CHAPTER

53

FUSELAGE

CHAPTER 53
FUSELAGE

A = Added, R = Revised, O = Overflow, D = Deleted

53-EFFECTIVE PAGES

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53-EFFECTIVE PAGES

Subject/Page	Date	Subject/Page	Date	Subject/Page	Date
53-80-70 ALLOWABLE DAMAGE 1 (cont)					
103	Apr 01/2005				
104	BLANK				
53-80-70 ALLOWABLE DAMAGE 2					
101	Apr 01/2005				
102	Apr 01/2005				
53-80-70 REPAIR 1					
201	Apr 01/2005				
202	Apr 01/2005				
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53-80-71 IDENTIFICATION 1					
1	Apr 01/2005				
2	Apr 01/2005				
53-80-90 IDENTIFICATION 1					
1	Apr 01/2005				
2	Apr 01/2005				
3	Apr 01/2005				
4	BLANK				
53-80-90 IDENTIFICATION 2					
1	Apr 01/2005				
2	BLANK				
53-80-90 REPAIR GENERAL					
201	Apr 01/2005				
202	BLANK				
53-80-90 REPAIR 1					
201	Apr 01/2005				
202	Apr 01/2005				

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CHAPTER 53
FUSELAGE

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FUSELAGE

GENERAL - FUSELAGE

1. General

A. This chapter contains information on identification, allowable damage and repairs to the structural components of the entire fuselage.

B. The term "body" is sometimes used in place of "fuselage" to ensure compatibility with manufacturing drawings. In particular, fore and aft locations on the fuselage are given by "body stations" and spanwise locations by "body buttock lines". Refer to Figure 1/GENERAL for Fuselage Station Diagram. Refer to Figure 2/GENERAL for Fuselage Cross Section Diagram.

C. The pressurized areas of the fuselage are shown in Figure 3/GENERAL.

D. The sealing procedure of structural repairs in the pressurized sections of the fuselage is indicated in 51-20-05.

2. References

Reference	Title
51-20-05	REPAIR SEALING
AMM 05-51-24	Aircraft Maintenance Manual

3. Special Instructions for Repair of Fuselage

A. Leakage tests should be carried out as detailed in AMM 05-51-24 after making the following repairs.

(1) Repairs involving several frames and/or bulkheads and adjacent skin panels.

(2) Repairs or replacement of structure adjacent to main entry doors; cargo doors, emergency hatches.

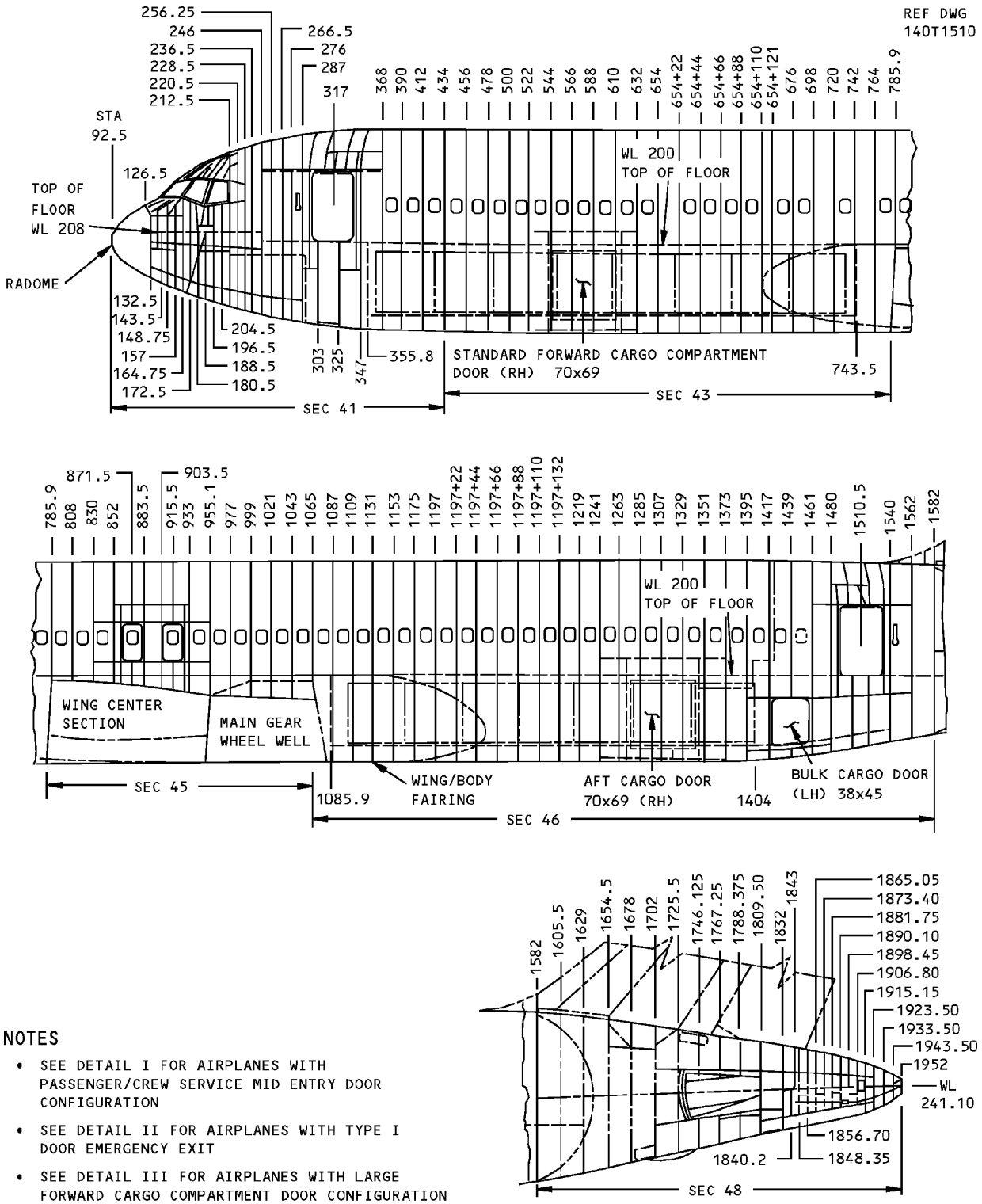
(3) Repairs to main entry doors, cargo doors or emergency hatches.

4. Testing

A. Proof pressure testing of an extensively damaged fuselage after repair is beneficial to the fatigue life of the structure as a pressure vessel.

B. Care in installation and sealing when carrying out repairs or replacements in the pressurized region of the fuselage will minimize the risk of leaks. Normally a check for excessive leakage rates may be made during flight test after repair.

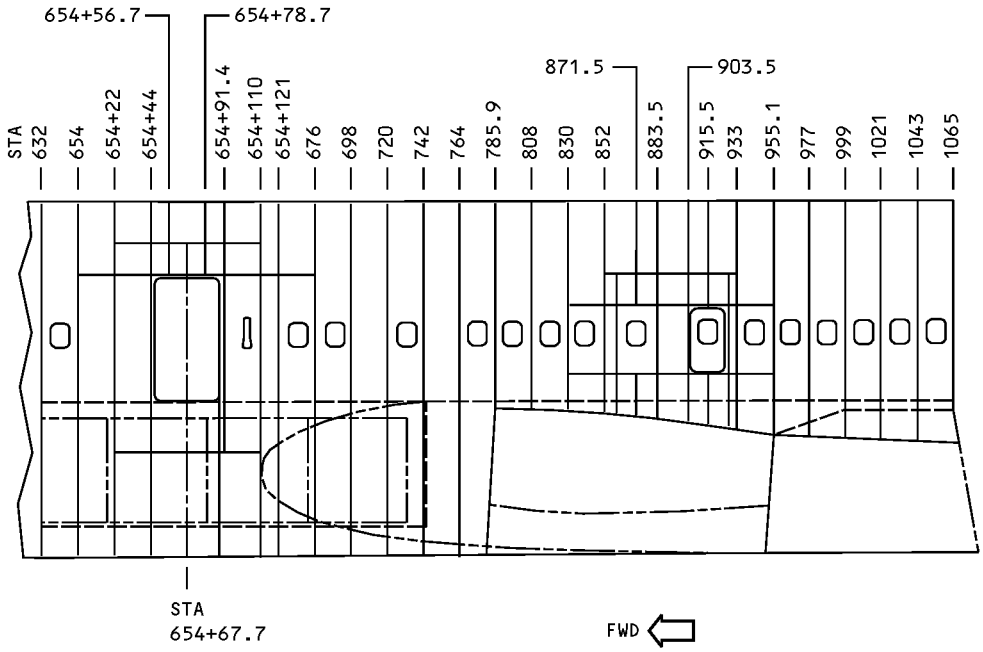
C. Where excessive leakage rates occur or where it is desired to make a leakage test on the ground, reference should be made to AMM 05-51-24.



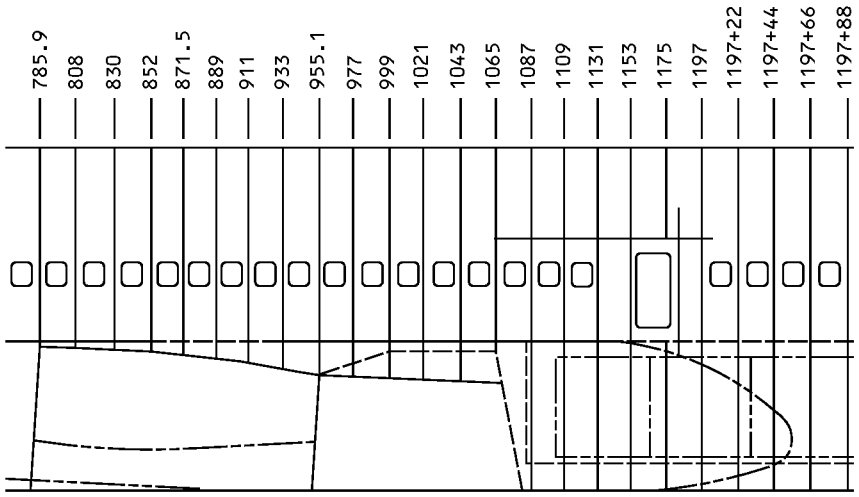
NOTES

- SEE DETAIL I FOR AIRPLANES WITH PASSENGER/CREW SERVICE MID ENTRY DOOR CONFIGURATION
- SEE DETAIL II FOR AIRPLANES WITH TYPE I DOOR EMERGENCY EXIT
- SEE DETAIL III FOR AIRPLANES WITH LARGE FORWARD CARGO COMPARTMENT DOOR CONFIGURATION

Fuselage Station Diagram
Figure 1 (Sheet 1 of 3)

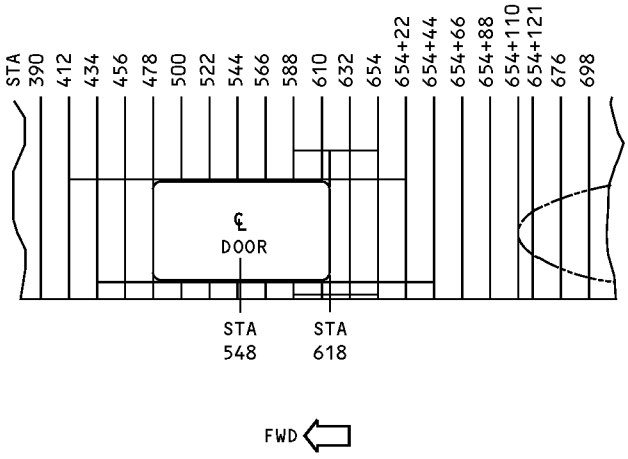


PASSENGER/CREW SERVICE MID ENTRY DOOR CONFIGURATION
DETAIL I



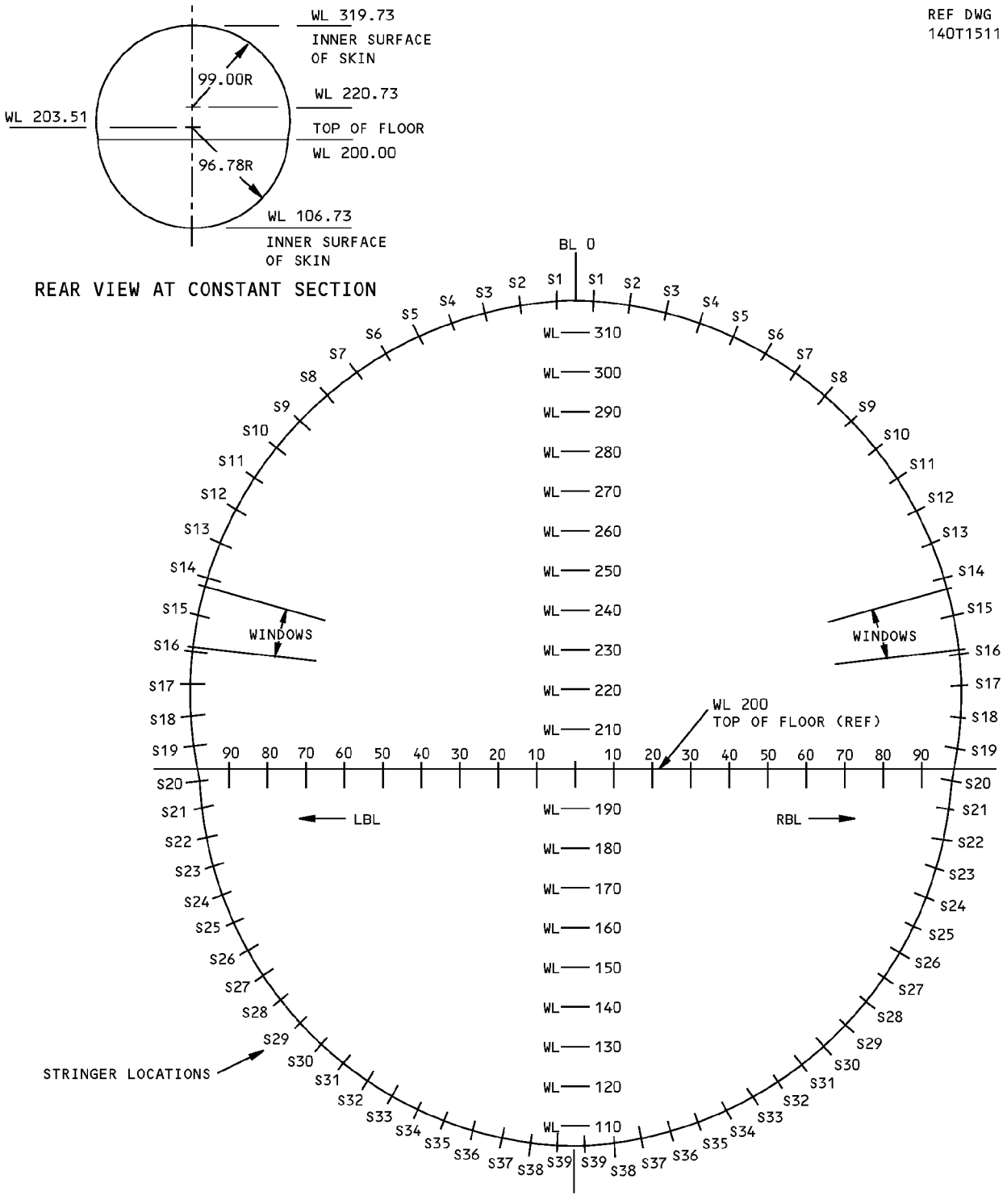
TYPE 1 DOOR EMERGENCY EXIT CONFIGURATION
DETAIL II

Fuselage Station Diagram
Figure 1 (Sheet 2 of 3)

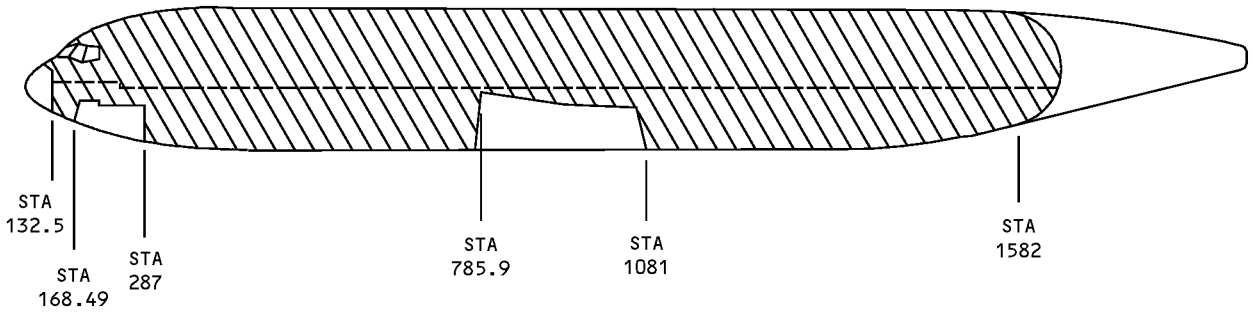


LEFT SIDE VIEW OF RIGHT SIDE
LARGE FORWARD CARGO COMPARTMENT DOOR (134 X 69)
DETAIL III

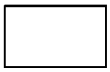
Fuselage Station Diagram
Figure 1 (Sheet 3 of 3)



Fuselage Cross Section Diagram
Figure 2



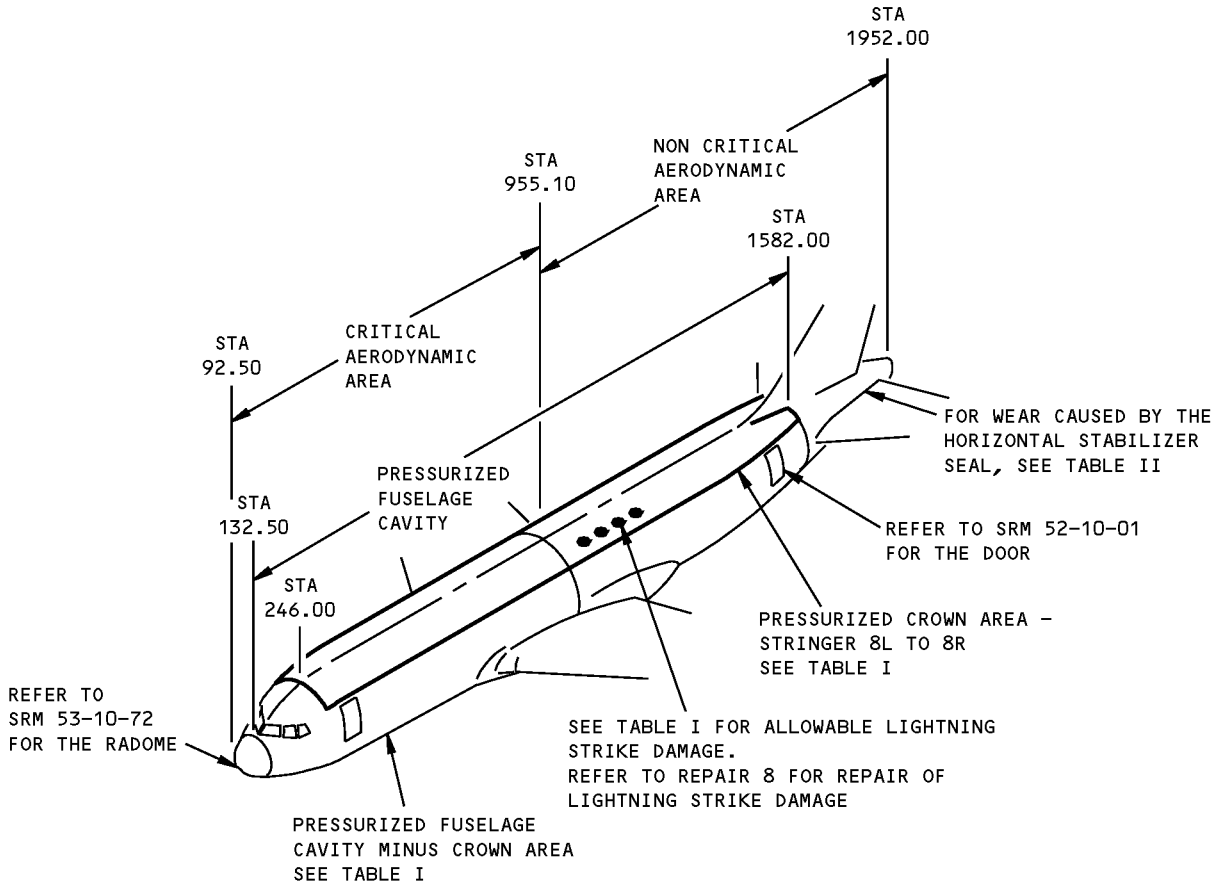

PRESSURIZED AREA


UNPRESSURIZED AREA

Pressurized Area Diagram
Figure 3

ALLOWABLE DAMAGE 1 - FUSELAGE SKIN

REFERENCE DRAWING
140T1530



Fuselage Skin Allowable Damage
Figure 101 (Sheet 1 of 17)

AREA	CRACKS [C]	NICKS, GOUGES, SCRATCHES AND CORROSION [C]	DENTS	HOLES [C]	WRINKLES OR BUCKLES	LIGHTNING STRIKES
PRESSURIZED FUSELAGE CAVITY MINUS THE CROWN AREA [K]	FOR EDGE CRACKS SEE DETAIL I [A]. OTHER CRACKS ARE NOT PERMITTED.	FOR EDGE DAMAGE SEE DETAIL I [A]. FOR OTHER DAMAGE SEE DETAIL II [D].	SEE DETAIL III [B] [F] [I]	NOT PERMITTED	[B] [J]	SEE TABLE III
PRESSURIZED FUSELAGE CROWN AREA (S8L–S8R)	FOR EDGE CRACKS SEE DETAIL I [A]. OTHER CRACKS ARE NOT PERMITTED.	FOR EDGE DAMAGE SEE DETAIL I [A]. FOR OTHER DAMAGE SEE DETAIL II [E].	SEE DETAIL III [B] [I]	NOT PERMITTED	[B]	SEE TABLE III
PRESSURIZED FUSELAGE LAP SPLICE AREAS	NOT PERMITTED	SEE DETAIL X	NOT PERMITTED	[P]	NOT PERMITTED	SEE TABLE III
PRESSURIZED FUSELAGE CIRCUMFERENTIAL BUTT JOINT AREAS	NOT PERMITTED	SEE DETAIL XI	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED	SEE TABLE III
PRESSURIZED FUSELAGE SKIN AROUND PERIPHERY OF EXTERNAL DOUBLERS	NOT PERMITTED	SEE DETAIL XII	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED	SEE TABLE III
FUSELAGE FROM STA 1582.00 TO STA 1952.00 [G]	FOR EDGE CRACKS SEE DETAIL I. OTHER CRACKS ARE NOT PERMITTED.	FOR EDGE DAMAGE SEE DETAIL I. FOR OTHER DAMAGE SEE DETAIL II [D].	SEE DETAIL III [B] [I]	HOLES CLEANED UP TO 0.25 DIAMETER. PLUG WITH A BACR15BB–D OR MS20470D() RIVET.	[B]	SEE TABLE III

TABLE I

Fuselage Skin Allowable Damage
Figure 101 (Sheet 2 of 17)

APPROXIMATE LOCATION OF WEAR CAUSED BY THE HORIZONTAL STABILIZER SEAL	ALLOWABLE WEAR DEPTH [H]	SKIN GAGE
AFT OF STATION 1725.5, STRINGER 15-22, LEFT AND RIGHT SIDES	0.028 INCH	0.056 INCH
FORWARD OF STATION 1809.5, STRINGER 12, LEFT AND RIGHT SIDES	0.050 INCH	0.140 INCH
AFT OF STATION 1809.5, STRINGER 12, LEFT AND RIGHT SIDES	0.035 INCH	0.100 INCH
AFT OF STATION 1809.5, STRINGER 17, LEFT AND RIGHT SIDES	0.043 INCH	0.100 INCH

TABLE II

1. REQUIRED GENERAL INSPECTIONS
   - DO A DETAIL VISUAL INSPECTION OF THE DAMAGE WITH A MINIMUM OF 10X MAGNIFICATION IN A 3 INCH (75 mm) RADIUS AREA AROUND THE DAMAGE TO MAKE SURE THERE ARE NO CRACKS.
   - DO A GENERAL VISUAL INSPECTION OF THE SKIN WITHIN A 22 INCH (56 cm) RADIUS AROUND THE DAMAGE TO MAKE SURE THERE ARE NO CRACKS OR CORROSION.
   - DO A GENERAL VISUAL INSPECTION OF THE HORIZONTAL STABILIZER AND WING TIPS FOR LIGHTNING STRIKE DAMAGE.
2. FOR LIGHTNING STRIKE DAMAGE AWAY FROM FASTENERS
   - AFTER YOU DO THE GENERAL INSPECTIONS, SEE DETAILS II AND VIII.
   - IF DAMAGE MEETS THE LIMITS OF DETAILS II AND VIII, AND THE DAMAGE CLEANUP IS COMPLETED, THERE ARE NO FLIGHT RESTRICTIONS.
   - IF DAMAGE IS MORE THAN THE LIMITS OF DETAIL II AND VIII, YOU MUST DO THE REPAIR AS GIVEN IN REPAIR 8 BEFORE FURTHER FLIGHT.
3. FOR LIGHTNING STRIKE DAMAGE AT FASTENERS
   - AFTER YOU DO THE GENERAL INSPECTIONS, SEE DETAILS IV THRU VII.
   - A MAXIMUM OF 50 FLIGHT CYCLES IS PERMITTED IF THE DAMAGE MEETS THE LIMITS OF DETAIL IV THRU VII, AND IS A MINIMUM OF 10 INCHES AWAY FROM OTHER REPAIRS. YOU MUST DO THE REPAIR IN REPAIR 8 AT OR BEFORE 50 FLIGHT CYCLES.
   - IF THE DAMAGE IS MORE THAN THE LIMITS GIVEN IN DETAIL IV THRU VII, YOU MUST DO THE REPAIR GIVEN IN REPAIR 8 BEFORE FURTHER FLIGHT.

TABLE III

Fuselage Skin Allowable Damage
Figure 101 (Sheet 3 of 17)

NOTES

- DAMAGE (DETAIL I, II, AND III):
  - THAT OCCURS TO A PRINCIPAL STRUCTURAL ELEMENT (PSE) AS DEFINED IN SRM 51-00-04, AND
  - THAT IS WITHIN THE ALLOWABLE DAMAGE LIMITS OF THE BOEING SRM, DOES NOT HAVE AN EFFECT ON THE DAMAGE TOLERANCE PROPERTIES OF THE PSE. THEREFORE, INITIAL INSPECTION PROGRAMS REMAIN EFFECTIVE.
- DAMAGE (DETAIL X):
  - THE REPAIR IS A CATEGORY A REPAIR FOR ENGINEERING DRAWING NOMINAL SKIN GAGES OF 0.063 INCHES OR GREATER.
  - THE REPAIR IS A CATEGORY B REPAIR FOR ENGINEERING DRAWING NOMINAL SKIN GAGES LESS THAN 0.063 INCHES. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE IV. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR THE REPAIR CATEGORIES AND DEFINITIONS.
- DAMAGE (DETAIL XII):
  - THE REPAIR IS A CATEGORY A REPAIR FOR ENGINEERING DRAWING NOMINAL SKIN GAGES OF 0.063 INCHES OR GREATER.
  - THE REPAIR IS A CATEGORY B REPAIR FOR ENGINEERING DRAWING NOMINAL SKIN GAGES LESS THAN 0.063 INCHES. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE V. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR THE REPAIR CATEGORIES AND DEFINITIONS.
- REFER TO AMM 05-51-19 FOR LIGHTNING STRIKE CONDITIONAL INSPECTION AND MAINTENANCE PRACTICES.
- REFER TO SRM 51-10-02 FOR THE INSPECTION AND REMOVAL OF DAMAGE.
- REFER TO SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL.

[A] EDGE GAPS MUST BE FILLED WITH AERODYNAMIC SMOOTHER AS SPECIFIED IN SRM 51-10-01 FORWARD OF STATION 955.00.

[B] REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS.

[C] REFER TO ALLOWABLE DAMAGE 2 FOR OPERATING LIMITS TO THE FUSELAGE SKIN AFTER DAMAGE CLEANUP.

[D] THE MAXIMUM CROSS SECTIONAL AREA THAT YOU CAN REMOVE, INCLUDING ALL THE INITIAL HOLES, IS NOT MORE THAN 15% OF THE TOTAL CROSS SECTION IN ANY LOCAL AREA.

[E] THE MAXIMUM CROSS SECTIONAL AREA THAT YOU CAN REMOVE, INCLUDING ALL THE INITIAL HOLES, IS NOT MORE THAN 10% OF THE TOTAL CROSS SECTION IN ANY LOCAL AREA.

[F] REFER TO SRM 51-10-01 FOR LIMITATIONS IN THE VICINITY OF THE STATIC PORT.

[G] SEE TABLE II FOR DAMAGE CAUSED BY THE HORIZONTAL STABILIZER.

[H] TO PREVENT MORE DAMAGE CAUSED BY RUBBING FROM THE HORIZONTAL STABILIZER SEAL, REFER TO SRM 53-80-01, REPAIR 1.

[I] IF THE DENT DAMAGE DOES NOT AGREE WITH THE CONDITIONS SPECIFIED IN DETAIL III AND IT IS NOT POSSIBLE TO IMMEDIATELY REPAIR THE DENT, THE AIRPLANE IS PERMITTED TO OPERATE IF YOU:

- MAKE AN INITIAL DETAILED VISUAL INSPECTION OF ALL ADJACENT STRUCTURE IN A 22 INCHES (56 cm) RADIUS. MAKE SURE THERE IS NO DAMAGE TO ANY FRAME, STRINGER, INTERIOR OR EXTERIOR DOUBLER, OR TEAR STRAP. IF THERE IS DAMAGE TO ANY STRUCTURE OTHER THAN THE SKIN, MAKE THE REPAIRS IMMEDIATELY. CONTINUE TO MAKE DETAILED VISUAL INSPECTIONS OF THE DENT EVERY 300 FLIGHT CYCLES TO MAKE SURE THERE ARE NO CRACKS OR CORROSION

  MAKE SURE THE DENT IS SMOOTH AND FREE FROM SHARP CREASES AND GOUGES
- MAKE AN INITIAL HIGH FREQUENCY EDDY CURRENT INSPECTION OF THE DENT AND CONTINUE TO MAKE HIGH FREQUENCY EDDY CURRENT INSPECTIONS EVERY 3000 FLIGHT CYCLES OR STRUCTURAL C CHECK TO MAKE SURE THE SKIN HAS NO CRACKS
- MAKE SURE THERE ARE NO FASTENERS IN THE DENT AREA AND THERE ARE NO SHEARED OR LOOSE FASTENERS ADJACENT TO THE DENT. MAKE SURE THERE ARE NO ELONGATED FASTENER HOLES ADJACENT TO THE DENT
- MAKE SURE THE DENT IS A MINIMUM OF 10.0 INCHES (250 mm) AWAY FROM A SKIN SPLICE OR CUTOUT, OR INITIAL REPAIRS AND DENTS, AND 1.0 INCH (25 mm) AWAY FROM A STRINGER, TEAR STRAP, OR SKIN DOUBLER
- MAKE SURE YOU CAN INSPECT THE DENT. DO NOT FILL THE DENT WITH BODY PUTTY.

DENT DAMAGE THAT IS MORE THAN THE LIMITS IN DETAIL III MUST BE REPAIRED AT THE NEXT SCHEDULED HEAVY MAINTENANCE OR STRUCTURAL 4C CHECK.

Fuselage Skin Allowable Damage
Figure 101 (Sheet 4 of 17)

NOTES (CONTINUED)

[J] IT IS NORMAL TO FIND LIGHT SKIN WRINKLES OR BUCKLING IN THE FUSELAGE, EXCEPT LOCALLY AROUND CUTOUTS.

THE WRINKLES ARE CONSIDERED TO BE NORMAL UNLESS THERE ARE CRACKS, LOOSE OR DAMAGED FASTENERS, SHARP CREASES, OR WRINKLING THAT EXTENDS INTO OR BEYOND FASTENER ROWS. FUSELAGE SKINS WITH CRACKS, LOOSE OR DAMAGED FASTENERS, SHARP CREASES, OR WRINKLING THAT EXTENDS INTO OR BEYOND FASTENER ROWS MUST BE REPAIRED, AND ADJACENT STRUCTURE MUST BE INSPECTED FOR DAMAGE. REFER TO AMM 05-51.

[K] FOR REDUCED VERTICAL SEPARATION MINIMUM (RVSM) CERTIFIED AIRCRAFT, REFER TO SRM 51-10-03, FIGURE 101 FOR LIMITATIONS IN THE VICINITY OF THE PITOT STATIC PROBES.

[L] THE MAXIMUM SIZE OF A DAMAGE GROUP IS A 20 INCH (500 mm) X 20 INCH (500 mm) SQUARE.

[M] DO A HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTION OF THE DAMAGE AREA. REFER TO 767 NDT, PART 6, 53-00-09

[N] DO A HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTION OF THE DAMAGE AREA. REFER TO 767 NDT, PART 6, 51-00-19

[O] NO DAMAGE CLEANOUT IS PERMITTED COMMON TO THE CIRCUMFERENTIAL BUTT SPLICE STRAP, BETWEEN THE SKINS. SOME JOINTS CONTAIN SPLICE AND FAILSAFE STRAPS. NO DAMAGE IS PERMITTED COMMON TO FAILSAFE STRAPS. CONTACT BOEING IF THERE IS DAMAGE.

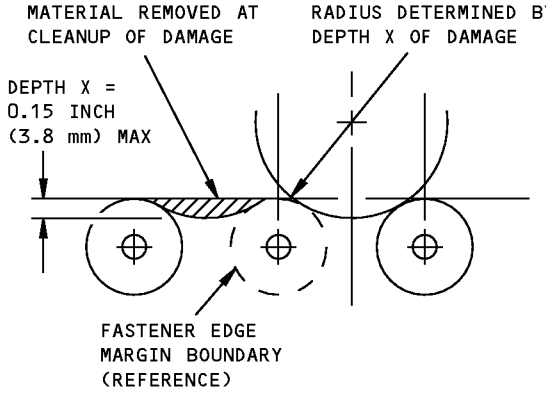
NOTE: FOR DAMAGE OTHER THAN CORROSION, DO THE STEP IN [M] BEFORE CONTACTING BOEING.

THE GAP BETWEEN THE FORWARD AND AFT SKIN EDGES MUST BE GREATER THAN 0.08 INCH (PROBE DIAMETER)

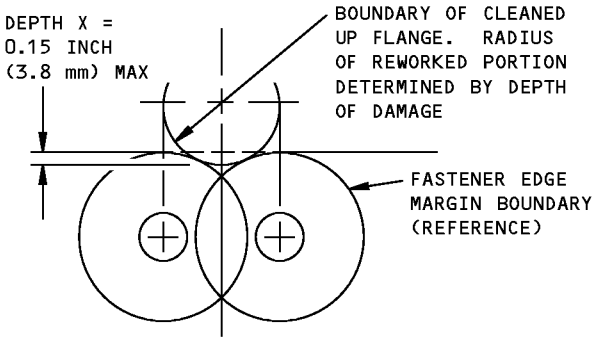
[P] HOLES ARE NOT PERMITTED, EXCEPT DURING INSTALLATION OF THE REPAIRS EQUIVALENT TO REPAIRS 12 AND 13.

[Q] DO AN ULTRASONIC (UT) INSPECTION OF THE DAMAGE AREA. REFER TO 767 NDT, PART 4, 53-00-01.

[R] DAMAGE REMOVAL (BLEND OUT) MUST BE A MINIMUM OF 40 INCHES (101.5cm) FROM THE NEAREST BLEND OUT ADJACENT TO THE SAME DOUBLE EDGE WITHIN ZONE B.



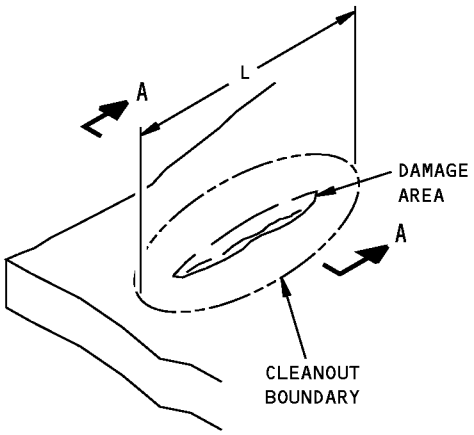
DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

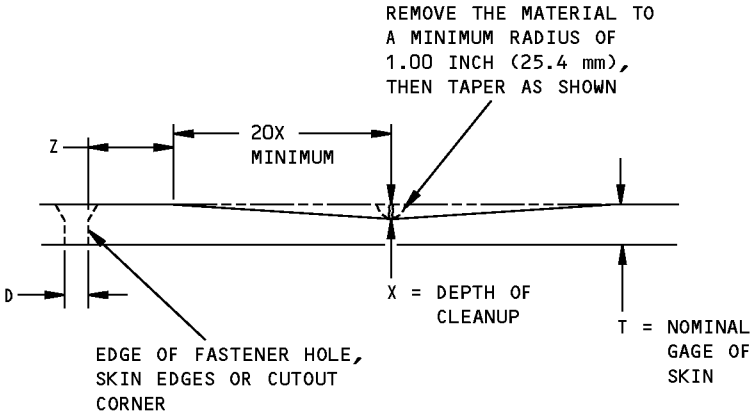


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL I

Fuselage Skin Allowable Damage
Figure 101 (Sheet 5 of 17)





T = NOMINAL GAGE OF PARTS

L = LENGTH OF CLEANOUT

A-A

IF Z IS:

- DISTANCE BETWEEN THE CLEANOUT BOUNDARY AND THE EDGE OF THE INITIAL FASTENER HOLE, THEN Z MUST BE LARGER THAN 2D (Z > 2D)
- DISTANCE BETWEEN THE CLEANOUT BOUNDARY AND THE SKIN EDGE, THEN Z MUST BE LARGER THAN 0.25 INCH (6.4 mm) (Z > 0.25 INCH)
- DISTANCE BETWEEN THE CLEANOUT BOUNDARY AND THE CUTOUT CORNERS MUST BE LARGER THAN 1.0 INCH (25.4 mm) (Z > 1.0 INCH)

FOR CROWN AREA:

XMAX = 10% T, FOR L ≤ 11 INCHES (279 mm)

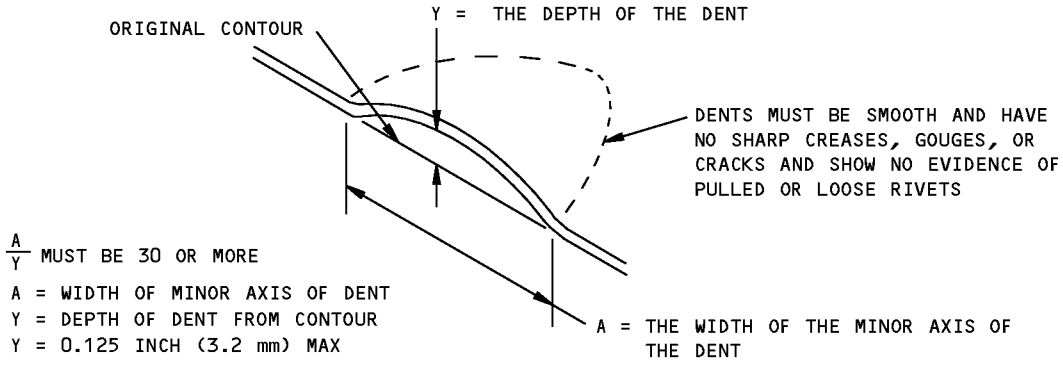
(REFER TO ALLOWABLE DAMAGE 2, CHART AREA A FOR A SMALLER PERCENT T AND LENGTH OF CLEANOUT RESTRICTION)

FOR ALL OTHER AREAS:

XMAX = 15% T, FOR L ≤ 10 INCHES (254 mm)

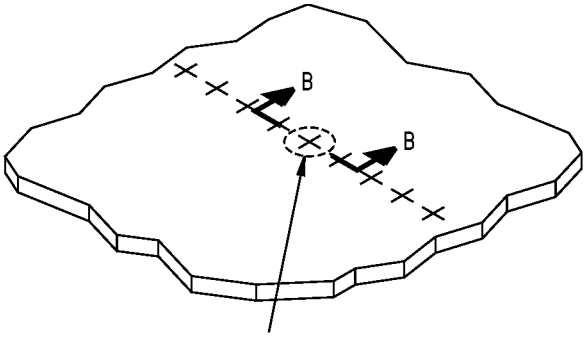
(REFER TO ALLOWABLE DAMAGE 2, CHART AREA A FOR A SMALLER PERCENT T AND LENGTH OF CLEANOUT RESTRICTION)

DETAIL II



DETAIL III

Fuselage Skin Allowable Damage
Figure 101 (Sheet 6 of 17)

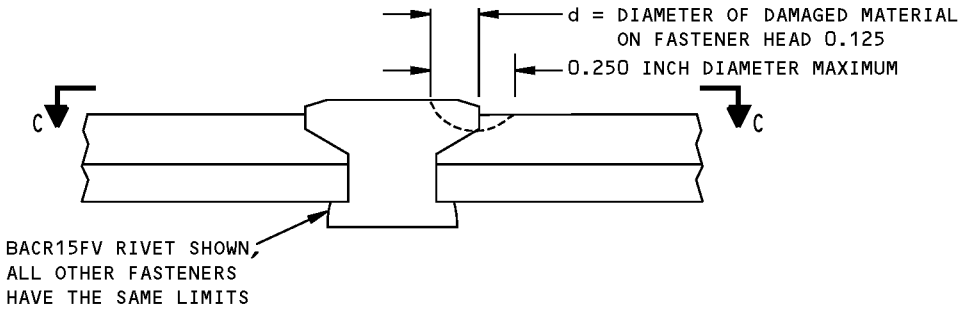


LIGHTNING STRIKE DAMAGE ON FASTENERS IS PERMITTED TO A MAXIMUM DIAMETER OF d IF:

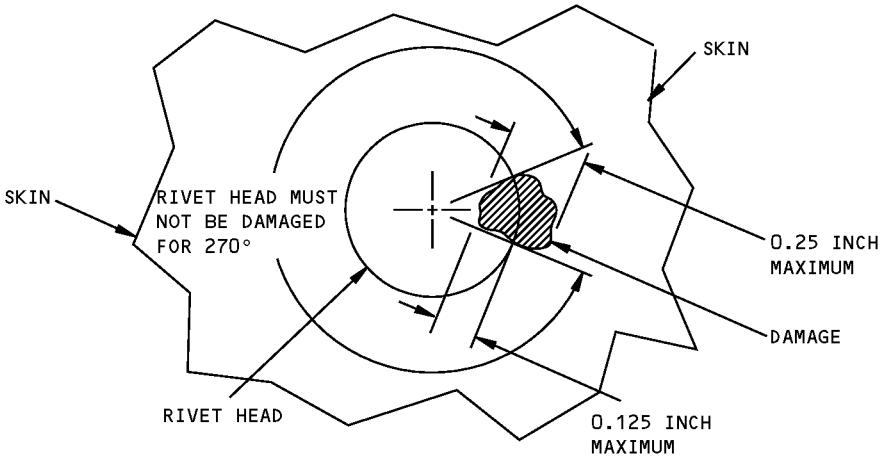
- THE HEADS OF THE DAMAGED FASTENERS ARE ATTACHED CORRECTLY
- THERE ARE NO ADJACENT DAMAGED FASTENERS
- THERE ARE A MAXIMUM OF 2 DAMAGED FASTENERS IN 22 INCHES IN ANY DIRECTION
- THERE IS A MAXIMUM OF 1 DAMAGED FASTENER ON A SHEAR TIE AND IT IS NOT AN END FASTENER

NOTE: DAMAGE TO SKIN ADJACENT TO A FASTENER IS PERMITED AS SHOWN IN VIEWS B-B AND C-C.

LIGHTNING STRIKE DAMAGE ON A FASTENER AWAY FROM AN EDGE, BUTT SPLICE, OR LAP SPLICE
DETAIL IV

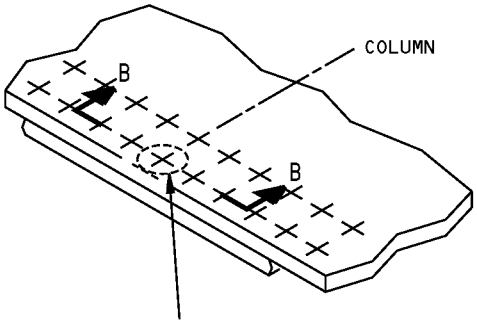


SECTION B-B



VIEW C-C

Fuselage Skin Allowable Damage
Figure 101 (Sheet 7 of 17)

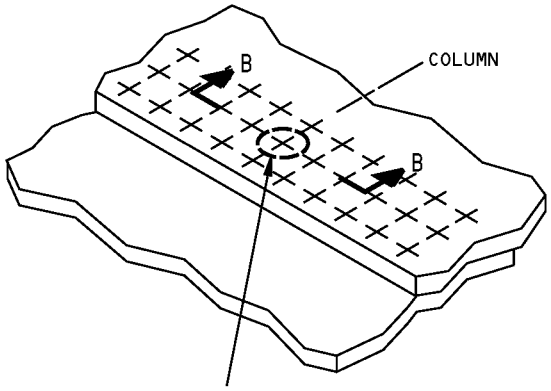


LIGHTNING STRIKE DAMAGE ON FASTENERS IS PERMITTED TO A MAXIMUM DIAMETER OF d IF:

- THE HEADS OF THE DAMAGED FASTENERS ARE ATTACHED CORRECTLY
- THERE ARE NO ADJACENT DAMAGED FASTENERS
- THERE IS A MAXIMUM OF 1 DAMAGED FASTENER IN A SINGLE COLUMN
- THERE IS A MAXIMUM OF 1 DAMAGED FASTENER IN EACH CIRCUMFERENTIAL 7 INCHES
- THERE ARE A MAXIMUM OF 2 DAMAGED FASTENERS IN EACH LONGITUDINAL 22 INCHES

NOTE: DAMAGE TO SKIN ADJACENT TO FASTENERS IS PERMITTED AS SHOWN IN VIEWS B-B AND C-C.

LIGHTNING STRIKE DAMAGE ON A FASTENER AT AN EDGE
THAT IS NOT AT A BUTT SPLICE OR A LAP SPLICE
DETAIL V



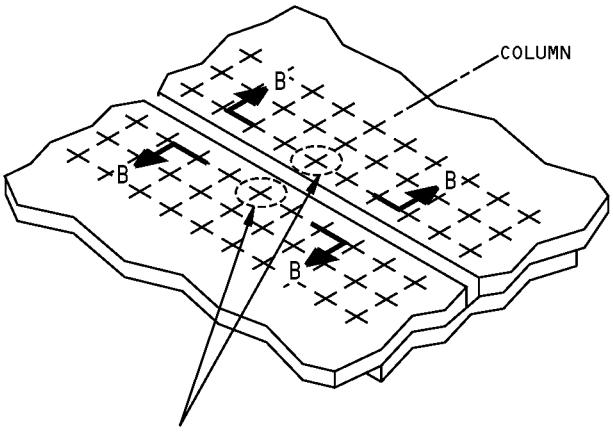
LIGHTNING STRIKE DAMAGE ON FASTENERS IS PERMITTED TO A MAXIMUM DIAMETER OF d IF:

- THE HEADS OF THE DAMAGED FASTENERS ARE ATTACHED CORRECTLY
- THERE ARE NO ADJACENT DAMAGED FASTENERS
- THERE IS A MAXIMUM OF 1 DAMAGED FASTENER IN A SINGLE COLUMN
- THERE ARE A MAXIMUM OF 2 DAMAGED FASTENERS IN 22 INCHES
- THE LAP SPLICE LOCATION HAS A MINIMUM OF 3 ROWS IN THE PRESSURIZED AREA AND A MINMIUM OF 2 ROWS IN THE NON-PRESSURIZED AREA.

NOTE: DAMAGE TO SKIN ADJACENT TO FASTENERS IS PERMITTED AS SHOWN IN VIEWS B-B AND C-C.

LIGHTNING STRIKE DAMAGE ON A FASTENER AT A LAP SPLICE
DETAIL VI

Fuselage Skin Allowable Damage
Figure 101 (Sheet 8 of 17)



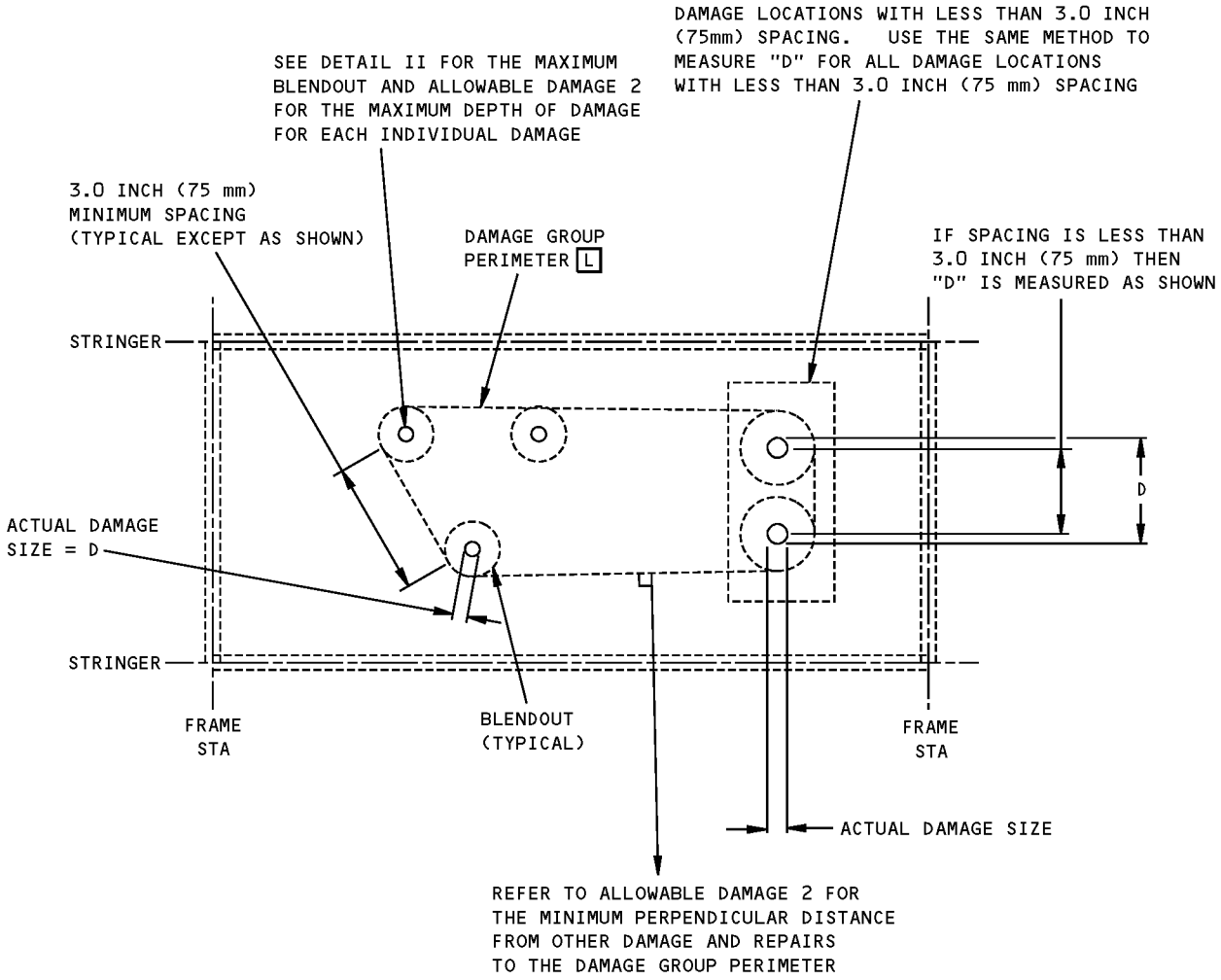
LIGHTNING STRIKE DAMAGE ON FASTENERS IS PERMITTED TO A MAXIMUM DIAMETER OF d IF:

- THE HEADS OF THE DAMAGED FASTENERS ARE ATTACHED CORRECTLY
- THERE ARE NO ADJACENT DAMAGED FASTENERS
- THERE IS A MAXIMUM OF 1 DAMAGED FASTENER IN A SINGLE COLUMN ON EACH SIDE OF THE JOINT
- THERE ARE A MAXIMUM OF 2 DAMAGED FASTENERS IN EACH CIRCUMFERENTIAL 7 INCHES (175 mm)

NOTE: DAMAGE TO SKIN ADJACENT TO FASTENERS IS PERMITTED AS SHOWN IN VIEWS B-B AND C-C.

LIGHTNING STRIKE DAMAGE ON A FASTENER AT A BUTT SPLICE
DETAIL VII

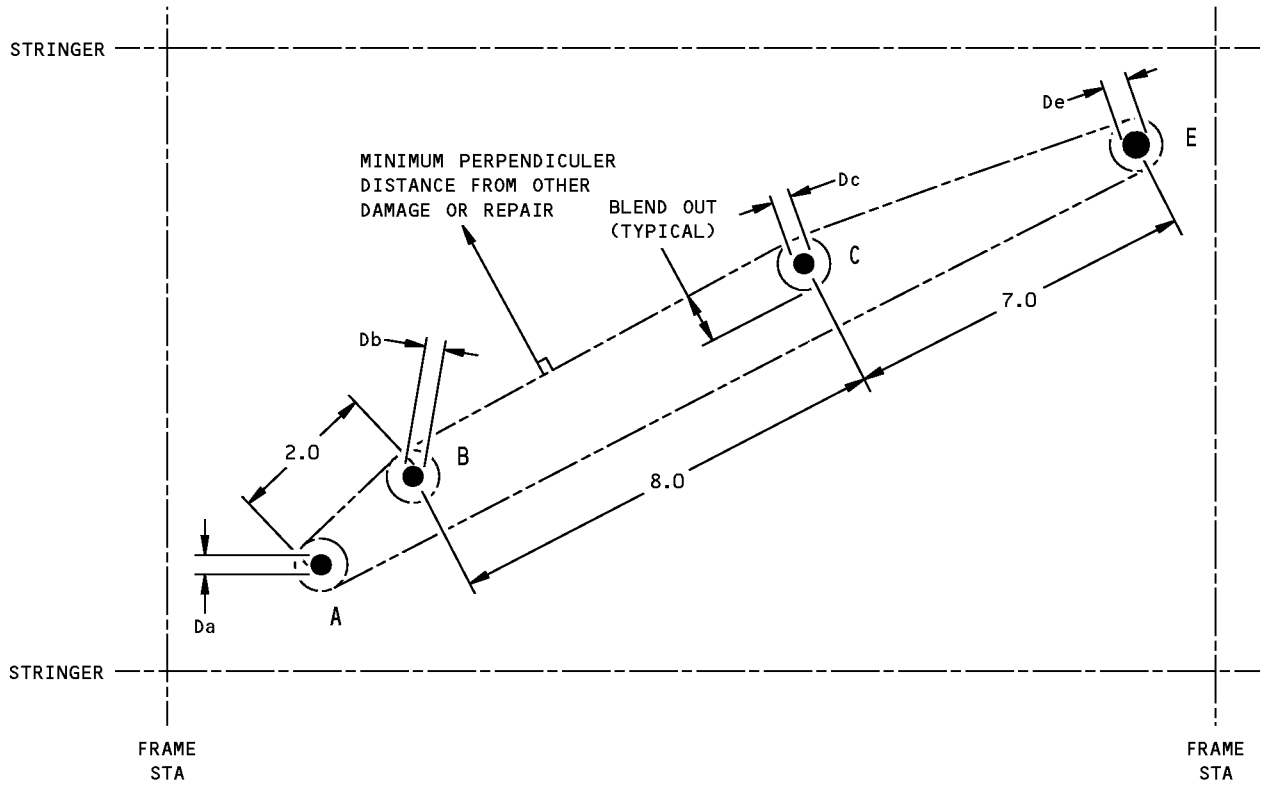
Fuselage Skin Allowable Damage
Figure 101 (Sheet 9 of 17)



NOTE: THE TOTAL DAMAGE LENGTH "L" USED IN ALLOWABLE DAMAGE 2 IS THE SUM OF ALL INDIVIDUAL DAMAGE SIZES (D) WITHIN THE GROUP PERIMETER. SEE DETAIL IX FOR AN EXAMPLE.

ANALYSIS OF LIGHTNING STRIKE WITH MULTIPLE DAMAGE SITES
DETAIL VIII

Fuselage Skin Allowable Damage
Figure 101 (Sheet 10 of 17)



NOTES:

- ALL DIMENSIONS ARE IN INCHES

ASSUMPTIONS:

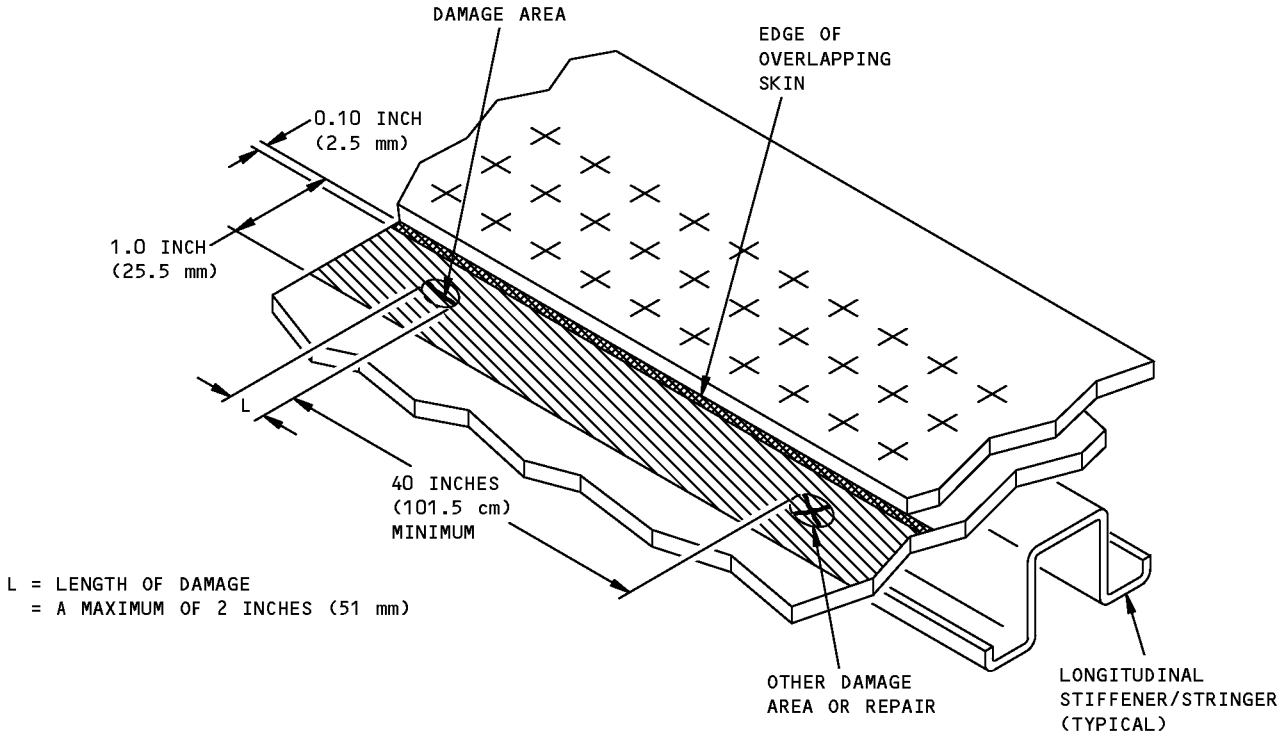
- THERE ARE FOUR DAMAGES, A, B, C, AND E. THE DAMAGES ARE INSPECTED AS GIVEN IN TABLE III, GENERAL INSPECTION. NO CRACKS ARE FOUND.
- THE DAMAGES ARE CLEANED OUT AS GIVEN IN DETAIL II AND ARE WITHIN DETAIL II LIMITS.
- Da = 0.5 Db = 0.6 Dc = 0.25, AND De = 0.70

INSTRUCTIONS:

- PUT TOGETHER DAMAGES A AND B. DISTANCE BETWEEN A AND B IS LESS THAN 3 INCHES. DAMAGE LENGTH(L) IS 2.0 INCHES FOR THESE TWO DAMAGES
- DISTANCE BETWEEN B AND C, AND C AND E IS GREATER THAN 3 INCHES. DAMAGE LENGTH FOR C, IS Dc = 0.25 AND FOR E, IS De = 0.70
- TOTAL LENGTH OF DAMAGE (L) IS : 2.0+0.25+0.70 = 2.95.
- REFER TO ALLOWABLE DAMAGE 2. THIS DAMAGE FALLS IN ZONE A. SEE FLAG NOTE [E]. SINCE 1 < 2.95 < 5, OTHER DAMAGE OR REPAIR MUST BE A MINIMUM OF 44 INCHES AWAY. IF THERE IS NO OTHER DAMAGE OR REPAIRS WITHIN 44 INCHES OF THIS DAMAGE GROUP, THERE ARE NO FLIGHT RESTRICTIONS.

EXAMPLE LENGTH CALCULATION FOR MULTIPLE LIGHTNING STRIKE DAMAGES IN A GROUP
DETAIL IX

Fuselage Skin Allowable Damage
Figure 101 (Sheet 11 of 17)



ZONE A - DAMAGE IN ZONE A IS NOT PERMITTED.
CONTACT BOEING FOR THE ALLOWABLE LIMITS IN THIS AREA.

NOTE: FOR DAMAGE OTHER THAN CORROSION, DO STEPS IN [M] AND [Q] BEFORE CONTACTING THE BOEING COMPANY. REPORT DAMAGE LENGTH, WIDTH, DEPTH, LOCATION, ORIENTATION AND PROXIMITY TO OTHER DAMAGE

ZONE B - DAMAGES IN ZONE B ARE PERMITTED IF:

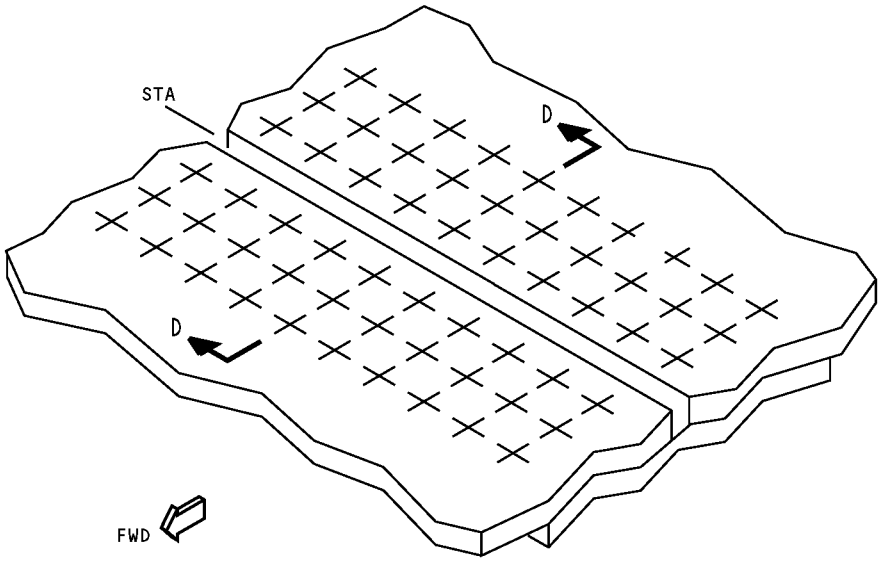
- THE DAMAGE IS 2 INCHES (51 mm) MAXIMUM LONG (L) IN THE LONGITUDINAL DIRECTION. SEE DETAIL II FOR DAMAGE REMOVAL.
- THE DISTANCE BETWEEN A DAMAGE AREA AND THE OTHER DAMAGE OR REPAIR ALONG THE SAME LAP SPLICE IS MORE THAN 40 INCHES (101.5 cm)

NOTE: FOR DAMAGE OTHER THAN CORROSION, DO STEP IN [N] BEFORE CONTACTING BOEING.

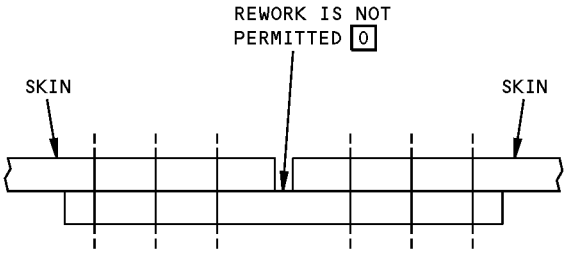
- DAMAGE REMOVAL (BLEND OUT) CAN EXTEND FROM ZONE B INTO ZONE A. IF YOU CANNOT REMOVE THE DAMAGE AS GIVEN IN DETAIL II (WHICH INCULDES THE 20X MINIMUM BLEND RATIO), CONTACT BOEING.
- FILLET SEAL IS NOT PERMITTED TO COVER THE DAMAGE AREA.

DAMAGE AT THE LONGITUDINAL LAP SPLICE
DETAIL X

Fuselage Skin Allowable Damage
Figure 101 (Sheet 12 of 17)

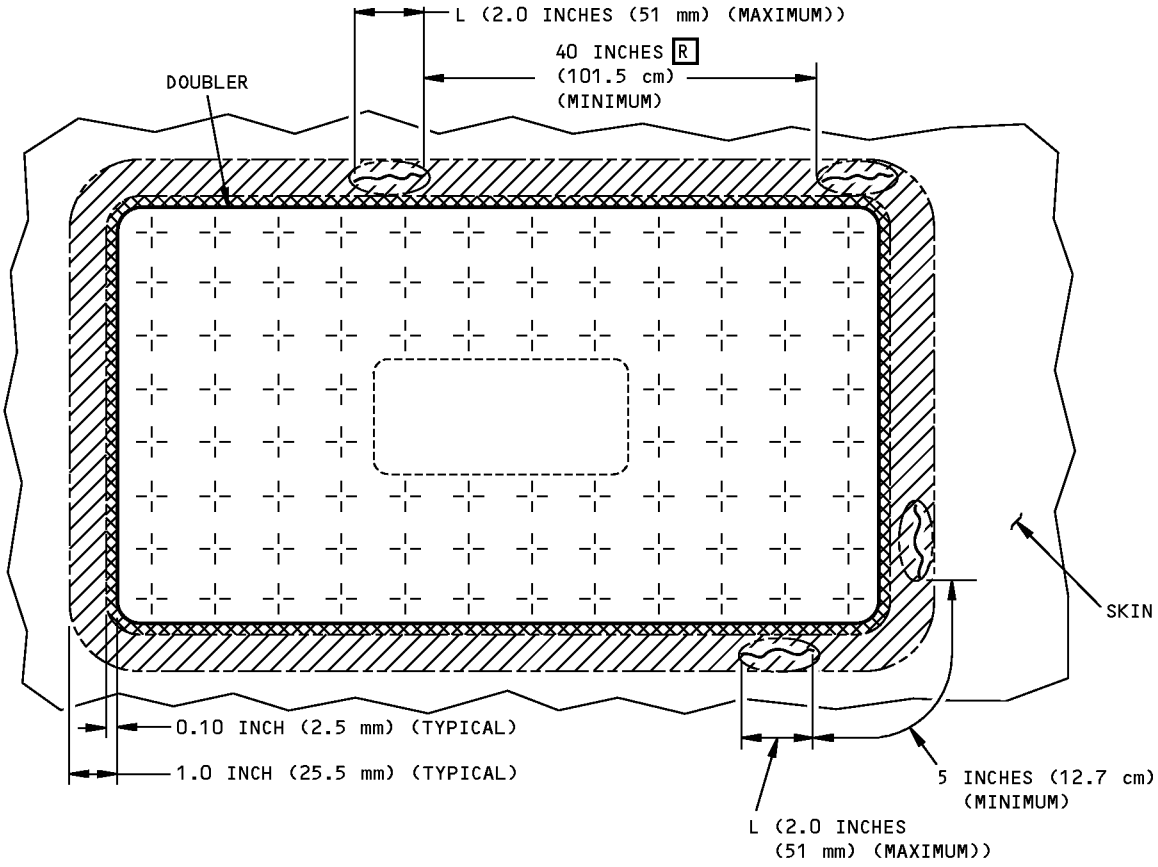


DAMAGE AT THE CIRCUMFERENTIAL BUTT SPLICE
DETAIL XI



D–D

Fuselage Skin Allowable Damage
Figure 101 (Sheet 13 of 17)



ZONE A - DAMAGE IN ZONE A IS NOT PERMITTED.
CONTACT BOEING FOR THE ALLOWABLE LIMITS IN THIS AREA.

NOTE: FOR DAMAGE OTHER THAN CORROSION, DO STEPS IN M AND Q BEFORE CONTACTING BOEING. REPORT DAMAGE LENGTH, WIDTH, DEPTH, LOCATION, ORIENTATION AND PROXIMITY TO OTHER DAMAGE.

ZONE B - DAMAGES IN ZONE B ARE PERMITTED IF:

- THE DAMAGE IS 2 INCHES (51 mm) MAXIMUM LONG (L) IN THE LONGITUDINAL DIRECTION. SEE DETAIL II FOR DAMAGE REMOVAL.
- AREAS OF DAMAGE REMOVAL (BLEND OUT) ON THE SAME EDGE OF THE DOUBLER MUST BE AT LEAST 40 INCHES (101.5 cm) FROM ANY OTHER DAMAGE OR DAMAGE REPAIR.
- AREAS OF DAMAGE REMOVAL (BLEND OUT) ON ADJACENT EDGES OF THE DOUBLER MUST BE AT LEAST 5 INCHES (12.7 cm) FROM ANY OTHER DAMAGE OR DAMAGE REPAIR.

NOTE: FOR DAMAGE OTHER THAN CORROSION, DO STEP IN N BEFORE CONTACTING BOEING.

- DAMAGE REMOVAL (BLEND OUT) CAN EXTEND FROM ZONE B INTO ZONE A. IF YOU CANNOT REMOVE THE DAMAGE AS GIVEN IN DETAIL II (WHICH INCULDES THE 20X MINIMUM BLEND RATIO), CONTACT BOEING.
- FILLET SEAL IS NOT PERMITTED TO COVER THE DAMAGE AREA.

VIEW LOOKING INBOARD

TYPICAL EXTERNAL DOUBLER
DETAIL XII

Fuselage Skin Allowable Damage
Figure 101 (Sheet 14 of 17)

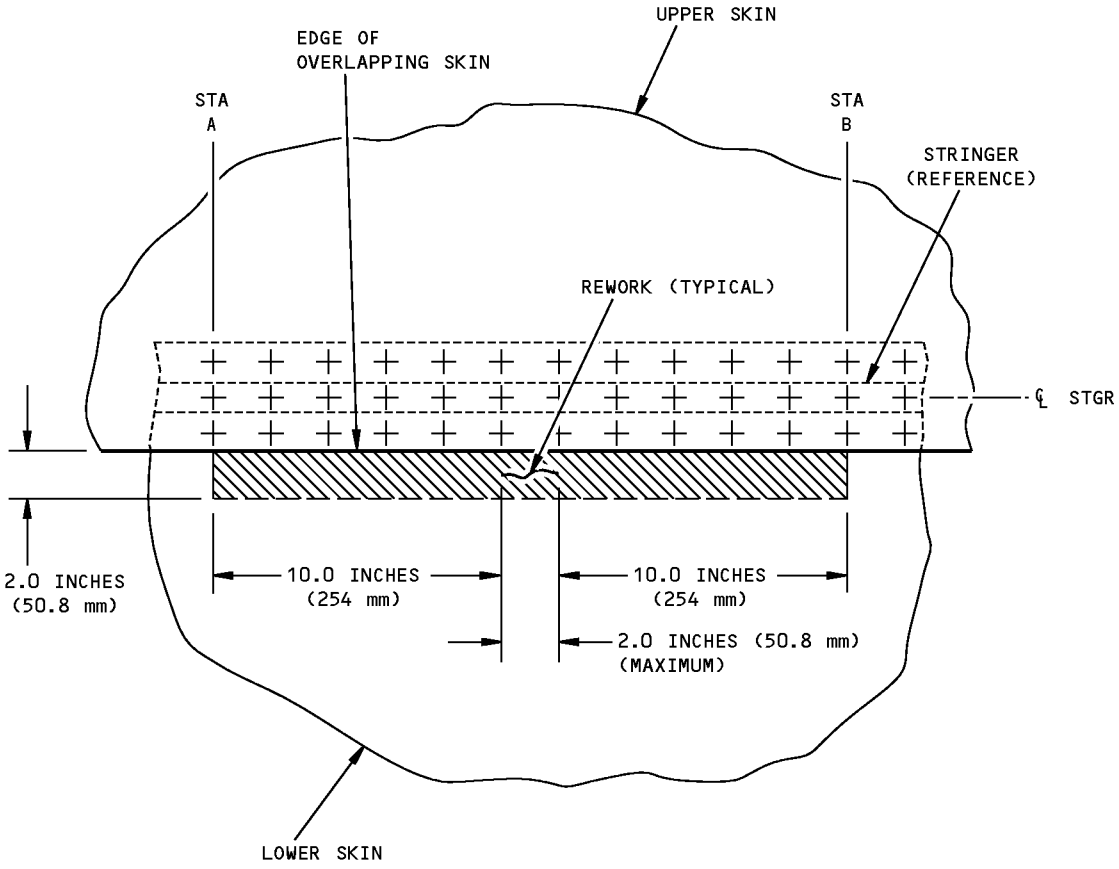
CATEGORY B REPAIR INSPECTION REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTIONS		
	METHOD	INTERVAL	REFERENCE
30,000 FLIGHT CYCLES FROM TIME OF THE REPAIR	EXTERNAL DETAILED INSPECTION	3,000 FLIGHT CYCLES	---
NOTE: DO A DETAILED INSPECTION OF THE DAMAGE BLEND OUT OF THE FUSELAGE SKIN PLUS 10-INCHES OF SKIN FORWARD AND AFT OF THE DAMAGE BLENT OUT AS SHOWN IN DETAIL XIII.			

TABLE IV

CATEGORY B REPAIR INSPECTION REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTIONS		
	METHOD	INTERVAL	REFERENCE
30,000 FLIGHT CYCLES FROM TIME OF THE REPAIR	EXTERNAL DETAILED INSPECTION	3,000 FLIGHT CYCLES	---
NOTE: DO A DETAILED INSPECTION OF THE FUSELAGE SKIN AROUND THE ENTIRE PERIPHERY OF THE REPAIR DOUBLER AS SHOWN IN DETAIL XIV.			

TABLE V

Fuselage Skin Allowable Damage
Figure 101 (Sheet 15 of 17)

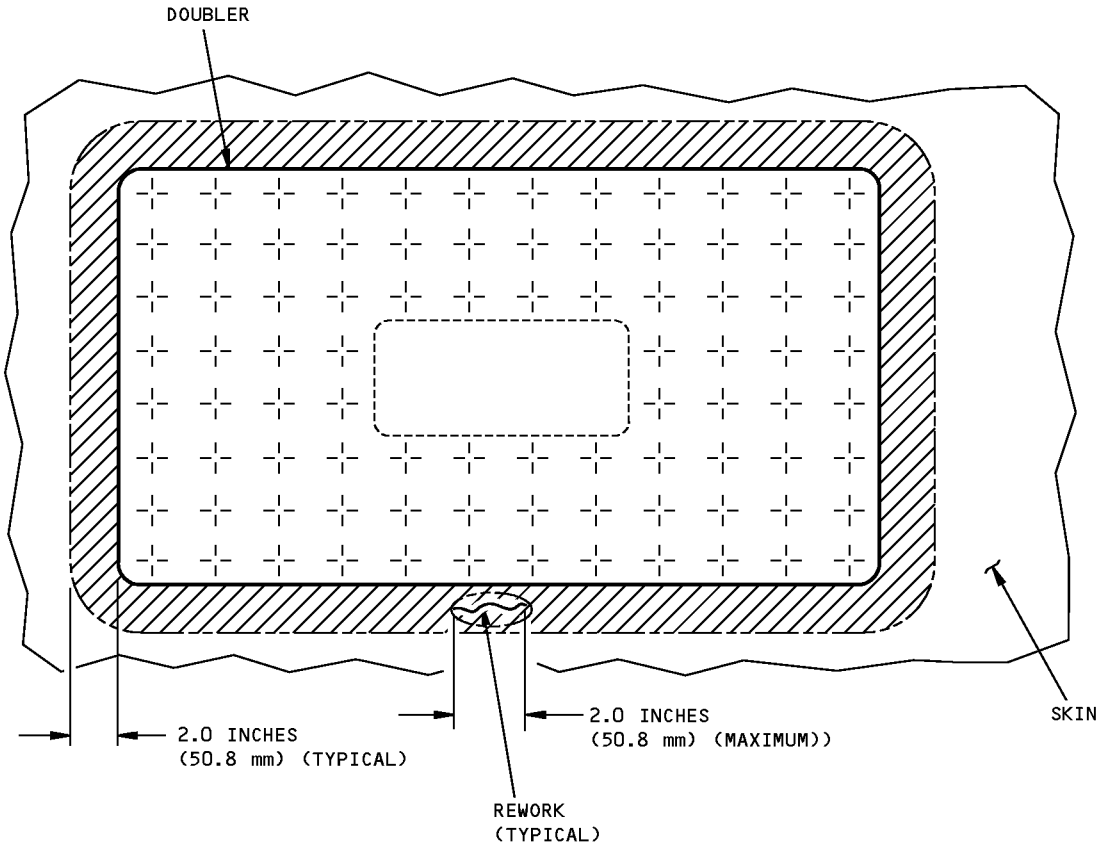


2.0 INCHES (50.8 mm) FROM THE LAP SPLICE EDGE.
DO A DETAILED INSPECTION OF THE FUSELAGE SKIN IN FRAME BAY.

INSPECTION AREA FOR DETAIL X

DETAIL XIII

Fuselage Skin Allowable Damage
Figure 101 (Sheet 16 of 17)



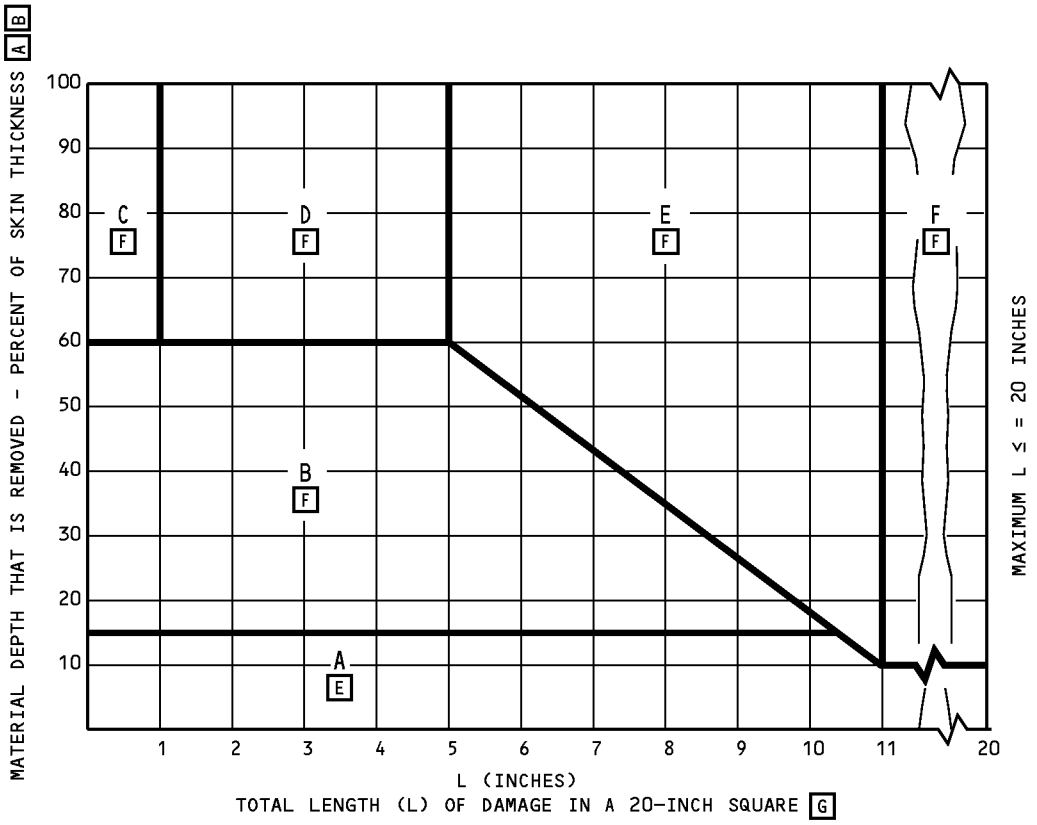
2.0 INCHES (50.8 mm) FROM THE DOUBLER EDGES.
DO A DETAILED INSPECTION OF THE FUSELAGE SKIN.

INSPECTION AREA FOR DETAIL XII

DETAIL XIV

Fuselage Skin Allowable Damage
Figure 101 (Sheet 17 of 17)

ALLOWABLE DAMAGE 2 - OPERATING LIMITS FOR FUSELAGE SKIN



NOTES

[A] THE PERCENT OF SKIN THICKNESS IS CALCULATED FROM THE NOMINAL THICKNESS GIVEN ON THE PRODUCTION DRAWING FOR THE SKIN. DO NOT USE THE "MINIMUM DRAWING THICKNESS" TO CALCULATE THE PERCENT OF SKIN THICKNESS.

[B] DAMAGE INCLUDES HOLES AND PUNCTURES, NICK, GOUGES, SCRATCHES, CORROSION AND CRACKS. DAMAGE DOES NOT INCLUDE DENTS.

[C] CABIN PRESSURE LIMITS ARE FOR SKIN DAMAGE IN THE PRESSURIZED FUSELAGE CAVITY ONLY.

[D] FOR OPERATING LIMITS WHEN DAMAGE IS CAUSED BY LIGHTNING STRIKES AT AND AROUND FASTENERS, SEE FIGURE 101 TABLE III AND DETAIL IV THRU VII.

[E] FOR LIGHTNING STRIKE DAMAGE AWAY FROM FASTENERS IN CHART AREA A (DAMAGE DEPTH LESS THAN OR EQUAL TO 10 PERCENT DEEP IN THE CROWN AREA OR LESS THAN OR EQUAL TO 15 PERCENT DEEP IN OTHER AREAS), OTHER DAMAGE AND REPAIRS MUST BE:

- 22 INCHES (56 cm) AWAY, FOR A DAMAGE OR DAMAGE GROUP WHEN L ≤ 1 INCH (25 mm)
- 44 INCHES (112 cm) AWAY, FOR A DAMAGE OR DAMAGE GROUP WHEN 1 < L ≤ 5 INCHES (25 mm < L ≤ 125mm)
- 66 INCHES (168 cm) AWAY, FOR A DAMAGE OR DAMAGE GROUP WHEN 5 < L ≤ 20 INCHES (125 mm < L ≤ 500mm)

SEE ALLOWABLE DAMAGE 1 DETAIL VIII FOR THE DEFINITION OF A DAMAGE GROUP.

[F] FOR LIGHTNING STRIKE DAMAGE AWAY FROM FASTENERS IN CHART AREAS B, C, D, E, AND F, OTHER DAMAGE AND REPAIRS MUST BE:

- 66 INCHES (168 cm) AWAY, FOR A DAMAGE OR DAMAGE GROUP WHEN L ≤ 20 INCH (L ≤ 500 mm)

SEE ALLOWABLE DAMAGE 1 DETAIL VIII FOR THE DEFINITION OF A DAMAGE GROUP.

[G] MINIMUM 20 INCHES (635 mm) (EDGE-TO-EDGE) BETWEEN ALLOWABLE DAMAGE 1 DETAIL II, ADJACENT DAMAGE CLEANOUT LOCATIONS.

Operating Limits for Fuselage Skin
Figure 101 (Sheet 1 of 2)

CHART AREA	DAMAGE TREATMENT	ALLOWABLE AIRPLANE OPERATIONS
A	CLEAN UP AS SPECIFIED IN ALLOWABLE DAMAGE 1	NO FLIGHT RESTRICTIONS [D]
B	CLEAN UP AS SPECIFIED IN ALLOWABLE DAMAGE 1 TO DAMAGE DEPTH.	LIMITED TO 50 HOURS OF FLIGHT INCLUDING REVENUE FLIGHTS. [D]
	DO AN APPLICABLE REPAIR AS GIVEN IN SRM 53-00-01	REFER TO THE APPLICABLE REPAIR FOR THE LIMITS.
C	CLEAN UP AS SPECIFIED IN ALLOWABLE DAMAGE 1 TO DAMAGE DEPTH. STOP DRILL 0.25 INCH DIAMETER HOLES AT THE ENDS OF CRACKS.	A NON-REVENUE FLIGHT TO A REPAIR STATION IS PERMITTED IF THE APPLICABLE REGULATORY AUTHORITY GIVES APPROVAL BEFORE THE FLIGHT. IT IS RECOMMENDED THAT THE PROPOSED REPAIR PROCEDURE BE PROVIDED TO BOEING. THE MAXIMUM CABIN PRESSURE DIFFERENTIAL LIMIT [C] TO 6.0 PSIG (41.4 KPAG) UNLESS REPAIRED.
	DO AN APPLICABLE REPAIR AS GIVEN IN SRM 53-00-01	REFER TO THE APPLICABLE REPAIR FOR THE LIMITS.
D	CLEAN UP AS SPECIFIED IN ALLOWABLE DAMAGE 1 TO DAMAGE DEPTH. STOP DRILL 0.25 INCH DIAMETER HOLES AT THE ENDS OF CRACKS.	A NON-REVENUE FLIGHT TO A REPAIR STATION IS PERMITTED IF THE APPLICABLE REGULATORY AUTHORITY GIVES APPROVAL BEFORE THE FLIGHT. IT IS RECOMMENDED THAT THE PROPOSED REPAIR PROCEDURE BE PROVIDED TO BOEING. THE MAXIMUM CABIN PRESSURE DIFFERENTIAL LIMIT [C] TO 6.0 PSIG (41.4 KPAG) UNLESS REPAIRED.
	DO AN APPLICABLE REPAIR AS GIVEN IN SRM 53-00-01	REFER TO THE APPLICABLE REPAIR FOR THE LIMITS.
E	CLEAN UP AS SPECIFIED IN ALLOWABLE DAMAGE 1 TO DAMAGE DEPTH. STOP DRILL 0.25 INCH DIAMETER HOLES AT THE ENDS OF CRACKS.	A NON-REVENUE FLIGHT TO A REPAIR STATION IS PERMITTED IF THE APPLICABLE REGULATORY AUTHORITY GIVES APPROVAL BEFORE THE FLIGHT. IT IS RECOMMENDED THAT THE PROPOSED REPAIR PROCEDURE BE PROVIDED TO BOEING. THE MAXIMUM CABIN PRESSURE DIFFERENTIAL LIMIT [C] IS NOT MORE THAN ZERO PSIG.
	DO AN APPLICABLE REPAIR AS GIVEN IN SRM 53-00-01	REFER TO THE APPLICABLE REPAIR FOR THE LIMITS.
F	CLEAN UP AS SPECIFIED IN ALLOWABLE DAMAGE 1 TO DAMAGE DEPTH. STOP DRILL 0.25 INCH DIAMETER HOLES AT THE ENDS OF CRACKS.	OPERATION IS NOT PERMITTED BEFORE BOEING AND THE APPLICABLE REGULATORY AUTHORITY GIVES APPROVAL.
	DO AN APPLICABLE REPAIR AS GIVEN IN SRM 53-00-01	REFER TO THE APPLICABLE REPAIR FOR THE LIMITS.

Operating Limits for Fuselage Skin
Figure 101 (Sheet 2 of 2)

REPAIR 1 - FUSELAGE SKIN - EXTERNAL REPAIR AT A STRINGER

APPLICABILITY

THIS SOLID OR BLIND FASTENER REPAIR IS APPLICABLE TO A SKIN DAMAGE AT A STRINGER IN TWO REPAIR ZONES:

ZONE A - ALL AREAS OF THE FUSELAGE SKIN THAT ARE NOT IN ZONE B

ZONE B - BS 654+110 TO BS 786, S-4L TO S-4R (ABOVE)

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE AT A CIRCUMFERENTIAL BUTT SPLICE
- DAMAGE AT A SKIN LAP-SPLICE
- DAMAGE NEAR THE STATIC PORTS OR ANGLE OF ATTACK SENSORS
- WITHIN 22 INCHES OF AN ADJACENT SKIN (EXTERNAL OR INTERNAL) REPAIR
- WITHIN 22 INCHES FROM THE EDGE OF THE DOOR CUTOUT TO THE NEAREST EDGE OF A REPAIR DOUBLER.
- DAMAGE AT THE WINDOW BELT

REPAIR INSTRUCTIONS

THE EXTERNAL REPAIR AS SHOWN ALLOWS EITHER SOLID FASTENER OR BLIND FASTENER REPAIR. REFER TO THE APPLICABLE REPAIR INSTRUCTIONS.

SOLID FASTENER REPAIR

CAUTION: IF ACOUSTIC TILES ARE FOUND DURING THE FUSELAGE SKIN REPAIR, REMOVE THESE TILES BEFORE YOU DO THIS REPAIR.

1. Get access to the damaged area.
2. Remove the necessary fasteners in the area of the damaged skin.

CAUTION: DO NOT GOUGE, SCRATCH, OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR.

3. Carefully cut and remove the damaged part of the fuselage skin.
   A. Make the cut a rectangular shape with the sides either parallel or perpendicular to the stringers.
   B. Use caution so you do not cut or cause damage to the stringers. If the stringer is damaged, repair as shown in SRM 53-00-03.
   C. Make the corner radii of the cutout a minimum of 0.5 inch.
   D. Make the edges of the cut smooth with a surface finish of 125 microinches Ra.
4. Do a High Frequency Eddy Current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-00-01. Repeat steps 3 and 4 if all of the damage was not removed.
5. Make the repair parts. See Table I.
6. Assemble the repair parts as shown in Detail I or II and drill the fastener holes. Refer to SRM 51-40-05 for the fastener hole size. Do not drill the fastener holes near a chem-milled or machined radius. If you must drill a fastener hole near a chem-milled or machined radius, shift the location to prevent the hole or fastener from interfering with the radius or use a radius filler. Use a drill microstop to prevent damage to the parts on the other side of the skin such as stringer, frame etc. Set the drill microstop to come out a maximum of 0.060 inch on the other side.
7. Disassemble the repair parts.
8. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
9. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
10. Apply two layers of BMS 10-11, Type I primer to the internal surfaces of the repair parts and to the bare internal surfaces of the initial parts. Refer to SOPM 20-41-02.
11. Apply one layer of BMS 10-79, Type II or III primer to the external surfaces of the repair parts and to the bare external surfaces of the initial parts. Refer to SOPM 20-44-04.
12. Install the repair parts wet with BMS 5-95 sealant between mating surfaces.
13. Install the fasteners as given in Table II. [A] Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant. Overdrive BACR15FV( )KE rivets to make the driven head 1.5D. Use a countersink repair washer to fill any initial countersink in the skin. Refer to SRM 51-40-08.
14. Apply a fillet seal to the repair parts on the external edges of the repair area. Refer to SRM 51-20-05.
15. Apply a layer of BMS 3-23 corrosion inhibiting compound to the internal structure of the repair area if the repair is below the main passenger floor. Refer to SRM 51-20-01.
16. Apply the decorative finish to the repair area. Refer to AMM 51-21.
17. Replace the acoustic tiles if necessary.

Fuselage Skin - External Repair at a Stringer
Figure 201 (Sheet 1 of 11)

BLIND FASTENER REPAIR

NOTE: Refer to the general notes for fastener spacing and inspection requirements before you make a blind fastener repair. Blind fastener repairs are limited to areas in which the skin thickness is equal to or less than 0.125 inch and to areas in which all initial (existing) fasteners are equal to or less than 6/32-inch diameter.

CAUTION: IF ACOUSTIC TILES ARE FOUND DURING THE FUSELAGE SKIN REPAIR, BE CAREFUL NOT TO DAMAGE THESE TILES.

1. Get access to the damaged area.
2. Remove the necessary fasteners in the area of the damaged skin.

CAUTION: DO NOT GOUGE, SCRATCH, OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR.

3. Carefully cut and remove the damaged part of the fuselage skin.
   A. Make the cut a rectangular shape with the sides either parallel or perpendicular to the stringers.
   B. Use caution so you do not cut or cause damage to the stringer. If the stringer is damaged, repair as shown in SRM 53-00-03.
   C. Make the corner radii of the cutout a minimum of 0.5 inch.
   D. Make the edges of the cut smooth with a surface finish of 125 microinches Ra.
4. Do a High Frequency Eddy Current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-00-01. Repeat steps 3 and 4 if all of the damage was not removed.
5. Make the repair parts. See Table I.
6. Assemble the repair parts as shown in Detail I and drill the fastener holes. Refer to SRM 51-40-05 for the fastener hole size. Do not drill the fastener holes near a chem-milled or machined radius. If you must drill a fastener hole near a chem-milled or machined radius, shift the location to prevent the hole or fastener from interfering with the radius or use a radius filler. Use a drill microstop to prevent damage to the parts on the other side of the skin such as stringer, frame etc. Set the drill microstop to come out a maximum of 0.060 inch on the other side.
7. Disassemble the repair parts.
8. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
9. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
10. Apply two layers of BMS 10-11, Type I primer to the internal surfaces of the repair parts and to the bare internal surfaces of the initial parts. Refer to SOPM 20-41-02.
11. Apply one layer of BMS 10-79, Type II or III primer to the external surfaces of the repair parts and to the bare external surfaces of the initial parts. Refer to SOPM 20-44-04.
12. Install the repair parts wet with BMS 5-95 sealant between mating surfaces.
13. Install the fasteners as given in Table III. [A] Install the fasteners wet with BMS 5-95 sealant. Use a countersink repair washer to fill any initial countersink in the skin. Refer to SRM 51-40-08.
14. Apply a fillet seal to the repair parts on the internal and external edges of the repair area. Refer to SRM 51-20-05.
15. Apply a layer of BMS 3-23 corrosion inhibiting compound to the internal structure of the repair area if the repair is below the main passenger floor. Refer to SRM 51-20-01.
16. Apply the decorative finish to the repair area. Refer to AMM 51-21.
17. Replace the acoustic tiles if necessary.

NOTES

- THE SOLID FASTENER REPAIR IS CATEGORY B. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE V OR TABLE VI AS APPLICABLE. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR THE REPAIR CATEGORIES AND DEFINITIONS.

NOTE: THE CRITICAL FASTENER ROW MUST BE VISUALLY INSPECTABLE INTERNALLY AND MUST NOT BE OBSTRUCTED BY A STRINGER, FRAME, TEARSTRAP, ETC.

Fuselage Skin - External Repair at a Stringer
Figure 201 (Sheet 2 of 11)

NOTES (Cont.)

- THE BLIND FASTENER REPAIR IS CATEGORY C. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE INSPECTIONS GIVEN IN TABLE VII. INSPECT FOR SIGNS OF LOOSE OR MISSING FASTENERS. THIS REPAIR MUST BE REPLACED BY A SOLID FASTENER REPAIR WITHIN THE NEXT 3000 FLIGHT CYCLES.

NOTE: WHEN A BLIND FASTENER IS REPLACED BY A SOLID FASTENER, USE THE SOLID FASTENERS SPECIFIED IN TABLE II EXCEPT THAT THE SOLID FASTENER MUST BE A MINIMUM OF 1/32-INCH LARGER IN DIAMETER THAN THE NOMINAL SIZE OF THE BLIND FASTENER BEING REPLACED.

- BLIND FASTENER REPAIRS SHOULD NOT BE USED UNLESS YOU CAN ENSURE THAT THEY ARE SEATED CORRECTLY ON THE INTERNAL STRUCTURE AND YOU CAN KEEP THE CORRECT FASTENER SPACING AND EDGE MARGIN.
- DO NOT END THE REPAIR DOUBLER ON A STRINGER OR OTHER INTERNAL STRUCTURE. INSTEAD, ADD AN ADDITIONAL FASTENER ROW TO HAVE BETTER INTERNAL INSPECTABILITY AND REPAIR DURABILITY.
- D = FASTENER DIAMETER
- THE MAXIMUM PULL-UP PERMITTED PRIOR TO FASTENER INSTALLATION IS 0.005 INCH (0.13 mm).
- MAINTAIN A MINIMUM OF 2D EDGE MARGIN ON ALL REPAIR PARTS.
- FOR SOLID FASTENER REPAIRS, ENSURE THAT THERE ARE NO KNIFE EDGE CONDITIONS IN THE DOUBLER BEFORE DRILLING THE FASTENER HOLES. IF THE COUNTERSINK DEPTH IS GREATER THAN 2/3 OF THE SHEET THICKNESS, INSTALL A PROTRUDING HEAD FASTENER.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR DECORATIVE EXTERIOR FINISHES, CLEANING AND PAINTING
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILE
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SOPM 20-44-04 FOR APPLICATION OF URETHANE COMPATIBLE PRIMERS
  - SRM 51-00-06 FOR DEFINITION OF REPAIR CATEGORIES
  - SRM 51-10-02 FOR THE INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS.
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR SEALING PROCEDURES AND ALTERNATE SEALANTS
  - SRM 51-20-08 FOR INSTALLATION OF SHIMS
  - SRM 51-40-02 FOR FASTENER INSTALLATION AND REMOVAL
  - SRM 51-40-03 FOR FASTENER SUBSTITUTIONS
  - SRM 51-40-05 FOR FASTENER HOLE SIZES
  - SRM 51-40-06 FOR FASTENER EDGE MARGINS
  - SRM 51-40-08 FOR COUNTERSINK REPAIR WASHERS

[A] DO NOT INSTALL FASTENERS THROUGH ACOUSTIC TILES.

[B] USE BACR15CE5D RIVETS FOR SKIN REPAIRS IN SECTIONS 41 AND 48. USE BACR15FV5KE RIVETS FOR SKIN REPAIRS IN SECTIONS 43, 45, AND 46.

[C] USE BACR15CE6D RIVETS FOR SKIN REPAIRS IN SECTIONS 41 AND 48. USE BACR15FV6KE RIVETS FOR SKIN REPAIRS IN SECTIONS 43, 45, AND 46.

[D] USE BACR15CE8D RIVETS FOR SKIN REPAIRS IN SECTIONS 41 AND 48. USE BACR15FV8KE RIVETS FOR SKIN REPAIRS IN SECTIONS 43, 45 AND 46.

[E] USE BACB30NW6K() HEX-DRIVE BOLTS WITH BACC30M6 COLLARS.

[F] USE BACB30NW8K() HEX-DRIVE BOLTS WITH BACC30M8 COLLARS.

[G] THE USE OF TWO DOUBLERS IS RECOMMENDED WHEN THE TRIMMED SKIN THICKNESS IS GREATER THAN 0.112 INCH. REFER TO DETAIL II.

[H] FOR A REPAIR REQUIRING THE USE OF 2 DOUBLERS, USE THE FOLLOWING STEPS TO FIND THE APPROPRIATE THICKNESS FOR THE DOUBLERS.

1. FIND THE MINIMUM TOTAL COMBINED THICKNESS OF THE PART 1 AND 2 DOUBLER
   - A. MEASURE THE MAXIMUM THICKNESS OF THE MATERIAL THAT WAS REMOVED FROM THE INITIAL SKIN.
   - B. THE TOTAL COMBINED THICKNESS OF THE PART 1 AND 2 DOUBLERS MUST BE A MINIMUM OF ONE GAGE HIGHER THAN THE TRIMMED SKIN THICKNESS.

Fuselage Skin - External Repair at a Stringer
Figure 201 (Sheet 3 of 11)

NOTES (Cont.)

2. FIND THE THICKNESS OF THE PART 1 DOUBLER.

   IF THE REPAIR FASTENERS ARE BACB30NW6K() HEX DRIVE BOLTS:

   A. DIVIDE THE MINIMUM TOTAL COMBINED THICKNESS BY TWO TO GET THE MINIMUM THICKNESS OF THE PART 1 DOUBLER. IF THE CALCULATED VALUE IS LESS THAN 0.071 INCH, USE 0.071 INCH AS THE MINIMUM THICKNESS OF THE PART 1 DOUBLER.

   B. IF THE CALCULATED VALUE IS LARGER THAN 0.071 INCH, THE THICKNESS OF THE PART 1 DOUBLER IS THE SUBSEQUENT THICKER GAGE LISTED IN TABLE IV. YOU CAN USE THE CALCULATED VALUE THICKNESS IF IT IS EQUAL TO A GAGE LISTED IN TABLE IV.

   IF THE REPAIR FASTENERS ARE BACB30NW8K() HEX DRIVE BOLTS:

   C. DIVIDE THE MINIMUM TOTAL COMBINED THICKNESS BY TWO TO GET THE MINIMUM THICKNESS OF THE PART 1 DOUBLER. IF THE CALCULATED VALUE IS LESS THAN 0.090 INCH, USE 0.090 INCH AS THE MINIMUM THICKNESS OF THE PART 1 DOUBLER.

   D. IF THE CALCULATED VALUE IS LARGER THAN 0.090 INCH, THE THICKNESS OF THE PART 1 DOUBLER IS THE SUBSEQUENT THICKER GAGE LISTED IN TABLE IV. YOU CAN USE THE CALCULATED VALUE THICKNESS IF IT IS EQUAL TO A GAGE LISTED IN TABLE IV.

3. FIND THE THICKNESS OF THE PART 2 DOUBLER.

   IF THE REPAIR FASTENERS ARE BACB30NW6K() HEX DRIVE BOLTS:

   A. SUBTRACT THE PART 1 DOUBLER THICKNESS DETERMINED IN STEP 2 FROM THE MINIMUM TOTAL COMBINED THICKNESS DETERMINED IN STEP 1. IF THE CALCULATED VALUE IS LESS THAN 0.071 INCH, USE 0.071 INCH AS THE MINIMUM THICKNESS OF THE PART 2 DOUBLER.

   B. IF THE CALCULATED VALUE IS LARGER THAN 0.071 INCH, THE THICKNESS OF THE PART 2 DOUBLER IS THE SUBSEQUENT THICKER GAGE LISTED IN TABLE IV. YOU CAN USE THE CALCULATED VALUE THICKNESS IF IT IS EQUAL TO A GAGE LISTED IN TABLE IV.

   IF THE REPAIR FASTENERS ARE BACB30NW8K() HEX DRIVE BOLTS:

   C. SUBTRACT THE PART 1 DOUBLER THICKNESS DETERMINED IN STEP 2 FROM THE MINIMUM TOTAL COMBINED THICKNESS DETERMINED IN STEP 1. IF THE CALCULATED VALUE IS LESS THAN 0.090 INCH, USE 0.090 INCH AS THE MINIMUM THICKNESS OF THE PART 2 DOUBLER.

   D. IF THE CALCULATED VALUE IS LARGER THAN 0.090 INCH, THE THICKNESS OF THE PART 2 DOUBLER IS THE SUBSEQUENT THICKER GAGE LISTED IN TABLE IV. YOU CAN USE THE CALCULATED VALUE THICKNESS IF IT IS EQUAL TO A GAGE LISTED IN TABLE IV.

[I] IF THE SKIN HAS A CHEM-MILLED OR MACHINED POCKET WHICH IS COVERED BY THE REPAIR THE PART 1 DOUBLER (ONE DOUBLER CONFIGURATION) OR THE PART 2 DOUBLER (TWO DOUBLER CONFIGURATION) SHOULD BE NOT MORE THAN ONE GAGE THICKER THAN THE THICKNESS OF THE SKIN POCKET.

[J] THE THICKNESS OF THE PART 1 DOUBLER (ONE DOUBLER CONFIGURATION) OR THE PART 2 DOUBLER (TWO DOUBLER CONFIGURATION) SHOULD NOT BE MORE THAN ONE GAGE THICKER THAN THE THICKNESS OF THE SKIN AT THE CRITICAL FASTENER ROW.

[K] IF THE REPAIR IS ABOVE THE MAIN PASSENGER FLOOR, LIMIT THE DIMENSIONS OF THE PART 3 FILLER TO THE WIDTH OF THE STRINGER BASE.

[L] IN THE CIRCUMFERENTIAL DIRECTION, EXTEND THE DOUBLER A MINIMUM OF 3 ROWS OF FASTENERS ABOVE AND BELOW THE EDGE OF THE SKIN CUTOUT FOR THE SOLID FASTENER REPAIR.

[M] IN THE CIRCUMFERENTIAL DIRECTION, EXTEND THE DOUBLER A MINIMUM OF 4 ROWS OF FASTENERS ABOVE AND BELOW THE EDGE OF THE SKIN CUTOUT FOR THE BLIND FASTENER REPAIR.

[N] IN THE LONGITUDINAL DIRECTION, EXTEND THE DOUBLER A MINIMUM OF 4 ROWS OF FASTENERS FORWARD AND AFT OF THE EDGE OF THE SKIN CUTOUT FOR THE SOLID FASTENER REPAIR.

[O] IN THE LONGITUDINAL DIRECTION, EXTEND THE DOUBLER A MINIMUM OF 5 ROWS OF FASTENERS FORWARD AND AFT OF THE EDGE OF THE SKIN CUTOUT FOR THE BLIND FASTENER REPAIR.

[P] THE FASTENER HEAD SHOULD NEVER BE ON TAPER.

[Q] LOW FREQUENCY EDDY CURRENT (LFEC) INSPECTION METHOD CAN BE USED ONLY IF THE REPAIR DOUBLER THICKNESS IS LESS THAN 0.11 INCH.

[R] IT IS NOT NECESSARY TO DO HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTIONS AT LOCATIONS WHERE THE SKIN IS COVERED BY A STRINGER.

[S] THIS INTERVAL IS APPLICABLE ONLY FOR THE BODY STATIONS IN SECTIONS 41, 43 AND 46 BETWEEN STRINGERS S-32L AND S-32R (BELOW)

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Fuselage Skin - External Repair at a Stringer
Figure 201 (Sheet 4 of 11)

FASTENER SYMBOLS

-!- REFERENCE FASTENER LOCATION

┼ INITIAL FASTENER LOCATION. FOR THE SOLID FASTENER REPAIR, INSTALL THE SAME TYPE AND SIZE FASTENER AS INITIAL FASTENER, IF INITIAL FASTENERS ARE HEX DRIVE BOLTS, INSTALL 1/64-INCH DIAMETER OVERSIZE BOLTS AND COLLARS. FOR THE BLIND FASTENER REPAIR, INSTALL A BACR15FR()E RIVET THAT IS 1/64-INCH LARGER IN DIAMETER THAN THE INITIAL FASTENER.

✦ REPAIR FASTENER LOCATION. INSTALL THE FASTENERS PER TABLE II FOR A SOLID FASTENER REPAIR. INSTALL THE FASTENERS PER TABLE III FOR A BLIND FASTENER REPAIR. MAINTAIN A MINIMUM OF 2D EDGE MARGIN AND 4D TO 6D FASTENER SPACING.

⌖ REPAIR FASTENER LOCATION. INSTALL BACR15FV5KE OR BACR15FV6KE RIVETS FOR A SOLID FASTENER REPAIR. INSTALL BACR15FR4E OR BACR15FR5E BLIND RIVETS FOR A BLIND FASTENER REPAIR. MAINTAIN 2D EDGE MARGIN AND 6D TO 8D FASTENER SPACING. THESE FASTENERS ARE NOT REQUIRED IF THE PART 3 FILLER IS NOT USED.

REPAIR MATERIAL			
PART NO.	PART	QUANTITY	MATERIAL
1	DOUBLER	1	SAME MATERIAL AND ONE GAGE THICKER THAN TRIMMED SKIN THICKNESS [G] [H] [I] [J]
2	DOUBLER	1	SAME MATERIAL AS THE INITIAL SKIN [G] [H] [I] [J]
3	FILLER	1	SAME MATERIAL AND GAGE AS TRIMMED SKIN [K]

TABLE I

SOLID REPAIR FASTENER TYPE, SIZE, AND FASTENER SPACING				
INITIAL SKIN THICKNESS (INCHES)	ONE DOUBLER REPAIR		TWO DOUBLER REPAIR	
	FASTENER TYPE AND SIZE	FASTENER SPACING (INCHES)	FASTENER TYPE AND SIZE	FASTENER SPACING (INCHES)
0.040 TO 0.050	[B]	0.78 TO 0.938	NOT PERMITTED	———
0.051 TO 0.079	[C]	0.90 TO 1.125	NOT PERMITTED	———
0.080 TO 0.111	[D]	1.125 TO 1.50	NOT PERMITTED	———
0.112 TO 0.125	[D]	1.125 TO 1.50	[E]	0.95 TO 1.125
0.126 TO 0.142	[F]	1.25 TO 1.50	[E]	0.95 TO 1.125
> 0.143	[F]	1.25 TO 1.50	[F]	1.25 TO 1.50

TABLE II

Fuselage Skin - External Repair at a Stringer
Figure 201 (Sheet 5 of 11)

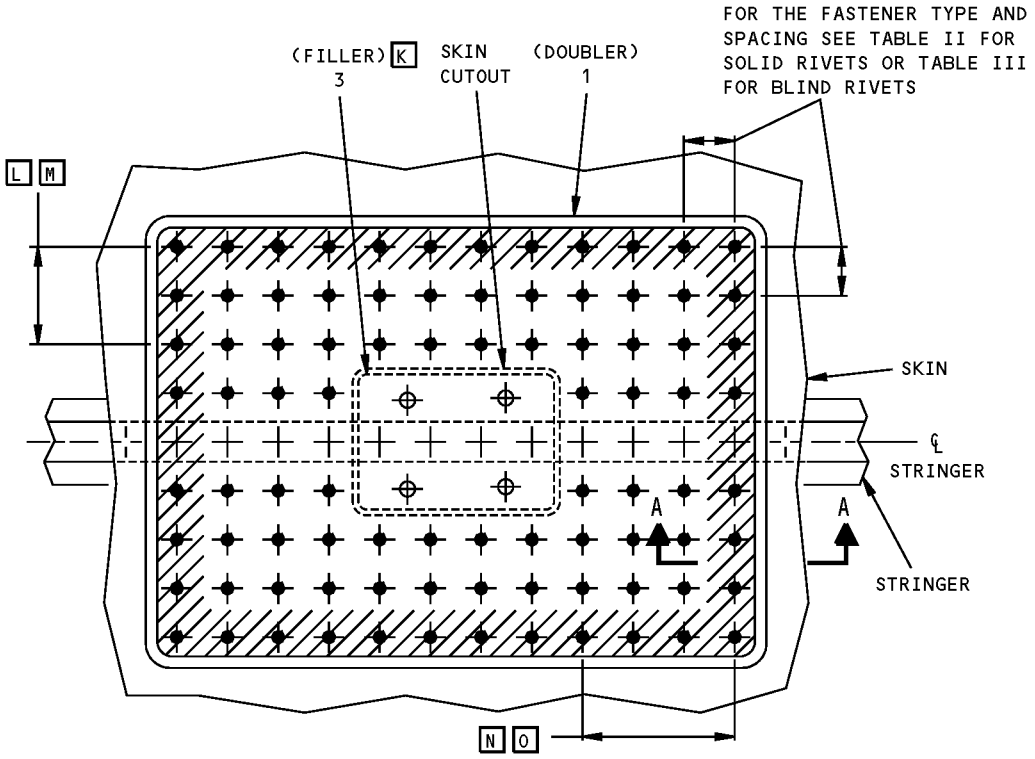
BLIND REPAIR FASTENER TYPE, SIZE, AND FASTENER SPACING		
INITIAL SKIN THICKNESS (INCHES)	ONE DOUBLER REPAIR	
	FASTENER TYPE AND SIZE	FASTENER SPACING (INCHES)
0.040 TO 0.050	BACR15FR4E	0.75 TO 0.875
0.051 TO 0.079	BACR15FR5E	0.90 TO 1.00
0.080 TO 0.125	BACR15FR6E	1.15 TO 1.30

TABLE III

STANDARD ALUMINUM SHEET METAL GAGES
0.050
0.056
0.063
0.071
0.080
0.090
0.100
0.112
0.125
0.140
0.160
0.190
0.250

TABLE IV

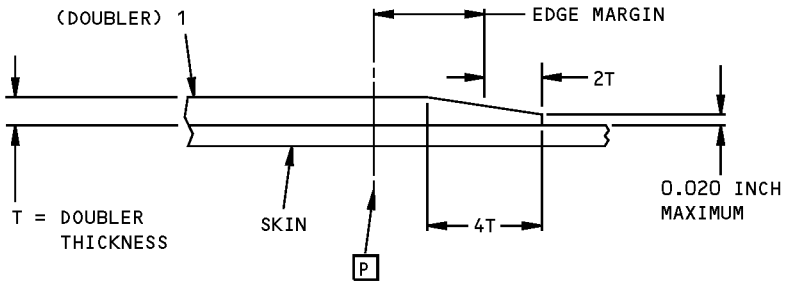
Fuselage Skin - External Repair at a Stringer
Figure 201 (Sheet 6 of 11)



SUBSEQUENT INSPECTIONS ARE NECESSARY FOR CATEGORY B AND C REPAIRS. REFER TO TABLES V AND VI FOR CATEGORY B AND TABLE VII FOR CATEGORY C INSPECTION REQUIREMENTS

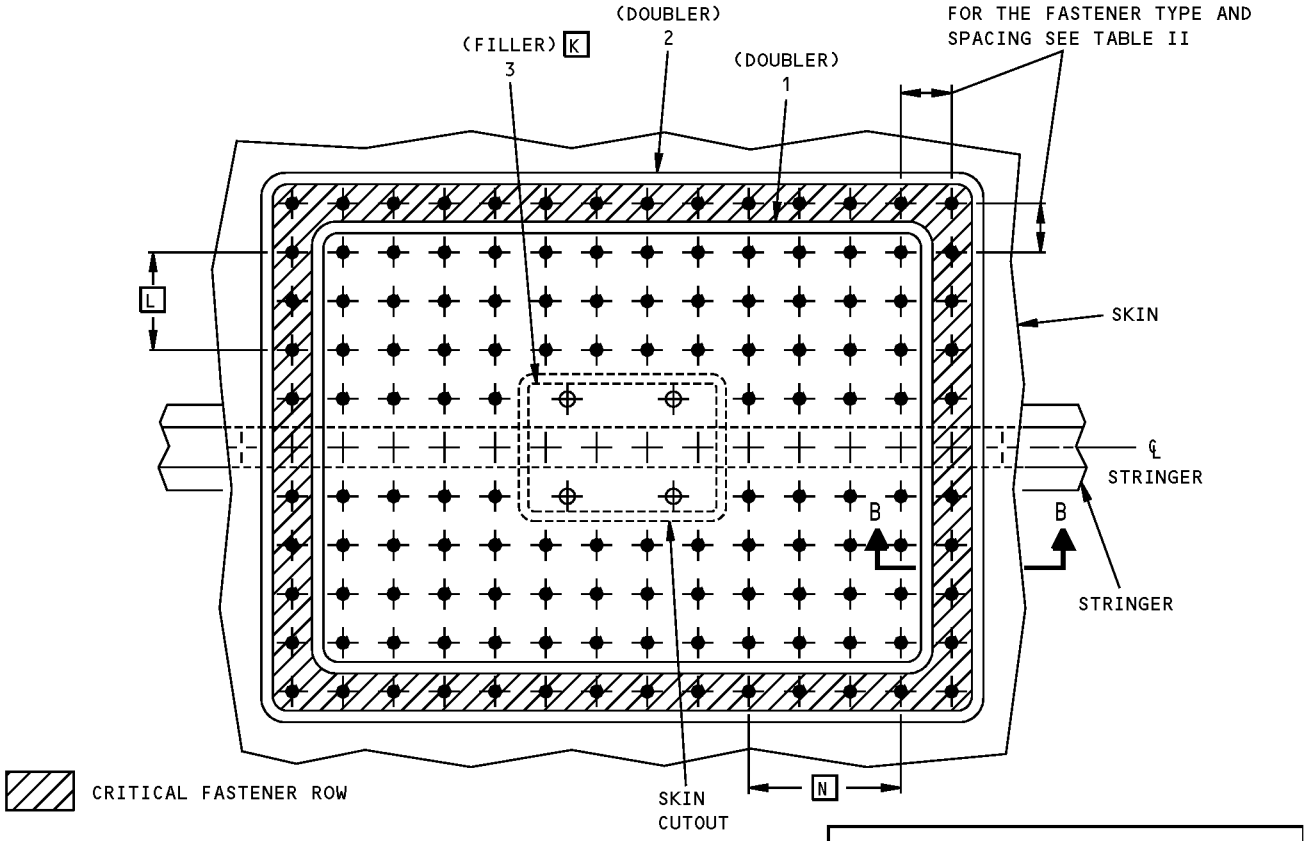
SOLID RIVET REPAIR SHOWN, BLIND RIVET REPAIR SIMILAR EXCEPT FOR NUMBER OF ROWS OF FASTENERS

ONE DOUBLER CONFIGURATION
DETAIL I

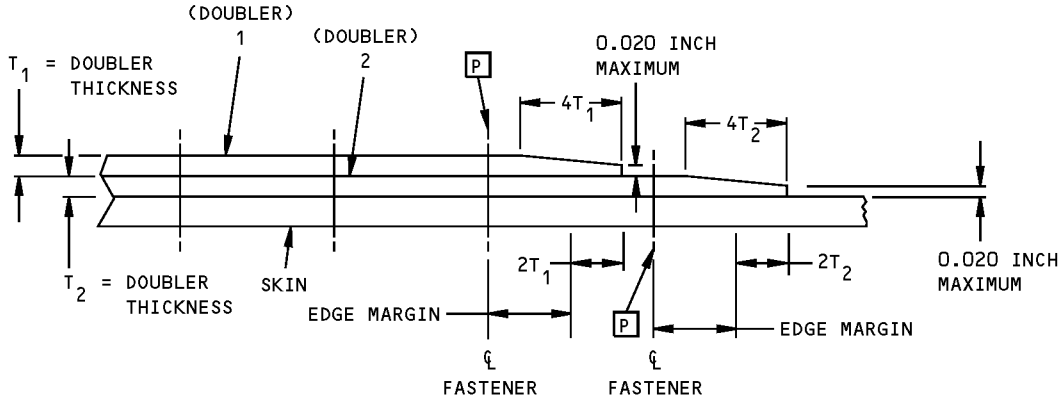


SECTION A-A

Fuselage Skin - External Repair at a Stringer
Figure 201 (Sheet 7 of 11)



TWO DOUBLER CONFIGURATION – SOLID FASTENERS ONLY
DETAIL II



SECTION B–B

Fuselage Skin - External Repair at a Stringer
Figure 201 (Sheet 8 of 11)

ZONE A – CATEGORY B REPAIR INSPECTION REQUIREMENTS					
INSPECTION THRESHOLD	REPEAT INSPECTION ALTERNATIVES				
	ALTERNATIVE	METHOD	INTERVAL		REFERENCE
37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	I	INTERNAL – HIGH FREQUENCY EDDY CURRENT (HFEC)	12,000 FLIGHT CYCLES	9,000 FLIGHT CYCLES [S]	NDT PART 6 51-00-01
		EXTERNAL DETAILED INSPECTION			---
	II	EXTERNAL – LOW FREQUENCY EDDY CURRENT (LFEC) [Q]	3,000 FLIGHT CYCLES		NDT PART 6 53-00-06
		EXTERNAL DETAILED INSPECTION			---

NOTE:

- USE ALTERNATIVE I OR II TO INSPECT THE SKIN AT THE CRITICAL FASTENER ROW ALONG THE EDGE OF THE PART 1 OR PART 2 DOUBLER AS SHOWN IN DETAIL III OR IV AS APPLICABLE.
- FOR ALTERNATIVE I AND II, DO A DETAILED INSPECTION OF THE REPAIR DOUBLER(S) AND A 2-INCH WIDE ZONE AROUND THE REPAIR EXTERNALLY AS SHOWN IN DETAIL III AND IV.

TABLE V

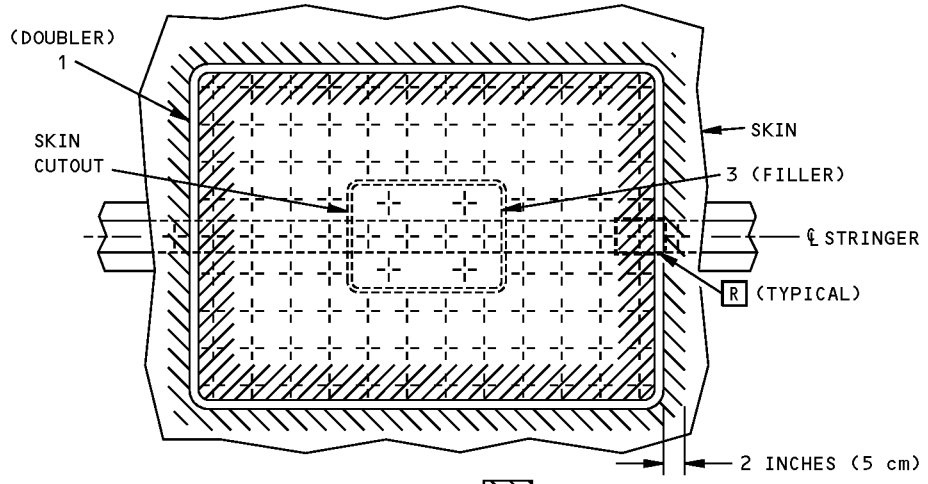
ZONE B – CATEGORY B REPAIR INSPECTION REQUIREMENTS				
INSPECTION THRESHOLD	REPEAT INSPECTION ALTERNATIVES			
	ALTERNATIVE	METHOD	INTERVAL	REFERENCE
25,000 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	I	INTERNAL – HIGH FREQUENCY EDDY CURRENT (HFEC)	9,000 FLIGHT CYCLES	NDT PART 6 51-00-01
		EXTERNAL DETAILED INSPECTION		---
	II	EXTERNAL – LOW FREQUENCY EDDY CURRENT (LFEC) [Q]	3,000 FLIGHT CYCLES	NDT PART 6 53-00-06
		EXTERNAL DETAILED INSPECTION		---

NOTE:

- USE ALTERNATIVE I OR II TO INSPECT THE SKIN AT THE CRITICAL FASTENER ROW ALONG THE EDGE OF THE PART 1 OR PART 2 DOUBLER AS SHOWN IN DETAIL III OR IV AS APPLICABLE.
- FOR ALTERNATIVE I AND II, DO A DETAILED INSPECTION OF THE REPAIR DOUBLER(S) AND A 2-INCH WIDE ZONE AROUND THE REPAIR EXTERNALLY AS SHOWN IN DETAIL III AND IV.

TABLE VI

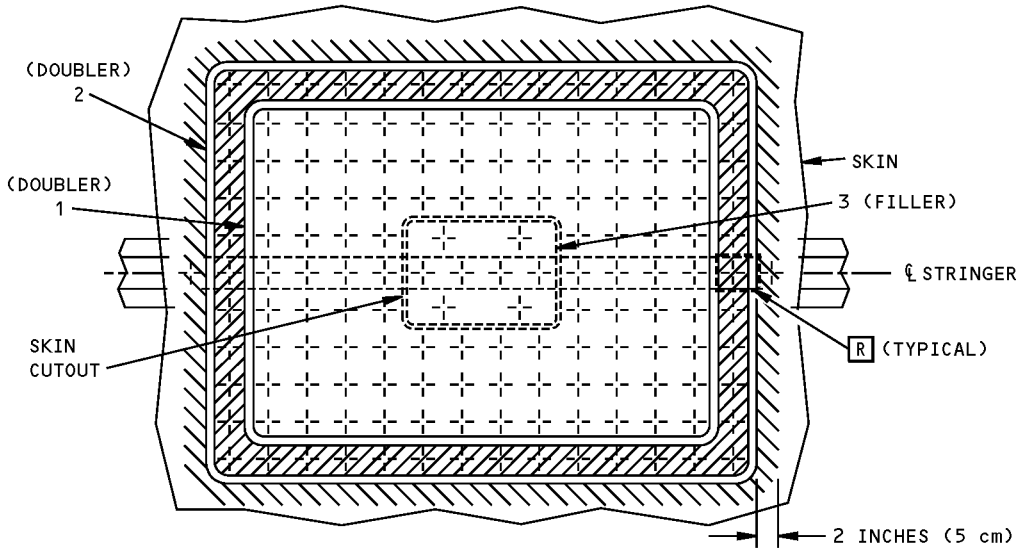
Fuselage Skin - External Repair at a Stringer
Figure 201 (Sheet 9 of 11)



SKIN INSPECTION AREA AT THE CRITICAL FASTENER ROW. IF YOU USE LFEC, THEN DO THE INSPECTION OF THE SKIN EXTERNALLY THROUGH THE PART 1 DOUBLER. IF YOU USE HFEC, INSPECT THE SKIN INTERNALLY. HOWEVER, HFEC INSPECTION IS NOT REQUIRED AROUND THE FASTENERS WHERE THE SKIN IS UNDER THE STRINGER.

SKIN INSPECTION AREA AROUND THE REPAIR. DO A DETAILED INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL I WHEN SOLID FASTENERS ARE USED
DETAIL III



SKIN INSPECTION AREA AT THE CRITICAL FASTENER ROW. IF YOU USE LFEC, THEN DO THE INSPECTION OF THE SKIN EXTERNALLY THROUGH THE PART 2 DOUBLER. IF YOU USE HFEC, INSPECT THE SKIN INTERNALLY. HOWEVER, HFEC INSPECTION IS NOT REQUIRED AROUND THE FASTENERS WHERE THE SKIN IS UNDER THE STRINGER.

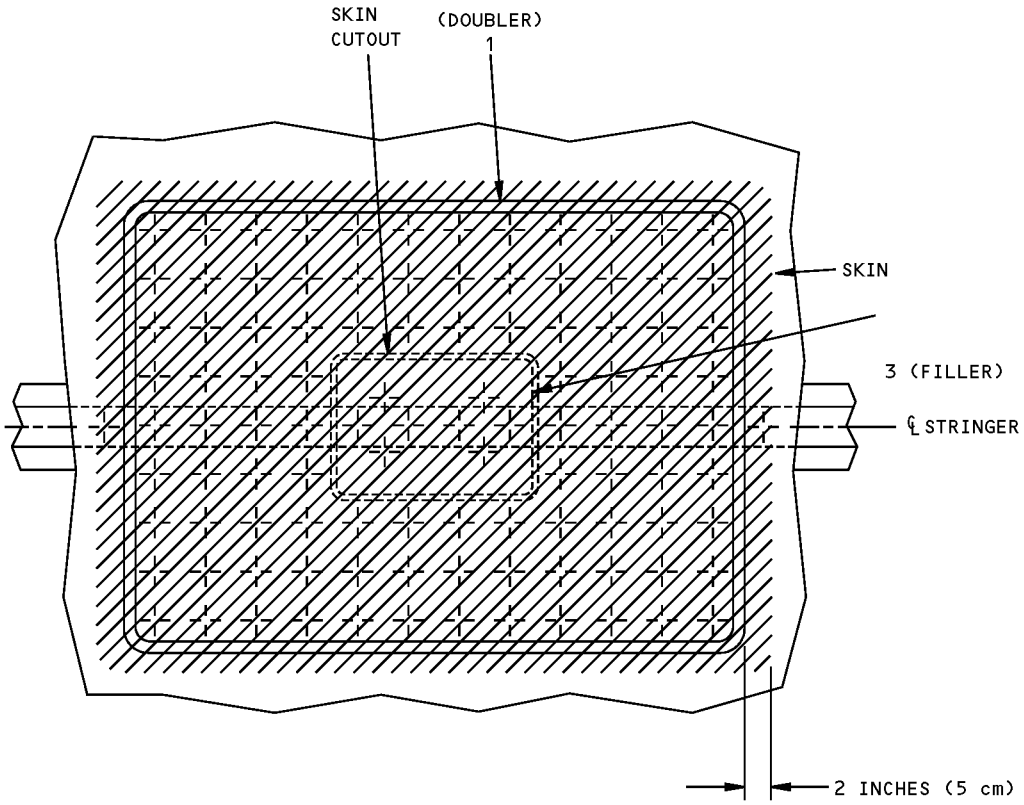
SKIN INSPECTION AREA AROUND THE REPAIR. DO A DETAILED INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL II
DETAIL IV

Fuselage Skin - External Repair at a Stringer
Figure 201 (Sheet 10 of 11)

ZONE A AND B – CATEGORY C REPAIR INSPECTION AND REPLACEMENT REQUIREMENTS				
INSPECTION THRESHOLD	REPEAT INSPECTION			TIME LIMIT
	METHOD	INTERVAL	REFERENCE	
1,000 FLIGHT CYCLES	DETAILED INSPECTION	1,000 FLIGHT CYCLES		3,000 FLIGHT CYCLES
NOTE: INSPECT THE 2 INCH WIDE ZONE AROUND THE DOUBLER FOR SKIN DAMAGE AND INSPECT THE DOUBLER FOR MISSING OR LOOSE FASTENERS. REFER TO DETAIL V FOR THE AREA WHERE THE EXTERNAL DETAILED INSPECTION IS NECESSARY.				

TABLE VII



EXTERNAL DETAILED INSPECTION AREA
(INCLUDES 2 INCHES AROUND THE DOUBLER)

INSPECTION AREAS FOR DETAIL I WHEN BLIND FASTENERS ARE USED
DETAIL V

Fuselage Skin - External Repair at a Stringer
Figure 201 (Sheet 11 of 11)

REPAIR 2 - FUSELAGE SKIN - FLUSH REPAIR BETWEEN STRINGERS

APPLICABILITY

THIS REPAIR IS APPLICABLE TO:

- SKIN DAMAGE BETWEEN STRINGERS AND FRAMES

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE AT A CIRCUMFERENTIAL BUTT SPLICE
- DAMAGE THAT EXTENDS OVER A CHEM-MILLED OR MACHINED RADIUS
- DAMAGE AT A SKIN LAP-SPLICE
- DAMAGE NEAR THE STATIC PORTS OR ANGLE OF ATTACK SENSORS
- WITHIN 22 INCHES OF AN ADJACENT SKIN (EXTERNAL OR INTERNAL) REPAIR
- WITHIN 22 INCHES OF A DOOR CUTOUT
- DAMAGE AT THE WINDOW BELT

REPAIR INSTRUCTIONS

CAUTION: IF ACOUSTIC TILES ARE FOUND DURING THE FUSELAGE SKIN REPAIR, REMOVE THESE TILES BEFORE YOU DO THIS REPAIR.

1. Get access to the damaged area.

CAUTION: DO NOT GOUGE, SCRATCH, OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR.

2. Carefully cut and remove the damaged part of the fuselage skin.
   A. Make the cut a rectangular shape with the sides either parallel or perpendicular to the stringers.
   B. Make the corner radii of the cutout a minimum of 0.5 inch.
   C. Make the edges of the cut smooth with a surface finish of 125 microinches Ra.
3. Do a High Frequency Eddy Current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, SRM 51-00-01. Repeat steps 2 and 3 if all of the damage was not removed.
4. Make the repair parts. See Table I. [J]
5. Assemble the repair parts as shown in Detail I and drill the fastener holes. Refer to SRM 51-40-05 for the fastener hole sizes.
6. Disassemble the repair parts.
7. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
9. Apply two layers of BMS 10-11, Type I primer to the internal surfaces of the repair parts and to the bare internal surfaces of the initial parts. Refer to SOPM 20-41-02.
10. Apply one layer of BMS 10-79, Type II or III primer to the external surfaces of the repair parts and to the bare external surfaces of the initial parts. Refer to SOPM 20-44-04.
11. Install the repair parts wet with BMS 5-95 sealant between mating surfaces.
12. Install the fasteners as given in Table II. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant. Overdrive BACR15FV( )KE rivets to make the driven head 1.5D. [A]
13. Apply a fillet seal to the repair parts on the internal and external edges of the repair area. Refer to SRM 51-20-05.
14. Apply a layer of BMS 3-23 corrosion inhibiting compound to the internal structure of the repair area if the repair is below the main passenger floor. Refer to SRM 51-20-01.
15. Fill the gap between parts with aerodynamic smoother.
16. Apply the decorative finish to the repair area. Refer to AMM 51-21.
17. Replace the acoustic tiles, if necessary.

NOTES

- THIS REPAIR IS A CATEGORY A REPAIR IF THE PART 2 DOUBLER SIZE IS LESS THAN 12 INCHES (30 cm) IN BOTH DIRECTIONS. THE INSPECTIONS GIVEN IN THE MAINTENANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERANCE OF THE INITIAL STRUCTURE WITH THIS CATEGORY A REPAIR INSTALLED.

  IF THIS REPAIR IS NOT A CATEGORY A REPAIR, THEN IT IS A CATEGORY B REPAIR. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE III. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- D = FASTENER DIAMETER.
- THE MAXIMUM PULL-UP PERMITTED PRIOR TO FASTENER INSTALLATION IS 0.005 INCH.
- MAINTAIN A MINIMUM OF 2D EDGE MARGIN ON ALL REPAIR PARTS.

Fuselage Skin - Flush Repair Between Stringers
Figure 201 (Sheet 1 of 4)

NOTES (CONT)

- MAKE SURE THERE ARE NO KNIFE-EDGE CONDITIONS IN THE SKIN BEFORE DRILLING THE FASTENER HOLES. IF THE COUNTERSINK DEPTH IS GREATER THAN 2/3 OF THE SHEET THICKNESS, INSTALL A PROTRUDING HEAD FASTENER.
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21 FOR DECORATIVE EXTERIOR FINISHES, CLEANING AND PAINTING.
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILES.
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES.
  - SOPM 20-44-04 FOR APPLICATION OF URETHANE COMPATIBLE PRIMERS.
  - SRM 51-00-06 FOR DEFINITION OF REPAIR CATEGORIES.
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS.
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS.
  - SRM 51-20-05 FOR SEALING PROCEDURES AND ALTERNATE SEALANTS.
  - SRM 51-20-08 FOR INSTALLATION OF SHIMS.
  - SRM 51-40-02 FOR FASTENER INSTALLATION AND REMOVAL.
  - SRM 51-40-03 FOR FASTENER SUBSTITUTIONS.
  - SRM 51-40-05 FOR FASTENER HOLE SIZES.
  - SRM 51-40-06 FOR FASTENER EDGE MARGINS.

[A] DO NOT INSTALL FASTENERS THROUGH ACOUSTIC TILES.

[B] USE BACR15BB5D RIVETS.

[C] USE BACR15CE6D RIVETS FOR SKIN REPAIRS IN SECTIONS 41 AND 48. USE BACR15FV6KE RIVETS FOR SKIN REPAIRS IN SECTION 43, 45, AND 46.

[D] USE BACR15CE8D RIVETS FOR SKIN REPAIRS IN SECTIONS 41 AND 48. USE BACR15FV8KE RIVETS FOR SKIN REPAIRS IN SECTION 43, 45 AND 46.

[E] USE BACB30NW8K() HEX-DRIVE BOLTS.

[F] IN THE CIRCUMFERENTIAL DIRECTION EXTEND THE DOUBLER A MINIMUM OF 3 ROWS OF FASTENERS ABOVE AND BELOW THE EDGE OF THE SKIN CUTOUT.

[G] IN THE LONGITUDINAL DIRECTION EXTEND THE DOUBLER A MINIMUM OF 4 ROWS OF FASTENERS FORWARD AND AFT OF THE EDGE OF THE SKIN CUTOUT.

[H] SIZE THE FILLER SUCH THAT THERE IS A 0.03 INCH TO 0.07 INCH GAP (MAXIMUM) AROUND THE SKIN CUTOUT.

[I] TAPER THE DOUBLER SUCH THAT THE GAGE AT THE EDGE OF THE DOUBLER IS 75 PERCENT OF THE INITIAL DOUBLER GAGE.

[J] THE CRITICAL FASTENER ROW OF THE PART 2 DOUBLER MUST NOT BE COMMON TO A STRINGER, FRAME SHEAR TIE OR ANY OTHER BACK-UP STRUCTURE. DO NOT COVER THE TEAR STRAP WITH THE DOUBLER.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION.

REPAIR FASTENER LOCATION. INSTALL THE FASTENERS PER TABLE II. MAINTAIN A MINIMUM OF 2D EDGE MARGIN AND 4D TO 6D FASTENER SPACING.

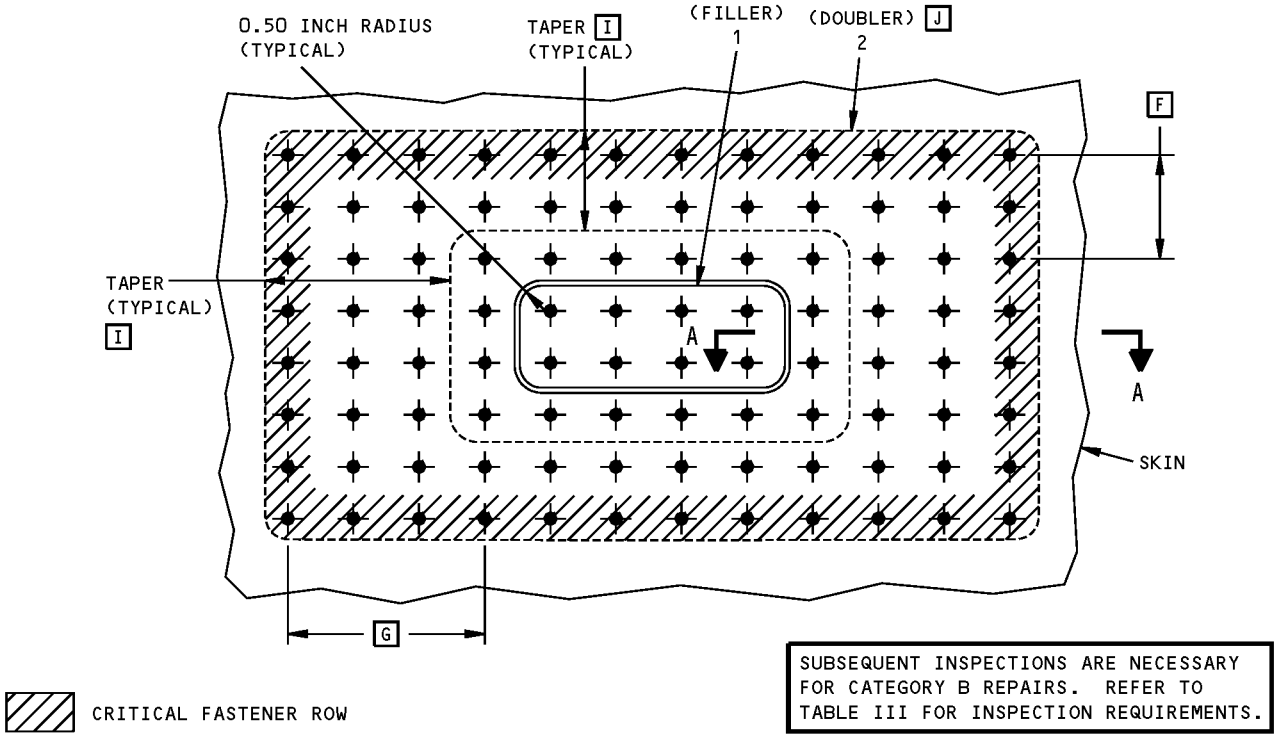
REPAIR MATERIAL			
PART NO.	PART	QUANTITY	MATERIAL
1	FILLER	1	SAME MATERIAL AND GAGE AS INITIAL SKIN [H]
2	DOUBLER	1	SAME MATERIAL, ONE GAGE THICKER THAN THE TRIMMED SKIN THICKNESS

TABLE I

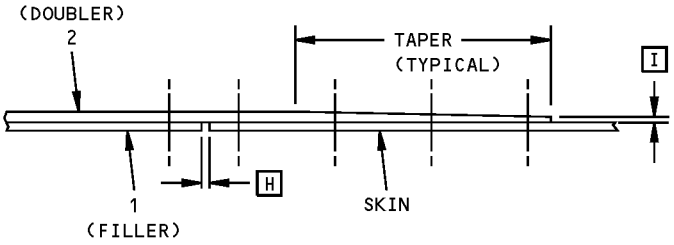
Fuselage Skin - Flush Repair Between Stringers
Figure 201 (Sheet 2 of 4)

INITIAL SKIN GAGE (INCHES)	REPAIR FASTENERS	FASTENER SPACING (INCHES)
0.040 TO 0.050	B	0.780 TO 0.938
0.051 TO 0.079	C	0.90 TO 1.125
0.080 TO 0.125	D	1.125 TO 1.50
OVER 0.125	E	1.125 TO 1.50

TABLE II



DETAIL I



SECTION A-A

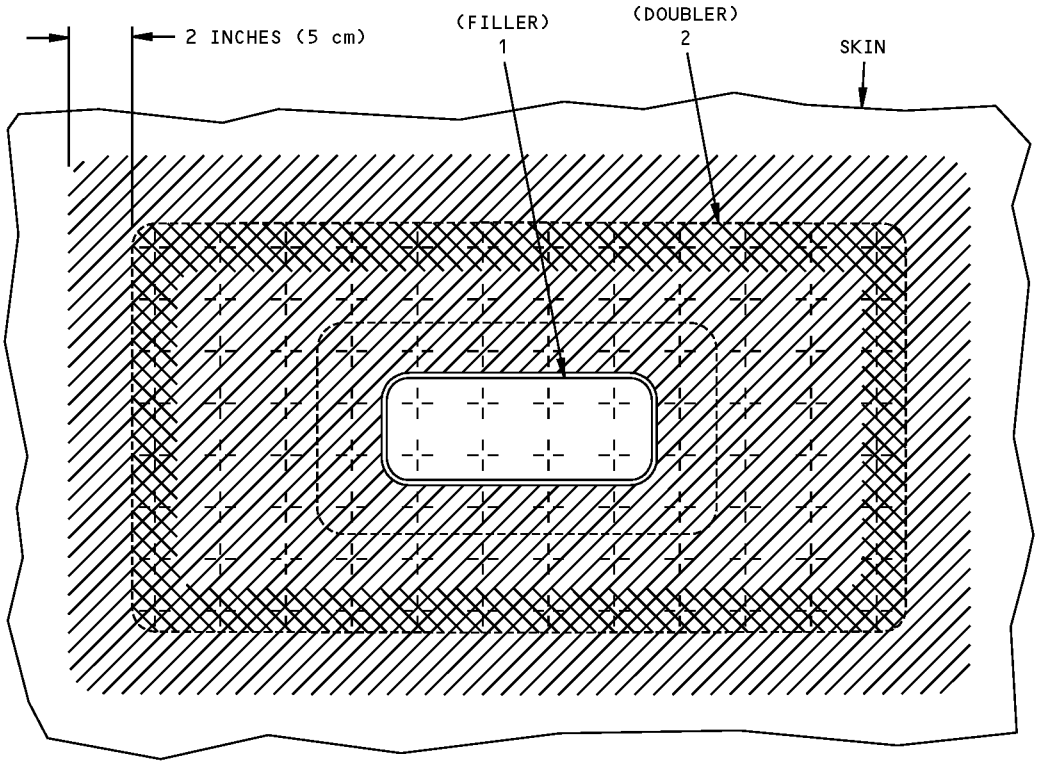
Fuselage Skin - Flush Repair Between Stringers
Figure 201 (Sheet 3 of 4)

CATEGORY B REPAIR INSPECTION REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTIONS		
	METHOD	INTERVAL	REFERENCE
37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	EXTERNAL – HIGH FREQUENCY EDDY CURRENT (HFEC)	12,000 FLIGHT CYCLES	NDT PART 6 51-00-01
	EXTERNAL DETAILED INSPECTION		—

NOTE: – DO AN HFEC INSPECTION OF THE SKIN EXTERNALLY AT THE CRITICAL FASTENER ROW ALONG THE EDGE OF THE PART 2 DOUBLER AS SHOWN IN DETAIL II.

– DO A DETAILED INSPECTION OF THE SKIN IN THE REPAIR AREA AND A 2-INCH WIDE ZONE AROUND THE REPAIR EXTERNALLY AS SHOWN IN DETAIL II.

TABLE III



SKIN INSPECTION AREA AT THE CRITICAL FASTENER ROW WITH AN HFEC METHOD EXTERNALLY

SKIN INSPECTION ARE IN THE REPAIR AREA AND AROUND THE REPAIR. DO A DETAILED INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL I
DETAIL II

Fuselage Skin - Flush Repair Between Stringers
Figure 201 (Sheet 4 of 4)

REPAIR 3 - FUSELAGE SKIN - FLUSH REPAIR AT STRINGER (DOUBLER THICKER THAN STRINGER LEG)

APPLICABILITY

THIS REPAIR IS APPLICABLE TO:

- SKIN DAMAGE AT A STRINGER

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE AT A CIRCUMFERENTIAL BUTT SPLICE
- DAMAGE AT A SKIN LAP-SPLICE
- DAMAGE NEAR THE STATIC PORTS OR ANGLE OF ATTACK SENSORS
- WITHIN 22 INCHES OF AN ADJACENT SKIN (EXTERNAL OR INTERNAL) REPAIR
- WITHIN 22 INCHES OF A DOOR CUTOUT
- DAMAGE AT THE WINDOW BELT

REPAIR INSTRUCTIONS

CAUTION: IF ACOUSTIC TILES ARE ENCOUNTERED DURING FUSELAGE SKIN REPAIR, REMOVE TILE BEFORE PROCEEDING WITH REPAIR.

1. Cut and remove damaged portion of skin and stringer.

   NOTE: The stringer will have to be cut back beyond edge of hole to permit installation of the part 2 doubler with four rows of rivets at each end.

2. Make repair parts. See Table I. [F]

   NOTE: For stringer repair, refer to SRM 53-00-03.

3. Assemble repair parts and drill the fastener holes.
4. Remove repair parts.
5. Break sharp edges of original and repair parts 0.015R to 0.030R.
6. Remove all nicks, scratches, burrs, sharp edges and corners from initial and repair parts.
7. Apply a chemical conversion coating to the repair parts and bare edges of the initial parts. Refer to SRM 51-20-01.
8. Apply one coat of BMS 10-11, Type I primer to all of part 2, 3, 4 and to the bare edges and inner surface of part 1. Refer to SOPM 20-41-02.
9. Install repair parts, making a faying surface seal with BMS 5-95 sealant. Install hex-drive bolts wet with BMS 5-95.
10. Fill gap between parts with aerodynamic smoother.
11. Restore exterior and interior finish. Refer to AMM 51-21.
12. Replace acoustic tile, if necessary.

NOTES

- THIS REPAIR IS A CATEGORY A REPAIR IF THE PART 2 DOUBLER SIZE IS LESS THAN 12 INCHES (30 cm) IN BOTH DIRECTIONS. THE INSPECTIONS GIVEN IN THE MAINTENANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERANCE OF THE INITIAL STRUCTURE WITH THIS CATEGORY A REPAIR INSTALLED.

  IF THIS REPAIR IS NOT A CATEGORY A REPAIR, THEN IT IS A CATEGORY B REPAIR. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE III. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.

