



SERVICE BULLETIN

No. 672A

Piper Aircraft Corporation

Lock Haven, Pennsylvania, U.S.A.

April 16, 1981 M

(Service Bulletin No. 672A supersedes and voids Service Bulletin No. 672, dated June 20, 1980.)

Subject: Step Attachment Area Inspection/Reinforcement

Reason for Revision: Completion of Engineering tests show that installation of the footstep reinforcement will relieve the recurring inspection requirement of Service Bulletin No. 672; revise Serial Numbers Affected.

Models Affected:

PA-23, PA-23-160 Apache
PA-23-235 Apache
PA-23-250 Aztec
PA-23-250 (6 place) Aztec

Serial Numbers Affected:

23-1 through 23-2046
27-505 through 27-622
27-1 through 27-504
27-2000 through 27-8054049*

- * In Service Bulletin No. 672, dated June 20, 1980, ONLY the inspection requirement applied to aircraft with Serial Numbers 27-8054050 and up; these aircraft were factory-reinforced before delivery. This Service Bulletin 672A relieves that inspection requirement.

Compliance Time:

Aircraft with five hundred (500) hours or more total operating time: Within the next one hundred (100) hours of operation or at the next scheduled inspection, whichever occurs first, and at each subsequent scheduled inspection unless/until footstep is reinforced in accordance with this Service Release.

Purpose:

Field reports indicate that some aircraft, depending upon the type of use, may develop cracks in the fuselage tubular crossmember adjacent to the cabin entry step attachment. Cracks and eventual separation of the crossmember will adversely affect the integrity of the step installation, and may also cause misalignment of the rudder cable pulley in the same area, possibly resulting in impairment of rudder control.

This Service Release provides instructions for the inspection, repair, and reinforcement of the cabin entry footstep attachment area.

(over)

Instructions:

Refer to attached sketch/instruction data for inspection, repair and reinforcement procedure.

Material Required:

Refer to attached Sketch/Instruction data.

Availability of Parts:

Your Piper Field Service Facility or local supplier.

Effectivity Date:

This Service Release is effective upon receipt.

Summary:

Please contact your Piper Field Service Facility to arrange for compliance with this Service Release in accordance with Compliance Time, above.

Reimbursement for material and pro-rated reimbursement for labor is available for a period of time not to exceed one hundred eighty (180) days from the date of this Service Release.

