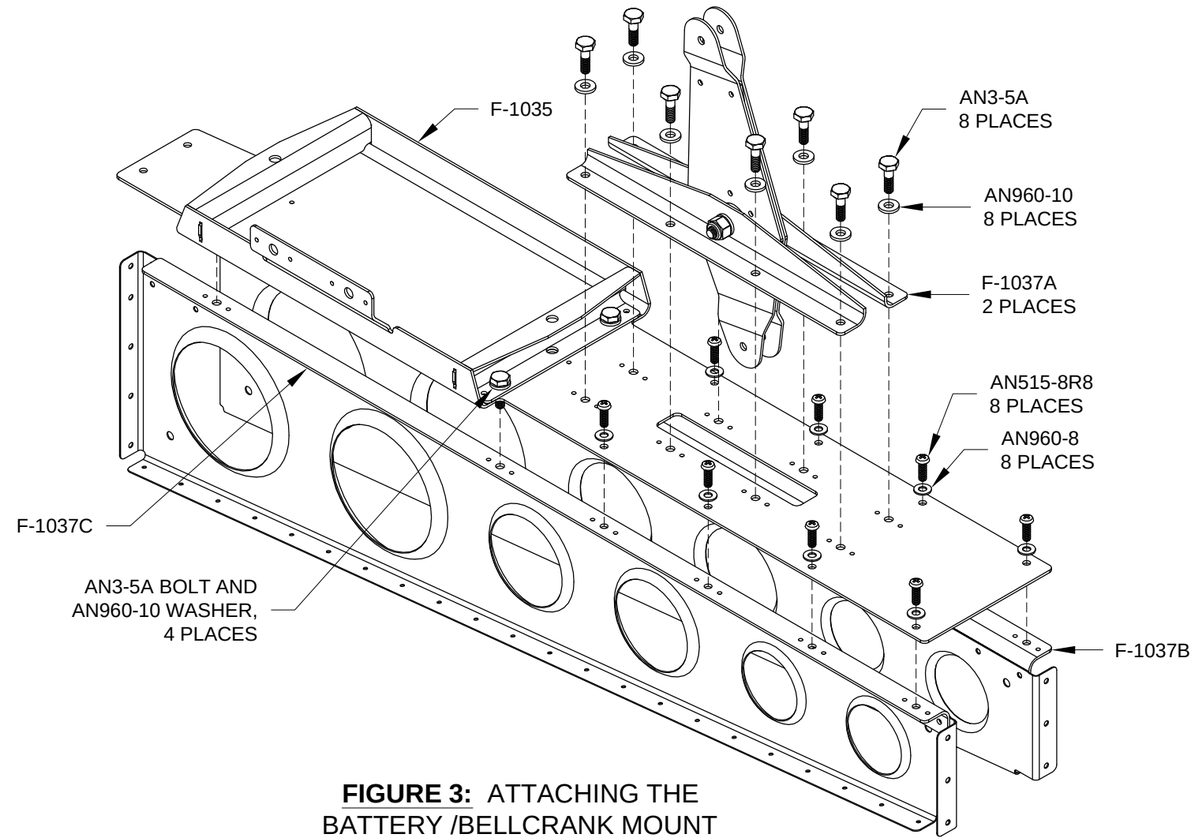


FIGURE 3: ATTACHING THE BATTERY /BELLCRANK MOUNT

Step 1: Secure the Concord Battery to the F-1035 Battery /Bellcrank Mount using the F-1036A Battery Channel and the hardware shown in Figure 1. The top hole in each F-1036B Battery Channel may be enlarged if it is difficult to install the bolts.

Step 2: Secure the ES 24115 Master Relay to the F-1035 Battery /Bellcrank Mount using the hardware shown in Figure 1.

