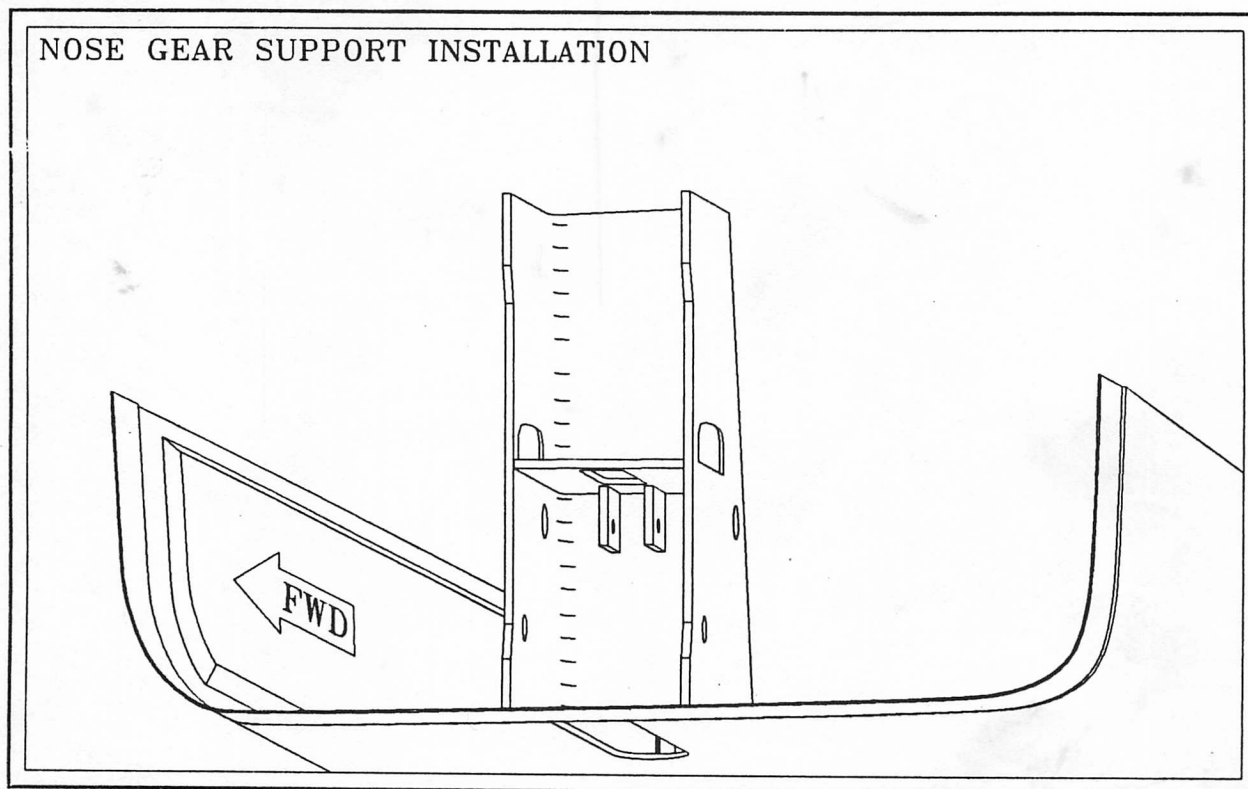


5.080. LOCATING FIREWALL AND INSTALLING NOSE GEAR SUPPORT**DESCRIPTION:**

The nose gear support provides mounting points for the nose gear and rudder pedal assemblies. The support butts against the firewall. The firewall will be temporarily located at Station 34 to establish the proper position of the nose gear support.

**SUPPLIED MATERIALS:**

<u>Part No.</u>	<u>Qty.</u>	<u>Description</u>
112-12-001	1	Support, nose gear
112-12-012	1	Firewall
112-12-036	2	Rib, rudder pulley block
112-14-003	1	Support, rudder block
AN5-22A	1	Bolt
MS20220-2	2	Pulley

TOOLS:

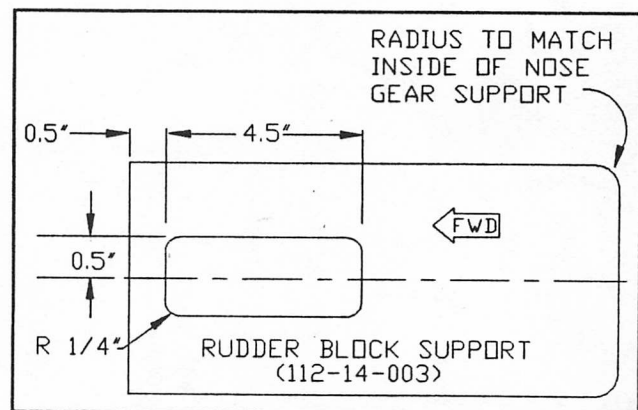
Rasp/File
Jigsaw or hacksaw blade
1/4" Drill bit
5/16" Drill bit
3/4" Hole cutter
Electric drill

PROCEDURE:**Step 1. Radius rear corners of rudder block support.**

The upper surface of the rudder block support will be installed in the nose gear support, flush with the lower edges of the rudder tube cutouts. Radius the rear corners of the rudder block support (112-14-003) to match the inner contour of the nose gear support (112-12-001) aft of the cutout areas. Bevel the rear face of the rudder block support 10°. The rudder block support will slightly spread the edges of the nose gear support when positioned.

Step 2. Cut cable horn slot in rudder block support.

Draw centerlines length-wise on both sides of the rudder block support. See figure at right for dimensions of the cable horn slot to be cut from the part. Carefully cut out the slot with a 1/4" radius in each corner.

**Figure 5.080.1****Step 3. Hot glue the rudder block support into the nose gear support.**

Prep the area around the inside of the nose gear support cutouts by sanding away any primer for at least two inches surrounding the area where the rudder block support will be bonded. Hot glue the rudder block support into the nose gear support. See Fig. 5.080.2.