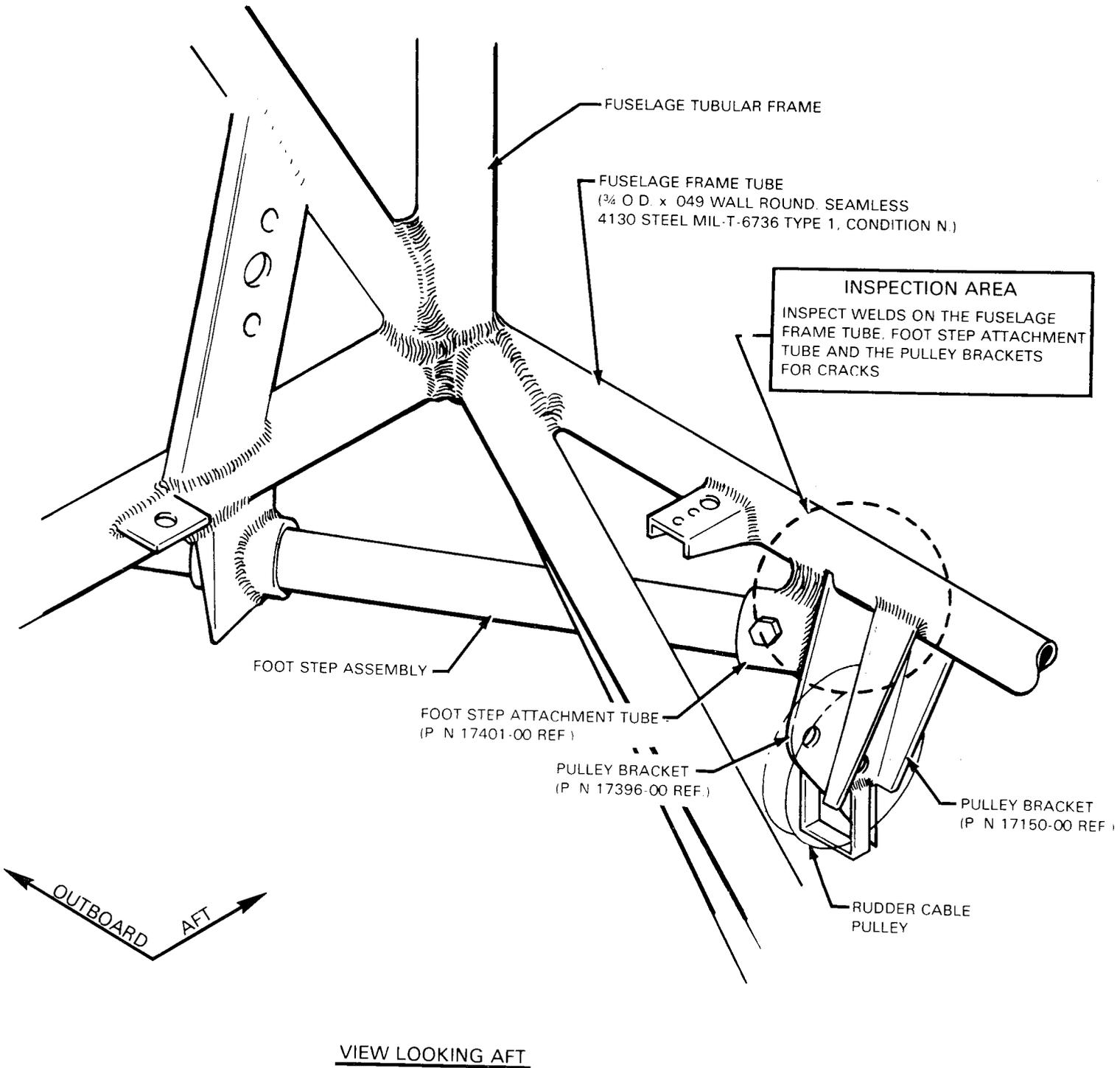
INSPECTION AND REPAIR INSTRUCTIONS

1. Gain access to the rear baggage compartment thru the rear baggage compartment door.
2. Remove the oxygen bottle (if installed), rear baggage compartment floorboard and carpeting. Remove middle and aft seats, seat tracks, carpeting, aft cabin floorboard and the right fuselage side panel to gain access to the fuselage tubular frame at the footstep attachment area and to the bottom portion of the Sta. 153/171 canted bulkhead.
3. Remove the footstep assembly.
4. Inspect, using 10X magnification, the welds on the fuselage frame tube, footstep attachment tube and rudder cable pulley brackets, in the area shown on Sketch "A", for cracks. If no cracks are found, proceed to step 5. If cracks are found proceed as follows (NOTE: All repairs must be done by gas welding):
 - a. Make a 30 degree scarf cut thru the fuselage frame tube at a point 14.5 inches inboard from the corner of the fuselage frame as shown on Sketch "B". Remove excess weld from the inside of the fuselage frame tube, in the area of the pulley brackets, to facilitate installation of a reinforcement tube.
 - b. Fabricate a fuselage frame reinforcement tube from .625 O.D. x .049 wall, round, seamless 4130 steel (MIL-T-6736 type 1, condition N. Length to be 12.5 inches. (Reinforcement tube may be procured thru Piper Aircraft Corporation by ordering tube part number 82352-114).
 - c. Install the reinforcement tube into the fuselage frame tube, refer to Sketch "B", using the inner sleeve method as described in Chapter 2, Section 2, Paragraph 74 of the FAA Advisory Circular 43:13-1A.
 - d. Weld cracks using acceptable methods listed in the FAA Advisory Circular 43:13-1A, Chapter 2, Section 2.
5. Inspect, using 10X magnification, the bottom aft side of Sta. 153/171 canted bulkhead for cracks, in the area where the rudder cable pulley bracket attaches to the bulkhead, as shown in Sketch "C". If no cracks are found, proceed to the Footstep Reinforcement Brackets Installation Instruction which follow. If cracks are found, repair with acceptable methods listed in the FAA Advisory Circular 43:13-1A, Chapter 2, Section 3, or replace with new part (Refer to the appropriate parts catalog for correct bulkhead part number). Proceed with the Footstep Reinforcement Brackets Installation Instructions which follow.

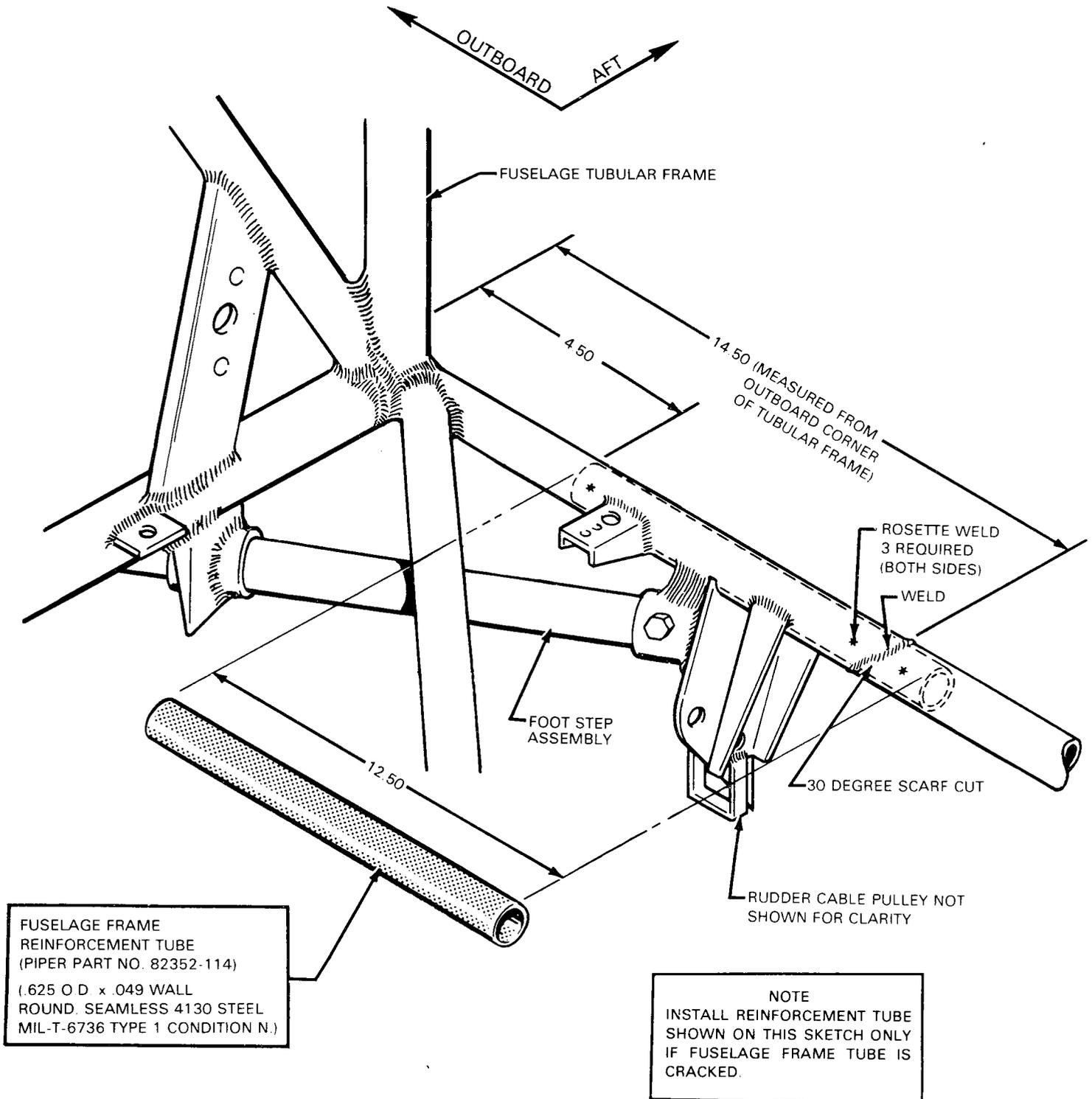
FOOTSTEP REINFORCEMENT BRACKETS INSTALLATION INSTRUCTIONS

