

**9.4 REAR CARGO AREA BULKHEAD**

- 1) Ensure the four sides of bulkhead are flat. A straight edge held to the side of opposite webs should lie flat.

Figure 1.

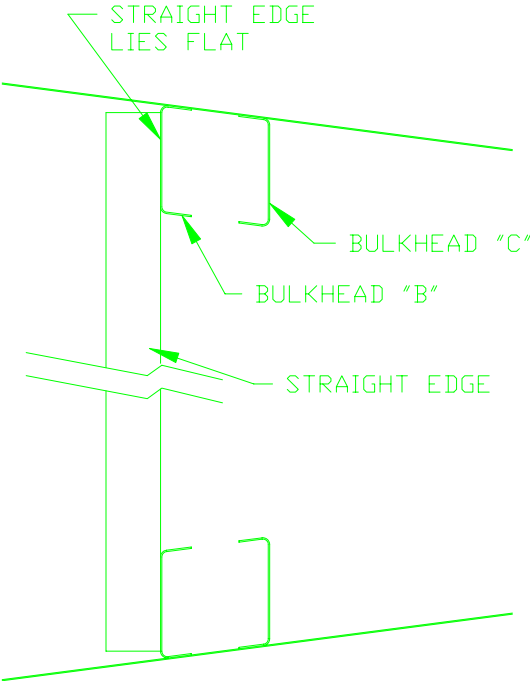


FIGURE 1

- 2) Bend the inside flanges of bulkhead "B" and "C" so a straight edge lies flat on the flanges. Figure 2.

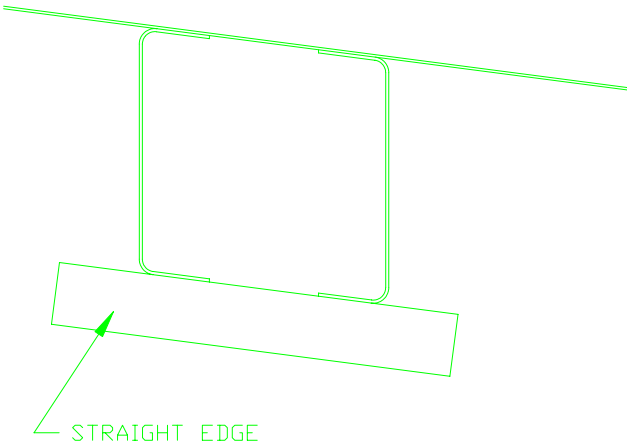


FIGURE 2

- 3) Use FUS-367 straps to line the flat inside flanges of the two bulkheads. In the corners the FUS-367 straps will not be wide enough to cover the flanges so make the corner pieces from RAWST-10 the corner pieces should overlap the FUS-367 straps two rivets on each bulkhead. Nominal rivet spacing is 1 ¼". Rivet in place with 1/8 avex rivets.

**NOTE :** STEPS 4 to 22 are for the optional cargo door.

- 4) Trim the three FUS-369 bulkhead webs to fit on the front side of bulkhead "B" as in Figure 3.

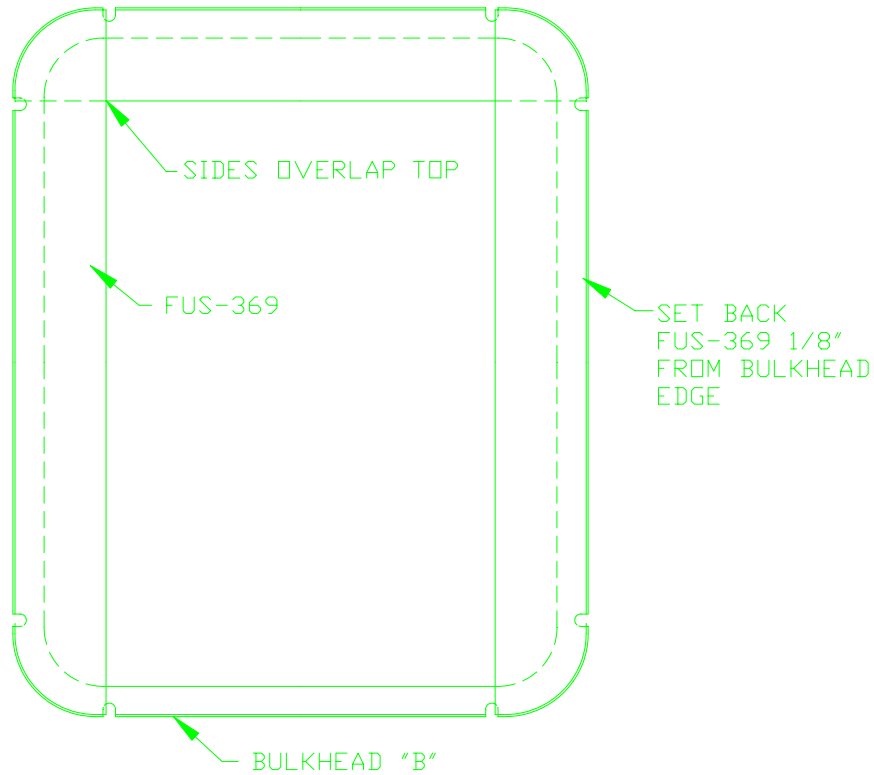


FIGURE 3

- 5) Drill to #40 as in Figure 4. Where the bulkhead sections overlap, you can use the holes previously drilled or ignore them.

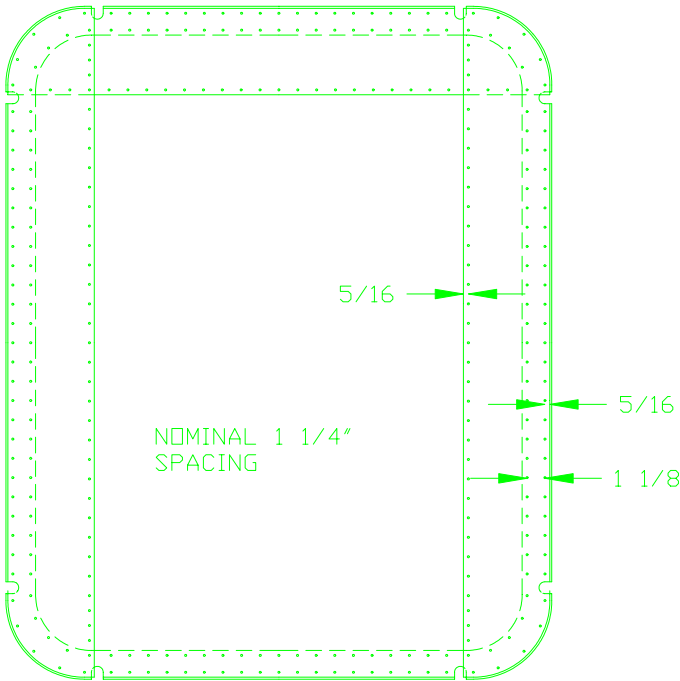
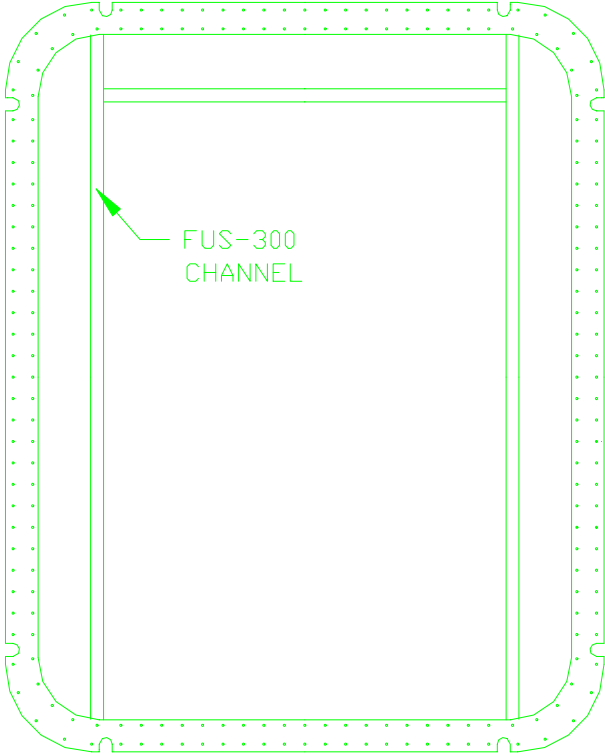


FIGURE 4

- 6) Cut three lengths of FUS-300 channel to fit as in Figure 5. The channels should be  $1/16$ \"



FUS-369 BULKHEAD WEBS NOT SHOWN

FIGURE 5

- 7) Drill back through the FUS-369 bulkhead webs.
- 8) Make six clips from ST-40 angle to tie the channels to the bulkheads and each other. Figure 6

