

9.6 Inner Floor Installation

- 1) Trim the Forward Floor Skin (FUS-382) as in Figure 1.

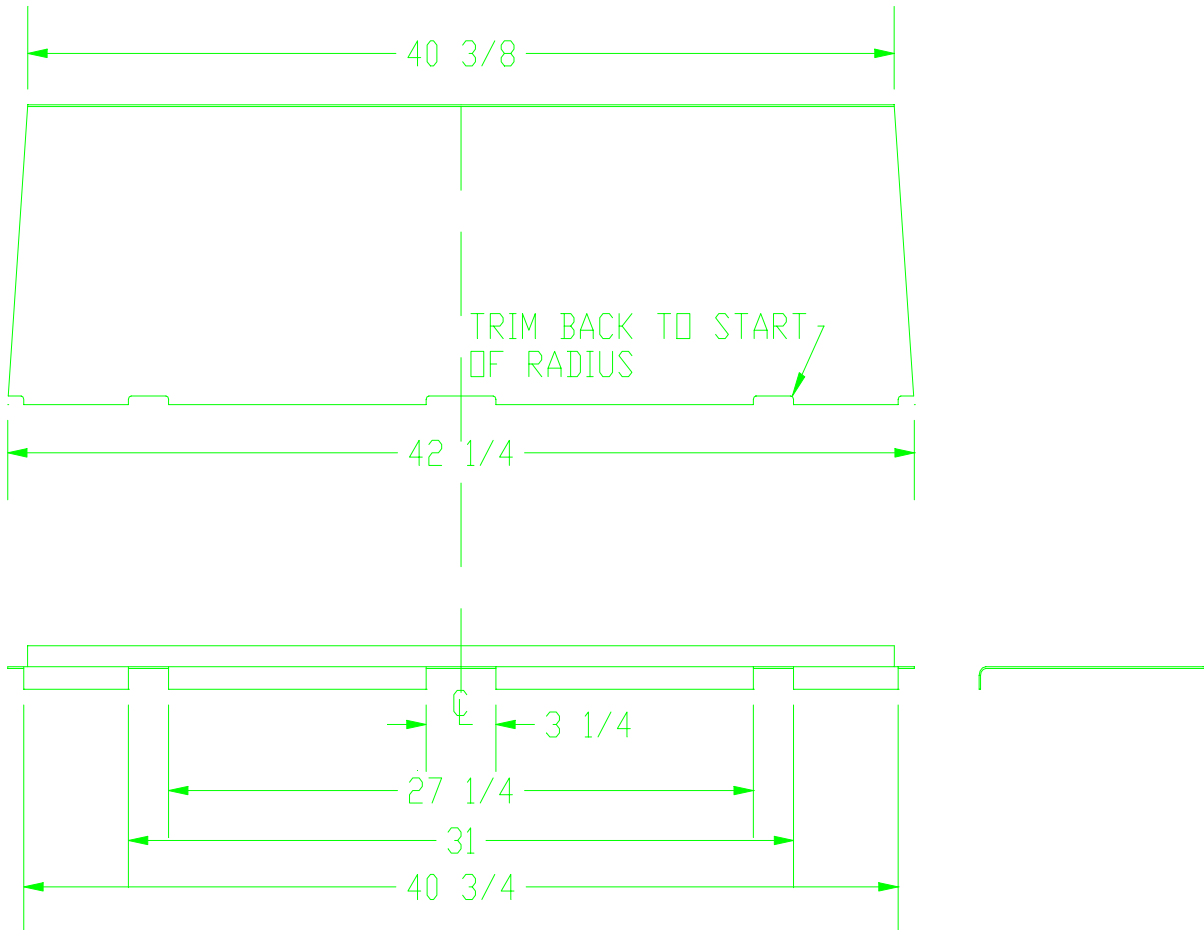


FIGURE 1

- 2) Center the floor skin in the cabin with the forward flange tight against the firewall. Back drill the flange to #30 through the holes in firewall. Add holes between existing holes with a nominal rivet pitch of approximately $1 \frac{1}{4}$ ". Figure 2.

- 3) Remove the Outside Bottom Skin (FUS-383) from the bottom and back drill through the two Engine Mount

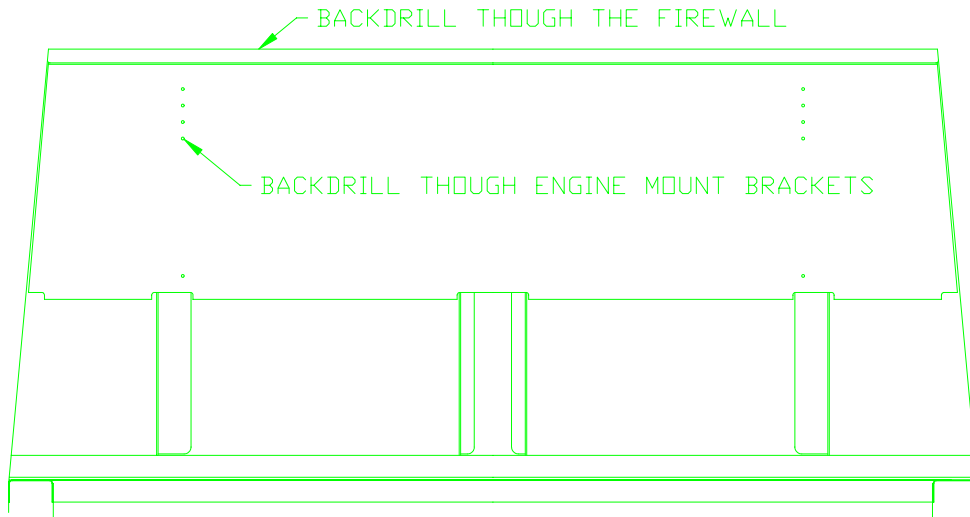


FIGURE 2

Brackets (FUS-340) into the floor skin.

- 4) Mark the location of the two inner shear web angles onto the floor skin. Remove the floor skin.
- 5) To the floor skin add the #40 holes and 1" slots shown in Figure 3.

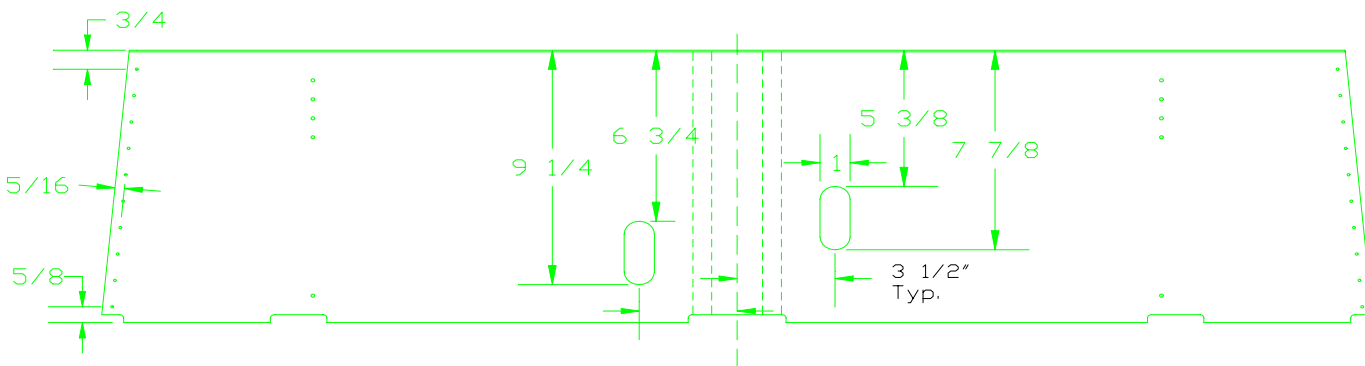


FIGURE 3

- 6) Cut two RP-13-1 (Delrin Bearings) in half. Figure 4.