- WHERE THIS REPAIR IS BEING USED IN A MACHINED OR CHEM-MILLED SKIN, SHIMS MAY BE USED BETWEEN DOUBLER AND SKIN TO MAKE UP VARIATIONS IN THICKNESS
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILE

    AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS

[A] SAME MATERIAL ONE GAGE THICKER THAN THE MAXIMUM THICKNESS OF SKIN REMOVED

[B] HORIZONTAL SPACING OF FASTENERS TO BE SAME AS THE NEAREST LONGITUDINAL FUSELAGE SKIN LAP SPLICE

Fuselage Skin - Flush Repair at Stringer (Doubler Thicker Than Stringer Leg)
Figure 201 (Sheet 1 of 4)

NOTES (CONT)

[C] USE BACR15CE6D FOR SKINS IN SECTIONS 41 AND 48. USE BACR15FV6KE FOR SKINS IN SECTIONS 43, 45 AND 46

[D] USE BACR15CE8D FOR SKINS IN SECTIONS 41 AND 48. USE BACR15FV8KE FOR SKINS IN SECTIONS 43, 45 AND 46

[E] BACB30FN8A CAN BE USED AS A SUBSTITUTE FOR BACB30NW8K

[F] THE CRITICAL FASTENER ROW OF THE PART 2 DOUBLER MUST NOT BE COMMON TO A STRINGER, FRAME SHEAR TIE OR ANY OTHER BACK-UP STRUCTURE. DO NOT COVER THE TEAR STRAP WITH THE DOUBLER.

FASTENER SYMBOLS

-|- REFERENCE FASTENER LOCATION

+ INITIAL FASTENER LOCATION. USE SAME TYPE AND DIAMETER AS STRINGER RIVETING. USE 1/64 INCH OVERSIZE ON HEX-DRIVE BOLTS.

⊕ REPAIR FASTENER LOCATION. SEE TABLE II FOR THE FASTENER TYPE AND DIAMETER.

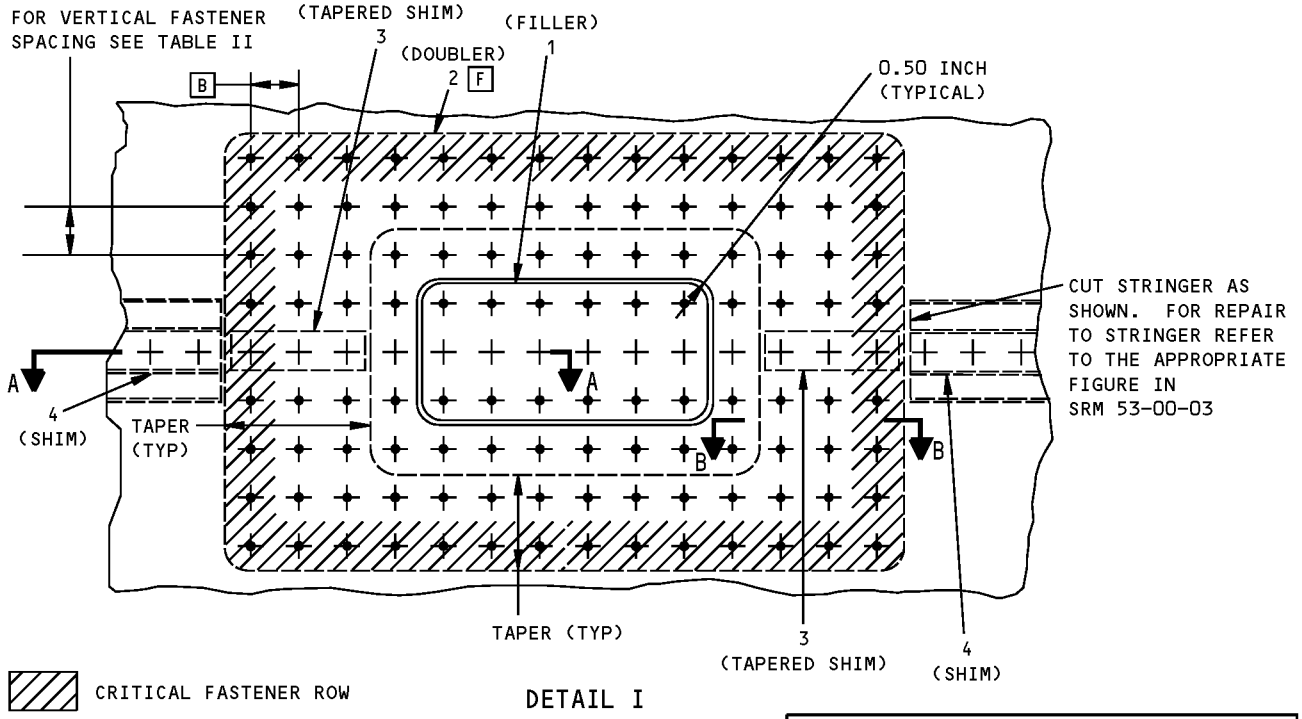
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	FILLER	1	SAME MATERIAL AND GAGE AS THE INITIAL SKIN
2	DOUBLER	1	[A]
3	TAPERED SHIM	2	2024-T3 OR 7075-T6
4	SHIM	2	2024-T3 OR 7075-T6

TABLE I

INITIAL SKIN GAGE (INCH)	REPAIR FASTENERS	VERTICAL SPACING OF FASTENERS (INCHES)
0.040 TO 0.050	BACR15BB5D	1.20 1.00
0.051 TO 0.071	[C]	1.35 1.30
0.072 TO 0.125	[D]	1.50 1.40
OVER 0.125	BACB30NW8K [E]	1.50 1.40

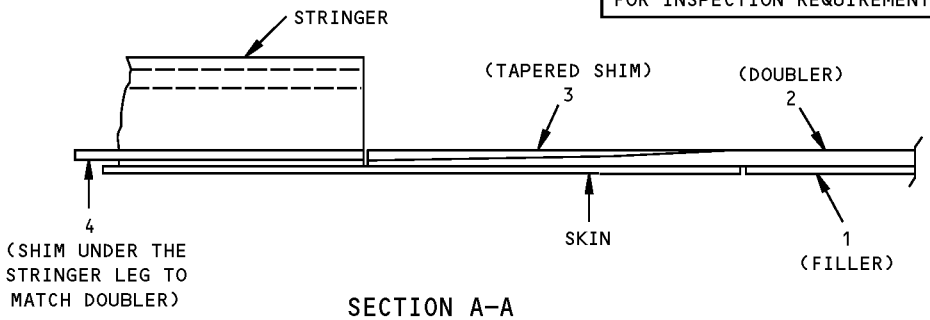
TABLE II

Fuselage Skin - Flush Repair at Stringer (Doubler Thicker Than Stringer Leg)
Figure 201 (Sheet 2 of 4)

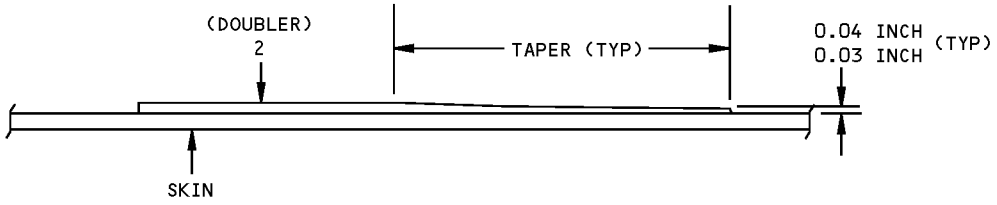


DETAIL I

SUBSEQUENT INSPECTIONS ARE NECESSARY FOR CATEGORY B REPAIRS. REFER TO TABLE III FOR INSPECTION REQUIREMENTS



SECTION A-A



SECTION B-B

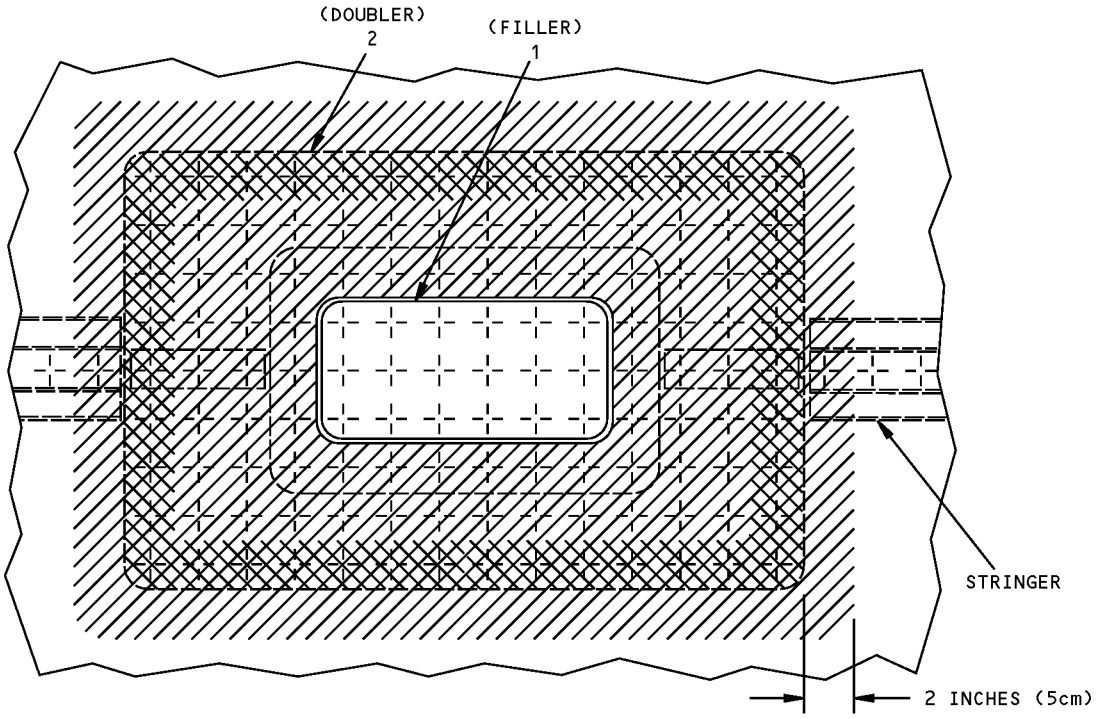
Fuselage Skin - Flush Repair at Stringer (Doubler Thicker Than Stringer Leg)
Figure 201 (Sheet 3 of 4)

CATEGORY B REPAIR INSPECTION REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTIONS		
	METHOD	INTERVAL	REFERENCE
37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	EXTERNAL – HIGH FREQUENCY EDDY CURRENT (HFEC)	12,000 FLIGHT CYCLES	NDT PART 6 51-00-01
	EXTERNAL DETAILED INSPECTION		—

NOTE: – DO AN HFEC INSPECTION OF THE SKIN EXTERNALLY AT THE CRITICAL FASTENER ROW ALONG THE EDGE OF THE PART 2 DOUBLER AS SHOWN IN DETAIL II.

– DO A DETAILED INSPECTION OF THE SKIN IN THE REPAIR AREA AND A 2-INCH WIDE ZONE AROUND THE REPAIR EXTERNALLY AS SHOWN IN DETAIL II.

TABLE III



SKIN INSPECTION AREA AT THE CRITICAL FASTENER ROW WITH AN HFEC METHOD EXTERNALLY

SKIN INSPECTION ARE IN THE REPAIR AREA AND AROUND THE REPAIR. DO A DETAILED INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL I
DETAIL II

Fuselage Skin - Flush Repair at Stringer (Doubler Thicker Than Stringer Leg)
Figure 201 (Sheet 4 of 4)

REPAIR 4 - FUSELAGE SKIN - FLUSH REPAIR AT STRINGER (STRINGER LEG THICKER THAN DOUBLER)

APPLICABILITY

THIS REPAIR IS APPLICABLE TO:

- SKIN DAMAGE AT A STRINGER

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE AT A CIRCUMFERENTIAL BUTT SPLICE
- DAMAGE AT A SKIN LAP-SPLICE
- DAMAGE NEAR THE STATIC PORTS OR ANGLE OF ATTACK SENSORS
- WITHIN 22 INCHES OF AN ADJACENT SKIN (EXTERNAL OR INTERNAL) REPAIR
- WITHIN 22 INCHES OF A DOOR CUTOUT
- DAMAGE AT THE WINDOW BELT

REPAIR INSTRUCTIONS

CAUTION: IF ACOUSTIC TILES ARE ENCOUNTERED DURING FUSELAGE SKIN REPAIR, REMOVE TILE BEFORE PROCEEDING WITH REPAIR.

1. Cut and remove damaged portion of skin and stringer.

   NOTE: The stringer will have to be cut back beyond edge of hole to permit installation of doubler plate with four rows of rivets at each end.

2. Make repair parts. See Table I. [F]

   NOTE: For stringer repair, refer to SRM 53-00-03.

3. Assemble repair parts and drill the fastener holes.
4. Remove repair parts.
5. Break sharp edges of original and repair parts 0.015R to 0.030R.
6. Remove all nicks, scratches, burrs, sharp edges and corners from original and repair parts.
7. Apply a chemical conversion coating to the repair parts and bare edges of the initial parts. Refer to SRM 51-20-01.
8. Apply one coat of BMS 10-11, Type I primer to all of part 2, 3, 4 and to the bare edges and inner surface of part 1. Refer to SRM 20-41-02.
9. Install repair parts, making a faying surface seal with BMS 5-95 sealant. Install hex-drive bolts wet with BMS 5-95.
10. Fill gap between parts with aerodynamic smoother.
11. Restore exterior and interior finish.
12. Replace acoustic tile, if necessary.

NOTES

- THIS REPAIR IS A CATEGORY A REPAIR IF THE PART 2 DOUBLER SIZE IS LESS THAN 12 INCHES (30 cm) IN BOTH DIRECTIONS. THE INSPECTIONS GIVEN IN THE MAINTENANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERANCE OF THE INITIAL STRUCTURE WITH THIS CATEGORY A REPAIR INSTALLED.

  IF THIS REPAIR IS NOT A CATEGORY A REPAIR, THEN IT IS A CATEGORY B REPAIR. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE III. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- WHERE THIS REPAIR IS BEING USED IN A MACHINED OR CHEM-MILLED SKIN, SHIMS MAY BE USED BETWEEN DOUBLER AND SKIN TO MAKE UP VARIATIONS IN THICKNESS
- ALL DIMENSIONS ARE IN INCHES
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21 OR INTERIOR AND EXTERIOR FINISHES
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILE
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS.

[A] SAME MATERIAL ONE GAGE THICKER THAN THE MAXIMUM THICKNESS OF SKIN REMOVED.

[B] HORIZONTAL SPACING OF FASTENERS TO BE SAME AS THE NEAREST LONGITUDINAL FUSELAGE SKIN LAP SPLICE.

Fuselage Skin - Flush Repair at Stringer (Stringer Leg Thicker Than Doubler)
Figure 201 (Sheet 1 of 4)

NOTES (CONT)

[C] USE BACR15CE6D FOR SKINS IN SECTIONS 41 AND 48. USE BACR15FV6KE FOR SKINS IN SECTIONS 43, 45 AND 46

[D] USE BACR15CE8D FOR SKINS IN SECTIONS 41 AND 48. USE BACR15FV8KE FOR SKINS IN SECTIONS 43, 45 AND 46

[E] BACB30FN8A CAN BE USED AS A SUBSTITUTE FOR BACB30NW8K

[F] THE CRITICAL FASTENER ROW OF THE PART 2 DOUBLER MUST NOT BE COMMON TO A STRINGER, FRAME SHEAR TIE OR ANY OTHER BACK-UP STRUCTURE. DO NOT COVER THE TEAR STRAP WITH THE DOUBLER.

FASTENER SYMBOLS

-!- REFERENCE FASTENER LOCATION

INITIAL FASTENER LOCATION. USE SAME TYPE AND DIAMETER AS STRINGER RIVETING. USE 1/64 INCH OVERSIZE ON HEX-DRIVE BOLTS.

REPAIR FASTENER LOCATION. SEE TABLE II FOR THE FASTENER TYPE AND DIAMETER.

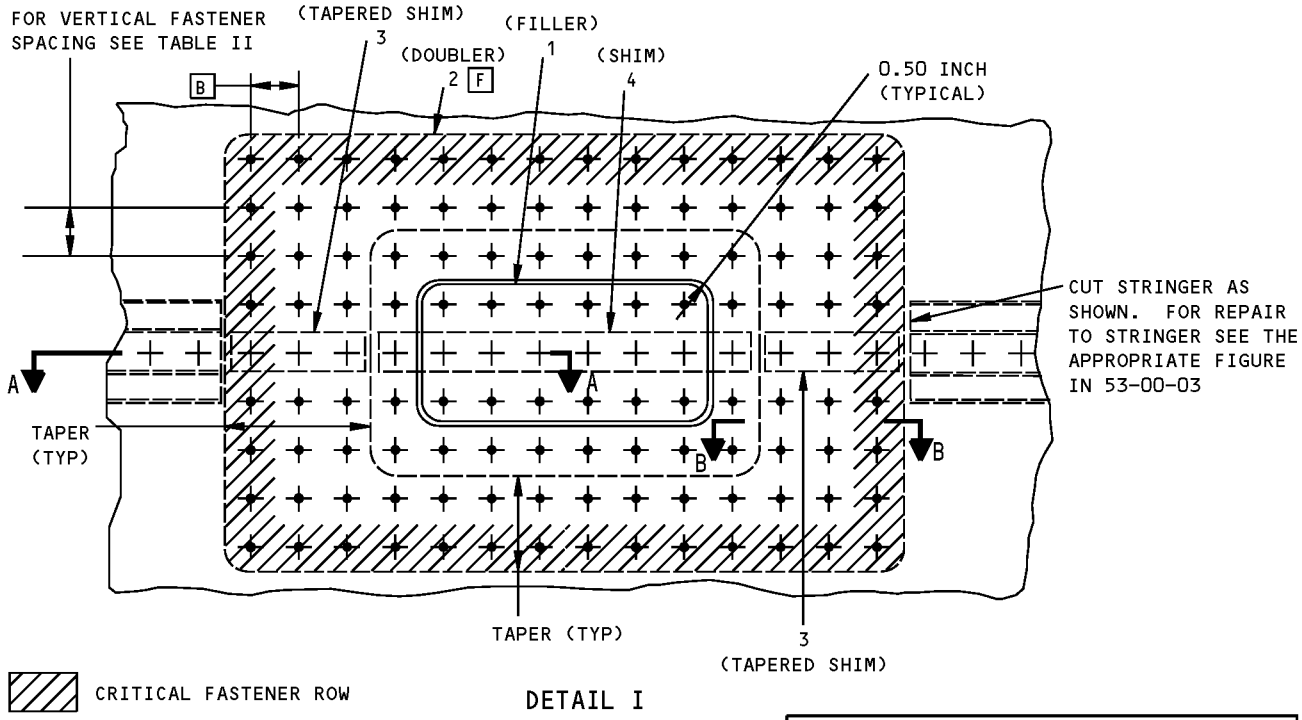
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	FILLER	1	SAME MATERIAL AND GAGE AS THE INITIAL SKIN
2	DOUBLER	1	[A]
3	TAPERED SHIM	2	2024-T3 OR 7075-T6
4	SHIM	1	2024-T3 OR 7075-T6

TABLE I

INITIAL SKIN GAGE (INCH)	REPAIR FASTENERS	VERTICAL SPACING OF FASTENERS (INCHES)
0.040 TO 0.050	BACR15BB5D	1.20 1.00
0.051 TO 0.071	[C]	1.35 1.30
0.072 TO 0.125	[D]	1.50 1.40
OVER 0.125	BACB30NW8K [E]	1.50 1.40

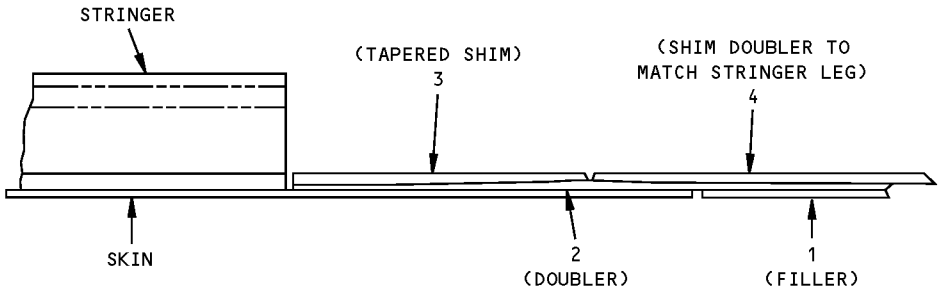
TABLE II

Fuselage Skin - Flush Repair at Stringer (Stringer Leg Thicker Than Doubler)
Figure 201 (Sheet 2 of 4)

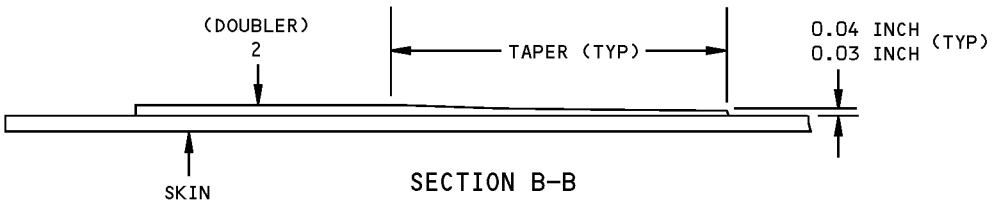


DETAIL I

SUBSEQUENT INSPECTIONS ARE NECESSARY FOR CATEGORY B REPAIRS. REFER TO TABLE III FOR INSPECTION REQUIREMENTS



SECTION A-A



SECTION B-B

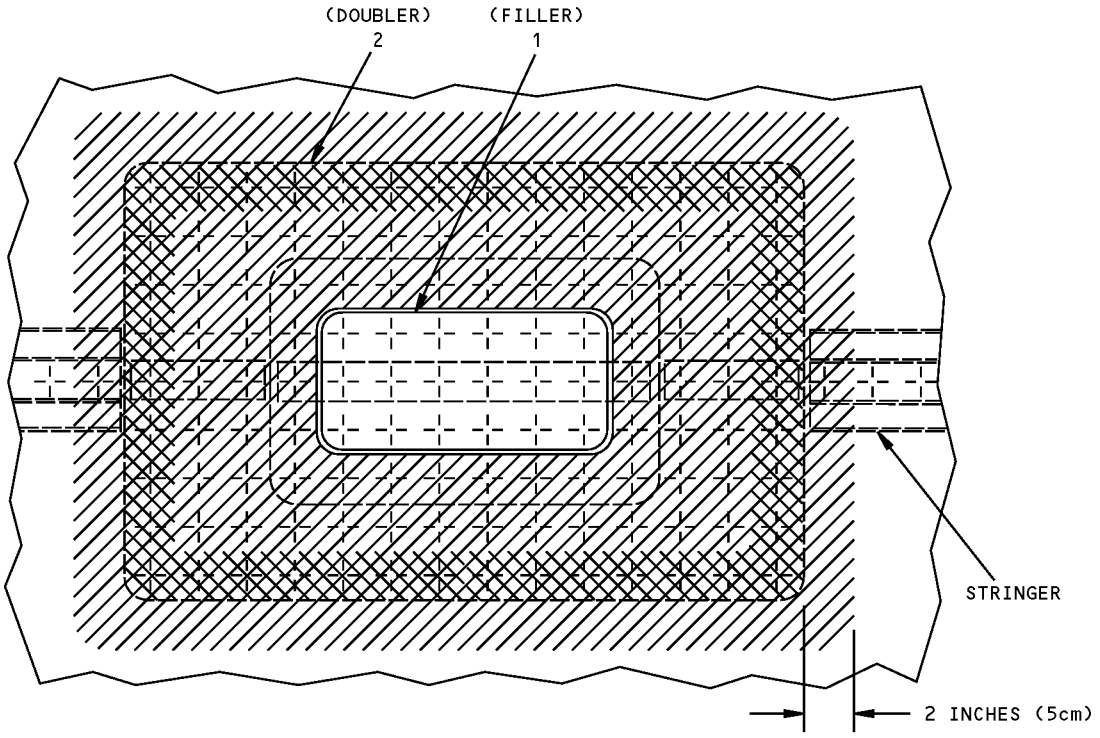
Fuselage Skin - Flush Repair at Stringer (Stringer Leg Thicker Than Doubler)
Figure 201 (Sheet 3 of 4)

CATEGORY B REPAIR INSPECTION REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTIONS		
	METHOD	INTERVAL	REFERENCE
37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	EXTERNAL – HIGH FREQUENCY EDDY CURRENT (HFEC)	12,000 FLIGHT CYCLES	NDT PART 6 51-00-01
	EXTERNAL DETAILED INSPECTION		—

NOTE: – DO AN HFEC INSPECTION OF THE SKIN EXTERNALLY AT THE CRITICAL FASTENER ROW ALONG THE EDGE OF THE PART 2 DOUBLER AS SHOWN IN DETAIL II.

– DO A DETAILED INSPECTION OF THE SKIN IN THE REPAIR AREA AND A 2-INCH WIDE ZONE AROUND THE REPAIR EXTERNALLY AS SHOWN IN DETAIL II.

TABLE III



SKIN INSPECTION AREA AT THE CRITICAL FASTENER ROW WITH AN HFEC METHOD EXTERNALLY

SKIN INSPECTION ARE IN THE REPAIR AREA AND AROUND THE REPAIR. DO A DETAILED INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL I
DETAIL II

Fuselage Skin - Flush Repair at Stringer (Stringer Leg Thicker Than Doubler)
Figure 201 (Sheet 4 of 4)

REPAIR 5 - FUSELAGE SKIN - SMALL HOLE EXTERNAL REPAIR

APPLICABILITY

THIS REPAIR IS APPLICABLE TO:

- SKIN DAMAGE WHICH CAN BE REMOVED WITH A MAXIMUM OF 1.0 INCH (25 mm) DIAMETER CUTOUT

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE AT A CIRCUMFERENTIAL BUTT SPLICE
- DAMAGE IN THE PRESSURIZED CROWN AREA. (S-8L TO S-8R).
- DAMAGE IN AN AREA WITH EXISTING DOUBLERS OR AN INTEGRAL PAD-UP
- DAMAGE THAT EXTENDS OVER A CHEM-MILLED OR MACHINED RADIUS
- DAMAGE AT A SKIN LAP-SPLICE
- DAMAGE NEAR THE STATIC PORTS OR ANGLE OF ATTACK SENSORS
- WITHIN 22 INCHES (55 cm) OF AN ADJACENT SKIN (EXTERNAL OR INTERNAL) REPAIR
- WITHIN 22 INCHES OF A DOOR CUTOUT
- DAMAGE AT THE WINDOW BELT
- AREAS WHERE THE SKIN THICKNESS IS 0.125 INCH (3.2 mm) OR MORE
- WITHIN 3 INCHES (75 mm) OF AN EXISTING FASTENER ROW

REPAIR INSTRUCTIONS

CAUTION: IF ACOUSTIC TILES ARE FOUND DURING THE FUSELAGE SKIN REPAIR, BE CAREFUL NOT TO DAMAGE THESE TITLES.

1. Get access to the damaged area.

CAUTION: DO NOT GOUGE, SCRATCH, OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR.

2. Carefully cut and remove the damaged part of the fuselage skin.
   A. Make the cut a 1.0 inch (25 mm) maximum diameter hole.
   B. Make the edges of the cut smooth with a surface finish of 125 microinches Ra.
3. Do a high frequency eddy current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-00-01. Repeat steps 2 and 3 if all of the damage was not removed.
4. Make the repair parts. See Table I.
5. Assemble the repair parts as shown in Detail I and drill the fastener hole(s). Refer to SRM 51-40-05 for the fastener hole size.
6. Disassemble the repair parts.
7. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
9. Apply two layers of BMS 10-11, Type I primer to the internal surfaces of the repair parts and to the bare internal surfaces of the initial parts. Refer to SOPM 20-41-02.
10. Apply one layer of BMS 10-79, Type II or III primer to the external surfaces of the repair parts and to the bare external surfaces of the initial parts. Refer to SOPM 20-44-04.
11. Install the fastener(s). Fasteners must be installed wet with BMS 5-95 sealant. A
12. Apply a fillet seal to the repair parts on the internal edges of the repair area. Refer to SRM 5-20-05.

NOTES

- THIS REPAIR IS A CATEGORY C REPAIR. THIS REPAIR HAS FAA APPROVAL PROVIDED THAT THE REPAIR IS DISASSEMBLED AND THE STRUCTURE IS INSPECTED EVERY 300 FLIGHT HOURS. THIS REPAIR MUST BE REPLACED BY THE REPAIR SHOWN IN REPAIR 6 WITHIN 1000 FLIGHT HOURS OR AT THE NEXT "C" CHECK, WHICHEVER COMES FIRST.
- D = FASTENER DIAMETER.
- THE MAXIMUM PULL-UP PERMITTED PRIOR TO FASTENER INSTALLATION IS 0.005 INCH (0.13 mm).
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR DECORATIVE EXTERIOR FINISHES, CLEANING AND PAINTING
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILES
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINSHES
  - SOPM 20-44-04 FOR APPLICATION OF URETHANE COMPATIBLE PRIMERS
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR SEALING PROCEDURES AND ALTERNATE SEALANTS
  - SRM 51-20-08 FOR INSTALLATION OF SHIMS
  - SRM 51-40-02 FOR FASTENER INSTALLATION AND REMOVAL

Fuselage Skin - Small Hole External Repair
Figure 201 (Sheet 1 of 2)

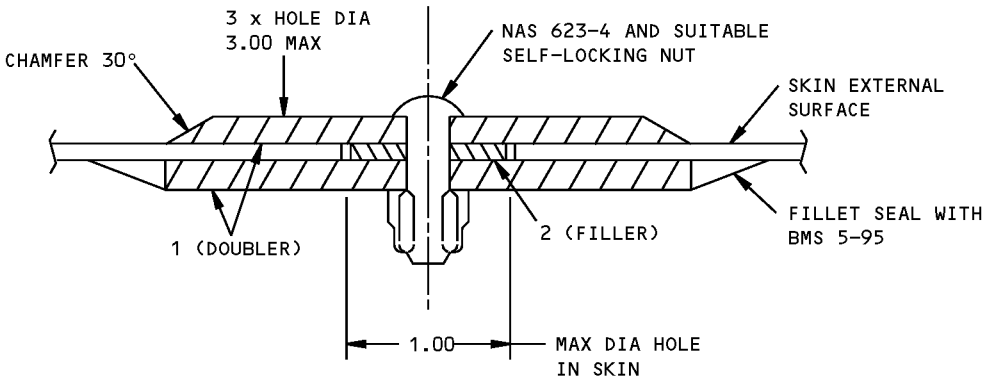
NOTES (CONT)

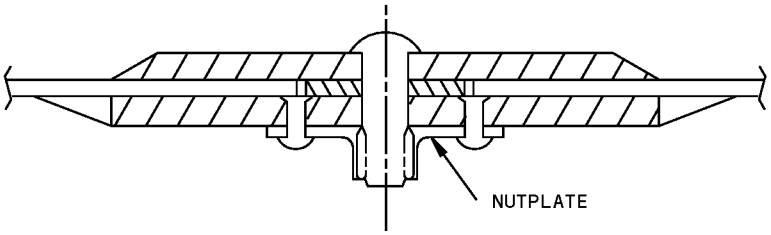
- SRM 51-40-03 FOR FASTENER SUBSTITUTIONS
- SRM 51-40-05 FOR FASTENER HOLE SIZES
- SRM 51-40-06 FOR FASTENER EDGE MARGINS
- SRM 51-70-09 FOR METAL-TO-METAL STRUCTURAL BONDING.

[A] DO NOT INSTALL FASTENERS THROUGH ACOUSTIC TILES.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	2	2024-T3, -T4 OR -T42 TWICE TOTAL SKIN THICKNESS
2	FILLER	1	2024-T3, -T4 OR -T42 SAME GAGE AS SKIN

TABLE I





OPTIONAL METHOD

DETAIL I

Fuselage Skin - Small Hole External Repair
Figure 201 (Sheet 2 of 2)

REPAIR 6 - FUSELAGE SKIN - SMALL HOLE FLUSH REPAIR

APPLICABILITY

THIS REPAIR IS APPLICABLE TO:

- SKIN DAMAGE WHICH CAN BE REMOVED WITH A MAXIMUM 1.0 INCH DIAMETER CUTOUT.

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE AT A CIRCUMFERENTIAL BUTT SPLICE
- DAMAGE IN AN AREA WITH EXISTING DOUBLERS OR AN INTEGRAL PAD-UP
- DAMAGE THAT EXTENDS OVER A CHEM-MILLED OR MACHINED RADIUS
- DAMAGE AT A SKIN LAP-SPLICE
- DAMAGE NEAR THE STATIC PORTS OR ANGLE OF ATTACK SENSORS
- WITHIN 22 INCHES OF AN ADJACENT SKIN (EXTERNAL OR INTERNAL) REPAIR
- WITHIN 22 INCHES OF A DOOR CUTOUT
- DAMAGE AT THE WINDOW BELT.

REPAIR INSTRUCTIONS

CAUTION: IF ACOUSTIC TILES ARE FOUND DURING THE FUSELAGE SKIN REPAIR, REMOVE THESE TILES BEFORE YOU DO THIS REPAIR.

1. Get access to the damage area.

CAUTION: DO NOT GOUGE, SCRATCH, OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR.

2. Carefully cut and remove the damaged part of the fuselage skin.
   A. Make the cut a 1.0 inch maximum diameter hole.
   B. Make the edges of the cut smooth with a surface finish of 125 microinches Ra.
3. Do a high frequency eddy current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-00-01. Repeat steps 2 and 3 if all of the damage was not removed.
4. Make the repair parts. See Table I.
5. Assemble the repair parts as shown in Detail I and drill the fastener holes. Refer to SRM 51-40-05 for the fastener hole size.
6. Disassemble the repair parts.
7. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
9. Apply two layers of BMS 10-11, Type I primer to the internal surfaces of the repair parts and to the bare surfaces of the initial parts. Refer to SOPM 20-41-02.
10. Apply one layer of BMS 10-79, Type II or III primer to the external surfaces of the repair parts and to the bare external surfaces of the initial parts. Refer to SOPM 20-44-04.
11. Install the repair parts wet with BMS 5-95 sealant between mating surfaces.
12. Install the fasteners as given in Table II. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant. Overdrive BACR15FV()KE rivets to make the driven head 1.5D.
13. Apply a fillet seal to the repair parts on the internal edges of the repair area. Refer to SRM 51-20-05.
14. Apply a layer of BMS 3-23 corrosion inhibiting compound to the internal structure of the repair area if the repair is below the main passenger floor. Refer to SRM 51-20-01.
15. Fill the gap between parts with aerodynamic smoother.
16. Apply the decorative finish to the repair area. Refer to AMM 51-21.
17. Replace the acoustic tiles if necessary.

NOTES

- THIS REPAIR IS CATEGORY A AND NO SUPPLEMENTAL INSPECTIONS ARE NECESSARY.
- D = FASTENER DIAMETER.
- THE MAXIMUM PULL-UP PERMITTED PRIOR TO FASTENER INSTALLATION IS 0.005 INCH.
- MAINTAIN A MINIMUM OF 2D EDGE MARGIN ON ALL REPAIR PARTS.
- MAKE SURE THAT THERE ARE NO KNIFE-EDGE CONDITIONS IN THE SKIN BEFORE DRILLING THE FASTENER HOLES. IF THE COUNTERSINK DEPTH IS GREATER THAN 2/3 OF THE SHEET THICKNESS, INSTALL A PROTRUDING HEAD FASTENER.

Fuselage Skin - Small Hole Flush Repair
Figure 201 (Sheet 1 of 3)

NOTES (CONT)

- WHEN YOU DO THIS REPAIR, REFER TO:
  - AMM 51-21 FOR DECORATIVE EXTERIOR FINISHES, CLEANING AND PAINTING
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILE
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SOPM 20-44-04 FOR APPLICATION OF URETHANE COMPATIBLE PRIMERS
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR SEALING PROCEDURES AND ALTERNATE SEALANTS
  - SRM 51-20-08 FOR INSTALLATION OF SHIMS
  - SRM 51-40-02 FOR FASTENER INSTALLATION AND REMOVAL
  - SRM 51-40-03 FOR FASTENER SUBSTITUTIONS
  - SRM 51-40-05 FOR FASTENER HOLE SIZES
  - SRM 51-40-06 FOR FASTENER EDGE MARGINS
  - SRM 51-70-09 FOR METAL-TO-METAL STRUCTURAL BONDING.

[A] DO NOT INSTALL FASTENERS THROUGH ACOUSTIC TILES.

[B] USE BACR15BB5D RIVETS.

[C] USE BACR15CE()D RIVETS FOR SKIN REPAIRS IN SECTIONS 41 AND 48. USE BACR15FV()KE RIVETS FOR SKIN REPAIRS IN SECTION 43, 45, AND 46.

[D] USE BACB30NW8K HEX-DRIVE BOLTS WITH BACC30M8 COLLARS.

[E] SIZE THE FILLER SUCH THAT THERE IS A 0.03 TO 0.07 INCH GAP (MAXIMUM) AROUND THE SKIN CUTOUT.

NOTES (CONT)

⌖ REPAIR FASTENER LOCATION. INSTALL THE FASTENERS PER TABLE II. [A]

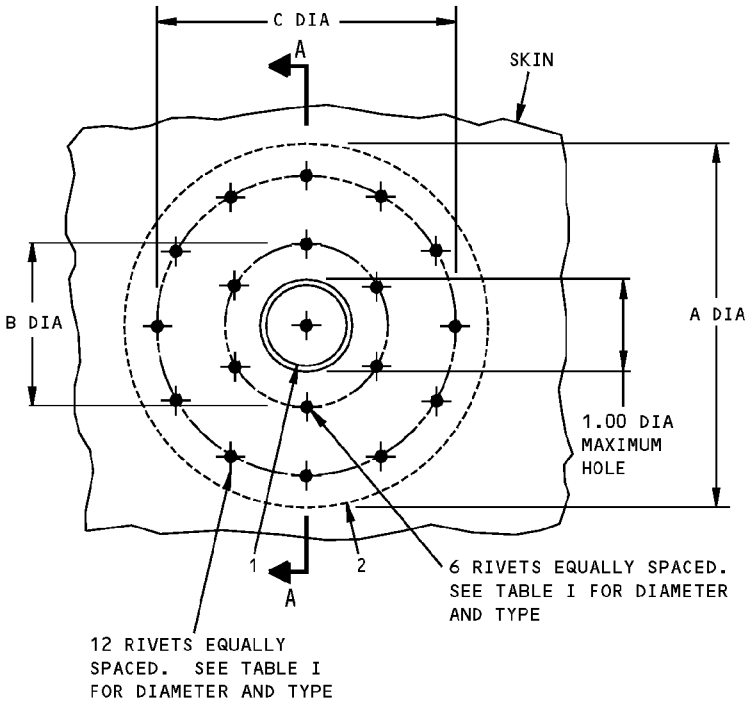
REPAIR MATERIAL			
PART NO.	PART	QTY	MATERIAL
1	FILLER	1	USE THE SAME MATERIAL AND GAGE AS THE INITIAL SKIN.
2	DOUBLER	1	USE THE SAME MATERIAL AS THE INITIAL SKIN. SEE TABLE II FOR THE THICKNESS.

TABLE I

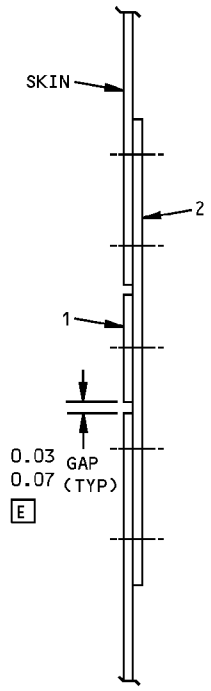
Fuselage Skin - Small Hole Flush Repair
Figure 201 (Sheet 2 of 3)

SKIN GAGE	PART 2 (DOUBLER) GAGE	A DIA	B DIA	C DIA	FASTENER DIA	FASTENER TYPE
0.040	0.056	3.80	1.80	3.10	5/32	[B]
0.047	0.063	3.80	1.80	3.10	5/32	
0.056	0.063	3.80	1.80	3.10	5/32	[C]
0.063	0.071	4.30	2.00	3.50	3/16	
0.071	0.080	4.30	2.00	3.50	3/16	
0.080	0.090	5.25	2.25	4.25	1/4	
0.090	0.100	5.25	2.25	4.25	1/4	
0.100	0.125	5.25	2.25	4.25	1/4	[D]

TABLE II



DETAIL I



SECTION A–A

Fuselage Skin - Small Hole Flush Repair
Figure 201 (Sheet 3 of 3)

REPAIR 7 - METHOD OF USING BRILES RIVET HEAD AS REPAIR WASHER FOR EXTERNAL SKIN REPAIR

REPAIR INSTRUCTIONS

1. Overdrive the existing Briles rivet button to a maximum diameter of 1.65D button diameter.
2. Centerpunch center of existing Briles manufactured rivet head.
3. Drill 1/8-inch pilot hole through the Briles rivet from the manufactured side.
4. Microshave (flush) the manufactured head to provide a flush surface for the doubler.
5. Locate repair doubler and drill all holes in new fastener locations.
6. Backdrill pilot holes through repair doubler from button side.
7. Drill or ream holes to final size and countersink for desired fastener on external side of repair doubler.
8. Remove chips and any remaining portion of the original rivet button.
9. Install fasteners.

NOTES

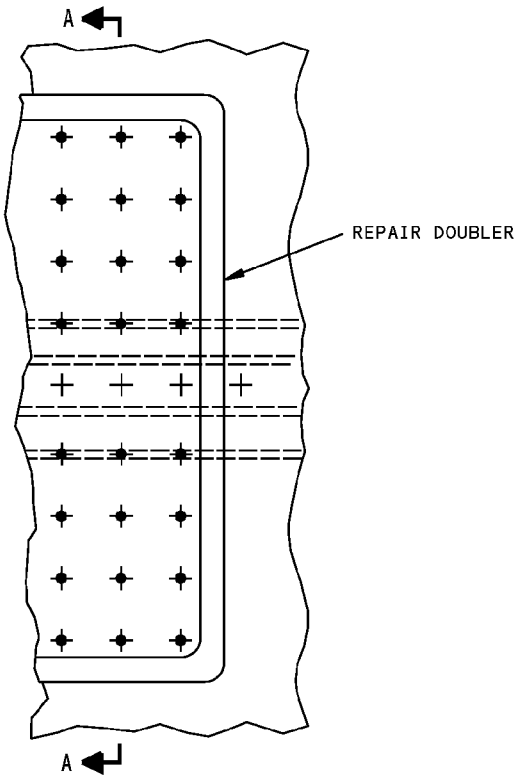
- WHEN USING THIS METHOD THE REPAIR RIVET OR FASTENER MUST BE THE SAME SIZE AS EXISTING RIVET
- THIS IS A TYPICAL PROCEDURE FOR INSTALLING AN EXTERNAL REPAIR PLATE OVER AREAS WHERE BRILES RIVETS (BACR15FV) WERE INSTALLED AT MANUFACTURE, THE EXISTING BRILES RIVET HEADS ARE USED AS REPAIR WASHERS IN THIS REPAIR PROCEDURE
- FINISH THE REWORKED ARE PER 51-20 OF THE MAINTENANCE MANUAL
- ALODIZE EDGES AND HOLES PER 51-10-02
- SEE 51-40-02 FOR RIVET INSTALLATION

FASTENER SYMBOLS

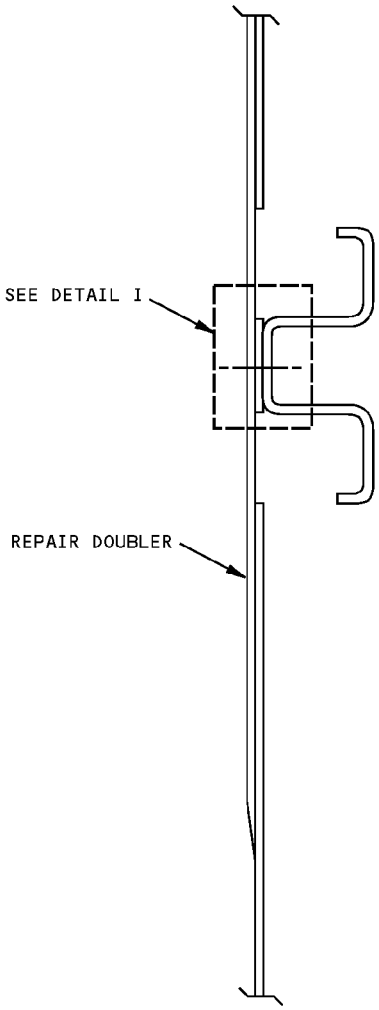
┼ EXISTING FASTENER LOCATIONS

✛ NEW FASTENER LOCATIONS

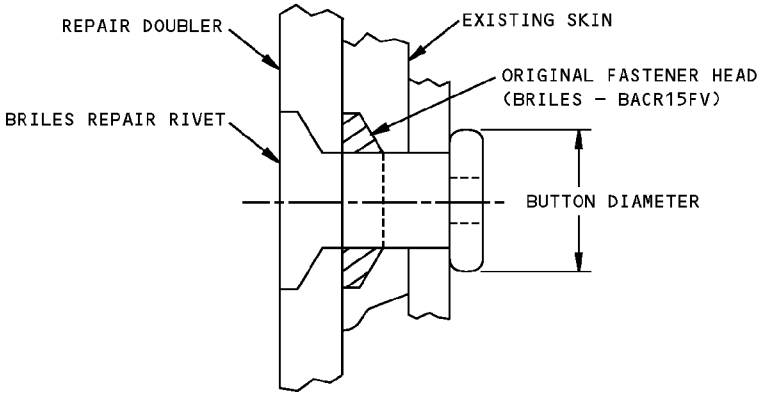
Method of Using Briles Rivet Head as Repair Washer for External Skin Repair
Figure 201 (Sheet 1 of 2)



TYPICAL SKIN REPAIR DOUBLER



SECTION A-A
(2X SIZE)



BRILES REPAIR RIVET SHOWN INSTALLED
SEE APPLICABLE REPAIR FOR REPAIR FASTENER
DETAIL I

Method of Using Briles Rivet Head as Repair Washer for External Skin Repair
Figure 201 (Sheet 2 of 2)

REPAIR 8 - REPAIR OF LIGHTNING STRIKE DAMAGE ON PRESSURIZED FUSELAGE SKIN

APPLICABILITY
THIS REPAIR IS FOR DAMAGE THAT IS LOCATED IN AN AREA OF CONSTANT THICKNESS. DAMAGE MUST ALSO BE AT LEAST 1.5 TIMES THE DAMAGE DIAMETER FROM A CHEM-MILLED RADIUS

REPAIR INSTRUCTIONS

NOTE: LIGHTNING STRIKES CAUSE DAMAGES THAT LOOK LIKE SMALL BURN MARKS. SEE DETAIL II.

NOTE: REFER TO SECTION I FOR SKIN DAMAGE AWAY FROM A FASTENER LOCATION. REFER TO SECTION II FOR DAMAGE AT A FASTENER LOCATION. SEE DETAIL I FOR THE REPAIR FLOW CHART.

CAUTION: IF ACOUSTIC TILES ARE FOUND WHEN YOU DO THE FUSELAGE SKIN REPAIR, REMOVE THE TILE BEFORE YOU CONTINUE WITH THE REPAIR. REFER TO AMM 53-01-04.

SECTION I

REPAIR OF SKIN DAMAGE AWAY FROM A FASTENER LOCATION:

1. Get access to the damaged area.
2. Examine the damaged area and find the depth and the length of the damage.
   A. If the depth of the damage is more than the limits shown in the surface damage detail in SRM 53-00-01, Allowable Damage 1, and the damage is less than or equal to 0.3125 inch long, Refer to pararagrah 3 or paragraph 4 to drill it out and install a rivet.
   B. If the depth of the damage is more than the limits shown in the surface damage detail in SRM 53-00-01, Allowable Damage 1, and the damage is longer than 0.3125 inch, See Table I for a doubler repair.
3. Solid Rivet Repair

   For a Category A repair with a solid rivet, do as follows if the damage is less than or equal to 0.3125 inch in diameter. [B]

NOTE: MAKE SURE THAT THE EDGE MARGIN IS A MINIMUM OF 2 TIMES THE LENGTH OF THE DAMAGE.

   A. Drill out the damage. Use a drill with a diameter that is the same or larger than the length of damage.
   B. Inspect the hole to make sure there are no cracks. [A]
   C. If no cracks are found drill the hole 1/16 inch oversize.

CAUTION: DO NOT MAKE THE COUNTERSINK DEPTH MORE THAN 67% OF THE SKIN THICKNESS. THE FASTENER FLUSHNESS MUST MEET FLUSHNESS REQUIREMENTS OF SRM 51-10-01, FIGURE 3. DO NOT INSTALL A RIVET THROUGH A CHEM-MILLED RADIUS.

   D. Countersink the hole if necessary (Refer to SRM 51-40-08). Remove all nicks, gouges, and sharp edges.
   E. Apply a chemical conversion coating to any bare aluminum surfaces. Refer to SRM 51-20-01.

CAUTION: BE CAREFUL WHEN YOU INSTALL LARGE DIAMETER RIVETS IN THIN SKINS. RIVET TOOLS CAN DENT, SCRATCH, OR GOUGE THE FUSELAGE SKIN.

   F. Install a solid rivet. The rivet must not be larger than 0.375 inch in diameter. See Detail III or IV. Make sure the fastener hole size agrees with SRM 51-40-05 for the fastener that will be used.
   G. Apply the finish to the repair area as necessary. Refer to AMM 51-21-10.

4. Blind Rivet Repair

   For a Category C repair with supplemental inspections do as follows: [B]

NOTE: MAKE SURE THAT THE EDGE MARGIN IS A MINIMUM OF 2 TIMES THE LENGTH OF THE DAMAGE.

   A. Drill out the damage. Use a drill with a diameter that is the same or larger than the length of damage.
   B. Do a detail visual inspection of the hole with a minimum 10X magnification to make sure there are no cracks.

NOTE: INCREASING THE SIZE OF THE HOLE AS AN INSURANCE CUT IS NOT NECESSARY WHEN YOU INSTALL A BLIND FASTENER FOR A CATEGORY C REPAIR. YOU WILL MAKE THE HOLE LARGER WHEN YOU REPLACE THE BLIND FASTENER WITH CATEGORY A REPAIR USING A SOLID FASTENER (PARAGRAPH 5).

   C. If no cracks are found, install a blind fastener. See Detail V. [D] Refer to SRM 51-40-02. Do not micro-shave blind fasteners.
   D. Do the repeat inspections as given in Table II. Replace the repair with a solid fastener repair in the specified time limit given in Table II. Refer to Paragraph 5 to do the solid fastener repair. As an alternative you can do a general SRM skin repair (See Table I).

Repair Of Lightning Strike Damage On Pressurized Fuselage Skin
Figure 201 (Sheet 1 of 8)

REPAIR INSTRUCTIONS CONTINUED

5. Blind Fastener Replacement

   In the time limit given in Table II, replace the blind fastener with an oversized solid rivet as follows:

   A. Remove the blind fastener. Refer to SRM 51-40-05.

   B. Inspect the hole to make sure there are no cracks or other damage. [A]

   C. If no cracks are found, drill the hole 1/16 inch larger for an oversize rivet installation. Refer to SRM 51-40-05. If the hole diameter for the 1/16 inch diameter oversize solid rivet is greater than 0.375, Refer to Repair 6 for a small hole flush repair.

   CAUTION: DO NOT MAKE THE COUNTERSINK DEPTH MORE THAN 67% OF THE SKIN THICKNESS. THE FASTENER FLUSHNESS MUST MEET FLUSHNESS REQUIREMENTS OF SRM 51-10-01, FIGURE 3. DO NOT INSTALL A RIVET THROUGH A CHEM-MILLED RADIUS.

   D. If a flush head solid rivet is used, countersink the hole. If a protruding head solid rivet is used, use a countersink repair washer to fill any initial countersink in the skin. Refer to SRM 51-40-08.

   E. Apply a chemical conversion coating to any bare aluminum surfaces. Refer to SRM 51-20-01.

   CAUTION: BE CAREFUL WHEN YOU INSTALL LARGE DIAMETER RIVETS IN THIN SKINS. RIVET TOOLS CAN DENT, SCRATCH, OR GOUG THE FUSELAGE SKIN.

   F. Install the rivet. The rivet must not be larger than 0.375 inch in diameter. Refer to Detail III or IV.

   G. Apply the finish to the repair area as necessary. Refer to AMM 51-21-00.

SECTION II

REPAIR OF LIGHTNING STRIKE DAMAGE AT A FASTENER LOCATION:

1. Get access to the damaged area.

2. Damage at a fastener location can be limited to the fastener or also include a part of the skin.

   A. For fastener only damage, replace the fastener as given in Section II, paragraph 3 or 4.

   B. For adjacent skin damage you can do one of the procedures that follow:

      - Blend out the skin damage as given in the allowable damage section, Allowable Damage 1 and install a fastener as given in Section II, paragraph 3 or 4 or,

      - Use a larger replacement fastener that would remove the skin damage as given in Section II Paragraph 3 or 4 or,

      - Do a general skin repair as given in Table I.

3. Solid Fastener Repair [F]

   For damage limited to a fastener, do steps A to F for a Category A repair. For damage at a fastener with adjacent skin damage, see step G.

   A. Remove the initial fastener and drill the hole up to 1/32 inch diameter oversize. Refer to SRM 51-40-05.

   CAUTION: DO NOT MAKE THE COUNTERSINK DEPTH MORE THAN 67% OF THE SKIN THICKNESS. THE FASTENER FLUSHNESS MUST MEET FLUSHNESS REQUIREMENTS OF SRM 51-10-01, FIGURE 3.

   B. Countersink the hole if necessary. Refer to SRM 51-40-08. If a Briles rivet is used, refer to SRM 51-40-02 Figure 5 for the installation of oversize Briles rivet in thin skin. Remove all nicks, gouges, and sharp edges.

   C. Do a nondestructive test to make sure all the damage is removed. [A] If more damage is found, get alternative repair instructions from Boeing.

   D. Apply a chemical conversion coating to bare aluminum surfaces. Refer to SRM 51-20-01.

   CAUTION: BE CAREFUL WHEN YOU INSTALL LARGE DIAMETER RIVETS IN THIN SKINS. RIVET TOOLS CAN DENT, SCRATCH, OR GOUGE THE FUSELAGE SKIN

   E. Install the oversize fastener.

   F. Apply the finish to the fastener head as necessary. Refer to AMM 51-21-00.

Repair Of Lightning Strike Damage On Pressurized Fuselage Skin
Figure 201 (Sheet 2 of 8)

REPAIR INSTRUCTIONS CONTINUED

G. For damage at a fastener with adjacent skin damage, it is permitted to repair the skin damage by increasing the replacement fastener one full size (1/16th inch) [G]. Do procedures in Section II, Paragraph 3 steps A thru F, provided the requirements that follow are met:

- The edge margin for the replacement fastener must be greater than 1.75D minimum or as specified in SRM 51-40-06.
- The replacement fastener spacing must be a minimum of 4D.

4. Blind Fastener Repair

For damage limited to a rivet, do steps A to E for a Category C repair with supplemental inspections as given in Table II. For a Category C repair when damage is at a fastener with adjacent skin damage, see step F.

NOTE: TO USE THIS REPAIR THE INITIAL FASTENER MUST BE A BACR15CE( ) OR A BACR15FV( ) RIVET WITH A MAXIMUM DIAMETER OF 6/32 INCH.

A. Remove the damaged rivet. Refer to SRM 51-40-02.

NOTE: INCREASING THE SIZE OF THE HOLE AS AN INSURANCE CUT IS NOT NECESSARY FOR THE BLIND FASTENER REPAIR. YOU WILL MAKE THE HOLE LARGER WHEN YOU SUBSEQUENTLY DO THE CATEGORY A REPAIR WITH A SOLID FASTENER.

B. Clean the hole and do a detail visual inspection of the hole with a minimum 10X magnification to make sure there are no cracks.

C. Apply a chemical conversion coating to the bare surfaces of the skin. Refer to SRM 51-20-01.

D. Install a protruding head blind fastener as given in Table III. [H]

E. Do the repeat inspections as given in Table II. Replace the repair with a solid rivet repair in the specified time limit given in Table II. Refer to Section I, paragraph 5.

F. For damage at a fastener with adjacent skin damage, it is permitted to repair the skin damage by increasing the replacement fastener one full size (1/16th inch) [G]. You can do a Category C repair with supplemental inspection if you do the procedures in Section II, Paragraph 4 steps A thru E, and also provided the requirements that follow are met:

- The edge margin for the replacement fastener must be greater than 1.75D
- The replacement fastener spacing must be a minimum of 4D.

NOTES

- D = FASTENER DIAMETER
- REFER TO ALLOWABLE DAMAGE 1 FOR FUSELAGE SKIN ALLOWABLE DAMAGE LIMITS.
- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-10-02 FOR INVESTIGATION AND CLEANUP OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40-00 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS.
  - AMM 51-21-00 FOR INTERIOR AND EXTERIOR FINISHES.

[A] AN EDDY CURRENT INSPECTION FOR CRACKS IS RECOMMENDED. REFER TO NDT PART 6, 51-00-04 OR 51-00-11 AS APPLICABLE FOR EDDY CURRENT INSPECTIONS. FOR EXTERNAL SKIN DAMAGE ONLY, A PERMITTED ALTERNATIVE IS TO PENETRANT INSPECT. REFER TO SOPM 20-20-02.

[B] ANY HOLES MADE FOR THE REPAIR MUST NOT BE WITHIN 4 HOLE DIAMETERS FROM ANY OTHER HOLE OR FASTENER. IF A HOLE MADE FOR THE REPAIR IS CLOSER THAN ALLOWED, USE AN EXTERNAL OR FLUSH REPAIR (SEE TABLE I).

[C] FASTENER HEADS WHICH ARE ABOVE THE OUTER MOLD LINE OF THE SKIN ARE NOT PERMITTED NEAR THE STATIC PRESSURE PORTS. REFER TO SRM 51-10-01.

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Repair Of Lightning Strike Damage On Pressurized Fuselage Skin
Figure 201 (Sheet 3 of 8)

NOTES CONTINUED

D THIS REPAIR IS CATEGORY C WHEN BLIND FASTENERS ARE USED. THE CATEGORY C REPAIR HAS FAA APPROVAL IF YOU DO THE INSPECTIONS AT THE SPECIFIED THRESHOLD AND INTERVAL GIVEN IN TABLE II AND REPLACE THE REPAIR WITH THE SOLID RIVET REPAIR AT THE SPECIFIED TIME LIMIT GIVEN IN TABLE II. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES.

E DO NOT INSTALL FASTENERS THROUGH ACOUSTIC TILES.

F REPLACE THE INITIAL FASTENER WITH THE SAME FASTENER TYPE. USE BACR15CE()D RIVETS FOR RIVET REPAIRS IN SECTIONS 41 AND 48. USE BACR15FV()KE RIVETS FOR RIVET REPAIRS IN SECTIONS 43, 45, AND 46.

G YOU ARE ALLOWED TO MOVE THE CENTER OF THE HOLE SO THAT THE DAMAGE CAN BE REMOVED. MAKE SURE THE FASTENER HOLE WILL NOT BE IN THE BEND RADIUS OF AN UNDERLYING STRUCTURE. THE MINIMUM FASTENER SPACING PERMITTED IS 4D, AND THE MINIMUM EDGE MARGIN PERMITTED IS 1.75D.

H INSTALL A COUNTERSINK REPAIR WASHER AS GIVEN IN SRM 51-40-08.

LENGTH OF DAMAGE	REPAIR
0.3125 TO 1.000 INCH	FLUSH REPAIR: REPAIR 6 OPTIONAL: REPAIRS 1, 2, 3, 4
LARGER THAN 1.0 INCH	USE EXTERNAL OR FLUSH REPAIR FOR LARGE DAMAGE - REPAIRS 1, 2, 3, 4

TABLE I

CATEGORY C REPAIR INSPECTION AND REPAIR REQUIREMENTS				
DAMAGE LOCATION	INSPECTION THRESHOLD	REPEAT INSPECTION ALTERNATIVES		TIME LIMIT TO DO THE CATEGORY A REPAIR
		METHOD	INTERVAL	
PRESSURIZED FUSELAGE WHICH IS NOT IN THE CROWN AREA	1500 CYCLES	10 X MAGNIFIED DETAILED INSPECTION	1500 CYCLES	6000 FLIGHT CYCLES
FOR THE PRESSURIZED CROWN AREA (8L - 8R), REPLACE BLIND FASTENERS WITH SOLID FASTENERS NO LATER THAN 1500 FLIGHT CYCLES.				
NOTE: INSPECT THE SKIN AROUND THE HOLE FOR CRACKS. LOOSE OR MISSING FASTENERS MUST BE REPLACED WITH SOLID FASTENERS.				

TABLE II - CATEGORY C REPAIR INSPECTION AND REPAIR REQUIREMENTS

Repair Of Lightning Strike Damage On Pressurized Fuselage Skin
Figure 201 (Sheet 4 of 8)

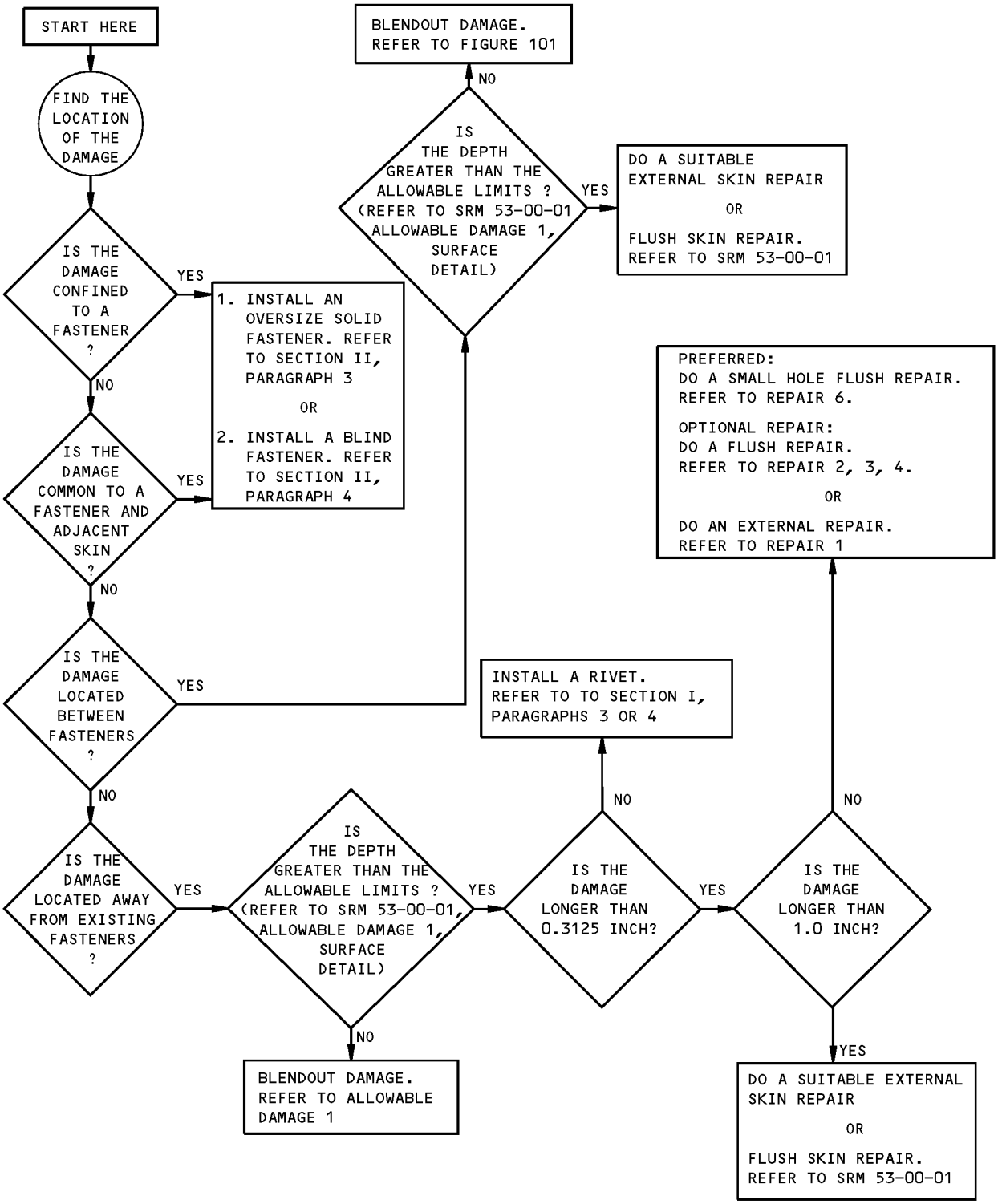
DAMAGED FASTENER	BLIND FASTENER	COMMENTS
BACR15FV( )KE or, BACR15CE( )D, KE, AD	MS90354 ( ) H BACR15FR( )E H NAS1398D H	Protruding Head Repair Fasteners

NOTES

- BLIND FASTENER REPAIRS ARE PERMITTED AS FOLLOWS:
  - A MAXIMUM OF 2 FASTENERS WITHIN 22 INCHES IN THE LONGITUDINAL DIRECTION EXCEPT ALONG A LAP SPLICE. A MAXIMUM OF 4 FASTENERS WITHIN 22 INCHES ALONG A LAP SPLICE.
  - A MAXIMUM OF ONE FASTENER ON A SHEAR TIE BETWEEN STRINGERS. NO BLIND FASTENERS ARE PERMITTED AT THE END LOCATIONS OF A SHEAR TIE.
  - BLIND FASTENER REPAIRS ARE PERMITTED ONLY TO THE AREAS IN WHICH THE SKIN THICKNESS IS EQUAL TO OR LESS THAN 0.125 INCH AND IN WHICH THE INITIAL FASTENER IS EQUAL TO OR LESS THAN 6/32 INCH DIAMETER.
- DO NOT USE PROTRUDING HEAD FASTENERS IN AERODYNAMICALLY EXTRA-CRITICAL AREAS. REFER TO SRM 51-10-01.
- MAKE SURE THE EDGE MARGINS WITH THE OVERSIZED HOLES ARE 1.75D MINIMUM OR AS SPECIFIED IN SRM 51-40-06, WHICH EVER IS LESS.

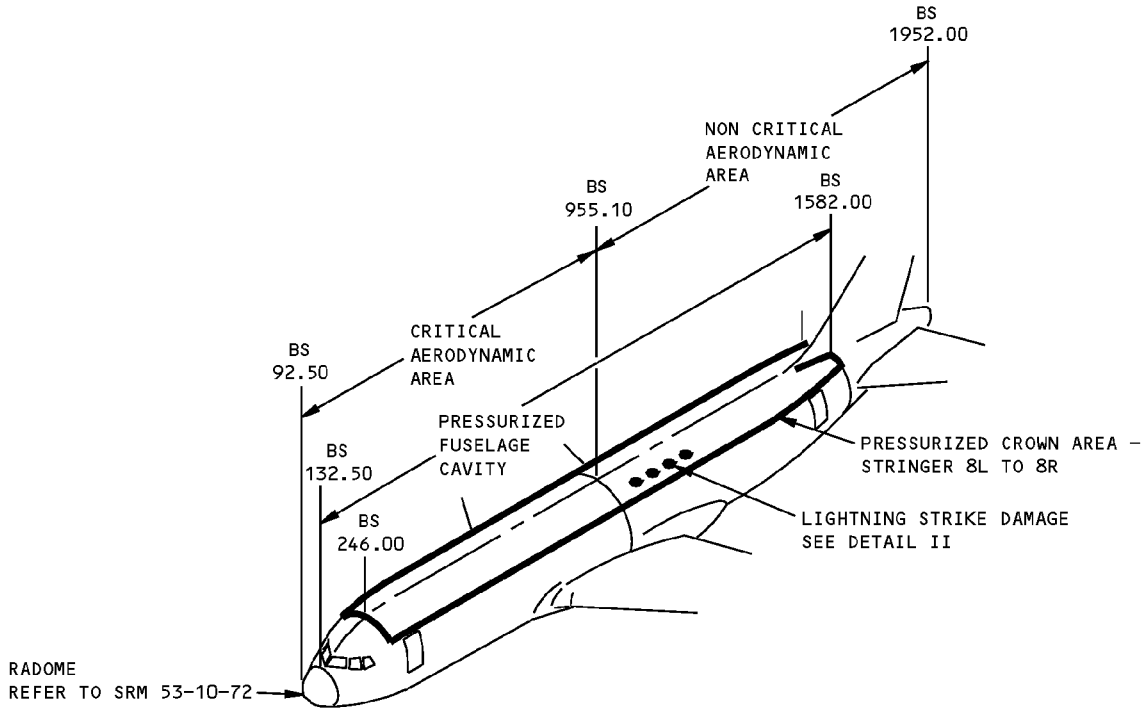
TABLE III – REPAIR WITH BLIND FASTENER FOR DAMAGED INITIAL BACR15CE( ) AND BACR15FV( ) RIVET

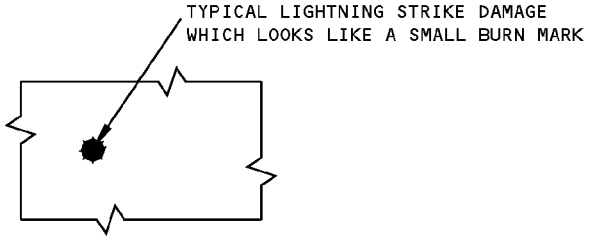
Repair Of Lightning Strike Damage On Pressurized Fuselage Skin
Figure 201 (Sheet 5 of 8)



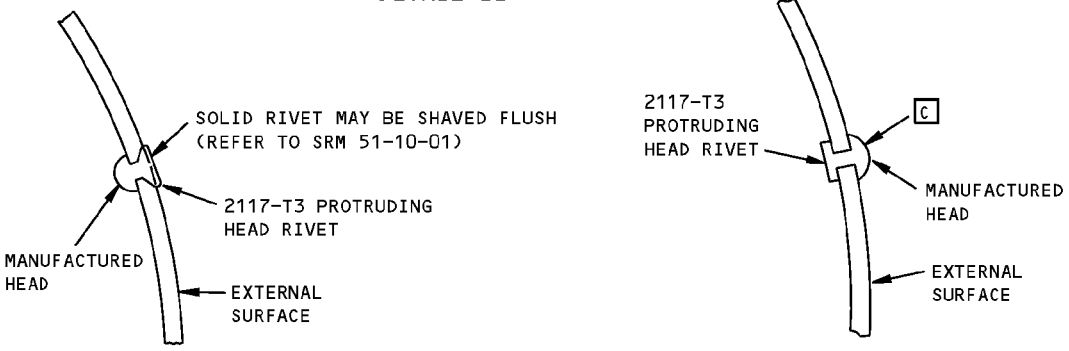
DETAIL I

Repair Of Lightning Strike Damage On Pressurized Fuselage Skin
Figure 201 (Sheet 6 of 8)





DETAIL II

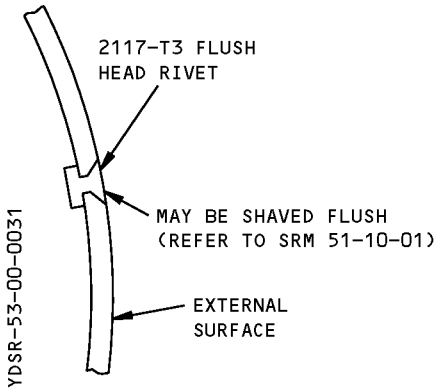


RECOMMENDED METHOD

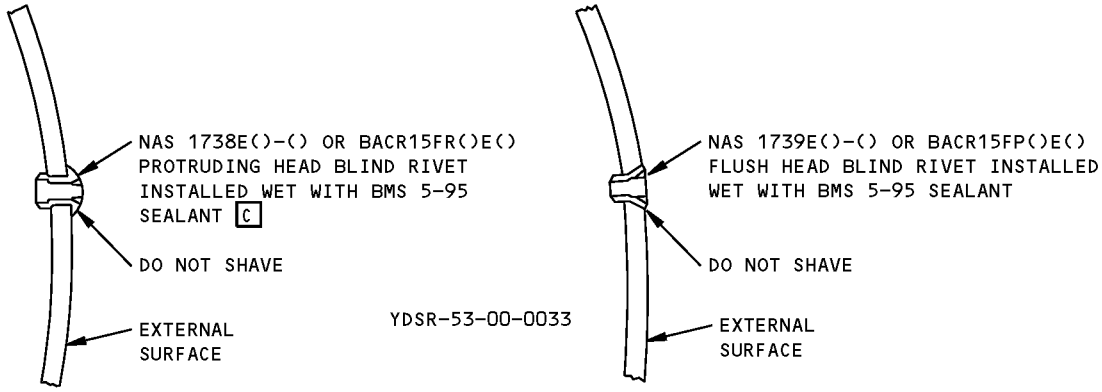
ALTERNATIVE METHOD

DETAIL III

Repair Of Lightning Strike Damage On Pressurized Fuselage Skin
Figure 201 (Sheet 7 of 8)



DETAIL IV



FOR USE IN AREAS WITHOUT EASY ACCESS
FOR INTERNAL INSTALLATION

DETAIL V D E

Repair Of Lightning Strike Damage On Pressurized Fuselage Skin
Figure 201 (Sheet 8 of 8)

REPAIR 9 - FUSELAGE SKIN - FLUSH REPAIR AT STRINGER FOR SKIN THICKNESS OF 0.09 INCH OR LESS

APPLICABILITY

THIS REPAIR IS APPLICABLE TO:

- SKIN DAMAGE AT A STRINGER
- AREAS OF SKINS WITH A CONSTANT GAGE THICKNESS.

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE AT A CIRCUMFERENTIAL BUTT SPLICE
- DAMAGE AT A SKIN LAP-SPLICE
- DAMAGE NEAR THE STATIC PORTS OR ANGLE OF ATTACK SENSORS
- WITHIN 22 INCHES OF AN ADJACENT SKIN (EXTERNAL OR INTERNAL) REPAIR
- WITHIN 22 INCHES OF A DOOR CUTOUT
- DAMAGE AT THE WINDOW BELT.

REPAIR INSTRUCTIONS

CAUTION: IF ACOUSTIC TILES ARE ENCOUNTERED DURING FUSELAGE SKIN REPAIR, REMOVE TILES BEFORE PROCEEDING WITH REPAIR.

1. Get access to the damaged area.
2. Cut and remove the damaged part of the initial skin.
3. Make the repair parts. See Table I. [B]
4. Assemble the repair parts and drill the fastener holes.
5. Disassemble the repair parts.
6. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the initial skin.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial skin. Refer to SRM 51-20-01.
8. Apply one layer of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the initial skin. Refer to SOPM 20-41-02.
9. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
10. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
11. Apply the finish to the repair area. Refer to AMM 51-21.
12. Apply a layer of BMS 3-23 corrosion inhibiting compound above S-20. For S-20 and lower, apply a layer of BMS 3-29 corrosion inhibiting compound. Refer to SRM 51-20-01.
13. Replace the acoustic tiles, if necessary.

NOTES

- THIS REPAIR IS A CATEGORY A REPAIR IF THE PART 1 DOUBLER SIZE IS LESS THAN 12 INCHES (30 cm) IN BOTH DIRECTIONS. THE INSPECTIONS GIVEN IN THE MAINTENANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERANCE OF THE INITIAL STRUCTURE WITH THIS CATEGORY A REPAIR INSTALLED.

  IF THIS REPAIR IS NOT A CATEGORY A REPAIR, THEN IT IS A CATEGORY B REPAIR. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE III. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.

- D = FASTENER DIAMETER
- ALL DIMENSIONS ARE IN INCHES
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS.

[A] USE THE SAME HORIZONTAL SPACING OF THE FASTENERS AS THE NEAREST LONGITUDINAL FUSELAGE SKIN LAP SPLICE.

[B] THE CRITICAL FASTENER ROW OF THE PART 1 DOUBLER MUST NOT BE COMMON TO A STRINGER, FRAME SHEAR TIE OR ANY OTHER BACK-UP STRUCTURE. DO NOT COVER THE TEAR STRAP WITH THE DOUBLER.

Fuselage Skin - Flush Repair at Stringer For Skin Thickness of 0.09 inch or Less
Figure 201 (Sheet 1 of 6)

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION

INITIAL FASTENER LOCATION. INSTALL THE SAME TYPE AND SIZE FASTENER AS THE INITIAL FASTENER. USE 1/64 INCH OVERSIZE FOR HEX-DRIVE BOLTS.

REPAIR FASTENER LOCATION. SEE TABLE II FOR THE FASTENER TYPE AND DIAMETER.

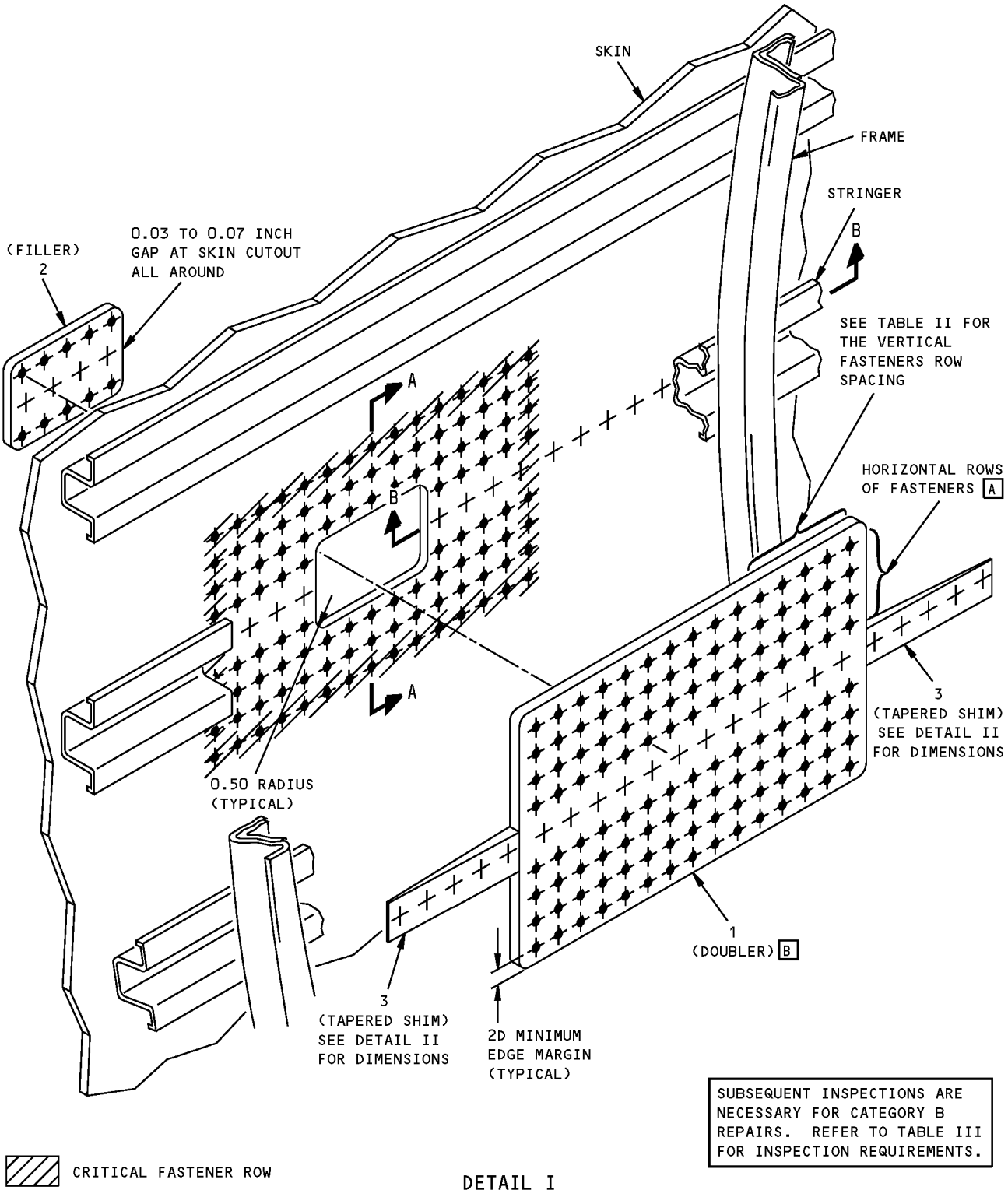
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	USE THE SAME MATERIAL AND ONE GAGE THICKER.
2	FILLER	1	USE THE SAME MATERIAL AND THICKNESS AS INITIAL SKIN.
3	TAPERED SHIM	2	USE THE SAME MATERIAL AS INITIAL SKIN. SEE DETAIL II FOR THE DIMENSIONS.

TABLE I

INITIAL SKIN GAGE (INCH)	REPAIR FASTENER	VERTICAL SPACING OF FASTENERS (INCHES)
0.056 TO 0.071	USE BACR15CE6D() RIVETS FOR SKINS IN SECTIONS 41 AND 48. USE BACR15FV6KE() BRILES RIVETS FOR SKINS IN SECTIONS 43,45 AND 46.	1.35 1.30
0.072 TO 0.090	USE BACR15CE8D() RIVETS FOR SKINS IN SECTIONS 41 AND 48. USE BACR15FV8KE() BRILES RIVETS FOR SKINS IN SECTIONS 43,45 AND 46.	1.50 1.40

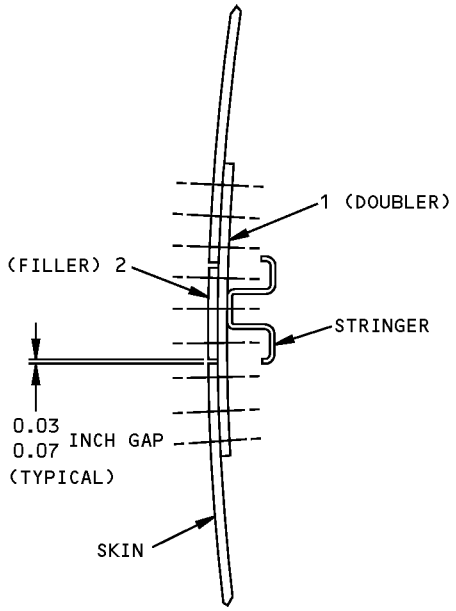
TABLE II

Fuselage Skin - Flush Repair at Stringer For Skin Thickness of 0.09 inch or Less
Figure 201 (Sheet 2 of 6)

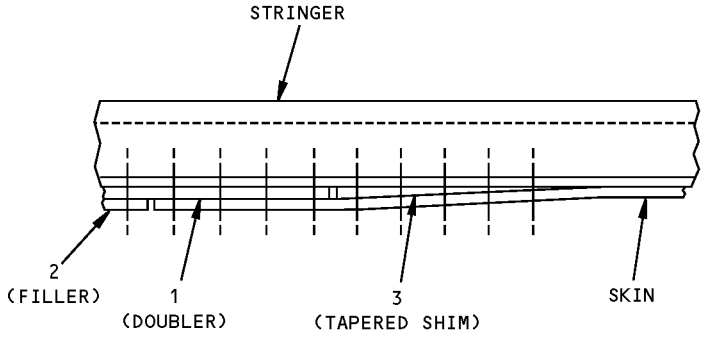


DETAIL I

Fuselage Skin - Flush Repair at Stringer For Skin Thickness of 0.09 inch or Less
Figure 201 (Sheet 3 of 6)

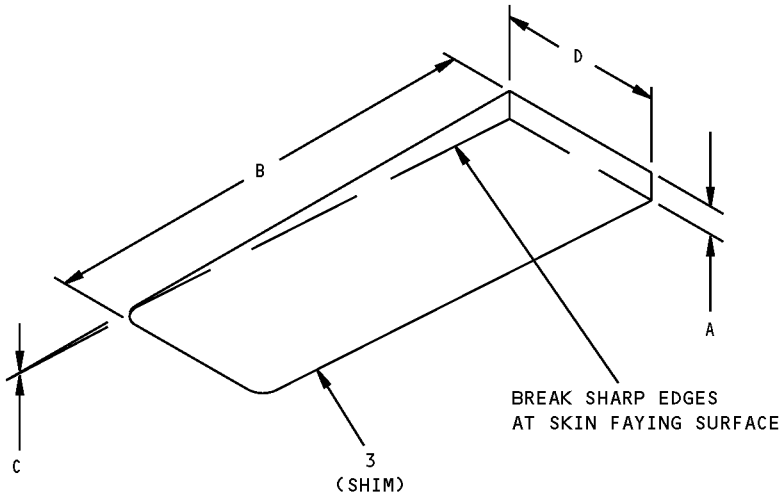


SECTION A-A



SECTION B-B

Fuselage Skin - Flush Repair at Stringer For Skin Thickness of 0.09 inch or Less
Figure 201 (Sheet 4 of 6)



A = DOUBLER THICKNESS
B = 100 (A-C)
C = 0.01
D = 1.30

DETAIL II

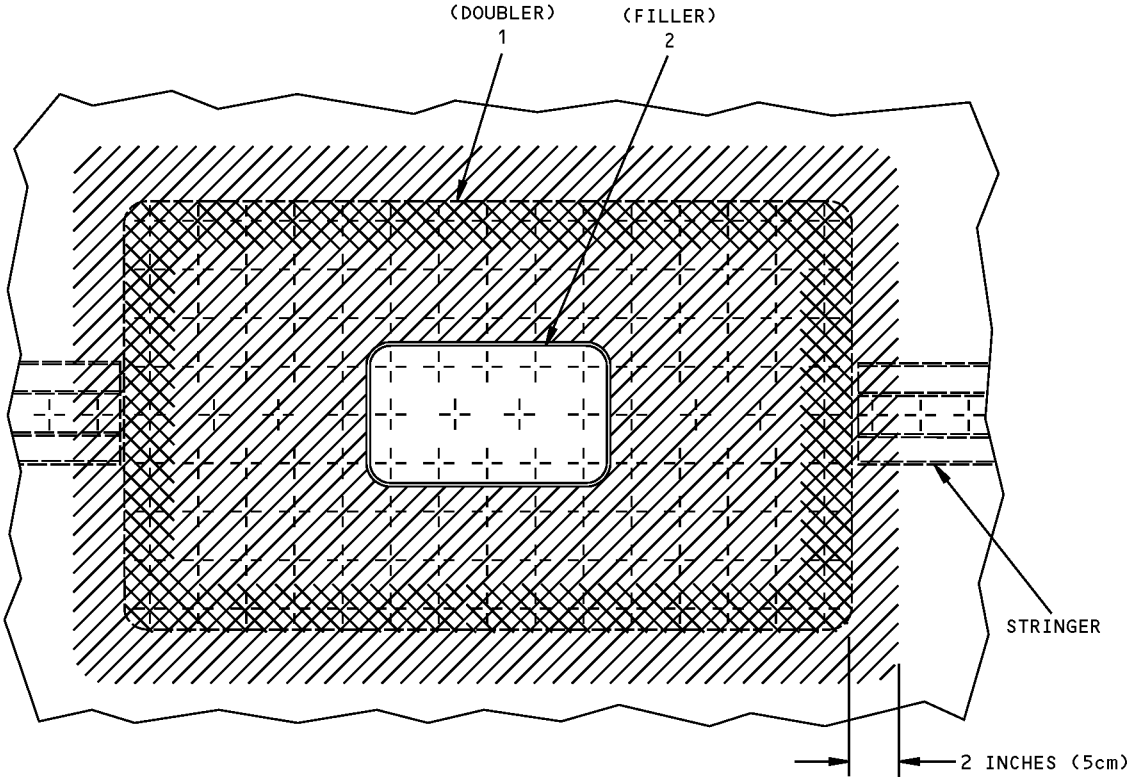
Fuselage Skin - Flush Repair at Stringer For Skin Thickness of 0.09 inch or Less
Figure 201 (Sheet 5 of 6)

CATEGORY B REPAIR INSPECTION REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTIONS		
	METHOD	INTERVAL	REFERENCE
37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	EXTERNAL – HIGH FREQUENCY EDDY CURRENT (HFEC)	12,000 FLIGHT CYCLES	NDT PART 6 51-00-01
	EXTERNAL DETAILED INSPECTION		—

NOTE: – DO AN HFEC INSPECTION OF THE SKIN EXTERNALLY AT THE CRITICAL FASTENER ROW ALONG THE EDGE OF THE PART 1 DOUBLER AS SHOWN IN DETAIL III.

– DO A DETAILED INSPECTION OF THE SKIN IN THE REPAIR AREA AND A 2-INCH WIDE ZONE AROUND THE REPAIR EXTERNALLY AS SHOWN IN DETAIL III.

TABLE III



SKIN INSPECTION AREA AT THE CRITICAL FASTENER ROW WITH AN HFEC METHOD EXTERNALLY

SKIN INSPECTION ARE IN THE REPAIR AREA AND AROUND THE REPAIR. DO A DETAILED INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL I
DETAIL III

Fuselage Skin - Flush Repair at Stringer For Skin Thickness of 0.09 inch or Less
Figure 201 (Sheet 6 of 6)

REPAIR 10 - FUSELAGE SKIN - SMALL HOLE EXTERNAL REPAIR WITH SOLID OR BLIND FASTENERS

APPLICABILITY

THIS REPAIR IS APPLICABLE TO:

- SKIN DAMAGE BETWEEN STRINGERS AND FRAMES
- SKIN DAMAGE WHICH CAN BE REMOVED WITH A MAXIMUM 1.0 INCH (25.4 mm) DIAMETER CUTOUT
- AREAS OF CONSTANT SKIN THICKNESS
- AREAS THAT ARE LESS THAN OR EQUAL TO 0.090 INCH (2.286 mm) SKIN THICKNESS

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE AT A CIRCUMFERENTIAL BUTT SPLICE
- DAMAGE AT A SKIN LAP-SPLICE
- DAMAGE NEAR THE STATIC PORTS OR ANGLE OF ATTACK SENSORS
- WITHIN 22 INCHES (558.8 mm) OF AN ADJACENT SKIN (EXTERNAL OR INTERNAL) REPAIR
- WITHIN 22 INCHES (558.8 mm) OF A DOOR CUTOUT
- DAMAGE AT THE WINDOW BELT

REPAIR INSTRUCTIONS

THIS EXTERNAL REPAIR AS SHOWN PERMITS EITHER A SOLID FASTENER REPAIR OR BLIND FASTENER REPAIR. REFER TO THE APPLICABLE REPAIR INSTRUCTIONS BELOW.

NOTE: MAKE SURE ALL REPAIR FASTENERS AS SHOWN IN DETAIL I ARE NOT COMMON TO THE OTHER INTERNAL STRUCTURE SUCH AS STRINGERS, TEAR STRAPS, OR SHEAR TIES. IF THIS IS NOT THE CASE, CONTACT THE BOEING COMPANY FOR MORE INFORMATION.

SOLID FASTENER REPAIR

CAUTION:
- IF ACOUSTIC TILES ARE FOUND WHEN YOU DO THE FUSELAGE SKIN REPAIR, REMOVE THE TILES BEFORE YOU CONTINUE WITH THE REPAIR. REFER TO AMM 53-01-04.
- DO NOT GOUGE, SCRATCH, OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR.

1. Get access to the damaged area.
2. Carefully cut and remove the damaged part of the fuselage skin.
   A. Make the cutout a 1.0 inch (25.4 mm) maximum diameter hole to remove skin damage that is greater than 0.3125 inch (7.9375 mm) but less than or equal to 1.0 inch (25.4 mm). Refer to SRM 53-00-01, Repair 8 for damage that can be removed by a cutout less than 0.3125 inch (7.9375 mm) in diameter.
   B. Make the edges of the cutout smooth with a minimum surface finish of 125 micro-inches Ra.
3. Do a high frequency eddy current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-00-01. Repeat steps 2 and 3 if all of the damage was not removed.
4. Make the repair parts. See Table I.
5. Assemble the repair parts as shown in Detail I and drill the fastener holes. Refer to SRM 51-40-05 for the fastener hole size and SRM 51-40-08 for countersinking.
6. Disassemble the repair parts.
7. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
9. Apply one layer of BMS 10-79, Type II or III primer to the external surfaces of the repair parts and to the bare external surfaces of the initial parts. Refer to SOPM 20-44-04.
10. Install the repair parts wet with BMS 5-95 sealant between the mating surfaces.
11. Install the fasteners as given in Table II [A]. Fasteners not made of aluminum must be installed wet with BMS 5-95 sealant. Overdrive BACR15FV()KE rivets to make the driven head 1.5D. Overdrive BACR15CE()D rivets to make driven head 1.4D.
12. Apply a fillet seal to the repair parts on the internal and external edges of the repair area as shown in Section A-A. Refer to SRM 51-20-05.
13. Apply a layer of BMS 3-23 inhibiting compound to the internal surface of the repair area. If the repair is under the wing to body fairing. Apply a layer of BMS 3-23 to the internal and external surface of the repair area. Refer to SRM 51-20-01. Apply BMS 3-26, Type II corrosion inhibiting compound over BMS 3-23 below the cargo floor.
14. Apply the decorative finish to the repair area as necessary. Refer to AMM 51-21-10.
15. Replace the acoustic tiles, if necessary.

Fuselage Skin - Small Hole External Repair with Solid or Blind Fasteners
Figure 201 (Sheet 1 of 7)

BLIND FASTENER REPAIR

CAUTION: - IF ACOUSTIC TILES ARE FOUND WHEN YOU DO THE FUSELAGE SKIN REPAIR, REMOVE THE TILES BEFORE YOU CONTINUE WITH THE REPAIR. REFER TO AMM 53-01-04.

- DO NOT GOUGE, SCRATCH, OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR.

1. Get access to the damaged area.
2. Carefully cutout and remove the damaged part of the fuselage skin.
   A. Make the cutout a 1.0 inch (25.4 mm) maximum diameter hole to remove skin damage that is greater than 0.3125 inch (7.9375 mm) but less than or equal to 1.0 inch (25.4 mm). Refer to SRM 53-00-01, Figure 208 for damage that can be removed by a cutout less than 0.3125 inch (7.9375 mm) in diameter.
   B. Make the edges of the cutout smooth with a minimum surface finish of 125 micro-inches Ra.
3. Do a high frequency eddy current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-00-01. Repeat steps 2 and 3 if all of the damage was not removed.
4. Make the repair parts. See Table I.
5. Assemble the repair parts as shown in Detail I and drill the fastener holes. Refer to SRM 51-40-05 for the fastener hole size.
6. Disassemble the repair parts.
7. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
9. Apply one layer of BMS 10-79, Type II or III primer to the external surfaces of the repair parts and to the bare external surfaces of the initial parts. Refer to SOPM 20-44-04.
10. Install the repair parts wet with BMS 5-95 sealant between the mating surfaces.
11. Install the fasteners as given in Table II [A]. Fasteners not made of aluminum must be installed wet with BMS 5-95 sealant.
12. Apply a fillet seal to the repair parts on the external edges of the repair areas as shown in Section A-A. Refer to SRM 51-21-10.
13. Apply the decorataive finish to the repair area as necessary. Refer to AMM 51-20-05.
14. Replace the acoutic tiles, if necessary.

BLIND FASTENER REPLACEMENT

CAUTION: - IF ACOUSTIC TILES ARE FOUND WHEN YOU DO THE FUSELAGE SKIN REPAIR, REMOVE THE TILES BEFORE YOU CONTINUE WITH THE REPAIR. REFER TO AMM 53-01-04.

- DO NOT GOUGE, SCRATCH, OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR.

1. Remove the blind fastener. Refer to SRM 51-40-02.

CAUTION: DO NOT MAKE THE COUNTERSINK DEPTH MORE THAN 67% OF THE DOUBLER THICKNESS. IF THE COUNTERSINK DEPTH IS GREATER THAN 67% OF THE DOUBLER THICKNESS, INSTALL A PROTRUDING HEAD FASTENER.

2. Drill the holes. Refer to SRM 51-40-05 for fastener hole sizes and SRM 51-40-08 for countersinking.
3. Make a detailed visual inspection of the fastener holes to make sure there are no cracks or other damage.
4. Install the fasteners as given in Table III [A].
5. Replace the acoustic tiles, if necessary.

Fuselage Skin - Small Hole External Repair with Solid or Blind Fasteners
Figure 201 (Sheet 2 of 7)

NOTES

- THE SOLID FASTENER REPAIR IS CATEGORY A WHEN IT IS INSTALLED BELOW THE LEFT OR RIGHT HAND SIDE OF STRINGER 33. THE INSPECTION GIVEN IN THE MAINTANANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERANCE OF THE INITIAL STRUCTURE WITH THIS REPAIR INSTALLED.
- THE SOLID FASTENER REPAIR IS CATEGORY B IF IT IS INSTALLED ABOVE THE LEFT OR RIGHT HAND SIDE OF STRINGER 33. THE CATEGORY B REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE IV. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- THE BLIND FASTENER REPAIR IS CATEGORY C. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE INSPECTION AT THE SPECIFIED THRESHOLD AND INTERVALS, AND REPLACE THE REPAIR AT THE SPECIFIED THRESHOLD AND INTERVALS, AND REPLACE THE REPAIR AT THE SPECIFIED TIME LIMIT AS GIVEN IN TABLE V. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- THE BLIND FASTENER REPAIRS SHOULD NOT BE USED WHERE THERE ARE DOUBLERS, TRIPLERS, AND NON-TYPICAL STRUCTURE UNLESS YOU CAN ENSURE THE FASTENERS ARE SEATED CORRECTLY ON THE INTERNAL STRUCTURE AND YOU CAN KEEP THE CORRECT FASTENER SPACING AND EDGE MARGIN.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR DECORATIVE EXTERIOR FINISHES, CLEANING AND PAINTING
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILES
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SOPM 20-44-04 FOR APPLICATION OF URETHANE COMPATIBLE PRIMERS
  - SRM 51-00-06 FOR DEFINITION OF REPAIR CATEGORIES
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-10-02 FOR INVESTIGATION AND CLEAN UP OF DAMAGE AND ZERO-TIMING PROCEDURE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR SEALING PROCEDURES AND ALTERNATE SEALANTS
  - SRM 51-40-02 FOR FASTENER INSTALLATION AND REMOVAL
  - SRM 51-40-03 FOR FASTENER SUBSITUTIONS
  - SRM 51-40-05 FOR FASTENER HOLES
  - SRM 51-40-06 FOR FASTENER EDGE MARGINS
  - SRM 51-40-08 FOR COUNTERSINKING OF FASTENER HOLES

[A] DO NOT INSTALL FASTENERS THROUGH ACOUSTIC TILES.

[B] THE DISTANCE FROM THE CENTER OF THE FASTENER HOLE TO THE CENTER OF THE INITIAL DRAWING FASTENER HOLE MUST NOT BE LESS THAN 5 TIMES THE LARGER OF THE TWO HOLE DIAMETERS.

[C] USE BACR15CE5D RIVETS FOR SKIN REPAIRS IN SECTIONS 41 AND 48.
USE BACR15FV5KE RIVETS FOR SKIN REPAIRS IN SECTIONS 43,45, AND 46.

[D] USE BACR15CE6D RIVETS FOR SKIN REPAIRS IN SECTIONS 41 AND 48.
USE BACR15FV6KE RIVETS FOR SKIN REPAIRS IN SECTIONS 43,45, AND 46.

[E] USE BACR15CE8D RIVETS FOR SKIN REPAIRS IN SECTIONS 41 AND 48.
USE BACR15FV8KE RIVETS FOR SKIN REPAIRS IN SECTIONS 43,45, AND 46.

[F] USE ONLY BACR15FT6KE RIVETS FOR BLIND FASTENER REPLACEMENT IN SECTION 48.

[G] TO MAKE THIS CATEGORY C REPAIR TO A CATEGORY A OR B REPAIR, REPLACE THE BLIND FASTENERS WITH SOLID FASTENERS GIVEN IN TABLE III.

[H] FOR SOLID FASTENER REPAIR, FILL CUTOUT AREA WITH BMS 5-95 SEALANT BELOW STRINGER 29 TO PREVENT WATER TRAP. ALSO, FILLET SEAL WITH BMS 5-95 SEALANT ABOVE STRINGER 29.

FASTENER SYMBOLS

REPAIR FASTENER LOCATION. REFER TO TABLE II FOR THE FASTENER CALLOUT.

Fuselage Skin - Small Hole External Repair with Solid or Blind Fasteners
Figure 201 (Sheet 3 of 7)

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	SAME MATERIAL AND HEAT TREAT AS THE SKIN. REFER TO TABLE II FOR GAGE

TABLE I

SKIN GAGE (INCH)	DOUBLER GAGE (INCH)	A DIA (INCH)	B DIA (INCH)	C DIA (INCH)	NOMINAL FASTENER DIAMETER (INCH)	SOLID FASTENER TYPE	BLIND FASTENER TYPE
0.040	0.056	4.05	1.80	3.10	5/32	C	BACR15FR5MP()
0.047	0.063	4.05	1.80	3.10	5/32	C	BACR15FR5MP()
0.056	0.063	4.05	1.80	3.10	5/32	C	BACR15FR5MP()
0.063	0.071	4.65	2.00	3.50	3/16	D	BACR15FR6MP()
0.071	0.080	4.65	2.00	3.50	3/16	D	BACR15FR6MP()
0.080	0.090	5.75	2.25	4.25	1/4	E	NASM90354
0.090	0.100	5.75	2.25	4.25	1/4	E	NASM90354

TABLE II

BLIND FASTENER REPLACEMENT			
DOUBLER GAGE (INCH)	NOMINAL FASTENER DIAMETER (INCH)	BLIND FASTENER TYPE	SOLID FASTENER REPLACEMENT
0.056	5/32	BACR15FR5MP()	BACR15FT6KE
0.063	5/32	BACR15FR5MP()	BACR15FT6KE F OR BACR15FV6KE
0.071	3/16	BACR15FR6MP()	BACR15FT7KE OR BACR15DS7KE
0.080	3/16	BACR15FR6MP()	BACR15FV7KE OR BACR15DS7KE
0.090	1/4	NASM90354	BACR15FT9KE OR BACR15DS9KE
0.100	1/4	NASM90354	BACR15FV9KE OR BACR15DS9KE

TABLE III

Fuselage Skin - Small Hole External Repair with Solid or Blind Fasteners
Figure 201 (Sheet 4 of 7)

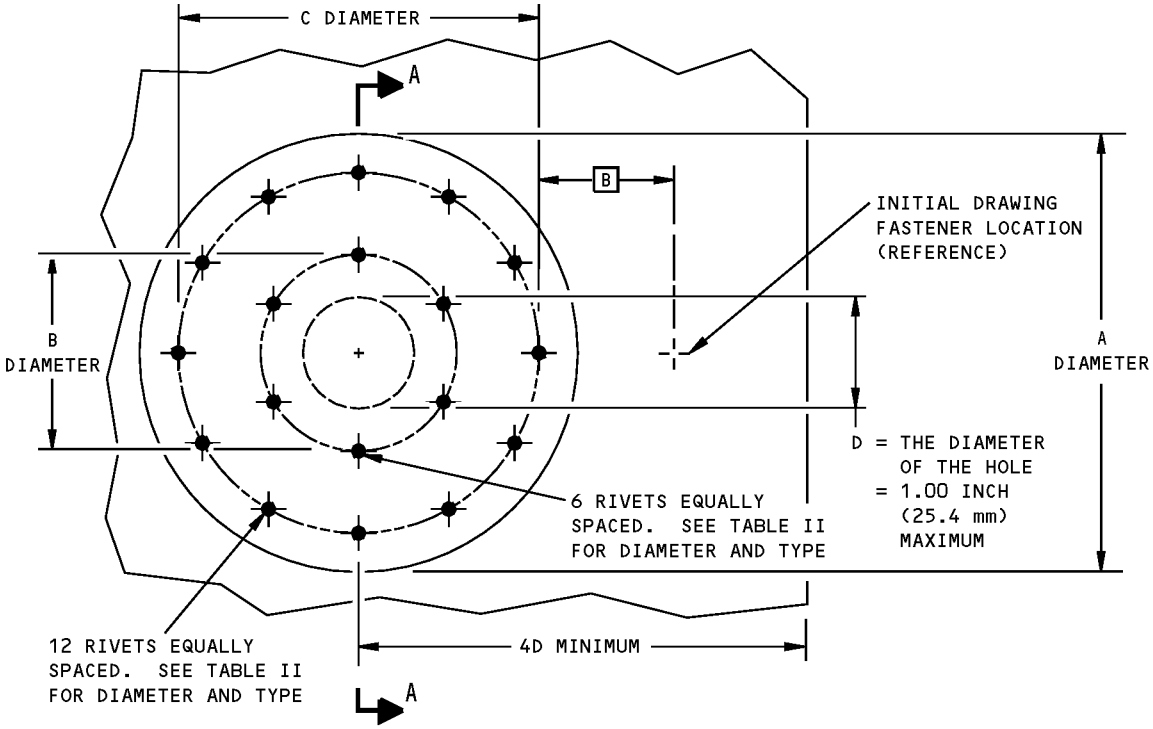
CATEGORY B REPAIR INSPECTION REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTION		
	METHOD	INTERVAL	REFERENCE
37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	INTERNAL DETAILED VISUAL	12,000 FLIGHT CYCLES	
NOTE: REFER TO DETAIL III FOR THE AREA WHERE THE INTERNAL DETAILED VISUAL INSPECTION IS NECESSARY.			

TABLE IV

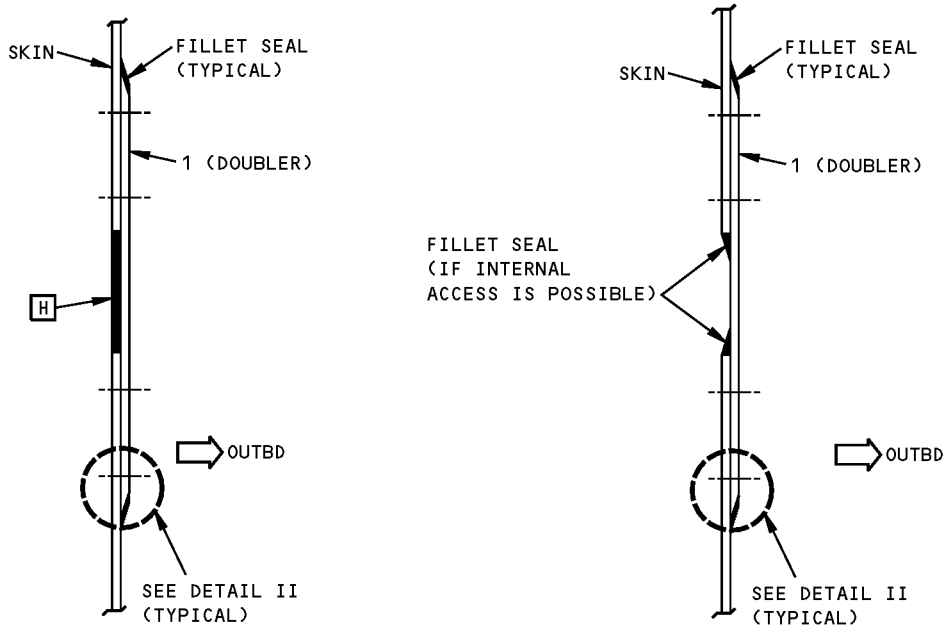
CATEGORY C REPAIR INSPECTION AND REPLACEMENT REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTION		
	METHOD	INTERVAL	TIME LIMIT
1,000 FLIGHT CYCLES AFTER REPAIR INSTALLATION	EXTERNAL DETAILED VISUAL	1,000 FLIGHT CYCLES	3,000 FLIGHT CYCLES [G]
NOTE: INSPECT THE 2 INCH (50.8 mm) WIDE ZONE AROUND THE DOUBLER FOR SKIN DAMAGE AND INSPECT THE DOUBLER FOR MISSING OR LOOSE FASTENERS. IF FOUND, REPLACE THE FASTENER.			

TABLE V

Fuselage Skin - Small Hole External Repair with Solid or Blind Fasteners
Figure 201 (Sheet 5 of 7)



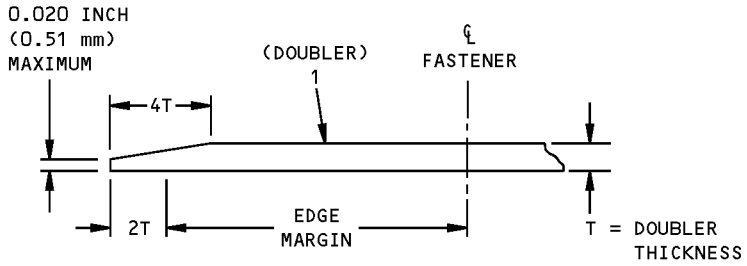
DETAIL I



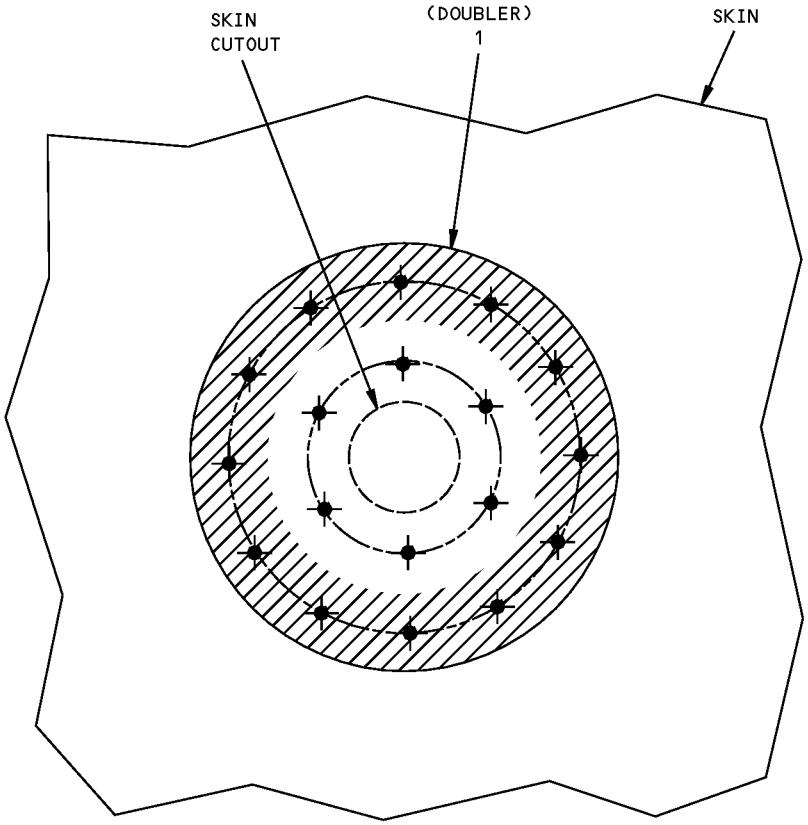
(FOR SOLID FASTENER REPAIR) (FOR BLIND FASTENER REPAIR)

SECTION A-A

Fuselage Skin - Small Hole External Repair with Solid or Blind Fasteners
Figure 201 (Sheet 6 of 7)



(TYPICAL ALL EDGES)
DETAIL II



INTERNAL DETAILED VISUAL INSPECTION AREA

DETAIL III

Fuselage Skin - Small Hole External Repair with Solid or Blind Fasteners
Figure 201 (Sheet 7 of 7)

REPAIR 11 - FUSELAGE SKIN - FLUSH REPAIR AT STRINGER FOR SKIN THICKNESS GREATER THAN 0.09 INCH

APPLICABILITY

THIS REPAIR IS APPLICABLE TO:

- SKIN DAMAGE AT A STRINGER
- AREAS OF SKINS WITH A CONSTANT GAGE THICKNESS.

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE AT A CIRCUMFERENTIAL BUTT SPLICE
- DAMAGE AT A SKIN LAP-SPLICE
- DAMAGE NEAR THE STATIC PORTS OR ANGLE OF ATTACK SENSORS
- WITHIN 22 INCHES OF AN ADJACENT SKIN (EXTERNAL OR INTERNAL) REPAIR
- WITHIN 22 INCHES OF A DOOR CUTOUT
- DAMAGE AT THE WINDOW BELT

REPAIR INSTRUCTIONS

CAUTION: IF ACOUSTIC TILES ARE ENCOUNTERED DURING FUSELAGE SKIN REPAIR, REMOVE TILES BEFORE PROCEEDING WITH REPAIR.

1. Get access to the damaged area.
2. Cut and remove the damaged part of the initial skin.
3. Cut and remove the piece of stringer that must be removed to permit access. Cut the stringer further behind the edge of the hole to permit installation of the doubler and four rows of fasteners at each end.
4. Choose the applicable repair configuration from Details I or II.
5. Make the repair parts. See Table I. [B]

   NOTE: For the parts that are necessary for the stringer repair, refer to SRM 53-00-03, Repair 1 for stringers S-1 thru S-19. Refer to SRM 53-00-03, Repair 3 for stringers S-21 through S-39. Refer to SRM 51-70-12 for stringer S-20.

6. Assemble the repair parts and drill the fastener holes.
7. Disassemble the repair parts.
8. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the initial skin.
9. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial skin. Refer to SRM 51-20-01.
10. Apply one layer of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the initial skin. Refer to SOPM 20-41-02.
11. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
12. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
13. Apply the finish to the repair area. Refer to AMM 51-21.
14. Apply a layer of BMS 3-23 corrosion inhibiting compound above S-20. For S-20 and lower, apply a layer of BMS 3-29 corrosion inhibiting compound. Refer to SRM 51-20-01.
15. Replace the acoustic tiles, if necessary.

NOTES

- THIS REPAIR IS A CATEGORY A REPAIR. THE INSPECTIONS GIVEN IN THE MAINTENANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERANCE OF THE INITIAL STRUCTURE WITH THIS REPAIR INSTALLED. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- D = FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS.

[A] USE THE SAME HORIZONTAL SPACING OF THE FASTENERS AS THE NEAREST LONGITUDINAL FUSELAGE SKIN LAP SPLICE.

[B] THE CRITICAL FASTENER ROW OF THE PART 1 DOUBLER MUST NOT BE COMMON TO A STRINGER, FRAME SHEAR TIE OR ANY OTHER BACK-UP STRUCTURE. DO NOT COVER THE TEAR STRAP WITH THE DOUBLER.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION

INITIAL FASTENER LOCATION. INSTALL THE SAME TYPE AND SIZE FASTENER AS THE INITIAL FASTENER. USE 1/64 INCH OVERSIZE FOR HEX-DRIVE BOLTS.

REPAIR FASTENER LOCATION. SEE TABLE II FOR THE FASTENER TYPE AND DIAMETER.

Fuselage Skin - Flush Repair at Stringer For Skin Thickness Greater Than 0.09 inch
Figure 201 (Sheet 1 of 6)

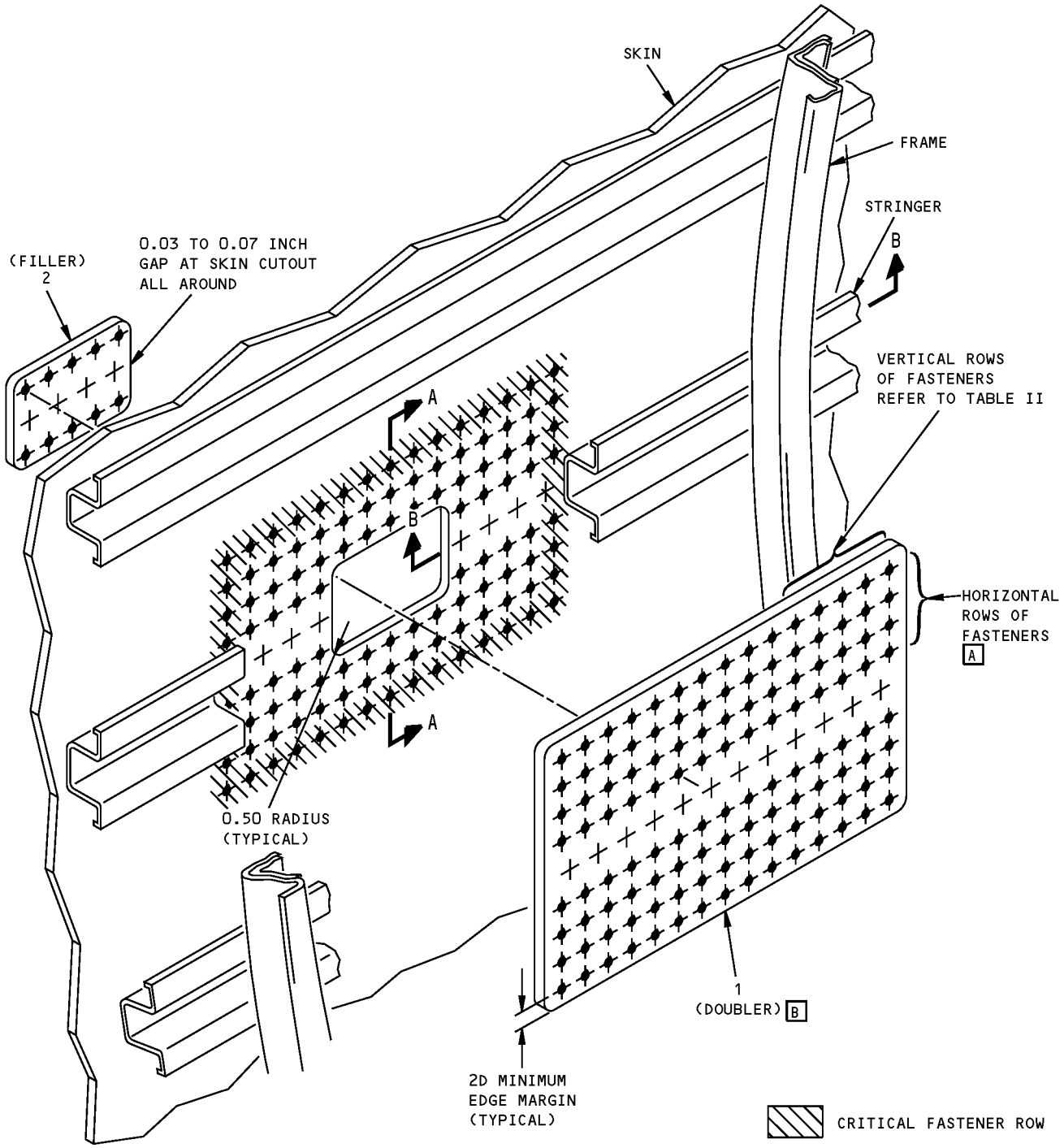
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	USE THE SAME MATERIAL AND ONE GAGE THICKER.
2	FILLER	1	USE THE SAME MATERIAL AND THICKNESS AS INITIAL SKIN.
3	TAPERED SHIM	2	USE THE SAME MATERIAL AS INITIAL SKIN. SEE DETAIL III FOR THE DIMENSIONS.

TABLE I

INITIAL SKIN GAGE	REPAIR FASTENER	VERTICAL SPACING OF FASTENERS (INCHES)
0.091 TO 0.125	USE BACR15CE8D() RIVETS FOR SKINS IN SECTIONS 41 AND 48. USE BACR15FV8KE() BRILES RIVETS FOR SKINS IN SECTIONS 43,45 AND 46.	1.50 1.40
OVER 0.125	BACB30NW8K() HEX DRIVE BOLT WITH A BACC30M8 COLLAR.	1.50 1.40

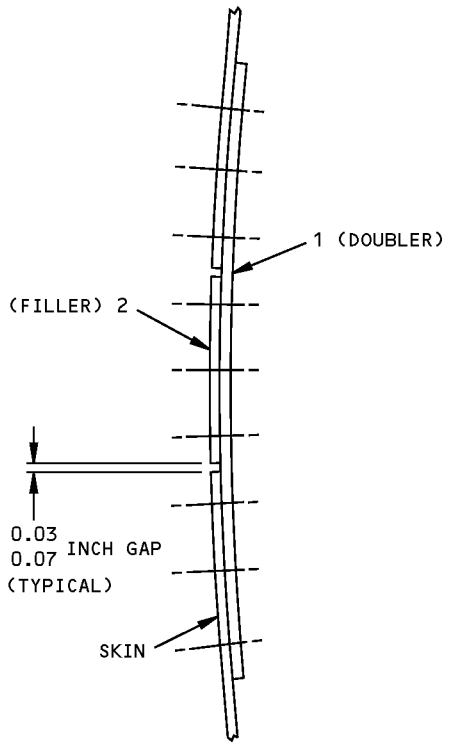
TABLE II

Fuselage Skin - Flush Repair at Stringer For Skin Thickness Greater Than 0.09 inch
Figure 201 (Sheet 2 of 6)

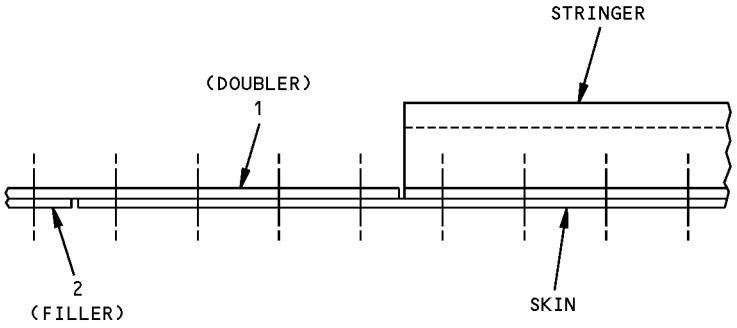


(REPAIR STRINGER IS NOT SHOWN)
USE THIS REPAIR WHEN 1 (DOUBLER) IS THE SAME THICKNESS AS THE STRINGER GAGE
DETAIL I

Fuselage Skin - Flush Repair at Stringer For Skin Thickness Greater Than 0.09 inch
Figure 201 (Sheet 3 of 6)

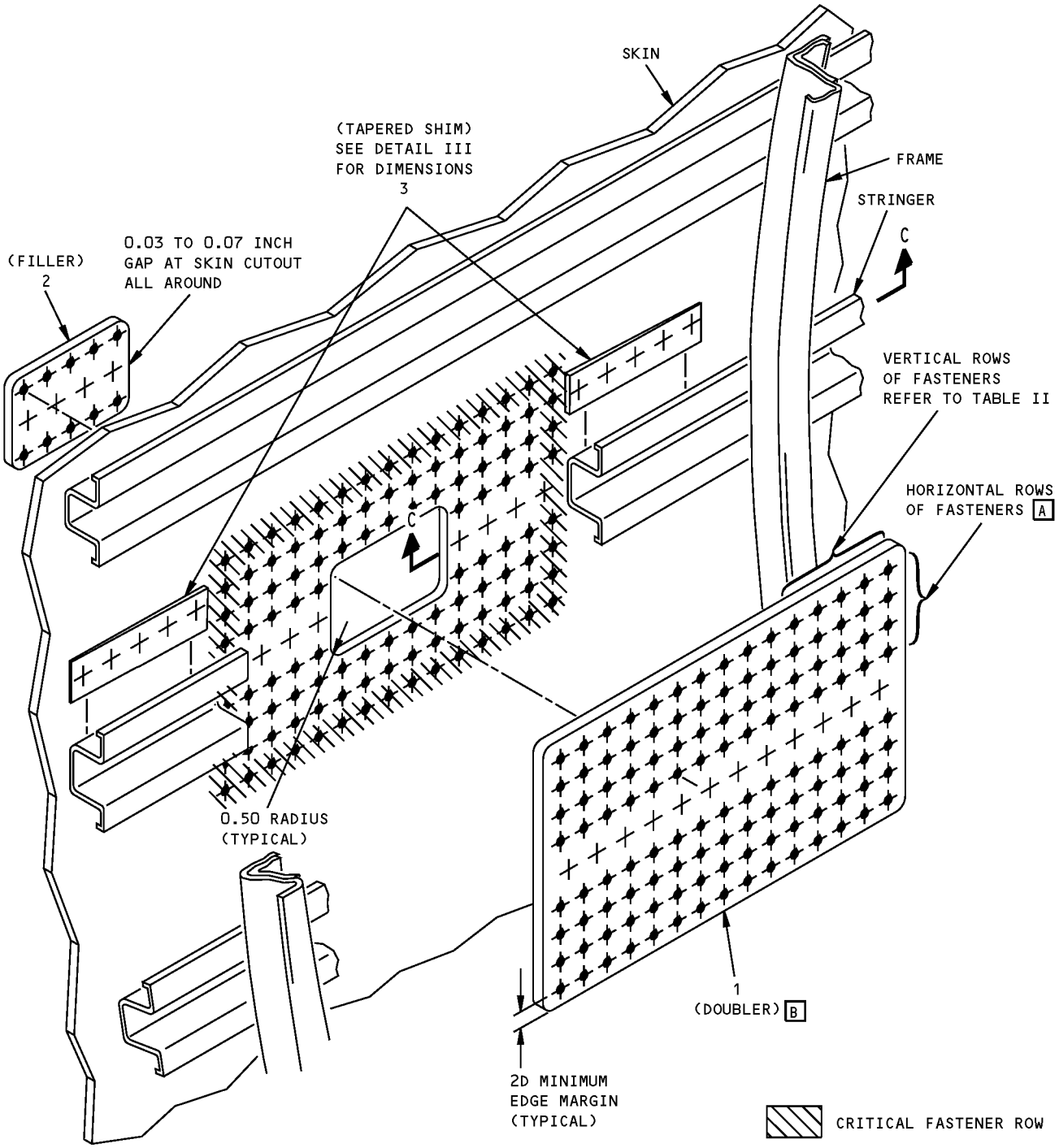


(REPAIR STRINGER IS NOT SHOWN)
SECTION A-A



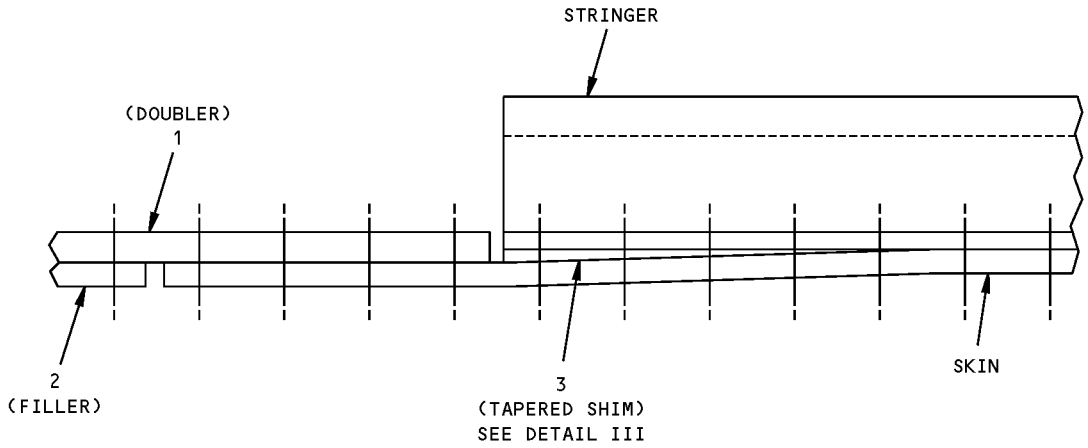
SECTION B-B

Fuselage Skin - Flush Repair at Stringer For Skin Thickness Greater Than 0.09 inch
Figure 201 (Sheet 4 of 6)

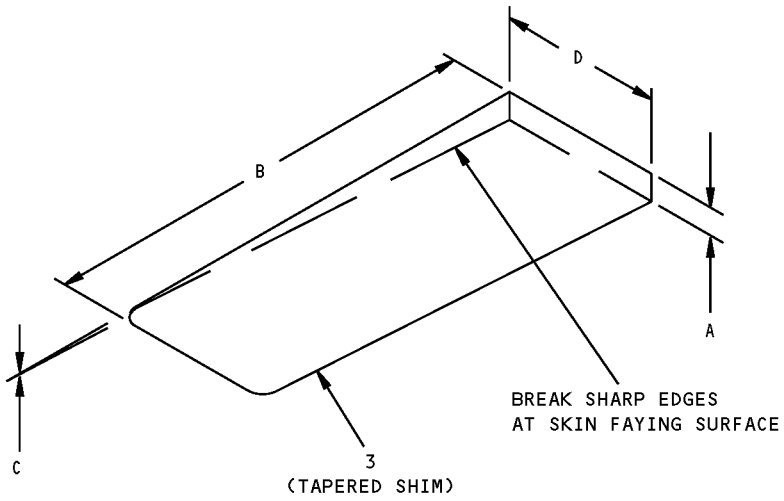


(REPAIR STRINGER IS NOT SHOWN)
USE THIS REPAIR WHEN THE DOUBLER IS THICKER THAN THE STRINGER GAGE
DETAIL II

Fuselage Skin - Flush Repair at Stringer For Skin Thickness Greater Than 0.09 inch
Figure 201 (Sheet 5 of 6)



(REPAIR STRINGER IS NOT SHOWN)
SECTION C-C



A = (DOUBLER GAGE) - (STRINGER GAGE)
B = 100 (A-C)
C = 0.01
D = 1.30

DETAIL III

Fuselage Skin - Flush Repair at Stringer For Skin Thickness Greater Than 0.09 inch
Figure 201 (Sheet 6 of 6)

REPAIR 12 - LAP SPLICE EXTERNAL REPAIR

APPLICABILITY

THIS REPAIR IS APPLICABLE TO THE LAP SPLICES WITH THREE ROWS OF FASTENERS IN TWO REPAIR ZONES:

ZONE A - ALL AREAS OF THE FUSELAGE SKIN THAT ARE NOT IN ZONE B

ZONE B - DAMAGE AT S-2R LONGITUDINAL LAP JOINT

- BS 654+110 TO BS 786, S-4L TO S-4R (ABOVE)

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE AT A CIRCUMFERENTIAL BUTT SPLICE
- DAMAGE NEAR THE STATIC PORTS OR ANGLE OF ATTACK SENSORS
- WITHIN 22 INCHES FROM AN ADJACENT REPAIR
- WITHIN 22 INCHES OF A DOOR CUTOUT
- THE WINDOW BELT S-17L/R LAP SPLICE.

REPAIR INSTRUCTIONS

CAUTION: IF ACOUSTIC TILES ARE FOUND DURING THE FUSELAGE SKIN REPAIR, REMOVE THESE TILES BEFORE YOU DO THIS REPAIR.

NOTE: This repair is shown for damage to both the lower and upper skins. If the damage is only on one skin, the other skin does not have to be trimmed.

1. Get access to the damaged area.
2. Remove the necessary fasteners in the area of the damage skin.

CAUTION: DO NOT GOUGE SCRATCH OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR.

3. Carefully cut and remove the damaged part of the fuselage skin. Use a sheet metal guard between the skins and or internal structure to prevent damage. Refer to SRM 51-70-10.
   A. Make the cut a rectangular shape with the sides either parallel or perpendicular to the stringers.
   B. Use caution so you do not cut or cause damage to the stringer. If the stringer is damaged, repair as shown in SRM 53-00-03.
   C. Make the corner radii of the cutout a minimum of 0.5 inch.
   D. Make the edges of the cut smooth with a surface finish of 125 microinches Ra.
4. Do a High Frequency Eddy Current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-00-01. Repeat steps 3 and 4 if all of the damage was not removed.
5. Make the repair parts. See Table I. Refer to Detail I or IV as applicable.
6. Assemble the repair parts as shown in Detail I and drill the fastener holes. Try not to drill the fastener holes near a chem-milled or machined radius. If you must drill a fastener hole near a chem-milled or machined radius, shift the location to prevent the hole or fastener from interfering with the radius or use a radius filler. Use a drill microstop to prevent damage to the parts on the other side of the skin such as stringer, frame etc. Set the drill microstop to come out a maximum of 0.060 inch (1.5 mm) on the other side.
7. Disassemble the repair parts.
8. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
9. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
10. Apply two layers of BMS 10-11, Type I primer to the internal surfaces of the repair parts and to the bare internal surfaces of the initial parts. Refer to SOPM 20-41-02.
11. Apply one layer of BMS 10-79, Type II or III primer to the external surfaces of the repair parts and to the bare external surfaces of the initial parts. Refer to SOPM 20-44-04.
12. Install the repair parts wet with BMS 5-95 sealant between mating surfaces.
13. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant. Overdrive BACR15FV()KE() rivets to make the driven head 1.5D. Use a countersink repair washer to fill any initial countersink in the skin. Refer to SRM 51-40-08.
14. Apply a fillet seal to the repair parts on the external edges of the repair area. Refer to SRM 51-20-05.
15. Fill the gap between the upper skin edge and the repair parts 2 and 3 with BMS 5-95 sealant.
16. Fill all voids and empty spaces with BMS 5-95 sealant to avoid water traps.
17. Apply a layer of BMS 3-23 corrosion inhibiting compound to the internal structure of the repair area if the repair area is below the main passenger floor. Refer to SRM 51-20-01.
18. Apply the decorative finish to the repair area. Refer to AMM 51-21.
19. Replace the acoustic tiles if necessary.

Lap Splice External Repair
Figure 201 (Sheet 1 of 10)

REPAIR INSTRUCTIONS (CONTINUED)

NOTES

- THIS REPAIR IS A CATEGORY B REPAIR. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE II OR TABLE III AS APPLICABLE. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR THE REPAIR CATEGORIES AND DEFINITIONS.
- THE INSPECTIONS GIVEN IN TABLE II AND III ARE AN ALTERNATIVE METHOD OF COMPLIANCE (AMOC) TO AD 2003-18-10 APPLICABLE TO LINE NUMBERS 132 THRU 895 IN THE AREA COVERED BY THIS REPAIR. THE AMOC IS APPLICABLE ONLY TO THE FOLLOWING ITEMS OF SECTION 9 AND APPENDIX B OF 767 MAINTENANCE PLANNING DATA (MPD) THAT ARE EFFECTED BY THIS REPAIR:
  - LAP SPLICES ABOVE S-20 L/R

    53-10-107A, 53-30-104A, 53-60-105A
    53-10-107B, 53-30-104B, 53-60-105B
  - LAP SPLICES BELOW S-20 L/R

    53-10-107C, 53-30-104C, 53-60-105C
    53-10-107D, 53-30-104D, 53-60-105D
- IF THIS REPAIR IS IN A TEAR STRAP AREA, MOVE THE SKIN APART FROM THE TEAR STRAPS USING NYLON OR HARDWOOD WEDGES. BE CAREFUL, DIVIDE THE PARTS SLOWLY AND CONTINUOUSLY. USE A SUFFICIENT NUMBER OF WEDGES TO PREVENT BUCKLING. REFER TO SRM 51-70-10. THE TEAR STRAPS ABOVE S-26L/R ARE BONDED TO THE SKIN. TAKE CARE TO NOT DAMAGE REMAINING STRUCTURE WHILE DISBONDING THE TEAR STRAPS. REFER TO DETAIL IV.
- DO NOT END THE REPAIR DOUBLER OR FILLERS ON A STRINGER OR OTHER INTERNAL STRUCTURE. INSTEAD, ADD AN ADDITIONAL FASTENER ROW TO HAVE BETTER INTERNAL INSPECTABILITY AND REPAIR DURABILITY.
- D=FASTENER DIAMETER
- THE MAXIMUM PULL-UP PERMITTED PRIOR TO FASTENER INSTALLATION IS 0.005 INCH (0.13 mm).
- MAINTAIN A MINIMUM OF 2D EDGE MARGIN ON ALL REPAIR PARTS.
- MAKE SURE THERE ARE NO KNIFE EDGE CONDITIONS IN THE DOUBLER AND FILLERS BEFORE DRILLING THE FASTENER HOLES. IF THE COUNTERSINK DEPTH IS GREATER THAN 2/3 OF THE SHEET THICKNESS, INSTALL A PROTRUDING HEAD FASTENER.
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21 FOR DECORATIVE EXTERIOR FINISHES, CLEANING AND PAINTING
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILES
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SOPM 20-44-04 FOR APPLICATION OF URETHANE COMPATIBLE PRIMERS
  - SRM 51-00-06 FOR DEFINITION OF REPAIR CATEGORIES.
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR SEALING PROCEDURES AND ALTERNATE SEALANTS
  - SRM 51-20-08 FOR INSTALLATION OF SHIMS
  - SRM 51-40-02 FOR FASTENER INSTALLATION AND REMOVAL
  - SRM 51-40-03 FOR FASTENER SUBSTITUTIONS
  - SRM 51-40-05 FOR FASTENER HOLE SIZES
  - SRM 51-40-06 FOR FASTENER EDGE MARGINS
  - SRM 51-40-08 FOR COUNTERSINK REPAIR WASHERS.
  - SRM 51-70-10 FOR METAL-TO-METAL STRUCTURAL BONDING.

[A] REFER TO DETAIL II FOR ASSISTANCE IN SIZING THE PART 1 DOUBLER.

[B] IF DAMAGE IS ONLY TO THE UPPER SKIN THE PART 4 FILLER IS NOT REQUIRED AND THE THICKNESS OF THE PART 1 DOUBLER SHOULD BE ONE GAGE THICKER THAN THE TRIMMED UPPER SKIN. IF DAMAGE IS ONLY TO THE LOWER SKIN THE PART 5 FILLER IS NOT REQUIRED AND THE THICKNESS OF THE PART 1 DOUBLER SHOULD BE ONE GAGE THICKER THAN THE TRIMMED LOWER SKIN.

[C] IF THE THICKNESS OF THE PART 1 DOUBLER IS MORE THAN ONE GAGE THICKER THAN THE UPPER SKIN THICKNESS (INCLUDING CHEM-MILLED OR MACHINED POCKETS) THEN THE PART 1 DOUBLER SHOULD BE MADE IN TWO PIECES WITH ONE ADDITIONAL RELIEF ROW ON ALL SIDES. THIS RELIEF ROW IS IN ADDITION TO THE FASTENERS SHOWN IN DETAIL I. ENSURE THAT THERE ARE NO KNIFE EDGE CONDITIONS IN THE RELIEF ROW OF FASTENERS. THE PART 1 DOUBLER THICKNESS (COMBINED) SHOULD NEVER BE LESS THAN THE THICKNESS OF THE TRIMMED SKIN.

Lap Splice External Repair
Figure 201 (Sheet 2 of 10)

NOTES (CONTINUED)

[D] IF THE LOWER SKIN HAS A CHEM-MILLED OR MACHINED POCKET WHICH IS COVERED BY THE REPAIR THE THICKNESS OF THE PART 2 FILLER SHOULD NOT BE MORE THAN ONE GAGE THICKER THAN THE THICKNESS OF THE LOWER SKIN POCKET. ENSURE THAT THERE ARE NO KNIFE EDGE CONDITIONS IN THE RELIEF ROW OF FASTENERS.

[E] IF THE UPPER SKIN IS TAPERED IN THE FORWARD AND AFT DIRECTION THE PART 3 FILLER SHOULD BE AS TAPERED AS WELL.

[F] IF THE REPAIR IS AT S-36L/R EXTEND THE PART 5 FILLER TO BUTT AGAINST THE UPPER SKIN CUTOUT AS SHOWN IN SECTION A-A AND B-B. IF THE REPAIR IS NOT AT S-36L/R THE SIZE OF THE PART 5 FILLER CAN BE LIMITED TO THE THREE ROWS OF FASTENERS AT THE LAP SPLICE.

[G] IN THE CIRCUMFERENTIAL DIRECTION EXTEND THE DOUBLER A MINIMUM OF 3 ROWS OF FASTENERS ABOVE AND BELOW THE EDGE OF THE SKIN CUTOUT.

[H] IN THE LONGITUDINAL DIRECTION EXTEND THE DOUBLER A MINIMUM OF 4 ROWS OF FASTENERS FORWARD AND AFT OF THE EDGE OF THE SKIN CUTOUT.

[I] THE FASTENER HEAD SHOULD NEVER BE ON TAPER.

[J] LOW FREQUENCY EDDY CURRENT (LFEC) INSPECTION METHOD CAN BE USED ONLY IF THE REPAIR DOUBLER THICKNESS IS LESS THAN 0.11 INCH.

[K] ANY NEW FASTENER HOLES THROUGH THE TEAR STRAP SHOULD BE STAGGERED SUCH THAT THEY ARE NOT INLINE WITH EXISTING FASTENER HOLES.

[L] IT IS NOT NECESSARY TO DO HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTIONS AT LOCATIONS WHERE THE SKIN IS COVERED BY A STRINGER, TEAR STRAP, SHEAR TIE OR OTHER STRUCTURE.

[M] THIS INTERVAL IS APPLICABLE ONLY FOR THE BODY STATIONS IN SECTIONS 41, 43 AND 46 BETWEEN STRINGERS S-32L AND S-32R (BELOW)

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION

INITIAL FASTENER LOCATION. INSTALL THE SAME TYPE AND DIAMETER FASTENER AS THE INITIAL FASTENER. IF INITIAL FASTENERS ARE HEX DRIVE BOLTS INSTALL 1/64-INCH DIAMETER OVERSIZE BOLTS AND COLLARS.

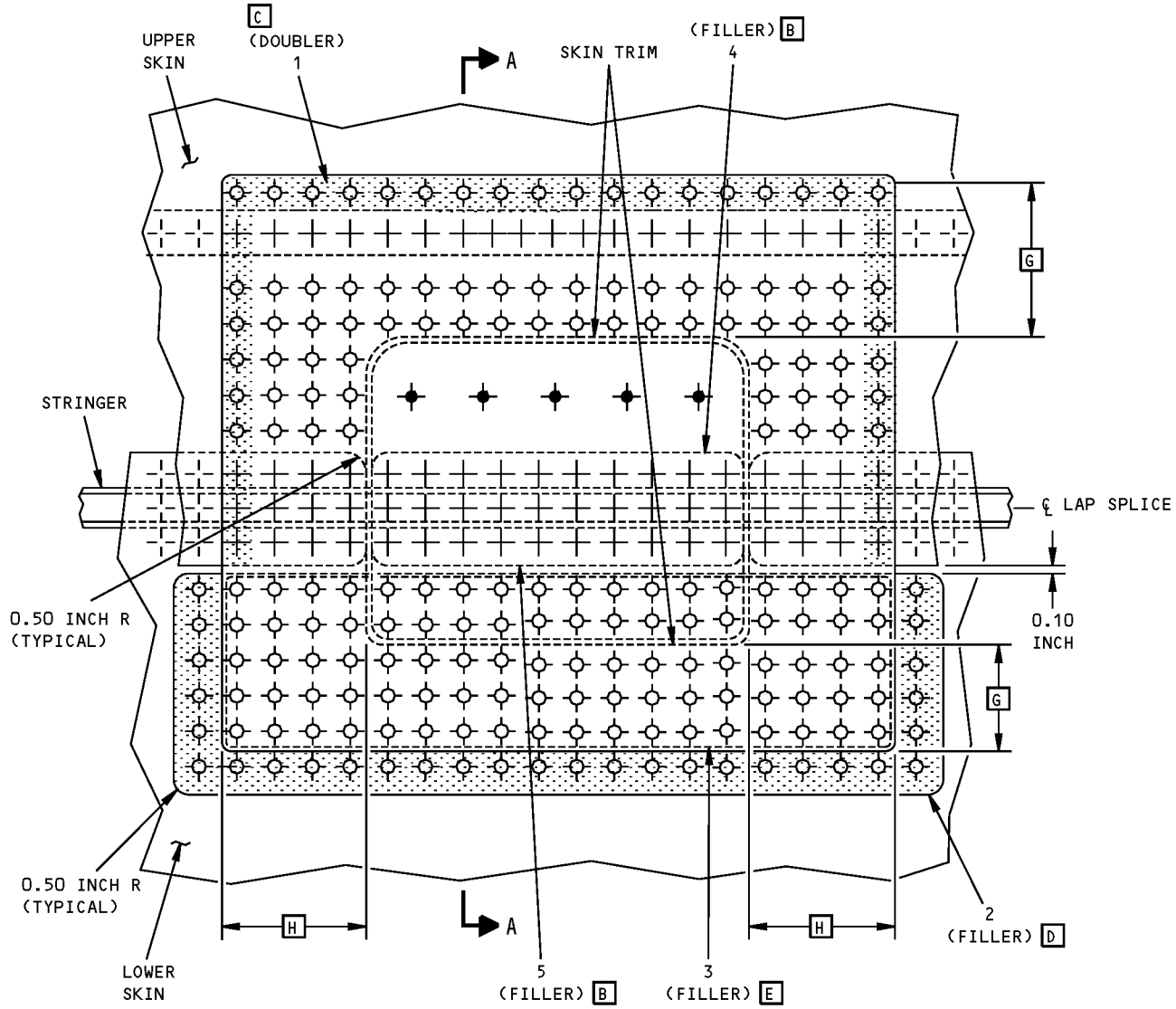
REPAIR FASTENER LOCATION. INSTALL THE SAME TYPE AND SIZE FASTENER AS THE FASTENERS AT THE LAP SPLICE. MAINTAIN 2D EDGE MARGIN, AND 4D-6D FASTENER SPACING.

REPAIR FASTENER LOCATION. INSTALL BACR15FV5KE() OR BACR15FV6KE() RIVETS. THESE FASTENERS ARE NOT NECESSARY IF THE PART 5 FILLER IS NOT EXTENDED TO BUTT AGAINST THE UPPER SKIN CUTOUT. MAINTAIN 2D EDGE MARGIN, AND 6D-8D FASTENER SPACING.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	2024-T3 CLAD [A][B][C]
2	FILLER	1	2024-T3 CLAD, THICKNESS OF THE LOWER SKIN [D]
3	FILLER	1	2024-T3 CLAD, THICKNESS OF THE UPPER SKIN EDGE AT THE LAP LESS THE THICKNESS OF THE PART 2 FILLER [E]
4	FILLER	1	2024-T3 CLAD, THICKNESS OF THE LOWER SKIN [B]
5	FILLER	1	2024-T3 CLAD, THICKNESS OF THE UPPER SKIN [B][F]

TABLE I

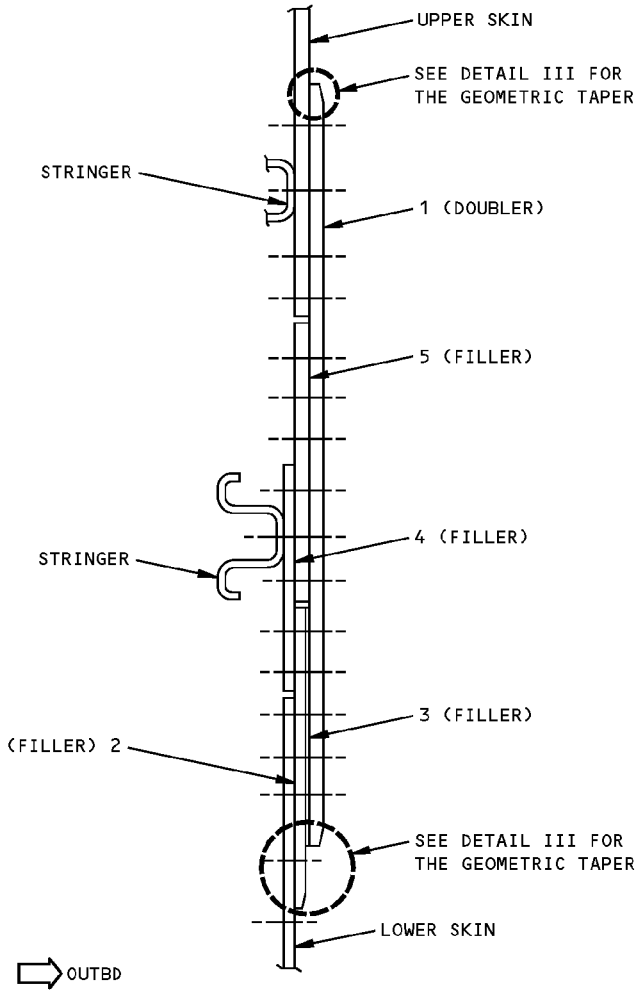
Lap Splice External Repair
Figure 201 (Sheet 3 of 10)



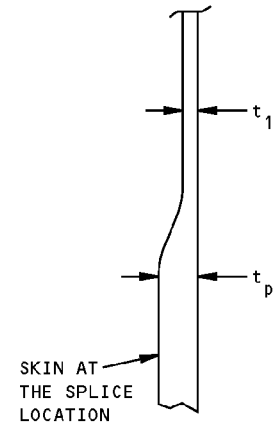
SUBSEQUENT INSPECTIONS ARE NECESSARY FOR A CATEGORY B REPAIR. REFER TO TABLE II OR III AS APPLICABLE FOR INSPECTION REQUIREMENTS.