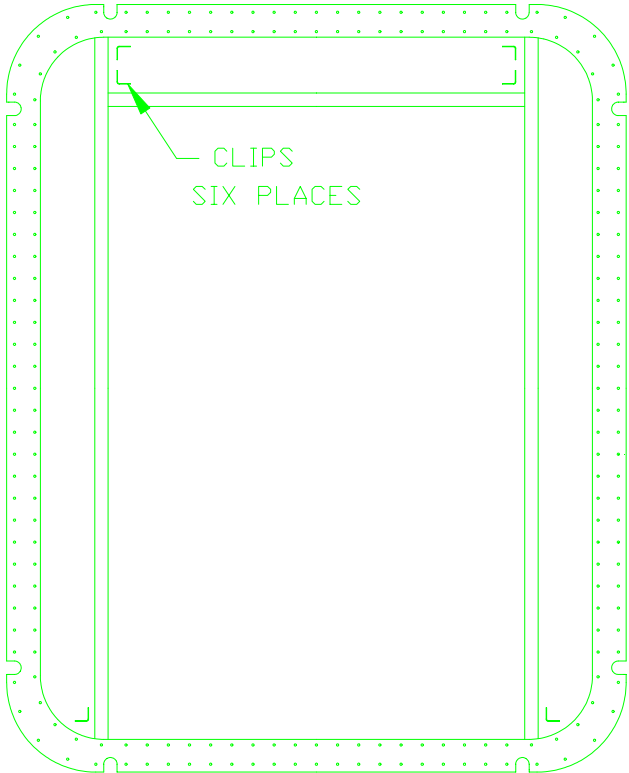
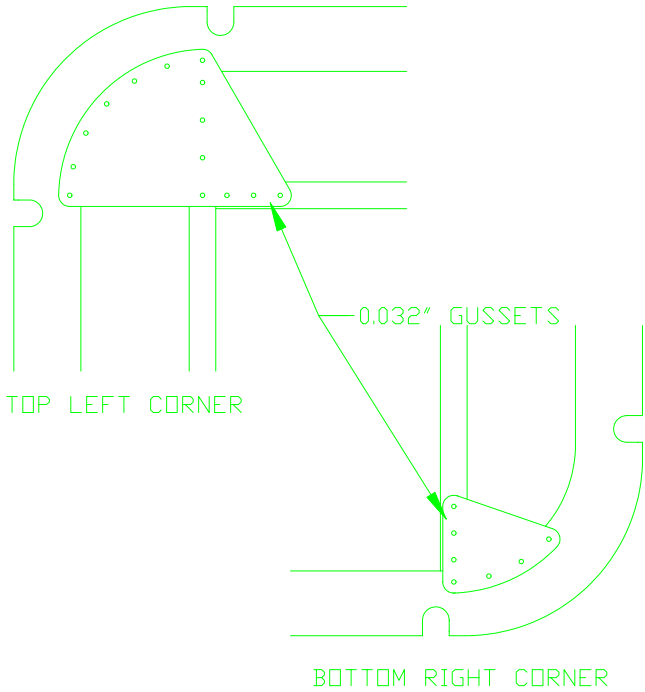


FIGURE 6

- 9) Make gussets from RAWST-10 to tie the back of the structure together. Figure 7.



AS SEEN FROM THE REAR

FIGURE 7

- 10) Rivet the FUS-369 bulkhead webs, FUS-300 channels, gussets and clips in place with 1/8" avex rivets. Do not rivet around the perimeter of the door opening at this time.
- 11) Measure the door opening. Figure 8.

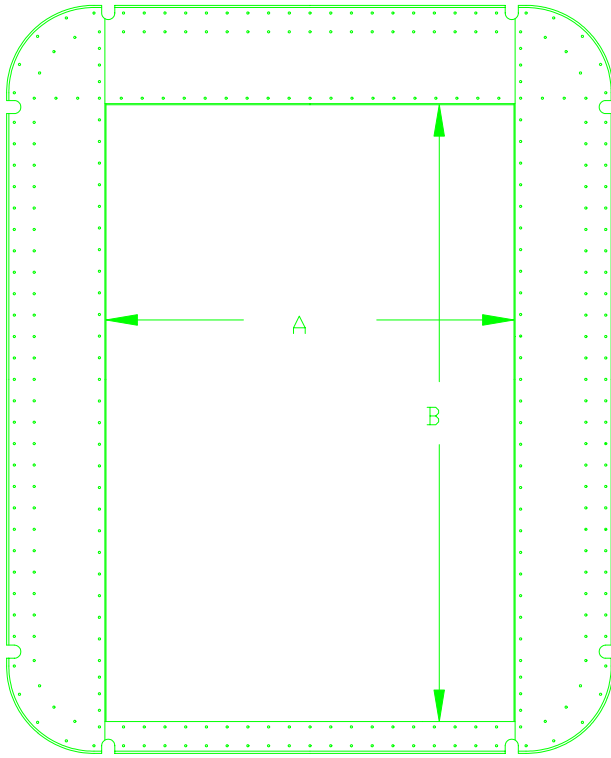


FIGURE 8

- 12) Build a door frame from RAWST-11 and .032 gussets 3/8" smaller than the dimensions taken in step 11. The gusset go on the backside only. Figure 9

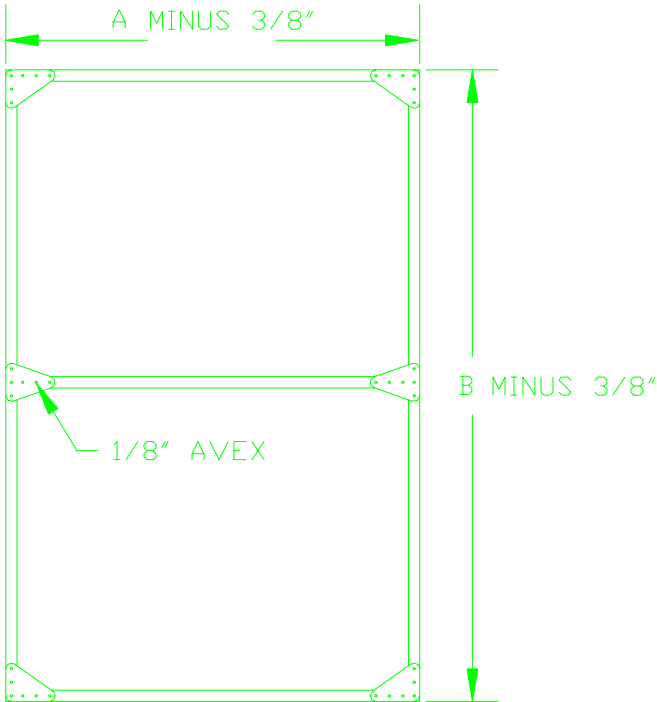
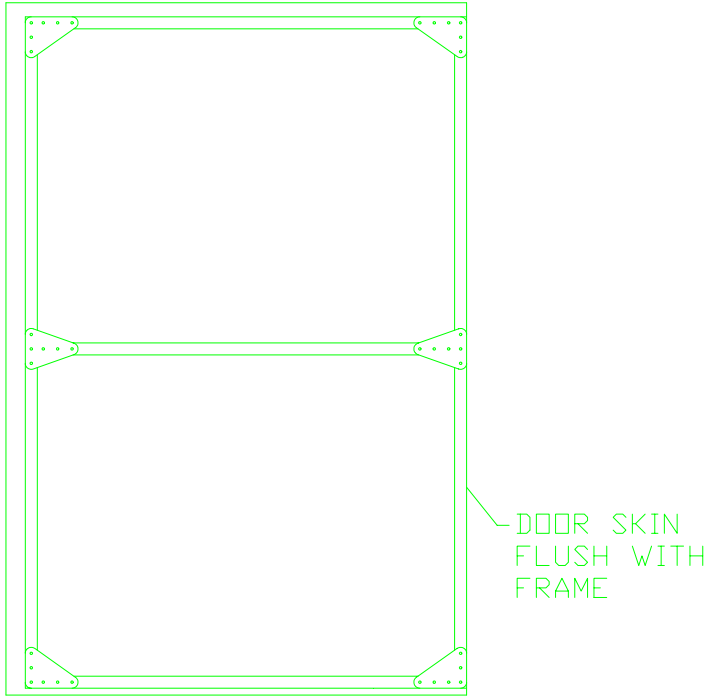


FIGURE 9

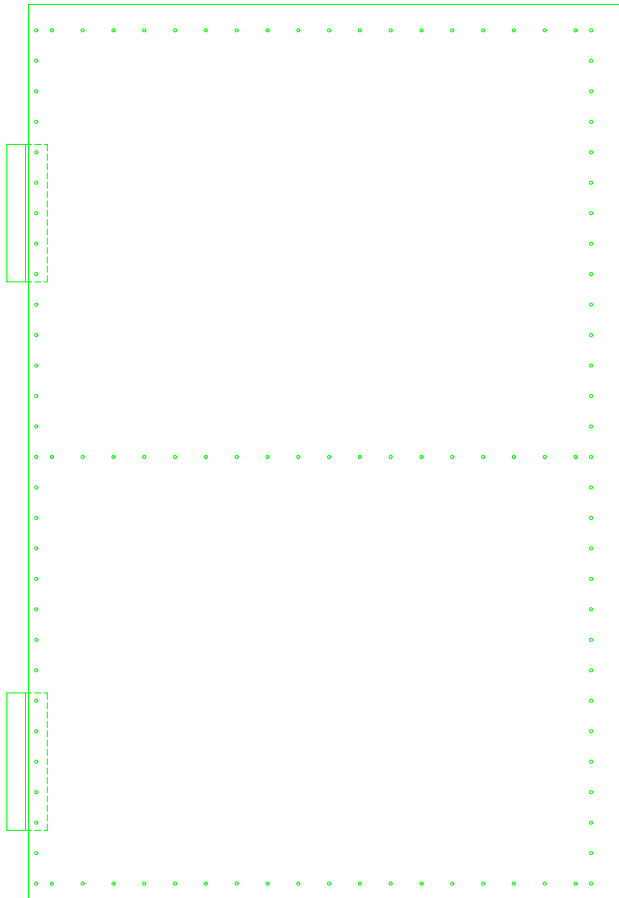
- 13) Check that the door fits in the opening evenly.
- 14) Lay the door frame on to the FUS-368 door skin. Figure 10.