1. Fabricate the reinforcement parts shown on Sketches "D", "E" and "F" from the materials specified for each part. (NOTE: Parts shown on Sketches "E" and "F" may be procured from Piper Aircraft Corporation by ordering the part number specified on the sketches. All three parts shown on Sketches "D", "E" and "F" are actual size templates to facilitate fabrication). Form and drill reinforcements as specified on Sketches "D", "E" and "F". Round and weld two corners of the support bracket where shown on Sketch "E". (NOTE: Additional forming of the support bracket may be required to insure proper fit in the bulkhead flange radii before welding). Zinc Chromate prime the reinforcements shown on Sketches "E" and "F" and paint.

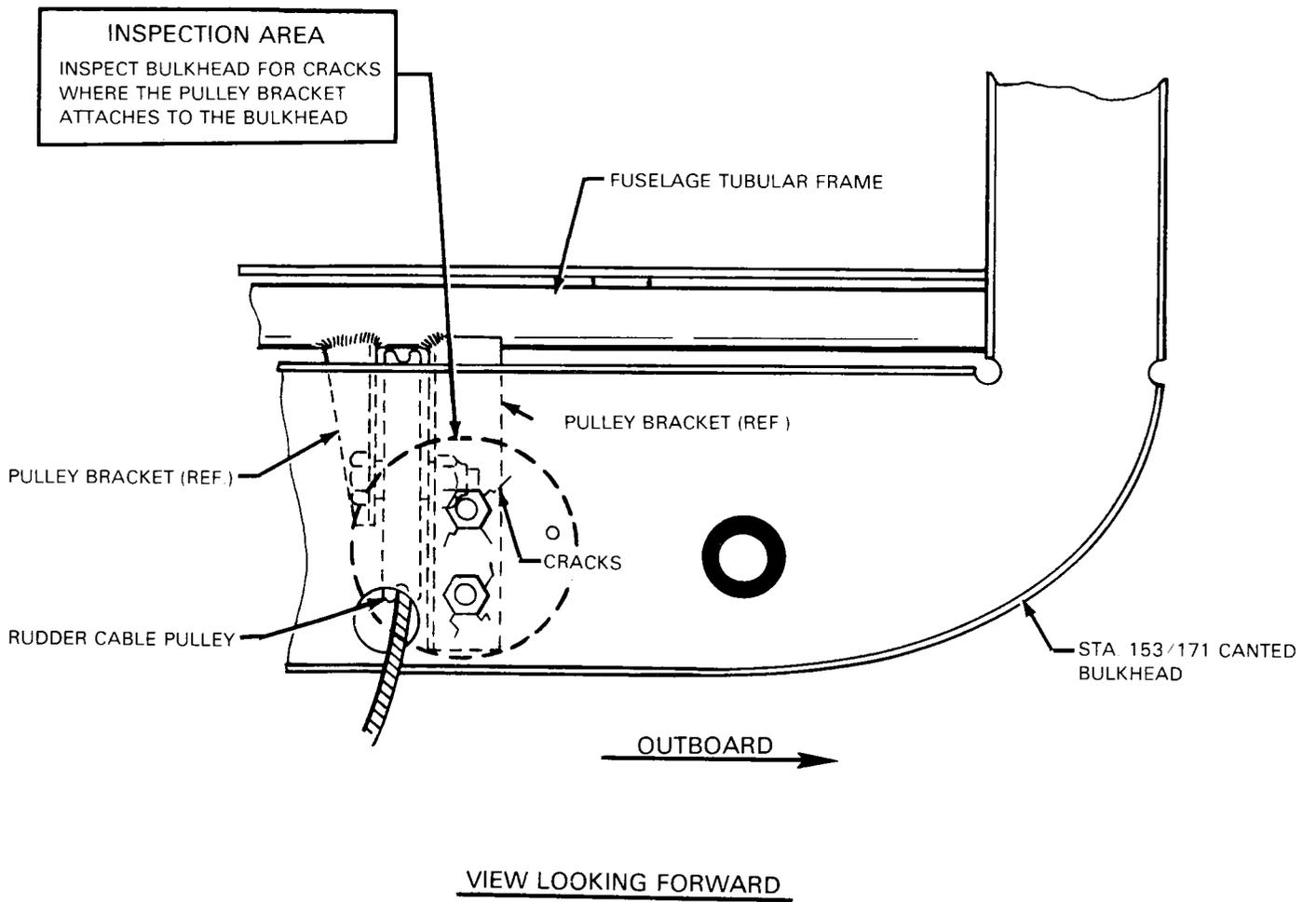
2. Refer to Sketch "G". Remove the rudder cable pulley. Position the fuselage frame tube reinforcement bracket between the fuselage frame tubes with the reinforcement bracket butted up against the outboard side of the existing outboard pulley bracket. Install existing rudder pulley bolt thru both pulley brackets and the new reinforcement bracket to maintain alignment. Weld, using gas welding method, the new reinforcement bracket to the existing pulley bracket. Weld the reinforcement bracket flange to the fuselage frame tube on both the forward and aft ends of the reinforcement bracket. At the forward end of the reinforcement bracket, continue flange weld down and around the fuselage frame tube. NOTE: When welding, take all precautions against the hazard of fire. Use a flame proof material to cover the rudder cable, the fuselage skins, structures, electrical wiring and pneumatic deicer system plumbing (if pneumatic deicer is installed).
3. Refer to Sketch "H". Remove the bolts which attach the rudder cable pulley bracket to Sta. 153/171 canted bulkhead. Position the fuselage skin reinforcement plate by butting the reinforcement plate against the Sta. 153/171 canted bulkhead bottom flange so that the forward inboard corner of the reinforcement plate just clears the "Hat" shaped channel as shown on Sketch "H". Enlarge the .098 holes in the reinforcement plate by drilling .129 holes thru the reinforcement plate and the fuselage bottom skin. Install the reinforcement plate to the fuselage bottom skin using rivets shown. Drill .191 drain hole thru the reinforcement plate using the .191 hole in the fuselage bottom skin as a guide.
4. Refer to Sketch "H". Position the fuselage bulkhead support bracket between the flanges of the Sta. 153/171 canted bulkhead so that the scribed line on the support bracket is visible thru the rudder cable pulley bracket attachment holes and the bulkhead. (NOTE: Some filing of the support bracket corners may be required to allow the support bracket to "nest" into the bulkhead flange radii). Drill two .189/.191 holes thru the support bracket using the rudder cable pulley bracket attachment holes at the Sta. 153/171 canted bulkhead as a guide. Temporarily, reinstall the existing pulley bracket attachment hardware thru the pulley bracket, bulkhead and new support bracket. Mark the location of the four .129 holes in the new support bracket onto the fuselage skin reinforcement plate. Remove new support bracket.
5. Using a .098 drill, drill the four marked hole locations on the reinforcement plate thru the reinforcement plate and the fuselage bottom skin. Reposition the new support bracket and install to Sta. 153/171 canted bulkhead by reinstalling the existing rudder cable pulley bracket attachment hardware thru the pulley bracket, bulkhead and new support bracket (NOTE: Longer bolts, AN3-4A (P/N 400 438), may be required to insure proper engagement of the self locking nut). Install the new support bracket on the new reinforcement plate by enlarging the four .098 holes in the fuselage bottom skin to .129 and installing rivets as shown on Sketch "H".
6. Zinc Chromate prime the fuselage frame tube reinforcement bracket and paint.
7. Reinstall the rudder cable pulley using existing hardware (NOTE: A longer bolt, AN5-10A (P/N 401 188), may be required to insure proper engagement of the self locking nut. Insure that the new reinforcement bracket does not interfere with the operation of the rudder cable or the rudder cable pulley).
8. Reinstall floorboards, footstep assembly, side panel, carpeting, seat tracks, seats and any other equipment which was removed for ease of installation. Reinstall the oxygen bottle (if aircraft is so equipped) as described in the appropriate service manual.
9. Make proper logbook entry of compliance with Service Bulletin No. 672.



