

TOTAL PERFORMANCE
VAN'S AIRCRAFT

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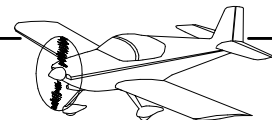
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REVISION DESCRIPTION:

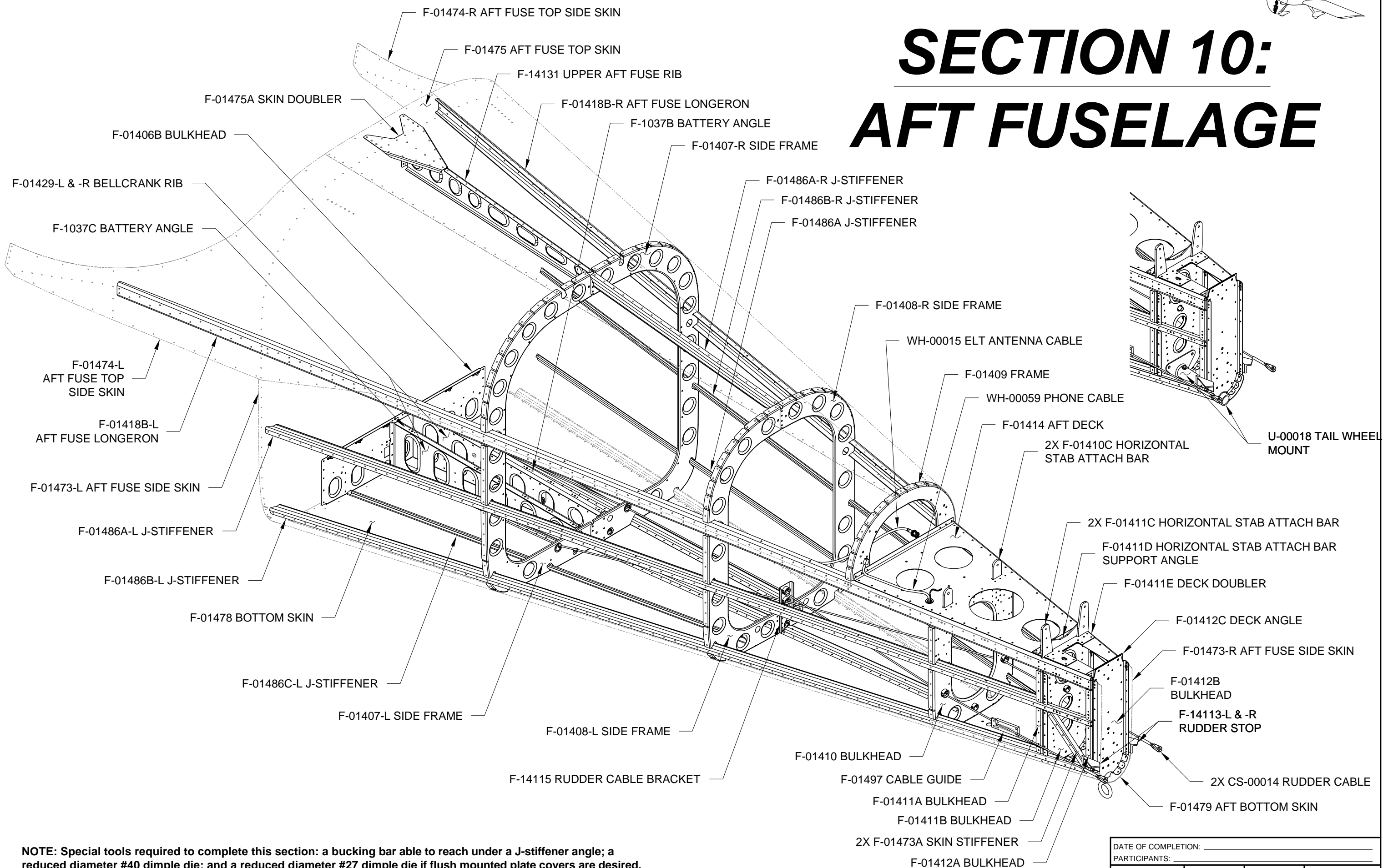
Page: 10-03 MEMO: Before Step 4, added "NOTE: The following process can be repeated to straighten any other thick (.125 [3.2 mm] or thicker) part which has been bowed due to the manufacturing process."

Page 10-27 REV 1: In Step 2, added instructions to dimple the holes in the F-01414 Aft Deck.

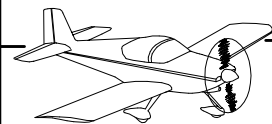
In Figure 1, added "Dimple Flush This Side" call-out for the holes in the web of the aft deck.



SECTION 10: AFT FUSELAGE



NOTE: Special tools required to complete this section: a bucking bar able to reach under a J-stiffener angle; a reduced diameter #40 dimple die; and a reduced diameter #27 dimple die if flush mounted plate covers are desired.



Step 1: Separate the F-01497B Cable Guides by removing the hatched areas as shown in Figure 1. Save the cable guides for later installation.

Step 2: Separate the F-01473A Stiffener Angles by removing the hatched areas shown in Figure 2.

NOTE: The J-Stiffeners and Battery Angles each have a different hole pattern that make identification easier. Use a sharpie pen to mark parts with part numbers prior to separation.

Step 3: Separate the F-01486D, F-01486E and F-01486F J-Stiffeners by removing hatched areas as shown in Figure 3.

Step 4: Separate the F-1037A, F-1037B and F-1037C Battery Angles by removing the hatched areas as shown in Figure 4.

Step 5: Drill #30 through the middle of the bend radius of the F-1037B Battery Angle as shown in Figure 4.

Cut up to the #30 hole and remove hatched area as shown.

Step 6: Final-Drill 1/4 the F-1037A Battery Angles as shown in Figure 4.

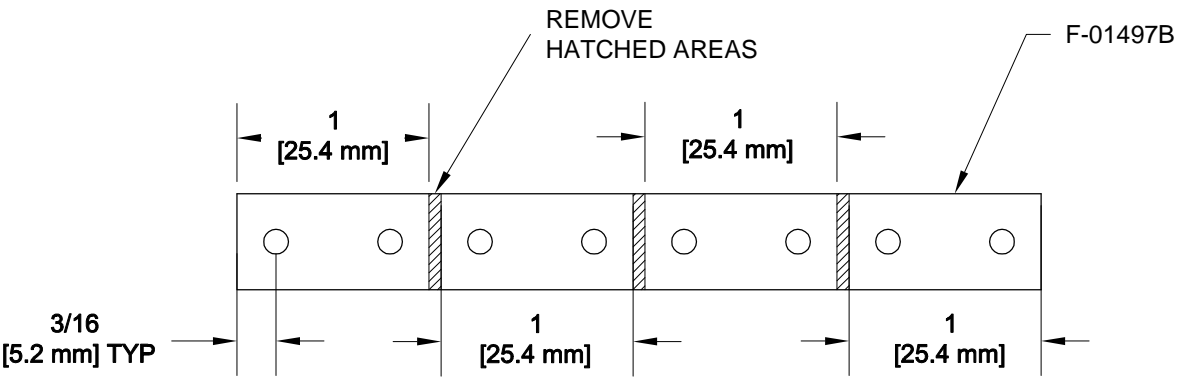


FIGURE 1: CABLE GUIDES

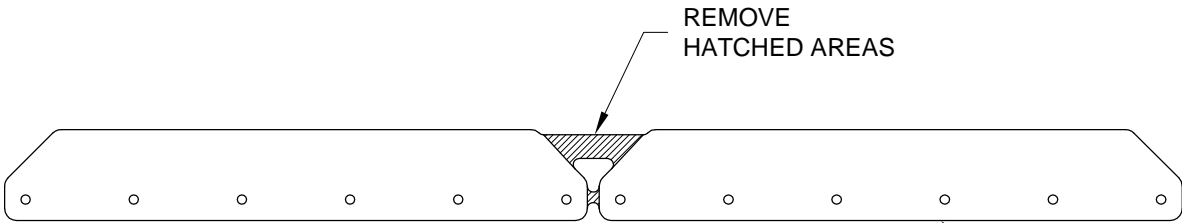
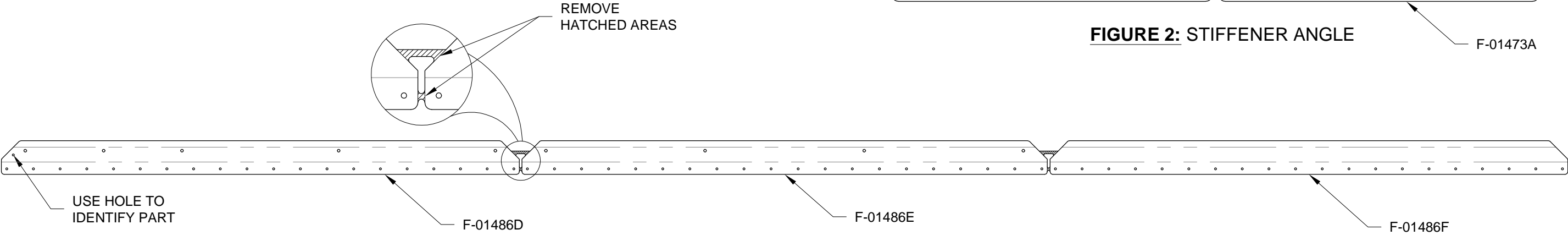
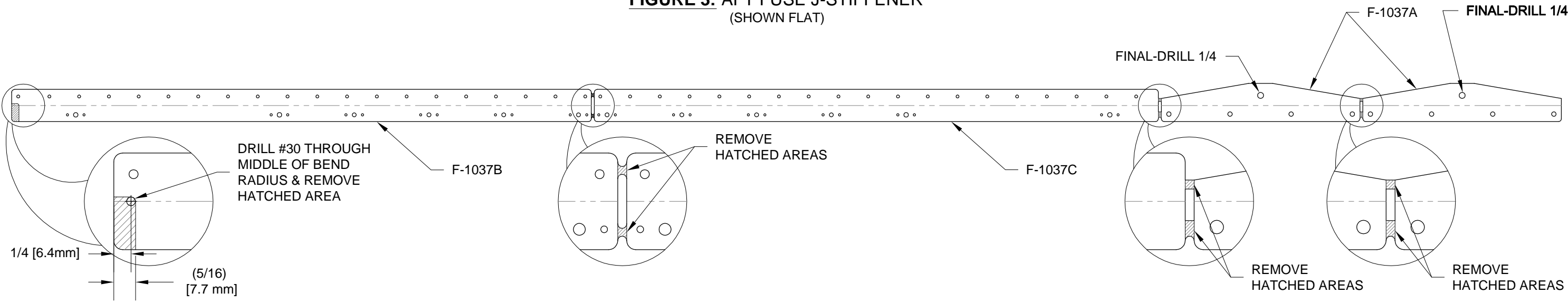


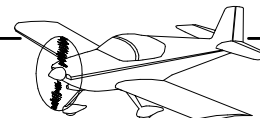
FIGURE 2: STIFFENER ANGLE



**FIGURE 3: AFT FUSE J-STIFFENER
(SHOWN FLAT)**



**FIGURE 4: BATTERY ANGLES
(SHOWN FLAT)**



Step 1: Remove the hatched areas from the F-01486A-L & -R and F-01486B-L & -R J-Stiffeners as shown in Figure 1.

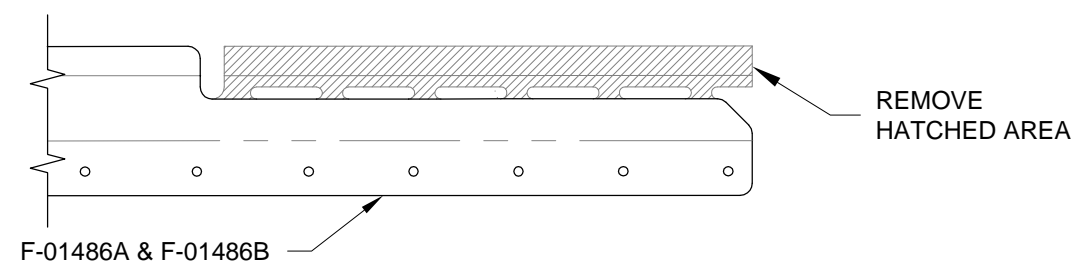


FIGURE 1: MODIFY J-STIFFENERS
(SHOWN FLAT)

Step 2: Remove the hatched areas from the F-01418B-L & -R Aft Fuse Longerons as shown in Figure 2.

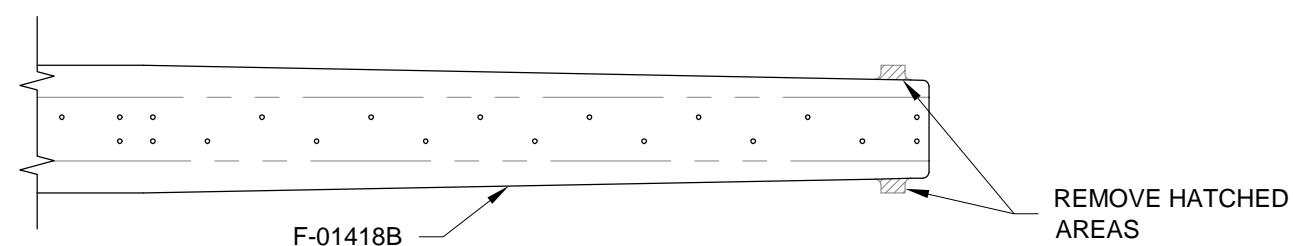


FIGURE 2: MODIFY AFT FUSE LONGERONS
(SHOWN FLAT)

Step 3: Separate the F-01410B-L & -R Bulkhead Doublers by removing the hatched areas as shown in Figure 3.

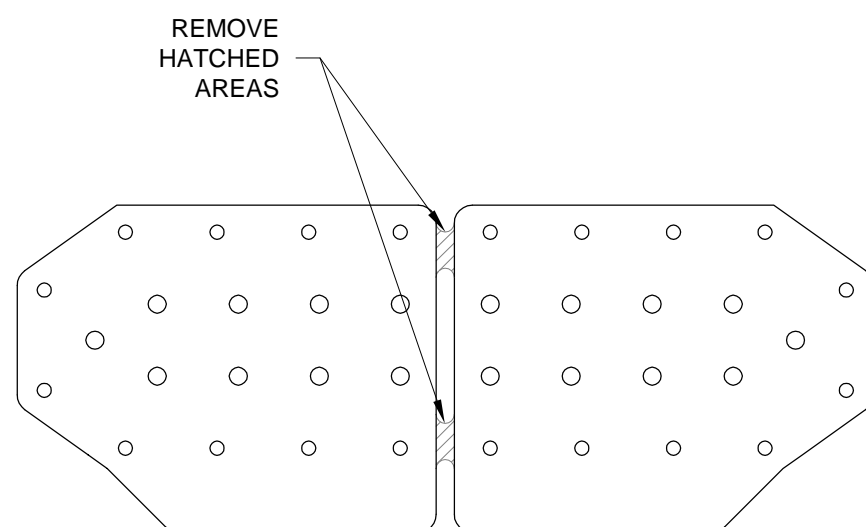


FIGURE 3: F-01410B BULKHEAD DOUBLERS
(SHOWN FLAT)

NOTE: The two F-01411C Horizontal Stabilizer Attachment Bars may be bowed due to the punching operation used during their manufacture. This bow must be removed prior to installation.

NOTE: The following process can be repeated to straighten any other thick (.125 [3.2 mm] or thicker) part which has been bowed due to the manufacturing process.

Step 4: Clamp one of the F-01411C Horizontal Stabilizer Attachment Bars in a padded vice (padded with wood, aluminum, etc.) near one end.

Pre-load the free end of the attachment bar in the direction required to straighten it. 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 as necessary until the bar is straight within 1/16 [1.6 mm] along its entire length. See Figure 4.

Repeat process with the remaining horizontal stabilizer attachment bar.

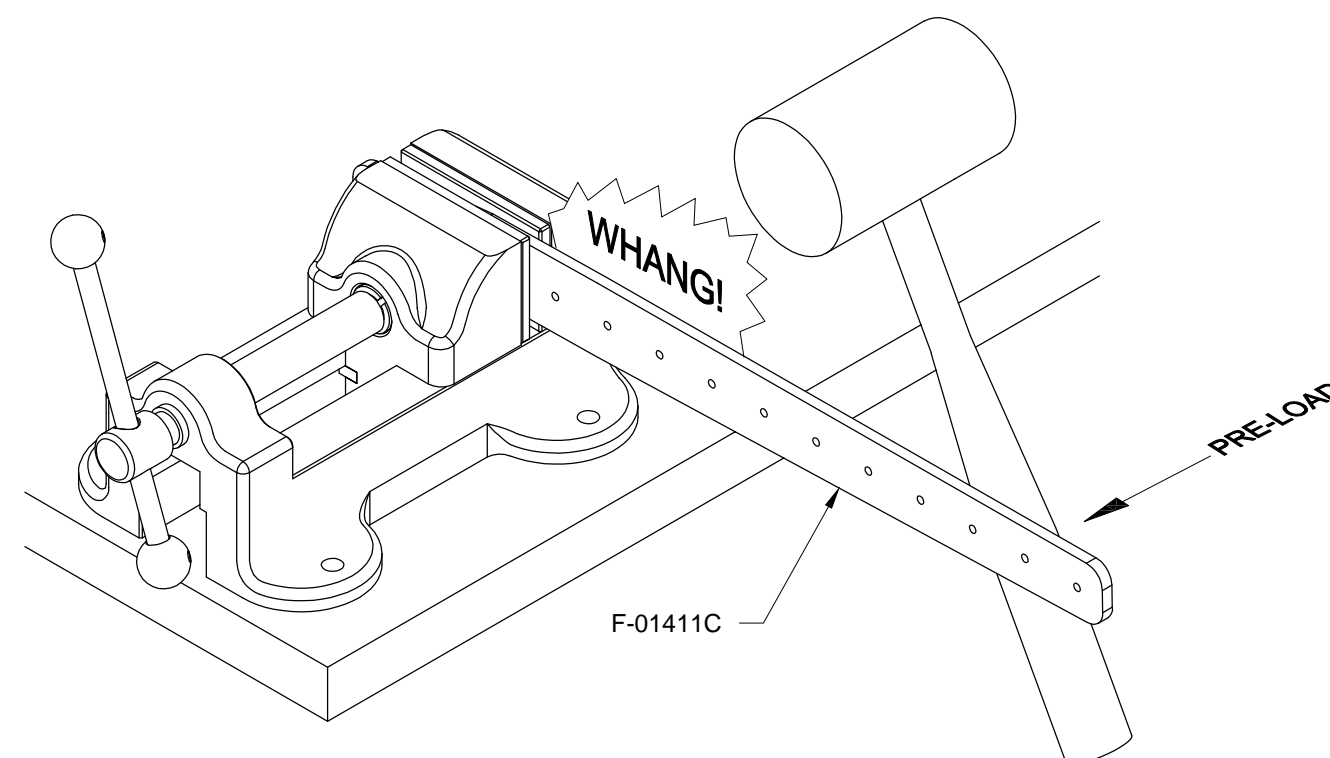


FIGURE 4: STRAIGHTENING THE HORIZONTAL STABILIZER ATTACHMENT BARS



Step 1: Fabricate the F-01411D Horizontal Stab Attach Bar Support Angle as shown in Figure 1.

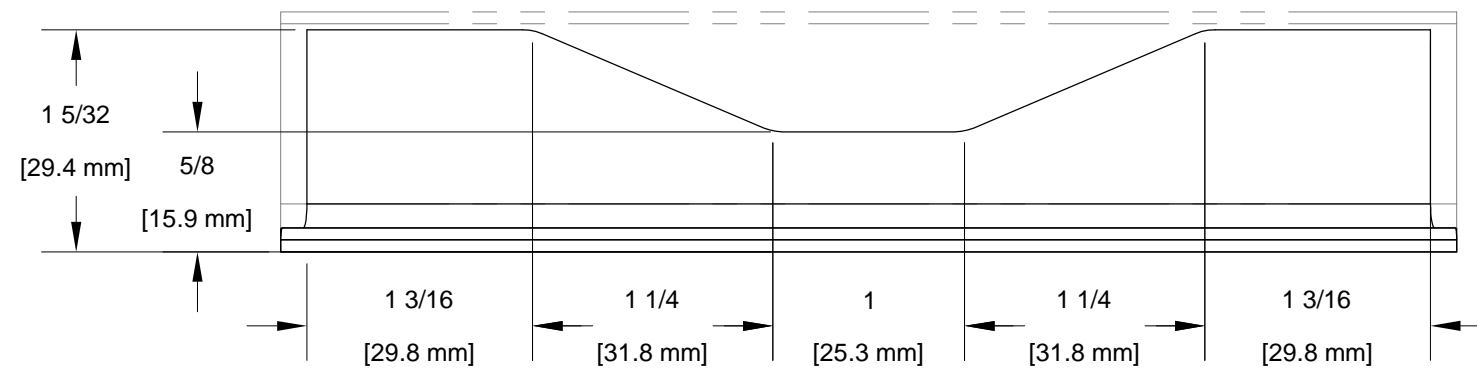
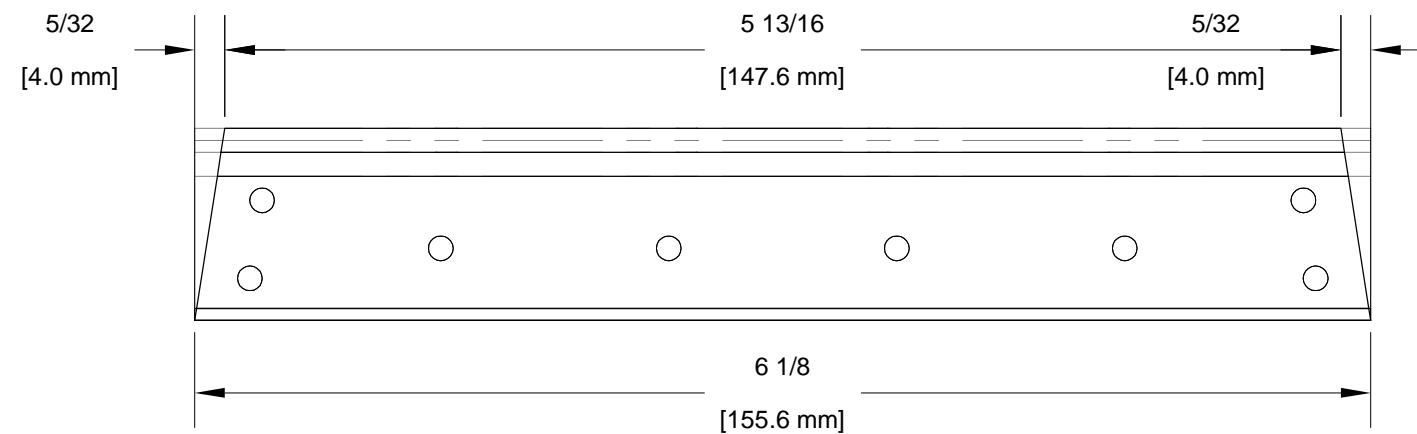
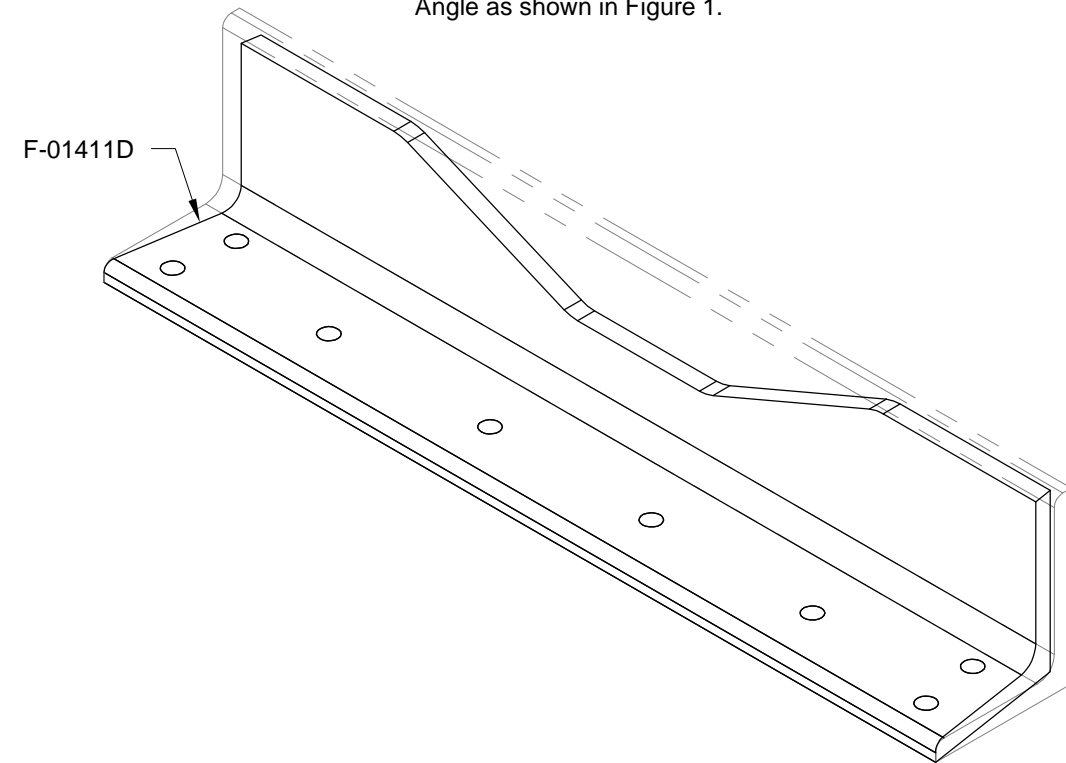


FIGURE 1: F-01411D HORIZONTAL STAB ATTACH BAR SUPPORT ANGLE

Step 2: Fabricate the F-14113-L & -R Rudder Stops as shown in Figure 2.

Step 3: Machine countersink the #30 holes in the F-14113-L & -R Rudder Stops for the head of an AN426AD4 rivet.

NOTE: See Section 5-1 for information on priming parts.

Step 4: Prime the horizontal stabilizer attachment bars and the F-14113-L & -R Rudder Stops.

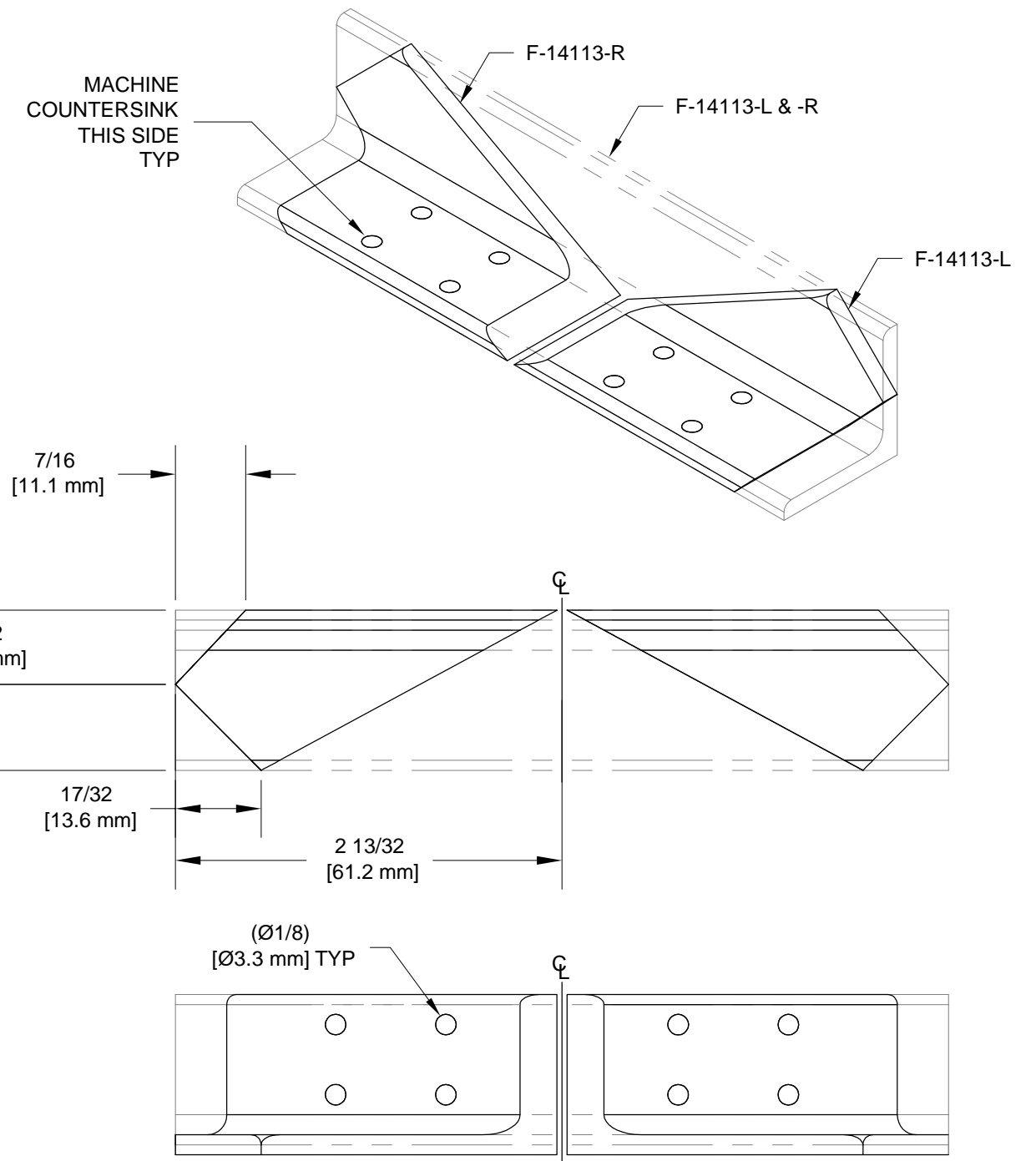
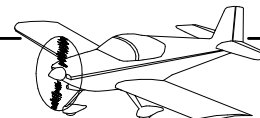


FIGURE 2: F-14113-L & -R RUDDER STOPS



NOTE: This section includes instructions for both tri-gear and tail dragger aircraft models. Where necessary, separate instructions are provided for each model on a step by step basis and are clearly marked tri-gear or tail dragger.