AS SEEN FROM THE REAR

FIGURE 10

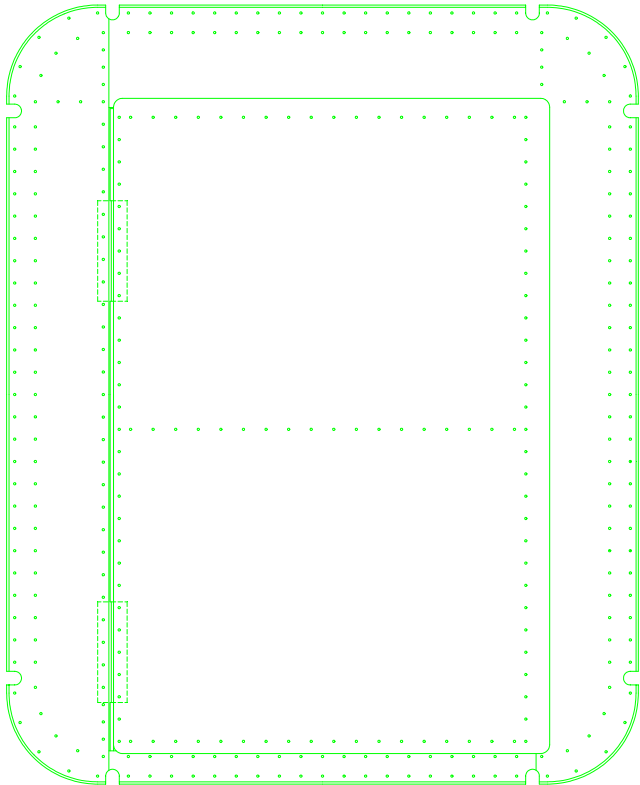
- 15) Trace both the outside and inside edges of each frame member onto the door skin. Remove the frame.
- 16) Draw center lines where each frame member has been traced. Drill to #40 with a nominal spacing of 1 ¼”.
- 17) Reposition the frame on the door skin and back drill to #30.
- 18) On the hinge side, position two approximately 6” lengths of piano hinge (CAI-1002H-721) between the door skin and frame, drill. Figure 11



AS SEEN FROM THE FRONT

FIGURE 11

- 19) Rivet the door and hinges together with 1/8” avex rivets.
- 20) Position the door with the hinges under the left bulkhead web (Looking Aft) and drill the hinges. Figure 12.



AS SEEN FROM THE FRONT

FIGURE 12

- 21) Rivet with 1/8" avex rivets.
- 22) For a latch use a short piece of hinge. Loop one end of the pin for easy removal. Figure 13.

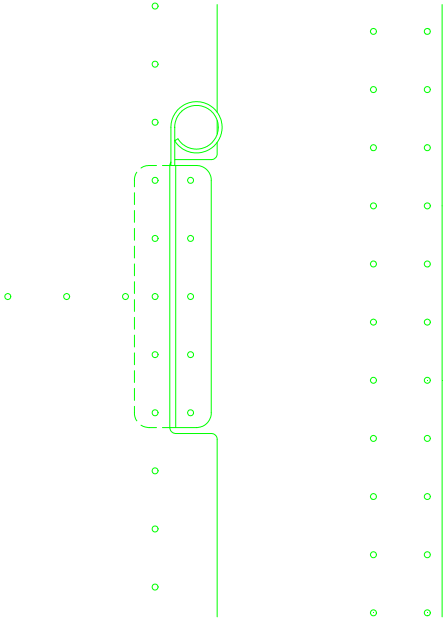
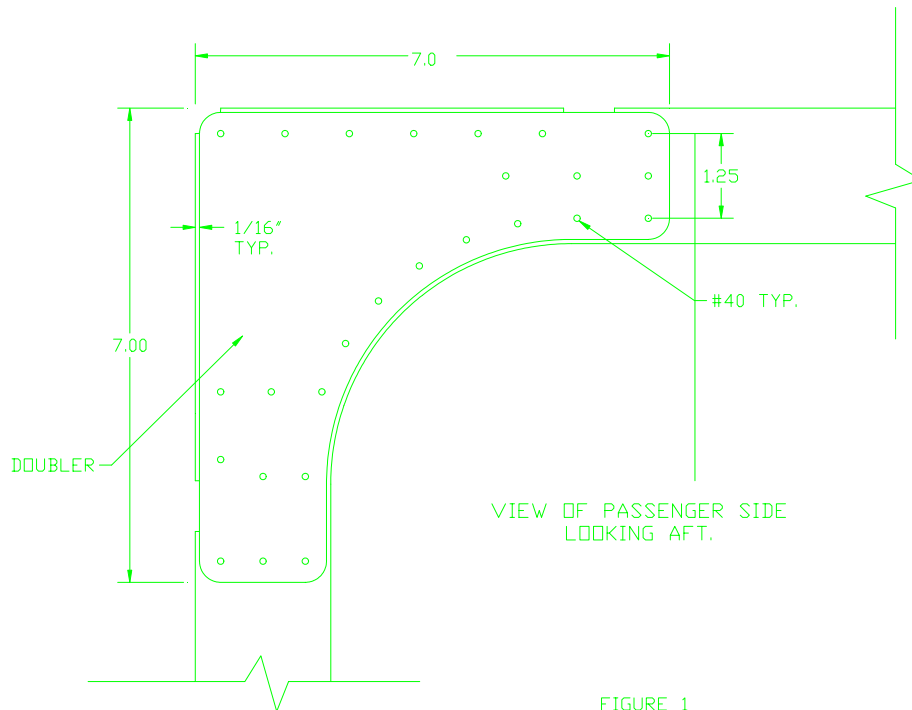


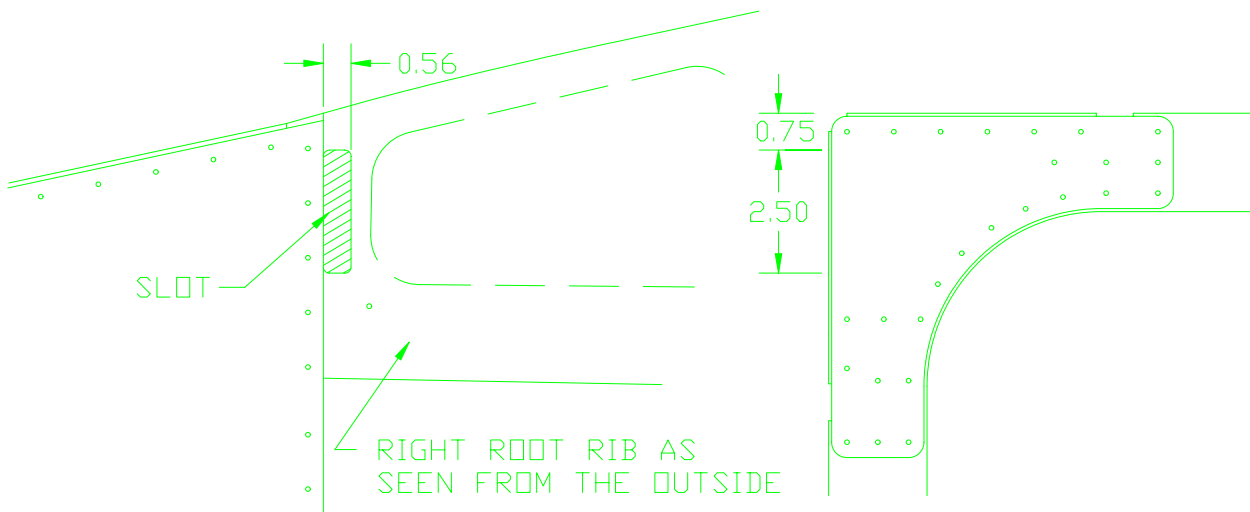
FIGURE 13

### REAR WING ATTACH BRACKET INSTALLATION

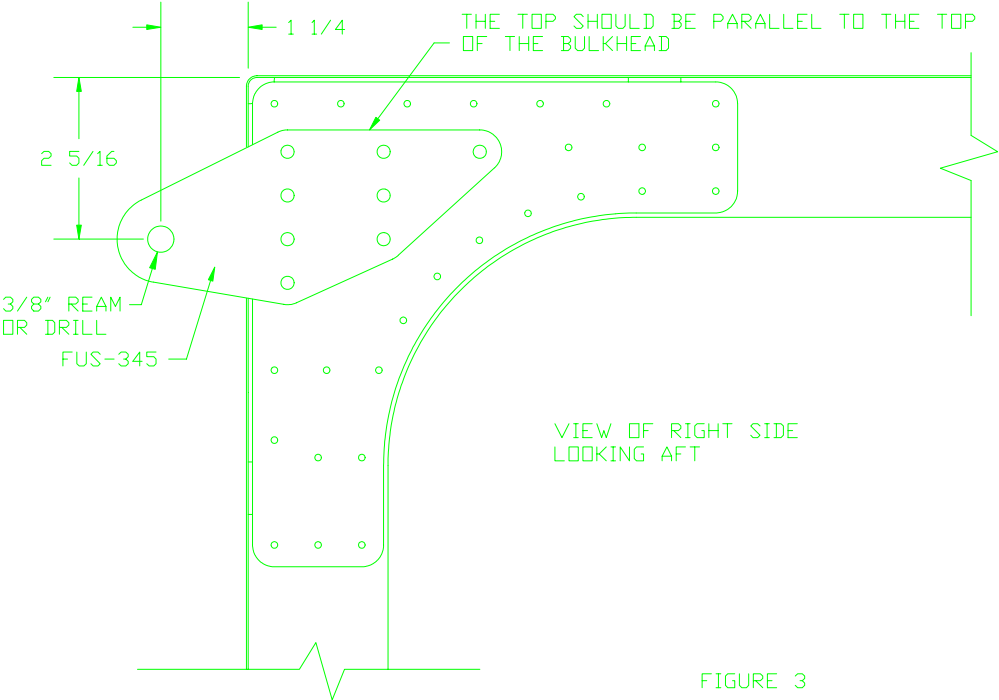
23) From RAWST-10 make a doubler for each end of the station 5 bulkhead. Figure 1