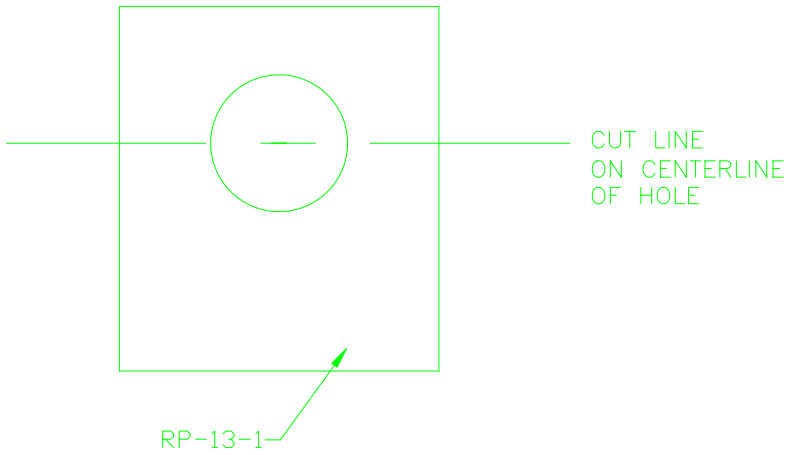


FIGURE 4

- 7) Draw guide lines on the floor skin as in Figure 5.

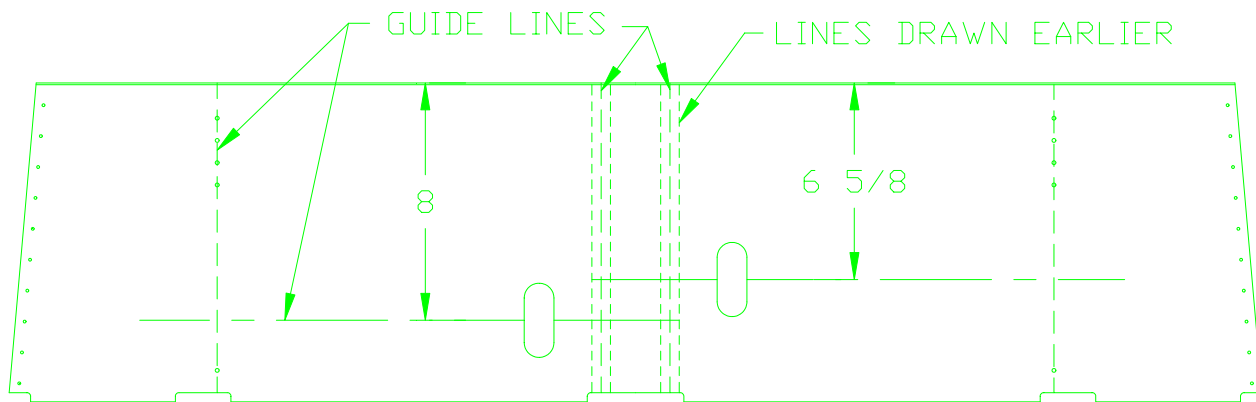


FIGURE 5

- 8) Assemble a left and right Rudder Pedal Assembly as in Figure 6. **NOTE:** Use the exploded view drawing in Chapter 12 as a guide.

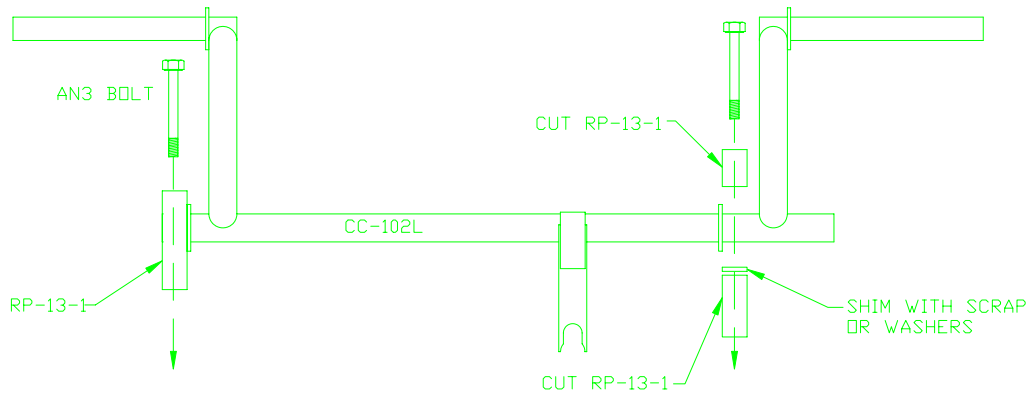


FIGURE 6

- 9) Center the two Rudder Pedal Assemblies (CC-102L and CC-102R) over the horizontal guidelines so the RP-13-1 bearings are centered over the vertical guidelines. Figure 7.

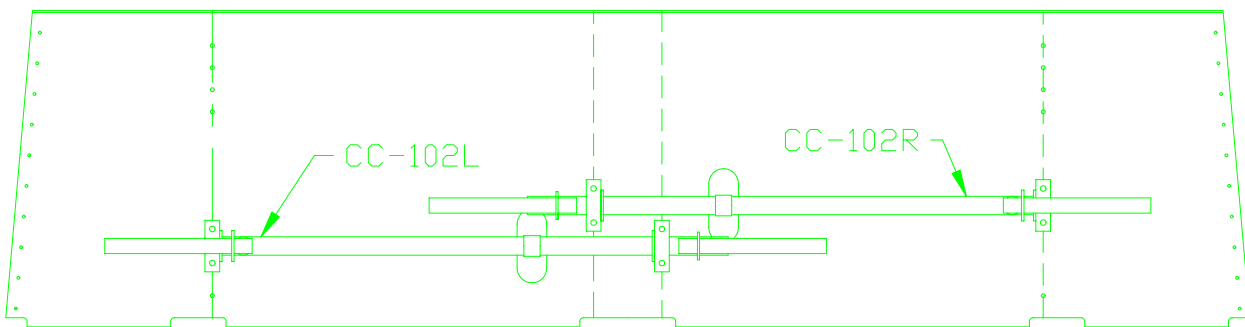


FIGURE 7

- 10) Using the RP-13-1 Delrin Bearings as drill guides, drill the floor skin to #11.
- 11) Add extra #30 holes as in Figure 8.