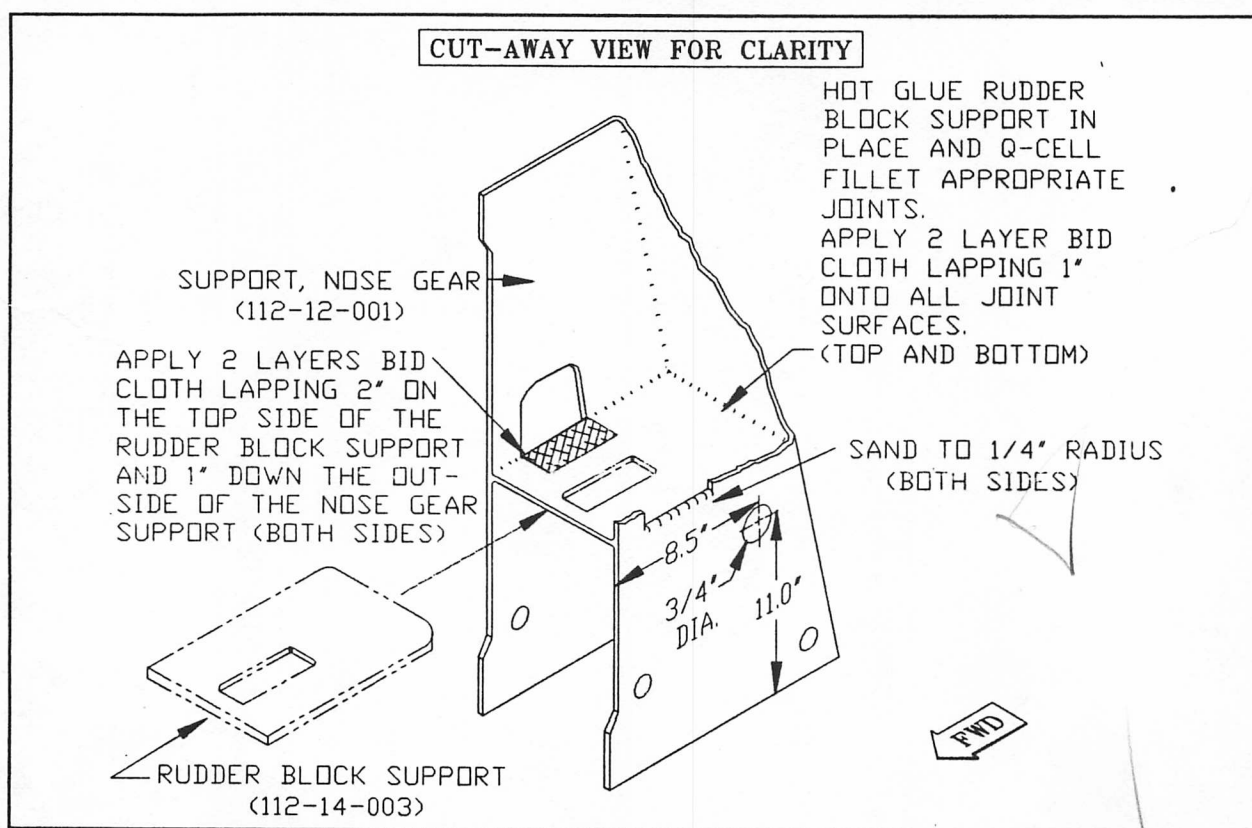


Figure 5.080.2

Step 4. Apply Q-cell to the rudder block support.

Radius the outside lower edge of each cutout in the nose gear support sides. Apply a 1/4" Q-cell mixture fillet along the upper and lower face joints of the rudder block support where it contacts the nose gear support.

Step 5. Apply bid cloth to rudder block support.

Apply two layers of bid cloth, lapping 1.0" onto all joint surfaces. Also apply two layers of bid cloth, lapping 2.0" on the top surface of the rudder block support and 1.0" down the outside face at the cutouts in the nose gear support.

Step 6. Install rudder pulley block ribs inside nose gear support.

Stack the two rudder pulley block ribs (112-12-036) and drill 5/16" holes through both parts as shown in the figure at right.

10-75"
Cut a 3/4" diameter hole through both sides of the nose gear support, 11.0" up from the bottom and 8.5" aft from the forward edge of the part. This access hole will allow the assembly bolt to be removed later in this procedure. See Fig. 5.080.2 above.

Prep sand both sides of each pulley block rib along the aft end and top. Prep sand the area on the lower face of the rudder block support and rear face of the nose gear housing where the pulley block ribs will be installed.

Position the two pulleys (MS20220-2) between the pulley block ribs. With bolt (AN5-22A) holding the assembly in alignment, hot glue the ribs in place. The pulley block ribs should be centered on the center line on the underside of the rudder block support and against the aft face of the nose gear support. See Fig. 5.080.4

Carefully remove the bolt and pulleys. Apply a Q-cell mixture fillet along all joints, inside and out. Laminate two plies of bid cloth with 1.0" lap along all joint faces. (Bend the metal bristle retainer of one of your brushes so the bristles are at an angle of about 25° to the handle. This will help you reach into the area.) When cured re-install the pulleys to check for free movement. Sand away any laminate that contacts the pulleys. The pulleys will be permanently installed later.