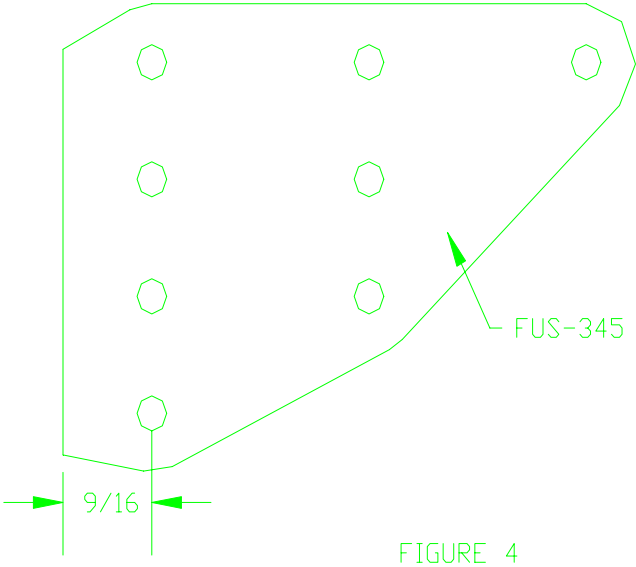
24) Cut out a slot in each root rib in front of the station 5 bulkhead as in Figure 2.



25) Ream or drill out the wing attach holes of two FUS-345 wing attach brackets to 3/8". Position one of the brackets on the station 5 bulkhead as in Figure 3. Backdrill through the bracket into the bulkhead.



26) Trim two FUS-345's as in Figure 4.



27) Cleco the two trimmed FUS-345 brackets and one untrimmed FUS-345 to the one on the bulkhead Figure 5.

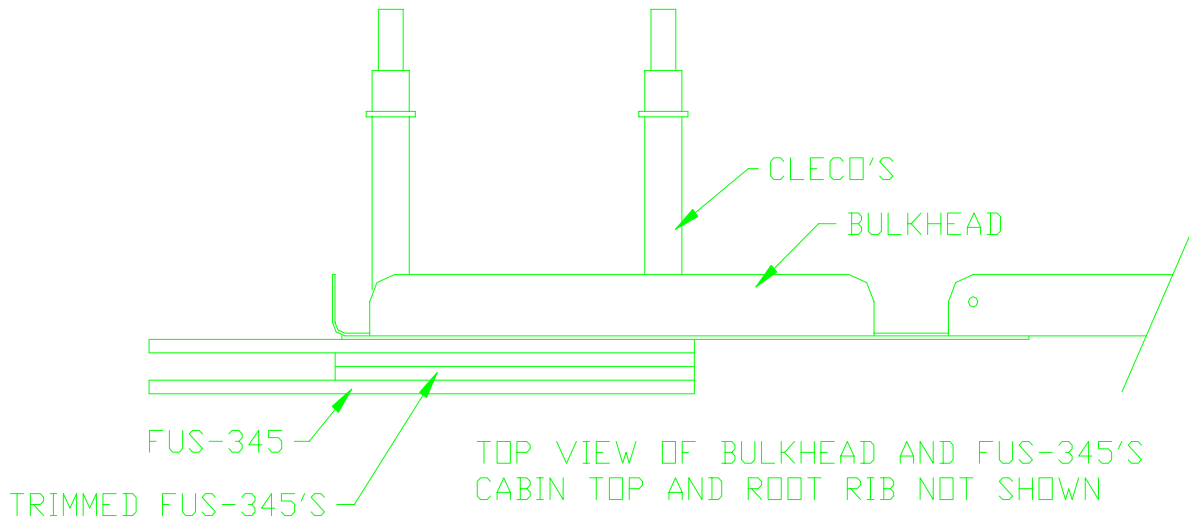


FIGURE 5

- 28) Trim a RBULK-1 to fit in the root rib channel and against the FUS-345's. Cut and drill a doubler for the bulkhead as you did for the station 5 bulkhead Figure 6. Bend the top flange of the bulkhead to the angle of the cabin top.

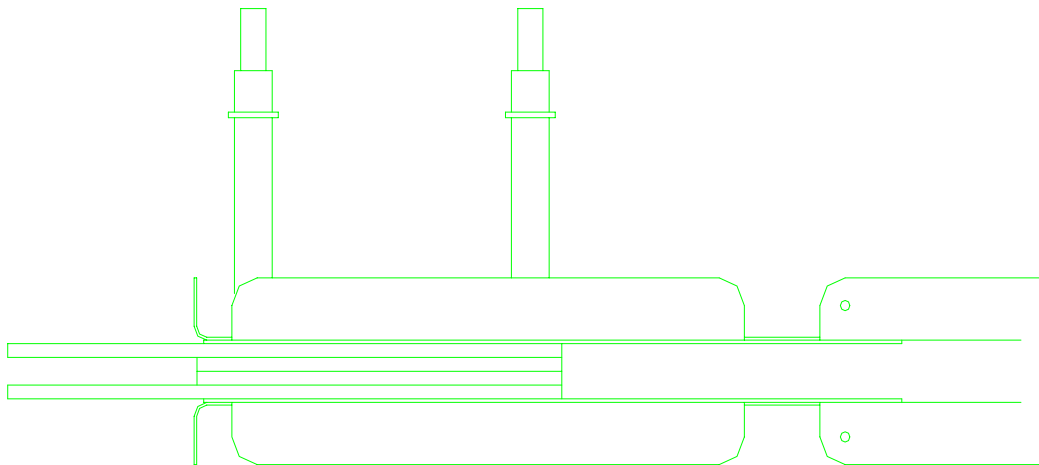


FIGURE 6

- 29) Backdrill through the station 5 bulkhead and FUS-345's into the new bulkhead.  
 30) Repeat steps 3 - 7 for the other side.  
 31) Drill nine holes in the overlap of the two bulkheads.  
 32) Drill out the eight holes in the FUS-345's to 3/16".  
 33) Drill six #40 holes through the root rib into the bulkhead vertical flange. Figure 7.

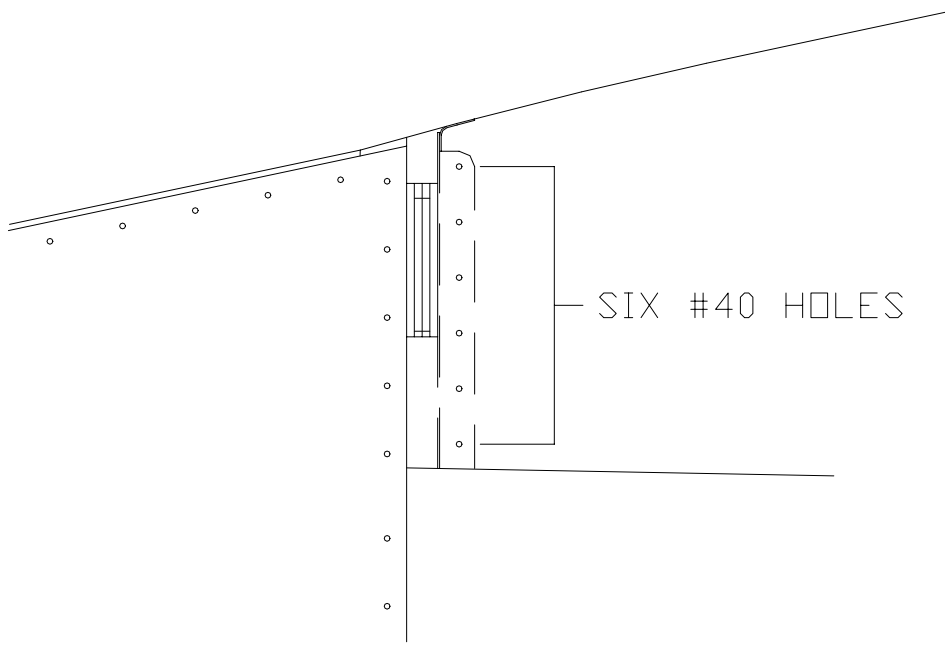


FIGURE 7

34) Make a doubler from RAWST-10 to fit around the attach bracket slot. Position a FLAP-11 bearing to locate the four mounting holes. Drill the root rib and doubler 1/16" hole. Figure 8. Use an .063" spacer under the doubler where the root rib is depressed. Also make a doubler for the front door post from RAWST-10.

