

**TOTAL PERFORMANCE**  
**VAN'S AIRCRAFT**

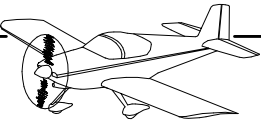
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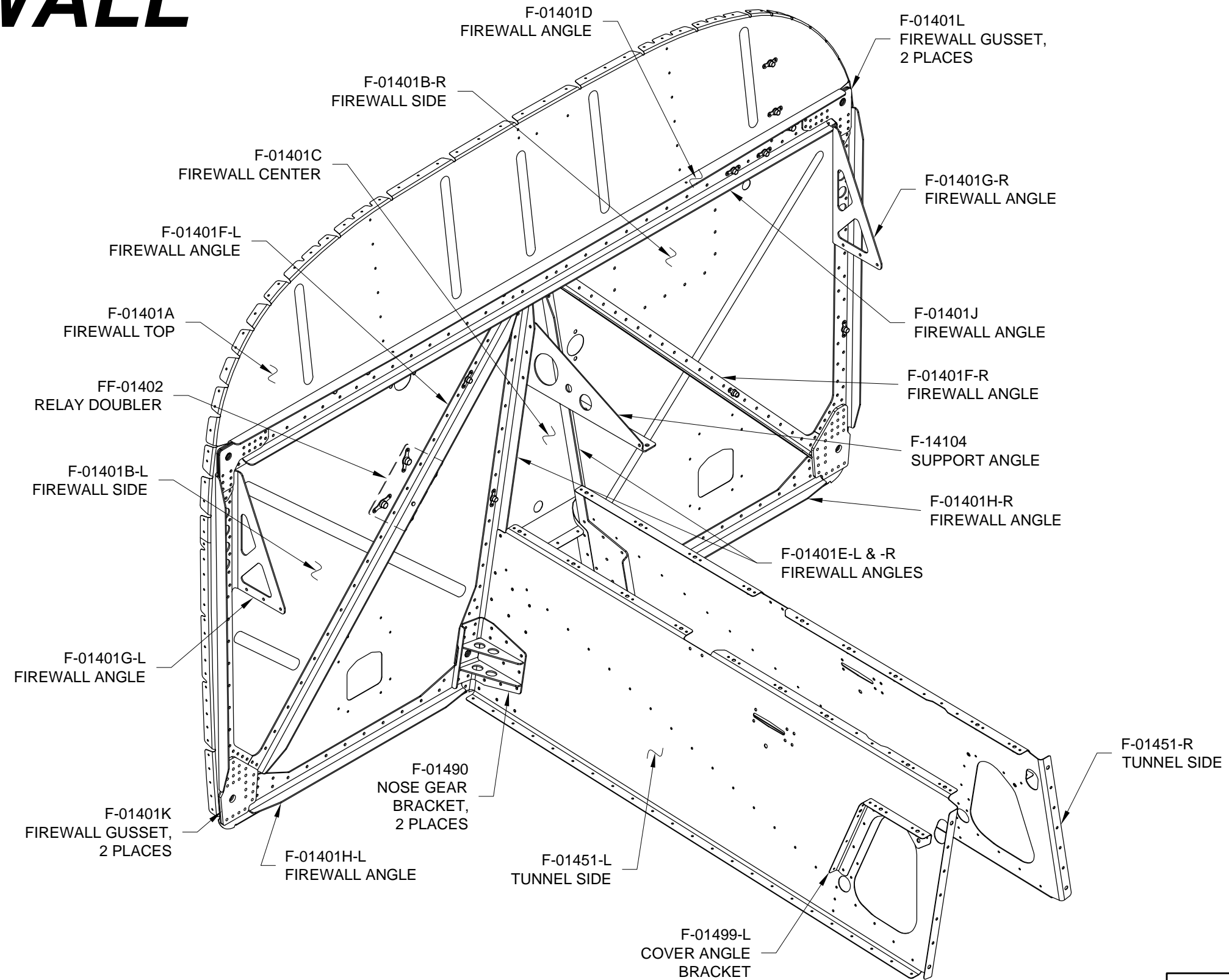
**REVISION DESCRIPTION:**

**Page: 27-04 REV 2:** Steps 1 and 2 combined for clarity.

**Page: 27-05 REV 2:** In Figure 1 the shaded "DO NOT DIMPLE" area encompasses 7 rivets (one extra outboard) rather than 6. Changed to the correct locations.