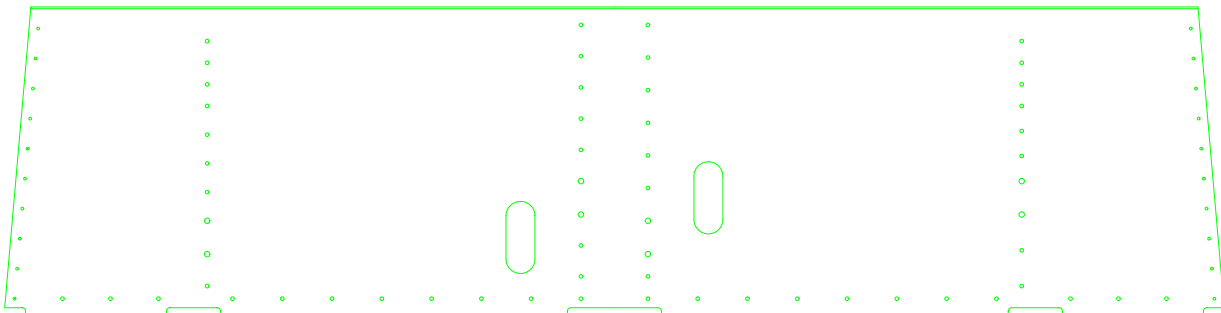
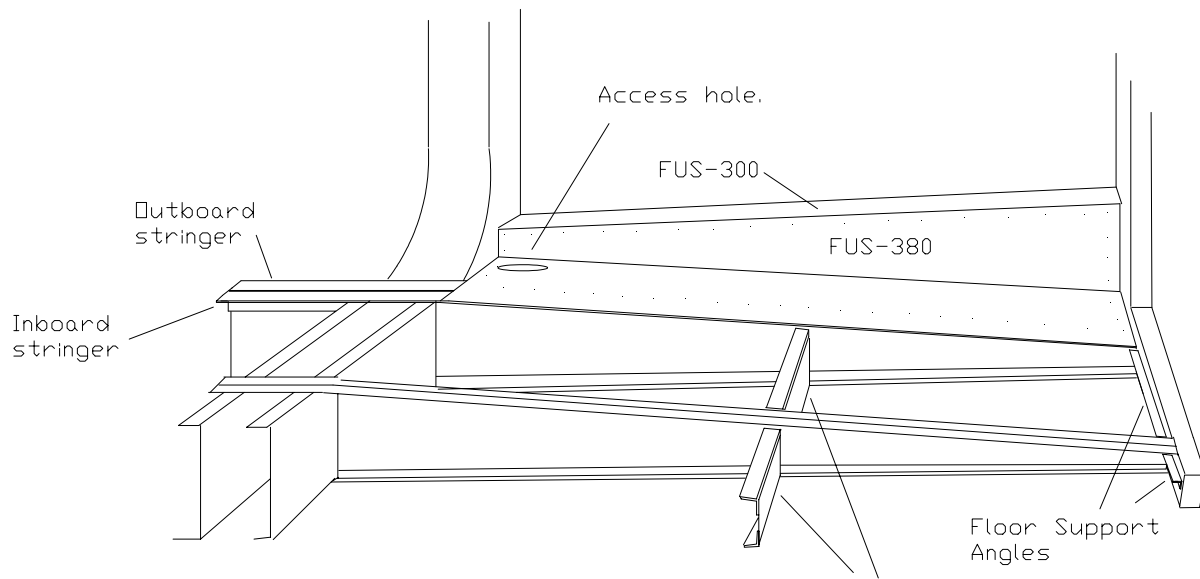


FIGURE 8

NOTE: Before the final install of any of the floor panels you will need to go ahead to Chapter 12 at this time and work on the Control section of the manual. Many parts of the Controls are located under the floor and must be installed first. Also install any wires, fuel lines, etc. at this time.

- 12) The normal rivet pitch for all areas in the floor will be 1 ¼”.
- 13) Two Cargo Floor Support Bulkheads will have to be fabricated. Use RAWST-8 angles and RAWST-10 .032 material to construct two bulkheads. See figure. 9 for locations. These should be located halfway between the Inner Cargo Door bulkhead and the next forward bulkhead.
- 14) Also fabricate a floor support angle (from ST-28 or RAWST-8) that goes across the Inner Cargo Door bulkhead at station “B C”. Keep them flush with the top of the floor stringers. Figure 9.



Cargo Support Bulkheads

FIGURE 9

- 15) Trim an FUS-380 Inside Corner to fit against the FUS-300 Channels that go from the rear door post to the Inner Cargo Door bulkhead. Trim the edges to be flush with the FUS-300 channel and the inner stringers on the floor (Figure 9). Layout and drill a rivet pattern on the part through the channel and stringer. Drill a 2 ½” access hole for the Float Fitting. You may rivet FUS-380 to the FUS-300 channel only at this time.
- 16) Cut twelve seatbelt brackets from RAWST-6 at
- 17) ¾” long. (Figure 10) Drill ¼” holes in the center of both web surfaces. Offset one hole closer to the top for bolt head clearance.

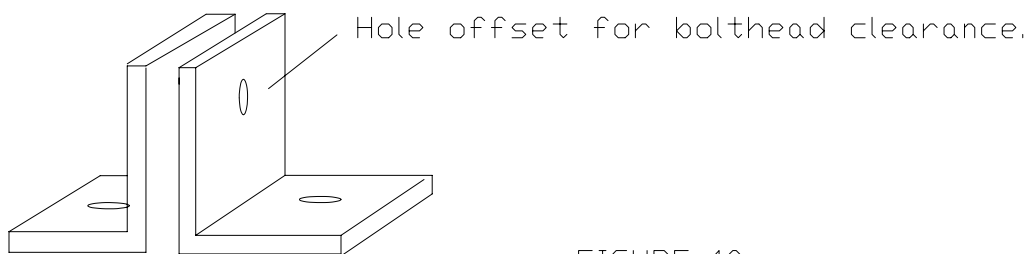


FIGURE 10

17) Bolt a Seatbelt Fitting as a spacer between two of the brackets (offset holes) and place the assembly on the top of the bulkhead centered on the flange and drill the 1/4" holes through the bulkhead. Figure 11 Repeat for the opposite side of the center section. Repeat this process for the center section at Station 7. (Stringers do not run through Station 4 on Trike version)

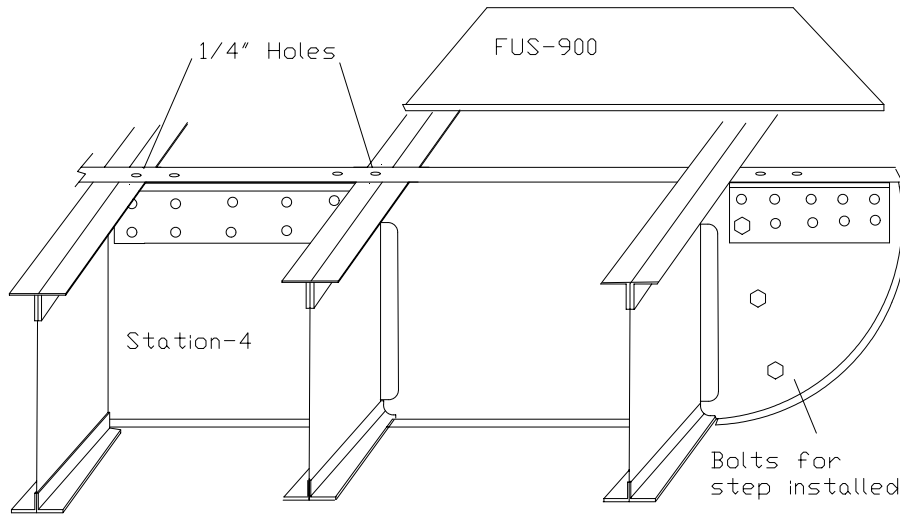


FIGURE 11

18) The two outboard 1/4 " holes labeled in Figure. 11 can be drilled into the stringer at the Station 7 bulkhead.
19) Cut and make four Seatbelt Support Angles out of SA-204, two to fit between the center section of Station 4 and Station 7. (Figure 12.) and two shorter angles to fit on either end of Station 4 bulkhead. Figure 11. You will have to measure their aprox. Length.