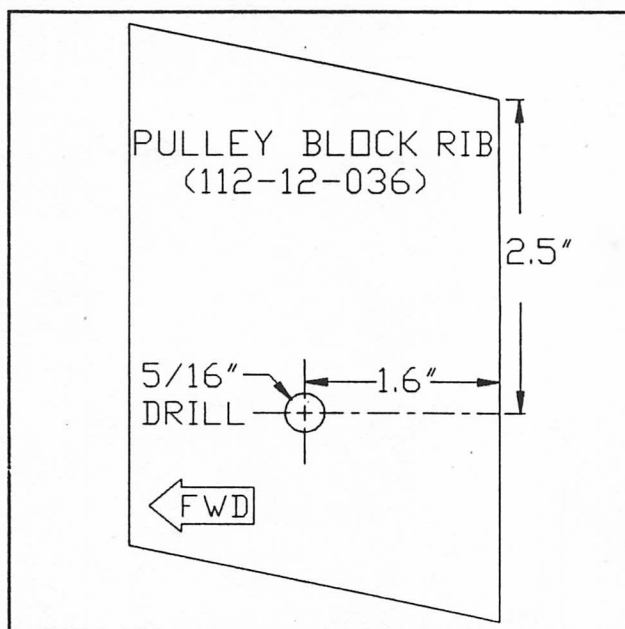


Figure 5.080.3

MANDATORY CHANGE

Date: 10 January 1990

Procedure: 5.080

Subject: Nose gear support structure

Application: All F-FT-3 kits accompanied by Assembly Manual 4, 5, or 1.6

Instructions: In Step 6, Figure 5.080.4 does not show the necessary lamination where the rudder pulley block ribs meet the rudder block support. The figure should appear as shown below.

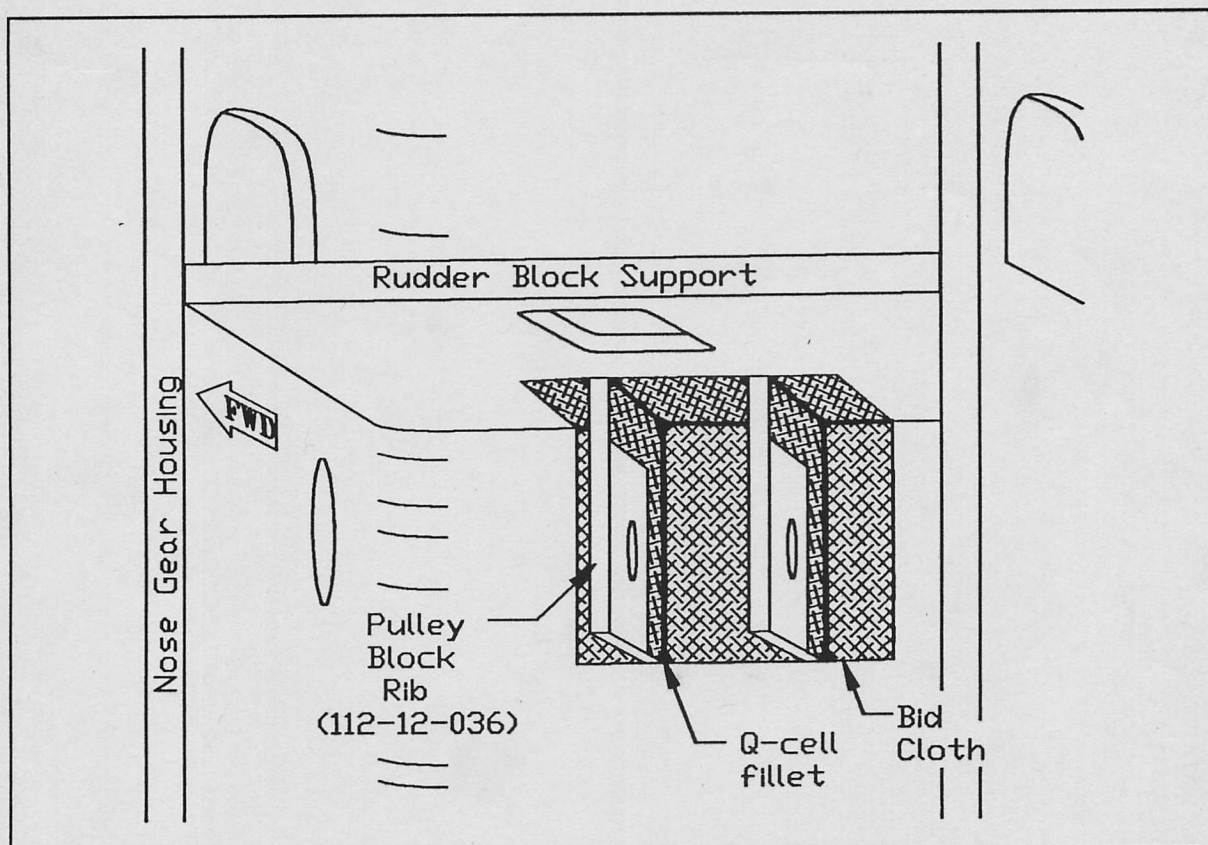


Figure 5.080.4.

In Step 9, add the following note:

NOTE: The nose gear support has already been trimmed to EOP during manufacturing. During installation, only minor trimming or sanding should be necessary.

MANDATORY CHANGE

Date: 1 June 1990
Procedure: 5.080
Subject: Nose gear support (NGS)
Supersedes: BA024
Application: All F-FT-3 kits

Parts Required:	<u>Part Number</u>	<u>Qty.</u>	<u>Description</u>
	119-98-243-03	1	Cloth, uni, 2" x 63"
	K1000-3	4	Nut, anchor
	AN526-1032-R14	4	Screw, machine
	AN426AD3-3	8	Rivet, countersunk

Overview: The nose gear installation has been redesigned to attach to the engine mount. This allows some tooling changes in the NGS (112-12-001), and necessitates some installation procedure changes.

- The slot in the fuselage floor is eliminated (Step 7).
- A panel is added to access the interior of the NGS (new step).
- The holes used to level the NGS assembly no longer exist in newly manufactured parts (Step 9).
- The holes used to install the hardware holding the cable pulleys in the NGS have changed locations.
- The lower tabs are removed.
- Unidirectional (uni) cloth is added to the NGS (new step).

Instructions: If you have completed Step 7 of the procedure, do both Part A and Part B; otherwise, only do Procedure 5.080, with the modifications as described in Part B.