# SECTION 27: FIREWALL



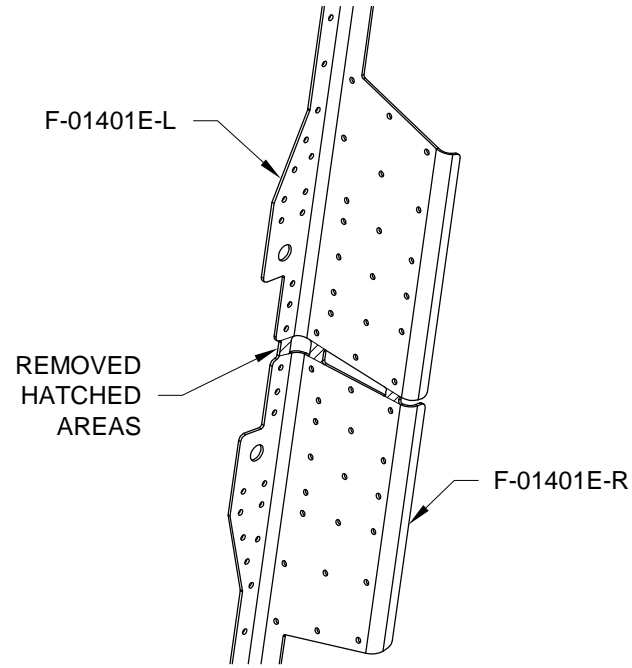


**Step 1:** Separate the F-01401E Firewall Angles as shown in Figure 1.

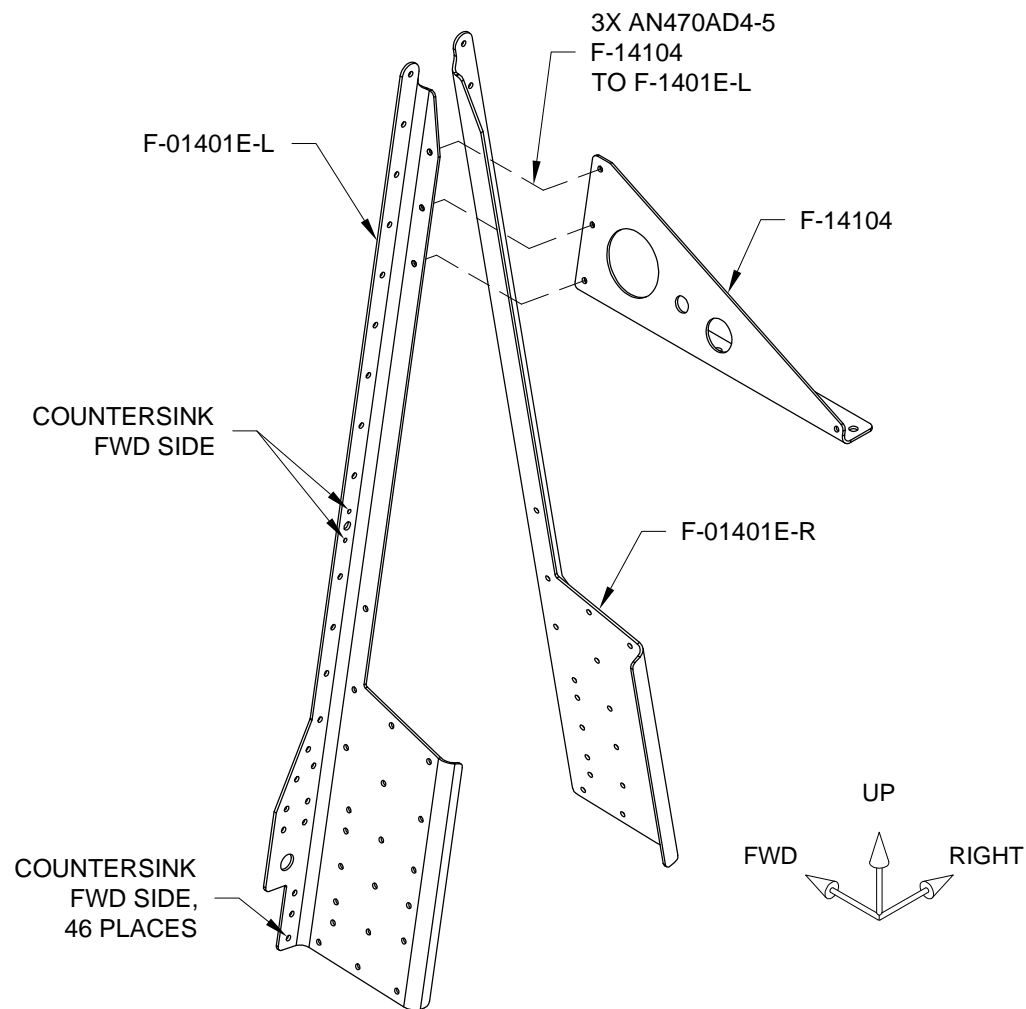
**Step 2:** Machine countersink the #40 holes in the forward flange of the F-01401E-L Firewall Angle as shown in Figure 2.

**Step 3:** Machine countersink the #30 holes in the forward flanges of the F-01401E-L & -R Firewall Angles.

**Step 4:** Rivet the F-14104 Support Angle to the inboard side of the F-01401E-L Firewall Angle as shown in Figure 2.



**FIGURE 1: SEPARATE FIREWALL ANGLES**



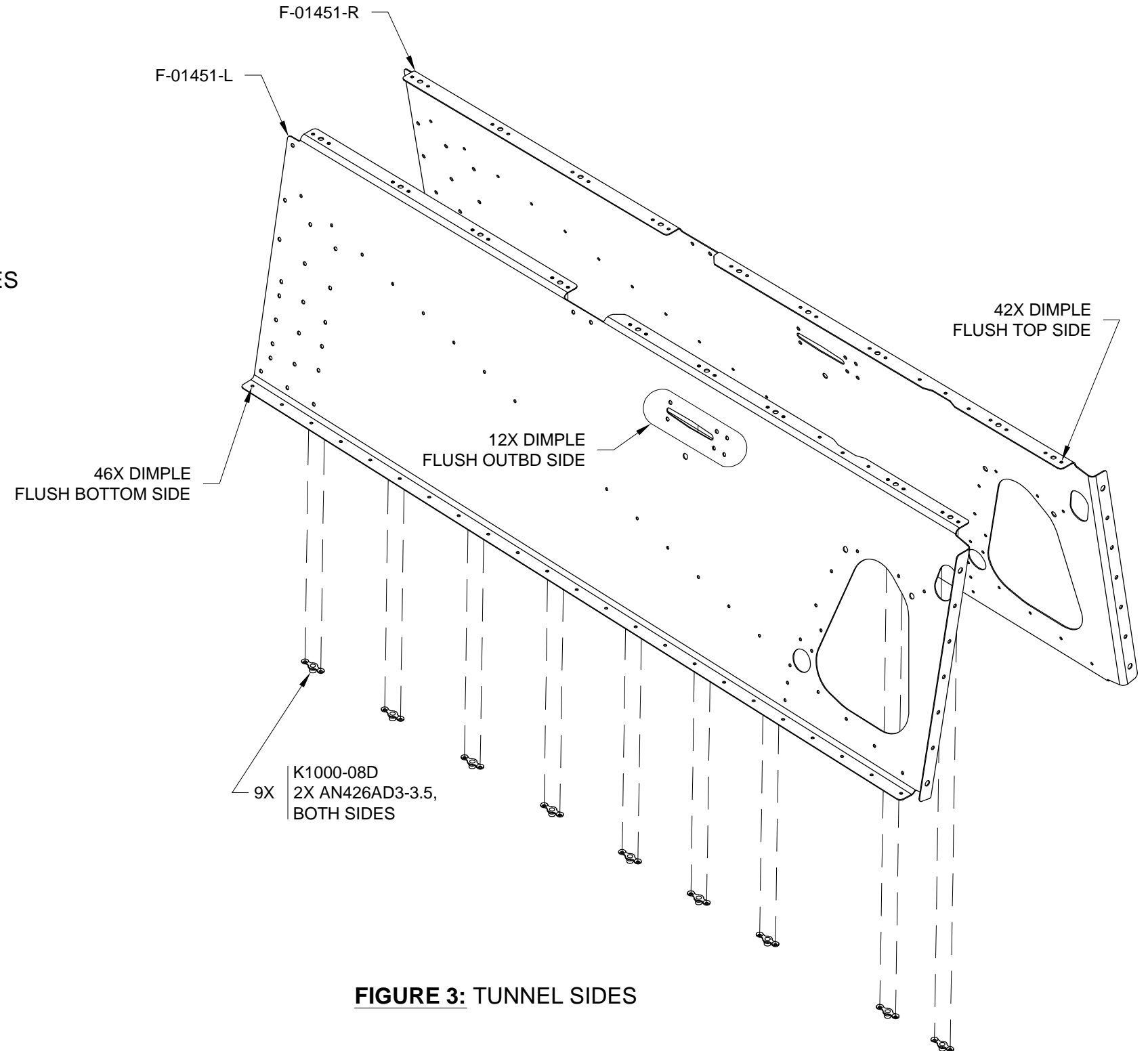
**FIGURE 2: FIREWALL ANGLES**

**Step 5:** Dimple the #40 holes in the lower flanges of the F-01451-L & -R Tunnel Sides.

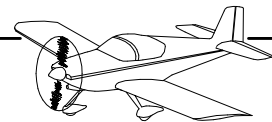
Dimple the #40 holes in the upper flanges of the tunnel sides.