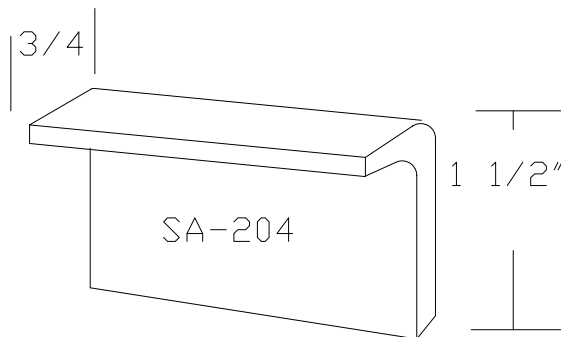


FIGURE 12

- 20) Using the 1/4" holes you just drilled in the stringers and flanges as a guide drill through the angles you just made.
- 21) Install F5000-4 nut plates under the angles using the 1/4" holes as a guide. Layout and drill a rivet pattern on each of the angles through the bulkheads. Rivet together. **NOTE:** If you have installed the Step use one of the bolt holes as a guide for locating the outer two angles. Figure 11.
- 22) Locate FUS900 and FUS-901 right and left floor panels. They go from the leading edge of the forward stringer on Station 2 back to the Station 'BC' bulkhead on top of the angle you fabricated earlier. Trim flush with the inboard edge of the inboard sheer web angle. Figure 11.

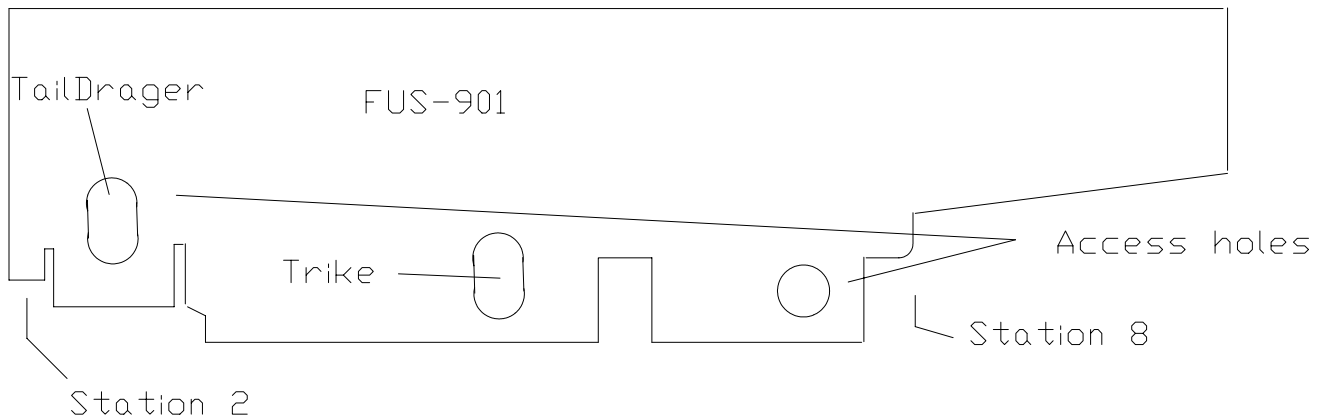


FIGURE 13

- 23) Lay panels in place and trim so you get a good fit around the uprights.
- 24) Before drilling any holes in either FUS-900 or 901 panels go ahead to Chapter 22 Seat Assembly and make one-bucket seat. This is so you can accurately locate the Seat Rails on the floor.
- 25) Lay the two Floor Panels with the Seat Rails in their proper locations. Figure 14. The FUS-902 Center Floor

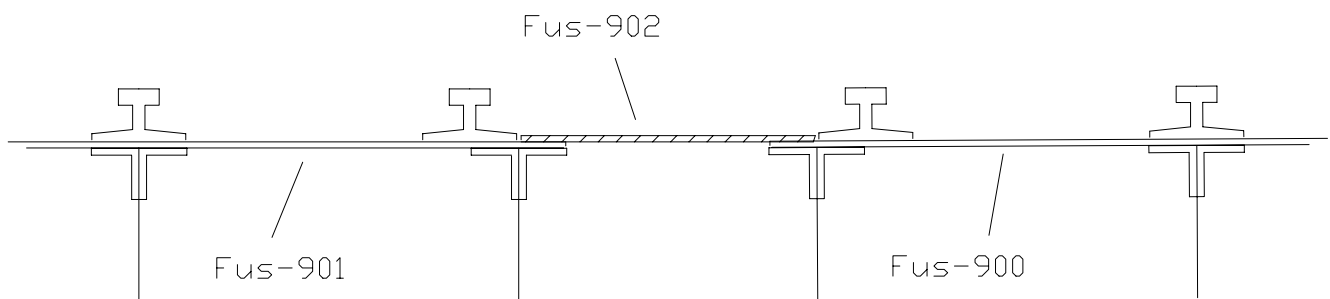


FIGURE 14

Panel should sit on top of both main Panels and between the two inner Seat Rails.

- 26) Layout and drill a rivet pattern on all parts through all bulkhead flanges and stringers except the Forward Angle in Station 2 Bulkhead. **NOTE:** Use the instructions in the Seat Assembly Section for drilling the Seat Rails. Remember to transfer the 1/4" Seatbelt Bracket holes into the Floor Panels.
- 27) Layout and drill any extra Access Holes you require (Figure 13 and Figure 15) in the three floor Panels.

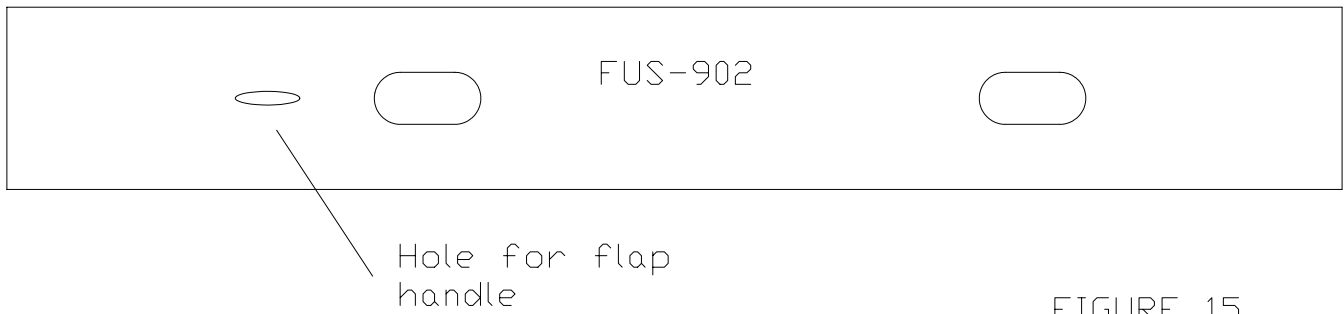


FIGURE 15

- 28) Using Figure 16 as a guide fabricate the FUS-334 Floor Panel. **NOTE:** The measurements given in Figure 16
- 29) are approximate, your Panel may be slightly different. Use the holes in the Panel as a guide to drill through the Station 2 Forward Angle and Floor Panels. Install FUS-334 with F5000-3 Nut Plates and AN525-832 R10 machine screws last. Later you will also need to cut a short piece of Angle to support the Panel along the side of the fuselage. (Step 32)
- 29) FUS-334 overlaps all of the Floor Panels and is installed with Nut Plates to allow access to the Control Column.
- 30) Access hole covers can be drilled and installed with PK screws or rivets after final inspection.