Part A: You need to fill in the slot made in Step 7. Cut a piece of cardboard large enough to cover the nose gear slot. Cover it with plastic (at least 3-mil). Securely prop or tape the wrapped cardboard under the nose gear slot. Apply a Q-cell radius where the cardboard meets the edges of the slot. Laminate four plies of bid cloth to cover the hole

from the inside, lapping one inch onto the fuselage floor, at a 45° bias. Allow to fully cure.

Part B: 1. You need to cut an access hole in the NGS. Perform this new

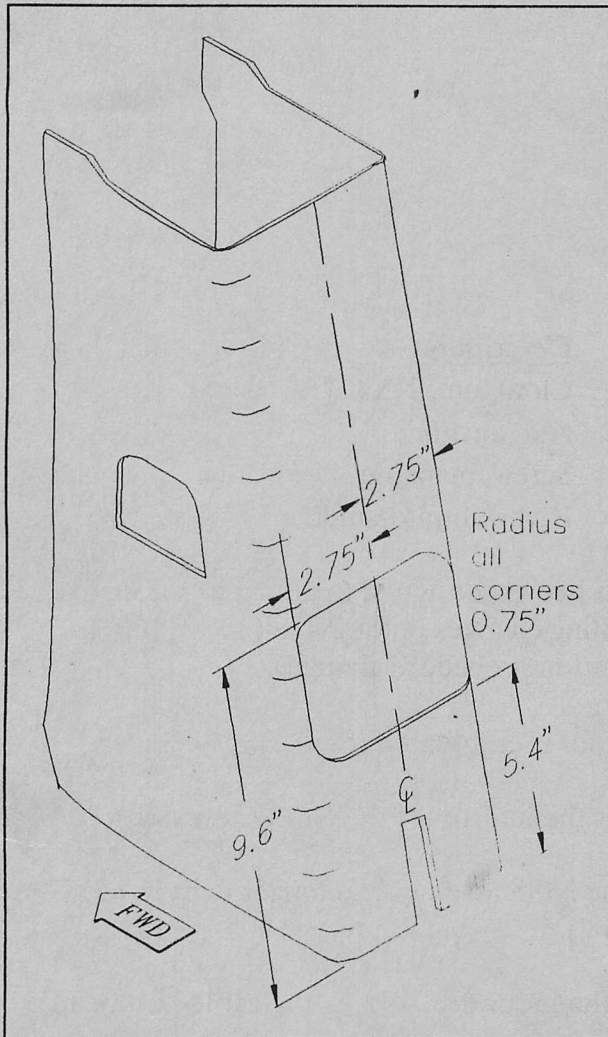


Fig. SB056-1. Cutting access panel in NGS.

step as early as possible in Procedure 5.080, preferably before Step 1. Draw the vertical centerline on the aft face of the NGS (see Fig. SB056-1). Draw two horizontal lines on the aft face, one at 5.4" and one at 9.6" from the bottom of the NGS. From the CL, measure 2.75" outboard in both directions along each horizontal line. Draw the perimeter of the 4.2" x 5.5" rectangle defined, then round the corners to a 0.75" radius. Carefully cut out the access panel with a saber saw, using small holes to start the cut.

On a piece of plastic, laminate 2 plies of bid cloth, 4.0" x 5.0". When cured, cut four tabs, 1.5" x 2.0", and round off their corners to about a 0.25" radius. On the inside of the NGS, sand away any primer where the tabs will go (see Fig. SB056-2). Apply a layer of milled fiber to each tab where it will contact the NGS, and clamp each in place. When fully cured, fit the access panel in place. Drill holes through the panel and each tab, and secure the panel with anchor nuts, countersunk rivets, and a screw, as shown in Fig. SB056-2.

2. In the second paragraph of Step 6, change the dimension from 11.0" to 10.75".

3. Omit Step 7.

4. In Step 9, sand the inner and outer surfaces for two inches aft from the forward edge. Also, the holes referred to for leveling the NGS are absent on later versions. Instead, place a level along the CL of the NGS to verify alignment.