Dimple the #30 holes around the slots in the tunnel sides. See Figure 3.

**Step 6:** Rivet the nutplates to the upper flanges of the F-01451-L & -R Tunnel Sides as shown in Figure 3.



**FIGURE 3: TUNNEL SIDES**



Step 1: Separate the F-01499 Cover Angle Brackets as shown in the first view of Figure 1.

Step 2: Dimple the #40 holes in the upper and forward flanges of the F-01499-L & -R Cover Angle Brackets as shown in Figure 1.

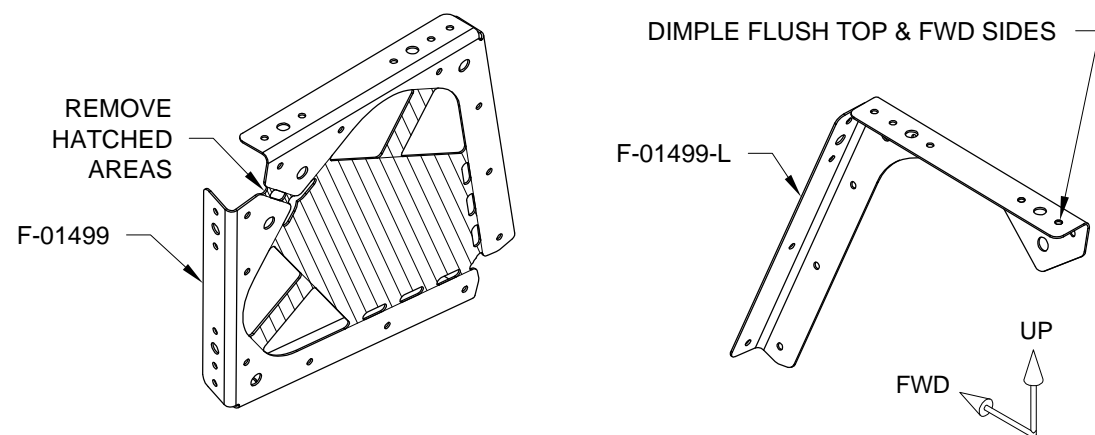
Step 3: Rivet the F-01499-L & -R Cover Angle Brackets to the F-01451-L & -R Tunnel Sides as shown in Figure 2.

Step 4: Rivet the nutplates to the upper flanges of the F-01499-L & -R Cover Angle Brackets as shown in Figure 3.

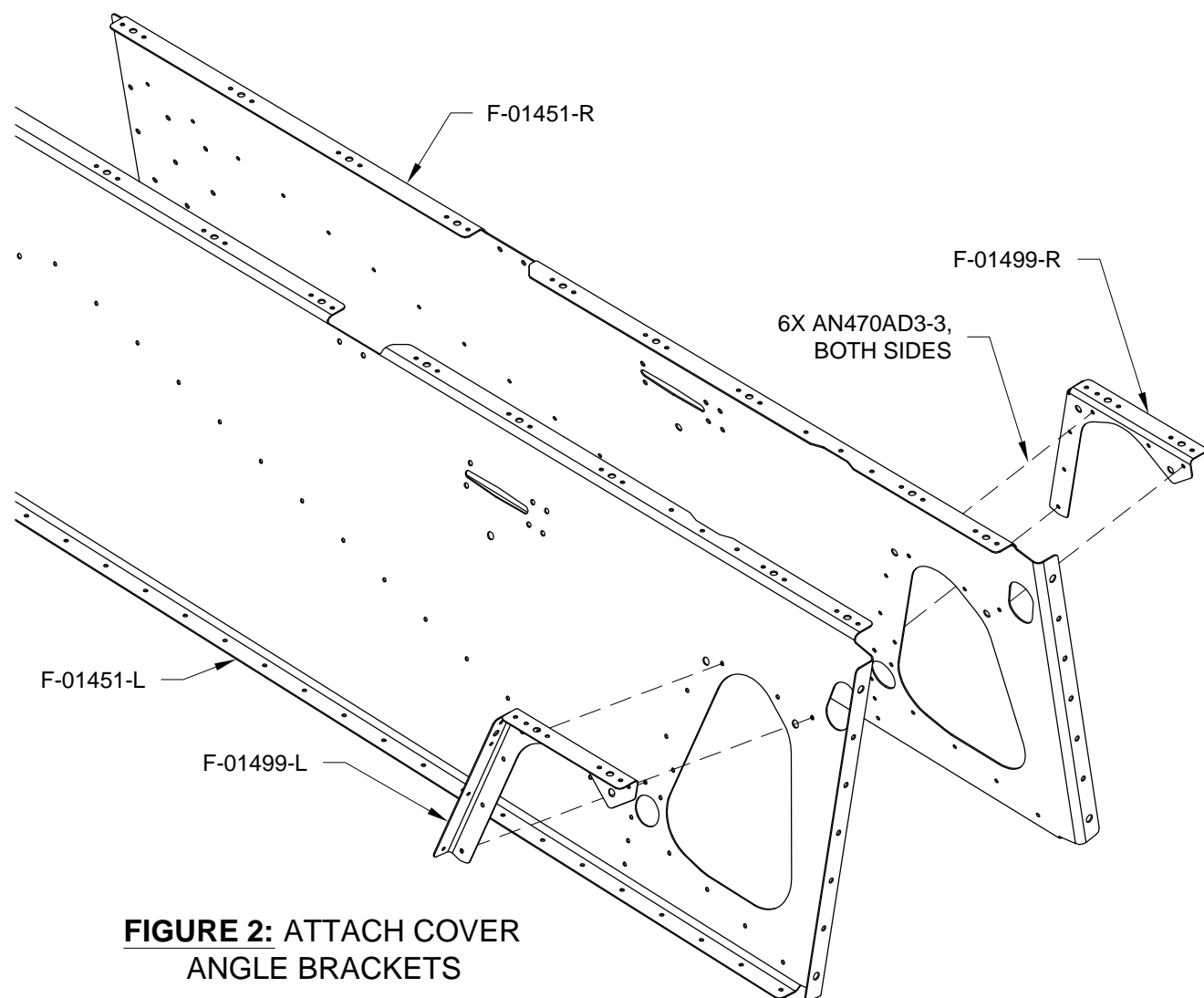
Step 5: Final-Drill #30 the holes in the F-01490 Nose Gear Brackets as shown in Figure 3.