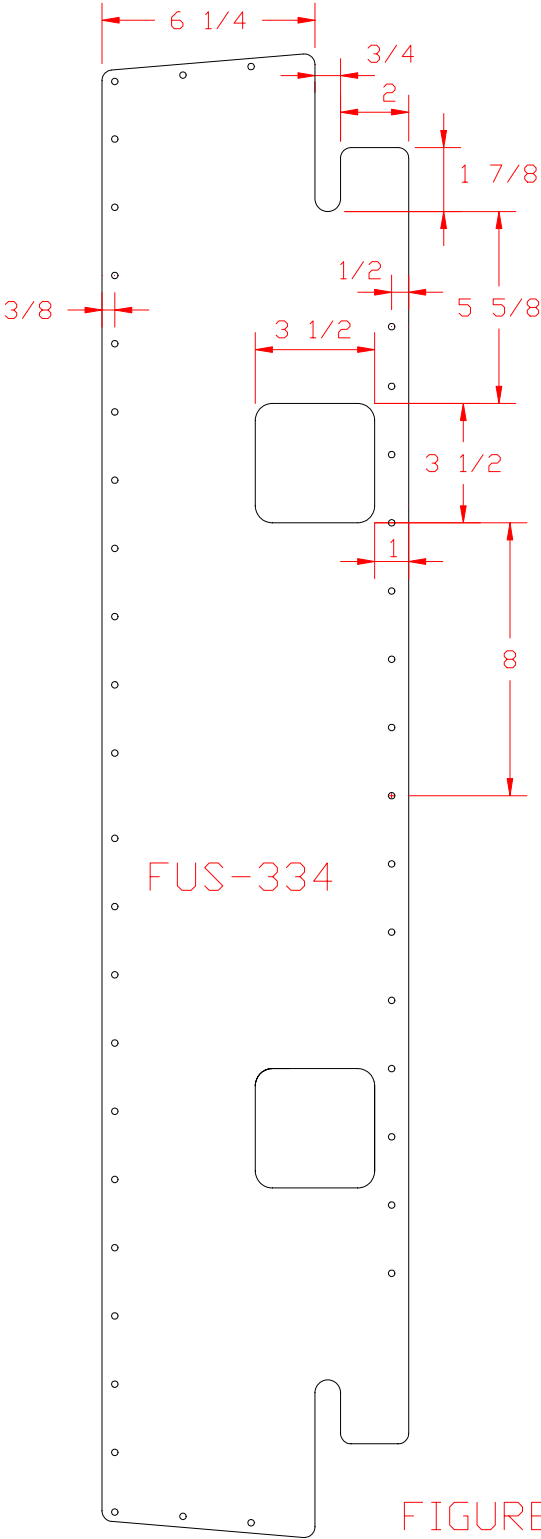


FIGURE 16

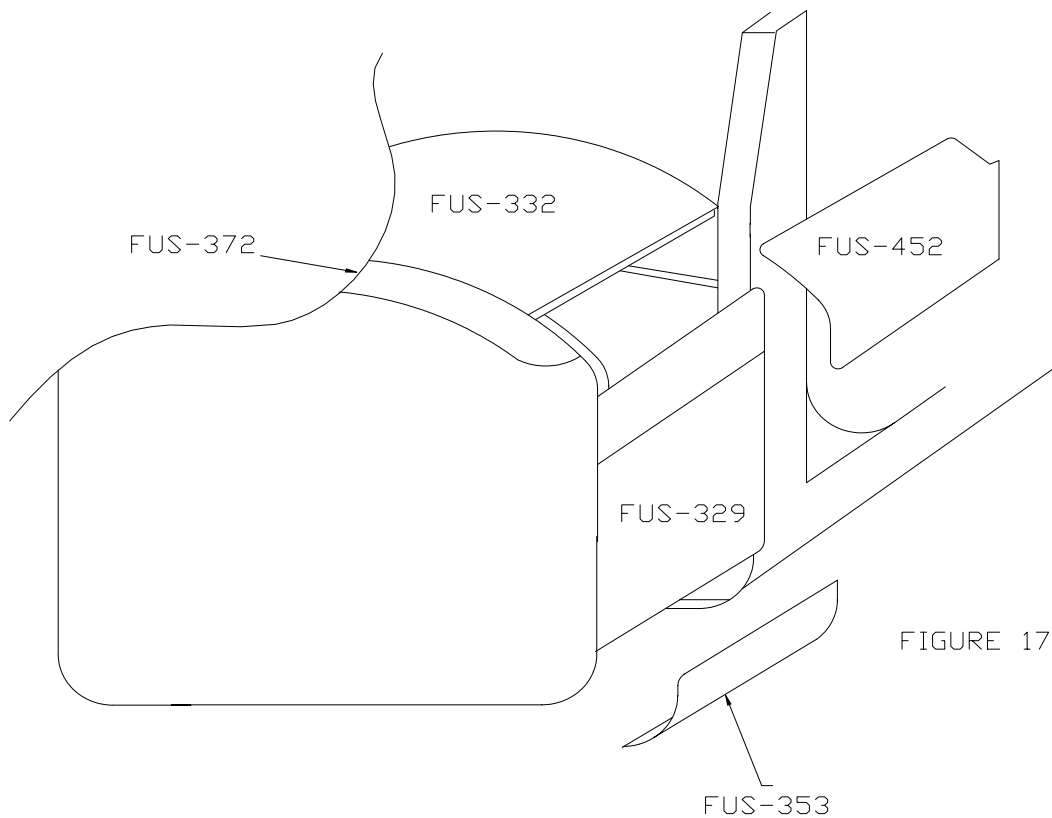
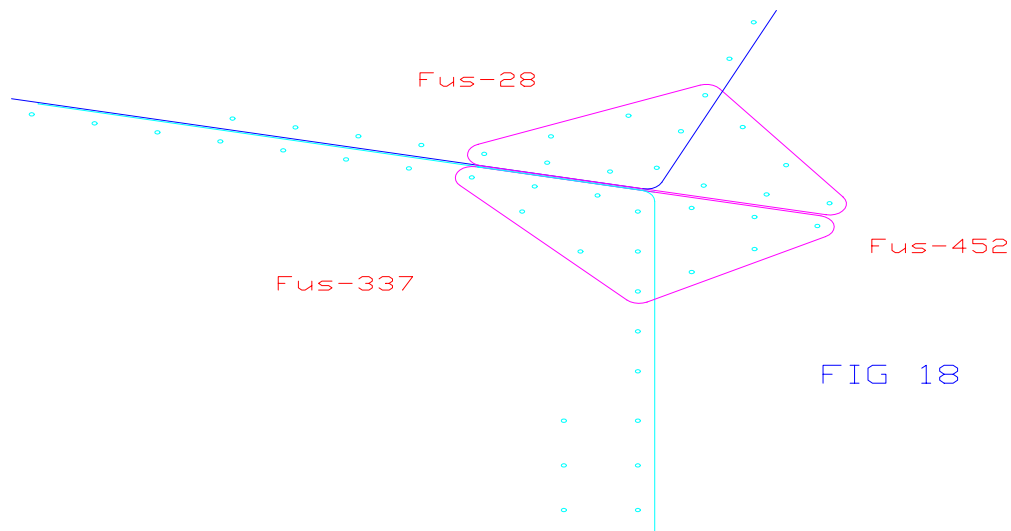