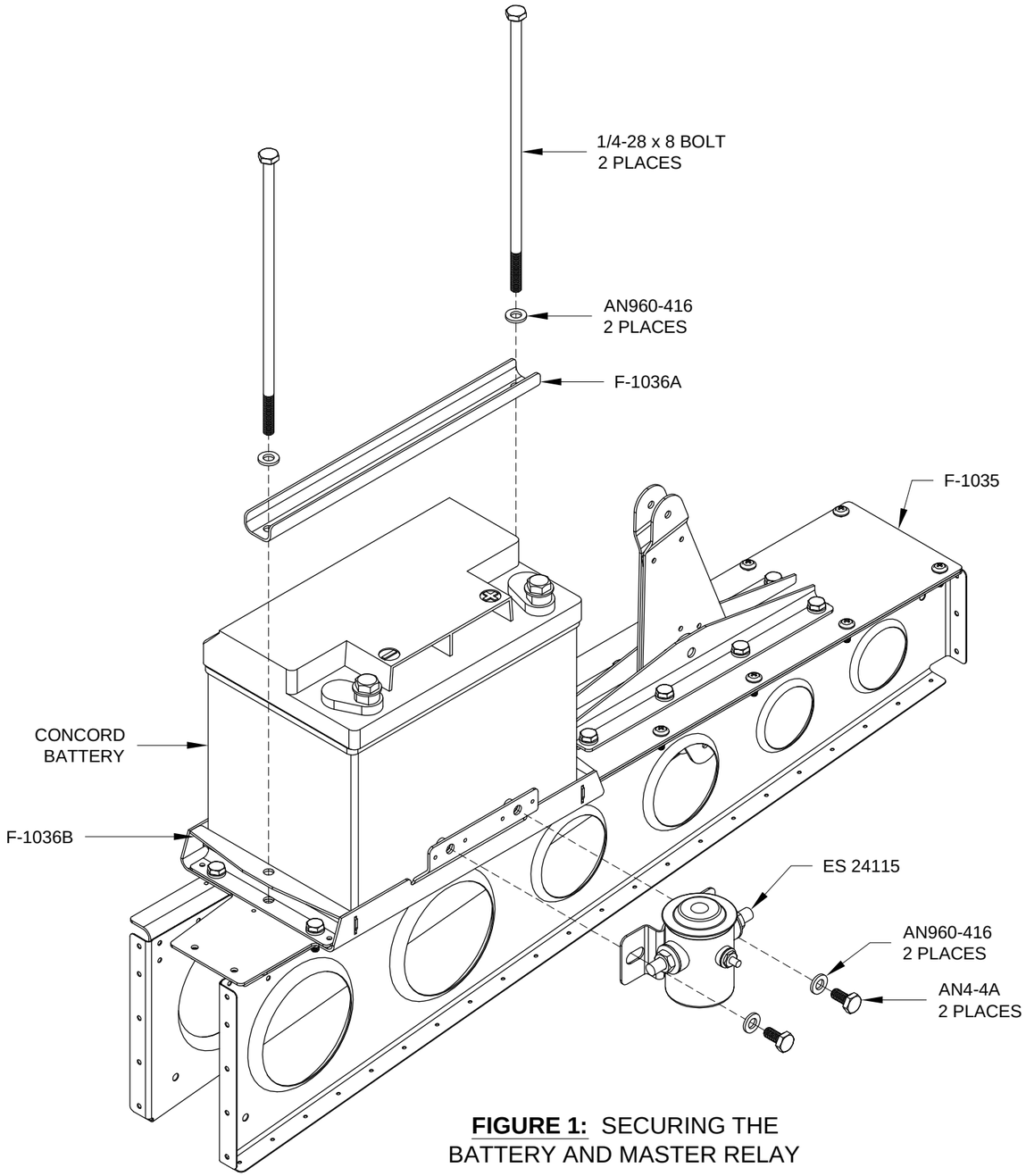


FIGURE 1: SECURING THE BATTERY AND MASTER RELAY

Step 3: Bolt the F-636 Shoulder Harness Anchors to the F-1032 Longerons using the hardware shown in Figure 2.

This completes the construction of the tailcone. The F-1028 Baggage Bulkhead Channel, the F-1074 Forward Top Skin, and the F-1006 Bulkhead are riveted after the tailcone is attached to the forward fuselage.