Step 1: Cleco the F-01412A and F-01412B Bulkheads to the Vertical Stabilizer using the two #30 locator holes as shown in Figure 1.

Match-Drill #40 the two holes in the bulkheads to the vertical stabilizer as shown in Figure 1 and Figure 2.

Step 2 (Tri-Gear): Match-drill #30 then final-drill 17/64 [6.7 mm] the systems hole in the F-01412A and F-01412B Bulkheads to the Vertical Stabilizer as shown in Figure 1.

Step 3 (Tri-Gear): Match-drill #30 & Cleco the four holes in the F-01412A and F-01412B Bulkheads into the Vertical Stabilizer as shown in Figure 1.

Remove the cleco from the lower locator hole

Cleco the F-01412D Tie Down Bracket to the Bulkheads and Vertical Stabilizer as shown in Figure 1.

Final-drill #12 the four holes into the tie down bracket, bulkheads and Vertical Stabilizer as shown in Figure 1.

Insert AN3 bolts as these holes are drilled.

Remove the tie down bracket and bulkheads from the vertical stabilizer.

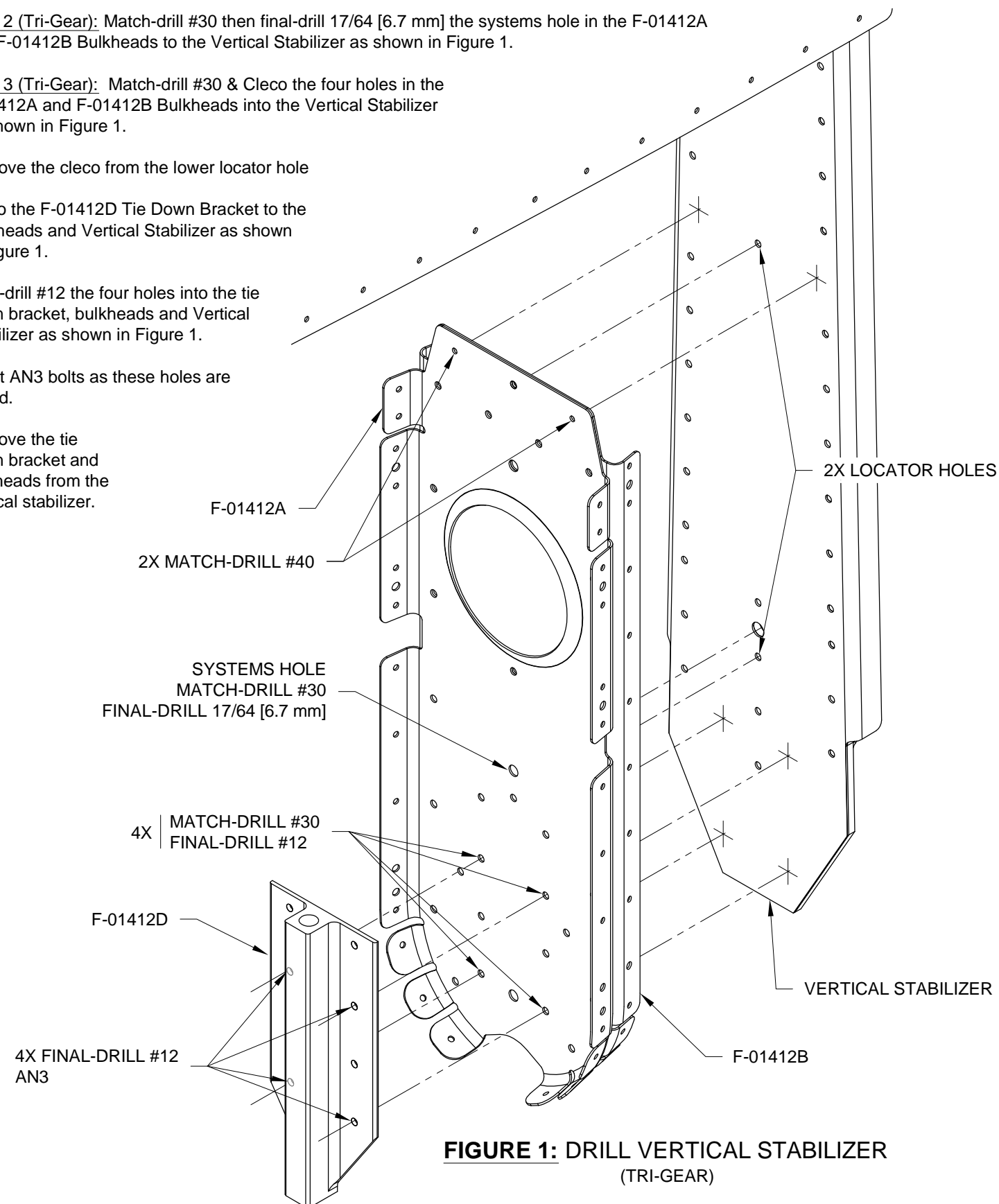


FIGURE 1: DRILL VERTICAL STABILIZER
(TRI-GEAR)

NOTE: It is critical to drill the holes perpendicular to the bulkheads and vertical stabilizer.

Step 2 (Tail Dragger): Match-drill #30 the two holes in the F-01412A and F-01412B Bulkheads to the Vertical Stabilizer as shown in Figure 2.

Match-Drill #11 the hole in the bulkheads to the vertical stabilizer as shown in Figure 2.

Step 3: (Tail Dragger): Match-drill #30 then final-drill 17/64 [6.7 mm] the systems hole in the F-01412A and F-01412B Bulkheads to the Vertical Stabilizer as shown in Figure 1. Remove the bulkheads from the vertical stabilizer.

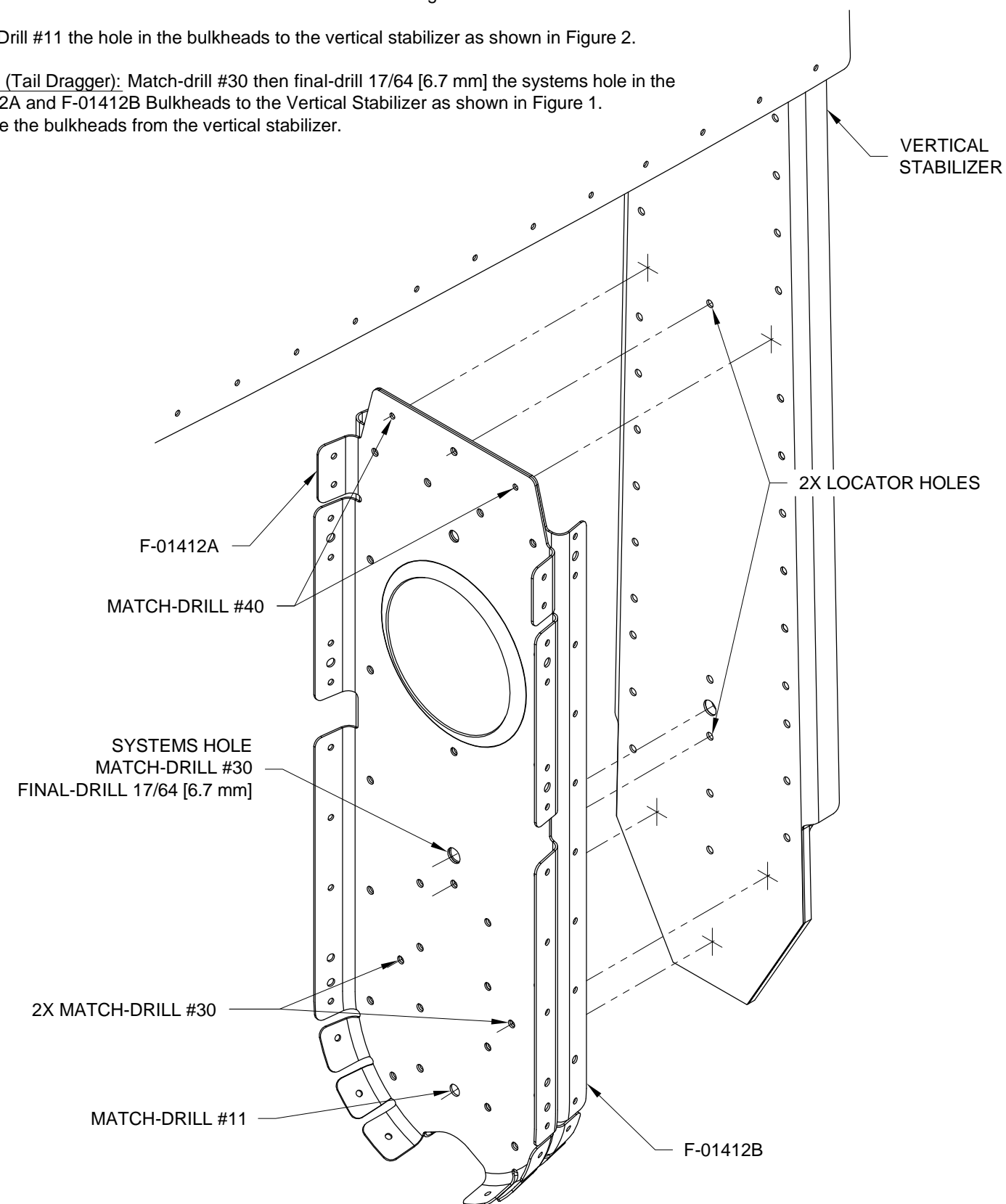
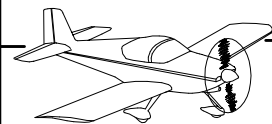


FIGURE 2: DRILL VERTICAL STABILIZER
(TAIL DRAGGER)



Step 1: Corners of flanges on curved portions of formed parts may be faceted. Round the facets on the bulkhead frames as shown in Figure 1 to ensure the skin will fit smoothly over the bulkheads.

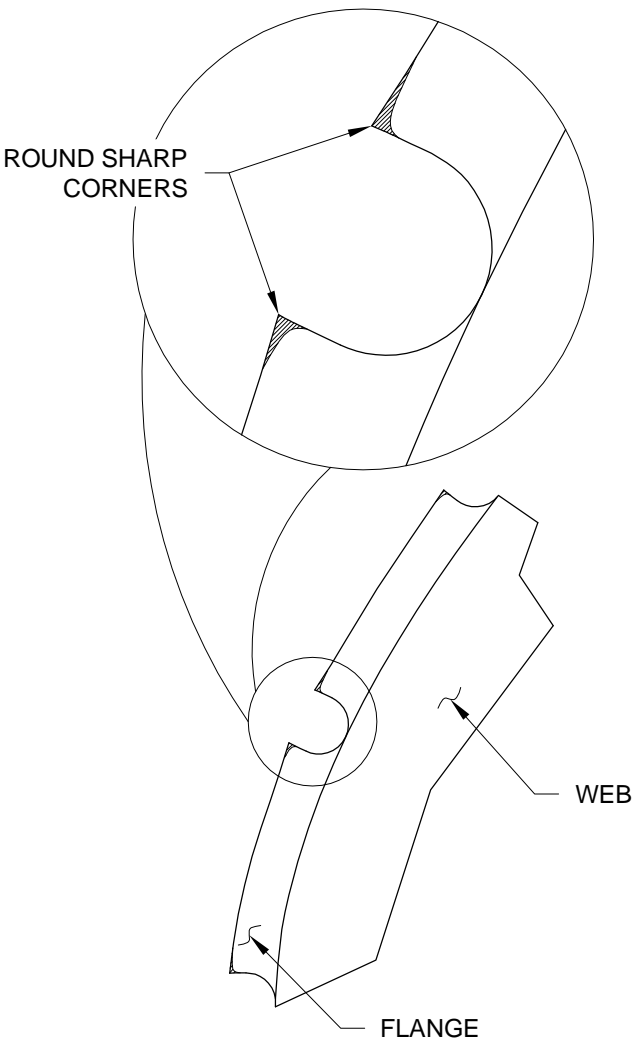


FIGURE 1: ROUNDING FLANGES

NOTE: The manufactured heads will be on the aft and outboard sides of the assembly.

Step 2 (Tail Dragger): Dimple the #30 holes in the webs of the F-01412A and F-01412B Bulkheads for the head of an AN426AD4 rivet, except as shown in Figure 2.

Dimple the #30 and #40 holes in the bulkhead flanges, except as noted in Figure 2.

NOTE: If a flush screw installation of the F-14112 Plate Covers is desired, complete Step 3. See Page 10-14, Step 11 and Page 10-20, Step 3 for more information.

Step 3 (Optional): Dimple the #27 holes flanges of the F-01412A Bulkhead as shown in Figure 2.

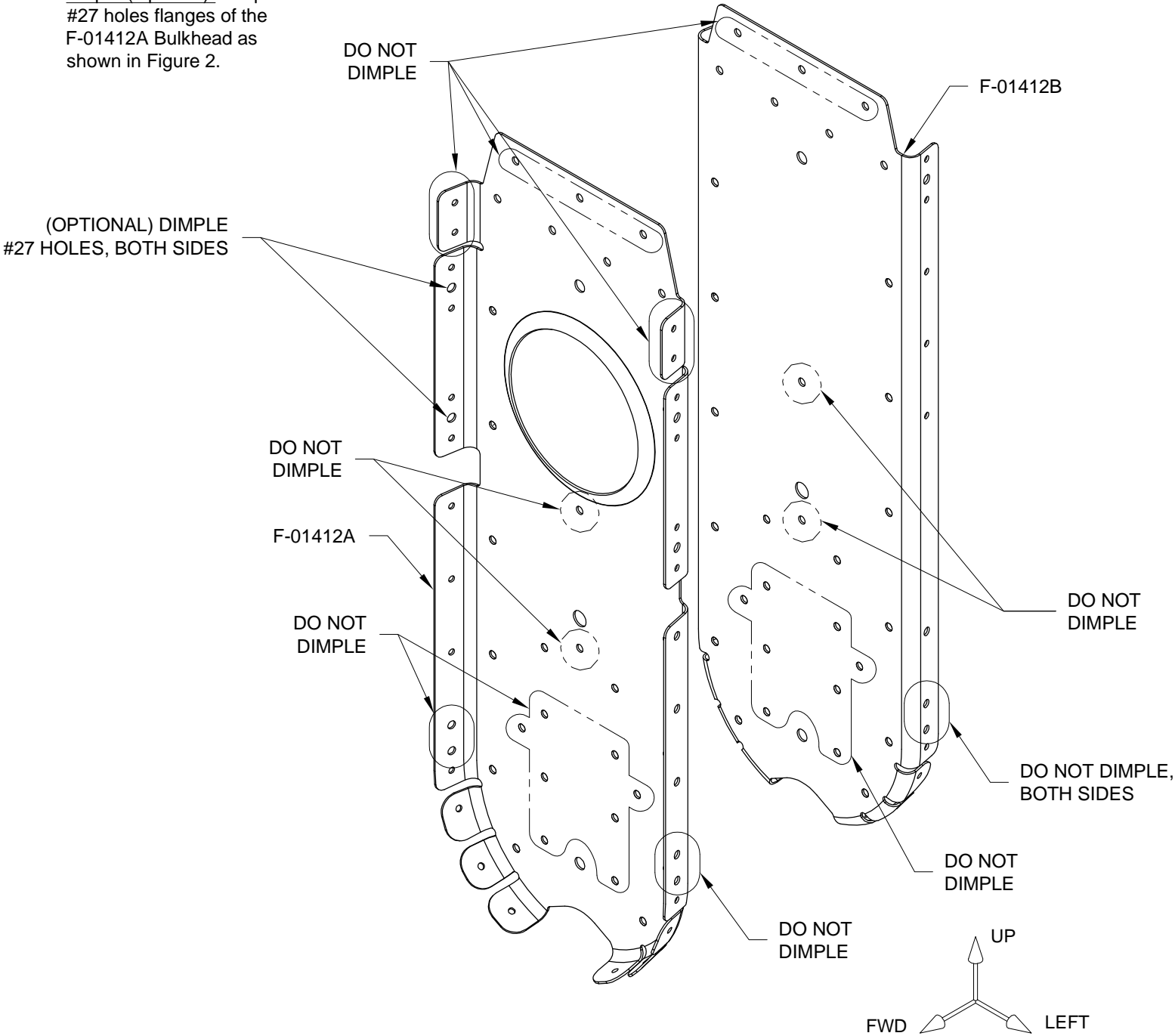


FIGURE 2: F-01412 BULKHEAD
(TAIL DRAGGER)

NOTE: The manufactured heads will be on the aft and outboard sides of the assembly.

Step 1: (Tri-Gear) Dimple the #30 holes in the web of the F-01412A and F-01412B Bulkheads for the head of an AN426AD4 rivet, except as noted in Figure 1.

Step 2 (Tri-Gear): Machine countersink the aft side of the F-01412D Tie Down Bracket to accept the four rivet dimples in the bulkheads as shown in Figure 1.

Step 3: Dimple the #40 and #30 holes in the bulkhead flanges, except as noted in Figure 2.

NOTE: If a flush screw installation of the F-14112 Plate Covers is desired, complete Step 3. See Page 10-14, Step 11; Page 10-20, Step 3; and Page 10-32, Step 3 for more information.

Step 4 (Optional): Dimple the #27 holes flanges of the F-01412A Bulkhead as shown in Figure 1.

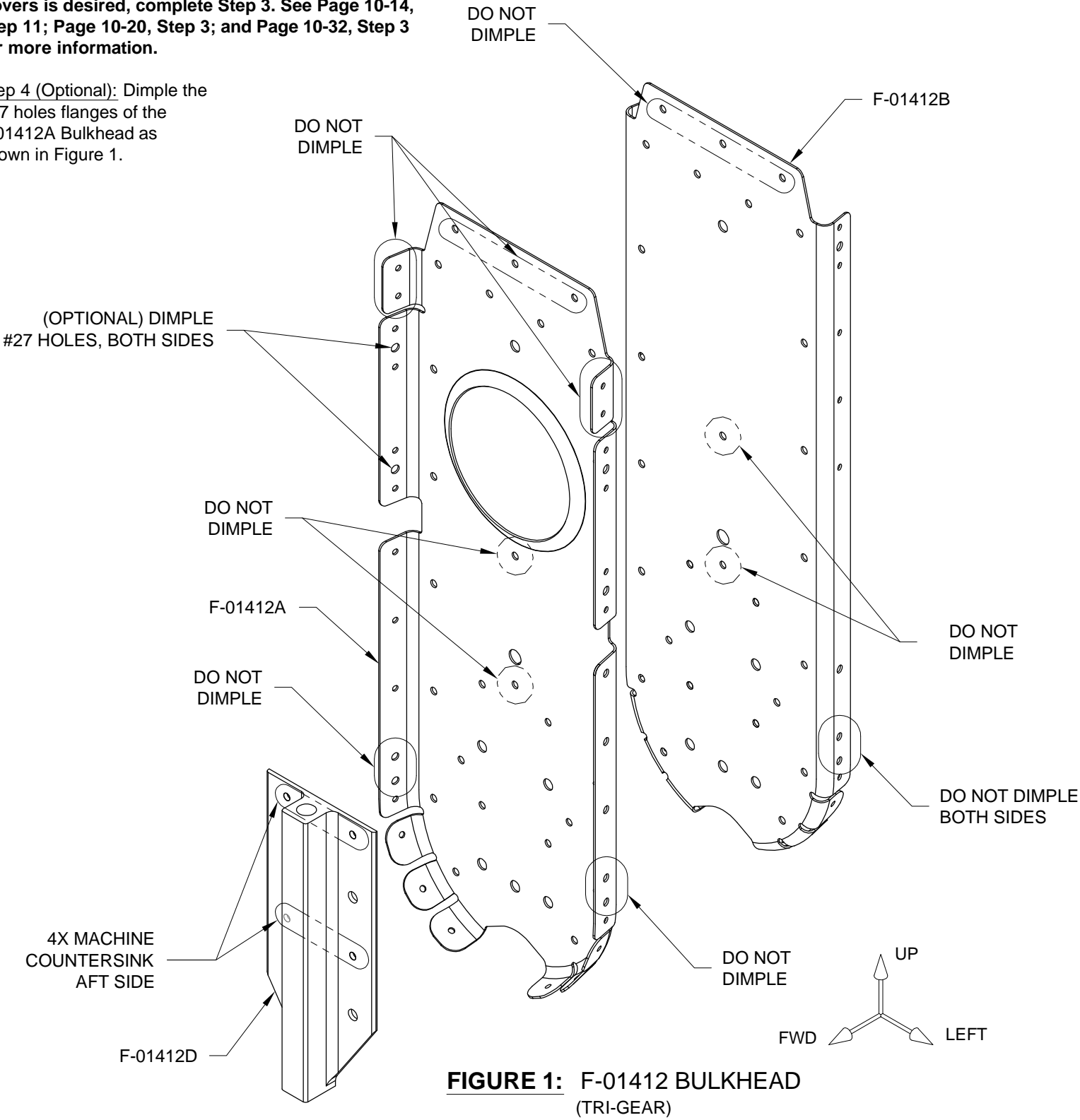
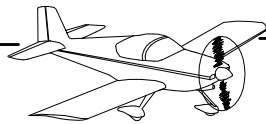


FIGURE 1: F-01412 BULKHEAD
(TRI-GEAR)



NOTE: All non-alclad material must be primed.

Step 1 (Tri-Gear): Prime the F-01412D Tie Down Bar.

Prime the F-01412A Bulkhead and F-01412B Bulkhead as desired.

Step 2 (Tri-Gear): Cleco then rivet the F-01412D Tie Down Bar and F-01412A & F-01412B Bulkheads together as shown in Figure 1 and on Page 10-07, Figure 1.

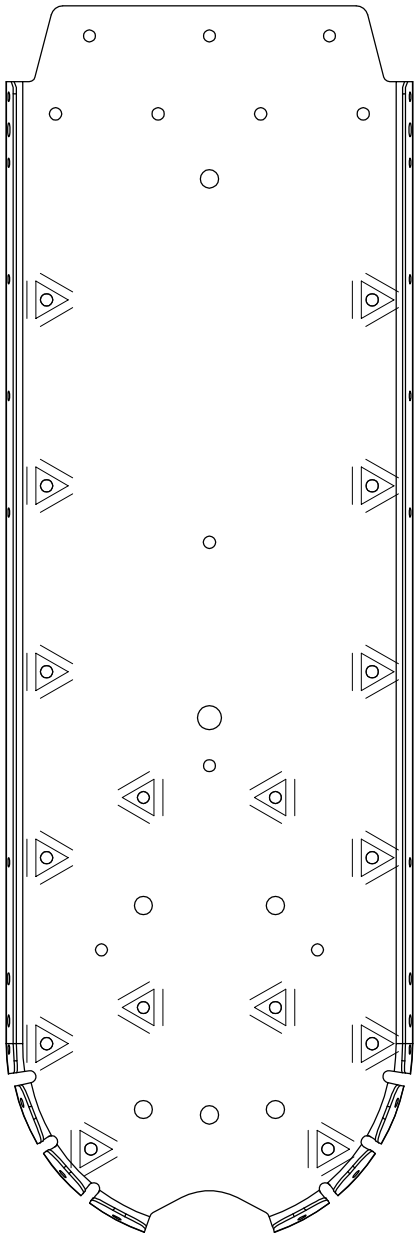


FIGURE 1: F-01412 BULKHEAD RIVETS
(TRI- GEAR AFT VIEW)

Step 1 (Tail Dragger): Prime the F-01412A Bulkhead and F-01412B Bulkhead as desired.

Step 2 (Tail Dragger): Cleco then rivet the F-01412A Bulkhead and F-01412B Bulkhead together as shown in Figure 2 and on Page 10-06, Figure 2.

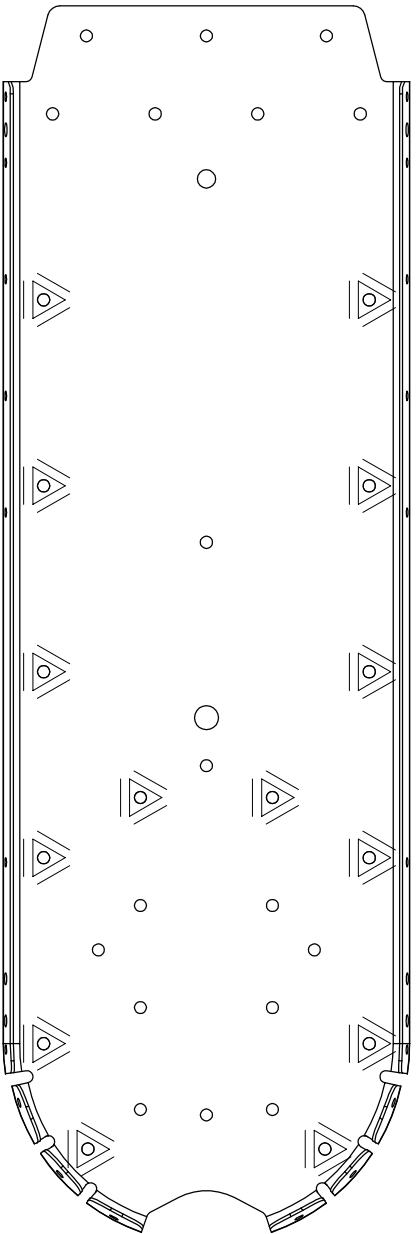
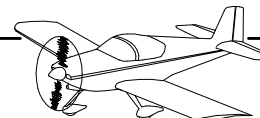


FIGURE 2: F-01412 BULKHEAD RIVETS
(TAIL DRAGGER AFT VIEW)

AN426AD4-4
AN426AD4-5



Step 1: Cleco the F-01411A Bulkhead, F-01411B Bulkhead, and F-01411C Horizontal Stab Attach Bars together.

Final-Drill #30 the hole locations as shown in Figure 1.

Step 2 (Tri-Gear): Label for orientation and separate the parts.

Step 2 (Tail Dragger): Final-Drill 1/4 the holes in the bottom of the F-01411C Horizontal Stab Attach Bars as shown in Figure 1.

Label for orientation and separate the parts.

NOTE: See Section 5.13 for more information on Fluting.

Step 3: Round the faceted edges on the F-01411A Bulkhead and F-01411B Bulkhead flanges as shown on Page 10-06 Figure 1.

Flute the bottom flange of the bulkheads as required to fit the F-01479 Aft Bottom Skin. See Figure 1, Page 10-17 and 10-18.

NOTE: If a flush screw installation of the F-14112 Plate Covers is desired, complete Step 4. See Page 10-14, Step 11; Page 10-20 and Page 10-32 Step 3 for more information.

Step 4 (Optional): Dimple the #27 holes in the flanges of the F-01411B Bulkhead as shown in Figure 1.

Step 5: Dimple the #40 holes in the flanges of the F-01411A Bulkhead and F-01411B Bulkhead, except as noted in Figure 1.

NOTE: All non-alclad material must be primed.

Step 6: Prime the F-01411C Horizontal Stab Attach Bars.

Prime the F-01411A Bulkhead, F-01411B Bulkhead as desired.

Step 7: Cleco then rivet the F-01411A Bulkhead, F-01411B Bulkhead and F-01411C Horizontal Stab Attach Bars together as shown in Figure 1.