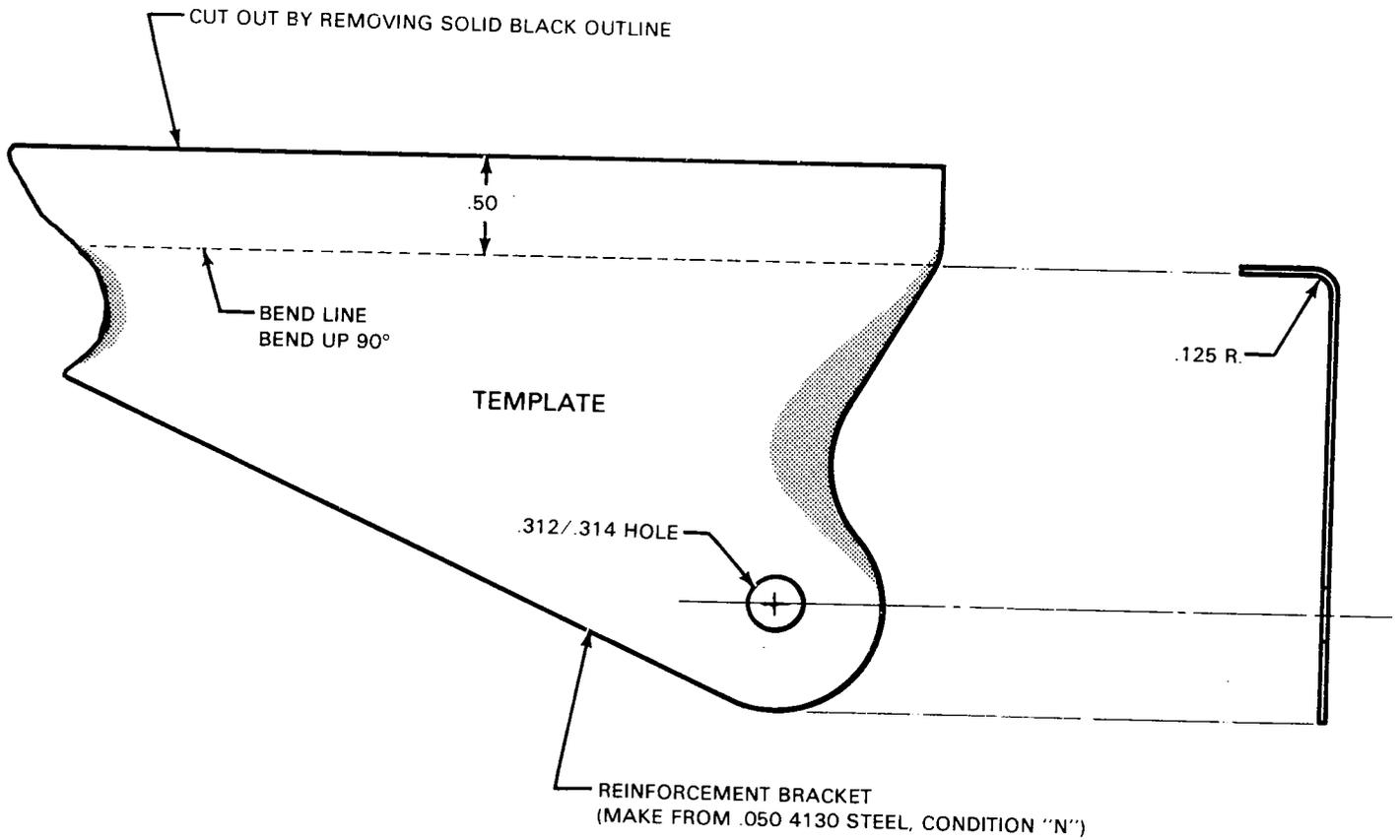
SKETCH "A"