Step 6: Rivet the F-01490 Nose Gear brackets and the F-01401E-L & -R Firewall Angles to the F-01451-L & -R Tunnel Sides as shown in Figure 3.

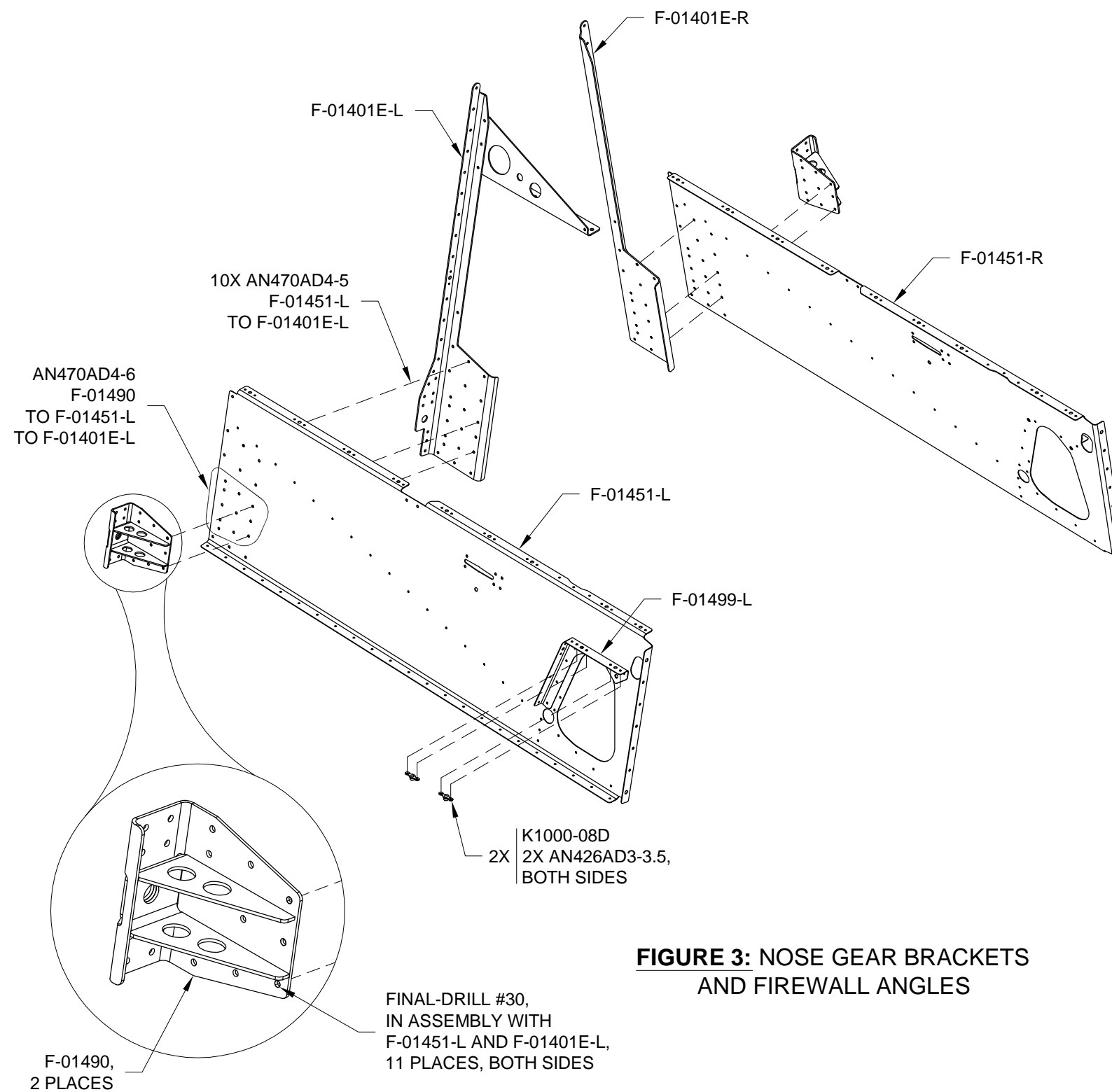
Hereafter refer to these as the Left and Right Tunnel Side Assemblies.



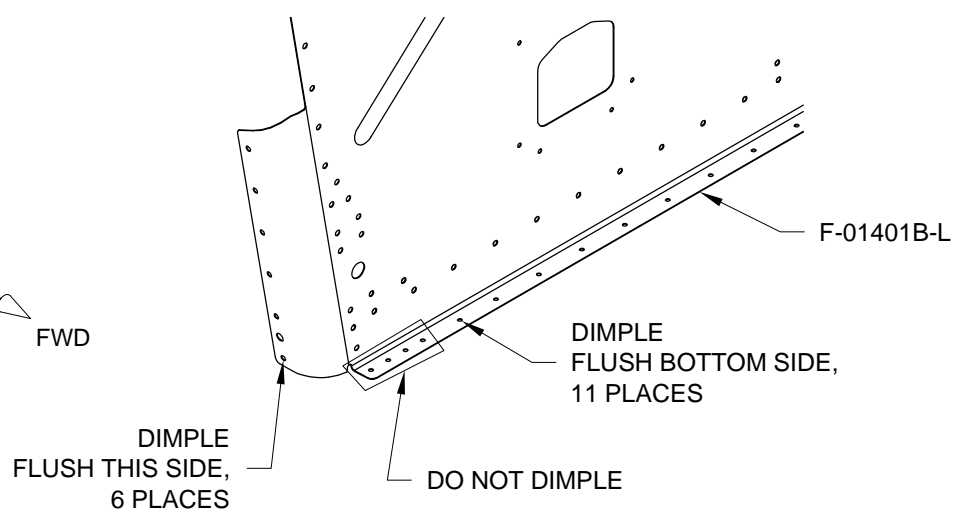
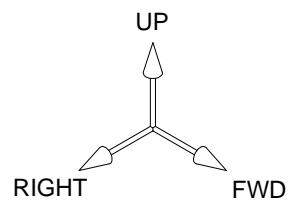
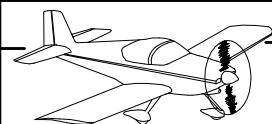
**FIGURE 1: COVER ANGLE BRACKETS**



**FIGURE 2: ATTACH COVER ANGLE BRACKETS**



**FIGURE 3: NOSE GEAR BRACKETS AND FIREWALL ANGLES**



**FIGURE 1: DIMPLE FIREWALL SIDES**  
(LEFT SIDE SHOWN)

**CAUTION!** Stainless steel edges are very sharp. Handle with care.

**NOTE:** See Section 5-15 for more information about working with steel parts.

All rivets are installed flush on the forward side of the firewall unless otherwise noted.