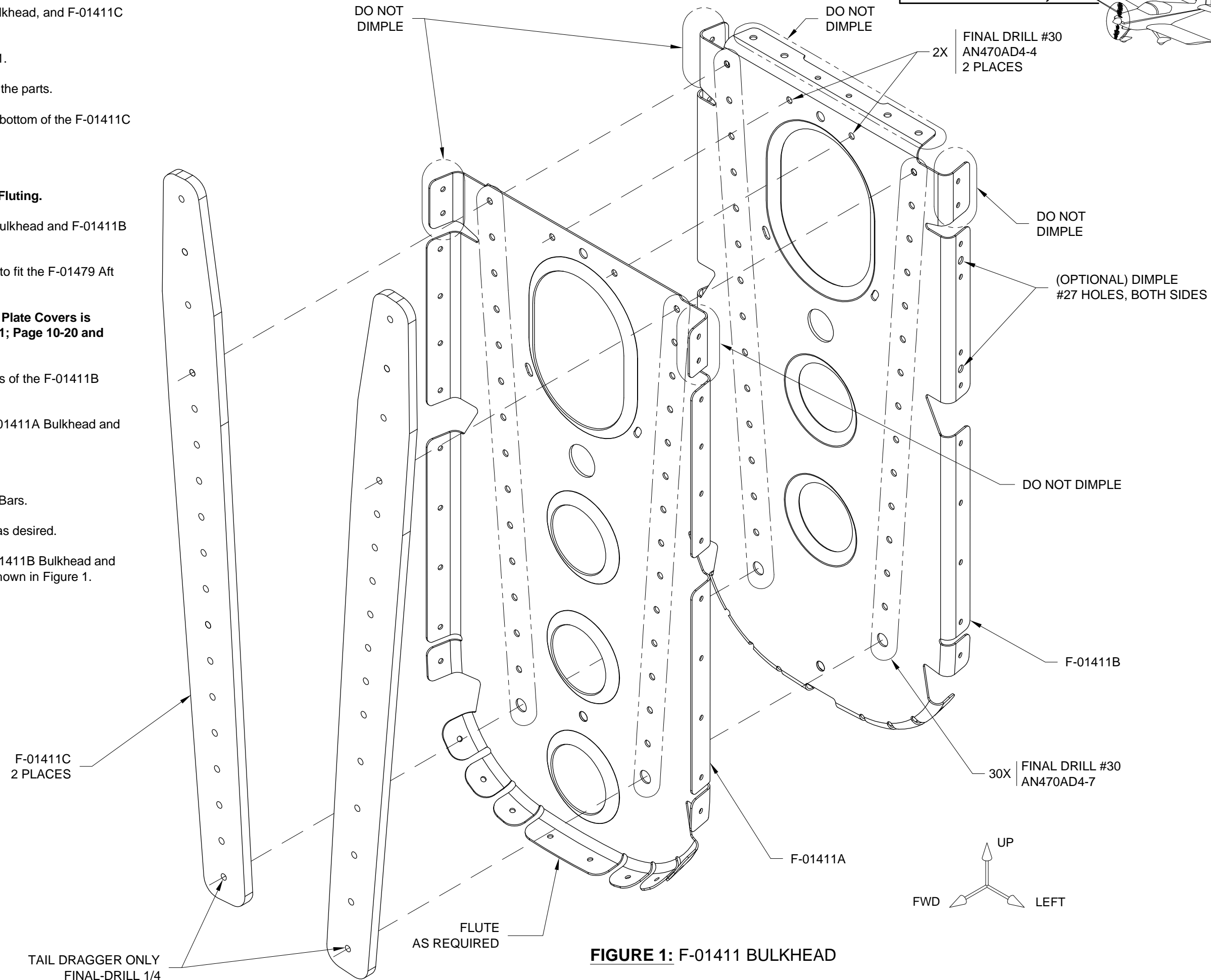
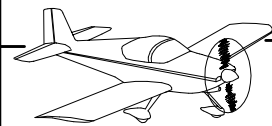


FIGURE 1: F-01411 BULKHEAD



Step 1: Use a step drill to enlarge the Systems hole in the F-01410 Bulkhead as shown in Figure 1.

Step 2: Dimple the #40 holes in the flanges of the F-01410 Bulkhead, except as shown in Figure 1.

NOTE: See Section 5.13 for more information on Fluting.

Step 3: Round the faceted edges on the F-01410A Bulkhead as shown on Page 10-06 Figure 1.

Flute the bottom flanges of the bulkhead as required to fit the F-01479 Aft Bottom Skin. See Figure 1 and Page 10-17 and 10-18.

Step 4: Use a drill press to final-drill 1/4 (6.35 mm) the holes in the F-01410C Horizontal Stab Attach Bars as shown in Figure 1.

NOTE: All non-alclad material must be primed.

Step 5: Prime the F-01410C Horizontal Stab Attach Bars.

Prime the F-01410 Bulkhead and the F-01410A & F-01410B Bulkhead Doublers as desired.

Step 6: Cleco then rivet the F-01410C Horizontal Stab Attach Bar, F-01410A and F-01410B Bulkhead Doublers to the F-01410 Bulkhead as shown in Figure 2.

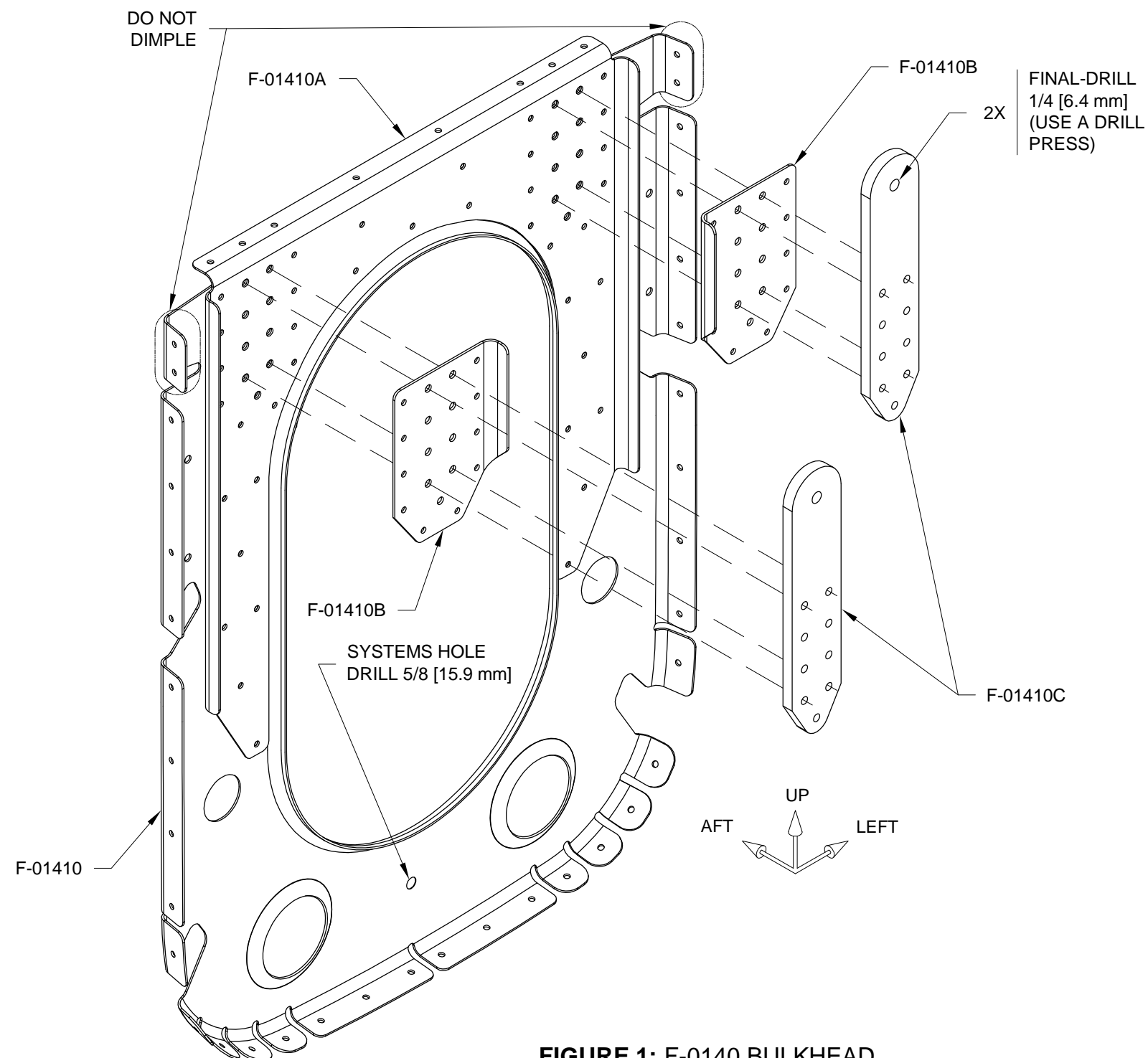


FIGURE 1: F-0140 BULKHEAD

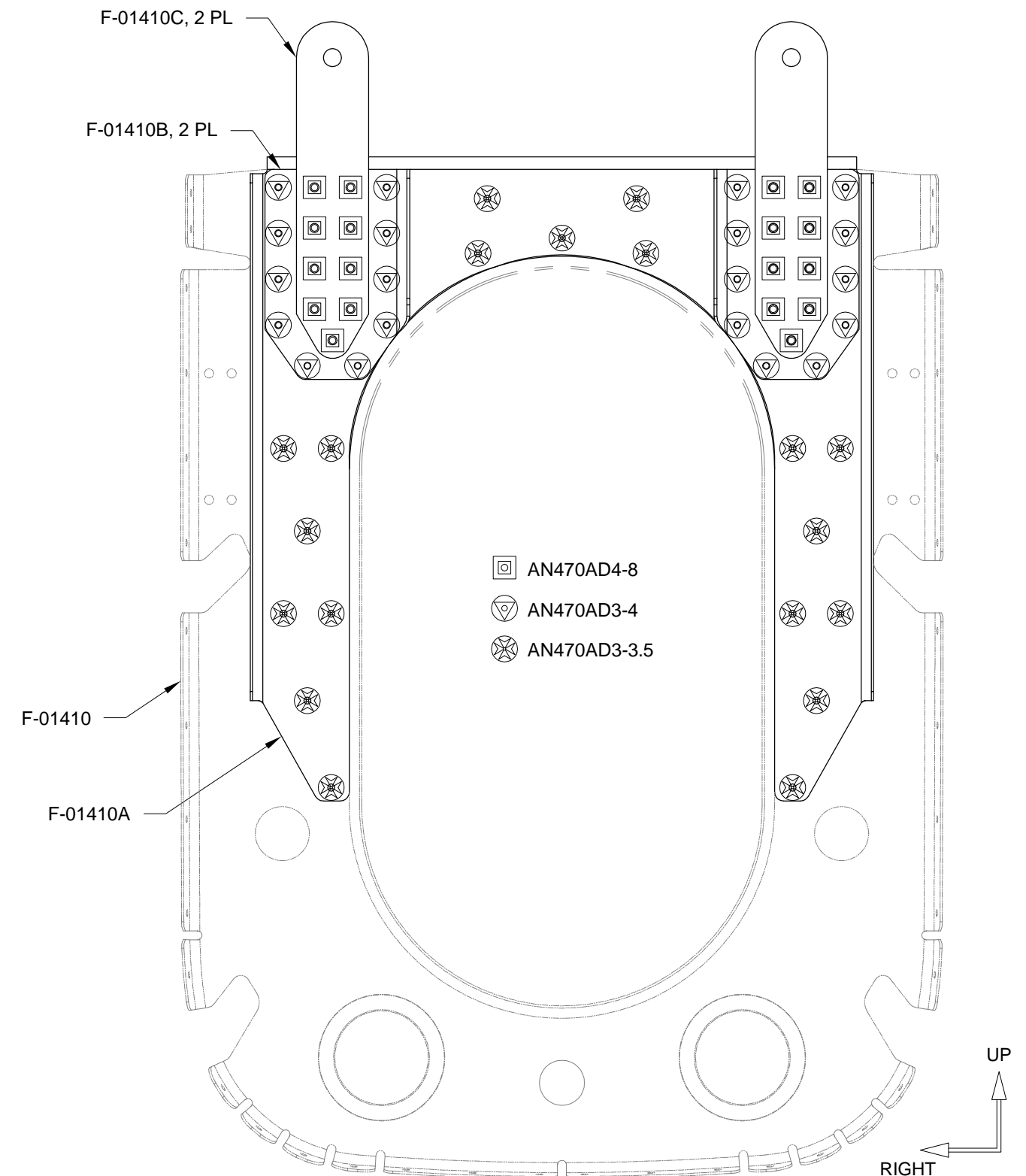
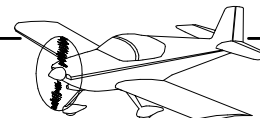


FIGURE 2: F-01410 BULKHEAD RIVETS



Step 1: Dimple the #40 holes in the flanges of the F-01407-L & -R Bulkheads, F-01408-L & -R Side Frames to accept a dimpled skin, except as noted in Figure 1 and Figure 2.

Step 2: Use a step drill to enlarge the Systems Hole in the F-01408-R Side Frame as shown in Figure 2.

Step 3: Prime the F-01407-L & -R Side Frames and the F-01408-L & -R Side Frames as desired.

Step 4: Cleco then rivet the F-01407-L & -R Side Frames together as shown in Figure 2.

Step 5: Cleco then rivet the F-01408-L & -R Side Frames and the F-14115 Rudder Cable Bracket together as shown in Figure 2.

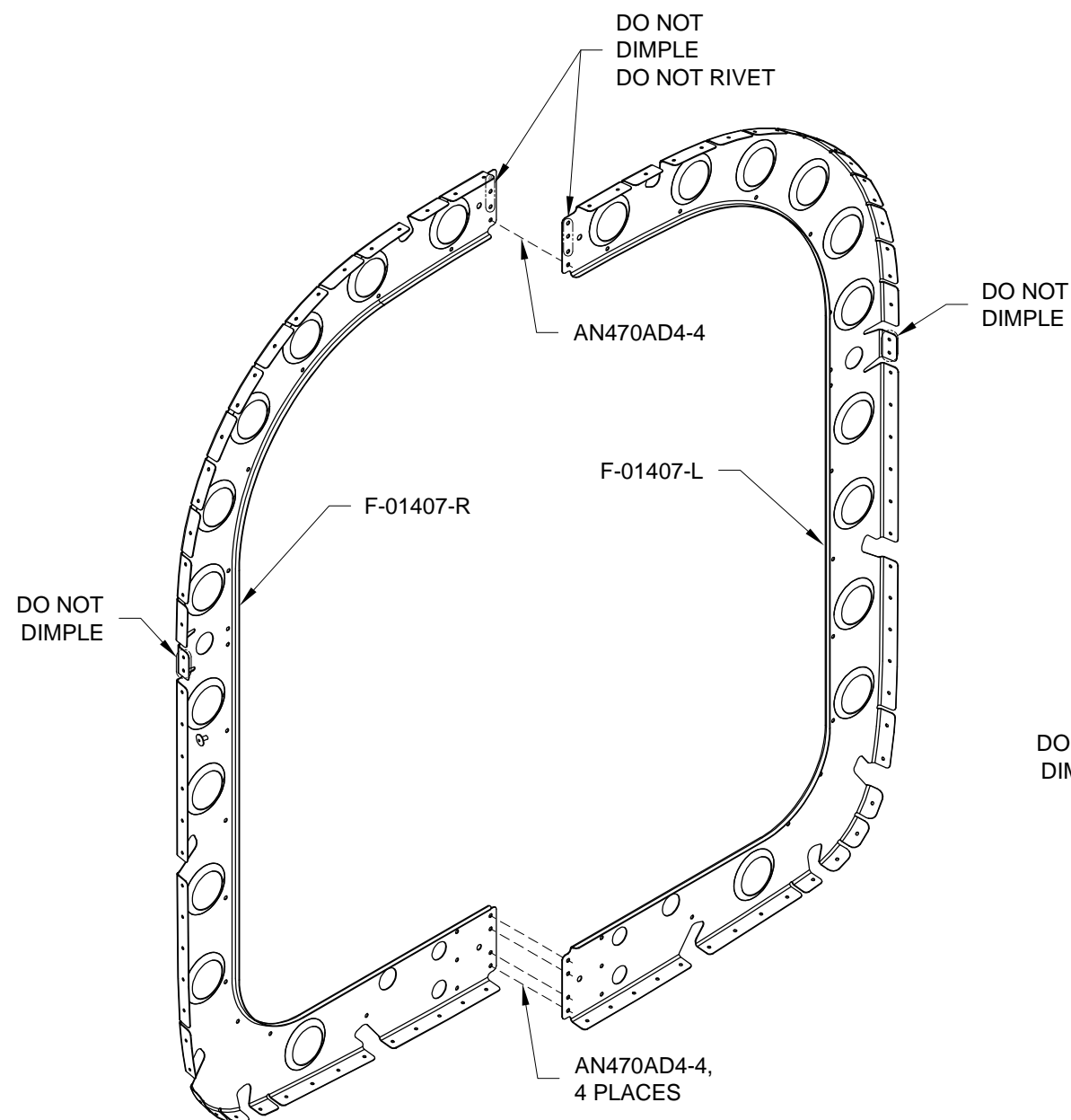


FIGURE 1: F-01407 BULKHEAD

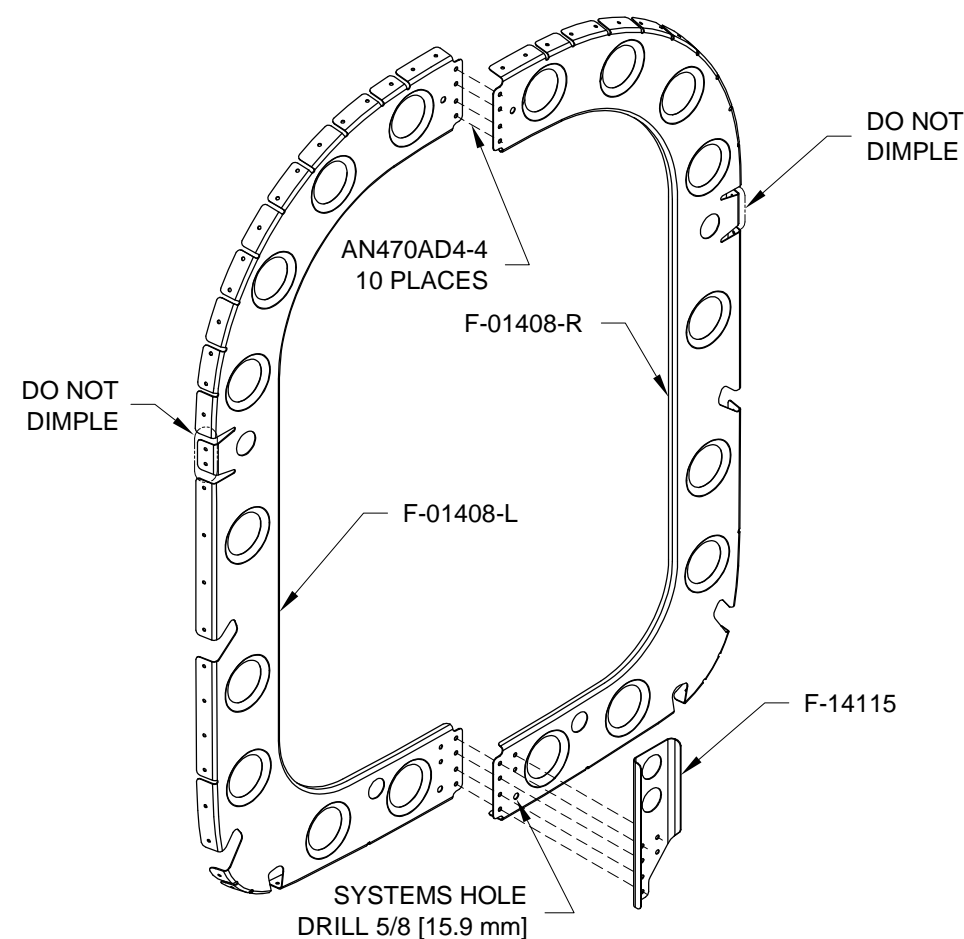


FIGURE 2: F-01408 BULKHEAD

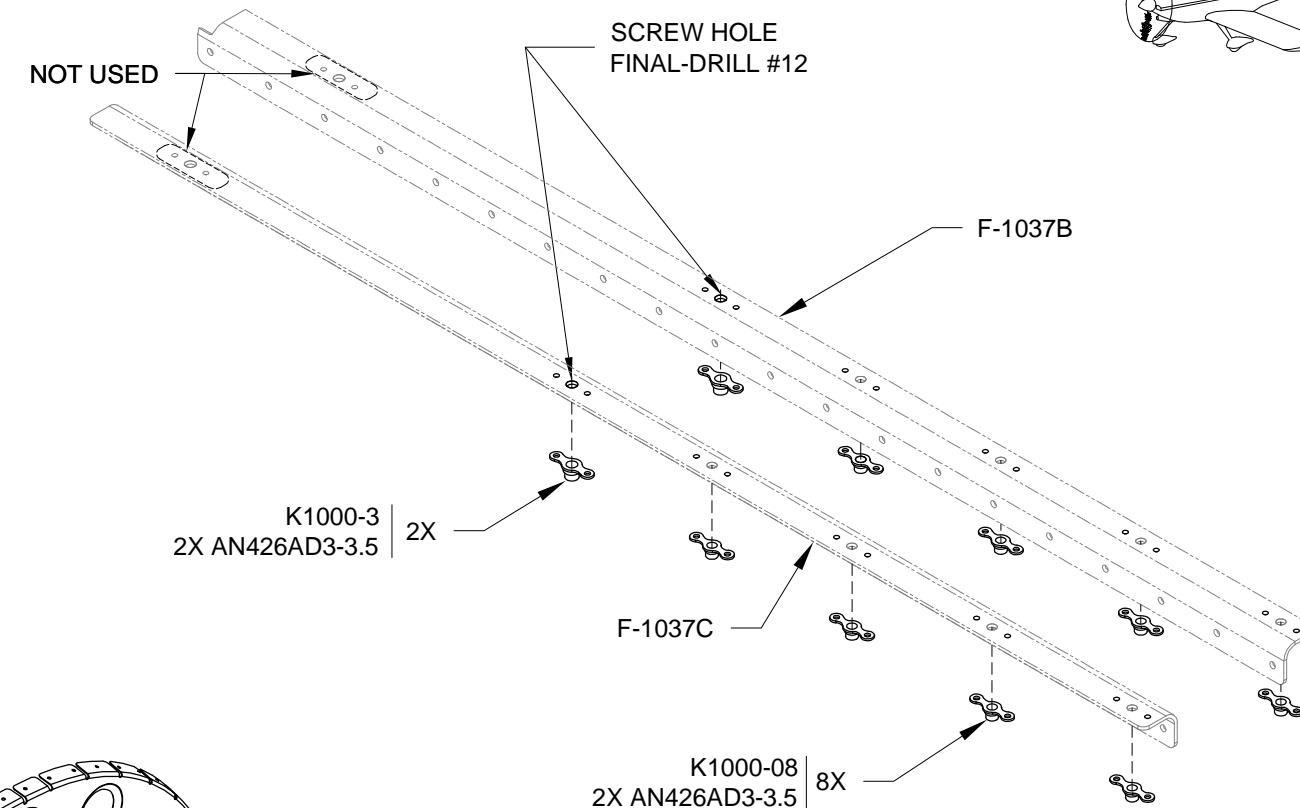


FIGURE 3: BATTERY ANGLES

NOTE: The forward 2 sets of nutplate holes are for the RV-10 and not utilized in the RV-14. See Figure 3.

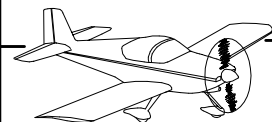
Step 6: Final-Drill #40 the nutplate attach holes on the F-1037B and F-1037C Battery Angles. See Figure 3.

Countersink the nutplate attach holes on the battery angles to fit the head of an AN426AD3 rivet.

Final-Drill #12 the screw hole locations called out in Figure 3.

Step 7: Prime the F-1037B and F-1037C Battery Angles as desired.

Step 8: Rivet the nutplates to the F-1037B and F-1037C Battery Angles as shown in Figure 3.



Step 1: Separate the F-01429 Bellcrank Ribs by removing the hatched areas shown in Figure 1.

NOTE: The manufactured heads will be on the forward side of the assembly.

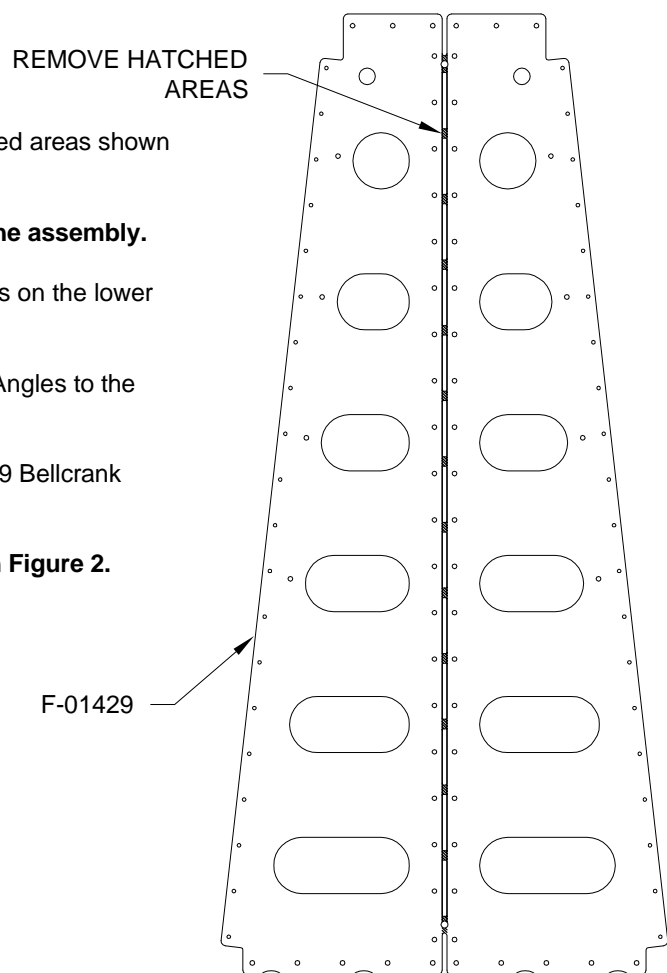
Step 2: Dimple the two holes on the forward flanges and all the holes on the lower flanges of the F-01429 Bellcrank Ribs as shown in Figure 2.

Step 3: Cleco then final-drill #30 the F-1037B and F-1037C Battery Angles to the F-01429-L & -R Ribs as shown in Figure 1.

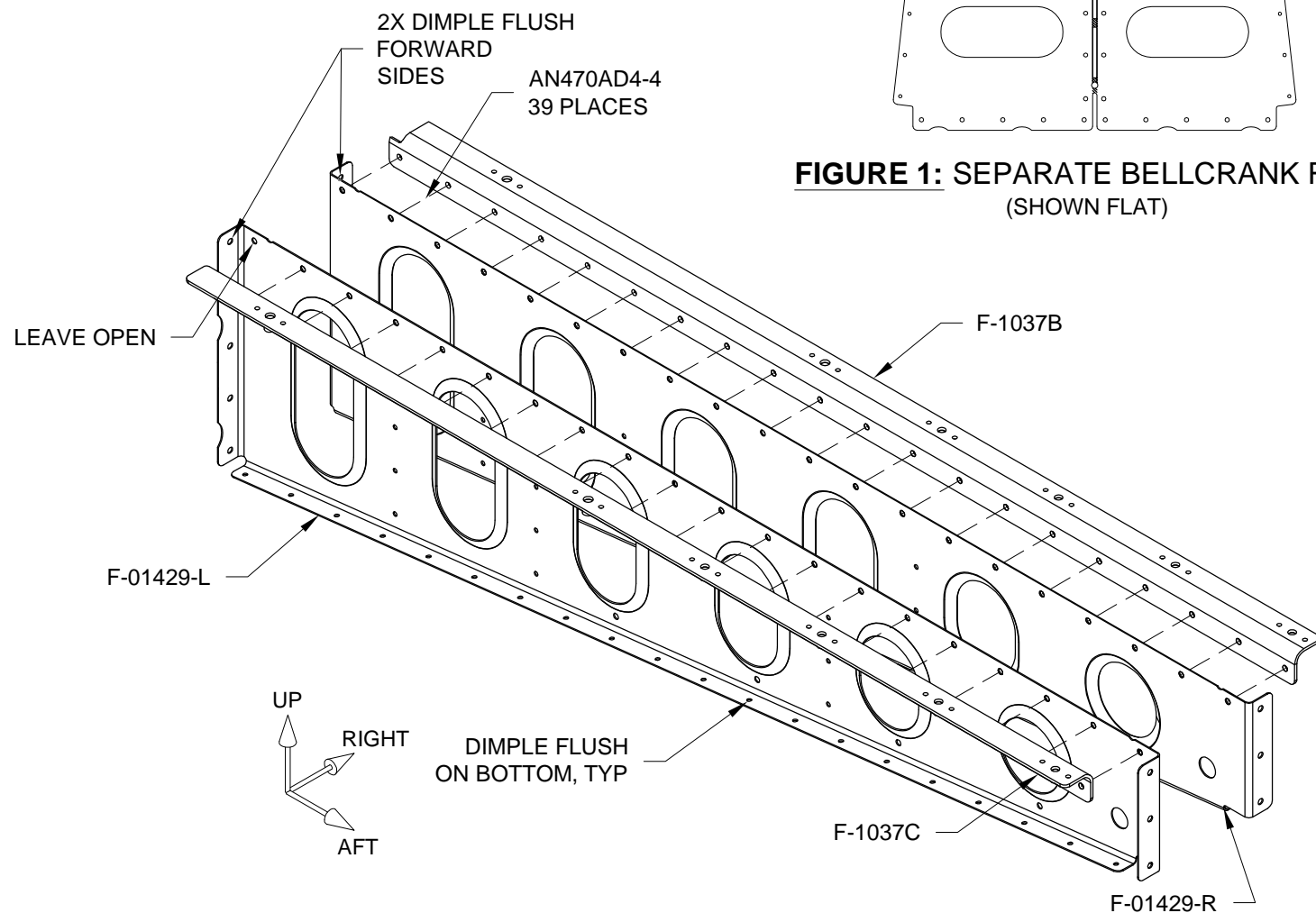
Step 4: Prime the F-1037B and F-1037C Battery Angles and F-01429 Bellcrank Ribs as desired.