SKETCH "B"



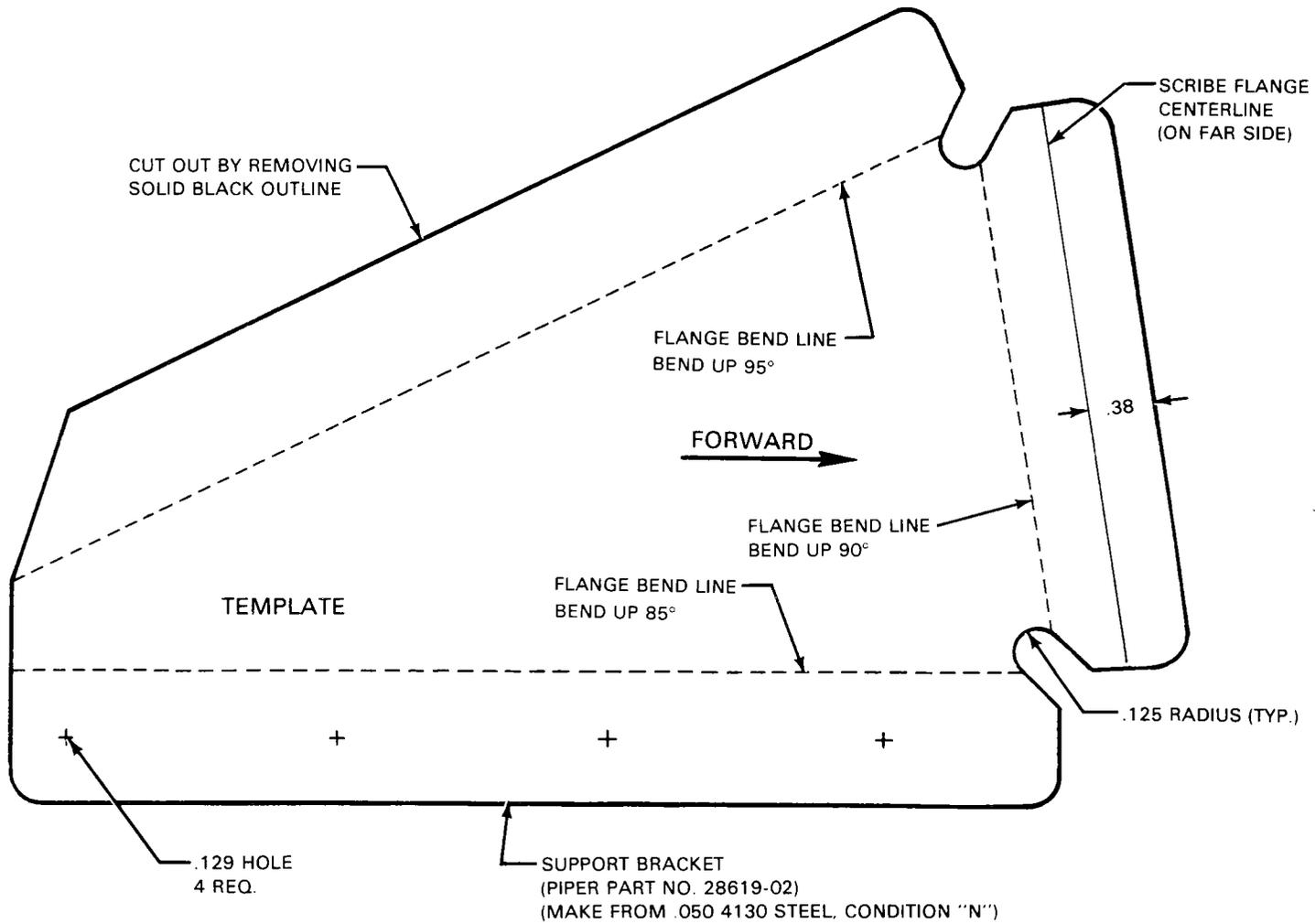
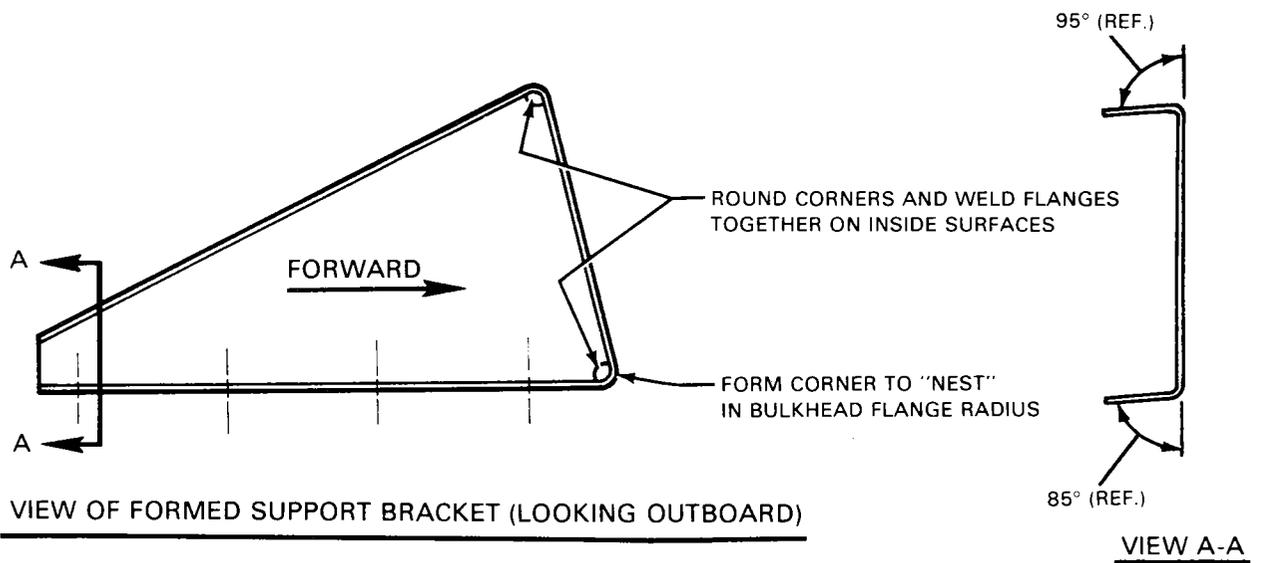
FUSELAGE FRAME TUBE REINFORCEMENT BRACKET TEMPLATE