DETAIL I

Lap Splice External Repair
Figure 201 (Sheet 4 of 10)

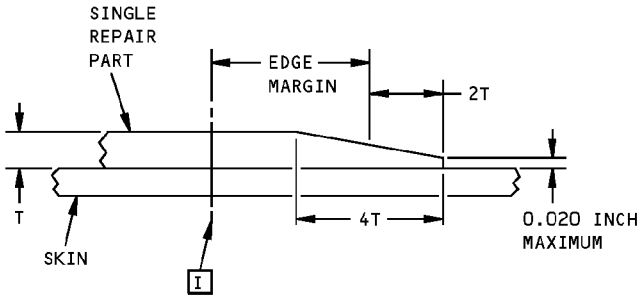


SECTION A-A



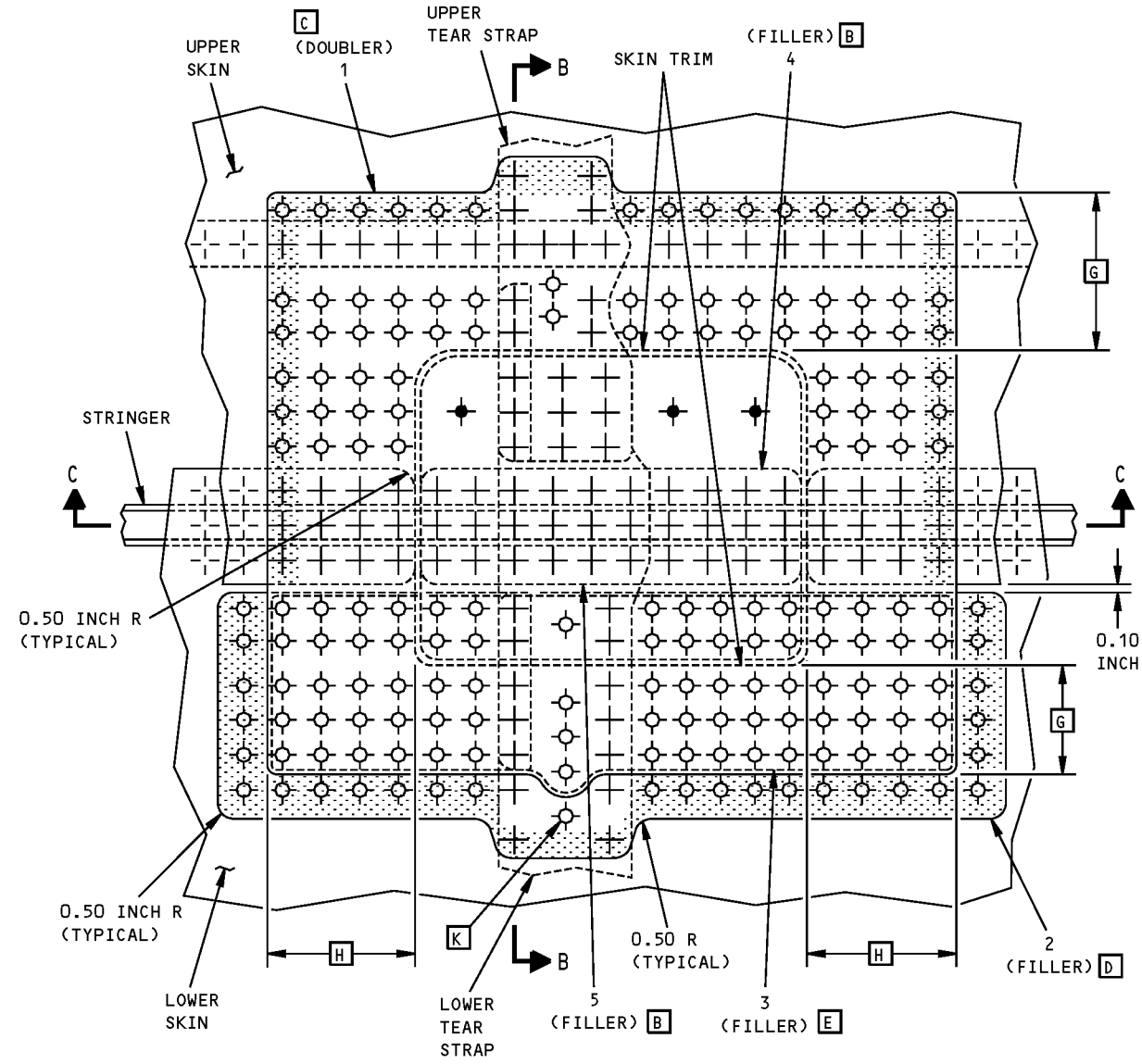
THICKNESS OF PART 1 DOUBLER = t_{DBLR}
$t_{DBLR} > t_1$ BY ONE GAGE OR
$t_{DBLR} = t_p$ WHICHEVER IS GREATER.

DETERMINATION OF THE THICKNESS OF PART 1 DOUBLER
DETAIL II



GEOMETRIC TAPER FOR EXTERNAL REPAIR PARTS
DETAIL III

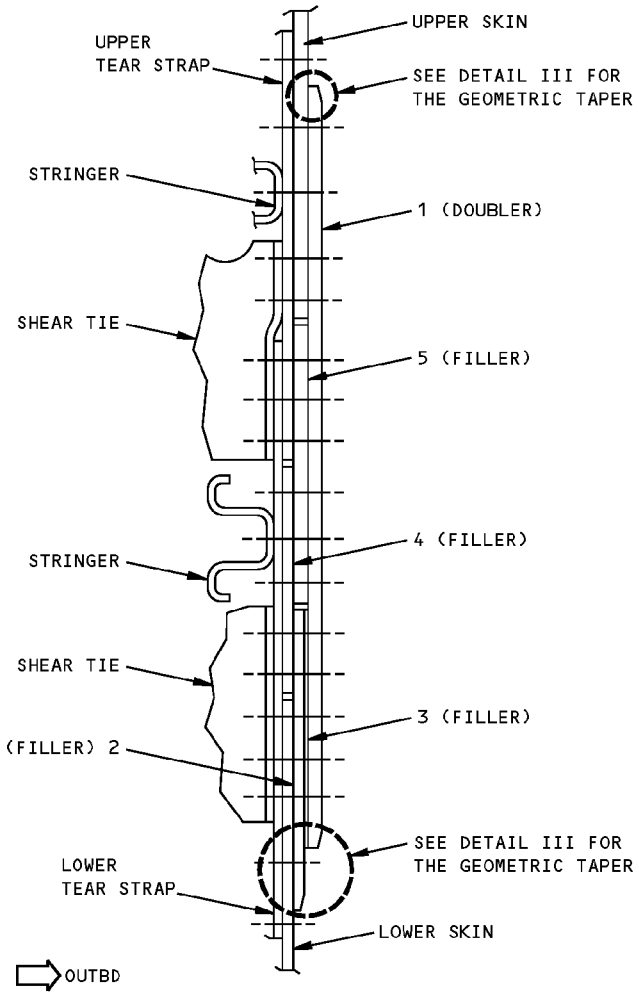
Lap Splice External Repair
Figure 201 (Sheet 5 of 10)



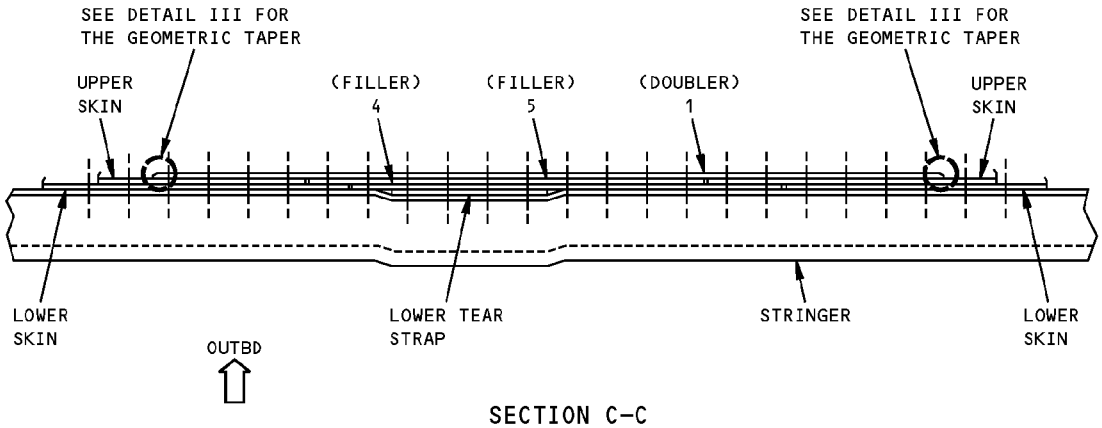
SUBSEQUENT INSPECTIONS ARE NECESSARY FOR A CATEGORY B REPAIR. REFER TO TABLE II OR III AS APPLICABLE FOR INSPECTION REQUIREMENTS.

DETAIL IV

Lap Splice External Repair
Figure 201 (Sheet 6 of 10)



SECTION B–B



SECTION C–C

Lap Splice External Repair
Figure 201 (Sheet 7 of 10)

ZONE A – CATEGORY B REPAIR INSPECTION REQUIREMENTS					
INSPECTION THRESHOLD	REPEAT INSPECTION ALTERNATIVES				
	ALTERNATIVE	METHOD	INTERVAL		REFERENCE
37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	I	INTERNAL – HIGH FREQUENCY EDDY CURRENT (HFEC)	12,000 FLIGHT CYCLES	9,000 FLIGHT CYCLES [M]	NDT PART 6 51-00-01
		EXTERNAL DETAILED INSPECTION			---
	II	EXTERNAL – LOW FREQUENCY EDDY CURRENT (LFEC) [J]	3,000 FLIGHT CYCLES		NDT PART 6 53-00-06
		EXTERNAL DETAILED INSPECTION			---

NOTE:

- USE ALTERNATIVE I OR II TO INSPECT THE SKIN AT THE CRITICAL FASTENER ROW ALONG THE EDGE OF THE PART 1 DOUBLER AND PART 2 FILLER AS SHOWN IN DETAIL V OR VI AS APPLICABLE.
- FOR ALTERNATIVE I AND II, DO A DETAILED INSPECTION OF THE REPAIR PARTS AND A 2-INCH WIDE ZONE AROUND THE REPAIR EXTERNALLY AS SHOWN IN DETAIL V AND VI.

TABLE II

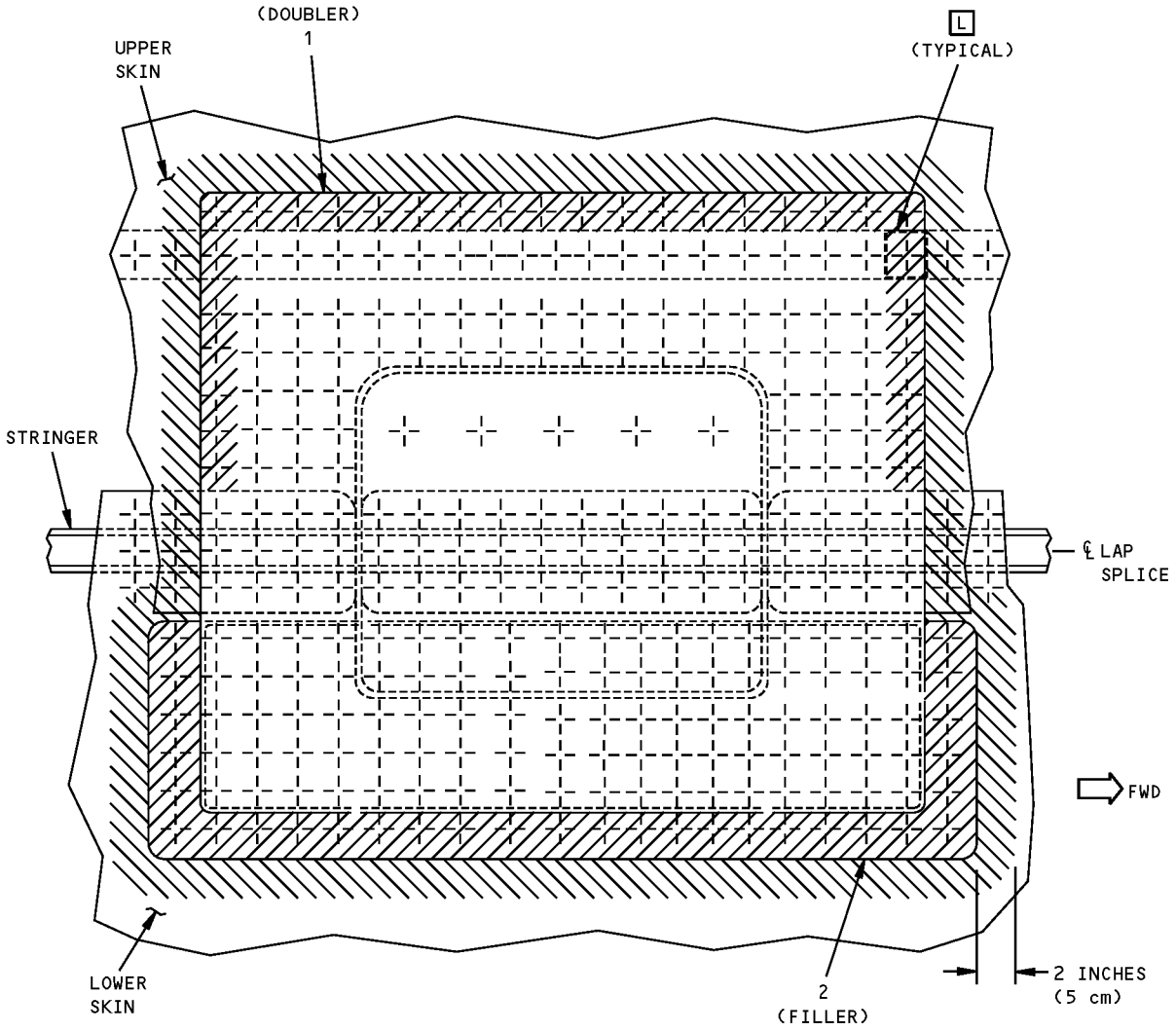
ZONE B – CATEGORY B REPAIR INSPECTION REQUIREMENTS				
INSPECTION THRESHOLD	REPEAT INSPECTION ALTERNATIVES			
	ALTERNATIVE	METHOD	INTERVAL	REFERENCE
25,000 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	I	INTERNAL – HIGH FREQUENCY EDDY CURRENT (HFEC)	9,000 FLIGHT CYCLES	NDT PART 6 51-00-01
		EXTERNAL DETAILED INSPECTION		---
	II	EXTERNAL – LOW FREQUENCY EDDY CURRENT (LFEC) [J]	3,000 FLIGHT CYCLES	NDT PART 6 53-00-06
		EXTERNAL DETAILED INSPECTION		---

NOTE:

- USE ALTERNATIVE I OR II TO INSPECT THE SKIN AT THE CRITICAL FASTENER ROW ALONG THE EDGE OF THE PART 1 DOUBLER AND PART 2 FILLER AS SHOWN IN DETAIL V OR VI AS APPLICABLE.
- FOR ALTERNATIVE I AND II, DO A DETAILED INSPECTION OF THE REPAIR PARTS AND A 2-INCH WIDE ZONE AROUND THE REPAIR EXTERNALLY AS SHOWN IN DETAIL V AND VI.

TABLE III

Lap Splice External Repair
Figure 201 (Sheet 8 of 10)

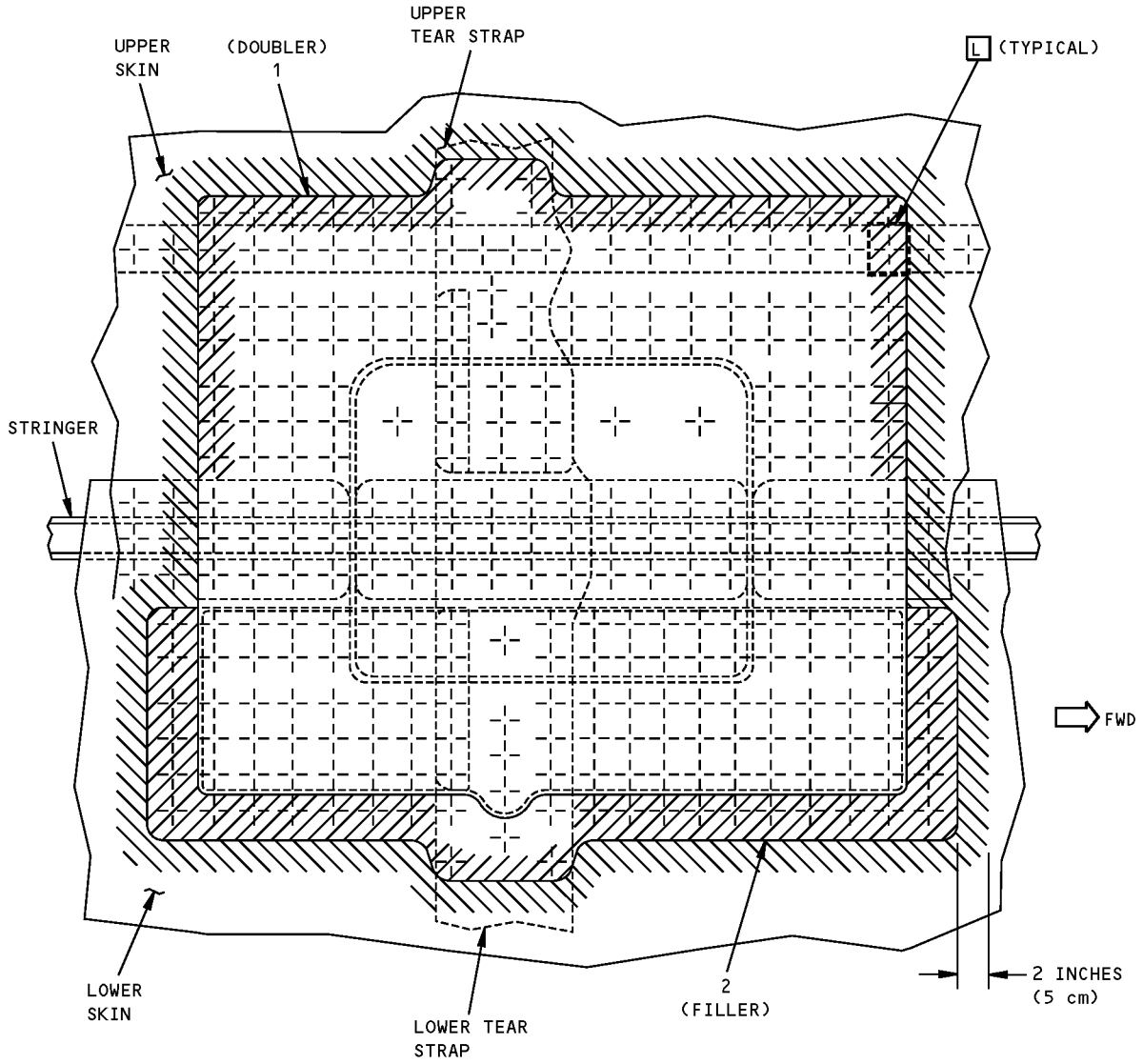


UPPER AND LOWER SKINS INSPECTION AREA AT THE CRITICAL FASTENER ROW. IF YOU USE LFEC, THEN DO THE INSPECTION OF THE UPPER AND LOWER SKIN EXTERNALLY THROUGH THE PART 1 DOUBLER AND PART 2 FILLER. IF YOU USE HFEC, INSPECT THE LOWER AND UPPER SKINS INTERNALLY. HOWEVER, HFEC INSPECTION IS NOT NECESSARY AROUND THE FASTENERS WHERE THE SKIN IS UNDER THE STRINGER.

UPPER AND LOWER SKINS INSPECTION AREA AROUND THE REPAIR. DO A DETAILED INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL I
DETAIL V

Lap Splice External Repair
Figure 201 (Sheet 9 of 10)



UPPER AND LOWER SKINS INSPECTION AREA AT THE CRITICAL FASTENER ROW. IF YOU USE LFEC, THEN DO THE INSPECTION OF THE UPPER AND LOWER SKIN EXTERNALLY THROUGH THE PART 1 DOUBLER AND PART 2 FILLER. IF YOU USE HFEC, INSPECT THE LOWER AND UPPER SKINS INTERNALLY. HOWEVER, HFEC INSPECTION IS NOT NECESSARY AROUND THE FASTENERS WHERE THE SKIN IS UNDER THE STRINGER OR FRAME.

UPPER AND LOWER SKINS INSPECTION AREA AROUND THE REPAIR. DO A DETAILED INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL IV
DETAIL VI

Lap Splice External Repair
Figure 201 (Sheet 10 of 10)

REPAIR 13 - LAP SPLICE FLUSH REPAIR

APPLICABILITY

THIS REPAIR IS APPLICABLE TO:

- LAP SPLICES WITH THREE ROWS OF FASTENERS
- THE AREAS WHERE THE TRIMMED SKIN THICKNESS IS LESS THAN 0.063 INCH. (INCLUDING THE PAD-UP THICKNESS)

THIS REPAIR IS NOT APPLICABLE TO DAMAGE:

- AT A CIRCUMFERENTIAL BUTT SPLICE
- NEAR THE STATIC PORTS OR ANGLE OF ATTACK SENSORS
- THAT GOES TO MORE THAN ONE STRINGER OR FRAME BAY
- WITHIN 8 INCHES FROM A BODY FRAME
- WITHIN 22 INCHES FROM AN ADJACENT REPAIR
- WITHIN 22 INCHES OF A DOOR CUTOUT
- THE WINDOW BELT S-17L/R LAP SPLICE
- IF UPPER OR LOWER SKIN IS TAPERED IN THE FORWARD OR AFT DIRECTION

REPAIR INSTRUCTIONS

CAUTION: IF ACOUSTIC TILES ARE FOUND DURING THE FUSELAGE SKIN REPAIR, REMOVE THESE TILES BEFORE YOU DO THIS REPAIR. IF THE TILES ARE NOT REMOVED, THEY WILL BE DAMAGED.

NOTE: THIS REPAIR SHOULD BE ACCOMPLISHED ONLY IF THE INTERNAL REPAIR DOUBLERS, FILLERS, AND TAPERED SHIMS DO NOT INTERFERE WITH EXISTING INTERNAL STRUCTURE SUCH AS TEAR STRAPS OR BEAR STRAPS.

THIS REPAIR IS SHOWN FOR DAMAGE TO BOTH THE LOWER AND UPPER SKINS. IF THE DAMAGE IS ONLY ON ONE SKIN, THE OTHER DOES NOT HAVE TO BE TRIMMED.

1. Get access to the damaged area.
2. Remove the necessary fasteners in the area of the damaged skin.

CAUTION: DO NOT GOUGE, SCRATCH, OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR. IF THE SKIN ADJACENT TO THE REPAIR IS DAMAGED, MORE REPAIR WORK MAY BE NECESSARY.

3. Carefully cut and remove the damaged part of the fuselage skin. Use a sheet metal guard between the skins and or internal structure to prevent damage.
   a. Make the cut a rectangular shape with the sides either parallel or perpendicular to the stringers.
   b. Use caution so you do not cut or cause damage to the stringer. If the stringer is damaged, repair as shown in SRM 53-00-03.
   c. Make the corner radii of the cutout a minimum of 0.5 inch.
   d. Make the edges of the cut smooth with a surface finish of 125 microinches Ra.
4. Do a high frequency eddy current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-00-01. Repeat steps 3 and 4 if all of the damage was not removed.
5. Make the repair parts. See Table I.
6. Assemble the repair parts as shown in Detail I and drill the fastener holes. Do not drill the fastener holes near a chem-milled or machined radius. If you must drill a fastener hole near a chem-milled to machined radius, shift the location to prevent the hole or fastener from interferring with the radius or use a radius filler. Use a drill microstop to prevent damage to the parts on the other side of the skin such as stringer, frame etc. Set the drill microstop to come out a maximum of 0.060 inch (1.5 mm) on the other side.
7. Disassemble the repair parts.
8. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
9. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
10. Apply two layers of BMS 10-11, Type 1 primer to the internal surfaces of the repair parts and to the bare internal surfaces of the initial parts. Refer to SOPM 20-41-02.
11. Apply one layer of BMS 10-79, Type II or III primer to the external surfaces or the repair parts and to the bare external surfaces of the initial parts. Refer to SOPM 20-44-04.
12. Install the repair parts wet with BMS 5-95 sealant between mating surfaces.
13. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant. Overdrive BACR15FV()KE() rivets to make the driven head 1.5D.
14. Apply a fillet seal to the repair parts on the internal and external edges of the repair area. Refer to SRM 51-20-05.

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Lap Splice FLush Repair
Figure 201 (Sheet 1 of 7)

REPAIR INSTUCTIONS CONTINUED

16. Apply a layer of BMS 3-23 corrosion inhibiting compound to the internal structure of the repair area, if the repair is below the main passenger floor. Refer to SRM 51-20-01.
17. Install the acoustic tiles that were removed.
18. Apply the decorative finish to the repair area. Refer to AMM 51-21.

NOTES

- THIS REPAIR IS A CATEGORY B REPAIR . THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE II. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR THE REPAIR CATEGORIES AND DEFINITIONS.
- THE INSPECTIONS GIVEN IN TABLE II ARE AN ALTERNATIVE METHOD OF COMPLIANCE (AMOC) TO AD 2003-18-10 APPLICABLE TO LINE NUMBERS 132 THRU 895 IN THE AREA COVERED BY THIS REPAIR. THE AMOC IS APPLICABLE ONLY TO THE FOLLOWING ITEMS OF SECTION 9 AND APPENDIX B OF 767 MAINTENANCE PLANNING DATA (MPD) THAT ARE EFFECTED BY THIS REPAIR:
  - LAP SPLICES ABOVE S-20 L/R

    53-10-107A, 53-30-104A, 53-60-105A
    53-10-107B, 53-30-104B, 53-60-105B
  - LAP SPLICES BELOW S-20 L/R

    53-10-107C, 53-30-104C, 53-60-105C
    53-10-107D, 53-30-104D, 53-60-105D
- D = FASTENER DIAMETER
- THE MAXIMUM PULL-UP PERMITTED PRIOR TO FASTENER INSTALLATION IS 0.005 INCH (0.13 mm)
- MAINTAIN A MINIMUM OF 2D EDGE MARGIN ON ALL REPAIR PARTS
- MAKE SURE THERE ARE NO KNIFE EDGE CONDITIIONS IN THE DOUBLER AND FILLERS BEFORE DRILLING THE FASTENER HOLES. IF THE COUNTERSINK DEPTH IS GREATER THAN 2/3 OF THE SHEET THICKNESS, INSTALL A PROTRUDING HEAD FASTENER.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR DECORATIVE EXTERIOR FINISHES, CLEANING AND PAINTING
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILES
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SRM 51-00-06 FOR DEFINITION OF REPAIR CATEGORIES
  - SOPM 20-44-04 FOR APPLICATION OF URETHANE COMPATIBLE PRIMERS
  - SRM 51-00-06 FOR DEFINITION OF REPAIR CATEGORIES.
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR SEALING PROCEDURES AND ALTERNATE SEALANTS
  - SRM 51-20-08 FOR INSTALLATION OF SHIMS
  - SRM 51-40-02 FOR FASTENER INSTALLATION AND REMOVAL
  - SRM 51-40-03 FOR FASTENERS SUBSTITUTIONS
  - SRM 51-40-05 FOR FASTENER HOLE SIZES
  - SRM 51-40-06 FOR FASTENER EDGE MARGINS

[A] REFER TO DETAIL II FOR ASSISTANCE IN SIZING THE PART 1 DOUBLER, AND THE PART 2 FILLER

[B] IF DAMAGE IS ONLY TO THE UPPER SKIN, THE PART 3 FILLER IS NOT REQUIRED AND THE THICKNESS OF THE PART 1 DOUBLER SHOULD BE ONE GAGE THICKER THAN THE TRIMMED UPPER SKIN. IF DAMAGE IS ONLY TO THE LOWER SKIN THE PART 4 FILLER IS NOT REQUIRED AND THE THICKNESS OF THE PART 1 DOUBLER SHOULD BE ONE GAGE THICKER THAN THE TRIMMED LOWER SKIN

[C] REFER TO DETAIL III FOR ASSISTANCE IN SIZING THE TAPERED SHIM

[D] IN THE CIRCUMFERENTIAL DIRECTION EXTEND THE DOUBLER A MINIMUM OF 4 ROWS OF FASTENERS ABOVE AND BELOW THE EDGE OF THE SKIN CUTOUT

[E] IN THE LONGITUDINAL DIRECTION EXTEND THE DOUBLER A MINIMUM OF 4 ROWS OF FASTENERS FORWARD AND AFT OF THE EDGE OF THE SKIN CUTOUT

[F] FILL GAPS WITH BMS 5-95 SEALANT (TYPICAL)

[G] DO NOT END THE REPAIR DOUBLER OR FILLERS ON A STRINGER OR OTHER INTERNAL STRUCTURE. INSTEAD, ADD AN ADDITIONAL FASTENER ROW TO HAVE BETTER INTERNAL INSPECTABILITY AND REPAIR DURABILITY.

[H] THE CRITICAL FASTENER ROW OF THE PART 1 DOUBLER AND PART 2 FILLER MUST NOT BE COMMON TO A STRINGER, FRAME SHEAR TIE, TEARSTRAP OR ANY OTHER BACK-UP STRUCTURE. DO NOT COVER THE TEAR STRAP WITH THE DOUBLER.

Lap Splice FLush Repair
Figure 201 (Sheet 2 of 7)

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION

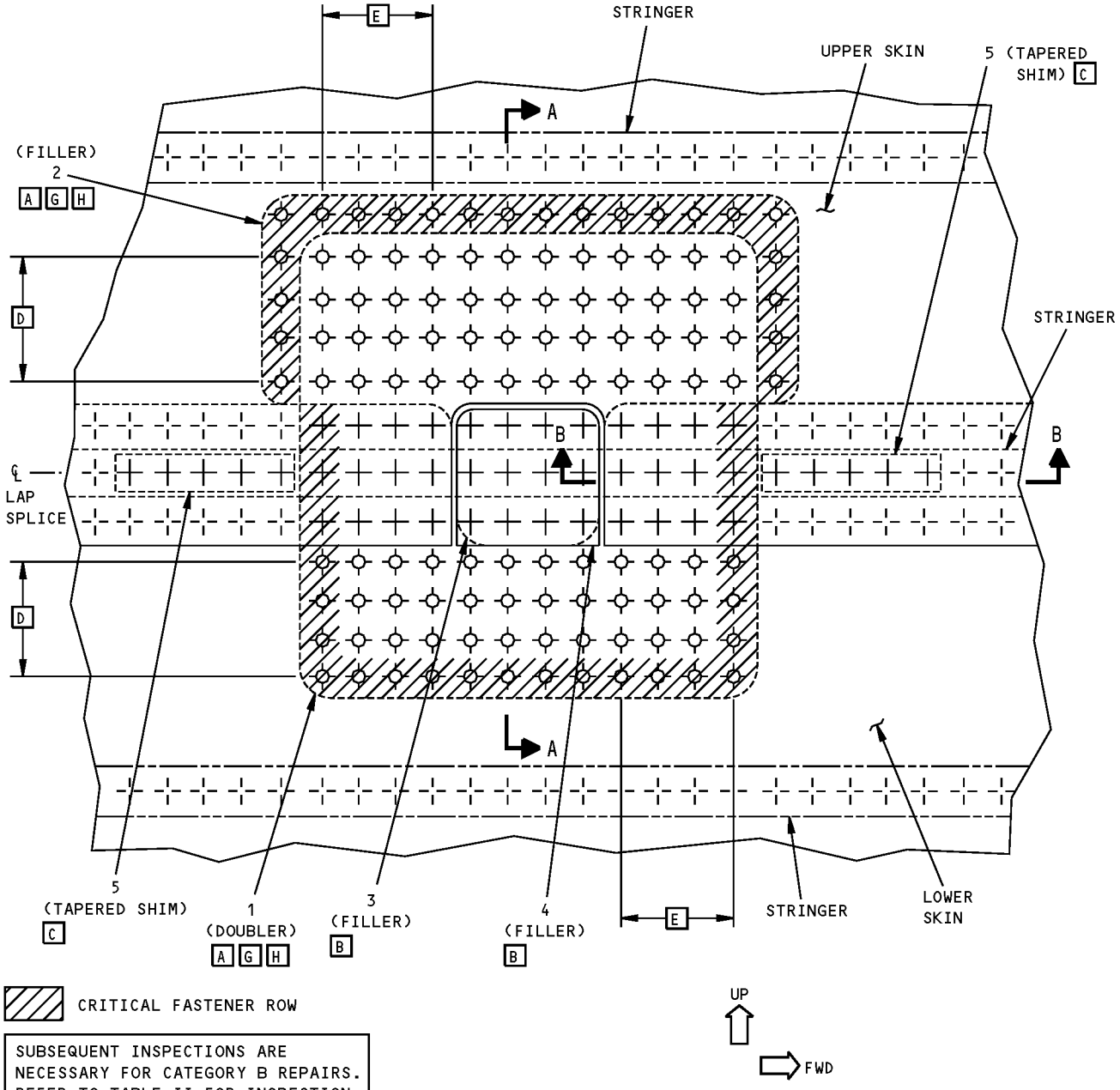
INITIAL FASTENER LOCATION. INSTALL THE SAME TYPE AND DIAMETER FASTENER AS THE INITIAL FASTENER. IF INITIAL FASTENERS ARE HEX-DRIVE BOLTS INSTALL 1/64 INCH DIAMETER OVERSIZE BOLTS AND COLLARS. IF THE INITIAL FASTENER HOLE IS DAMAGED, USE A 1/32 INCH DIAMETER OVERSIZE FASTENER.

REPAIR FASTENER LOCATION. INSTALL BACR15FV6KE() RIVETS, MAINTAIN 2D EDGE MARGIN, AND 4D TO 6D FASTENER SPACING

REPAIR MATERIAL			
PART NO.	PART	QUANTITY	MATERIAL
1	DOUBLER	1	2024-T3 CLAD [A]
2	FILLER	1	2024-T3 CLAD [A]
3	FILLER	1	2024-T3 CLAD SAME GAGE AS THE LOWER SKIN [B]
4	FILLER	1	2024-T3 CLAD SAME GAGE AS THE UPPER SKIN [B]
5	TAPERED SHIM	1	2024-T3 CLAD [C]

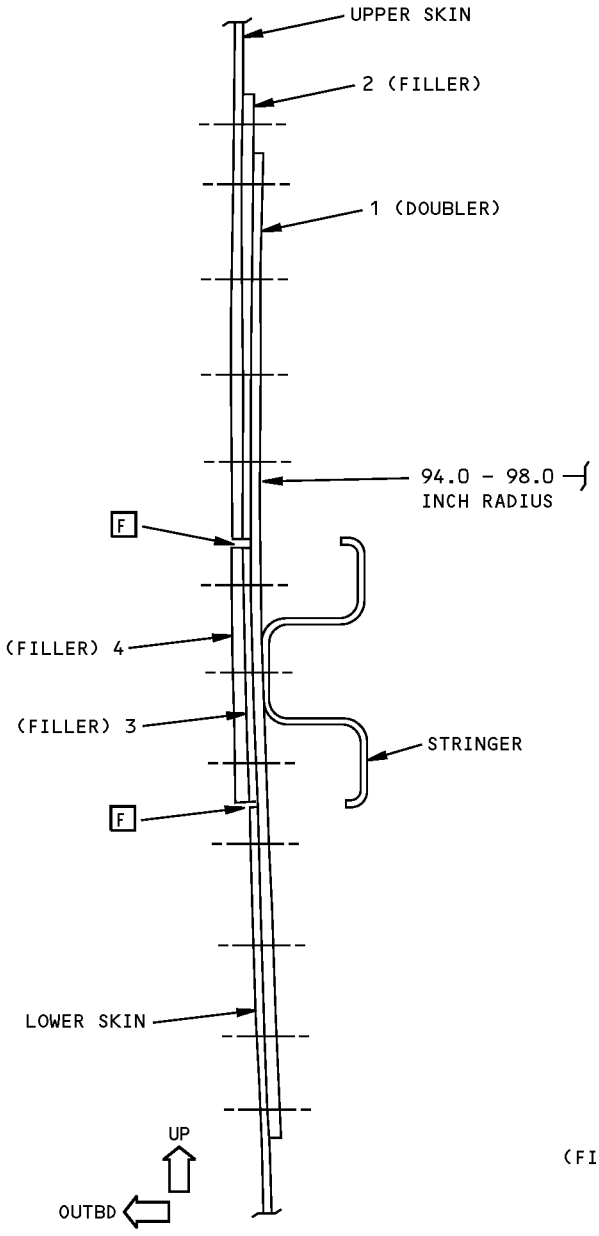
TABLE I

Lap Splice FLush Repair
Figure 201 (Sheet 3 of 7)

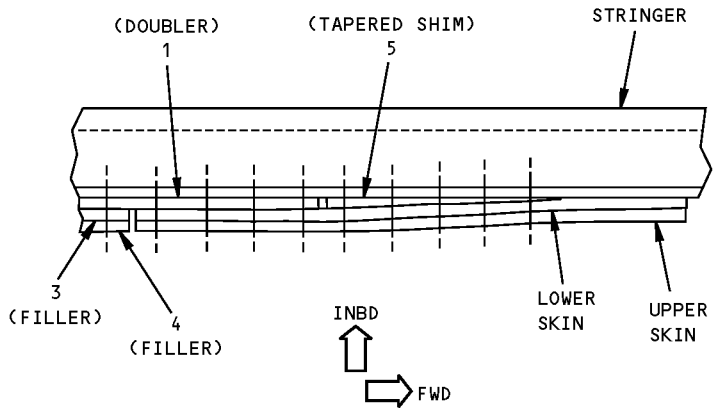


DETAIL I

Lap Splice FLush Repair
Figure 201 (Sheet 4 of 7)

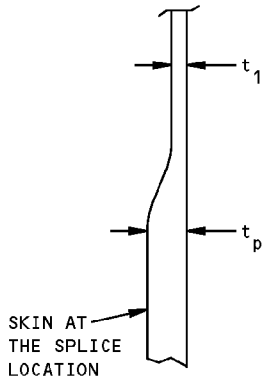


SECTION A-A



SECTION B-B

Lap Splice FLush Repair
Figure 201 (Sheet 5 of 7)

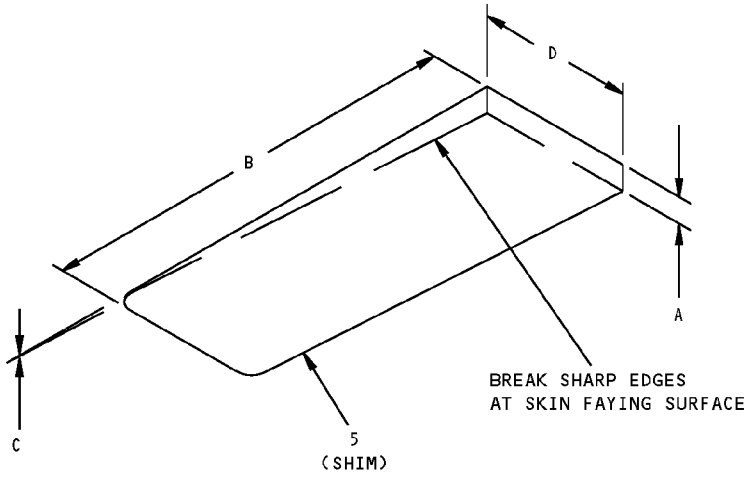


THICKNESS OF PART 1 DOUBLER = t_{DBLR}
$t_{DBLR} > t_1$ BY ONE GAGE OR
$t_{DBLR} = t_p$ WHICHEVER IS GREATER.

THICKNESS OF PART 2 FILLER = t_{FILLER}
THICKNESS OF LOWER SKIN AT LAP SPLICE = t_{LOWER}
$t_{FILLER} = t_{LOWER} + (t_p - t_1)$

DETERMINATION OF THE THICKNESS
OF PART 1 DOUBLER AND PART 2 FILLER

DETAIL II



A = DOUBLER THICKNESS
B = 100 (A-C)
C = 0.01
D = 1.30

DETAIL III

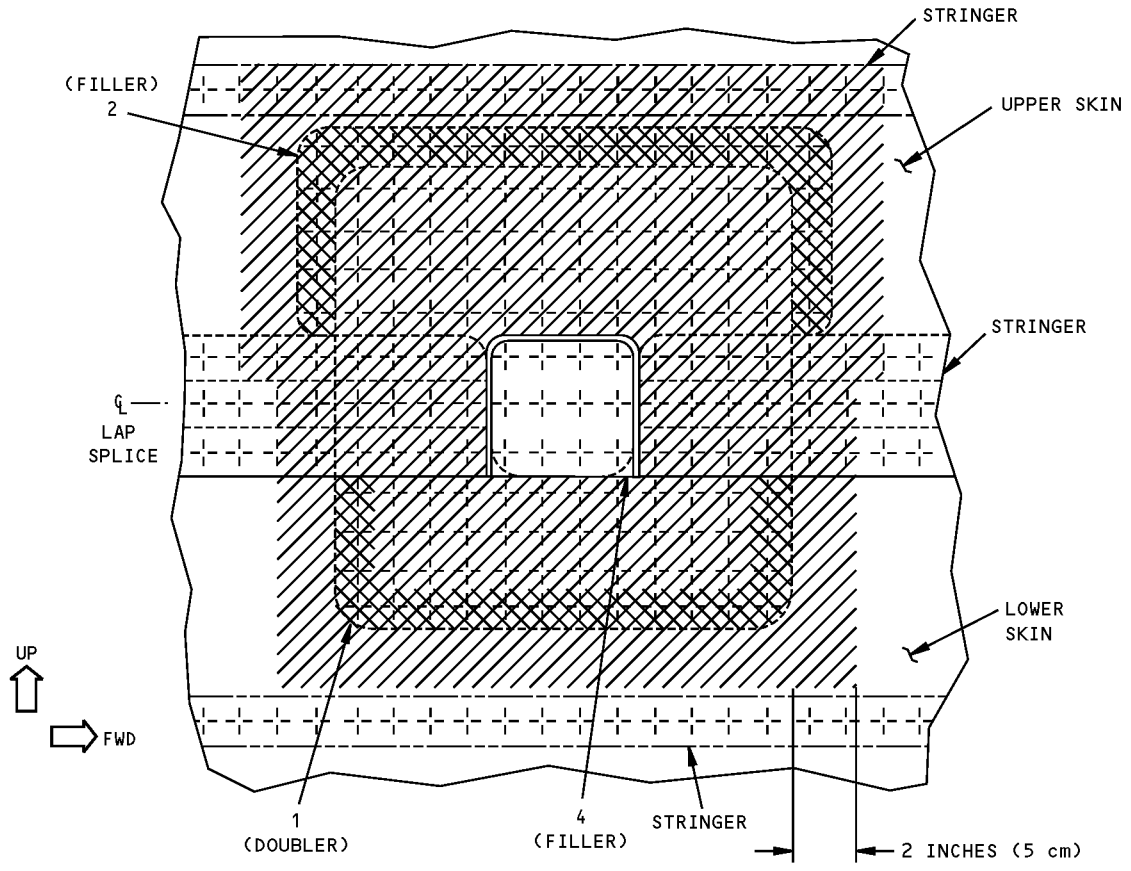
Lap Splice FLush Repair
Figure 201 (Sheet 6 of 7)

CATEGORY B REPAIR INSPECTION REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTIONS		
	METHOD	INTERVAL	REFERENCE
37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	EXTERNAL – HIGH FREQUENCY EDDY CURRENT (HFEC)	12,000 FLIGHT CYCLES	NDT PART 6 51-00-01
	EXTERNAL DETAILED INSPECTION		—

NOTE: – DO AN HFEC INSPECTION OF THE UPPER AND LOWER SKINS EXTERNALLY AT THE CRITICAL FASTENER ROW ALONG THE EDGE OF THE PART 1 DOUBLER AND PART 2 FILLER AS SHOWN IN DETAIL IV.

– DO A DETAILED INSPECTION OF THE UPPER AND LOWER SKINS IN THE REPAIR AREA AND A 2-INCH WIDE ZONE AROUND THE REPAIR EXTERNALLY AS SHOWN IN DETAIL IV.

TABLE II



UPPER AND LOWER SKINS INSPECTION AREA AT THE CRITICAL FASTENER ROW WITH AN HFEC METHOD EXTERNALLY

UPPER AND LOWER SKINS INSPECTION AREA IN THE REPAIR AREA AND AROUND THE REPAIR. DO A DETAILED INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL I
DETAIL IV

Lap Splice FLush Repair
Figure 201 (Sheet 7 of 7)

REPAIR 14 - FUSELAGE SKIN - EXTERNAL REPAIR BETWEEN STRINGERS

APPLICABILITY

THIS SOLID OR BLIND FASTENER REPAIR IS APPLICABLE TO SKIN DAMAGE BETWEEN STRINGERS AND FRAMES IN TWO REPAIR ZONES:

ZONE A - ALL AREAS OF THE FUSELAGE SKIN THAT ARE NOT IN ZONE B

ZONE B - BS 654+110 TO BS 786, S-4L TO S-4R (ABOVE)

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE AT A CIRCUMFERENTIAL BUTT SPLICE
- DAMAGE AT A SKIN LAP-SPLICE
- DAMAGE NEAR THE STATIC PORTS OR ANGLE OF ATTACK SENSORS
- WITHIN 22 INCHES OF AN ADJACENT SKIN (EXTERNAL OR INTERNAL) REPAIR
- WITHIN 22 INCHES OF A DOOR CUTOUT
- DAMAGE AT THE WINDOW BELT

REPAIR INSTRUCTIONS

THE EXTERNAL REPAIR AS SHOWN ALLOWS EITHER SOLID FASTENER OR BLIND FASTENER REPAIR. REFER TO THE APPLICABLE REPAIR INSTRUCTIONS.

SOLID FASTENER REPAIR

CAUTION: IF ACOUSTIC TILES ARE FOUND DURING THE FUSELAGE SKIN REPAIR, REMOVE THESE TILES BEFORE YOU DO THIS REPAIR.

1. Get access to the damaged area.
2. Remove the necessary fasteners in the area of the damaged skin.

CAUTION: DO NOT GOUGE, SCRATCH, OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR.

3. Carefully cut and remove the damaged part of the fuselage skin.
   A. Make the cut a rectangular shape with the sides either parallel or perpendicular to the stringers.
   B. Use caution so you do not cut or cause damage to the stringers. If the stringer is damaged, repair as shown in SRM 53-00-03.
   C. Make the corner radii of the cutout a minimum of 0.5 inch.
   D. Make the edges of the cut smooth with a surface finish of 125 microinches Ra.
4. Do a high frequency eddy current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-00-01. Repeat steps 3 and 4 if all of the damage was not removed.
5. Make the repair parts. See Table I.
6. Assemble the repair parts as shown in Detail I or II and drill the fastener holes. Refer to SRM 51-40-05 for the fastener hole size. Do not drill the fastener holes near a chem-milled or machined radius. If you must drill a fastener hole near a chem-milled or machined radius, shift the location to prevent the hole or fastener from interfering with the radius or use a radius filler. Use a drill microstop to prevent damage to the parts on the other side of the skin such as stringer, frame etc. Set the drill microstop to come out a maximum of 0.060 inch on the other side.
7. Disassemble the repair parts.
8. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
9. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
10. Apply two layers of BMS 10-11, Type I primer to the internal surfaces of the repair parts and to the bare internal surfaces of the initial parts. Refer to SOPM 20-41-02.
11. Apply one layer of BMS 10-79, Type II or III primer to the external surfaces of the repair parts and to the bare external surfaces of the initial parts. Refer to SOPM 20-44-04.
12. Install the repair parts wet with BMS 5-95 sealant between mating surfaces.
13. Install the fasteners as given in Table II. [A] Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant. Overdrive BACR15FV( )KE rivets to make the driven head 1.5D. Use a countersink repair washer to fill any initial countersink in the skin. Refer to SRM 51-40-08.
14. Apply a fillet seal to the repair parts on the external edges of the repair area. Refer to SRM 51-20-05.
15. Apply a layer of BMS 3-23 corrosion inhibiting compound to the internal structure of the repair area if the repair is below the main passenger floor. Refer to SRM 51-20-01.
16. Apply the decorative finish to the repair area. Refer to AMM 51-21.
17. Replace the acoustic tiles if necessary.

Fuselage Skin - External Repair Between Stringers
Figure 201 (Sheet 1 of 11)

BLIND FASTENER REPAIR

NOTE: Refer to the general notes for fastener spacing and inspection requirements before you make a blind fastener repair. Blind fastener repairs are limited to areas in which the skin thickness is equal to or less than 0.125 inch and to areas in which all initial (existing) fasteners are equal to or less than 6/32-inch diameter.

CAUTION: IF ACOUSTIC TILES ARE FOUND DURING THE FUSELAGE SKIN REPAIR, BE CAREFUL NOT TO DAMAGE THESE TILES.

1. Get access to the damaged area.
2. Remove the necessary fasteners in the area of the damaged skin.

CAUTION: DO NOT GOUGE, SCRATCH, OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR.

3. Carefully cut and remove the damaged part of the fuselage skin.
   A. Make the cut a rectangular shape with the sides either parallel or perpendicular to the stringers.
   B. Use caution so you do not cut or cause damage to the stringer. If the stringer is damaged, repair as shown in SRM 53-00-03.
   C. Make the corner radii of the cutout a minimum of 0.5 inch.
   D. Make the edges of the cut smooth with a surface finish of 125 microinches Ra.
4. Do a High Frequency Eddy Current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-00-01. Repeat steps 3 and 4 if all of the damage was not removed.
5. Make the repair parts. See Table I.
6. Assemble the repair parts as shown in Detail I and drill the fastener holes. Refer to SRM 51-40-05 for the fastener hole size. Do not drill the fastener holes near a chem-milled or machined radius. If you must drill a fastener hole near a chem-milled or machined radius, shift the location to prevent the hole or fastener from interfering with the radius or use a radius filler. Use a drill microstop to prevent damage to the parts on the other side of the skin such as stringer, frame etc. Set the drill microstop to come out a maximum of 0.060 inch on the other side.
7. Disassemble the repair parts.
8. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
9. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
10. Apply two layers of BMS 10-11, Type I primer to the internal surfaces of the repair parts and to the bare internal surfaces of the initial parts. Refer to SOPM 20-41-02.
11. Apply one layer of BMS 10-79, Type II or III primer to the external surfaces of the repair parts and to the bare external surfaces of the initial parts. Refer to SOPM 20-44-04.
12. Install the repair parts wet with BMS 5-95 sealant between mating surfaces.
13. Install the fasteners as given in Table III. [A] Install the fasteners wet with BMS 5-95 sealant. Use a countersink repair washer to fill any initial countersink in the skin. Refer to SRM 51-40-08.
14. Apply a fillet seal to the repair parts on the internal and external edges of the repair area. Refer to SRM 51-20-05.
15. Apply a layer of BMS 3-23 corrosion inhibiting compound to the internal structure of the repair area if the repair is below the main passenger floor. Refer to SRM 51-20-01.
16. Apply the decorative finish to the repair area. Refer to AMM 51-21.
17. Replace the acoustic tiles if necessary.

NOTES

- THE SOLID FASTENER REPAIR IS CATEGORY B. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE V OR TABLE VI AS APPLICABLE. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR THE REPAIR CATEGORIES AND DEFINITIONS.

  NOTE: THE CRITICAL FASTENER ROW MUST BE VISUALLY INSPECTABLE INTERNALLY AND MUST NOT BE OBSTRUCTED BY A STRINGER, FRAME, TEARSTRAP, ETC.

Fuselage Skin - External Repair Between Stringers
Figure 201 (Sheet 2 of 11)

NOTES (Cont.)

- THE BLIND FASTENER REPAIR IS CATEGORY C. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE INSPECTIONS GIVEN IN TABLE VII. INSPECT FOR SIGNS OF LOOSE OR MISSING FASTENERS. THIS REPAIR MUST BE REPLACED BY A SOLID FASTENER REPAIR WITHIN THE NEXT 3000 FLIGHT CYCLES.

NOTE: WHEN A BLIND FASTENER IS REPLACED BY A SOLID FASTENER, USE THE SOLID FASTENERS SPECIFIED IN TABLE II EXCEPT THAT THE SOLID FASTENER MUST BE A MINIMUM OF 1/32-INCH LARGER IN DIAMETER THAN THE NOMINAL SIZE OF THE BLIND FASTENER BEING REPLACED.

- BLIND FASTENER REPAIRS SHOULD NOT BE USED UNLESS YOU ARE SURE THEY ARE SEATED CORRECTLY ON THE INTERNAL STRUCTURE AND YOU CAN KEEP THE CORRECT FASTENER SPACING AND EDGE MARGIN.
- DO NOT END THE REPAIR DOUBLER ON A STRINGER OR OTHER INTERNAL STRUCTURE. INSTEAD, ADD AN ADDITIONAL FASTENER ROW TO HAVE BETTER INTERNAL INSPECTABILITY AND REPAIR DURABILITY.
- D = FASTENER DIAMETER
- THE MAXIMUM PULL-UP PERMITTED PRIOR TO FASTENER INSTALLATION IS 0.005 INCH (0.13 mm).
- MAINTAIN A MINIMUM OF 2D EDGE MARGIN ON ALL REPAIR PARTS.
- FOR SOLID FASTENER REPAIRS, MAKE SURE THERE ARE NO KNIFE EDGE CONDITIONS IN THE DOUBLER BEFORE DRILLING THE FASTENER HOLES. IF THE COUNTERSINK DEPTH IS GREATER THAN 2/3 OF THE SHEET THICKNESS, INSTALL A PROTRUDING HEAD FASTENER.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR DECORATIVE EXTERIOR FINISHES, CLEANING AND PAINTING
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILE
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SOPM 20-44-04 FOR APPLICATION OF URETHANE COMPATIBLE PRIMERS
  - SRM 51-00-06 FOR DEFINITION OF REPAIR CATEGORIES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR SEALING PROCEDURES AND ALTERNATE SEALANTS
  - SRM 51-20-08 FOR INSTALLATION OF SHIMS
  - SRM 51-40-02 FOR FASTENER INSTALLATION AND REMOVAL
  - SRM 51-40-03 FOR FASTENER SUBSTITUTIONS
  - SRM 51-40-05 FOR FASTENER HOLE SIZES
  - SRM 51-40-06 FOR FASTENER EDGE MARGINS
  - SRM 51-40-08 FOR COUNTERSINK REPAIR WASHERS
  - SRM 51-70-09 FOR METAL-TO-METAL STRUCTURAL BONDING

[A] DO NOT INSTALL FASTENERS THROUGH ACOUSTIC TILES.

[B] USE BACR15CE5D RIVETS FOR SKIN REPAIRS IN SECTIONS 41 AND 48. USE BACR15FV5KE RIVETS FOR SKIN REPAIRS IN SECTIONS 43, 45, AND 46.

[C] USE BACR15CE6D RIVETS FOR SKIN REPAIRS IN SECTIONS 41 AND 48. USE BACR15FV6KE RIVETS FOR SKIN REPAIRS IN SECTIONS 43, 45, AND 46.

[D] USE BACR15CE8D RIVETS FOR SKIN REPAIRS IN SECTIONS 41 AND 48. USE BACR15FV8KE RIVETS FOR SKIN REPAIRS IN SECTIONS 43, 45 AND 46.

[E] USE BACB30NW6K() HEX-DRIVE BOLTS WITH BACC30M6 COLLARS.

[F] USE BACB30NW8K() HEX-DRIVE BOLTS WITH BACC30M8 COLLARS.

[G] THE USE OF TWO DOUBLERS IS RECOMMENDED WHEN THE TRIMMED SKIN THICKNESS IS GREATER THAN 0.112 INCH. REFER TO DETAIL II.

[H] FOR A REPAIR REQUIRING THE USE OF 2 DOUBLERS, USE THE FOLLOWING STEPS TO FIND THE APPROPRIATE THICKNESS FOR THE DOUBLERS.

1. FIND THE MINIMUM TOTAL COMBINED THICKNESS OF THE PART 1 AND 2 DOUBLER
   - A. MEASURE THE MAXIMUM THICKNESS OF THE MATERIAL THAT WAS REMOVED FROM THE INITIAL SKIN.
   - B. THE TOTAL COMBINED THICKNESS OF THE PART 1 AND 2 DOUBLERS MUST BE A MINIMUM OF ONE GAGE HIGHER THAN THE TRIMMED SKIN THICKNESS.

Fuselage Skin - External Repair Between Stringers
Figure 201 (Sheet 3 of 11)

NOTES (Cont.)

2. FIND THE THICKNESS OF THE PART 1 DOUBLER.

   IF THE REPAIR FASTENERS ARE BACB30NW6K() HEX DRIVE BOLTS:

   A. DIVIDE THE MINIMUM TOTAL COMBINED THICKNESS BY TWO TO GET THE MINIMUM THICKNESS OF THE PART 1 DOUBLER. IF THE CALCULATED VALUE IS LESS THAN 0.071 INCH, USE 0.071 INCH AS THE MINIMUM THICKNESS OF THE PART 1 DOUBLER.

   B. IF THE CALCULATED VALUE IS LARGER THAN 0.071 INCH, THE THICKNESS OF THE PART 1 DOUBLER IS THE SUBSEQUENT HIGHER GAGE LISTED IN TABLE IV. YOU CAN USE THE CALCULATED VALUE THICKNESS IF IT IS EQUAL TO A GAGE LISTED IN TABLE IV.

   IF THE REPAIR FASTENERS ARE BACB30NW8K() HEX DRIVE BOLTS:

   C. DIVIDE THE MINIMUM TOTAL COMBINED THICKNESS BY TWO TO GET THE MINIMUM THICKNESS OF THE PART 1 DOUBLER. IF THE CALCULATED VALUE IS LESS THAN 0.090 INCH, USE 0.090 INCH AS THE MINIMUM THICKNESS OF THE PART 1 DOUBLER.

   D. IF THE CALCULATED VALUE IS LARGER THAN 0.090 INCH, THE THICKNESS OF THE PART 1 DOUBLER IS THE SUBSEQUENT THICKER GAGE LISTED IN TABLE IV. YOU CAN USE THE CALCULATED VALUE THICKNESS IF IT IS EQUAL TO A GAGE LISTED IN TABLE IV.

3. FIND THE THICKNESS OF THE PART 2 DOUBLER.

   IF THE REPAIR FASTENERS ARE BACB30NW6K() HEX DRIVE BOLTS:

   A. SUBTRACT THE PART 1 DOUBLER THICKNESS DETERMINED IN STEP 2 FROM THE MINIMUM TOTAL COMBINED THICKNESS DETERMINED IN STEP 1. IF THE CALCULATED VALUE IS LESS THAN 0.071 INCH, USE 0.071 INCH AS THE MINIMUM THICKNESS OF THE PART 2 DOUBLER.

   B. IF THE CALCULATED VALUE IS LARGER THAN 0.0721 INCH, THE THICKNESS OF THE PART 2 DOUBLER IS THE SUBSEQUENT THICKER GAGE LISTED IN TABLE IV. YOU CAN USE THE CALCULATED VALUE THICKNESS IF IT IS EQUAL TO A GAGE LISTED IN TABLE IV.

   IF THE REPAIR FASTENERS ARE BACB30NW8K() HEX DRIVE BOLTS:

   C. SUBTRACT THE PART 1 DOUBLER THICKNESS DETERMINED IN STEP 2 FROM THE MINIMUM TOTAL COMBINED THICKNESS DETERMINED IN STEP 1. IF THE CALCULATED VALUE IS LESS THAN 0.090 INCH, USE 0.090 INCH AS THE MINIMUM THICKNESS OF THE PART 2 DOUBLER.

   D. IF THE CALCULATED VALUE IS LARGER THAN 0.090 INCH, THE THICKNESS OF THE PART 2 DOUBLER IS THE SUBSEQUENT THICKER GAGE LISTED IN TABLE IV. YOU CAN USE THE CALCULATED VALUE THICKNESS IF IT IS EQUAL TO A GAGE LISTED IN TABLE IV.

[I] IF THE SKIN HAS A CHEM-MILLED OR MACHINED POCKET WHICH IS COVERED BY THE REPAIR THE PART 1 DOUBLER (ONE DOUBLER CONFIGURATION) OR THE PART 2 DOUBLER (TWO DOUBLER CONFIGURATION) SHOULD BE NOT MORE THAN ONE GAGE THICKER THAN THE THICKNESS OF THE SKIN POCKET.

[J] THE THICKNESS OF THE PART 1 DOUBLER (ONE DOUBLER CONFIGURATION) OR THE PART 2 DOUBLER (TWO DOUBLER CONFIGURATION) SHOULD NOT BE MORE THAN ONE GAGE THICKER THAN THE THICKNESS OF THE SKIN AT THE CRITICAL FASTENER ROW.

[K] IF THE REPAIR IS ABOVE THE MAIN PASSENGER FLOOR THE PART 3 FILLER IS NOT REQUIRED.

[L] IN THE CIRCUMFERENTIAL DIRECTION, EXTEND THE DOUBLER A MINIMUM OF 3 ROWS OF FASTENERS ABOVE AND BELOW THE EDGE OF THE SKIN CUTOUT FOR THE SOLID FASTENER REPAIR.

[M] IN THE CIRCUMFERENTIAL DIRECTION, EXTEND THE DOUBLER A MINIMUM OF 4 ROWS OF FASTENERS ABOVE AND BELOW THE EDGE OF THE SKIN CUTOUT FOR THE BLIND FASTENER REPAIR.

[N] IN THE LONGITUDINAL DIRECTION, EXTEND THE DOUBLER A MINIMUM OF 4 ROWS OF FASTENERS FORWARD AND AFT OF THE EDGE OF THE SKIN CUTOUT FOR THE SOLID FASTENER REPAIR.

[O] IN THE LONGITUDINAL DIRECTION, EXTEND THE DOUBLER A MINIMUM OF 5 ROWS OF FASTENERS FORWARD AND AFT OF THE EDGE OF THE SKIN CUTOUT FOR THE BLIND FASTENER REPAIR.

[P] THE FASTENER HEAD SHOULD NEVER BE ON TAPER.

[Q] LOW FREQUENCY EDDY CURRENT (LFEC) INSPECTION METHOD CAN BE USED ONLY IF THE REPAIR DOUBLER THICKNESS IS LESS THAN 0.11 INCH.

[R] IT IS NOT NECESSARY TO DO HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTIONS AT LOCATIONS WHERE THE SKIN IS COVERED BY A STRINGER, TEAR STRAP, SHEAR TIE OR OTHER STRUCTURE.

[S] THIS INTERVAL IS APPLICABLE ONLY FOR BODY STATIONS IN SECTION 41, 43 AND 46 BETWEEN STRINGERS S-32L AND S-32R (BELOW)

Fuselage Skin - External Repair Between Stringers
Figure 201 (Sheet 4 of 11)

FASTENER SYMBOLS

-!- REFERENCE FASTENER LOCATION

+ INITIAL FASTENER LOCATION. FOR THE SOLID FASTENER REPAIR, INSTALL THE SAME TYPE AND SIZE FASTENER AS INITIAL FASTENER, IF INITIAL FASTENERS ARE HEX DRIVE BOLTS, INSTALL 1/64-INCH DIAMETER OVERSIZE BOLTS AND COLLARS. FOR THE BLIND FASTENER REPAIR, INSTALL A BACR15FR()E RIVET THAT IS 1/64-INCH LARGER IN DIAMETER THAN THE INITIAL FASTENER.

REPAIR FASTENER LOCATION. INSTALL THE FASTENERS AS SPECIFIED IN TABLE II FOR A SOLID FASTENER REPAIR. INSTALL THE FASTENERS AS SPECIFIED IN TABLE III FOR A BLIND FASTENER REPAIR. MAINTAIN A MINIMUM OF 2D EDGE MARGIN AND 4D TO 6D FASTENER SPACING.

REPAIR FASTENER LOCATION. INSTALL BACR15FV5KE OR BACR15FV6KE RIVETS FOR A SOLID FASTENER REPAIR. INSTALL BACR15FR4E OR BACR15FR5E BLIND RIVETS FOR A BLIND FASTENER REPAIR. MAINTAIN 2D EDGE MARGIN AND 6D TO 8D FASTENER SPACING. THESE FASTENERS ARE NOT REQUIRED IF THE PART 3 FILLER IS NOT USED.

REPAIR MATERIAL			
PART NO.	PART	QUANTITY	MATERIAL
1	DOUBLER	1	SAME MATERIAL AND ONE GAGE THICKER THAN TRIMMED SKIN THICKNESS [G] [H] [I] [J]
2	DOUBLER	1	SAME MATERIAL AS THE INITIAL SKIN [G] [H]
3	FILLER	1	SAME MATERIAL AND GAGE AS TRIMMED SKIN [K]

TABLE I

SOLID REPAIR FASTENER TYPE, SIZE, AND FASTENER SPACING				
INITIAL SKIN THICKNESS (INCHES)	ONE DOUBLER REPAIR		TWO DOUBLER REPAIR	
	FASTENER TYPE AND SIZE	FASTENER SPACING (INCHES)	FASTENER TYPE AND SIZE	FASTENER SPACING (INCHES)
0.040 TO 0.050	[B]	0.78 TO 0.938	NOT PERMITTED	———
0.051 TO 0.079	[C]	0.90 TO 1.125	NOT PERMITTED	———
0.080 TO 0.111	[D]	1.125 TO 1.50	NOT PERMITTED	———
0.112 TO 0.125	[D]	1.125 TO 1.50	[E]	0.95 TO 1.125
0.126 TO 0.142	[F]	1.25 TO 1.50	[E]	0.95 TO 1.125
>0.143	[F]	1.25 TO 1.50	[F]	1.25 TO 1.50

TABLE II

Fuselage Skin - External Repair Between Stringers
Figure 201 (Sheet 5 of 11)

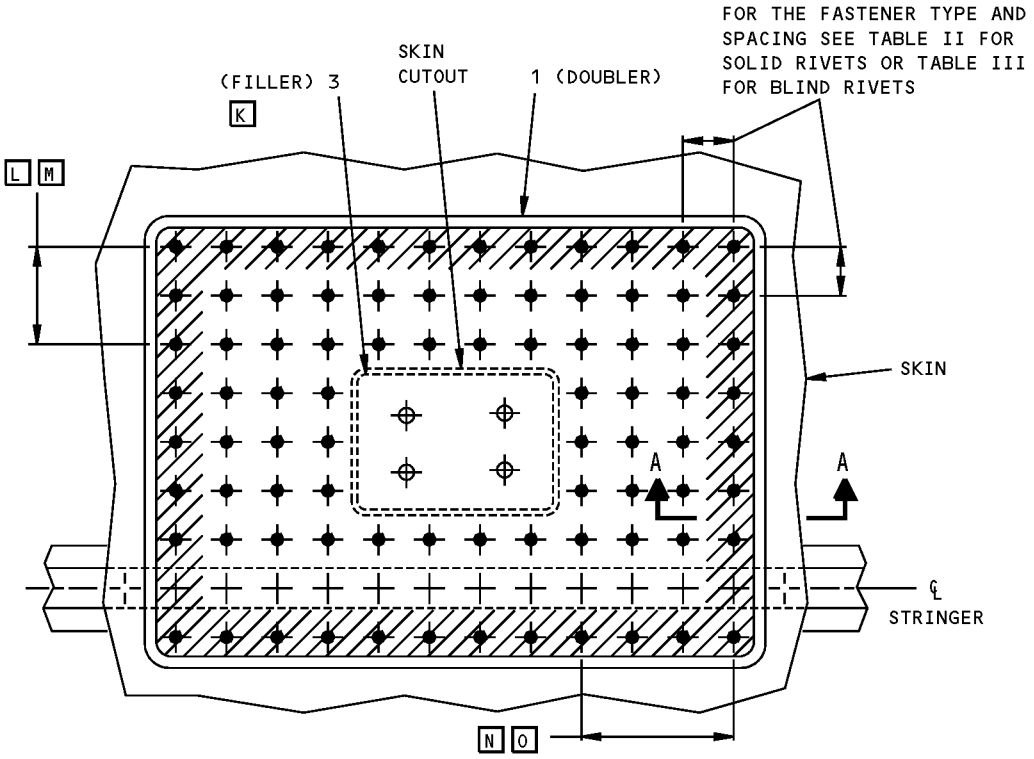
BLIND REPAIR FASTENER TYPE, SIZE, AND FASTENER SPACING		
INITIAL SKIN THICKNESS (INCHES)	ONE DOUBLER REPAIR	
	FASTENER TYPE AND SIZE	FASTENER SPACING (INCHES)
0.040 TO 0.050	BACR15FR4E	0.75 TO 0.875
0.051 TO 0.079	BACR15FR5E	0.90 TO 1.00
0.080 TO 0.125	BACR15FR6E	1.15 TO 1.30

TABLE III

STANDARD ALUMINUM SHEET METAL GAGES
0.050
0.056
0.063
0.071
0.080
0.090
0.100
0.112
0.125
0.140
0.160
0.190
0.250

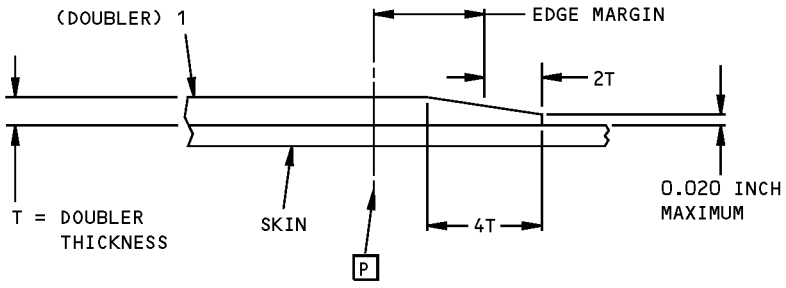
TABLE IV

Fuselage Skin - External Repair Between Stringers
Figure 201 (Sheet 6 of 11)



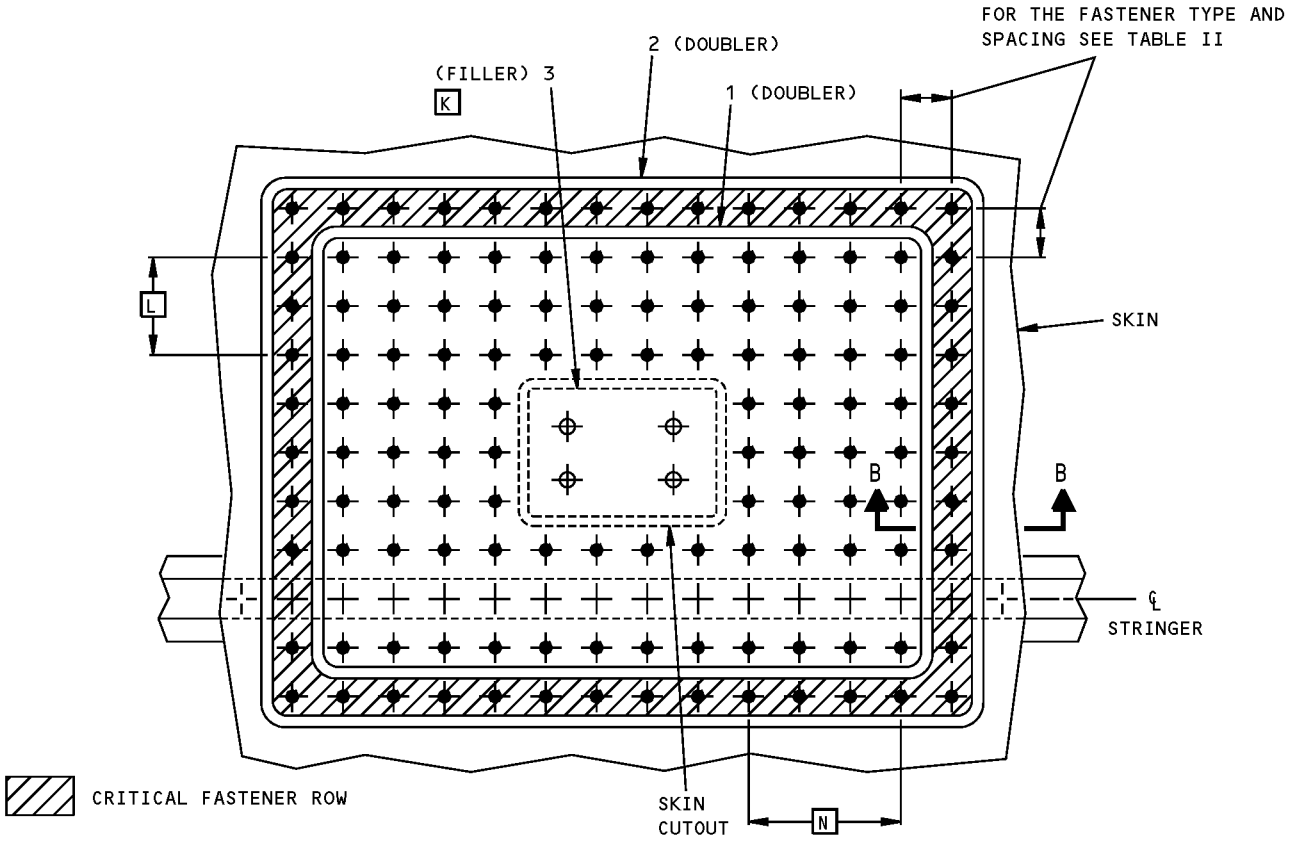
SOLID RIVET REPAIR SHOWN,
BLIND RIVET REPAIR SIMILAR EXCEPT
FOR NUMBER OF ROWS OF FASTENERS

ONE DOUBLER CONFIGURATION
DETAIL I



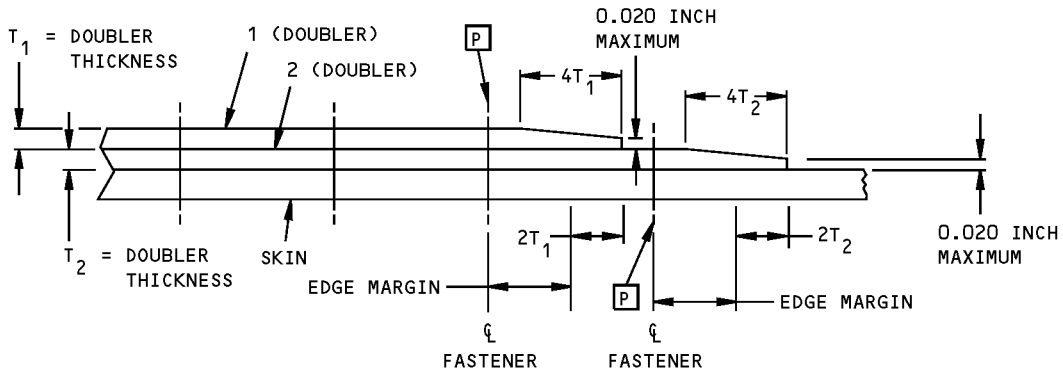
SECTION A-A

Fuselage Skin - External Repair Between Stringers
Figure 201 (Sheet 7 of 11)



SUBSEQUENT INSPECTIONS ARE NECESSARY FOR CATEGORY B REPAIRS. REFER TO TABLE V OR TABLE VI AS APPLICABLE FOR CATEGORY B INSPECTION REQUIREMENTS

TWO DOUBLER CONFIGURATION – SOLID FASTENERS ONLY
DETAIL II



SECTION B–B

Fuselage Skin - External Repair Between Stringers
Figure 201 (Sheet 8 of 11)

ZONE A – CATEGORY B REPAIR INSPECTION REQUIREMENTS					
INSPECTION THRESHOLD	REPEAT INSPECTION ALTERNATIVES				
	ALTERNATIVE	METHOD	INTERVAL		REFERENCE
37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	I	INTERNAL – HIGH FREQUENCY EDDY CURRENT (HFEC)	12,000 FLIGHT CYCLES	9,000 FLIGHT CYCLES [S]	NDT PART 6 51-00-01
		EXTERNAL DETAILED INSPECTION			---
	II	EXTERNAL – LOW FREQUENCY EDDY CURRENT (LFEC) [Q]	3,000 FLIGHT CYCLES		NDT PART 6 53-00-06
		EXTERNAL DETAILED INSPECTION			---

NOTE:

- USE ALTERNATIVE I OR II TO INSPECT THE SKIN AT THE CRITICAL FASTENER ROW ALONG THE EDGE OF THE PART 1 OR PART 2 DOUBLER AS SHOWN IN DETAIL III OR IV AS APPLICABLE.
- FOR ALTERNATIVE I AND II, DO A DETAILED INSPECTION OF THE REPAIR DOUBLER(S) AND A 2-INCH WIDE ZONE AROUND THE REPAIR EXTERNALLY AS SHOWN IN DETAIL III AND IV.

TABLE V

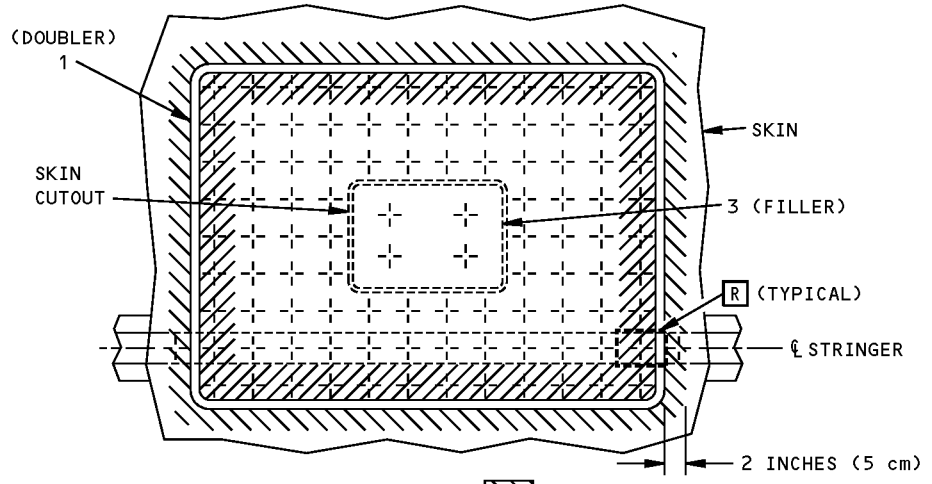
ZONE B – CATEGORY B REPAIR INSPECTION REQUIREMENTS				
INSPECTION THRESHOLD	REPEAT INSPECTION ALTERNATIVES			
	ALTERNATIVE	METHOD	INTERVAL	REFERENCE
25,000 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	I	INTERNAL – HIGH FREQUENCY EDDY CURRENT (HFEC)	9,000 FLIGHT CYCLES	NDT PART 6 51-00-01
		EXTERNAL DETAILED INSPECTION		---
	II	EXTERNAL – LOW FREQUENCY EDDY CURRENT (LFEC) [Q]	3,000 FLIGHT CYCLES	NDT PART 6 53-00-06
		EXTERNAL DETAILED INSPECTION		---

NOTE:

- USE ALTERNATIVE I OR II TO INSPECT THE SKIN AT THE CRITICAL FASTENER ROW ALONG THE EDGE OF THE PART 1 OR PART 2 DOUBLER AS SHOWN IN DETAIL III OR IV AS APPLICABLE.
- FOR ALTERNATIVE I AND II, DO A DETAILED INSPECTION OF THE REPAIR DOUBLER(S) AND A 2-INCH WIDE ZONE AROUND THE REPAIR EXTERNALLY AS SHOWN IN DETAIL III AND IV.

TABLE VI

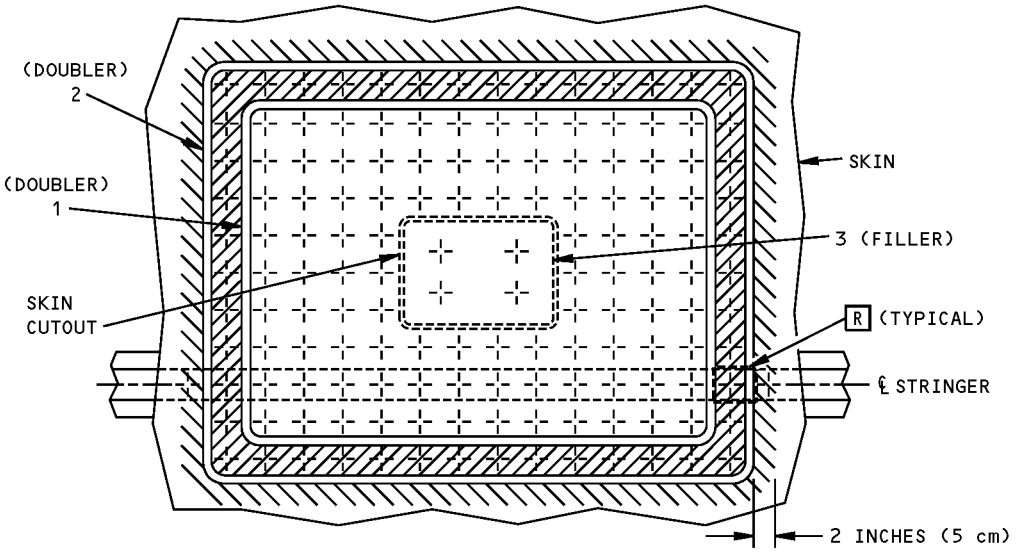
Fuselage Skin - External Repair Between Stringers
Figure 201 (Sheet 9 of 11)



SKIN INSPECTION AREA AT THE CRITICAL FASTENER ROW. IF YOU USE LFEC, THEN DO THE INSPECTION OF THE SKIN EXTERNALLY THROUGH THE PART 1 DOUBLER. IF YOU USE HFEC, INSPECT THE SKIN INTERNALLY. HOWEVER, HFEC INSPECTION IS NOT REQUIRED AROUND THE FASTENERS WHERE THE SKIN IS UNDER THE STRINGER.

SKIN INSPECTION AREA AROUND THE REPAIR. DO A DETAILED INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL I WHEN SOLID FASTENERS ARE USED
DETAIL III



SKIN INSPECTION AREA AT THE CRITICAL FASTENER ROW. IF YOU USE LFEC, THEN DO THE INSPECTION OF THE SKIN EXTERNALLY THROUGH THE PART 2 DOUBLER. IF YOU USE HFEC, INSPECT THE SKIN INTERNALLY. HOWEVER, HFEC INSPECTION IS NOT REQUIRED AROUND THE FASTENERS WHERE THE SKIN IS UNDER THE STRINGER.

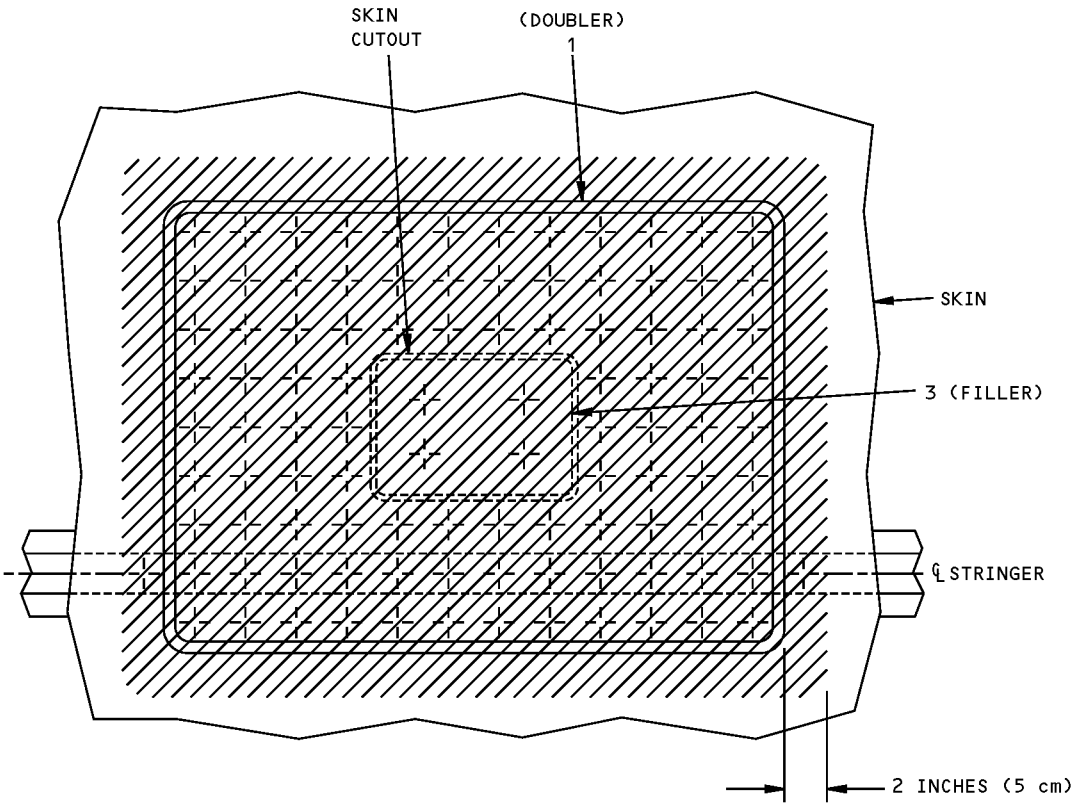
SKIN INSPECTION AREA AROUND THE REPAIR. DO A DETAILED INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL II
DETAIL IV

Fuselage Skin - External Repair Between Stringers
Figure 201 (Sheet 10 of 11)

ZONE A AND B – CATEGORY C REPAIR INSPECTION AND REPLACEMENT REQUIREMENTS				
INSPECTION THRESHOLD	REPEAT INSPECTION			TIME LIMIT
	METHOD	INTERVAL	REFERENCE	
1,000 FLIGHT CYCLES	DETAILED INSPECTION	1,000 FLIGHT CYCLES		3,000 FLIGHT CYCLES
NOTE: INSPECT THE 2-INCH WIDE ZONE AROUND THE DOUBLER FOR SKIN DAMAGE AND INSPECT THE DOUBLER FOR MISSING OR LOOSE FASTENERS. REFER TO DETAIL V FOR THE AREA WHERE THE EXTERNAL DETAILED INSPECTION IS NECESSARY.				

TABLE VII

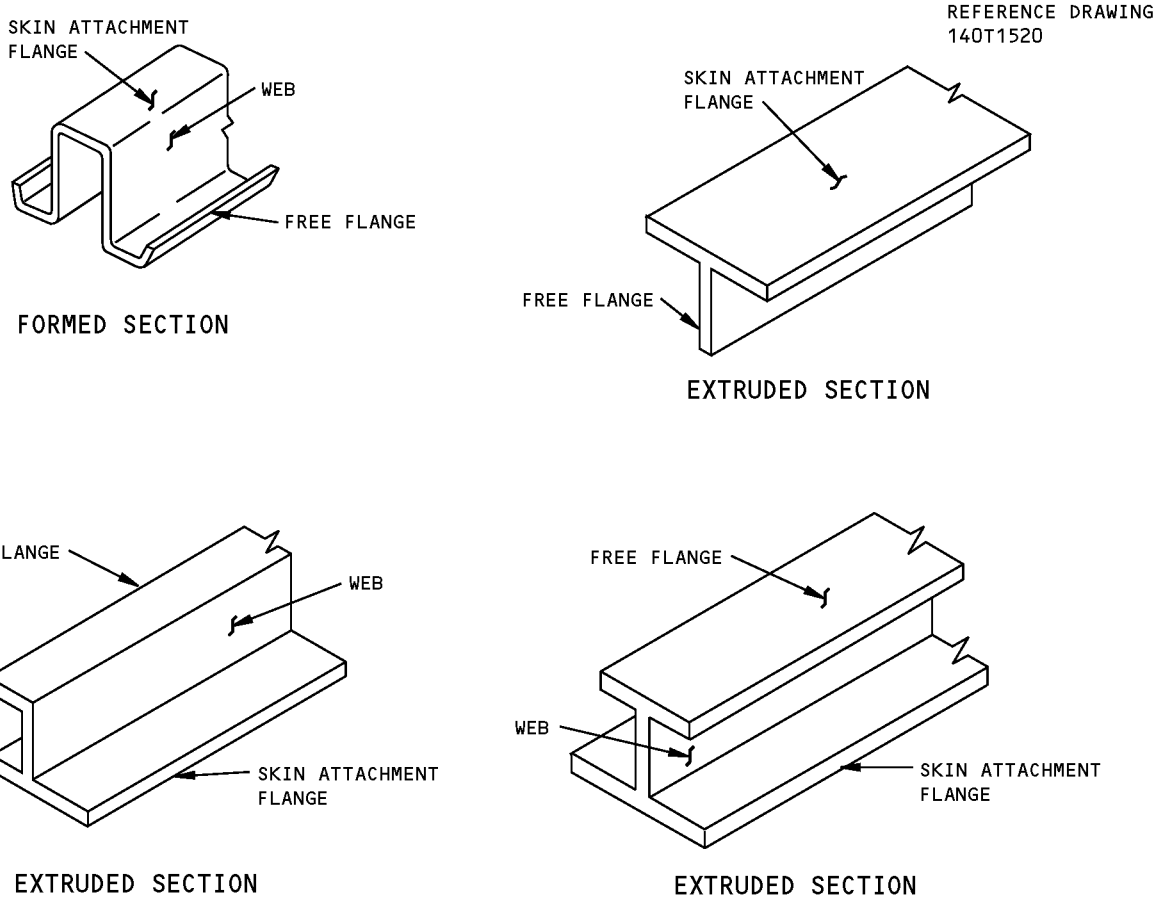


EXTERNAL DETAILED INSPECTION AREA
(INCLUDES 2 INCHES AROUND THE DOUBLER)

INSPECTION AREAS FOR DETAIL I WHEN BLIND FASTENERS ARE USED
DETAIL V

Fuselage Skin - External Repair Between Stringers
Figure 201 (Sheet 11 of 11)

ALLOWABLE DAMAGE 1 - FUSELAGE STRINGERS



TYPICAL STRINGER SECTIONS

MATERIAL: ALUMINUM

DESCRIPTION		CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
FORMED SECTION	WEB	NOT PERMITTED	C	SEE DETAIL III	D
	SKIN ATTACHMENT FLANGE	NOT PERMITTED	C	SEE DETAIL III	NOT PERMITTED
	FREE FLANGE	A	C	SEE DETAIL III	D
EXTRUDED SECTION	WEB	NOT PERMITTED	E	NOT PERMITTED	D
	SKIN ATTACHMENT FLANGE	B	E	NOT PERMITTED	NOT PERMITTED
	FREE FLANGE	B	E	NOT PERMITTED	D

Fuselage Stringers Allowable Damage
Figure 101 (Sheet 1 of 5)

NOTES

- DAMAGE (DETAIL I, II, III, IV, V, VI, AND VII):
  - THAT OCCURS TO A PRINCIPAL STRUCTURAL ELEMENT (PSE) AS DEFINED IN SRM 51-00-04, AND
  - THAT IS WITHIN THE ALLOWABLE DAMAGE UNITS OF THE BOEING SRM, DOES NOT HAVE AN EFFECT ON THE DAMAGE TOLERANCE PROPERTIES OF THE PSE. THEREFORE, INITIAL INSPECTION PROGRAMS REMAIN EFFECTIVE.
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS I AND IV.

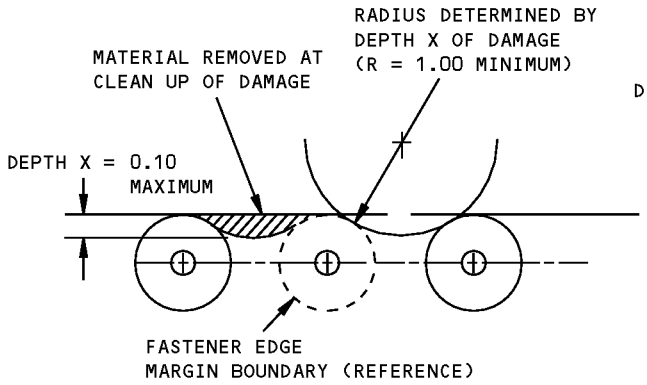
[B] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS I AND V.

[C] REMOVE EDGE DAMAGE AS SHOWN IN DETAILS I AND IV. REMOVE OTHER DAMAGE AS SHOWN IN DETAIL II. THE AREA REMOVED FOR CLEANUP MUST NOT DECREASE THE INITIAL MANUFACTURED CROSS-SECTIONAL AREA BY MORE THAN 10 PERCENT. SEE DETAIL VII.

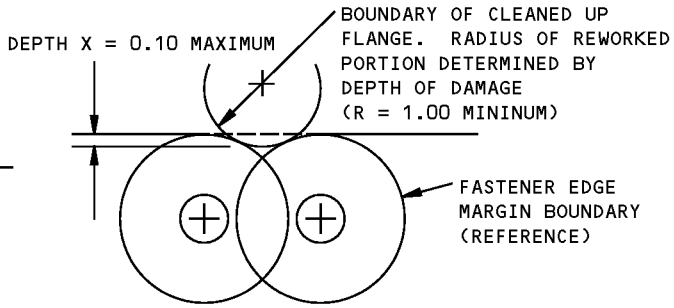
[D] CAUTION: DO NOT PLUG STRINGER DRAIN HOLES. CLEAN OUT DAMAGE UP TO 0.18 INCH DIAMETER MAXIMUM AND NOT CLOSER THAN 3D TO A FASTENER HOLE, MATERIAL EDGE OR OTHER DAMAGE. IN THE FREE FLANGE YOU CAN HAVE A MAXIMUM OF 4 HOLES IN 6 INCHES. SEE DETAIL VI. FILL HOLES WITH 2117-T3 OR T4 ALUMINUM RIVETS INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES MUST BE REPAIRED. OPEN HOLES ARE NOT PERMITTED IN THE CROWN STRINGERS BETWEEN S-8L TO S-8R. THE AREA REMOVED FOR CLEANUP MUST NOT DECREASE THE INITIAL MANUFACTURED CROSS-SECTIONAL AREA BY MORE THAN 10 PERCENT. SEE DETAIL VII.

[E] REMOVE DAMAGE AS GIVEN IN DETAILS I, II AND V. THE AREA REMOVED FOR CLEANUP MUST NOT DECREASE THE INITIAL MANUFACTURED CROSS-SECTIONAL AREA BY MORE THAN 10 PERCENT. SEE DETAIL VII.

Fuselage Stringers Allowable Damage
Figure 101 (Sheet 2 of 5)

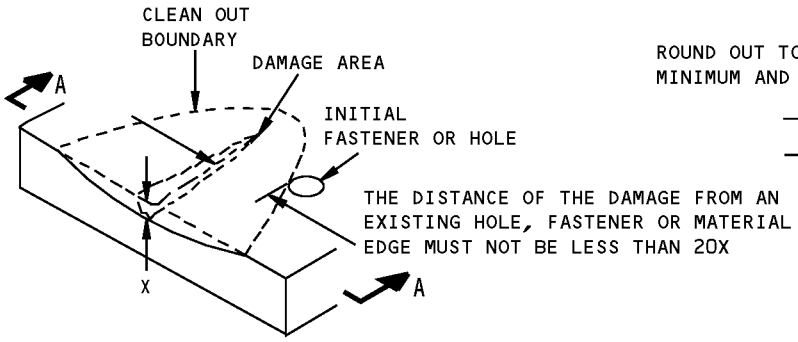


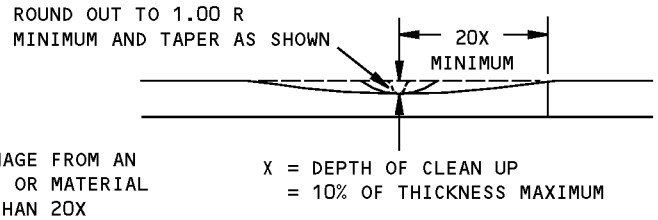
DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS OVERLAP

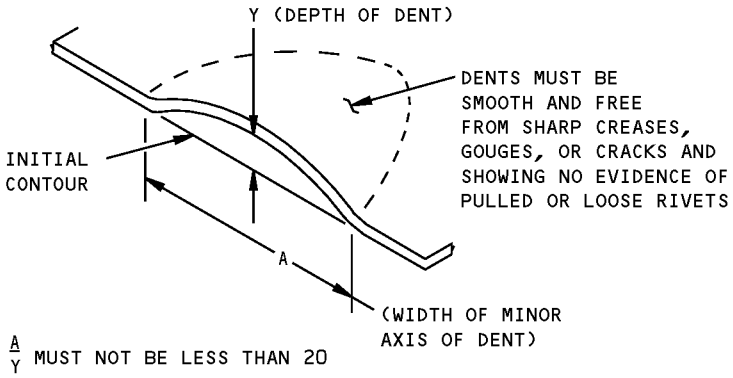
DETAIL I





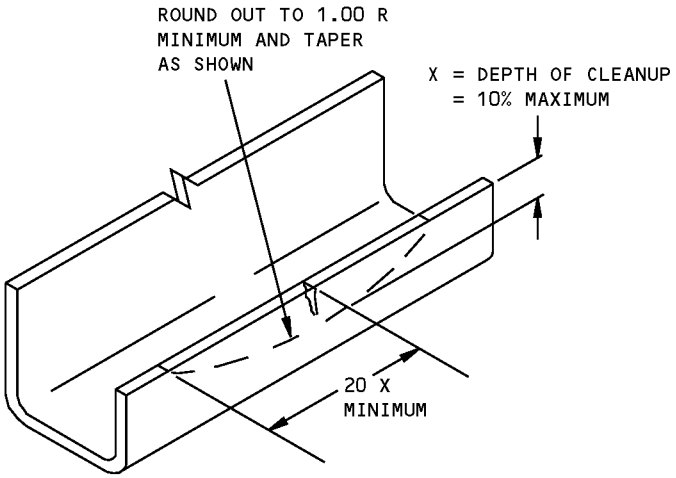
SECTION A–A

REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL II

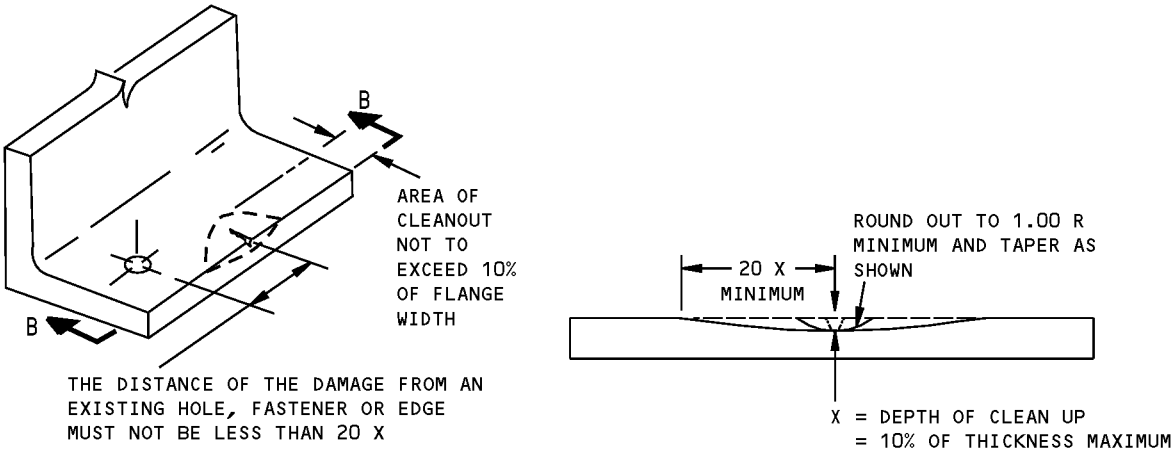


ALLOWABLE DAMAGE FOR DENT
DETAIL III

Fuselage Stringers Allowable Damage
Figure 101 (Sheet 3 of 5)



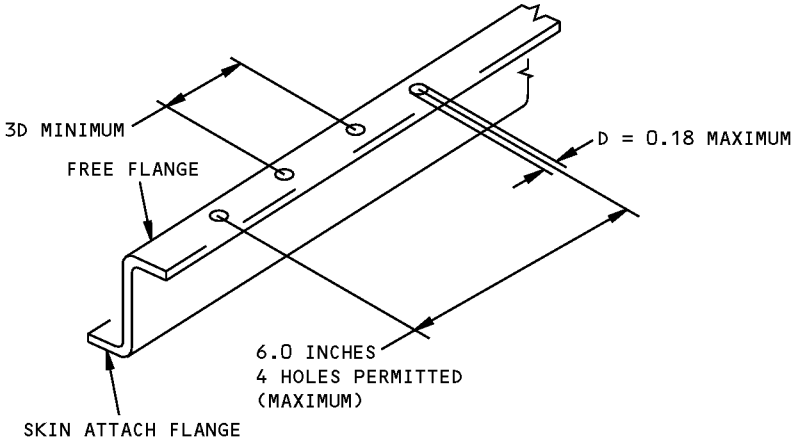
REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE
DETAIL IV



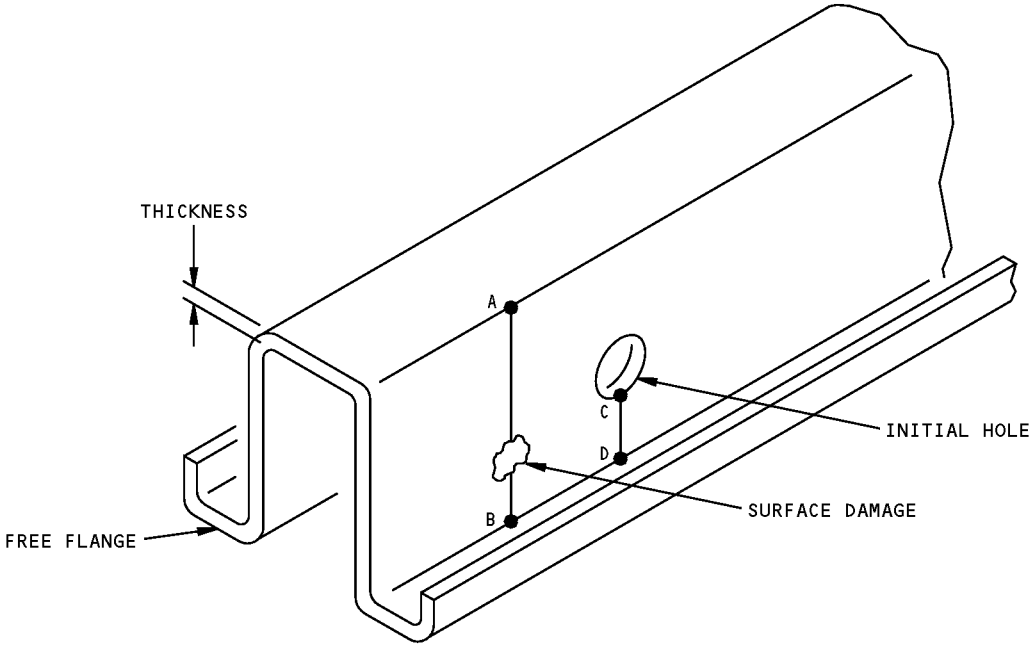
SECTION B–B

REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE
DETAIL V

Fuselage Stringers Allowable Damage
Figure 101 (Sheet 4 of 5)



HOLE ALLOWABLE DAMAGE
DETAIL VI



INITIAL CROSS-SECTIONAL AREA
AT C-D, AREA = (LENGTH OF LINE C-D) X THICKNESS
AT A-B, AREA = (LENGTH OF LINE A-B) X THICKNESS

A_1 = INITIAL NET CROSS-SECTIONAL AREA

A_2 = AREA REMOVED FOR NICKS, GOUGES, CORROSION OR HOLE DAMAGE

$\frac{A_2}{A_1}$ X 100 ≤ 10% MAXIMUM

LOSS IN CROSS-SECTIONAL AREA ALONG ANY LINE A-B OR C-D DUE TO REMOVAL OF ANY TYPE OF DAMAGE MUST NOT EXCEED 10 PERCENT OF THE INITIAL NET CROSS-SECTIONAL AREA. USE THESE SAME LIMITS FOR EXTRUDED OR FORMED FREE FLANGES AND EXTRUDED OR FORMED SKIN ATTACHMENT FLANGES.

DETAIL VII

Fuselage Stringers Allowable Damage
Figure 101 (Sheet 5 of 5)

REPAIR 1 - FUSELAGE STRINGER REPAIR S-1 THRU S-19

APPLICABILITY
THIS REPAIR IS APPLICABLE TO ZONE A OR B FOR FUSELAGE STRINGER DAMAGE FROM S-1 THRU S-19.
ZONE A - STA 654 TO STA 1395, S-8L TO S-8R.
ZONE B - ALL AREAS OF THE STRINGER FROM S-19L TO S-19R THAT ARE NOT IN ZONE A

REPAIR INSTRUCTIONS

CAUTION: IF ACOUSTIC TILES ARE FOUND WHEN YOU DO THE FUSELAGE STRINGER REPAIR, REMOVE THE TILES BEFORE YOU CONTINUE WITH THE REPAIR.

1. Cut and remove the damaged part of the stringer. Do not cut into the skin. If the skin is damaged, refer to SRM 53-00-01.
2. Make the repair parts. See Detail II, III or IV.
3. Assemble the repair parts and drill the fastener holes.
4. Remove the repair parts.
5. Break the sharp edges of the initial parts and the repair parts 0.015 to 0.010.
6. Remove all nicks, scratches, burrs, sharp edges and corners from the initial parts and the repair parts.
7. Apply a chemical conversion coating to the repair parts and to the bare edges of the initial parts.
8. Apply one coat of BMS 10-11, Type 1 primer to all of parts 1,5,6,7,8 and 9 and to the bare edges of parts 2, 3 and 4. Refer to SOPM 20-41-02.
9. Install the repair parts. Install the rivets. See Table I for the number and type of rivets to install.
10. Replace the acoustic tiles.
11. Restore the initial finish. Refer to AMM 51-21.

NOTES

- ZONE B OF THIS REPAIR IS A CATEGORY A REPAIR. THE INSPECTIONS GIVEN IN THE MAINTENANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERANCE OF THE INITIAL STRUCTURE WITH THIS CATEGORY A REPAIR INSTALLED. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- ZONE A OF THIS REPAIR IS A CATEGORY B REPAIR. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE V. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILES.
  - SRM 51-00-06 FOR STRUCTURAL REPAIR DEFINITIONS
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLES SIZES AND EDGE MARGINS
- THIS REPAIR APPLIES ONLY IN AREAS WHERE 3/16-INCH DIAMETER FASTENERS ARE USED. THIS REPAIR DOES NOT APPLY WITHIN 20 INCHES OF A STRINGER SPLICE.

[A] USED IN SECTIONS 41 AND 48

[B] USED IN SECTIONS 43, 45 AND 46

[C] SEE TABLE II FOR THE REPAIR SECTION NUMBER

[D] USE WHEN REQUIRED, GAGE TO AGREE WITH THE CONDITIONS OF A NESTING FIT. INSTALL A SHIM IF THE GAP IS MORE THAN 0.006 INCH BEFORE THE INSTALLATION OF THE FASTENER.

[E] IF THE INITIAL FASTENER HOLE IS DAMAGED, USE A 1/32-INCH DIAMETER OVERSIZE FASTENER. REFER TO SRM 51-40-05.

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Fuselage Stringer Repair S-1 thru S-19
Figure 201 (Sheet 1 of 10)

NOTES (CONTINUED)

F. MINIMUM NUMBER OF FASTENERS REQUIRED ON EACH SIDE OF THE DAMAGE AND IN EACH ROW

G. FOR THE DIMENSIONS AND LOCATIONS OF TYPES I AND II SECTIONS, SEE TABLE III.

H. MAKE THE REPAIR SECTIONS AS GIVEN IN DETAIL I.

I. MAKE PARTS 5 AND 6 AS GIVEN IN DETAIL I. MAKE PARTS 7 AND 8 TO NEST INSIDE PARTS 5 AND 6 AS SHOWN IN DETIL IV. USE SHIMS AS REQUIRED FOR A NESTING FIT.

J. FOR THE INITIAL STRINGER GAGES OF 0.032 THRU 0.063, USE ONE GAGE HEAVIER. FOR THE INITIAL STRINGER GAGES GREATER THAN 0.063, USE THE SAME GAGE.

K. THE COMBINED THICKNESS OF PARTS 5 AND 7 (AND PARTS 6 AND 8) MUST BE GREATER THAN OR EQUAL TO THE INITIAL STRINGER GAGE.

L. GAGE TO BE APPROXIMATELY HALF THE INITIAL STRINGER GAGE.

M. REFER TO THE STRINGER IDENTIFICATION FOR THE INITIAL SECTION NUMBER.

N. TABLE III ONLY SHOWS LOCATIONS AND TYPES OF STRINGERS WHICH DO NOT HAVE A "BAC" SPECIFICATION.

FASTENER SYMBOLS

INITIAL FASTENER

REPAIR FASTENER

Fuselage Stringer Repair S-1 thru S-19
Figure 201 (Sheet 2 of 10)

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	HAT SECTION	1	7075-T6 [C]
2	FILLER	1	CLAD 7075-T6, SAME GAGE AS ORIGINAL STRINGER
3	SHIM [D]	2	CLAD 7075-T6
4	SHIM [D]	1	CLAD 7075-T6
5	CHANNEL	1	7075-O HT TR T6 OR 7075-T6 [C] [K] [L]
6	ANGLE	2	7075-O HT TR T6 OR 7075-T6 [C] [K] [L]
7	CHANNEL	1	7075-O HT TR T6 OR 7075-T6 [C] [K]
8	ANGLE	2	7075-O HT TR T6 OR 7075-T6 [C] [K]
9	HAT SECTION	1	SAME MATERIAL AND GAGE (SAME SECTION NUMBER) AS ORIGINAL STRINGER [M]

DETAIL NO.	ORIGINAL SECTION GAGE	ORIGINAL FASTENERS		REPAIR FASTENERS	
		TYPE [E]	QTY MIN [F]	TYPE	QTY MIN [F]
II AND III	0.032 THRU 0.063	BACR15CE6KE [A] BACR15FV6KE [B]	6	BACR15FT6KE*C	4
	0.064 THRU 0.080	BACR15CE6KE [A] BACR15FV6KE [B]	7	BACR15FT6KE*C	5
IV	0.081 THRU 0.112	BACR15CE6KE [A] BACR15FV6KE [B]	6	BACR15FT8KE*C	4

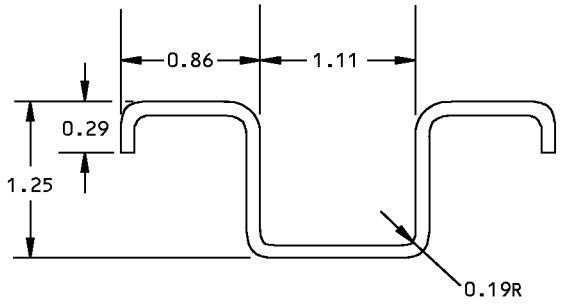
TABLE I

Fuselage Stringer Repair S-1 thru S-19
Figure 201 (Sheet 3 of 10)

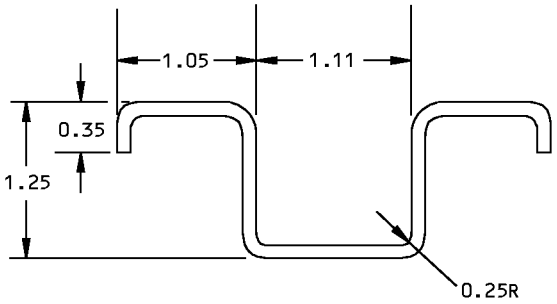
ORIGINAL SECTION GAGE	ORIGINAL SECTION	REPAIR SECTION		
		DETAIL II	DETAIL III	DETAIL IV
0.032	BAC1498-205 TYPE I [G]	BAC1498-200		
0.036	BAC1498-206 TYPE I [G]	BAC1498-201		
0.040	BAC1498-140		BAC1493-412 BAC1493-513	
	BAC1498-207 TYPE I [G]	BAC1498-202		
0.045	BAC1498-141	BAC1498-132		
	TYPE I [G]	BAC1498-202		
0.050	BAC1498-142	BAC1498-132		
	BAC1498-208 TYPE I [G]	BAC1498-203		
0.056	BAC1498-143	BAC1498-132		
	TYPE I [G]	BAC1498-203		
0.063	BAC1498-144	BAC1498-132		
	BAC1498-209 TYPE I [G]	BAC1498-203		
0.071	BAC1498-145	BAC1498-131		
	TYPE I [G]	BAC1498-204		
0.080	BAC1498-146	BAC1498-131		
	TYPE I [G]	BAC1498-204		
0.090	BAC1498-147			[I] [K]
	BAC1498-210			[I] [K]
0.032 THRU 0.0800	TYPE II [G]		[H] [J]	
0.081 THRU 0.112	TYPE I [G] TYPE II [G]			[I] [K]

TABLE II [N]

Fuselage Stringer Repair S-1 thru S-19
Figure 201 (Sheet 4 of 10)



TYPE I



TYPE II

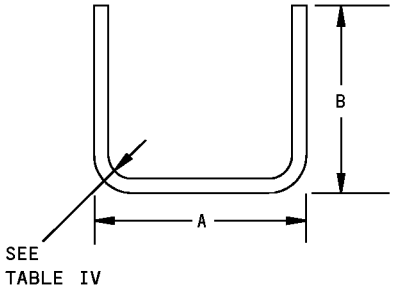
TYPE	LOCATION
I	STA 434 THRU STA 785.9 STA 1307 THRU STA 1582, S17A THRU S19 STA 1395 THRU STA 1582, S1 THRU S13A
II	STA 785.9 THRU STA 1065 STA 1065 THRU STA 1395, S1 THRU S13A STA 1065 THRU STA 1307, S17A THRU S19

TABLE III [N]

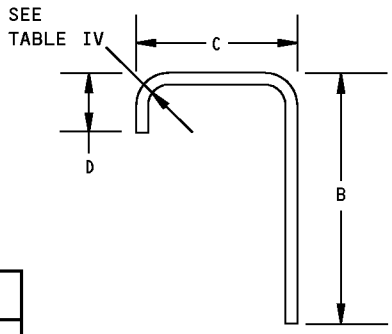
Fuselage Stringer Repair S-1 thru S-19
Figure 201 (Sheet 5 of 10)

ORIGINAL SECTION GAGE	ORIGINAL SECTION	A	B	C	D
0.090	BAC1498-147	0.98	0.96	0.68	0.25
0.090	BAC1498-210	1.09	0.94	0.63	0.20
0.081 THRU 0.112	TYPE I				
0.032 THRU 0.112	TYPE II	1.09	0.88	0.82	0.25

DETAIL I



CHANNEL

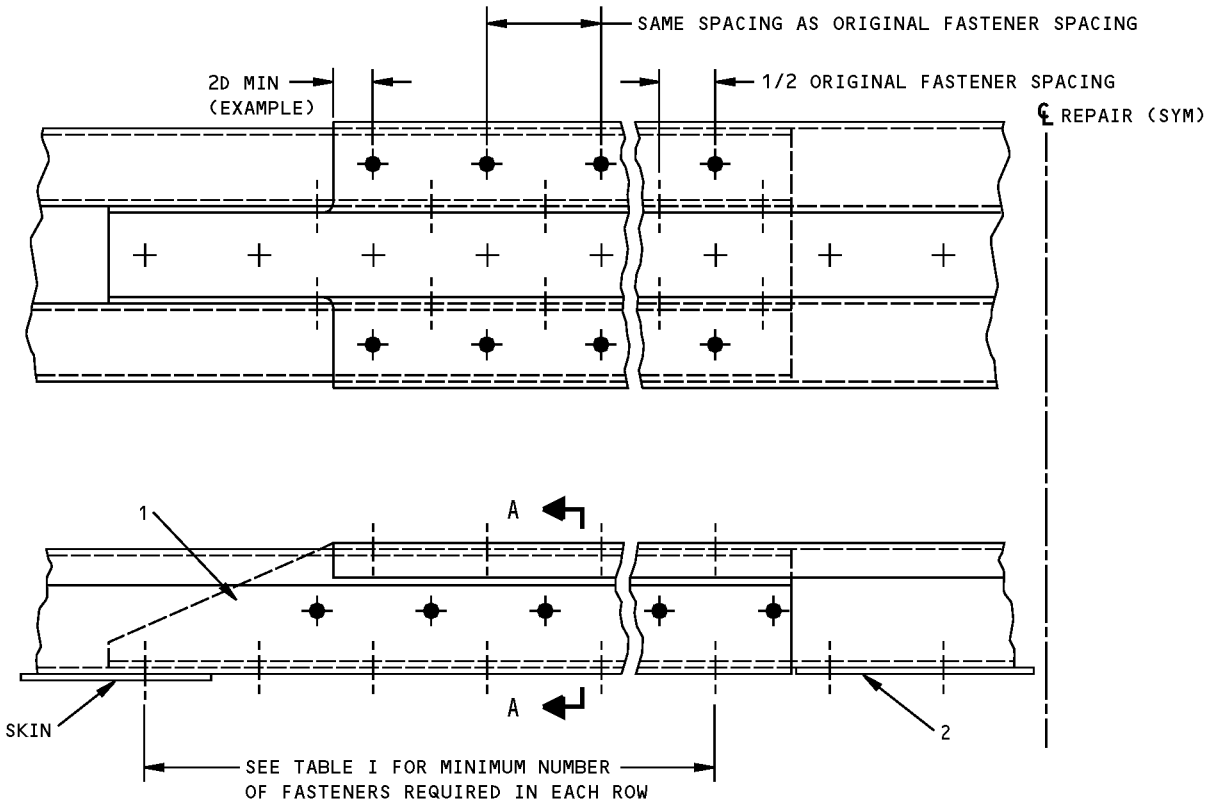


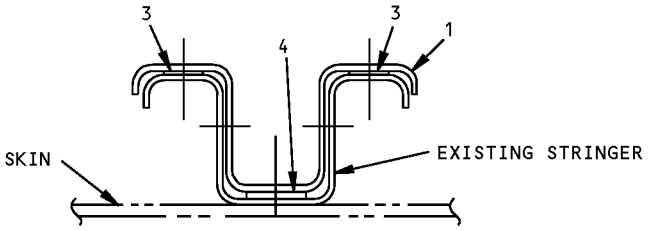
ANGLE

GAGE	ALLOY	
	7075-O	7075-T6
0.032	0.06	0.16
0.036	0.06	0.19
0.040	0.06	0.19
0.045	0.09	0.25
0.050	0.09	0.25
0.056	0.12	0.28
0.063	0.12	0.31
0.071	0.12	0.38
0.080	0.19	0.44
0.090	0.19	0.50
0.100	0.22	0.62
0.112	0.28	0.75

MINIMUM STANDARD INSIDE BEND RADII
ROOM TEMPERATURE FORMING
TABLE IV

Fuselage Stringer Repair S-1 thru S-19
Figure 201 (Sheet 6 of 10)

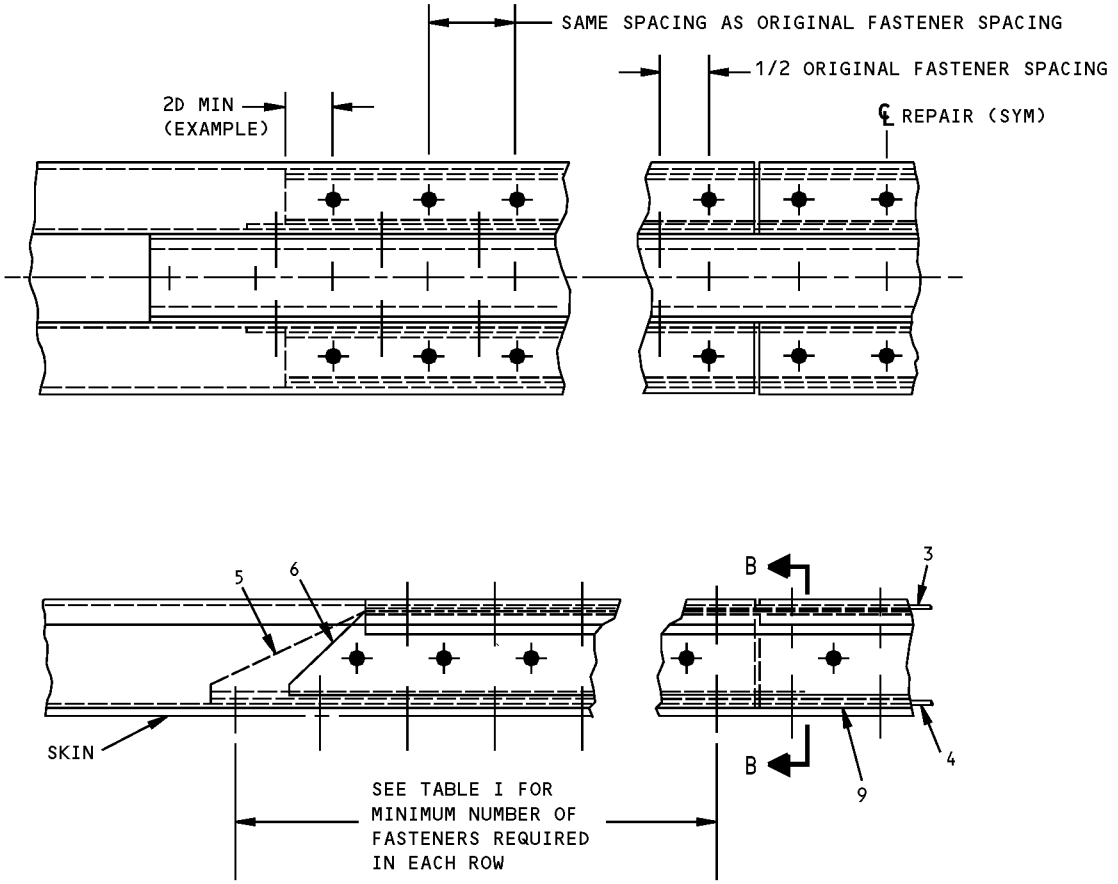


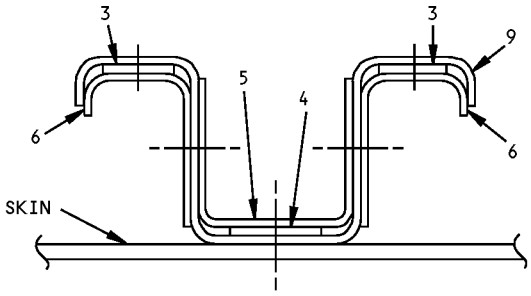


SECTION A–A

STRINGER GAGE 0.080 OR LESS
DETAIL II

Fuselage Stringer Repair S-1 thru S-19
Figure 201 (Sheet 7 of 10)

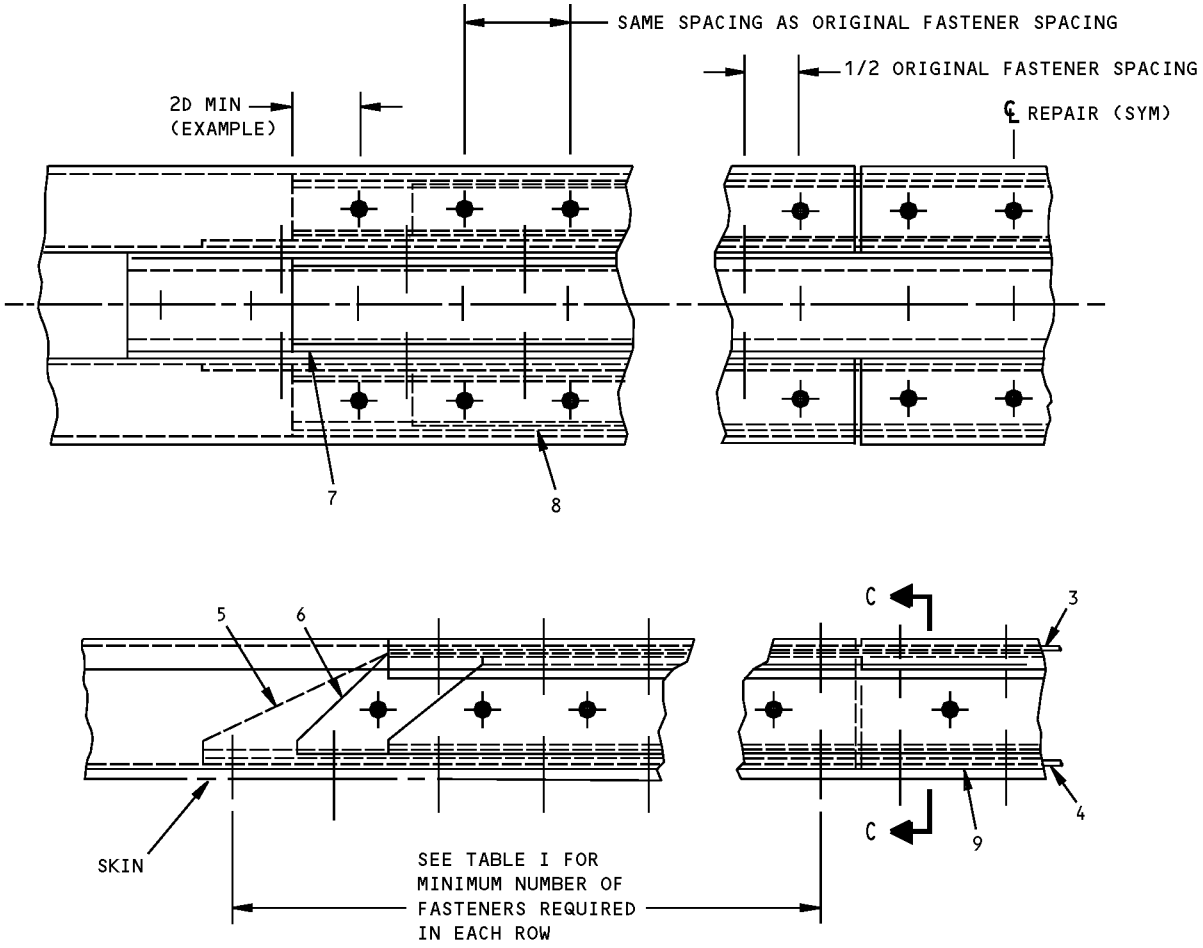


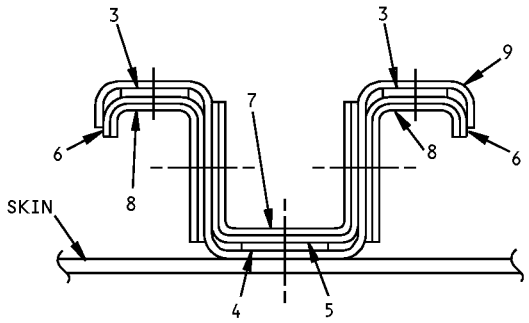


SECTION B–B

STRINGER GAGE 0.080 OR LESS
DETAIL III

Fuselage Stringer Repair S-1 thru S-19
Figure 201 (Sheet 8 of 10)





SECTION C–C

STRINGER GAGE GREATER THAN 0.080
DETAIL IV

Fuselage Stringer Repair S-1 thru S-19
Figure 201 (Sheet 9 of 10)

CATEGORY B REPAIR INSPECTION REQUIREMENTS		
INSPECTION THRESHOLD	REPEAT INSPECTION	
	METHOD	INTERVAL
37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY (1)	INTERNAL DETAILED VISUAL (2)	12,000 FLIGHT CYCLES
	EXTERNAL DETAILED VISUAL (3)	12,000 FLIGHT CYCLES

NOTES: (1) OR PERFORM THE INSPECTION WITHIN 12,000 FLIGHT CYCLES FROM THE REPAIR INSTALLATION, WHICHEVER IS LAST.

(2) DO AN INTERNAL DETAILED VISUAL INSPECTION OF THE STRINGER REPAIR PARTS AND A 1.0 INCH WIDE ZONE AT EITHER END OF THE REPAIR.

(3) DO AN EXTERNAL DETAILED VISUAL INSPECTION OF THE SKIN COMMON TO THE REPAIR AND A 2.0 INCH WIDE ZONE AT EITHER END OF THE REPAIR.

TABLE V

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Fuselage Stringer Repair S-1 thru S-19
Figure 201 (Sheet 10 of 10)

REPAIR 2 - FUSELAGE STRINGER REPAIR S-21 THRU S-39

APPLICABILITY
IN SECTIONS 41,43,45, AND 46, THIS REPAIR APPLIES TO STRINGERS S-21 THRU S-39.
IN SECTION 48 THIS REPAIR APPLIES TO STRINGERS S-21 THRU S-39 WHERE 5/32 AND 3/16-INCH DIAMETER FASTENERS ARE USED.
THIS REPAIR DOES NOT APPLY WITHIN 20 INCHES OF A STRINGER SPLICE.

REPAIR INSTRUCTIONS

CAUTION: IF ACOUSTIC TILES ARE FOUND WHEN YOU DO THE FUSELAGE STRINGER REPAIR, REMOVE THE TILE BEFORE YOU CONTINUE WITH THE REPAIR.

1. Get access to the damaged area.
2. Cut and remove the damaged stringer. Do not cut into the skin, and in Section 48, do not cut into the reinforcement radius fillers. If the skin is damaged, refer to SRM 53-00-01.
3. Make the repair parts. See Details I,II, III or IV and Tables II and IV.
4. Assemble the repair parts and drill the fastener holes.
5. Remove the repair parts.
6. Remove all nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the stringer.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts.
8. Apply one coat of BMS 10-11, Type 1 primer to parts 1,5,6, and 7 and to the bare surfaces of parts 2,3, and 4. Refer to SOPM 20-41-02.
9. Install the repair parts. See Table I for the number and type of rivets. Install the fasteners.
10. Replace the acoustic tile.
11. Apply the finish. Refer to AMM 51-21-10.

NOTES

- THIS REPAIR IS A CATEGORY A REPAIR. THE INSPECTIONS GIVEN IN THE MAINTENANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERANCE OF THE INITIAL STRUCTURE WITH THIS CATEGORY A REPAIR INSTALLED.
- D = FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILE.
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLES SIZES AND EDGE MARGINS.

[A] USED IN SECTIONS 41 AND 48. IN SECTION 48 WHERE THE INITIAL FASTENER IS A BACR15CE5KE, REPLACE WITH A BACR15FT6KE()C OR A BACR15FT7KE()C RIVET.

[B] USED IN SECTIONS 43,45 AND 46.

[C] SEE TABLE II FOR THE REPAIR SECTION NUMBER.

[D] USE WHEN REQUIRED, GAGE TO AGREE WITH THE CONDITIONS OF A NESTING FIT. INSTALL A SHIM IF THE GAP IS MORE THAN 0.006-INCH BEFORE THE INSTALLATION OF THE FASTENER.

[E] IF THE INITIAL FASTENER HOLE IS DAMAGED, USE A 1/32-INCH DIAMETER OVERSIZE FASTENER. REFER TO SRM 51-40-05.

[F] MINIMUM NUMBER OF FASTENERS REQUIRED ON EACH SIDE OF THE DAMAGE AND IN EACH ROW.

[G] FOR THE DIMENSIONS AND LOCATIONS OF TYPES I, II AND III SECTIONS, SEE TABLE III.

[H] MAKE THE REPAIR SECTIONS AS GIVEN IN DETAIL I.

[I] MAKE THE REPAIR SECTIONS AS GIVEN IN DETAIL II.

[J] FOR THE INITIAL STRINGER GAGES OF 0.032 THRU 0.063, USE ONE GAGE HEAVIER. FOR THE INITIAL STRINGER GAGES GREATER THAN 0.063, USE THE SAME GAGE.

[K] REFER TO THE STRINGER IDENTIFICATION FOR THE INITIAL SECTION NUMBER.

[L] YOU CAN USE EITHER DETAIL III OR DETAIL IV TYPE REPAIR FOR THESE TYPE II STRINGERS.

[M] TABLE III ONLY SHOWS LOCATIONS AND TYPES OF STRINGERS WHICH DO NOT HAVE A "BAC" SPECIFICATION.

FASTENER SYMBOLS

INITIAL FASTENER LOCATION. INSTALL FASTENER AS GIVEN IN TABLE I.

REPAIR FASTENER LOCATION. INSTALL FASTENER AS GIVEN IN TABLE I.

Fuselage Stringer Repair S-21 thru S-39
Figure 201 (Sheet 1 of 8)

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	HAT SECTION	1	7075-T6 [C]
2	FILLER	1	CLAD 7075-T6, SAME GAGE AS THE INITIAL STRINGER
3	SHIM [D]	2	CLAD 7075-T6
4	SHIM [D]	1	CLAD 7075-T6
5	HAT SECTION	1	SAME GAGE AND MATERIAL (SAME SECTION NUMBER) AS THE INITIAL STRINGER [K]
6	CHANNEL	1	7075-O HT TR T6 OR 7075-T6 [C] [J]
7	ANGLE	2	7075-O HT TR T6 OR 7075-T6 [C] [J]

DETAIL NO.	INITIAL SECTION GAGE	INITIAL FASTENERS		REPAIR FASTENERS	
		TYPE [E]	QTY MIN [F]	TYPE	QTY MIN [F]
III	0.032 THRU 0.063	BACR15CE6KE [A] BACR15FV6KE [B]	6	BACR15FT6KE*C	5
	0.064 THRU 0.080	BACR15CE6KE [A] BACR15FV6KE [B]	7	BACR15FT6KE*C	6
	0.090	BACR15CE7KE [A] BACR15FV7KE [B]	7	BACR15FT6KE*C	6
IV	0.032 THRU 0.071	BACR15CE6KE [A] BACR15FV6KE [B]	5	BACR15FT6KE*C	4
	0.072 THRU 0.090	BACR15CE6KE [A] BACR15FV6KE [B]	6	BACR15FT7KE*C FOR TYPE III ONLY	5
	0.091 THRU 0.112	BACR15FV8KE BACB30NW6K + BACC30M6	6	BACR15FT8KE BACB30MY6K + BACC30M6	5

TABLE I

Fuselage Stringer Repair S-21 thru S-39
Figure 201 (Sheet 2 of 8)

INITIAL SECTION GAGE	INITIAL SECTION	REPAIR SECTION	
		DETAIL III	DETAIL IV
0.032	BAC1498-205 TYPE I [G]	BAC1498-200	
0.036	BAC1498-206 TYPE I [G]	BAC1498-201	
0.040	BAC1498-140		BAC1493-412 BAC1493-513
	BAC1498-207 TYPE I [G]	BAC1498-202	
0.045	BAC1498-141	BAC1498-132	
	TYPE I [G]	BAC1498-202	
0.050	BAC1498-142	BAC1498-132	
	BAC1498-208 TYPE I [G]	BAC1498-203	
0.056	BAC1498-143	BAC1498-132	
	TYPE I [G]	BAC1498-203	
0.063	BAC1498-144	BAC1498-132	
	BAC1498-209 TYPE I [G]	BAC1498-203	
0.071	BAC1498-145	BAC1498-131	
	TYPE I [G]	BAC1498-204	
0.080	BAC1498-146	BAC1498-131	
	TYPE I [G]	BAC1498-204	
0.090	BAC1498-147	BAC1498-131	
	BAC1498-210 TYPE I [G]	BAC1498-204	

TABLE II [M]

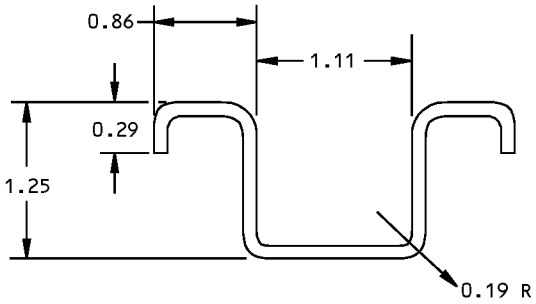
Fuselage Stringer Repair S-21 thru S-39
Figure 201 (Sheet 3 of 8)

INITIAL SECTION GAGE	INITIAL SECTION	REPAIR SECTION	
		DETAIL III	DETAIL IV
0.032 AND 0.036	TYPE II G L	BAC1498-232	H J L
0.040	TYPE II G L	BAC1498-233	H J L
0.045 AND 0.050	TYPE II G L	BAC1498-234	H J L
0.056 AND 0.063	TYPE II G L	BAC1498-235	H J L
0.071,0.080 AND 0.090	TYPE II G L	BAC1498-236	H J L
0.095 THRU 0.112	TYPE II G		H J
0.032 THRU 0.112	TYPE III G		I J

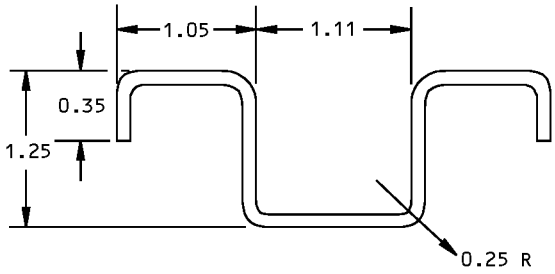
TABLE II M

Fuselage Stringer Repair S-21 thru S-39
Figure 201 (Sheet 4 of 8)

REFERENCE DRAWING
140T1520



TYPE I



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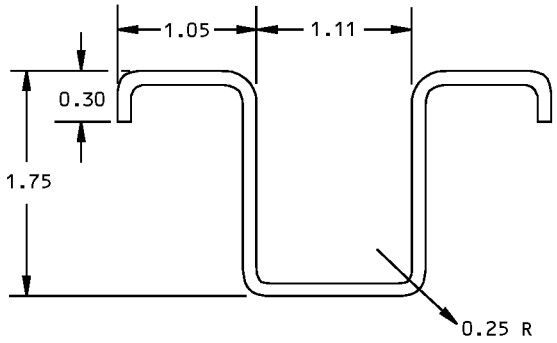


TYPE III

TYPE	LOCATION
I	STA 434 THRU STA 785.9 S21 THRU S39 STA 1307 THRU STA 1582, S21 THRU S34
II	STA 1065 THRU STA 1307, S21 THRU S34
III	STA 1065 THRU STA 1582, S35 THRU S39

TABLE III [M]

Fuselage Stringer Repair S-21 thru S-39
Figure 201 (Sheet 5 of 8)

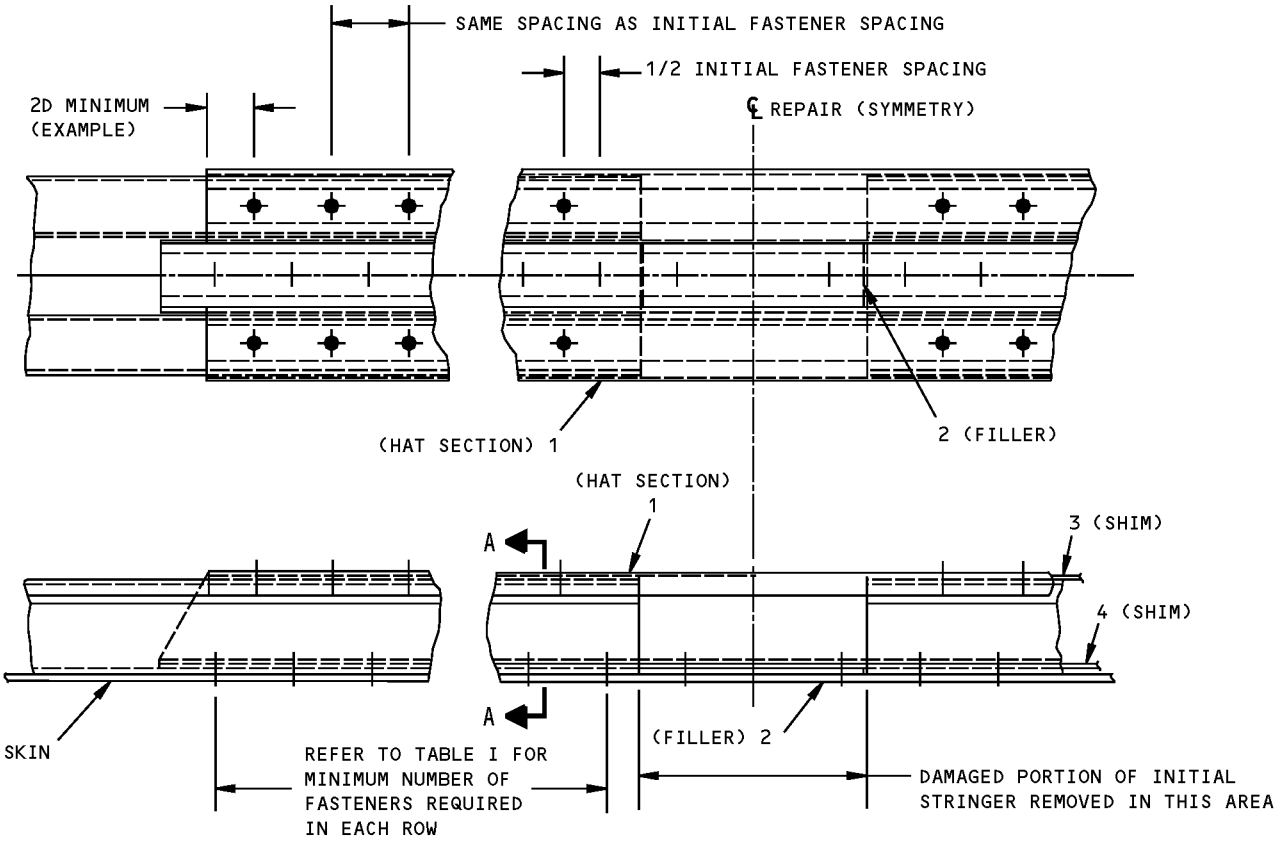
REPAIR SECTIONS FOR TYPE II STRINGERS J
DETAIL I

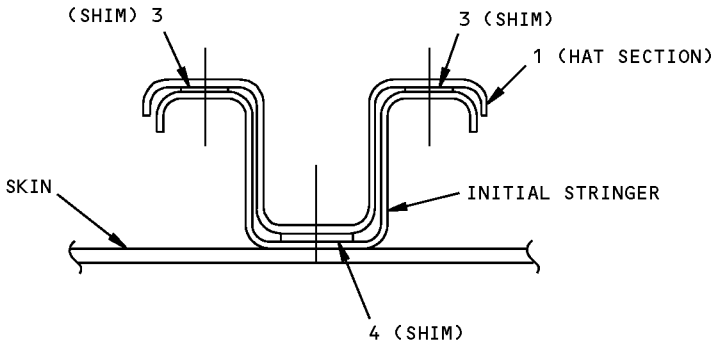
REPAIR SECTIONS FOR TYPE III STRINGERS J
DETAIL II

GAGE	ALLOY	
	7075-O	7075-T6
0.032	0.06	0.16
0.036	0.06	0.19
0.040	0.06	0.19
0.045	0.09	0.25
0.050	0.09	0.25
0.056	0.12	0.28
0.063	0.12	0.31
0.071	0.12	0.38
0.080	0.19	0.44
0.090	0.19	0.50
0.100	0.22	0.62
0.112	0.28	0.75

MINIMUM STANDARD INSIDE BEND RADII
ROOM TEMPERATURE FORMING
TABLE IV

Fuselage Stringer Repair S-21 thru S-39
Figure 201 (Sheet 6 of 8)

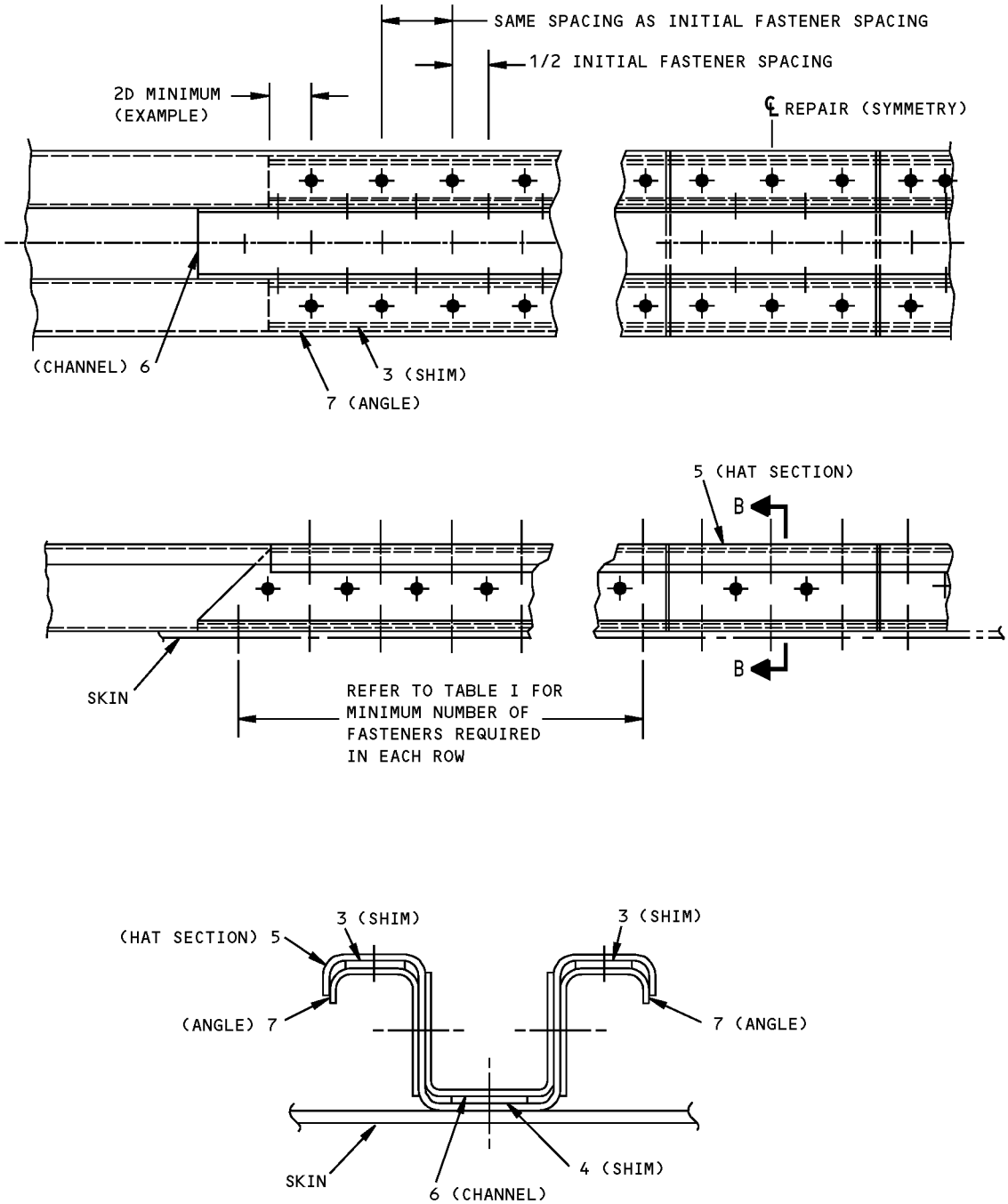




SECTION A–A

DETAIL III

Fuselage Stringer Repair S-21 thru S-39
Figure 201 (Sheet 7 of 8)



SECTION B–B

DETAIL IV

Fuselage Stringer Repair S-21 thru S-39
Figure 201 (Sheet 8 of 8)

REPAIR 3 - HAT-SECTION STRINGER - TYPICAL REPAIR OF A CRACK

APPLICABILITY
USE THIS PROCEDURE FOR THE REPAIR OF A CRACK IN A HAT-SECTION STRINGER.
THIS REPAIR IS APPLICABLE FOR:
- STRINGERS S-21 THRU S-39 ONLY
- STRINGERS THAT ARE 0.112-INCH THICK OR LESS
THIS REPAIR IS NOT APPLICABLE FOR DAMAGE THAT IS 20 INCHES OR LESS FROM A STRINGER SPLICE.
DO NOT USE THIS REPAIR FOR STRINGERS THAT ARE GREATER THAN 0.112 INCH THICK.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.