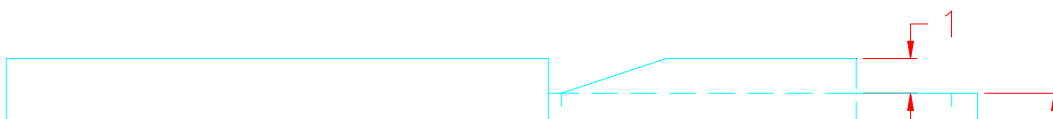
FIGURE 17

- 31) Cleco the Dash(FUS-327) and top skin in place(FUS-332). Notch the top rear of FUS-452 to allow the side of it to overlap the row of rivets on the side of the post. Figure 17. Slide it under the post skin, tape it in place and back drill all holes. Cleco as you go. Remove the part and trim off excess material. Re-install on top of post and drill all holes to #30. Repeat for the other side.
- 32) Back drill to #30 the Bottom Corner Wraps(FUS-353) using the holes existing in the other parts as a guide and allowing it to overlap the second row in the bottom skin.(FUS-383) Drill the rear holes in the wrap through the sill and bulkhead to #11. Trim, debur and rivet Wraps in place except for the top row. Add an L-Angle, from RAWST-8, to this row for front floor skin support. Back drill through the Angle using the holes in the corner wrap and front floor as a guided. Debur and rivet. **NOTE:** All rivets on firewall flange should be dimpled so cowl will sit flat.
- 33) Draw a line 1/2" down from one side of the Windshield Shelf (FUS-372). Also draw a vertical center line.
- 34) Slide the Shelf between the top of the Firewall and the FUS-332 Upper Skin so that the line you just drew on FUS-372 is visible through the existing holes.
- 35) Make certain the part is centered on the Firewall.
- 36) Drill #30 through the Shelf using the Upper Skin as a drill guide. Cleco as you go. Remove the part and debur then re-install.

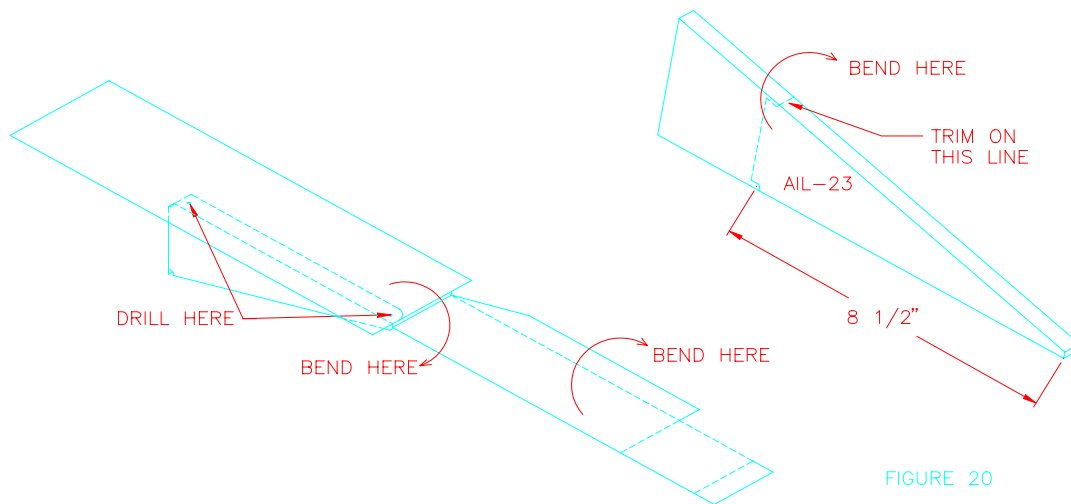
- 37) On the Rear Cabin, behind FUS-337 (Fuselage Side Skin) where it meets FUS-28 and FUS-452, two doublers will need to be fabricated from scrap .032 material. Use Figure 18 as a guide to make the two doublers.
- 38) Slide the Doubler under FUS-28 and FUS-337 and drill through existing rivet holes. Copy fwd. holes in rear location shown., rivet the Doublers in place under fwd. skins. **NOTE:** Do not rivet the holes on FUS-28 location as your Fairing Box will need to slide under it later.
- 39) Repeat for the opposite side.



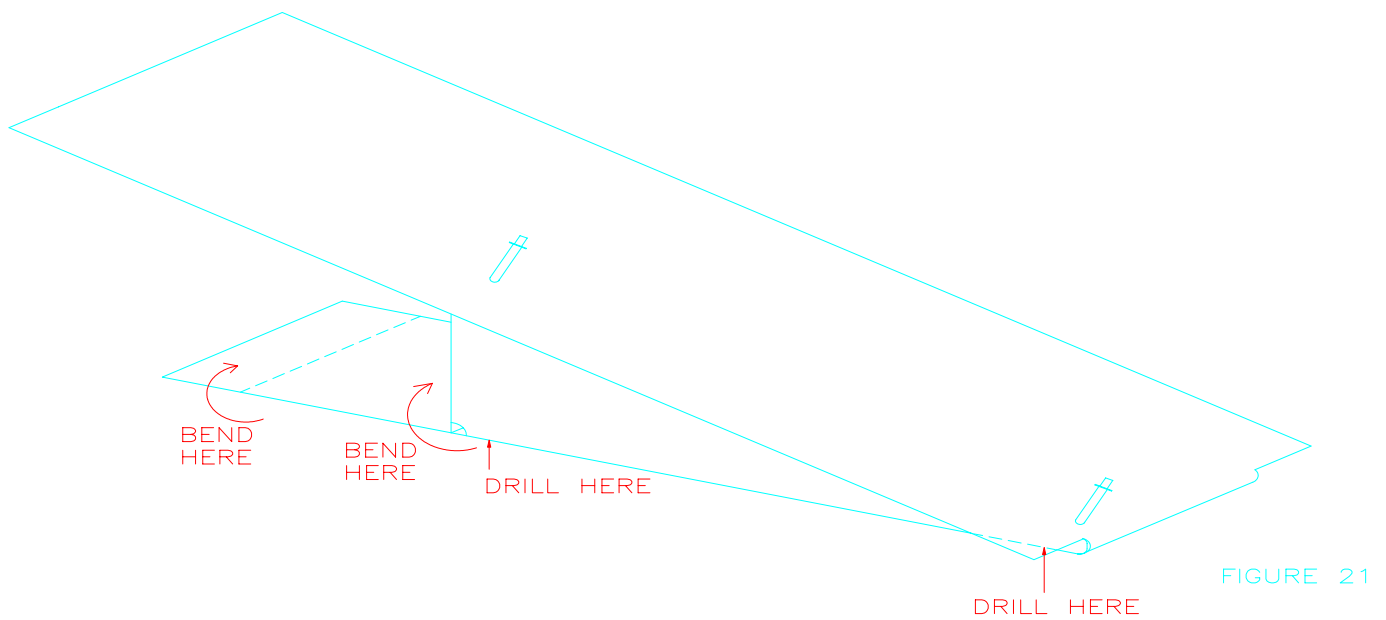
- 40) Two wing-fairing boxes will have to be fabricated. The wings will need to be installed to get a proper fit. Go ahead to the Wing Strut (Chapter 14) or continue on at Step 64 if you like.
- 41) Mark and cut two strips of .020 material (from FUS-62) as in figure 19. The width (distance X) should be measured as the distance from the edge of the Flap to the side of the Fuselage. **NOTE:** Left shown, right is opp.