NOTE: Leave the forward hole on the left side open as shown in Figure 2.

Step 5: Rivet the F-1037B and F-1037C Battery Angles to the F-01429 Bellcrank Ribs as shown in Figure 2.



**FIGURE 1: SEPARATE BELLCRANK RIBS
(SHOWN FLAT)**



**FIGURE 2: BATTERY ANGLE AND BELLCRANK RIB
ASSEMBLY**

NOTE: The manufactured heads will be on the forward side of the assembly.

Step 6: Dimple the holes on the F-01406B Bulkhead as shown in Figure 3.

Dimple the nutplate attach holes on the bulkhead. The manufactured heads will be on the forward and top sides of the assembly.

Dimple the holes flush on the lower side of the lower flange of the F-01406B Bulkhead.

NOTE: See Section 5.16 for more information on Dimpling Nutplates.

Step 7: Dimple the nutplates shown in Figure 3.

Step 8: Prime the F-01406B Bulkhead as desired.

Step 9: Rivet the nutplates and F-01429-L & -R Bellcrank Ribs to the F-01406B Bulkhead as shown in Figure 3.

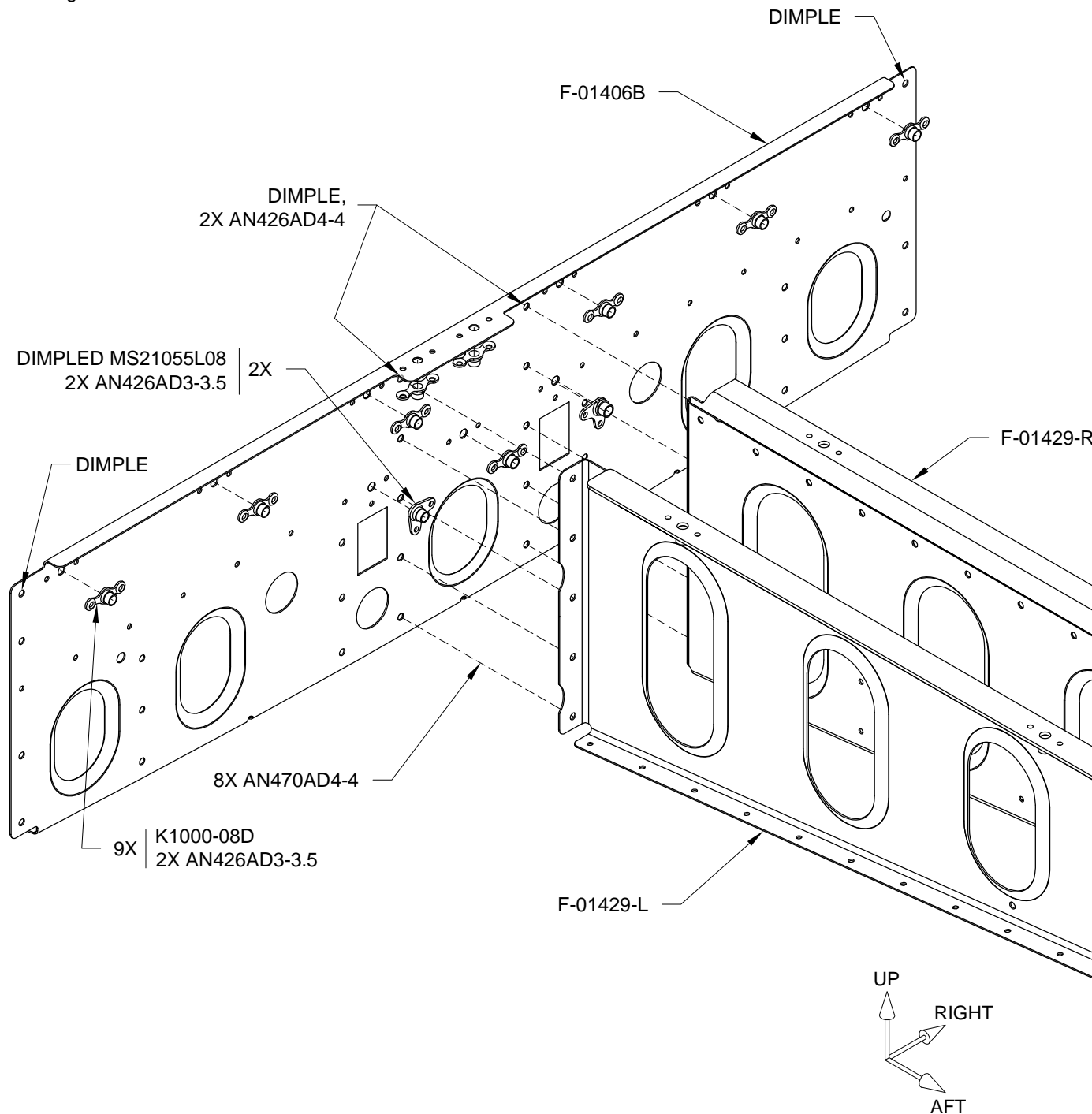
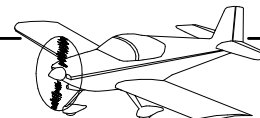


FIGURE 3: BATTERY ANGLE AND BULKHEAD ASSEMBLY



Step 1: Rivet the Battery Angle and Bellcrank Rib Assembly to the F-01407 Bulkhead as shown in Figure 1.

Step 2: Dimple all #40 holes in the F-01478 Bottom Skin.

NOTE: Use a reduced diameter female die on the J-Channel of the F-01478 Bottom Skin.

Step 3: Dimple the #40 holes in the F-01486B-L & -R, F-01486C-L & -R, F-01486D and F-01486E Stiffeners.

Step 4: Place the F-01478 Bottom Skin upside down across two sawhorses which are at least 38 [96.5 cm] tall oriented as shown in Figure 1.

NOTE: If the edge stiffeners formed into the F-01478 Aft Fuse Fwd Bottom Skin interfere with the notches in the Bulkheads, bend the stiffeners or enlarge the the notches in the bulkheads slightly until the stiffeners clear the edge of the notches.

Step 5: Cleco the F-01407 Bulkhead to the F-01478 Aft Fuse Fwd Bottom Skin.

Slide the F-01486C-L & -R, F-01486D and F-01486E J-Stiffeners into position and cleco to the bottom skin.

Slide the F-01408 Bulkhead along the stiffeners and cleco it to the bottom skin. See Figure 1.

NOTE: Rivet ONLY the holes called out in Figure 1. Cover the unused holes with tape to prevent inadvertent riveting.

Step 6: Rivet the F-01407 Bulkhead, F-01408 Bulkhead, the F-01486C-L & -R, F-01486D and F-01486E J-Stiffeners and the F-01429-L & -R Bellcrank Ribs to the F-01478 Bottom Skin as shown in Figure 1.

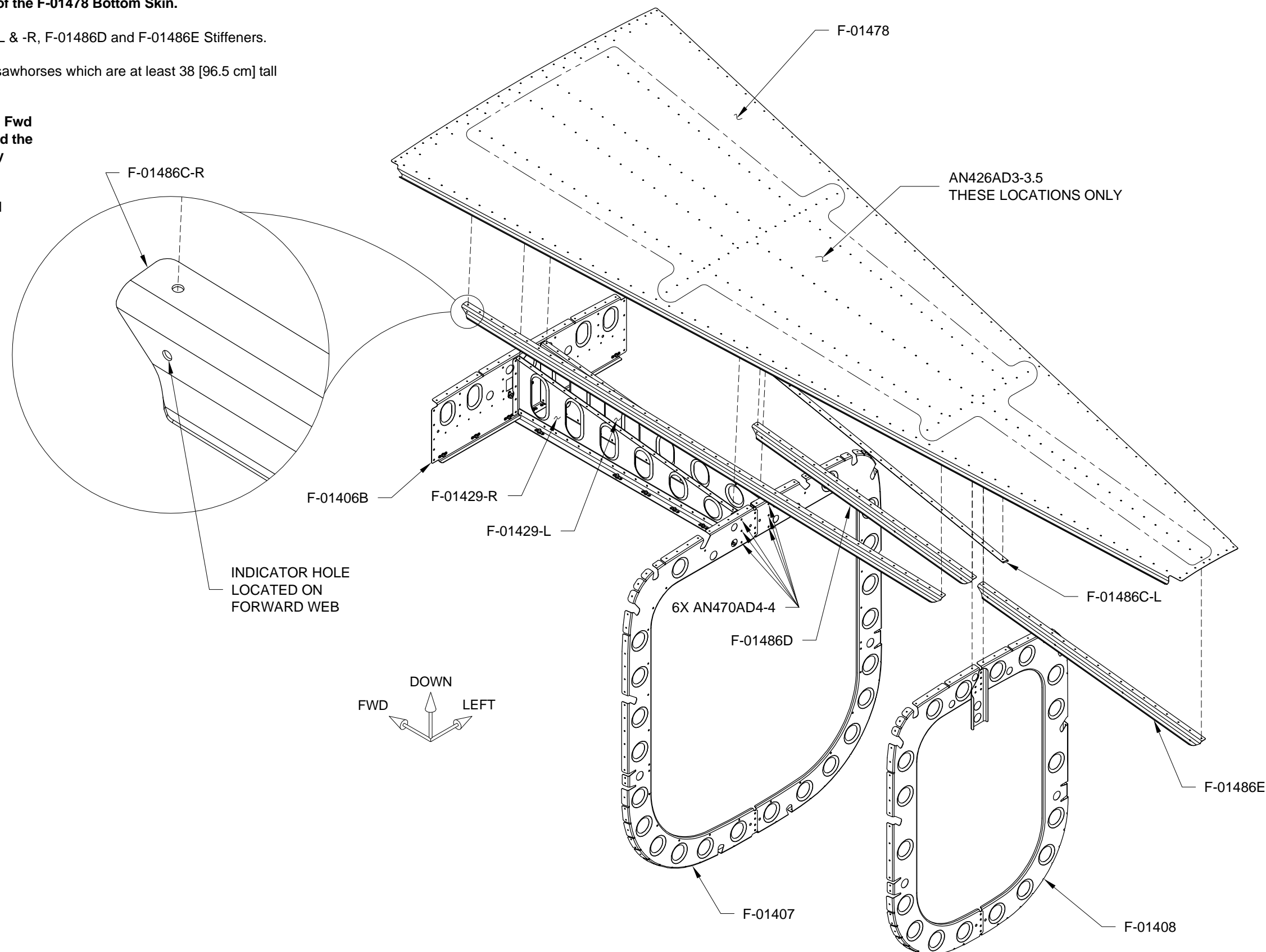
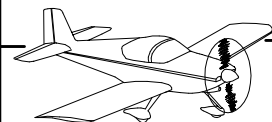


FIGURE 1: BOTTOM SKIN & BULKHEAD ASSEMBLY



NOTE: Break the edges of the skins where they will overlap each other to improve the fit. See Section 5.10 for more information on lap joints. Dimple using a reduced diameter female die on the curved portions of the skin.

For now, leave the Assembly oriented upside down on the sawhorses as shown on Page 10-13 Figure 1

Step 1: Dimple all #40 holes in the F-01473-L & -R Side Skins.

Dimple the #30 holes in the side skins except as shown in Figure 1.

Dimple the #40 Holes in the F-01473A Angle Stiffeners.

Step 2: Machine countersink the #40 holes in the F-01418B-L & -R Longerons to fit a dimpled skin.

NOTE: Dimple using a reduced diameter female die.

Step 3: Dimple the #40 holes in the F-01486A-L & -R, F-01486B-L & -R Stiffeners.

NOTE: The nutplate attach holes in the F-01486A -L & -R Stiffeners are located aft.

Step 4: Prime the F-01486A-L & -R Stiffeners, F-01486B-L & -R Stiffeners, and F-01473-L & -R Side Skins as desired.

Step 5: Cleco the F-01410 Bulkhead to the F-01478 Aft Fuse Fwd Bottom Skin.

Step 6: Insert the F-01486A-L and F-01486B-L Stiffeners into the slots in the F-01407 and F-01408 Bulkheads.

Insert the F-01418B-L Longeron into the slots in the bulkheads.

Step 7: Position the F-01411 Bulkhead as shown in Figure 1.

Cleco the F-01411 Bulkhead to the F-01418B-L Longeron.

NOTE: Review the systems installation instructions beginning on Page 10-21 prior to installing the F-01473-L & -R Side Skins.

Step 8: Lay the WH-00057 Aft Fuselage Harness and WH-00059 Phone Cable in the F-01486A-L J-Stiffener and through the notches in the F-01407 and F-01408 Bulkheads as shown on Page 10-25 Figure 1 and Page 10-26 Figure 1.

Step 9: Cleco the F-01473-L Side Skin to the Aft Fuselage Assembly. See Figure 1.

Step 10: Position the Aft Fuselage Assembly upright on sawhorses as shown in Figure 1.

Insert the F-01486A-R and F-01486B-R Stiffeners into the slots in the F-01407 and F-01408 Bulkheads.

Insert the F-01418B-R Longerons into the slots in the bulkheads.

Cleco the F-01411 Bulkhead to the F-01418B-R Longeron.

Cleco the F-01473-R Side Skin to the Aft Fuselage Assembly.

Cleco the F-01486A-L & -R and F-01486B-L & -R Stiffeners to the side skins.

Cleco the F-01473A Angle Stiffeners to the F-01473-L & -R Side Skins.

NOTE: If a flush screw installation of the F-14112 Plate Covers is desired, complete Step 11.

The hardware for a flush screw installation is not included in the kit.

The flush screw installation requires a custom dimple die.

Step 11 (Optional): Dimple the #27 Holes in the F-01473-L & -R Side Skins as shown in Figure 2.

Dimple the #27 Holes in the F-01486A-L & -R Stiffeners as shown in Figure 2.

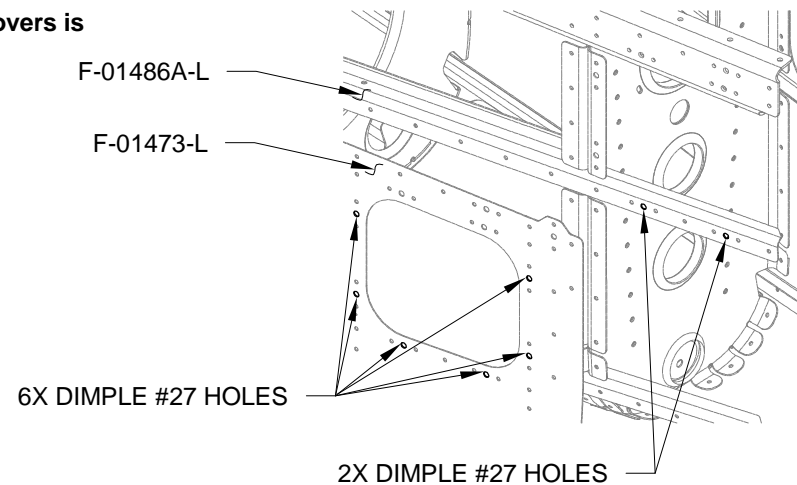


FIGURE 2: DIMPLE FOR PLATE COVERS WITH FLUSH SCREWS
(OPTIONAL, ONLY LEFT SIDE SHOWN)

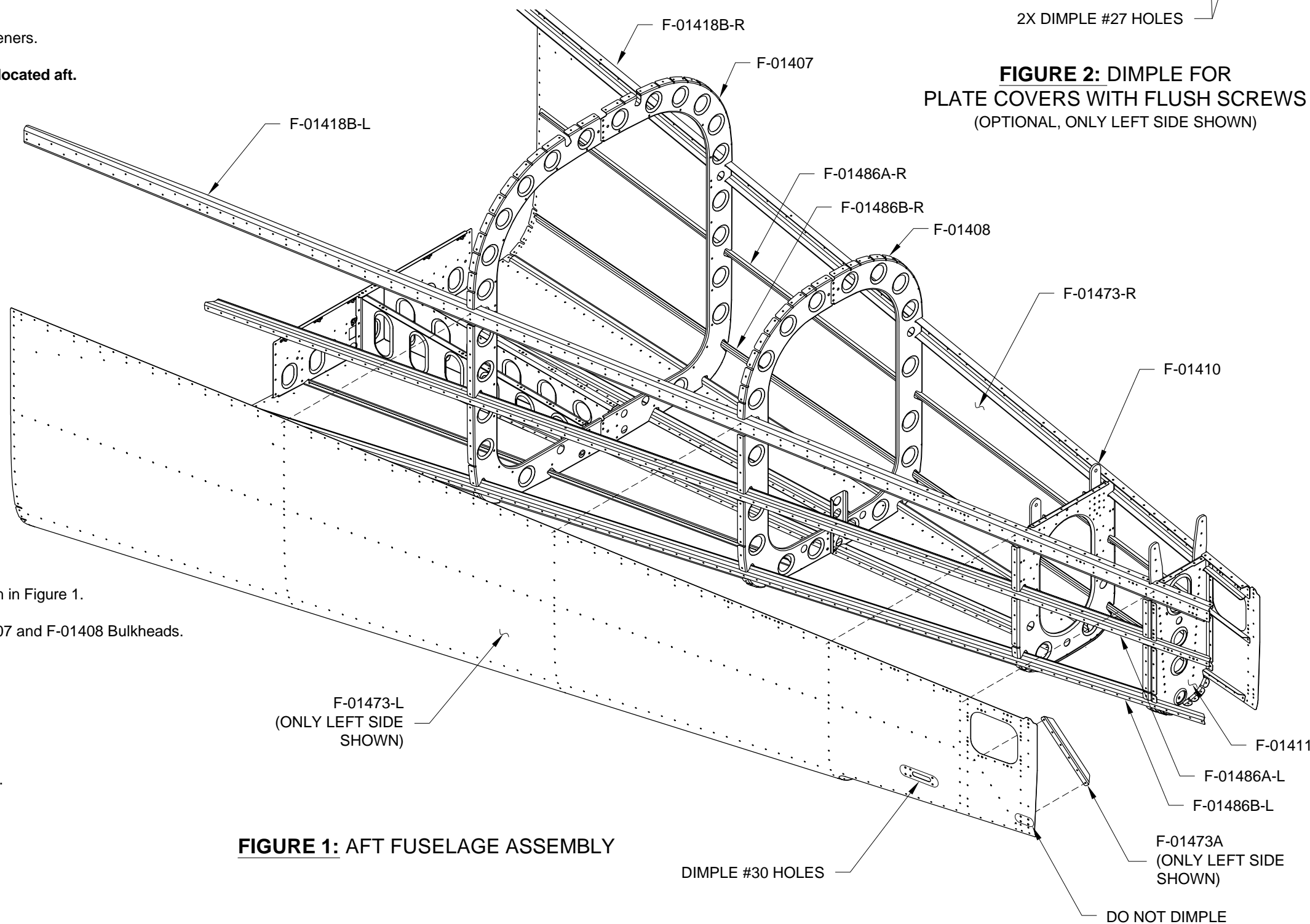


FIGURE 1: AFT FUSELAGE ASSEMBLY

Step 1: Remove the hatched areas on the F-01479 Aft Bottom Skin as shown in Figure 1.

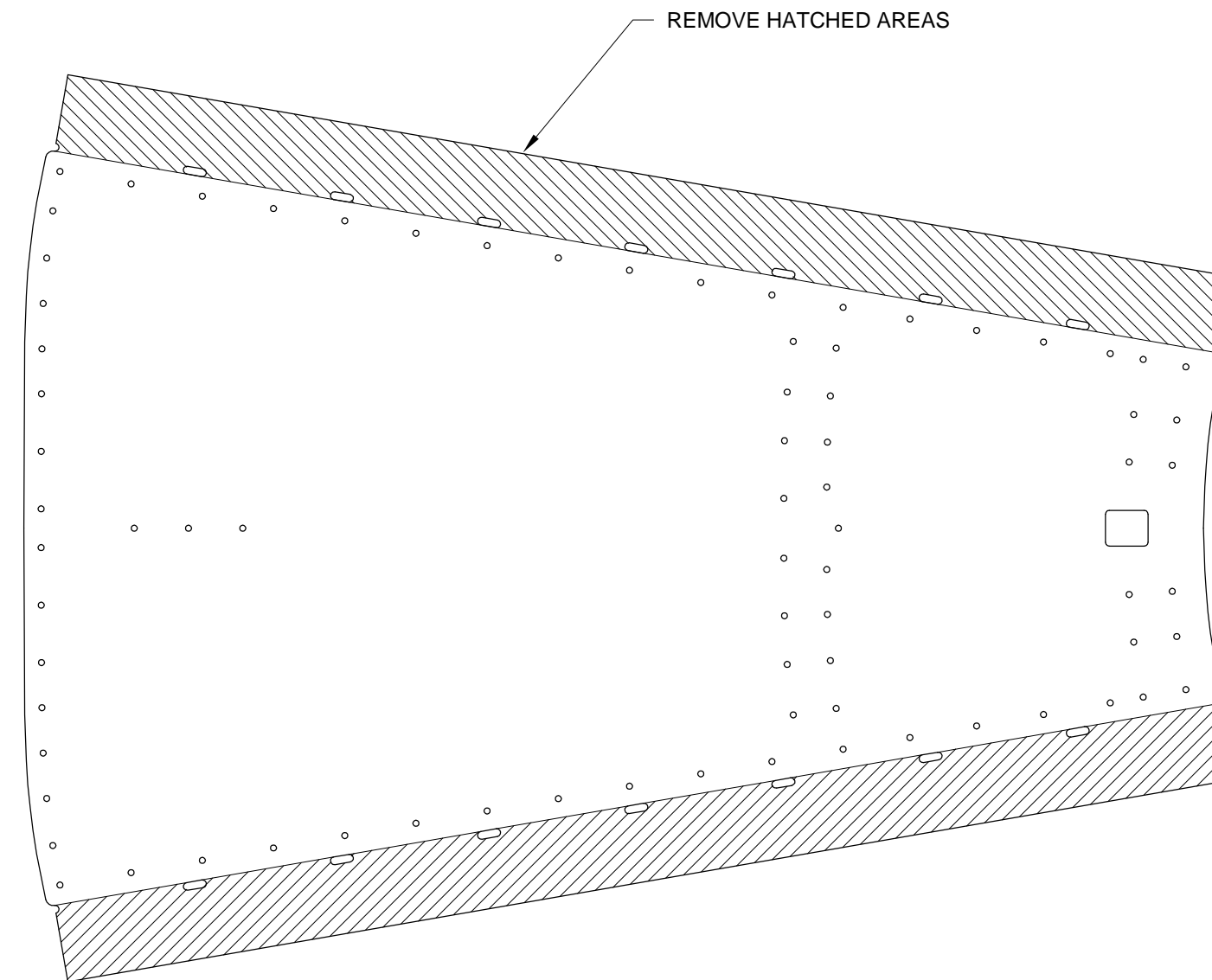


FIGURE 1: F-01479 AFT BOTTOM SKIN
(SHOWN FLAT)

Step 1 (Tri-Gear): Dimple the pilot hole in the F-01479 Aft Bottom Skin as shown in Figure 1.

Final-Drill #12 the two 3/32 [2.388mm] holes called out in Figure 1.

Final-Drill 9/16 the 3/32 [2.388mm] hole called out in Figure 1.

Dimple the #40 holes in the aft bottom skin. Use a reduced diameter female dimple die on rolled areas to minimize distortion.

Step 2 (Tri-Gear): Prime the F-01479 Aft Bottom Skin as desired.

Step 3 (Tri-Gear): Use a rivet to fill the the pilot hole in the F-01479 Aft Bottom Skin as shown in Figure 1.

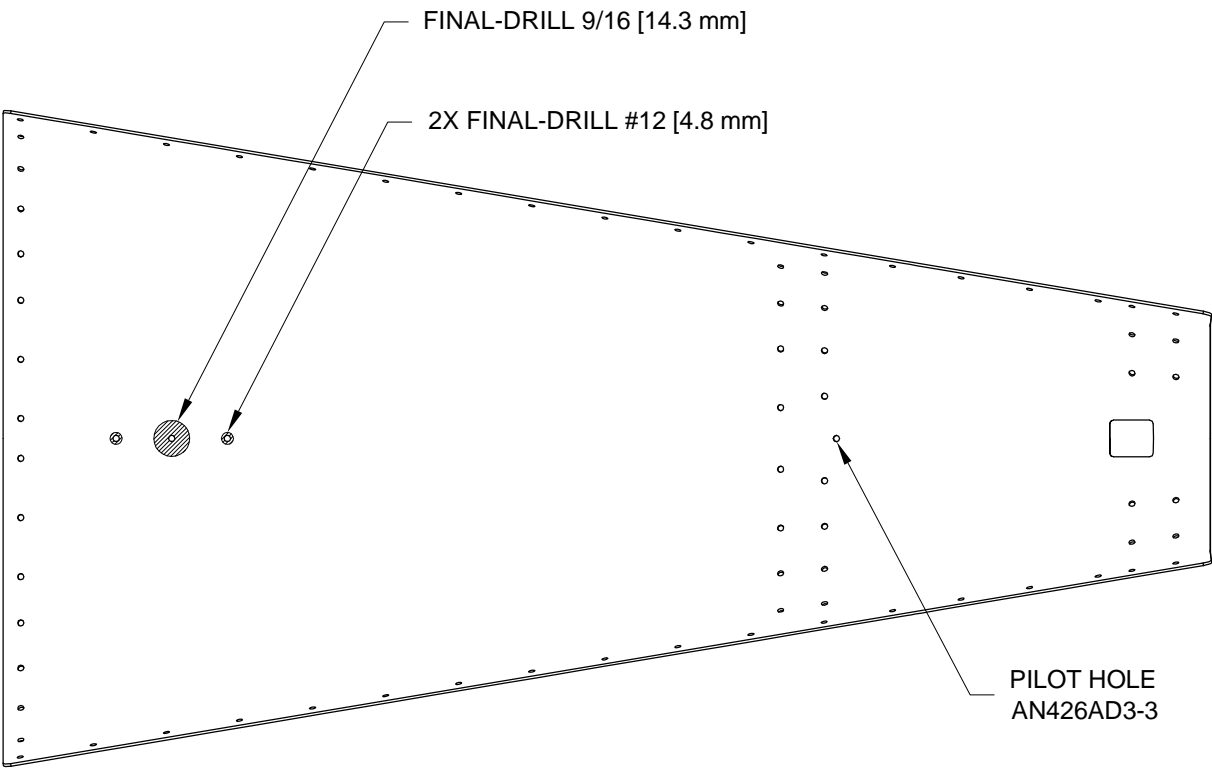


FIGURE 1: F-01479 AFT BOTTOM SKIN
(TRI-GEAR)

Step 1 (Tail Dragger): Modify the F-01479 Aft Bottom Skin by removing the hatched areas as shown in Figure 2. Use the template on Page 10-35.

Final-Drill #12 the two .094 [2.388mm] holes called out in Figure 2.

Final-Drill 9/16 the .094 [4.8mm] hole called out in Figure 2.

Dimple the #40 holes in the aft bottom skin. Use a reduced diameter female dimple die on rolled areas to minimize distortion.

Step 2 (Tail Dragger): Prime the F-01479 Aft Bottom Skin as desired.

Step 3 (Tail Dragger): Separate the F-14129B and F-14129D Shims from the F-14129AB and F-14129CD Shims by removing the hatched area as shown in Figure 3. Save the remaining pieces for later use in the finish kit.