CAUTION: DO NOT CAUSE DAMAGE TO THE ACOUSTIC TILES. IF THERE ARE ACOUSTIC TILES, REMOVE THEM BEFORE YOU CONTINUE WITH THIS REPAIR.

2. Remove the acoustic tiles, if they are installed. Refer to AMM 53-01-04.
3. Do a penetrant inspection to find the length of the crack. Refer to SOPM 20-20-02 for the penetrant inspection procedure.
4. Measure the length of the crack.
5. At each end of the crack, drill a 0.25-inch diameter stop hole. Make each hole 0.10 inch beyond the end of the crack. Refer to SRM 51-10-02.

NOTE: Use care and do not damage the skin when you drill the stop holes in the stringer.

6. Find the gage of the stringer and measure the stringer dimensions as shown in Detail I and Detail III. Use Detail III if the crack is in the central or inner part of the hat-section stringer. Use Detail I if the is in the outer part of the hat-section stringer.
7. Make the repair parts. See Table I.
8. Assemble the repair parts and drill the fastener holes.
9. Disassemble the repair parts.
10. Remove all nicks, scratches, gouges, burrs, and sharp edges from the repair parts and from the stringer.
11. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the stringer. Refer to SRM 51-20-01.
12. Apply one layer of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the stringer. Refer to SOPM 20-41-02.
13. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
14. Install the fasteners. See Table II for the number and type of fasteners.
15. Apply one layer of BMS 10-11, Type II enamel to the repair area. Refer to SOPM 20-41-02.
16. Install the acoustic tile, if necessary. Refer to AMM 53-01-04.

NOTES

- THIS REPAIR IS A CATEGORY B REPAIR. THIS CATEGORY B REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE III. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THIS REPAIR. REFER TO SRM 51-00-06 FOR THE REPAIR CATEGORIES AND DEFINITIONS.
- D = FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 53-01-04 FOR INSTALLATION AND REMOVAL OF ACOUSTIC TILE
  - SOPM 20-20-02 FOR PENETRANT INSPECTION PROCEDURES
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLES SIZES AND EDGE MARGINS.

[A] IF THE INITIAL FASTENER HOLE IS DAMAGED, USE A 1/32-INCH DIAMETER OVERSIZE FASTENER. REFER TO SRM 51-40-05.

[B] FOR AN INITIAL STRINGER GAGE BETWEEN 0.032 AND 0.063 INCH, MAKE THE REPAIR PART ONE GAGE THICKER THAN THE INITIAL STRINGER. FOR AN INITIAL STRINGER GAGE MORE THAN 0.063 INCH, MAKE THE REPAIR PART THE SAME GAGE AS THE INITIAL STRINGER.

Hat-Section Stringer - Typical Repair of a Crack
Figure 201 (Sheet 1 of 5)

FASTENER SYMBOLS

┼ INITIAL FASTENER LOCATION. INSTALL A FASTENER SHOWN IN TABLE II.

✦ REPAIR FASTENER LOCATION. INSTALL A FASTENER SHOWN IN TABLE II. [A]

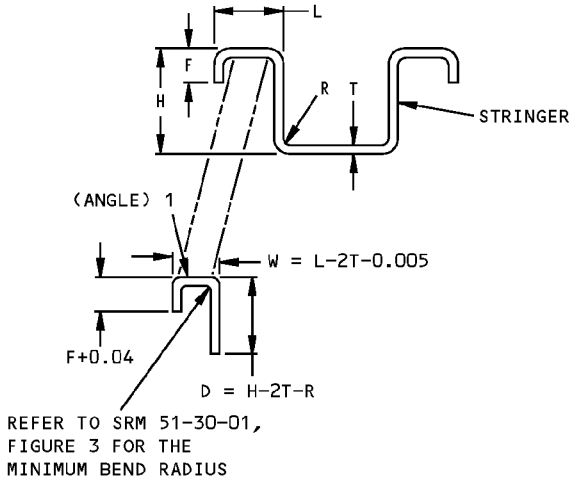
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	ANGLE	1	MAKE FROM CLAD 7075-T6 SHEET OR FROM CLAD 7075-0 AND HEAT TREAT TO -T6 AFTER FORMING THICKNESS: [B] SEE DETAIL I
2	CHANNEL	1	MAKE FROM CLAD 7075-T6 SHEET OR FROM CLAD 7075-0 AND HEAT TREAT TO -T6 AFTER FORMING THICKNESS: [B] SEE DETAIL III
3	SHIM [C]	AS REQ'D	CLAD 7075-T6

TABLE I

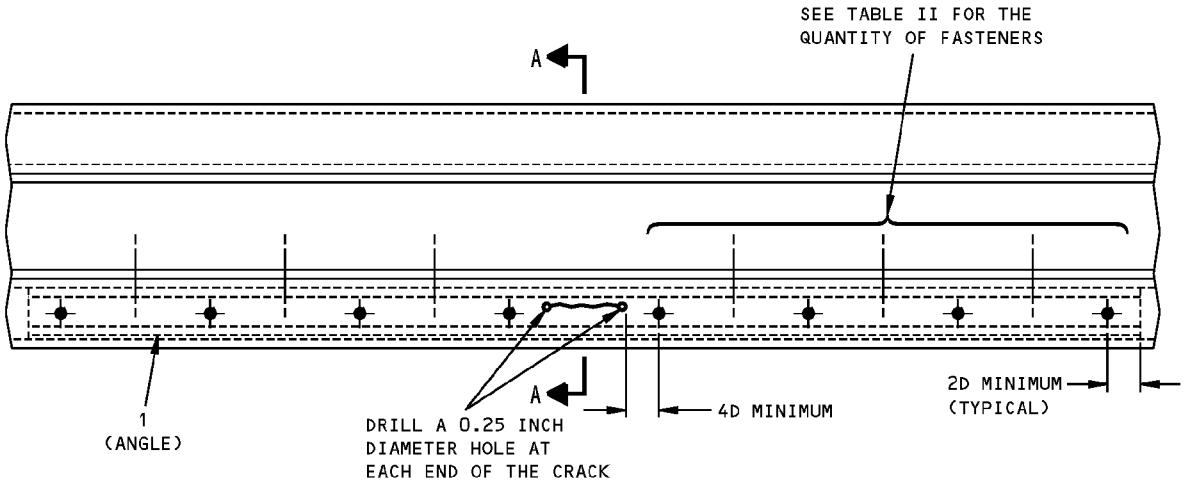
INITIAL SECTION GAGE	ROW Z (INITIAL FASTENER ROW)		ROW X AND ROW Y (REPAIR FASTENER ROWS)	
	TYPE [A]	MIN QTY [D]	TYPE	MIN QTY [D]
0.032	BACR15CE6KE() [E] BACR15FV6KE() [F]	4	BACR15BB5D()C	4
0.040	BACR15CE6KE() [E] BACR15FV6KE() [F]	4	BACR15BB6D()C	4
0.045	BACR15CE6KE() [E] BACR15FV6KE() [F]	4	BACR15BB6D()C	4
0.050	BACR15CE6KE() [E] BACR15FV6KE() [F]	4	BACR15BB6D()C	4
0.056	BACR15CE6KE() [E] BACR15FV6KE() [F]	4	BACR15BB6D()C	4
0.063	BACR15CE6KE() [E] BACR15FV6KE() [F]	4	BACR15FT6KE()C [H]	4
0.071	BACR15CE6KE() [E] BACR15FV6KE() [F]	5	BACR15FT6KE()C [H]	5
0.080	BACR15CE6KE() [E] BACR15FV6KE() [F]	5	BACR15FT6KE()C [H]	6
0.090	BACR15CE6KE() [E] BACR15FV6KE() [F]	6	BACR15FT6KE()C [H]	6
0.100	BACR15CE8KE() [E] BACR15FV8KE() [F]	7	BACR15FT8KE()C [I]	6
0.112	BACR15CE8KE() [E] BACR15FV8KE() [F]	7	BACR15FT8KE()C [I]	7

TABLE II

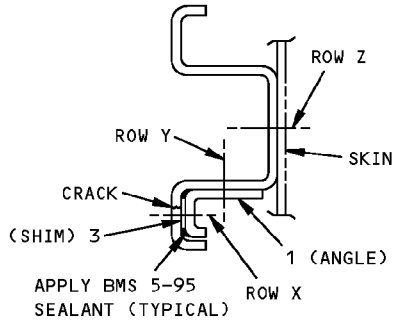
Hat-Section Stringer - Typical Repair of a Crack
Figure 201 (Sheet 2 of 5)



DETAIL I

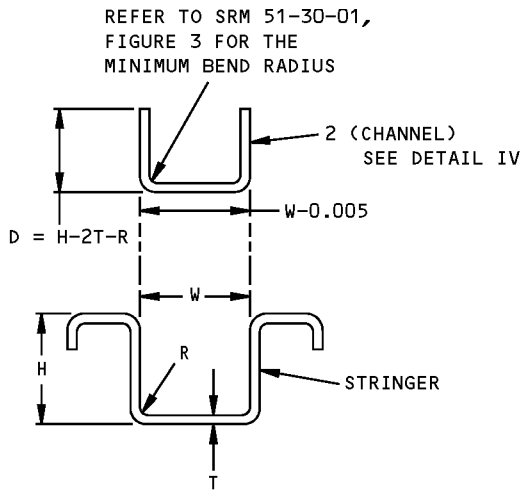


DETAIL II

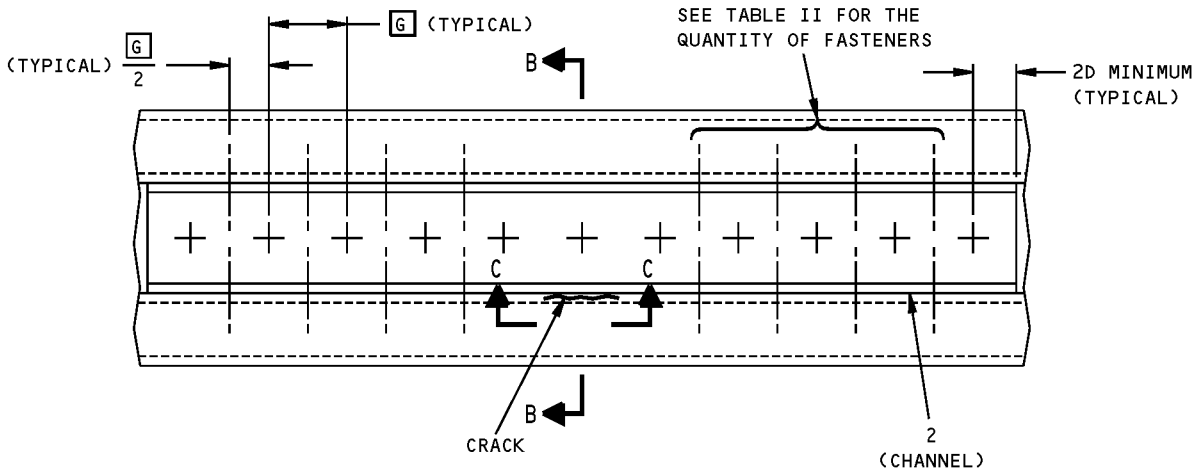


SECTION A-A

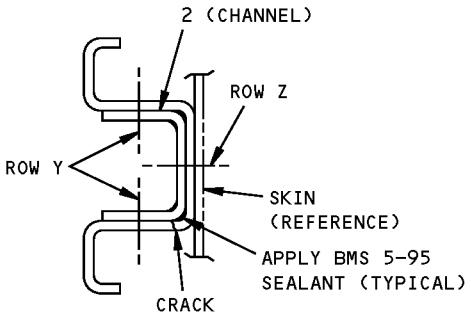
Hat-Section Stringer - Typical Repair of a Crack
Figure 201 (Sheet 3 of 5)



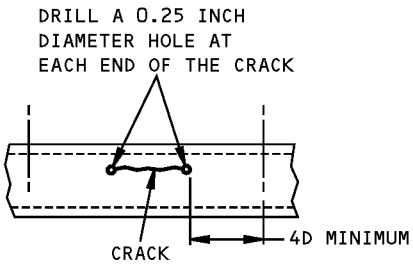
DETAIL III



DETAIL IV



SECTION B-B



SECTION C-C

Hat-Section Stringer - Typical Repair of a Crack
Figure 201 (Sheet 4 of 5)

CATEGORY B REPAIR INSPECTION REQUIREMENTS		
INSPECTION THRESHOLD	REPEAT INSPECTION	
	METHOD	INTERVAL
12,000 FLIGHT CYCLES AFTER REPAIR INSTALLATION	INTERNAL DETAILED INSPECTION	12,000 FLIGHT CYCLES
NOTE: - Do an internal detail inspection of the stringer and a 1-inch wide zone on the ends of the repair. - Do an internal detail inspection of the stop drilled holes and the repair parts.		

TABLE III

Hat-Section Stringer - Typical Repair of a Crack
Figure 201 (Sheet 5 of 5)

REPAIR 4 - TYPICAL FORMED AND EXTRUDED HAT STRINGER CORROSION REPAIR - S-20 TO S-39

APPLICABILITY

THIS REPAIR IS APPLICABLE TO:

- DAMAGE IN THE BASE AND SIDE FLANGES OF EXTRUDED AND FORMED SHEET HAT STRINGERS FROM S-20 L/R TO S-39 L/R

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE AT A STRINGER SPLICE LOCATION. REPAIR STRAP MUST NOT INTERFERE WITH A STRINGER SPLICE FITTING AND FASTENERS, STRINGER TO FRAME CONNECTION FASTENERS OR ANY EXISTING STRINGER REPAIR FASTENERS
- DAMAGE AT A FRAME LOCATION
- CRACKED STRINGERS.

NOTE: STRAP REPAIRS TO THE SAME STRINGER IN ONE FRAME BAY MUST BE A MINIMUM OF 2 INCHES APART. THE AFT EDGE OF ONE REPAIR STRAP AND THE FORWARD EDGE OF THE NEXT REPAIR STRAP MUST BE A MINIMUM OF 2 INCHES APART.

ONLY ONE REPAIR STRAP IS PERMITTED ON EACH STRINGER CROSS SECTION.

IF THE DAMAGE REMOVED IS ON ANY TWO FLANGES ZONE A, B AND C OF THE STRINGER, REPAIR WITH A U-CHANNEL USING SRM 53-00-03 REPAIR 3 SEE DETAIL II.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. Remove the fasteners in the repair area. Refer to SRM 51-40.
3. Remove the damage to get a 20:1 blend ratio. Refer to Detail I.
4. Measure the maximum depth and area of the blended surface to get the thickness and cross sectional area that was removed.

   NOTE: If the blend out extends into the stringer radii, repair the stringer as follows:

   - Repair as given in SRM 53-00-03 REPAIR 3, with a U-channel, if the radius at the base flange is affected
   - Repair as given in SRM 53-00-03 REPAIR 3, with an angle if the radius affected is between the side web flange and the brim flange
   - Repair as given in SRM 53-00-03 REPAIR 2, if more than one radius is affected.

   If the thickness removed is less than 10% of the initial thickness and the total cross sectional area removed is less than 10% of the initial cross sectional area, then no repair strap is required. Refer to SRM 53-00-03 for allowable damage corrective actions.

   If the thickness removed is less than 10% of the initial thickness but the total cross sectional area removed in the web or flange is greater than 10%, select repair parts as given in Tables IV and V.

   For tapered stringers, the thickness value is the largest cross sectional thickness in the repair area.

5. Prepare the repair parts as follows:
   A. Check the spacing of the fasteners. Refer to Detail III, Table IV and V to find the thickness of the necessary repair straps.
   B. Make the selection of the fasteners from Table II and III.
   C. Calculate the number of fasteners that are necessary on each side of the prepared repair area. Refer to Table II, III and Detail III.
   D. Make the length of the straps to include the number of fasteners on each side of the prepared repair area.
6. Make the repair parts. Refer to Table I, IV and V. [B]
7. Assemble the repair parts and drill the fastener holes.
8. Disassemble the repair parts.
9. Remove all nicks, scratches, gouges, burrs and sharp edges from the repair parts and the stringer.
10. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the skin and stringer. Refer to SRM 51-20-01.
11. Apply one layer of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the skin and stringer. Refer to SOPM 20-41-02.
12. Install the repair parts with BMS 5-95 sealant between the faying surfaces. Seal all empty spaces. [A]

Typical Formed and Extruded Hat Stringer Corrosion Repair - S-20 to S-39
Figure 201 (Sheet 1 of 7)

REPAIR INSTRUCTIONS (CONT)

13. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.

    NOTE: In some areas it is necessary to give protection against fire resistant hydraulic fluid contamination. Refer to AMM 51-24.

NOTES

- D = FASTENER DIAMETER.
- ALL DIMENSIONS ARE IN INCHES.
- THIS REPAIR IS A CATEGORY 'A' REPAIR.
- THE STEPS AND DETAIL VIEWS SHOWN IN THIS REPAIR ARE FOR FORMED STRINGERS. THIS REPAIR IS ALSO APPLICABLE TO EXTRUDED STRINGERS.
- THE MAXIMUM PULL-UP PERMITTED BEFORE FASTENER INSTALLATION IS 0.005 INCH (0.13 mm).
- WHEN YOU USE THIS REPAIR, REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS.

[A] THE REPAIR STRAP OR SEALANT MUST NOT BLOCK STRINGER DRAIN HOLE.

[B] MAKE CORNER RADII ON THE REPAIR STRAP TO FIT THE STRINGER RADII AS NECESSARY.

[C] USE A FASTENER PITCH OF 4D TO 6D FOR THE SIDE WALL ATTACHMENT. USE EXISTING PITCH FOR THE BASE TO SKIN ATTACHMENT. STAGGER THE SIDE WALL FASTENERS PITCH IN BETWEEN THE BASE TO SKIN ATTACHMENT FASTENERS.

[D] DO NOT INSTALL A STRAP. REPAIR AS GIVEN IN SRM 53-00-03 FIGURE 203.

[E] INSTALL THE SAME TYPE AND SIZE FASTENER AS THAT IS REMOVED UP TO A MAXIMUM 1/32 OVERSIZE.

MAKE SURE THAT OVERSIZING THE EXISTING FASTENER HOLES IN THE SKIN DOES NOT CAUSE KNIFE EDGE CONDITIONS.

THE ALTERNATIVE FASTENERS ARE AS FOLLOWS:
BACB30FN()A() COUNTERSINK HEAD HEX DRIVE BOLT
BACB30NW()K() COUNTERSINK HEAD HEX DRIVE BOLT
BACB30MY()K() PROTRUDING HEAD HEX DRIVE BOLT
BACR15CE()D COUNTERSINK HEAD RIVET IN SECTION 41 AND 48
BACR15FV()KE() COUNTERSINK HEAD RIVET IN SECTIONS 43, 45 AND 46.

[F] MAKE SURE THAT THE FASTENERS HAVE FLAT LANDS.

FASTENER SYMBOLS

-!- REFERENCE FASTENER LOCATION.

INITIAL FASTENER LOCATION. REFER TO TABLE II AND IV. [E]

REPAIR FASTENER LOCATION. REFER TO TABLE III. [C]

Typical Formed and Extruded Hat Stringer Corrosion Repair - S-20 to S-39
Figure 201 (Sheet 2 of 7)

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	STRAP	AS REQUIRED	7075-T6 FOR THICKNESS, REFER TO TABLE IV AND V. MAKE THE STRAP WIDTH FILL THE BASE PROFILE. SEE DETAIL III, SECTION B-B. [B]
2	STRAP	AS REQUIRED	7075-T6 FOR THICKNESS REFER TO TABLE IV AND IV. [B]
3	FILLER	AS REQUIRED	7075-T6 OR 2024-T4 THICKNESS AS REQUIRED.

TABLE I

Typical Formed and Extruded Hat Stringer Corrosion Repair - S-20 to S-39
Figure 201 (Sheet 3 of 7)

REPAIR STRAP GAUGE	ZONE A (BASE FLANGE)				
	FASTENER TYPES	MINIMUM QUANTITY OF FASTENERS REQUIRED ON EACH SIDE OF THE BLENDOUT			
		RIVET		BOLT	
		3/16	1/4	3/16	1/4
0.040	E	5	4	3	3
0.050	E	5	4	3	3
0.063	E	5	4	3	3
0.071	E	5	4	3	3
0.080	E	5	4	3	3
0.090	E	5	4	3	3
0.100	E	-	4	3	3
0.112	E	-	4	3	3
0.125	E	-	-	3	3
0.140	E	-	-	3	3

FASTENER QUANTITIES AND SIZES FOR STRINGER BASE WEB REPAIR
TABLE II

REPAIR STRAP GAUGE	FASTENER TYPES	ZONE B AND ZONE C (SIDE WEB)
		MINIMUM QUANTITY OF FASTENERS REQUIRED ON EACH SIDE OF THE BLENDOUT
ALL GAUGES	USE BACB30MY6K() HEX DRIVE BOLT WITH BACC30M6 COLLAR	4

FASTENER QUANTITIES AND SIZES FOR STRINGER SIDE WEB REPAIR
TABLE III

Typical Formed and Extruded Hat Stringer Corrosion Repair - S-20 to S-39
Figure 201 (Sheet 4 of 7)

STRINGER THICKNESS (INCHES)	STRINGER MATERIAL	FASTENER PITCH (INCHES)	REQUIRED STRAP THICKNESS (INCHES)		
			FOR DAMAGE = < 30% OF THICKNESS	FOR DAMAGE = < 40% OF THICKNESS	FOR DAMAGE = < 50% OF THICKNESS
0.032	7075-T6 sheet	[C]	0.040	[D]	[D]
0.040	7075-T6 sheet	[C]	0.040	0.045	0.050
0.045	7075-T6 sheet	[C]	0.040	0.045	0.050
0.050	7075-T6 sheet	[C]	0.040	0.045	0.050
0.056	7075-T6 sheet	[C]	0.040	0.045	0.056
0.063	7075-T6 sheet	[C]	0.040	0.045	0.063
0.071	7075-T6 sheet	[C]	0.056	0.063	0.071
0.080	7075-T6 sheet	[C]	0.056	0.063	0.080
0.090	7075-T6 sheet	[C]	0.056	0.063	0.090

SUMMARY OF CRITICAL REPAIR STRAP GAUGE
THICKNESSES FOR BASE AND SIDE WEB - FORMED STRINGERS

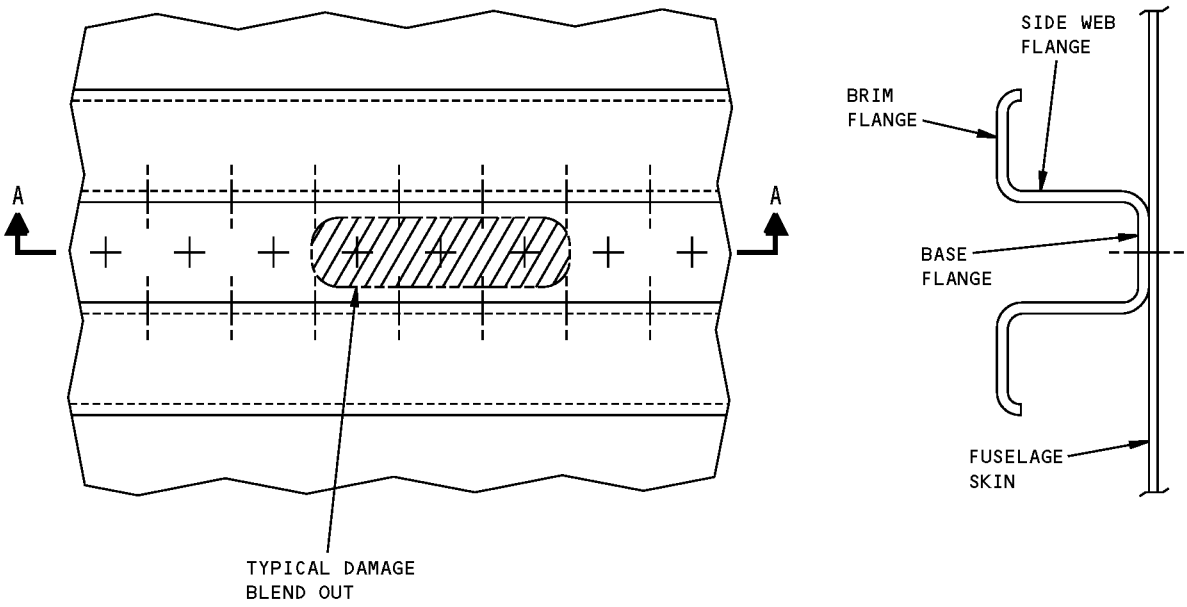
TABLE IV

STRINGER THICKNESS (INCHES)	STRINGER MATERIAL	FASTENER PITCH (INCHES)	REQUIRED STRAP THICKNESS (INCHES)		
			FOR DAMAGE = < 30% OF THICKNESS	FOR DAMAGE = < 40% OF THICKNESS	FOR DAMAGE = < 50% OF THICKNESS
0.040	7075 extrusion	[C]	0.040	0.040	[D]
0.050	7075 extrusion	[C]	0.040	0.045	0.050
0.060	7075 extrusion	[C]	0.040	0.056	0.063
0.070	7075 extrusion	[C]	0.050	0.063	0.071
0.080	7075 extrusion	[C]	0.050	0.063	0.080
0.090	7075 extrusion	[C]	0.063	0.071	0.090
0.100	7075 extrusion	[C]	0.063	0.071	0.100
0.110	7075 extrusion	[C]	0.071	0.080	0.110
0.120	7075 extrusion	[C]	0.071	0.090	0.120
0.130	7075 extrusion	[C]	0.080	0.100	0.130
0.140	7075 extrusion	[C]	0.080	0.110	0.140
0.150	7075 extrusion	[C]	0.080	0.120	0.150

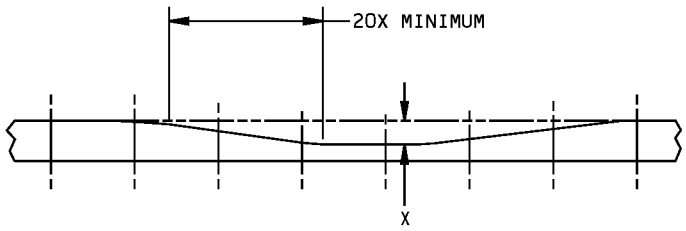
SUMMARY OF CRITICAL REPAIR STRAP GAUGE
THICKNESSES FOR BASE AND SIDE WEB - EXTRUDED STRINGERS

TABLE V

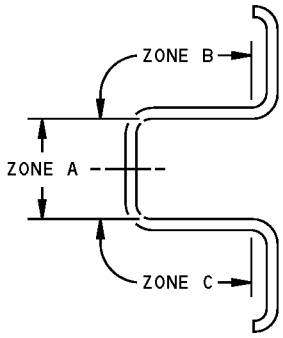
Typical Formed and Extruded Hat Stringer Corrosion Repair - S-20 to S-39
Figure 201 (Sheet 5 of 7)



DETAIL I

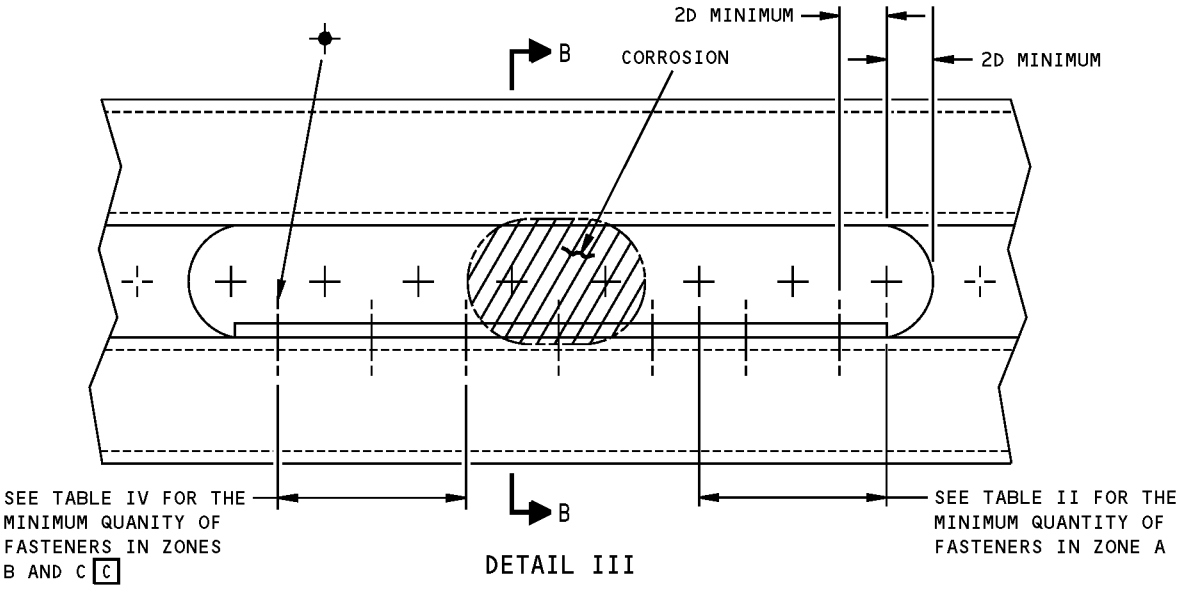


SECTION A-A

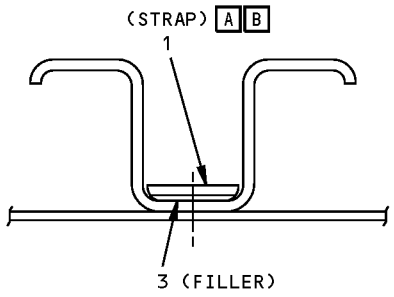


DETAIL II

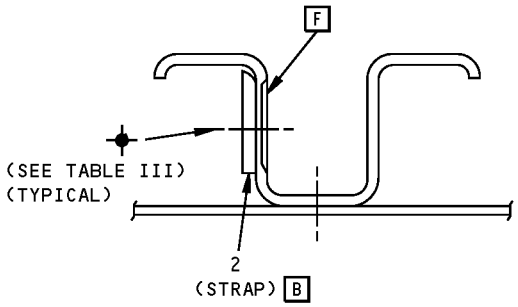
Typical Formed and Extruded Hat Stringer Corrosion Repair - S-20 to S-39
Figure 201 (Sheet 6 of 7)



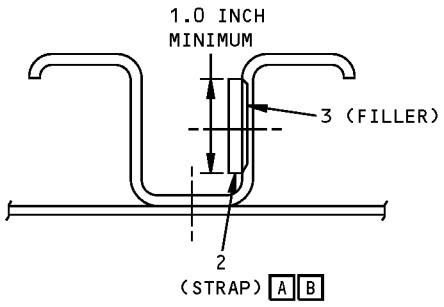
DETAIL III



METHOD I – FOR DAMAGE IN ZONE A
ROTATED 90° COUNTER CLOCKWISE
SECTION B–B



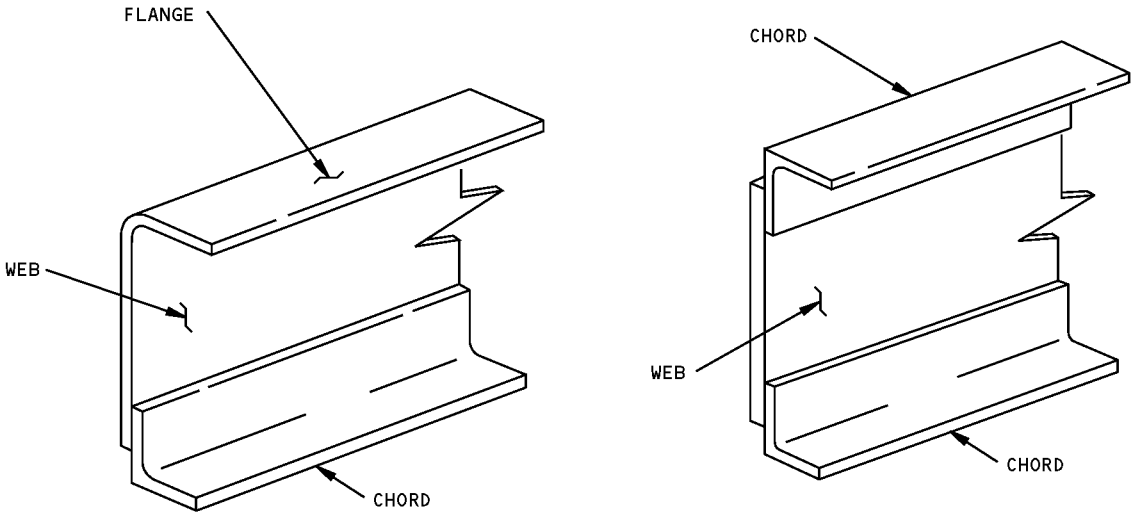
METHOD II – FOR REPAIR IN ZONE B OR C
ROTATED 90° COUNTER CLOCKWISE
SECTION B–B



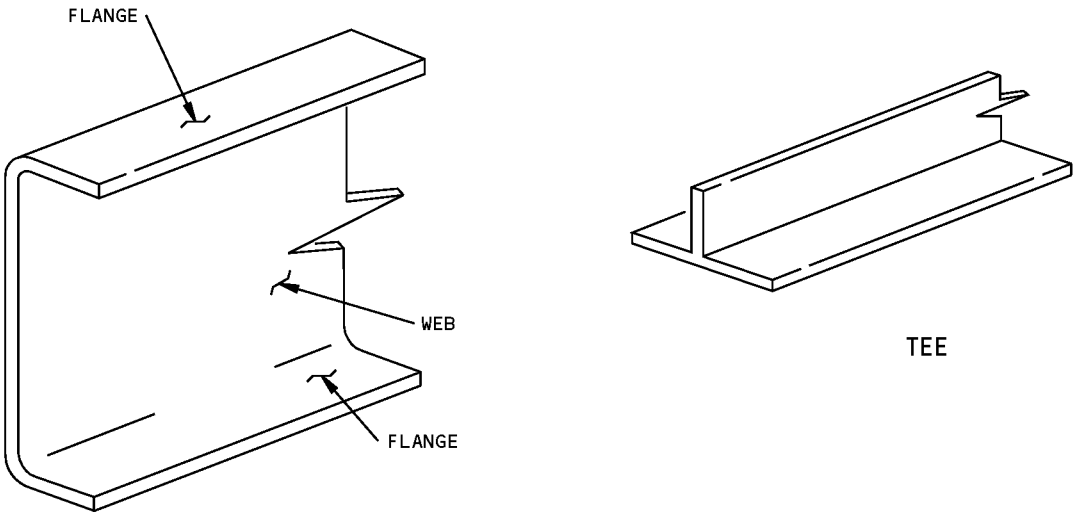
METHOD III – FOR REPAIR IN ZONES B OR C
ROTATED 90° COUNTER CLOCKWISE
SECTION B–B

Typical Formed and Extruded Hat Stringer Corrosion Repair - S-20 to S-39
Figure 201 (Sheet 7 of 7)

ALLOWABLE DAMAGE 1 - FUSELAGE INTERCOSTALS



BUILT-UP INTERCOSTALS



FORMED INTERCOSTAL

TEE

Allowable Damage - Intercostals
Figure 101 (Sheet 1 of 4)

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
BUILT-UP INTERCOSTAL				
EXTRUDED CHORD	[A]	[D]	NOT PERMITTED	NOT PERMITTED
FORMED CHORD	[B]	[E]	SEE DETAIL III	PERMITTED IN THE FREE FLANGE ONLY [G]
WEB	[C]	[F]	SEE DETAIL III	[G]
FLANGE	[B]	[E]	SEE DETAIL III	[G]
FORMED INTERCOSTAL				
WEB	[C]	[F]	SEE DETAIL III	[G]
FLANGE	[B]	[E]	SEE DETAIL III	PERMITTED IN THE FREE FLANGE ONLY [G]
TEE	[A]	[D]	NOT PERMITTED	NOT PERMITTED

NOTES

- DAMAGE (DETAIL I, II, III, IV, V, VI, AND VII):
  - THAT OCCURS TO A PRINCIPAL STRUCTURAL ELEMENT (PSE) AS DEFINED IN SRM 51-00-04, AND
  - THAT IS WITHIN THE ALLOWABLE DAMAGE LIMITS OF THE BOEING SRM, DOES NOT HAVE AN EFFECT ON THE DAMAGE TOLERANCE PROPERTIES OF THE PSE. THEREFORE, INITIAL INSPECTION PROGRAMS REMAIN EFFECTIVE.
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS I AND VII.

[B] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS I AND VI.

[C] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS I AND V.

[D] REMOVE DAMAGE AS GIVEN IN DETAILS I,II,IV AND VII.

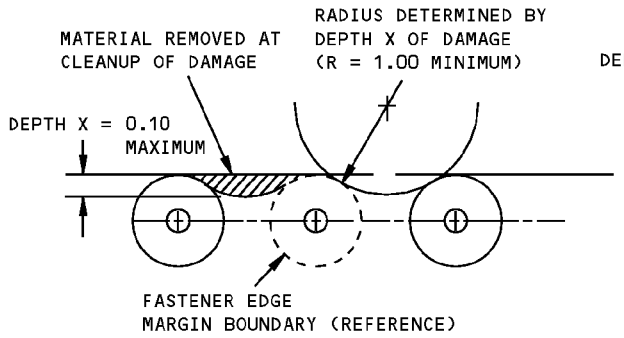
[E] REMOVE DAMAGE AS GIVEN IN DETAILS I,II,IV AND VI.

[F] REMOVE DAMAGE AS GIVEN IN DETAILS I,II,IV AND V.

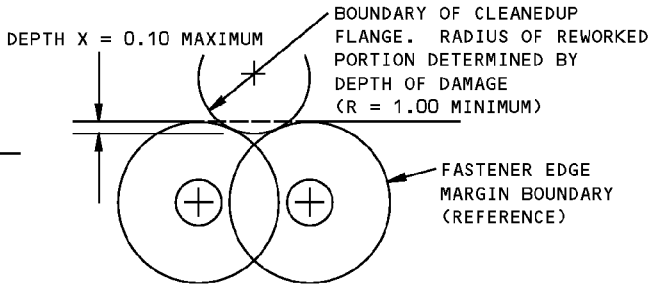
[G] CLEAN OUT DAMAGE UP TO 0.25 INCH MAXIMUM DIAMETER AND NOT CLOSER THAN 1.0 INCH TO A FASTENER HOLE OR OTHER DAMAGE. FILL THE HOLE WITH A 2117-T3 OR -T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES MUST BE REPAIRED.

[H] FOR MATING SURFACES, INSTALL LAMINATED SHIMS WITH BMS 5-95 SEALANT. THE GAP MUST BE LESS THAN OR EQUAL TO 0.003 INCH AFTER SHIMMING.

Allowable Damage - Intercostals
Figure 101 (Sheet 2 of 4)

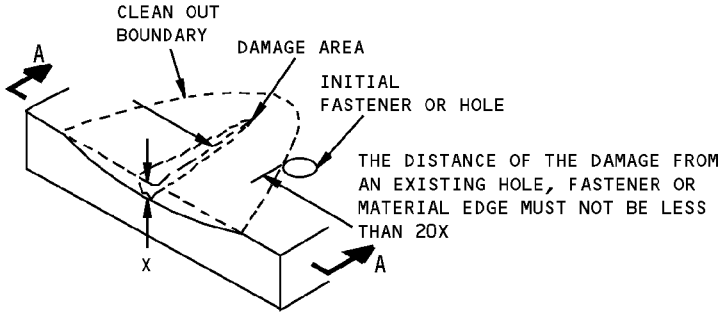


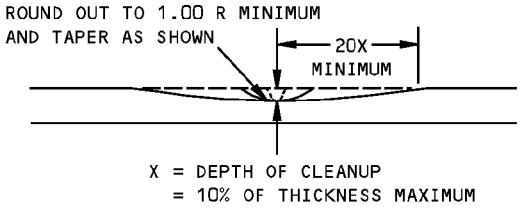
DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

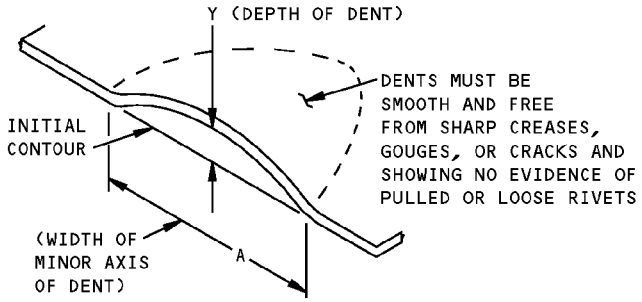
DETAIL I





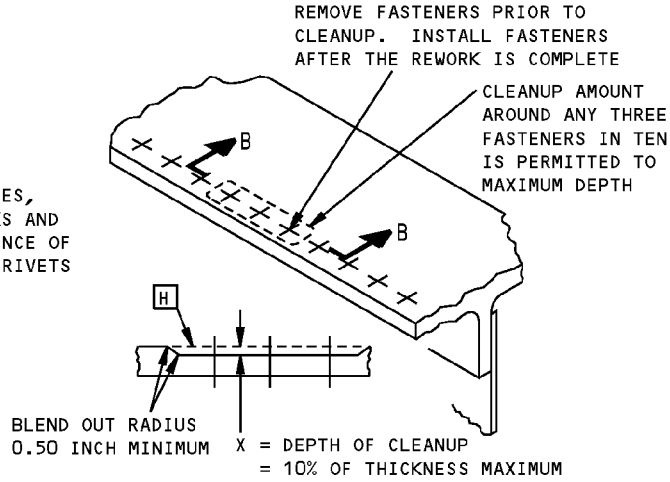
SECTION A–A

REMOVAL OF DAMAGE ON A SURFACE
DETAIL II



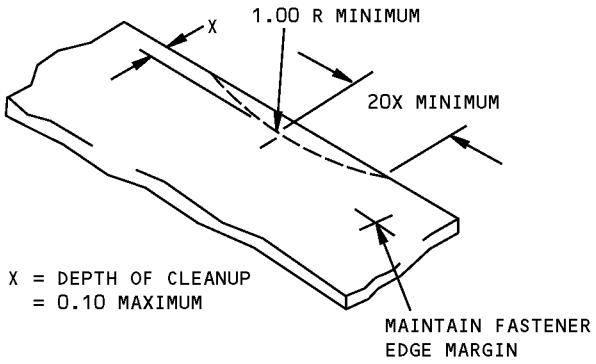
$\frac{A}{Y}$ MUST NOT BE LESS THAN 30

ALLOWABLE DAMAGE FOR DENT
DETAIL III



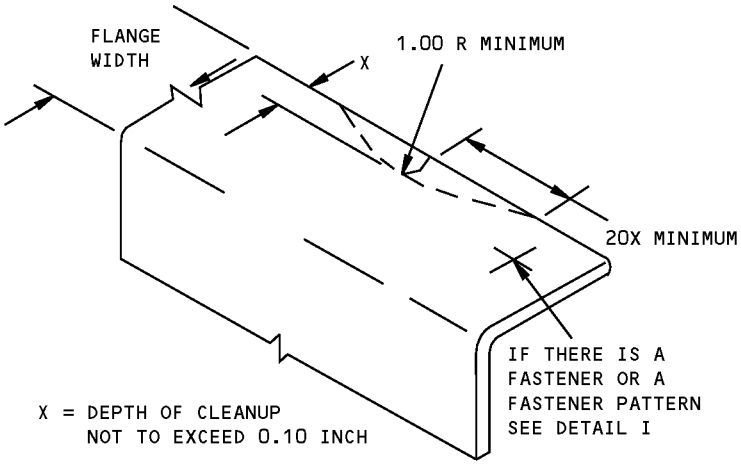
SECTION B–B
DAMAGE CLEANUP
DETAIL IV

Allowable Damage - Intercostals
Figure 101 (Sheet 3 of 4)



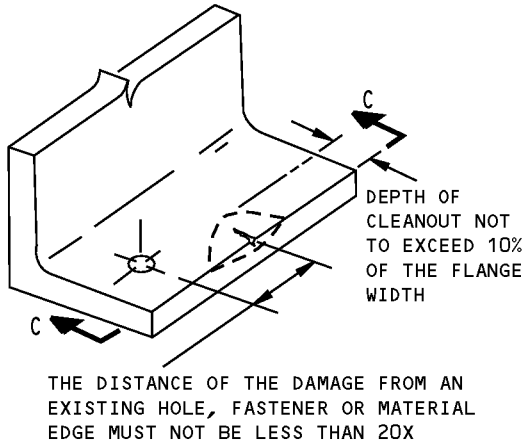
REMOVAL OF DAMAGE ON AN EDGE

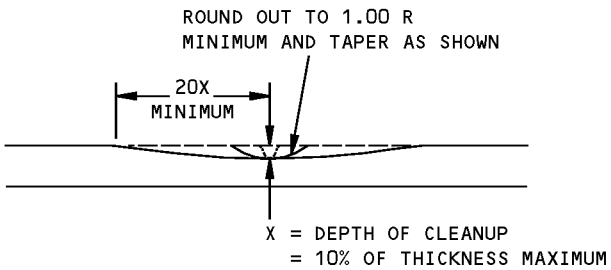
DETAIL V



REMOVAL OF DAMAGE ON AN EDGE
(FORMED MEMBER)

DETAIL VI



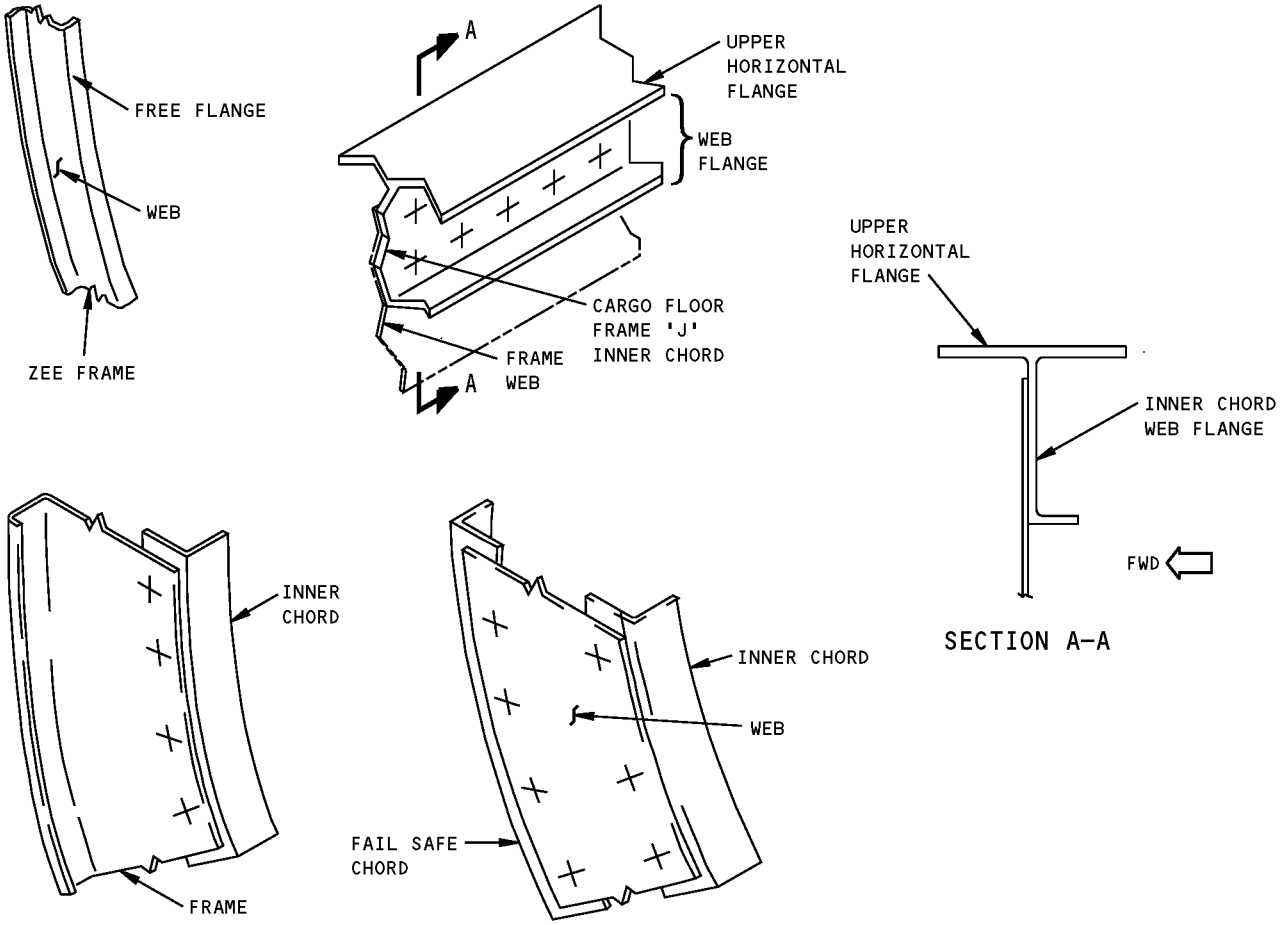


SECTION C–C

REMOVAL OF DAMAGE ON AN EDGE
DETAIL VII

Allowable Damage - Intercostals
Figure 101 (Sheet 4 of 4)

ALLOWABLE DAMAGE 1 - FUSELAGE FRAMES



TYPICAL FRAME SECTIONS

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
ZEE FRAMES	[A]	[C]	SEE DETAIL III	PERMITTED IN THE FREE FLANGE AND WEB ONLY [D]
FRAMES	[A]	[C]	SEE DETAIL III	PERMITTED IN THE WEB ONLY [D]
WEBS	[A]	[C]	SEE DETAIL III	[D]
FAIL SAFE CHORD	[B]	[E]	NOT PERMITTED	NOT PERMITTED
INNER CHORDS	[B]	[E]	NOT PERMITTED	PERMITTED IN THE FREE FLANGE ONLY [D]
CARGO FLOOR FRAME 'J' INNER CHORD UPPER HORIZONTAL FLANGE FROM S-32L TO S-32R	[F]	[G]	NOT PERMITTED	[H]
CARGO FLOOR FRAME 'J' INNER CHORD WEB FLANGE FROM S-32L TO S-32R	[B]	[E]	NOT PERMITTED	[D]

Fuselage Frames Allowable Damage
Figure 101 (Sheet 1 of 9)

NOTES

- DAMAGE (DETAIL I, II, III, IV, V, VI, VII, VIII, IX, X, XI, AND XII):
  - THAT OCCURS TO A PRINCIPAL STRUCTURAL ELEMENT (PSE) AS DEFINED IN SRM 51-00-04, AND
  - THAT IS WITHIN THE ALLOWABLE DAMAGE LIMITS OF THE BOEING SRM, DOES NOT HAVE AN EFFECT ON THE DAMAGE TOLERANCE PROPERTIES OF THE PSE. THEREFORE, INITIAL INSPECTION PROGRAMS REMAIN EFFECTIVE.
- ALL DIMENSIONS ARE IN INCHES
- D = DIAMETER
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- REFER TO SRM 53-00-51 FOR STANCHION ALLOWABLE DAMAGE
- THE TOTAL CROSS-SECTIONAL AREA THAT IS REMOVED BY ALL THE DAMAGE CLEANUP MUST NOT BE MORE THAN 10% OF THE INITIAL NET CROSS-SECTIONAL AREA OF THE WEB OR FLANGE AS APPLICABLE. THE NET CROSS-SECTIONAL AREA IS THE INITIAL CROSS-SECTIONAL AREA MINUS ALL LIGHTENING OR FASTENER HOLES THAT ARE MADE DURING AIRPLANE ASSEMBLY. SEE DETAIL VII.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS I AND V.

[B] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS I AND VI.

[C] REMOVE DAMAGE AS GIVEN IN DETAILS I,II AND V. THE AREA REMOVED FOR CLEANUP MUST NOT DECREASE THE INITIAL MANUFACTURED CROSS-SECTIONAL AREA BY MORE THAN 10 PERCENT. SEE DETAIL VII.

[D] CLEAN OUT DAMAGE UP TO 0.21 INCH DIAMETER MAXIMUM AND NOT CLOSER THAN 4D TO A FASTENER HOLE OR OTHER DAMAGE, AND NOT CLOSER THAN 2D TO A MATERIAL EDGE. YOU CAN HAVE A MAXIMUM OF 4 HOLES IN 6 INCHES. SEE DETAIL IV. FILL HOLES WITH 2117-T4, "AD", ALUMINUM RIVETS INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES MUST BE REPAIRED. THE AREA REMOVED FOR CLEANUP MUST NOT DECREASE THE INITIAL MANUFACTURED CROSS-SECTIONAL AREA BY MORE THAN 10 PERCENT. SEE DETAIL VII.

[E] REMOVE DAMAGE AS GIVEN IN DETAILS I,II AND VI. THE AREA REMOVED FOR CLEANUP MUST NOT DECREASE THE INITIAL MANUFACTURED CROSS-SECTIONAL AREA BY MORE THAN 10 PERCENT. SEE DETAIL VII.

[F] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS IX AND XII.

[G] REMOVE DAMAGE AS GIVEN IN DETAILS IX, X AND XII. THE ALLOWABLE DAMAGE FOR CARGO FLOOR FRAME "J" INNER CHORD'S UPPER HORIZONTAL FLANGE IS DEFINED IN DETAIL VIII.

[H] CLEAN OUT DAMAGE UP TO 0.21 INCH DIAMETER MAXIMUM, NOT CLOSER THAN 4D TO A FASTENER HOLE OR OTHER DAMAGE, AND NOT CLOSER THAN 2D TO A MATERIAL EDGE. YOU CAN HAVE A MAXIMUM OF 4 HOLES IN 6 INCHES (150 mm). SEE DETAIL XI. FILL HOLES WITH 2117-T4 "AD", ALUMINUM RIVETS INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES MUST BE REPAIRED. THE ALLOWABLE DAMAGE FOR CARGO FLOOR FRAME "J" INNER CHORD'S UPPER HORIZONTAL FLANGE IS DEFINED IN DETAIL VIII.

[I] ALL DAMAGE IS ASSUMED TO BE ON THE UPPER HORIZONTAL FLANGE ONLY, WITH NO DAMAGE ON THE REMAINING CROSS SECTION.

[J] "L" = THE LENGTH OF BLEND OUT IN THE INBOARD-OUTBOARD DIRECTION AND "W" = THE LENGTH OF BLEND OUT IN THE FORE-AFT DIRECTION.

[K] DAMAGE COULD BE ON EITHER THE FORWARD OR AFT SIDE OF THE HORIZONTAL FLANGE, FORWARD SIDE IS SHOWN.

[L] THE DAMAGE BLEND OUT CAN EXTEND INTO THE RADIUS IF NECESSARY. THE MAXIMUM MATERIAL REMOVED MUST BE LESS THAN OR EQUAL TO 0.010 INCHES.

[M] IF NUTPLATES ARE PRESENT IN THE DAMAGE AREA, BLEND OUT DAMAGE TO CREATE A SMOOTH FLAT SURFACE TO PROPERLY SEAT THE NUTPLATE. REINSTALL THE NUTPLATES TO THE FRAME INBOARD CHORD. USE EXISTING NUTPLATE ATTACHMENT HOLES AND SAME TYPE AND SIZE FASTENERS.

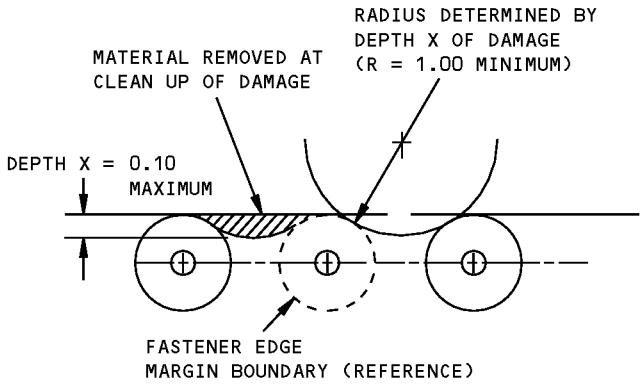
[N] INSTALL A FILLER MADE FROM 7075-T73 MACHINED TO FIT DAMAGE BLEND OUT USING BMS 5-95. IF NUTPLATES ARE PRESENT IN THE DAMAGED AREA, REINSTALL THE NUTPLATES TO THE FRAME INBOARD CHORD. USE INITIAL NUTPLATE ATTACHMENT RIVET HOLES AND SAME TYPE AND SIZE FASTENERS. MICROSHAVE RIVETS FLUSH ON THE UPPER SURFACE OF THE FRAME INBOARD CHORD. REFER TO SRM 51-10-01. MAXIMUM PULL UP PERMITTED IS 0.005 INCH (0.13 mm) BEFORE FASTENER INSTALLATION.

[O] DAMAGE COULD BE ON THE UPPER AND/OR LOWER SURFACE.

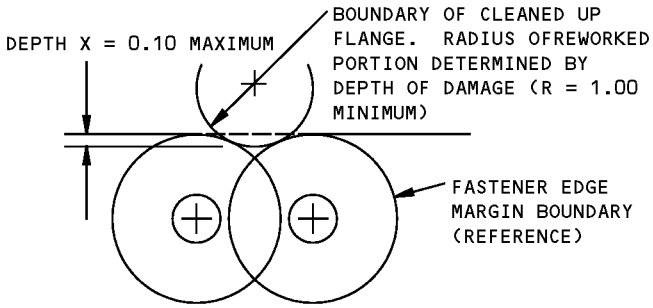
[P] IF BLEND-OUTS OVERLAP, BLEND SMOOTH ALL MISMATCHES.

[Q] REFER TO DETAIL VIII FOR DAMAGE LIMITS.

Fuselage Frames Allowable Damage
Figure 101 (Sheet 2 of 9)

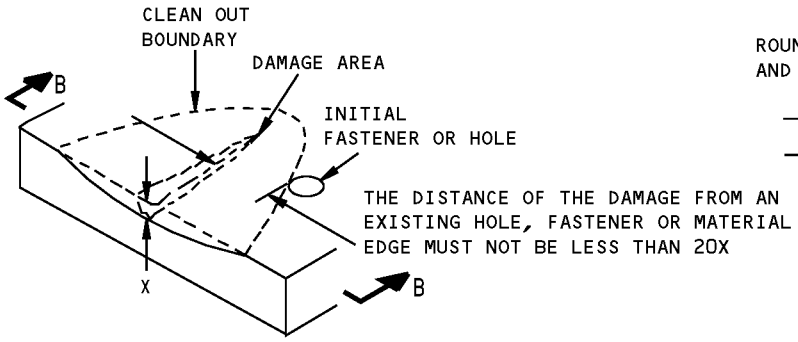


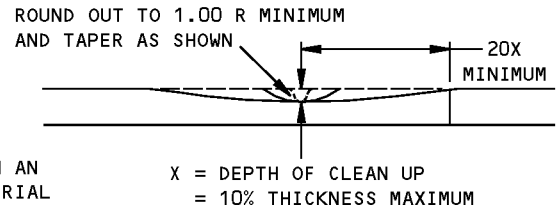
DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

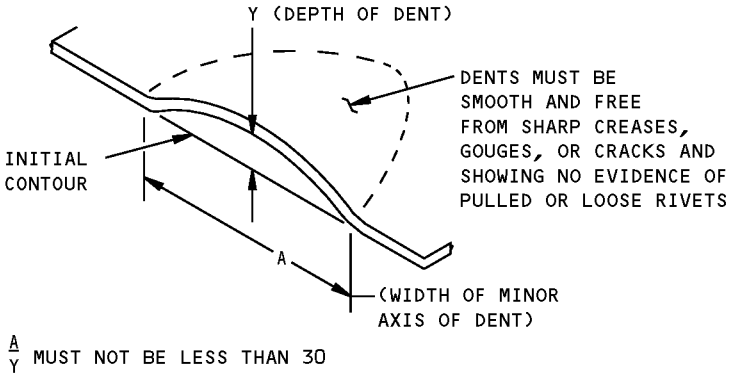
DETAIL I





SECTION B–B

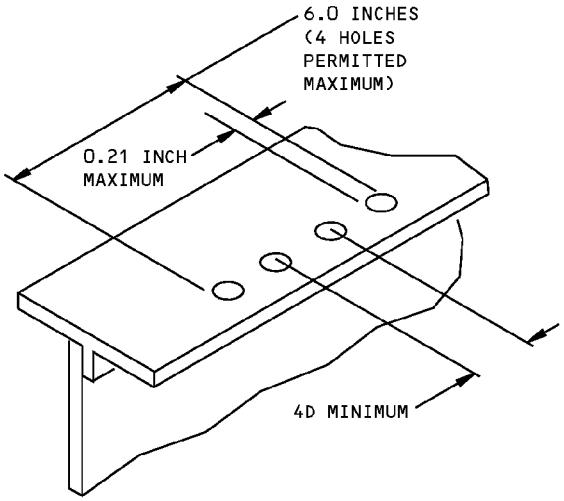
REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL II



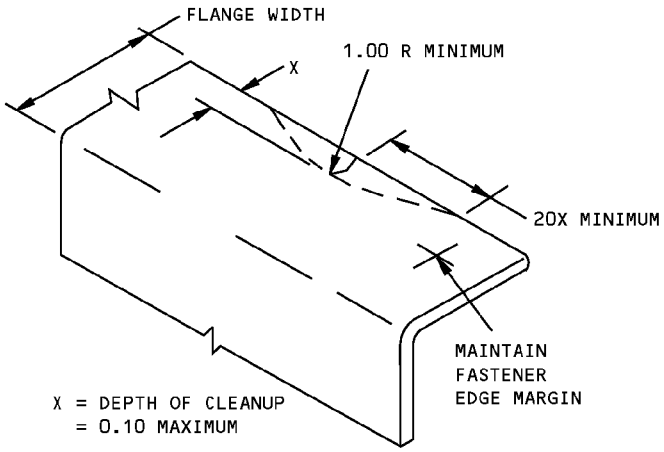
$\frac{A}{Y}$ MUST NOT BE LESS THAN 30

ALLOWABLE DAMAGE FOR DENT
DETAIL III

Fuselage Frames Allowable Damage
Figure 101 (Sheet 3 of 9)

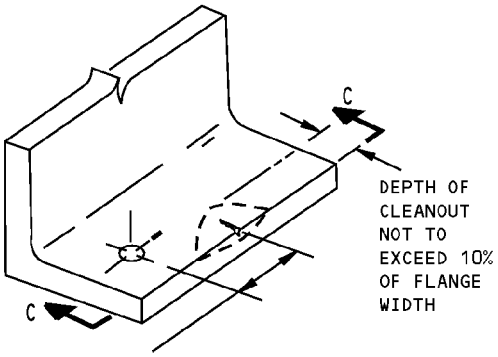


DETAIL IV



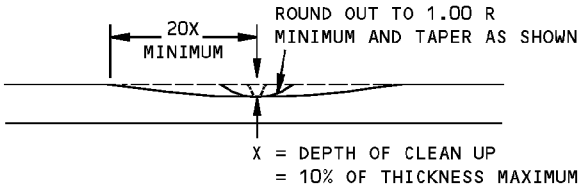
REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE

DETAIL V

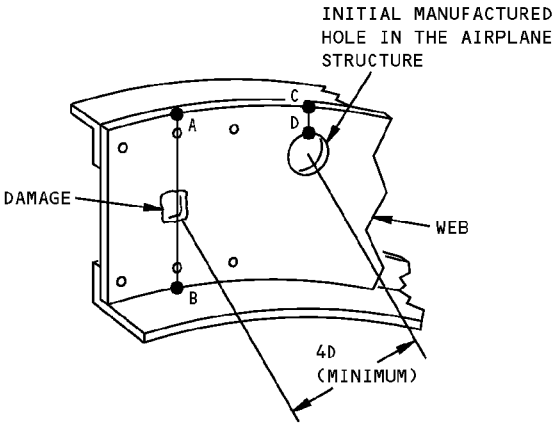


REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE

DETAIL VI



SECTION C–C



A_1 = INITIAL NET CROSS-SECTIONAL AREA

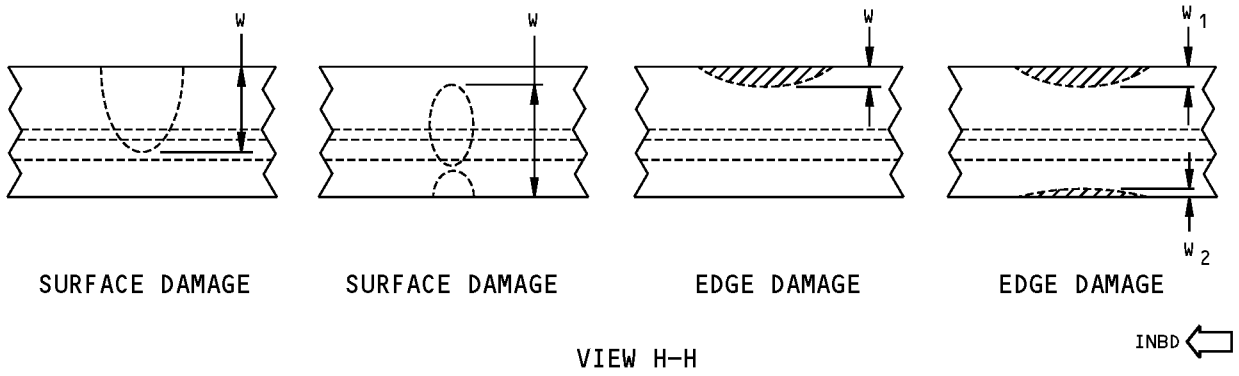
A_2 = AREA REMOVED FOR NICKS, GOUGES, CORROSION HOLE DAMAGE

$\frac{A_2}{A_1}$ X 100 ≤ 10% MAXIMUM

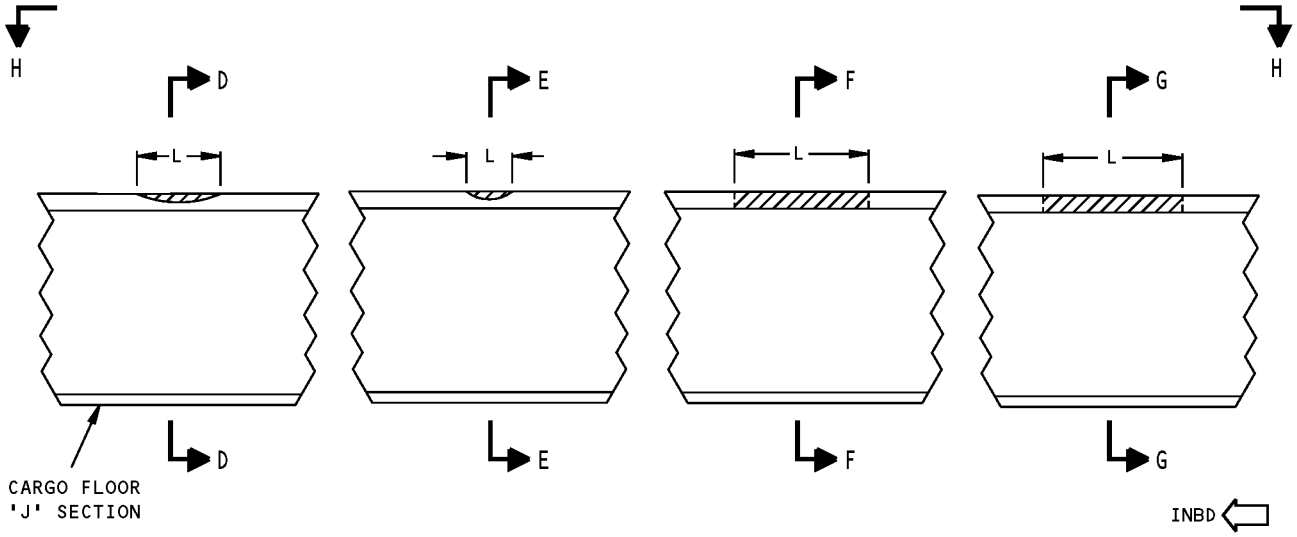
LOSS IN CROSS-SECTIONAL AREA ALONG ANY LINE A–B OR C–D DUE TO REMOVAL OF ANY TYPE OF DAMAGE MUST NOT EXCEED 10 PERCENT OF THE INITIAL NET CROSS-SECTIONAL AREA. USE THESE SAME LIMITS FOR THE FLANGES, CHORDS, AND WEBS.

DETAIL VII

Fuselage Frames Allowable Damage
Figure 101 (Sheet 4 of 9)



VIEW H-H

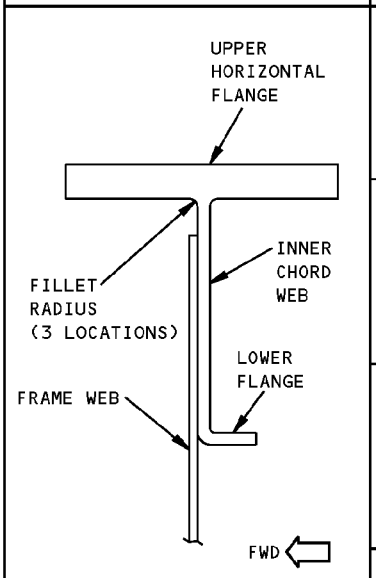
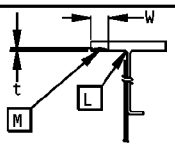
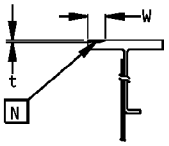
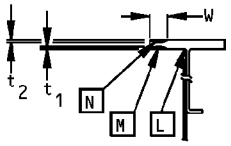
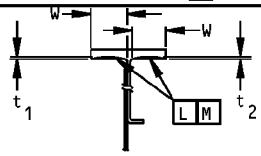
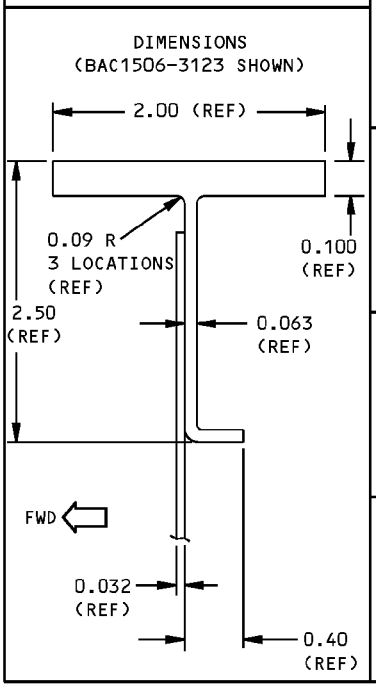
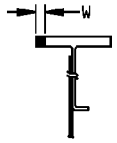
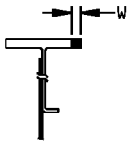
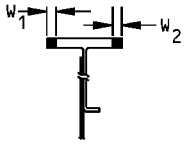


VIEW LOOKING FORWARD

ALLOWABLE DAMAGE TO THE UPPER HORIZONTAL FLANGE OF THE FRAME INBOARD CHORD (CARGO FLOOR "J" SECTION), FROM S-32L TO S-32R I

DETAIL VIII

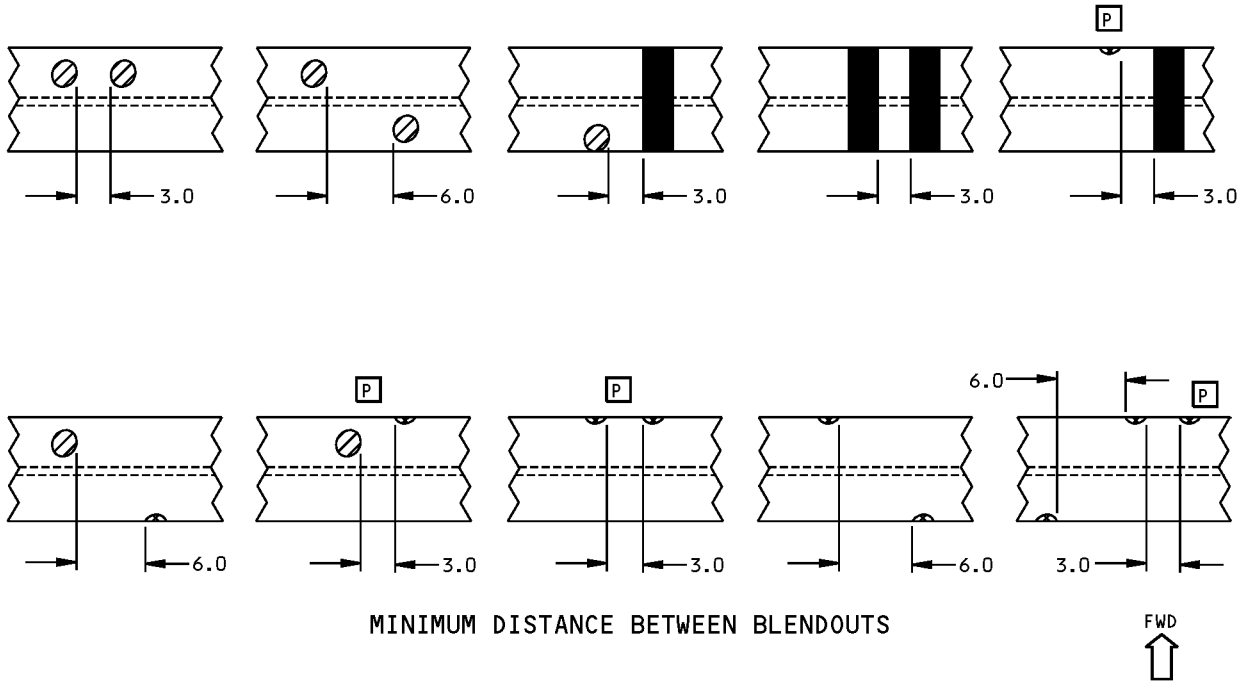
Fuselage Frames Allowable Damage
Figure 101 (Sheet 5 of 9)

TYPICAL SECTION (PRIOR TO DAMAGE)	DAMAGE CONFIGURATION	ALLOWABLE DAMAGE LIMITS [J]
	 SECTION D-D [K]	L = 3.00 MAXIMUM t = 0.025 MAXIMUM W = 0.90 MAXIMUM
	 SECTION D-D [K]	L = 3.00 MAXIMUM t = 0.025 MAXIMUM W = 0.90 MAXIMUM
	 SECTION D-D [K]	L = 3.00 MAXIMUM $t_1 + t_2 \leq 0.025$ MAXIMUM W = 0.90 MAXIMUM
	 SECTION E-E [O]	L = 3.00 MAXIMUM t_1, t_2 = 0.015 MAXIMUM W = 0.90 MAXIMUM
	 SECTION F-F	L = 12.0 MAXIMUM W = 0.25 MAXIMUM
	 SECTION F-F	L = 12.0 MAXIMUM W = 0.25 MAXIMUM
	 SECTION G-G	L = 12.00 MAXIMUM $W_1 + W_2 \leq 0.25$ MAXIMUM

ALLOWABLE DAMAGE TO THE UPPER HORIZONTAL FLANGE OF THE FRAME INBOARD CHORD (CARGO FLOOR "J" SECTION), FROM S-32L TO S- 32R [I]

DETAIL VIII

Fuselage Frames Allowable Damage
Figure 101 (Sheet 6 of 9)



NOTES

- ALL DIMENSION ARE IN INCHES.
- THE LOSS IN CROSS-SECTIONAL AREA DUE TO REMOVAL OF ANY TYPE OF DAMAGE MUST NOT EXCEED 15 PERCENT OF THE INITIAL NET CROSS SECTIONAL AREA OF THE UPPER HORIZONTAL FLANGE OF THE INBOARD CHORD. DO NOT INCLUDE THE CROSS SECTIONAL AREA OF THE WEB FLANGE AND THE LOWER FREE FLANGE IN THE CALCULATION. THE NET CROSS SECTIONAL AREA IS THE UPPER FLANGE MINUS ALL FASTENER HOLES MADE DURING AIRPLANE MANUFACTURE. IF:

  A1 = INITIAL CROSS SECTIONAL AREA OF THE UPPER HORIZONTAL FLANGE OF THE INBOARD CHORD

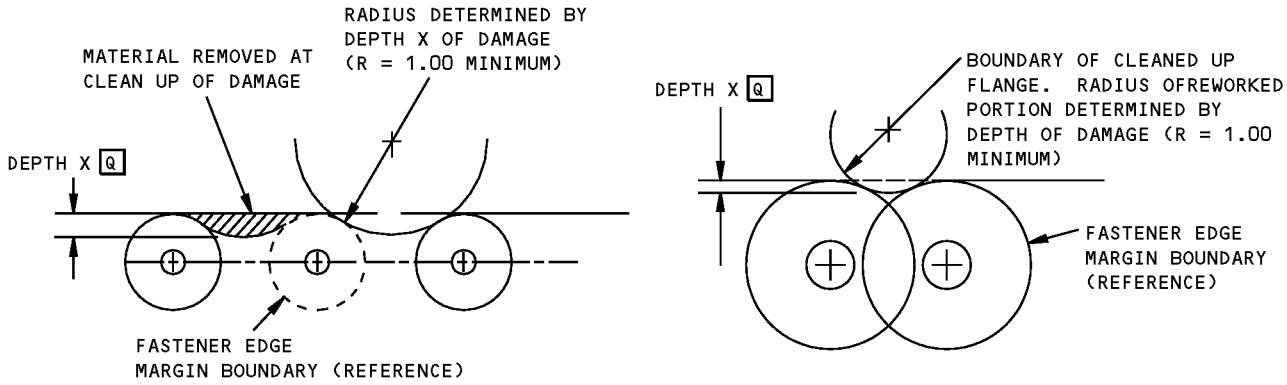
  A2 = AREA REMOVED FOR NICKS, GOUGES, CORROSION OR HOLE DAMAGE

  THEN, A2/A1 X 100 < 15%

ALLOWABLE DAMAGE TO THE UPPER HORIZONTAL FLANGE OF THE FRAME INBOARD CHORD (CARGO FLOOR "J" SECTION), FROM S-32L TO S-32R I

DETAIL VIII

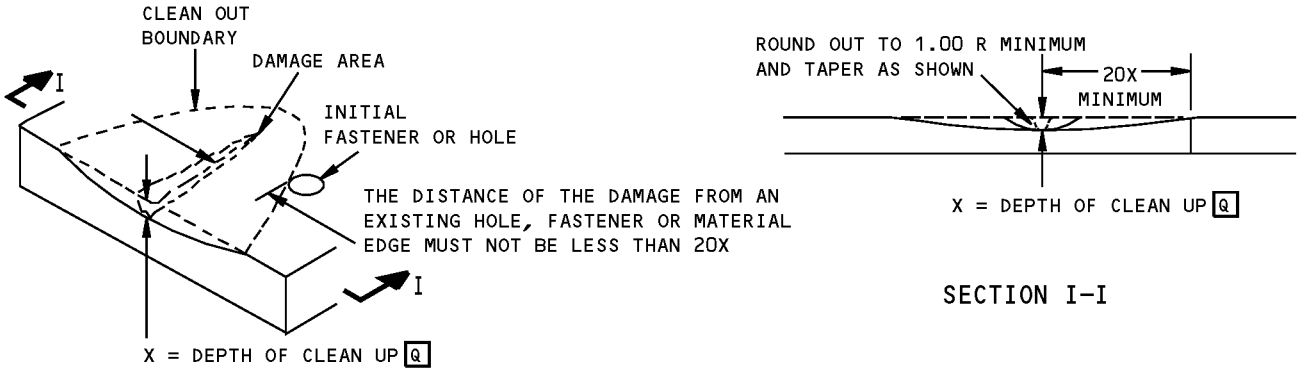
Fuselage Frames Allowable Damage
Figure 101 (Sheet 7 of 9)



DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

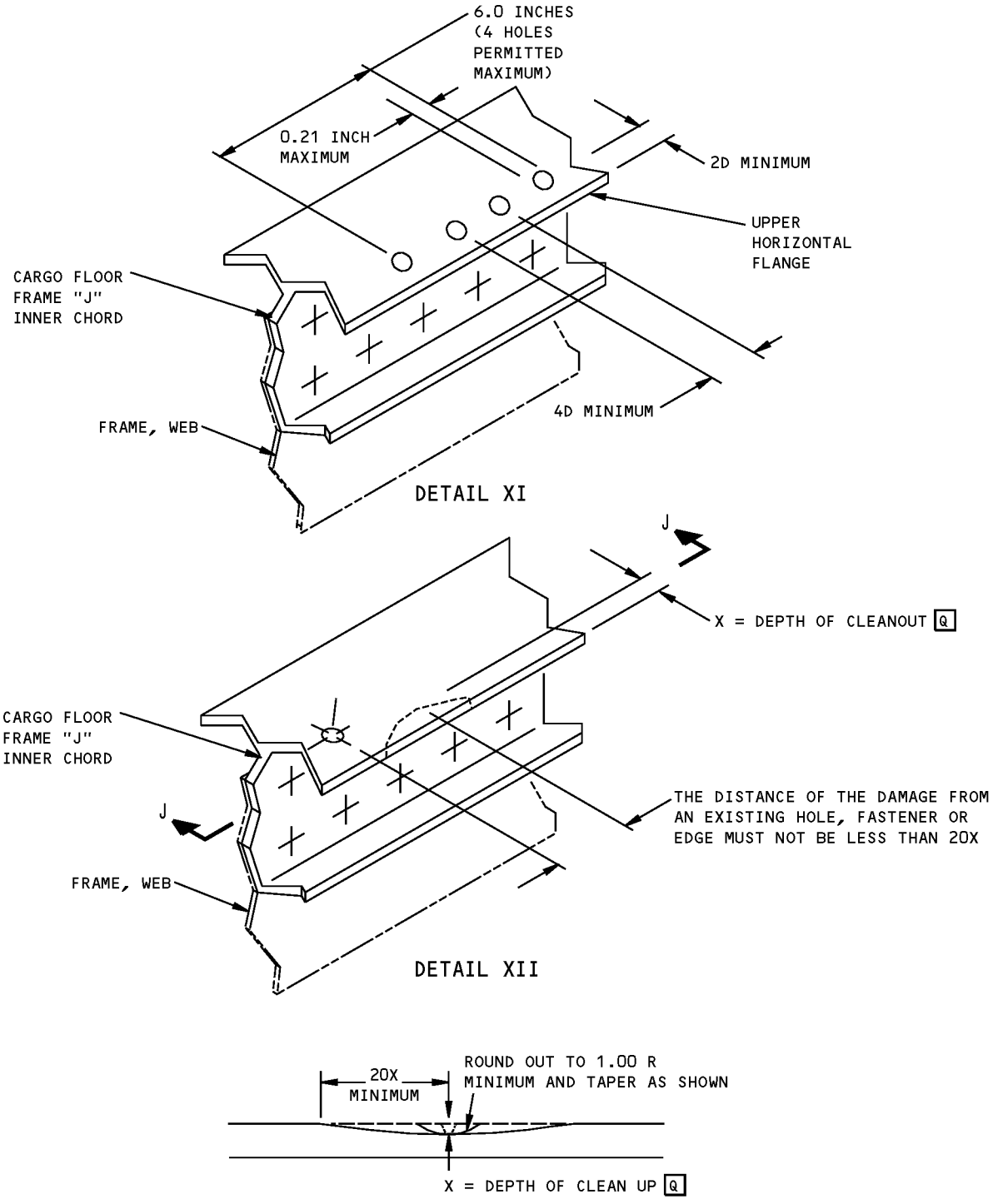
DETAIL IX



SECTION I–I

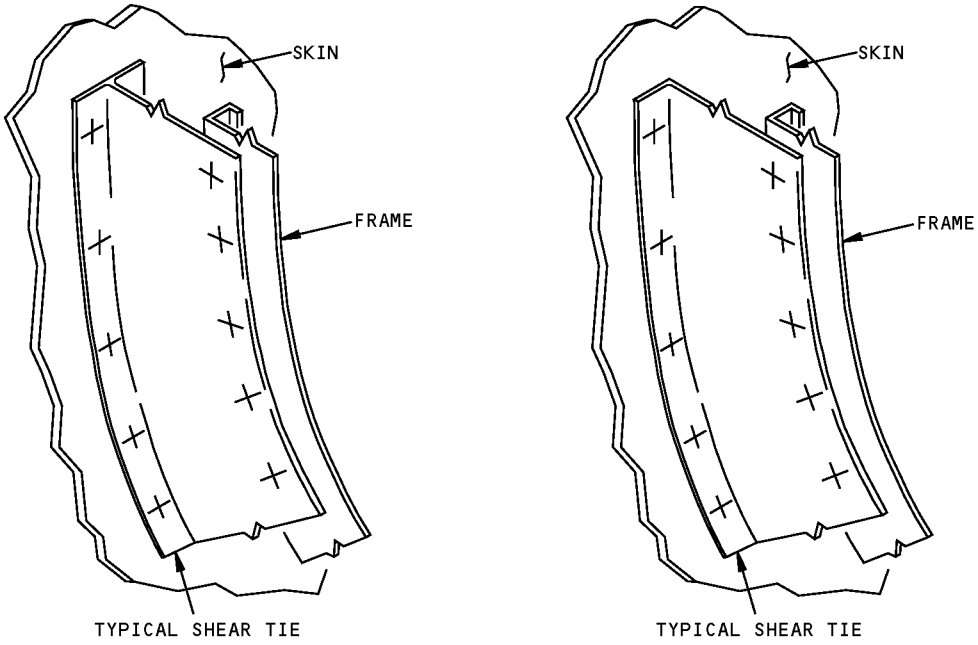
REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL X

Fuselage Frames Allowable Damage
Figure 101 (Sheet 8 of 9)



Fuselage Frames Allowable Damage
Figure 101 (Sheet 9 of 9)

ALLOWABLE DAMAGE 2 - FUSELAGE SHEAR TIES



TYPICAL SHEAR TIE SECTIONS

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
SHEAR TIES, FRAME FLANGE	A	B D E	SEE DETAIL III	SEE DETAIL V C
SHEAR TIES, SKIN FLANGE	A	B E	SEE DETAIL III	C

Fuselage Shear Ties Allowable Damage
Figure 101 (Sheet 1 of 4)

NOTES

- DAMAGE (DETAIL I, II, III, IV, AND V):
  - THAT OCCURS TO A PRINCIPAL STRUCTURAL ELEMENT (PSE) AS DEFINED IN SRM 51-00-04, AND
  - THAT IS WITHIN THE ALLOWABLE DAMAGE LIMITS OF THE BOEING SRM, DOES NOT HAVE AN EFFECT ON THE DAMAGE TOLERANCE PROPERTIES OF THE PSE. THEREFORE, INITIAL INSPECTION PROGRAMS REMAIN EFFECTIVE.
- D = DIAMETER
- APPLY A CHEMICAL CONVERSION COATING TO THE BARE SURFACES OF REWORKED AREAS. REFER TO SRM 51-20-01.
- APPLY A LAYER OF BMS 10-11, TYPE I PRIMER TO TO THE BARE SURFACES OF THE REWORKED AREAS. REFER TO SOPM 20-41-02.
- IF SHEAR TIE IS REMOVED FOR REWORK, USE OVERSIZE FASTENERS. APPLY BMS 5-95 FAYING SURFACE SEALANT, BETWEEN THE SHEAR TIE AND SKIN OR FRAME.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS.
- REFER TO SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS.
- REFER TO SRM 51-20-05 FOR SEALING INSTRUCTIONS.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS I AND IV.

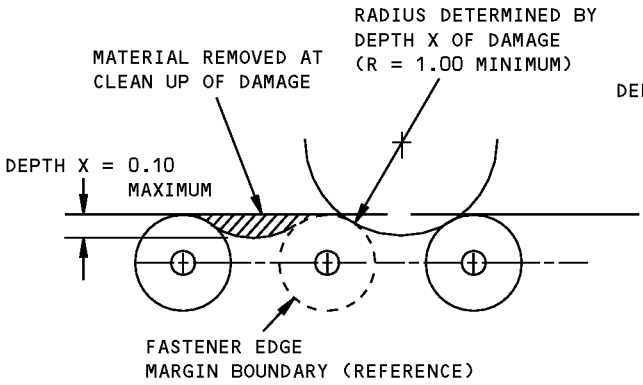
[B] REMOVE DAMAGE AS GIVEN IN DETAILS I,II AND IV, THE AREA REMOVED FOR CLEAN UP MUST NOT DECREASE THE INITIAL CROSS-SECTIONAL AREA BY MORE THAN 10%.

[C] CLEAN OUT DAMAGE TO 0.18 INCH DIAMETER MAXIMUM. THE DAMAGE SHOULD NOT BE CLOSER THAN 3D TO A FASTENER HOLE OR OTHER DAMAGE AND IT SHOULD NOT BE CLOSER THAN 1.7D TO AN EDGE. FILL HOLES WITH 2117-T3 ALUMINUM RIVETS USING A 0.02 INCH LIGHT COUNTERSINK ON ANY FAYING SERVICE.

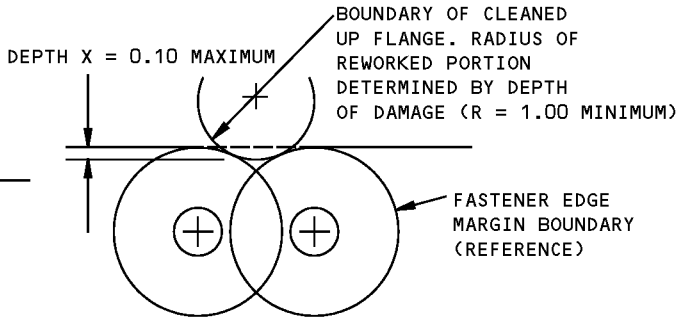
[D] NO DAMAGE IS PERMITTED IN THE AREAS OF THE SHEAR TIE SHOWN IN DETAIL V.

[E] AFTER REMOVAL OF DAMAGE FROM THE SHEAR TIE FLANGE SIDE FACING THE SKIN OR FRAME, THE MAXIMUM PERMITTED GAP IS 0.005 INCH (0.13 mm). USE SHIMS AS REQUIRED.

Fuselage Shear Ties Allowable Damage
Figure 101 (Sheet 2 of 4)

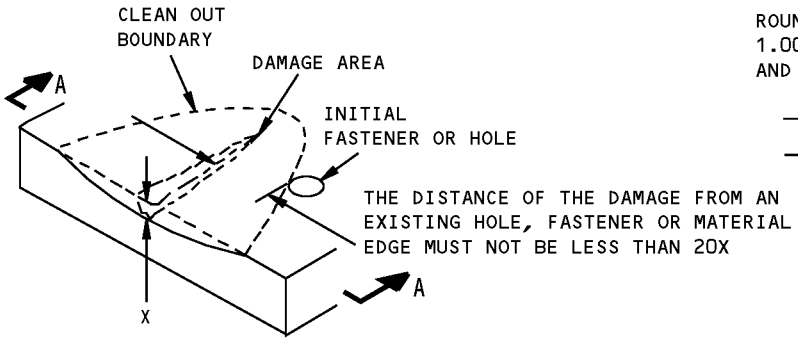


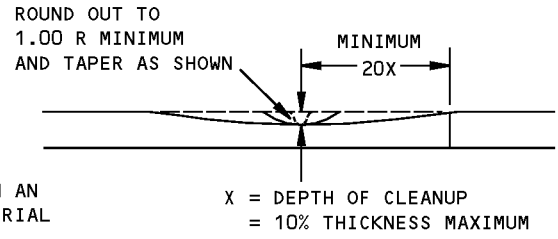
DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL I

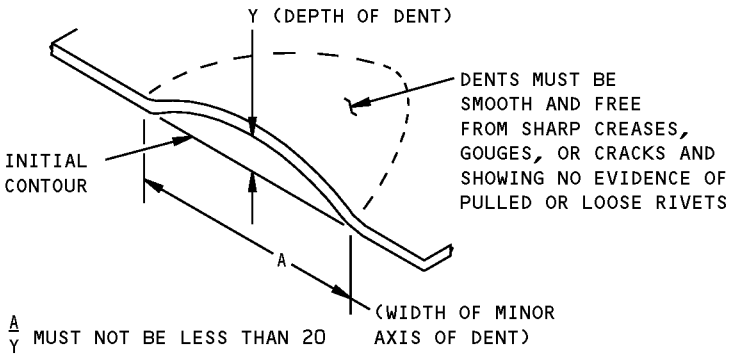




SECTION A–A

REMOVAL OF NICK, GOUGE, SCRATCH AND CORROSION DAMAGE ON A SURFACE

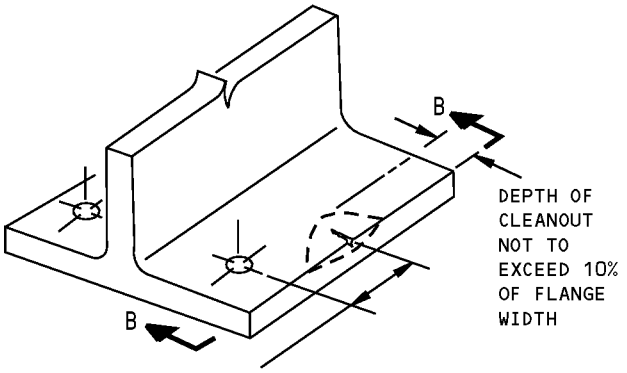
DETAIL II



ALLOWABLE DAMAGE FOR DENT

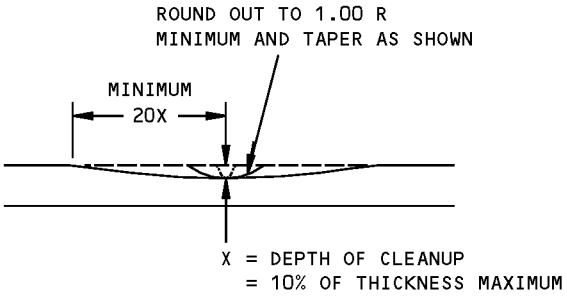
DETAIL III

Fuselage Shear Ties Allowable Damage
Figure 101 (Sheet 3 of 4)

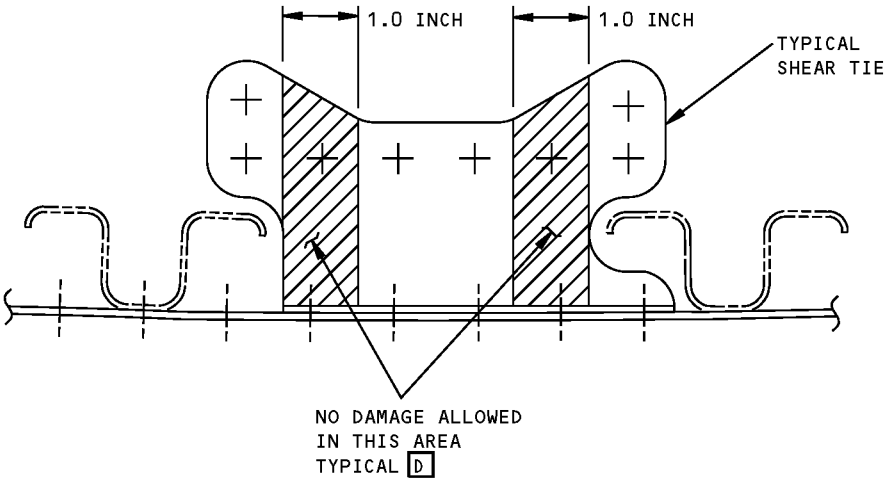


REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE

DETAIL IV



SECTION B–B



DETAIL V

Fuselage Shear Ties Allowable Damage
Figure 101 (Sheet 4 of 4)

REPAIR 1 - CHEM - MILLED ZEE FRAME REPAIR

APPLICABILITY
THIS REPAIR IS APPLICABLE TO CHEMICALLY MILLED ZEE FRAMES ONLY.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. Cut and remove the damaged part of the frame and find the dimensions of the repair to be made. Remove the minimum amount of material required to make sure the damage is removed. Use Details I to IV.
3. Make the repair parts. See Table I.
4. Assemble the repair parts and drill the fastener holes.
5. Disassemble the repair parts.
6. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of all initial parts. Refer to SRM 51-20-01.
8. Apply two layers of BMS 10-11, Type 1 primer to the repair parts and to the bare surfaces of all initial parts. Refer to SOPM 20-41-02.
9. Install the repair parts wet with BMS 5-95 sealant between the mating surfaces.
10. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
11. Apply one layer of BMS 10-11, Type 1 primer to the repair area. Refer to SOPM 20-41-02.

NOTES

- THIS REPAIR IS CATEGORY "A". REFER TO SRM 51-00-06 TO FIND THE DEFINITIONS OF THE DIFFERENT CATEGORIES OF REPAIRS.
- D = FASTENER DIAMETER
- USE A MINIMUM OF 2D AS EDGE MARGIN ON ALL FASTENERS UNLESS SPECIFIED OTHERWISE.
- KEEP SAME TYPE FASTENERS ABOVE THE REPAIR. DO NOT MIX RIVETS AND HI-LOKS.
- KEEP SAME TYPE FASTENERS BELOW THE REPAIR. DO NOT MIX RIVETS AND HI-LOKS.
- THE MAXIMUM PULL-UP PERMITTED IS 0.007 INCH BEFORE YOU INSTALL THE FASTENERS.
- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS.

[A] Make a filler shaped to fill the gap between the plate and the chem-milled frame web.

[B] Form the angle in the "O" condition and heat treat to T6. The angle should conform to the frame contour.

[C] If the filler is thicker than 0.025 inch, extend it one row of fasteners, beyond the repair plate.

[D] Install part 1, repair plate on the chem-milled side of the frame web, if the repair plate will not interfere with the stringer clips. This is possible when the repair plate is installed between stringer clips.

[E] For fasteners above or below the repair cutout only:

- If the thickness of the flange is less than or equal to 0.071 inch, use BACR15FT6KE() rivets in "A" and "B" locations.
- If the thickness of the flange is greater than 0.071 inch, use BACR15FT8KE() rivets in "A" locations and BACR15FT6KE() rivets in "B" locations. As an alternative, install BACB30MY6K() hex drive bolts with a BACC30M6 collar in all "A" and "B" locations.

[F] Do not stop any repair part at the stringer clip or at the shear tie end fasteners.

[G] In the chem-milled portion of the web only, you can use BACR15BB6AD() rivets if the thickness of the chem-milled portion is less than or equal to 0.050 inch.

FASTENER SYMBOLS

INITIAL FASTENER LOCATION. IF INITIAL FASTENERS ARE RIVETS, INSTALL THE SAME TYPE AND SIZE AS THE INITIAL FASTENERS. IF INITIAL FASTENERS ARE HI-LOKS, INSTALL THE SAME TYPE AND 1/64-INCH OVERSIZE DIAMETER FASTENERS AS THE INITIAL FASTENERS (UP TO 1/32-INCH DIAMETER OVERSIZE).

REPAIR FASTENER LOCATION. INSTALL A BACR15FT6KE() RIVET. [G]

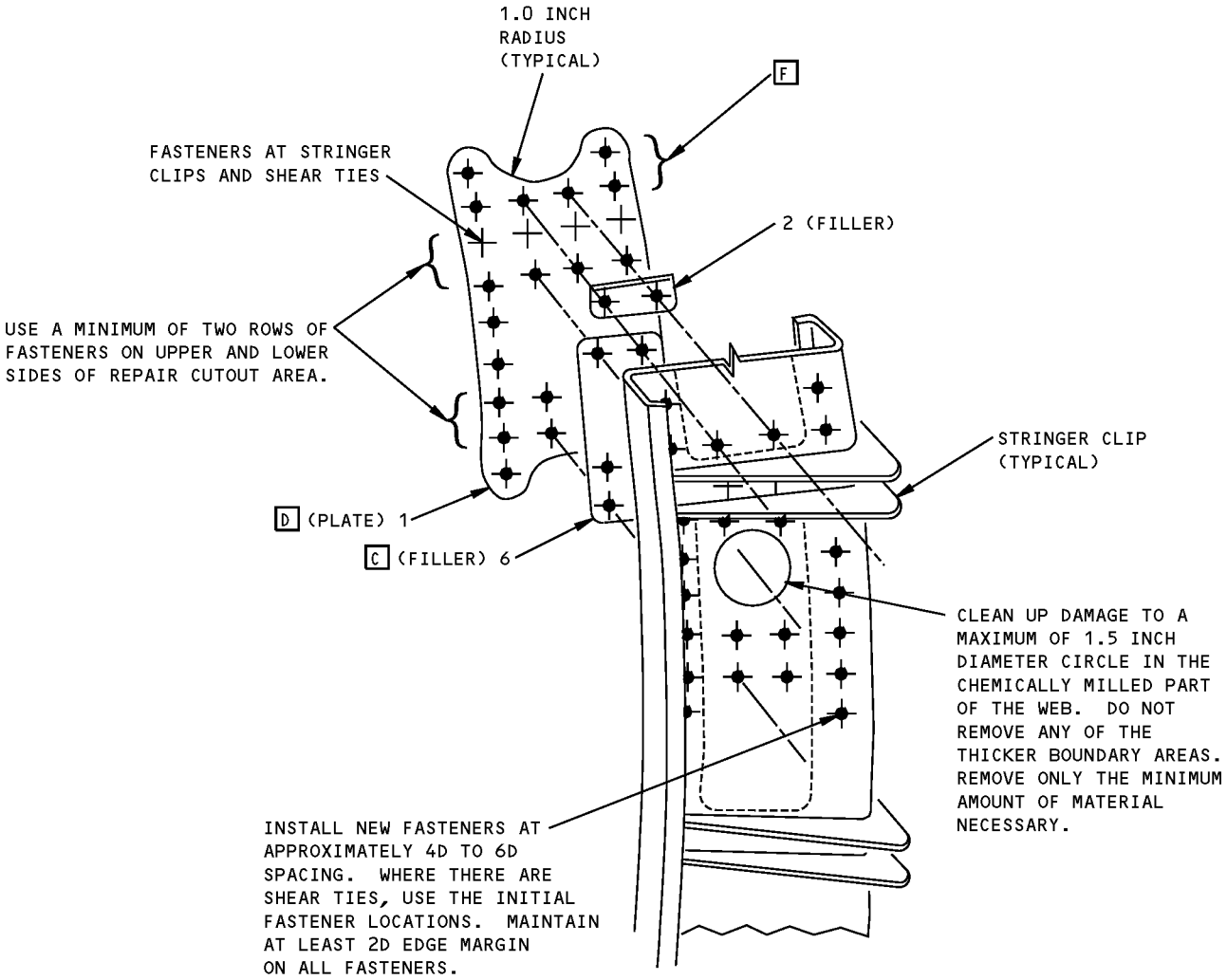
REPAIR FASTENER LOCATION. INSTALL A BACR15FT6KE() RIVET. [E] [G]

Chem - Milled Zee Frame Repair
Figure 201 (Sheet 1 of 6)

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	1	SAME MATERIAL AS THE INITIAL FRAME BUT ONE GAGE THICKER THAN THE CHEM-MILLED THICKNESS [D]
2	FILLER	AS REQ'D	7075-T73 [A]
3	ANGLE	1	SAME MATERIAL AS THE INITIAL FRAME BUT ONE GAGE THICKER THAN THE FLANGE THICKNESS [B]
4	FILLER	AS REQ'D	SAME MATERIAL AS THE INITIAL FRAME AT THE FLANGE
5	FILLER	1	SAME AS PART 1
6	FILLER	AS REQ'D	7075-T73 [A] [C]

TABLE 1

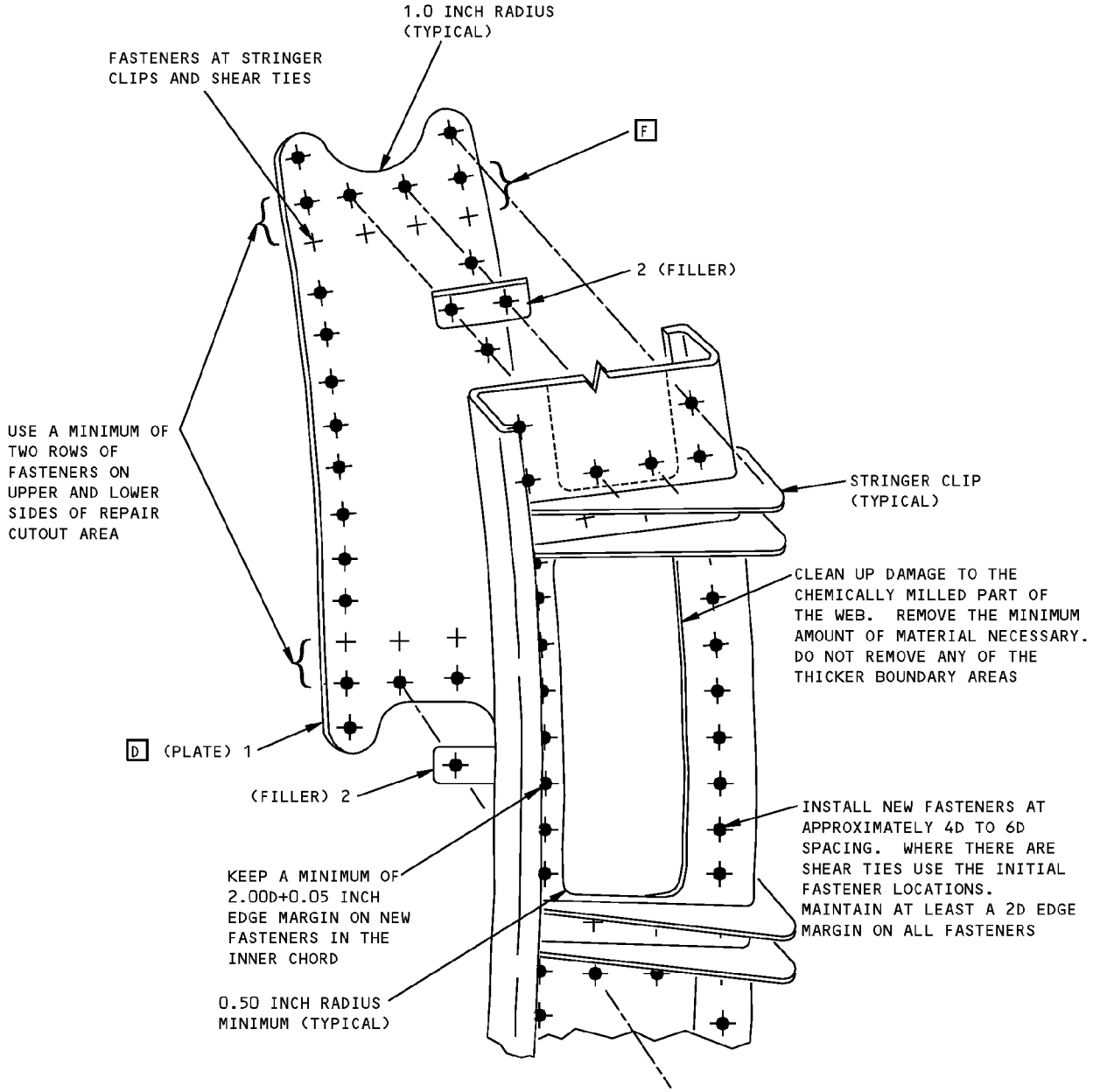
Chem - Milled Zee Frame Repair
Figure 201 (Sheet 2 of 6)



REPAIR TO CHEMICALLY MILLED WEB OF FRAME ONLY - SMALL DAMAGE

DETAIL I

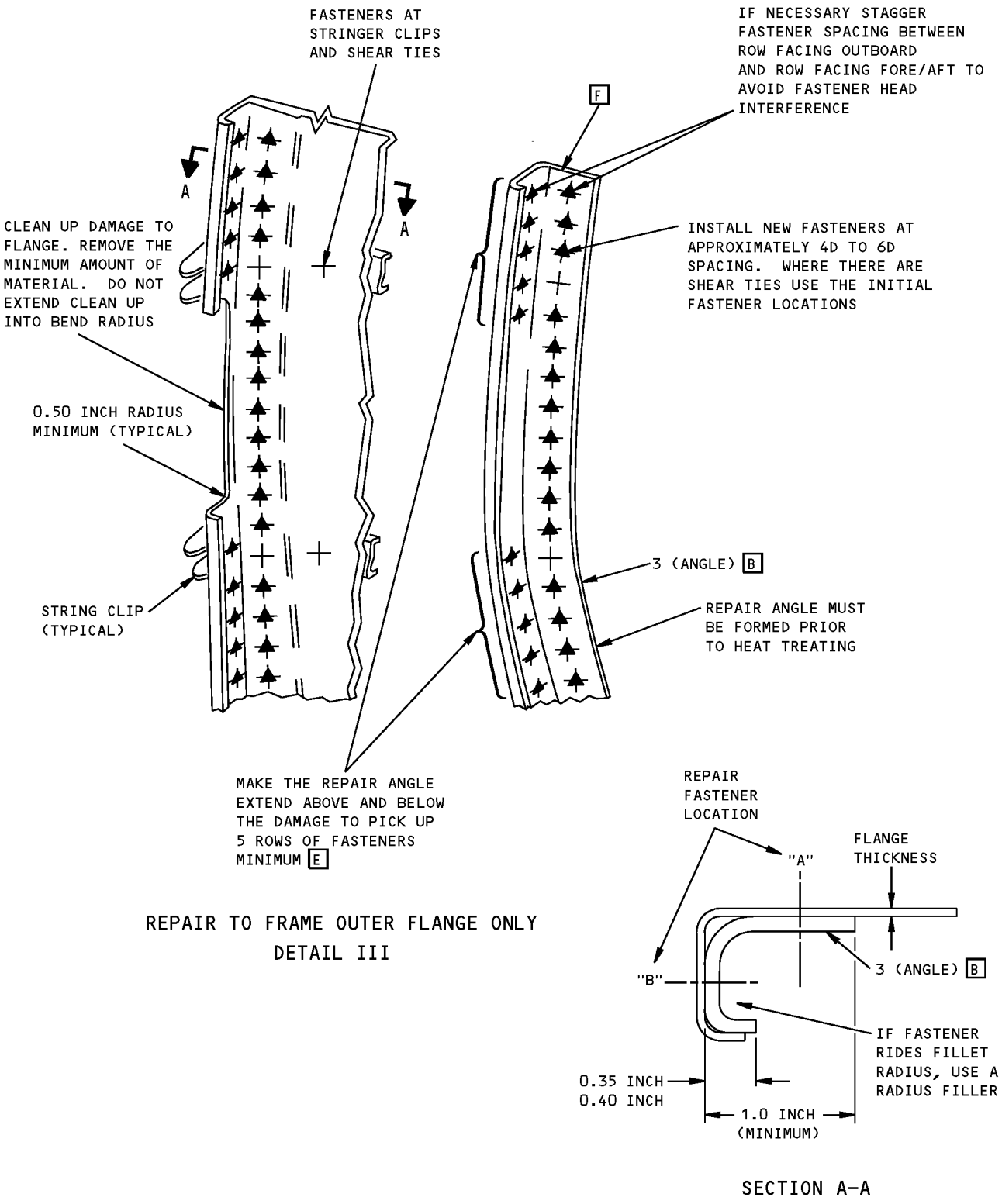
Chem - Milled Zee Frame Repair
Figure 201 (Sheet 3 of 6)



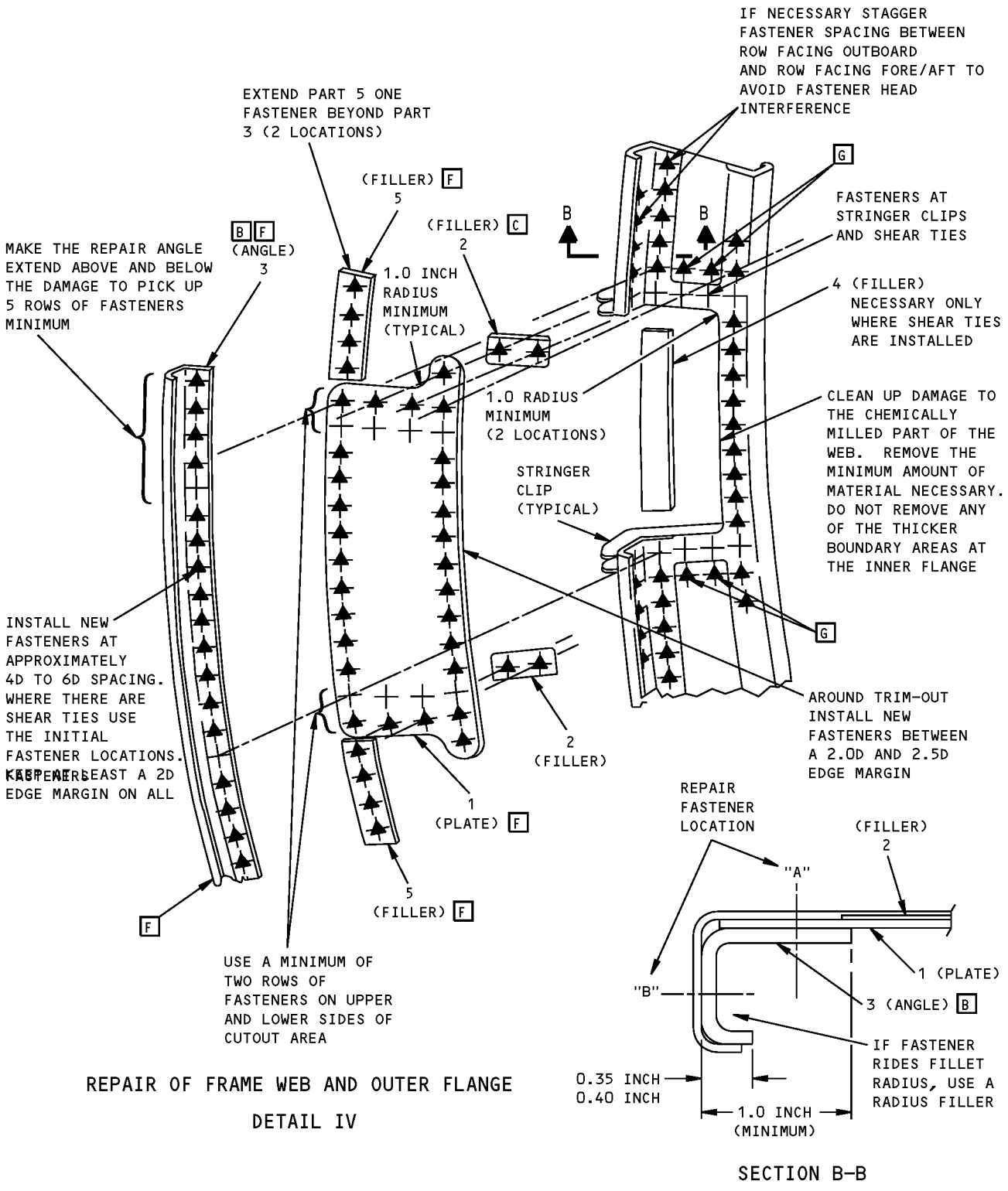
REPAIR TO CHEMICALLY MILLED WEB OF FRAME ONLY - LARGE DAMAGE

DETAIL II

Chem - Milled Zee Frame Repair
Figure 201 (Sheet 4 of 6)



Chem - Milled Zee Frame Repair
Figure 201 (Sheet 5 of 6)



Chem - Milled Zee Frame Repair
Figure 201 (Sheet 6 of 6)

REPAIR 2 - ZEE FRAME REPAIR - NOT CHEMICALLY MILLED

APPLICABILITY
THIS REPAIR IS APPLICABLE TO ZEE FRAMES WHICH ARE NOT CHEMICALLY MILLED.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. Cut and remove the damaged part of the frame and find the dimensions of the repair to be made. Remove the minimum amount of material required to make sure the damage is removed. Use Details I to IV.
3. Make the repair parts. See Table I.
4. Assemble the repair parts and drill the fastener holes.
5. Disassemble the repair parts.
6. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of all initial parts. Refer to SRM 51-20-01.
8. Apply two layers of BMS 10-11, Type 1 primer to the repair parts and to the bare surfaces of all initial parts. Refer to SOPM 20-41-02.
9. Install the repair parts wet with BMS 5-95 sealant between the mating surfaces.
10. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
11. Apply one layer of BMS 10-11, Type 1 primer to the repair area. Refer to SOPM 20-41-02.

NOTES

- THIS REPAIR IS CATEGORY "A". REFER TO SRM 51-00-06 TO FIND THE DEFINITIONS OF THE DIFFERENT CATEGORIES OF REPAIRS.
- D = FASTENER DIAMETER
- USE A MINIMUM OF 2D AS EDGE MARGIN ON ALL FASTENERS UNLESS SPECIFIED DIFFERENTLY.
- KEEP SAME TYPE FASTENERS ABOVE THE REPAIR. DO NOT MIX RIVETS AND HI-LOKS.
- KEEP SAME TYPE FASTENERS BELOW THE REPAIR. DO NOT MIX RIVETS AND HI-LOKS.
- THE MAXIMUM PULL-UP PERMITTED IS 0.007 INCH BEFORE YOU INSTALL THE FASTENERS.
- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS.

[A] If the frame thickness is greater than 0.071 inch, use BACB30MY6K() hex drive bolts with BACC30M6 collars.

[B] Form the angle in the "O" condition and heat treat to T6. The angle should conform to the frame contour.

[C] For fasteners above or below the repair cutout only:

- If the thickness of the flange is less than or equal to 0.071 inch, use BACR15FT6KE() rivets in "A" and "B" locations.
- If the thickness of the flange is greater than 0.071 inch, use BACR15FT8KE() rivets in "A" locations and BACR15FT6KE() rivets in "B" locations. As an alternative, install BACB30MY6K() hex drive bolts with a BACC30M6 collar in all "A" and "B" locations.

[D] Do not stop any repair part at the stringer clip or at the shear tie end fasteners.

FASTENER SYMBOLS

INITIAL FASTENER LOCATION. IF INITIAL FASTENERS ARE RIVETS, INSTALL THE SAME TYPE AND SIZE AS THE INITIAL FASTENERS. IF INITIAL FASTENERS ARE HI-LOKS, INSTALL THE SAME TYPE AND 1/64-INCH OVERSIZE DIAMETER FASTENERS AS THE INITIAL FASTENERS (UP TO 1/32-INCH DIAMETER OVERSIZE).

REPAIR FASTENER LOCATION. INSTALL A BACR15FT6KE() RIVET. [A]

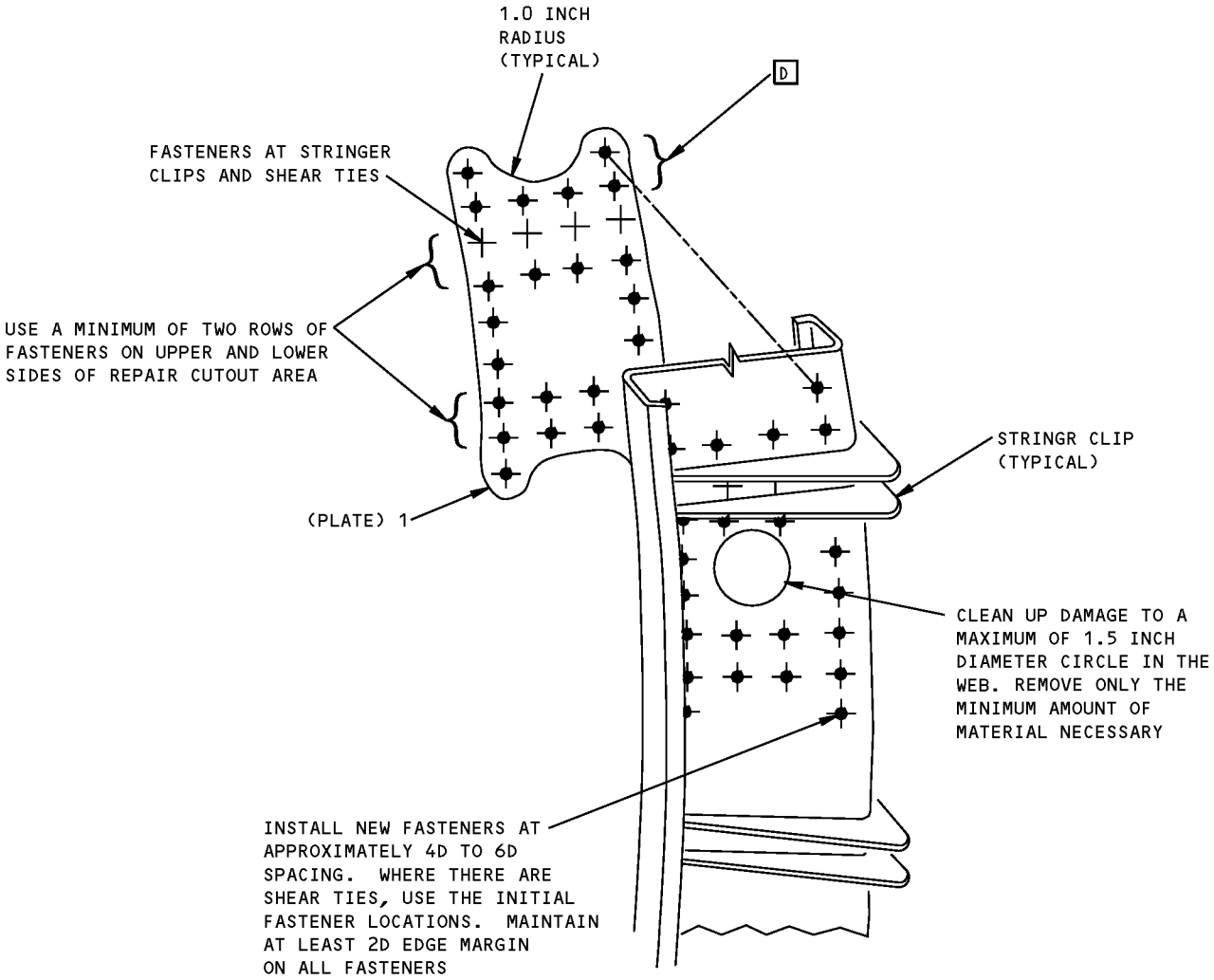
REPAIR FASTENER LOCATION. INSTALL A BACR15FT6KE() RIVET. [C]

Zee Frame Repair - Not Chemically Milled
Figure 201 (Sheet 1 of 6)

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	1	SAME MATERIAL AS THE INITIAL FRAME BUT ONE GAGE THICKER THAN THE DAMAGED MATERIAL THICKNESS
2	ANGLE	1	SAME MATERIAL AS THE INITIAL FRAME BUT ONE GAGE THICKER THAN THE FLANGE THICKNESS [B]
3	FILLER	AS REQ'D	SAME MATERIAL AND GAGE AS THE INITIAL FRAME AT THE FLANGE
4	FILLER	2	SAME AS PART 1

TABLE 1

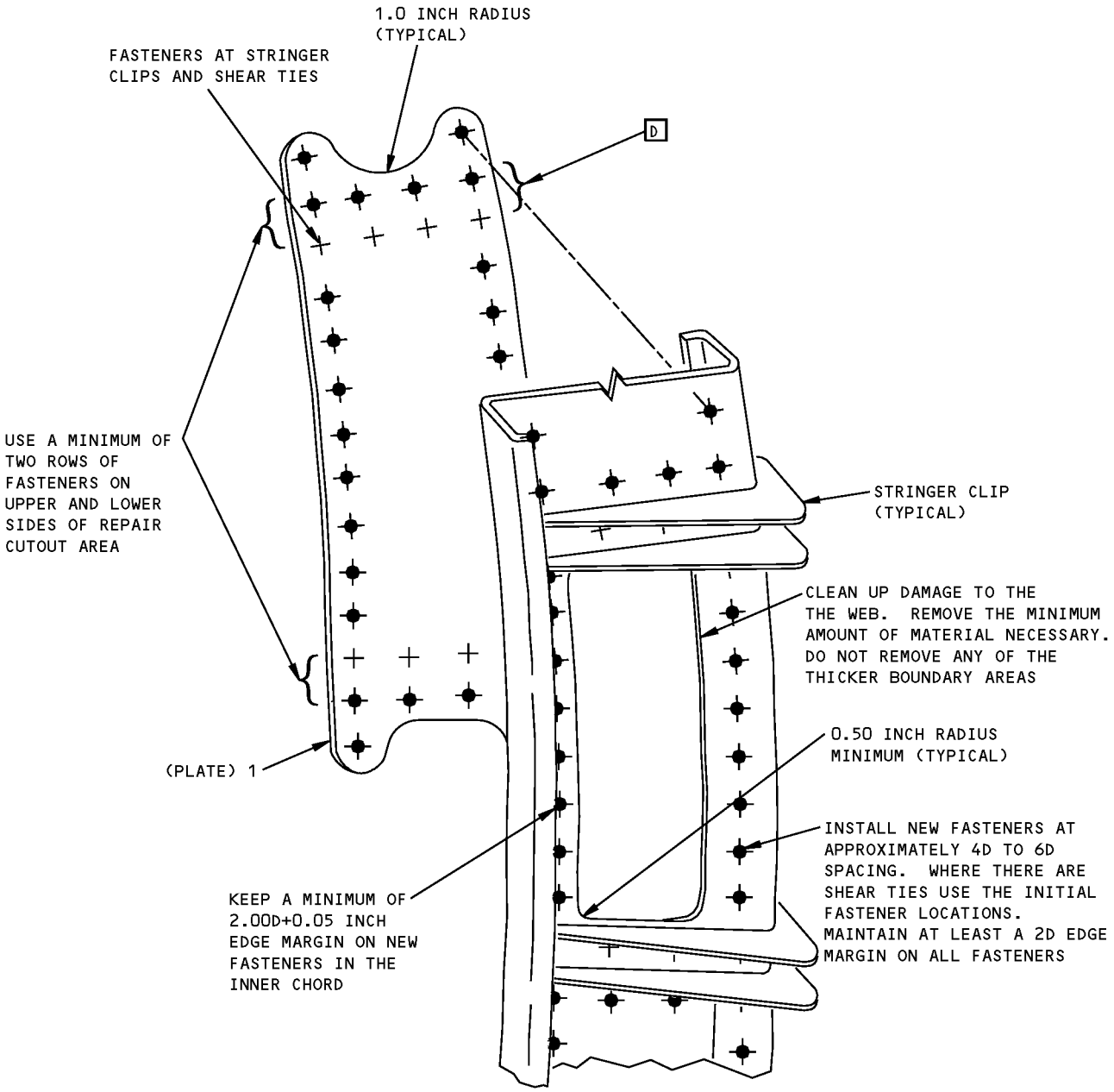
Zee Frame Repair - Not Chemically Milled
Figure 201 (Sheet 2 of 6)



REPAIR TO ZEE FRAME WEB ONLY – SMALL DAMAGE

DETAIL I

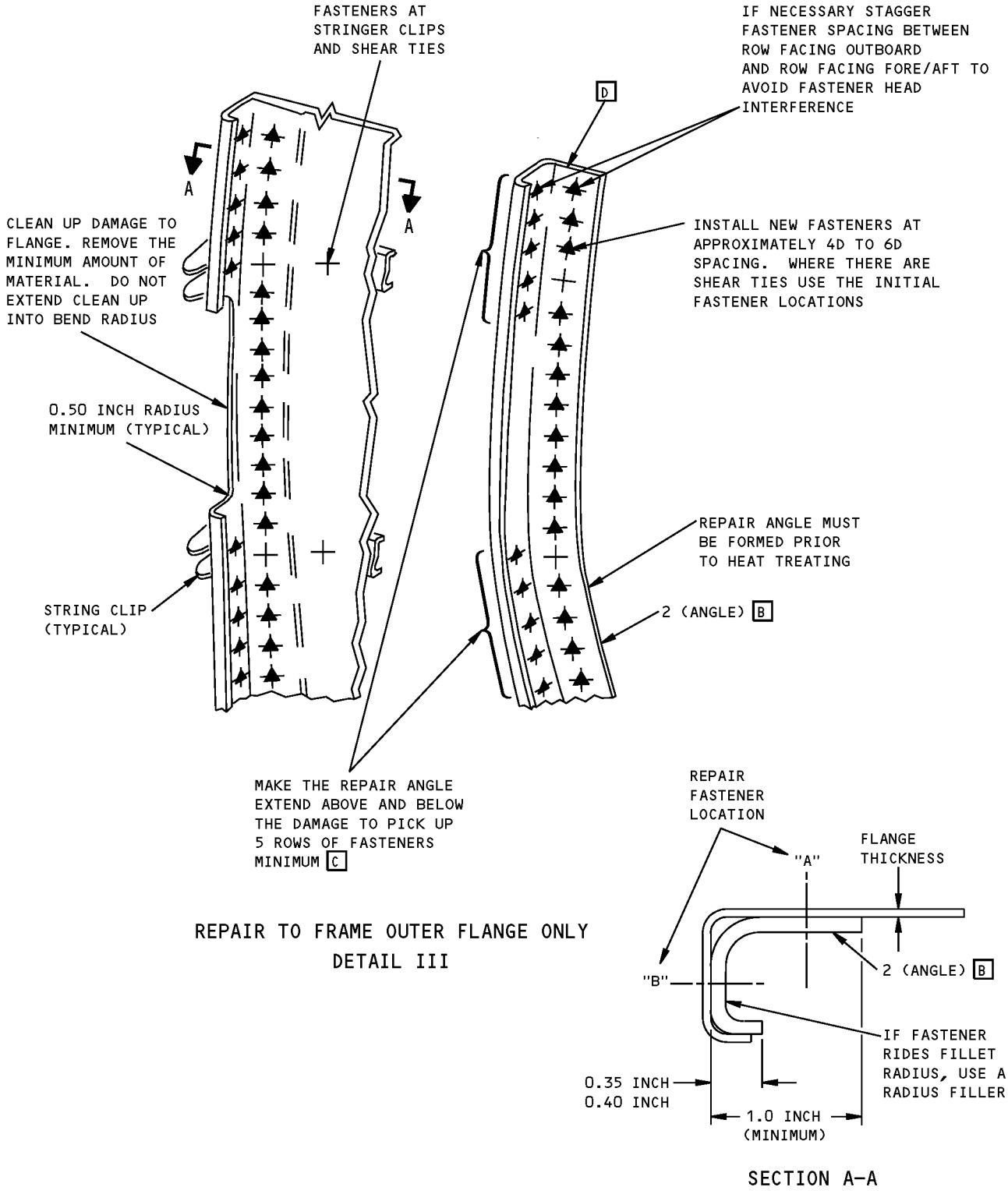
Zee Frame Repair - Not Chemically Milled
Figure 201 (Sheet 3 of 6)



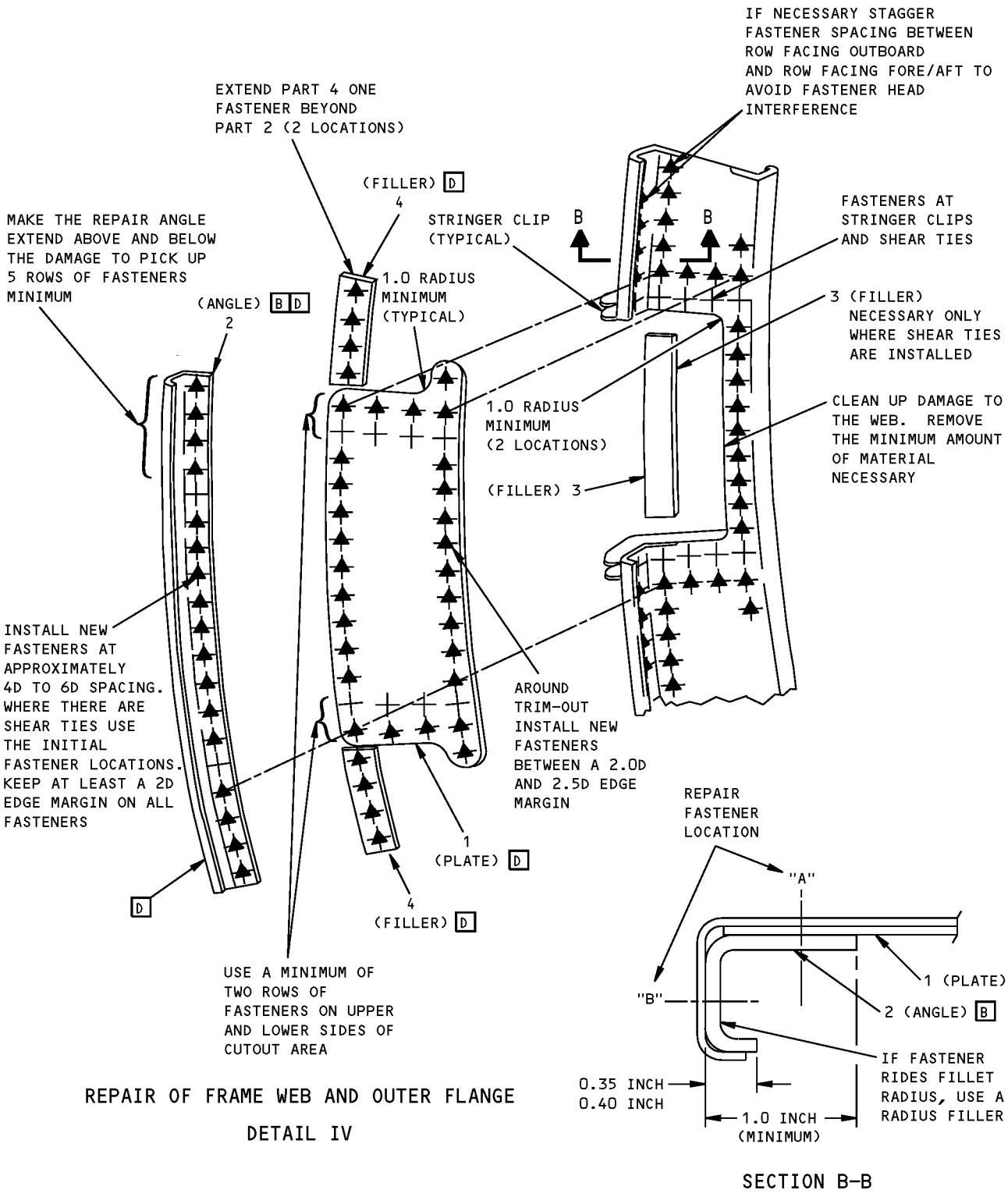
REPAIR TO ZEE WEB ONLY – LARGE DAMAGE

DETAIL II

Zee Frame Repair - Not Chemically Milled
Figure 201 (Sheet 4 of 6)



Zee Frame Repair - Not Chemically Milled
Figure 201 (Sheet 5 of 6)



Zee Frame Repair - Not Chemically Milled
Figure 201 (Sheet 6 of 6)

REPAIR 3 - BUILT UP FRAME REPAIR

APPLICABILITY
THIS REPAIR IS APPLICABLE TO BUILT-UP FRAMES ONLY.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. Cut and remove the damaged part of the frame and find the dimensions of the repair to be made. Remove the minimum amount of material required to make sure the damage is removed. Use Detail I and II.
3. Make the repair parts. See Table I.
4. Assemble the repair parts and drill the fastener holes.
5. Disassemble the repair parts.
6. Remove all nicks, scratches, gouges, burrs, and sharp edges from the initial and repair parts.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of all initial parts. Refer to SRM 51-20-01.
8. Apply one layer of BMS 10-11, Type 1 primer to the repair parts and to the bare surfaces of all initial parts, above the main passenger floor. Apply two layers of BMS 10-11, Type 1 primer to the repqair parts and to the bare surfaces of all initial parts below the main passenger floor. Refer to SOPM 20-41-02.
9. Install the repair parts wet with BMS 5-95 sealant between the mating surfaces.
10. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
11. Apply one layer of BMS 10-11, Type 1 finish to the repair area. Refer to SOPM 20-41-02.

NOTES

- THIS REPAIR IS CATEGORY "A". REFER TO SRM 51-00-06 TO FIND THE DEFINITIONS OF THE DIFFERENT CATEGORIES OF REPAIRS.
- D = FASTENER DIAMETER
- USE A MINIMUM OF 2D AS EDGE MARGIN ON ALL FASTENERS UNLESS SPECIFIED OTHERWISE.
- KEEP SAME TYPE FASTENERS ABOVE THE REPAIR. DO NOT MIX RIVETS AND HI-LOKS.
- KEEP SAME TYPE FASTENERS BELOW THE REPAIR. DO NOT MIX RIVETS AND HI-LOKS.
- THE MAXIMUM PULL-UP PERMITTED IS 0.007 INCH (0.18mm) BEFORE YOU INSTALL THE FASTENERS.
- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS.

[A] Make a filler shaped to fill the gap between the plate and the chem-milled frame web.

[B] If frame is chem-milled, use one gage thicker than the chem-milled thickness. If frame is not chem-milled, use one gage thicker than the frame thickness.

[C] If the filler is thicker than 0.025 inch, extend it one row of fasteners beyond repair plate wherever possible.

[D] Install part 1, repair plate on the chem-milled side of the frame web, if the repair plate will not interfere with the stringer clips. This is possible when the repair plate is installed between stringer clips.

[E] If the frame thickness is greater than 0.071 inch, use BACB30MY6K() hex drive bolts with BACC30M6 collars.

[F] Chem-milled web shown. If web is not chem-milled, do the repair in the same manner, except do not use fillers.

FASTENER SYMBOLS

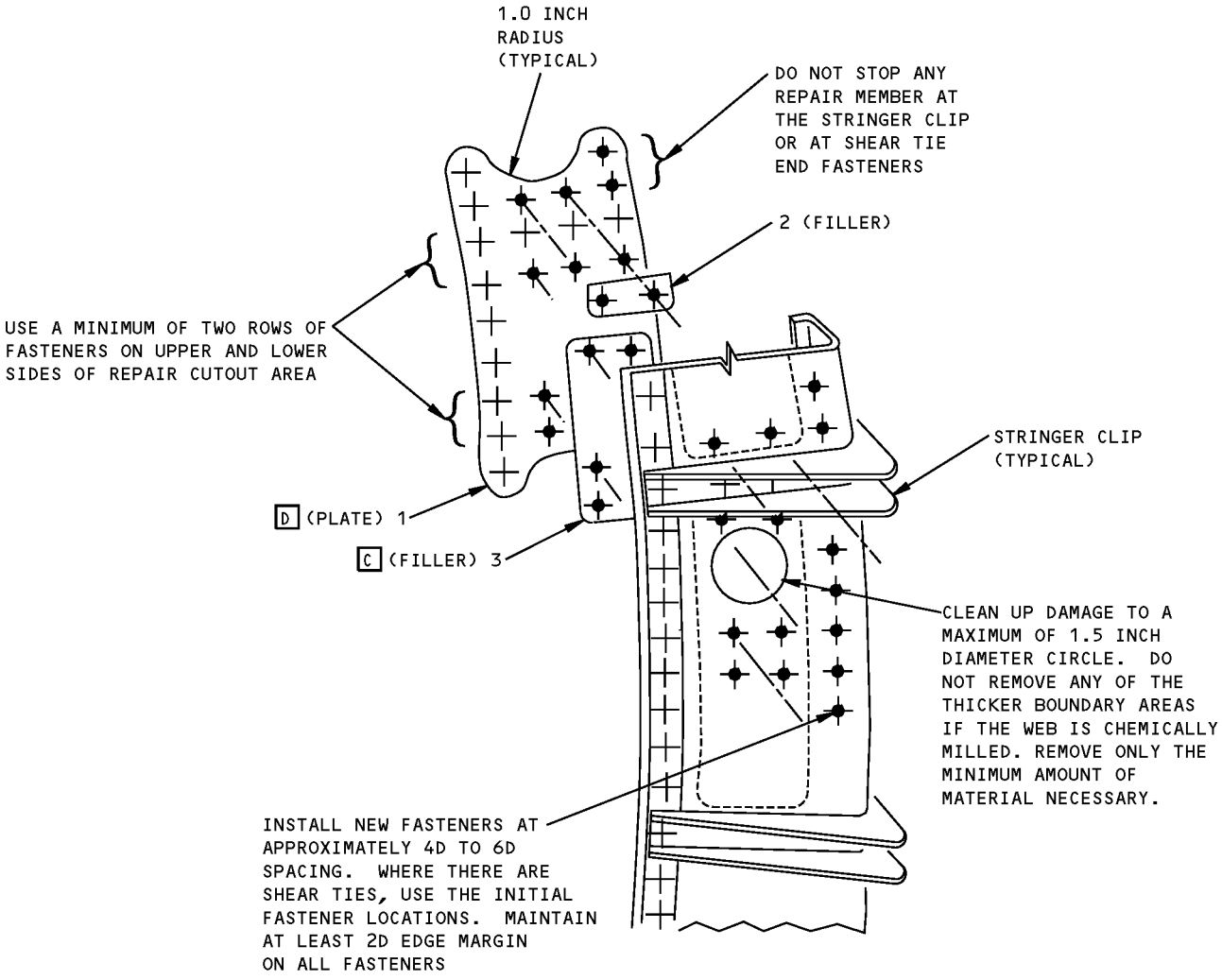
┼ INITIAL FASTENER LOCATION. IF INITIAL FASTENERS ARE RIVETS, INSTALL THE SAME TYPE AND SIZE AS THE INITIAL FASTENERS. IF INITIAL FASTENERS ARE HI-LOKS, INSTALL THE SAME TYPE AND 1/64-INCH OVERSIZE DIAMETER FASTENERS AS THE INITIAL FASTENERS (UP TO 1/32-INCH DIAMETER OVERSIZE).

✦ REPAIR FASTENER LOCATION. INSTALL A BACR15FT6KE() RIVET. [E]

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	1	SAME MATERIAL AS THE INITIAL FRAME BUT ONE GAGE THICKER [B] [D]
2	FILLER	AS REQ'D	7075-T73 [A] [C]
3	FILLER	AS REQ'D	7075-T73 [C]

TABLE 1

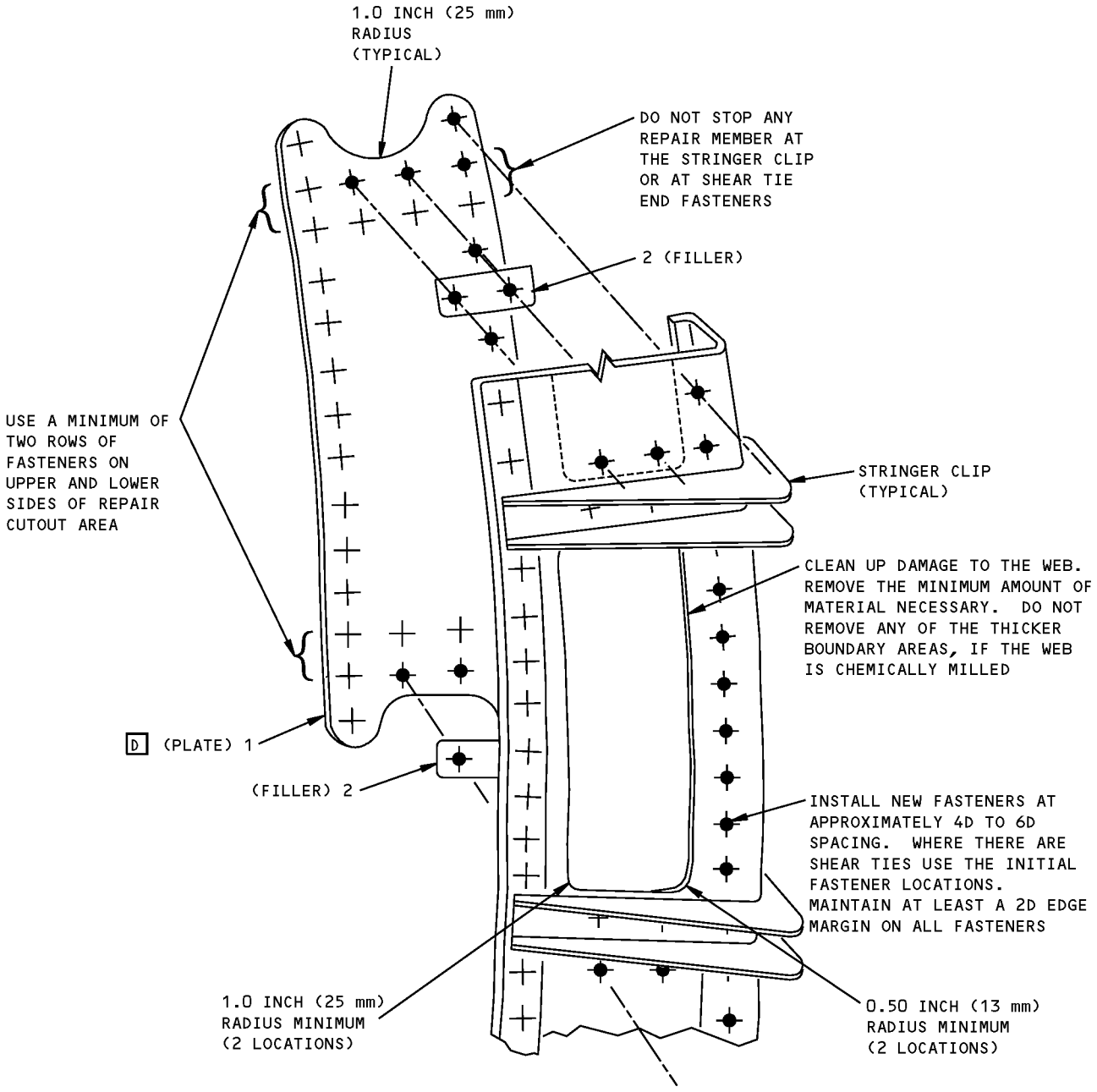
Built Up Frame Repair
Figure 201 (Sheet 1 of 3)



REPAIR TO WEB OF BUILT UP FRAME ONLY - SMALL DAMAGE

DETAIL I F

Built Up Frame Repair
Figure 201 (Sheet 2 of 3)



REPAIR TO WEB OF BUILT UP FRAME ONLY - LARGE DAMAGE

DETAIL II F

Built Up Frame Repair
Figure 201 (Sheet 3 of 3)

REPAIR 4 - CARGO FLOOR INBOARD CHORD "J" SECTION, BAC1506-3123, UPPER HORIZONTAL FLANGE REPAIR

APPLICABILITY

THIS REPAIR IS APPLICABLE TO CARGO FLOOR INBOARD CHORD, BAC1506-3123 "J" SECTION, UPPER HORIZONTAL FLANGE ONLY. THIS REPAIR MAY NOT BE APPLICABLE AT ALL FRAME LOCATIONS BECAUSE OF DIFFERENT CONFIGURATIONS. IF THIS REPAIR INTERFERES WITH THE EXISTING STRUCTURE, SOME REWORK MAY BE REQUIRED. CONTACT BOEING WHEN THIS HAPPENS.