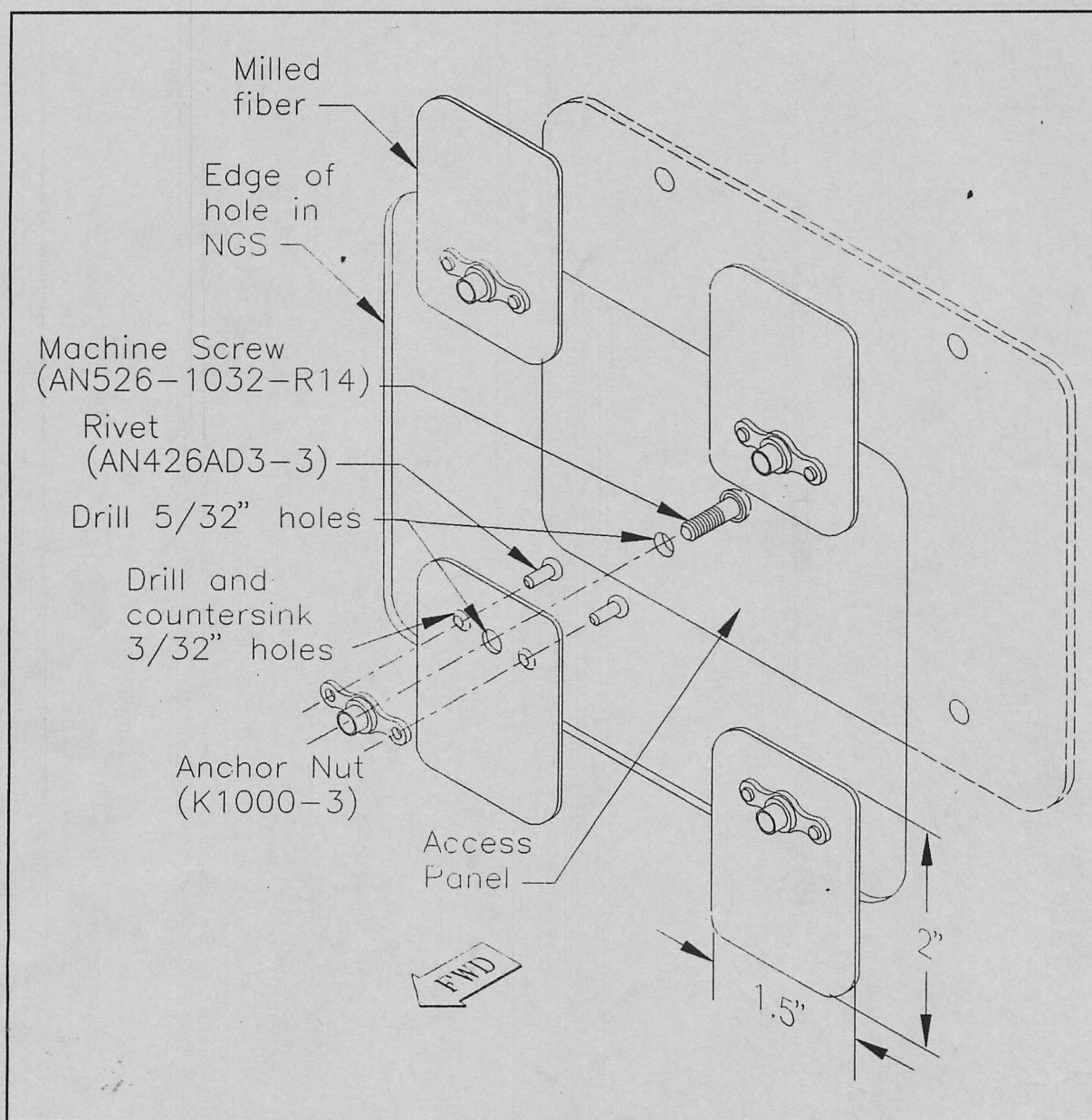


Fig. SB056-2. Securing panel with tabs.

Cut and/or sand off the lower tabs on the NGS (see Fig. SB056-3). Cut the uni cloth (119-98-243-03) in half, lengthwise. Along both forward edges of the outer surface of the NGS, laminate four layers of 1.0" wide uni cloth as indicated in Fig. SB056-3 and Table 1. Measurements are made from the bottom EOP of the NGS. Start with Layer A, and apply the uni cloth with the shiny side out. It is better to work with uni cloth on a horizontal surface; otherwise, the resin tends to bleed out.

When the uni cloth has green cured, trim out the holes that the rudder torque tubes pass through.

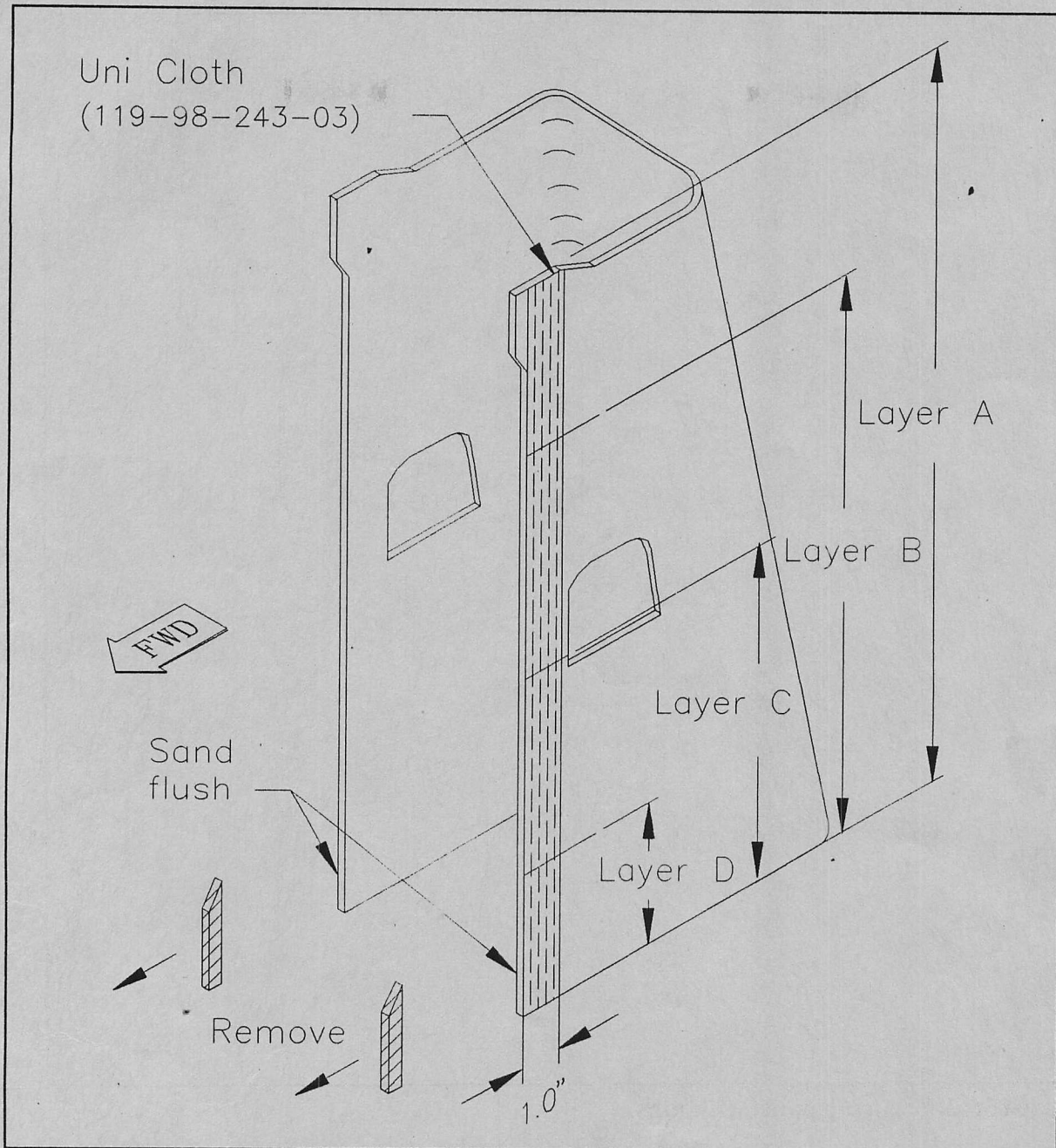


Fig. SB056-3. Trimming tabs and applying uni cloth.