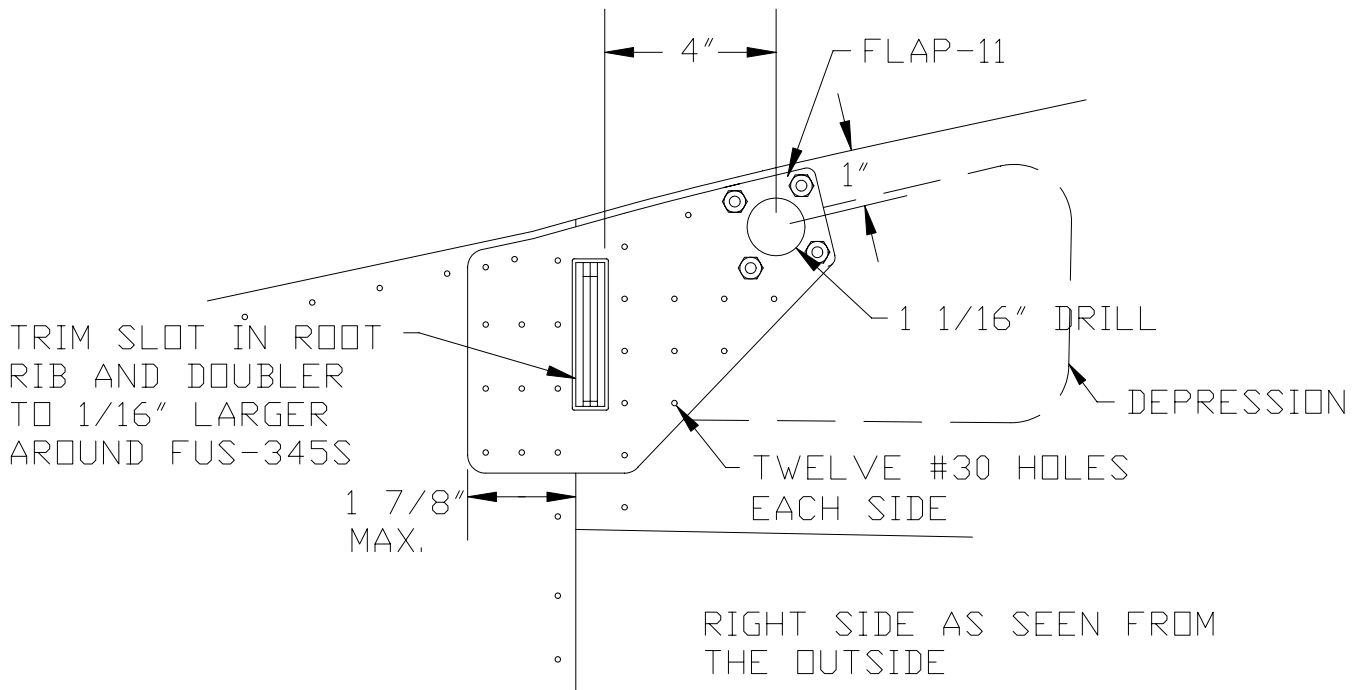
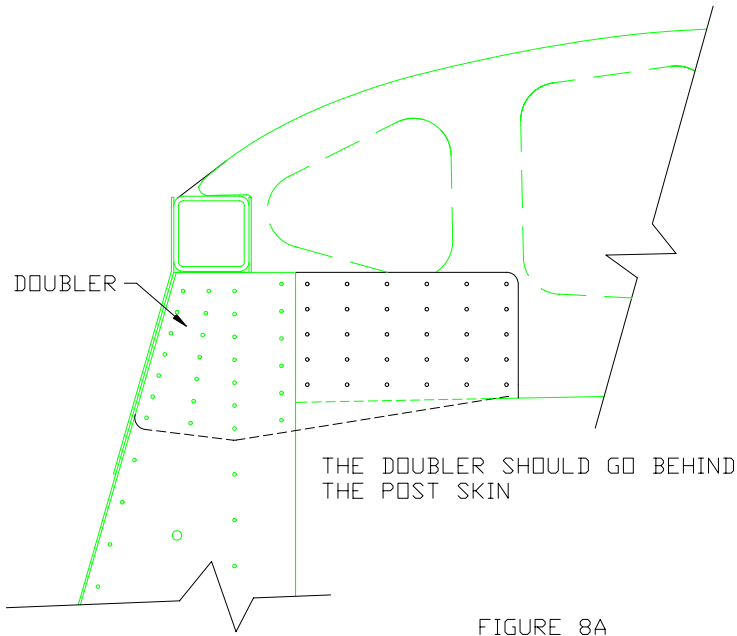


FIGURE 8

See Figure 8A for location and placement.

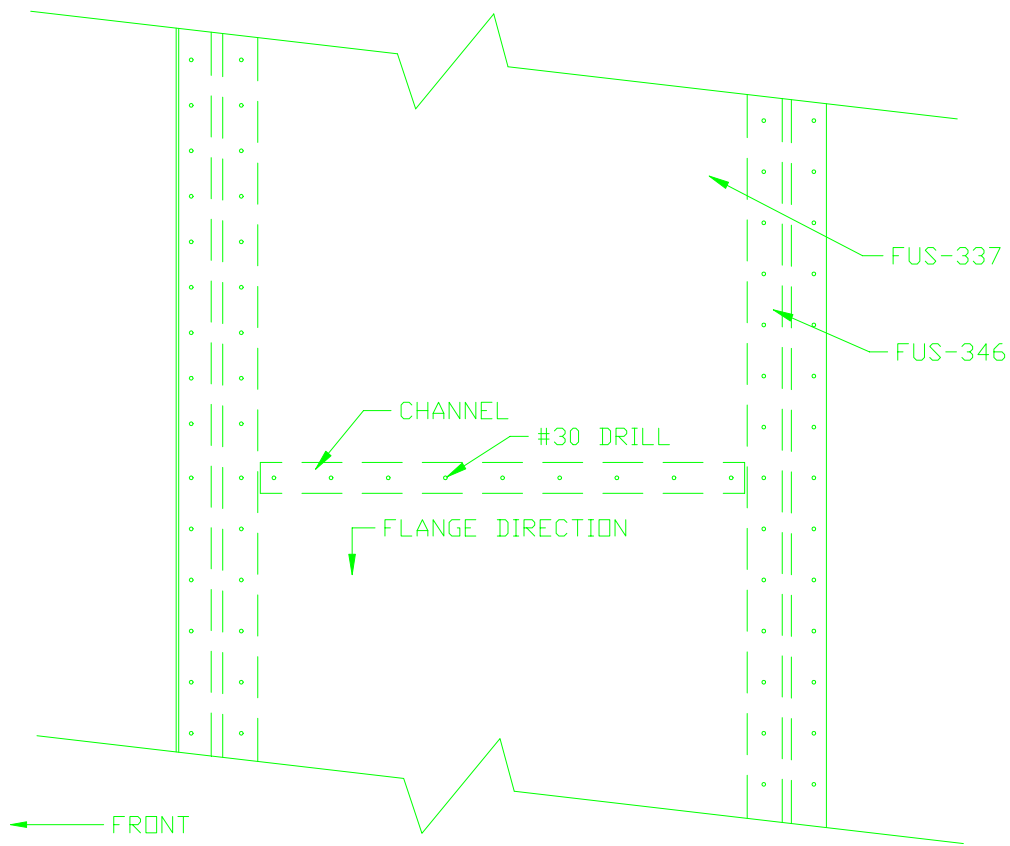


LEFT SIDE SHOWN

- 35) Repeat for other side.
- 36) Drill all doubler and bulkhead overlap holes to #30.
- 37) Duplicate the rivet pattern of the top of station 5 bulkhead into the new bulkhead.
- 38) From ST-40 make two clips to attach the new bulkhead legs to the root rib channel.
- 39) Rivet the bulkhead doublers, root rib doublers clips and bulkheads in place with 1/8 avex rivets. Bolt the FUS-345s in place with AN3 bolts. Mount the FLAP-11 on the inside of the root rib with AN509-1032R12 machine screws.

### **CABIN GUSSET AND BRACKET INSTALLATION**

- 40) From a FUS-300 channel cut two lengths 12 3/16" long.
- 41) Draw a center line down one flange of each channel.
- 42) Position one channel between station 6 and station 7 uprights so the flange line is visible through the row of prepunched holes in the FUS-337 fuselage side skin. Figure 9. Drill to #30.



LEFT FUS-346 AS SEEN FROM THE OUTSIDE

FIGURE 9

43) Make clips from ST-40 to attach the ends of the channel to the FUS-346 uprights.

44) Repeat for other side and rivet together with 1/8 avex rivets.