Locations on the F-01401B-L & -R Firewall Sides marked "DO NOT RIVET" still require dimpling.

**Step 1:** Dimple the #30 and #40 holes in the F-01401B-L & -R Firewall Sides except as shown in Figures 1 and 2. Do not dimple nutplate center holes.

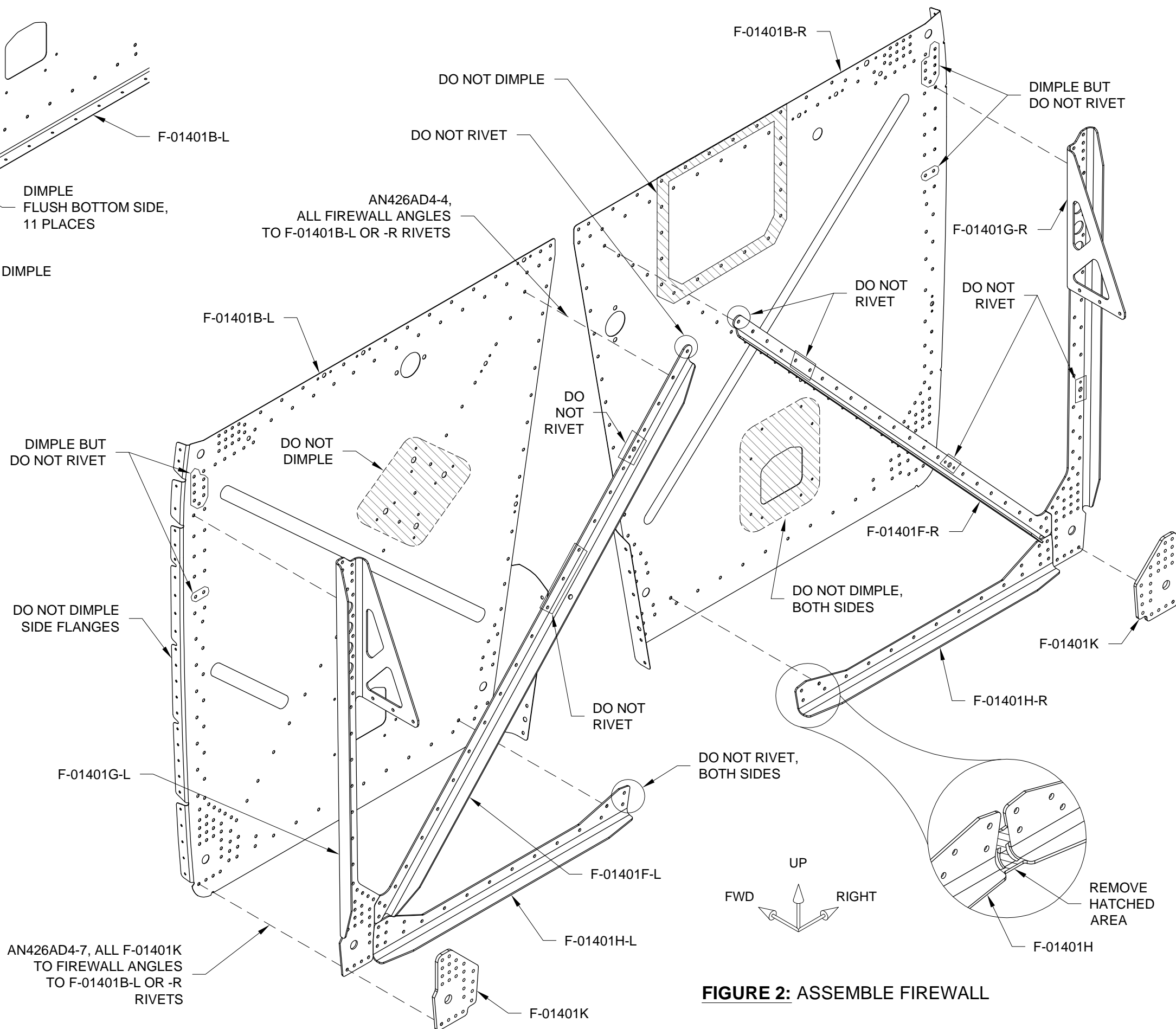
**Step 2:** Trim the F-01401H Firewall Angles as shown in the detail view of Figure 2.

**Step 3:** Flatten the F-01401K Gussets using a heavy soft-faced hammer as required.

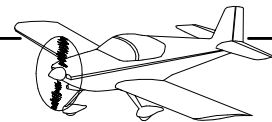
**NOTE:** Only machine countersink the holes in the firewall angles that correspond to dimpled holes in the firewall sides. Cover the holes that should not be countersunk with tape until countersinking is complete.

**Step 4:** Machine countersink the #30 and #40 holes in the left and right F-01401F, G, and H Firewall Angles to fit the dimples in the firewall sides.

Cleco then back rivet the firewall angles and F-01401K Gussets to the F-01401B-L & -R Firewall Sides except as shown in Figure 2.



**FIGURE 2: ASSEMBLE FIREWALL**



**Step 1:** Dimple the #30 and #40 holes in the web of the F-01401A Firewall Top as shown in Figure 1. Do not dimple the flanges or nutplate center holes.