Layer	Length
A	26.0"
B	20.0"
C	12.0"
D	5.0"

Table 1. Uni cloth dimensions.

Service Bulletin SB056

Complete

Initials

Date

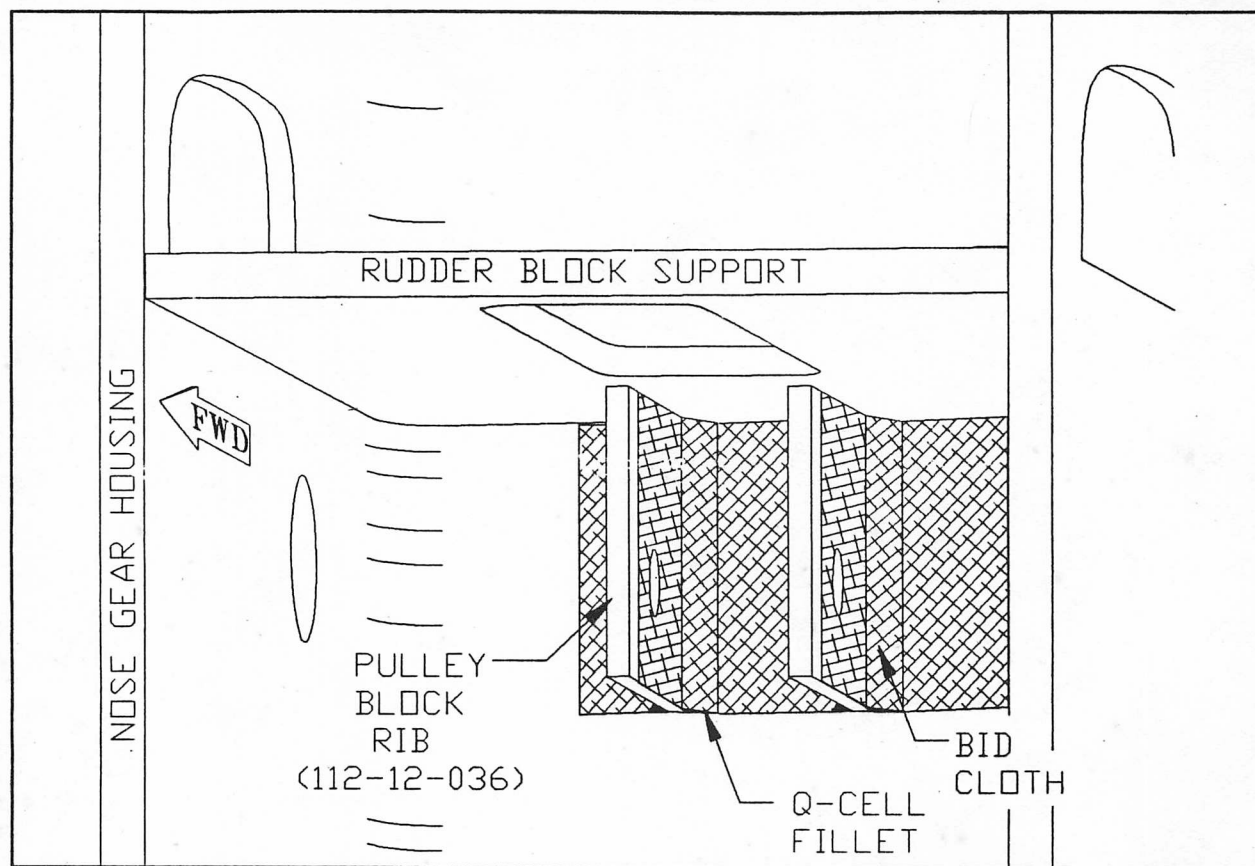


Figure 5.080.4

Step 7. Cut nose gear slot in fuselage floor.

Draw reference lines, 2.0" outboard from, and parallel to, the fuselage CL on each side of the nose gear support area. Draw another line, perpendicular to the CL, 1.5" aft of the forward EOP, crossing the reference lines just drawn. Mark a point 7.0" aft from the EOP along the CL. Draw a 2" radius line centered on this point. Draw a 1/2" radius at each of the

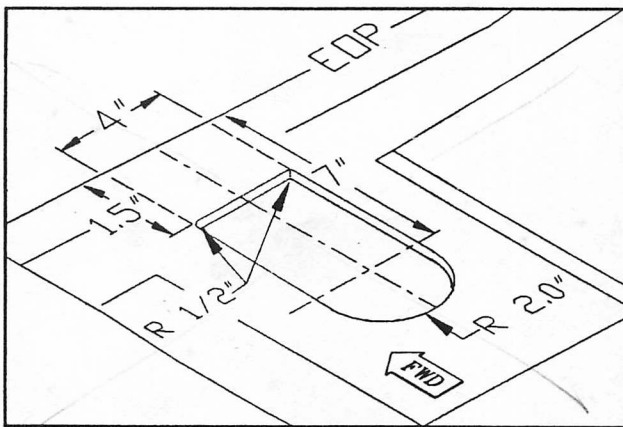


Figure 5.080.5

forward corners. Cut the slot away, following the lines and rear curve. Leave 1.5" of material at the firewall bond area.