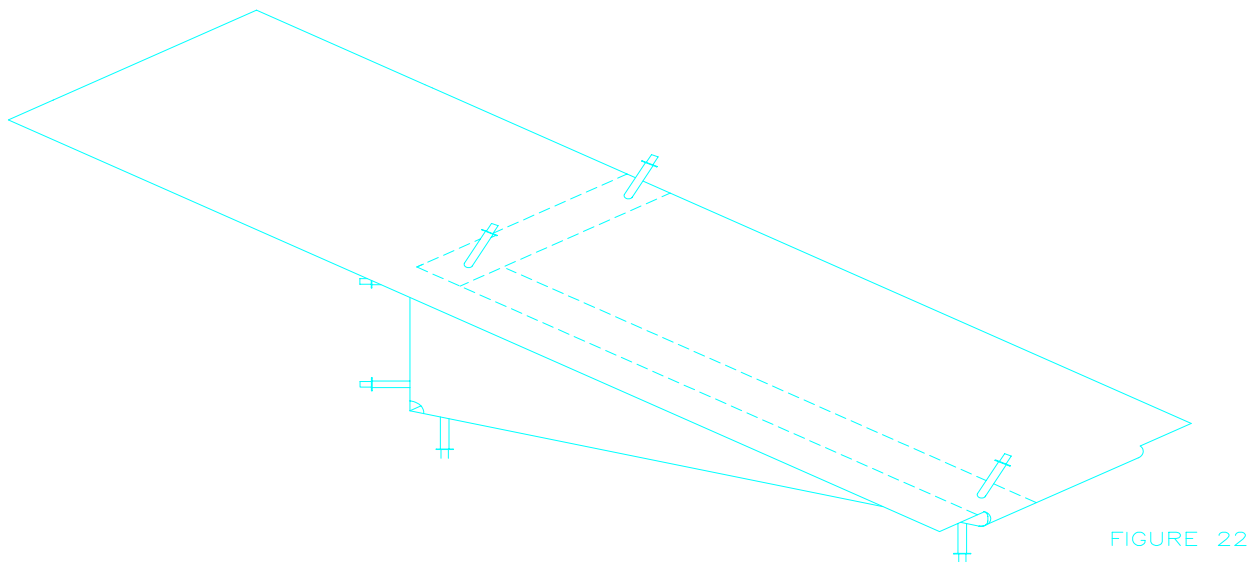
- 42) Mark the bending lines as shown on the drawing. Mark and cut out the 1" bend relief on the bottom flange. Debur all edges.
- 43) Using the first bend line as a guide, align the outboard edge of the fairing box material flush with the edge of an aileron rib (AIL-23). **NOTE:** The AIL-23 will have to be trimmed down to 8 1/2" to fit. Either trim the rib so that you make a front flange or add a piece of angle at the front of the rib. Figure 20.



- 44) Drill a #40 hole through the .20 material and the aileron rib at the top front corner. Figure 20. Cleco in place.
Also drill a hole at the top rear corner.
- 45) Make a 90° bend in the 1" flange which has the relief cut out in it. Figure 20.
- 46) Bend the fairing box at the first bend line to match the shape of the aileron rib.
- 47) Drill similar #40 holes through the fairing box material into the bottom flange of the aileron rib. Cleco at the new holes. Figure 21.

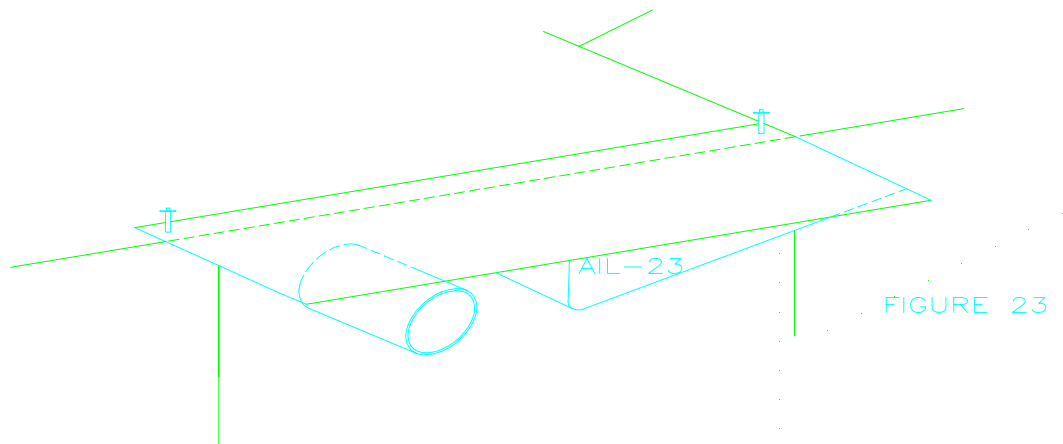


- 48) Make a 90° bend in the fairing box material at the end of the forward portion, and then bend up the forward portion to match the front of the aileron rib. **NOTE:** The top front cleco will have to be removed so the flange can fit sandwiched between the aileron rib and the top of the fairing box. Figure 22.



- 49) Drill a #40 hole through the top of the fairing box into the flange you just sandwiched under. Cleco.
 50) Drill two #40 holes in the front flange into the aileron rib. Figure 22.
 51) Layout and drill #30 holes at a 1 1/4" nominal spacing between the clecoed holes.

- 52) Place the fairing box against the fuselage with the flaps overlapping the roof skin and the top wing skin and align the trailing edge with the trailing edge of the flap. **NOTE:** Make sure the flaps are in retracted position.
Figure 23.



- 53) Drill #30 holes through the ends of the overlapping flange into the roof skin and the flange of FUS-27 and cleco. **NOTE:** Use existing holes in the roof skin for the holes in the top flange.
- 54) Transfer and drill the rest of the #30 holes from the roof skin into the flange. Cleco as you go.
- 55) Using a felt pen, mark a line along the bottom of the box onto the side of the fuselage. Also mark lines at the ends of the bottom flange of the box.
- 56) Remove the fairing box from the side of the fuselage. **NOTE:** You may want to remove the wings to complete the job.
- 57) Mark a line 3/8" above the line marked earlier. Drill #30 holes 5/16" in from each end of the line you marked for the bottom flange.
- 58) Layout and drill #30 holes at a 1 1/4" nominal spacing between the two holes you just drilled.
- 59) Cleco the fairing box back onto the side of the fuselage using the top holes. From the inside of the cabin, back drill through the holes you just drilled into the bottom flange of the fairing box.
- 60) Remove the fairing box and disassemble it. Debur all holes and edges including those on the fuselage.