45) Position a FUS-367 strap on the inside flanges of the two FUS-346's uprights at station 5 & 6. Drill #40 holes at each end into the FUS-346 flanges and two #40 holes in line with the center of the channel. Figure 10. NOTE: (You may like to hide your fuel line under 367 strap before you rivet it)

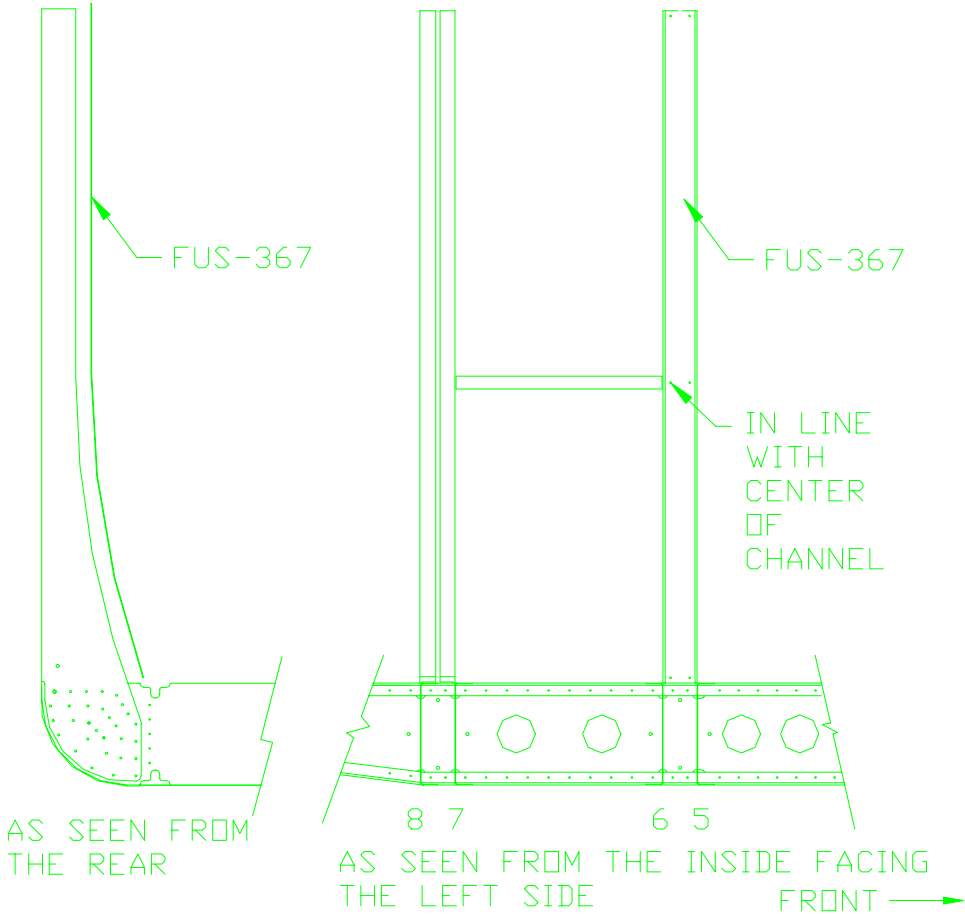


FIGURE 10

46) From RAWST-10 make a gusset to tie the channel flange to the strap. Drill the remaining holes with a nominal spacing of 1 ¼". Figure 11.

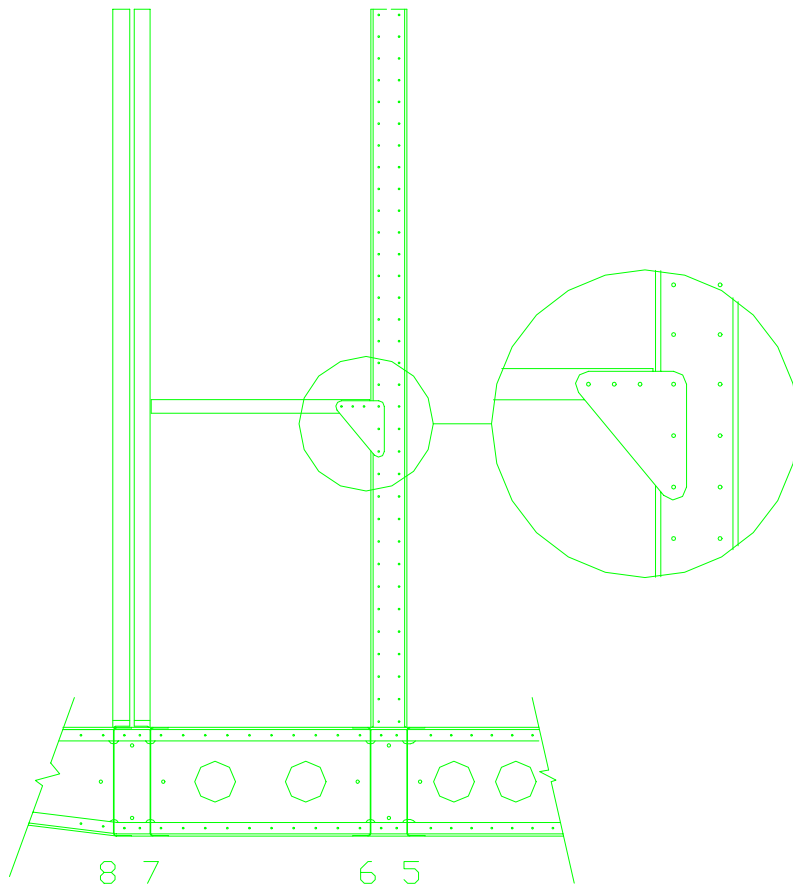


FIGURE 11

47) Make gussets from RAWST-10 to tie cabin top bulkheads to root rib channels. Figure 12. Rivet with 1/8 avex rivets

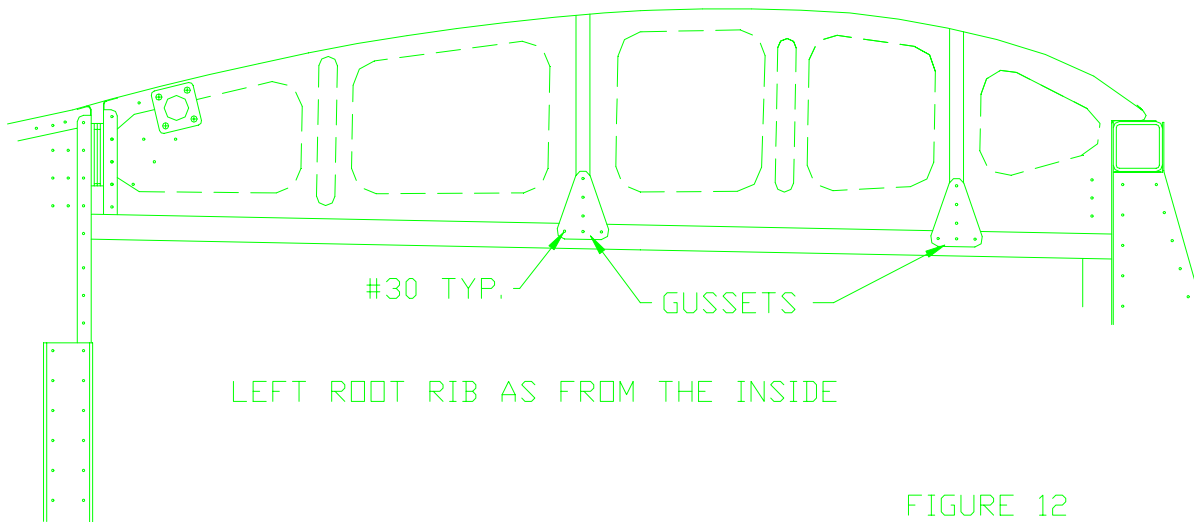


FIGURE 12

48) Cut a FUS-387 corner gusset into four gussets.

49) Position one gusset at the inner upper rear corner of the door opening. Figure 13. Drill to #40 only and trim.

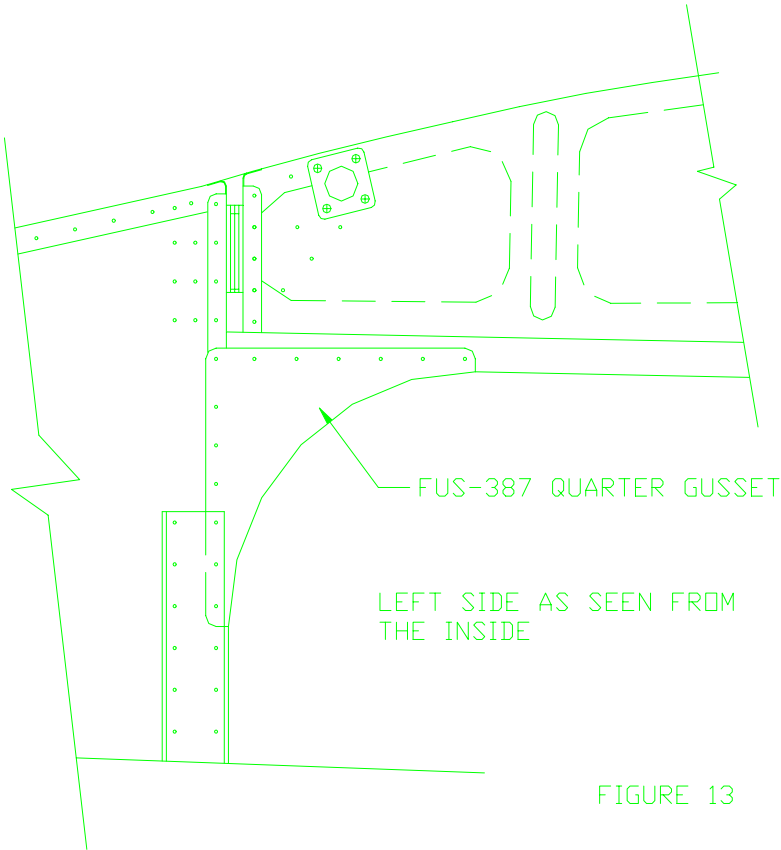


FIGURE 13

50) Remove the gusset and use it as a template to make the shoulder harness bracket from RAWST-9 (0.125” 2024-T3) material. Drill a 1/4” hole for mounting the harness. Figure 14.