REPAIR INSTRUCTIONS

1. Get access to the damaged area. Remove the floor panels as necessary. Refer to AMM 25-52.
2. Blend out the damaged flange of the inboard chord. Remove nutplates as required. Find the dimensions of the repair to be made and select a repair from Detail I.
3. Make the repair parts. See Table I.
4. Assemble the repair parts and drill the fastener holes.
5. Diassemble the repair parts.
6. Remove all nicks, scratches, gouges, burrs and sharp edges from the initial and repair parts.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
8. Apply two layers of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the initial parts. Refer to SOPM 20-41-02.
9. If a repair part extends into a nut plate location, fill the nutplate attachment holes in the floor inboard chord with 2117-T4 "AD" aluminum rivets installed wet with BMS 5-95 sealant. Flush plug the inboard chord with a light, 0.010/0.020 inch countersink to make sure the plug is retained. Microshave rivets flush. Refer to SRM 51-10-01.

   NOTE: Do not count the nut plate fastener as a repair fastener.

10. Install the nutplates BACN10KE3B2 on the repair part using BACR15BA3AD() rivets installed wet with BMS 5-95 sealant.
11. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
12. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
13. Apply a layer of BMS 3-23 corrosion inhibiting compound to the repair area. Refer to SRM 51-20-01.
14. Reinstall the floor panels. Make sure that floor panel attachment bolt threads protrude 1 1/2 to 2 threads from the nutplates in the repaired area. Refer to AMM 25-52.

NOTES

- THIS REPAIR IS CATEGORY "A". REFER TO SRM 51-00-06 TO FIND THE DEFINITIONS OF THE DIFFERENT CATEGORIES OF REPAIRS.
- D = FASTENER DIAMETER
- USE A MINIMUM OF 2D EDGE MARGIN ON ALL FASTENERS UNLESS SPECIFIED DIFFERENTLY
- THE MAXIMUM PULL-UP PERMITTED IS 0.007 INCH BEFORE YOU INSTALL THE FASTENERS
- INSTALL ALL NEW FASTENERS AT APPROXIMATELY 4D TO 6D SPACING
- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS
- THE CARGO FLOOR INNER CHORD UPPER HORIZONTAL FLANGE MUST BE VISIBLE FOR INSPECTION. IF MORE THAN ONE REPAIR EXISTS OR IS REQUIRED, THE REPAIRS MUST NOT OVERLAP.
- ONLY ONE COMPLETE FRAME INBOARD CHORD CUT AND SPLICE REPAIR IS PERMITTED FOR EACH FRAME. REPLACE THE ENTIRE CHORD IF MORE THAN ONE COMPLETE CUT-AND-SPLICE REPAIR IS REQUIRED.
- A MAXIMUM OF 3 REINFORCING-TYPE REPAIRS, WHICH USE ANGLES OR STRAPS, ARE PERMITTED ON ANY ONE FRAME INBOARD CHORD UPPER HORIZONTAL FLANGE. REPLACE THE ENTIRE CHORD IF MORE THAN 3 SUCH REPAIRS ARE NECESSARY.
- REPAIRS ARE NOT PERMITTED WITHIN 10 INCHES OF INTITAL FRAME SPLICES.
- IF A FRAME HAS A COMPLETE CUT-AND-SPLICE REPAIR, IT IS NOT PERMITTED TO HAVE A COMPLETE CUT-AND-SPLICE REPAIR ON THE ADJACENT FRAMES FORE AND AFT OF THIS FRAME. A MAXIMUM OF 2 REINFORCING-TYPE REPAIRS, WHICH USE ANGLES AND STRAPS, ARE PERMITTED ON THESE FRAMES. IF THE DAMAGE IS MORE THAN THESE LIMITS, REPLACE THE ENTIRE CHORD.

Cargo Floor Inboard Chord "J" Section, BAC1506-3123, Upper Horizontal Flange Repair
Figure 201 (Sheet 1 of 10)

NOTES (Continued)

A. ALL DAMAGE IS ASSUMED TO BE ON THE UPPER HORIZONTAL FLANGE ONLY, WITH NO DAMAGE ON THE REMAINING CROSS SECTION. CONTACT BOEING IF DAMAGE EXISTS ON THE REMAINING CROSS SECTION.

B. DAMAGE COULD BE IN THE FORWARD OR AFT SIDE OF THE VERTICAL WEB. FORWARD SIDE IS SHOWN.

C. "L" = THE LENGTH OF BLEND OUT IN INBOARD - OUTBOARD DIRECTION; "W" = THE LENGTH OF BLEND OUT IN THE FORE - AFT DIRECTION. "T" = THE THICKNESS OF THE BLEND OUT.

D. THE DAMAGE BLEND OUT CAN EXTEND INTO THE RADIUS IF NECESSARY. THE MAXIMUM MATERIAL REMOVED MUST BE LESS THAN OR EQUAL TO 0.010 INCHES.

E. DAMAGE COULD BE ON THE UPPER AND/OR LOWER SURFACE.

F. IF THE DEPTH OF THE COUNTERSINK IN THE INNER CHORD EXCEEDS 66% OF THE REMAINING THICKNESS, DO THE REPAIR AS GIVEN ION DETAIL V.

G. IF A FRAME WEB STIFFENER IS REMOVED TO INSTALL THIS REPAIR, FORM A NEW STIFFENER FROM THE SAME MATERIAL AND DIMENSIONS AS THE INITIAL PART IN THE "O" CONDITION. JOGGLE STIFFENER AT 6 TO 1 MINIMUM TO ACCOMMODATE REPAIR PART, HEAT TREAT TO T6 AND INSTALL THIS NEW STIFFENER ON THE REPAIR MEMBER.

H. THE MINIMUM EDGE MARGIN PERMITTED FOR PART 5, FILLER, IS 0.16 INCH. THE MINIMUM EDGE MARGIN PERMITTED FOR PART 1, ANGLE, IS 0.31 INCH.

I. THE MINIMUM EDGE MARGIN PERMITTED FOR PART 5, FILLER, IS 0.29 INCH. THE MINIMUM EDGE MARGIN PERMITTED FOR PART 4, ANGLE, IS 0.31 INCH.

J. CHAMFER OR RADIUS THIS CORNER OF THE REPAIR PART SUCH THAT IT DOES NOT COME IN CONTACT WITH THE "J" CHORD FILLET RADIUS.

K. MAKE SURE THAT THE ANGLE CAN BE INSTALLED WITH SUFFICIENT EDGE MARGIN AND THAT THE FASTENER COLLAR IS NOT INSTALLED ON THE ANGLE RADIUS.

L. DO NOT USE AN ANGLE INSTEAD OF THE STRAP. IT WILL REDUCE INSPECTABILITY.

M. USE PART 4 ANGLE AT LOCATIONS WHERE THERE ARE LOCAL VERTICAL LOADS APPLIED SUCH AS THE ROLLER TRAYS OR BALL MATS.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION

REPAIR FASTENER LOCATION. INSTALL A BACB30NW6K() HEX DRIVE BOLT WITH A BACC30M6 COLLAR.

INITIAL FASTENER LOCATION. REPLACE INITIAL 5/32 INCH RIVET WITH A BACB30MY6K() HEX DRIVE BOLT AND A BACC30M6 COLLAR. REPLACE INITIAL 6/32 INCH RIVET WITH A BACB30MY6K()Y, 1/32 OVERSIZE HEX DRIVE BOLT AND A BACC30R6 COLLAR. REPLACE INITIAL 6/32 INCH HEX DRIVE BOLT WITH A BACB30MY6K()X, 1/64 OVERSIZE, HEX DRIVE BOLT AND A BACC30M6 COLLAR.

REPAIR FASTENER LOCATION. INSTALL A BACB30NW5K() HEX DRIVE BOLT WITH A BACC30M5 COLLAR. F

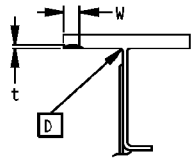
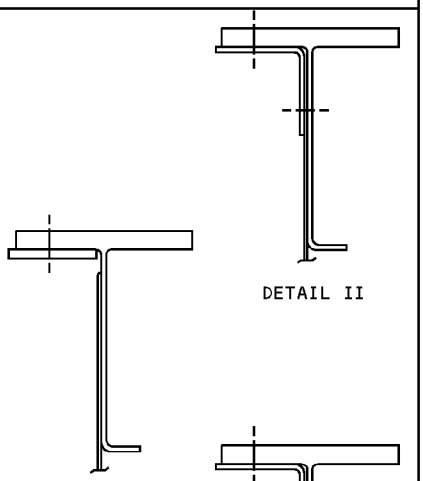
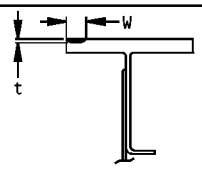
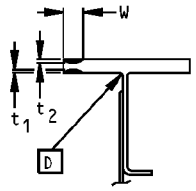
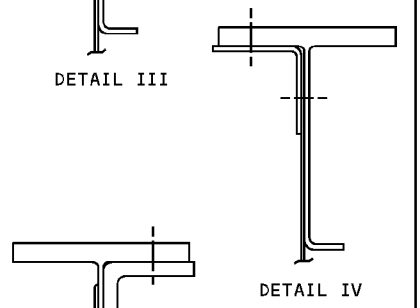
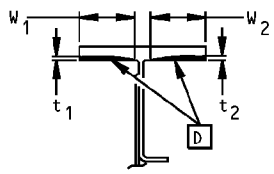
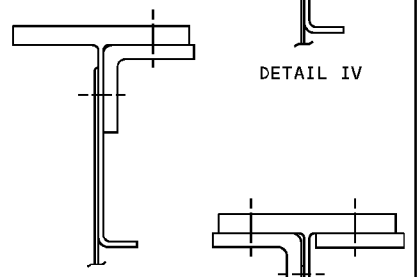
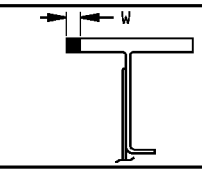
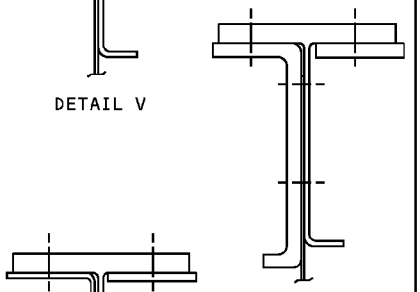
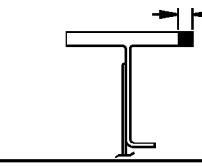
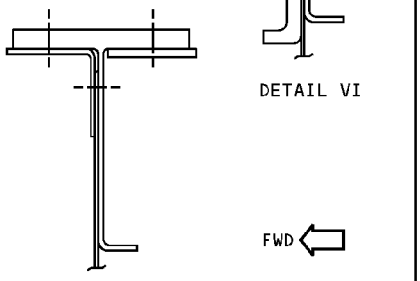
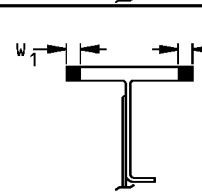
REPAIR FASTENER LOCATION. INSTALL A BACB30NW5K() HEX DRIVE BOLT WITH A BACC30M5 COLLAR. H

REPAIR FASTENER LOCATION. INSTALL A BACB30NW5K() HEX DRIVE BOLT WITH A BACC30M5 COLLAR. I

REPAIR MATERIAL

PART NO.	PART NAME	QTY	MATERIAL
1	ANGLE	1	0.063, 7075-T6 FORM ANGLE IN THE "O" CONDITION AND HEAT TREAT TO T6 CONDITION. K AS AN ALTERNATE YOU CAN USE BAC1503-2743, 7075-T6511 EXTRUSION. J
2	FILLER	AS REQUIRED	7075-T73, SHAPED TO FIT BLEND-OUT
3	STRAP	1	0.10, 7075-T6 SHEET. AS AN ALTERNATE, USE 0.125, 7075-76 SHEET
4	ANGLE	1	BAC1503-100018, 7075-T6511 EXTRUSION
5	FILLER	1	0.10, 7075-T73 SHAPED TO FIT BLEND-OUT
6	CHORD, "J" SECTION	1	BAC1506-3123, 7075-T6511 EXTRUSION
7	STRAP	2	0.125, 7075-T6
8	CHANNEL	2	MAKE FROM BAC1509-100682, 7075-T6511 EXTRUSION. AS AN ALTERNATIVE, YOU CAN USE BAC1509-100643 EXTRUSION.
9	STIFFENER	AS REQUIRED	G

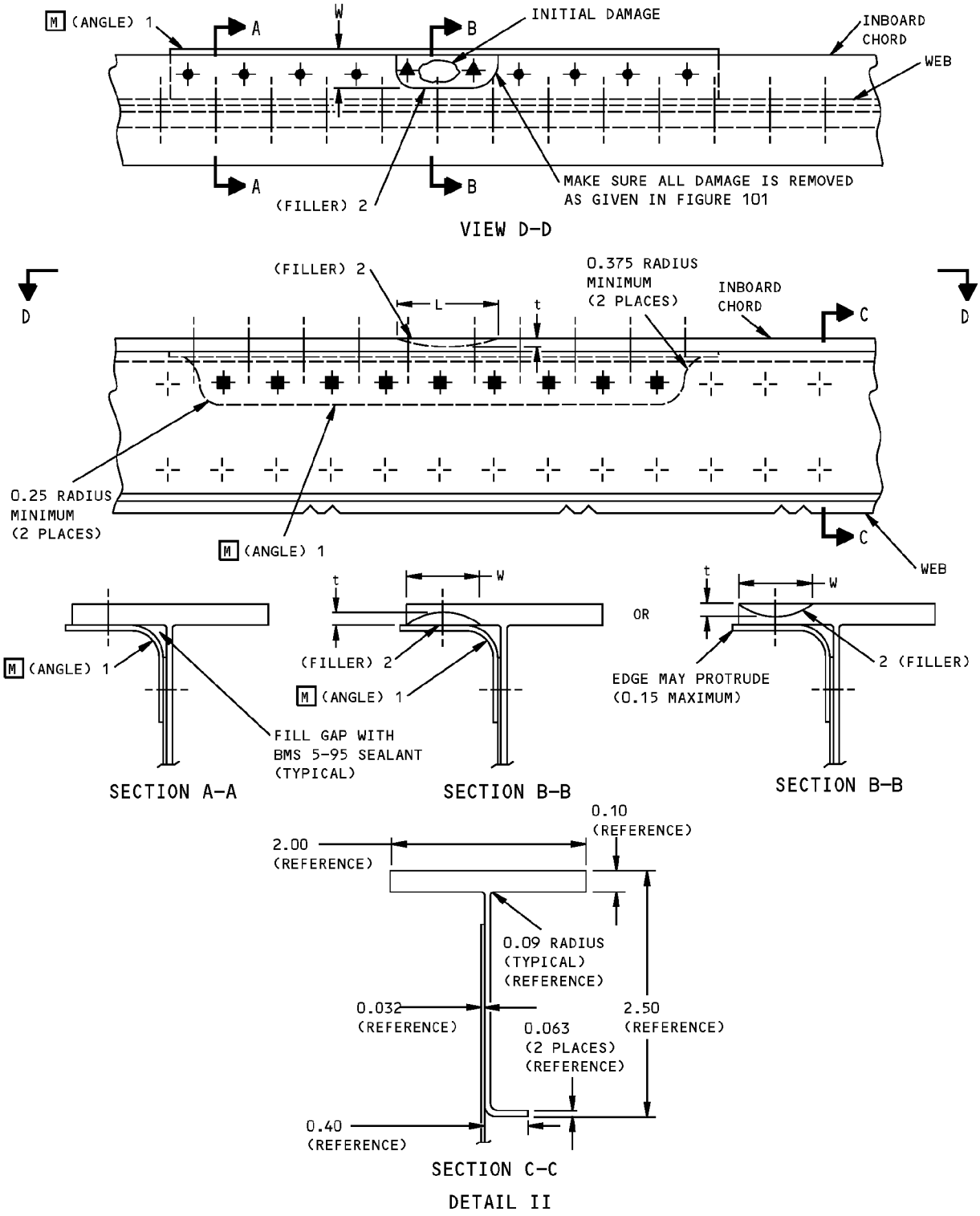
Cargo Floor Inboard Chord "J" Section, BAC1506-3123, Upper Horizontal Flange Repair
Figure 201 (Sheet 2 of 10)

DAMAGE CONFIGURATION	DAMAGE LIMITS AND ASSOCIATED REPAIRS [C]	REPAIR CONFIGURATION
 [B]	L≤ 1.00 0.025≤ t≤ 0.050 W≤ 0.90 } DETAIL III 1.00< L≤ 3.00 0.025≤ t≤ 0.050 W≤ 0.90 } DETAIL II L> 3.00 t> 0.050 W> 0.90 } DETAIL VI	
 [B]		
 [B]	L≤ 1.00 0.025≤ t_1+ t_2≤ 0.050 } DETAIL III W≤ 0.90 1.00< L≤ 3.00 0.025≤ t_1+ t_2≤ 0.050 } DETAIL II W≤ 0.90 L> 3.00 t_1+ t_2> 0.050 } DETAIL VI W> 0.90	
 [E]	L≤ 3.00 0.015≤ t_1, t_2≤ 0.030 W_1≤ 0.90, W_2≤ 0.90 } DETAIL VIII L> 3.00 t_1, t_2> 0.030 W_1> 0.90, W_2> 0.90 } DETAIL VI	
	L≤ 3.00 0.25≤ W≤ 0.40 } DETAIL IV 3.00< L≤ 6.00 0.40≤ W≤ 0.90 } DETAIL V	
	L> 6.00 W> 0.90 } DETAIL VI	
	L≤ 6.00 0.25≤ W_1≤ 0.90 W_2≤ 0.050 } DETAIL V L> 6.00 W_1> 0.90 W_2> 0.05 } DETAIL VI	

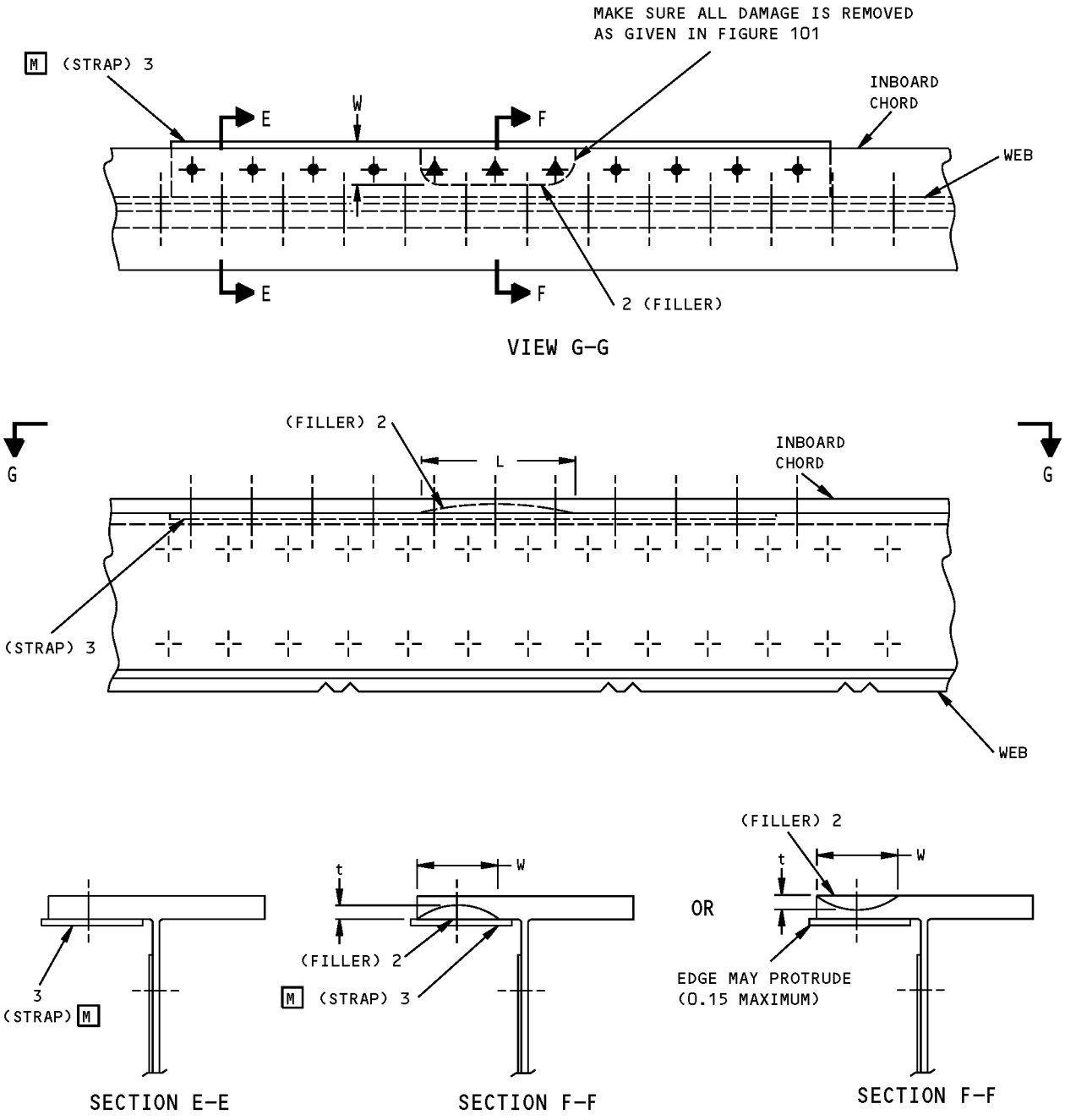
"J" SECTION UPPER FLANGE REPAIRS [A]

DETAIL I

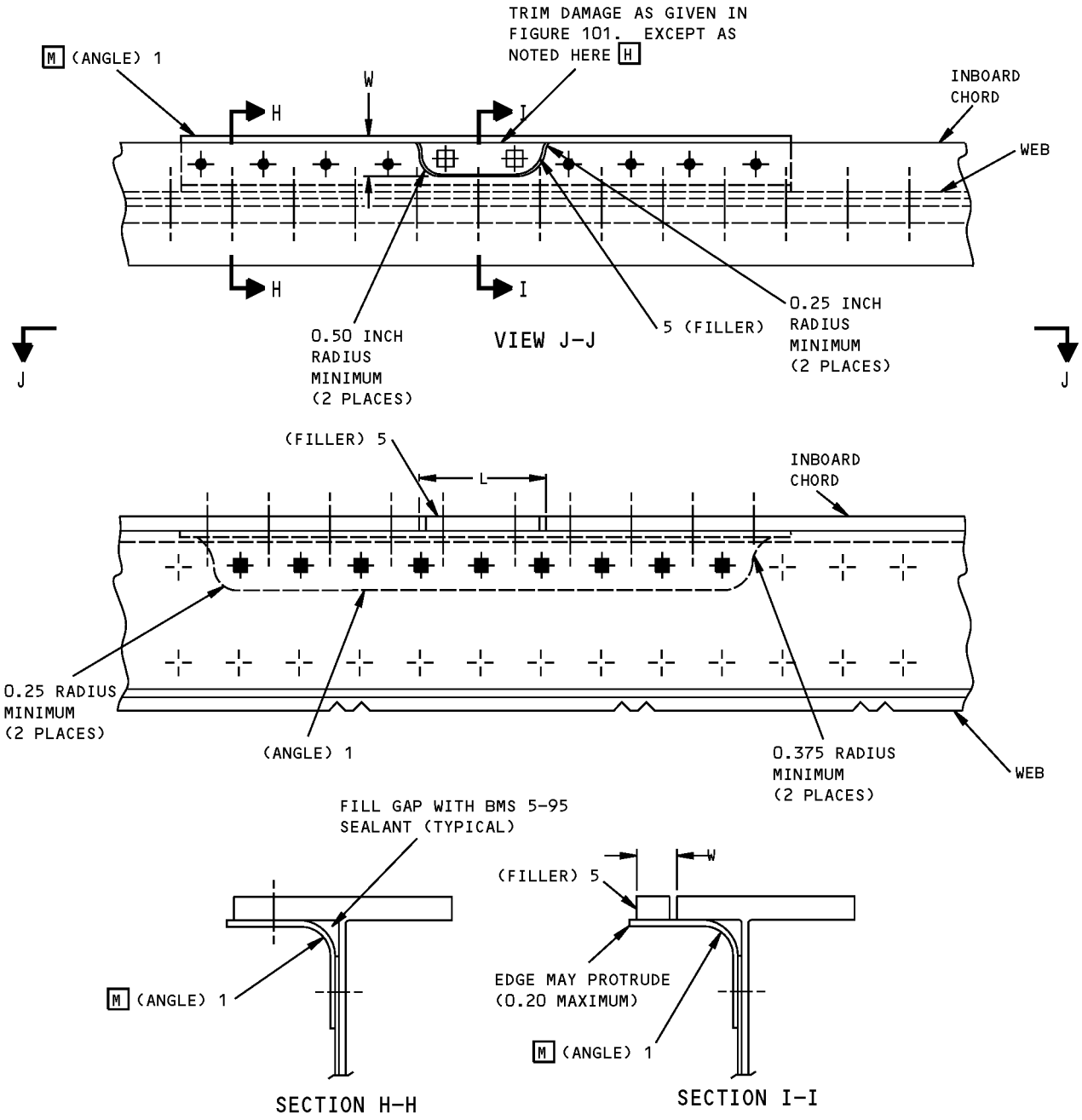
Cargo Floor Inboard Chord "J" Section, BAC1506-3123, Upper Horizontal Flange Repair
Figure 201 (Sheet 3 of 10)



Cargo Floor Inboard Chord "J" Section, BAC1506-3123, Upper Horizontal Flange Repair
Figure 201 (Sheet 4 of 10)

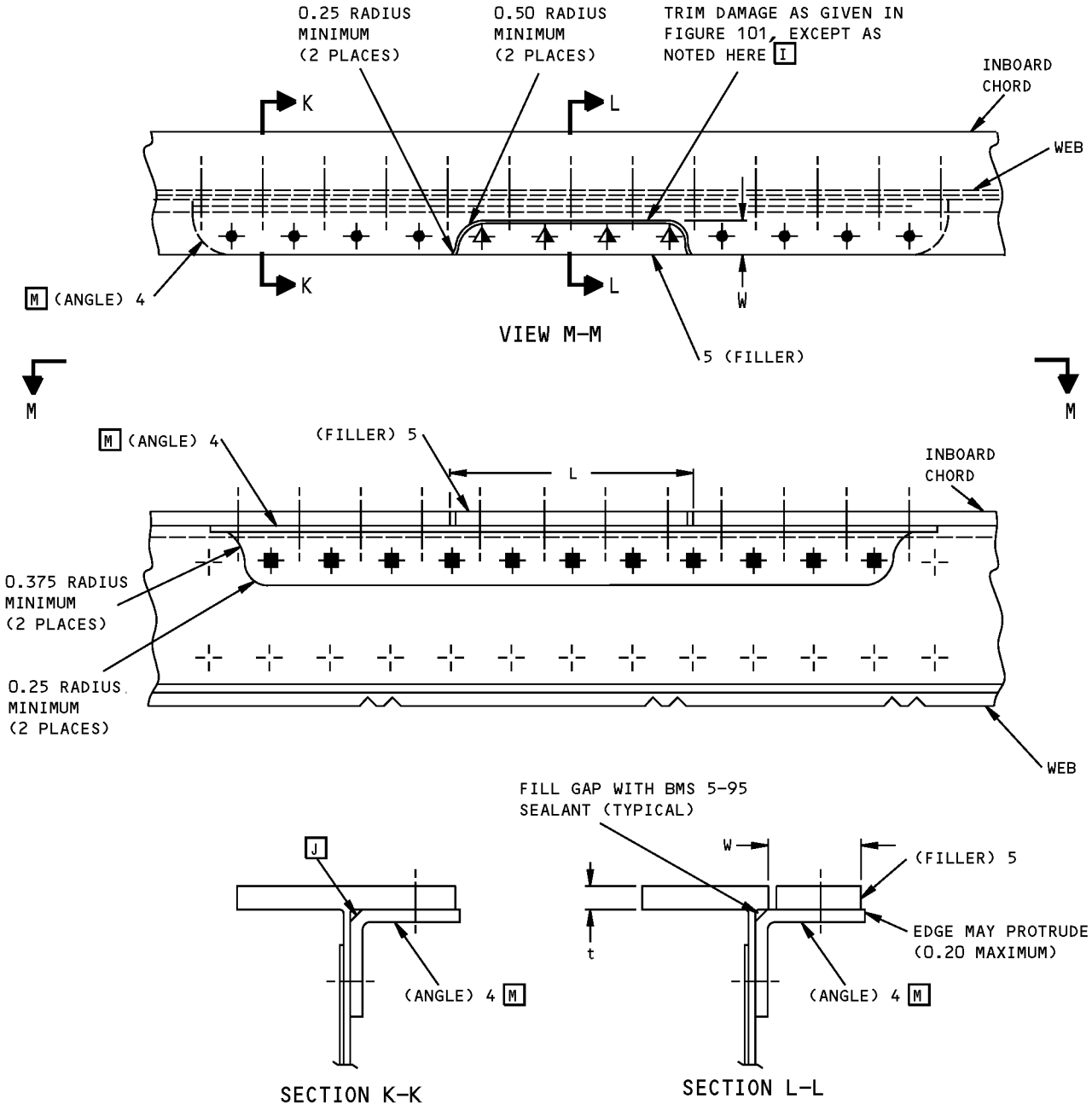


Cargo Floor Inboard Chord "J" Section, BAC1506-3123, Upper Horizontal Flange Repair
Figure 201 (Sheet 5 of 10)



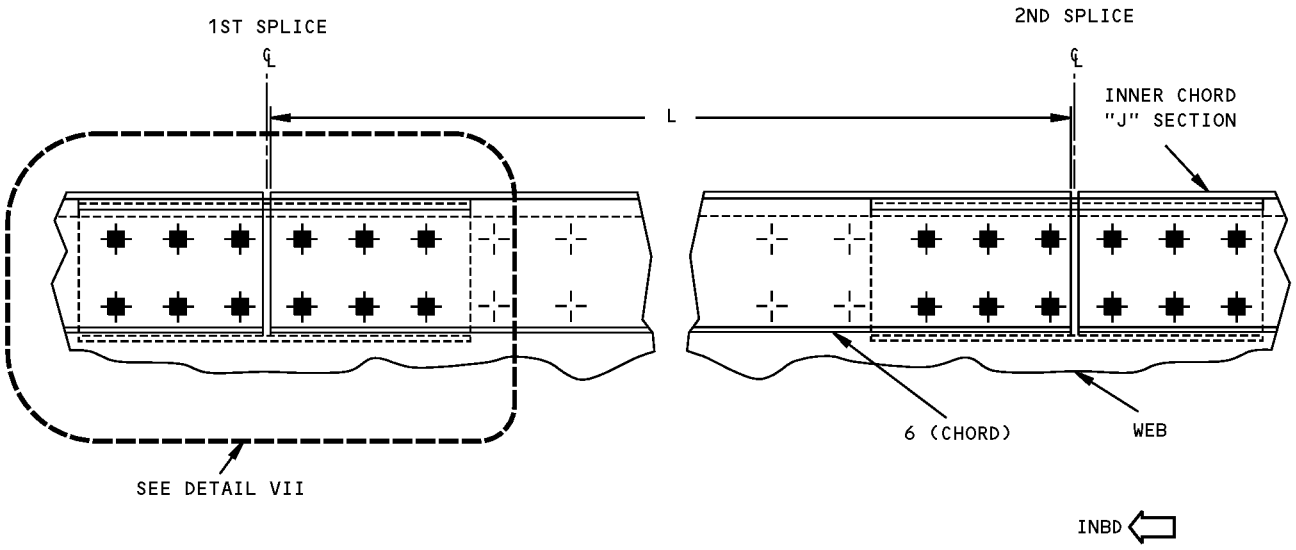
DETAIL IV

Cargo Floor Inboard Chord "J" Section, BAC1506-3123, Upper Horizontal Flange Repair
Figure 201 (Sheet 6 of 10)



DETAIL V

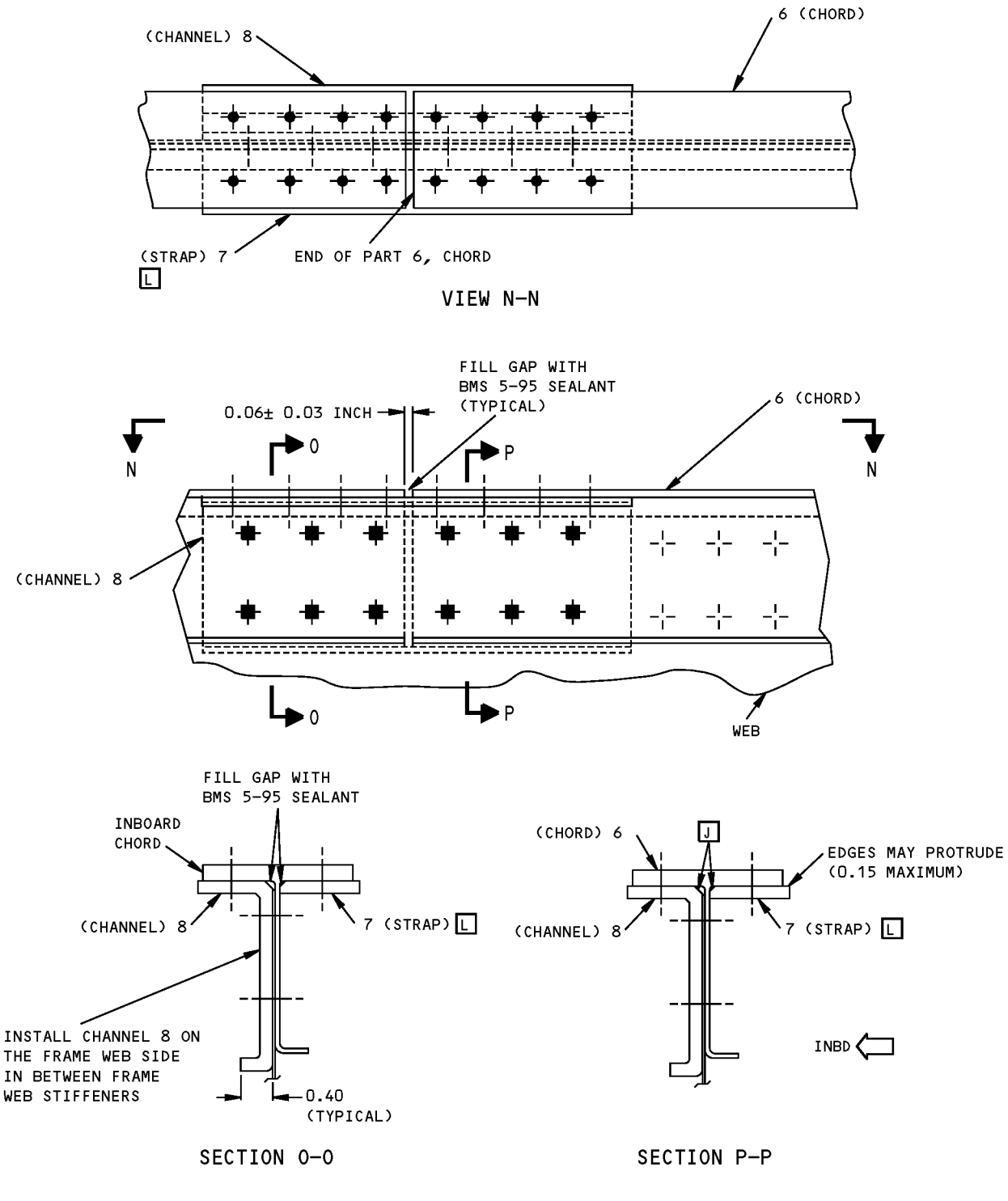
Cargo Floor Inboard Chord "J" Section, BAC1506-3123, Upper Horizontal Flange Repair
Figure 201 (Sheet 7 of 10)



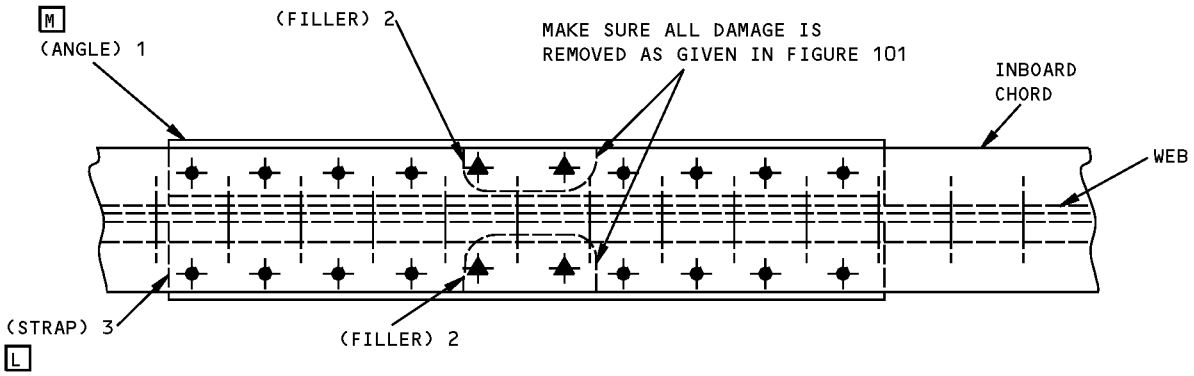
INNER CHORD FULL SPLICE

DETAIL VI

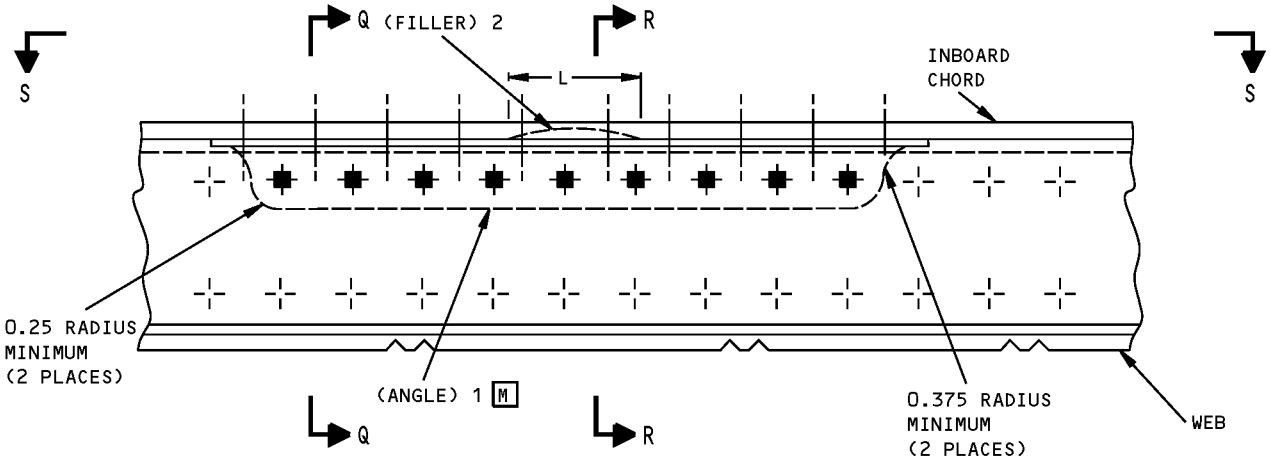
Cargo Floor Inboard Chord "J" Section, BAC1506-3123, Upper Horizontal Flange Repair
Figure 201 (Sheet 8 of 10)

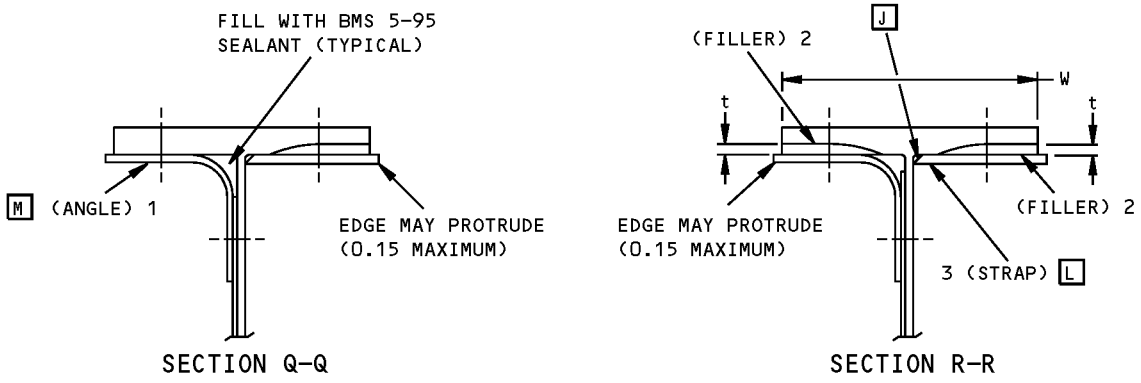


Cargo Floor Inboard Chord "J" Section, BAC1506-3123, Upper Horizontal Flange Repair
Figure 201 (Sheet 9 of 10)



VIEW S-S

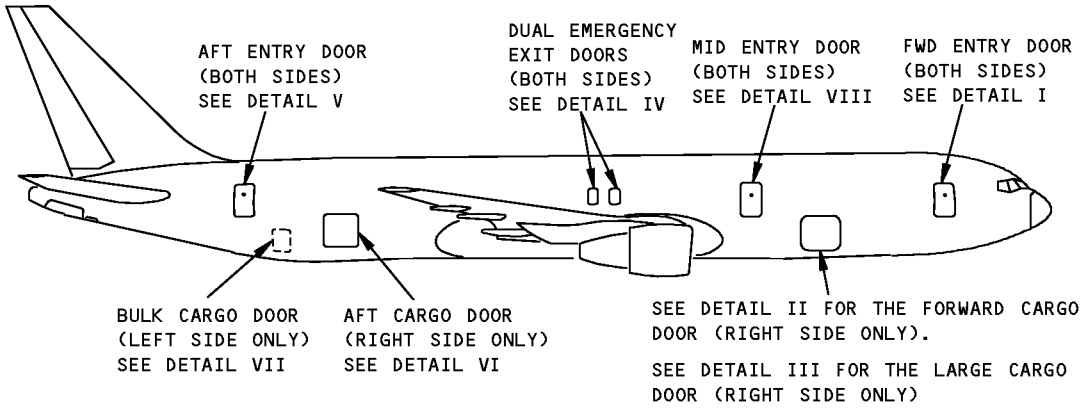




DETAIL VIII

Cargo Floor Inboard Chord "J" Section, BAC1506-3123, Upper Horizontal Flange Repair
Figure 201 (Sheet 10 of 10)

ALLOWABLE DAMAGE 1 - DOOR SURROUND STRUCTURE



NOTES

- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- REFINISH REWORKED AREAS AS SHOWN IN 51-21
- D = HOLE DIAMETER

[A] CRACKS NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAILS XI AND XV

[B] CRACKS NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAILS XI AND XVII

[C] CRACKS NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAILS XI AND XVI

[D] REMOVE DAMAGE AS SHOWN IN DETAILS XI, XII, XIV AND XV

[E] REMOVE DAMAGE AS SHOWN IN DETAILS XI, XII, XIV AND XVII

[F] REMOVE DAMAGE AS SHOWN IN DETAILS XI, XII, XIV AND XVI

[G] CLEAN OUT DAMAGE TO A 0.25 INCH MAXIMUM DIAMETER HOLE. THE DAMAGE MUST BE AT LEAST 4D AWAY FROM A HOLE, FASTENER, OR OTHER DAMAGE. THE EDGE OF THE DAMAGE MUST BE 2D AWAY FROM THE EDGE OF THE PART. INSTALL A 2117-T3 OR T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT IN THE OPEN HOLE. REFER TO SRM 51-40-05 FOR RIVET HOLE SIZES

[H] SEE DETAIL IX FOR FRAME CONFIGURATIONS

[I] FRAME LOCATED ONLY ON SAME SIDE AS DOOR HANDLE. DOOR HANDLE LOCATION IS PROVIDED AS OPERATOR OPTION

[J] SEE DETAIL X FOR SILL CONFIGURATIONS

[K] INSTALL LAMINATED SHIMS WITH BMS 5-95 SEALANT. GAP MUST BE LESS THAN OR EQUAL TO 0.003 INCH (0.08 mm) AFTER SHIMMING

[L] REMOVE DAMAGE AS SHOWN IN DETAILS XI, XII AND XVI

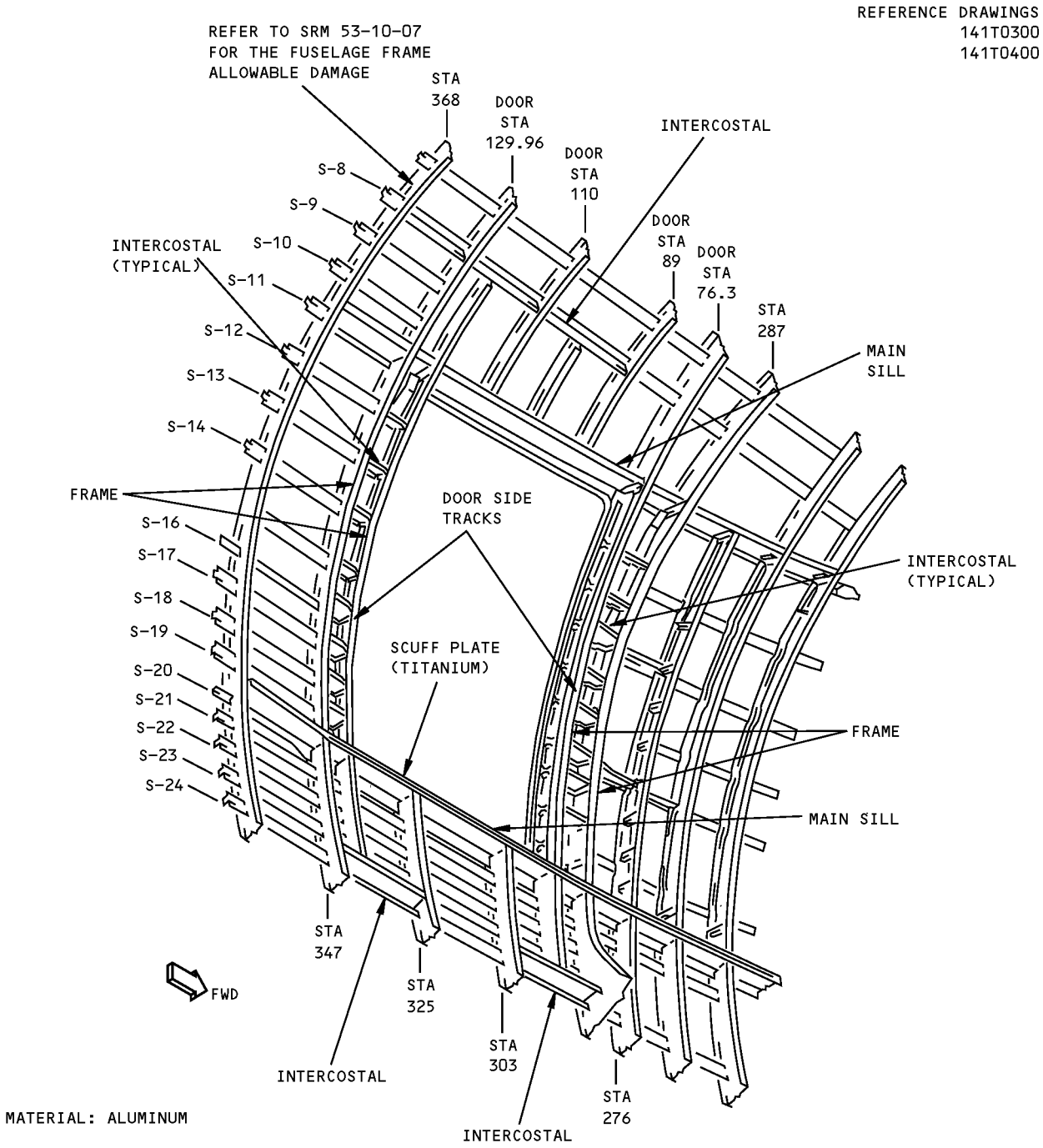
[M] HOLES AND PUNCTURES ARE PERMITTED UP TO A MAXIMUM DIAMETER OF 0.25 INCH. THE DAMAGE MUST BE A MINIMUM OF 1.0 INCH (25 mm) FROM OTHER DAMAGE, A HOLE OR A PART EDGE. CLEAN UP THE DAMAGE AND FILL THE HOLE WITH A BLIND RIVET AND MONEL SLEEVE, IF THERE IS ADEQUATE CLEARANCE BETWEEN THE SILL STRUCTURE AND THE SCUFF PLATE. IF THE SILL STRUCTURE IS ADJACENT TO THE SCUFF PLATE, DO NOT INSTALL THE RIVET. FILL THE HOLE WITH BMS 5-95 SEALANT. EXAMINE THE AREA REGULARLY AND REPAIR BY THE NEXT C-CHECK.

[N] REMOVE THE DAMAGE AS SHOWN IN DETAIL XVIII.

- NOTE: DO NOT SHOT PEEN OR FLAP PEEN THE SIDE TRACK.

  AFTER THE REPAIR IS ACCOMPLISHED, IDENTIFY AND CORRECT THE CAUSE OF DAMAGE TO THE SIDE TRACK.
- DO A DYE PENETRANT INSPECTION OF THE BLENDED AREA TO MAKE SURE ALL OF THE DAMAGE HAS BEEN REMOVED. REFER TO SOPM 20-20-02.
- APPLY A CHEMICAL CONVERSION COATING TO THE BARE SURFACES OF THE TRACK. REFER TO SRM 51-20-01.
- APPLY A LAYER OF BMS 10-11, TYPE I PRIMER. REFER TO SOPM 20-41-02.
- APPLY A LAYER OF BMS10-11 TYPE II ENAMEL. REFER TO SOPM 20-41-02.
- APPLY A FILM OF BMS 3-33 GREASE OR EQUIVALENT FOR TRACK LUBRICATION.

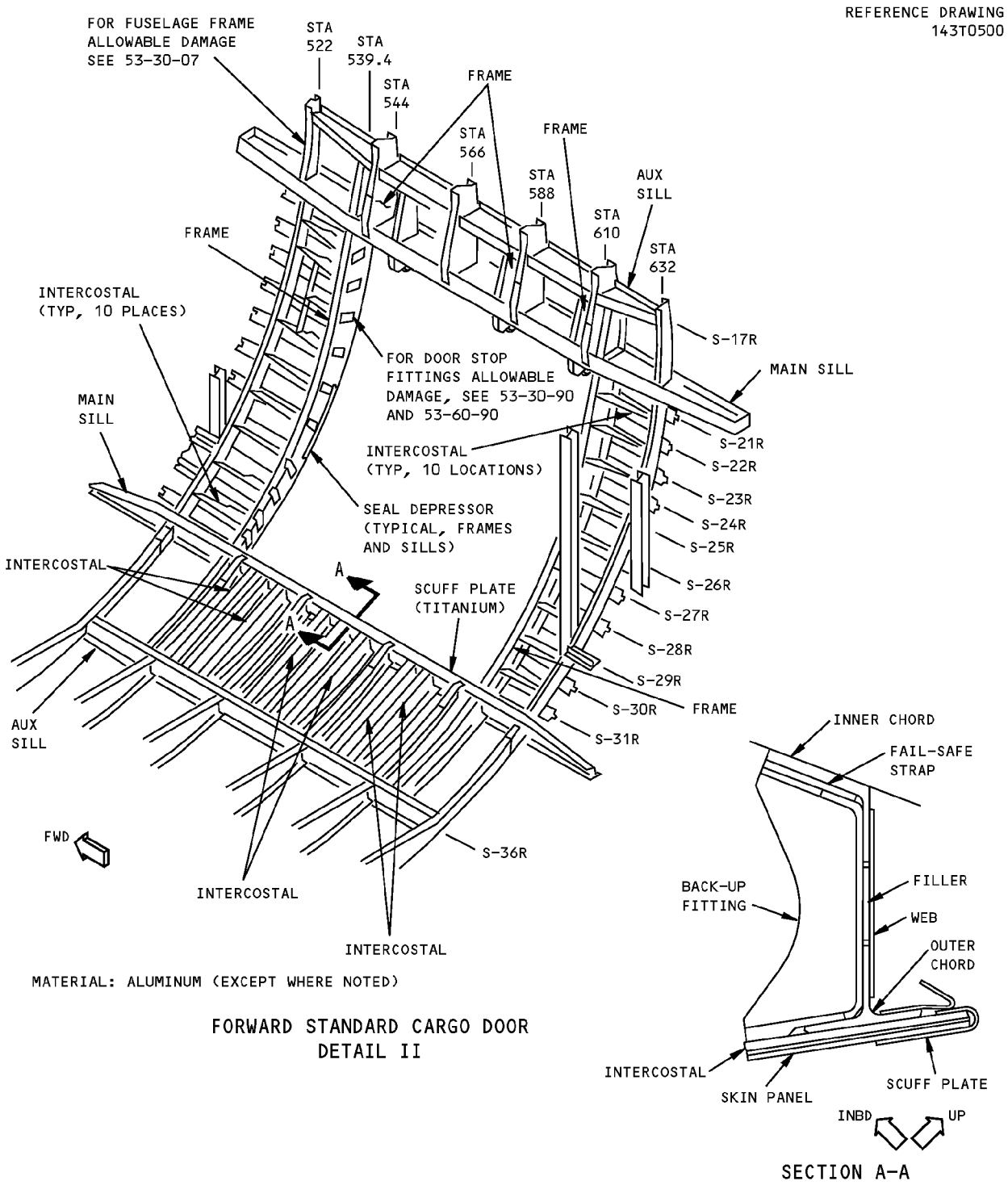
Door Surround Structure Allowable Damage
Figure 101 (Sheet 1 of 16)



LEFT SIDE IS SHOWN, RIGHT SIDE IS SIMILAR

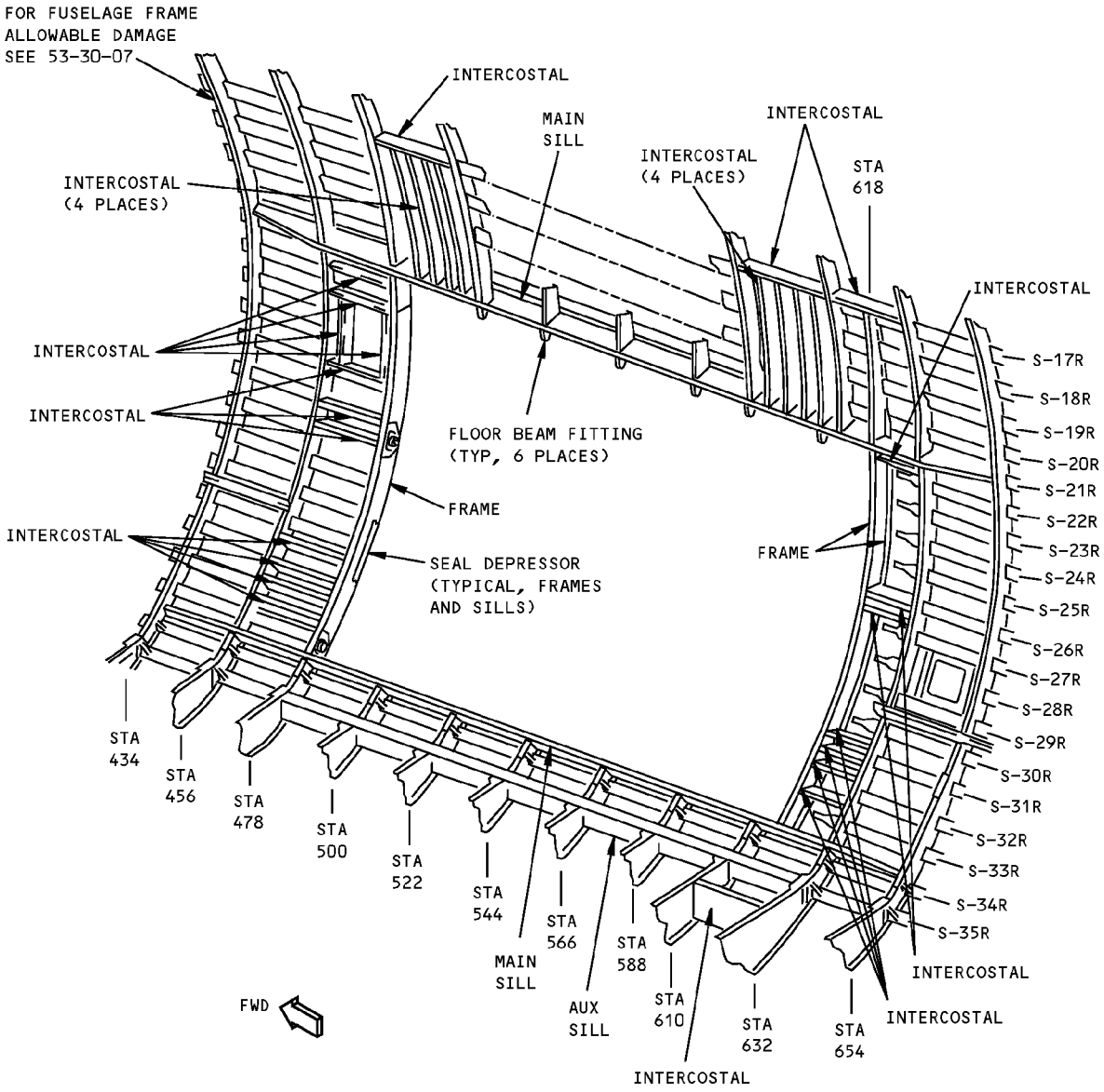
FORWARD ENTRY DOOR
DETAIL I

Door Surround Structure Allowable Damage
Figure 101 (Sheet 2 of 16)



Door Surround Structure Allowable Damage
Figure 101 (Sheet 3 of 16)

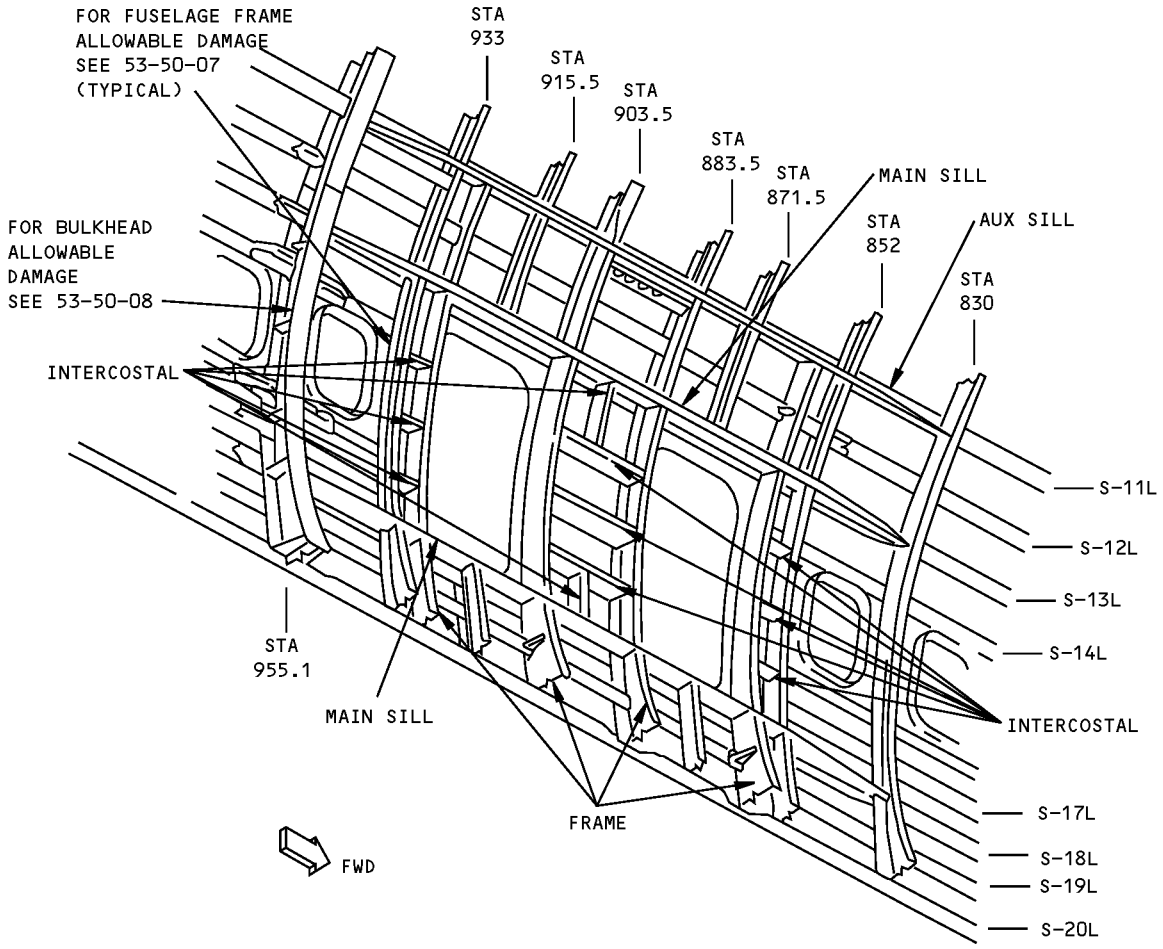
REFERENCE DRAWING
143T0500



MATERIAL: ALUMINUM

LARGE CARGO DOOR
DETAIL III

Door Surround Structure Allowable Damage
Figure 101 (Sheet 4 of 16)

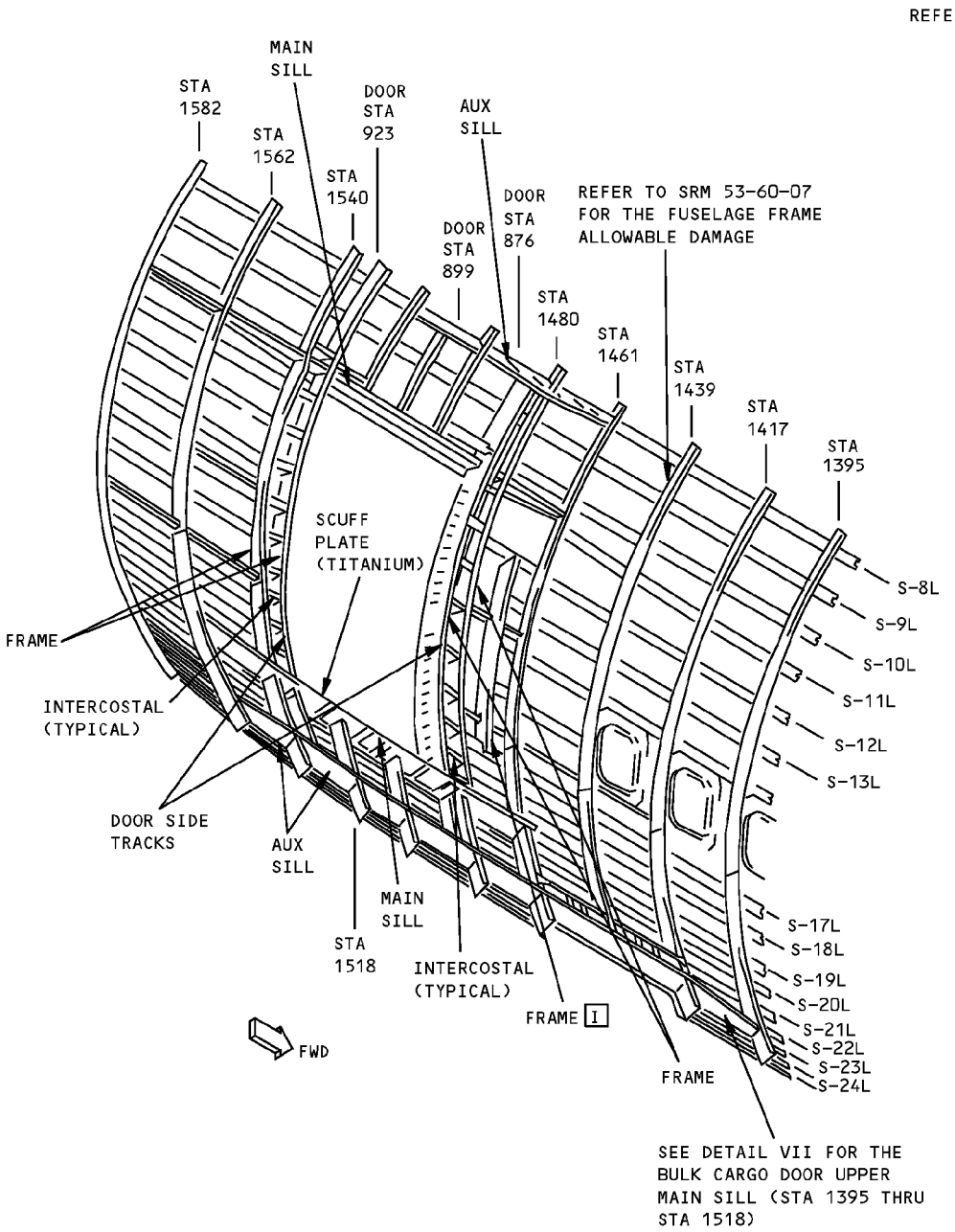


MATERIAL: ALUMINUM

EMERGENCY EXIT DOOR
LEFT SIDE SHOWN - RIGHT SIDE SIMILAR

DETAIL IV

Door Surround Structure Allowable Damage
Figure 101 (Sheet 5 of 16)

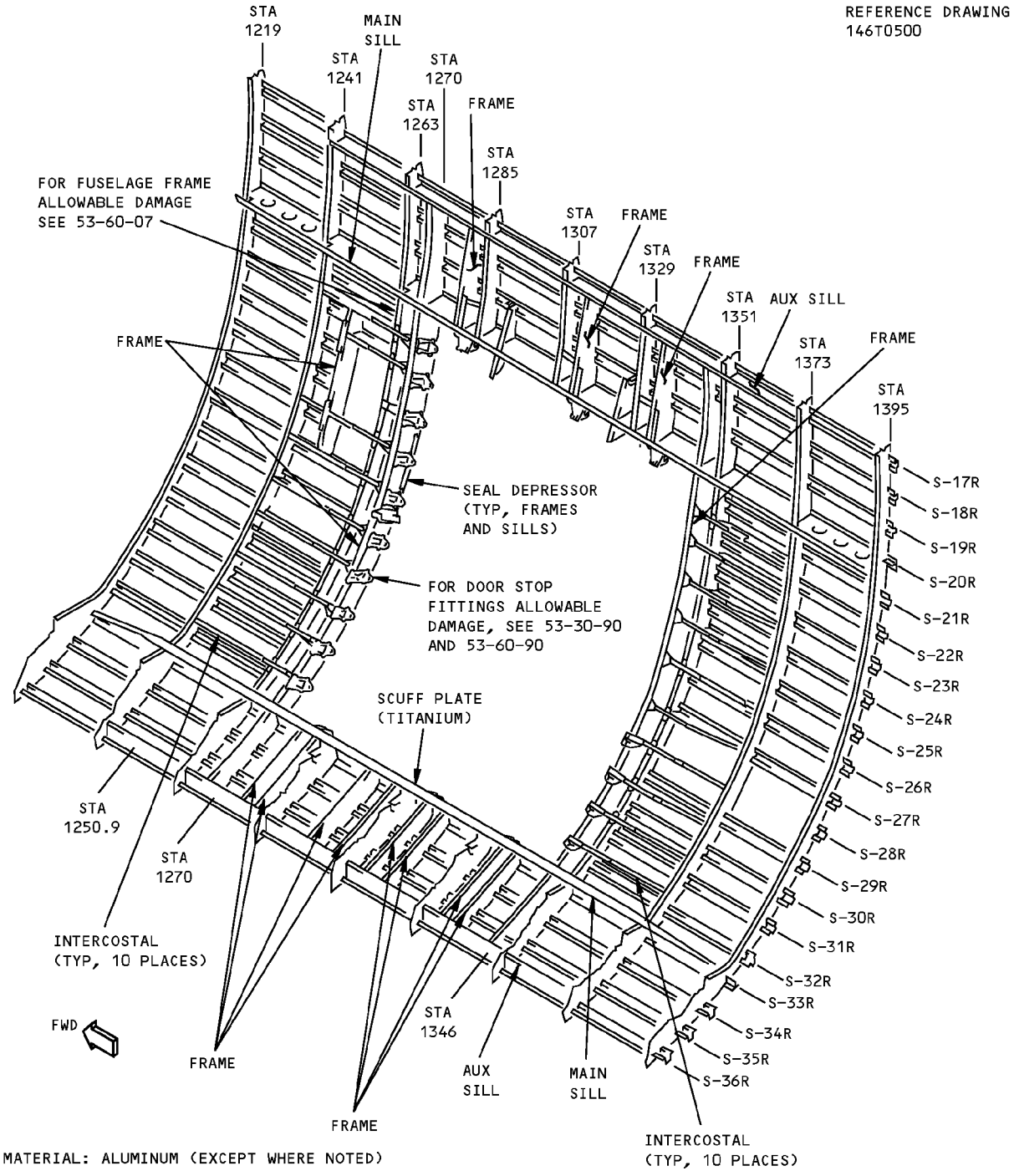


MATERIAL: ALUMINUM

LEFT SIDE IS SHOWN, RIGHT SIDE IS SIMILAR

AFT ENTRY DOOR
DETAIL V

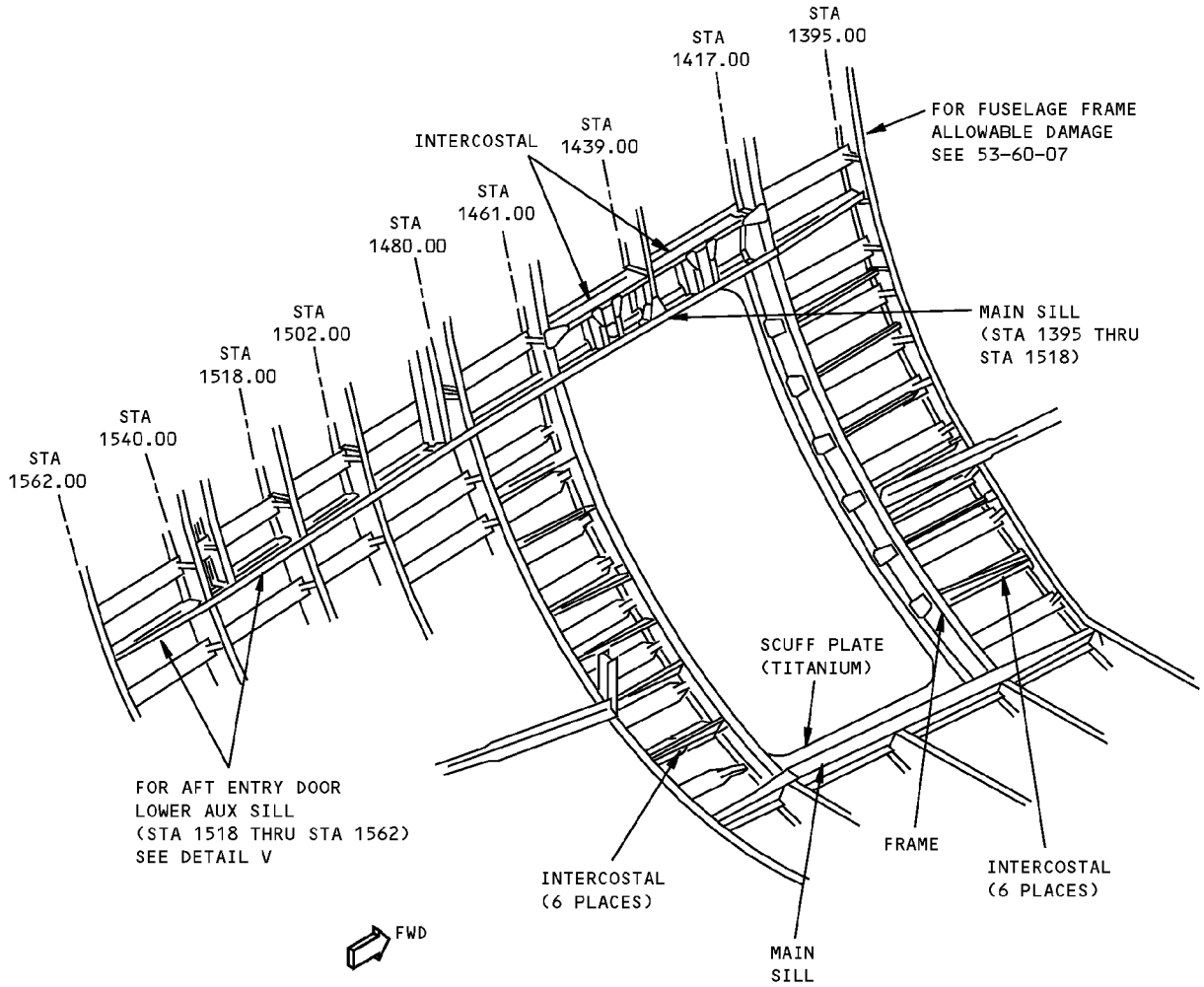
Door Surround Structure Allowable Damage
Figure 101 (Sheet 6 of 16)



AFT STANDARD CARGO DOOR
DETAIL VI

Door Surround Structure Allowable Damage
Figure 101 (Sheet 7 of 16)

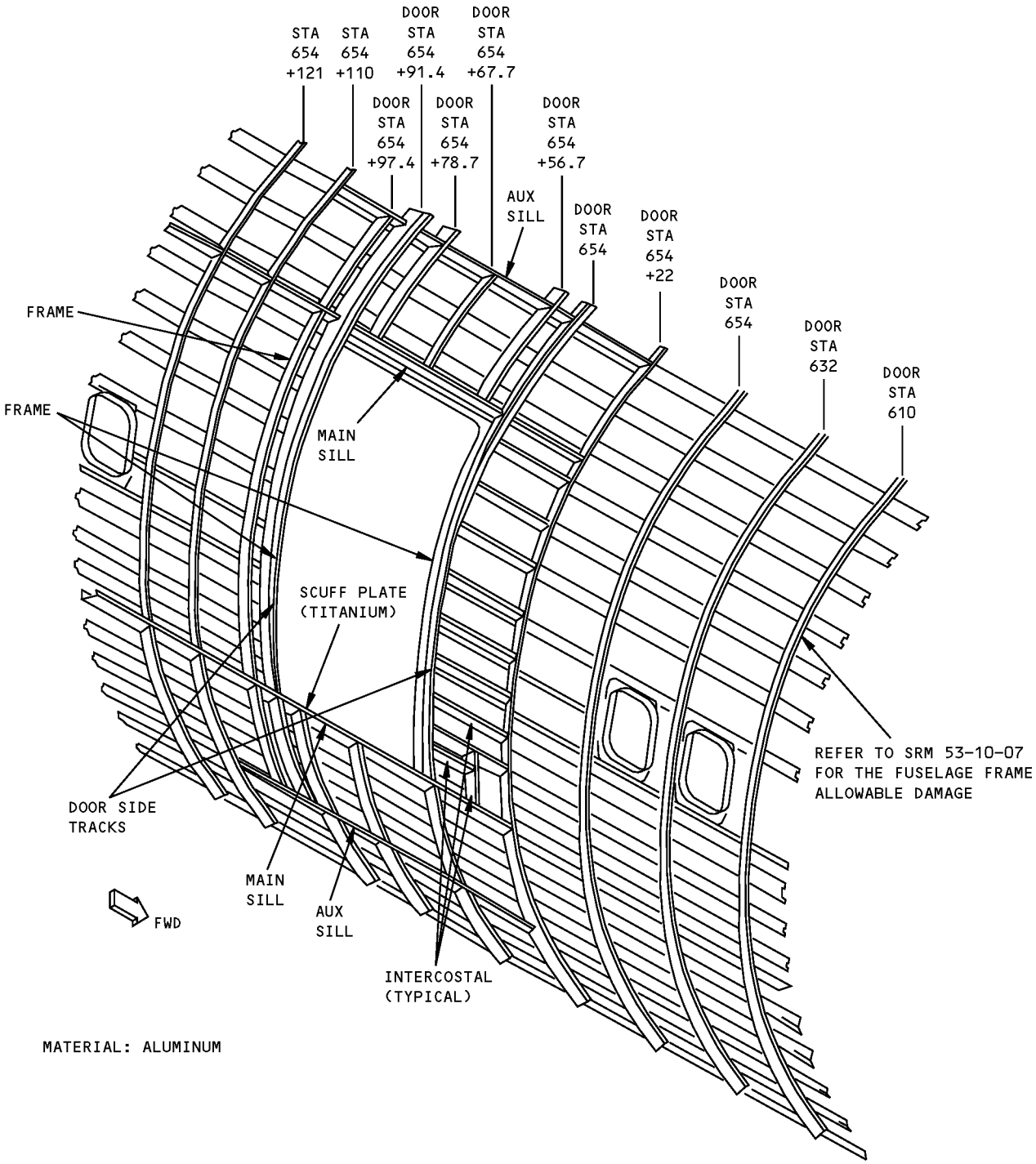
REFERENCE DRAWINGS
146T0300
146T0500



MATERIAL: ALUMINUM (EXCEPT WHERE NOTED)

BULK CARGO DOOR
DETAIL VII

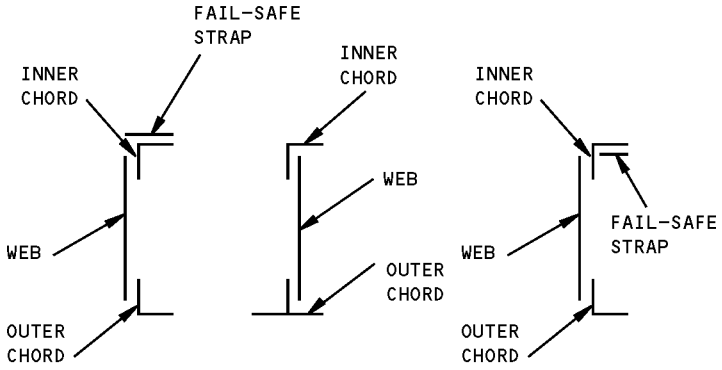
Door Surround Structure Allowable Damage
Figure 101 (Sheet 8 of 16)



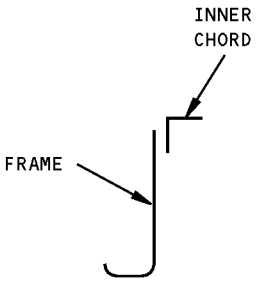
LEFT SIDE IS SHOWN, RIGHT SIDE IS SIMILAR

MID ENTRY DOOR
DETAIL VIII

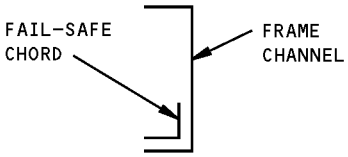
Door Surround Structure Allowable Damage
Figure 101 (Sheet 9 of 16)



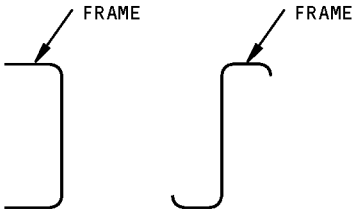
CONFIGURATION 1



CONFIGURATION 2



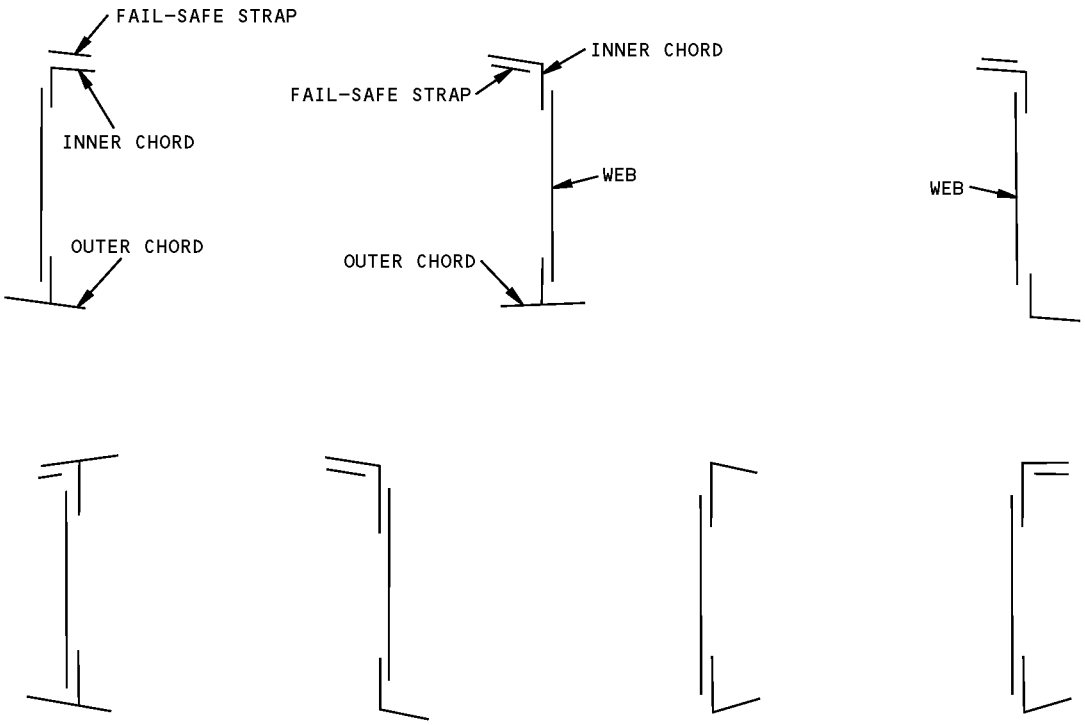
CONFIGURATION 3



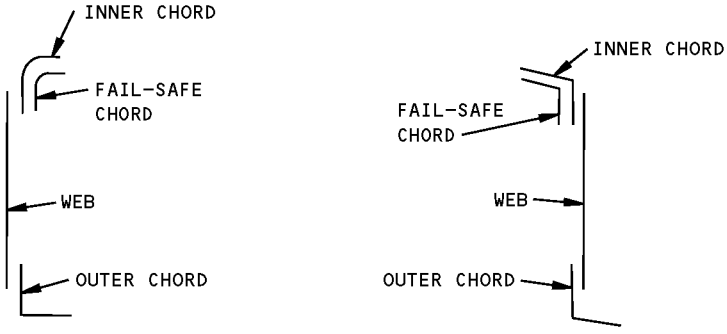
CONFIGURATION 4

FRAME CONFIGURATIONS
DETAIL IX

Door Surround Structure Allowable Damage
Figure 101 (Sheet 10 of 16)



CONFIGURATION 1



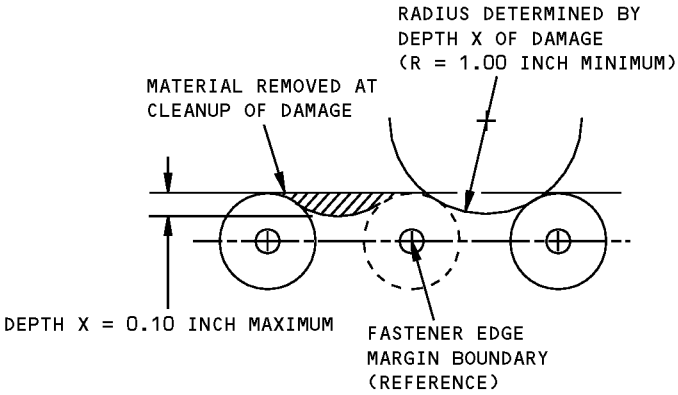
CONFIGURATION 2

SILL CONFIGURATIONS
DETAIL X

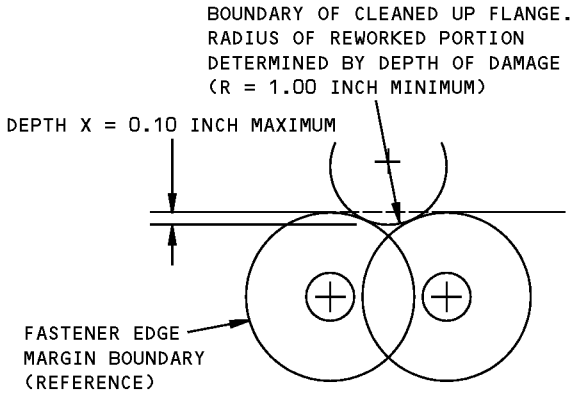
Door Surround Structure Allowable Damage
Figure 101 (Sheet 11 of 16)

DESCRIPTION			CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
MAIN SILL [J]	WEB		[A]	[D]	SEE DETAIL XIII	[G]
	OUTER CHORD		[B]	[E]	NOT ALLOWED	NOT ALLOWED
	INNER CHORD		[B]	[E]	NOT ALLOWED	NOT ALLOWED
	1	FAIL-SAFE STRAP	[B]	[E]	NOT ALLOWED	NOT ALLOWED
	2	FAIL-SAFE CHORD	[B]	[E]	NOT ALLOWED	NOT ALLOWED
AUX SILL	WEB		[A]	[D]	SEE DETAIL XIII	[G]
	CHORD		[B]	[E]	NOT ALLOWED	NOT ALLOWED
FRAME [H]	1	WEB	[A]	[D]	SEE DETAIL XIII	[G]
		OUTER CHORD	[B]	[E]	NOT ALLOWED	NOT ALLOWED
		INNER CHORD	[B]	[E]	NOT ALLOWED	NOT ALLOWED
		FAIL-SAFE STRAP	[B]	[E]	NOT ALLOWED	NOT ALLOWED
	2	FRAME	[C]	[F]	SEE DETAIL XIII	ALLOWED IN WEB ONLY [G]
		INNER CHORD	[B]	[E]	NOT ALLOWED	NOT ALLOWED
	3	FRAME CHANNEL	[B]	[E]	NOT ALLOWED	ALLOWED IN WEB ONLY [G]
		FAIL-SAFE CHORD	[B]	[E]	NOT ALLOWED	NOT ALLOWED
	4	FRAME	[C]	[F]	SEE DETAIL XIII	ALLOWED IN WEB ONLY [G]
INTERCOSTAL	1	WEB	[A]	[D]	SEE DETAIL XIII	[G]
		FORMED CHORD	[C]	[F]	SEE DETAIL XIII	FREE FLANGE ONLY [G]
	2	WEB	[A]	[D]	SEE DETAIL XIII	[G]
		EXTRUDED CHORD	[B]	[E]	NOT ALLOWED	NOT ALLOWED
	3	WEB	[A]	[D]	SEE DETAIL XIII	[G]
FLOOR BEAM FITTING			[B]	[E]	NOT ALLOWED	NOT ALLOWED
SEAL DEPRESSOR			[C]	[L]	SEE DETAIL XIII	NOT ALLOWED
SCUFF PLATE			[C]	[F]	SEE DETAIL XIII	[M]
DOOR SIDE TRACKS			NOT ALLOWED	[N]	NOT ALLOWED	NOT ALLOWED

Door Surround Structure Allowable Damage
Figure 101 (Sheet 12 of 16)

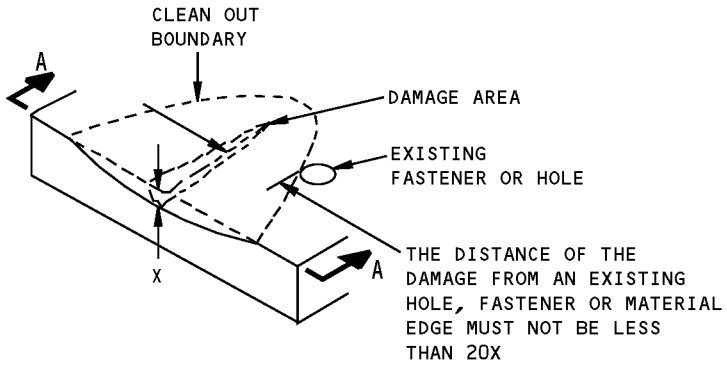


DAMAGE CLEANUP OF EDGES WHERE
FASTENER EDGE MARGINS DO NOT OVERLAP



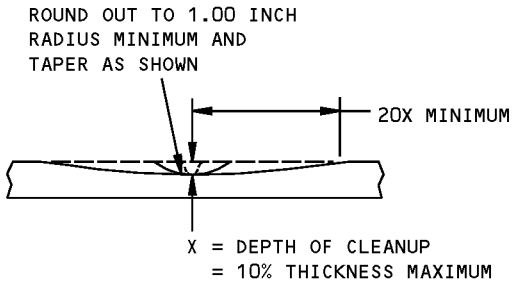
DAMAGE CLEANUP OF EDGES WHERE
FASTENER EDGE MARGINS OVERLAP

DETAIL XI



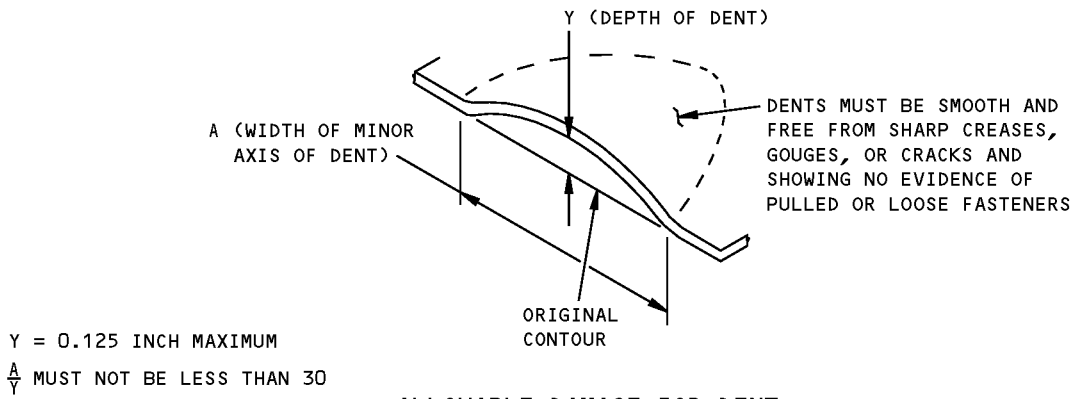
REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE

DETAIL XII



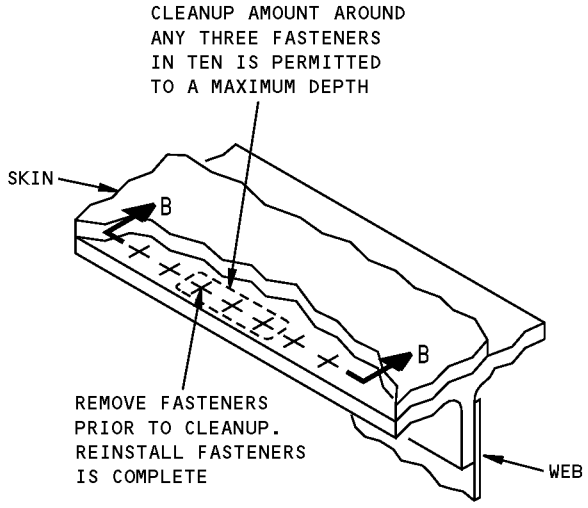
SECTION A–A

Door Surround Structure Allowable Damage
Figure 101 (Sheet 13 of 16)



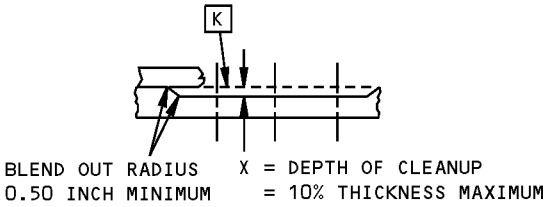
ALLOWABLE DAMAGE FOR DENT

DETAIL XIII



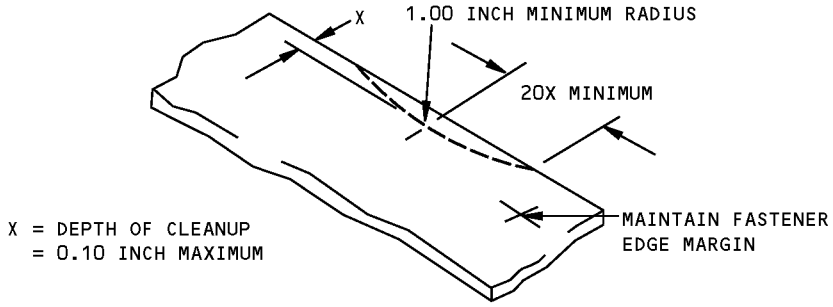
CORROSION CLEANUP

DETAIL XIV



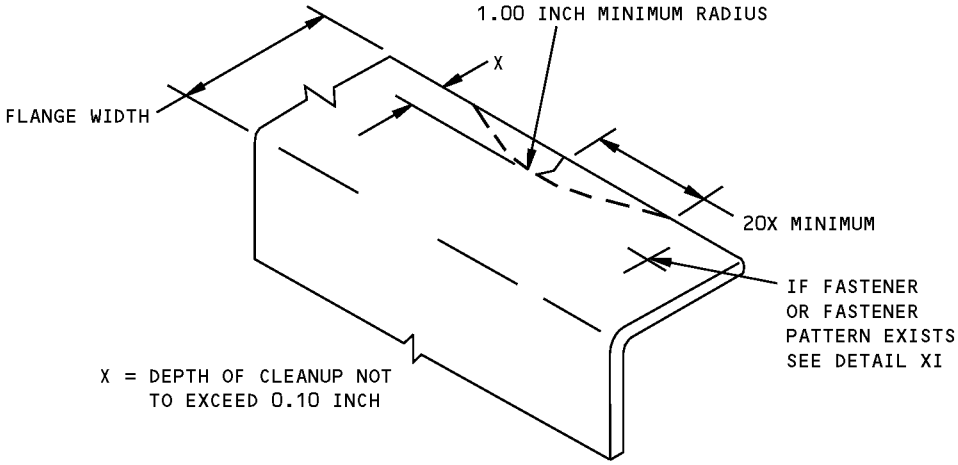
SECTION B–B

Door Surround Structure Allowable Damage
Figure 101 (Sheet 14 of 16)



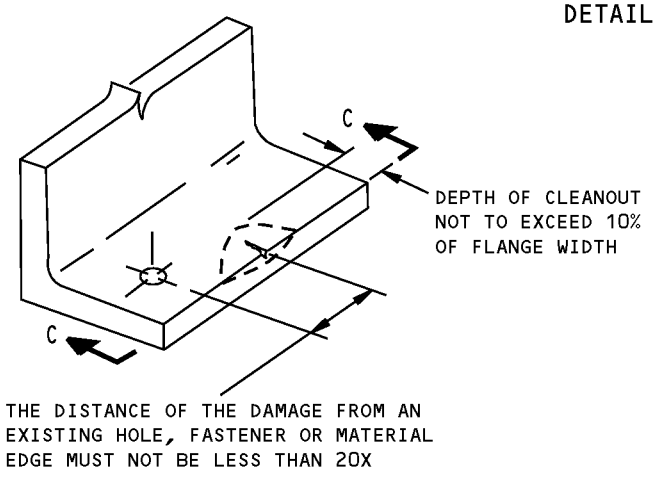
REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE

DETAIL XV



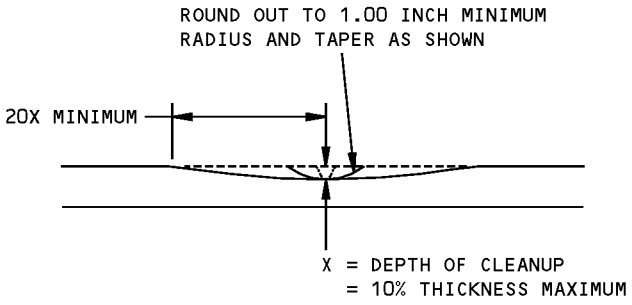
FORMED MEMBER

DETAIL XVI



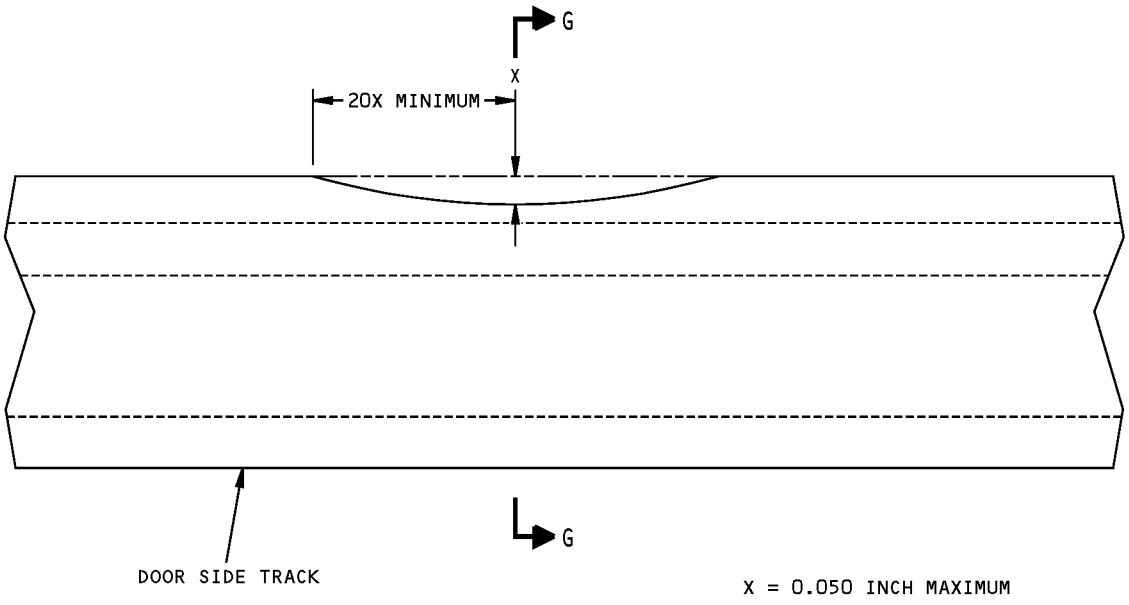
REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE

DETAIL XVII

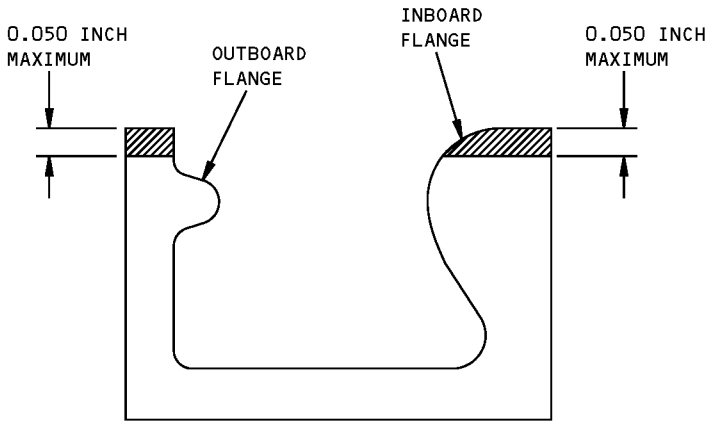


SECTION C–C

Door Surround Structure Allowable Damage
Figure 101 (Sheet 15 of 16)



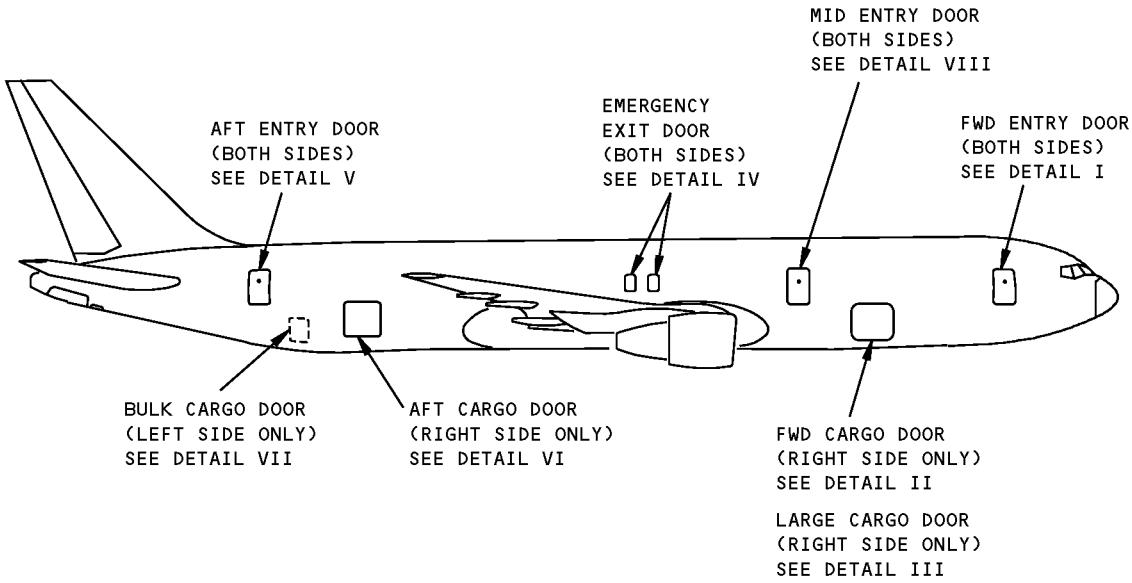
REMOVAL OF DAMAGE ON THE INBOARD AND OUTBOARD FLANGES
OF ENTRY/SERVICE DOOR SIDE TRACKS
DETAIL XVIII



SECTION G-G

Door Surround Structure Allowable Damage
Figure 101 (Sheet 16 of 16)

REPAIR GENERAL - DOOR SURROUND STRUCTURE REPAIR



NOTES

- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- REFINISH REWORKED AREAS PER 51-21 OF THE 767 MAINTENANCE MANUAL

[A] REPAIR PARTS MUST NOT DISPLACE HINGE FITTINGS, DOOR STOPS, OR ANY DEVICE WHICH SECURES THE DOOR OR MAINTAINS AIRTIGHT INTEGRITY

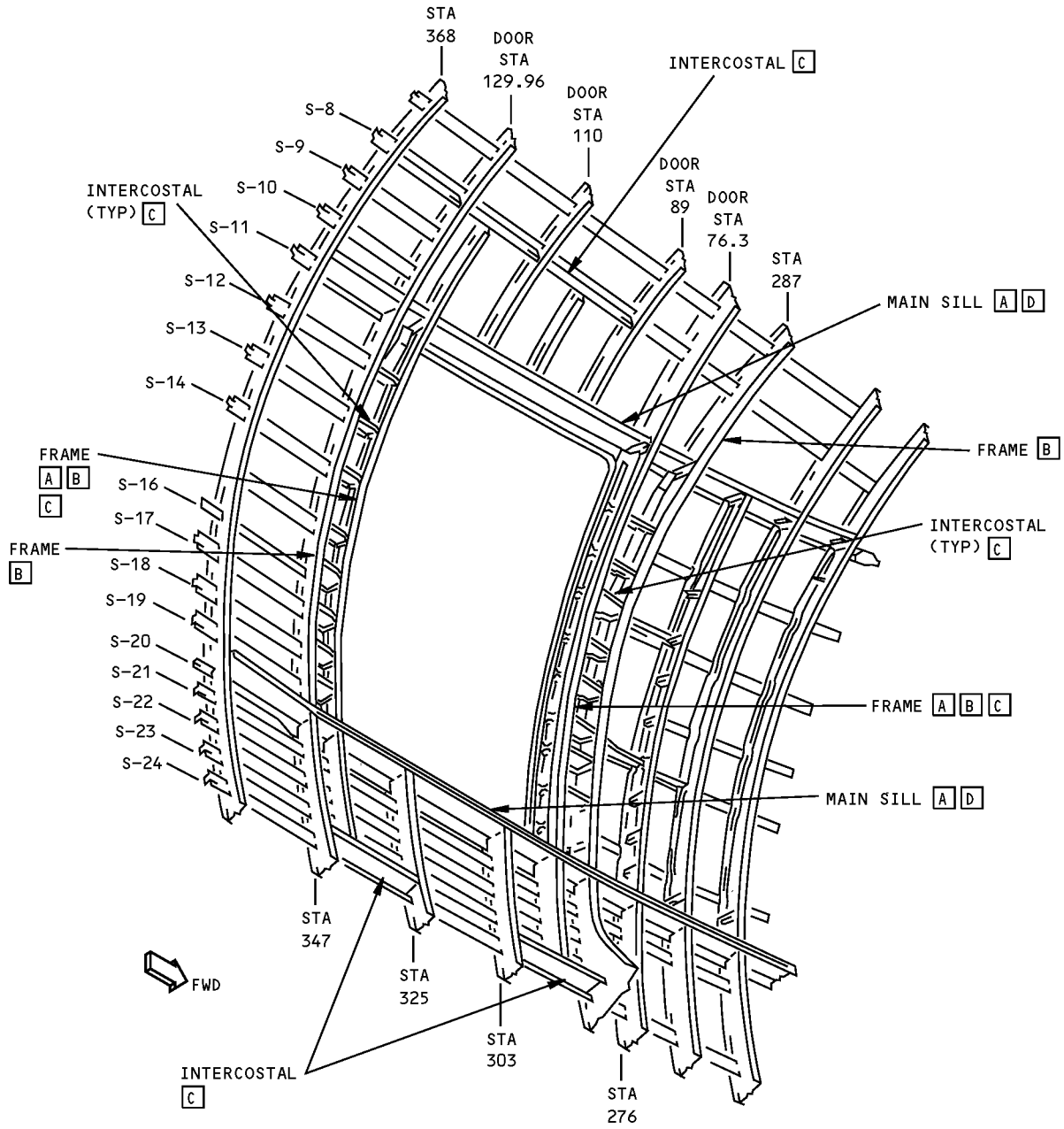
[B] SEE 51-70-13 FOR WEB REPAIR
53-00-07 FOR FRAME REPAIR

[C] SEE 51-70-11 FOR FORMED SECTION REPAIR
51-70-12 FOR EXTRUDED SECTION REPAIR
51-70-13 FOR WEB REPAIR

[D] SEE 51-70-13 FOR WEB REPAIR. CONTACT THE BOEING COMPANY FOR REPAIRS TO OTHER PARTS OF THE DOOR SILL

[E] FRAME LOCATED ONLY ON SAME SIDE AS DOOR HANDLE. DOOR HANDLE LOCATION IS PROVIDED AS AN OPERATOR OPTION

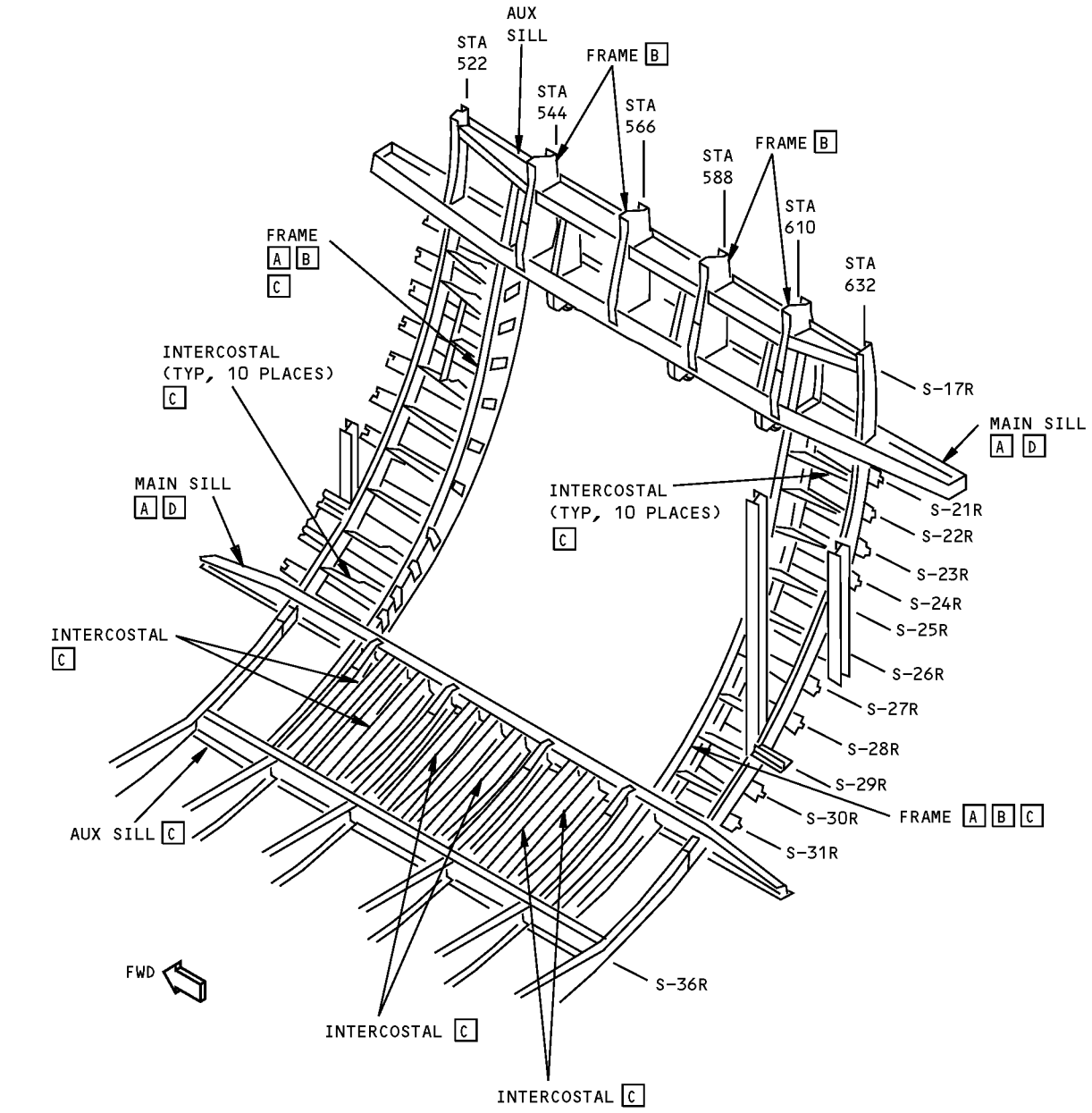
Door Surround Structure Typical Repair References
Figure 201 (Sheet 1 of 9)



MATERIAL: ALUMINUM

FORWARD ENTRY DOOR
LEFT SIDE SHOWN – RIGHT SIDE SIMILAR
DETAIL I

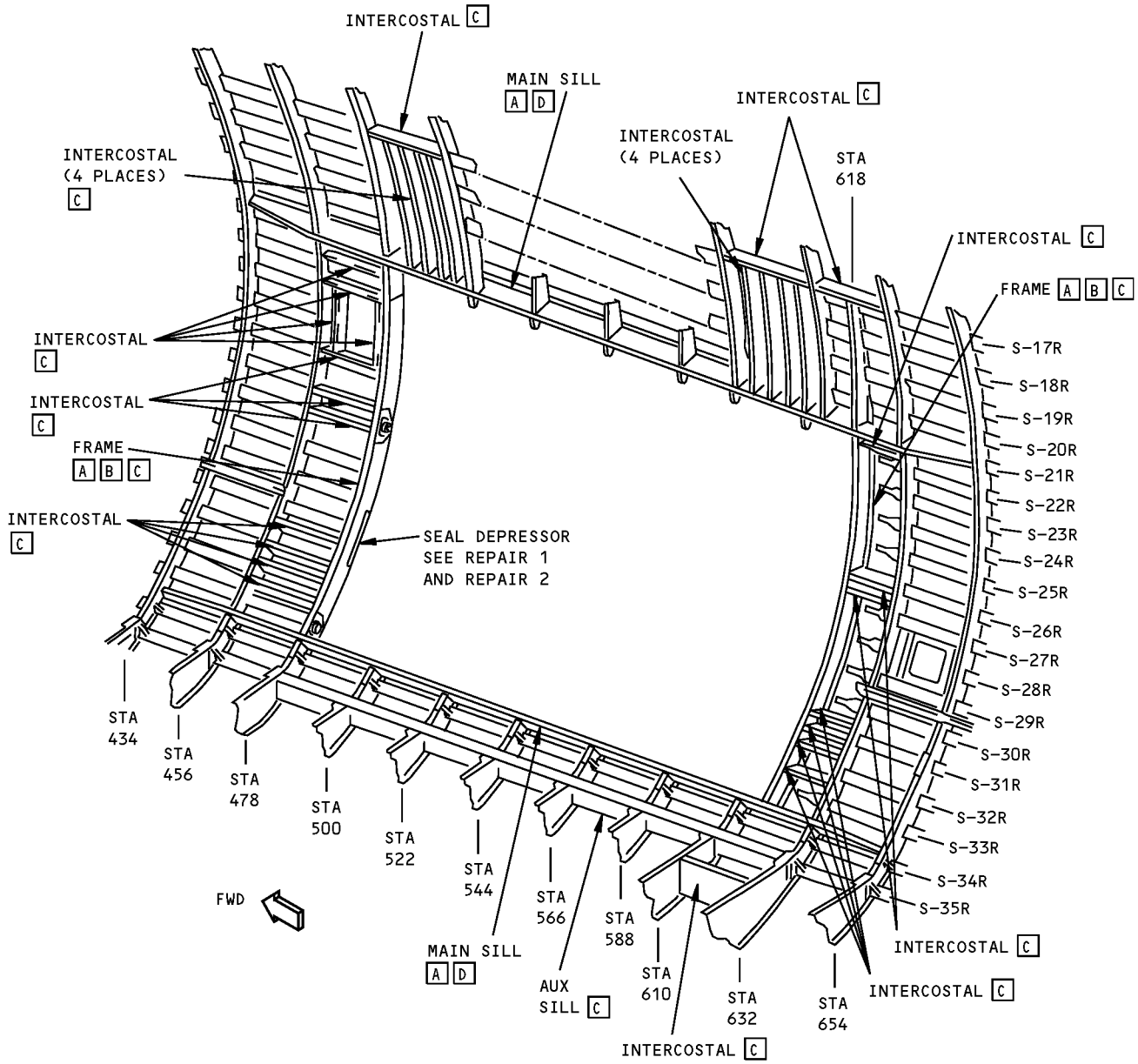
Door Surround Structure Typical Repair References
Figure 201 (Sheet 2 of 9)



MATERIAL: ALUMINUM

FORWARD STANDARD CARGO DOOR
DETAIL II

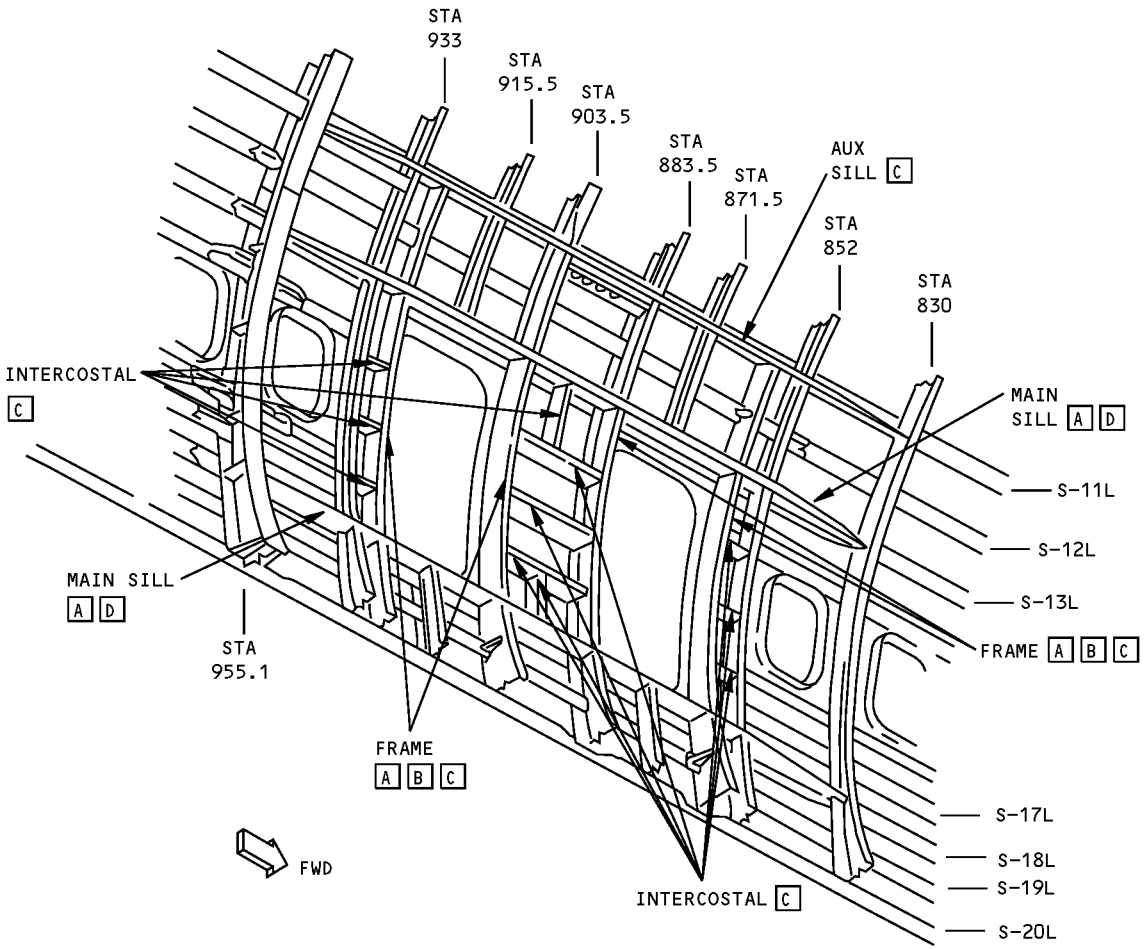
Door Surround Structure Typical Repair References
Figure 201 (Sheet 3 of 9)



MATERIAL: ALUMINUM

LARGE CARGO DOOR
DETAIL III

Door Surround Structure Typical Repair References
Figure 201 (Sheet 4 of 9)

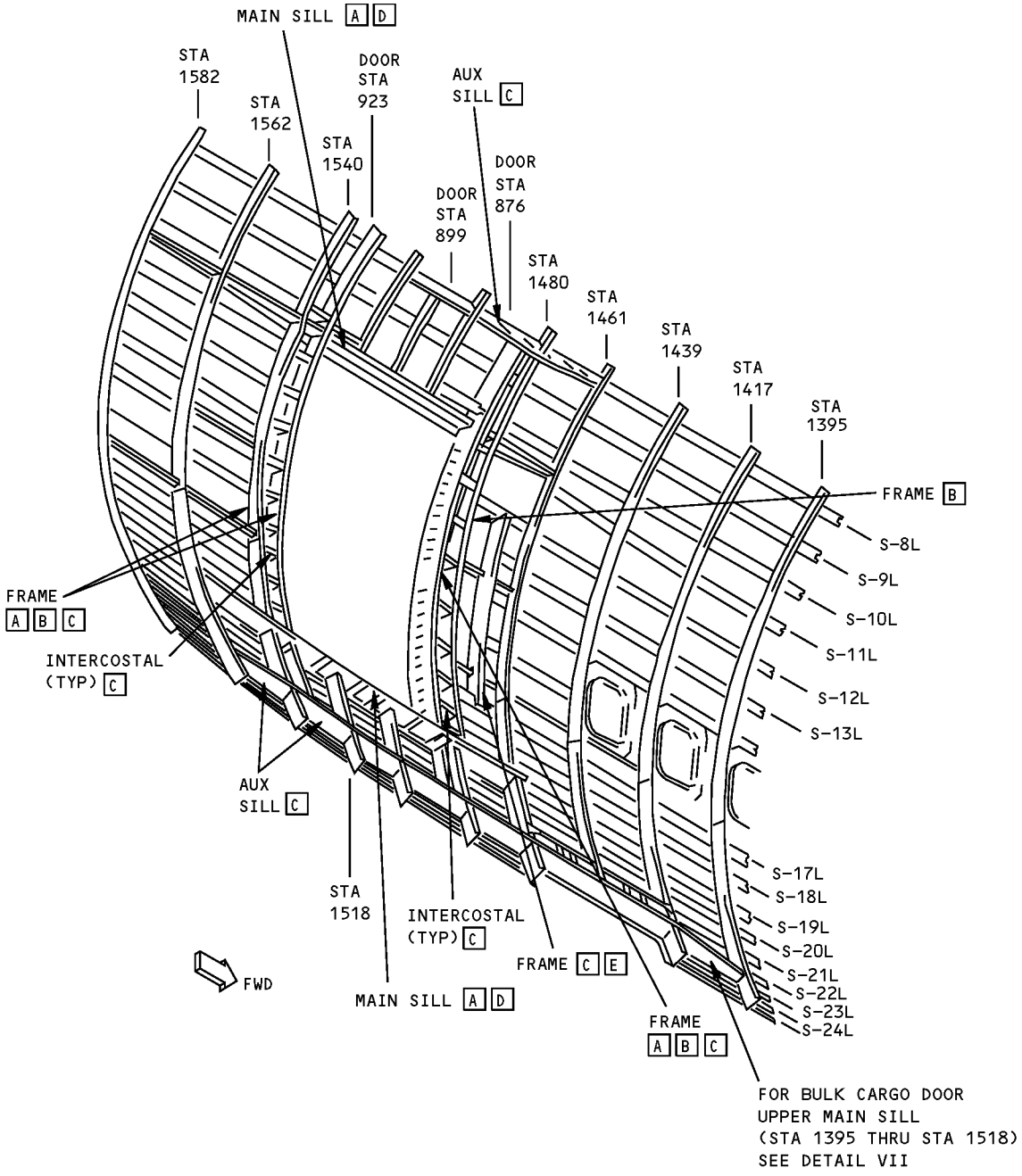


MATERIAL: ALUMINUM

EMERGENCY EXIT DOOR
LEFT SIDE SHOWN - RIGHT SIDE SIMILAR

DETAIL IV

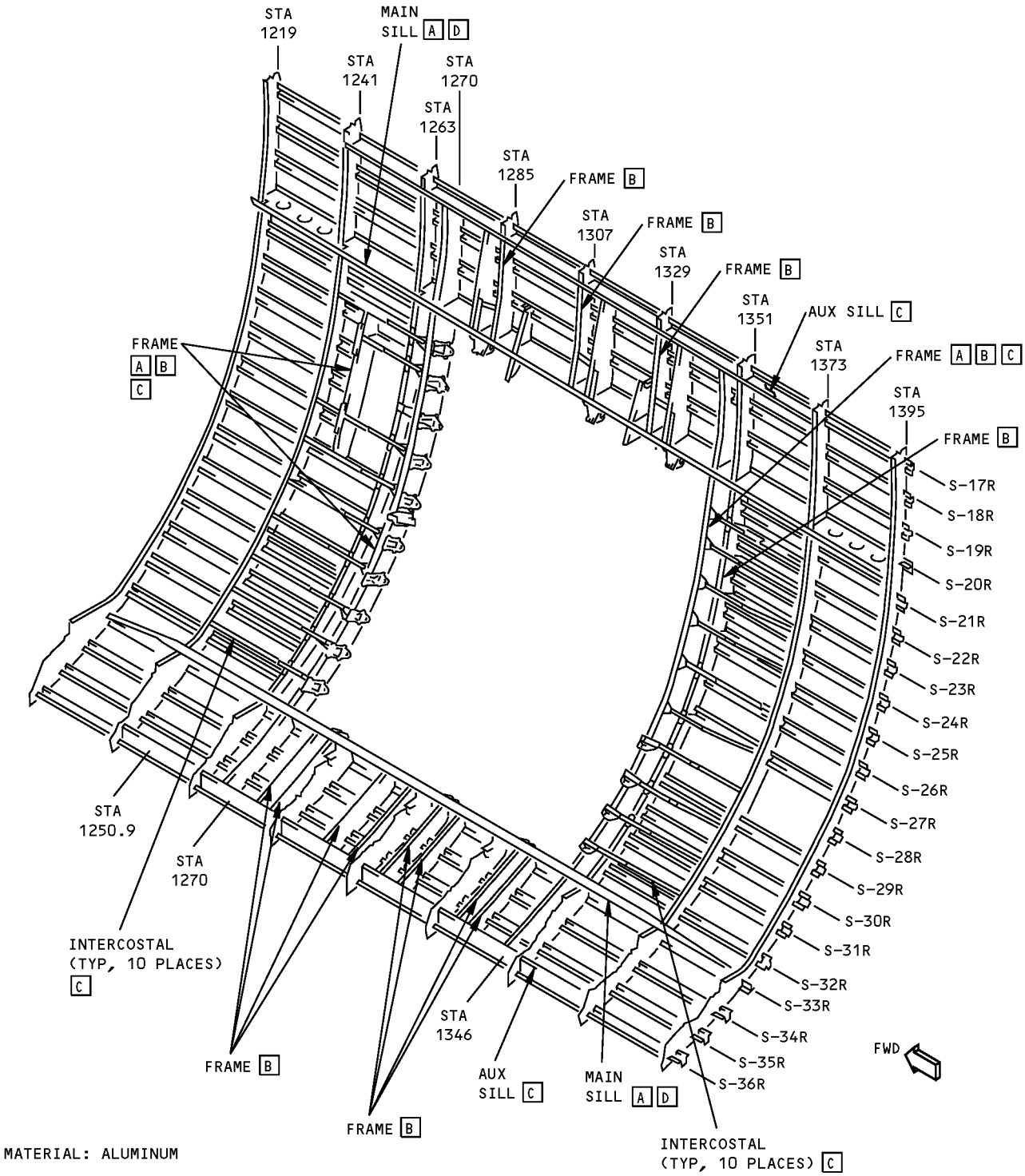
Door Surround Structure Typical Repair References
Figure 201 (Sheet 5 of 9)



MATERIAL: ALUMINUM

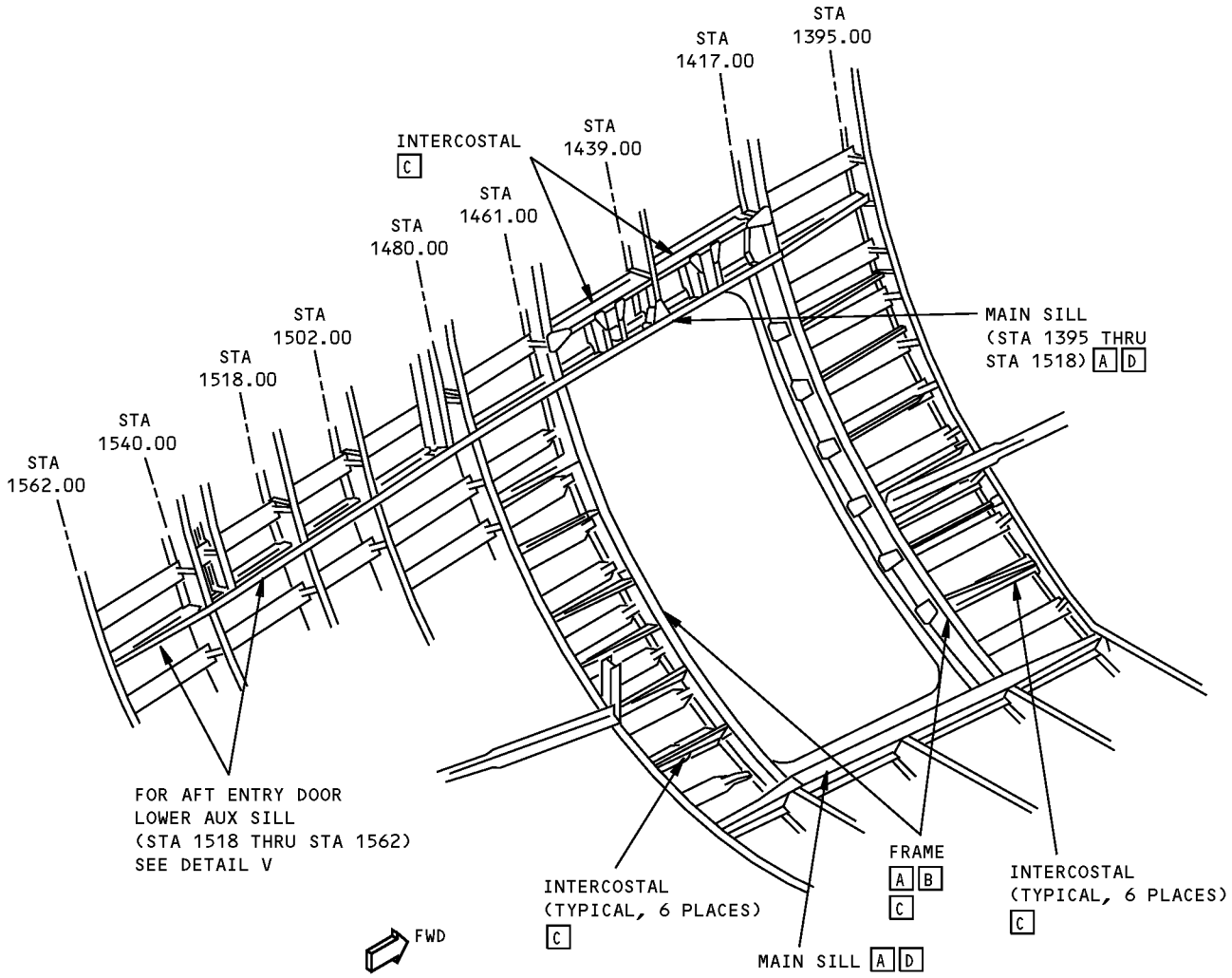
AFT ENTRY DOOR
LEFT SIDE SHOWN - RIGHT SIDE SIMILAR
DETAIL V

Door Surround Structure Typical Repair References
Figure 201 (Sheet 6 of 9)



AFT STANDARD CARGO DOOR
DETAIL VI

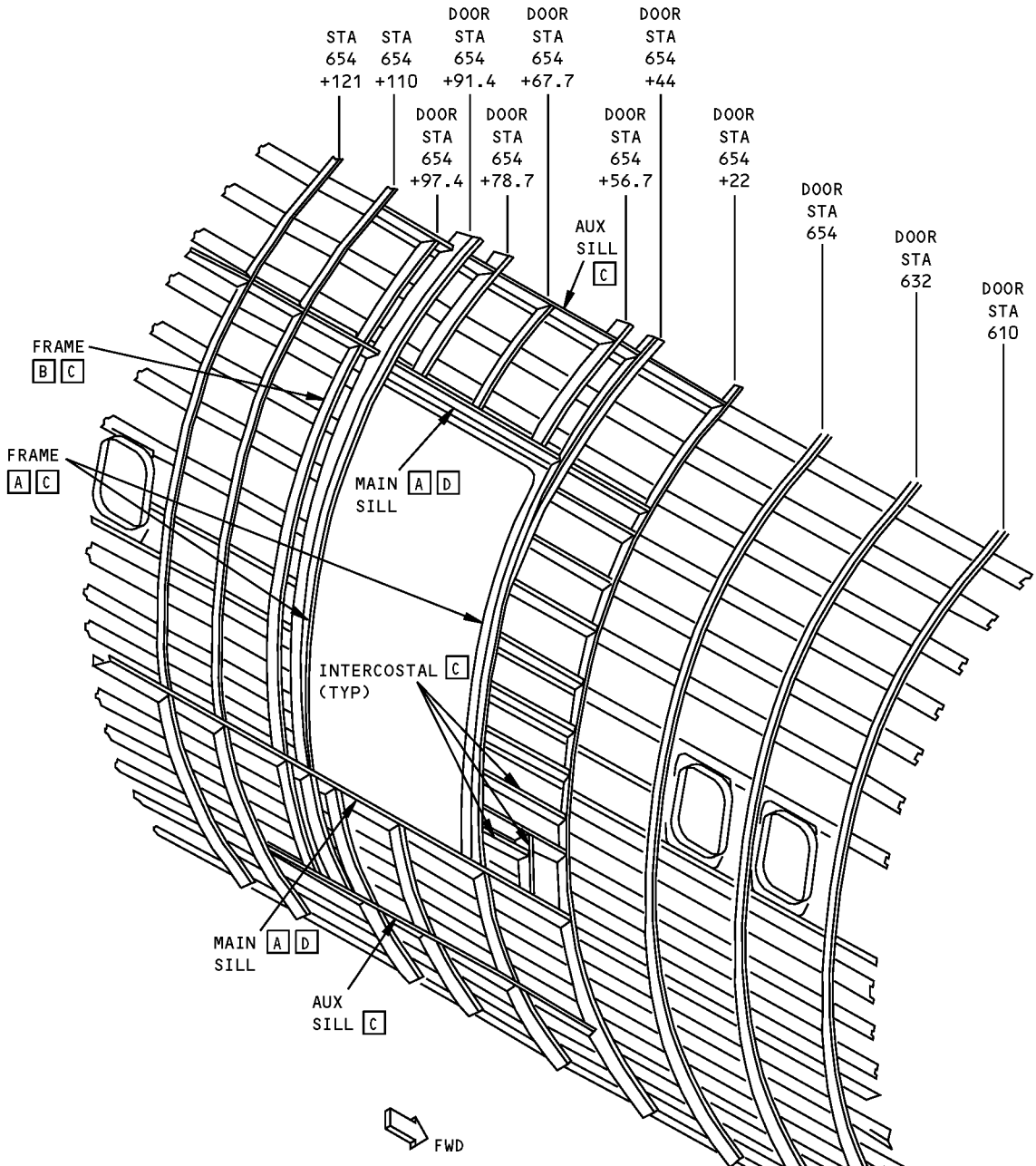
Door Surround Structure Typical Repair References
Figure 201 (Sheet 7 of 9)



MATERIAL: ALUMINUM

BULK CARGO DOOR
DETAIL VII

Door Surround Structure Typical Repair References
Figure 201 (Sheet 8 of 9)



MID ENTRY DOOR
LEFT SIDE SHOWN - RIGHT SIDE SIMILAR
DETAIL VIII

Door Surround Structure Typical Repair References
Figure 201 (Sheet 9 of 9)

REPAIR 1 - LARGE CARGO DOOR SURROUND STRUCTURE - SEAL DEPRESSOR REPAIR - S-25R TO S-31.5R

APPLICABILITY
THIS REPAIR APPLIES TO DAMAGED SEAL DEPRESSORS AT THE LARGE CARGO DOOR ONLY. USE THIS REPAIR BETWEEN STRINGERS S-25R AND S-31.5R AT BOTH EDGE FRAME LOCATIONS. THIS REPAIR IS NOT APPLICABLE IF THE EDGE OF THE DAMAGE CUTOUT IS CLOSER THAN 5.0 INCHES FROM THE CENTER OF AN EXISTING PRODUCTION SPLICE.

REPAIR INSTRUCTIONS

1. Cut and remove the damaged flange of the seal depressor. See Detail I.

   NOTE: Make sure that there are no cracks in the flange outside of the cutout. Make sure that the flange which is attached to the outer chord of the edge frame is not damaged. Make sure that there is no damage to other primary structure.

2. Make the repair parts. See Table I and Details I through V.

   NOTE: If the Part 1 angle is used, form the angle while the aluminum is in the annealed condition. Heat treat the part after it is formed to the T42 condition

3. Assemble the repair parts and drill the fastener holes.
4. Disassemble the repair parts.
5. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the seal depressor.
6. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the seal depressor. Refer to SRM 51-20-01.
7. Apply one layer of BMS 10-11 primer to the repair parts and to the bare surfaces of the seal depressor. Refer to SOPM 20-41-02.
8. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
9. Install the fasteners.

CAUTION: MAKE SURE THE EXPOSED EDGES OF THE PART 2 FILLER HAVE THE CORRECT CONTOUR. MAKE SURE THAT ALL EMPTY SPACES IN THE REPAIR ARE FILLED WITH SEALANT AND THE SURFACE IS FLAT AND SMOOTH. FAILURE TO DO THIS CAN CAUSE DAMAGE TO THE SEAL AND CAN CAUSE AIR TO LEAK FROM THE AIRPLANE.

10. Fillet seal the edges of the repair parts and fill all gaps and empty spaces with BMS 5-95 sealant.
11. Apply the finish to the repair area. Refer to AMM 51-21.
12. Apply a layer of BMS 3-29 corrosion inhibiting compound. Refer to SRM 51-20-01.

NOTES

- THIS REPAIR IS A PERMANENT REPAIR AND NO DAMAGE TOLERANCE ASSESSMENT IS NECESSARY. REFER TO SRM 51-00-06 FOR REPAIR CLASSIFICATION.
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS.

FASTENER SYMBOLS

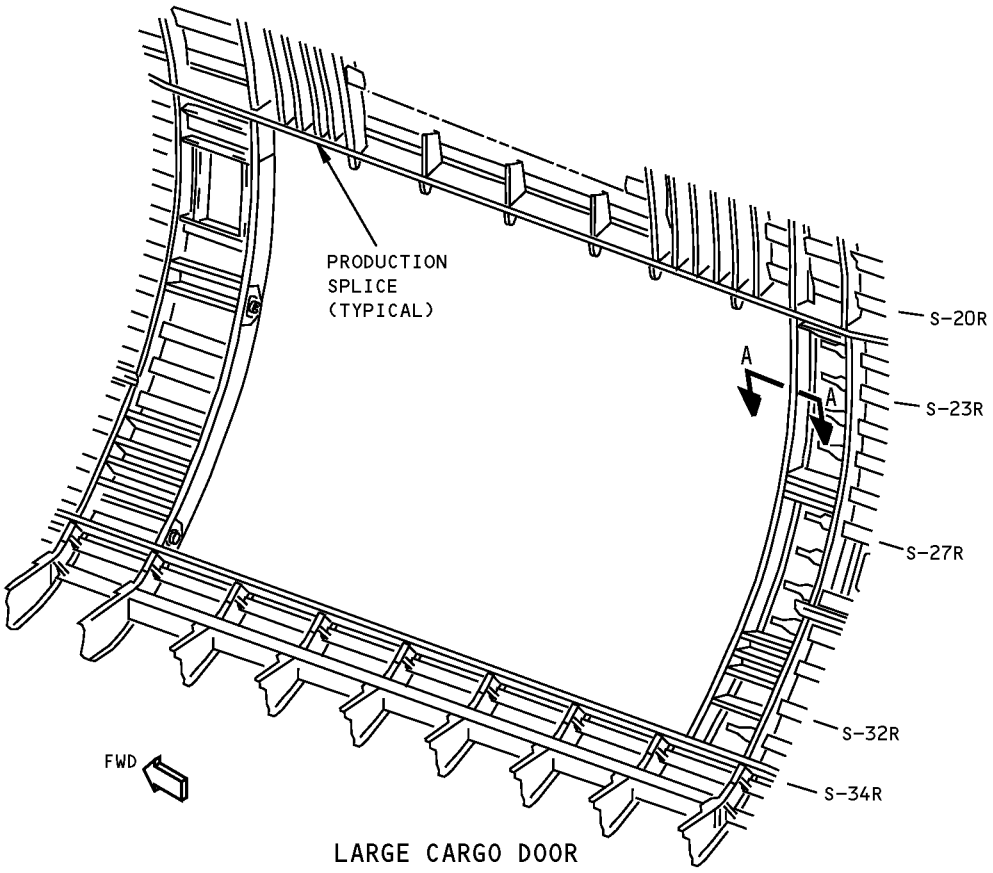
REPAIR FASTENER LOCATION. INSTALL A BACR15CE5KE RIVET. AS AN ALTERNATIVE, INSTALL A BACB30NW5K HEX DRIVE BOLT WITH A BACC30M5 COLLAR.

NOTE: IF YOU USE THE ALTERNATIVE FASTENER, USE TWO FASTENERS ON EACH SIDE OF THE CUTOUT INSTEAD OF THE THREE AS SHOWN IN DETAILS II AND III. MAKE THE PART 1 ANGLE OR THE PART 3 STRAP 1.5 INCHES SHORTER THAN IS SHOWN IN DETAILS IV AND V.