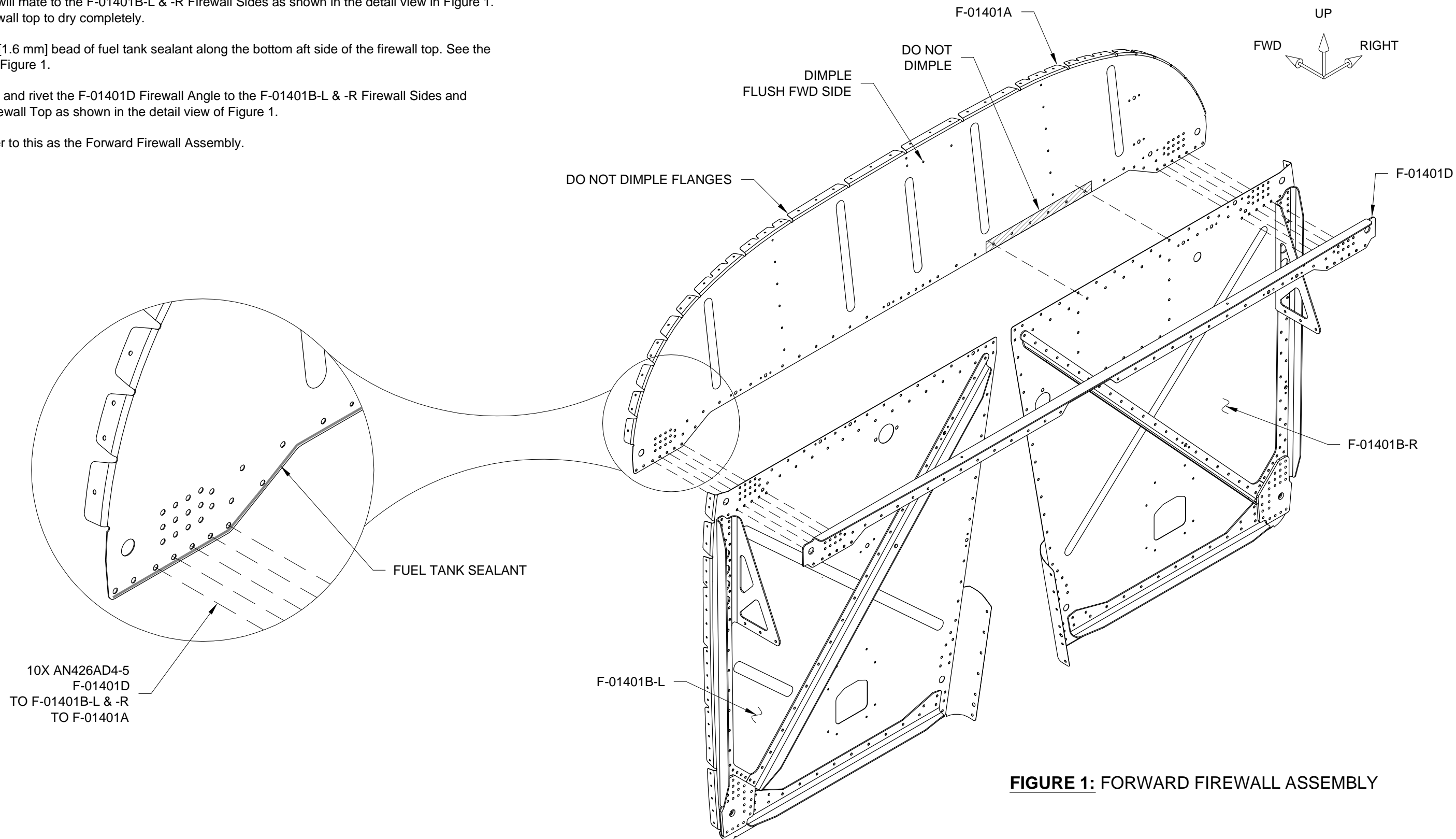
**Step 2:** Machine countersink the F-01401D Firewall Angle to fit the dimples in the F-01401B-L & -R Firewall Sides.

**Step 3:** Clean with solvent (acetone or isopropyl alcohol) the bottom aft side of the F-01401A Firewall Top where it will mate to the F-01401B-L & -R Firewall Sides as shown in the detail view in Figure 1. Allow the firewall top to dry completely.

Apply a 1/16 [1.6 mm] bead of fuel tank sealant along the bottom aft side of the firewall top. See the detail view in Figure 1.

**Step 4:** Cleco and rivet the F-01401D Firewall Angle to the F-01401B-L & -R Firewall Sides and F-01401A Firewall Top as shown in the detail view of Figure 1.

Hereafter refer to this as the Forward Firewall Assembly.



**FIGURE 1: FORWARD FIREWALL ASSEMBLY**



Step 1: Cleco the Left and Right Tunnel Side Assemblies to the Forward Firewall Assembly using only the holes shown in Figure 1.

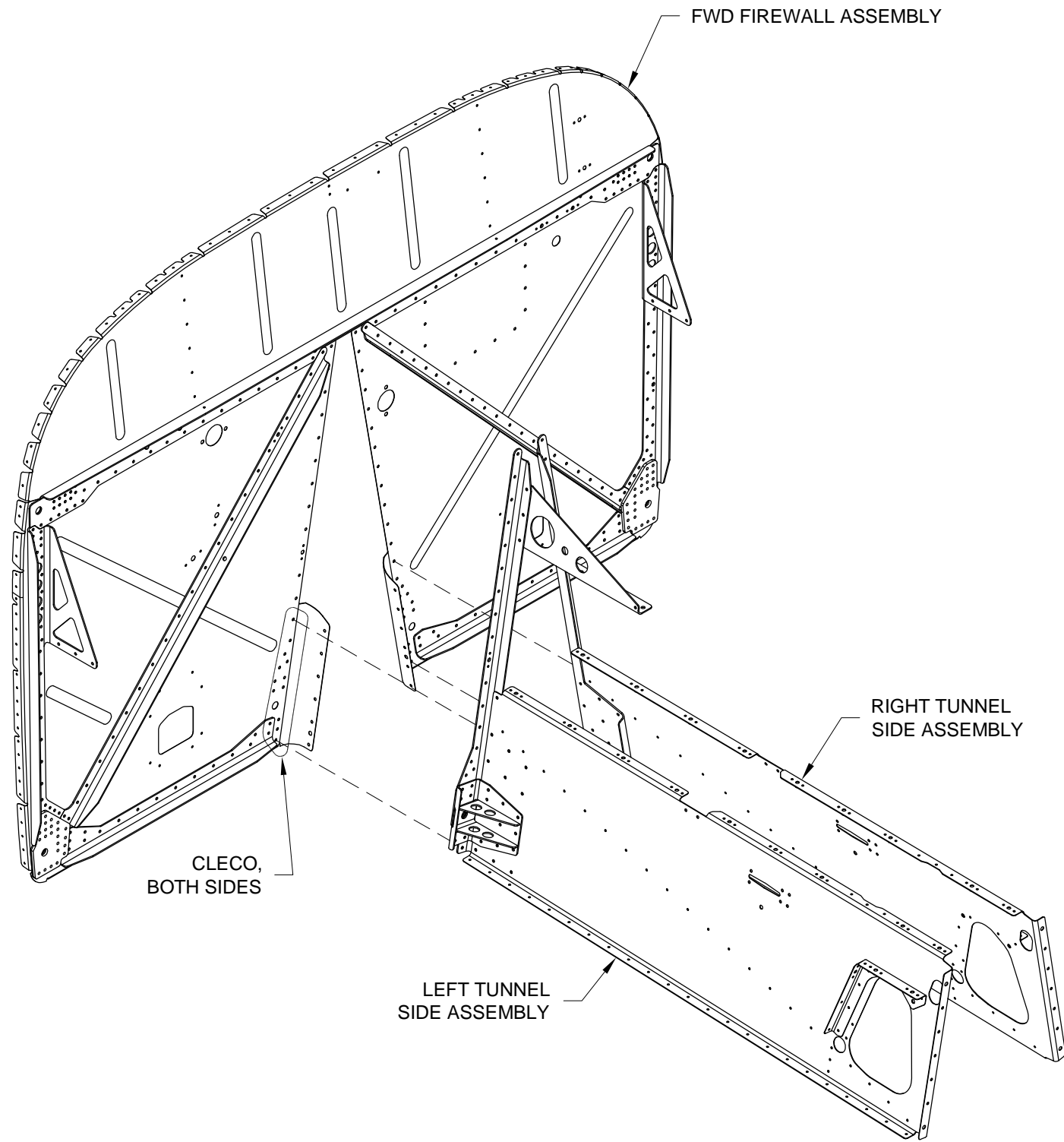


FIGURE 1: TUNNEL INSTALLATION

Step 2: Dimple the #30 and #40 holes in the F-01401C Firewall Center flush on the forward side.