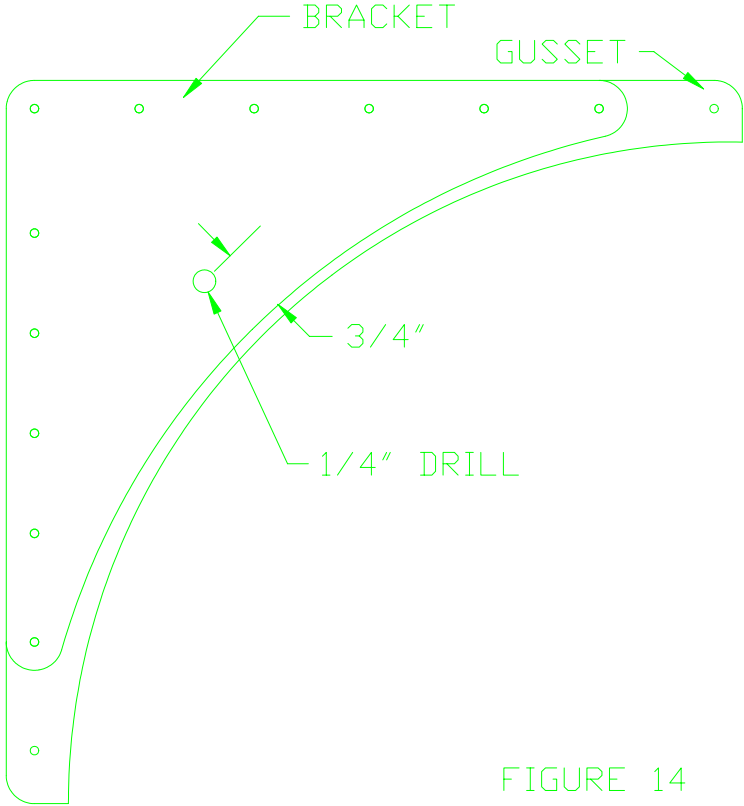
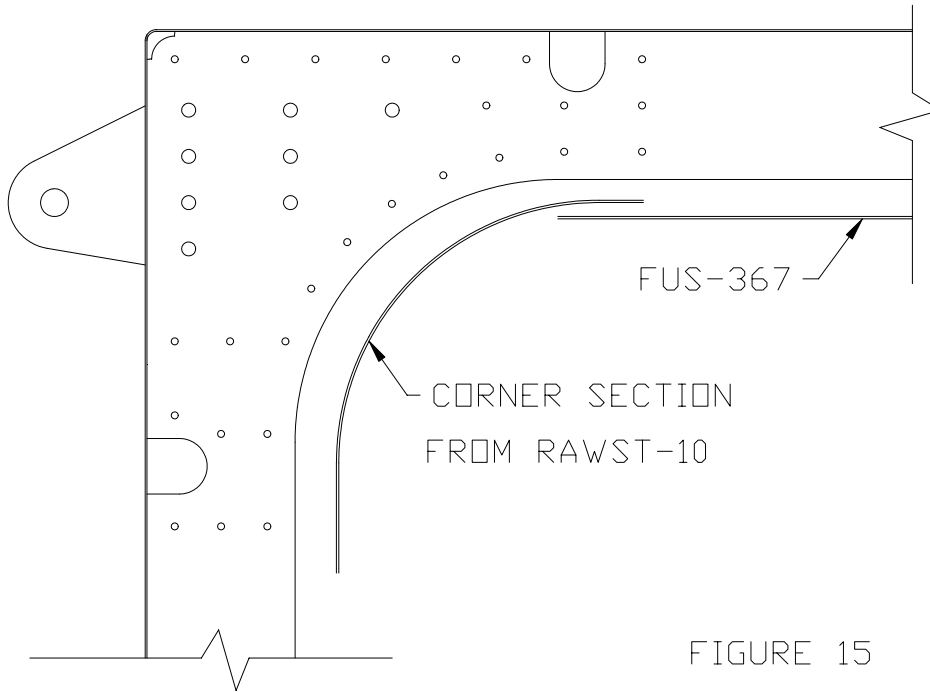


FIGURE 14

- 51) Replace the gusset and bracket with clecos only.
- 52) Repeat for the other side.
- 53) Tie the two bulkheads at station 5 together with a FUS-367 strap. The strap will not follow the corners so make the corner sections from RAWST-10. The strap and corner sections should overlap at least two rivets. Nominal rivet pitch is 1". Use 1/8 avex rivets. The corner sections should go behind the corner gussets and brackets at least two rivets. Figure 15.



- 54) Drill out the corner gussets and shoulder harness bracket to #11. Rivet with 3/16 avex rivets.
- 55) Install a 1/4" anchor nut in the 1/4" hole in the gusset and bracket.
- 56) Install a FUS-387 corner gusset to the outsides as in Figure 16. and 16A. Also make a corner gusset and doubler from Rawst-10 for the top front of the door opening as per Figure 16A. Install the lower outside corner gussets the same way. The lower inside gussets will have to be done after your floor. Rivet with RV-4412 avex countersunk under door flange and RV1410 rivets everywhere else.

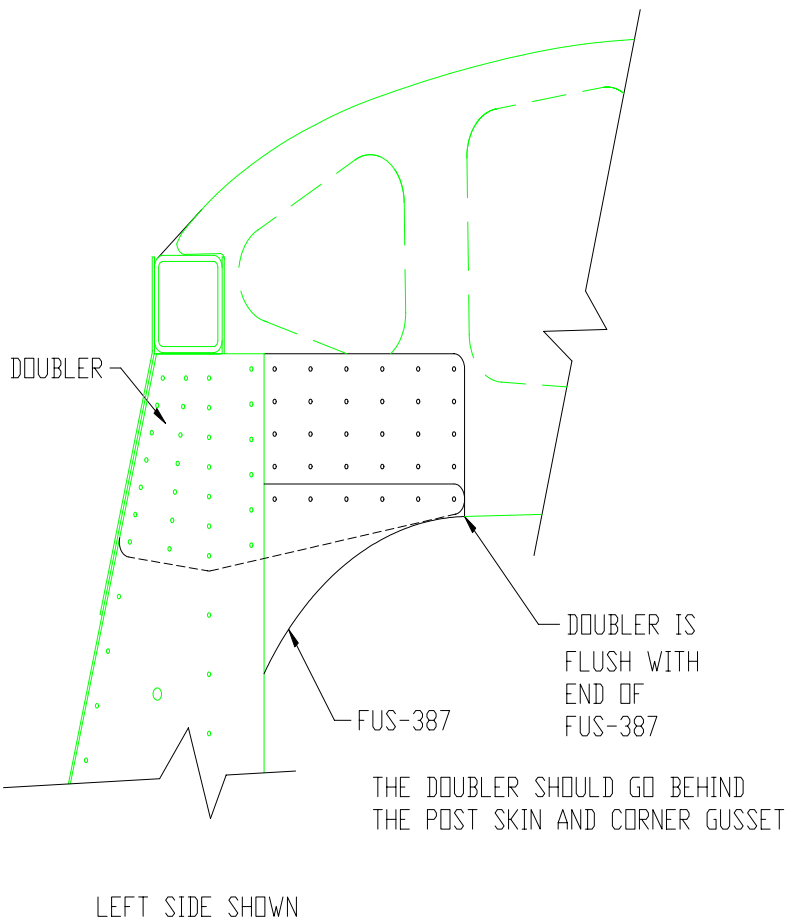
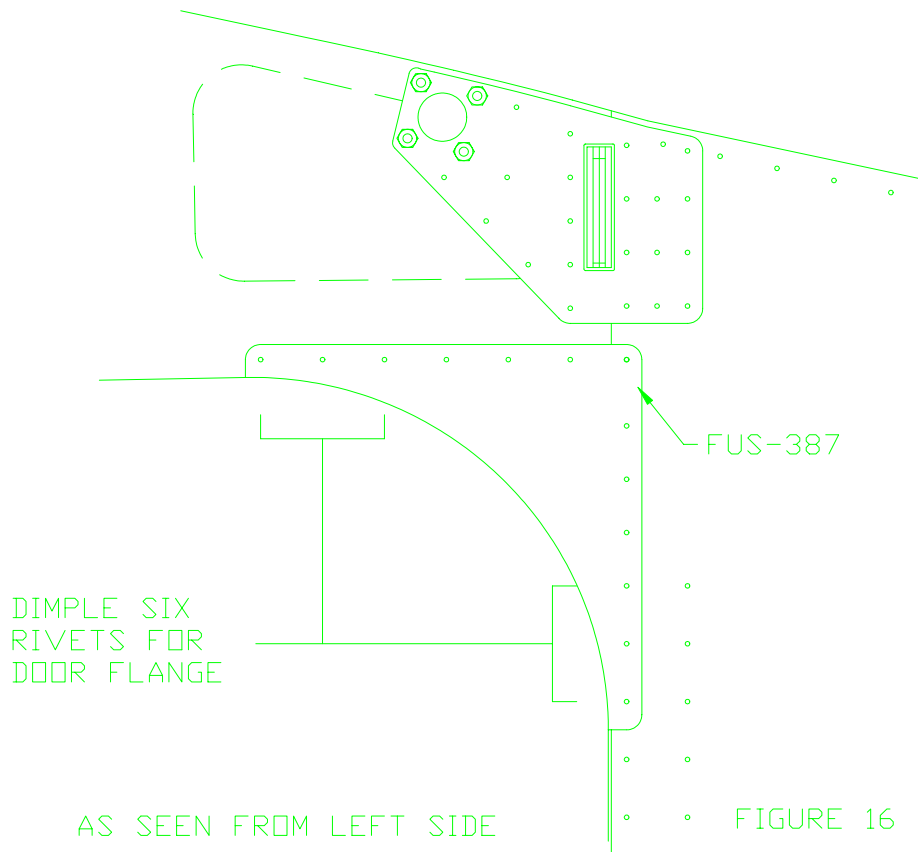
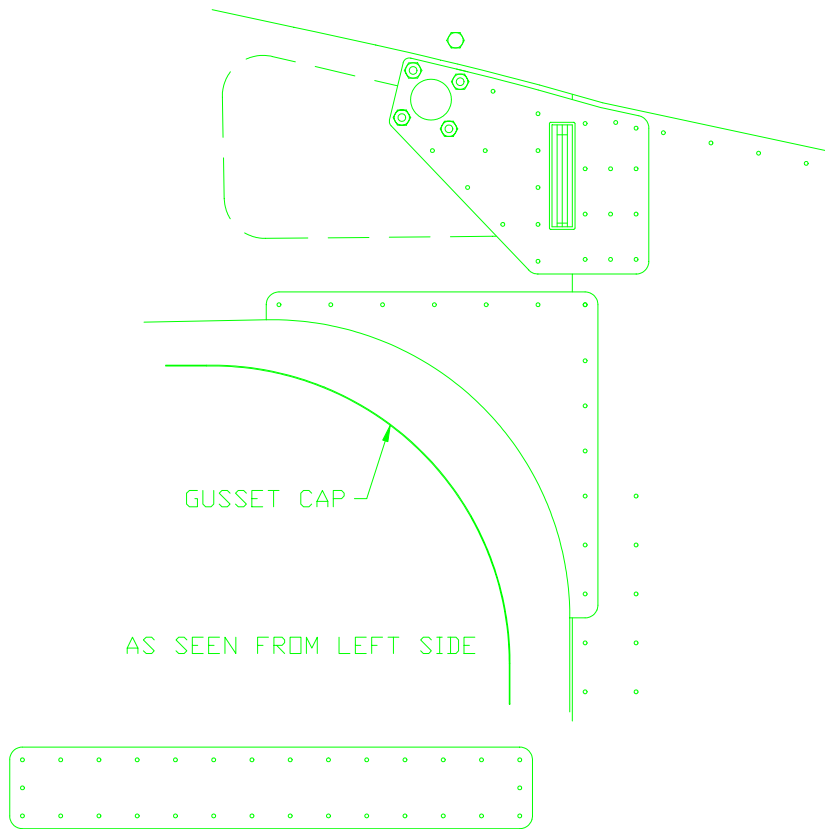