REPAIR MATERIAL				
	PART	QTY	GAGE	MATERIAL
1	ANGLE	1	0.063	CLAD 2024-0 HT-TR TO T42
2	FILLER	1	0.063	CLAD 2024-T3
3	STRAP	1	0.063	CLAD 2024-T3

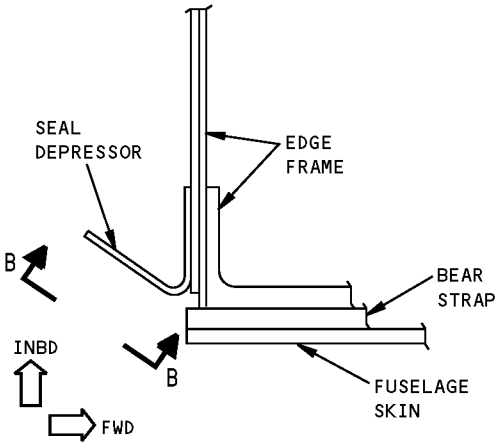
TABLE I

Large Cargo Door Surround Structure - Seal Depressor Repair - S-25R to S-31.5R
Figure 201 (Sheet 1 of 5)



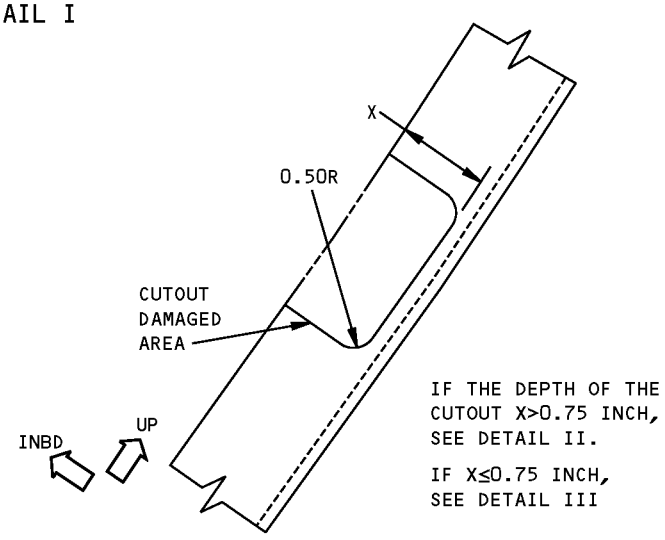
LARGE CARGO DOOR
SEAL DEPRESSOR INSTALLATION

DETAIL I



SEAL DEPRESSOR BEFORE THE REPAIR

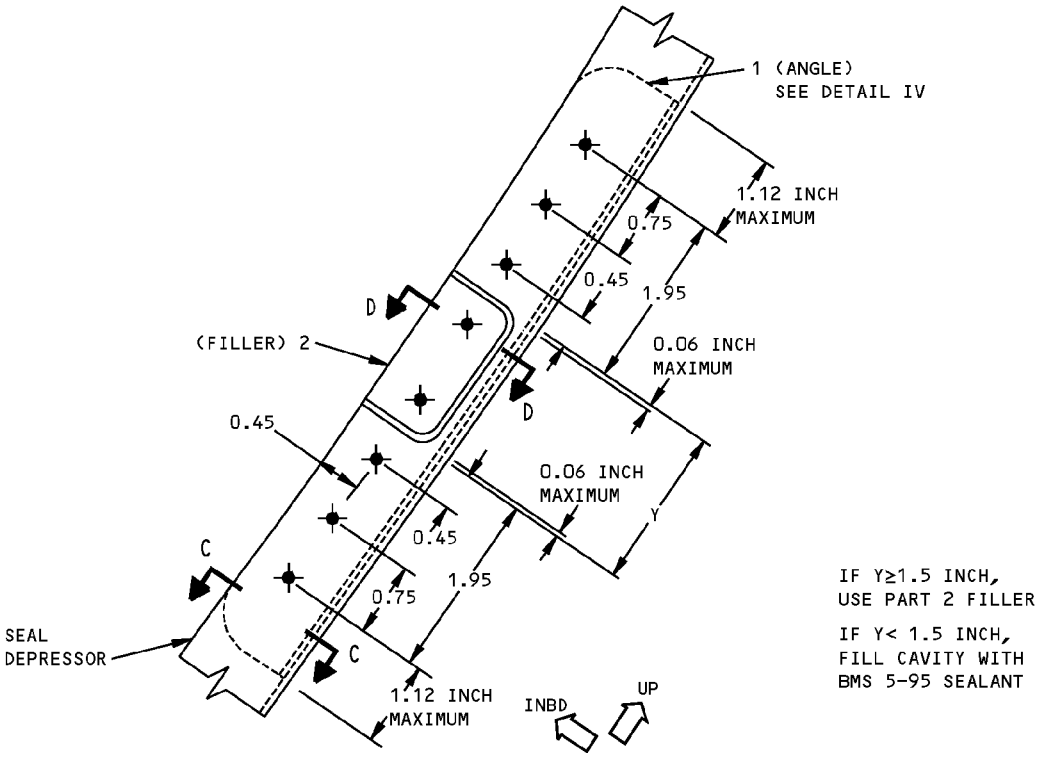
SECTION A-A



SEAL DEPRESSOR BEFORE THE REPAIR

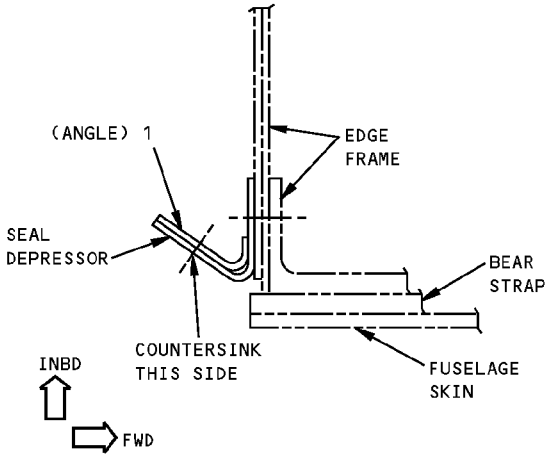
VIEW B-B

Large Cargo Door Surround Structure - Seal Depressor Repair - S-25R to S-31.5R
Figure 201 (Sheet 2 of 5)

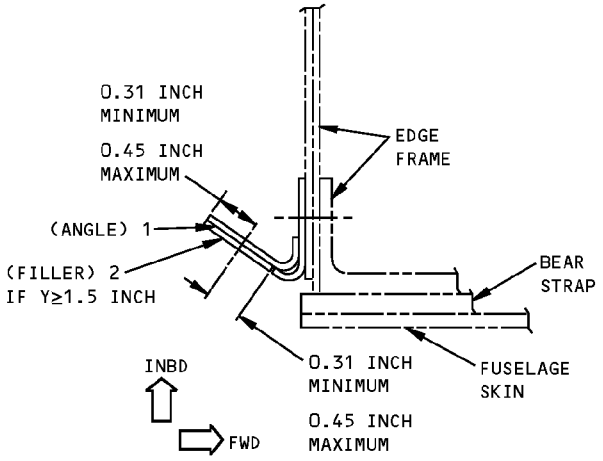


CUTOUT DEPTH X>0.75 INCH

DETAIL II

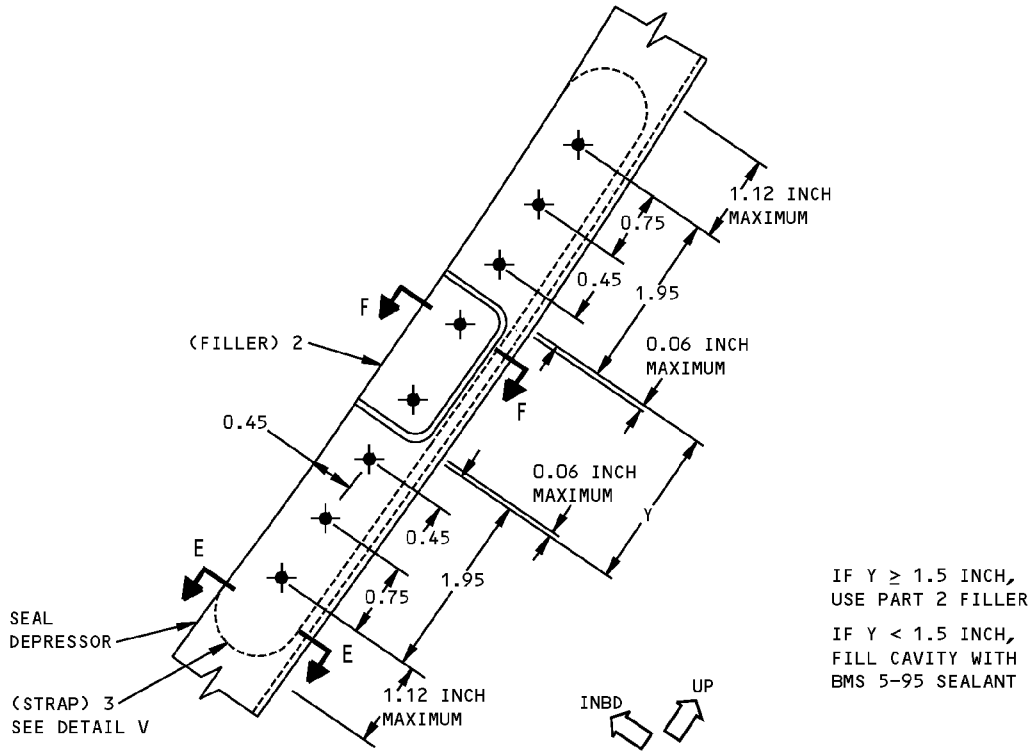


SECTION C-C



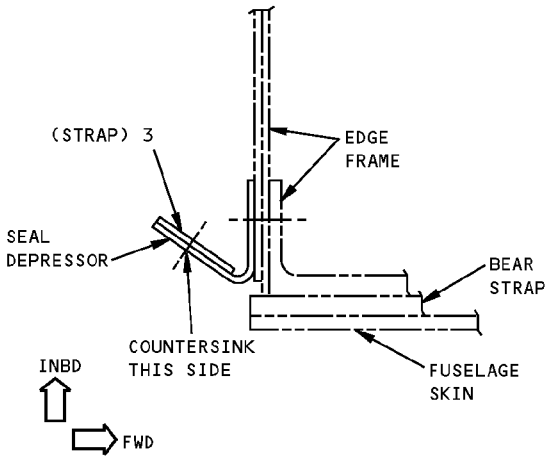
SECTION D-D

Large Cargo Door Surround Structure - Seal Depressor Repair - S-25R to S-31.5R
Figure 201 (Sheet 3 of 5)

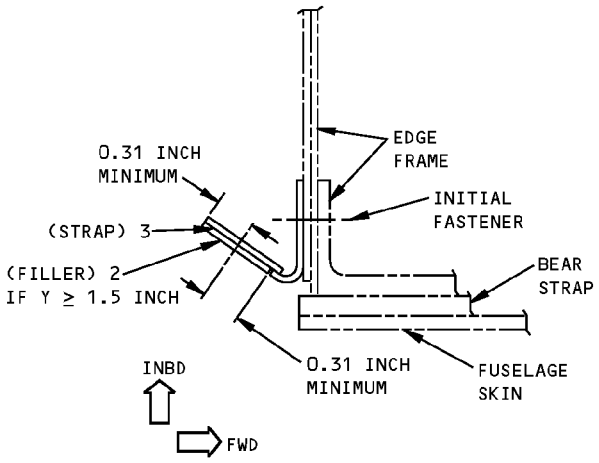


CUTOUT DEPTH X ≤ 0.75 INCH

DETAIL III

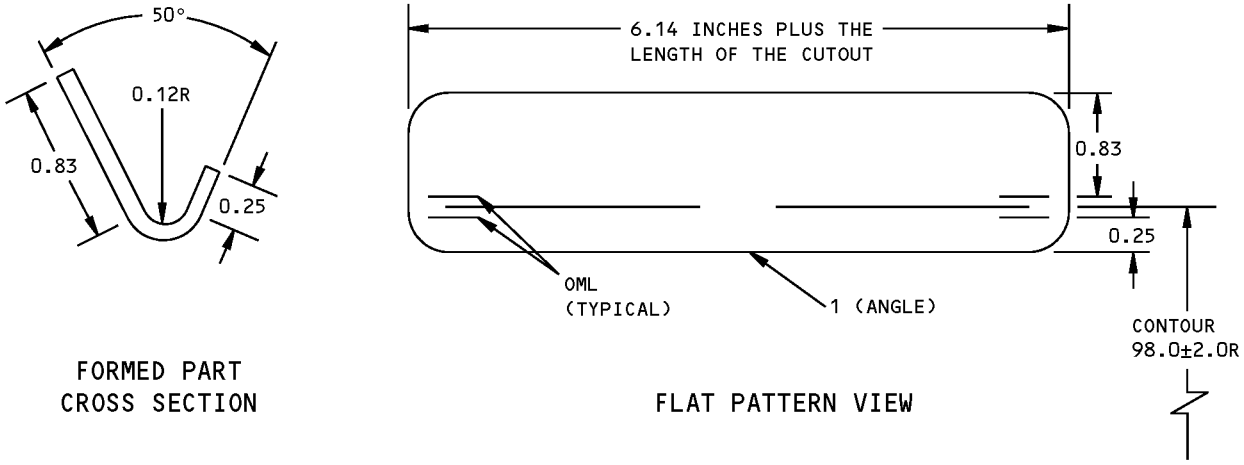


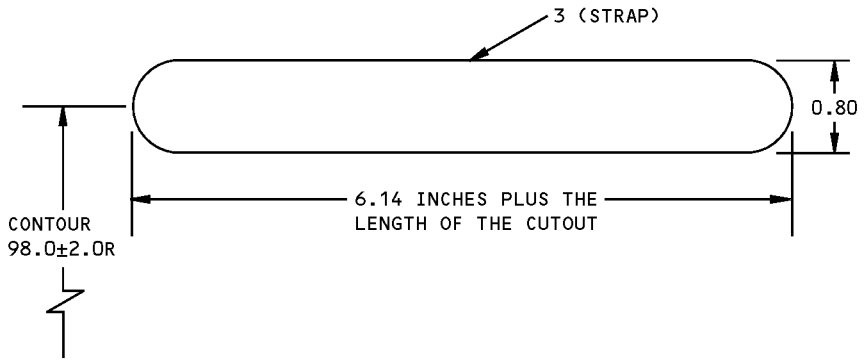
SECTION E-E



SECTION F-F

Large Cargo Door Surround Structure - Seal Depressor Repair - S-25R to S-31.5R
Figure 201 (Sheet 4 of 5)





Large Cargo Door Surround Structure - Seal Depressor Repair - S-25R to S-31.5R
Figure 201 (Sheet 5 of 5)

REPAIR 2 - LARGE CARGO DOOR SURROUND STRUCTURE - SEAL DEPRESSOR TIME-LIMITED REPAIR - S-25R TO S-31.5R

APPLICABILITY

THIS REPAIR IS APPLICABLE TO DAMAGED SEAL DEPRESSORS AT THE LARGE CARGO DOOR. USE THIS REPAIR BETWEEN STRINGERS S25R AND S31.5R AT BOTH EDGE FRAME LOCATIONS. THIS REPAIR IS NOT APPLICABLE IF THE EDGE OF THE DAMAGE IS CLOSER THAN 5.0 INCHES (125 mm) FROM THE CENTER OF AN EXISTING SPLICE.

NOTE: THIS REPAIR IS A TIME-LIMITED REPAIR.

- THIS REPAIR MUST BE INSPECTED EVERY FLIGHT CYCLE TO MAKE SURE THAT THE SURFACE OF THE TAPE IS SMOOTH. THERE SHOULD BE NO CUTS, TEARS, GAPS, WRINKLES, OR LOOSE, TURNED-UP OR FOLDED-OVER EDGES.
- THIS REPAIR MUST BE REPLACED WITH A PERMANENT REPAIR AT OR BEFORE 50 FLIGHT CYCLES. REFER TO REPAIR 1.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. If the damage on the seal depressor is only a dent at the edge and can be easily straightened out without developing any cracks, follow instructions 3 to 6. Otherwise use Detail I, instructions 7 to 13 or REPAIR 1.
3. Straighten out the dent carefully to match the original seal depressor shape.
4. Clean the repair area and do a 10X magnified visual inspection for cracks. If cracks are found, do the time limited repair as given in Detail I or do the permanent repair as given in REPAIR 1.
5. If cracks are not found, apply a chemical conversion coating to the bare surfaces of the seal depressor. Refer to SRM 51-20-01.
6. Apply one layer of BMS 10-11, Type I primer to the bare surfaces of the seal depressor. Refer to SOPM 20-41-02.
7. If the damage cannot be straightened out or if a crack is found, cut and remove the damaged part of the seal depressor as given in Detail I.
   A. Make the edges of the cut smooth with a surface finish of 125 microinches Ra.
   B. Make the corner radii of the cut a minimum of 0.50 inch (13 mm).
8. Make the repair parts. See Table I.
9. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the seal depressor.
10. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the seal depressor. Refer to SRM 51-20-01.
11. Apply one layer of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the seal depressor. Refer to SOPM 20-41-02.

CAUTION: MAKE SURE THE EXPOSED EDGES OF THE FILLER HAVE THE CORRECT CONTOUR, ALL VOIDS ARE FILLED WITH BMS 5-95 SEALANT, AND THAT THE SURFACE IS SMOOTH AND FLAT. FAILURE TO DO SO CAN CAUSE AIR TO LEAK FROM THE AIRCRAFT.

12. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
13. Use Speed Tape to attach the repair parts to the seal depressor.

NOTES

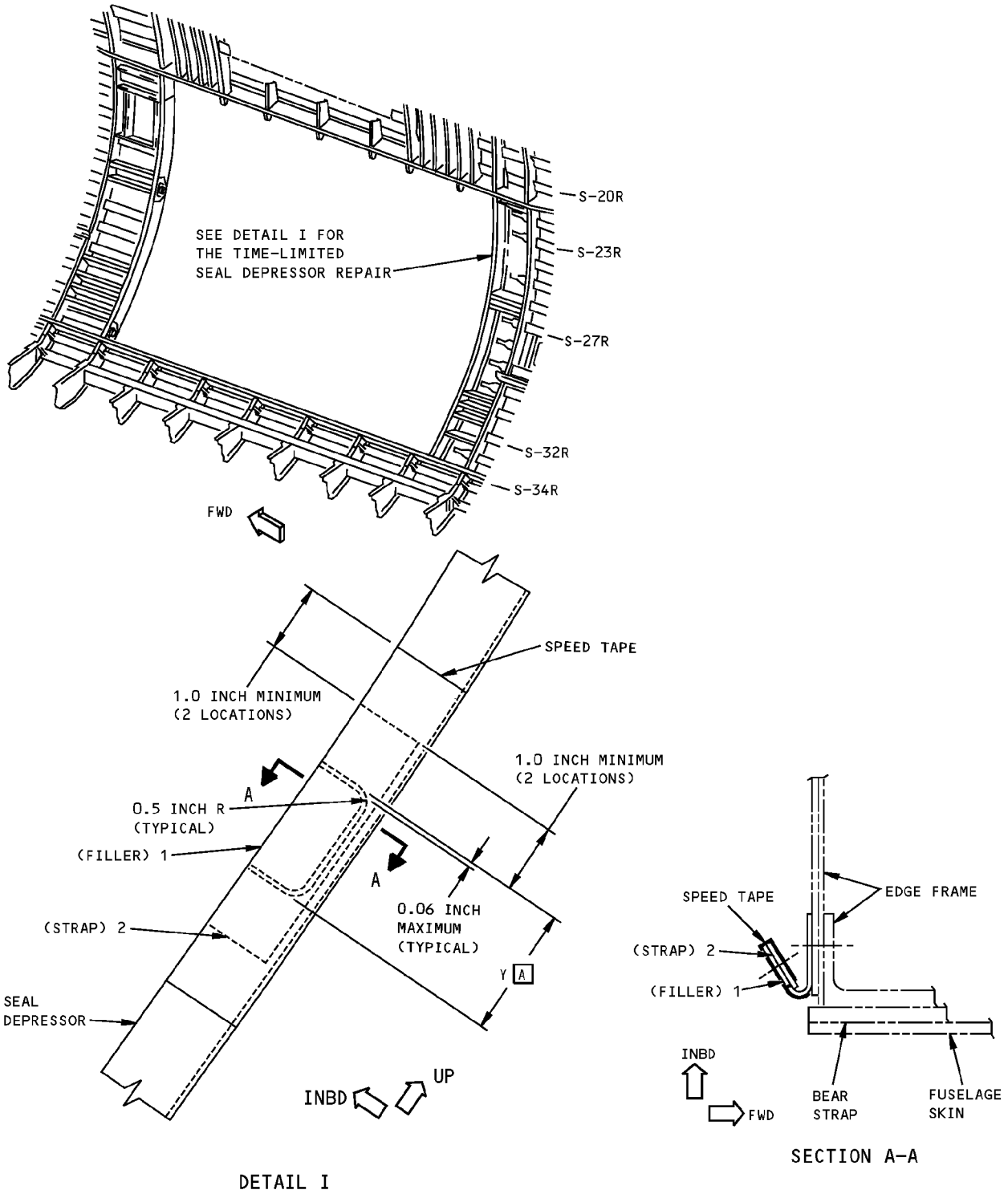
- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-00 FOR INVESTIGATION AND CLEANUP OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS

A IF Y IS GREATER THAN 2 INCHES (50 mm), THIS TIME LIMITED REPAIR IS NOT PERMITTED. REPAIR SEAL DEPRESSOR AS GIVEN IN REPAIR 1.

REPAIR MATERIAL			
PART NO.	PART	QTY	MATERIAL
1	FILLER	1	0.063 CLAD 2024-T3
2	STRAP	1	0.063 CLAD 2024-T3

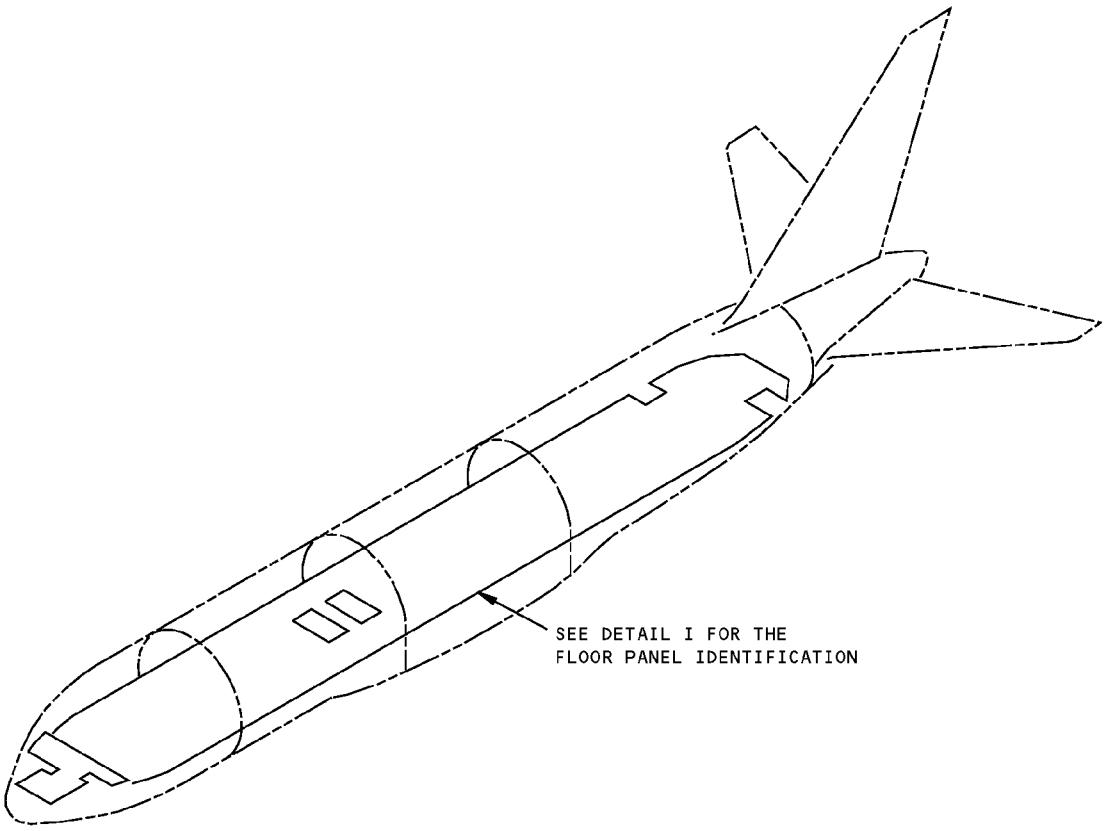
TABLE I

Large Cargo Door Surround Structure - Seal Depressor Time-Limited Repair - S-25R to S-31.5R
Figure 201 (Sheet 1 of 2)



Large Cargo Door Surround Structure - Seal Depressor Time-Limited Repair - S-25R to S-31.5R
Figure 201 (Sheet 2 of 2)

IDENTIFICATION 1 - MAIN DECK FLOOR PANEL



NOTES

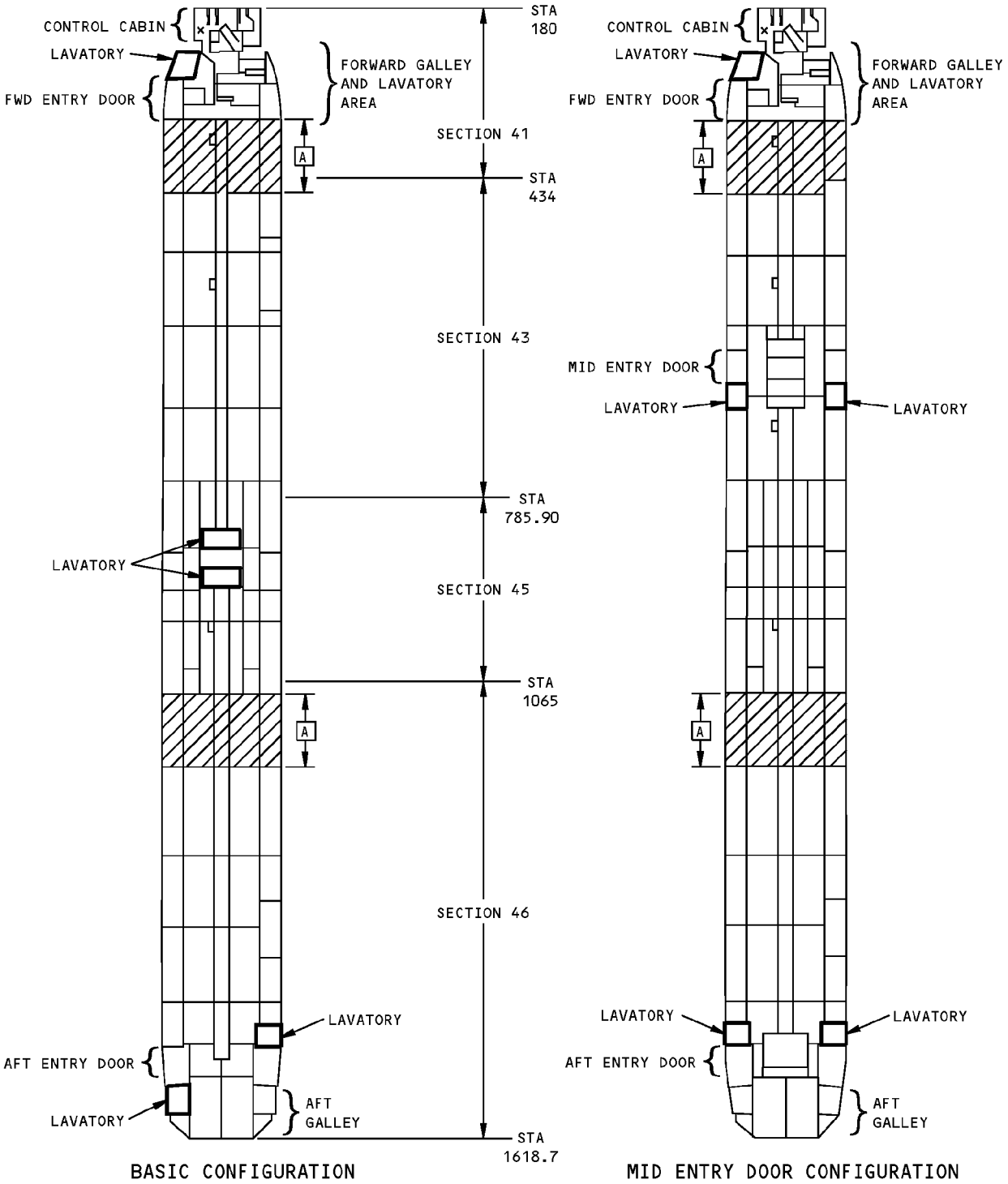
- FLOOR PANEL CONFIGURATIONS VARY AS AN OPERATOR OPTION. A TYPICAL FLOOR PANEL CONFIGURATION IS SHOWN TO DEPICT FLOOR PANEL CONSTRUCTION FOR SPECIFIC AREA USAGES (GALLEY, LAVATORY, DOOR ENTRY) AND TRAFFIC REQUIREMENTS.
- FOR APPLICABLE FLOOR PANEL INSTALLATIONS, REFER TO BOEING DRAWINGS:

  - 141T0001 FOR SECTION 41
  - 143T0001 FOR SECTION 43
  - 145T0001 FOR SECTION 45
  - 146T0001 FOR SECTION 46

- LAVATORY AND GALLEY LOCATIONS VARY AS AN OPERATOR OPTION. LAVATORY FLOORS ARE INTEGRAL WITH THE LAVATORY MODULE.
- THE FOLLOWING GROUND RULES HAVE BEEN USED FOR THE SELECTION OF FLOOR PANELS IN DESIGN. THE FLOOR PANEL ARRANGEMENT AND MATERIAL SELECTION, HOWEVER, REMAINS AS OPERATOR OPTIONS:

  1. FIBERGLASS FACED NOMEX CORE PANELS ARE TO BE USED IN POTENTIALLY MOIST AREAS (UNDER GALLEYS AND LAVATORIES, DOOR ENTRY AREAS, ETC.).
  2. CARBON FIBER (GRAPHITE) FACED PANELS ARE TO BE USED IN DRY AREAS.
  3. MEDIUM DENSITY HONEYCOMB CORE SANDWICH PANELS ARE TO BE USED IN LOW TRAFFIC AREAS.
  4. HIGH AND DUAL DENSITY HONEYCOMB CORE SANDWICH PANELS ARE TO BE USED IN HIGH TRAFFIC HIGH LOAD AREAS.

Main Deck Floor Panel Identification
Figure 1 (Sheet 1 of 3)



TYPICAL FLOOR PANEL ARRANGEMENT
DETAIL I

Main Deck Floor Panel Identification
Figure 1 (Sheet 2 of 3)

LOCATION	TYPE I FIBERGLASS FACED NOMEX (MEDIUM DENSITY CORE)	TYPE II FIBERGLASS FACED NOMEX (MEDIUM DENSITY CORE)	TYPE V FIBERGLASS FACED NOMEX (HIGH DENSITY CORE)	TYPE VII FIBERGLASS FACED NOMEX (DUAL DENSITY CORE)
CONTROL CABIN	•	•		
UNDER SEATS	•	•		
AISLES AND TRAFFIC AREAS				
SECTION 43 [F]		[D]		• [E]
SECTION 45 [F]		•		
SECTION 46 [F]				•
VICINITY OF ENTRY DOORS				
CARPETED		•	•	
UNCARPETED [B]		•	•	
UNDER GALLEYS [B]		•	•	
CARGO FLOOR	•	•		

BMS 4-17
TABLE I

LOCATION	TYPE III GRAPHITE FACED NOMEX (LOW DENSITY CORE)	TYPE II GRAPHITE FACED NOMEX (MEDIUM DENSITY CORE)	TYPE IV GRAPHITE FACED NOMEX (DUAL DENSITY CORE)
UNDER SEATS			
SECTION 43 [C]			
SECTION 46	•		
AISLES AND TRAFFIC AREAS			
SECTION 43		•	
SECTION 46			•

BMS 4-20
TABLE II

NOTES

- FIBERGLASS FACED NOMEX HONEYCOMB SANDWICH PER BMS 4-17 (LOW DENSITY - TYPE I; MEDIUM DENSITY - TYPE II; DUAL DENSITY - TYPE VII). REFER TO TABLE I.

[A] GRAPHITE FACED NOMEX HONEYCOMB SANDWICH PER BMS 4-20 (LOW DENSITY - TYPE III, MEDIUM DENSITY - TYPE II, DUAL DENSITY - TYPE IV). REFER TO TABLE II. [C]

[B] FIBERGLASS FACED NOMEX HONEYCOMB SANDWICH PER 69B15779, TYPE VI (HIGH DENSITY CORE) CUM LINE NUMBERS 132 THRU 264. BMS 4-17, TYPE VI (HIGH DENSITY CORE) CUM LINE NUMBERS 265 AND ON [C]

[C] PANEL TYPE AND LOCATION VARIES AS A CUSTOMER OPTION. SEE BOEING DRAWINGS.

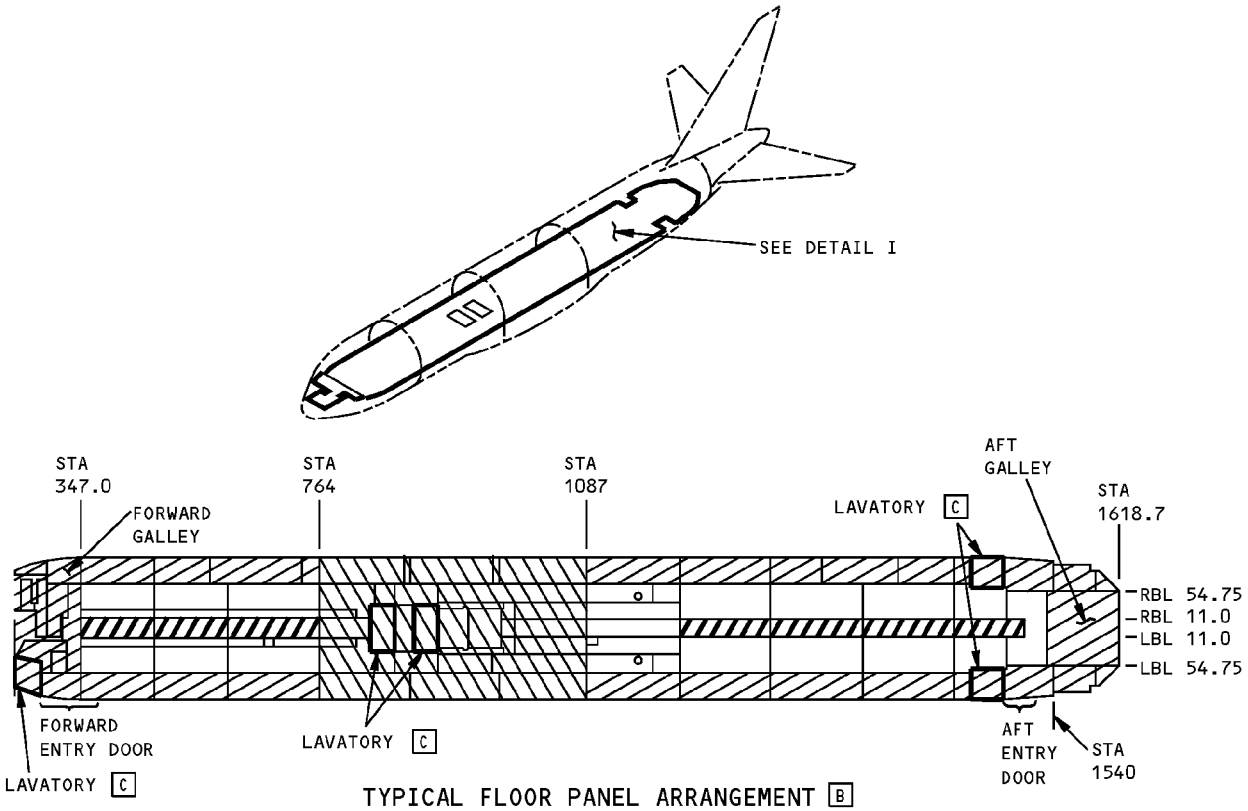
[D] MID ENTRY DOOR CONFIGURATION

[E] BASIC CONFIGURATION

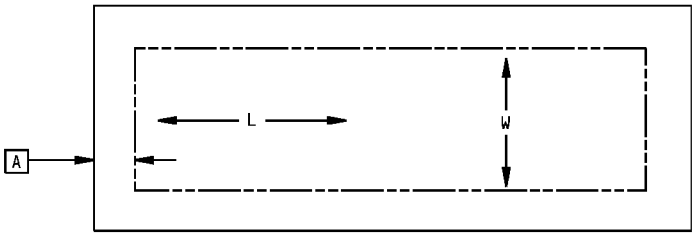
[F] GRAPHITE FACED NOMEX HONEYCOMB SANDWICH PER BMS 4-20, TYPE II FOR CUM LINE NUMBERS 280 AND ON

Main Deck Floor Panel Identification
Figure 1 (Sheet 3 of 3)

ALLOWABLE DAMAGE 1 - MAIN DECK FLOOR PANELS



TYPICAL FLOOR PANEL ARRANGEMENT B
DETAIL I



TYPICAL FLOOR PANEL
PLAN VIEW

ALLOWABLE DAMAGE (FOR ANY ONE PANEL) E F			
CRACKS	DENTS	HOLES	PANEL DELAMINATION
10 INCH LENGTH MAXIMUM	UP TO 50 SQUARE INCHES D	UP TO 50 SQUARE INCHES D	UP TO 50 SQUARE INCHES D

TABLE I

Main Deck Floor Panels Allowable Damage
Figure 101 (Sheet 1 of 2)

NOTES

- THE ALLOWABLE DAMAGE IS ONLY PERMITTED IN THE UPPER FACE SHEET OF A FLOOR PANEL. ONLY ONE DAMAGE IS PERMITTED PER PANEL UNLESS OTHERWISE SPECIFIED. NO DAMAGE IS ALLOWED IN THE LOWER FACE SHEET OF THE FLOOR PANEL. NICKS, GOUGES AND SCRATCHES THAT DO NOT BREAK THROUGH THE SURFACE PLY OF THE FACE SHEET ARE NOT COUNTED AS DAMAGE.

  IN THE CENTRAL AREA OF THE PANEL NO DAMAGE IS ALLOWED WITHIN 0.50 INCH FROM THE EDGE OF AN INSERT.

[A] NO DAMAGE IS PERMITTED WITHIN 3.00 INCHES OF THE EDGE OF THE PANEL.

[B] BASIC FLOOR PANEL CONFIGURATION IS SHOWN. THE FLOOR PANEL CONFIGURATION CAN BE DIFFERENT BECAUSE OF THE OPERATORS' OPTION.

[C] NO FLOOR PANELS IN LAVATORY AREAS.

[D] REFER TO DETAIL I FOR THE FOLLOWING RESTRICTIONS:


TOTAL DAMAGE MUST NOT BE MORE THAN 30% OF THE PANEL LENGTH IN THE "L" DIRECTION OR 30% OF THE PANEL WIDTH IN THE "W" DIRECTION.


TOTAL DAMAGE MUST NOT BE MORE THAN 5% OF THE PANEL LENGTH IN THE "L" DIRECTION OR 5% OF THE PANEL WIDTH IN THE "W" DIRECTION.


ONE DAMAGE AREA IS PERMITTED AND IT MUST NOT BE MORE THAN 10.00 INCHES IN EITHER THE "L" OR "W" DIRECTION.


TOTAL DAMAGE MUST NOT BE MORE THAN 30% OF THE PANEL LENGTH IN THE "L" DIRECTION OR 30% OF THE PANEL WIDTH IN THE "W" DIRECTION. DAMAGE IS NOT PERMITTED IN ADJACENT FLOOR BEAM BAYS, BUT IS PERMITTED IN ALTERNATE FLOOR BEAM BAYS. NO SIGNIFICANT FASTENERS AT BL 0.00

[E] THE ALLOWABLE DAMAGE CRITERIA STATED HEREIN APPLIES TO STRUCTURAL INTEGRITY ONLY AND SHOULD NOT BE USED WHERE FLOOR PANEL FUNCTIONAL UTILITY [G] IS IMPAIRED. IF THE FLOOR PANEL FUNCTIONAL UTILITY [G] IS IMPAIRED, REPAIR THE DAMAGED AREA AS GIVEN IN THE REPAIR SECTION OR REPLACE THE DAMAGED FLOOR PANEL. IF THE FLOOR PANEL FUNCTIONAL UTILITY [G] IS NOT IMPAIRED, REMOVE THE MOISTURE AND SEAL THE DAMAGE AREA AS GIVEN IN [F].

[F] REMOVE CONTAMINATION AND MOISTURE FROM THE DAMAGED AREA. USE VACUUM AND HEAT (A MAXIMUM OF 125°F OR 52°C) TO REMOVE MOISTURE FROM THE DAMAGED AREA. DO ONE OF THE STEPS THAT FOLLOW:

- SEAL THE DAMAGED AREA WITH ALUMINUM FOIL TAPE (SPEED TAPE). KEEP A RECORD OF THE LOCATION AND MAKE AN INSPECTION EVERY "A" CHECK. REPLACE THE TAPE IF ANY DAMAGE IS FOUND. REPAIR THE DAMAGED AREA OR REPLACE THE PANEL AT THE NEXT "C" CHECK, OR
- IF THE TYPE OF DAMAGE SUSTAINED PERMITS, APPLY A SEALING RESIN AS SPECIFIED IN SRM 51-70-06. KEEP A RECORD OF THE LOCATION AND MAKE AN INSPECTION EVERY "A" CHECK. REPAIR THE DAMAGED AREA OR REPLACE THE PANEL AT THE NEXT "C" CHECK.

THESE STEPS DO NOT RESTORE THE FUNCTIONAL UTILITY [G] OF THE FLOOR PANEL. THEY WILL ONLY PROVIDE AN ENVIRONMENTAL SEAL TO RETARD ENVIRONMENTAL DETERIORATION OF THE PANEL.

[G] THE PANEL MUST BE ABLE, WITH THE DAMAGE IT HAS SUSTAINED, TO PERFORM ITS REQUIRED USEFUL FUNCTIONS. FOR EXAMPLE, THE PANEL, THOUGH DAMAGED, MUST BE ABLE TO CARRY FOOT TRAFIC, FOOD CART AND DECOMPRESSION LOADS WITHOUT SUSTAINING ADDITIONAL DAMAGE.

IN ADDITION, THE PANEL MUST NOT BE A SAFETY HAZARD.

Main Deck Floor Panels Allowable Damage
Figure 101 (Sheet 2 of 2)

REPAIR GENERAL - FLOOR PANELS

1. General

A. These procedures apply to the repair of composite floor panels and aluminum faced balsa core floor panels. Refer to Figure 201/REPAIR GENERAL for main deck floor panel identification. See SRM 53-XX-53 for cargo compartment and 53-10-54, IDENTIFICATION 1 for equipment bay floor panel identification.

B. SeeFigure 201/REPAIR GENERAL for limitations on the size of composite floor panel repairs. There are no structural limitations on the size of balsa core floor panel repairs. The size of balsa core panel repairs are to be determined by the practicality of making a satisfactory repair with the facilities available.

C. Refer to Paragraph 5./REPAIR GENERAL for cleaning and preparation of composite surfaces.

D. Refer to 51-20-01, GENERAL for cleaning and alodizing of metal surfaces.

E. Restore surface finish as given in AMM 51-21.

2. References

Reference	Title
51-20-01, GENERAL	Protective Treatment of Metallic and Nonmetallic Repair Parts
53-10-54, IDENTIFICATION 1	Forward Equipment Bay Floor Panel
AMM 51-21	Aircraft Maintenance Manual
SOPM 20-30-99	Solvents For Final Cleaning of Composites Before Structural Bonding (Series 99)

3. Description

A. Composite panels consist of a nomex honeycomb core with either fiberglass or graphite face sheets.

B. Aluminum faced balsa core panels consist of a balsa grain core with a 0.050 clad 2024-T3 upper facesheet and a 0.012 clad 2024-T3 lower facesheet.

4. Repairs

A. Dent Repair

(1) Dents in composite panels result in delamination and fiber damage. Cut out damage and repair as a hole.

(2) Repairs to dents in balsa core panels greater than 1 in. (25 mm) across the major axis or greater than 0.02 in. (0.51 mm) deep.

(a) Mix a quantity of BMS 5-28 type 19 potting compound as described in Paragraph 8.E./REPAIR GENERAL Fill the dent in the panel with potting compound. Cure the compound 7 days at 75 to 85°F (25 to 29°C) or 5 hours at 115 to 125°F (46 to 52°C). Sand the potted area until it is flush with the surrounding skin.

(b) Bond a doubler over the repair as given in Paragraph 4.B./REPAIR GENERAL.

B. Repair to one skin with undamaged core.

(1) Composite Panels

(a) Insert bolts and nuts in the spacers in the vicinity of the damaged area to prevent further delamination during repair operations.

(b) Carefully cut the damaged skin with a circular hole saw and remove the damaged portion, or if the skin is cracked, drill stop holes at the extremities as shown in Figure 201/REPAIR GENERAL, Details I and II.

(c) Remove spacers in damaged area.

(d) Mix a quantity of BMS 5-28 type 19 potting compound as described in Paragraph 8.E./REPAIR GENERAL E. Fill all exposed core cells with potting compound to the core surface, making it flush or slightly above the outer skin surface. Cure the compound 7 days at 75 to 85°F (24 to 29°C) or 5 hours at 115 to 125°F (46 to 52°C). Sand the potted area until it is flush with the surrounding skin.

(e) Apply either of the following:

1) Four plies of BMS 9-3 Type H-2 or H-3 fiberglass cloth impregnated with Resin Mix #1 to a damaged top skin, or three plies to a damaged bottom skin as shown inFigure 201/REPAIR GENERAL, detail I. Refer to Paragraph 5./REPAIR GENERAL for cleaning of the damaged area, and preparation and application of fiberglass repair plies.

2) One ply of precured fiberglass sheet (BMS 8-100) as shown in Figure 201/REPAIR GENERAL, detail II. Refer to Paragraph 6./REPAIR GENERAL for cleaning of the damaged area, and preparation and application of the fiberglass sheet.

(f) Reinstall spacers as given in Paragraph 9./REPAIR GENERAL.

(2) Balsa Core Panels

(a) Insert bolts and nuts in the spacers in the vicinity of the damaged area to prevent further delamination during repair operations.

(b) Carefully cut the damaged skin with a circular hole saw and remove the damaged portion, or if the skin is cracked, drill stop holes at the extremities as shown inFigure 202/REPAIR GENERAL detail I.

(c) Remove spacers in damaged area.

(d) Mix a quantity of BMS 5-28 type 19 potting compound as described in Paragraph 8.E./REPAIR GENERAL Fill the exposed cavity with potting compound to make it flush or slightly above the outer skin surface. Cure the compound 7 days at 75 to 85°F (24 to 29°C) or 5 hours at 115 to 125°F (46 to 52°C). Sand the potted area until it is flush with the surrounding skin.

(e) Install a doubler as given in Paragraph 7./REPAIR GENERAL of the same gage and material as the damaged skin to extend 40 times the gage beyond the crack or the edge of the hole, as shown inFigure 202/REPAIR GENERAL, Detail I.

(f) Reinstall spacers as given in Paragraph 9./REPAIR GENERAL.

C. Repair to one skin and core less than 1 in. (25 mm) diameter.

(1) Composite Panels

(a) Insert bolts and nuts in the spacers in the vicinity of the damaged area to prevent further delamination during repair operation.

(b) Remove the damage by cutting a circular hole not more than 1 in. (25 mm) diameter, taking care not to damage the opposite skin.

NOTE: Rout out only the damaged portion of Nomex core.

(c) Remove spacers in damaged area.

(d) Fill the cavity in the core with BMS 5-28, type 19 potting compound. Cure the compound 7 days at 75 to 85°F (24 to 29°C) or 5 hours at 115 to 125°F (46 to 52°C). Sand the potted area until it is flush with the surrounding skin.

(e) Apply either of the following:

1) Four plies of BMS 9-3 Type H-2 or H-3 fiberglass cloth impregnated with Resin Mix #1 to a damaged bottom skin as shown in Figure 201/REPAIR GENERAL, Detail III. Refer to Paragraph 5./REPAIR GENERALfor cleaning of the damaged area, and preparation and application of fiberglass repair plies.

2) One ply of precured fiberglass sheet (BMS 8-100) as shown in Figure 201/REPAIR GENERAL, detail IV. Refer to application of the fiberglass sheet.

(f) Reinstall spacers as given in Paragraph 9./REPAIR GENERAL.

(2) Balsa Core Panels

(a) Insert bolts and nuts in the spacers in the vicinity of the damaged area to prevent further delamination during repair operations.

(b) Remove the damage by cutting a circular hole not more than 1 in. (25 mm) diameter, taking care not to damage the opposite skin.

(c) Rout out the core 0.5 in. (13 mm) back from the edge of the hole.

(d) Remove spacers in damaged area.

(e) Fill the cavity in the core with BMS 5-28, type 19 potting compound. Cure the compound 7 days at the 75 to 85°F (24 to 29°C) or 5 hours at 115 to 125°F (46 to 25°C). Sand the potted area until it is flush with the surrounding skin.

(f) Install a doubler as given in Paragraph 7./REPAIR GENERAL of the same gage and material as the damaged skin to extend 40 times the gage beyond the edge of the hole as shown in Figure 202/REPAIR GENERAL , Detail I.

(g) Reinstall spacers as given in Paragraph 9./REPAIR GENERAL.

D. Repair to one skin and core greater than 1 in. (25 mm) diameter.

(1) Composite Panels

(a) Insert bolts and nuts in the spacers in the vicinity of the damaged area to prevent further delamination during repair operations.

(b) Cut out the damaged area with a circular hole saw, taking care not to damage the opposite skin.

(c) Remove spacers in damaged areas.

(d) Make a core plug from similar material to the original core, 0.06 in. (1.52 mm) to 0.125 in. (3.18 mm) smaller than the diameter of the hole, as shown in Figure 201/REPAIR GENERAL. Cut core plug from a sheet thick enough so that the upper and/or lower surface of the plug protrudes slightly above the upper and/or lower surface of the floor panel.

(e) Mix a quantity of BMS 5-28, type 19 potting compound as described in Paragraph 8.E./REPAIR GENERAL. Pot the core plug into the hole with potting compound. Cure the compound 7 days at 75 to 85°F (24 to 29°C) or 5 hours at 115 to 125°F (46 to 52°C). Sand the plug until it is flush with the surrounding skin.

(f) Apply either of the following:

1) Four plies of BMS 9-3 Type H-2 or H-3 fiberglass cloth impregnated with Resin Mix #1 to a damaged top skin, or three plies to a damaged bottom skin as shown in Figure 201/REPAIR GENERAL, detail III. Refer to Paragraph 5./REPAIR GENERAL for cleaning of the damaged area, and preparation and application of fiberglass repair plies.

2) One ply of precured fiberglass sheet (BSM 8-100) as shown in Figure 201/REPAIR GENERAL, detail IV. Refer to Paragraph 6./REPAIR GENERAL for cleaning of the damaged area, and preparation and application of the fiberglass sheet.

(g) Reinstall spacers as given in Paragraph 9./REPAIR GENERAL

(2) Balsa Core Panels

(a) Insert bolts and nuts in the spacers in the vicinity of the damaged area to prevent further delamination during repair operations.

(b) Cut out the damaged area with a circular hole saw, taking care not to damage the opposite skin.

(c) Remove spacers in damaged areas.

(d) Make a core plug from similar material to the original core, 0.06 in. (1.52 mm) to0.125 in. (3.18 mm) smaller than the diameter of the hole, as shown in Figure 202/REPAIR GENERAL. Cut core plug from a sheet thick enough so that the upper and/or lower surface of the plug protrudes slightly above the upper and/or lower surface of the floor panel.

(e) Pot the core plug into the hole with BMS 5-28, type 19 potting compound. Cure the compound 7 days at 75 to 85°F (24 to 29°C) or 5 hours at 115 to 125°F (46 to 52°C). Sand the plug until it is flush with the surrounding skin.

(f) Install a doubler per Paragraph 6./REPAIR GENERAL of the same gage and material as the damaged skin, to extend 40 times the gage beyond the edge of the hole as shown inFigure 202/REPAIR GENERAL , Detail II.

(g) Reinstall spacers as given in Paragraph 9./REPAIR GENERAL.

E. Repair to both skins and core. (For all panels)

(1) Insert bolts and nuts in the spacers in the vicinity of the damaged area to prevent further delamination during repair operations.

(2) Where both skins and core are damaged, cut right through the panel with a circular hole saw.

(3) Repair each side of the panel as described in Paragraph 4.D./REPAIR GENERAL

(4) Reinstall spacers as given in Paragraph 9./REPAIR GENERAL.

F. Repairs to delaminated areas under 16 in^2 (103 cm^2) in area.

NOTE: It is preferable to repair delamination by removal of the skin from the affected area as described in Paragraph 4.B./REPAIR GENERAL Repair by adhesive injection as described in this paragraph is an optional alternative

(1) Composite Panels

NOTE: Delamination over 16 in^2 (103 cm^2) in area between skin plies must be repaired as given in Paragraph 4.B./REPAIR GENERAL

Delamination between skin and honeycomb core must be repaired as given in Paragraph 4.B./REPAIR GENERAL

(a) Install bolts and nuts in the spacers to ensure that the skins will not be separated from the spacers during the course of repair work.

(b) Locate the void by coin tap or other NDI method.

(c) Drill a 0.125 inch diameter hole at each end of the void. Only one hole is required if the void extends to the edge of a panel.

(d) Prepare Resin Mix #1 as described in Paragraph 8.A./REPAIR GENERAL and inject it into one hole until it comes out of the other hole or the panel edge.

(e) Fill the 0.125 inch diameter holes with Resin Mix #1 and finish off flush with the surrounding surface.

(f) Apply vacuum bag or 10 psi (69 kPa) to 15 psi (103 kPa) pressure and cure resin for 10 to 12 hours at 70°F (21°C) or 30 to 60 minutes at 200°F (93°C).

(2) Balsa Core Panels

NOTE: Delamination over 16 in^2 (103 cm^2) in area must be repaired as given in Paragraph 4.B./REPAIR GENERAL

(a) Install bolts and nuts in the spacers to ensure that the skins will not be separated from the spacers during the course of repair work.

(b) Locate the void by coin tap or other NDI method.

(c) Drill a 0.125 inch diameter hole at each end of the void. Only one hole is required if the void extends to the edge of the panel.

(d) Inject EC2216 adhesive (BMS 5-92, Type I) prepared as described in Paragraph 8./REPAIR GENERAL D., into one hole until it comes out of the other hole or the panel edge.

(e) Fill the 0.125 diameter holes with adhesive and finish off flush with the outer surface.

(f) Apply vacuum bag or 10 psi (69 kPa) to 15 psi (103 kPa) pressure and cure for 16 hours at room temperature or 3 hours at 140 to 160°F (60 to 71°C).

G. Edge delamination - composite panels

(1) Repair to edge delamination between skin plies.

(a) Install bolts and nuts in the spacers to ensure that the skins will not be separated from the spacers during the course of repair work.

(b) Insert a dull, clean spatula between the delaminated skin plies to determine the extent of the delamination.

NOTE: If delamination is greater than 4 in^2 (26 cm^2), repair per Paragraph 4.B./REPAIR GENERAL.

(c) Prepare Resin Mix #1 as described in Paragraph 8.A./REPAIR GENERAL and inject it into the damaged area with a syringe or sealant gun and clamp the edge firmly into shape.

(d) If the edge potting or core is damaged, fill with BMS 5-28, type 19 potting compound mixed as described in Paragraph 8.E./REPAIR GENERAL. (Figure 201/REPAIR GENERAL, detail V or VI). Cure the compound 7 days at 75 to 85° (24 to 29° C) or 5 hours at 115 to 125°F (46 to 52°C). Sand the potted area until it is flush with the surrounding skin.

(2) Repair to edge delamination between skin and nomex core.

(a) Repair edge delamination between skin and nomex coreas given in Paragraph 4.B./REPAIR GENERAL.

(3) Repair to edge delamination and damage to Nomex core.

(a) Insert bolts and nuts in the spacers in the vicinity of the damaged area to prevent further delamination during repair operations.

(b) Carefully trim off delaminated skin and remove damaged portion of core. Remove spacers and plugs in damaged area.

(c) Fill cavity in core with BMS 5-28 type 19 potting compound mixed as described in Paragraph 8.E./REPAIR GENERAL. Cure the compound 7 days at 75 to 85°F (24 to 29°C) or 5 hours at 115 to 125°F (46 to 52°C). Sand the potted area flush with surrounding skin and panel edge.

NOTE: If damage to core is greater than 4 square inches, bond a section of core with one skin attached, or an undamaged section of a scrap panel with one skin removed, into the trimmed area with BMS 5-28, type 19 potting compound as shown in Figure 201/REPAIR GENERAL, detail VII or VIII. The attached skin should correspond to the removed skin of the panel being repaired. The maximum gap between the new and trimmed face sheet must be 0.06 inch.

(d) Apply either of the following:

1) Four plies of BMS 9-3 Type H-2 or H-3 fiberglass cloth impregnated with Resin Mix #1 to a damaged top skin, or three plies to a damaged bottom skin as shown in Figure 201/REPAIR GENERAL, detail III. Refer to Paragraph 5./REPAIR GENERAL for cleaning of the damaged area, and preparation and application of fiberglass repair plies.

2) One ply of precured fiberglass sheet (BMS 8-100) as shown inFigure 201/REPAIR GENERAL , detail IV. Refer to par. 5 for cleaning of the damaged area, and preparation and application of the fiberglass sheet.

(e) Reinstall spacers as given in Paragraph 9./REPAIR GENERAL.

H. Edge delamination - balsa core panels

(1) Repair to edge delamiantion and damage to potting and core less than 1.0 in. (25 mm) deep and 3.0 in. (76 mm)inches long.

(a) Install bolts and nuts in the spacers to ensure that the face plies will not be separated from the spacers during the course of repair work.

(b) Insert a dull, clean spatula between the delaminated skin and the core to determine the extent of the damage.

(c) Straighten out any bent metal.

(d) Inject EC2216 adhesive (BMS 5-92, Type I) prepared as described in Paragraph 8.D./REPAIR GENERAL, into the damaged area with a syringe or sealant gun, and clamp the edge firmly into shape. Cure the adhesive for 16 hours at room temperature or 3 hours at 140 to 160°F (60 to 71°C).

(e) If the edge potting or core is damaged fill it with BMS 5-28, type 19 potting compound (detail III). Cure the compound 7 days at 75 to 85°F (24 to 29°C) or 5 hours at 115 to 125°F (46 to 52°C). Sand the potted area until it is flush with the surrounding skin.

(f) Where a face ply is damaged, install a doubler per par.Paragraph 4.B./REPAIR GENERAL

(2) Repair to edge delamination and damage to potting and core greater than 1.0 in. (25 mm)deep and 3.0 in. (76 mm) long.

(a) Insert bolts and nuts in the spacers in the vicinity of the damaged area to prevent further delamination during repair operations.

(b) Trim off damaged skin and remove damaged core to a distance at least 1.0 in. (25 mm) back from the edge of the panel. Carefully remove any spacers in the damaged area.

(c) Straighten any bent metal.

(d) Bond any delaminated areas back together as described in par.Paragraph 4.H.(1)/REPAIR GENERAL

(e) Bond a section of core with one face sheet attached, or an undamaged section of a scrap panel with one face removed into the trimmed area with EC2216 adhesive as shown inFigure 202/REPAIR GENERAL, detail IV. The attached face sheet should correspond to the removed face sheet of the panel being repaired. The maximum gap between the new and trimmed face sheet must be 0.060 in. (1.52 mm). Cure the bonded section as given in Paragraph 7./REPAIR GENERAL.

(f) Bond a doubleras given in Paragraph 4.B./REPAIR GENERAL

(g) Reinstall spacers as given in Paragraph 9./REPAIR GENERAL.

5. Application of Fiberglass Repair Plies

A. Lightly sand the area to be covered by the fiberglass repair plies, plus a 0.5 in. (13 mm) border beyond the area.

B. Clean the area with oil-free air.

C. Wipe the surfaces with a clean cloth moistened solvent, Series 99 (AMM/ SOPM 20-30-99).

D. Cut a piece of BMS 9-3, Type H-2 or H-3 fiberglass cloth of sufficient size to make the required number of repair plies.

E. Cut two pieces of parting film approximately 3 in. (76 mm) larger than the fiberglass cloth.

F. Spread Resin Mix #1, prepared as described in Paragraph 8.A./REPAIR GENERAL, over one piece of parting film and place the fiberglass cloth on top of the resin. The weight of resin required is approximately equal to the weight of the cloth.

G. Lay the second piece of parting film on top of the fiberglass cloth and press the resin through the cloth with a squeegee or roller.

H. Cut the repair plies to the desired size.

I. Remove the parting film from one side of one of the repair plies. Apply the exposed side of the repair ply to the damaged panel and lightly squeegee over the remaining parting film to remove wrinkles and entrapped air. Take care not to apply excessive pressure on the squeegee or too much resin will be squeezed from the repair ply. After installation remove the top parting film.

J. Apply the remaining repair plies, one at a time, in the same manner as the first ply.

K. Seal a diaphragm of PVA film over the repair area using extruded sealing tape, incorporating a vacuum sniffer tube.

L. Attach a vacuum hose to the sniffer to evacuate the space under the film, sweep the area with a squeegee to remove any air bubbles evident and maintain a minimum vacuum of 20 in. (51 cm) of mercury for the duration of the cure.

M. Cure the resin for approximately 10 to 12 hours at 70°F (21°C) or 30 to 60 minutes at 200°F (93°C).

N. After the resin has cured remove the PVA film.

O. Restore the initial finish.

6. Application of Precured Fiberglass Sheet

A. Remove the existing primer or paint finish over the area to which the fiberglass patch is to be applied, using a Tycro Type 30A very fine aluminum oxide unitized wheel attached to a drill motor or by hand sanding with a 200-grit or finer sandpaper.

B. Mask any exposed core with teflon or lead tape.

C. Clean the abraded area with solvent, Series 99 (AMM/ SOPM 20-30-99).

D. If the surface was unpainted remove surface gloss by sanding with fresh pieces of Scotchbrite Type A, taking care not to penetrate the glass fabric. Reclean the abraded area with solvent, Series 99 (AMM/ SOPM 20-30-99) or use oil-free compressed air to remove the sanding dust.

E. Remove any masking tape applied to exposed core.

F. Cut the repair patch from BMS 8-100 fiberglass sheet of the same thickness as the skin being repaired. Lightly sand the mating surface to remove the tedlar film and clean as described in Paragraph 6.C./REPAIR GENERAL and Paragraph 6.D./REPAIR GENERAL.

G. Apply a uniform coat of EC2216 adhesive, (BMS 5-92, Type I), prepared as described in Paragraph 8.D./REPAIR GENERAL, to both the floor panel and the fiberglass patch. The adhesive should be from 0.005 to 0.010 inch thick on each surface.

H. Apply the patch and clamp or bag the surfaces togeeher and hold under a minimum vacuum of 20 in. (51 cm) of mercury or 10 psi (69 kPa) to 15 psi (103 kPa) clamping pressure.

I. Cure the bond for 16 hours at room temperature or for 3 hours at 140 to 160°F (60 to 71°C) before removing the clamping pressure.

J. Leave the fillet formed by the adhesive squeezed out at the edges of the patch to seal the joint.

K. Restore the finish.

7. Aluminum to Aluminum Bonding Process

WARNING: THESE CHEMICALS CONTAIN TOXIC INGREDIENTS. PROVIDE ADEQUATE VENTILATION AND PROTECT THE SKIN AND EYES FROM CONTACT WITH UNCURED RESIN OR CURING AGENT. WEAR RUBBER GLOVES OVER COTTON GLOVES FOR PROTECTION OF HANDS. IF SKIN IS EXPOSED TO DIRECT CONTACT WITH UNCURED RESINS OR CURING AGENT WASH WITH SOAP AND WARM WATER. AVOID THE USE OF SOLVENTS FOR CLEANING THE SKIN.

A. Strip the organic and inorganic finish from the repair area and clean and alodize the surfaces to be bonded as described in 51-20-01, GENERAL. Before alodizing, thoroughly mask all of exposed core with lead or teflon tape.

B. After the final rinsing of the alodized surfaces, the area must be air dried, not less than 75°F (24°C) until no sign of water remains.

C. Within 2 hours after the final rinsing of the alodized surfaces, apply primer as described in 51-20-01, GENERAL.

D. Spread EC2216 adhesive (BMS 5-92, Type I), prepared as described in Paragraph 8.D./REPAIR GENERAL over both faying surfaces with a grooved trowel or spatula. Apply 0.005 in. (0.13 mm) to 0.010 in. (0.25 mm) thick.

E. Apply a vacuum bag and hold 20 in. (51 cm) of vacuum, or use clamps to provide 10 psi (69 kPa) to 15 psi (103 kPa) clamping pressure.

F. Cure the bond 16 hours at room temperature or 3 hours at 140 to 160°F (60 to 71°C).

8. Preparation of Resin Mixes

WARNING: THESE CHEMICALS CONTAIN TOXIC INGREDIENTS. PROVIDE ADEQUATE VENTILATION AND PROTECT THE SKIN AND EYES FROM CONTACT WITH UNCURED RESIN OR CURING AGENT. WEAR RUBBER GLOVES OVER COTTON GLOVES FOR PROTECTION OF HANDS. IF SKIN IS EXPOSED TO DIRECT CONTACT WITH UNCURED RESINS OR CURING AGENT WASH WITH SOAP AND WARM WATER. AVOID THE USE OF SOLVENTS FOR CLEANING THE SKIN.

A. Resin Mix #1

(1) Add 15 parts by weight of Epocast 9816 hardener to 100 parts by weight of Epocast 50A resin and mix thoroughly.

(2) Pot Life of the mixture is approximately 45 to 60 minutes at 75°F (24°C).

B. Alternatives Resin Mix #1

(1) Add 15 parts by weight of Epocast 8442B hardener to 100 parts by weight or Epocast 8442 Mod III resin and mix thoroughly.

(2) Pot Life of the mixture is approximately 45 to 60 minutes at 75°F (25°C).

C. Sealer Resin

(1) Add 10 parts by weight of Epocast 941 hardener to 100 parts by weight of Epocast 156 resin and mix thoroughly.

(2) Pot Life of the mixture is approximately 45 to 60 minutes at 70°F (21°C).

D. EC2216 Adhesive (BMS 5-92, Type I) The adhesive must be mixed thoroughly to a uniform gray color in the following ratio before use, scrape the sides and bottom of the container frequently to pull uncombined material into the mix.

Table 201: Adhesive Mix Data -BMS 5-92, Type I

Component	Weight	Parts by Volume
Base B (Off-White)	100	100
Hardener A (Gray)	140	150

(1) Pot Life of the adhesive is 2 hours if mixed in small batches weighing less than 6 oz (170 g). Larger batches or higher temperatures will reduce the pot life appreciably.

(2) Do not thin adhesive with solvents.

E. BMS 5-28 Type 19 Potting Compound

(1) Weigh the components to within ±27 percent of the proportions specified on the package. Do not mix a larger batch than 350 grains (23 grams).

(2) Mix the components together, using long strokes to avoid the inclusion of air, until the mixture obtains an even color. Do not thin resins.

(3) Pot life of the mixture is approximately 30 minutes at 75°F (24°C).

9. Reinstallation of Floor Panel Spacers (See Figure 201, Details IX and X)

A. Spacers that have been removed from damaged area are to be reinstalled as follows:

(1) Determine location of original spacers.

(2) Drill a 0.44 in. (11 mm) to 0.47 in. (12 mm) diameter hole for installation of the SL-5107-A3 series insert. Cut through the floor panel by any procedure which avoids damage extending more than 0.5 in. (13 mm) from the hole edge on either side of the panel. Avoid dimpling of skin and delamination between skin and core.

NOTE: Centerline of hole must be maintained. Hole must be clean and free of loose core pieces which can interfere with closing or bonding of inserts. Loose fibers shall be limited to areas which will be covered by the head of the installed insert.

No liquid coolants or lubricants are permitted.

(3) Solvent clean the surface with a clean, lint free cloth wetted with (but not saturated) genklene or chlorothene. Do not allow the solvent to evaporate from the surface.

(4) Wipe the surface dry with a clean dry cloth. Do not touch or contaminate cleaned surfaces.

(5) Degrease inserts using appropriate safety precautions.

(6) Mix the BMS 5-107 adhesive according to the suppliers recommended ratio (on the container) within ±5 percent.

NOTE: The adhesive shall be used within 45 minutes at temperatures not to exceed 90°F (32°C). All insert installations must be completed and cure started within 90 minutes of mixing.

(7) Apply the adhesive in any manner that will assure the adhesive covers the faying surface between the insert flange and panel after insert installation.

(8) Assemble the inserts to the panel so that the flange is on the lower side of the panel.

(9) Upset the upper side of the insert using a (ST3109H) flare fitting on a rivet squeezer for the SL-5107-A3 series insert, (see Figure 201/REPAIR GENERAL, Detail IX). Adjust upset pressure to provide dimension between the panel face sheet and the insert as shown in Figure 201/REPAIR GENERAL, Detail X after insert is upset.

NOTE: Boelube or liquid cetyl alcohol may be used on the forming tool to aid the forming action and increase tool life.

(10) All adhesives shall be removed from the inside bore of the insert prior to cure. Visually check for evidence of adhesive at the faying surface edge between the insert flange and the panel.

NOTE: Squeezed out fillets of adhesives are acceptable and need not be wiped off unless the adhesive extends more than 0.15 in. (3.8 mm) above the surface of the insert. (71 ±6°C) for two hours followed by a post cure of 24 hours at 68°F (20°C) minimum.

NOTE: Panels may be installed after initial two hour 160°F (71°C) cure.

REPAIR LIMITS FOR DAMAGE TO PANELS		
TYPE OF DAMAGE	LENGTH OR DIAMETER OF DAMAGE (INCHES)	DEPTH OF DAMAGE (INCHES)
PLY DELAMINATION	[D]	
CRACK OR HOLE	[D]	THROUGH FACE PLY
GOUGE	[D]	THROUGH FACE PLY INTO CORE
HOLE	[D]	COMPLETELY THROUGH PANEL
SCRATCH	[D]	[A]

TABLE I

NOTES

[A] SAND OUT SCRATCHES UP TO 0.015 DEEP ON BOTTOM FACE WITH 180 GRIT OR FINER SAND-PAPER. APPLY RESIN MIX 1 TO THE AFFECTED AREA AFTER REWORK. DEEPER SCRATCHES MUST BE REPAIRED IN A SIMILAR MANNER TO A CRACK

[B] SAME MATERIAL AS DAMAGED CORE (NOMEX, BMS 8-124, CLASS 1, TYPE 1, GRADE 4)

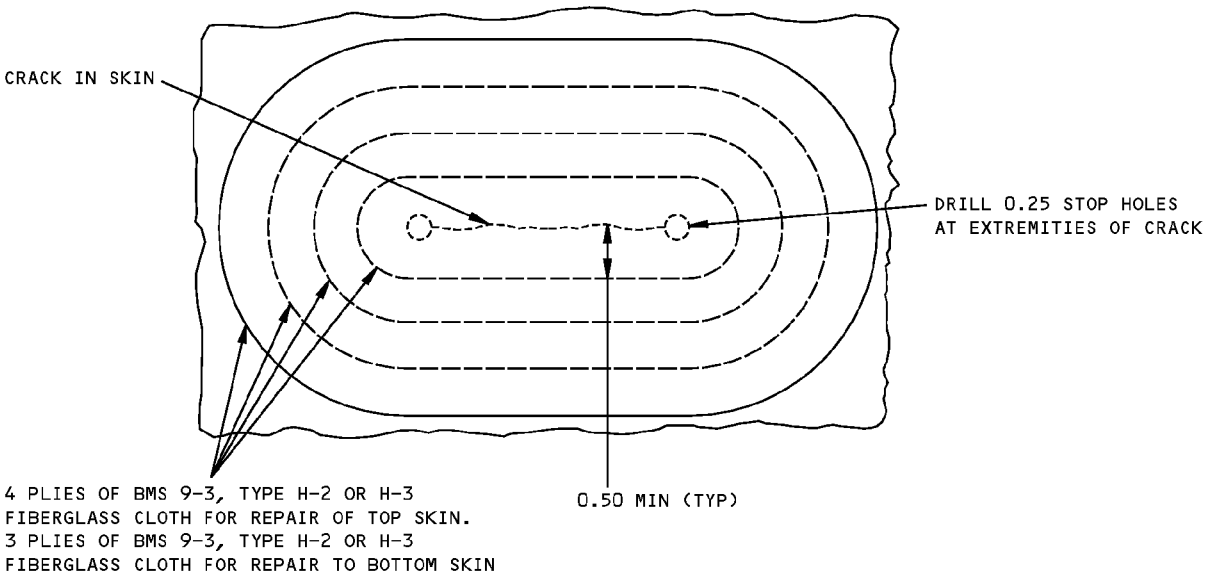
[C] CORE AND SKIN SAME AS ORIGINAL MAY BE MADE FROM SCRAP PANEL WITH ONE SKIN REMOVED

[D] THERE ARE NO STRUCTURAL LIMITATIONS ON THE SIZE OF REPAIRABLE DAMAGE. THE SIZE OF REPAIRABLE DAMAGE IS TO BE DETERMINED BY THE PRACTICABILITY OF MAKING A SATISFACTORY REPAIR WITH THE FACILITIES AVAILABLE

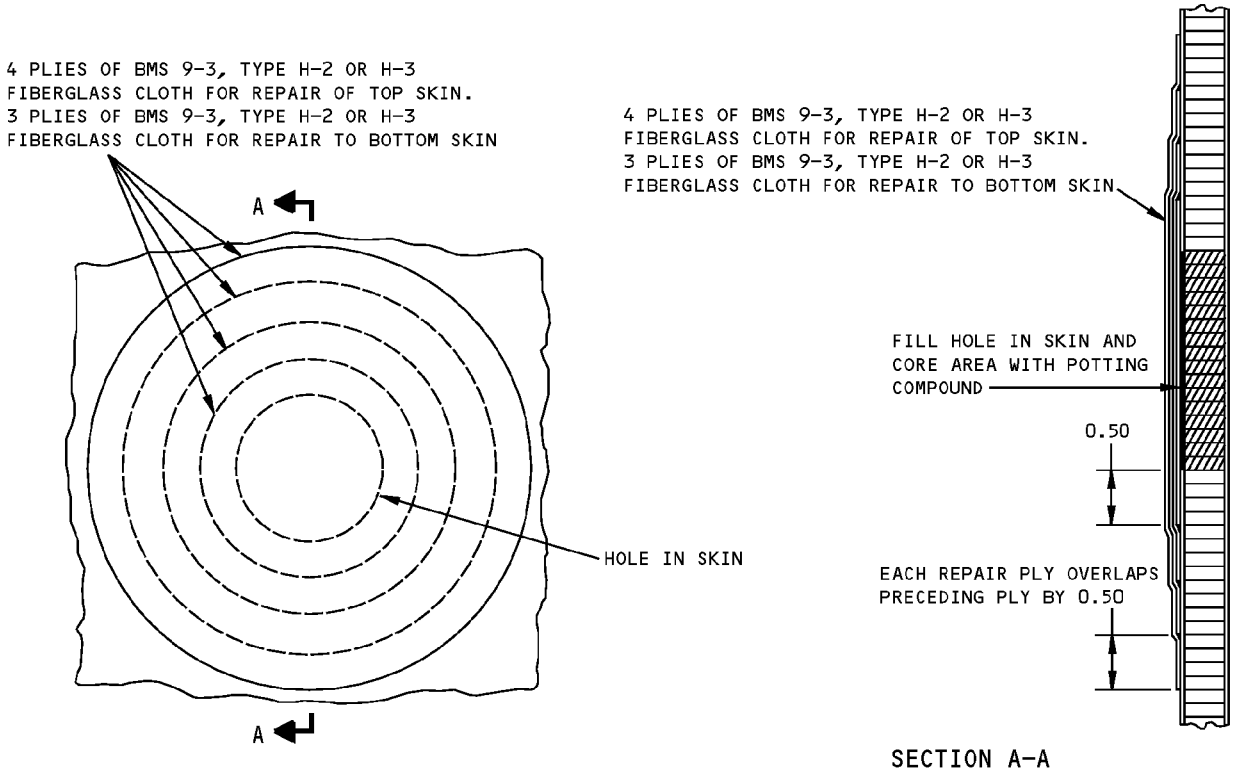
[E] BOEING TOOL NO. ST3109H OR SHUR-LOK TOOL NO. SLT5107-3P. OBTAIN FROM:
SHUR-LOK CORPORATION
2541 WHITE RD
IRVINE, CALIFORNIA 92713
OR
SHUR-LOK INTERNATIONAL
RUE du MIDI, 7-9
4822 PETIT-RECHAIN
BELGIQUE

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	CORE	AS REQ	[B]
2	FILLER	AS REQ	[C]

Fiberglass/Composite Floor Panel Repair
Figure 201 (Sheet 1 of 9)



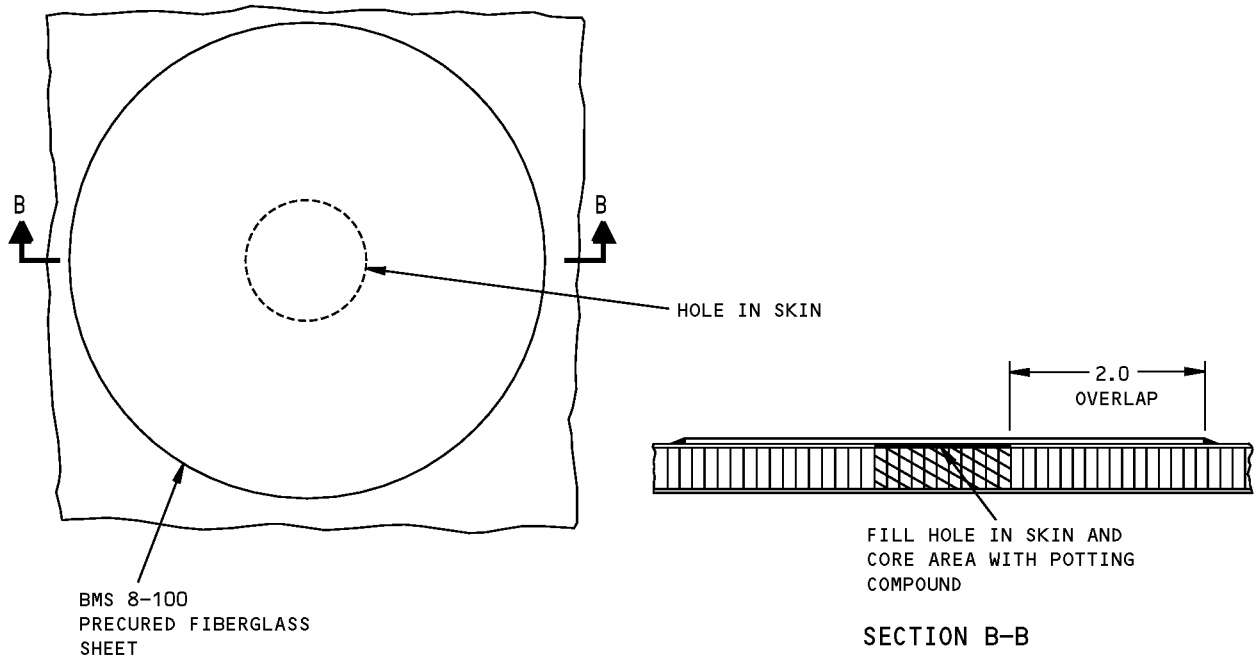
TYPICAL REPAIR TO CRACK IN SKIN USING FIBERGLASS CLOTH REPAIR PLIES



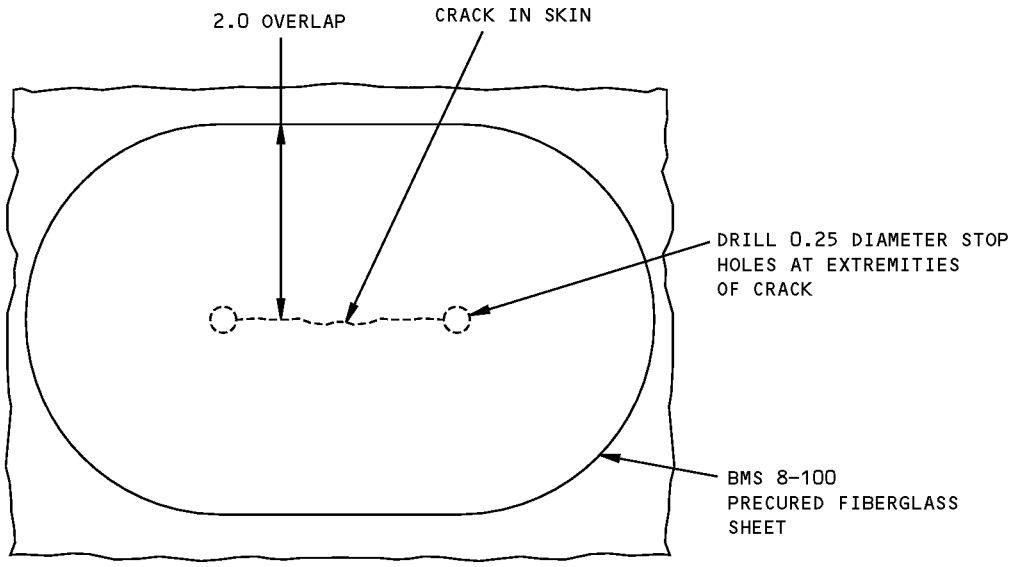
SECTION A-A

TYPICAL REPAIR TO HOLE OR CRACK IN SKIN USING FIBERGLASS CLOTH REPAIR PLIES
DETAIL I

Fiberglass/Composite Floor Panel Repair
Figure 201 (Sheet 2 of 9)



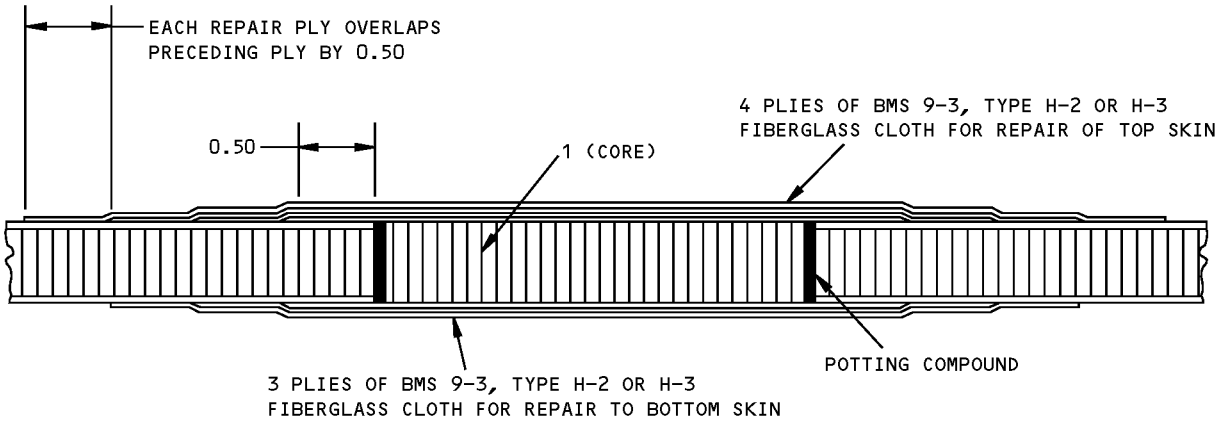
REPAIR FOR HOLE



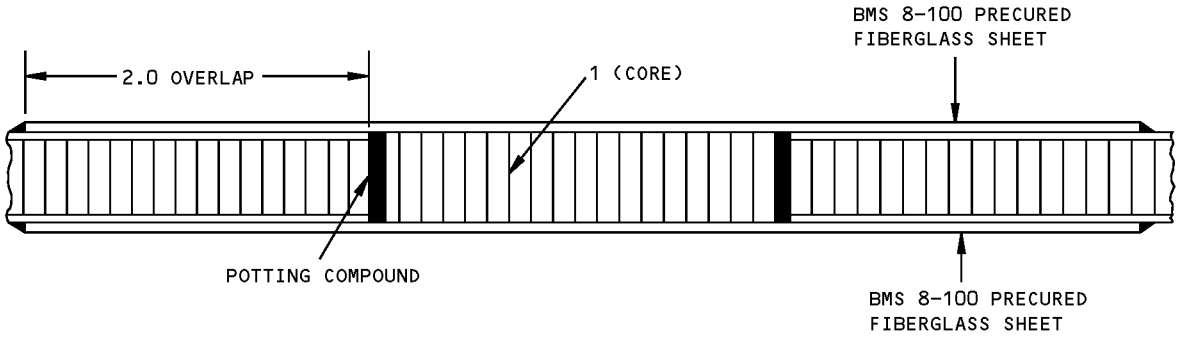
REPAIR FOR CRACK

TYPICAL REPAIR TO HOLE OR CRACK IN SKIN USING PRECURED FIBERGLASS SHEET
DETAIL II

Fiberglass/Composite Floor Panel Repair
Figure 201 (Sheet 3 of 9)

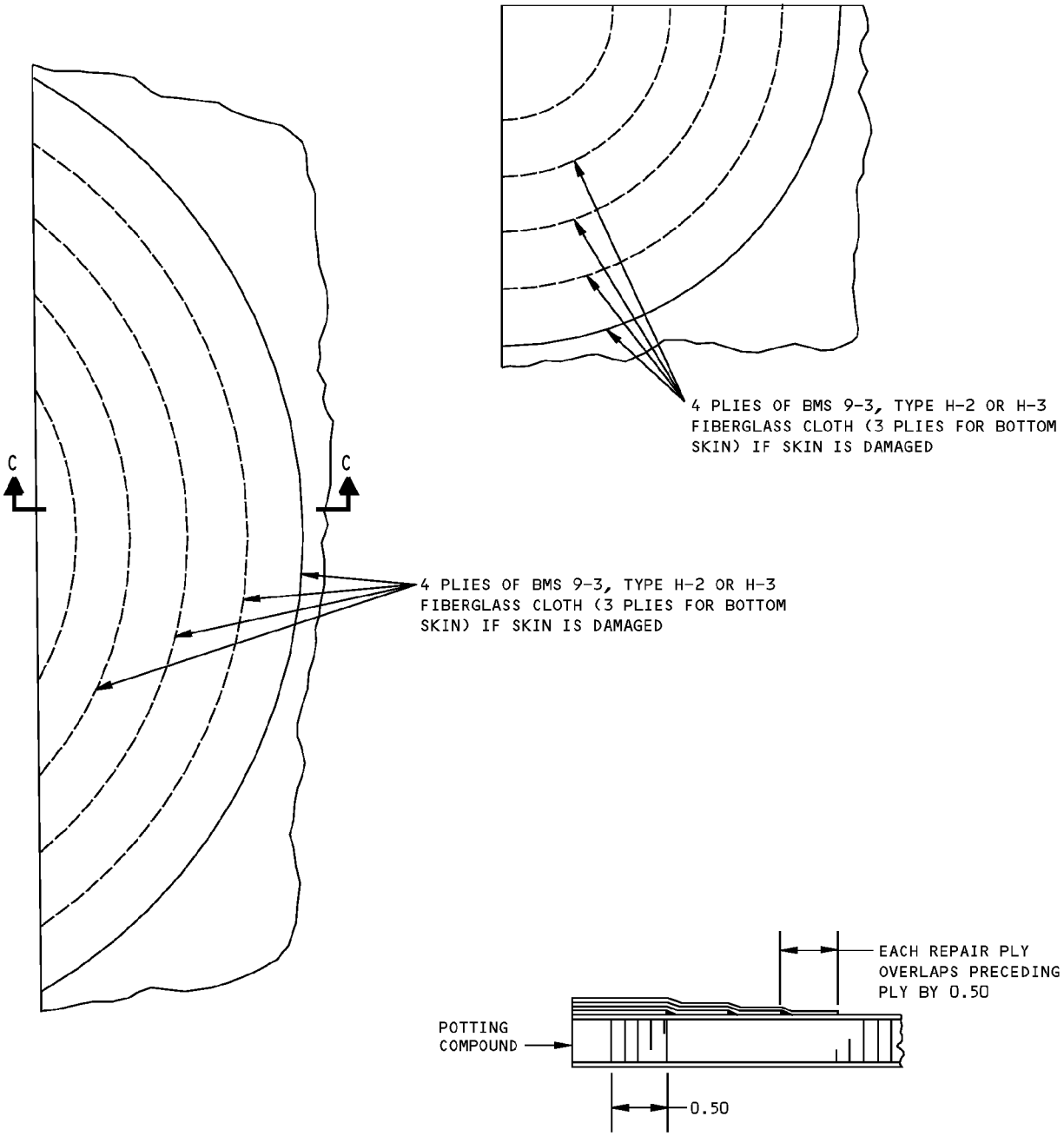


TYPICAL REPAIR TO SKIN AND CORE USING FIBERGLASS CLOTH REPAIR PLIES
DETAIL III



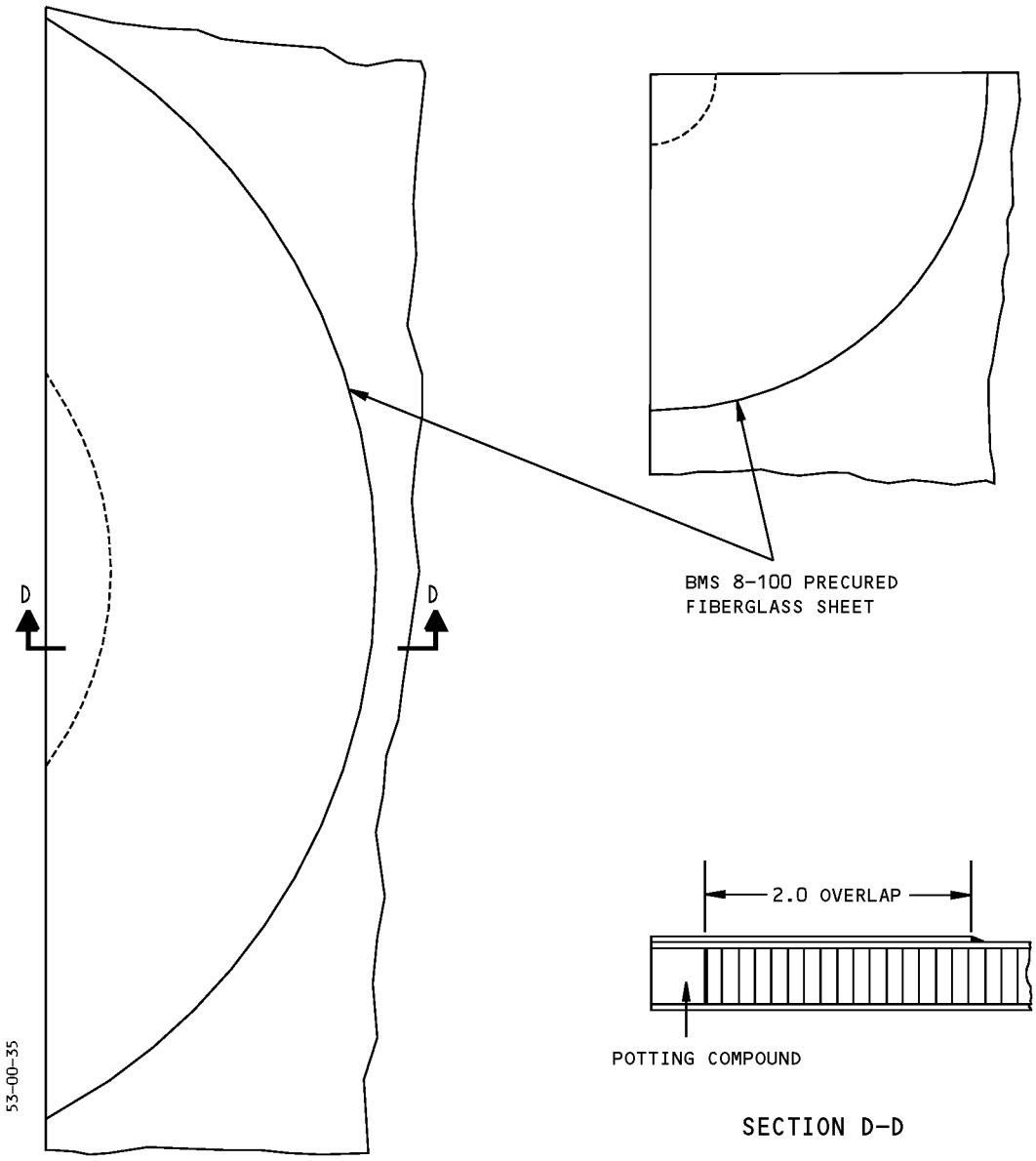
TYPICAL REPAIR TO SKIN AND CORE USING PRECURED FIBERGLASS SHEET
DETAIL IV

Fiberglass/Composite Floor Panel Repair
Figure 201 (Sheet 4 of 9)



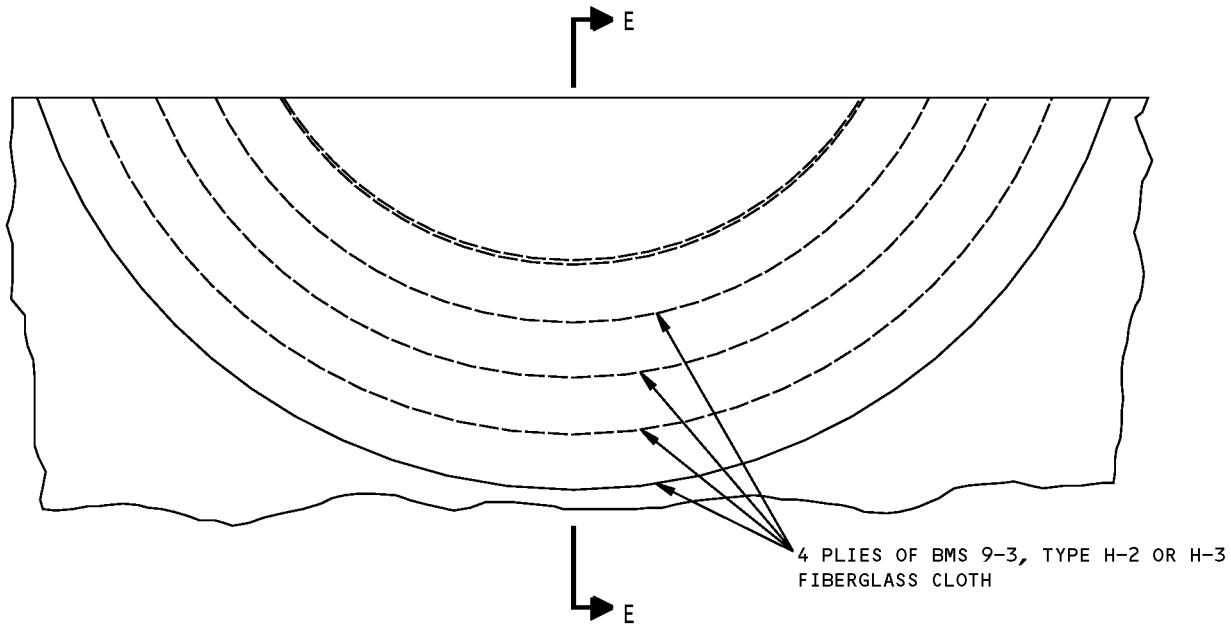
TYPICAL REPAIR TO CORE AT EDGE OF PANEL USING FIBERGLASS CLOTH REPAIR PLIES
DETAIL V

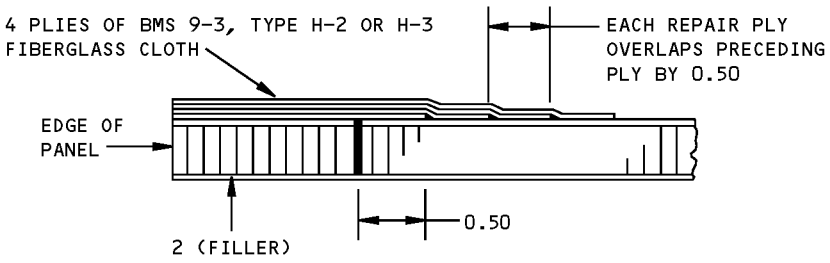
Fiberglass/Composite Floor Panel Repair
Figure 201 (Sheet 5 of 9)



TYPICAL REPAIR TO CORE AT EDGE OF PANEL USING PRECURED FIBERGLASS SHEET
DETAIL VI

Fiberglass/Composite Floor Panel Repair
Figure 201 (Sheet 6 of 9)

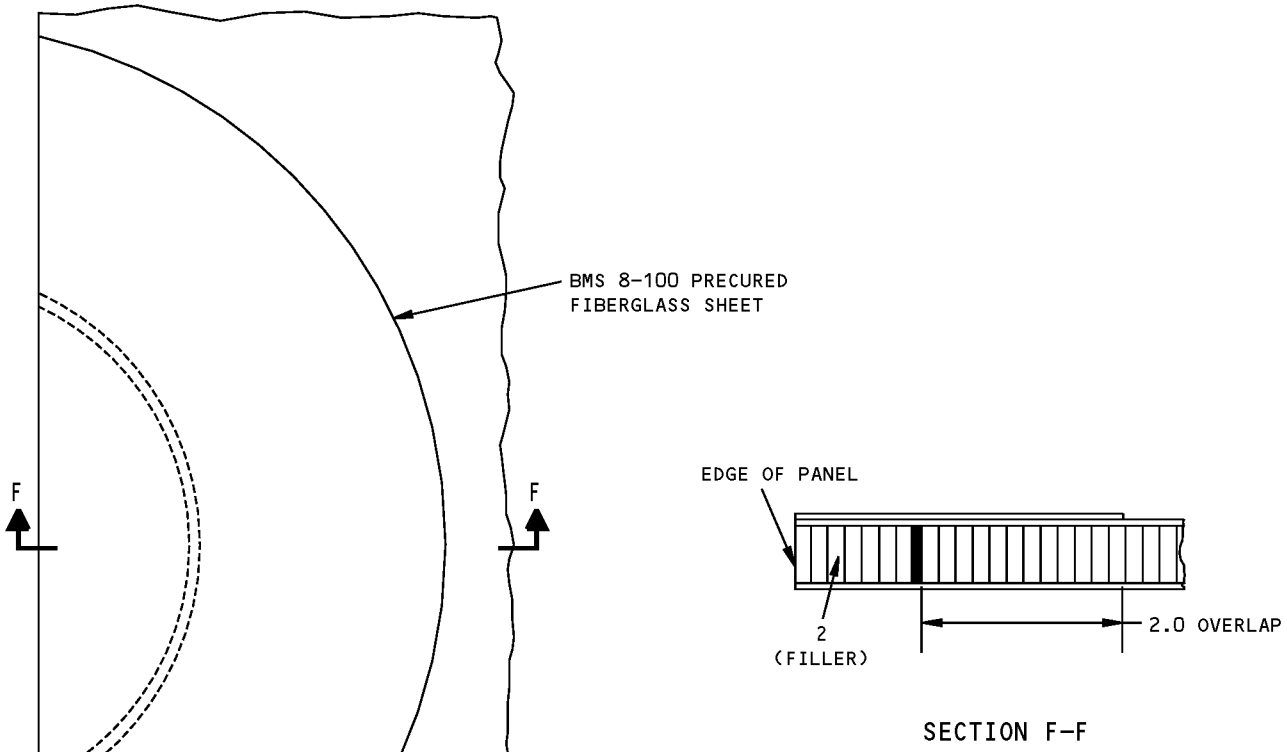




SECTION E-E

TYPICAL REPAIR TO SKIN AND CORE AT EDGE OF PANEL USING FIBERGLASS CLOTH REPAIR PLIES
DETAIL VII

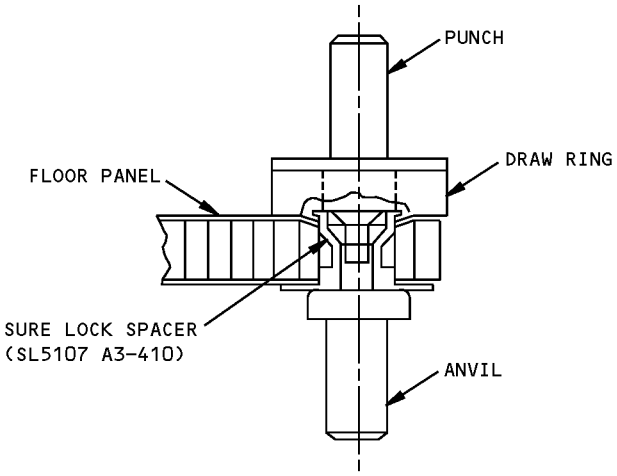
Fiberglass/Composite Floor Panel Repair
Figure 201 (Sheet 7 of 9)



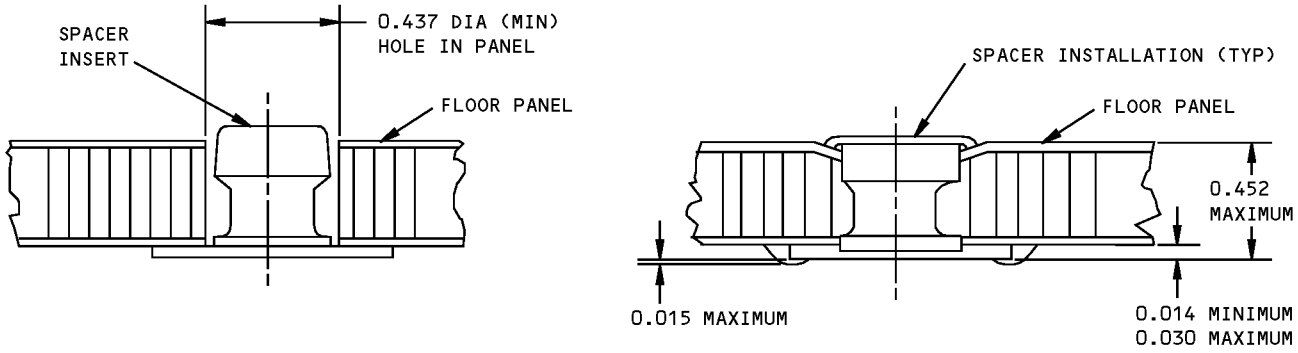
TYPICAL REPAIR TO SKIN AND CORE AT EDGE OF PANEL
USING PRECURED FIBERGLASS SHEET

DETAIL VIII

Fiberglass/Composite Floor Panel Repair
Figure 201 (Sheet 8 of 9)



INSTALLATION TOOL [E] FOR SURE LOCK SPACER SL5107 A3-410
DETAIL IX



BEFORE SWAGING

AFTER SWAGING

DETAIL X

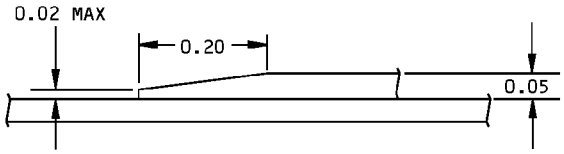
Fiberglass/Composite Floor Panel Repair
Figure 201 (Sheet 9 of 9)

REPAIR INSTRUCTIONS

Refer to paragraphs 3 and 6 for repair selection and bonding instructions.

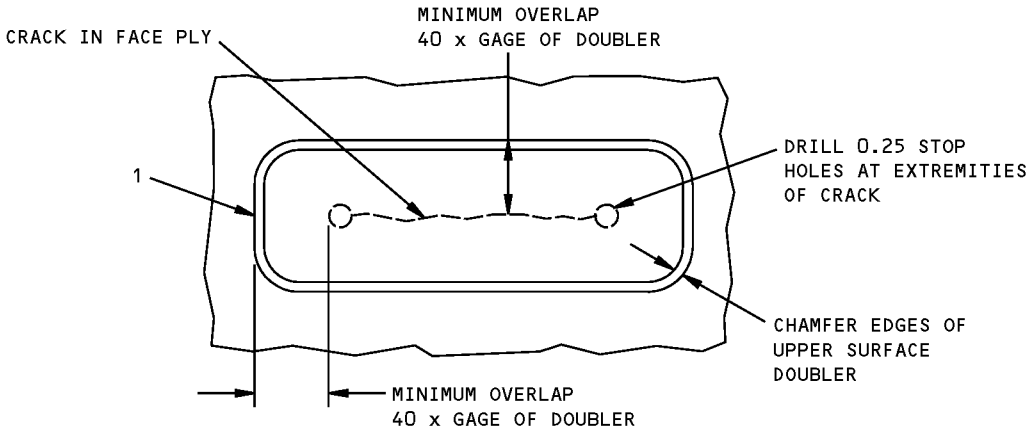
1. Cleanout damage per details I thru IV.
2. Make repair parts.
3. Chamfer edges of upper surface doublers.
4. Remove all burrs and sharp edges and corners from damage cutouts and repair doublers.
5. Alodize all raw edges of cutout and repair doublers.

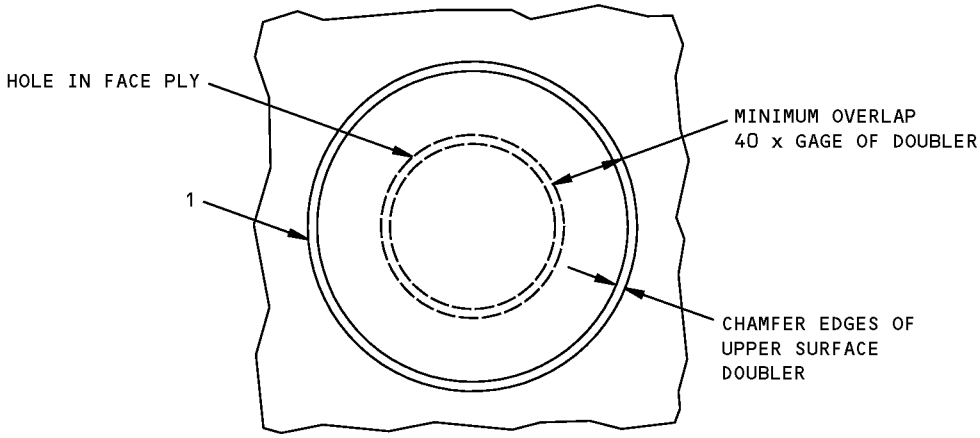
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	0.050 CLAD 2024-T3
2	DOUBLER	1	0.012 CLAD 2024-T3
3	FILLER	1	BALSA CORE



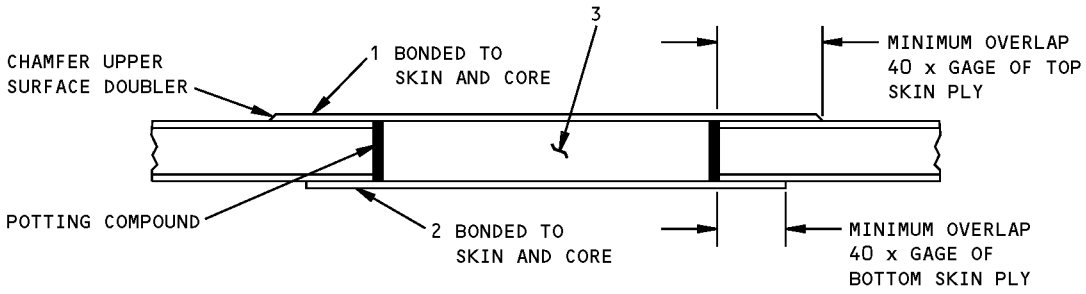
TYPICAL CHAMFERED EXTERNAL PATCH
(UPPER SURFACE ONLY)

Metal Faced Balsa Core Floor Panel Repair
Figure 202 (Sheet 1 of 4)



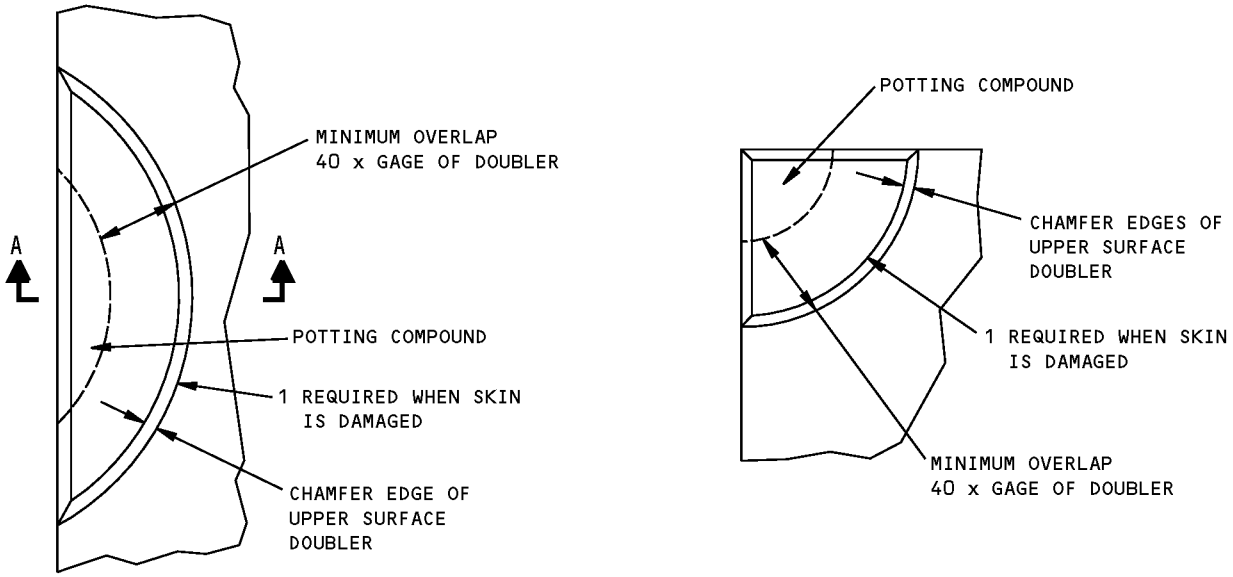


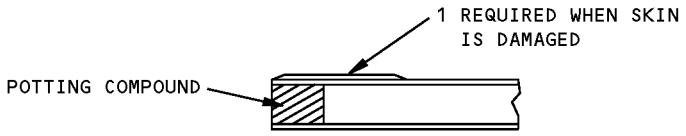
TYPICAL REPAIR TO HOLE OR CRACK IN FACE PLY
DETAIL I



TYPICAL REPAIR TO FACE PLIES AND CORE
DETAIL II

Metal Faced Balsa Core Floor Panel Repair
Figure 202 (Sheet 2 of 4)

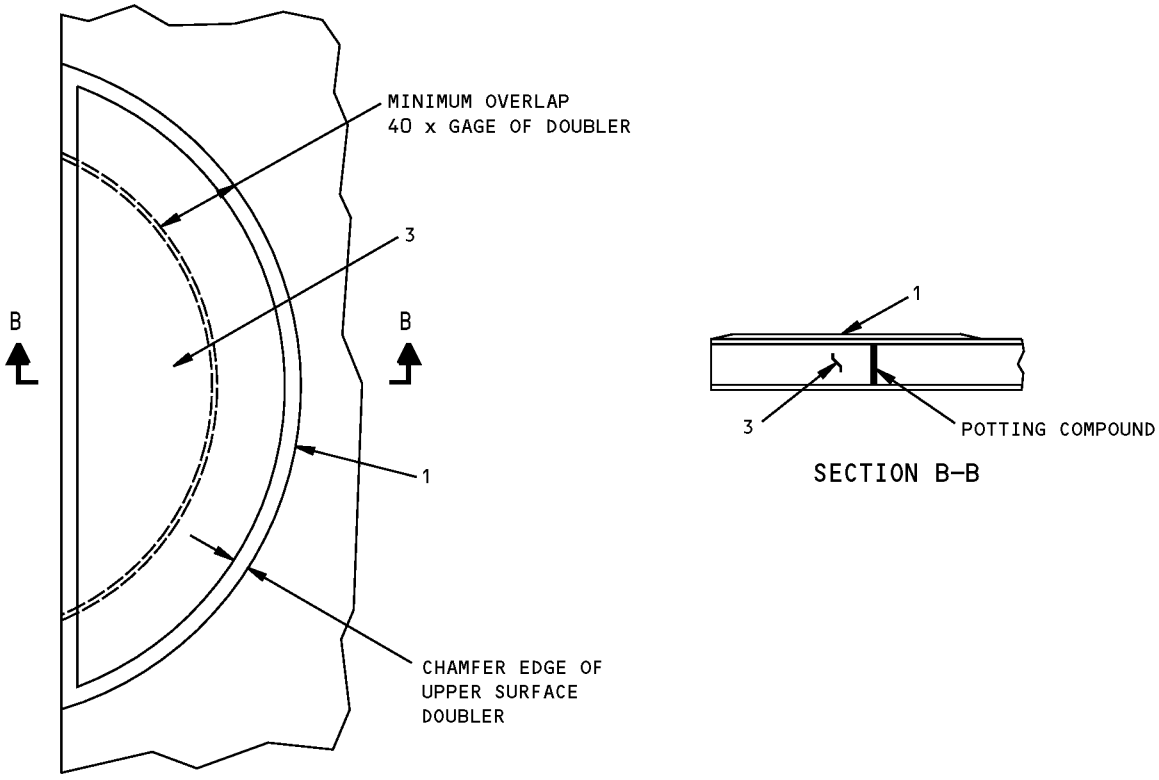




SECTION A-A

TYPICAL REPAIR TO CORE AT EDGE OF PANEL
DETAIL III

Metal Faced Balsa Core Floor Panel Repair
Figure 202 (Sheet 3 of 4)



TYPICAL REPAIR TO CORE AND
FACE PLY AT EDGE OF PANEL

DETAIL IV

Metal Faced Balsa Core Floor Panel Repair
Figure 202 (Sheet 4 of 4)

APPLICABILITY
THIS REPAIR IS APPLICABLE TO FLOOR PANELS: - MADE FROM BMS 4-17 AND BMS 4-20 FIBERGLASS AND GRAPHITE COMPOSITE-FACED FLOOR PANELS WITH A NOMEX HONEYCOMB CORE - INSTALLED BETWEEN LBL 54.75 AND RBL 54.75 ON THE MAIN DECK. THE DAMAGE OR DELAMINATION MUST NOT BE MORE THAN 12 INCHES IN DIAMETER ON THE TOP SKIN. DO NOT USE THIS REPAIR IF THE CORE OR THE BOTTOM SKIN OF THE FLOOR PANEL IS DAMAGED. THIS REPAIR IS TIME-LIMITED. YOU MUST REPLACE THE FLOOR PANEL OR MAKE A PERMANENT REPAIR BY THE NEXT 'C' CHECK.

REPAIR INSTRUCTIONS

CAUTION: DO NOT DRILL INTO THE FLOOR STRUCTURE. DAMAGE TO THE FLOOR STRUCTURE WILL OCCUR, AND MAKE ADDITIONAL REPAIRS NECESSARY.

1. Get access to the damaged area. See Detail III for limits on the location of the damage.

   NOTE: It is not necessary to remove the floor panel to do the floor panel repair.

2. If the floor panel is moist or wet, make it dry with a vacuum or with warm air.

3. Make the part 1 doubler. See Table I. Make the countersink repair washers. Refer to SRM 51-40-08. The doubler must:

   a. Extend from seat track to seat track for locations shown in Details I and II.

   b. Extend to the next forward or aft location of a floor beam which has no damage. Initial fastener locations to attach the floor panel to the floor beam must also be available.

4. Assemble the part 1 doubler on the floor panel. Drill fastener holes through the doubler at the initial floor panel fastener locations.

5. For a damaged floor panel with initial fasteners installed from below the floor structure, drill new fastener holes near the initial fastener holes. Do not drill into the floor structure. See Detail V.

6. If an object prevents access to part of a damaged floor panel, drill the repair fastener holes as shown in Detail III. Keep a minimum 2D edge margin. The repair fastener spacing shall not be more than the initial edge fastener spacing or 6.5 inches. Use the value that is less. Adjust the spacing as necessary so that you do not drill repair fastener holes in the floor structure below the floor panel.

7. Remove the part 1 doubler from the floor panel.

8. Replace the honeycomb core in the area of the repair fastener holes with potting compound or part 2 plugs. See Detail IV. If you use part 2 plugs, drill the fastener holes through the plugs before installation.

9. Remove the nicks, scratches, gouges, burrs, and sharp edges from the part 1 doubler.

10. Apply a chemical conversion coating to the part 1 doubler. Refer to SRM 51-20-01.

11. Apply two layers of BMS 10-11, Type I primer to the doubler. Refer t SOPM 20-41-02.

WARNING: THESE CHEMICALS CONTAIN TOXIC INGREDIENTS. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN WORKING IN A CONFINED SPACE OR AREA. AVOID CONTACT WITH SKIN, EYES, AND CLOTHING. WEAR EYE PROTECTION. KEEP AWAY FROM HEAT, FIRE, OR SPARKS. BREATHING VAPORS OR ALLOWING SOLVENT TO CONTACT THE SKIN OR EYES IS HAZARDOUS. FIRE, OR SPARKS CAN CAUSE AN EXPLOSION.

CAUTION: DO NOT USE PAINT STRIPPERS FOR THE REMOVAL OF FINISHES. DAMAGE TO THE ADHESIVE SYSTEM WILL OCCUR. DO NOT PERMIT STANDING SOLVENT TO REMAIN ON THE PART. DAMAGE TO THE PART WILL OCCUR.

12. Use a clean cloth that is moist with a ketone-based cleaning solvent and clean the top surface of the floor panel. Refer to SOPM 20-30-03.

13. Install the countersink repair washers at the initial fastener locations. Bond the part 1 doubler to the floor panel with BMS 5-92, Type 1 adhesive. If the floor panel is in a wet area (galley, lavatory, or doorway), apply a fillet seal along the edges of the part 1 doubler with BMS 5-95 sealant.

14. Install the repair fasteners wet with BMS 5-95 sealant.

15. Install the floor panel with the initial fasteners. Use longer fasteners of the same type as necessary.

Time-Limited Floor Panel Repair
Figure 203 (Sheet 1 of 4)

NOTES

- D = FASTENER DIAMETER.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - SOPM 20-30-03 FOR GENERAL CLEANING PROCEDURES
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-30-03 FOR NON-METALLIC MATERIALS
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS
  - SRM 51-40-08 FOR COUNTERSINK REPAIR WASHERS.

[A] THE EDGE OF THE PART 1 DOUBLER MUST BE A MINMUM OF 2.0 INCHES (50 mm) FROM THE EDGE OF THE DAMAGED AREA OF THE FLOOR PANEL.

[B] THE REPAIR FASTENER SPACING SHALL NOT BE MORE THAN THE INITIAL EDGE FASTENER SPACING OR 6.5 INCHES (165 mm). USE THE VALUE THAT IS LESS.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION.

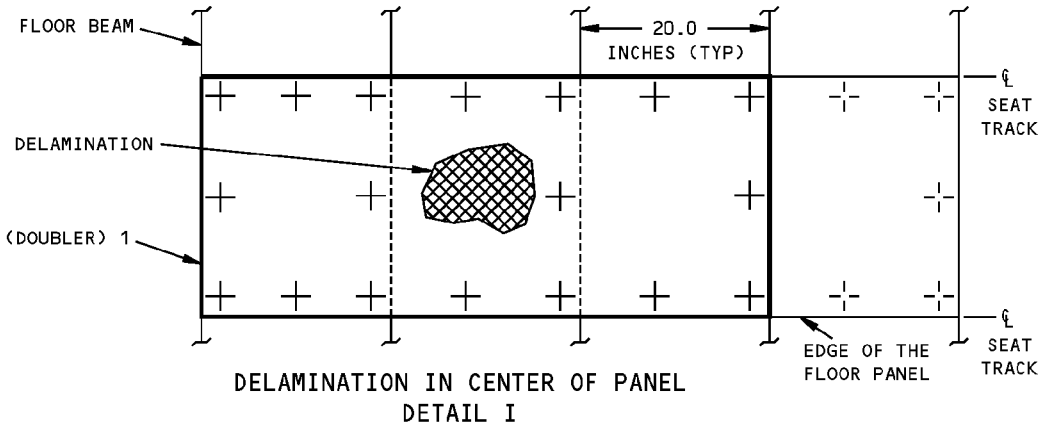
INITIAL FASTENER LOCATION. INSTALL THE SAME TYPE AND DIAMETER FASTENER AS THE INITIAL FASTENER. INCREASE THE GRIP LENGTH AS NECESSARY. USE COUNTERSINK REPAIR WASHERS IN THE INITIAL COUNTERSINKS IN THE FLOOR PANEL. REFER TO SRM 51-40-08. TIGHTEN SCREWS TO 25-35 IN-LBS TORQUE AND BOLTS TO 19-22 IN-LBS TORQUE.

REPAIR FASTENER LOCATION. INSTALL BACB30VF3K() BOLTS WITH BACW10BN()SP WASHERS AND BACN10JC3 NUTS. TIGHTEN THE BOLTS TO 19-22 IN-LBS TORQUE.

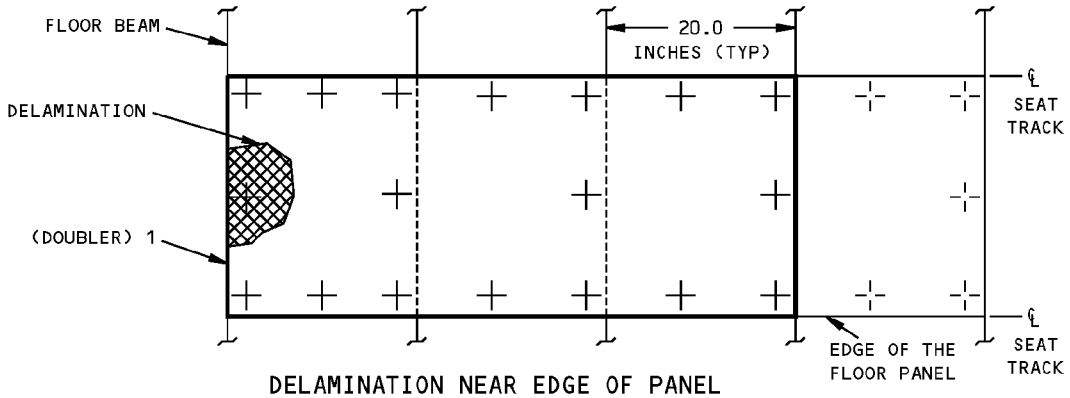
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	0.063 BARE OR CLAD 7075-T6
2	PLUG	AS NECESSARY	0.050 INCH DIAMETER 7075-T6

TABLE I

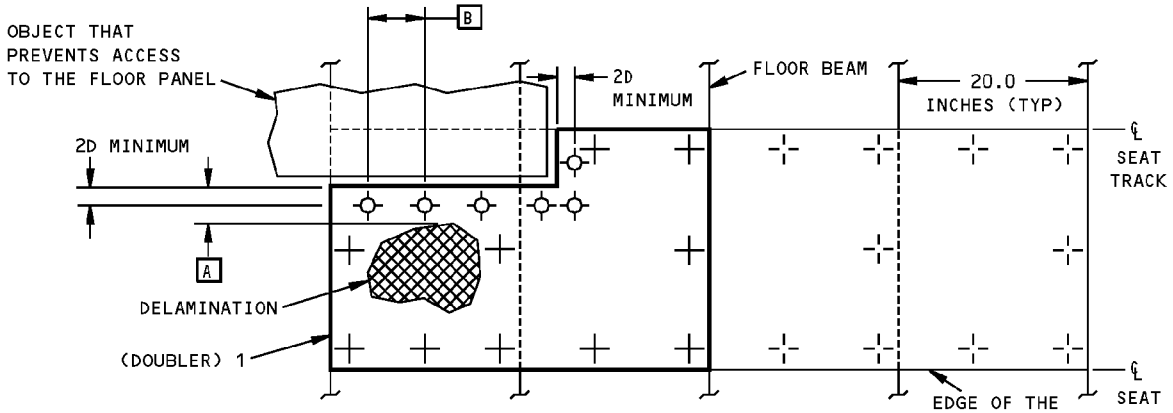
Time-Limited Floor Panel Repair
Figure 203 (Sheet 2 of 4)



DELAMINATION IN CENTER OF PANEL
DETAIL I

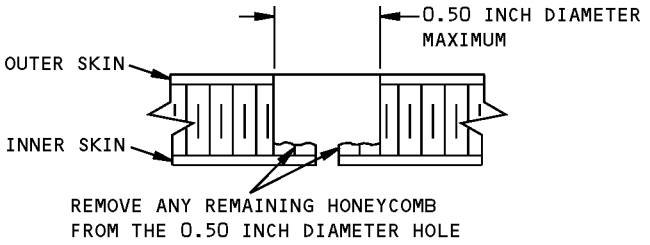


DELAMINATION NEAR EDGE OF PANEL
DETAIL II

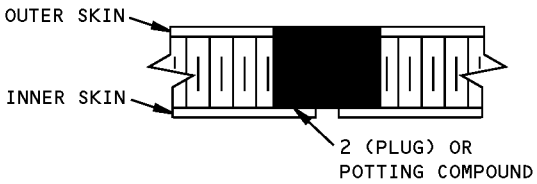


DELAMINATION NEAR ADJACENT STRUCTURE
DETAIL III

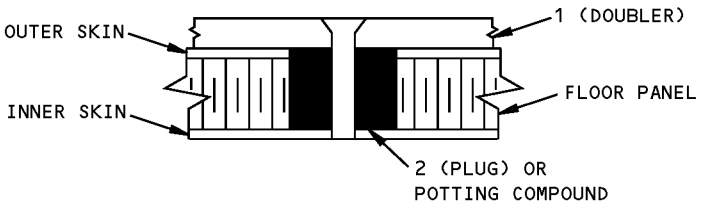
Time-Limited Floor Panel Repair
Figure 203 (Sheet 3 of 4)



1. DRILL A 0.50 INCH DIAMETER HOLE THROUGH THE OUTER SKIN AND INTO THE HONEYCOMB AT A REPAIR FASTENER HOLE LOCATION.

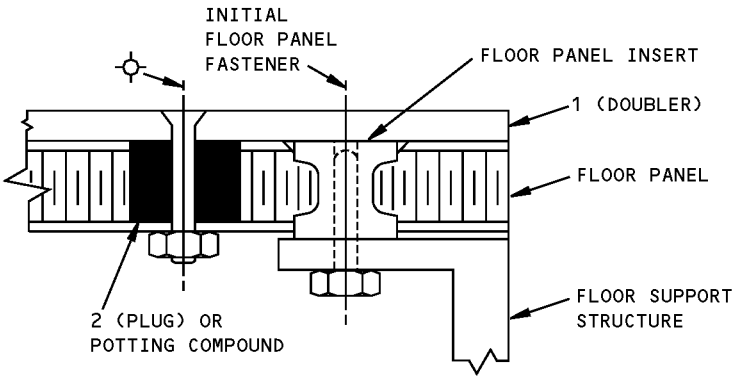


2. FILL THE CAVITY WITH EITHER:
   A. BMS 5-28, TYPE 6 POTTING COMPOUND OR
   B. A 7075 T-6 PLUG WITH A PREDRILLED FASTENER HOLE. INSTALL WET WITH BMS 5-95 SEALANT.



3. ASSEMBLE DOUBLER TO FLOOR PANEL. REDRILL THE FASTENER HOLE IF YOU USE POTTING COMPOUND.

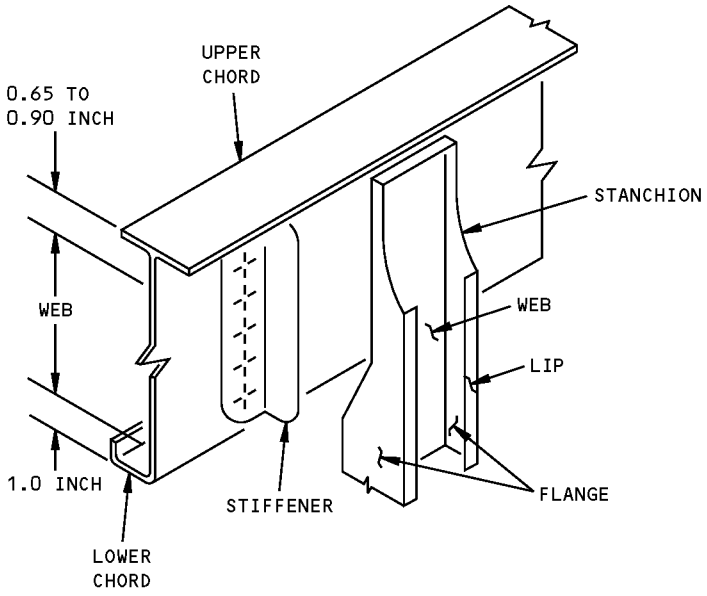
INSTALLATION PROCEDURE FOR A PLUG OR POTTING COMPOUND
DETAIL IV



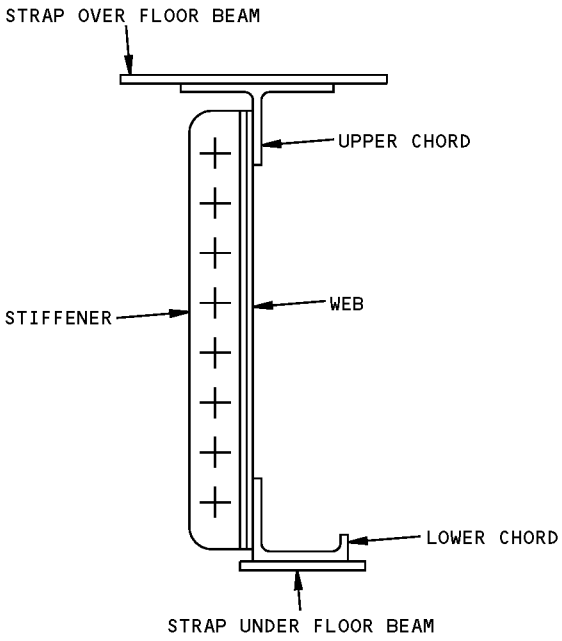
DETAIL V

Time-Limited Floor Panel Repair
Figure 203 (Sheet 4 of 4)

ALLOWABLE DAMAGE 1 - FLOOR STRUCTURE



TRANSVERSE FLOOR BEAM F AND STANCHION
EXTRUDED



LONGITUDINAL HEADER BEAMS
BUILT UP

Floor Structure Allowable Damage
Figure 101 (Sheet 1 of 4)

	ITEM	CRACKS	NICKS, GOUGES CORROSION	DENTS	HOLES
BUILT UP SECTION	UPPER CHORD	H	I	NOT PERMITTED	D J
	WEB G	A	B	C	E
	LOWER CHORD	H	I	NOT PERMITTED	D J
	STIFFENER	H	I	NOT PERMITTED	D
	STRAP	H	B I	NOT PERMITTED	NOT PERMITTED
EXTRUDED BEAM	UPPER CHORD	H	I	NOT PERMITTED	D J
	WEB G	NOT PERMITTED	B	C	E
	LOWER CHORD	H	I	NOT PERMITTED	D J
	STIFFENER	H	I	NOT PERMITTED	D
STANCHION	FLANGE	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED
	WEB	NOT PERMITTED	B K	NOT PERMITTED	L K
	LIP	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED	NOT PERMITTED

NOTES

- ALL DIMENSIONS ARE IN INCHES.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- REFINISH REWORK AREAS AS SPECIFIED IN AMM 51-20.
- REFER TO SRM 53-10-07, SRM 53-30-07 AND SRM 53-60-07 FOR STANCHION IDENTIFICATION.
- REFER TO SRM 53-00-15 FOR ALLOWABLE DAMAGE TO FLOOR BEAM END FITTINGS.

A CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SPECIFIED IN DETAIL I. THE AREA REMOVED FOR CLEANUP MUST NOT DECREASE THE INITIAL MANUFACTURED WEB CROSS-SECTIONAL AREA BY MORE THAN 10 PERCENT. SEE DETAIL III.

B REMOVE DAMAGE AS SPECIFIED IN DETAIL II. THE AREA REMOVED FOR CLEANUP MUST NOT DECREASE THE INITIAL MANUFACTURED WEB THICKNESS BY MORE THAN 20 PERCENT. SEE DETAILS II AND III.

C SMOOTH DENTS FREE FROM CRACKS, GOUGES AND ABRASIONS, SHOWING NO EVIDENCE OF PULLED OR LOOSE FASTENERS, ARE PERMITTED UP TO Y = 0.125 INCH (3.2 mm) DEEP PROVIDED THAT A/Y IS NOT LESS THAN 20. SEE DETAIL IV.

D HOLES WITH A MAXIMUM DIAMETER OF 10 PERCENT OF THE WIDTH OF THE ITEM ARE PERMITTED. THEY MUST NOT BE CLOSER THAN 4D TO ANY INITIAL HOLE OR OTHER DAMAGE, WITH A MAXIMUM OF 4 HOLES IN 6 INCHES. SEE DETAIL V. PLUG HOLES WITH 2117-T3 RIVETS OR 2117-T4 RIVETS. THE AREA REMOVED FOR CLEAN UP MUST NOT DECREASE THE INITIAL MANUFACTURED CHORD OR STIFFENER CROSS-SECTIONAL AREA BY MORE THAN 10 PERCENT. SEE DETAIL III.

E HOLES ARE PERMITTED UP TO 0.25 INCH DIAMETER. THEY MUST NOT BE CLOSER THAN 4D TO ANY INITIAL HOLE OR OTHER DAMAGE. PLUG HOLES WITH 2117-T3 OR 2117-T4 RIVETS. THE AREA REMOVED FOR CLEANUP MUST NOT DECREASE THE INTIAL MANUFACTURED WEB CROSS-SECTIONAL AREA BY MORE THAN 10 PERCENT. SEE DETAIL III.

F TRANSVERSE FLOOR BEAMS, FROM STA 390 THRU 764 AND STA 1087 THRU 1461, SHOT PEEN REWORKED WEB AND CHORD OUTBOARD OF BL 88.5. FLOOR BEAMS FORWARD OF STA 390 AND AFT OF STA 1461, SHOT PEEN REWORKED WEB AND CHORD UP TO 6 INCHES INBOARD FROM THE END OF THE BEAM. SHOT PEEN AS SPECIFIED IN SRM 51-20-06. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK.

G FOR WEB THICKNESS 0.03 INCH AND GREATER.

Floor Structure Allowable Damage
Figure 101 (Sheet 2 of 4)

NOTES (CONT.)

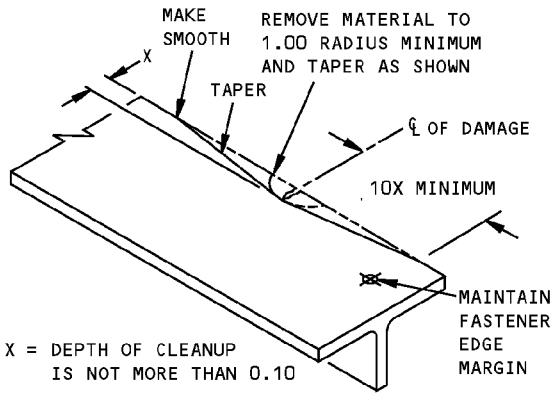
H. CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SPECIFIED IN DETAIL I. THE AREA REMOVED FOR CLEANUP MUST NOT DECREASE THE INITIAL MANUFACTURED CHORD CROSS-SECTIONAL AREA BY MORE THAN 10 PERCENT.

I. REMOVE EDGE DAMAGE AS SPECIFIED IN DETAIL I. REMOVE OTHER DAMAGE AS SPECIFIED IN DETAIL II. THE AREA REMOVED FOR CLEANUP MUST NOT DECREASE THE INTIAL MANUFACTURED CHORD CROSS-SECTIONAL AREA BY MORE THAN 10 PERCENT. SEE SECTION A-A.

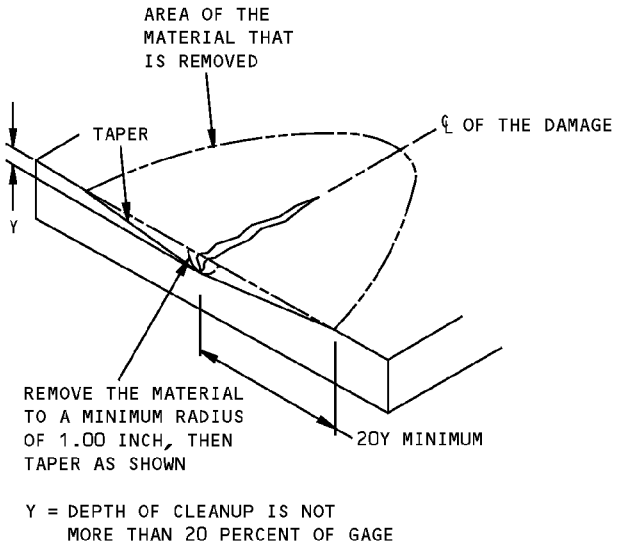
J. COUNTERSINKS/DOUBLE COUNTERSINKS ARE PERMITTED IF THE DEPTH OF THE COUNTERSINK IS NOT MORE THAN ONE THIRD OF THE FLANGE THICKNESS.

K. NOT PERMITTED IN AREAS WHERE THE STANCHION IS ATTACHED TO THE FLOOR BEAM OR FRAME.

L. HOLES ARE PERMITTED UP TO 0.25 INCH DIAMETER. THEY MUST NOT BE CLOSER THAN 4D TO ANY INITIAL HOLE OR OTHER DAMAGE. PLUG HOLES WITH 2117-T3 OR 2117-T4 RIVETS. THE AREA REMOVED FOR CLEANUP MUST NOT DECREASE THE INITIAL MANUFACTURED WEB CROSS-SECTIONAL AREA BY MORE THAN 15 PERCENT. SEE DETAIL III.

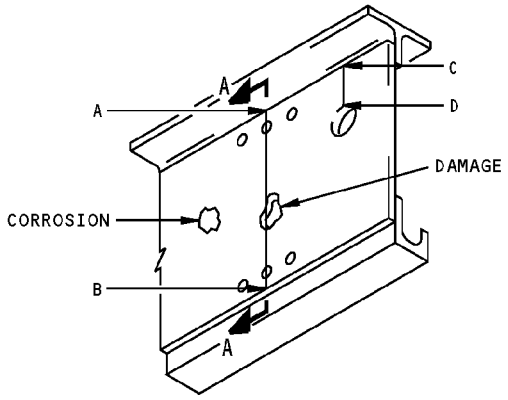


REMOVAL OF NICK OR CRACK DAMAGE
DAMAGE ON AN EDGE
DETAIL I



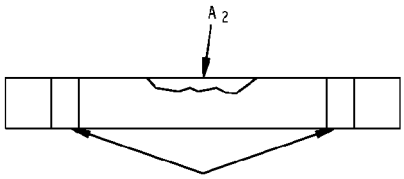
REMOVAL OF NICK, CRACK AND SCRATCH
DAMAGE ON A SURFACE
DETAIL II

Floor Structure Allowable Damage
Figure 101 (Sheet 3 of 4)



NOTE: LOSS IN CROSS-SECTIONAL AREA ALONG ANY LINE A-B OR C-D DUE TO REMOVAL OF CRACKS, NICKS, GOUGES OR CORROSION AS SHOWN IN DETAIL I OR DETAIL II IS PERMITTED IF NOT MORE THAN 10 PERCENT OF THE INITIAL NET CROSS-SECTIONAL AREA IS REMOVED (SEE A-A)

DETAIL III



INITIAL HOLES

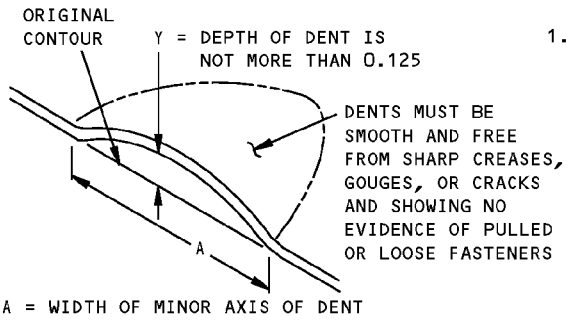
A_1 = NET AREA = TOTAL AREA - INITIAL HOLES AS MANUFACTURED

A_2 = AREA REMOVED FOR NICKS, GOUGES, OR CORROSION

$\left(\frac{A_2}{A_1}\right)$ = 10 PERCENT MAXIMUM

(ROTATED 90° CLOCKWISE)

A-A

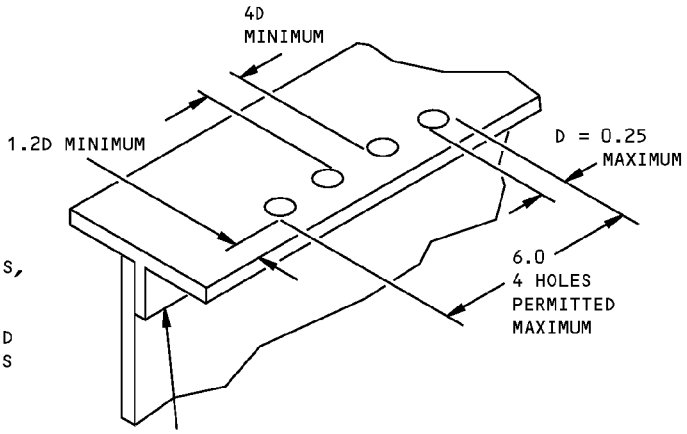


A = WIDTH OF MINOR AXIS OF DENT

$\frac{A}{Y}$ = MUST NOT BE LESS THAN 20

ALLOWABLE DAMAGE FOR DENT

DETAIL IV



HOLE DAMAGE IS NOT PERMITTED ON THE CHORD MEMBER THAT IS ATTACHED TO THE WEB

ALLOWABLE DAMAGE FOR HOLE

DETAIL V

Floor Structure Allowable Damage
Figure 101 (Sheet 4 of 4)

REPAIR 1 - FLOOR BEAM REPAIR - UPPER CHORD

APPLICABILITY
THIS REPAIR IS APPLICABLE TO FLOOR BEAMS MADE FROM BAC1506-3116 AND -3117 EXTRUSIONS. THESE BEAMS ARE LOCATED IN SECTION 41, STA 266 TO STA 412 AND ALL OF SECTIONS 43 AND 46.

REPAIR INSTRUCTIONS

1. Get access to the damaged area. Refer to AMM 53-01-01 for floor panel removal procedures.
2. Remove the damaged flange. The roughness of the cut surface must be 125 microinches Ra or smoother. See Detail V.
3. Do a high frequency eddy current (HFEC) inspection of the floor beam for cracks where the flange was removed. Refer to NDT, Part 6, 51-00-01 or 51-00-09. As an alternative, do a penetrant inspection. Refer to SOPM 20-20-02.
4. Make the repair parts. See Table I.

   Cut the horizontal flange of the repair tee chord to the same width as the top flange of the floor beam. Cut the vertical leg sufficiently wide for one row of fasteners along the joint between the repair chord and the web of the floor beam. Where there is a stiffener or a clip, make the vertical leg sufficently wide to include two fasteners. See Detail I.

   In section 41, for the area between the stanchion and the side of the body, cut the vertical leg of the repair tee chord to match the vertical leg of the initial cap angle. See Detail IV.
5. Remove and keep the stiffeners for later installation. Make replacement clips as necessary on the forward side of the beam. If the initial clips had shims, use the initial shims again if possible.
6. Cut the structure as necessary to permit clearance between the repair parts and other structure. Keep the edge margins.
7. Assemble the repair parts and drill the fastener holes. In section 43 and 46, install the repair tee chord on the aft (non chem-milled) side of the floor beam. In section 41, install the repair tee chord on the forward or aft side of the floor beam.
8. Disassemble the repair parts.
9. Remove the nicks, scratches, gouges, burrs and sharp edges from the repair parts, the cut edge of the floor beam, and any other areas cut to permit clearance between repair parts and other structure.
10. Apply a chemical conversion coating to the bare aluminum surfaces of the repair parts, floor beams, and any parts cut to permit clearance. Refer to SRM 51-20-01.
11. Apply one layer of BMS 10-11, Type I primer to the repair parts and the bare aluminum surfaces of the repair parts, floor beam and any parts cut to permit clearance. Refer to SOPM 20-41-02.
12. Install the nutplates to the part 2 (angle) and part 3 (angle) at the floor panel fastener locations. See Section A-A.
13. Install the repair parts and the salvaged parts with BMS 5-95, Type II sealant between the faying surfaces.

    Install the stiffeners and replacement clips with shims as necessary. Shim the replacement clips to a maximum gap of 0.03 inch between the clip and the adjacent structure.
14. Install any non-aluminum fastener wet with BMS 5-95 sealant.
15. Apply the finish to the repaired area. Refer to AMM 51-21.
16. Install the floor panels. Refer to AMM 53-01-01 for floor panel installation procedures.

Floor Beam Repair - Upper Chord
Figure 201 (Sheet 1 of 6)

NOTES

- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - AMM 53-01-01 FOR THE INSTALLATION OF FLOOR PANELS
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS

[A] DO NOT PUT THE FASTENERS THROUGH THE EDGE OF A CHEM-MILLED POCKET. DO NOT PUT FASTENERS IN CHEM-MILLED POCKETS LESS THAN 0.06 INCH THICK.

[B] IN AREAS WHERE THE TOP OF THE WEB ADJACENT TO THE TOP FLANGE IS 0.06 INCH (1.52 mm) THICK AND THE TOP FLANGE ITSELF IS 0.085 INCH (2.16 mm) THICK, USE TEE SECTION EXTRUSION BAC1505-101303 OR AN EQUIVALENT WITH 0.09 INCH (2.29 mm) THICK TOP FLANGE AND 0.07 INCH (1.78 mm) THICK LEG.

IN SECTION 41, WHERE THE WEB THICKNESS IS 0.125 INCHES (3.18 mm), AN EQUIVALENT GAGE TEE CHORD CAN BE USED.

IN OTHER AREAS, USE AN EXTRUSION WHICH IS SUFFICIENTLY THICK TO MACHINE THE CAP DOWN TO 0.01 INCH (0.25 mm) THICKER THAN THE THICKEST SECTION OF THE TOP FLANGE. MACHINE THE LEG DOWN TO 0.01 INCH (0.25 mm) THICKER THAN THE THICKNESS OF THE THICKEST SECTION THROUGH WHICH THE FASTENERS WILL PASS.

[C] REMOVE ALL OF THE TOP FLANGE OF THE EXTRUSION. REMOVE ONLY AS MUCH OF THE ADJACENT WEB AS NECESSARY TO MAXIMIZE THE EDGE MARGIN FOR THE FASTENERS THAT WILL JOIN THE REPAIR TEE CHORD TO THE WEB. SEE DETAIL V.

[D] THE SHIM USED HERE IS PERMITTED A MAXIMUM THICKNESS OF 0.05 INCH (1.27 mm). FOR REPAIRS THAT REQUIRE THICKER SHIMS IN THIS LOCATION, GET MORE INFORMATION FROM THE BOEING COMPANY. DO NOT STACK SHIMS TWO OR MORE DEEP IN THIS LOCATION.

[E] FLOOR PANEL FASTENERS SHOWN HERE ARE FOR A MID PANEL ATTACHMENT CONFIGURATION. IF THE REPAIRED BEAM IS AT A PANEL SPLIT LOCATION, THE ADDITIONAL FLOOR PANEL FASTENERS MAY BE ACCOMMODATED IN ONE OF TWO WAYS:

- INCREASE THE STRAP LENGTH TO INCLUDE THE ADDITIONAL FLOOR PANEL FASTENERS AND REDUCE THE NUMBER OF REPAIR FASTENERS FROM TEN TO EIGHT ON EACH SIDE.
- INCREASE THE WIDTH OF THE STRAP TO ACCOMMODATE NUT PLATES OUTSIDE OF THE FLOOR BEAM FLANGE (SEE DETAIL VI). PART 2 (ANGLE) WILL REQUIRE THE UNUSED FLOOR PANEL FASTENER HOLES TO BE PLUGGED IN THE REMAINING FLOOR BEAM FLANGES AND AN EQUAL NUMBER OF NEW INSERTS TO BE RELOCATED IN THE PANEL. THE MINIMUM NUMBER OF REPAIR FASTENERS ON EACH SIDE IS EIGHT, WHILE TEN FASTENERS IS THE PREFERRED NUMBER.

[F] IF THE REPAIR EXTENDS THROUGH THE AREA WHERE A STANCHION IS LOCATED, THE TEE MUST BE PLACED ON THE FORWARD SIDE OF THE BEAM WEB. SHIMS ARE NOT PERMITTED BETWEEN A STANCHION AND THE FLOOR BEAM WEB.

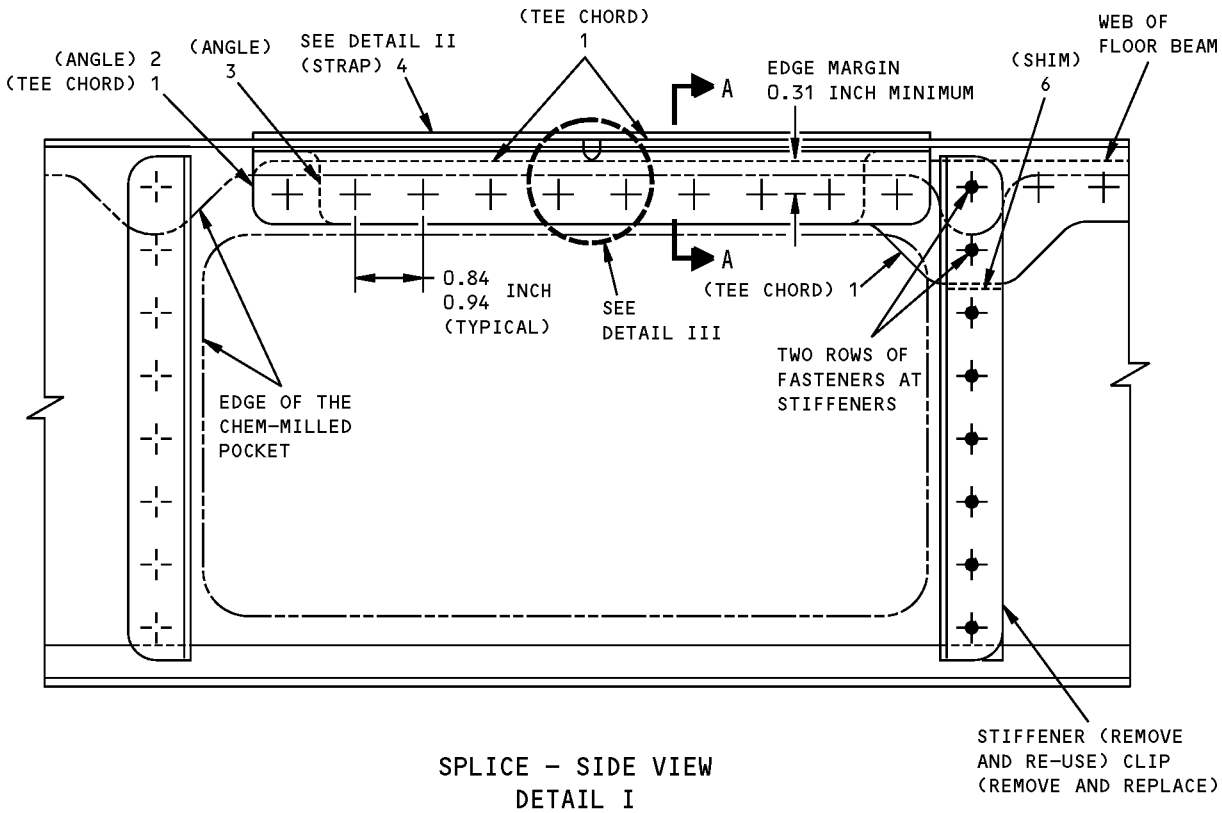
FASTENER SYMBOLS

- REFERENCE FASTENER LOCATION.
- REPAIR FASTENER LOCATION. INSTALL A BACB30NW6K HEX DRIVE BOLT WITH A BACC30M6 COLLAR. AS AN ALTERNATIVE, INSTALL A BACB30MY6K HEX DRIVE BOLT WITH A BACC30M COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30MY5K OR A BACB30FM5A HEX DRIVE BOLT WITH A BACC30M5 COLLAR.
- INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()X OR A BACB30FP6A HEX DRIVE BOLT WITH A BACC30M6 COLLAR.
- FLOOR PANEL ATTACH FASTENER LOCATION. INSTALL A BACN10JR3F NUTPLATE.