NOTE

IN SHADED AREAS, TRIM AS REQUIRED TO CLEAR WELD ON FOOTSTEP ATTACHMENT TUBE WHEN FITTING REINFORCEMENT BRACKET TO PULLEY BRACKET. THE REINFORCEMENT BRACKET MUST FIT FLAT AGAINST THE PULLEY BRACKET WHEN WELDING.

FUSELAGE BULKHEAD SUPPORT BRACKET TEMPLATE

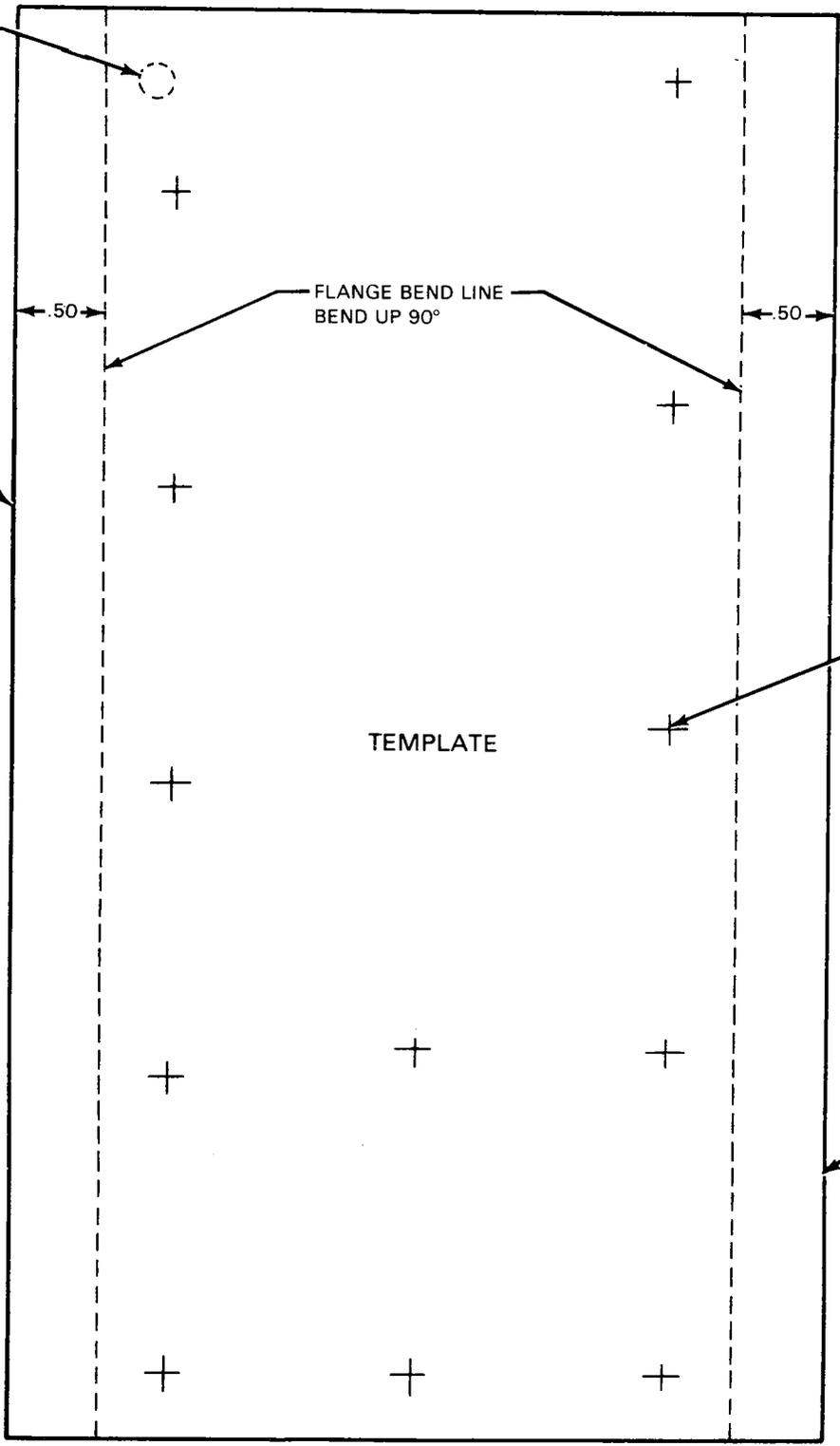


SKETCH "E"

FUSELAGE SKIN REINFORCEMENT PLATE TEMPLATE

APPROXIMATE LOCATION OF
.191 DRAIN HOLE IN
FUSELAGE BOTTOM SKIN
(REF.)