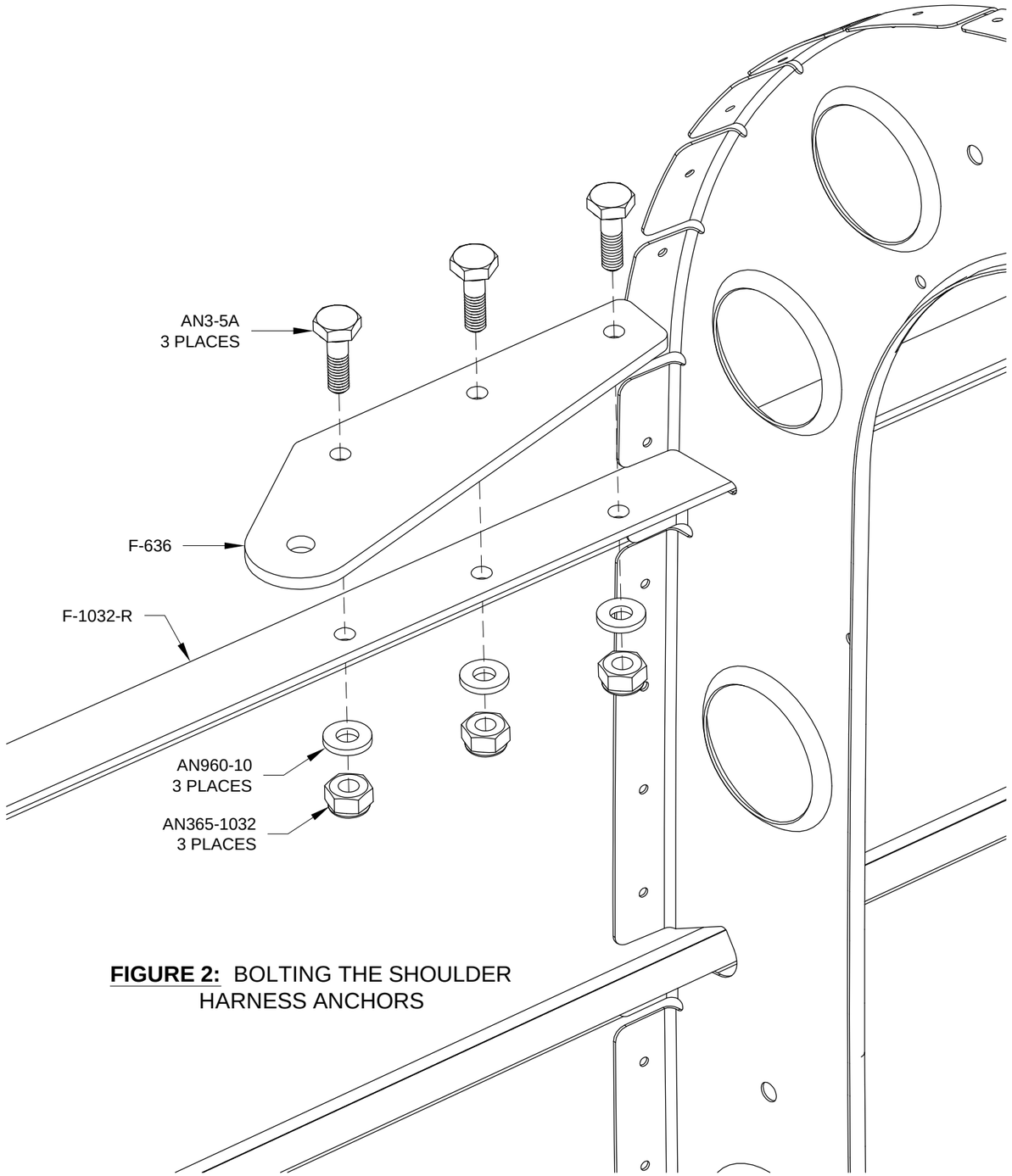


FIGURE 2: BOLTING THE SHOULDER HARNESS ANCHORS