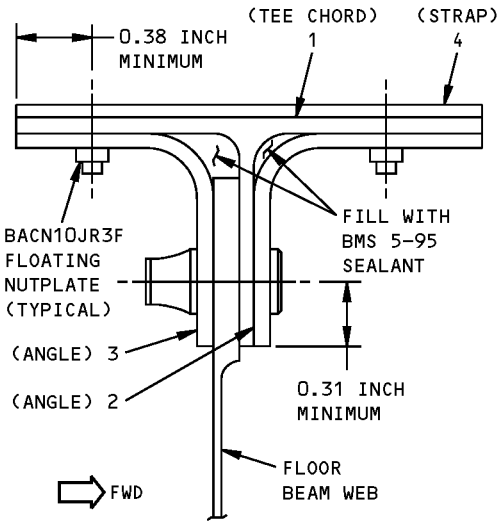
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	TEE CHORD	1	7075-T6511 EXTRUSION [B]
2	ANGLE	1 PER SPLICE	0.063 7075-T6 FORMED
3	ANGLE	1 PER SPLICE	0.063 7075-T6 FORMED
4	STRAP	1 PER SPLICE	0.063 7075-T6
5	RADIUS FILLERS	AS REQ'D	7075-T6 THICKNESS AS REQUIRED
6	SHIMS	AS REQ'D	7075-T6 THICKNESS AS REQUIRED
7	CAP ANGLE (SECTION 41 ONLY)	1	7075-T6 CLAD AND10134-2001

TABLE I

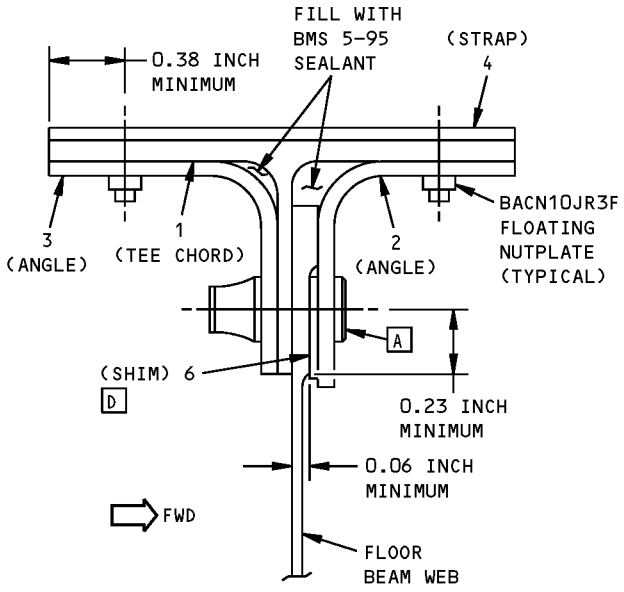
Floor Beam Repair - Upper Chord
Figure 201 (Sheet 2 of 6)



SPLICE - SIDE VIEW
DETAIL I



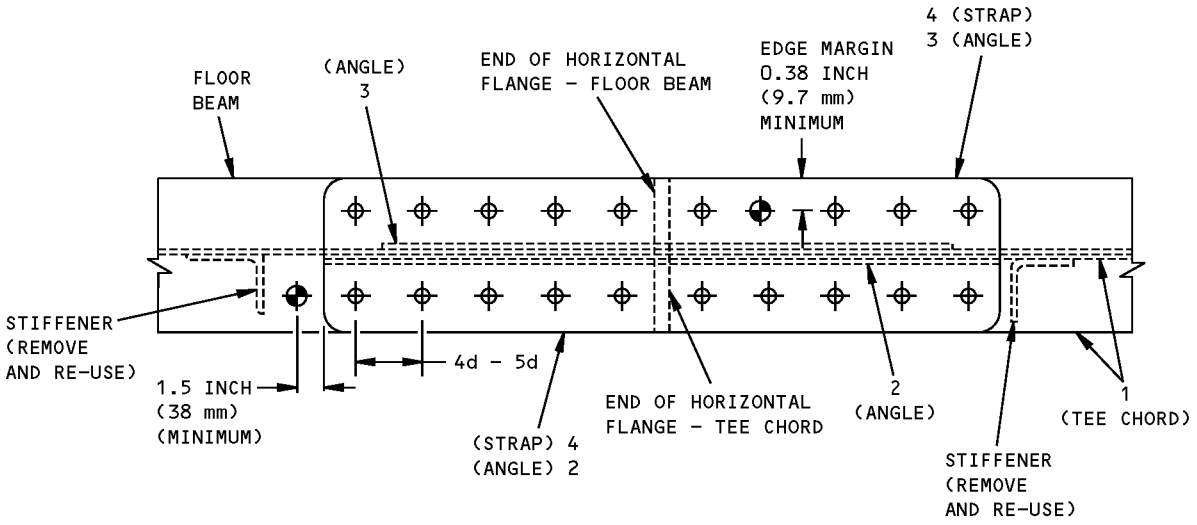
SECTION 41
(TEE CHORD LOCATED ON
FORWARD SIDE OF FLOOR BEAM,
AFT SIDE IS OPTIONAL)



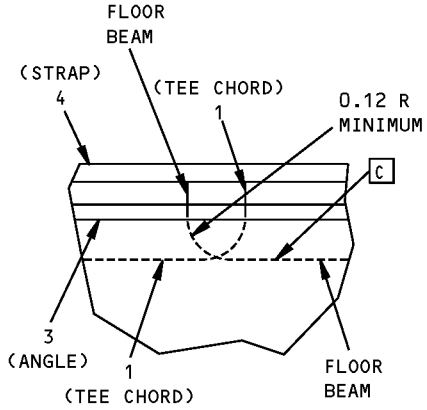
SECTIONS 43 AND 46 [F]

SECTION A-A

Floor Beam Repair - Upper Chord
Figure 201 (Sheet 3 of 6)

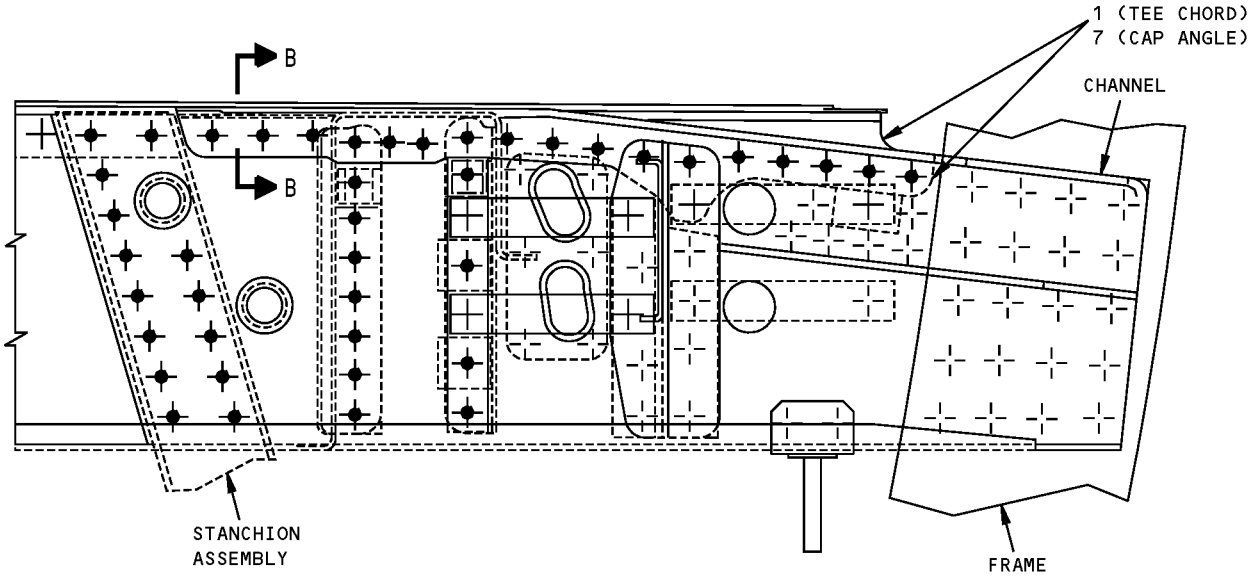


SPLICE – TOP VIEW [E]
DETAIL II

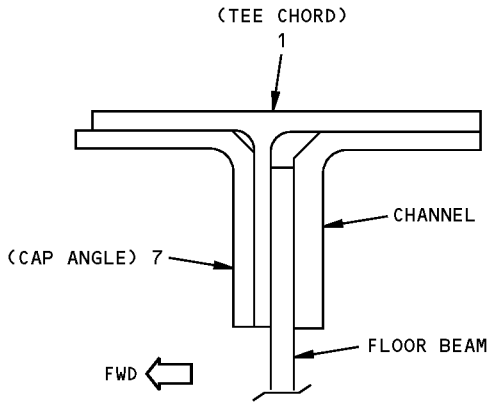


DETAIL III

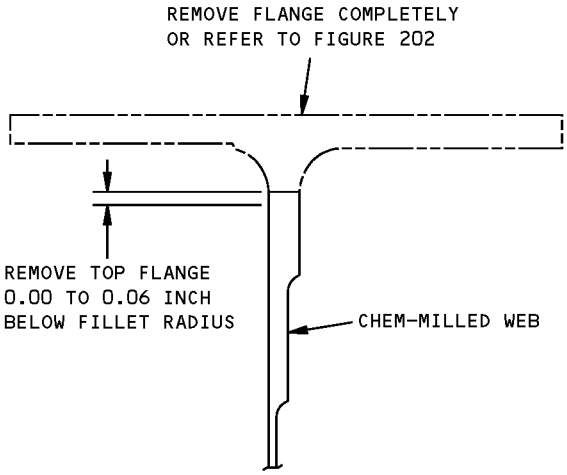
Floor Beam Repair - Upper Chord
Figure 201 (Sheet 4 of 6)



END OF FLOOR BEAM – SECTION 41
DETAIL IV

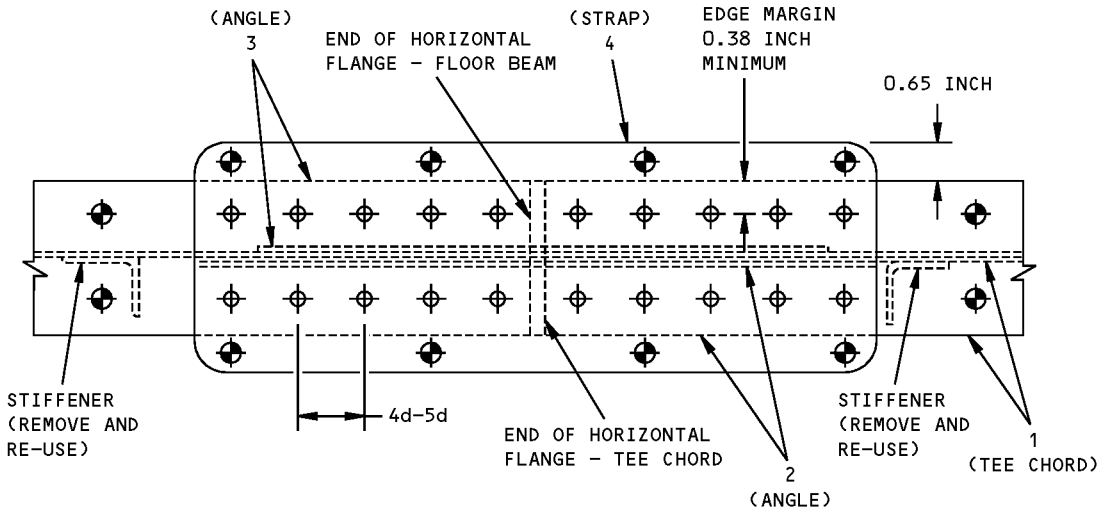


SECTION B–B



REMOVAL OF TOP FLANGE
DETAIL V

Floor Beam Repair - Upper Chord
Figure 201 (Sheet 5 of 6)



SPLICE AT A PANEL SPLIT LOCATION – TOP VIEW
DETAIL VI E

Floor Beam Repair - Upper Chord
Figure 201 (Sheet 6 of 6)

REPAIR 2 - FLOOR BEAM REPAIR - ONE FLANGE OF THE UPPER CHORD

APPLICABILITY
THIS REPAIR IS APPLICABLE TO FLOOR BEAMS MADE FROM BAC1506 3116 AND -3117 EXTRUSIONS. THESE BEAMS ARE LOCATED IN SECTION 41, STA 266 TO STA 412 AND ALL OF SECTIONS 43 AND 46.

REPAIR INSTRUCTIONS

1. Get access to the damaged area. Refer to AMM 53-01-01 for floor panel removal procedures.
2. Remove the damaged flange of the upper chord. Remove the entire length of the damaged area. Either one of the flanges may be removed using this repair. See Section A-A or Detail II. The roughness of the cut surface must be 125 microinches Ra or smoother.
3. Do a high frequency eddy current (HFEC) inspection of the floor beam for cracks where the cap was removed. Refer to NDT, Part 6, 51-00-01 or 51-00-19. As an alternative, do a penetrant inspection of the floor beam where the cap was removed. Refer to SOPM 20-20-02.
4. Make the repair parts. See Table I. Cut the vertical leg of the repair angle with sufficient height for one row of fasteners to be installed along the joint between the repair angle and the web of the floor beam. See Detail I.

   For repairs where the flange is removed on the chem-milled side of the floor beam, a shim may be necessary between the chem-milled pocket and the repair angle. See Detail II.
5. Remove and keep the stiffeners for later installation. Make replacement clips as necessary. If the initial clips had shims, use the initial shims again if possible.
6. If the part 2 (strap) is located under a seat track, remove the fasteners common to the seat track and upper flange in the floor beams just forward and aft of the beam that is being repaired. D
7. Cut the structure as necessary to permit clearance between the repair parts and other structure. Keep the edge margins. Do not alter or trim a stanchion. Do not shim a stanchion interface.
8. Assemble the repair parts and drill the fastener holes.
9. Remove the nicks, scratches, gouges, burrs and sharp edges from the repair parts, the cut edge of the floor beam, and any other areas cut to permit clearance.
10. Apply a chemical conversion coating to the bare aluminum surfaces of the repair parts, floor beams, and any parts cut to permit clearance. Refer to SRM 51-20-01.
11. Apply one layer of BMS 10-11, Type I primer to the repair parts and the bare aluminum surface of the repair parts, floor beam and any parts cut to permit clearance. Refer to AMM 51-21.
12. Install the repair parts and the stiffeners that were removed earlier. Use BMS 5-95, Type II sealant between the faying surfaces. Install any non-aluminum fasteners wet with the same sealant. Fill all gaps and cavities between parts with BMS 5-95 sealant. See Detail II. Refer to SRM 51-20-05.

    Install the stiffeners and replacement clips with part 4 (shims) as necessary. Shim the replacement clips to a maximum pull-up gap of 0.005 inch between the clip and the adjacent structure.

    Install the part 5 (shims) between the seat track and floor beam on the adjacent floor beams if necessary. D
13. Apply finish to the repaired area. Refer to AMM 51-21.
14. Install the floor panels. Refer to AMM 53-01-01 for floor panel installation procedures.

Floor Beam Repair - One Flange of the Upper Chord
Figure 201 (Sheet 1 of 6)

NOTES

- d = FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR REFER TO:
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - AMM 53-01-01 FOR THE REMOVAL AND INSTALLATION OF FLOOR PANELS.

FASTENER SYMBOLS

REPAIR FASTENER LOCATION. INSTALL A BACB30NW6K HEX DRIVE BOLT WITH A BACC30M6 COLLAR.

REPAIR FASTENER LOCATION. INSTALL A BACB30MY5K HEX DRIVE BOLT WITH A BACC30M5 COLLAR.

INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX DRIVE BOLT WITH A BACC30M6 COLLAR.

INITIAL FASTENER LOCATION. INSTALL A BACB30NY8()X HEX DRIVE BOLT WITH A BACC30X8 COLLAR.

INITIAL FASTENER LOCATION. INSTALL A BACB30YP6K()X OR BACB30VU6K()X HEX DRIVE BOLT WITH A BACC30BS6 COLLAR.

[A] DO NOT PUT THE FASTENERS THROUGH THE EDGE OF A CHEM-MILLED POCKET. DO NOT PUT FASTENERS IN CHEM-MILLED POCKETS LESS THAN 0.06 INCH (1.52 mm) THICK. SEE DETAIL I, II AND III.

[B] THE SHIM USED HERE IS PERMITTED A MAXIMUM THICKNESS OF 0.05 INCH (1.3 mm). FOR REPAIRS THAT REQUIRE THICKER SHIMS IN THIS LOCATION, GET MORE INFORMATION FROM THE BOEING COMPANY. DO NOT STACK SHIMS TWO OR MORE DEEP IN THIS LOCATION.

[C] THE STRAP MUST HAVE A MINIMUM OF 3 FASTENER PAIRS OUTSIDE EACH END OF THE HORIZONTAL FLANGE OF THE ANGLE.

[D] IF THE PART 2 (STRAP) IS INSTALLED BELOW A SEAT TRACK, YOU MUST INSTALL PART 5, 0.032 INCH THICK SHIMS, BELOW THE SEAT TRACK ON THE FLOOR BEAMS JUST FORWARD AND AFT OF THE REPAIRED BEAM.

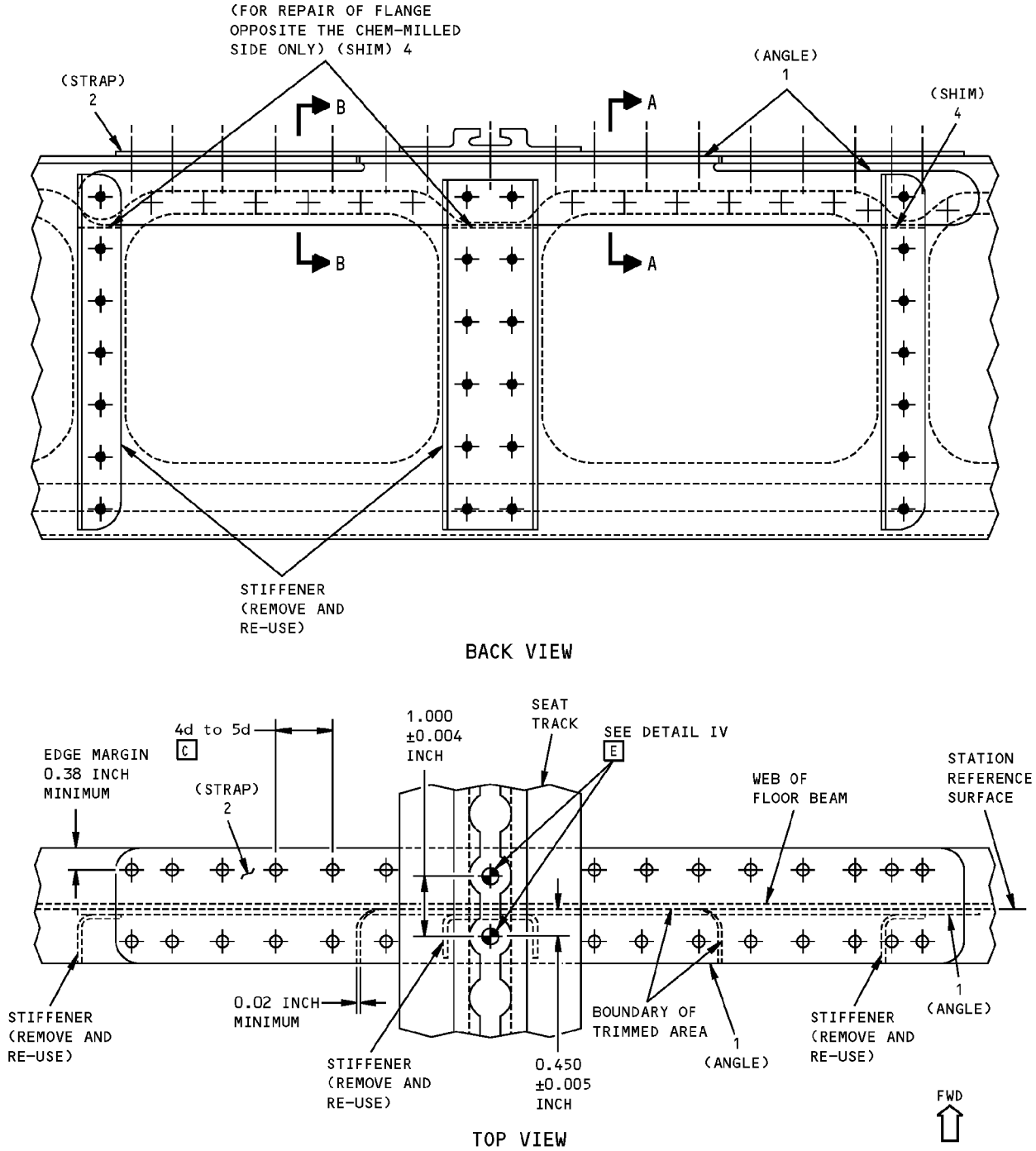
FOR EXAMPLE, IF THE STATION 456 BEAM IS REPAIRED, THE STATION 434 AND 478 BEAMS WOULD REQUIRE A SHIM BETWEEN THE UPPER FLOOR BEAM FLANGE AND THE SEAT TRACK.

[E] IF A CLIP IS INSTALLED BELOW THE SEAT TRACK AT THIS LOCATION, INSTALL THE FASTENERS AS SHOWN IN DETAIL IV.

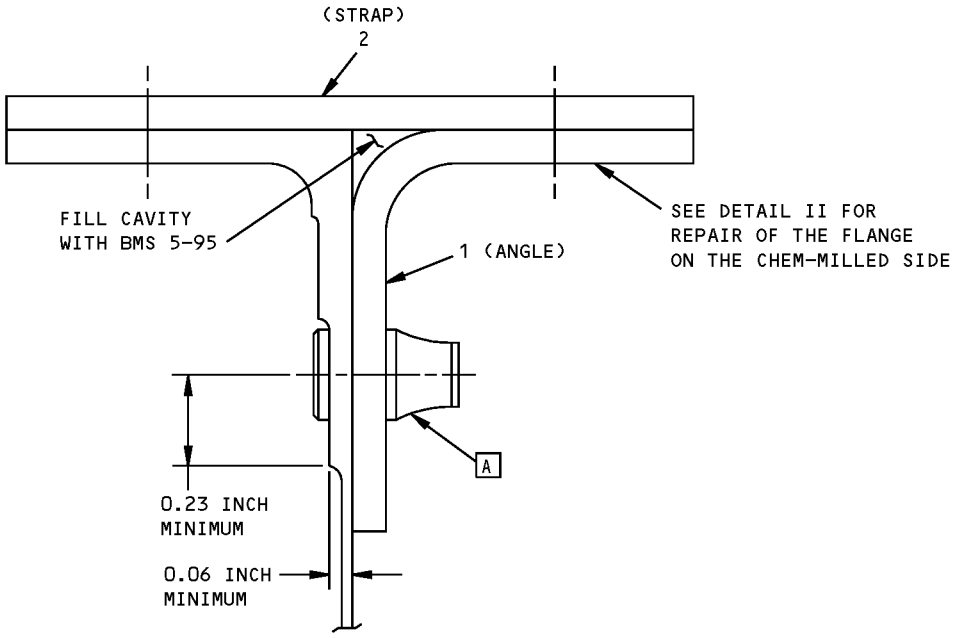
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	ANGLE	1	7075-T6 BAC1490-2905 OR EQUIVALENT
2	STRAP	1	0.063 7075-T6
3	SHIMS (FOR CHEM-MILLED SIDE ONLY)	AS REQ'D	7075-T6 THICKNESS AS REQUIRED
4	SHIMS	AS REQ'D	7075-T6, THICKNESS (0.063)
5	SHIMS [D]	2	2024-T3 OR 7075-T6 0.032 X 2.0 X SEAT TRACK FLANGE WIDTH

TABLE I

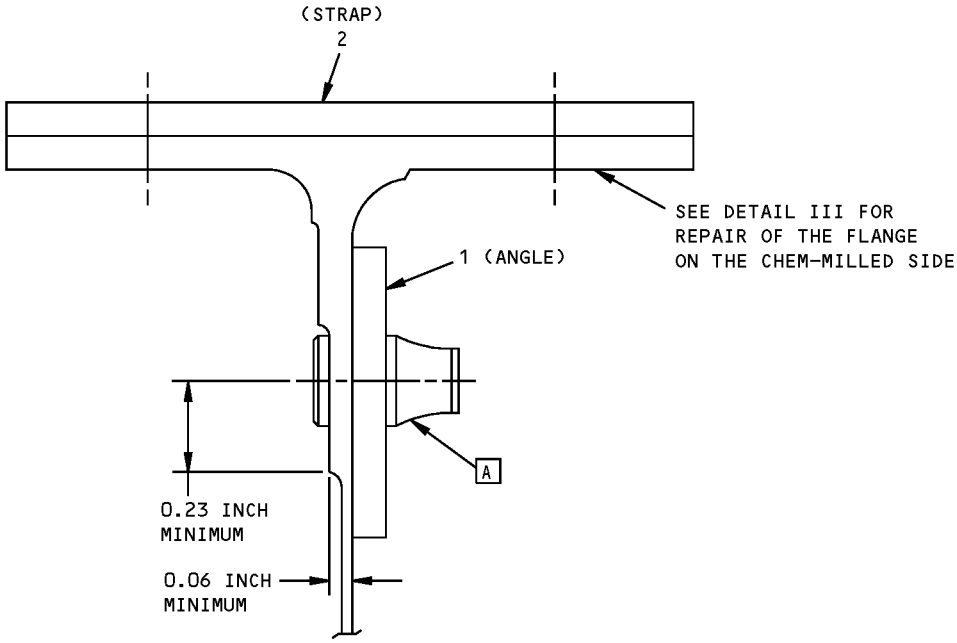
Floor Beam Repair - One Flange of the Upper Chord
Figure 201 (Sheet 2 of 6)



Floor Beam Repair - One Flange of the Upper Chord
Figure 201 (Sheet 3 of 6)

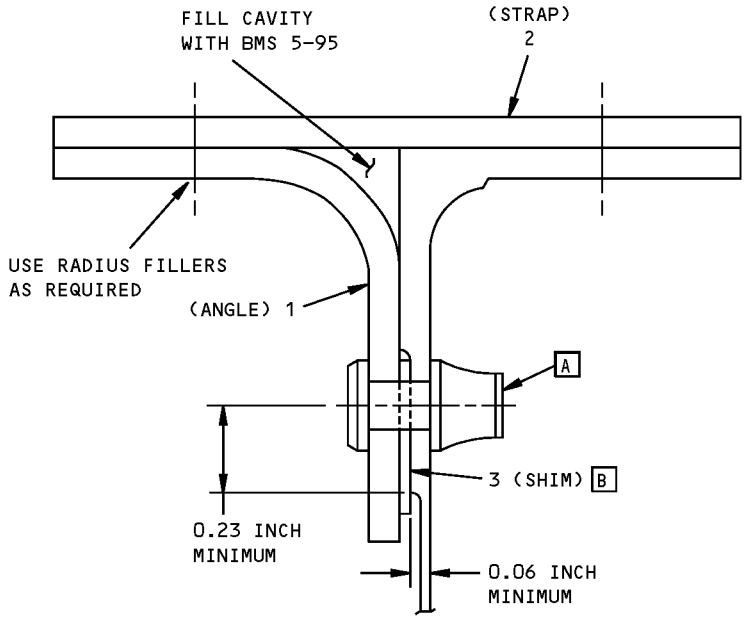


TYPICAL REPAIR OF THE FLANGE OPPOSITE THE CHEM-MILLED SIDE
SECTION A-A

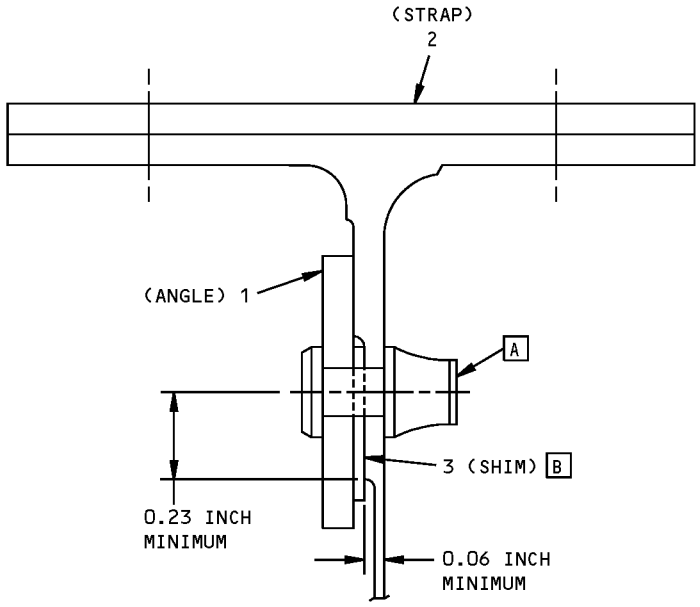


TYPICAL REPAIR OF THE FLANGE OPPOSITE THE CHEM-MILLED SIDE
SECTION B-B

Floor Beam Repair - One Flange of the Upper Chord
Figure 201 (Sheet 4 of 6)

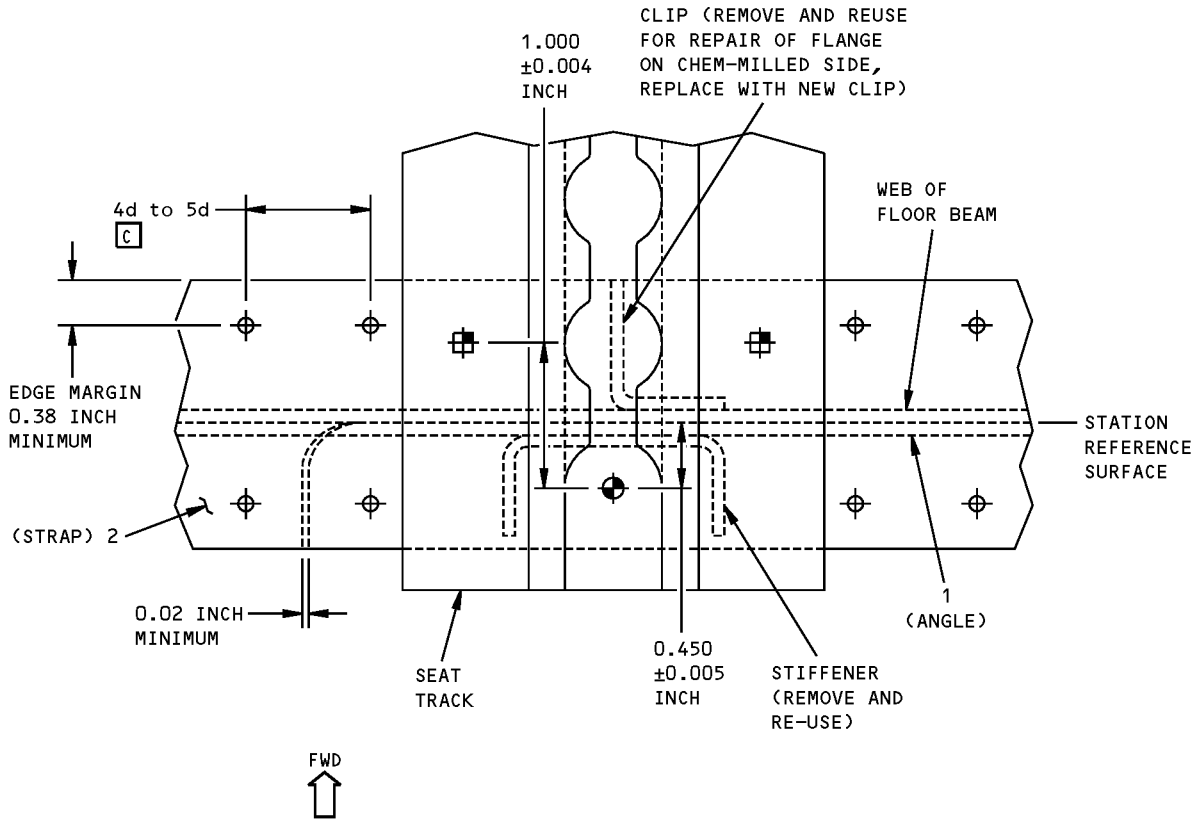


TYPICAL REPAIR OF THE FLANGE ON THE CHEM-MILLED SIDE
DETAIL II



TYPICAL REPAIR OF THE FLANGE ON THE CHEM-MILLED SIDE
DETAIL III

Floor Beam Repair - One Flange of the Upper Chord
Figure 201 (Sheet 5 of 6)



TOP VIEW

FASTENER INSTALLATION FOR LOCATIONS WITH CLIP INTERFERENCE
DETAIL IV

Floor Beam Repair - One Flange of the Upper Chord
Figure 201 (Sheet 6 of 6)

REPAIR 3 - FLOOR BEAM SPLICE REPAIR - WING CENTER SECTION

APPLICABILITY
THIS REPAIR IS APPLICABLE TO THE UPPER CHORD OF THE FLOOR BEAMS LOCATED IN THE WING CENTER SECTION BETWEEN STA 782.25 TO 999 AT BBL 11.06, 33.06, 54.81, AND 74.81.

REPAIR INSTRUCTIONS

1. Remove the floor panels at the repair location. Refer to AMM 53-01-01.
2. Get access to the damaged area. Remove miscellaneous support clips and brackets from the floor beam.
3. Locate the chord splice joint in an area where the repair parts can be installed with the least amount of interference to the adjacent structure. See Detail I.
4. Remove and keep any floor beam stiffener(s) from the area of the intended chord splice.
5. Cut the floor beam at a location as necessary to permit clearance between the repair parts and other structure. Keep the 2D minimum edge margins.
6. Make the repair parts. See Table I.
7. Assemble the repair parts and drill the fastener holes. Position the floor panels and drill the attach holes. See Detail IV.
8. Remove the floor panels and the repair parts.
9. Drill the holes for the floor panel attach fastener nutplates as necessary. Install BACN10JR3F nutplates or equivalant as given in Detail V.
10. Remove all nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the floor beam.
11. Apply a chemical conversion coating to all bare aluminum surfaces. Refer to SRM 51-20-01.
12. Apply one coat of BMS 10-11, Type I primer to the repair parts and the bare surfaces of the initial parts. Refer to AMM 51-21.
13. Install the nutplates for the floor panel attach fasteners on the part 2 repair angle as necessary.
14. Install the repair parts with BMS 5-95 sealant between the mating surfaces. Make sure the gaps at the chord splices and the voids at the bend radius are filled with BMS 5-95 sealant.
15. Install the fasteners wet with BMS 5-95 sealant.
16. Apply finish to the repair area. Refer to AMM 51-21.
17. Install all clips, brackets and the structure that were removed to get access to the damaged floor beam.
18. Install the floor panels. Refer to AMM 53-01-01. Increase the grip length of the panel screws at the chord repair splice as necessary.

NOTES

- D = FASTENER DIAMETER
- ALL DIMENSIONS ARE GIVEN IN INCHES UNLESS SPECIFIED OTHERWISE.
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 53-01-01 FOR FLOOR PANEL REMOVAL AND INSTALLATION PROCEDURES
  - SOPM 20-20-02 FOR THE PENETRANT INSPECTION PROCEDURES
  - SOPM 20-41-02 FOR THE APPLICATION OF FINISHES
  - SOPM 20-41-04 FOR APPLICATION OF DECORATIVE INTERIOR FINISHES
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS.

[A] TRIM NUT ACCESS SLOT HOLES THROUGH THE PART 2 REPAIR SPLICE ANGLE WHERE SEAT TRACKS ARE INSTALLED.

[B] FILL THE GAPS BETWEEN THE REPAIR PARTS AND THE BEND RADII OF THE UPPER CHORD WITH BMS 5-95 SEALANT.

[C] THE MINIMUM NUMBER OF FASTENERS COMMON TO THE VERTICAL FLANGE ON EACH SIDE OF THE SPLICE IS 6 FOR SINGLE ROW AREAS AND 11 FOR DOUBLE ROW AREAS.

[D] THE MINIMUM NUMBER OF FASTENERS COMMON TO THE HORIZONTAL FLANGE ON EACH SIDE OF THE SPLICE IS 12 (6 FASTENERS ON EACH FLANGE).

[E] CUT THE SPLICE ANGLES TO MATCH THE UPPER CHORD FLANGE WIDTH.

[F] MAKE THE FILLER PROFILE TO MATCH THE INITIAL PARTS. ALSO MAKE SURE THAT THE FILLERS DO NOT RIDE INTO THE RADII OF THE UPPER CHORD.

[G] FLOOR BEAM UPPER CHORD AT BL 33.06 AND BL 54.81 SHOWN. FLOOR BEAM UPPER CHORD AT BL 11.06 AND BL 74.81 SIMILAR.

Floor Beam Splice Repair - Wing Center Section
Figure 201 (Sheet 1 of 6)

NOTES

[H] FOR BL 11.06 FLOOR BEAMS

[I] FOR BL 33.06 AND BL 54.81 FLOOR BEAMS

[J] FOR BL 74.81 FLOOR BEAMS, 0.125 INCH (3.175 mm) THICK REINFORCING STRAPS ARE INSTALLED BELOW THE HORIZONTAL FLANGES OF THE UPPER CHORD IN PRODUCTION BETWEEN BS 817 AND BS 863. IF THE CHORD SPLICE LOCATION IS NEAR THE REINFORCING STRAP, INSTALL PART 4 FILLER AS NECESSARY TO COMPLETE THE REPAIR. SEE DETAIL II, VIEW B-B.

FASTENER SYMBOLS

REPAIR FASTENER LOCATION. INSTALL A BACB30NW8K() HEX DRIVE BOLT WITH A BACC30M8() COLLAR.

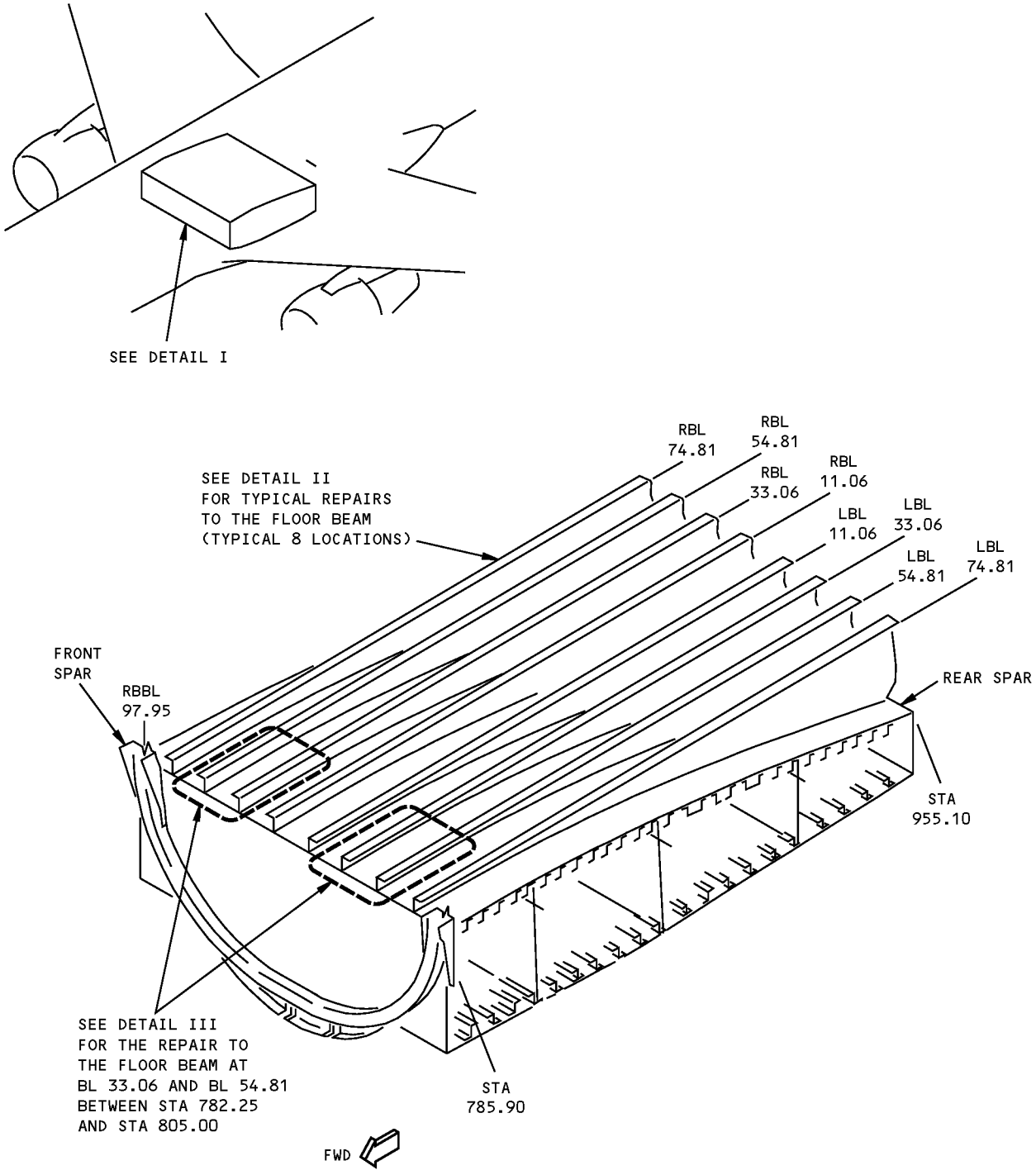
INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX DRIVE BOLT WITH A BACC30M6() COLLAR. INCREASE THE GRIP LENGTH AS NECESSARY.

REPAIR FASTENER LOCATION. INSTALL A BACB30NX10K() HEX DRIVE BOLT WITH A BACC30AC() COLLAR IN INTERFERENCE FIT HOLES. REQUIRED HOLE SIZES SHOWN BELOW.
BACB30NX10K() - (0.3085-0.3105)
BACB30NX10K()X - (0.3241-0.3261)
BACB30NX10K()Y - (0.3397-0.3417)

REPAIR PARTS			
PART		QTY	MATERIAL
1	UPPER CHORD	1	BAC1505-101155 [H] 7075-T73511 BAC1506-2066 [I] 7075-T73511 BAC1505-101595 [J] 7075-T73511
2	SPLICE ANGLE	2	0.125 7075-T6511 EXTRUDED ANGLE
3	FILLER	2	0.080 7075-T6 [I]
4	FILLER	2	0.125 7075-T6 [J]
5	FILLER	2	0.140 7075-T6 [H]
6	FILLER	AS REQUIRED	0.125 7075-T6

TABLE I

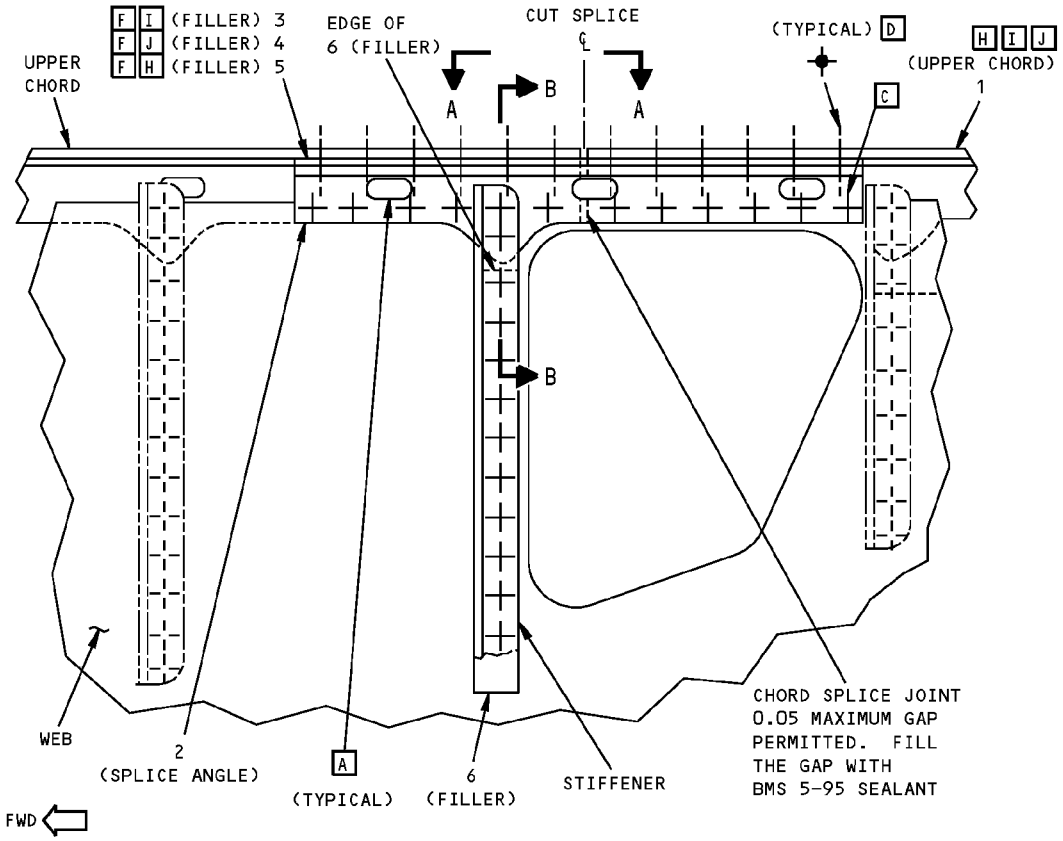
Floor Beam Splice Repair - Wing Center Section
Figure 201 (Sheet 2 of 6)



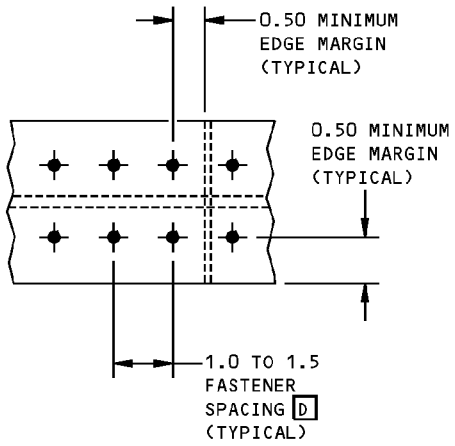
WING CENTER SECTION

DETAIL I

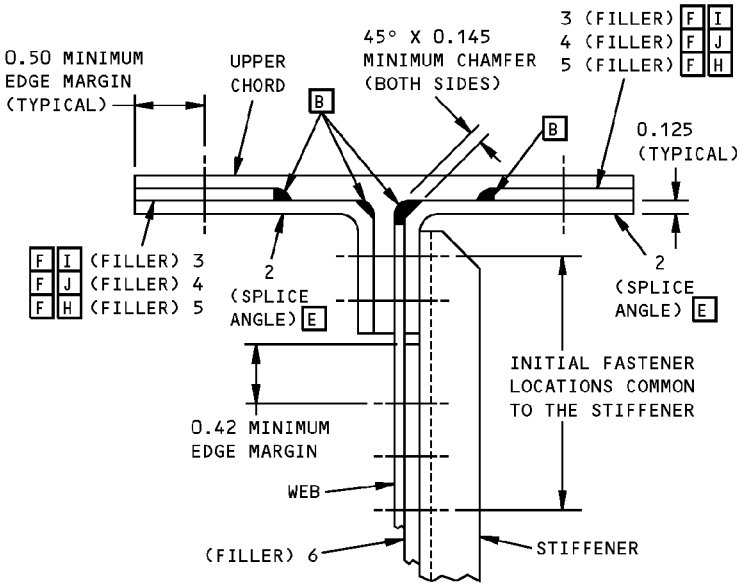
Floor Beam Splice Repair - Wing Center Section
Figure 201 (Sheet 3 of 6)



DETAIL II G

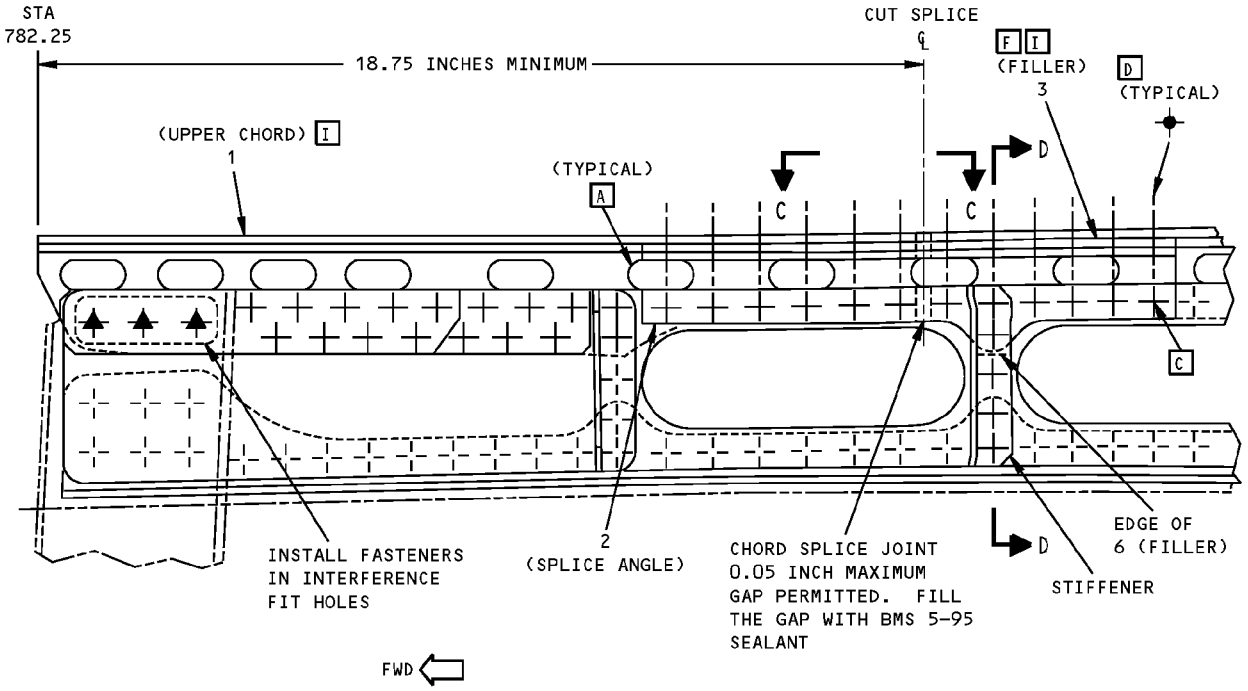


TYPICAL PLAN VIEW OF SPLICE
VIEW A-A G

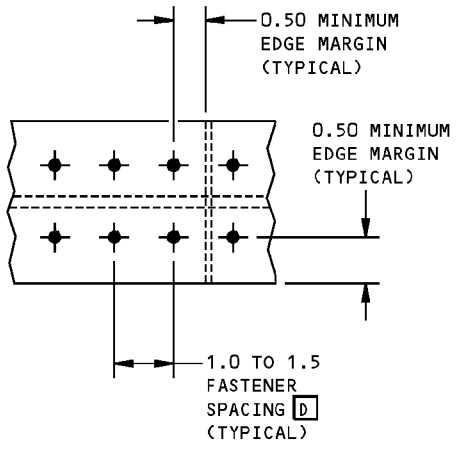


VIEW B-B G

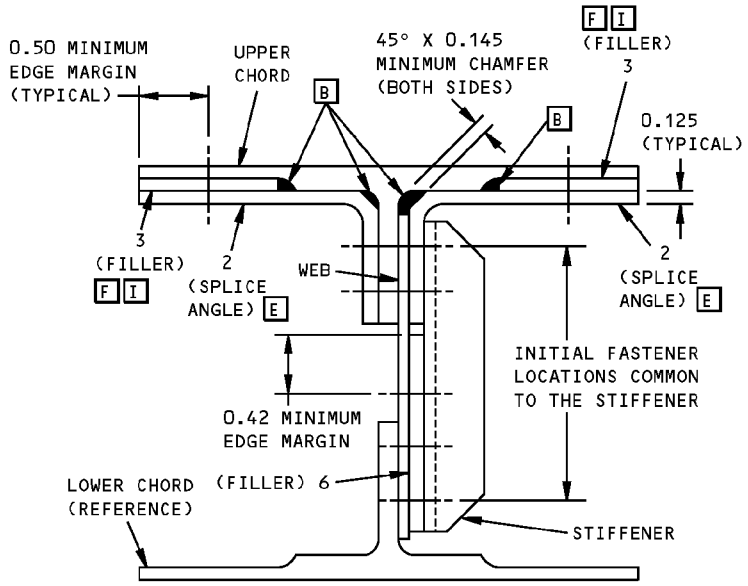
Floor Beam Splice Repair - Wing Center Section
Figure 201 (Sheet 4 of 6)



DETAIL III I

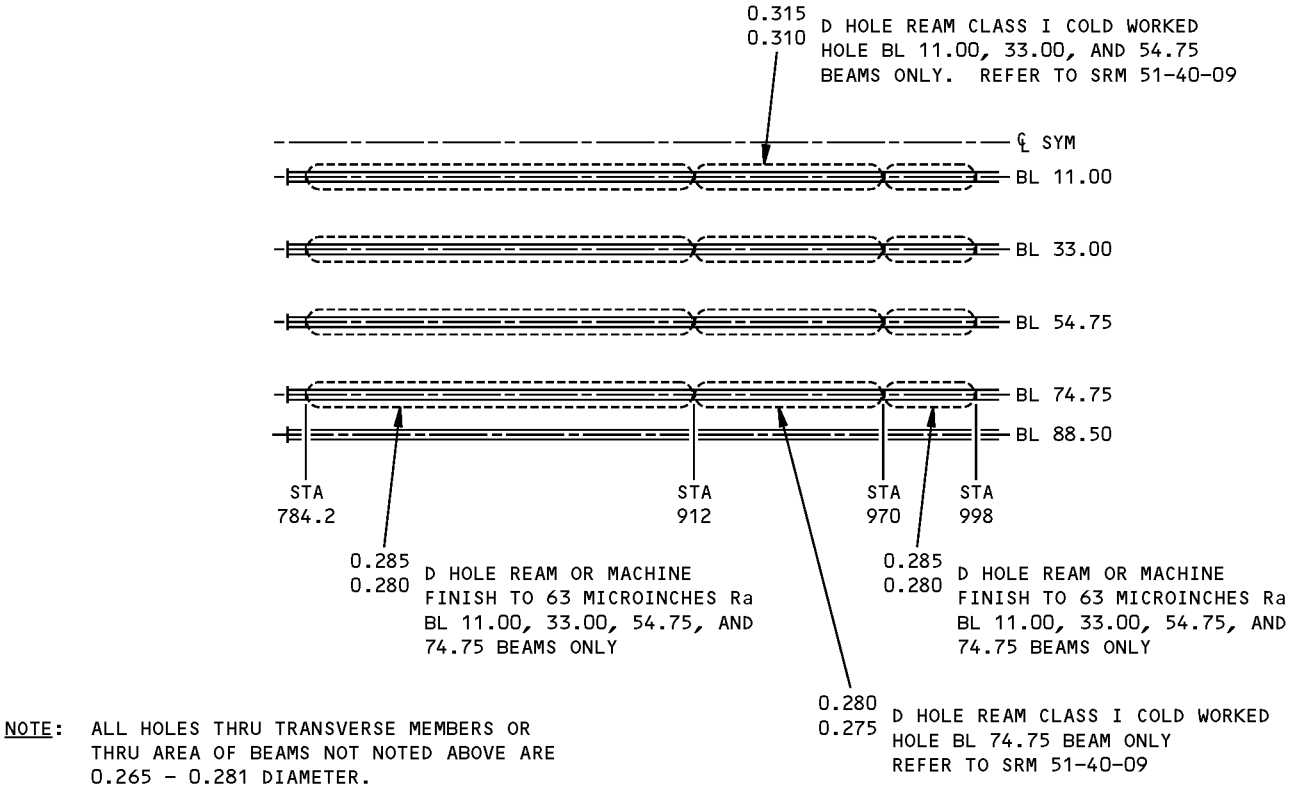


TYPICAL PLAN VIEW OF SPLICE
VIEW C-C



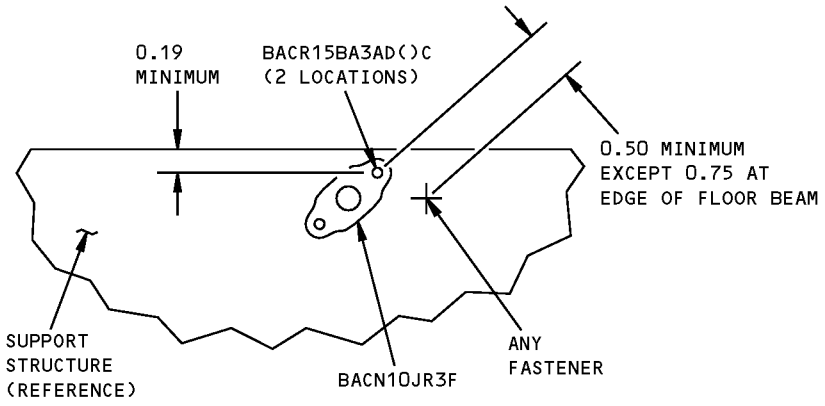
VIEW D-D

Floor Beam Splice Repair - Wing Center Section
Figure 201 (Sheet 5 of 6)



NOTE: ALL HOLES THRU TRANSVERSE MEMBERS OR THRU AREA OF BEAMS NOT NOTED ABOVE ARE 0.265 - 0.281 DIAMETER.

DETAIL IV



NUTPLATE INSTALLATION
ON ALUMINUM STRUCTURE
DETAIL V

Floor Beam Splice Repair - Wing Center Section
Figure 201 (Sheet 6 of 6)

REPAIR 4 - FLOOR BEAM REPAIR - UPPER CHORD

APPLICABILITY
THIS REPAIR IS APPLICABLE TO FLOOR BEAMS MADE FROM BAC1506-3116 OR BAC1506-3117 EXTRUSIONS EXCEPT FOR FLOOR BEAMS LOCATED AT STA. 266.5 AND STA. 1480.
THIS REPAIR IS FOR FULL UPPER CHORD DAMAGE BETWEEN LBL 67.5 AND RBL 64.5 ONLY.

REPAIR INSTRUCTIONS

1. Get access to the damaged area. Refer to AMM 53-01-01 for floor panel removal procedures.
2. Remove the upper cap of the floor beam the entire length of the damaged area. The upper flange trim must be staggered with offset of 2 fastener locations The surface roughness of the cut surface must be 125 microinches Ra or smoother. See Details II, III and V.
3. Do a high frequency eddy current (HFEC) inspection of the floor beam for cracks where the cap was removed. Refer to 767 NDT, Part 6, 51-00-01 for the HFEC inspection procedures. As an alternative, do a penetrant inspection of the floor beam where the cap was removed. Refer to SOPM 20-20-02.
4. Make the repair parts. See Table I.

   Make the repair angles. Cut the vertical leg of the repair angles sufficiently wide for one row of fasteners along the joint between the repair angles and the web of the floor beam. Where there is a stiffener or a clip, make the vertical leg sufficiently wide to include two fasteners. See Detail I.

   Make the width of the horizontal flange on the repair angle as wide as the floor beam's top flange. When you cut the horizontal flange of the repair angle at the transition to join the floor beam, remove only as much material as necessary to maximize the fastener edge margin common to the vertical leg of the repair angle and the web of the floor beam. See Details VI and VII.

   Make the repair shims of necessary shape and thickness to fill the chem-milled gaps between the repair angle and the web of the floor beam (a maximum pull-up gap of 0.005 inch is permitted). Make repair shims to fill the gap between the web and the stiffener.
5. Remove and keep the stiffeners for later installation. Make new replacement clips as necessary on either side of the beam. If the initial clips had shims, use the initial shims again if possible.
6. Cut the structure as necessary to permit clearance between the repair parts and other structure. Keep the edge margins.
7. Assemble the repair parts and drill the fastener holes.
8. Disassemble the repair parts.
9. Remove the nicks, scratches, gouges, burrs and sharp edges from the repair parts and all cut edges.
10. Apply a chemical conversion coating to the repair parts, and the bare surfaces of the floor beam and any parts cut to permit clearance. Refer to SRM 51-20-01.
11. Apply one layer of BMS 10-11, Type I primer to the repair parts and the bare surfaces of the floor beam and any parts cut to permit clearance. Refer to SOPM 20-41-02.
12. Install the nutplates to the part 1 and part 2 angles at the floor panel fastener locations. See Detail I, Section A-A.
13. Install the repair parts and the removed parts with BMS 5-95 sealant between the faying surfaces. Install any non-aluminum fasteners wet with the same sealant. Fill all gaps between parts with BMS 5-95 sealant. See Detail I, Sections A-A and B-B.

    Install the stiffeners and replacement clips with shims as necessary. Shim the replacement clips to a maximum gap of 0.005 inch between the clip and the adjacent structure.
14. Install the part 6 shims between the seat track and floor beam on the adjacent floor beams if necessary. [F]
15. Apply the finish to the repaired area. Refer to AMM 51-21.
16. Install the floor panels. Refer to AMM 53-01-01 for floor panel installation procedures.

Floor Beam Repair - Upper Chord
Figure 201 (Sheet 1 of 7)

NOTES

- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - AMM 53-01-01 FOR THE REMOVAL AND INSTALLATION OF FLOOR PANELS
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS

[A] DO NOT PUT THE FASTENERS THROUGH THE EDGE OF A CHEM-MILLED POCKET. DO NOT PUT FASTENERS IN CHEM-MILLED POCKETS WHICH ARE LESS THAN 0.06 INCH (1.52 mm) THICK.

[B] REMOVE ALL OF THE DAMAGED TOP FLANGE OF THE EXTRUSION. REMOVE ONLY AS MUCH OF THE ADJACENT WEB AS NECESSARY TO MAXIMIZE THE EDGE MARGIN FOR THE FASTENERS THAT WILL ATTACH THE REPAIR ANGLES TO THE WEB. SEE DETAIL I, SECTION A-A AND DETAILS III AND V.

[C] INSTALL A SINGLE PIECE SHIM AT THIS LOCATION. THE MAXIMUM SHIM THICKNESS PERMITTED IS 0.05 INCH (1.3 mm). FOR REPAIRS THAT REQUIRE THICKER SHIMS IN THIS LOCATION, GET MORE INFORMATION FROM THE BOEING COMPANY.

[D] CHAMFER THE UPPER MATING CORNERS OF THE PART 1 AND PART 2 ANGLES 0.02 X 0.05 INCH (0.5 mm X 1.3 mm). SEE DETAIL I, SECTIONS B-B AND C-C.

[E] REMOVE THESE PARTS AND INSTALL THEM AFTER THE PART 2 ANGLE IS INSTALLED.

[F] IF PART 3 STRAP IS INSTALLED BELOW A SEAT TRACK, YOU MUST INSTALL THE PART 6 SHIMS BELOW THE SEAT TRACK ON THE FLOOR BEAMS JUST FORWARD AND AFT OF THE REPAIRED BEAM TO MINIMIZE BENDING IN THE SEAT TRACK CAUSED BY THE STRAP INSTALLATION. FOR EXAMPLE, IF THE STATION 456 FLOOR BEAM IS BEING REPAIRED, INSTALL A SHIM BETWEEN THE UPPER FLOOR BEAM FLANGE AND THE SEAT TRACK AT STATIONS 434 AND 478.

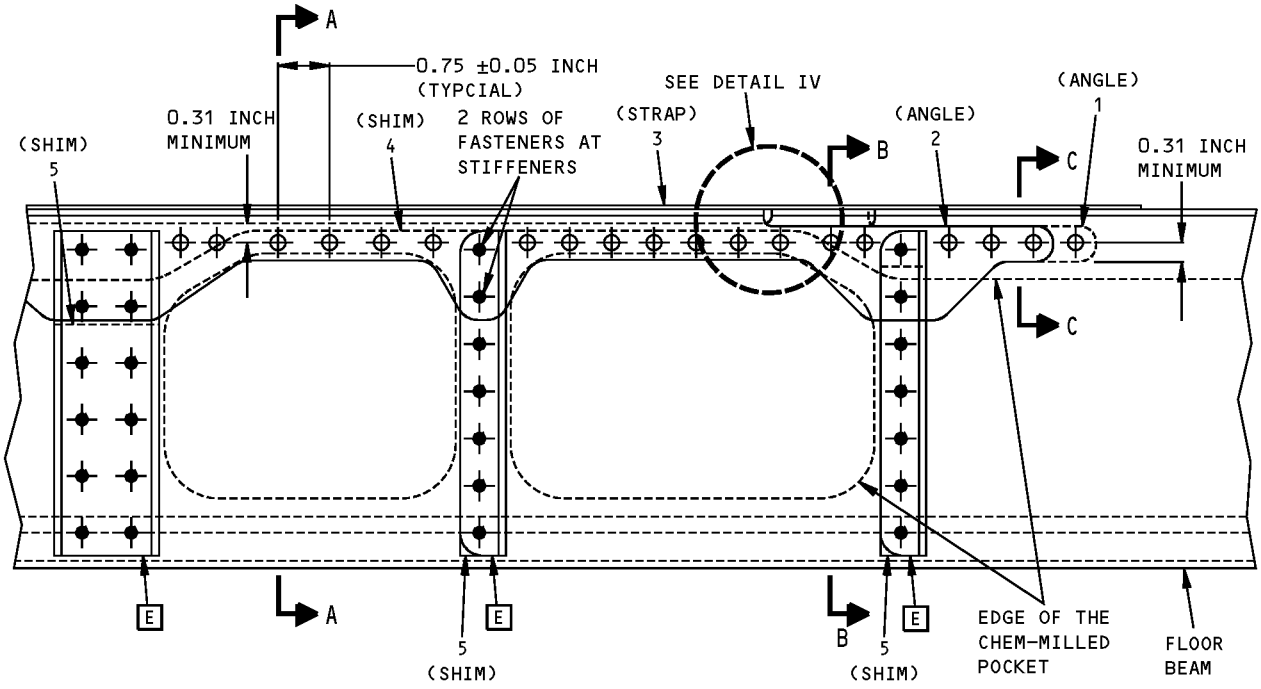
FASTENER SYMBOLS

- INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX DRIVE BOLT WITH A BACC30M6 COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30MY5K HEX DRIVE BOLT WITH A BACC30M5 COLLAR. AS AN ALTERNATIVE, INSTALL A BACB30VT5K HEX DRIVE BOLT WITH A BACC30BL5 COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30VU6K HEX DRIVE BOLT WITH A BACC30BL6 COLLAR. AS AN ALTERNATIVE, INSTALL A BACB30YP6K HEX DRIVE BOLT WITH A BACC30BL6 COLLAR.
- FLOOR PANEL ATTACH FASTENER LOCATION.

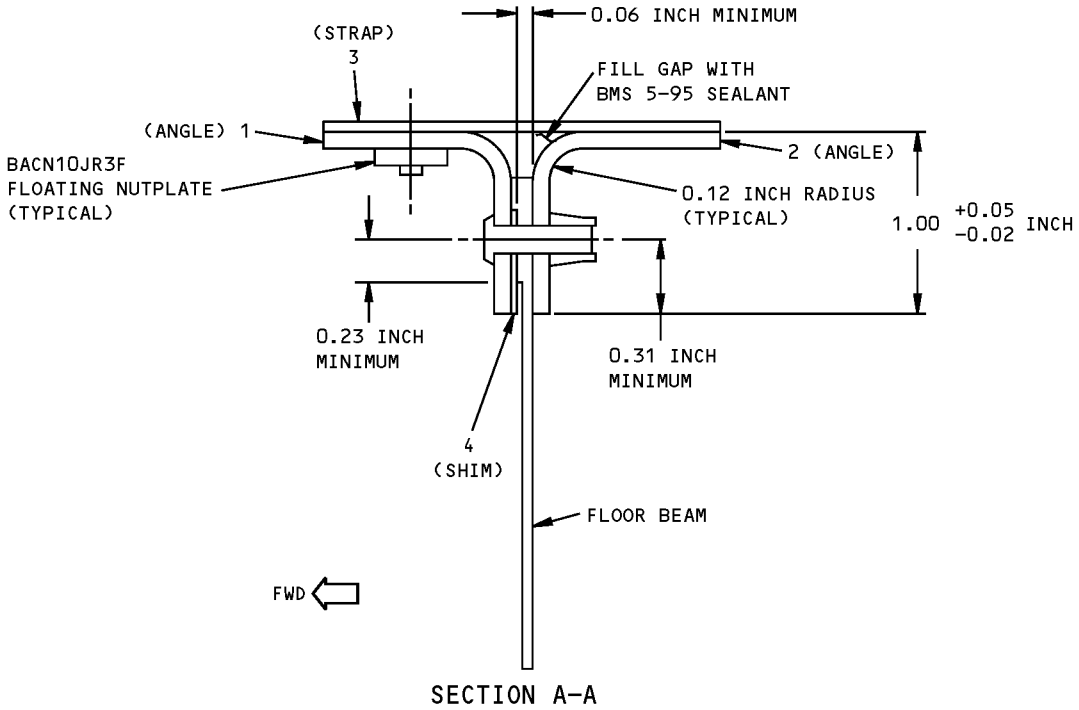
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	ANGLE [D]	1	0.071 7075-0 BARE SHEET HT TR TO T6 AFTER PART IS FORMED OR BAC1490-2896 7075-T6 BARE
2	ANGLE [D]	1	0.071 7075-0 BARE SHEET HT TR TO T6 AFTER PART IS FORMED OR BAC1490-2896 7075-T6 BARE
3	STRAP	1	0.063 INCH 7075-T6 BARE SHEET
4	SHIM [C]	AS NECESSARY	7075-T6 THICKNESS AS NECESSARY
5	SHIM	AS NECESSARY	0.071 INCH 7075-T6
6	SHIM [F]	2	0.032 INCH 7075-T6 LENGTH 2.0 INCHES WIDTH TO MATCH SEAT TRACK FLANGE WIDTH

TABLE I

Floor Beam Repair - Upper Chord
Figure 201 (Sheet 2 of 7)

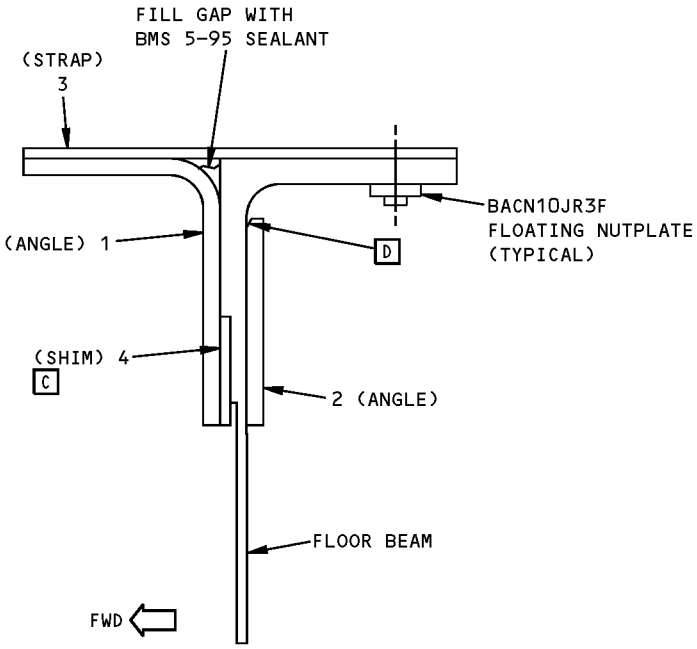


VIEW LOOKING FORWARD
DETAIL I

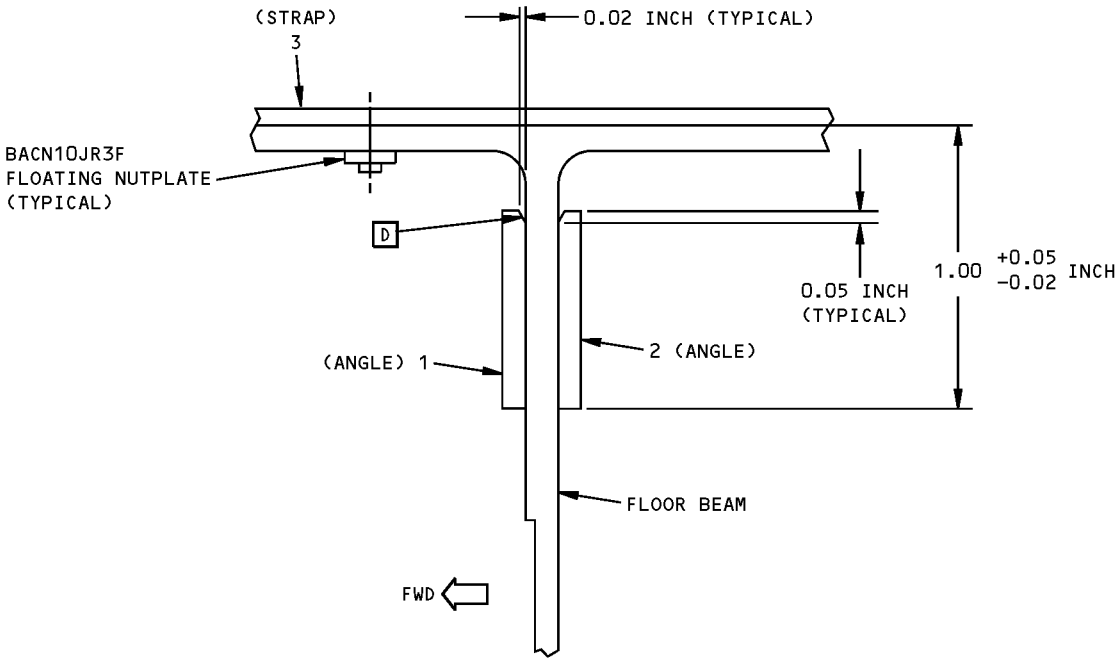


SECTION A-A

Floor Beam Repair - Upper Chord
Figure 201 (Sheet 3 of 7)

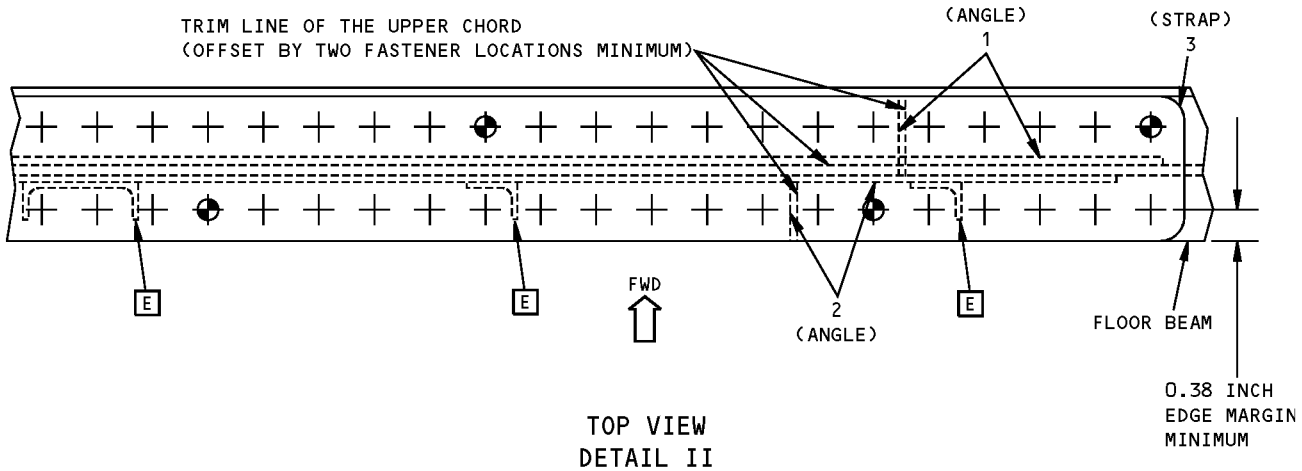


SECTION B-B

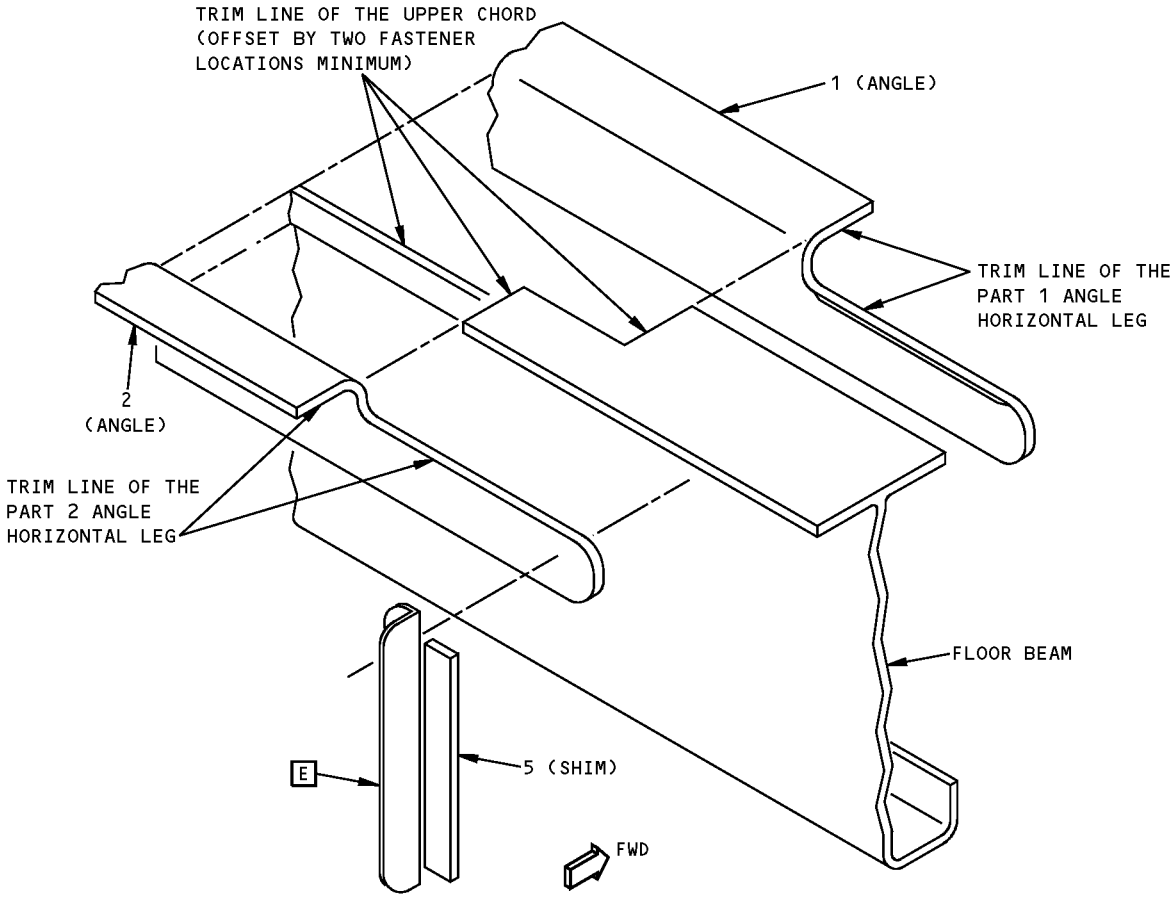


SECTION C-C

Floor Beam Repair - Upper Chord
Figure 201 (Sheet 4 of 7)

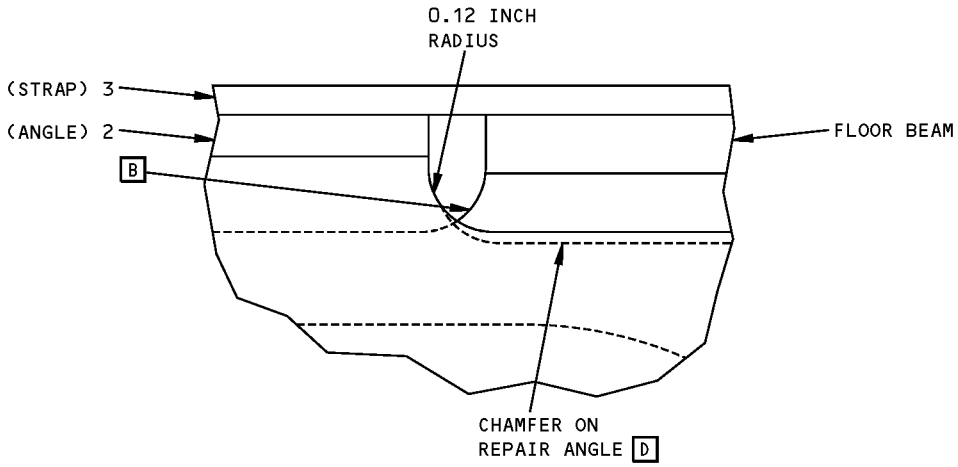


TOP VIEW
DETAIL II



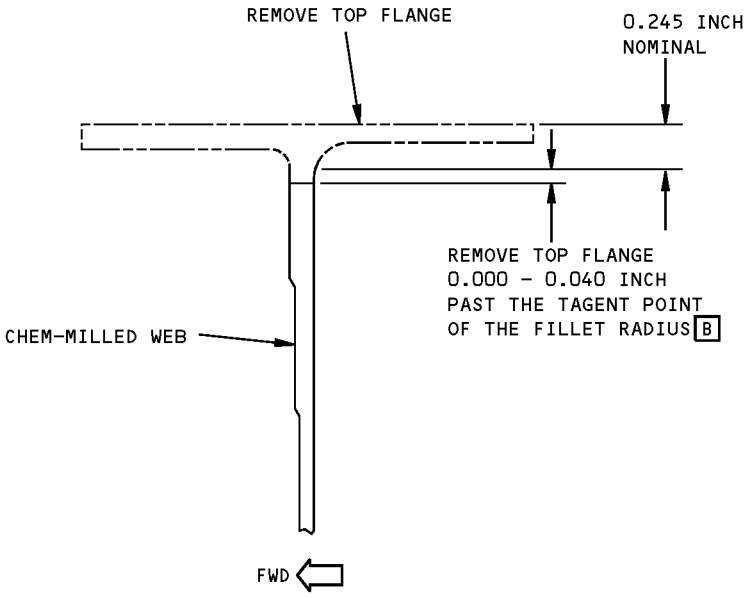
REMOVAL OF TOP FLANGE
DETAIL III

Floor Beam Repair - Upper Chord
Figure 201 (Sheet 5 of 7)



(PART 1 NOT SHOWN FOR CLARITY)

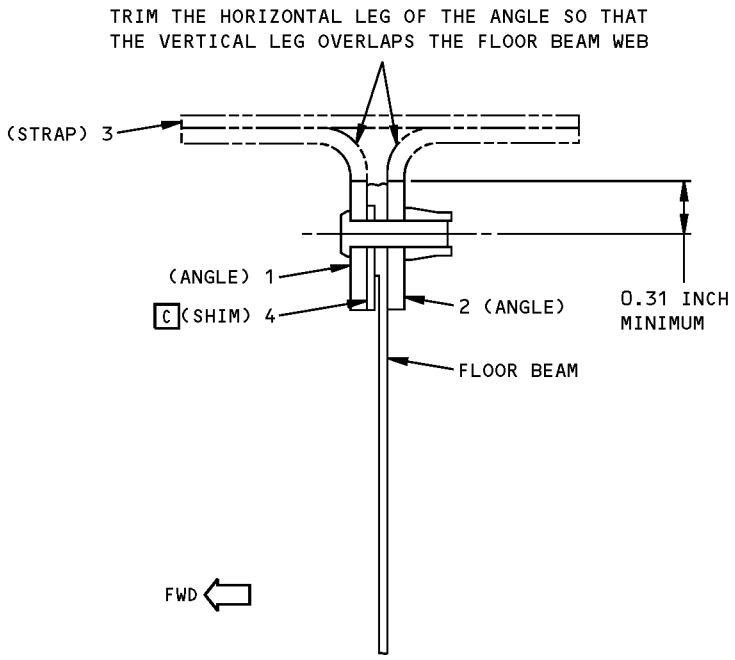
DETAIL IV



REMOVAL OF TOP FLANGE

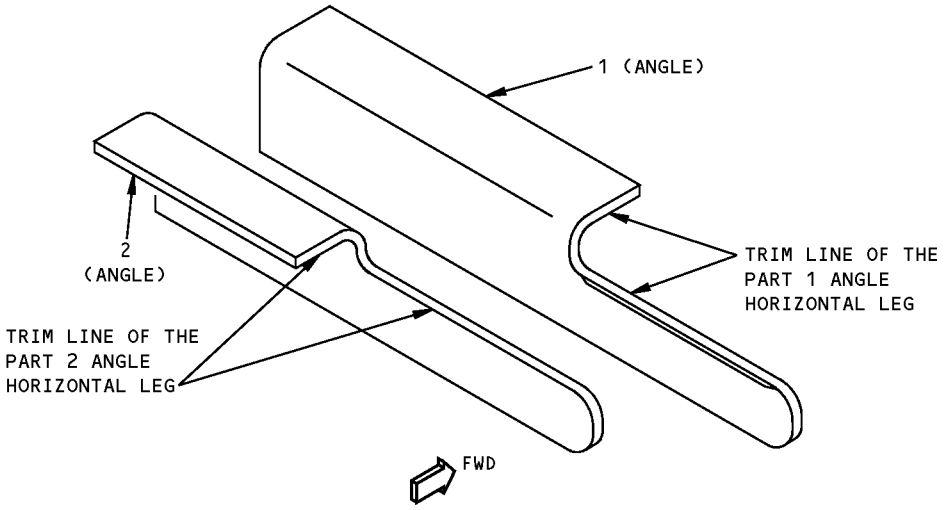
DETAIL V

Floor Beam Repair - Upper Chord
Figure 201 (Sheet 6 of 7)



TRIM FOR HORIZONTAL LEG OF ANGLES

DETAIL VI



TRIM FOR HORIZONTAL LEG OF ANGLES

DETAIL VII

Floor Beam Repair - Upper Chord
Figure 201 (Sheet 7 of 7)

REPAIR 5 - STATION 1480 FLOOR BEAM CORROSION REPAIR - UPPER CHORD

APPLICABILITY
THIS FIGURE CAN BE USED TO REPAIR CORROSION DAMAGE ON THE UPPER CHORD OF THE STATION 1480 FLOOR BEAM. IT CAN BE USED ON ALL AIRPLANES EXCEPT THOSE CONTAINED IN BOEING VARIABLE NUMBERS VN001 THRU VN080 AND VS196 THRU VS205. USE THIS REPAIR FOR DAMAGE BETWEEN THE FOLLOWING LOCATIONS: LBL 51.0 AND LBL 81.05 RBL 51.0 AND RBL 81.05 REFER TO DETAILS XVI AND XVII FOR A GENERAL VIEW OF THE STATION 1480 FLOOR BEAM. FIVE REPAIR ALTERNATIVES ARE AVAILABLE. REFER TO THE NOTES IN THE REPAIR INSTRUCTIONS AND DETAILS I AND II. [E] [F]

REPAIR INSTRUCTIONS

NOTE: Use ALTERNATIVE I when the damage is between BL 51 to BL 70 on either side of BL 0.0: Single flange repair [E].

Use ALTERNATIVE II when the damage is at between BL 51 to BL 70 on either side of BL 0.0: Double flange repair [E].

Use ALTERNATIVE III when the damage is at the outboard ends common to the horizontal flange of the upper chord extension: Full trim single flange repair (cut and remove the entire flange to the end at BL 81.05).

Use ALTERNATIVE IV when a single damage is at the outboard ends common to the horizontal flange of the upper chord extension: Partial trim single flange repair (cut and remove one damage segment on either forward or aft flange).

Use ALTERNATIVE V when the upper cap is damaged is at the outboard ends common to the horizontal flange of the upper chord extension: Full trim double flange repair (cut and remove the entire damaged upper cap to the end at BL 81.05).

ALTERNATIVE I:

Damage in areas between BL 51 and BL 70 on either side of BL 0.0: Single flange repair [E]. See Detail VI and View F-F.

1. Get access to the damaged area. Refer to AMM 53-01-01 for floor panel removal procedures as necessary.
2. Remove and keep the stiffeners, shims and clips for later installation in the repair area and make new replacement clips as necessary. If the initial clips had shims, keep the initial shims for use again if possible.
3. Cut and remove one flange of the floor beam upper chord the entire length of the corroded area. The surface roughness of the cut must be 125 microinches Ra or better. See Details VII, VIII and View F-F.
4. Do a high frequency eddy current (HFEC) inspection of the floor beam for cracks where the flange was removed. Refer to 767 NDT, Part 6, 51-00-01 for the inspection procedures. As an alternative, do a penetrant inspection of the floor beam where the flange was removed. Refer to SOPM 20-20-02.
5. Make the repair straps. See Details I, II, III, IV, V and Sections A-A, B-B, C-C, and Table I. Refer to BAC 5300 for the hot forming of titanium parts.

   Make repair part 4 (angle) or 5 (angle) as applicable. See Table I.

   Cut the vertical leg of the repair angle sufficiently tall for one row of fasteners along the joint between the repair angle and the web of the floor beam. Where there is a stiffener or an angle, make the vertical leg sufficiently tall to include two fasteners. You must use a minimum of 4 or 5 repair fasteners common to the floor beam web from flange trim line to the end of the vertical leg of the repair angle. See Detail VI.

   When you cut the horizontal flange of the repair angle at the transition to join the floor beam, remove only as much material as necessary to maximize the fastener edge margin common to the vertical leg of the repair angle and the web of the floor beam. See Detail XIII and Section E-E.
6. Trim any clips or stiffeners that interfere with the repair parts. Keep the edge margins.

   NOTE: If you trim primary structure, you must keep the surface roughness of the trimmed area 125 microinches Ra or better and do step 4 again.
7. Make the repair shims of necessary shape and thickness to fill the chem-milled gaps between the repair angle and the web of the floor beam. A maximum pull-up gap of 0.005 inch is permitted.

Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 1 of 24)

REPAIR INSTRUCTIONS

WARNING: USE CARE WHEN YOU DRILL TITANIUM. SMALL PARTICLES AND FINE SHAVINGS OF TITANIUM ARE HIGHLY FLAMMABLE. WATER WITH HOT TITANIUM CAN CAUSE A STEAM EXPLOSION. EXTINGUISH FIRES OF TITANIUM WITH FULLY DRY TALC, CALCIUM CARBONATE, SAND OR GRAPHITE. APPLY THE POWDER TO A DEPTH OF 1/2 INCH OR MORE ON THE AREA THAT IS ON FIRE. DO NOT USE FOAM, WATER, CARBON TETRACHLORIDE, OR CARBON DIOXIDE. USE OF THE WRONG MATERIAL CAN CAUSE INJURY TO PERSONS.

8. Assemble the repair parts and drill the fastener holes. Use the dimensions between fasteners as shown in Details III, IV and V, except in the areas where there is a repair angle installed. Keep 4D minimum fastener spacing and edge margins as given in Detail VI View F-F.
9. Disassemble the repair parts.
10. Remove the nicks, scratches, gouges, burrs and sharp edges from the repair parts, the cut edge of the floor beam, and any other areas trimmed to permit clearance between repair parts.
11. Apply a chemical conversion coating to the repair angles, shims, and the bare surfaces of the floor beam and all trimmed surfaces. Refer to SRM 51-20-01. Prepare the bare surfaces of the titanium straps for the application of primer. Refer to SOPM 20-30-03 for abrasive cleaning procedures for titanium parts.
12. Apply one layer of BMS 10-11, Type I primer to the titanium straps and two layers of BMS 10-11, Type I primer to the aluminum repair parts and the bare surfaces of the floor beam and all parts trimmed to permit clearance. Refer to SOPM 20-41-02.
13. Install the repair parts and the salvaged parts with BMS 5-95 sealant between the mating surfaces. Use BMS 5-95 sealant between all dissimilar materials and in gaps between straps. Install all fasteners wet with BMS 5-95 sealant.
14. Install the stiffeners and replacement clips with shims as necessary. Shim the replacement clips to a maximum pull-up gap of 0.005 inch between the clip and the adjacent structure.
15. Apply finish to the repaired area. Refer to AMM 51-21.
16. Install the floor panels as necessary. Refer to AMM 53-01-01.

ALTERNATIVE II:

Damage in areas between BL 51 and BL 70 on either side of BL 0.0: Double flange repair [E]. See Detail IX and View I-I.

1. Get access to the damaged area. Refer to AMM 53-01-01 for floor panel removal procedures as necessary.
2. Remove and keep the stiffeners, shims and clips for later installation in the repair area and make new replacement clips as necessary. If the initial clips had shims, keep the initial shims for use again if possible.
3. Cut and remove the upper flanges of the floor beam the entire length of the corroded area. The upper flange cut must be staggered with an offset of 2 fastener locations minimum. The surface roughness of the cut must be 125 microinches Ra or better. See Details XIV, XV, IX and View I-I.
4. Do a high frequency eddy current (HFEC) inspection of the floor beam for cracks where the flanges were removed. Refer to 767 NDT, Part 6, 51-00-01 for the inspection procedures. As an alternative, do a penetrant inspection of the floor beam where the flanges were removed. Refer to SOPM 20-20-02.
5. Make the repair straps. See Details I, II, III, IV, V and Sections A-A, B-B, C-C, and Table I. Refer to BAC 5300 for the hot forming of titanium parts.

   Make repair parts 4 (angle) and 5 (angle). See Table I.

   Cut the vertical leg of the repair angles sufficiently tall for one row of fasteners along the joint between the repair angles and the web of the floor beam. Where there is a stiffener or an angle, make the vertical leg sufficiently tall to include two fasteners. You must use a minimum of 4 or 5 repair fasteners common to the floor beam web from flange trim line to the end of the vertical leg of the repair angle. See Detail IX.

   When you cut the horizontal flange of the repair angle at the transition to join the floor beam, remove only as much material as necessary to maximize the fastener edge margin common to the vertical leg of the repair angle and the web of the floor beam. See Detail XIII Section H-H.

Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 2 of 24)

REPAIR INSTRUCTIONS (CONT)

6. Trim any clips or stiffeners that interfere with the repair parts. Keep the edge margins.

   NOTE: If you trim primary structure, you must keep the surface roughness of the trimmed area 125 microinches Ra or better and do step 4 again.

7. Make the repair shims of necessary shape and thickness to fill the chem-milled gap between the repair angle and the web of the floor beam. A maximum pull-up gap of 0.005 inch is permitted.

WARNING: USE CARE WHEN YOU DRILL TITANIUM. SMALL PARTICLES AND FINE SHAVINGS OF TITANIUM ARE HIGHLY FLAMMABLE. WATER WITH HOT TITANIUM CAN CAUSE A STEAM EXPLOSION. EXTINGUISH FIRES OF TITANIUM WITH FULLY DRY TALC, CALCIUM CARBONATE, SAND OR GRAPHITE. APPLY THE POWDER TO A DEPTH OF 1/2 INCH OR MORE ON THE AREA THAT IS ON FIRE. DO NOT USE FOAM, WATER, CARBON TETRACHLORIDE, OR CARBON DIOXIDE. USE OF THE WRONG MATERIAL CAN CAUSE INJURY TO PERSONS.

8. Assemble the repair parts and drill the fastener holes. Use the dimensions between fasteners as shown in Details III, IV and V, except in the areas where there is a repair angle installed. Keep 4D minimum fastener spacing and edge margins as given in Detail IX View I-I.

9. Disassemble the repair parts.

10. Remove the nicks, scratches, gouges, burrs and sharp edges from the repair parts, the cut edge of the floor beam, and any other areas trimmed to permit clearance between repair parts.

11. Apply a chemical conversion coating to the repair angles, shims, and the bare surfaces of the floor beam and all trimmed surfaces. Refer to SRM 51-20-01. Prepare the bare surfaces of the titanium straps for the application of primer. Refer to SOPM 20-30-03 for abrasive cleaning procedures for titanium parts.

12. Apply one layer of BMS 10-11, Type I primer to the titanium straps and two layers of BMS 10-11, Type I primer to the aluminum repair parts and the bare surfaces of the floor beam and all parts trimmed to permit clearance. Refer to SOPM 20-41-02.

13. Install the repair parts and the salvaged parts with BMS 5-95 sealant between the mating surfaces. Use BMS 5-95 sealant between all dissimilar materials and in gaps between straps. Install all fasteners wet with BMS 5-95 sealant.

14. Install the stiffeners and replacement clips with shims as necessary. Shim the replacement clips to a maximum pull-up gap of 0.005 inch between the clip and the adjacent structure.

15. Apply finish to the repaired area. Refer to AMM 51-21.

16. Install the floor panels as necessary. Refer to AMM 53-01-01.

ALTERNATIVE III:

Damage in the outboard end common to the horizontal flange of the upper chord extension: Single flange repair (cut and remove the entire damaged flange to the end at BL 81.05. Replace the initial upper chord extension with a repair extension angle. See Detail X and View K-K.

1. Get access to the damaged area. Refer to AMM 53-01-01 for floor panel removal procedures as necessary.

2. Remove and keep the stiffeners, shims and clips for later installation in the repair area and make new replacement clips as necessary. If the initial clips had shims, keep the initial shims for use again if possible.

   Remove the initial upper chord extension.

3. Cut and remove the damaged flange of the floor beam upper chord the entire length of the corroded area. One or the other of the flanges may be removed. The surface roughness of the cut must be 125 microinches Ra or better. See Details VII, VIII and View K-K.

4. Do a high frequency eddy current (HFEC) inspection of the floor beam for cracks where the flanges were removed. Refer to 767 NDT, Part 6, 51-00-01 for the inspection procedures. As an alternative, do a penetrant inspection of the floor beam where the flanges were removed. Refer to SOPM 20-20-02.

Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 3 of 24)

REPAIR INSTRUCTIONS (CONT)

5. Make the repair straps. See Details I, II, III, IV, V and Sections A-A, B-B, C-C, and Table I. Refer to BAC 5300 for the hot forming of titanium parts.

   Make repair part 6 or 7 (extension angle) as applicable.

   Make the repair angle cross-section similar to the extension angle it will replace, but of necessary length to accommodate the repair location. Cut the vertical leg of the repair angle sufficiently tall for one row of fasteners along the joint between the repair angle and the web of the floor beam. Use the initial fastener locations. You must use a minimum of 4 or 5 repair fasteners common to the floor beam web from flange trim line to the end of the vertical leg of the repair angle. See Detail X.

   When you cut the horizontal flange of the repair angle at the transition to join the floor beam, remove only as much material as necessary to maximize the fastener edge margin common to the vertical leg of the repair angle and the web of the floor beam. See Detail XIII.

6. Trim any clips or stiffeners that interfere with the repair parts. Keep the edge margins.

   NOTE: If you trim primary structure, you must keep the surface roughness of the trimmed area 125 microinches Ra or better and do step 4 again.

7. Make the repair shims of necessary shape and thickness to fill the chem-milled gap between the repair angle and the web of the floor beam. A maximum pull-up gap of 0.005 inch is permitted.

WARNING: USE CARE WHEN YOU DRILL TITANIUM. SMALL PARTICLES AND FINE SHAVINGS OF TITANIUM ARE HIGHLY FLAMMABLE. WATER WITH HOT TITANIUM CAN CAUSE A STEAM EXPLOSION. EXTINGUISH FIRES OF TITANIUM WITH FULLY DRY TALC, CALCIUM CARBONATE, SAND OR GRAPHITE. APPLY THE POWDER TO A DEPTH OF 1/2 INCH OR MORE ON THE AREA THAT IS ON FIRE. DO NOT USE FOAM, WATER, CARBON TETRACHLORIDE, OR CARBON DIOXIDE. USE OF THE WRONG MATERIAL CAN CAUSE INJURY TO PERSONS.

8. Assemble the repair parts and drill the fastener holes. Use the dimensions between fasteners as shown in Details III, IV and V, except in the areas where there is a repair angle installed. Keep 4D minimum fastener spacing and edge margins as given in Detail X View K-K.

9. Disassemble the repair parts.

10. Remove the nicks, scratches, gouges, burrs and sharp edges from the repair parts, the cut edge of the floor beam, and any other areas trimmed to permit clearance between repair parts.

11. Apply a chemical conversion coating to the repair angles, shims, and the bare surfaces of the floor beam and all trimmed surfaces. Refer to SRM 51-20-01. Prepare the bare surfaces of the titanium straps for the application of primer. Refer to SOPM 20-30-03 for abrasive cleaning procedures for titanium parts.

12. Apply one layer of BMS 10-11, Type I primer to the titanium straps and two layers of BMS 10-11, Type I primer to the aluminum repair parts and the bare surfaces of the floor beam and all parts trimmed to permit clearance. Refer to SOPM 20-41-02.

13. Install the repair parts and the salvaged parts with BMS 5-95 sealant between the mating surfaces. Use BMS 5-95 sealant between all dissimilar materials and in gaps between straps. Install all fasteners wet with BMS 5-95 sealant.

14. Install the stiffeners and replacement clips with shims as necessary. Shim the initial parts to a maximum pull-up gap of 0.005 inch between the initial parts and the adjacent structure.

15. Apply finish to the repaired area. Refer to AMM 51-21.

16. Install the floor panels as necessary. Refer to AMM 53-01-01.

ALTERNATIVE IV:

Damage in the outboard end common to the horizontal flange of the upper chord extension: Single flange repair partial trim with filler option (cut and remove one damaged flange and install a filler). Reuse the initial upper chord extension [G]. See Detail XI and View M-M.

Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 4 of 24)

REPAIR INSTRUCTIONS (CONT)

1. Get access to the damaged area. Refer to AMM 53-01-01 for floor panel removal procedures as necessary.
2. Remove and keep the stiffeners, shims and clips for later installation in the repair area. If the initial clips had shims, keep the initial shims for use again if possible.

   Remove the initial upper chord extension on the side where damage of the floor beam flange was found. Keep the initial chord extension for later installation.
3. Cut and remove either the aft of the forward damaged flange segment. The surface roughness of the cut must be 125 microinches Ra or better. See Detail XI, Section L-L and View M-M.
4. Do a high frequency eddy current (HFEC) inspection of the floor beam for cracks where the flanges were removed. Refer to 767 NDT, Part 6, 51-00-01 for the inspection procedures. As an alternative, do a penetrant inspection of the floor beam where the flanges were removed. Refer to SOPM 20-20-02.
5. Make the repair straps. See Details I, II, III, IV, V and Sections A-A, B-B, C-C, and Table I. Refer to BAC 5300 for the hot forming of titanium parts.

   Make repair filler of necessary shape and length. See Table I.
6. Trim any clips or stiffeners that interfere with the repair parts. Keep the edge margins.

   NOTE: If you trim primary structure, you must keep the surface roughness of the trimmed area 125 microinches Ra or better and do step 4 again.

WARNING: USE CARE WHEN YOU DRILL TITANIUM. SMALL PARTICLES AND FINE SHAVINGS OF TITANIUM ARE HIGHLY FLAMMABLE. WATER WITH HOT TITANIUM CAN CAUSE A STEAM EXPLOSION. EXTINGUISH FIRES OF TITANIUM WITH FULLY DRY TALC, CALCIUM CARBONATE, SAND OR GRAPHITE. APPLY THE POWDER TO A DEPTH OF 1/2 INCH OR MORE ON THE AREA THAT IS ON FIRE. DO NOT USE FOAM, WATER, CARBON TETRACHLORIDE, OR CARBON DIOXIDE. USE OF THE WRONG MATERIAL CAN CAUSE INJURY TO PERSONS.

7. Assemble the repair parts and drill the fastener holes. Use the dimensions between fasteners as shown in Details III, IV and V, except in the areas where there is a repair filler installed. Keep 4D minimum fastener spacing and edge margins as given in Detail XI View M-M.
8. Disassemble the repair parts.
9. Remove the nicks, scratches, gouges, burrs and sharp edges from the repair parts, the cut edge of the floor beam, and any other areas trimmed to permit clearance between repair parts.
10. Apply a chemical conversion coating to the repair filler and the bare surfaces of the floor beam and all trimmed surfaces. Refer to SRM 51-20-01. Prepare the bare surfaces of the titanium straps for the application of primer. Refer to SOPM 20-30-03 for abrasive cleaning procedures for titanium parts.
11. Apply one layer of BMS 10-11, Type I primer to the titanium straps and two layers of BMS 10-11, Type I primer to the aluminum repair parts and the bare surfaces of the floor beam and all parts trimmed to permit clearance. Refer to SOPM 20-41-02.
12. Install the initial upper chord extension, stiffeners and clips with their initial shims as necessary. Shim the initial parts to a maximum pull-up gap of 0.005 inch between the initial parts and the adjacent structure.
13. Install the repair parts with BMS 5-95 sealant between the mating surfaces. Use BMS 5-95 sealant between all dissimilar materials and in gaps between straps. Install all fasteners wet with BMS 5-95 sealant.
14. Apply finish to the repaired area. Refer to AMM 51-21.
15. Install the floor panels as necessary. Refer to AMM 53-01-01.

ALTERNATIVE V:

Full upper flange damage at the outboard end common to the horizontal flange of the upper chord extension: Double flange repair (cut and remove the entire damaged upper flange to the end at BL 81.05). Replace both initial upper chord extensions with repair extension angles. See Detail XII and View Q-Q.

Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 5 of 24)

REPAIR INSTRUCTIONS (CONT)

1. Get access to the damaged area. Refer to AMM 53-01-01 for floor panel removal procedures as necessary.
2. Remove the initial upper chord extensions. Remove and keep the stiffeners, shims and clips for later installation in the repair area. If the initial parts had shims, keep the initial shims for use again if possible.
3. Cut and remove the upper flange of the floor beam the entire length of the corroded area. The upper flange cut must be staggered with an offset of 2 fastener locations minimum. The surface roughness of the cut must be 125 microinches Ra or better. See Details XIV, XV and View Q-Q.
4. Do a high frequency eddy current (HFEC) inspection of the floor beam for cracks where the flanges were removed. Refer to 767 NDT, Part 6, 51-00-01 for the inspection procedures. As an alternative, do a penetrant inspection of the floor beam where the flanges were removed. Refer to SOPM 20-20-02.
5. Make the repair straps. See Details I, II, III, IV, V and Sections A-A, B-B, C-C, and Table I. Refer to BAC 5300 for the hot forming of titanium parts.

   Make repair parts 6 and 7 (extension angle). See Table I.

   Make the repair angle cross-section similar to the extension angle it will replace, but of necessary length to accommodate the repair location. Cut the vertical leg of the repair angles sufficiently tall for one row of fasteners along the joint between the repair angles and the web of the floor beam. You must use a minimum of 4 or 5 repair fasteners common to the floor beam web from flange trim line to the end of the vertical leg of the repair angle. See Detail XII.

   When you cut the horizontal flange of the repair angle at the transition to join the floor beam, remove only as much material as necessary to maximize the fastener edge margin common to the vertical leg of the repair angle and the web of the floor beam. See Detail XIII Section P-P.
6. Trim any clips or stiffeners that interfere with the repair parts. Keep the edge margins.

   NOTE: If you trim primary structure, you must keep the surface roughness of the trimmed area 125 microinches Ra or better and do step 4 again.
7. Make the repair shims of necessary shape and thickness to fill the chem-milled gap between the repair angle and the web of the floor beam. A maximum pull-up gap of 0.005 inch is permitted.

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8. Assemble the repair parts and drill the fastener holes. Use the dimensions between fasteners as shown in Details III, IV and V, except in the areas where there is a repair extension angle installed. Keep 4D minimum fastener spacing and edge margins as given in Detail IX View I-I.
9. Disassemble the repair parts.
10. Remove the nicks, scratches, gouges, burrs and sharp edges from the repair parts, the cut edge of the floor beam, and any other areas trimmed to permit clearance between repair parts.
11. Apply a chemical conversion coating to the repair angles, shims, and the bare surfaces of the floor beam and all trimmed surfaces. Refer to SRM 51-20-01. Prepare the bare surfaces of the titanium straps for the application of primer. Refer to SOPM 20-30-03 for abrasive cleaning procedures for titanium parts.
12. Apply one layer of BMS 10-11, Type I primer to the titanium straps and two layers of BMS 10-11, Type I primer to the aluminum repair parts and the bare surfaces of the floor beam and all parts trimmed to permit clearance. Refer to SOPM 20-41-02.
13. Install the repair parts and the salvaged parts with BMS 5-95 sealant between the mating surfaces. Use BMS 5-95 sealant between all dissimilar materials and in gaps between straps. Install all fasteners wet with BMS 5-95 sealant.

Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 6 of 24)

REPAIR INSTRUCTIONS (CONT)

14. Install the stiffeners and salvaged parts with shims as necessary. A maximum pull-up gap of 0.005 inch between the parts and the adjacent structure.
15. Apply finish to the repaired area. Refer to AMM 51-21.
16. Install the floor panels as necessary. Refer to AMM 53-01-01.

NOTES

- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - AMM 53-01-01 FOR THE REMOVAL AND INSTALLATION OF FLOOR PANELS
  - NDT PART 6, 51-00-01, FOR HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTION
  - SOPM 20-20-02 FOR PENETRANT INSPECTION PROCEDURES
  - SOPM 20-20-07 MACHINING OF TITANIUM
  - SOPM 20-30-03 FOR GENERAL CLEANING PROCEDURES
  - SOPM FOR APPLICATION OF FINISHES
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-30-01 FOR SHEET METAL MATERIAL
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS
  - BAC 5300 FOR HOT FORMING OF TITANIUM.

[A] DO NOT INSTALL A FASTNER THROUGH THE EDGE OF A CHEM-MILLED POCKET. DO NOT INSTALL A FASTENER THROUGH A CHEM-MILLED POCKET LESS THAN 0.06 INCH THICK.

[B] REMOVE ALL OF THE TOP FLANGE IN THE DAMAGED AREA OF THE EXTRUSION. REMOVE ONLY AS MUCH OF THE ADJACENT WEB AS NECESSARY TO MAXIMUZE THE EDGE MARGIN FOR THE FASTENERS THAT WILL ATTACH THE REPAIR ANGLES TO THE WEB. SEE DETAILS: VII, VIII, XIII, XIV, XV AND SECTIONS: D-D, G-G, J-J, N-N, AS APPLICABLE.

[C] TO AVOID INTERFERENCE WITH THE RADIUS, CHAMFER THE UPER MATING CORNERS OF REPAIR ANGLES 4, 5, 6 AND 7, 0.02 X 0.05 INCH. SEE DETAIL VI; SECTION E-E, DETAIL IX; SECTION H-H, DETAIL XII; SECTION P-P AND DETAIL XIII.

[D] REMOVE THESE PARTS AND INSTALL THEM WITH THE REPAIR PARTS OR INSTALL THEM AFTER THE REPAIR PARTS ARE INSTALLED. IF THE PARTS HAD SHIMS USE THE INITIAL SHIMS AGAIN IF POSSIBLE.

[E] FOR AFT OR FULL FLANGE DAMAGE IN THE STANCHION AREA (LBL 59.12 AND RBL 65.625) REFER TO SRM 53-00-51 FIGURE 201 FOR REPAIRS. USE A TITANIUM REPAIR STRAP INSTEAD OF AN ALUMINUM STRAP.

NOTE: IF THE DAMAGE IS IN THE FORWARD FLANGE OF THE UPPER CHORD OF THE FLOOR BEAM AROUND THE STANCHION AREA, USE SINGLE FLANGE ALTERNATIVE I.

[F] FOR FLOOR BEAM UPPER CHORD DAMAGE BETWEEN LBL 51.0 AND RBL 51.0. REFER TO SRM 52-00-51, FIGURE 204 FOR REPAIRS EXCEPT USE A TITANIUM REPAIR STRAP.

[G] A REPAIR FILLER MAY BE USED FOR SHORT TRIM LENGTHS AND MAY NOT EXTEND OUTBOARD BEYOND BL 79.10. A MINIMUM OF TWO FASTENERS THROUGH THE TITANIUM STRAP, UPPER CHORD FLANGE AND THE UPPER CHORD EXTENSION ON EITHER SIDE OF THE REPAIR FILLER ARE REQUIRED. PLUG THE INITIAL FASTENER HOLE TO GET TWO FASTENERS THROUGH THE FILLER IF NECESSARY. SEE SECTION L-L.

[H] NOT ALL AIRPLANES HAVE THIS PART. IF YOU HAVE THIS PART, REMOVE IT AND INSTALL OR REPLACE IT AFTER THE REPAIR PARTS ARE INSTALLED. IF THE INITIAL PARTS HAD SHIMS USE THOSE SHIMS AGAIN IF POSSIBLE.

[I] FOR LEFT SIDE, AFT FLANGE REPAIR, ON EITHER SIDE OF THE STANCHION, SEE DETAIL IX AND VIEW I-I.

Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 7 of 24)

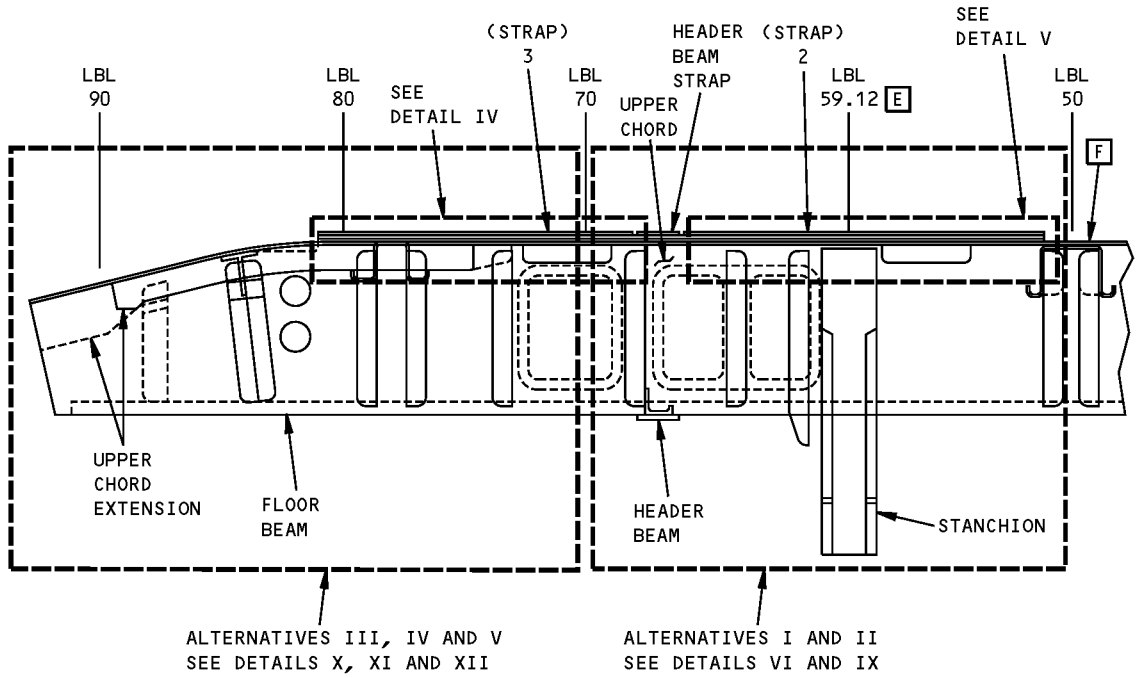
FASTENER SYMBOLS

- INITIAL FASTENER LOCATION.
- INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX DRIVE BOLT WITH A BACC30M6 COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30MY6K() HEX DRIVE BOLT WITH A BACC30M6 COLLAR. AS AN ALTERNATIVE, INSTALL A BACB30VT6K() HEX DRIVE BOLT WITH A BACC30BL6 COLLAR. [A]
- REPAIR FASTENER LOCATION. INSTALL A BACB30VU5K() HEX DRIVE BOLT WITH A BACC30BL5 COLLAR. AS AN ALTERNATIVE, INSTALL A BACB30YP5K() HEX DRIVE BOLT WITH A BACC30BL5 COLLAR. [A]
- INITIAL FASTENER LOCATION. INSTALL A BACB30YP5K() OR BACB30VU5K() HEX DRIVE BOLT WITH BACC30M5 COLLAR.
- INITIAL FASTENER LOCATION. INSTALL A BACB30YP6K OR BACB30VU6K() HEX DRIVE BOLT WITH BACC30M6 COLLAR.

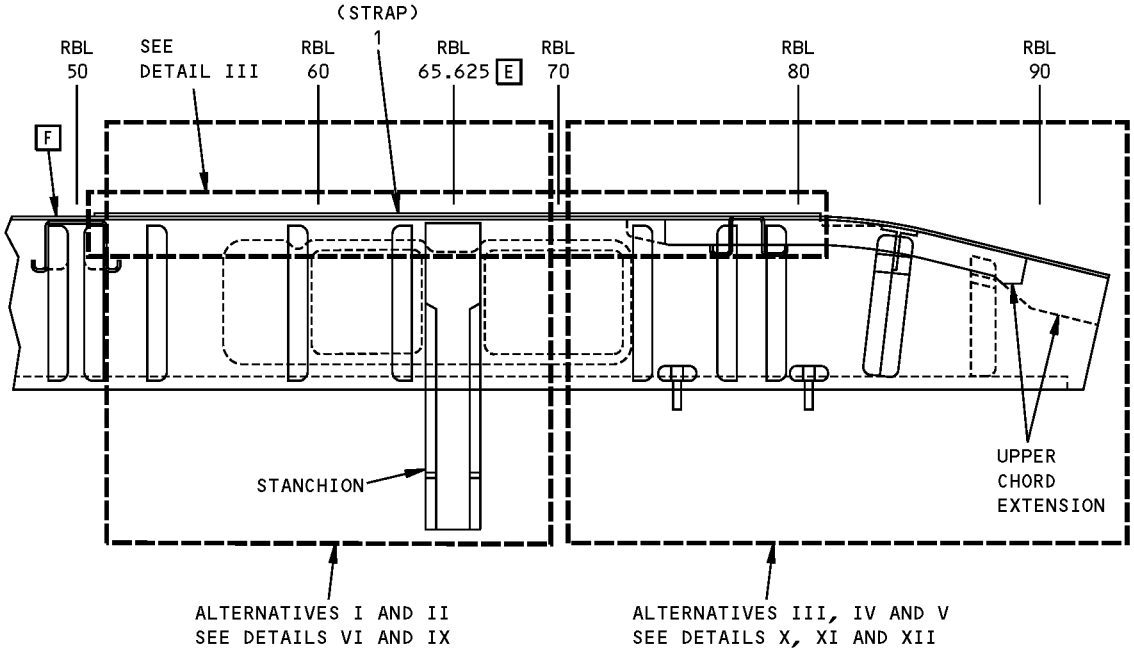
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	STRAP	1	0.063 TI-6AL-4V ANNEALED HOT FORMED
2	STRAP	1	0.063 TI-6AL-4V ANNEALED HOT FORMED
3	STRAP	1	0.063 TI-6AL-4V ANNEALED HOT FORMED
4	ANGLE [C]	AS NECESSARY	0.063 7075-O HT TR TO T62 AFTER FORMED
5	ANGLE [C]	AS NECESSARY	0.063 7075-O HT TR TO T62 AFTER FORMED
6	EXTENSION ANGLE	AS NECESSARY	0.090 7075-O HT TR TO T62 AFTER FORMED
7	EXTENSION ANGLE	AS NECESSARY	0.090 7075-O HT TR TO T62 AFTER FORMED
8	SHIM	AS NECESSARY	0.090 7075-T6
9	SHIM	AS NECESSARY	0.063 7075-T6
10	FILLER	1	0.085 7075-T6

TABLE I

Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 8 of 24)

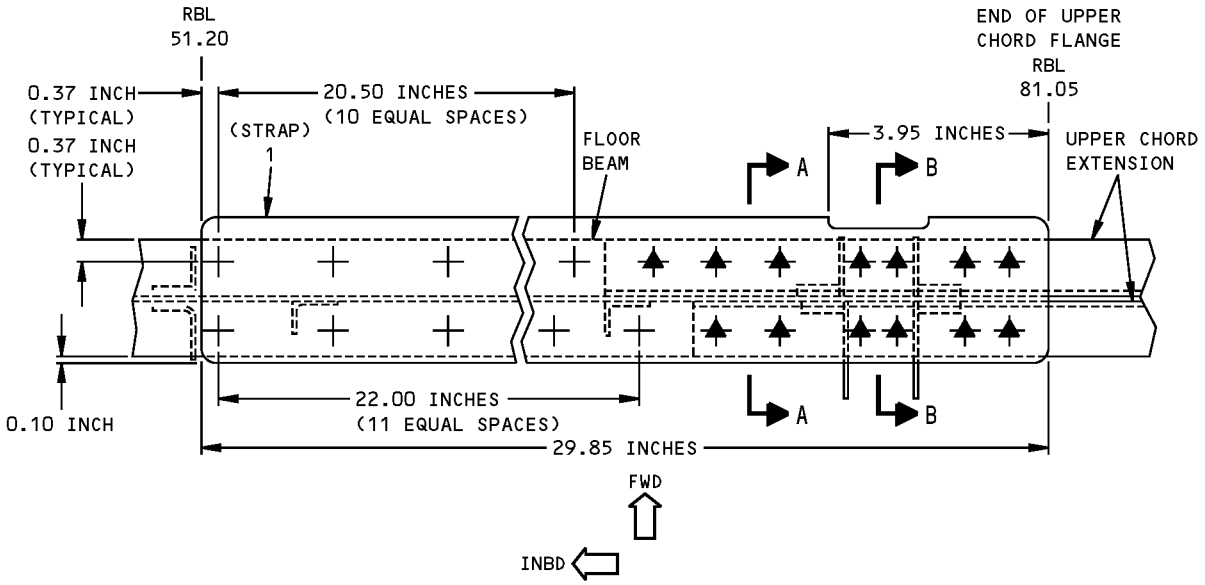


DETAIL I



DETAIL II

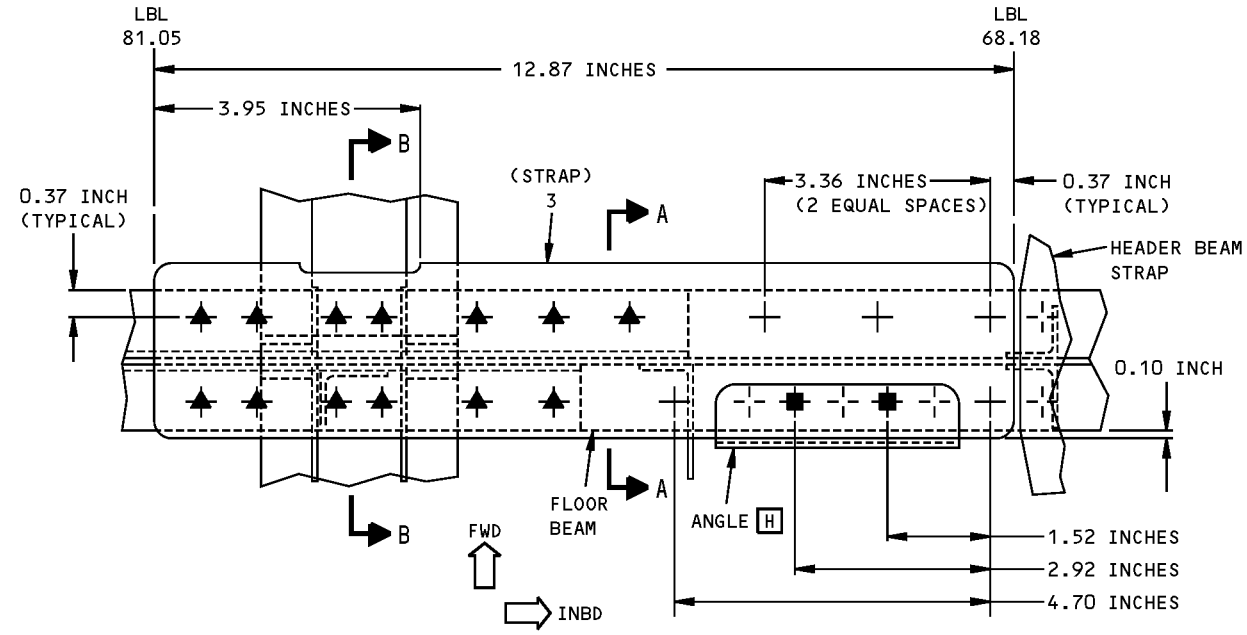
Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 9 of 24)



RIGHT SIDE IS SHOWN

TOP VIEW

DETAIL III

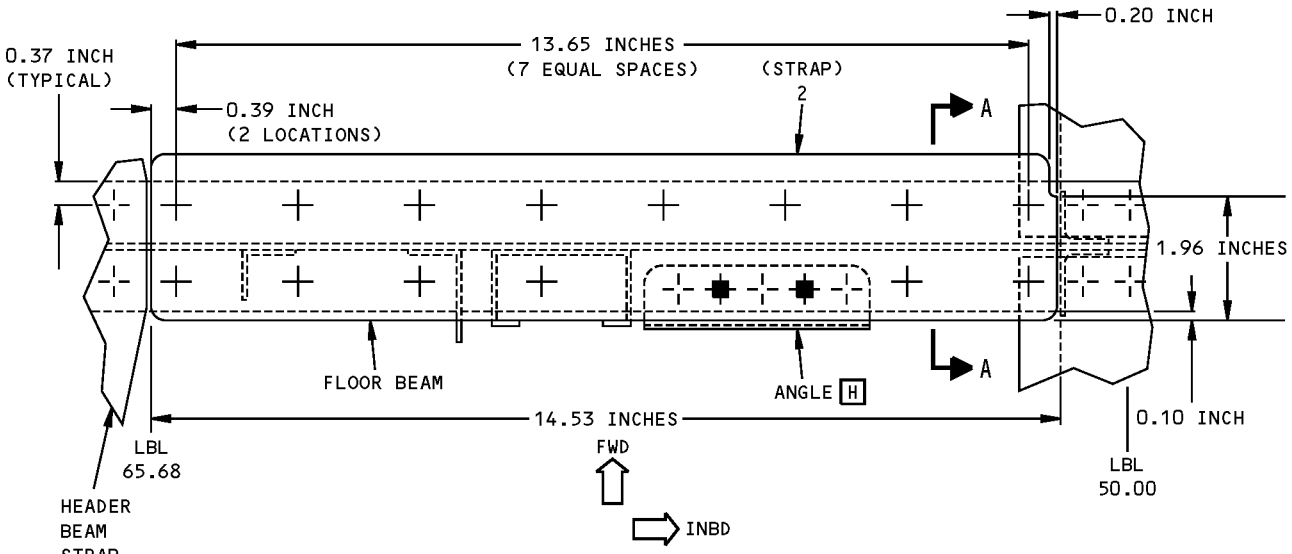


LEFT SIDE IS SHOWN

TOP VIEW

DETAIL IV

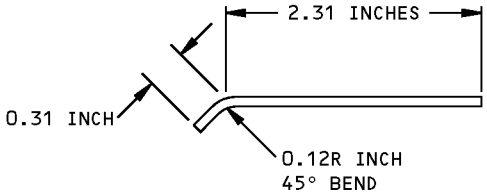
Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 10 of 24)



LEFT SIDE IS SHOWN

TOP VIEW

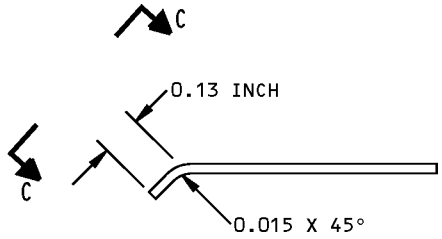
DETAIL V



ROTATED 90° COUNTER-CLOCKWISE

ONLY THE STRAP IS SHOWN FOR CLARITY

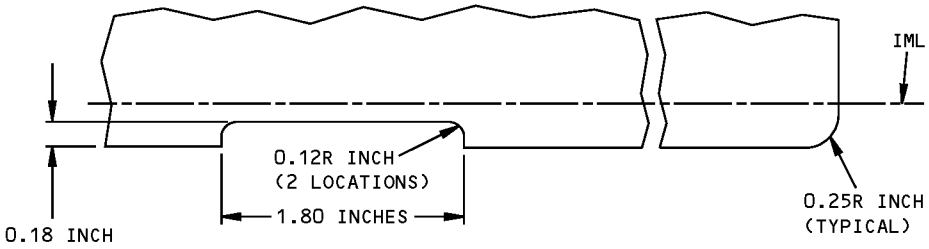
SECTION A-A



ROTATED 90° COUNTER-CLOCKWISE

ONLY THE STRAP IS SHOWN FOR CLARITY

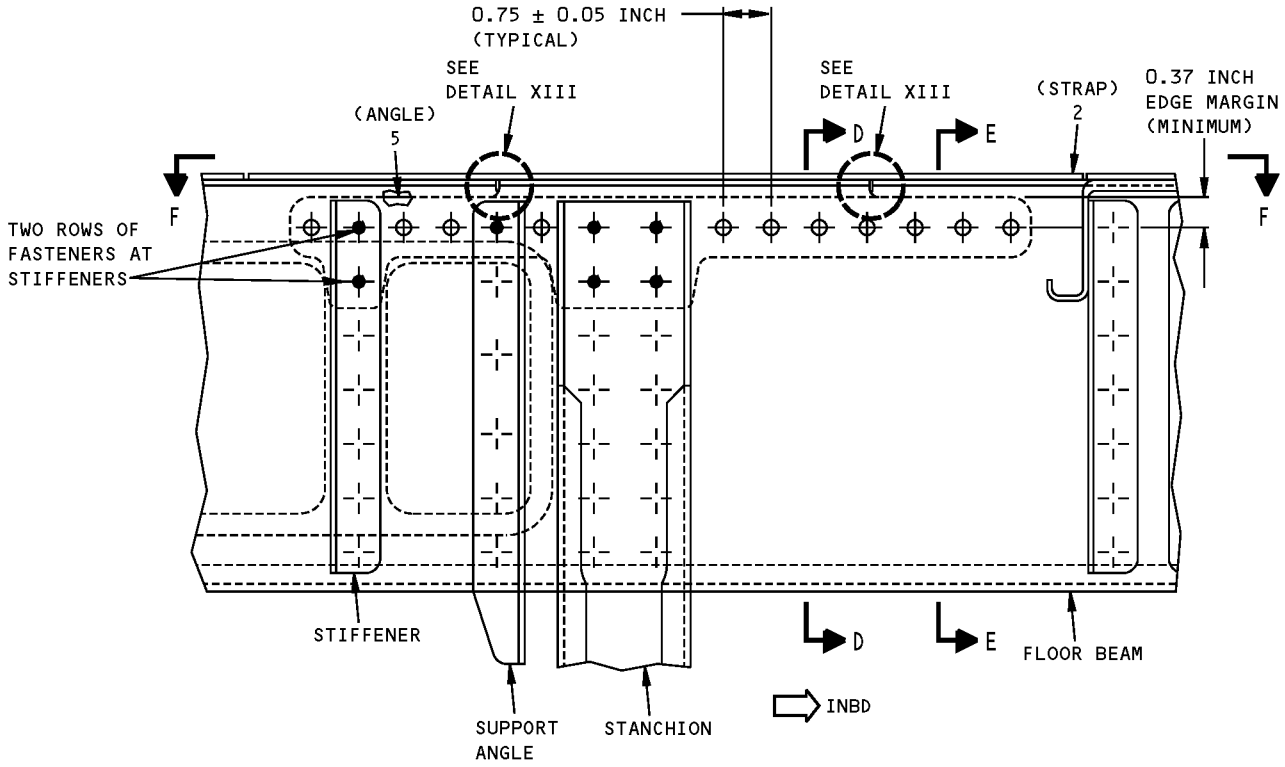
SECTION B-B



ROTATED 45° COUNTER-CLOCKWISE

SECTION C-C

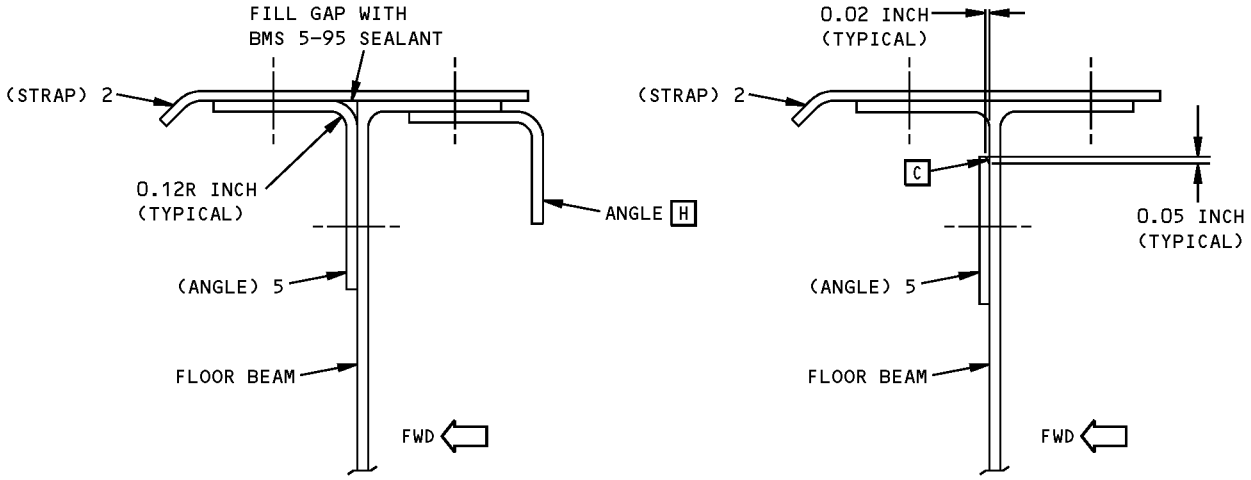
Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 11 of 24)



LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

VIEW LOOKING FORWARD

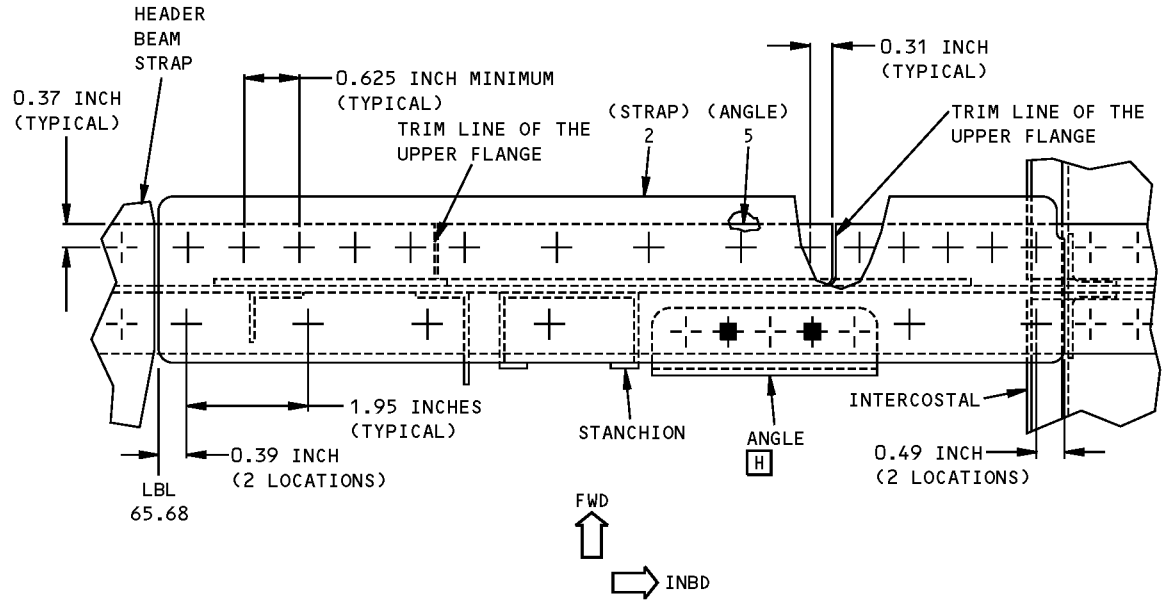
REPAIR OF THE FLOOR BEAM BETWEEN BL 51 AND BL 70 ON FORWARD FLANGE ONLY
DETAIL VI [J]



SECTION D-D

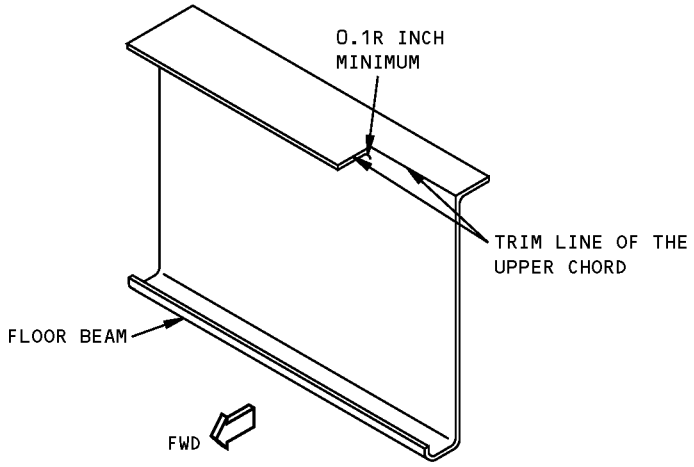
SECTION E-E

Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 12 of 24)

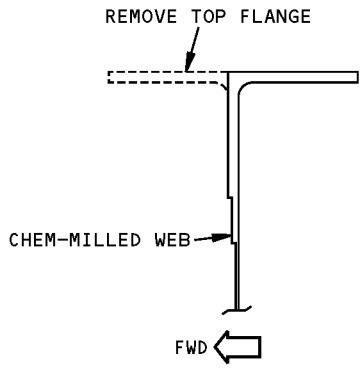


TOP VIEW OF DETAIL VI

VIEW F-F

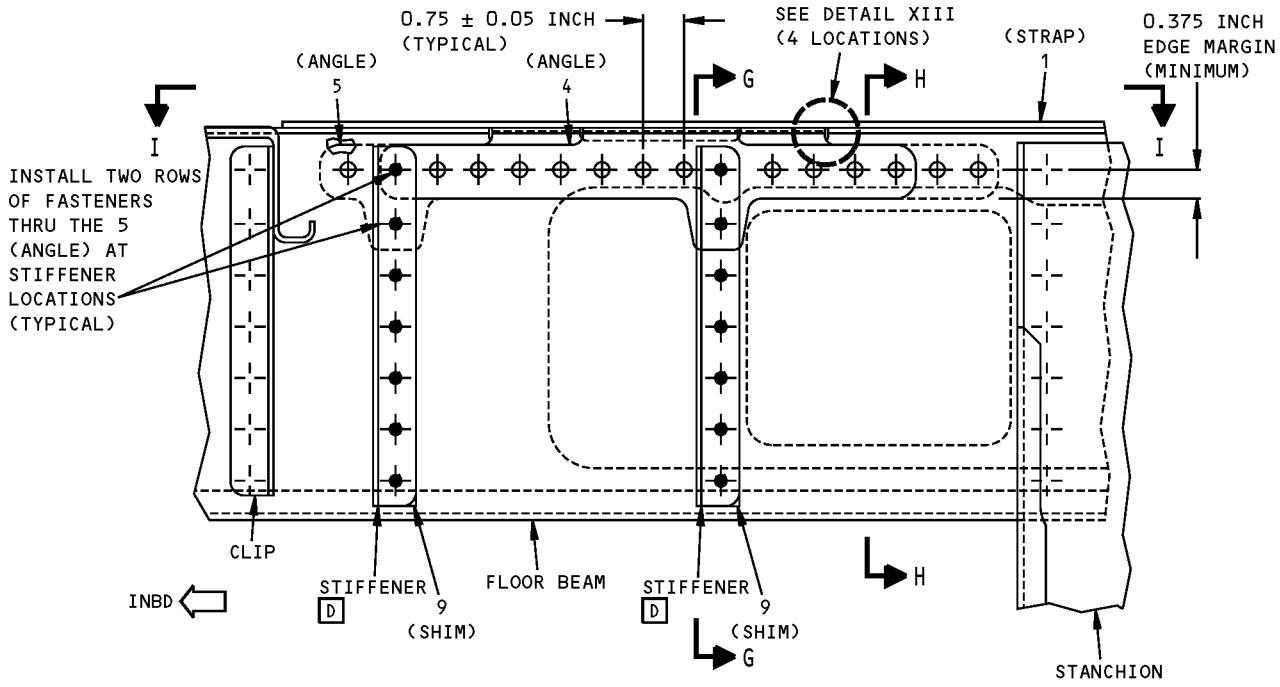


FLANGE REMOVED ON ONE SIDE
DETAIL VII



FLANGE REMOVED ON ONE SIDE
DETAIL VIII

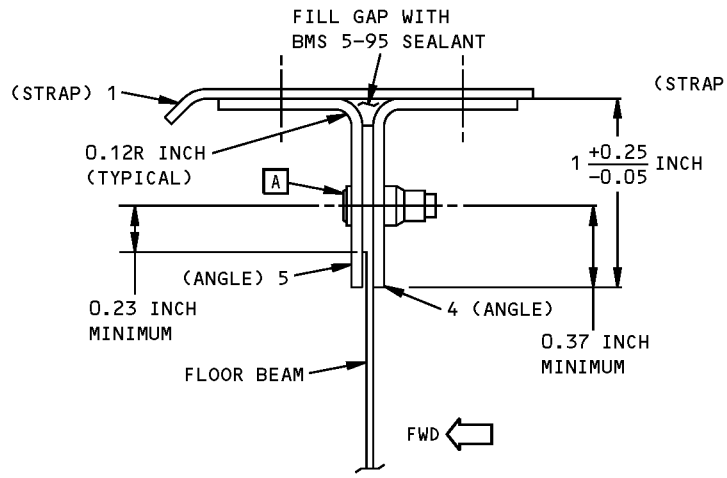
Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 13 of 24)



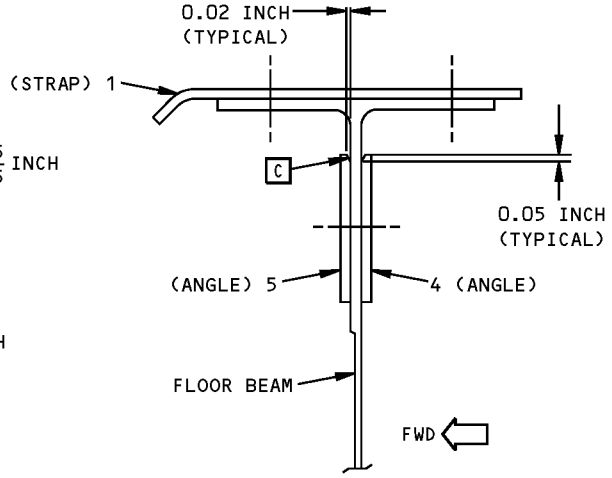
RIGHT SIDE IS SHOWN

VIEW LOOKING FORWARD

REPAIR OF THE FLOOR BEAM BETWEEN BL 51 AND BL 70 ON EITHER OR BOTH FLANGES
AFT FLANGE REPAIR INBOARD OF STANCHION
DETAIL IX

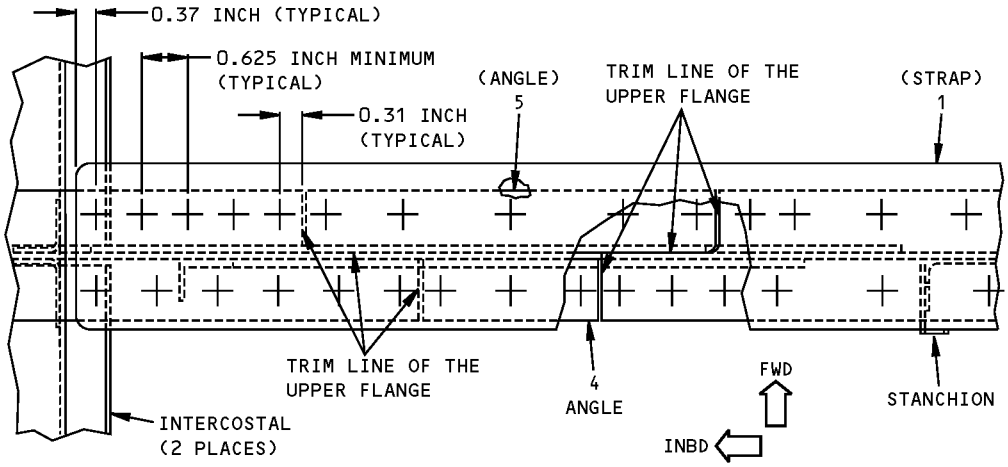


SECTION G-G



SECTION H-H

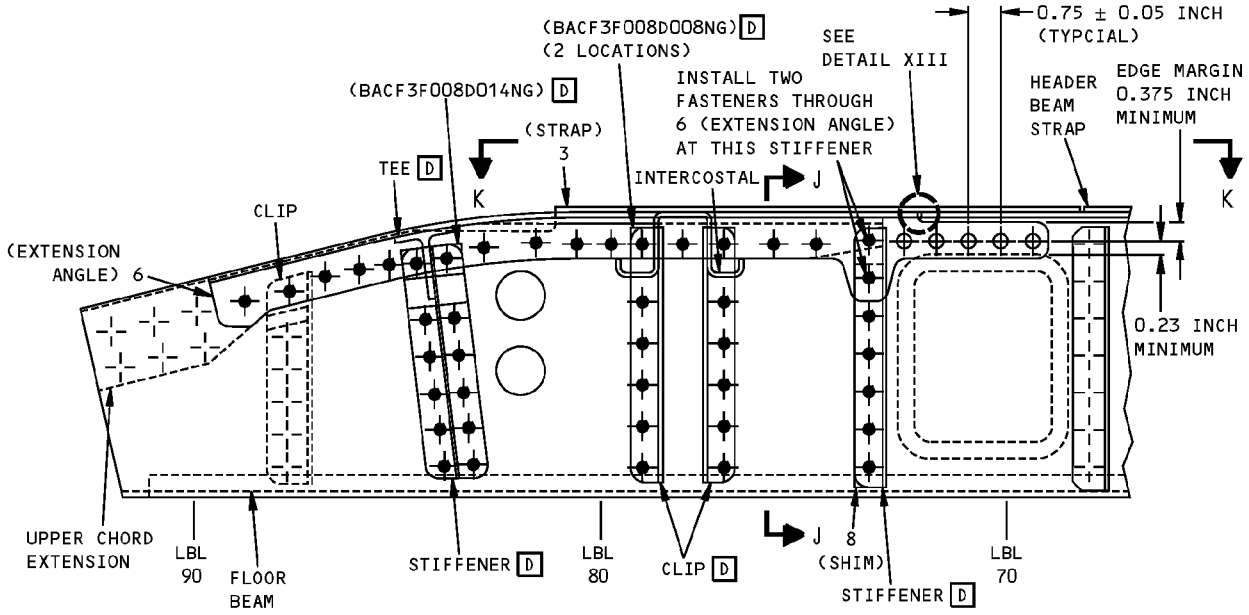
Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 14 of 24)



TOP VIEW OF DETAIL IX

VIEW I-I

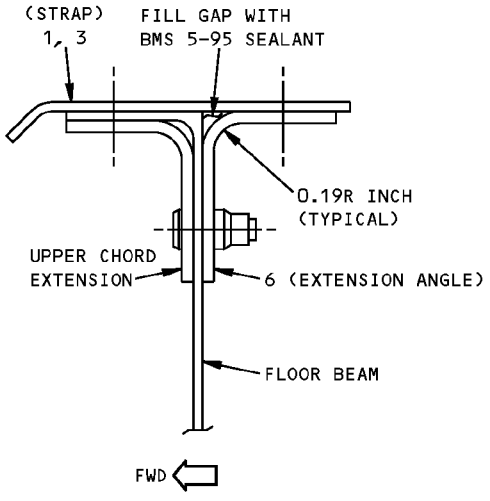
Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 15 of 24)



LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

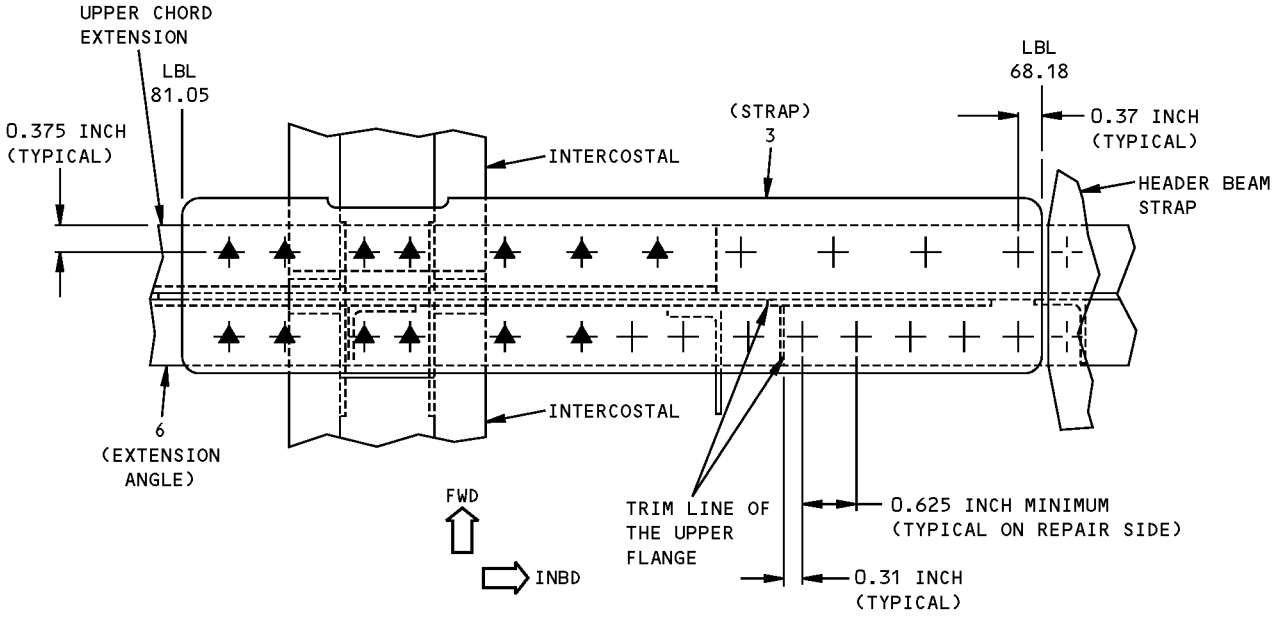
VIEW LOOKING FORWARD

SINGLE FLANGE REPAIR (TRIM OFF THE ENTIRE FLANGE TO THE END, BL 81.05)
AFT FLANGE
DETAIL X



SECTION J-J

Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 16 of 24)