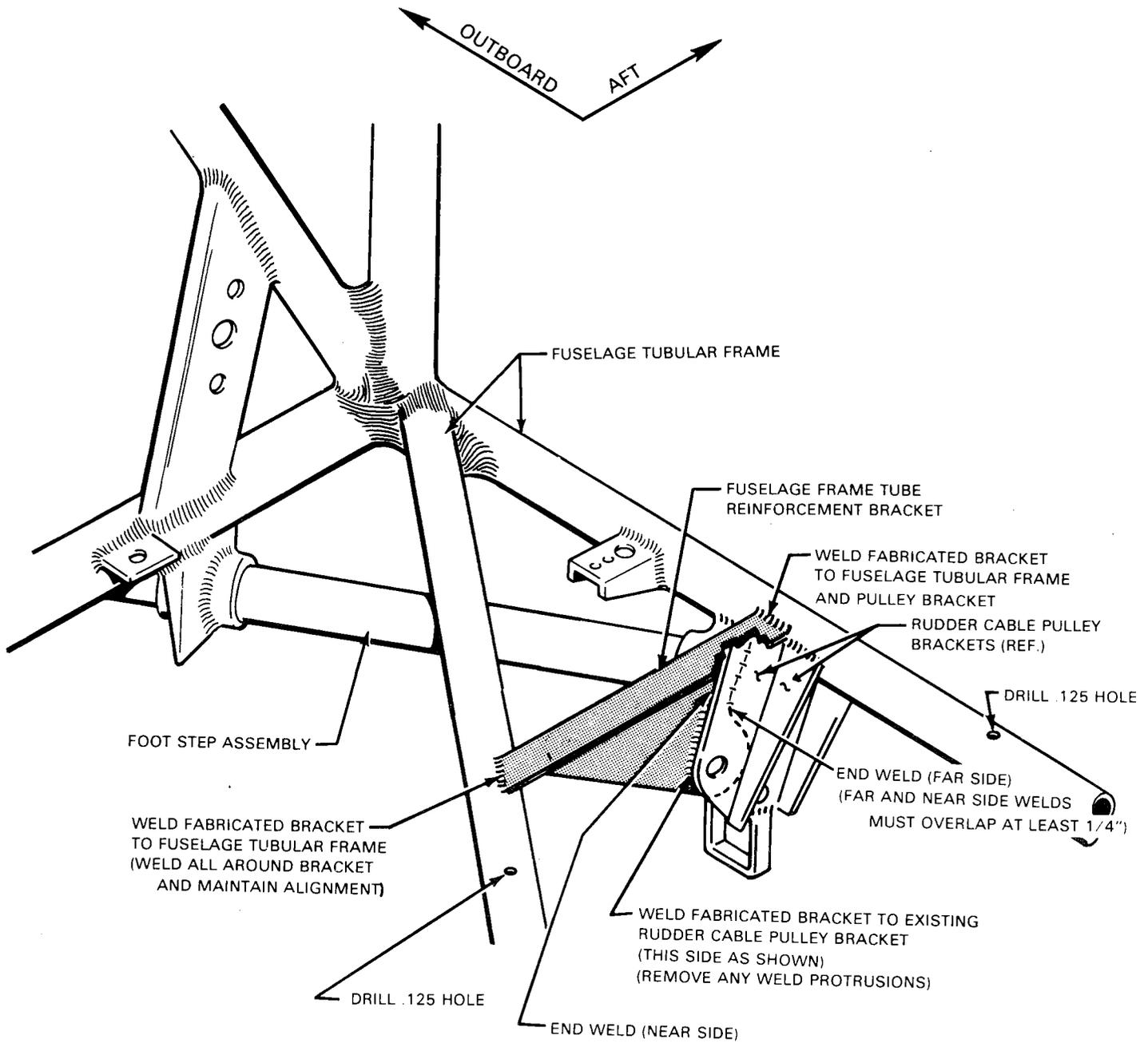
REINFORCEMENT PLATE
(PIPER PART NO. 28618-02)
(MAKE FROM .032 2024-T3
ALUMINUM)



.098 HOLE
12 REQ.