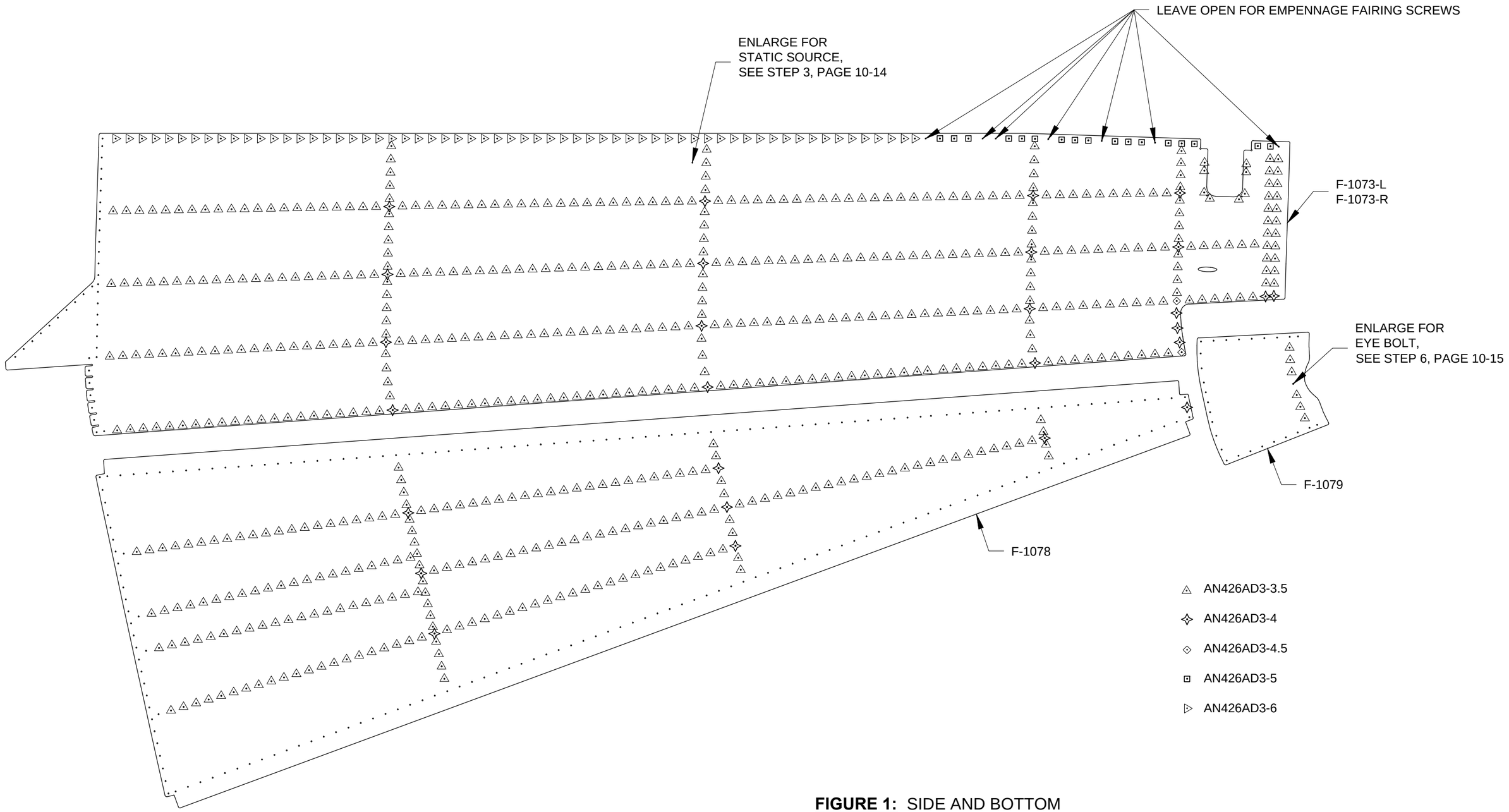


FIGURE 1: SIDE AND BOTTOM SKIN RIVETS