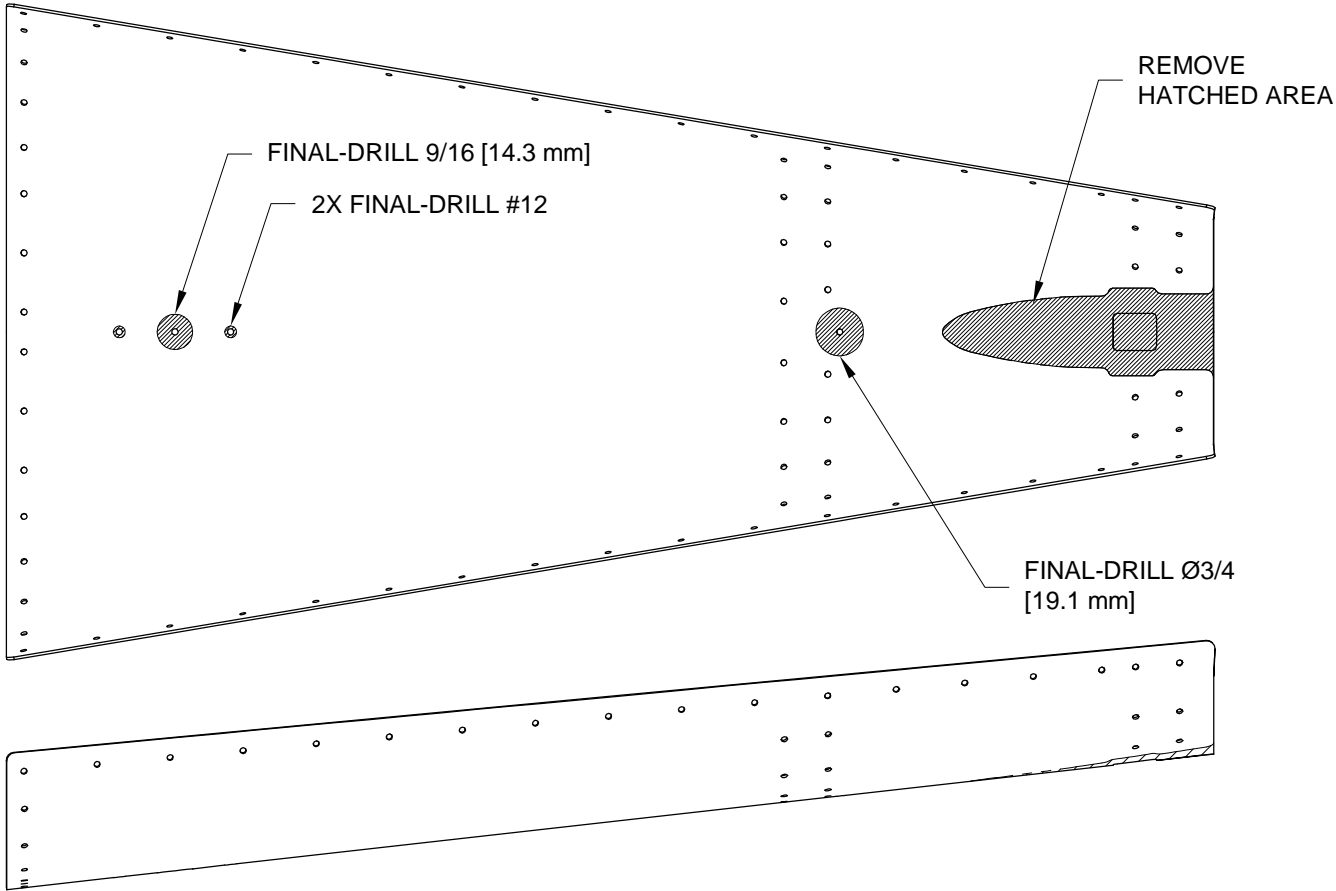


FIGURE 2: F-01479 AFT BOTTOM SKIN
(TAIL DRAGGER)

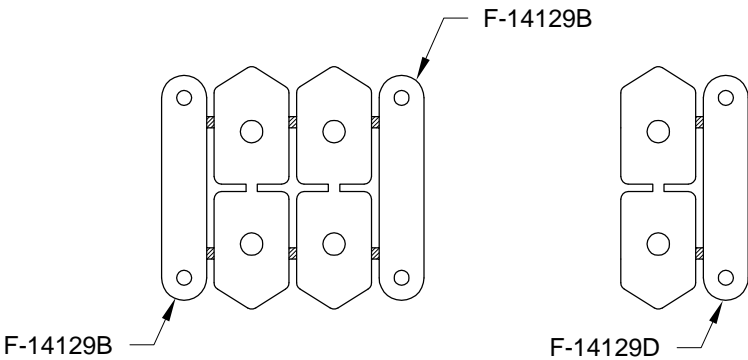
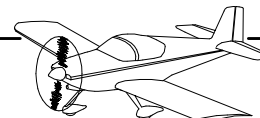


FIGURE 3: F-14129AB & F-14129CD SHIMS



NOTE: Do not rivet the holes shown in Figure 1.

Step 1 (Tri-Gear): Cleco the F-01412 Bulkhead to the F-01479 Aft Bottom Skin as shown in Figure 1.

Rivet the bulkhead to the aft bottom skin as shown in Figure 1 and on Page 10-19, Figure 2.

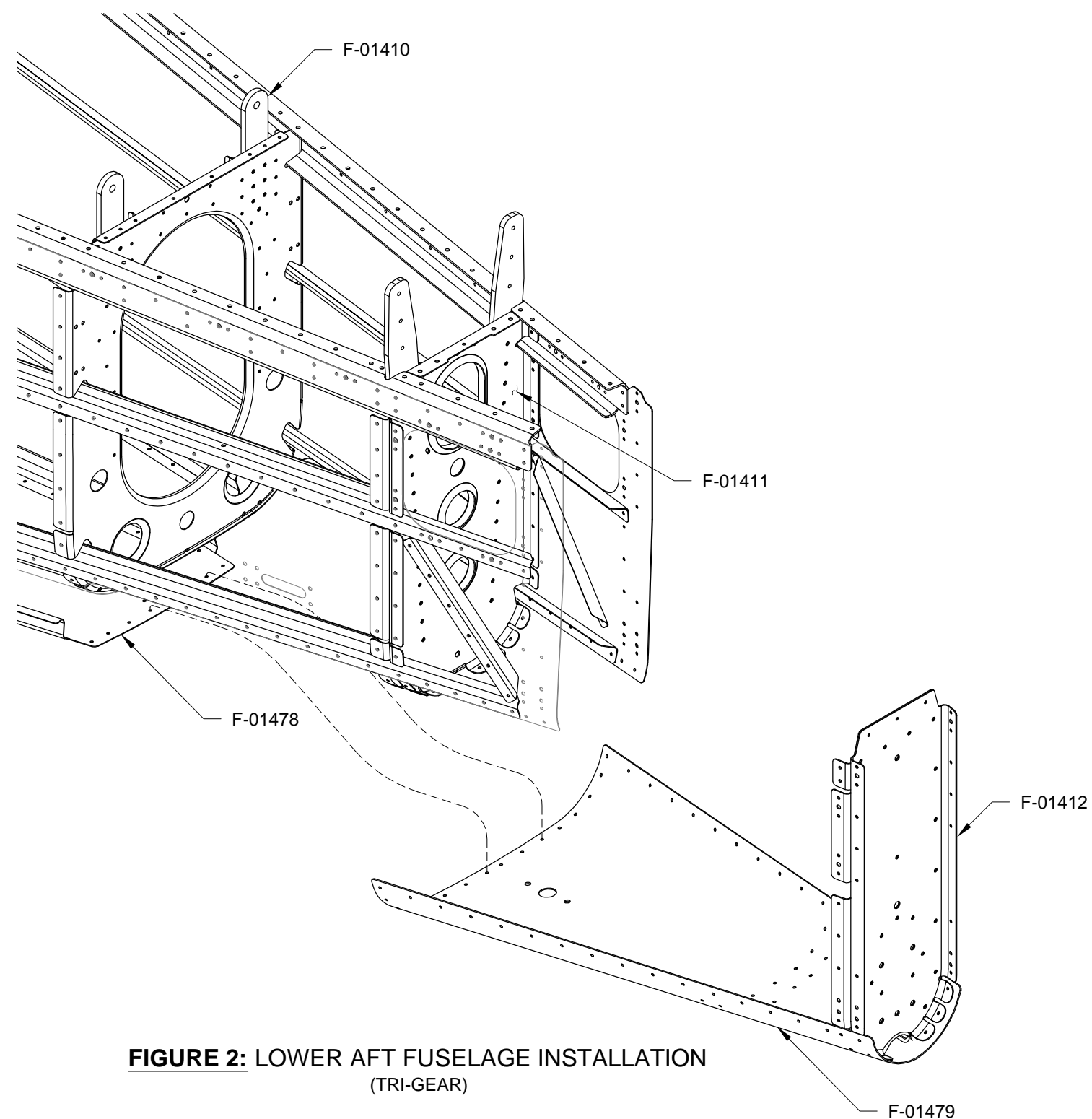
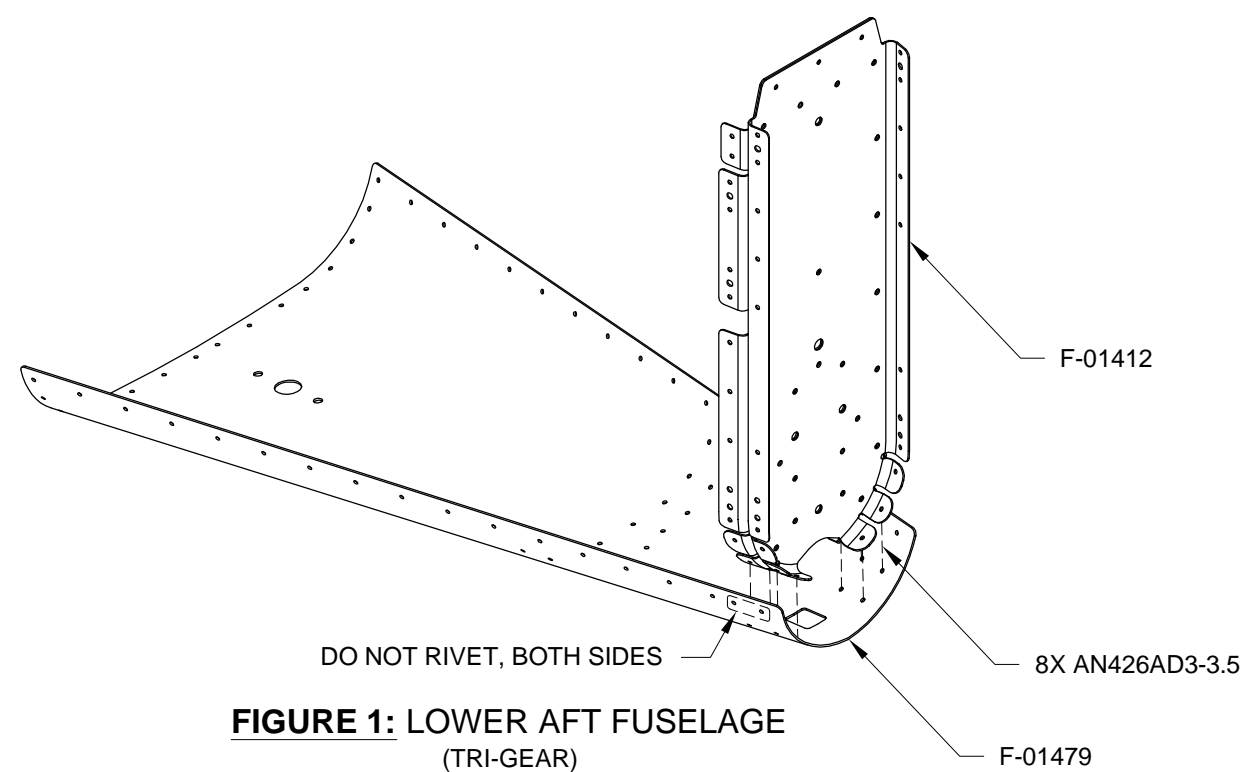
NOTE: The F-01479 Aft Bottom Skin lies between the F-01410 Bulkhead and the F-01478 Bottom Skin.

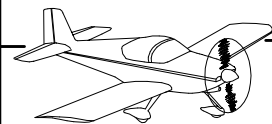
Step 2 (Tri-Gear): Remove the clecos holding the F-01410 Bottom Skin to the F-01410 Bulkhead in the Aft Fuselage.

Cleco the Lower Aft Fuselage Assembly to the Aft Fuselage Assembly as shown in Figure 2.

Step 3 (Tri-Gear): Starting in the center and moving outwards, rivet the F-01479 Aft Bottom Skin to the F-01411 Bulkhead. See Page 10-19 Figure 2.

Step 4 (Tri-Gear): Starting in the center and moving outwards, rivet the F-01479 Aft Bottom Skin to the F-01478 Bottom Skin and F-01410 Bulkhead as shown on Page 10-19 Figure 2.





Step 1 (Tail Dragger): Remove the clecos holding the F-01478 Aft Fuse Fwd Bottom Skin to the F-01410 Bulkhead in the Aft Fuselage Assembly.

Step 2 (Tail Dragger): Temporarily attach the U-00018 Tail Spring Mount to the F-01411 Bulkhead in the Aft Fuselage Assembly as shown in Figure 1.

NOTE: Ensure that the tail spring mount clears the aft bottom skin cutout. Enlarge the opening as needed.

The F-01479 Aft Bottom Skin lies between the F-01410 Bulkhead and the F-01478 Bottom Skin.

Step 3 (Tail Dragger): Cleco the F-01479 Aft Bottom Skin and F-01412 Bulkhead to the Aft Fuselage Assembly as shown in Figure 1.

Trim the F-01412 Bulkhead as necessary to clear the weld bead on the U-00018 Tail Spring Mount. See Figure 1.

Step 4 (Tail Dragger): Match-Drill #30 the two keeper rivet holes in the F-01412 Bulkhead and U-00018 Tail Spring Mount as shown in Figure 1.

Remove the F-01412 Bulkhead and F-01479 Aft Bottom Skin from the Aft Fuselage Assembly.

Machine countersink the #30 holes on the aft face of the F-01412 Bulkhead to fit the head of an AN426AD4 rivet. See the detail view in Figure 1.

Step 5 (Tail Dragger): Rivet the F-01412 Bulkhead to the F-01479 Aft Fuse Aft Bottom Skin as shown in Figure 2 and Page 10-19 Figure 2. See Figure 2 for exceptions.

Rivet the U-00018 Tail Dragger Spring Mount to the F-01412 Bulkhead as shown in Figure 1.

Step 6 (Tail Dragger): Cleco the Lower Aft Fuselage to the Aft Fuselage Assembly. Add F-14129B and/or F-14129D Spacers if there is a gap between the U-00018 Tail Spring Mount and the F-01411 Bulkhead.

Attach the tail spring mount to the F-01411 Bulkhead as shown in Figure 1. Orient the bolt heads aft for the best access.

Step 7 (Tail Dragger): Starting in the center and moving outwards, rivet the F-01479 Aft Bottom Skin to the F-01411 Bulkhead as shown in Figure 2 and on Page 10-19 Figure 2.

Step 8 (Tail Dragger): Rivet the F-01479 Aft Bottom Skin to the F-01478 Bottom Skin and F-01410 Bulkhead. See Page 10-19 Figure 2.

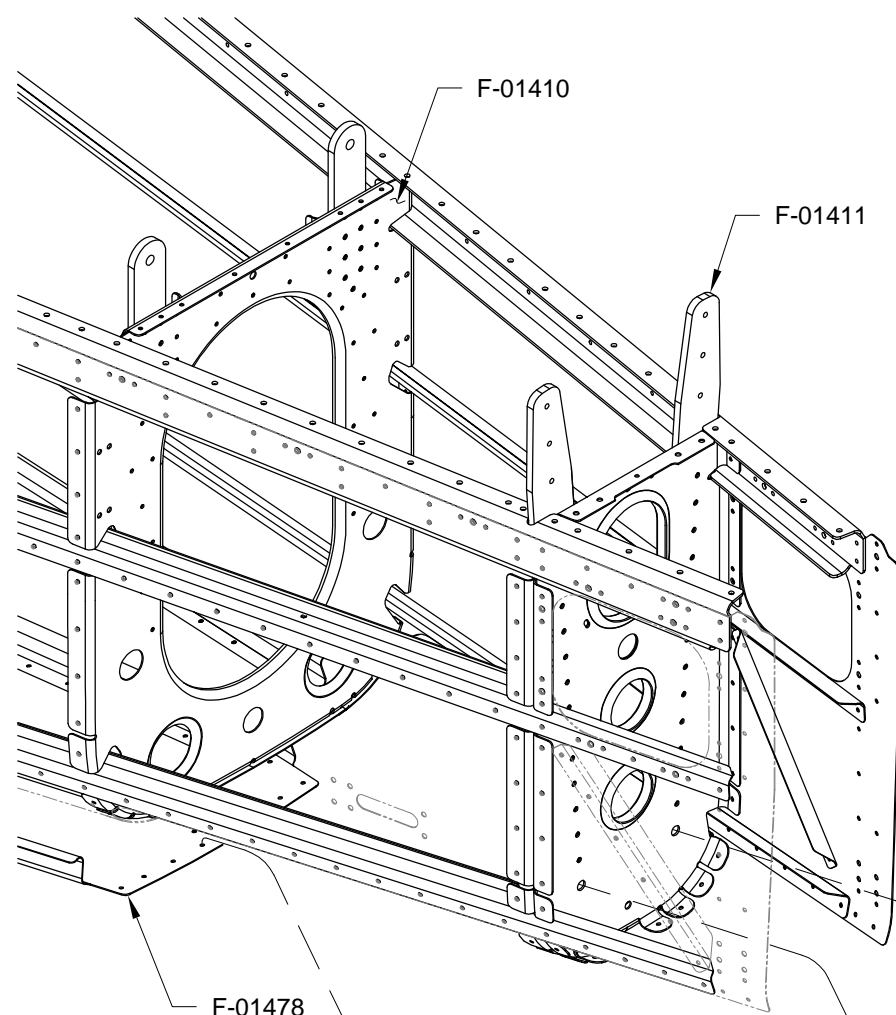


FIGURE 1: AFT FUSELAGE INSTALLATION
(TAIL DRAGGER)

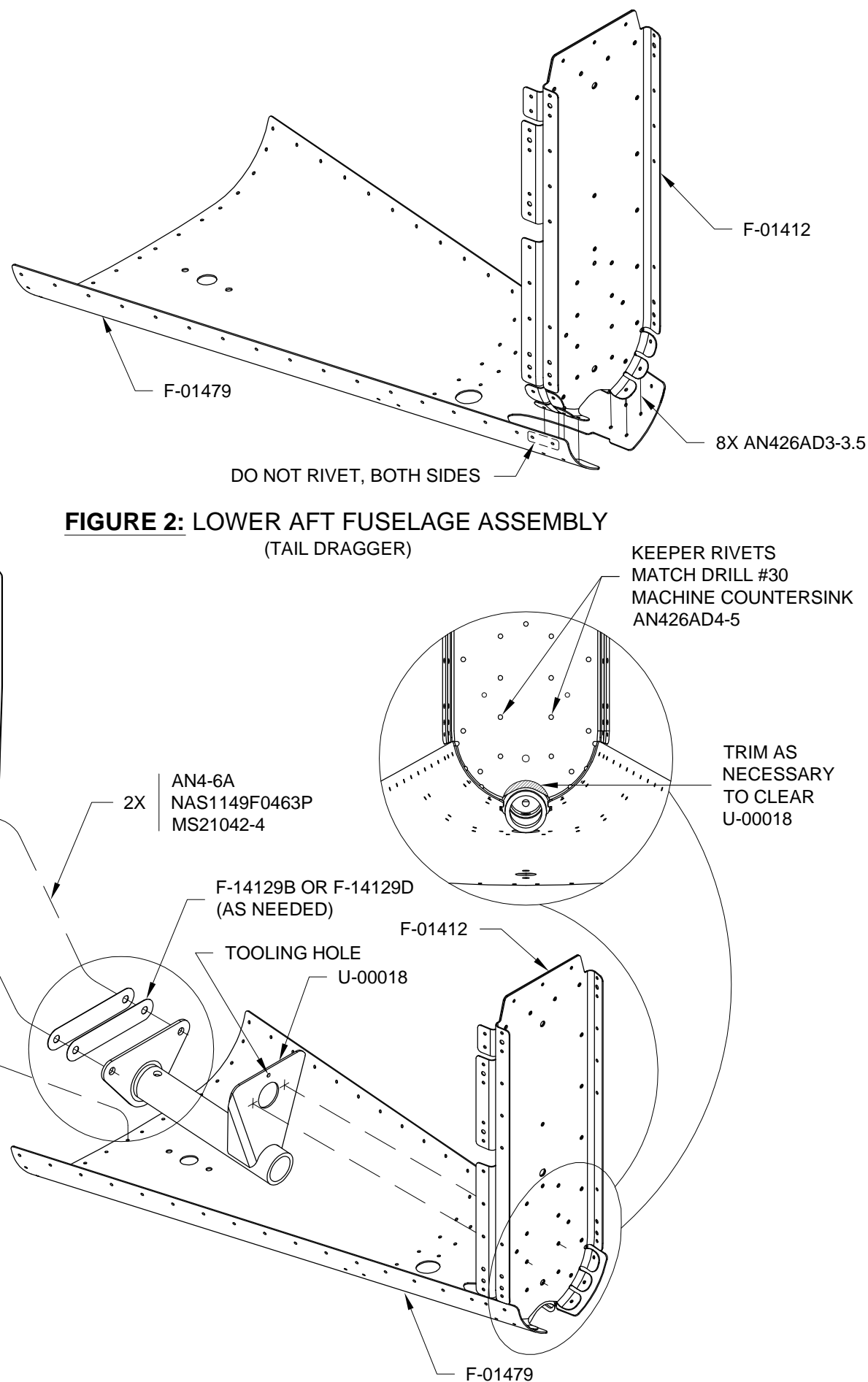


FIGURE 2: LOWER AFT FUSELAGE ASSEMBLY
(TAIL DRAGGER)

WARNING: See the systems installation instructions beginning on Page 10-25 prior to installing the F-01473-L & -R Side Skins.

NOTE: Only the left F-01473 Aft Fuse Side Skin is shown. The right side is a mirror of the left.

Rivet **ONLY** the holes called out in Figure 1 & Figure 2. Use tape to cover the unused holes to prevent inadvertent riveting.

NOTE: To help the skin lay down tight, rivet the flat sides first, then rivet the curved portions, working around the curve towards the edge of the skin.

Do not rivet the F-01473A Angle Stiffeners at this time.

Step 1: Rivet the F-01473-L & -R Aft Fuse Side Skins to the F-01478 Bottom Skin, F-01479 Aft Bottom Skin, F-01486A-L & R, F-01486B-L & -R Stiffeners, and the F-01407, F-01408, F-01409, F01410, F-01411 and F-01412 Bulkheads as shown in Figure 1.

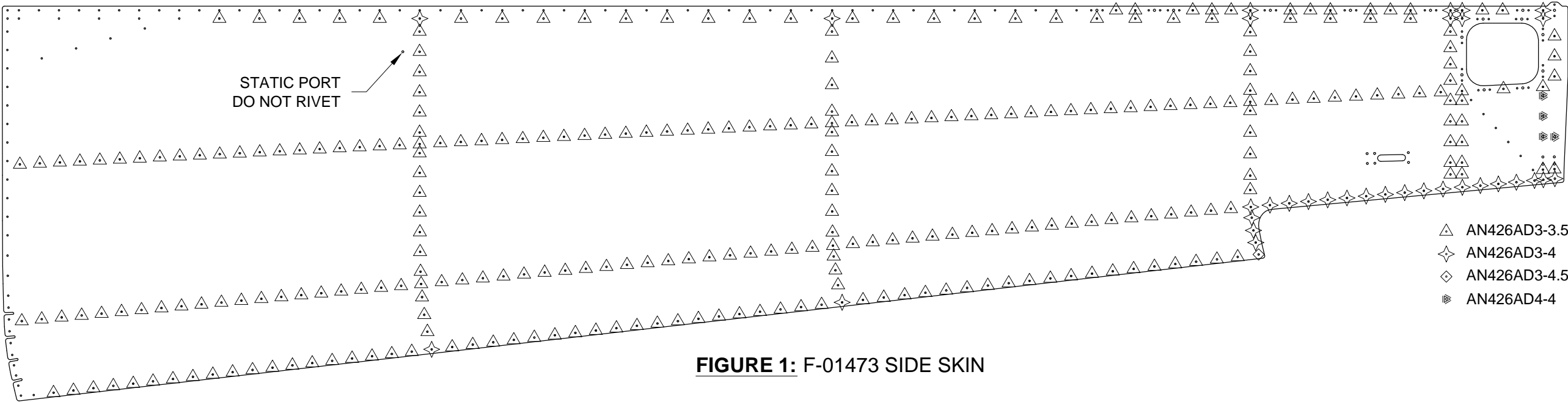


FIGURE 1: F-01473 SIDE SKIN

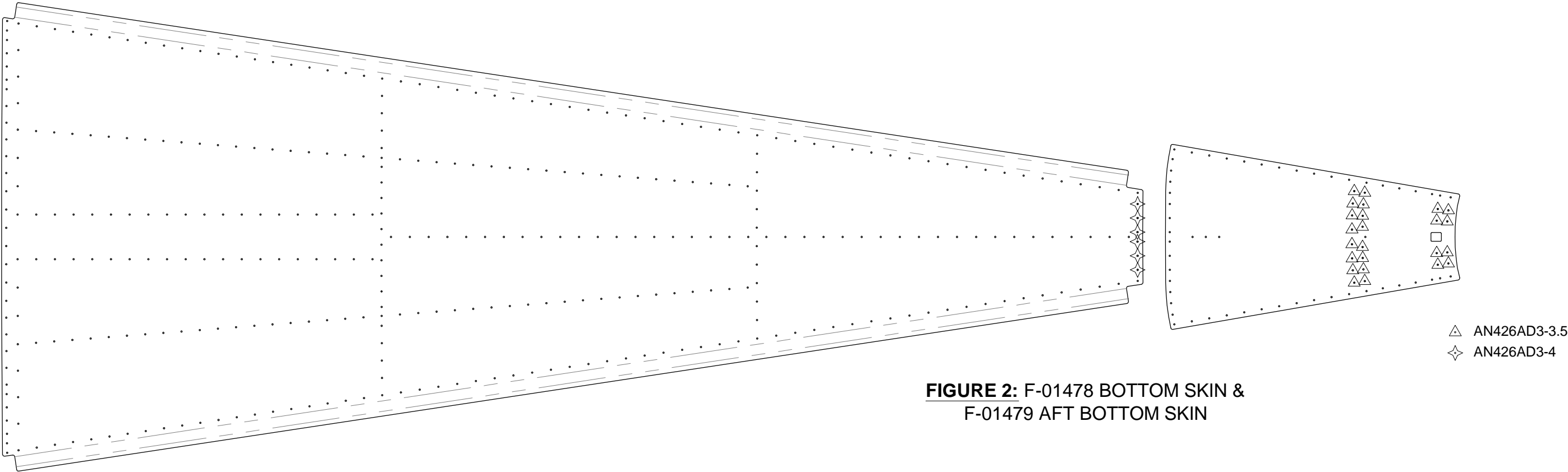


FIGURE 2: F-01478 BOTTOM SKIN & F-01479 AFT BOTTOM SKIN



NOTE: Only the left side is shown. The right side is a mirror of the left.

It is the builder's choice as to whether to complete all steps for the left side before repeating those steps for the right side or to complete each step for both left and right sides before moving to the next step.

Step 1: Rivet the F-14113-L & -R Rudder Stops to the Aft Fuselage Assembly as shown in Figure 1.

NOTE: Nutplates installed on the F-01418B-L & -R Longerons are not dimpled.

Step 3: Dimple the nutplates as shown in Figure 1. See Section 5.16 for more information on dimpling nutplates.

Rivet the nutplates to the Aft Fuselage Assembly as shown in Figure 1 and Figure 2.

NOTE: For a flush screw installation of the F-14112 Plate Covers, complete Step 3.

Step 3 (Optional): Machine Countersink the #27 holes common to the the F-01473-L & -R Side Skins and F-01418B-L & -R Longerons to fit a dimpled F-14112 Plate Cover and the head of a #6 Flush Head Screw. The center hole in the nutplates will act as a drill guide.

Step 4: Rivet the F-01473A Angle Stiffeners to the F-01473-L & -R Aft Fuse Side Skins as shown in Figure 1.