FIGURE 16A

57) From RAWST-27 make a gusset cap to tie the corner gussets together. Use a nominal spacing of 1". Figure 17.



GUSSET CAP HOLE PATTERN

FIGURE 17

58) Station 7 & 8 uprights are finished similar to station 5 & 6 but have two extra brackets installed. The bracket shown in detail “B” is not required if you are putting in the optional rear bucket seats. Install the strap and channel gusset with 1/8 avex rivets and each bracket with 3/16 avex rivets. Each bracket is make from RAWST-9. Figure 18. 18A, 18B, 18C.

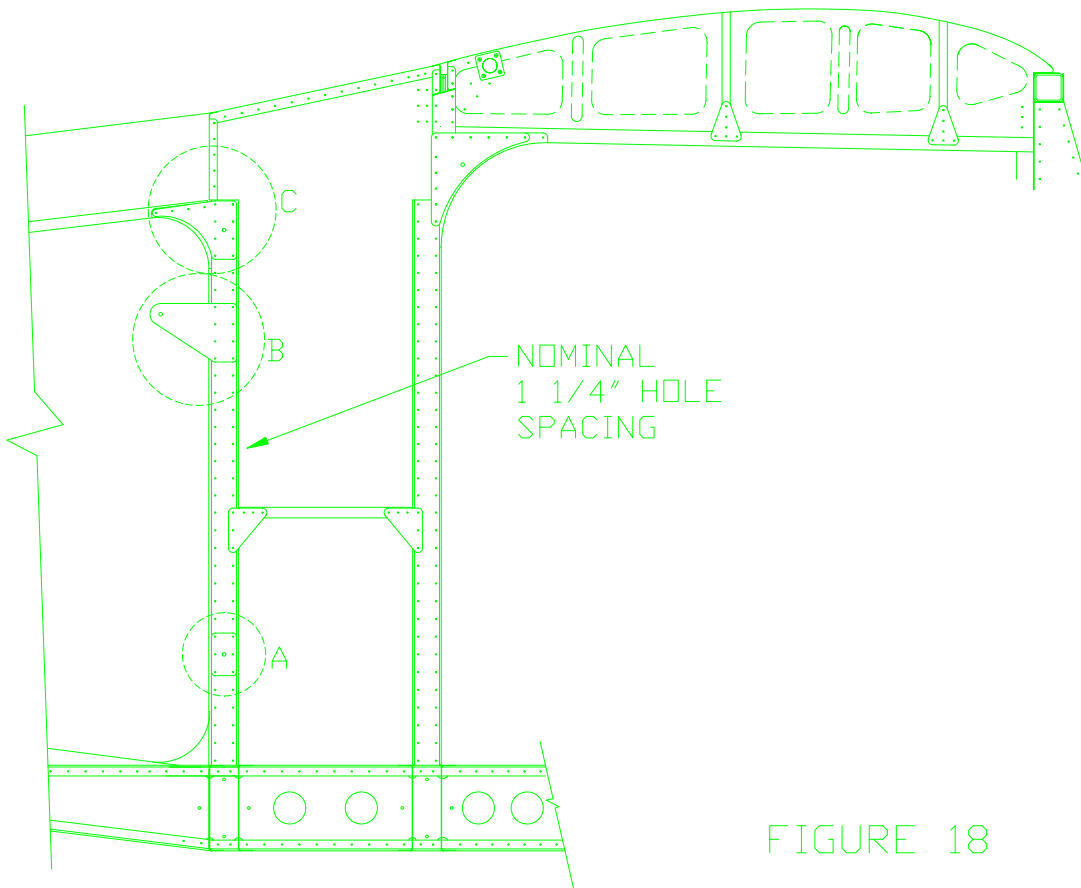


FIGURE 18

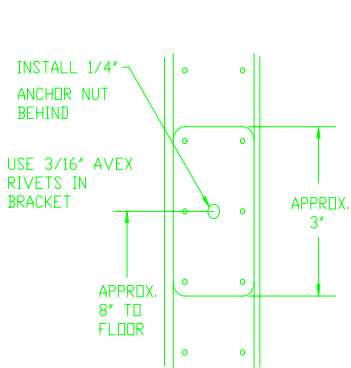


FIGURE 18A

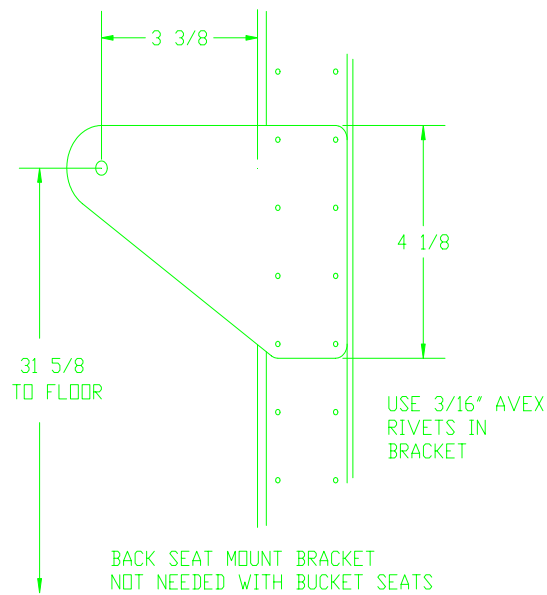


FIGURE 18B

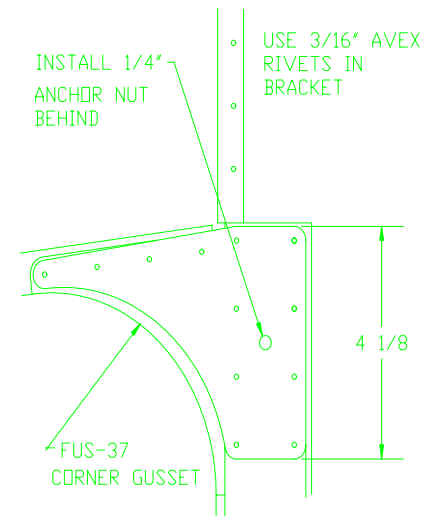


FIGURE 18C