Step 8. Locate firewall at Station 34.

The firewall (112-12-012) will be installed *temporarily* in the lower fuselage to help locate the nose gear support.

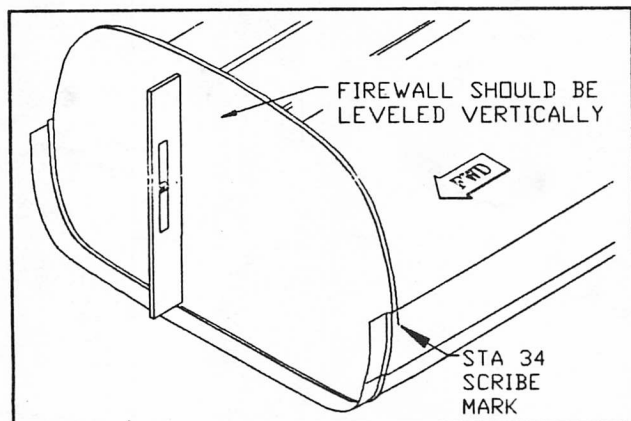


Figure 5.080.6

Your fuselage has lines inscribed on the outside skin at Sta. 34. These lines are about 1.5" aft of the EOP, and are about 1.0" long. They intersect WL40 on either side. Position the firewall in the lower fuselage with the foam reinforcement side facing aft. Line up the front face of the firewall with the Sta. 34 marks.

The firewall must be vertical. Use your level to check. When satisfied, *tack glue* the firewall in place. See Fig. 5.080.6.

Step 9. Position the nose gear support in place at firewall.

Prep sand at least 1.5" around the inside and outside of the lower faces and on both sides of the forward faces of the nose gear support. Also prep sand the area on the fuselage floor where the nose gear support will be installed.

The nose gear support is slightly tapered fore and aft. Measure across the outside faces of the forward opening of the part. Divide the measurement by two. Mark reference lines on either side of the fuselage centerline at Sta. 34 using the result.

The aft center of the part can be found by extending straight edges along the sides of the housing. Measure the distance between them, then mark a point at half the distance on masking tape extending across the cable slot. See Figure 5.080.7

Position the nose gear support against the firewall, lining up the part on the forward reference lines. The aft center mark should be aligned with the lower fuselage CL.

forward corners. Cut the slot away, following the lines and rear curve, leaving 1/2" of material at the firewall bond area.

Step 3. Locate firewall at Station 34.

The firewall (112-13-012) will be installed temporarily in the lower fuselage to help locate the nose gear support.

Your fuselage has lines inscribed on the outside skin at Sta. 34. These lines are about 1/2" off of the HOP, and are about 1.0" long. They represent W140 on either side. Position the firewall in the lower fuselage with the form reinforcement side facing all line up the front face of the firewall with the Sta. 34 marks.

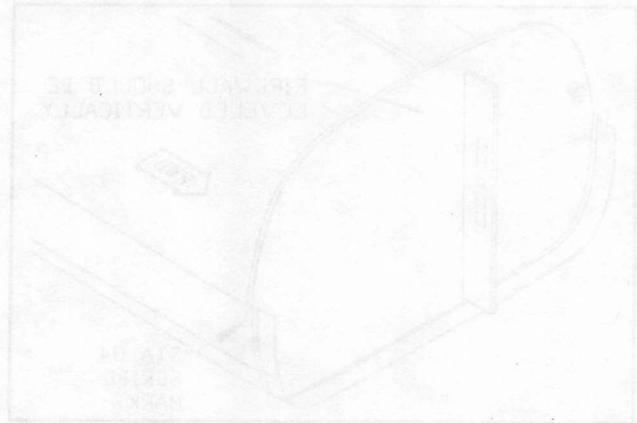


Figure 2-2

The firewall must be vertical. Use your level to check. When satisfied, lock the firewall in place. See Fig. 2-2-2.

Step 4. Position the nose gear support in place at firewall.

Position the nose gear support in place at the firewall. The nose gear support is slightly tapered fore and aft. Measure across the outside face of the forward opening of the part. Divide the measurement by two. Mark reference lines on either side of the fuselage centerline at Sta. 34 using the result.

The air corner of the part can be found by extending straight edges along the sides of the housing. Measure the distance between them, then mark a point at half the distance on missing tape extending across the cable slot. See Figure 2-2-3.

Position the nose gear support against the firewall, lining up the part on the forward reference lines. The air corner mark should be aligned with the lower fuselage CL.

Fit the nose gear support very carefully at all points of contact with the firewall and fuselage floor. To verify that the structure is properly aligned, insert a straight edge through the pair of holes nearest the lower aft corner. Place a level on one end of the straight edge and check the bubble. When satisfied, hot glue the part in place along the lower fuselage joints. *Do not hot glue the nose gear support to the firewall.*