2X MACHINE COUNTERSINK #27 HOLES

8X K1100-06
2X AN426AD3-4

AFT FUSELAGE
ASSEMBLY

FIGURE 2: NUTPLATE INSTALLATION
(OPTIONAL, ONLY LEFT SIDE SHOWN)

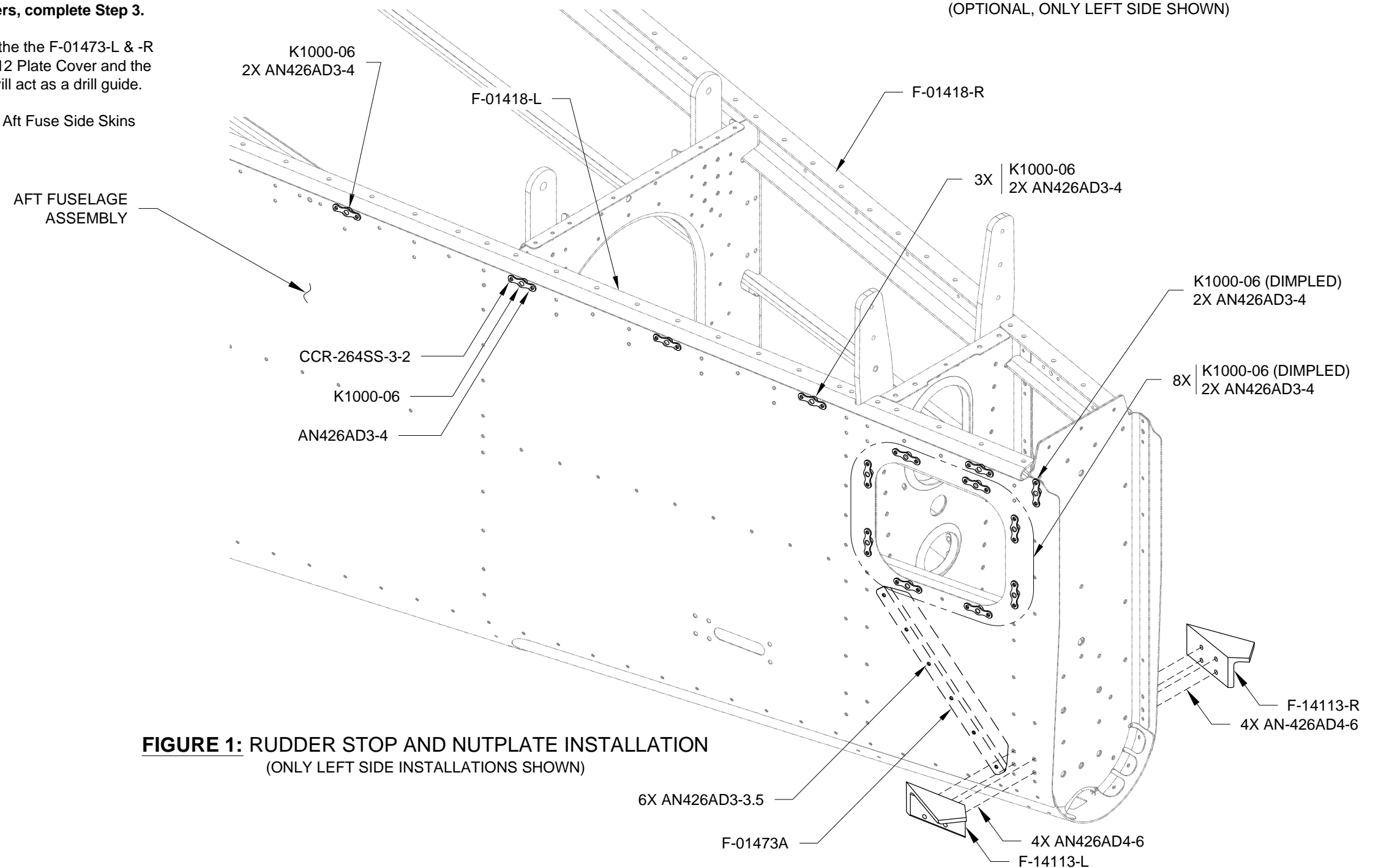
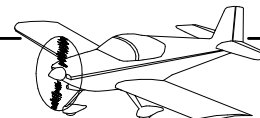


FIGURE 1: RUDDER STOP AND NUTPLATE INSTALLATION
(ONLY LEFT SIDE INSTALLATIONS SHOWN)



Step 1: Install the snap bushings into the Aft Fuselage Assembly as shown in Figure 1.

NOTE: The plastic sleeve on each of the CS-00014 Rudder Cables will be positioned on the forward end of the cable.

The cables cross to opposite sides of the fuselage between the F-01407 and F-01408 Bulkheads.

Step 2: Route the CS-00014 Rudder Cables forward through the slotted openings in the F-01473-L & -R Side Skins as shown in Figure 2.

Route the rudder cables forward through the snap bushings in the F-01410 Bulkhead, the snap bushings in the F-14115 Rudder Cable Bracket, and forward through the snap bushings in the F-01407 Bulkhead. See Figure 2.

Coil forward ends of the rudder cables and stow them aft of the F-01406B Bulkhead.

Step 3: Machine countersink the holes in the F-01497A and F-01497B Cable Guides to fit a dimpled skin.

Step 4: Rivet the F-01497A and F-01497B Cable Guides to the F-01473-L & -R Aft Fuse Side Skins as shown in Figure 2.

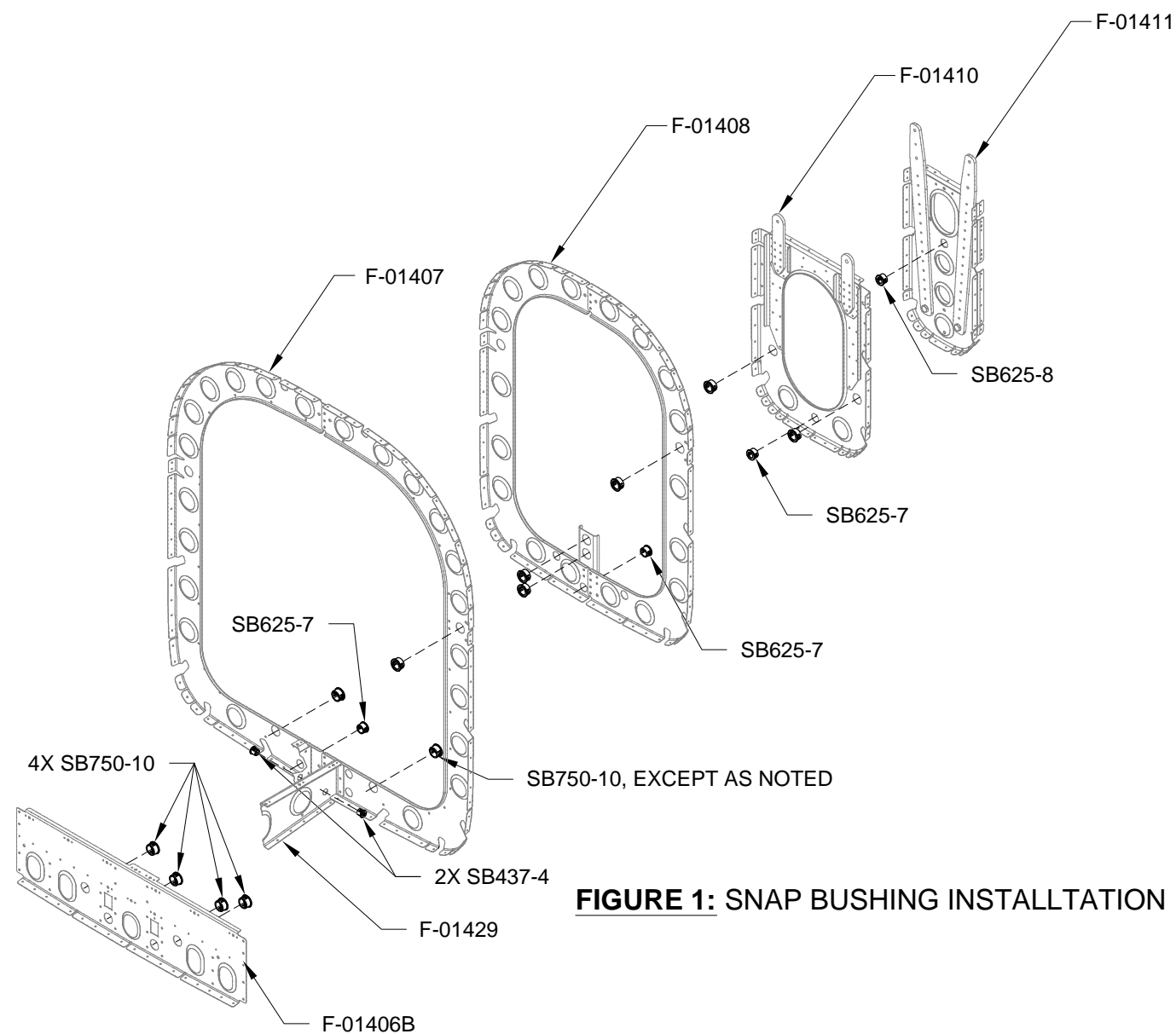
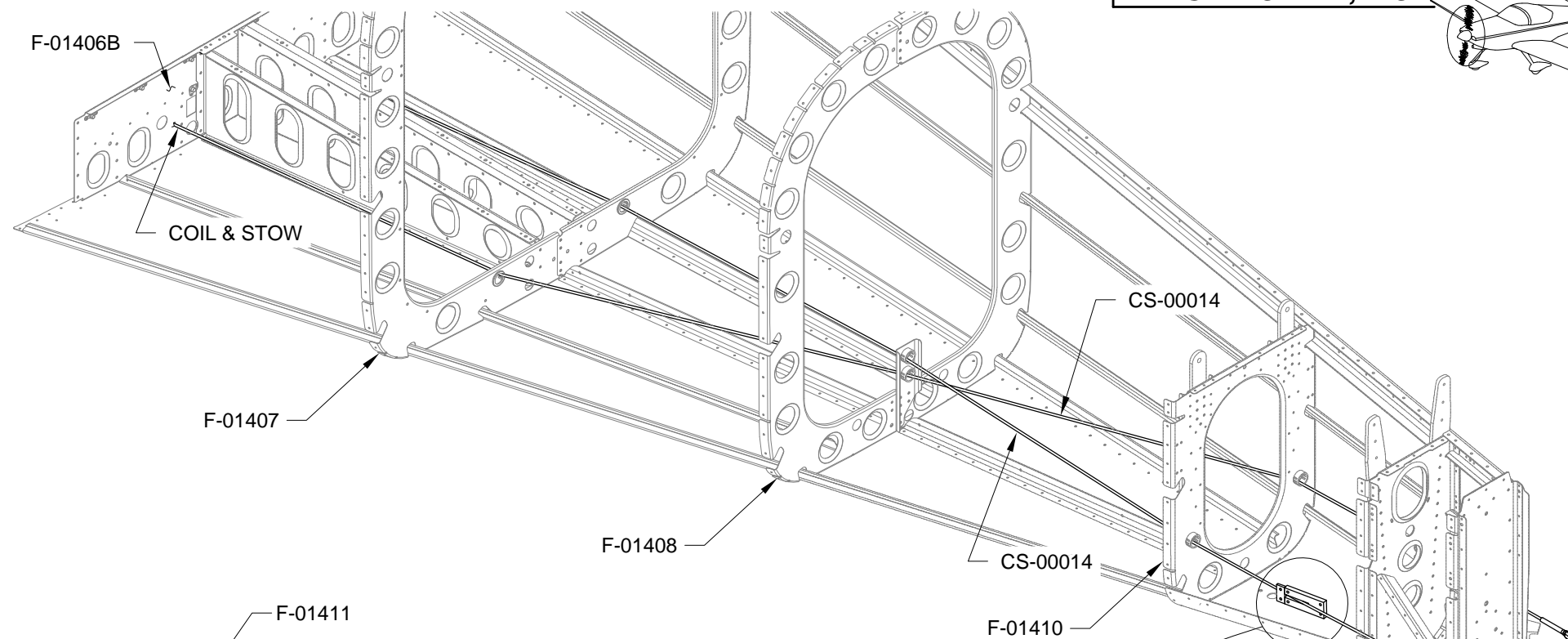


FIGURE 1: SNAP BUSHING INSTALLTATION

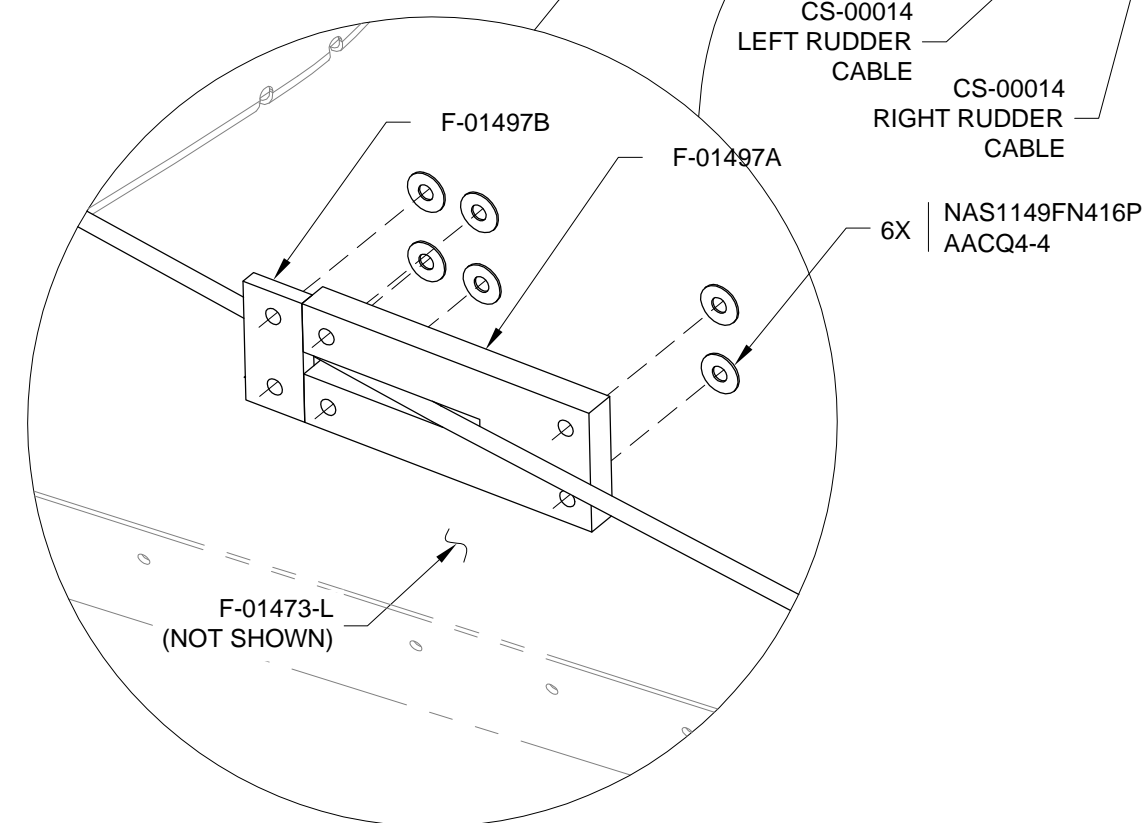
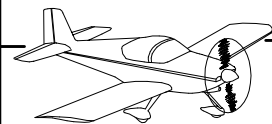


FIGURE 2: RUDDER CABLE INSTALLATION



Step 1: Follow the 'Installing the Static Air System' instructions included in the Static Air Kit to install the Left and Right Static Sources into the F-01473-L & -R Side Skins as shown in Figure 1 and on Page 10-19, Figure 1.

NOTE: The Tubing for the F-14124 Static Line is $\varnothing 1/4$ [6.4 mm].

Step 2: Fabricate the Right Static Line by cutting a length of PT 1/8 CLR PLASTIC tubing from the Static Air Kit to a length of 40 [101.6 cm].

Fabricate the Left Static Line by cutting a length of PT 1/8 CLR PLASTIC tubing from the Static Air Kit to a length of 4 1/4 [108.0 mm].

Fabricate the Static Line Tee Upsize by cutting a length of PT 1/8 CLR PLASTIC tubing from the Static Air Kit to a length of 7/16 [11.1 mm] long.

The PT035 X 1/4 Tubing forms the F-14124 Static Line

Step 3: Install the Right Static Line onto the F PLASTIC TEE as shown in Figure 1.

Install the Left Static Line and onto the tee as shown in Figure 1.

Install the Static Line Tee Upsize and the F-14124 Static Line onto the tee as shown in Figure 1.

Step 6: Install the Left and Right Static Line onto the Left and Right Static Sources as shown in Figure 1 and Figure 2.

Secure the left and right static lines to the static source rivets by applying a fillet of RTV sealant around the ends.

Step 7: Route and secure the static lines along the upper inside flange of the F-01407 Bulkhead as shown in Figure 1 and Figure 2.

NOTE: Do not overtighten tie-wraps. Do not allow any low spots to avoid water entrapment.

Step 8: Route the F-14124 Static Line forward along the base of the F-01429 Bellcrank Rib and forward as shown in Figure 2. Coil and stow the static line aft of the F-01406B Bulkhead.

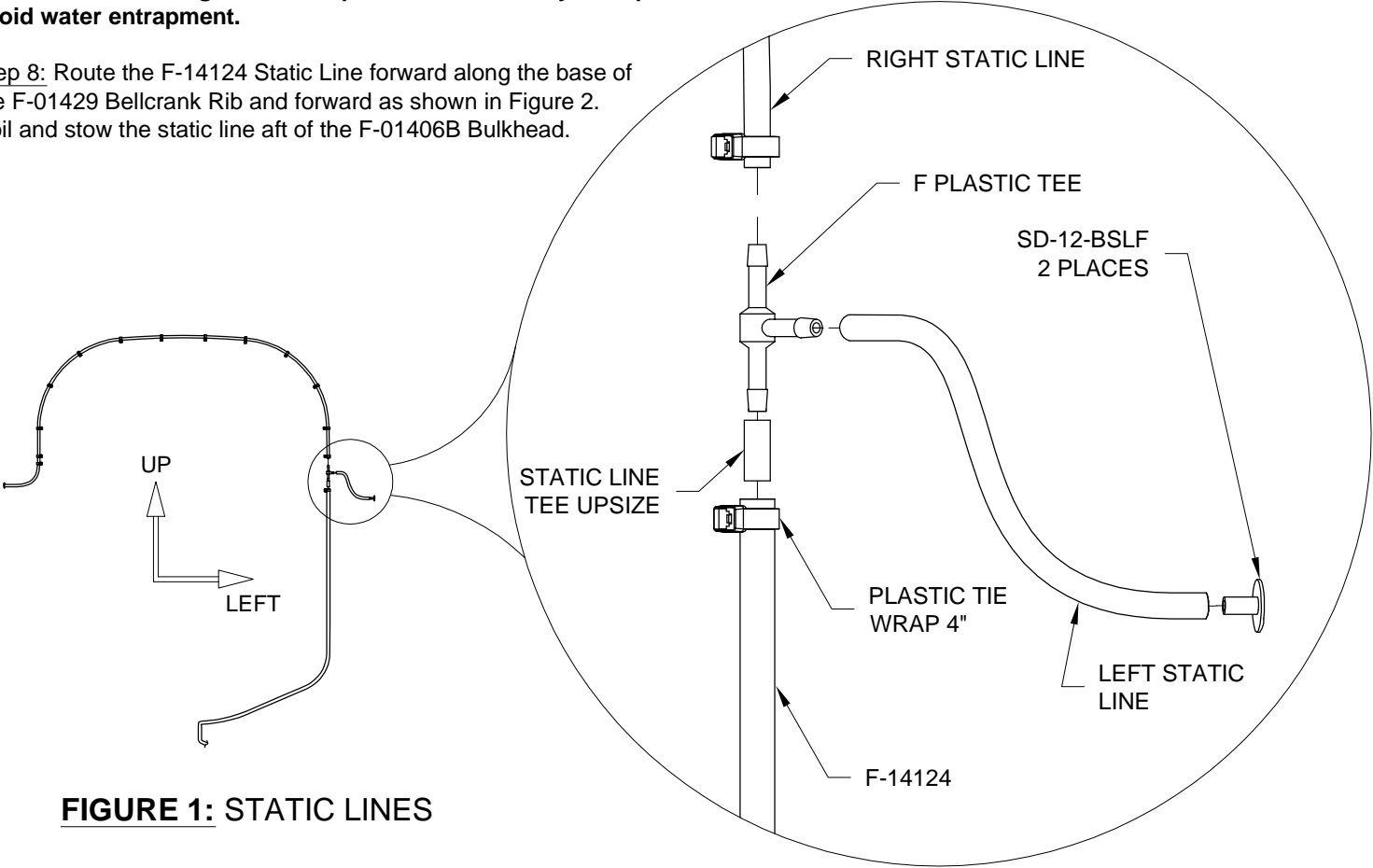


FIGURE 1: STATIC LINES

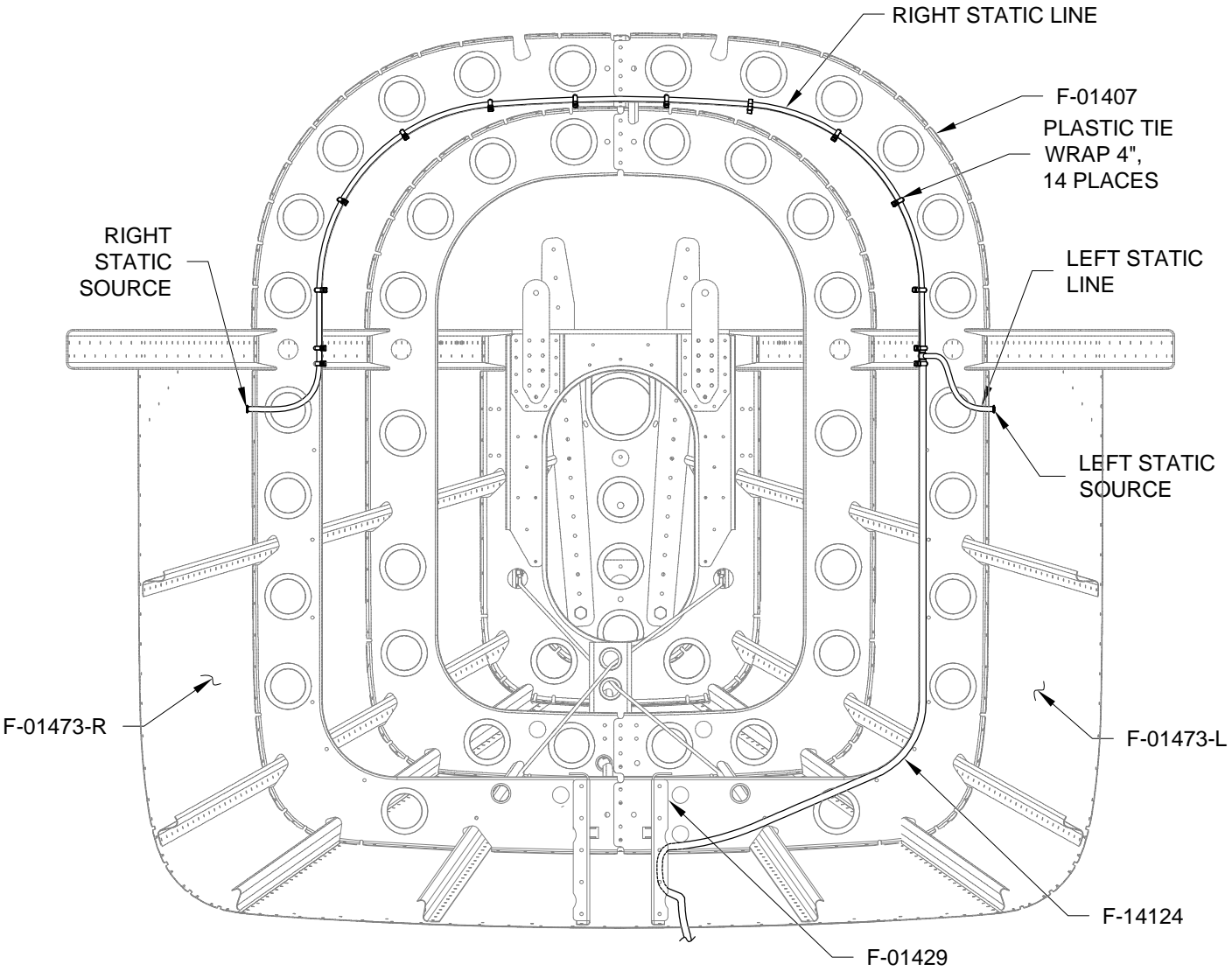
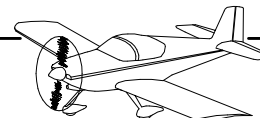


FIGURE 2: STATIC LINES INSTALLATION
(F-01406B NOT SHOWN)



Step 1: Route the WH-00014 UAT Antenna Cable forward through the F-01410, F-01409 & F-01408 Bulkheads as shown in Figure 1.

Step 2: Use a sharp knife to make a slit in the side of each snap bushing as shown in Figure 2.

Open the bushings and install them around the WH-00014 Antenna Cable and into the locations on the F-01410, F-01408 and F-01407 Bulkheads. See Figure 1 and Figure 2.

NOTE: Allow $3 \frac{5}{16}$ [84.1 mm] of the WH-00014 UAT Antenna Cable to extend aft of the F-01410 Bulkhead for final installation. See Figure 1.

The UAT Antenna Cable must retain a circular cross section to function correctly. Do not overtighten the tie wraps when securing the cable.

Do not fully tighten the Plastic Tie Wraps forward of the F-01407 Bulkhead. Additional wires will be installed later.

Step 3: Route and secure the UAT antenna cable as shown in Figure 1.

Coil and stow the UAT antenna cable aft of the F-01406B Bulkhead.

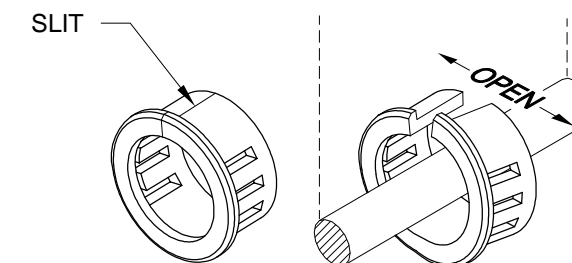


FIGURE 2: SNAP BUSHING INSTALLATION

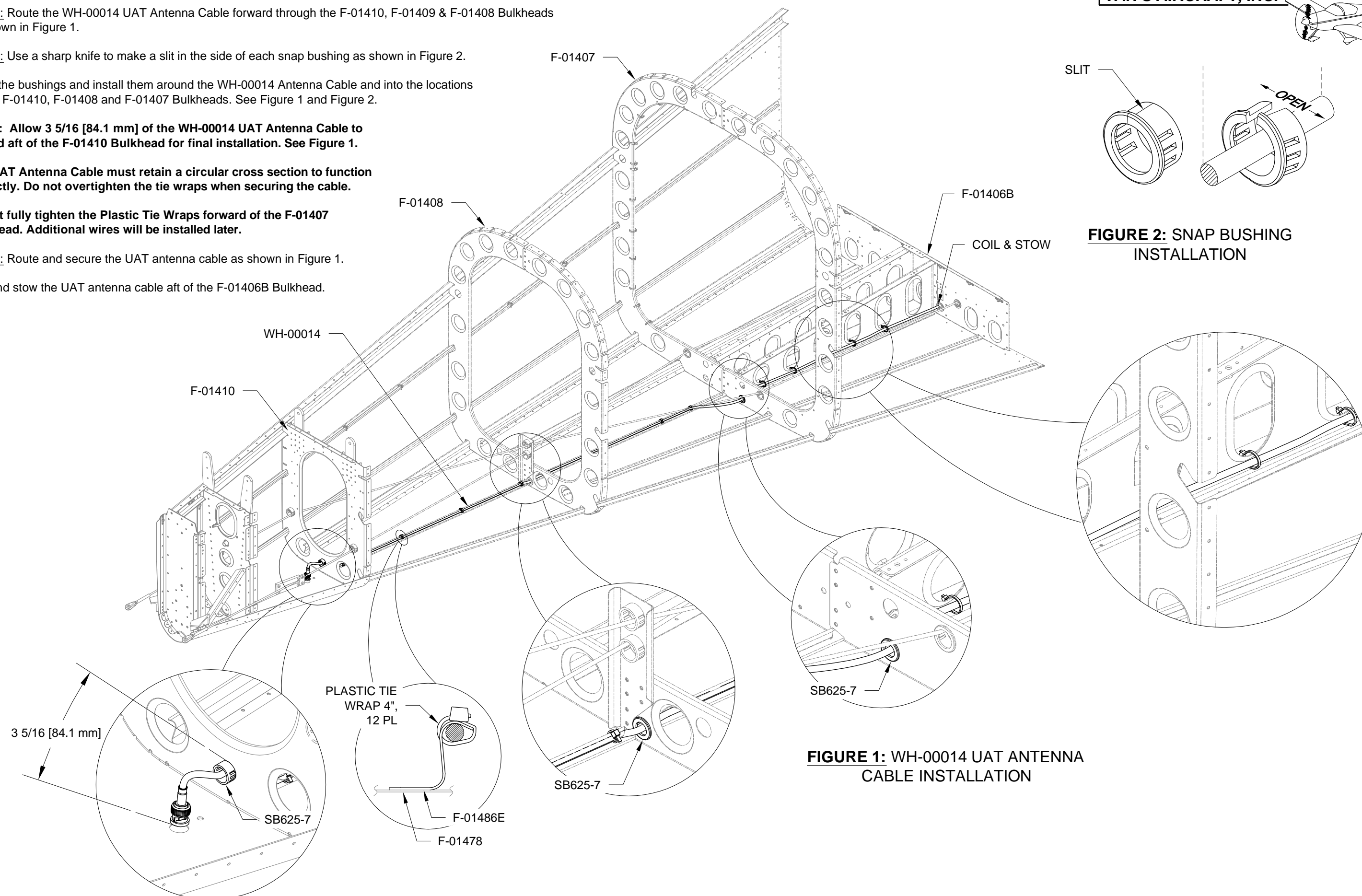


FIGURE 1: WH-00014 UAT ANTENNA CABLE INSTALLATION



Step 1: Route the WH-00015 ELT Antenna Cable forward through the F-01408 and F-01407 Bulkheads as shown in Figure 1.

Step 2: Use a sharp knife to make a slit in the side of each snap bushing as shown on Page 10-23, Figure 2.

Open the bushings and install them around the WH-00015 ELT Antenna Cable and into the locations on the F-01407 and F-01408 Bulkheads as shown in Figure 1.

Step 3: Secure the ELT antenna cable inside the flanges of the F-01418B-L Longerons as shown in Figure 1.