Dimple the four #40 holes on the curled flange of the firewall center flush on the bottom side.

Step 3: Clean with solvent (acetone or isopropyl alcohol) the forward side of the Forward Firewall Assembly where it will mate to the F-01401C Firewall Center. Allow the Forward Firewall Assembly to dry completely.

Apply a 1/16 [1.6 mm] bead of fuel tank sealant to the forward side of the Forward Firewall Assembly as shown in the detail view in Figure 2.

Step 4: Cleco the F-01401C Firewall Center and F-14132 Tunnel Angle to the Forward Firewall Assembly and to the Left and Right Tunnel Side Assemblies as shown in Figure 2.

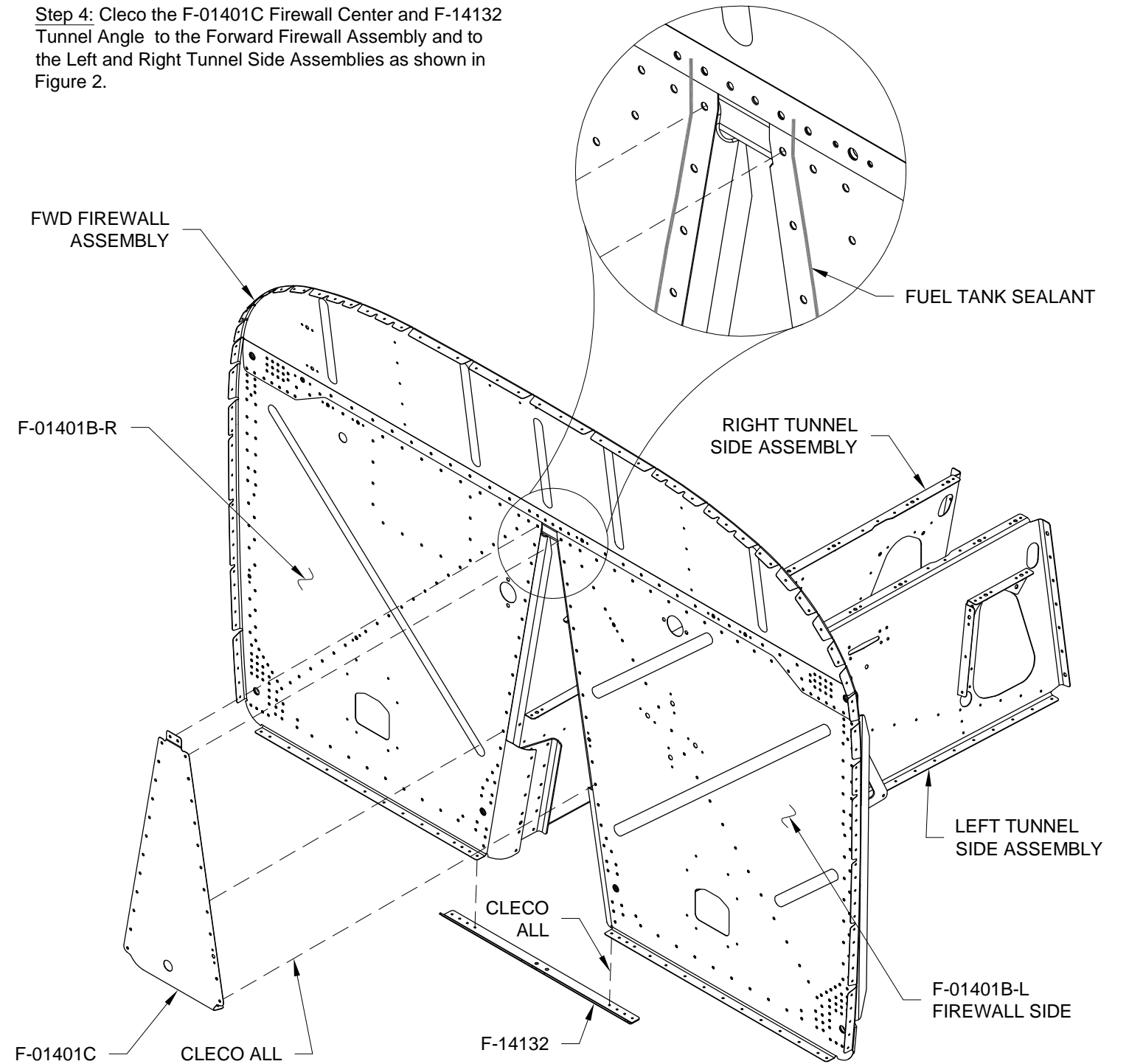
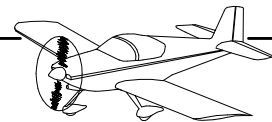


FIGURE 2: FIREWALL CENTER



**NOTE: All rivets are installed flush on the forward side of the firewall.**

**Step 1:** Match-Drill #30 the holes common to both the Forward Firewall Assembly and the F-01490 Nose Gear Brackets. Drill from the forward side of the Forward Firewall Assembly.

**NOTE: Match-Drill if/as required #30 or #40 any rivet holes that will not accept a rivet.**

**Step 2:** Cleco then rivet the F-01401L Firewall Gussets, F-01401J Firewall Angle, and Left and Right Tunnel Side Assemblies to the Forward Firewall Assembly as shown in the detail view in Figure 1.

**NOTE: Always ream using a drill press set at low speed. Use lubricant and clean the reamer before every hole.**

**Step 3:** Ream .375 the engine mount holes as shown in Figure 1. Maintain precise alignment to keep the holes perpendicular to the surface of the firewall.