CUT OUT BY REMOVING
SOLID BLACK OUTLINE

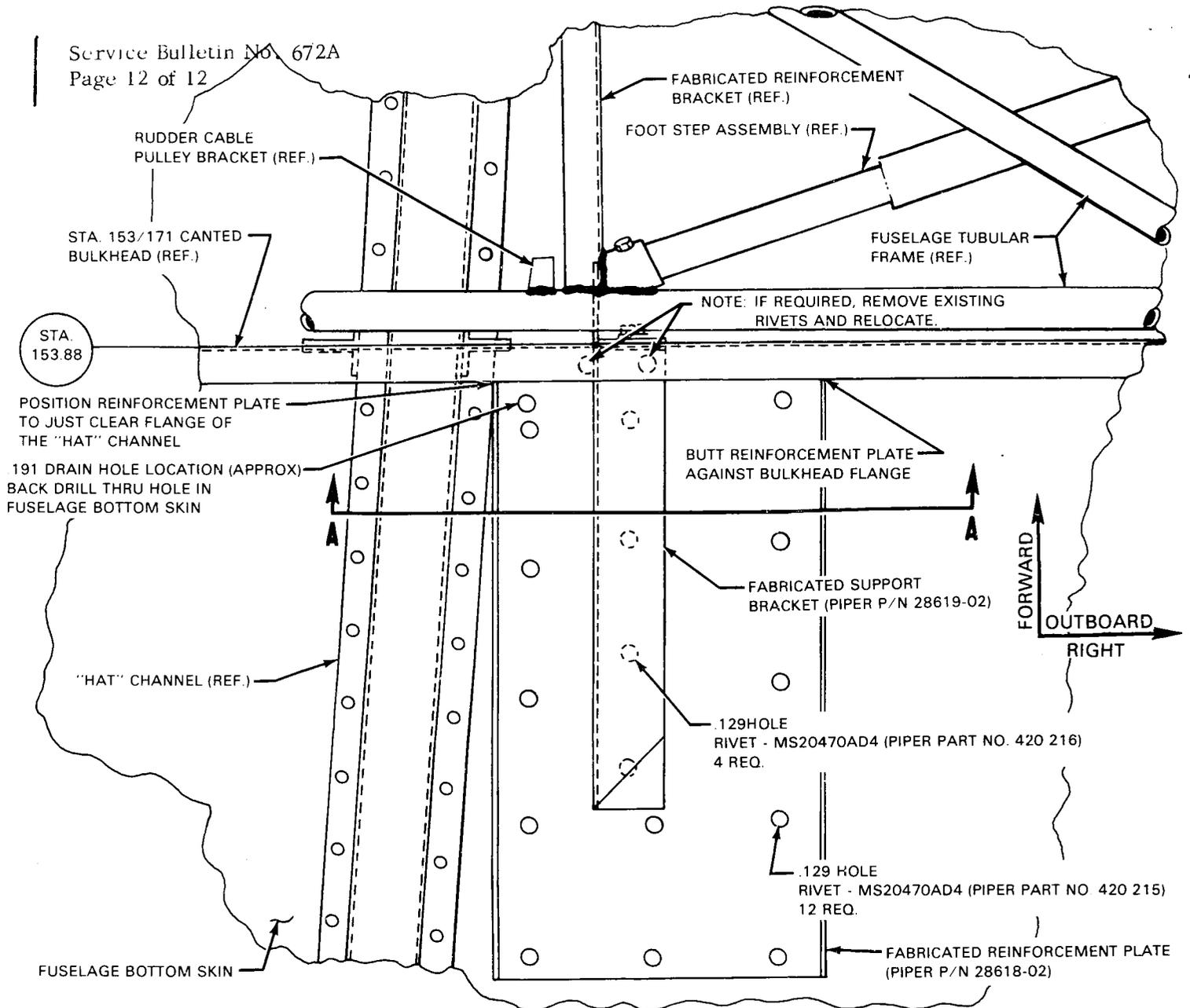
SKETCH "F"



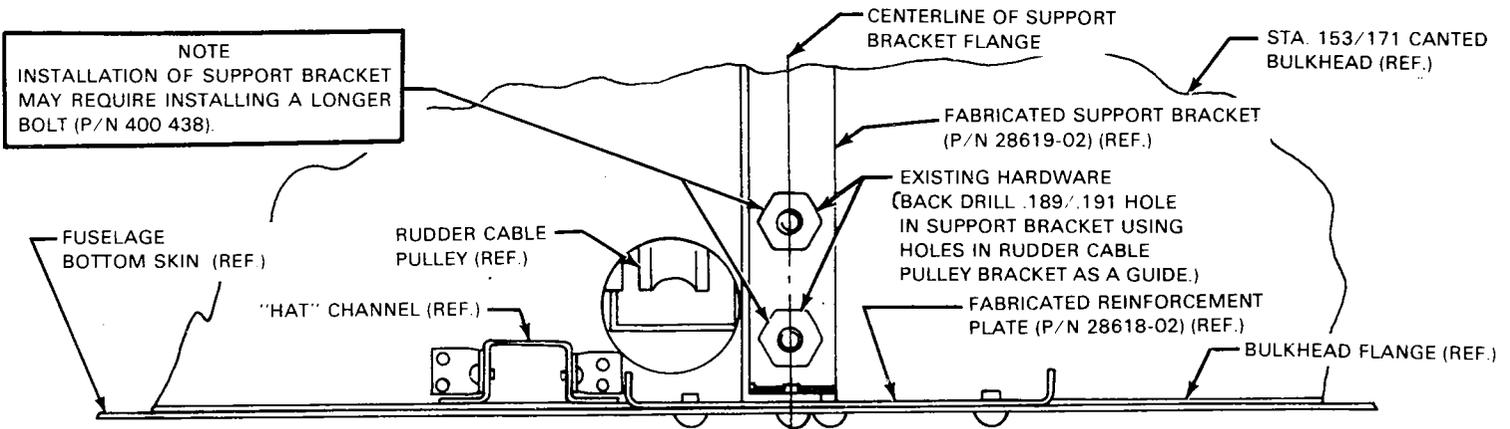
NOTE

1. TO RELIEVE PRESSURE INSIDE TUBING WHEN WELDING, DRILL .125 HOLE IN TUBES AS SHOWN.
2. COVER .125 HOLES WITH A DAMP CLOTH.
3. AFTER WELDING IS COMPLETED, WELD .125 HOLES CLOSED

SKETCH "G"



VIEW LOOKING DOWN AT STA. 153/171 CANTED BULKHEAD



VIEW A-A

VIEW LOOKING FORWARD AT STA. 153/171 CANTED BULKHEAD

SKETCH "H"