Allow 11 [279.4 mm] of the WH-00015 ELT Antenna Cable to extend aft of the aft most tie wrap for final installation.

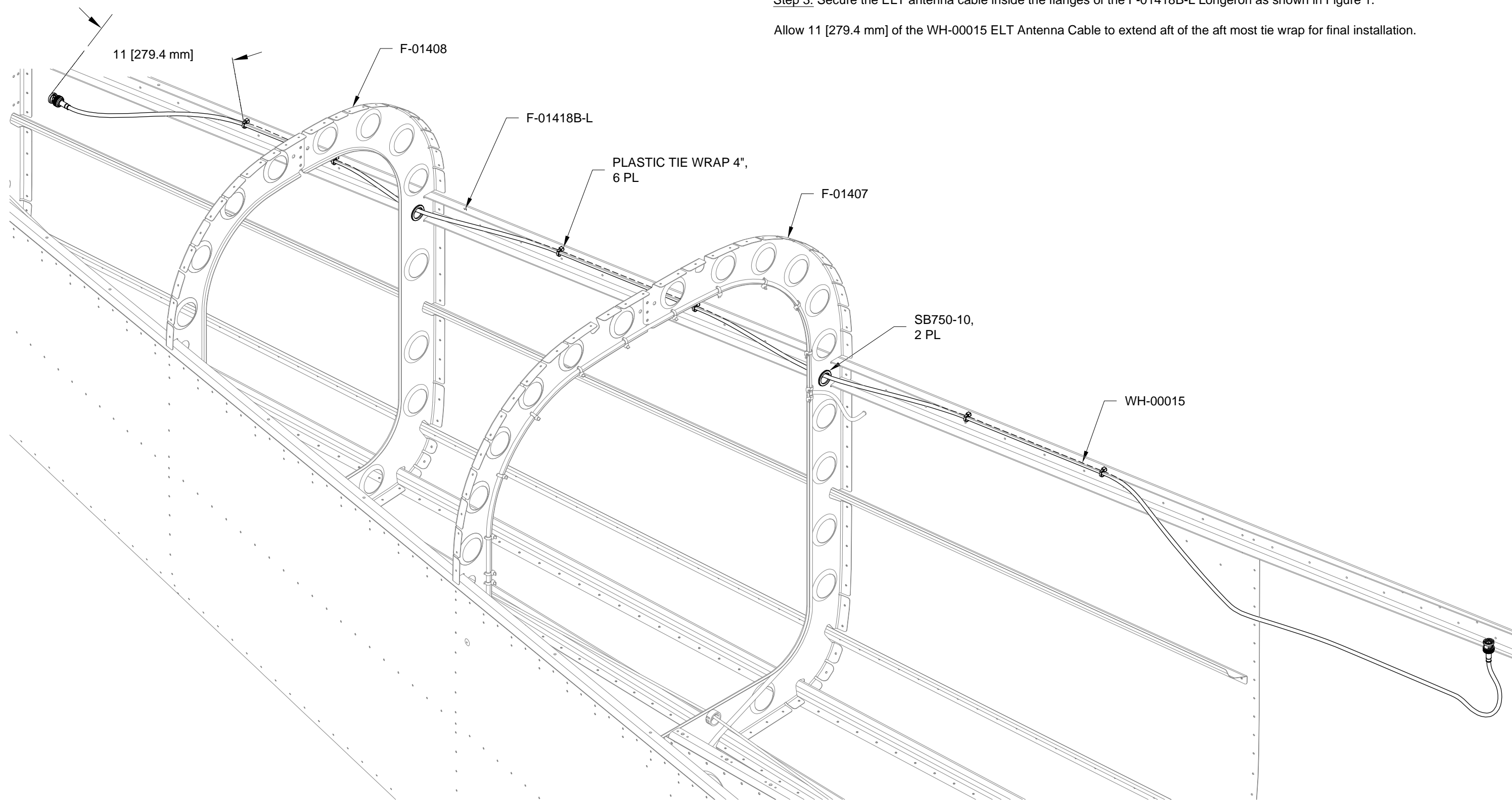


FIGURE 1: WH-00015 ELT ANTENNA CABLE INSTALLATION

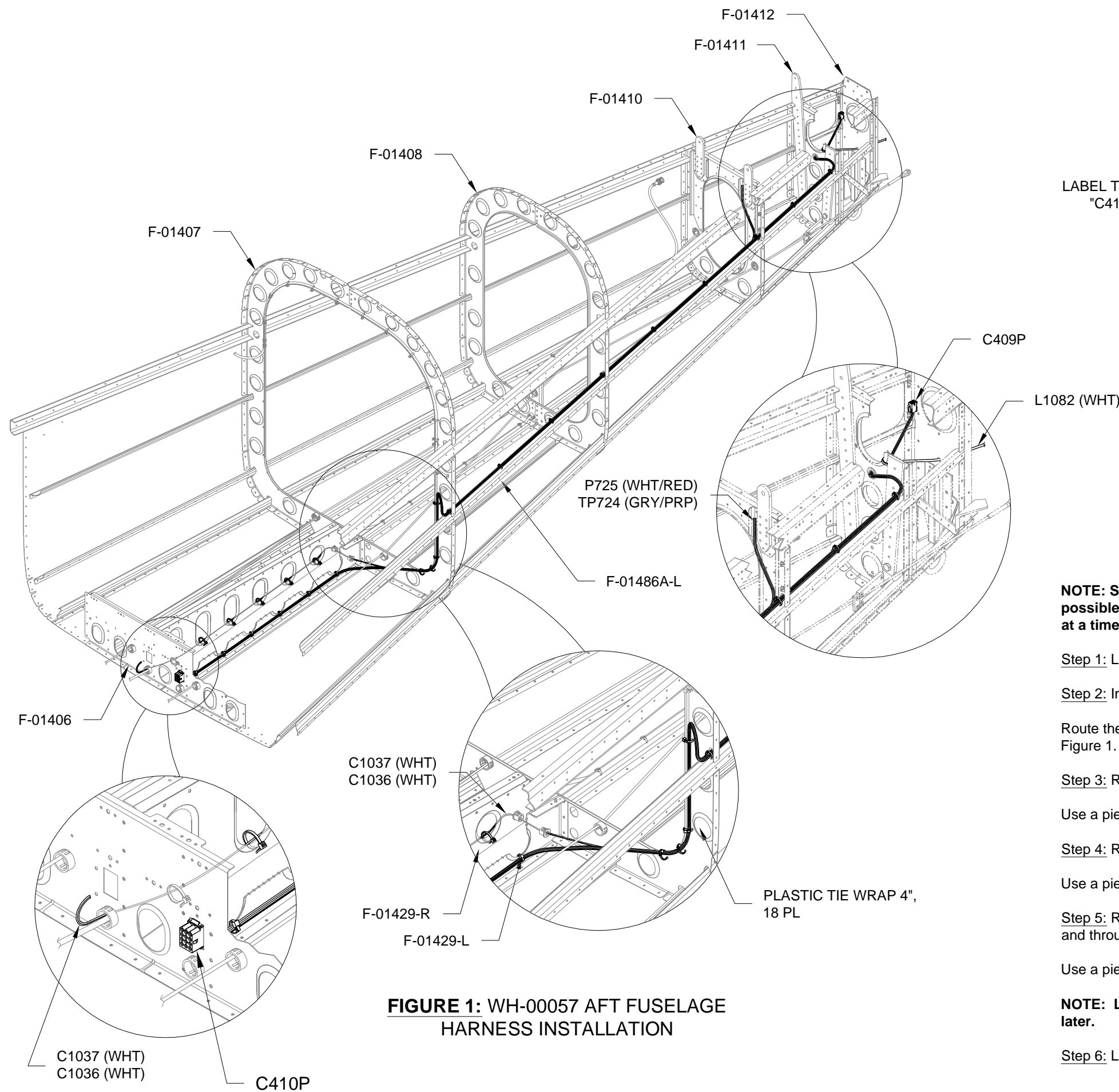


FIGURE 1: WH-00057 AFT FUSELAGE HARNESS INSTALLATION

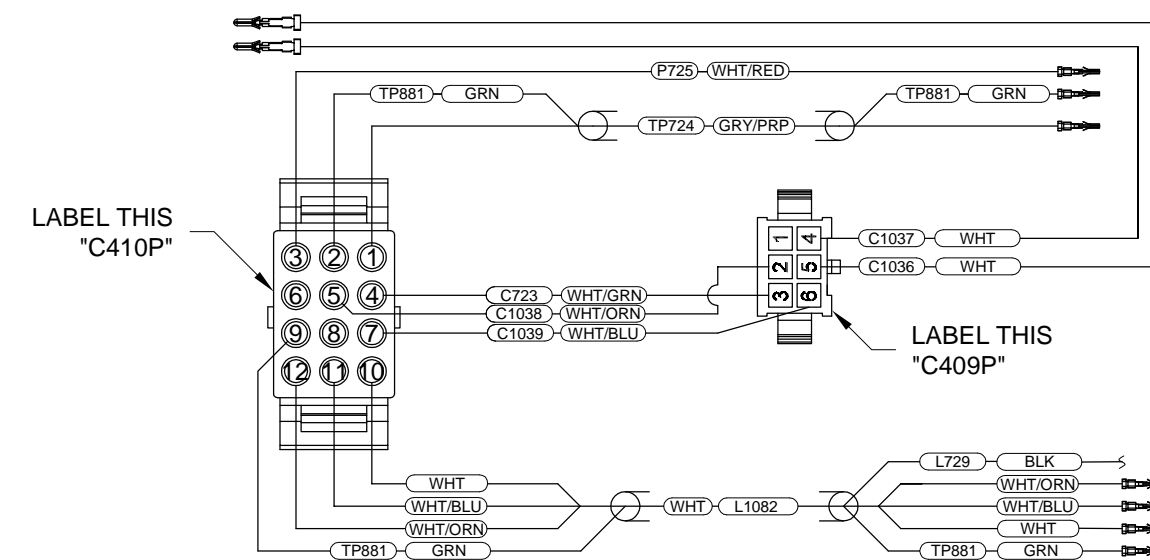


FIGURE 2: WH-00057 AFT FUSELAGE HARNESS

NOTE: See Section 5.21 for wire color callouts. Keep wire chases as neat, tight and straight as possible, without being completely taut. It may be desirable, in certain cases, to route one wire at a time.

Step 1: Label the Molex Connectors in the WH-00057 Aft Fuselage Harness as shown in Figure 2.

Step 2: Install C410P into the F-01406B Bulkhead as shown in Figure 1.

Route the W-00057 Aft Fuselage Harness aft through the F-01410 & F-01411 Bulkheads as shown in Figure 1.

Step 3: Route the L1082 (WHT) Wire aft through the F-01412 Bulkhead as shown in Figure 1.

Use a piece of tape to secure the wire to the aft side of the bulkhead.

Step 4: Route the P725 (WHT/RED) and TP724 (GRY/PRP) Wires up as shown in Figure 1.

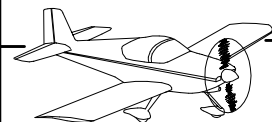
Use a piece of tape to secure the wires to the F-01410 Bulkhead.

Step 5: Route the C1036 (WHT) and C1037 (WHT) Wires through the F-01429-L & -R Bellcrank Ribs and through the F-01406B Bulkhead as shown in Figure 1.

Use a piece of tape to secure the wires to the forward side of the bulkhead.

NOTE: Leave the Plastic Tie Wraps as loose as possible. Additional wires will be installed later.

Step 6: Lightly secure the WH-00057 Aft Fuselage Harness as shown in Figure 1.



Step 1: Route the W-00059 Phone Cable aft through the F-01429-L & -R Bellcrank Ribs, then aft through the F-01407 and F-01408 Bulkheads and up along the forward face of the F-01410 Bulkhead as shown in Figure 1.

NOTE: Allow 12 1/8 [308.0 mm] of the WH-00059 Phone Cable to extend from the aft most tie wrap for final installation. See Figure 1.

Do not fully tighten the Plastic Tie Wraps on the F-01429-L Bellcrank Rib. Additional wires will be installed later.

Step 2: Secure the W-00059 Phone Cable & W-00057 Aft Fuselage Harness to the F-01429-L & -R Bellcrank Ribs by tightening the Tie Wraps installed on Page 10-25.

Secure the phone cable to the F-01410 Bulkhead using Plastic Tie Wraps as shown in Figure 1.

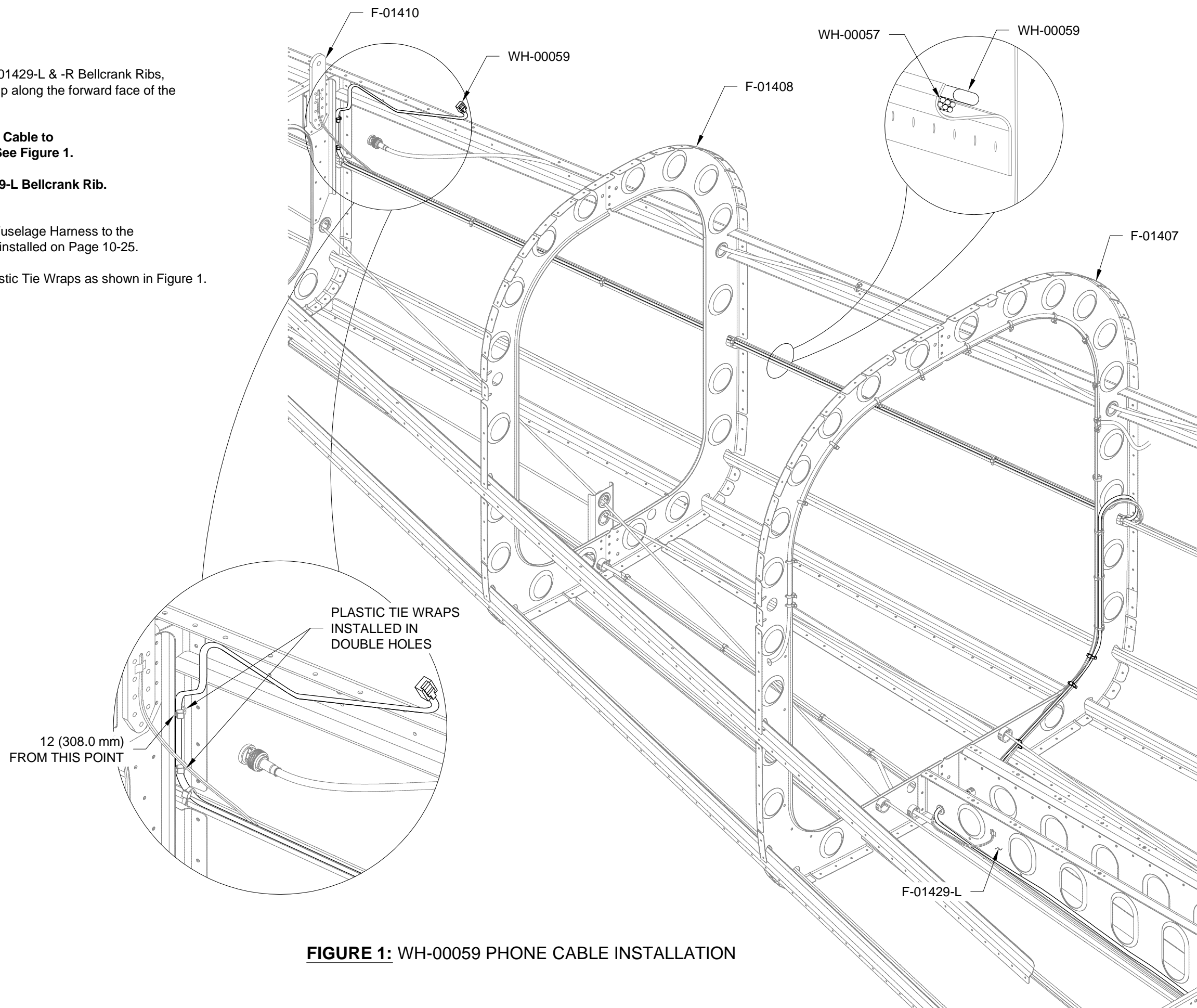


FIGURE 1: WH-00059 PHONE CABLE INSTALLATION

Step 1: Round the faceted edges on F-01409 Frame as shown on Page 10-06, Figure 1.

Step 2: Dimple the #40 holes on the flanges of the F-01409 Frame as shown in Figure 1.

Dimple the F-01414 Aft Deck as shown in Figure 1.

NOTE: All non-alclad material must be primed.

Step 3: Prime the F-01412C Deck Angle, F-01411D Horizontal Stab Attach Bar Support Angle. Prime the F-01414 Aft Deck, F-01411E Deck Doubler, and F-01409 Frame as desired.

Step 4: Cleco the F-01414 Aft Deck, F-01412C Deck Angle, F-01411E Deck Doubler, F-01411D Horizontal Stab Attach Bar Support Angle and F-01409 Frame to the Aft Fuselage as shown in Figure 1.

Step 5: Clamp and Match-Drill #30 the F-01411D Horizontal Stab Attach Bar Support Angle to the F-01411C Attach Bars as shown in Figure 3.

Step 6: Match-Drill #30 and #40 the holes in the F-01412 Bulkhead into the F-01412C Deck Angle as shown in Figure 3.

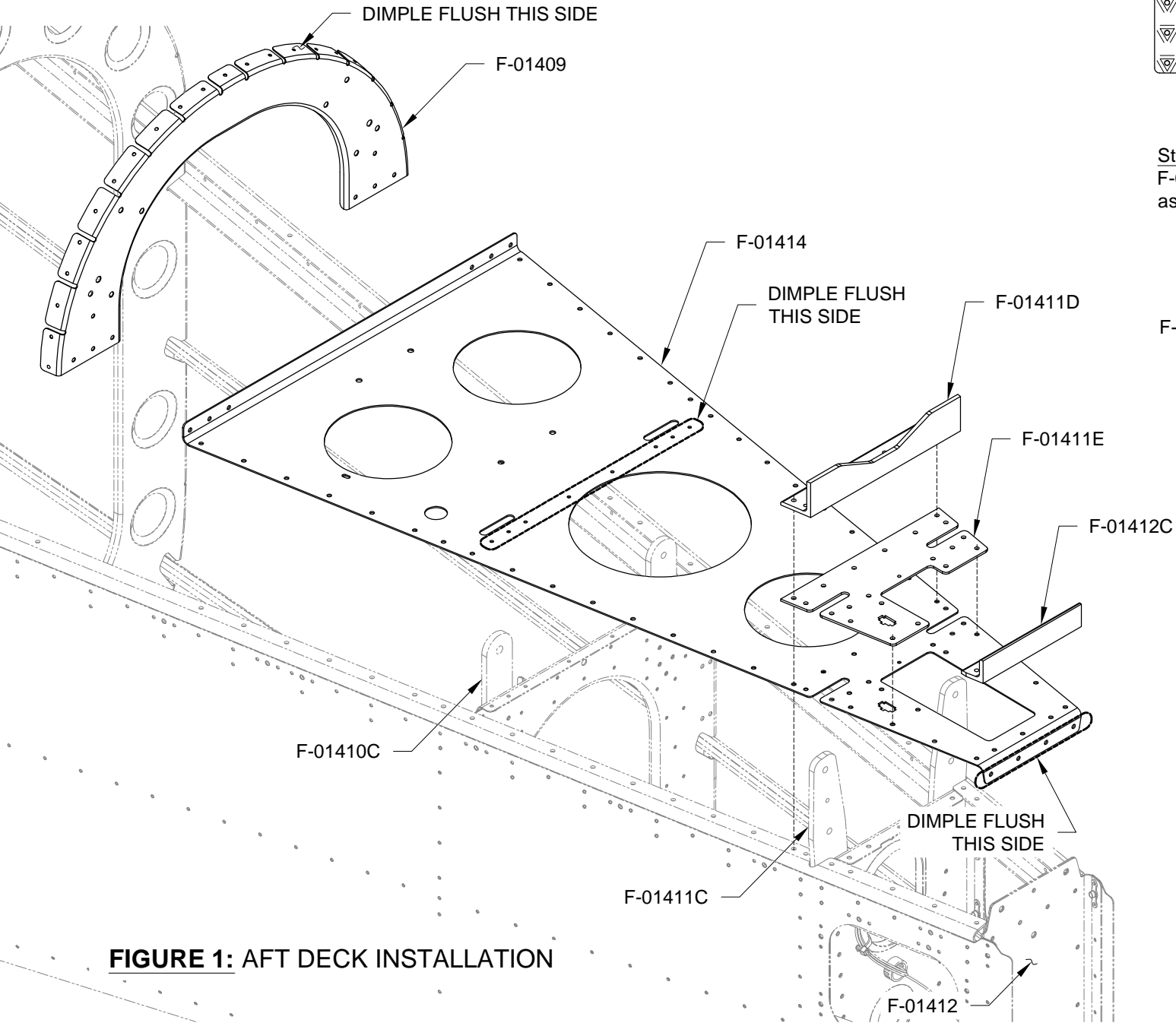
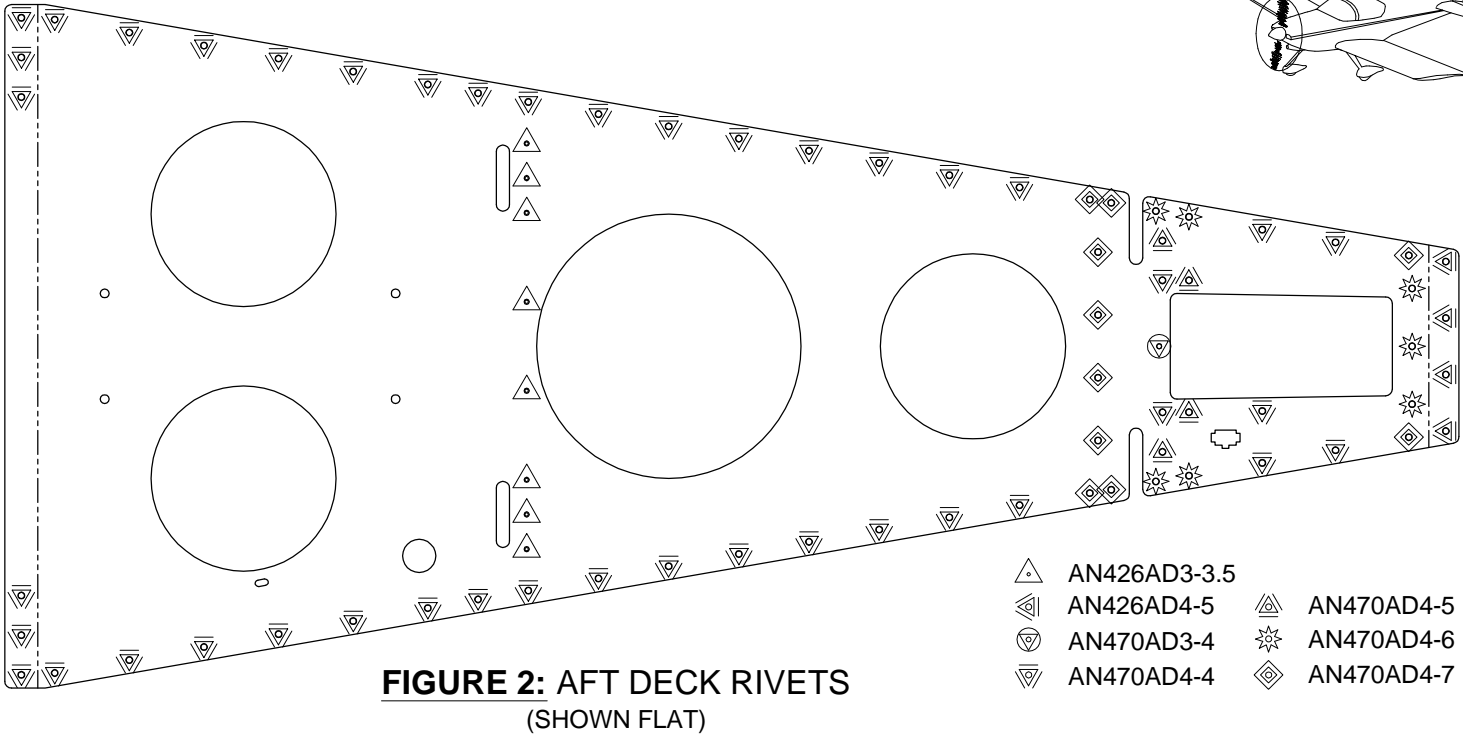


FIGURE 1: AFT DECK INSTALLATION



**FIGURE 2: AFT DECK RIVETS
(SHOWN FLAT)**

Step 7: Rivet the F-01414 Aft Deck, F-01412C Deck Angle, F-01411E Deck Doubler, F-01411D Horizontal Stab Attach Bar Support Angle and F-01409 Frame to the Aft Fuselage as shown in Figure 2 and Figure 3.

Step 8: Remove the tape securing the P725 (WHT/RED) and TP724 (GRY/PRP) wires from the WH-00057 Aft Fuselage Harness to the F-01410 Bulkhead.

Route WH-00059 Phone Cable and the P725 (WHT/RED) and TP724 (GRY/PRP) wires up through the systems hole in the F-01414 Aft Deck as shown in Figure 3.

Install the snap bushing into the F-01414 Aft Deck as shown in Figure 3.

Use a piece of tape to secure the wires to the aft deck.

Install C409P into the aft deck as shown in Figure 2.

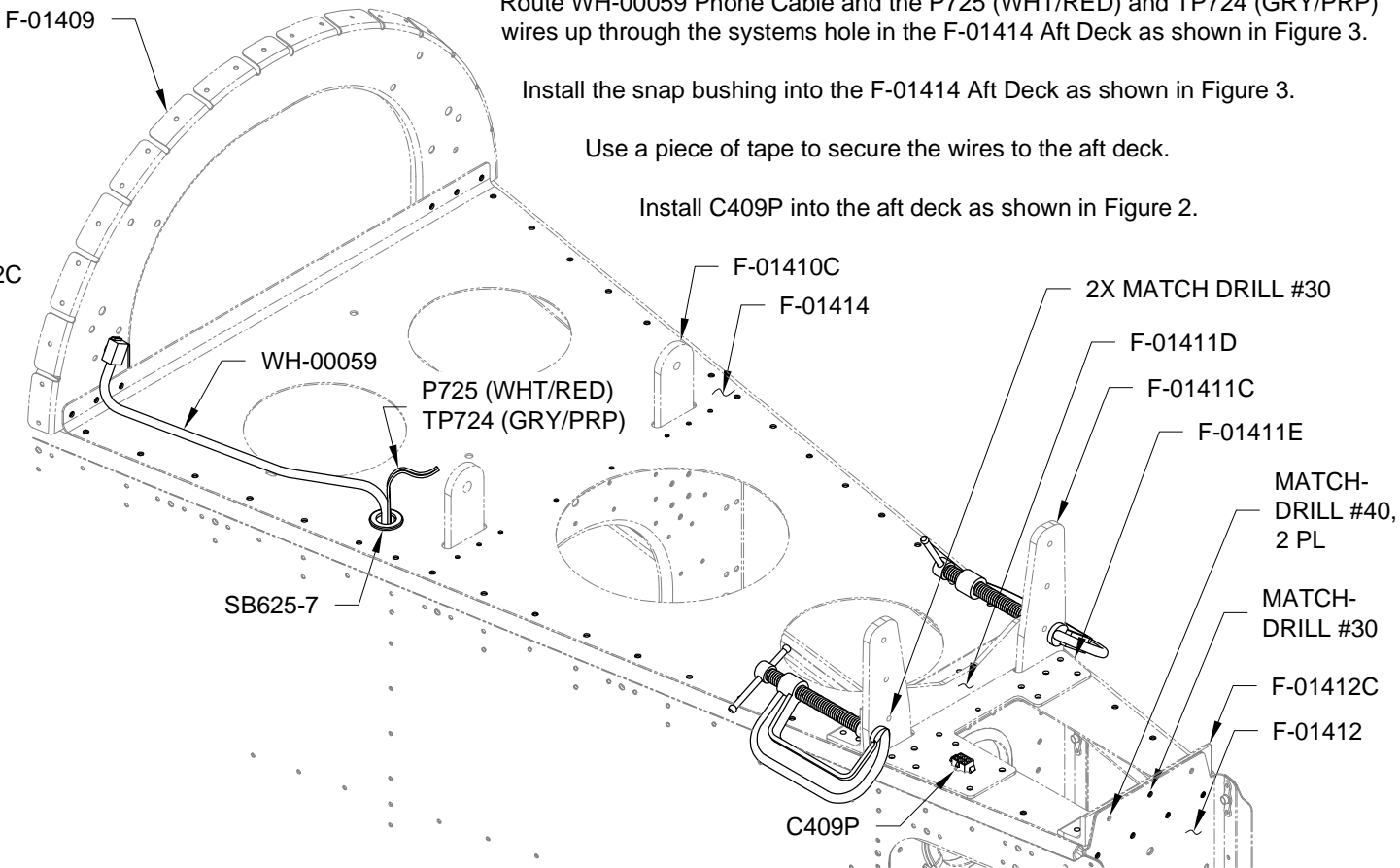


FIGURE 3: AFT DECK



NOTE: It is critical to drill the holes perpendicular to the Vertical Stabilizer Spar.