**Step 4:** Machine countersink the #30 and #40 holes in the FF-01402 Relay Doubler.

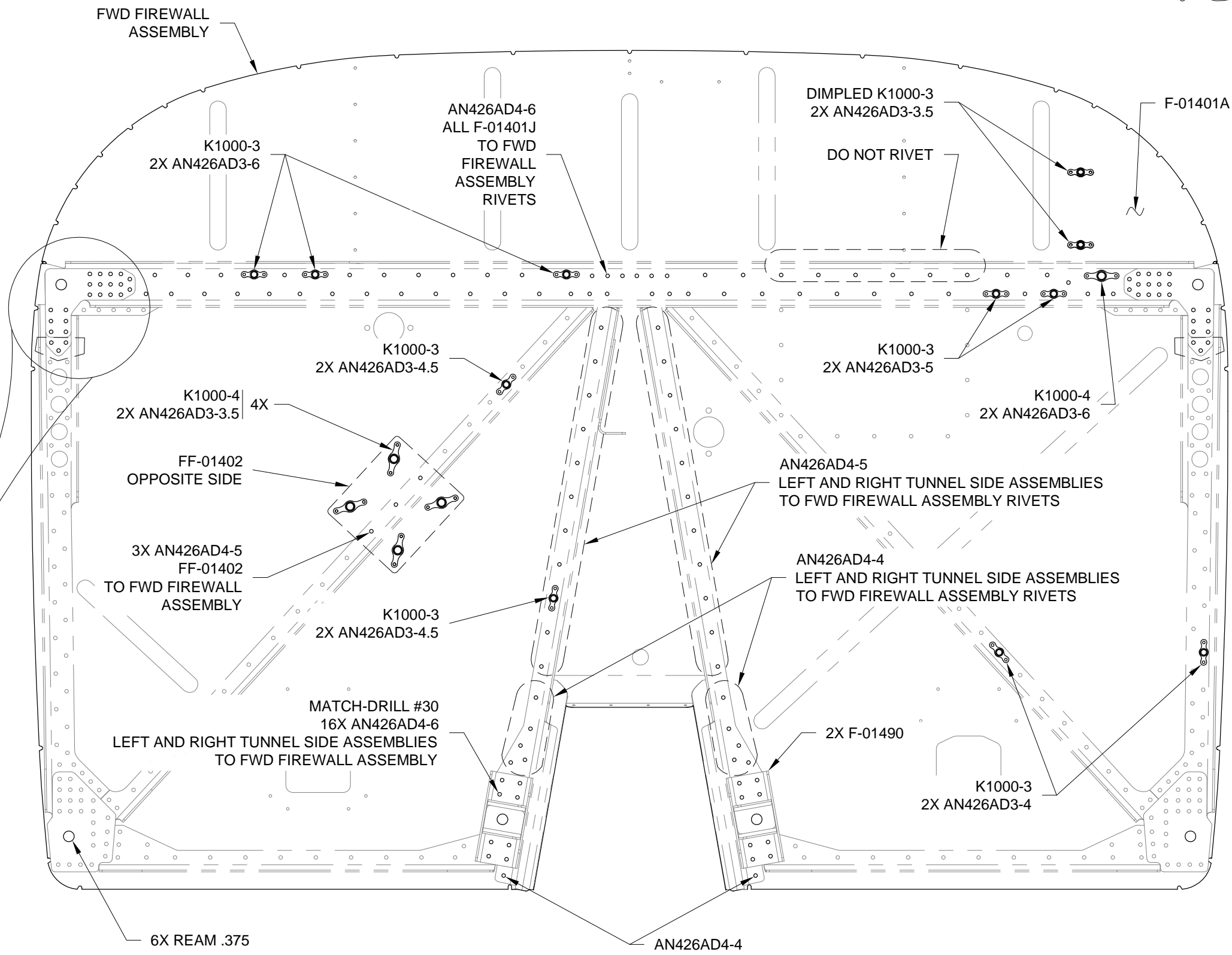
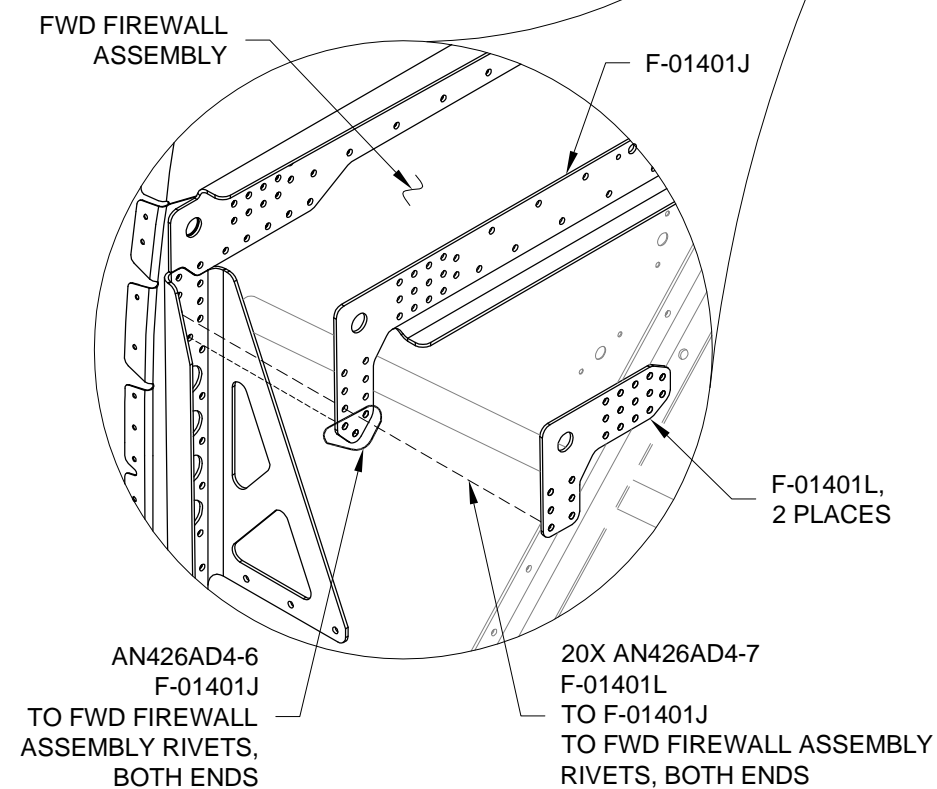
**Step 5:** Rivet the relay doubler to the forward face of the Forward Firewall Assembly as shown in Figure 1.

**Step 6:** Dimple the two nutplates that will attach to the F-01401A Firewall Top as shown in Figure 1.

**Step 7:** Rivet all nutplates to the Firewall Assembly as shown in Figure 1.

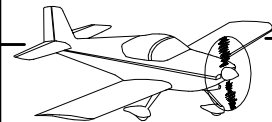
Hereafter refer to this as the Firewall Assembly.

**Step 8:** Remove the F-14132 Tunnel Angle and set it aside for the next section.



**FIGURE 1: FIREWALL FINAL ASSEMBLY**  
(AFT SIDE VIEW LOOKING FORWARD - SOME PARTS NOT SHOWN)





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