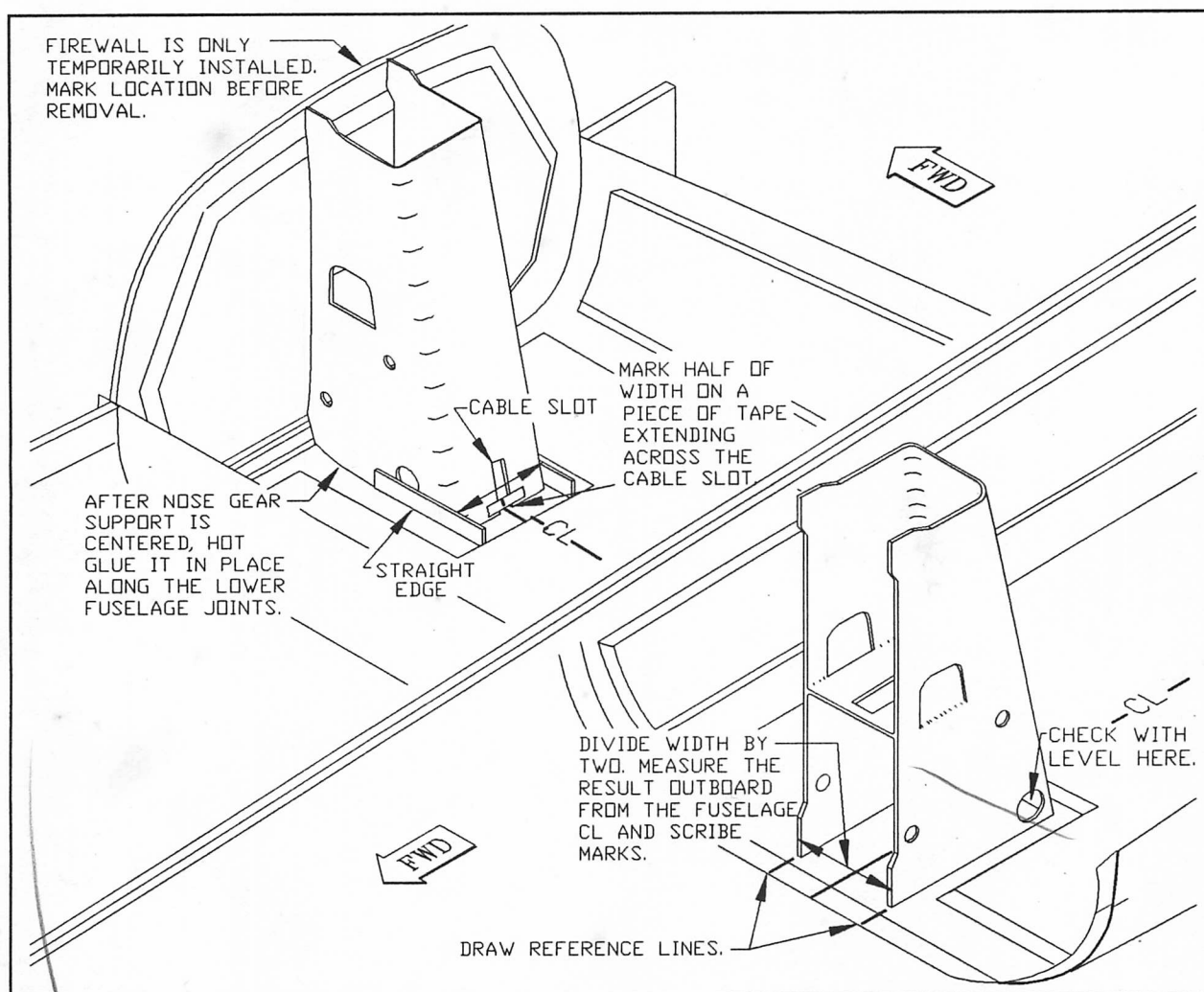


Figure 5.080.7

Step 10: Mark firewall location, then remove firewall.

Mark the location of the firewall on the inside of the lower fuselage with a pencil. The lines will help you re-install the firewall later. Remove the firewall.

Step 11. Apply fillet and bid cloth along nose gear support joints.

Apply a 1/4" Q-cell fillet to all nose gear support joints along the fuselage, inside and outside.

Laminate four 3.0" wide layers of 45° bid cloth along all the joints, inside and out, lapping 1.5" on the joint faces. See Figure 5.080.8.

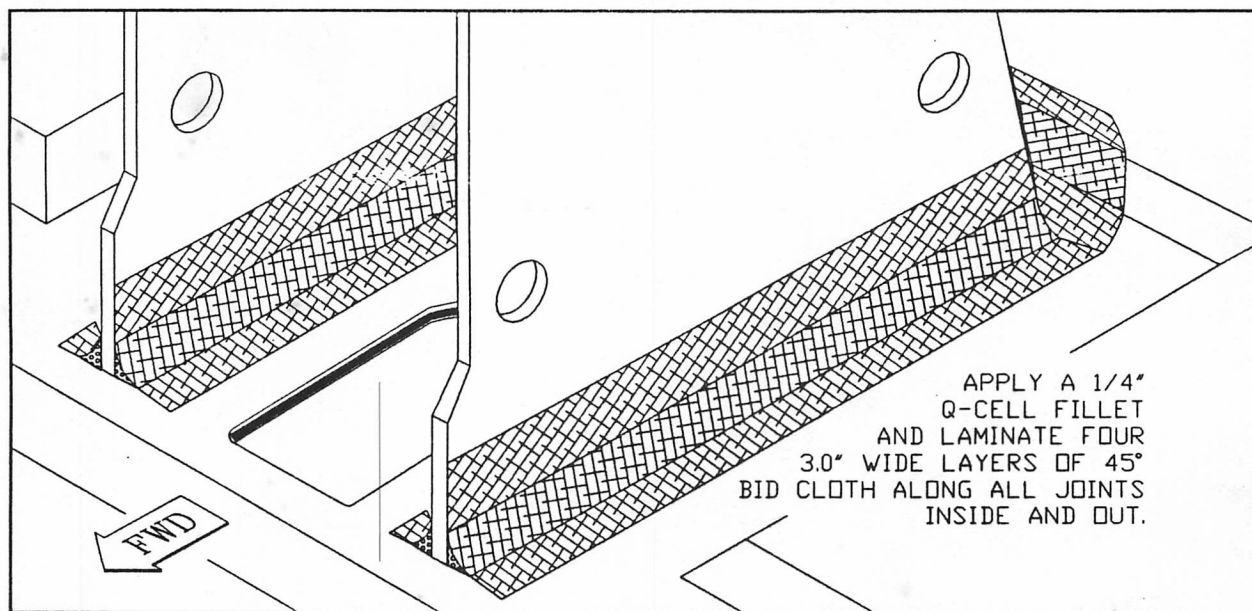


Figure 5.080.8

PROCEDURE 5.080 COMPLETED 7.12.91