Step 1 (Tri-Gear): Cleco and temporarily secure the Vertical Stabilizer to the Aft Fuselage as shown in Figure 1.

Step 2 (Tri-Gear): Final-drill #12 the two holes in the vertical stabilizer into the F-01412 Bulkhead and F-01412C Deck Angle as shown in Figure 1.

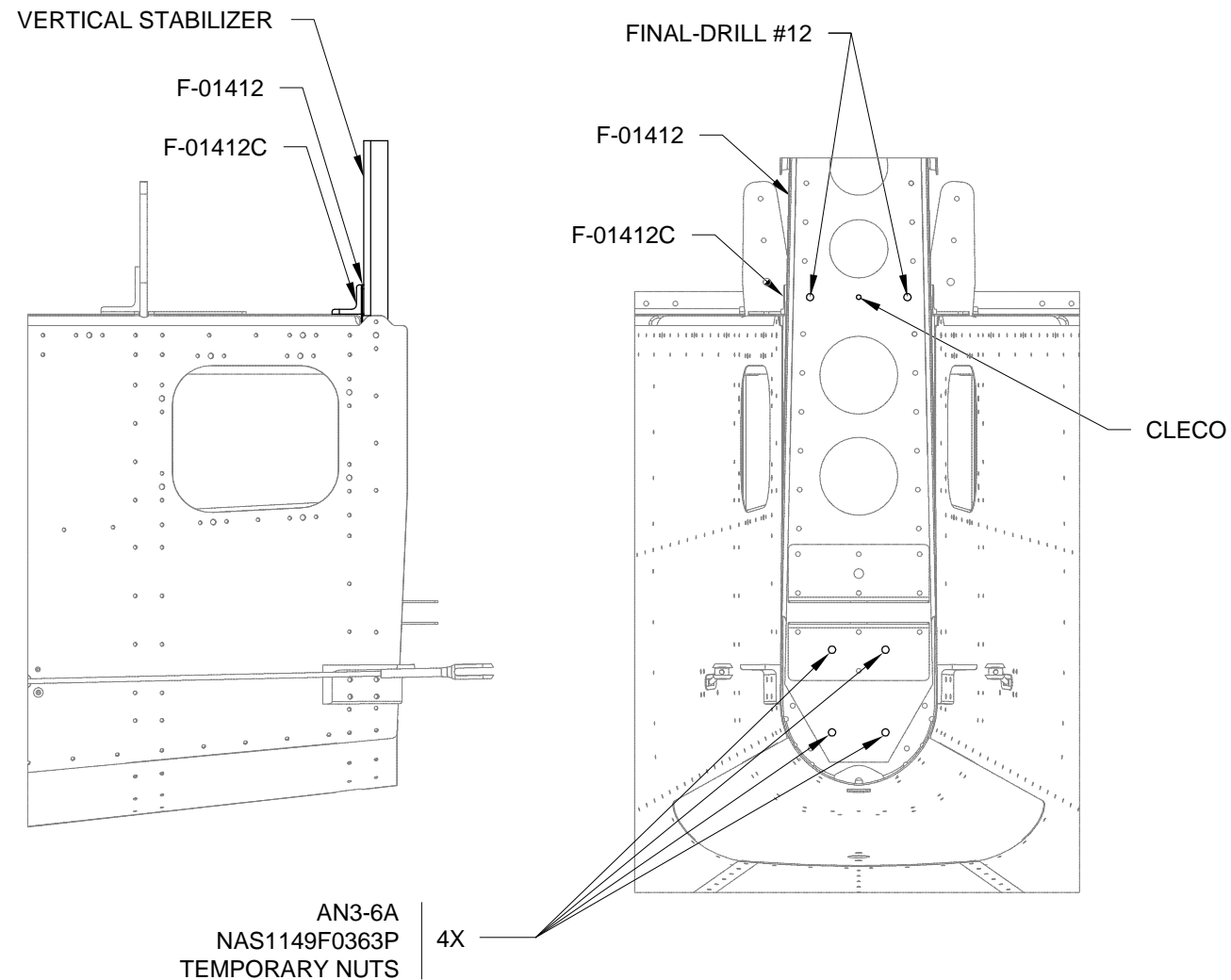


FIGURE 1: TRI-GEAR DRILLING

NOTE: It is critical to drill the holes perpendicular to the Vertical Stabilizer Spar.

Step 1 (Tail Dragger): Cleco the Vertical Stabilizer to the Aft Fuselage as shown in Figure 2.

Insert a #30 drill bit into the hole as shown in Figure 2.

Secure the Vertical Stabilizer by clamping it to the F-01412 Bulkhead with a block of wood as shown in Figure 2.

Step 2 (Tail Dragger): Final-Drill 1/4 [6.4 mm] the holes in the Vertical Stabilizer as shown in Figure 2. Insert bolts as the holes are drilled as shown in Figure 2.

Final-Drill #12 the holes in the vertical stabilizer into the F-01412 Bulkhead and F-01412C Deck Angle as shown in Figure 2.

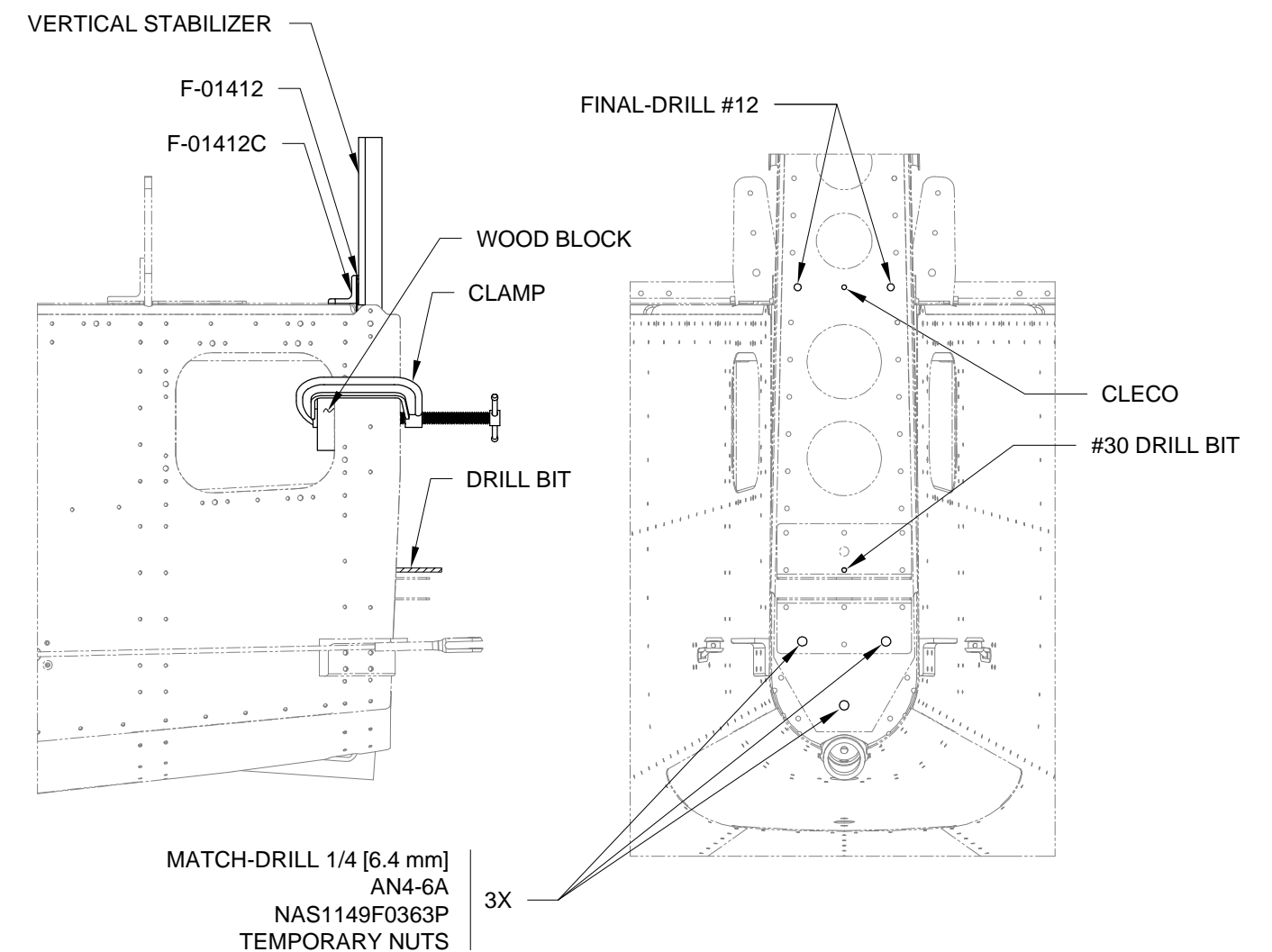


FIGURE 2: TAIL DRAGGER DRILLING



Step 1: Break the side edges and aft edge of the F-01475 Top Skin as described in Section 5.10. Pay particular attention to the aft edge to ensure a good fit when assembled.

Step 2: Dimple the #30 and #40 holes in the F-01475 Top Skin for external flush rivets, except as shown in Figure 1.

Dimple the nutplate attach holes in the top skin as shown in Figure 2. The nutplate will be installed in another section.

Dimple the holes in the upper flange of the F-14131 Upper Aft Fuse Rib as shown in Figure 2.

Dimple all holes in the F-01475A Skin Doubler.

Dimple all holes in the F-01486F J-Stiffener

NOTE: Not all locations will be riveted in this section. Use masking tape to cover the holes without rivet callouts to prevent inadvertent riveting. See Figure 1.

Step 3: Rivet the F-14131 Upper Aft Fuse Rib, F-01475A Skin Doubler and F-01486F J-Stiffener to the F-01475 Top Skin as shown in Figure 1 and Figure 2.

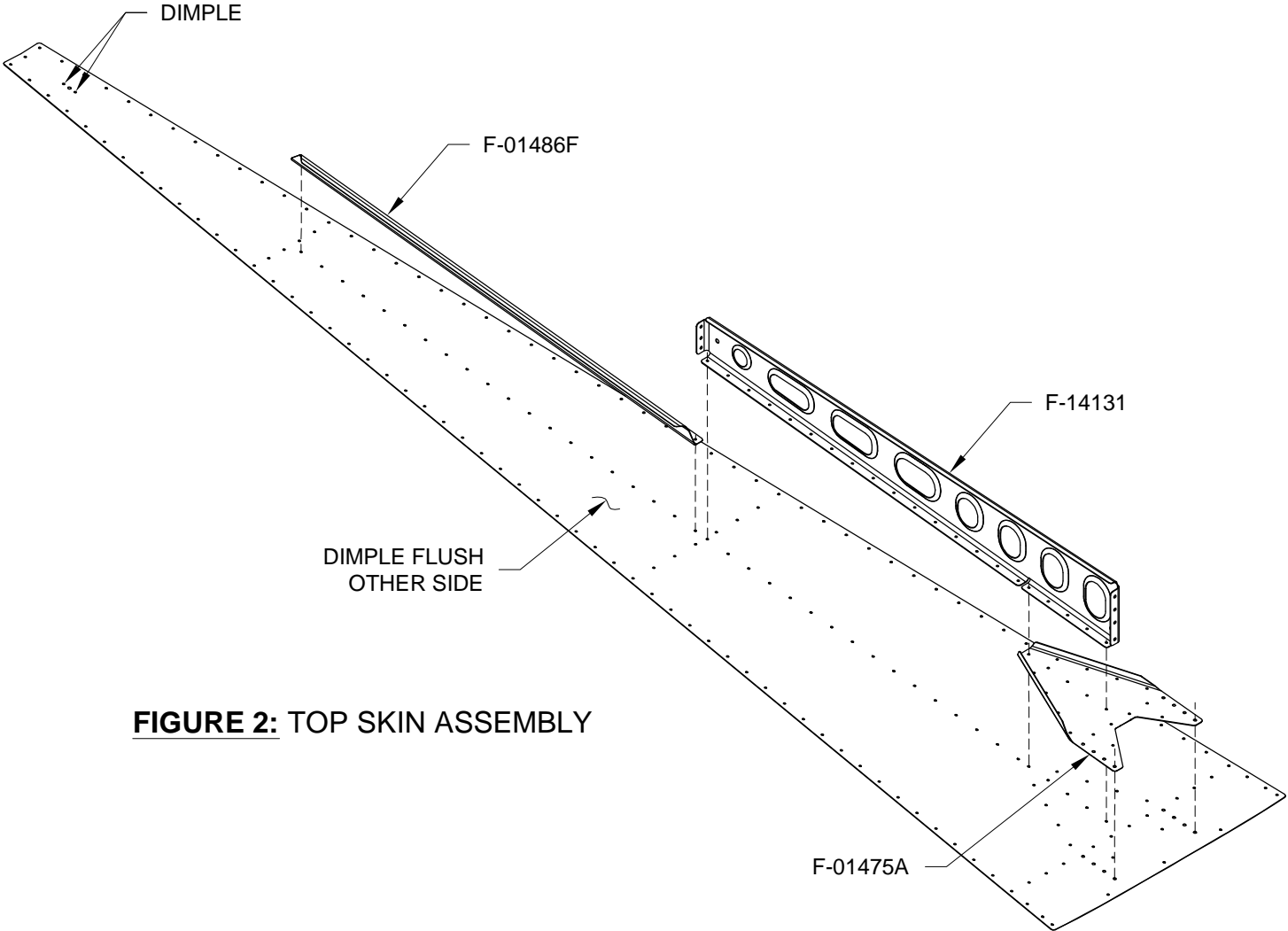


FIGURE 2: TOP SKIN ASSEMBLY

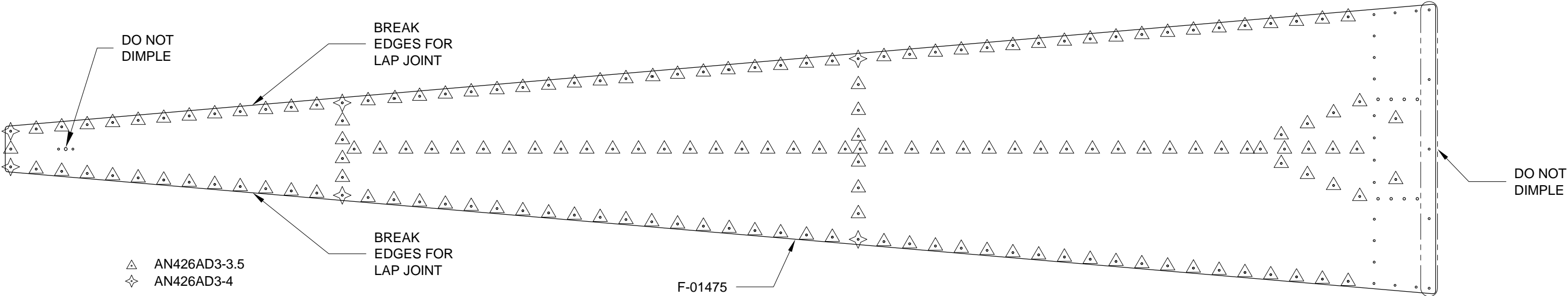
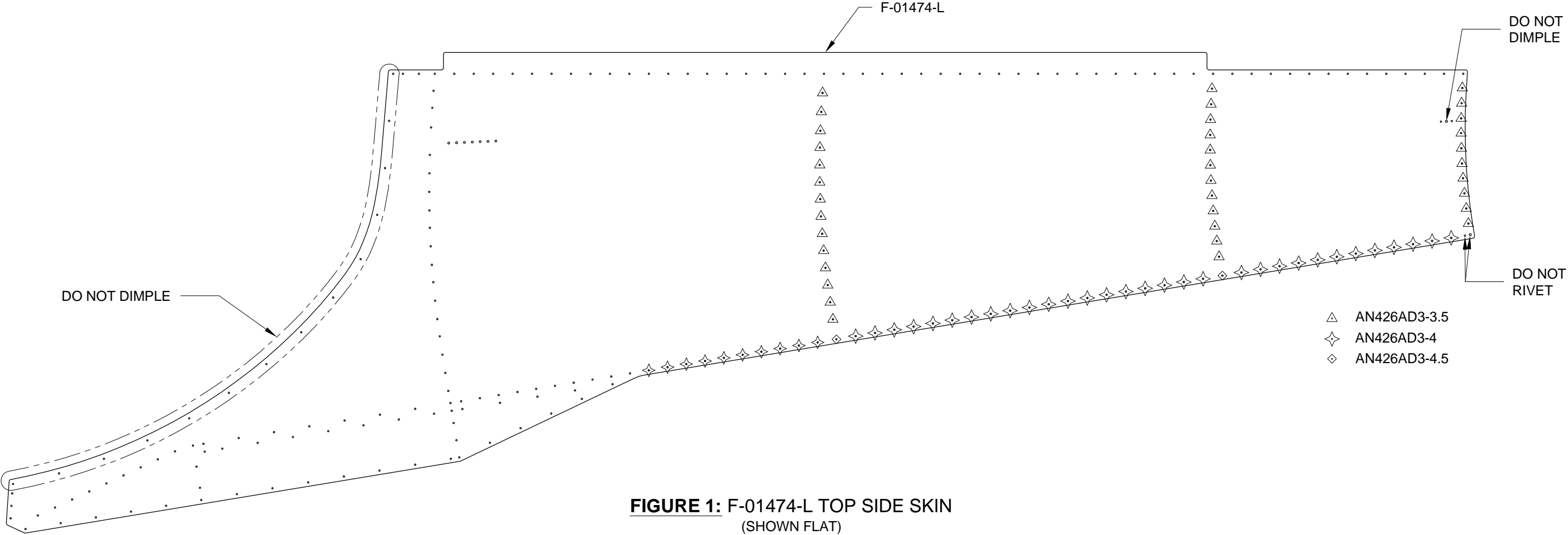


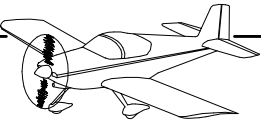
FIGURE 1: TOP SKIN RIVETS

NOTE: Only the left F-01474 Top Side Skin is shown. The right side is a mirror of the left.

Not all locations will be riveted in this section. Use masking tape to cover the holes without rivet callouts to prevent inadvertent riveting. See Figure 1.

- Step 1: Dimple all #30 and #40 holes in the F-01474-L & -R Top Side Skins for exterior flush mounted rivets except as shown in Figure 1.
- Step 2: Prime the F-01474-L & -R Top Side Skins as desired.





NOTE: The F-01474-L & F-01474-R Top Side Skins are installed one at a time so that the fuselage may be rolled on its side for easier rivet access.

Step 1: Cleco the F-01474-L Top Side Skin to the Aft Fuselage as shown in Figure 1.

Rivet the top side skin to the assembly as shown in Figure 1 and on Page 10-30 Figure 1.

Step 2: Cleco the F-01474-R Top Side Skin to the Aft Fuselage, as shown in Figure 1.

Rivet the top side skin to the assembly as shown in Figure 1 and on Page 10-30 Figure 1.

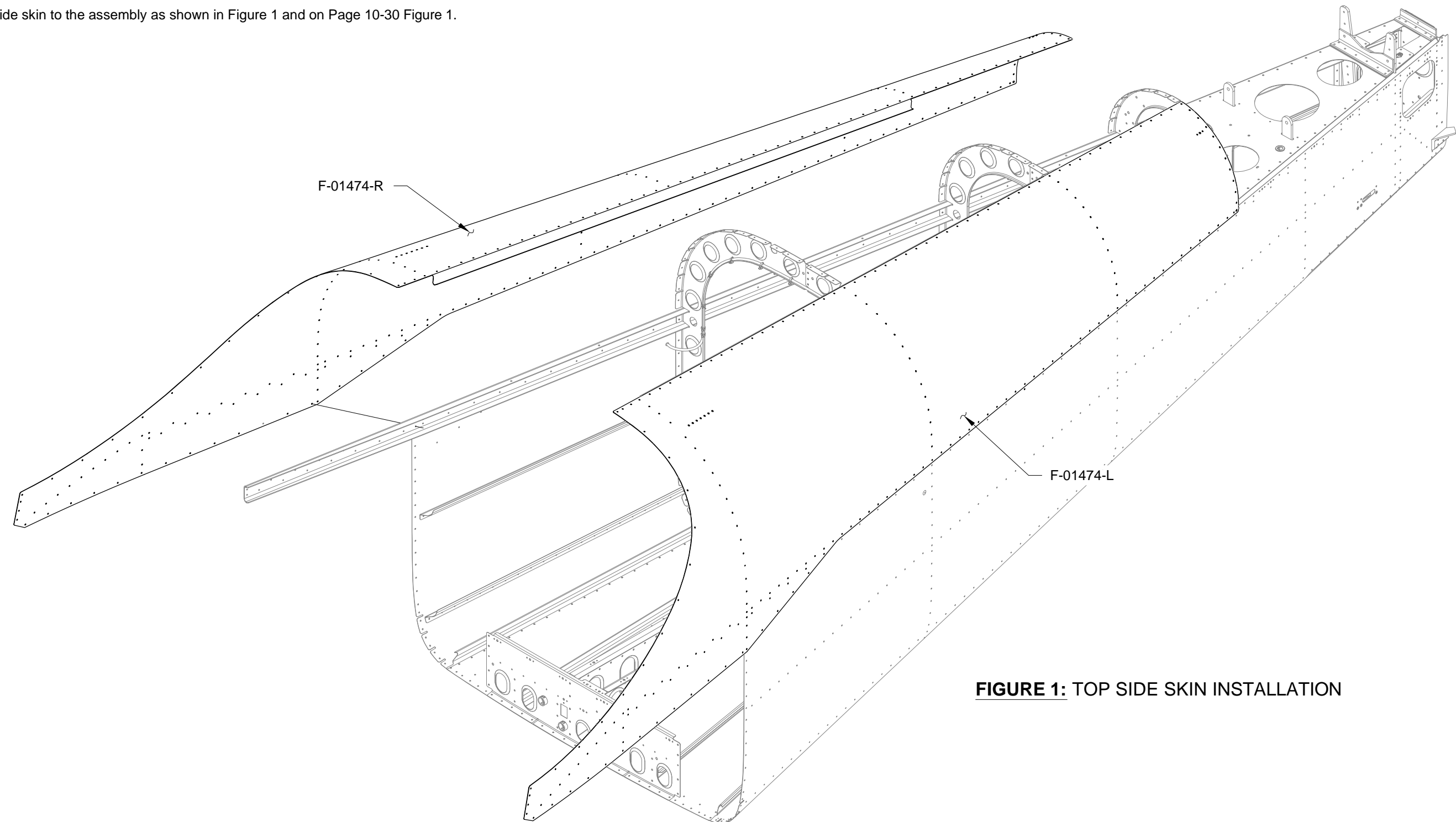
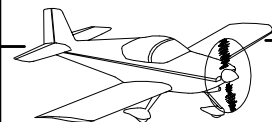


FIGURE 1: TOP SIDE SKIN INSTALLATION



NOTE: For better access, position the Aft Fuselage low to the ground.

Step 1: Cleco the F-01475 Top Skin to the Aft Fuselage as shown in Figure 1. Check that the skin fits well over the F-01474 Aft Side Skins. If necessary, break the edges of the skins further with a hand seamer as described in Section 5.16.

NOTE: If necessary, remove the clecos in the aft half of the skin and roll it forward to gain better access to the forward rivets.

Step 2: Beginning at the forward portion, Rivet the F-01475 Top Skin to the Aft Fuselage Assembly as shown in Figure 1 and on Page 10-29, Figure 1.

Step 3: Rivet the F-14131 Upper Aft Fuselage Rib to the F-01407 Bulkhead as shown in Figure 1.

NOTE: For a flush screw installation on the F-14112 Plate Covers, complete Step 3. Verify the correct orientation of the F-14112 Cover Plates with the mounting nutplates.

Step 4 (Optional): Dimple the holes in the F-14112 Cover plates for exterior flush screws as shown in Figure 1.

Step 5: Loosely install the F-14112 Cover plates as shown in Figure 1.

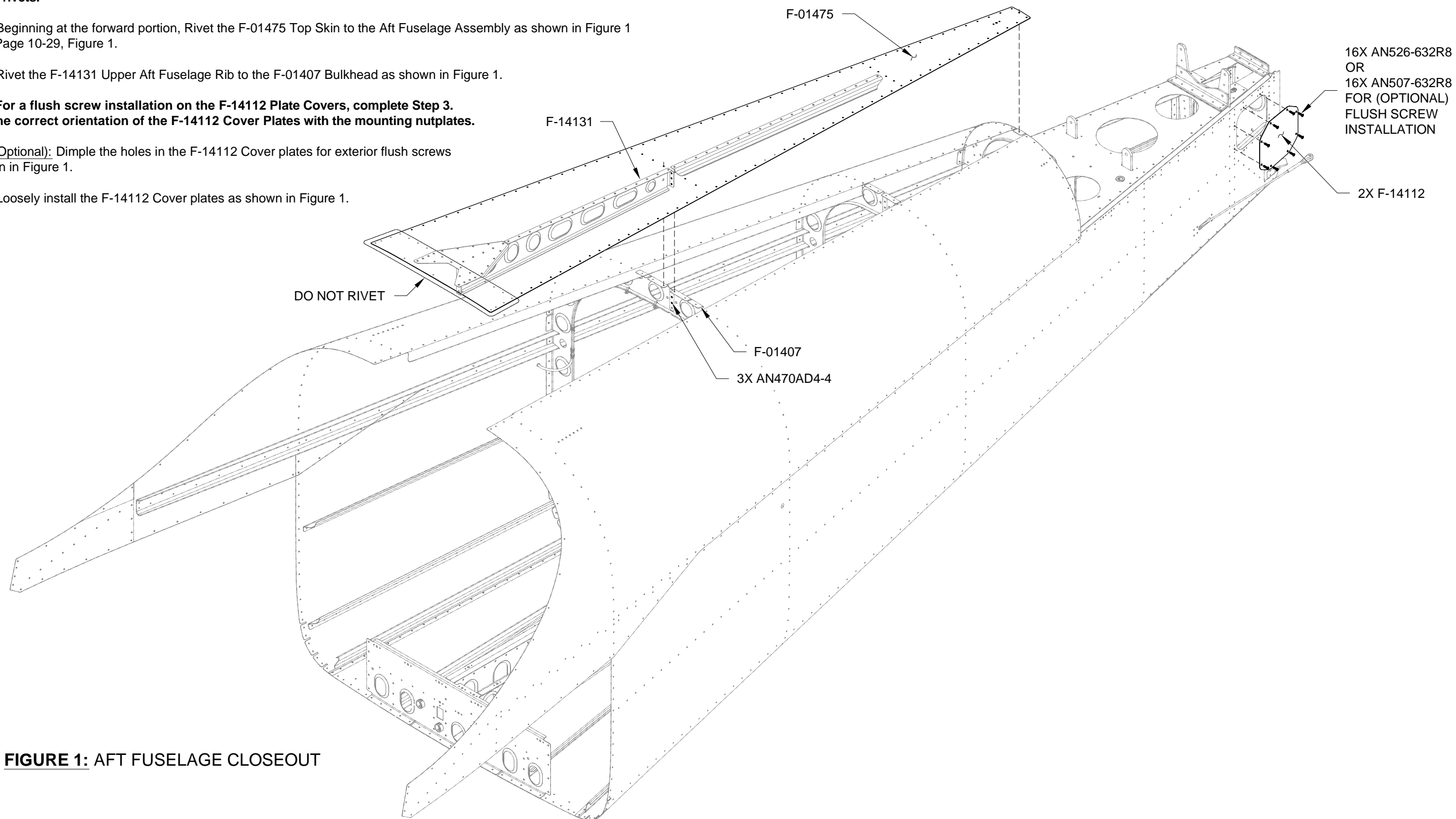
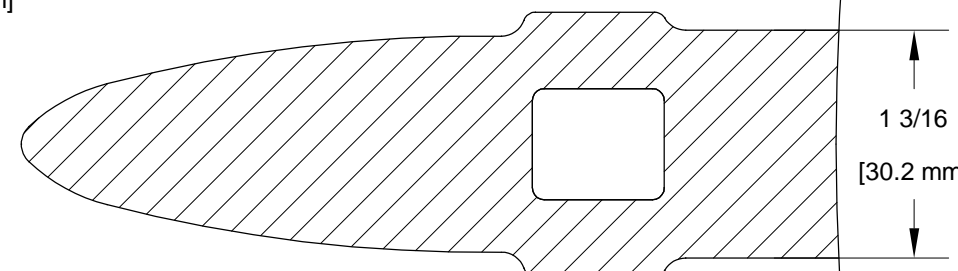
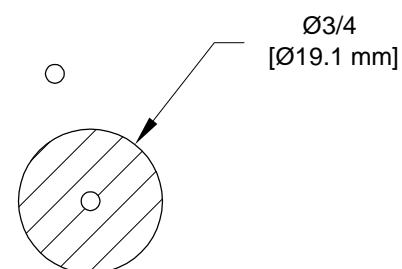


FIGURE 1: AFT FUSELAGE CLOSEOUT



NOTE: CHECK PRINTED SCALE IS 1:1 BEFORE USING THE TEMPLATE!



**FIGURE 1: F-01479 TRIM
TEMPLATE**



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