△ AN426AD3-3.5

✧ AN426AD3-4

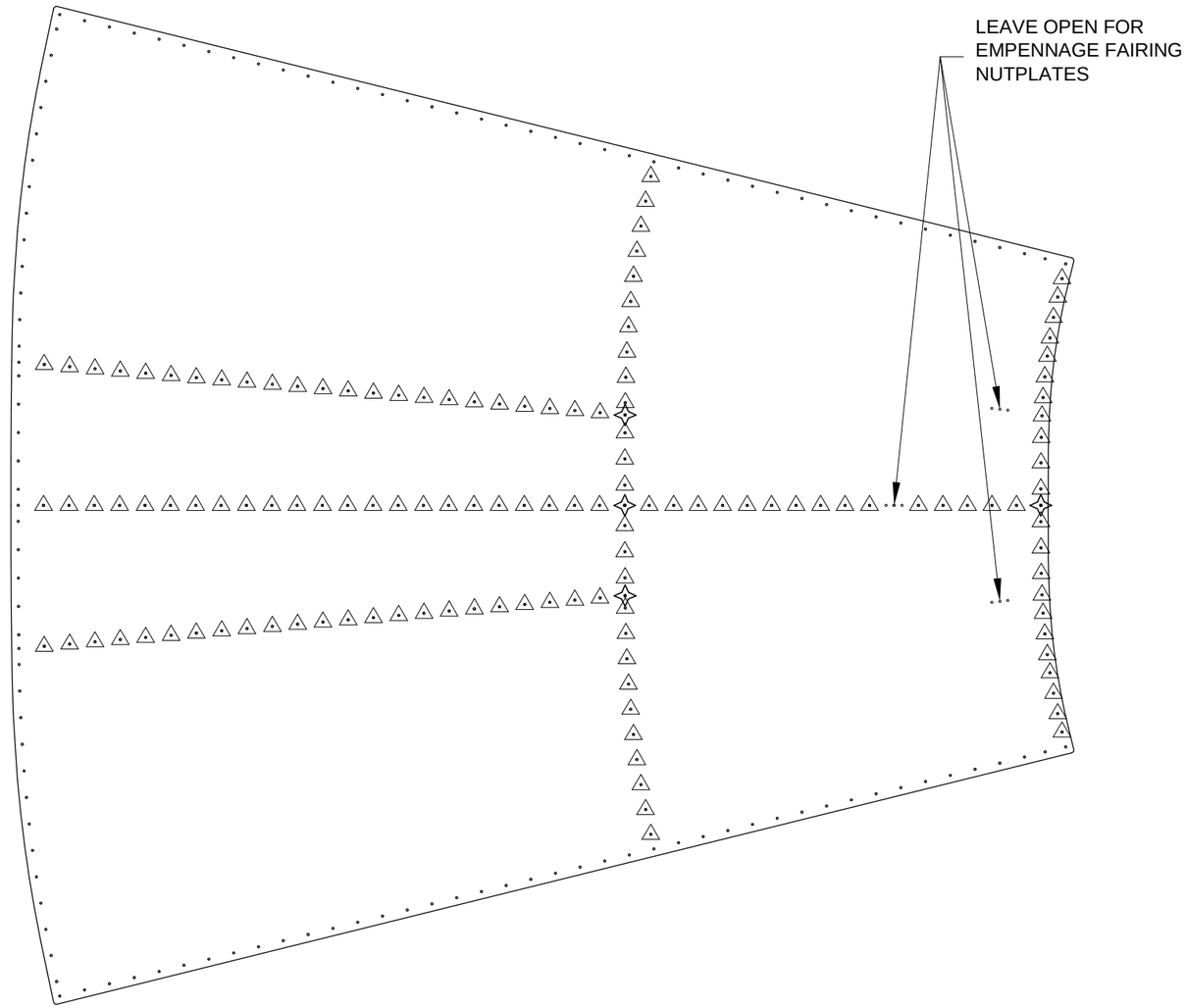


FIGURE 1: TOP SKIN RIVETS