- 61) Reassemble the box and attach it to the fuselage using 1/8" rivets.
- 62) Repeat for the opposite side fairing box.
- 63) On the inside of the cabin two channels will need to be installed behind the door bulkhead going back to the next bulkhead.
- 64) Cut two pieces of FUS-300 channel to fit between the two bulkheads as in Fig 24

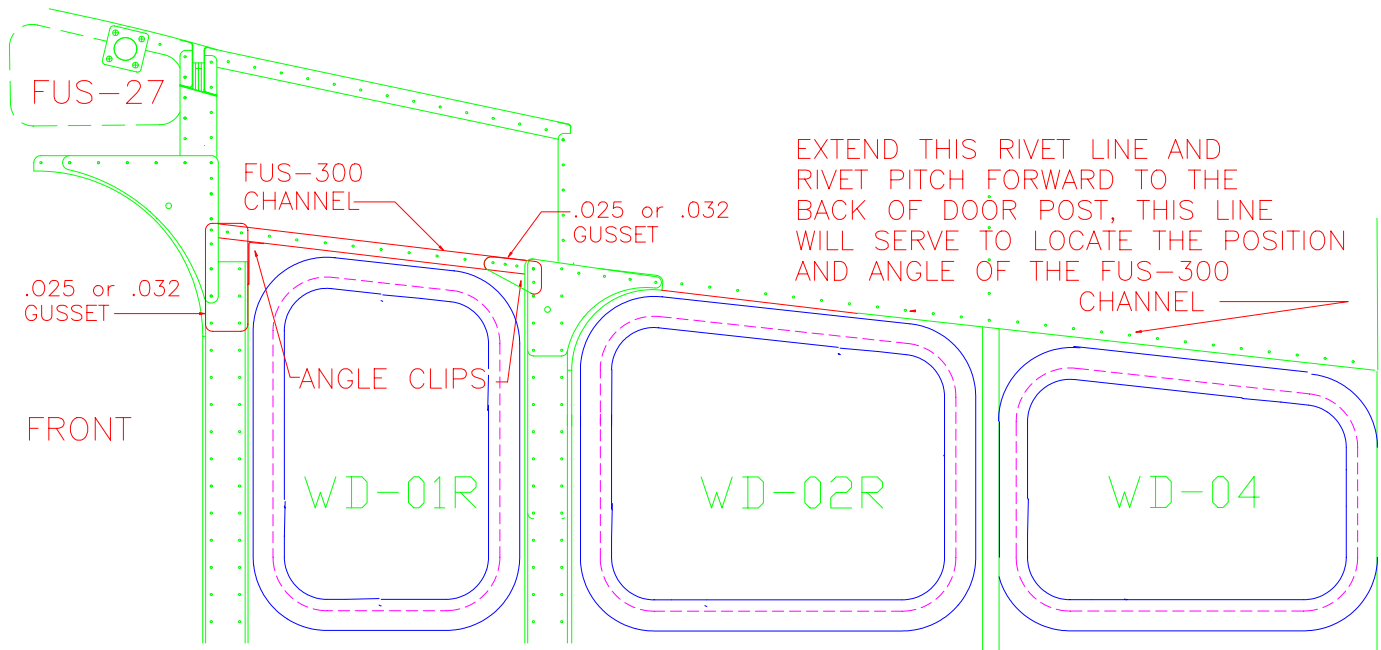


Figure 24.

- 65) Fabricate two gussets and two angle clips to support the channel in the location shown. **NOTE:** You may have to remove some rivets from the Seat Belt Brackets to accomplish this. You are basically using the seat belt brackets as a rivet template for the new gussets with the exception of the hole patterns established by the rivet spacing in the FUS-300 channel.
- 66) With the channels and gussets in place, drill #30 holes into the channel.. Also inter-space one 3/16" hole between the two existing holes in the front gusset. See gusset rivet pattern shown in Fig.24.
- 67) Trace a line above and below the channel, using it as a guide. Remove the channel and gussets and between the two lines you traced on the Side Skin layout and drill a 1" nominal rivet pattern.
- 68) Cleco the channel in place and drill through the Side Skin using the channel flange holes as a guide.
- 69) Remove the parts and debur. Re-assemble the parts.
- 70) Rivet together using 3/16" rivets in the Seat Belt Brackets and 1/8" rivets everywhere else.
- 71) Repeat for the opposite side.

72) Cut three pieces of RAWST-11 to fabricate Dash braces as shown in Figure 25.

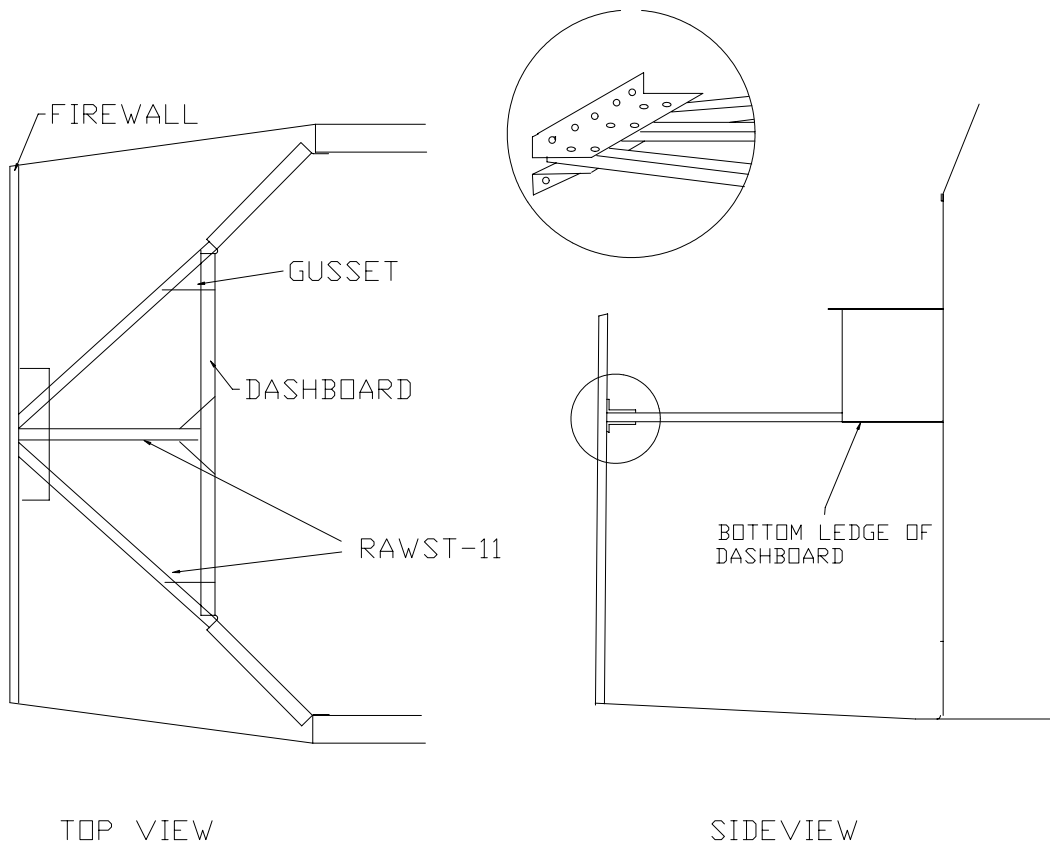


Figure 25

The diagonals will need gently bending to meet at the firewall.

73) Drill #30 through the bottom ledge of the Dashboard in to RAWST-11 and cleco (1 ½" Rivet pitch).

74) Make gussets shown in Figure 25 using the standard practices that you have learned.

75) Rivet the Bracing in place (1/8 rivets) now or after installing your instruments if you wish.