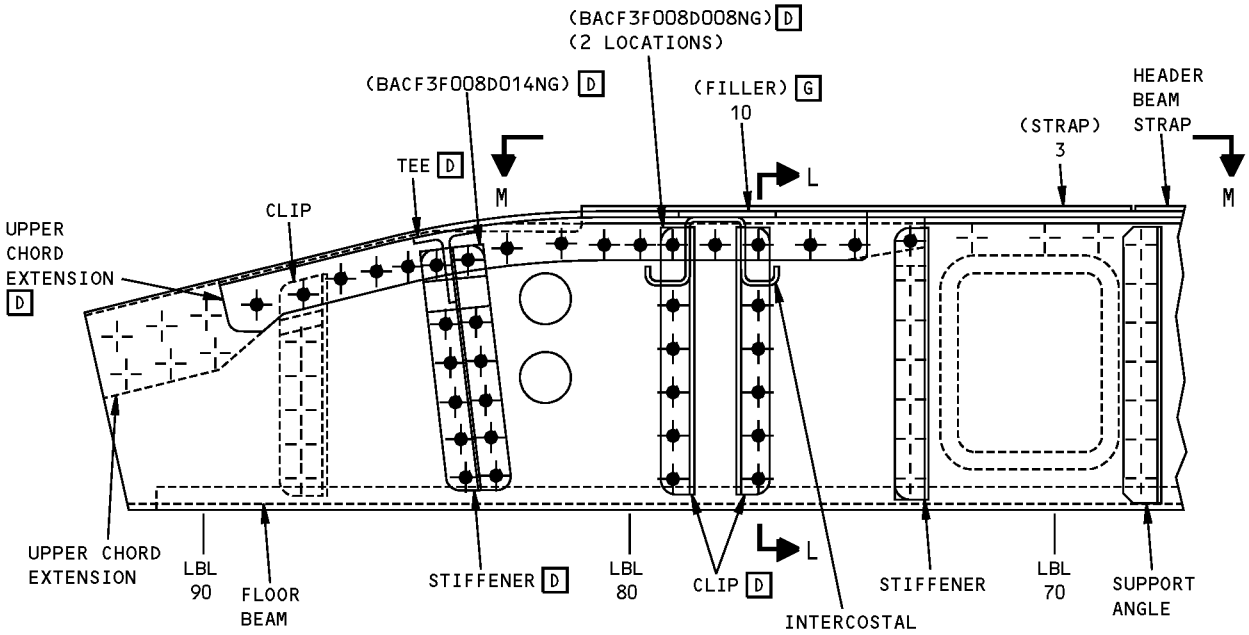


LEFT SIDE IS SHOWN OF DETAIL X

TOP VIEW

VIEW K-K

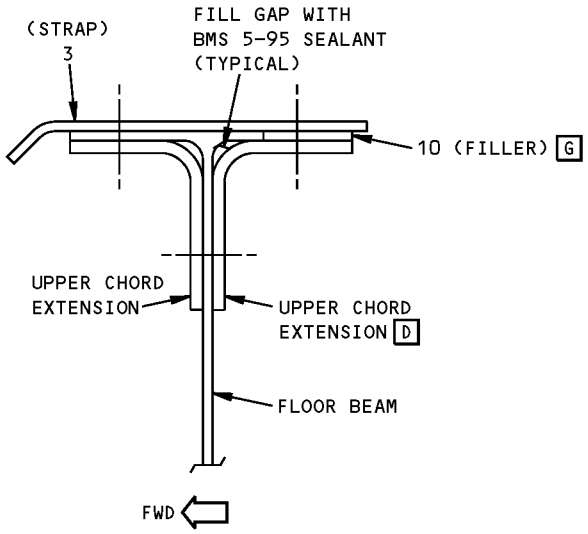
Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 17 of 24)



LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

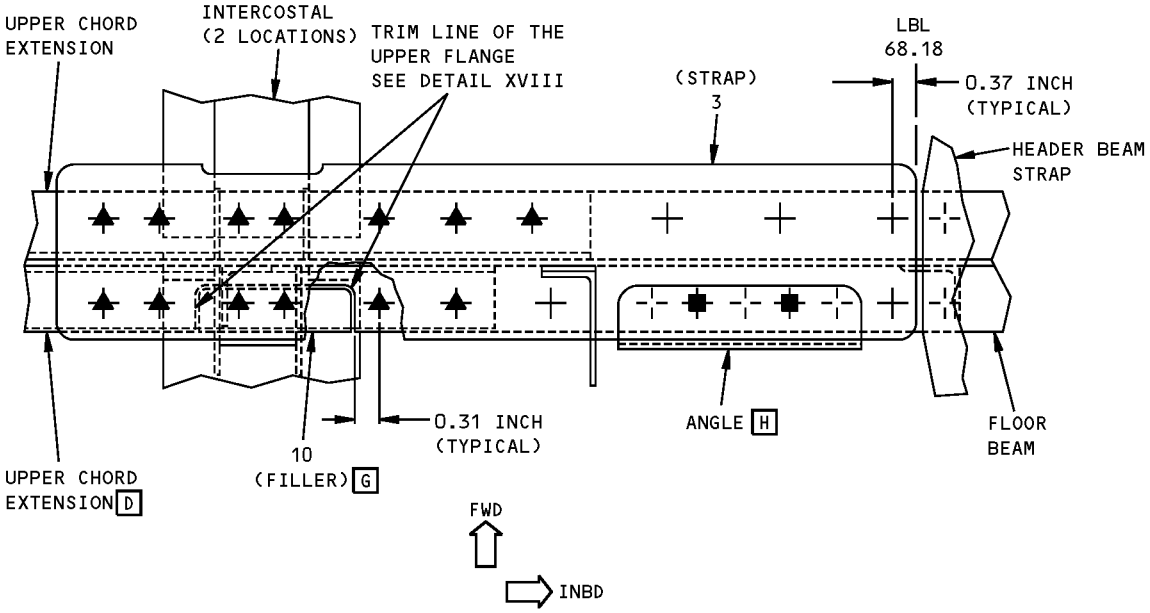
VIEW LOOKING FORWARD

PARTIAL REPAIR OR THE FLOOR BEAM ON ONE FLANGE
DETAIL XI



SECTION L-L

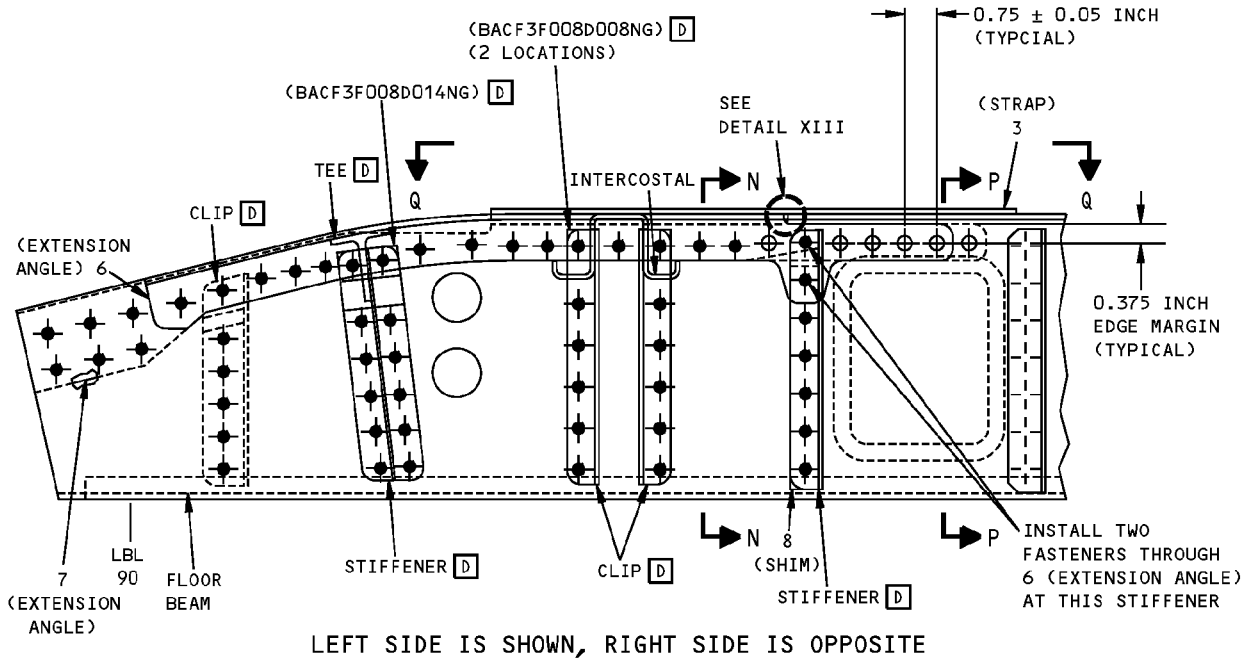
Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 18 of 24)



TOP VIEW OF DETAIL XI

VIEW M-M

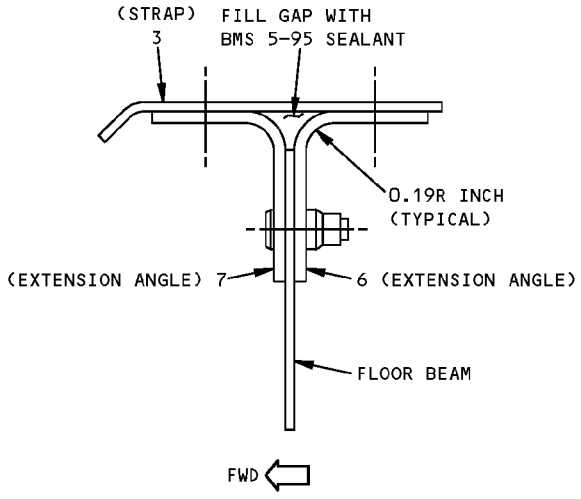
Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 19 of 24)



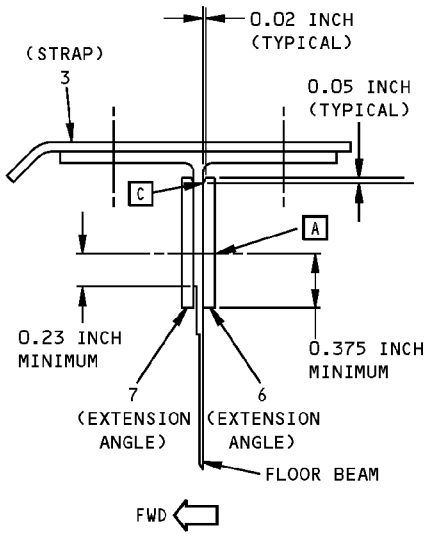
LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

VIEW LOOKING FORWARD

BOTH FLANGE REPAIR (TRIM OFF THE ENTIRE FLANGE TO THE END, BL 81.05)
DETAIL XII

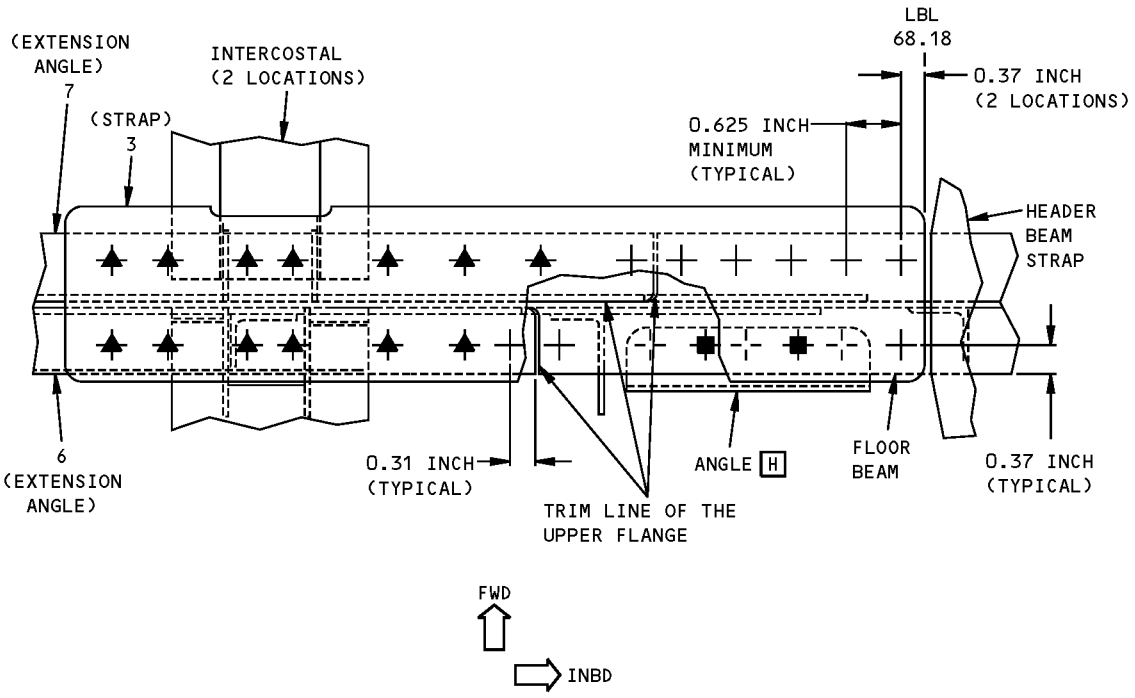


SECTION N-N



SECTION P-P

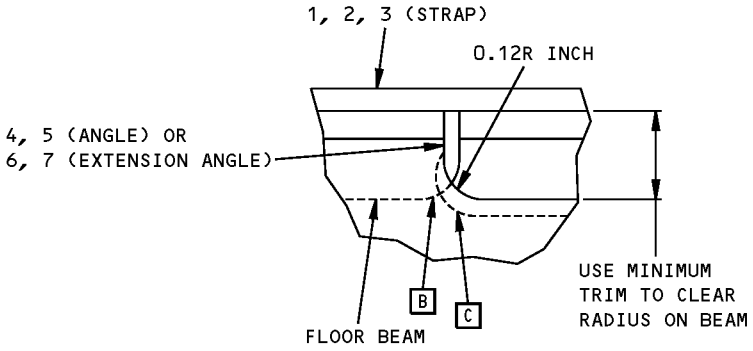
Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 20 of 24)



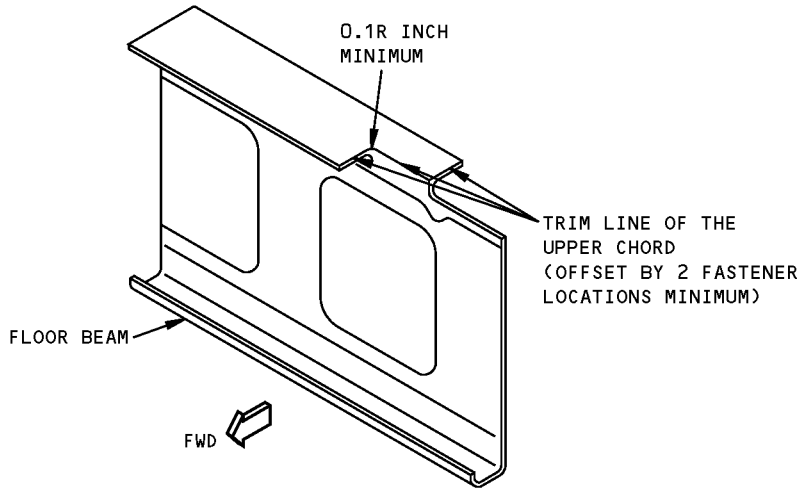
TOP VIEW OF DETAIL XII

VIEW Q-Q

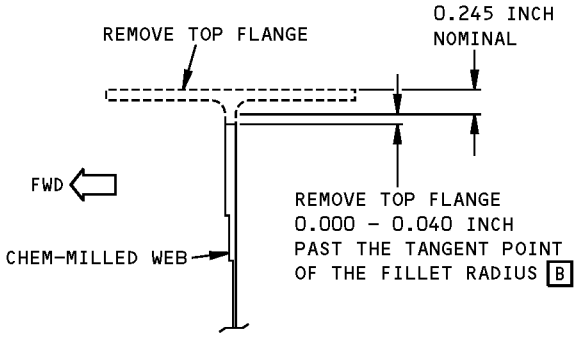
Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 21 of 24)



DETAIL XIII

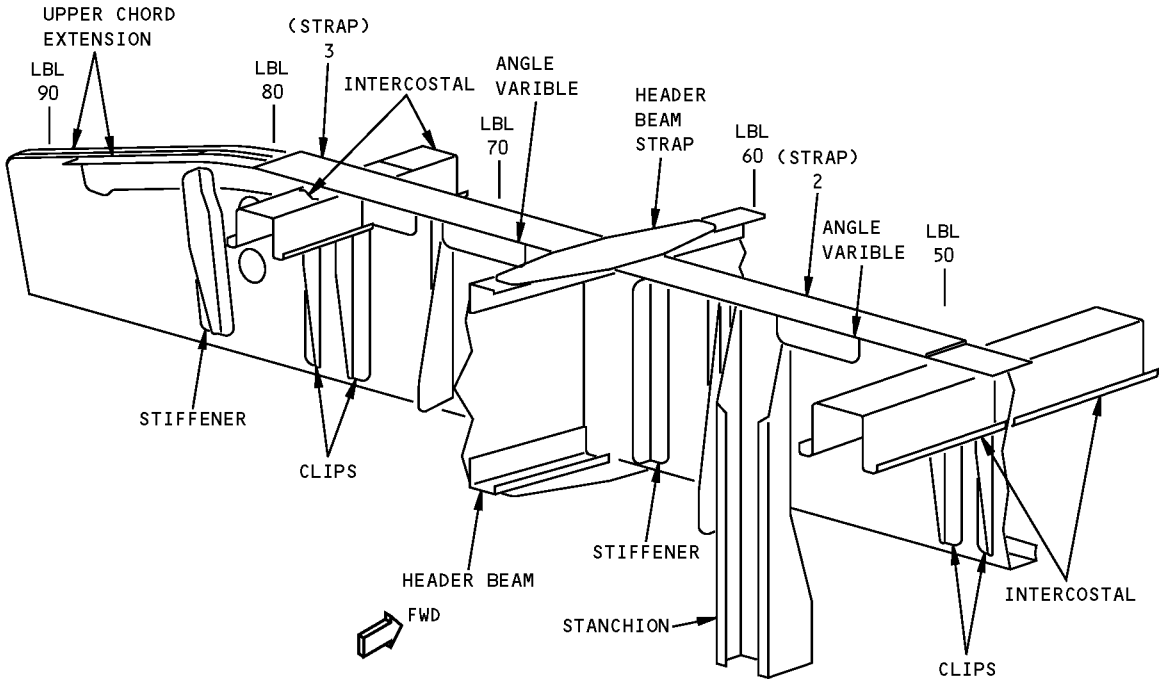


TOP FLANGE REMOVAL
DETAIL XIV



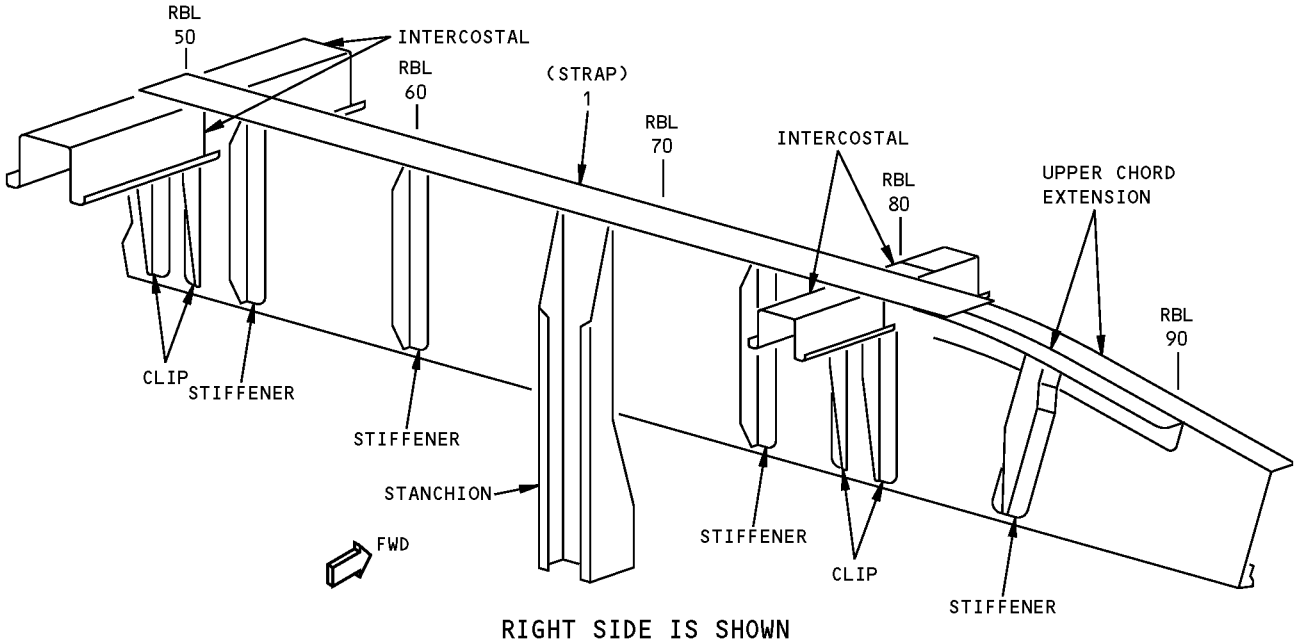
TOP FLANGE REMOVAL
DETAIL XV

Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 22 of 24)



LEFT SIDE IS SHOWN

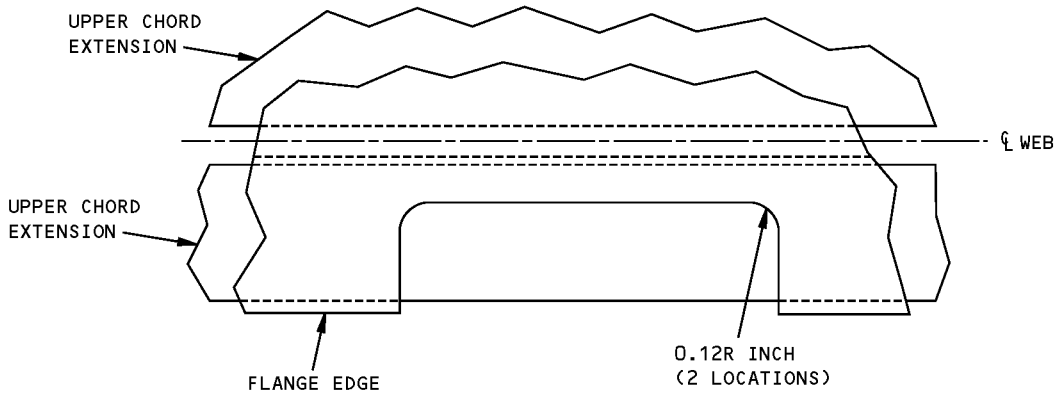
STATION 1480 FLOOR BEAM (SHOWN WITH REPAIR STRAPS INSTALLED)
DETAIL XVI



RIGHT SIDE IS SHOWN

STATION 1480 FLOOR BEAM (SHOWN WITH REPAIR STRAP INSTALLED)
DETAIL XVII

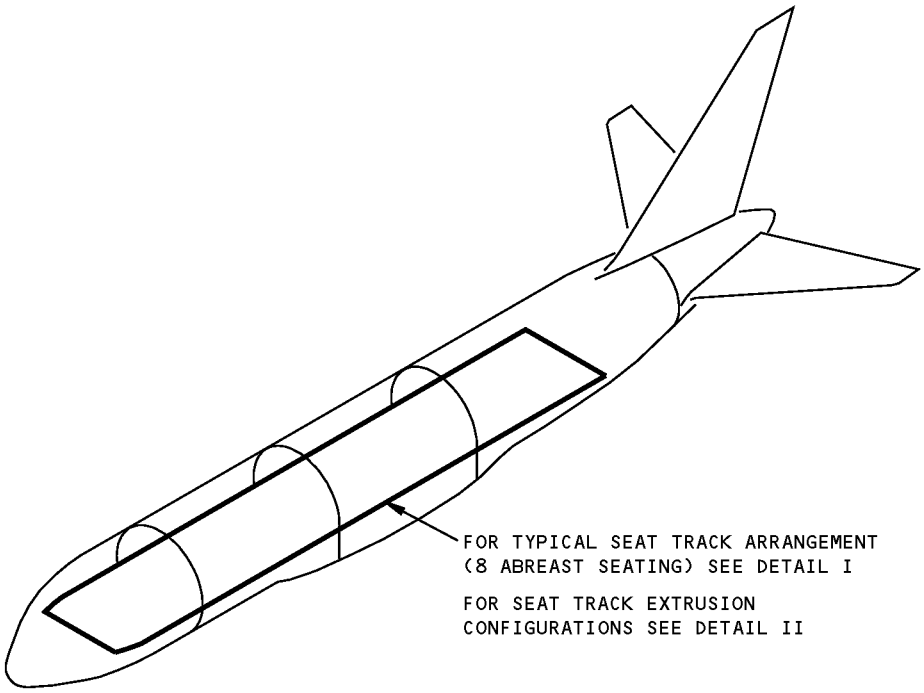
Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 23 of 24)

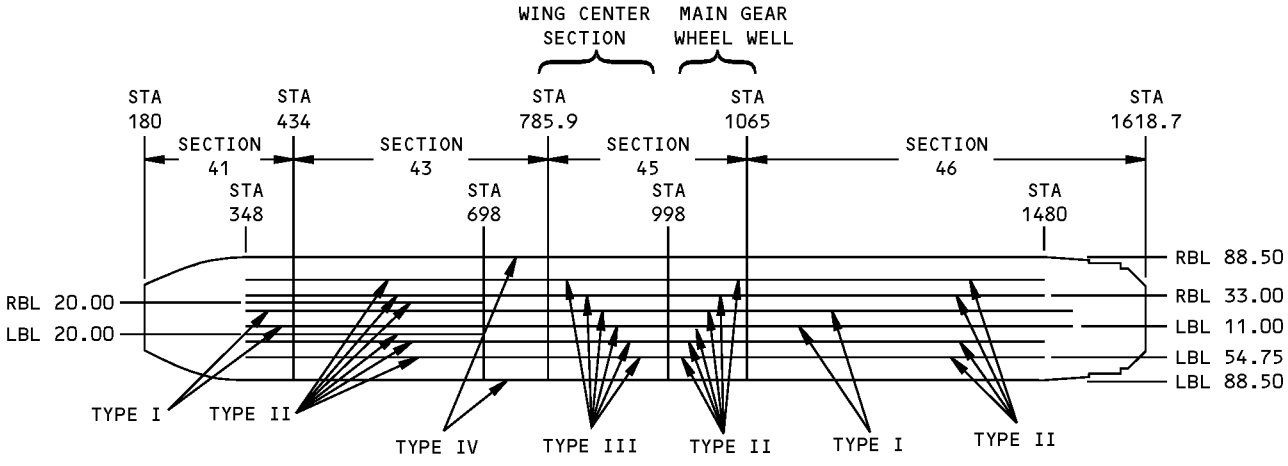


UPPER FLANGE PARTIAL TRIM
(UPPER CHORD EXTENSIONS, PART 3 STRAP, INTERCOSTALS,
AND CLIPS NOT FULLY SHOWN FOR CLARITY)
DETAIL XVIII

Station 1480 Floor Beam Corrosion Repair - Upper Chord
Figure 201 (Sheet 24 of 24)

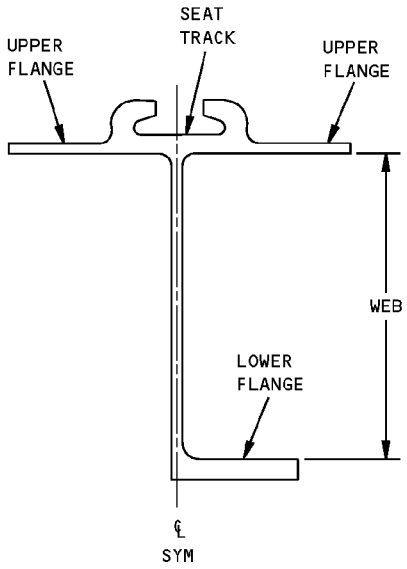
ALLOWABLE DAMAGE 1 - SEAT TRACKS



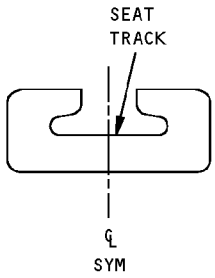


TYPICAL SEAT TRACK ARRANGEMENT (8 ABREAST SEATING)
DETAIL I

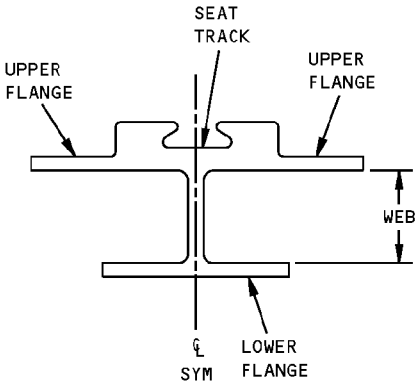
Allowable Damage - Seat Tracks
Figure 101 (Sheet 1 of 5)



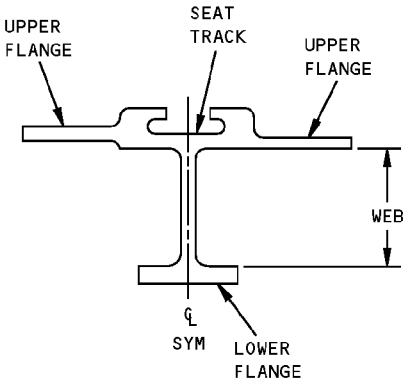
TYPE I
BAC1520-1545
7178-T6511 EXTRUSION



TYPE III
BAC1520-2194, BAC1520-2195
7178-T6511 EXTRUSION



TYPE II
BAC1520-2192, BAC1520-2557
7178-T6511 EXTRUSION



TYPE IV
BAC1520-2193, BAC1520-2196, BAC1520-2332
7075-T6511 EXTRUSION

SEAT TRACK EXTRUSION CONFIGURATIONS
DETAIL II

Allowable Damage - Seat Tracks
Figure 101 (Sheet 2 of 5)

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES
SEAT TRACKS	CRACKS ARE NOT ALLOWED, EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAILS IX AND X	SEE DETAILS III THRU X	NOT ALLOWED	NOT ALLOWED

NOTES

- D = FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR REFER TO:
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES.
- REMOVE CORROSION AS GIVEN IN SRM 51-10-00. APPLY A CHEMICAL CONVERSION COATING TO THE BARE SURFACES OF THE INITIAL PARTS. REFER TO SRM 51-20-01. APPLY BMS 10-11, TYPE 1 PRIMER AND FINISH COAT WITH BMS 10-86, TYPE 1 WHITE COLOR URETHANE COATING. REFER TO AMM 51-21.

[A] THE AREA REMOVED FOR CLEANUP MUST NOT REDUCE THE FLANGE CROSS-SECTIONAL AREA BY MORE THAN 10%.

[B] DIMENSION FOR STUD HOLE ONLY. DOES NOT APPLY TO "LIP" REGION.

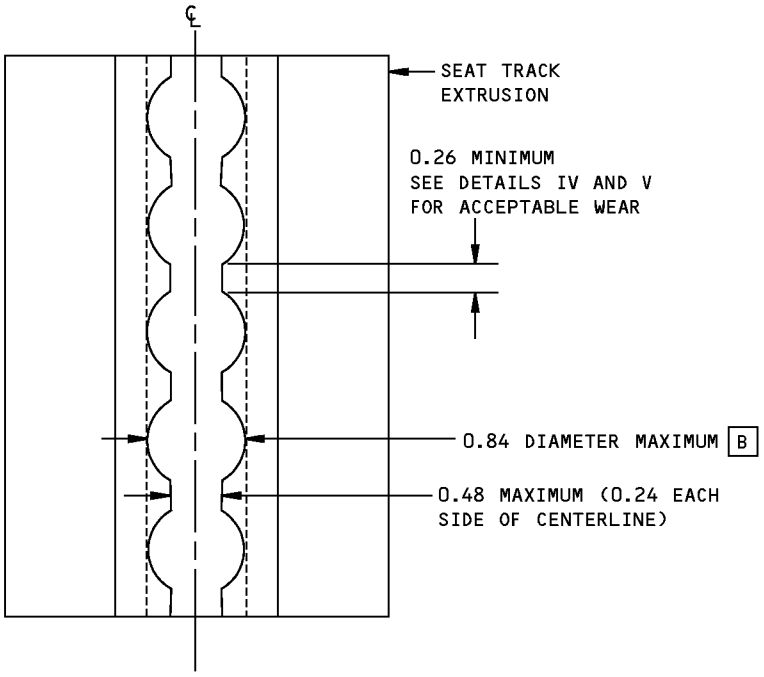
[C] W = MINIMUM WIDTH. SEE TABLE I.

AREA	STATION	BL 11.00 STANDARD	BL 20.00 STANDARD	BL 33.00 STANDARD	BL 54.75 STANDARD	BL 54.75 HEAVY DUTY	BL 88.50 STANDARD
SECTION 41/43	347 - 781	0.171	0.251	0.251	0.251	0.251	0.280
WING CENTER SECTION	781 - 955	0.211	NOT AVAILABLE	0.171	0.171	NOT AVAILABLE	0.280
MAIN GEAR WHEEL WELL	955 - 1065	0.251	NOT AVAILABLE	0.251	0.251	NOT AVAILABLE	0.280
SECTION 46	1065 - 1480	0.171	NOT AVAILABLE	0.251	0.251	NOT AVAILABLE	0.280

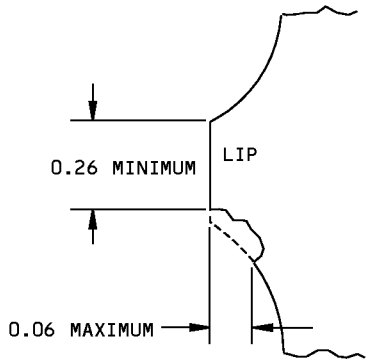
MINIMUM REQUIRED VERTICAL SEAT TRACK LIP FLANGE THICKNESS - W (INCHES)

TABLE I

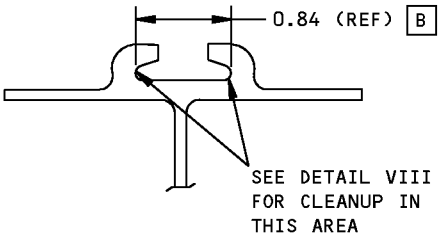
Allowable Damage - Seat Tracks
Figure 101 (Sheet 3 of 5)



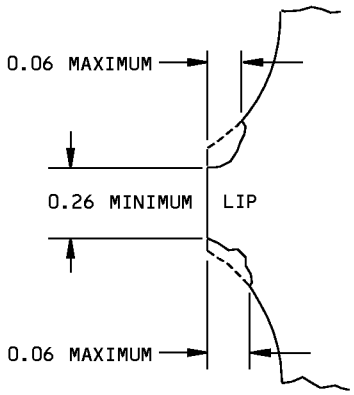
DETAIL III



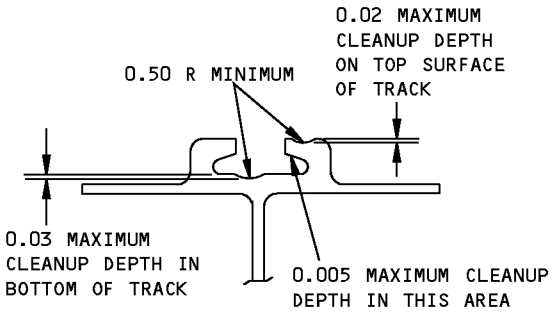
DETAIL V



DETAIL VI

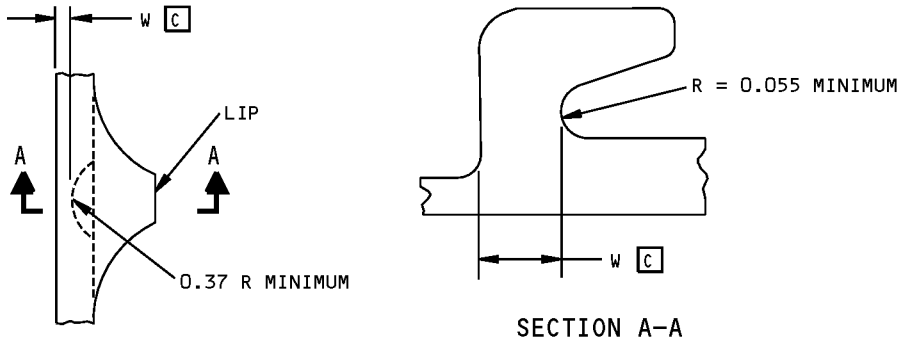


DETAIL IV

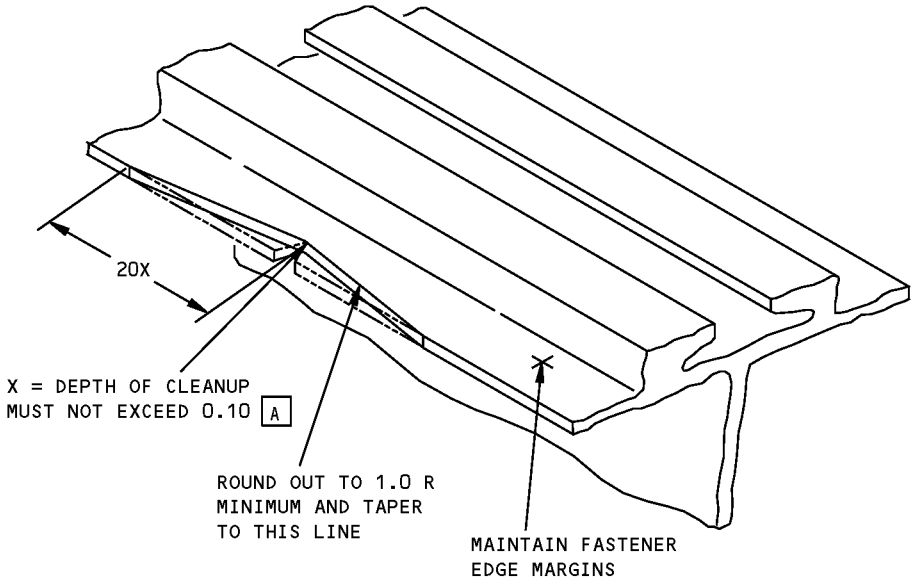


DETAIL VII

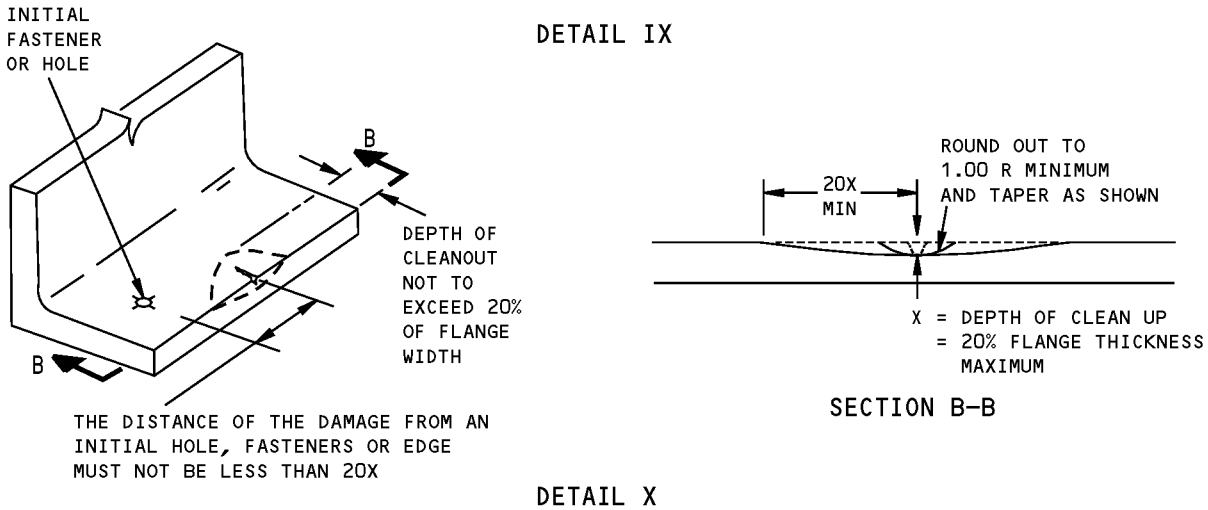
Allowable Damage - Seat Tracks
Figure 101 (Sheet 4 of 5)



DETAIL VIII



DETAIL IX



DETAIL X

Allowable Damage - Seat Tracks
Figure 101 (Sheet 5 of 5)

REPAIR 1 - SEAT TRACK REPAIR - BAC1520-1545 EXTRUSIONS

APPLICABILITY
THIS REPAIR IS APPLICABLE ONLY TO SEAT TRACKS MADE FROM BAC1520-1545 EXTRUSIONS

REPAIR INSTRUCTIONS

1. Remove the floor panels to get access to the damaged seat track. Refer to AMM 53-01-01 for floor panel removal procedures.
2. Remove the damaged section of seat track. Center each cut ±0.03 inch (0.762 mm) on the center of the seat track stud hole. See Detail II.
3. Make the repair parts. See Detail I and Table I.
4. Do a penetrant inspection of the repair parts to make sure there are no defects after machining. Use Type I, method c, sensitivity level 3 or higher penetrant for the inspection. Refer to SOPM 20-20-02.
5. Assemble the repair parts and drill the fastener holes. [B] [C]
6. Disassemble the repair parts.
7. Remove all nicks, scratches, gouges, burrs, and sharp edges from the seat track and the repair parts.
8. Apply a chemical conversion coating to repair parts 1, 2, 3 and 4 and the bare surfaces of the initial seat track. Do not apply this coating to part 5 seat track. Refer to SRM 51-20-01.
9. Apply two layers of BMS 10-11, Type 1 primer to parts 1, 2, 3 and 4 and the bare surfaces of the initial seat track. Do not apply this coating to the part 5 seat track. Refer to SOPM 20-41-02.
10. Chromic acid anodize repair part 5 seat track. Include the crown center and the crown flanges. Refer to SOPM 20-43-01.
11. Apply an aluminized epoxy primer to the repair part 5 seat track. Include crown center. The inner surface of the crown flanges do not have to be primed. Refer to SOPM 20-41-04.
12. Install the nutplates to repair parts 1 and 2 at the floor panel fastener locations. [C] [E]
13. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
14. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
15. Fill the gap at the splice centerline with BMS 5-95 sealant.
16. Apply a layer of BMS 3-29 corrosion inhibiting compound to the repair area. Refer to SRM 51-20-01.
17. Install the floor panels removed in step 1. Refer to AMM 53-01-01.

NOTES

- A REPAIR SPLICE MAY BE MADE BETWEEN ANY PAIR OF ADJACENT FLOOR BEAMS [G]
- D = FASTENER DIAMETER
- WHEN USING THIS REPAIR REFER TO THE FOLLOWING:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - AMM 53-31 FOR SEAL AND SEALING
  - AMM 53-01-01 FOR FLOOR PANEL REMOVAL AND INSTALLATION PROCEDURES
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS
  - SOPM 20-20-02 FOR PENETRANT INSPECTON PROCEDURES
  - SOPM 20-41-02 FOR APPLICATION OF DECORATIVE INTERIOR FINISHES
  - SOPM 20-43-01 FOR CHROMIC ACID ANODIZING

[A] CHAMFER THE CROWN ENDS OF THE INITIAL AND THE PART 5 SEAT TRACK EXTRUSIONS 0.06 X 45° (1.52 mm X 45°)

[B] USE THE FLOOR PANELS TO LOCATE AND DRILL FLOOR PANEL FASTENER HOLES IN REPAIR PART 5.

[C] THE LOCATION OF REPAIR FASTENERS ON THE UPPER FLANGES WILL VARY DUE TO LOCATION OF FLOOR PANEL FASTENERS. INSTALL 5 REPAIR FASTENERS ON EACH FLANGE AND MAINTAIN FASTENER SPACING AND EDGE MARGINS.

[D] MAKE THE PART 5 SEAT TRACK WITH THE SAME DIMENSION AS THE INITIAL SEAT TRACK IN THIS AREA.

[E] INSTALL BACN10JR3CFD NUTPLATE WITH TWO BACR15BA3D RIVETS ON THE REPAIR PARTS 1 AND 2 AT THE FLOOR PANEL FASTENER LOCATIONS.

[F] LOCATE CUT AT THE CENTER OF THE TRACK STUD HOLE.

Seat Track Repair - BAC1520-1545 Extrusions
Figure 201 (Sheet 1 of 3)

NOTES (CONT.)

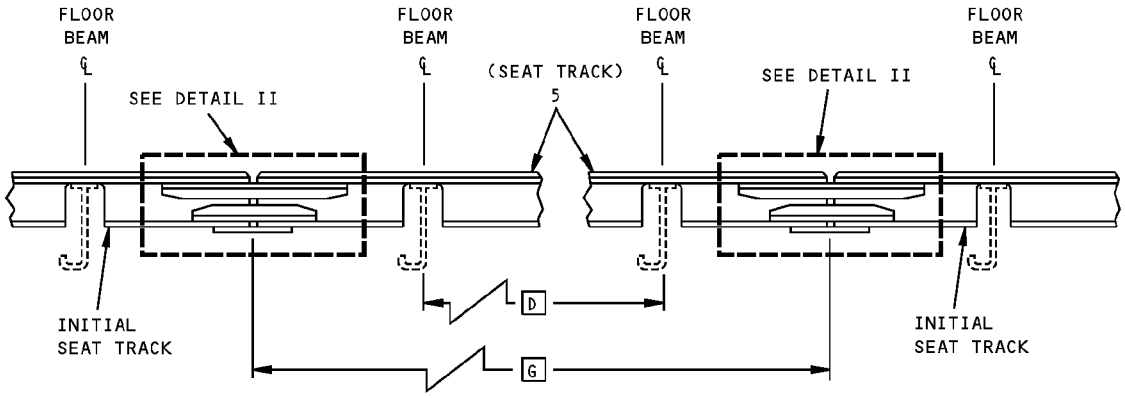
[G] A NEW SEAT TRACK REPAIR SPLICE MUST BE LOCATED AT LEAST TWO FULL FLOOR BEAM BAYS AWAY, 44 INCHES (1118 mm), FROM A PRODUCTION SPLICE OR ANOTHER REPAIR SPLICE. REFER TO DETAIL I. IN THE AREA WHERE THE AIRCRAFT SECTIONS ARE JOINED, A REPAIR SPLICE MUST BE AT LEAST 2.5 FLOOR BEAM BAYS AWAY, 55 INCHES (1397 mm), FROM THE SEAT TRACK PINNED OR JOINED LOCATION.

SYMBOLS

- INITIAL FASTENER LOCATION. USE SAME TYPE AND SIZE AS INITIAL FASTENER.
- REPAIR FASTENER LOCATION. INSTALL A BACB30NW6K() HEX DRIVE BOLT WITH A BACC30M6 COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30MY8K() HEX DRIVE BOLT WITH A BACC30M8 COLLAR.

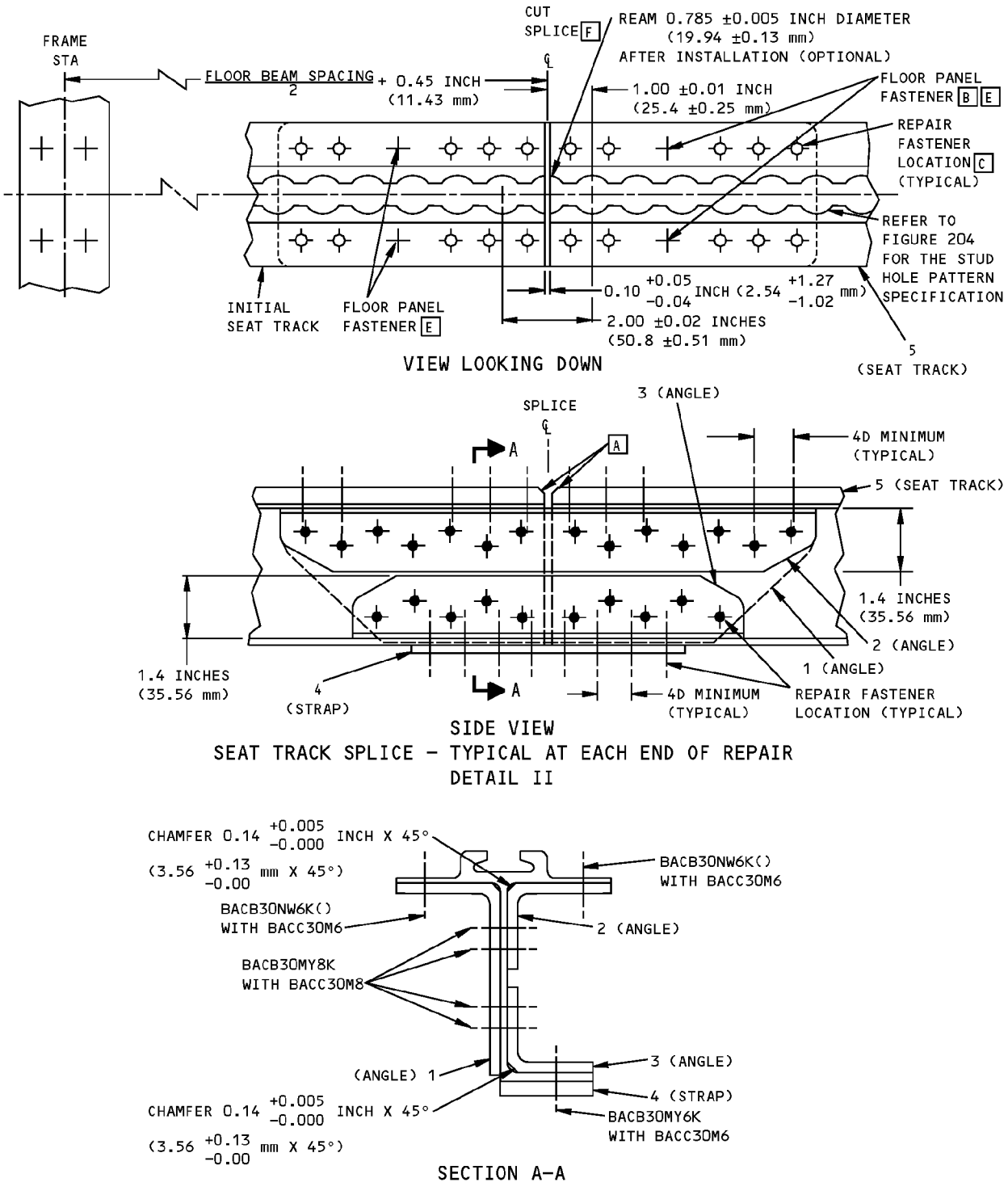
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	ANGLE	2	BAC1490-2864 7075-T6
2	ANGLE	2	BAC1503-5818 7075-T6511
3	ANGLE	2	BAC1503-5818 7075-T6511
4	STRAP	2	0.160 INCH (4.06 mm) 7075-T6
5	SEAT TRACK	1	BAC1520-1545 7178-T6511 OPTIONAL MATERIAL: 7150-T77511 AS GIVEN IN BMS 7-306

TABLE I



TYPICAL REPAIR CONFIGURATION
DETAIL I

Seat Track Repair - BAC1520-1545 Extrusions
Figure 201 (Sheet 2 of 3)



Seat Track Repair - BAC1520-1545 Extrusions
Figure 201 (Sheet 3 of 3)

REPAIR 2 - SEAT TRACK SPLICE REPAIR - BAC1520-2192 EXTRUSION

APPLICABILITY

THIS REPAIR IS APPLICABLE ONLY TO SEAT TRACKS MADE FROM BAC1520-2192 EXTRUSIONS.

REPAIR INSTRUCTIONS

1. Remove the floor panels to get access to the damaged seat track. Refer to AMM 53-01-01 for floor panel removal procedures.
2. Remove excess sealant from the seat track flange. Use a hardwood or phenolic scraper. Do not use a metal scraper.
3. Remove damaged section of seat track. Center each cut ±0.03 inch (0.76 mm) on the center of the seat track stud hole. See Detail II.
4. Trim initial seat track extrusions as given in Detail I, Section A-A.
5. Make repair parts. See Table I, and Details IV and V. Trim part 1, as given in Detail I, Section A-A. [A]
6. For repair parts 2 and 3, do a penetrant inspection of the repair parts to make sure there are no defects after machining. Use Type I, method c, sensitivity level 3 or higher, penetrant for the inspection. Refer to SOPM 20-20-02.
7. Assemble the repair parts. Locate and drill floor panel fastener holes and all repair fastener holes. Floor panel attach fasteners do not count as repair splice fasteners. See Detail II. [B] [C]
8. Disassemble the repair parts.
9. Remove the nicks, scratches, gouges, burrs, and sharp edges from the seat track and the repair parts.
10. Apply a chemical conversion coating to parts 2 and 3 and the bare surfaces of the initial seat track. Refer to SRM 51-20-01. Do not apply this coating to part 1 seat track.
11. Apply 2 layers of BMS 10-11, Type 1 primer to parts 2 and 3 and the bare surfaces of the initial seat track. Do not apply this coating to the part 1 seat track. Refer to SOPM 20-41-02.
12. Anodize the part 1 seat track. Include the crown center and the crown flanges. Refer to SOPM 20-43-01.
13. Apply an aluminized epoxy primer to the part 1 seat track. Include the crown center. Refer to SOPM 20-41-04. The inner surfaces of the crown lips do not have to be primed.
14. Install the nutplates to the part 2 splice channel at the floor panel fastener locations. [D]
15. Install the repair parts with BMS 5-95 sealant between the mating surfaces. See Section C-C
16. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
17. Fill the gap at the splice centerline with BMS 5-95 sealant.
18. Apply a layer of BMS 3-29 corrosion inhibiting compound to the repair area from WL 199.50 and below. Refer to SRM 51-20-01.
19. Install the floor panels removed in step 1. Refer to AMM 53-01-01 for the floor panel installation procedures.

NOTES

- A REPAIR SPLICE CAN BE MADE BETWEEN ANY PAIR OF ADJACENT FLOOR BEAMS [L].
- D = FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 53-01-01 FOR FLOOR PANEL REMOVAL AND INSTALLATION PROCEDURES
  - SOPM 20-20-02 FOR THE PENETRANT INSPECTION PROCEDURES
  - SOPM 20-41-02 FOR THE APPLICATION OF FINISHES
  - SOPM 20-41-04 FOR APPLICATION OF DECORATIVE INTERIOR FINISHES
  - SOPM 20-43-01 FOR CHROMIC ACID ANODIZING
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS.

[A] CHAMFER THE CROWN ENDS OF THE INITIAL AND THE PART 1 SEAT TRACK EXTRUSIONS 0.06 INCH X 45° (1.52 mm X 45°).

[B] USE THE FLOOR PANELS TO LOCATE AND DRILL THE FLOOR PANEL FASTENER HOLES IN THE PART 1 SEAT TRACK.

[C] THE LOCATION OF REPAIR FASTENERS ON THE UPPER HORIZONTAL FLANGE WILL VARY DUE TO THE LOCATION OF FLOOR PANEL FASTENERS. A MINIMUM OF ONE REPAIR FASTENER MUST BE INSTALLED BETWEEN THE END OF PART 2 SPLICE CHANNEL AND A FLOOR PANEL FASTENER.

Seat Track Splice Repair - BAC1520-2192 Extrusion
Figure 201 (Sheet 1 of 6)

NOTES (CONT)

[D] INSTALL A BACN10JR3CFD NUTPLATE WITH TWO BACR15BA3D RIVETS ON THE PART 2 SPLICE CHANNEL AT FLOOR PANEL FASTENER LOCATIONS.

[E] CUT MUST BE 0.55 INCH (13.97 mm) MINIMUM FROM INITIAL FLOOR PANEL FASTENER LOCATIONS.

[F] KEEP EQUAL SPACING. A MINIMUM OF 5 REPAIR FASTENERS MUST BE USED ON EACH SIDE OF THE SPLICE THROUGH EACH UPPER HORIZONTAL FLANGE OR THE SPLICE CHANNEL. ADJUST FASTENER SPACING TO PREVENT FASTENER INTERFERENCE WITH THE FLOOR PANEL ATTACHMENT FASTENERS.

[G] LOCATE AND INSTALL THE FASTENERS IN A STAGGERED PATTERN, AS NECESSARY TO PREVENT INTERFERENCE BETWEEN THE FASTENER HEADS AND THE COLLARS.

[H] A MINIMUM OF 7 REPAIR FASTENERS MUST BE USED ON EACH SIDE OF THE SPLICE THROUGH THE SPLICE CHANNEL.

[I] FILL THE GAP BETWEEN REPAIR PART 1 AND THE INITIAL SEAT TRACK WITH BMS 5-95 SEALANT.

[J] USE PART 4 SHIM AS NECESSARY. MAXIMUM GAP PERMITTED IS 0.003 INCH (0.076 mm). FAY SURFACE SEAL REPAIR PARTS WITH BMS 5-95 SEALANT.

[K] MAKE ONE CHANNEL WITH PILOT HOLES AND THE MATING CHANNEL BLANK.

[L] A NEW SEAT TRACK REPAIR SPLICE MUST BE LOCATED AT LEAST TWO FULL FLOOR BEAM BAYS AWAY, 44 INCHES (1118 mm), FROM A PRODUCTION SPLICE OR ANOTHER REPAIR SPLICE. REFER TO DETAIL I. IN THE AREA WHERE THE AIRCRAFT SECTIONS ARE JOINED, A REPAIR SPLICE MUST BE AT LEAST 2.5 FLOOR BEAM BAYS AWAY, 55 INCHES (1397 mm), FROM THE SEAT TRACK PINNED OR JOINED LOCATION.

FASTENER SYMBOLS

INITIAL FASTENER LOCATION. USE SAME TYPE AND SIZE AS INITIAL FASTENER.

REPAIR FASTENER LOCATION. INSTALL A BACB30NW6K() HEX DRIVE BOLT WITH BACC30M6() COLLAR.

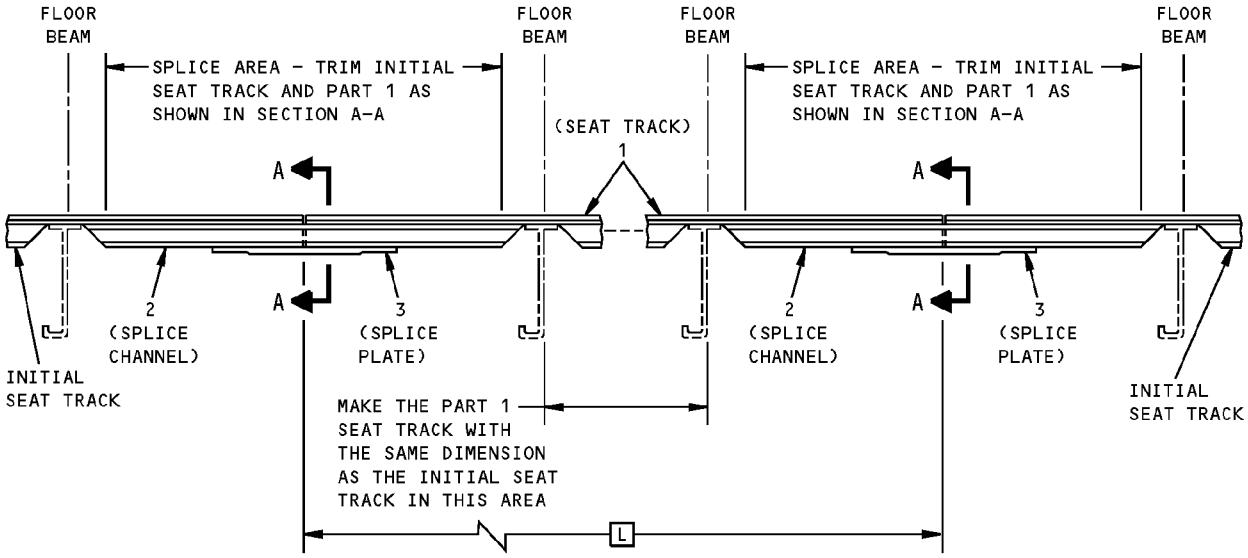
REPAIR FASTENER LOCATION. INSTALL A BACB30MY8K() HEX DRIVE BOLT WITH BACC30M8() COLLAR.

REPAIR FASTENER LOCATION. INSTALL A BACB30MY6K() HEX DRIVE BOLT WITH BACC30M6() COLLAR.

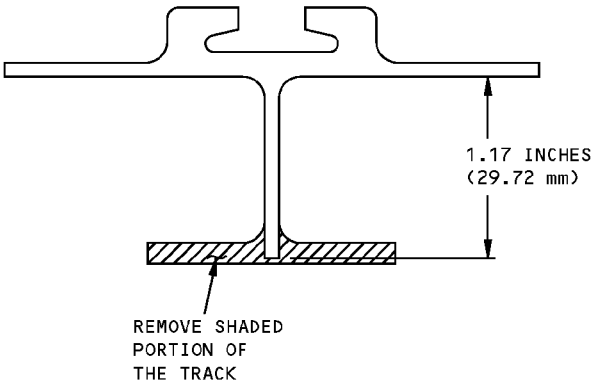
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	SEAT TRACK	1	BAC1520-2192 7178-T6511 ALTERNATIVE MATERIAL: 7150-T77511 AS GIVEN IN BMS 7-306
2	SPLICE CHANNEL	2 [K]	MAKE FROM BAC1509-100027 7075-T6511
3	SPLICE PLATE	1	0.160 INCH (4.06 mm) 7075-T6 BARE PLATE
4	SHIM	AS REQUIRED	2024-T4 OR 7075-T6 OR AN ALTERNATIVE BACS40R008B088NG LAMINATED SHIM

TABLE I

Seat Track Splice Repair - BAC1520-2192 Extrusion
Figure 201 (Sheet 2 of 6)



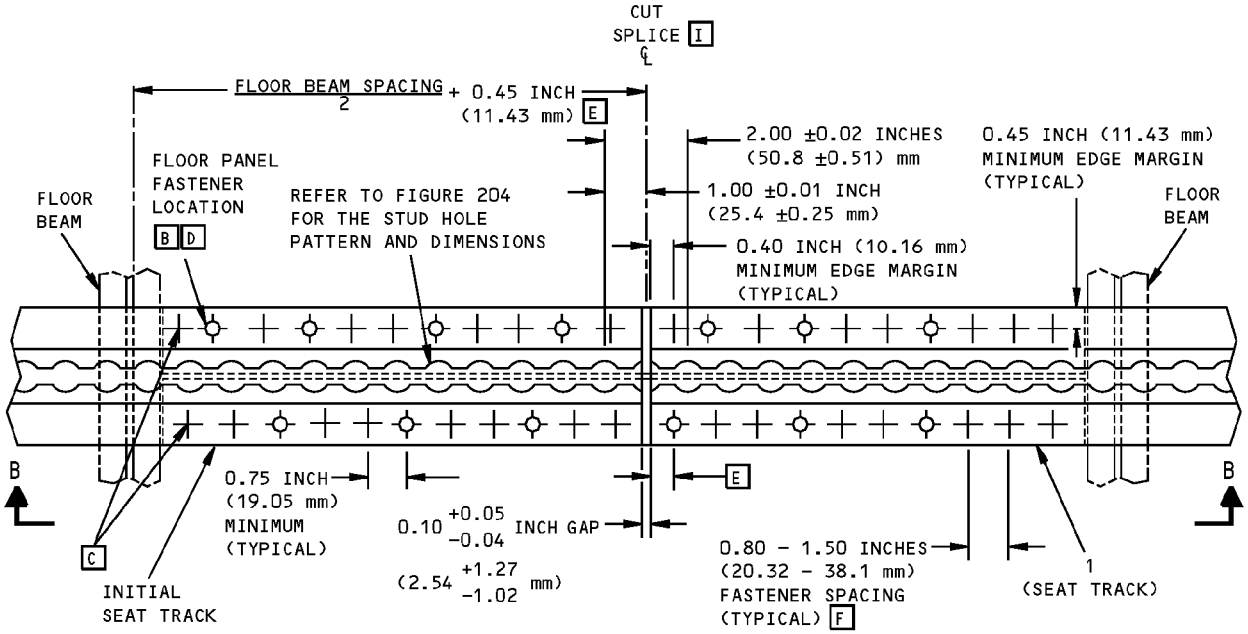
SEAT TRACK TRIM AREAS
DETAIL I



REPAIR PARTS NOT SHOWN

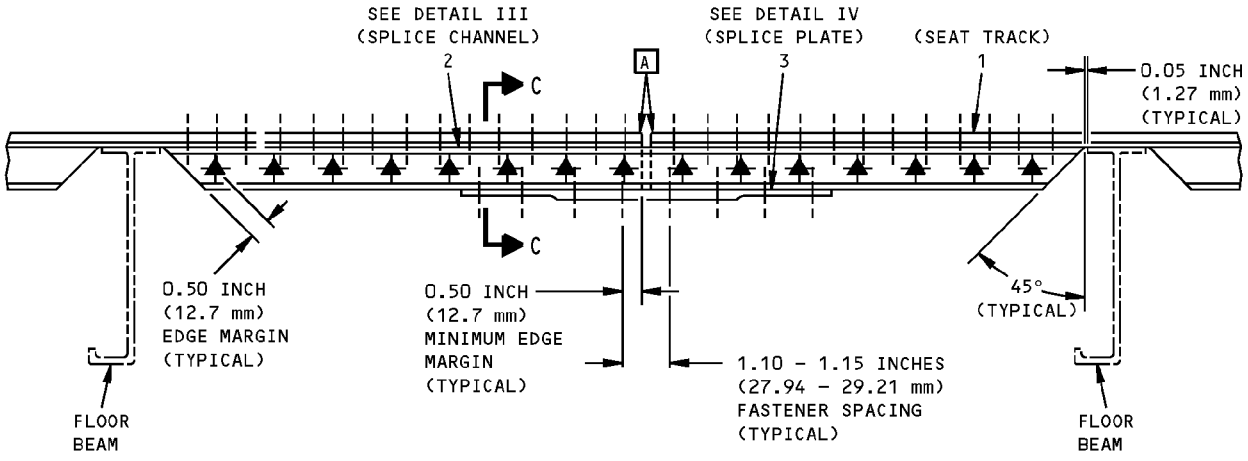
SECTION A-A

Seat Track Splice Repair - BAC1520-2192 Extrusion
Figure 201 (Sheet 3 of 6)



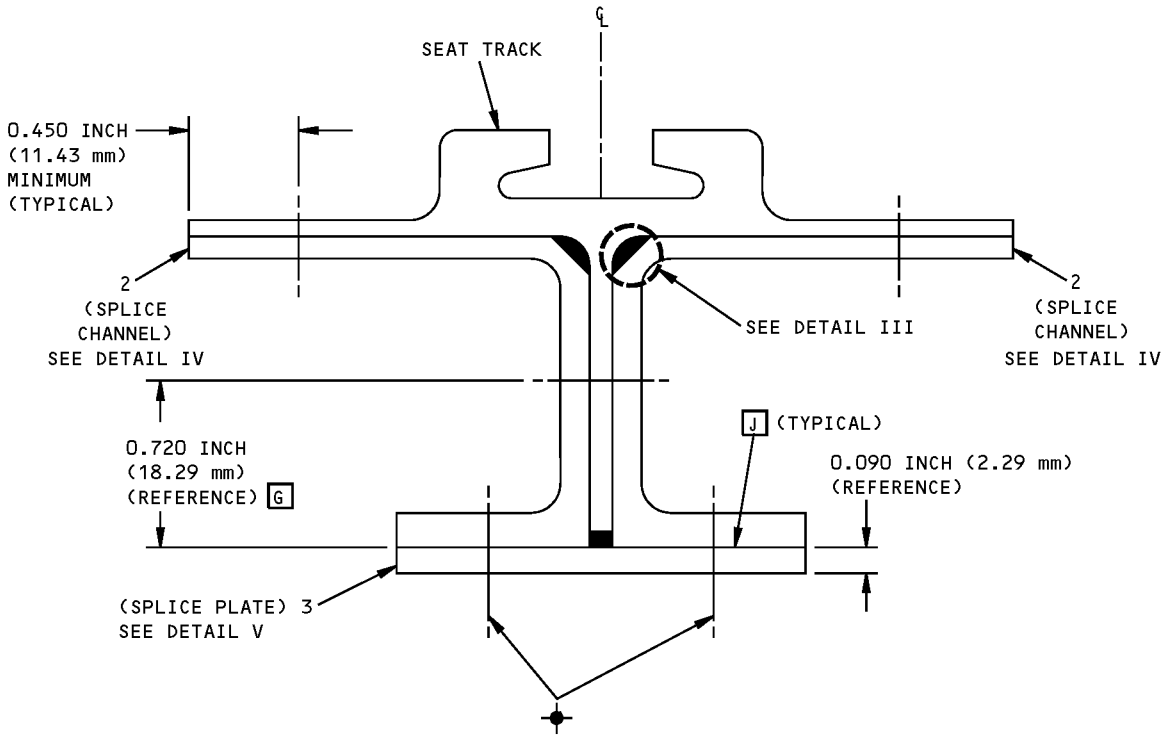
TOP VIEW

SEAT TRACK SPLICE - TYPICAL AT EACH END OF REPAIR
DETAIL II

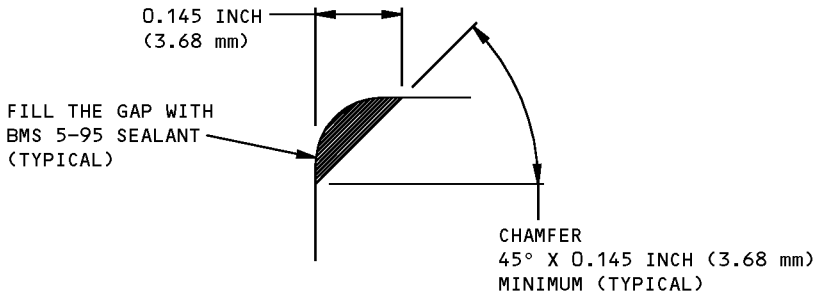


VIEW B-B

Seat Track Splice Repair - BAC1520-2192 Extrusion
Figure 201 (Sheet 4 of 6)

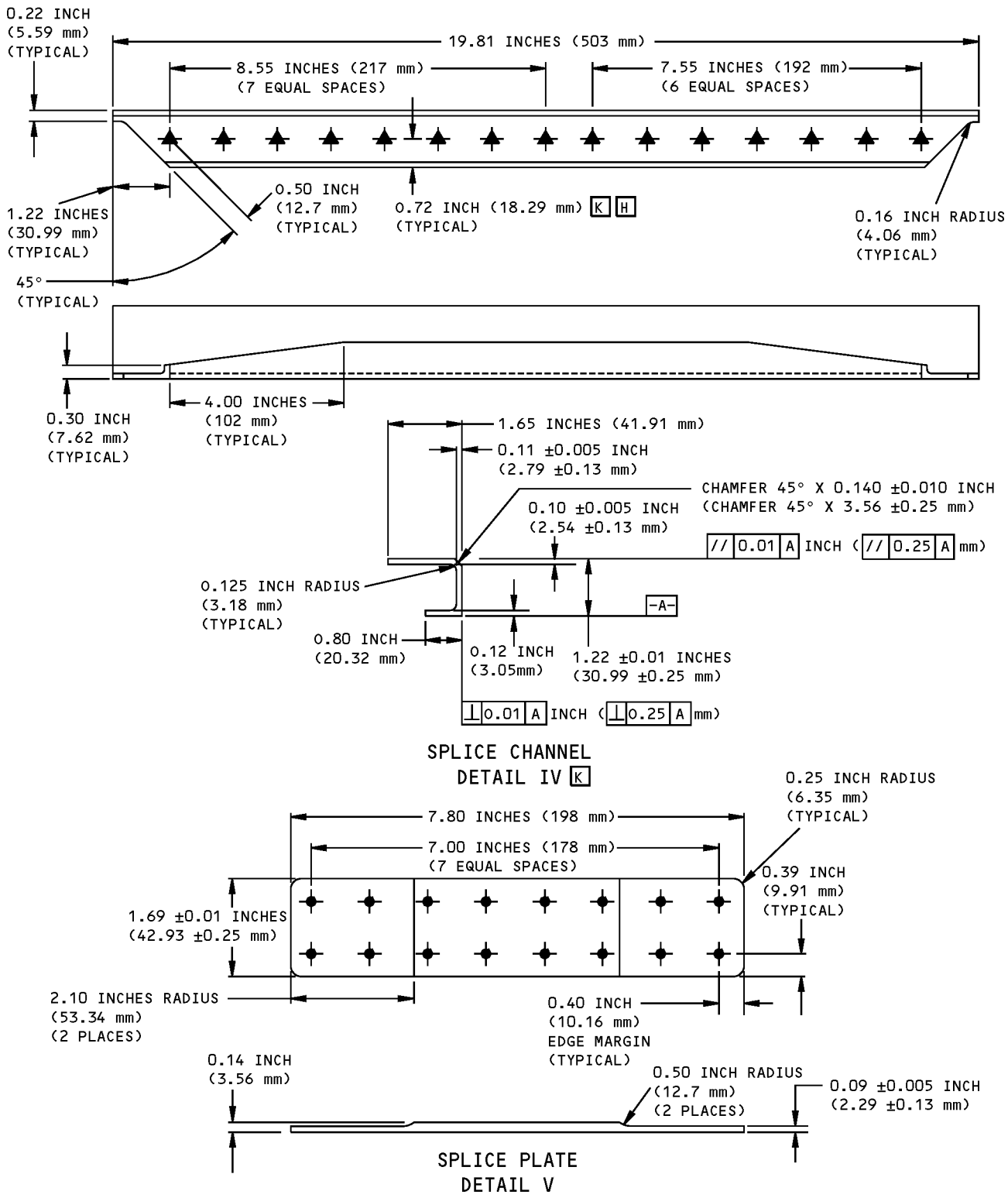


SECTION C–C



DETAIL III

Seat Track Splice Repair - BAC1520-2192 Extrusion
Figure 201 (Sheet 5 of 6)



Seat Track Splice Repair - BAC1520-2192 Extrusion
Figure 201 (Sheet 6 of 6)

REPAIR 3 - SEAT TRACK REPAIR - BL 88.50

APPLICABILITY
THIS REPAIR IS APPLICABLE ONLY TO SEAT TRACKS AT BL 88.50, BAC1520-2193 EXTRUSIONS

REPAIR INSTRUCTIONS

1. Remove the floor panels to get access to the damaged seat track. Refer to AMM 53-01-01 for floor panel removal procedures.
2. Remove the excess sealant from the seat track flange. Use a hardwood or phenolic scraper.
3. Cut and remove the damaged section of seat track. Center each cut ±0.03 inch (0.76 mm) on the center of the seat track stud hole. See Detail II.
4. Trim the initial seat track extrusions as given in Detail I.
5. Make the repair parts. Trim part 1 as given in Detail I. [A]
6. Do a penetrant inspection of the repair parts to make sure there are no defects after machining. Use Type I, method c, sensitivity level 3 or higher penetrant for the inspection. Refer to SOPM 20-20-02.
7. Assemble the repair parts and drill the fastener holes. [B]
8. Disassemble the repair parts.
9. Remove all nicks, scratches, gouges, burrs, and sharp edges from the seat track and the repair parts.
10. Apply a chemical conversion coating to parts 2, 3, 4 and the bare surfaces of the initial seat track. Refer to SRM 51-20-01. Do not apply this coating to part 1 seat track.
11. Apply two layers of BMS 10-11, Type 1 primer to parts 2, 3, 4 and the bare surfaces of the initial seat track. Do not apply this coating to the part 1 seat track. Refer to SOPM 20-41-04.
12. Anodize the part 1 seat track. Include the crown center and the crown flanges. Refer to SOPM 20-43-01.
13. Apply an aluminized epoxy primer to the part 1 seat track. Include the crown center. Refer to SOPM 20-41-04. The inner surfaces of the crown flanges do not have to be primed.
14. Install the nutplates to part 3 and part 4 straps at the floor panel fastener locations. [D]
15. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
16. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
17. Apply BMS 5-95 sealant at the splice centerline gap.
18. Apply a layer of BMS 3-29 corrosion inhibiting compound to the repair area. Refer to SRM 51-20-01.
19. Apply finish to the repair area. Refer to AMM 51-21.
20. Install the floor panels removed in step 1. Refer to AMM 53-01-01.

NOTES

- A REPAIR SPLICE CAN BE MADE BETWEEN ANY PAIR OF ADJACENT FLOOR BEAMS [G].
- D = FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-04 FOR THE APPLICATION OF FINISHES
  - SOPM 20-43-01 FOR CHROMIC ACID ANODIZING
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS.

[A] CHAMFER THE ENDS OF THE INITIAL AND THE REPAIRED SEAT TRACK EXTRUSIONS 0.06 INCH X 45° (1.52 mm X 45°).

[B] USE THE FLOOR PANELS TO LOCATE AND DRILL THE FLOOR PANEL FASTENER HOLES IN THE PART 1 SEAT TRACK.

[C] THE LOCATION OF REPAIR FASTENERS ON THE UPPER HORIZONTAL FLANGE WILL VARY DUE TO THE LOCATION OF FLOOR PANEL FASTENERS. A MINIMUM OF ONE REPAIR FASTENER MUST BE INSTALLED BETWEEN THE END OF PART 3 AND A FLOOR PANEL FASTENER.

[D] INSTALL A BACN10JR3CFD NUTPLATE WITH TWO BACR15BA3D RIVETS ON THE PART 3 STRAP AT FLOOR PANEL FASTENER LOCATIONS.

[E] LOCATE THE CENTER OF THE CUT AT THE CENTER OF THE TRACK STUD HOLE.

[F] THE MINIMUM NUMBER OF FASTENERS NECESSARY FOR EACH SIDE ON A TOP FLANGE OF THE SPLICE IS 8. THE MINIMUM NUMBER OF FASTENERS NECESSARY FOR EACH SIDE ON THE VERTICAL WEB SPLICE IS 8.

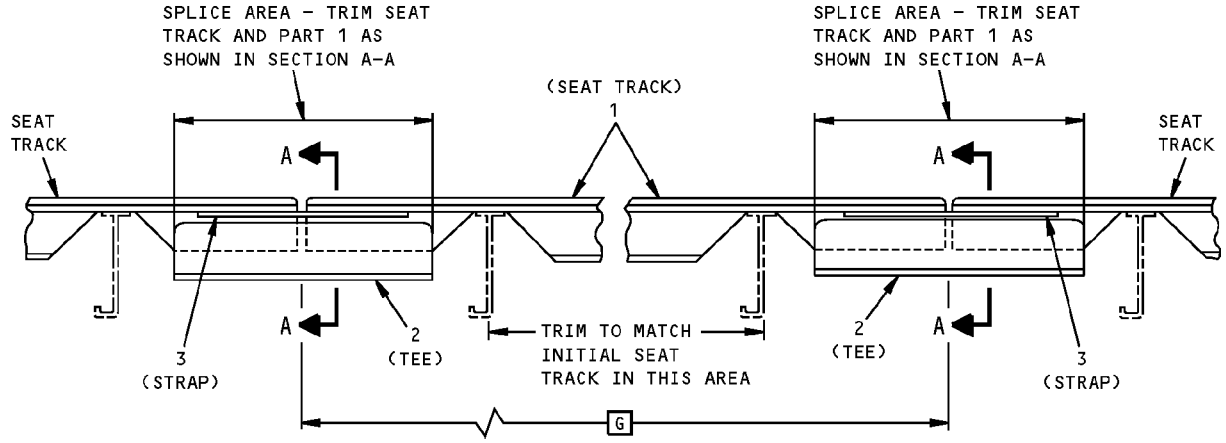
[G] A NEW SEAT TRACK REPAIR SPLICE MUST BE LOCATED AT LEAST TWO FULL FLOOR BEAM BAYS AWAY, 44 INCHES (1118 mm), FROM A PRODUCTION SPLICE OR ANOTHER REPAIR SPLICE. REFER TO DETAIL I.

Seat Track Repair - BL 88.50
Figure 201 (Sheet 1 of 3)

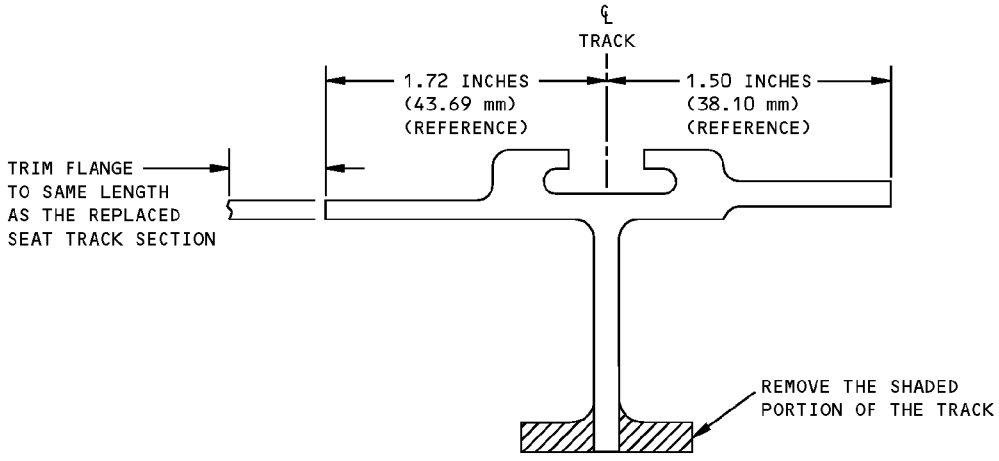
FASTENER SYMBOLS

- INITIAL FASTENER LOCATION. USE SAME TYPE AND SIZE AS INITIAL FASTENER.
- REPAIR FASTENER LOCATION. INSTALL A BACB30NW6K() HEX DRIVE BOLT WITH BACC30M6() COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30NX8K() HEX DRIVE BOLT WITH BACC30X8() COLLAR.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	SEAT TRACK	1	SAME AS ORIGINAL ALTERNATIVE MATERIAL:7150-T77511 AS GIVEN IN BMS 7-306
2	TEE	1	MAKE FROM BAC1505-100322 7075-T6
3	STRAP	1	0.100 INCH X 0.75 INCH WIDE (2.54 mm X 19.05 mm) 7075-T6
4	STRAP	1	0.100 INCH X 1.00 INCH WIDE (2.54 mm X 25.4 mm) 7075-T6

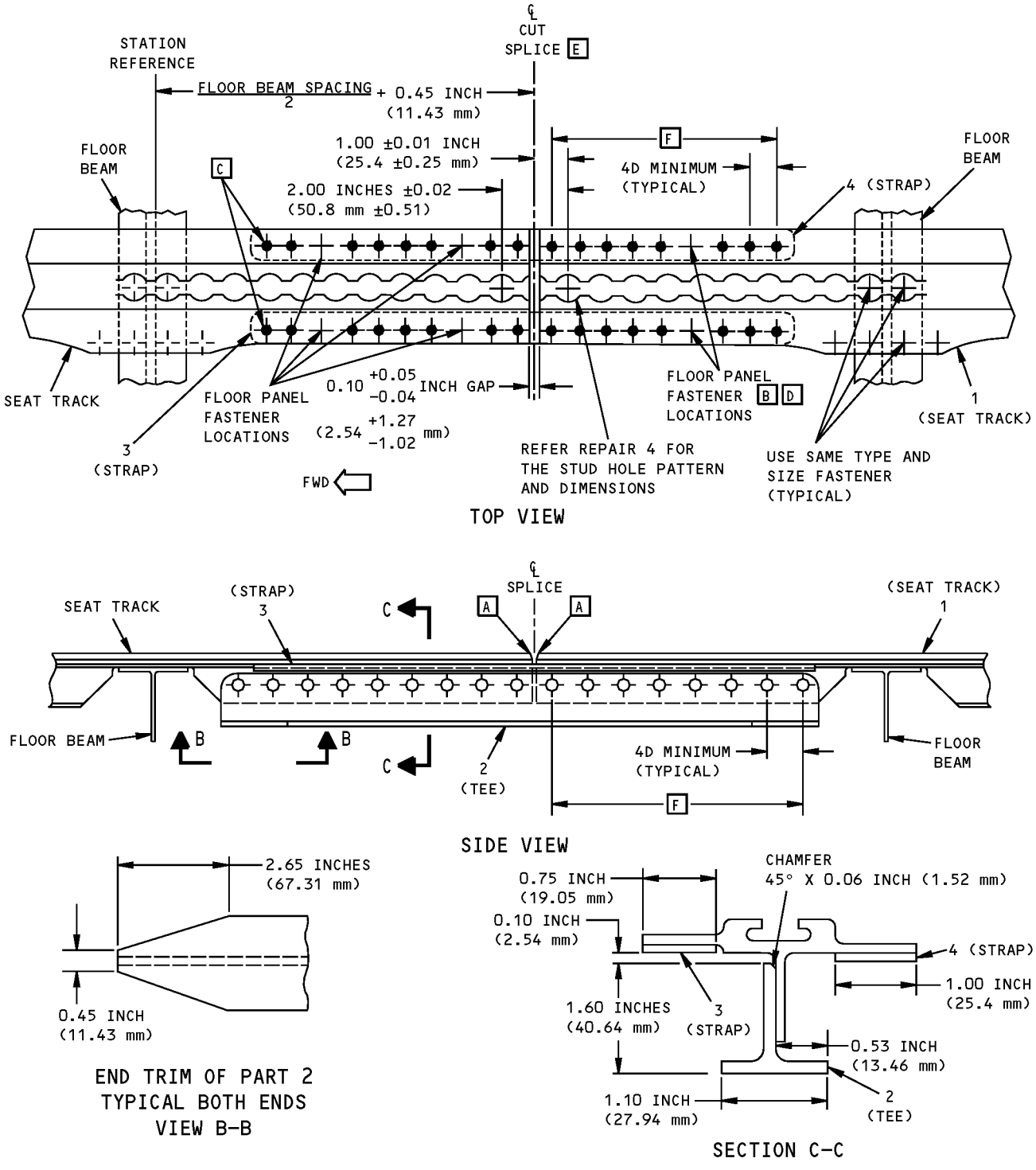


SEAT TRACK TRIM AREAS
DETAIL I



BAC1520-2193 EXTRUSION
REPAIR PARTS NOT SHOWN
SECTION A-A

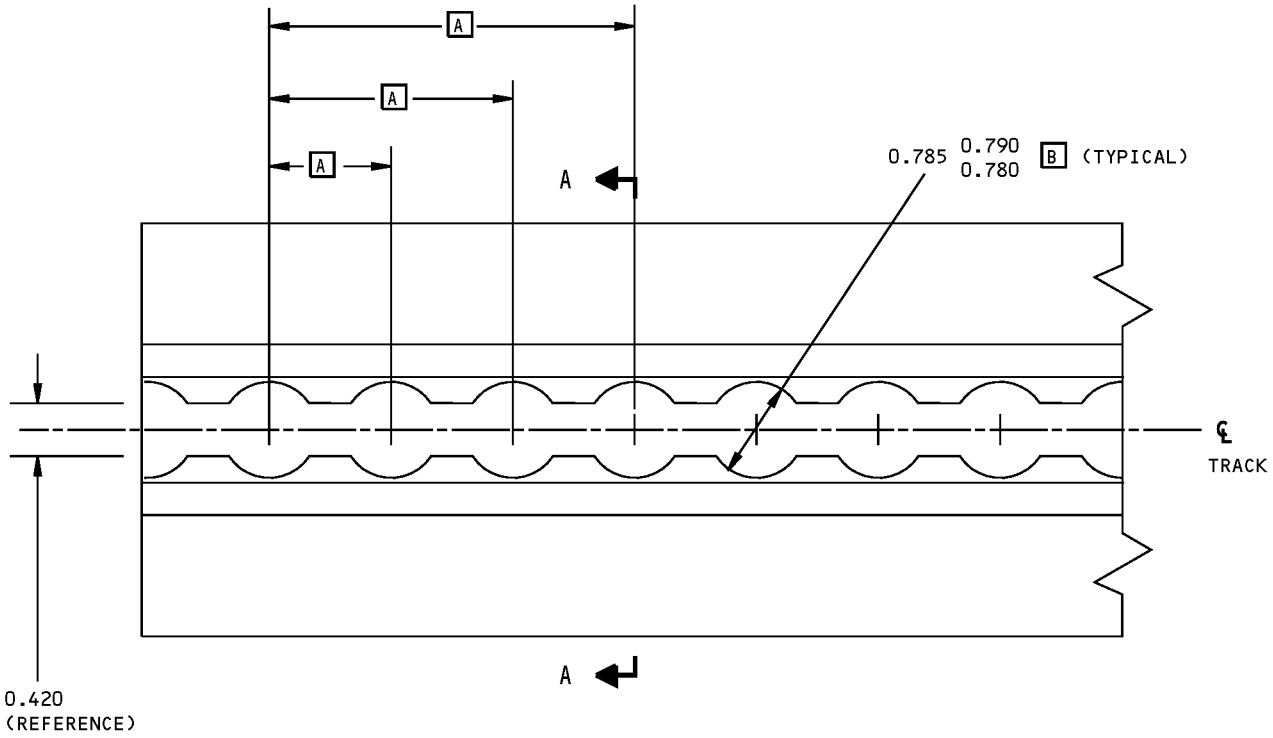
Seat Track Repair - BL 88.50
Figure 201 (Sheet 2 of 3)

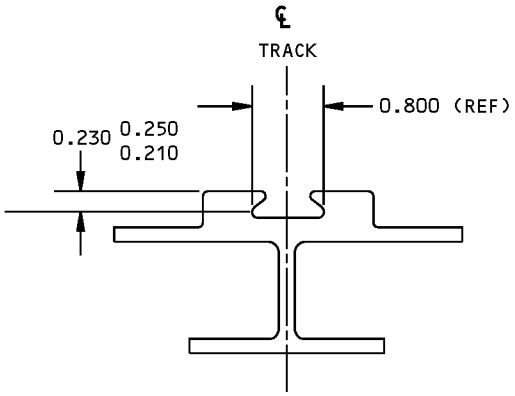


SEAT TRACK SPLICE – TYPICAL AT EACH END OF REPAIR
DETAIL II

Seat Track Repair - BL 88.50
Figure 201 (Sheet 3 of 3)

REPAIR 4 - HOLE PATTERN FOR SEAT TRACK REPAIRS





SECTION A–A

NOTES

- ALL DIMENSIONS ARE GIVEN IN INCHES.
- MACHINE FINISH TO 125 MICROINCHES AA.

A LOCATION OF STUD HOLES TO BE 1.000 INCH TIMES NUMBER OF HOLES ±0.005 BETWEEN ANY TWO HOLES IN ANY 20–INCH INCREMENT AND ±0.015 BETWEEN ANY TWO HOLES IN ANY 100–INCH INCREMENT AT 70°F (21°C).

B 0.785 INCH DIAMETER HOLE TO BE LOCATED TO THE CENTERLINE OF THE 0.420 INCH SLOT WITHIN ±0.005 INCH.

Hole Pattern for Seat Track Repairs
Figure 201

REPAIR 5 - SEAT TRACK REPAIR - REMOVABLE CROWN

REPAIR INSTRUCTIONS

1. Cut and remove the damaged portion of seat track. The cut lines must be located in between the attach bolts in the zones shown.
2. Make the repair parts.
3. Break sharp edges of original and repair parts 0.015 to 0.030.
4. Remove all nicks, scratches, burrs, and sharp corners from original and repair parts.
5. Alodize the cut ends of the original track and part 1, and parts 2 and 3.
6. Install part 1.
7. Fill the track joints with sealant. [A]
8. To prevent installation of seats at track joints, install parts 2 and 3. Coat faying surfaces of repair parts and seat track with BMS 5-95 class B or C sealant immediately before installation.
9. Restore finish.

NOTES

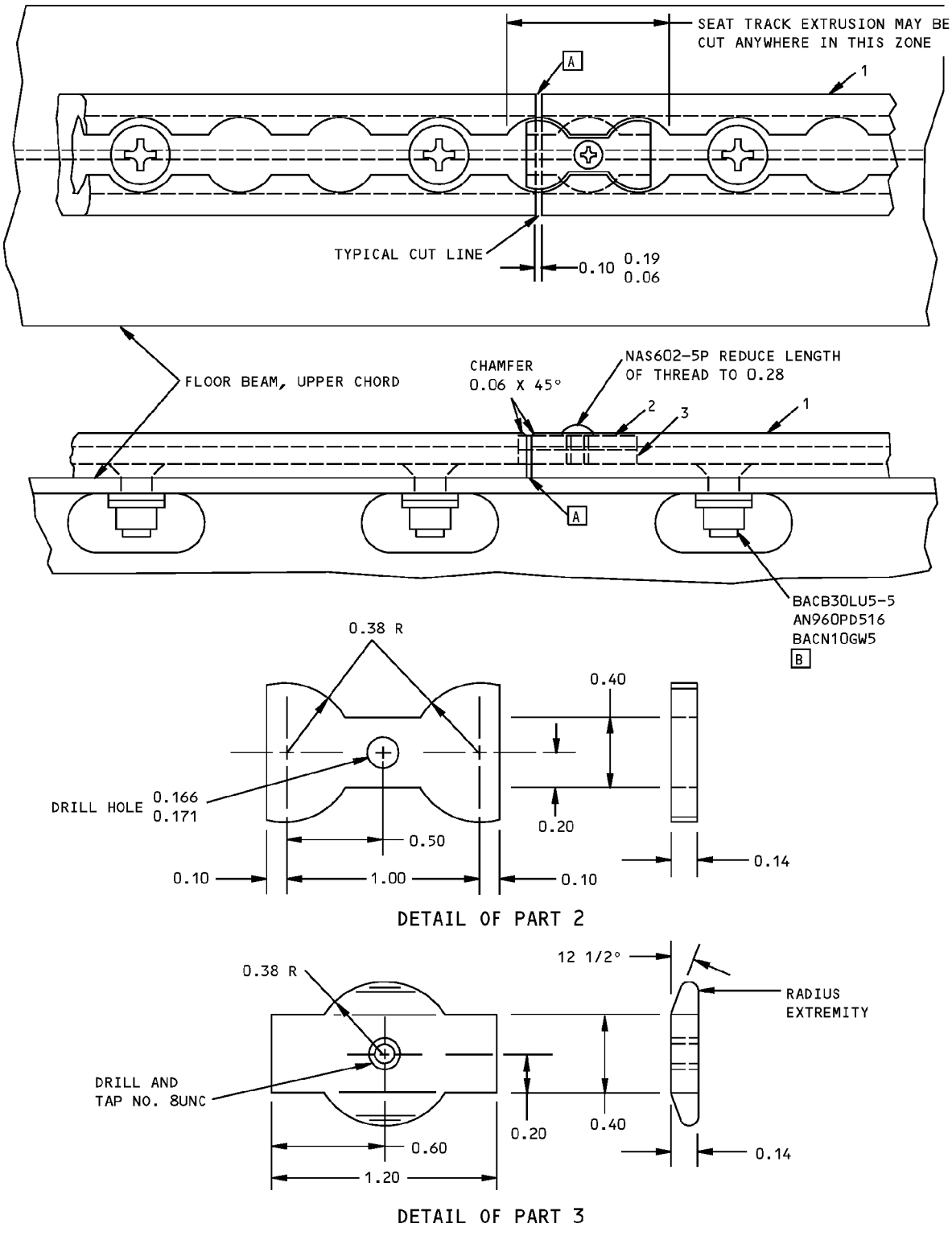
- THIS REPAIR APPLIES TO SEAT TRACKS MADE FROM BAC1520-2194 OR BAC1520-2195, 7178-T6511, EXTRUSIONS IN THE AREA ABOVE THE WING.
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - AMM 51-31 FOR SEALS AND SEALING
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS.

[A] FILL JOINT IN TRACK WITH BMS 5-95 OR BMS 5-79 CLASS B SEALANT.

[B] COAT UNDERSIDE OF BOLT HEADS AND COUNTER-SINKS IN TRACKS WITH BMS 5-95, CLASS B OR C SEALANT.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	SEAT TRACK	1	SAME AS ORIGINAL OPTIONAL MATERIAL: 7150-T77511 AS GIVEN IN BMS 7-306
2	PLATE	2	0.14 2024-T3 OR T4
3	PLATE	2	0.14 2024-T3 OR T4

Seat Track Repair - Removable Crown
Figure 201 (Sheet 1 of 2)



Seat Track Repair - Removable Crown
Figure 201 (Sheet 2 of 2)

REPAIR 6 - SEAT TRACK SPLICE REPAIR - BAC1520-2557, BAC1520-2162 EXTRUSIONS

APPLICABILITY
THIS REPAIR IS APPLICABLE ONLY TO SEAT TRACKS MADE FROM BAC1520-2557 OR BAC1520-2162 EXTRUSIONS

REPAIR INSTRUCTIONS

1. Remove the floor panels to get access to the damaged seat track. Refer to AMM 53-01-01 for floor panel removal procedures.
2. Remove the excess sealant from the seat track flange. Use a hardwood or phenolic scraper. Do not use a metal scraper.
3. Remove the damaged section of seat track. Center each cut ±0.03 inch (0.76 mm) on the center of the seat track stud hole. See Detail II.
4. Trim the initial seat track extrusion as given in Detail I, and Section A-A.
5. Make the repair parts. See Table I. Trim part 1, as given in Detail I, and Section A-A. [A]
6. Do a penetrant inspection of the repair parts to make sure there are no defects after machining. Use Type I, method c, sensitivity level 3 or higher. Refer to SOPM 20-20-02.
7. Assemble the repair parts. Locate and drill the floor panel fastener holes and all repair fastener holes. Floor panel attach fasteners do not count as repair splice fasteners. See Detail II. [B] [C]
8. Disassemble the repair parts.
9. Remove all nicks, scratches, gouges, burrs, and sharp edges from the seat track and the repair parts.
10. Apply a chemical conversion coating to parts 2, 3 and the bare surfaces of the initial seat track. Refer to SRM 51-20-01. Do not apply this coating to part 1 seat track.
11. Apply two layers of BMS 10-11, Type 1 primer to parts 2, 3 and the bare surfaces of the initial seat track. Do not apply this coating to the part 1 seat track. Refer to SOPM 20-41-02.
12. Chromic acid anodize the part 1 seat track. Include the crown center and the crown flanges. Refer to SOPM 20-43-01.
13. Apply an aluminized epoxy primer to the part 1 seat track. Include the crown center. Refer to SOPM 20-41-04. The inner surfaces of the crown lips do not have to be primed.
14. Install the nutplates to the part 2 splice channels at the floor panel attach fastener locations. [D]
15. Install the repair parts with BMS 5-95 sealant between the mating surfaces. See Section C-C.
16. Install the fasteners. Fasteners must be installed wet with BMS 5-95 sealant.
17. Apply BMS 5-95 sealant at the splice centerline gap.
18. Apply a layer of BMS 3-29 corrosion inhibiting compound to the repair area from WL 199.50 and below. Do not apply BMS 3-29 to the seat tracks. Refer to SRM 51-20-01.
19. Install the floor panels removed in step 1. Refer to AMM 53-01-01 for the floor panel installation procedures.

NOTES

- A REPAIR SPLICE CAN BE MADE BETWEEN ANY PAIR OF ADJACENT FLOOR BEAMS [K].
- D = FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 53-01-01 FOR FLOOR PANEL REMOVAL AND INSTALLATION PROCEDURES
  - SOPM 20-20-02 FOR THE PENETRANT INSPECTION PROCEDURES
  - SOPM 20-41-02 FOR THE APPLICATION OF FINISHES
  - SOPM 20-41-04 FOR APPLICATION OF DECORATIVE INTERIOR FINISHES
  - SOPM 20-43-01 FOR CHROMIC ACID ANODIZING
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS.

Seat Track Splice Repair - BAC1520-2557, BAC1520-2162 Extrusions
Figure 201 (Sheet 1 of 6)

NOTES (CONT)

[A] CHAMFER THE ENDS OF THE INITIAL AND THE PART 1 SEAT TRACK EXTRUSIONS 0.06 INCH X 45° (1.52 mm X 45°).

[B] USE THE FLOOR PANELS TO LOCATE AND DRILL THE FLOOR PANEL FASTENER HOLES IN THE PART 1 SEAT TRACK.

[C] THE LOCATION OF REPAIR FASTENERS ON THE UPPER HORIZONTAL FLANGE WILL VARY DUE TO THE LOCATION OF FLOOR PANEL ATTACH FASTENERS. A MINIMUM OF ONE REPAIR FASTENER MUST BE INSTALLED BETWEEN THE END OF PART 2 SPLICE CHANNEL AND A FLOOR PANEL ATTACH FASTENER. SEE DETAIL II.

[D] INSTALL A BACN10JR3CFD NUTPLATE WITH TWO BACR15BA3D RIVETS ON THE PART 2 SPLICE CHANNEL AT FLOOR PANEL ATTACH FASTENER LOCATIONS.

[E] THE CUT MUST BE 0.55 INCH (13.97 mm) MINIMUM FROM INITIAL FLOOR PANEL ATTACH FASTENER LOCATIONS.

[F] KEEP EQUAL SPACING. A MINIMUM OF 5 REPAIR FASTENERS MUST BE USED ON EACH SIDE OF THE SPLICE THROUGH EACH UPPER HORIZONTAL FLANGE OF THE SPLICE CHANNEL. ADJUST FASTENER SPACING TO PREVENT FASTENER INTERFERENCE WITH THE FLOOR PANEL ATTACHMENT FASTENERS.

[G] FILL THE GAP BETWEEN REPAIR PART 1 AND THE INITIAL SEAT TRACK WITH BMS 5-95 SEALANT.

[H] USE PART 4 SHIM AS NECESSARY. MAXIMUM GAP PERMITTED IS 0.003 INCH (0.076 mm). FAY SURFACE SEAL REPAIR PARTS WITH BMS 5-95 SEALANT.

[I] MAKE ONE CHANNEL WITH PILOT HOLES AND THE MATING CHANNEL BLANK.

[J] MAKE THE CENTER OF THE CUT AT THE CENTER OF THE TRACK STUD HOLE.

[K] A NEW SEAT TRACK REPAIR SPLICE MUST BE LOCATED AT LEAST TWO FULL FLOOR BEAM BAYS AWAY, 44 INCHES (1118 mm), FROM A PRODUCTION SPLICE OR ANOTHER REPAIR SPLICE. REFER TO DETAIL I. IN THE AREA WHERE THE AIRCRAFT SECTIONS ARE JOINED, A REPAIR SPLICE MUST BE AT LEAST 2.5 FLOOR BEAM BAYS AWAY, 55 INCHES (1397 mm), FROM THE SEAT TRACK PINNED OR JOINED LOCATION.

[L] A MINIMUM OF 7 REPAIR FASTENERS MUST BE USED ON EACH SIDE OF THE SPLICE THROUGH THE SPLICE CHANNEL.

[M] LOCATE AND INSTALL THE FASTENERS IN A STAGGERED PATTERN, AS NECESSARY TO PREVENT INTERFERENCE BETWEEN THE FASTENER HEADS AND COLLARS.

FASTENER SYMBOLS

INITIAL FASTENER LOCATION. USE SAME TYPE AND SIZE AS THE INITIAL FASTENER.

REPAIR FASTENER LOCATION. INSTALL A BACB30NW6K() HEX DRIVE BOLT WITH A BACC30M6() COLLAR.

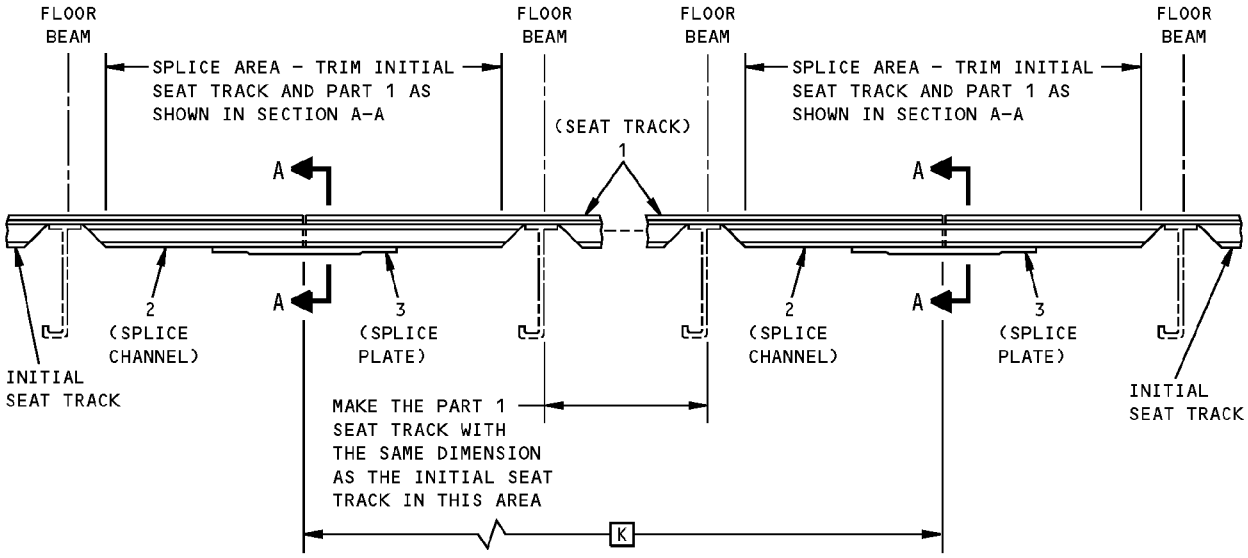
REPAIR FASTENER LOCATION. INSTALL A BACB30MY8K() HEX DRIVE BOLT WITH A BACC30M8() COLLAR.

REPAIR FASTENER LOCATION. INSTALL A BACB30MY6K() HEX DRIVE BOLT WITH A BACC30M6() COLLAR.

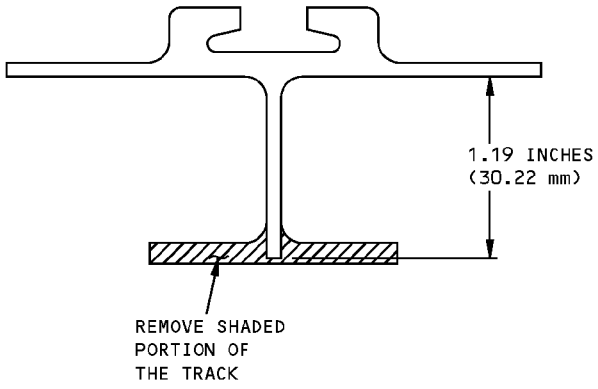
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	SEAT TRACK	1	BAC1520-2557 OR BAC1520-2162, 7178-T6511 ALTERNATIVE MATERIAL: 7150-T77511
2	SPLICE CHANNEL	2 [I]	MAKE FROM BAC1509-100027 7075-T6511
3	SPLICE PLATE	1	0.160 INCH (4.06mm) 7075-T6 BARE PLATE
4	SHIM	AS REQUIRED	2024-T4 OR 7075-T6 OR AS AN ALTERNATIVE BACS40R008B078P LAMINATED SHIM

TABLE I

Seat Track Splice Repair - BAC1520-2557, BAC1520-2162 Extrusions
Figure 201 (Sheet 2 of 6)



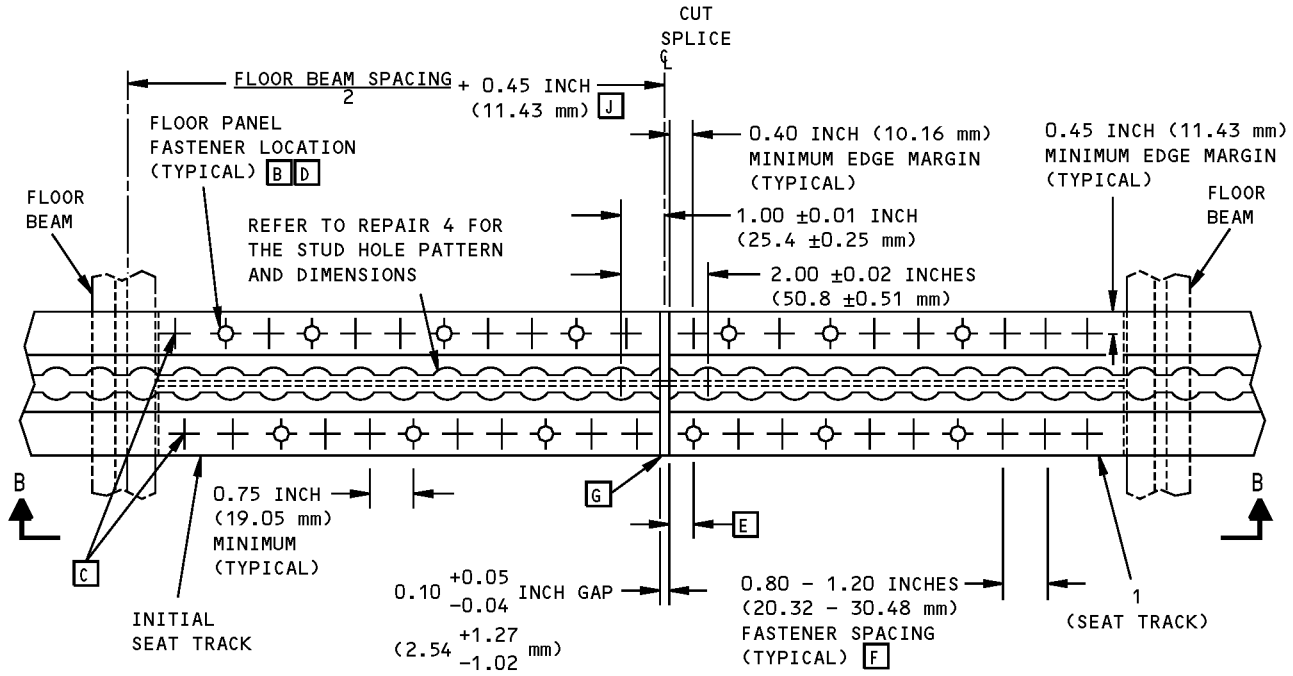
SEAT TRACK TRIM AREAS
DETAIL I



REPAIR PARTS NOT SHOWN

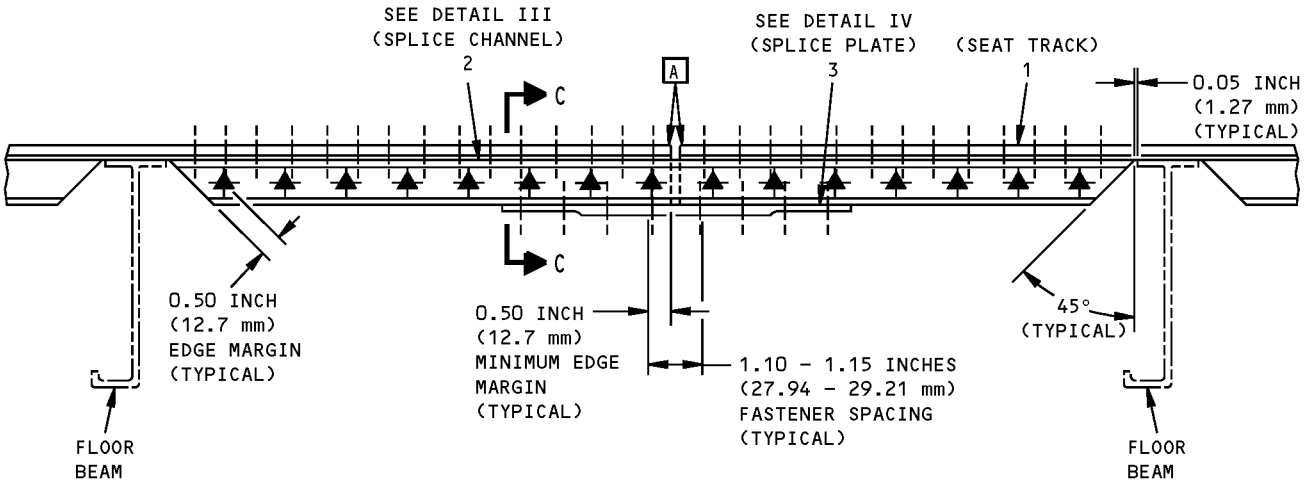
SECTION A-A

Seat Track Splice Repair - BAC1520-2557, BAC1520-2162 Extrusions
Figure 201 (Sheet 3 of 6)



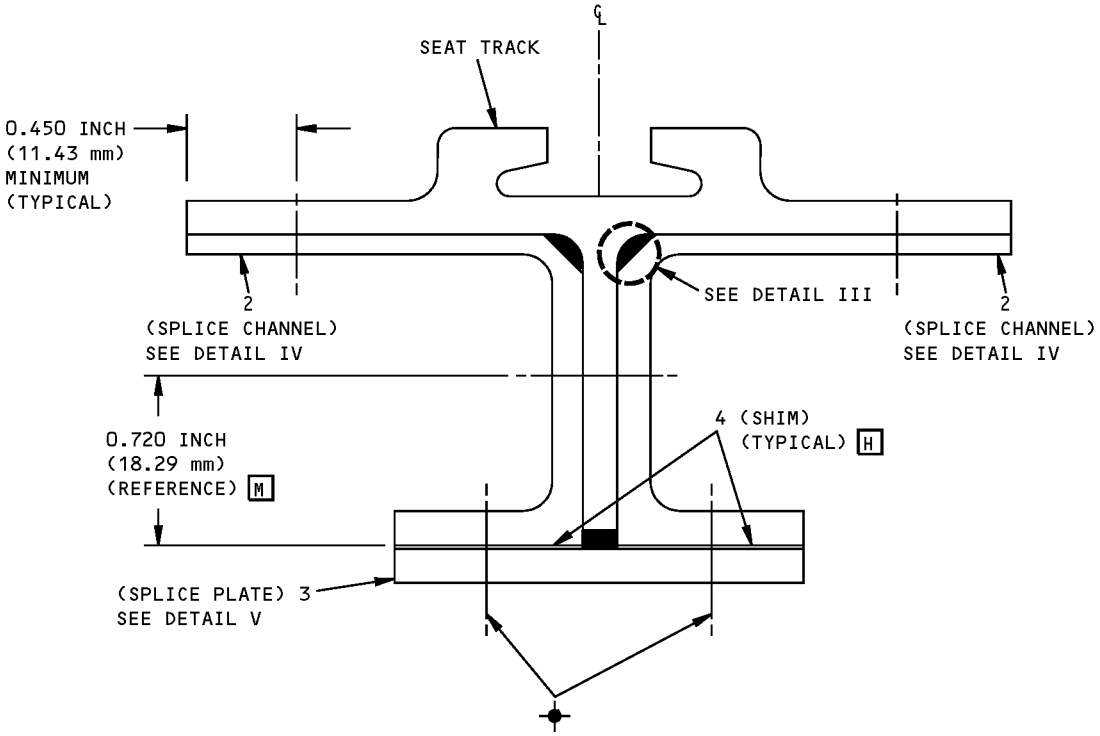
TOP VIEW

SEAT TRACK SPLICE - TYPICAL AT EACH END OF REPAIR
DETAIL II

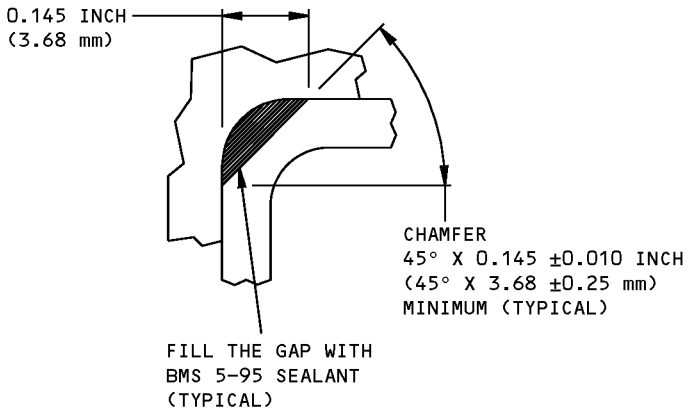


VIEW B-B

Seat Track Splice Repair - BAC1520-2557, BAC1520-2162 Extrusions
Figure 201 (Sheet 4 of 6)

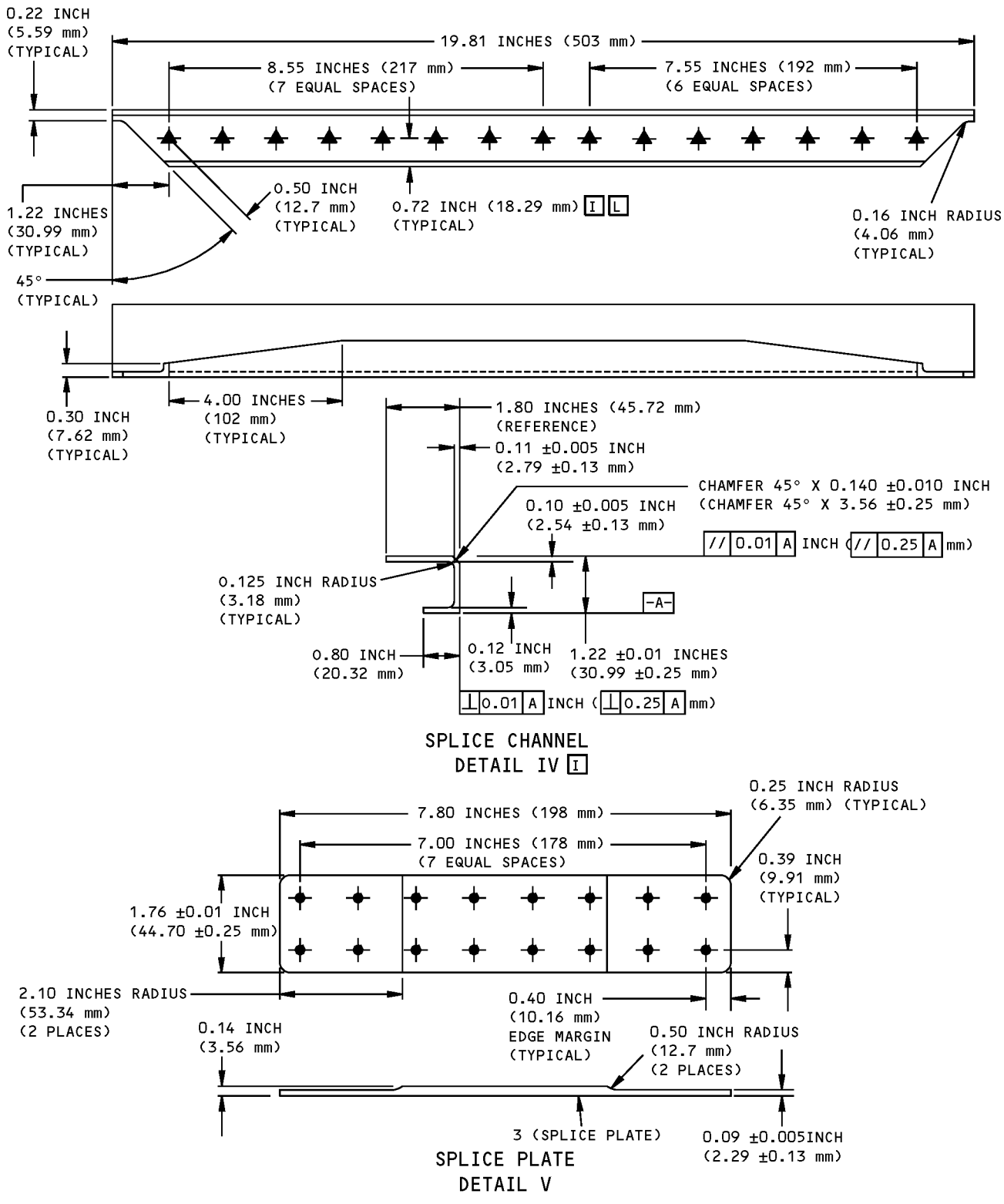


SECTION C–C



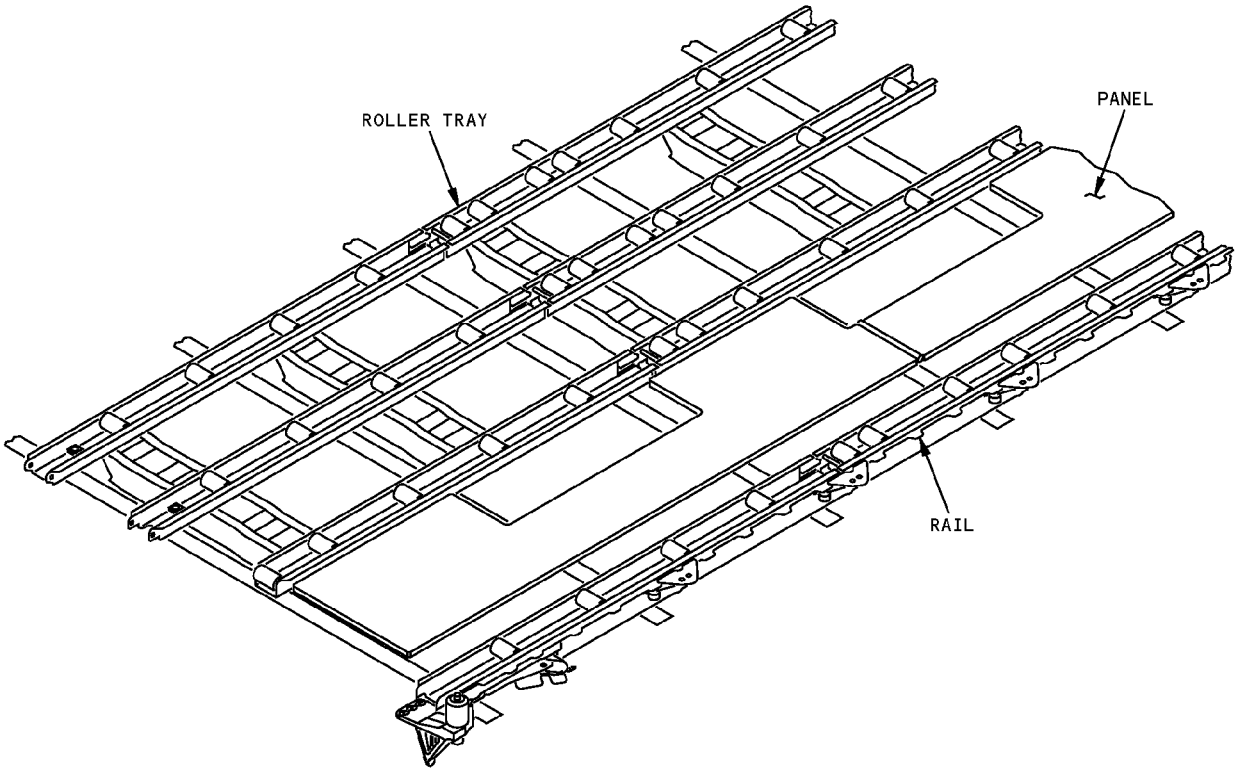
DETAIL III

Seat Track Splice Repair - BAC1520-2557, BAC1520-2162 Extrusions
Figure 201 (Sheet 5 of 6)

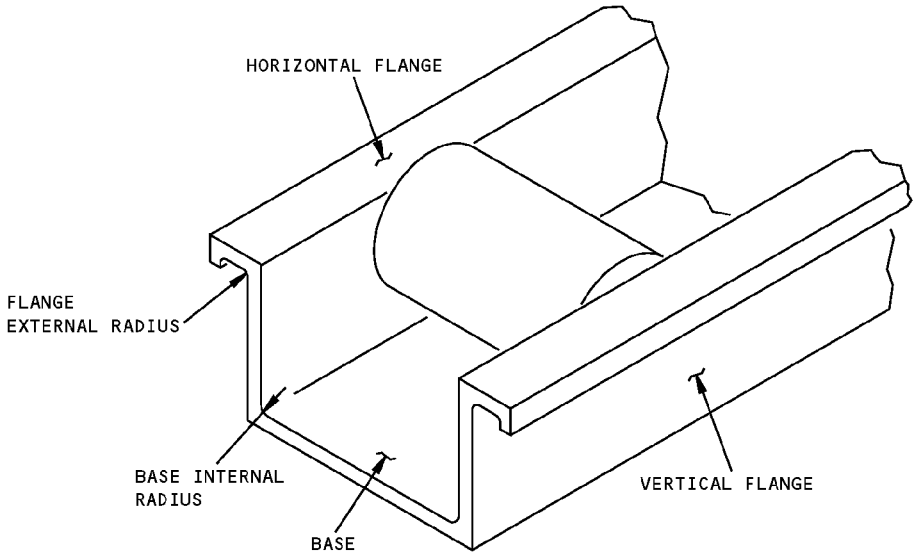


Seat Track Splice Repair - BAC1520-2557, BAC1520-2162 Extrusions
Figure 201 (Sheet 6 of 6)

ALLOWABLE DAMAGE 1 - CARGO COMPARTMENT STRUCTURE



TYPICAL SEGMENT OF CARGO COMPARTMENT



TYPICAL ROLLER TRAY SECTION

Cargo Compartment Structure Allowable Damage
Figure 101 (Sheet 1 of 5)

DESCRIPTION	CRACKS	NICKS, GOUGES SCRATCHES, AND CORROSION	DENTS	HOLES AND PUNCTURES
ROLLER TRAY	[A]	[B]	NOT PERMITTED	[C]

NOTES

- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- APPLY A CHEMICAL CONVERSION COATING TO THE REWORKED AREAS. REFER TO SRM 51-20-01.
- APPLY A FINISH TO THE REWORKED AREAS. REFER TO AMM 51-20 AND AMM 52-24.
- D = THE FASTENER DIAMETER.
- THE REMOVAL OF MATERIAL IS PERMITTED IF THE DAMAGE IS AS FOLLOWS:
  - A MINIMUM OF 4 INCHES (100 mm) (MEASURED ALONG THE LENGTH OF THE ROLLER TRAY) FROM OTHER DAMAGE.
  - A MINIMUM OF 4 INCHES (100 mm) FROM A LOCK OR STOP MOUNTING LOCATION.
  - A MINIMUM OF 0.25 INCH (6 mm) FROM THE BASE INTERNAL RADIUS OR THE FLANGE EXTERNAL RADIUS.
  - A MINIMUM OF 0.25 INCH (6 mm) FROM ANY CHEM-MILLED ZONES.

[A] REMOVE THE EDGE CRACKS AS SHOWN IN DETAIL I. OTHER CRACKS ARE NOT PERMITTED. REFER TO [D] FOR NON-CARGO FLIGHTS.

[B] REMOVE EDGE DAMAGE AS SHOWN IN DETAIL I AND OTHER DAMAGE AS SHOWN IN DETAIL IV. THE TOTAL CROSS-SECTIONAL AREA REMOVED MUST NOT BE MORE THAN 15 PERCENT OF THE INITIAL NET AREA AS GIVEN IN DETAIL V. REFER TO [D] FOR NON-CARGO FLIGHTS.

[C] HOLES AND PUNCTURES ARE NOT PERMITTED IN THE HORIZONTAL FLANGES OR THE BASE OF THE ROLLER TRAY. HOLES AND PUNCTURES ARE PERMITTED IN THE VERTICAL FLANGES OF THE ROLLER TRAY IF:

- THEY CAN BE DRILLED (CLEANED UP) TO A MAXIMUM OF 0.50 INCH (12.7 mm)IN DIAMETER.
- THEY ARE NOT CLOSER THAN 2.0 INCHES (50 mm) TO THE ROLLER TRAY PIVOT BOLT.
- THERE IS 4D MINIMUM SPACING BETWEEN THE HOLE AND OTHER DAMAGE.
- THE TOTAL CROSS-SECTIONAL AREA REMOVED IS NOT MORE THAN 15 PERCENT OF THE INITIAL NET AREA AS GIVEN IN DETAIL V.

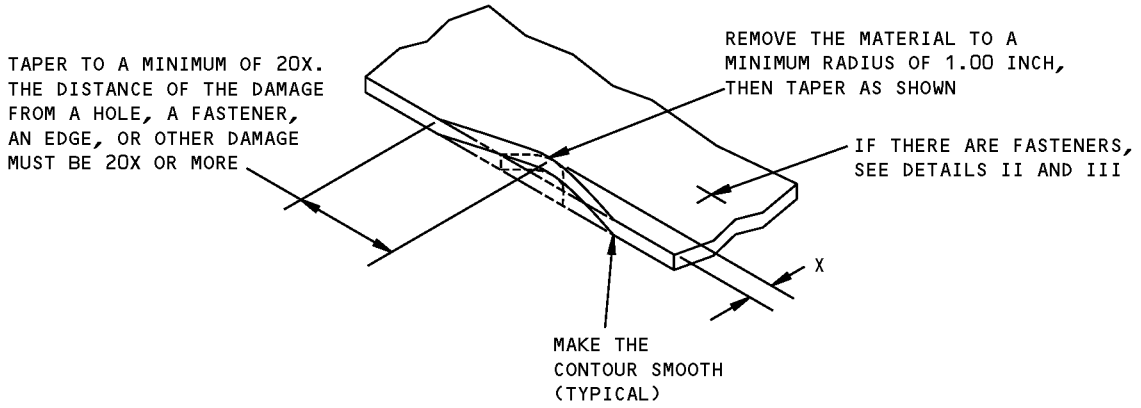
REFER TO [D] FOR NON-CARGO FLIGHTS.

[D] IF THERE IS NO CARGO IN THE APPLICABLE CARGO COMPARTMENT, THERE IS NO LIMIT FOR THE AMOUNT AND TYPE OF DAMAGE OF THE ROLLER TRAYS AT BL 20.50.

IF THERE IS NO CARGO IN THE APPLICABLE CARGO COMPARTMENT, DAMAGE TO THE ROLLER TRAYS AT BL 6.50 AND BL 44.0 IS PERMITTED WITH THE CONDITIONS THAT FOLLOW:

- ONE VERTICAL FLANGE IS CRACKED OR DAMAGED TO THE BASE, THE OTHER VERTICAL FLANGE IS CRACKED OR DAMAGED BUT HAS A MINIMUM OF 1.10 (27.9 mm) INCHES OF UNDAMAGED MATERIAL THAT REMAINS (MEASURED UP FROM THE BASE). THE CRACKS OR DAMAGE MUST BE LESS THAN 10 INCHES (250 mm) LONG AND THE ENDS OF THE CRACKS MUST BE STOP DRILLED WITH 0.25 (6 mm) INCH DIAMETER HOLES.
- TWO VERTICAL FLANGES ARE CRACKED OR DAMAGED, BUT THERE IS A MINIMUM OF 0.40 INCH (10.2 mm) OF UNDAMAGED MATERIAL THAT REMAINS ON EACH VERTICAL FLANGE (MEASURED UP FROM THE BASE). THE CRACKS OR DAMAGE MUST BE LESS THAN 10 INCHES LONG (250 mm) AND THE ENDS OF THE CRACKS MUST BE STOP DRILLED WITH 0.25 INCH (6 mm) DIAMETER HOLES.
- CRACKS ON ONE VERTICAL FLANGE OF THE ROLLER TRAY THAT DO NOT GO INTO THE BASE. THE ENDS OF THE CRACKS MUST BE STOP DRILLED WITH 0.25 INCH (6 mm) DIAMETER HOLES.

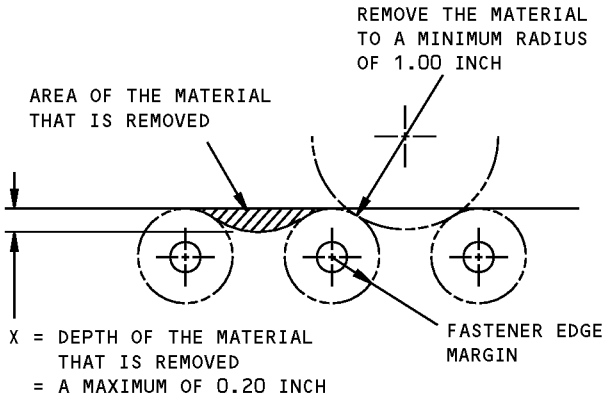
Cargo Compartment Structure Allowable Damage
Figure 101 (Sheet 2 of 5)



X = DEPTH OF THE MATERIAL THAT IS REMOVED
= A MAXIMUM OF 0.20 INCH

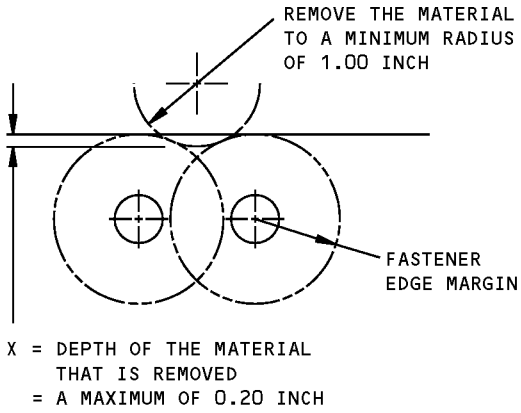
REMOVAL OF DAMAGED MATERIAL AT AN EDGE

DETAIL I



REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS DO NOT HAVE AN OVERLAP

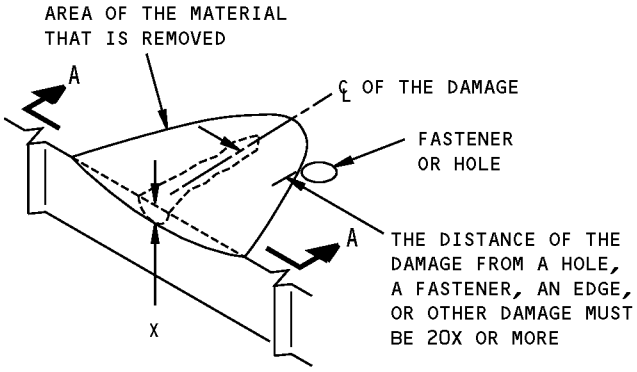
DETAIL II



REMOVAL OF DAMAGED MATERIAL AT EDGES WHERE THE FASTENER EDGE MARGINS HAVE AN OVERLAP

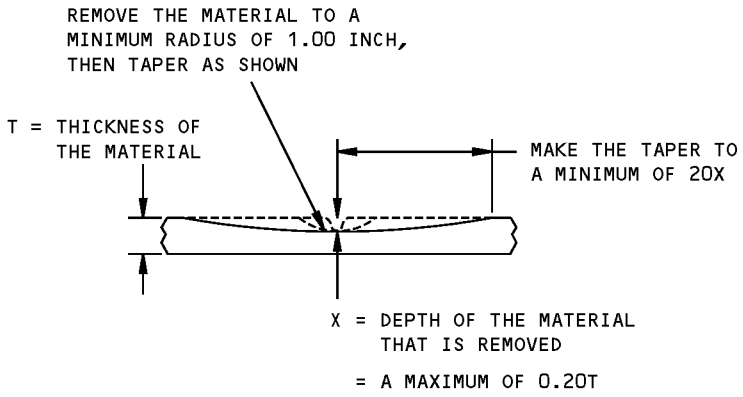
DETAIL III

Cargo Compartment Structure Allowable Damage
Figure 101 (Sheet 3 of 5)



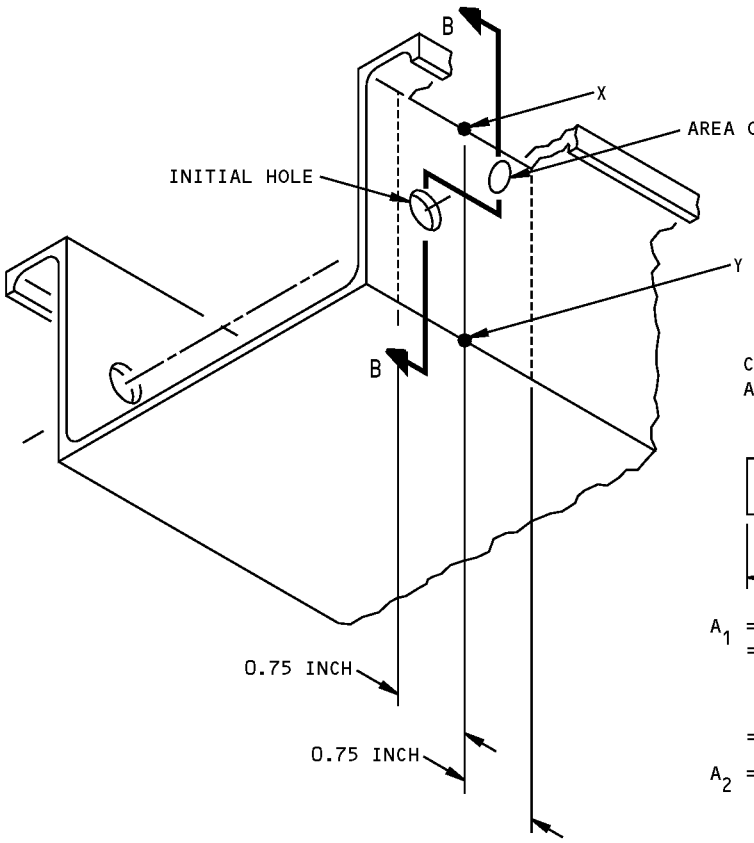
REMOVAL OF DAMAGED MATERIAL ON A SURFACE

DETAIL IV

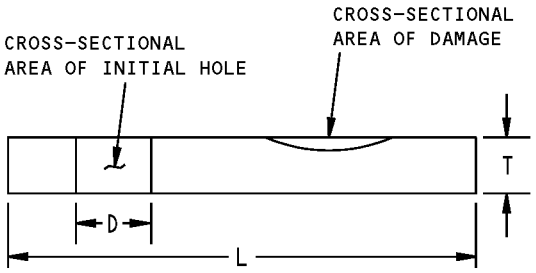


SECTION A-A

Cargo Compartment Structure Allowable Damage
Figure 101 (Sheet 4 of 5)



THE TOTAL LOSS OF CROSS-SECTIONAL AREA IN ALL ZONES X-Y (0.75 INCH ON EACH SIDE OF A LINE X-Y) MUST NOT BE MORE THAN 15 PERCENT OF THE INITIAL NET AREA AS GIVEN IN SECTION B-B.



A_1 = INITIAL NET AREA
= TOTAL CROSS-SECTIONAL AREA MINUS THE CROSS-SECTIONAL AREA OF THE INITIAL HOLES

= LT - DT

A_2 = CROSS-SECTIONAL AREA REMOVED AS A RESULT OF DAMAGE

$\left(\frac{A_2}{A_1}\right)$ X 100 = PERCENT OF CROSS-SECTIONAL AREA REMOVED
= 15 PERCENT MAXIMUM

ROTATED 90° CLOCKWISE
SECTION B-B

PERMITTED LOSS OF CROSS-SECTIONAL AREA

DETAIL V

Cargo Compartment Structure Allowable Damage
Figure 101 (Sheet 5 of 5)

REPAIR 1 - ROLLER TRAY REPAIRS

REPAIR INSTRUCTIONS

1. Find an applicable repair in Table II.
2. Clean out the damage or crack and stop drill the crack. Refer to SRM 51-10-02.
3. Make the necessary repair parts. See Table I.
4. Assemble only repair parts 2 and 3 to the tray and drill the fastener holes. For repairs that use the part 2 strap, install the fasteners thru the center of the roller tray flange. Refer to SRM 51-40.
5. Disassemble repair parts 2 and 3.
6. Remove all nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the roller tray.
7. In preparation to bond plate 1 or 4 to the roller tray (see Details II thru V, IX, and X), remove all of the finish from the inner surface of the tray in the area of the bond.
8. Clean and refinish the inner surface of the roller tray around the damaged area and finish the repair plate 1 or 4 as follows: (refer to SRM 51-70-09 to prepare the tray for the bond except use BMS 5-141 adhesive instead of BMS 5-101.)
   a. Anodize the repair plate, the tray inner surface and the damaged area as shown in SRM 51-70-09. Use the PANTA method.
   b. Apply BMS 5-89 corrosion inhibiting adhesive primer to repair plate 1 or 4 and the inner surface of the roller tray in preparation for the bond.
9. Mix the bond components thoroughly as given in Table III.
10. Apply an even layer of BMS 5-141 adhesive to each faying surface and install the plate.
11. Apply pressure of 5-10 psi (35-69 kPa) to make sure faying surfaces touch each other. If you push on the roller tray or a weight is used, you must have some means of support at the bottom of the tray when you apply pressure to the repair plate. The support will make sure there is uniform pressure applied between the repair plate and the tray. On the chem-milled sections of roller tray, be careful not to damage the thin web of the tray. The preferred method of pressure application is the vacuum bag method. Refer to SRM 51-70-09.
12. Wipe off excessive adhesive with solvent before it dries. If solvent is used, do not let the solvent flow into the bondline.
13. Install the rivets thru the repair plate 1 or 4 and the tray bottom after the bond has cured for handling strength. Refer to Table III.
14. Apply a chemical conversion coating to the part 2 strap and part 3 angle and to the bare surfaces of the roller tray. Refer to SRM 51-20-01.
15. Apply one layer of BMS 10-11, Type I primer to the part 2 strap and part 3 angle and to any bare surfaces of the roller tray. Refer to SOPM 20-41-02.
16. Install repair parts 2 and 3 with BMS 5-95 sealant between the mating surfaces. Install the non-aluminum fasteners wet with BMS 5-95 sealant. Refer to SRM 51-20-05.
17. Apply BMS 5-95 sealant into any exposed portions of a crack in the tray.
18. Apply one coat of BMS 10-11, Type II enamel to the repair area. Refer to SOPM 20-41-02.
19. If the repair part 3 angle interferes with the floor panel, trim the floor panel edge. The trimming will remove the floor panel potted edge. Measured from the trimmed edge of the floor panel facesheets, remove only the honeycomb core to a depth of 0.18 inch (4.57 mm). Make sure that the edges of the upper and lower facesheets of the floor panel are even with each other before potting compound application. Make a new potted edge and apply BMS 5-28, Type 9 potting compound and fill the space in between the upper and lower facesheets.

Roller Tray Repairs
Figure 201 (Sheet 1 of 14)

NOTES

- ALL DIMENSIONS ARE GIVEN IN INCHES.
- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR THE APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS
  - SRM 51-70-09 FOR METAL-TO-METAL STRUCTURAL BONDING.

[A] THE MAXIMUM LENGTH OF DAMAGE ALLOWED BY THIS REPAIR IS 10.0 INCHES (250 mm). THIS REPAIR IS TIME LIMITED TO THE NEXT MAJOR "C" CHECK. AT THIS "C" CHECK REPLACE THESE REPAIRED SECTIONS OF THE ROLLER TRAY WITH A NEW SECTION SPLICED IN AS SHOWN IN DETAIL IV.

[B] REPLACE THE INITIAL ROLLER ASSEMBLY BOLT WITH A BACB30VT8K49 HEX DRIVE BOLT WITH A BACC30BL8 COLLAR. USE THE INITIAL WASHERS AGAIN.

[C] PUT THE REPAIR FASTENER IN APPROXIMATELY THE LOCATION SHOWN WITH A MINIMUM OF 0.60 INCH FROM THE CENTER OF THE ROLLER ASSEMBLY BOLT.

[D] THIS REPAIR IS NOT PERMITTED IN AREAS WHERE THE SIDES OF THE ROLLER TRAY ARE CHEM-MILLED. WHEN DAMAGE OCCURS IN AREAS WHERE THE SIDES OF THE ROLLER TRAYS ARE CHEM-MILLED, CUT AND REMOVE THE CHEM-MILLED SECTION. PUT IN A NEW SPLICED SECTION THAT DOES NOT HAVE CHEM-MILLED SIDES AS SHOWN IN DETAIL IV.

[E] THE ENDS OF THE ROLLER TRAY SECTIONS OF THE SPLICE MUST NOT BE CHEM-MILLED ON THE SIDES. THE SPLICE JOINT SHOULD BE A MINIMUM OF TWO PAIRS OF FASTENERS AWAY FROM THE ROLLER.

[F] WHEN THE CRACK DIRECTION IS DIAGONAL ACROSS THE TRAY INSTEAD OF AS IT IS SHOWN IN DETAILS I THRU V, THE REQUIRED LENGTH OF THE REPAIR PART SHOULD BE INCREASED TO AGREE WITH THE DIAGONAL LENGTH OF THE CRACK.

[G] BOND THE PART 1 OR 4 PLATE WITH BMS 5-141 ADHESIVE TO THE TRAY. FOR THE CHEM-MILLED SECTION OF THE TRAY, THE WEB IS THIN AND CAN BE EASILY DAMAGED. BE CAREFUL WHEN YOU APPLY PRESSURE TO THE INNER SURFACE OF THE TRAY. VACUUM BAG IS THE PREFERRED METHOD OF PRESSURE APPLICATION.

[H] IF BOTH SIDES OF THE TRAY ARE CRACKED, INSTALL THE STRAP AND THE ANGLE ON EACH SIDE.

[I] EITHER ONE OR TWO REPAIR PARTS ARE NEEDED IF ONE OR BOTH SIDES OF THE TRAY ARE DAMAGED.

[J] UPON COMPLETION OF THE FIRST 16 HOURS OF CURE TIME (HANDLING STRENGTH), THE APPLIED PRESSURE MAY BE REMOVED FOR THE REMAINING CURE CYCLE (FULL CURE).

[K] THE FLANGE LIP OF THE ROLLER TRAY IS COUNTED AS PART OF THE EDGE MARGIN.

FASTENER SYMBOLS

- REFERENCE FASTENER LOCATION.
- INITIAL FASTENER LOCATION. INSTALL THE SAME TYPE AND DIAMETER OF FASTENER AS THE INITIAL FASTENER.
- REPAIR FASTENER LOCATION. INSTALL A BACR15CE6D() RIVET.
- REPAIR FASTENER LOCATION. INSTALL A BACR15CE5D() RIVET.
- REPAIR FASTENER LOCATION. INSTALL A BACR15BB3AD RIVET.
- REPAIR FASTENER LOCATION. INSTALL A BACR15BA3AD() RIVET.
- REPAIR FASTENER LOCATION. INSTALL A BACR15BA4AD RIVET.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	1	0.020 7075-T6 2.32 MAX WIDTH
2	STRAP	[I]	0.080 X 0.60 WIDE CLAD, 7075-T6
3	ANGLE	[I]	AND10133-1401, 7075-T6511 EXTRUSION, (SEE VIEW F-F)(MINIMUM LENGTH 10.0 INCHES) [F]
4	PLATE	1	0.063 MINIMUM 7075-T6, 2.32 MAXIMUM WIDTH

TABLE I

Roller Tray Repairs
Figure 201 (Sheet 2 of 14)

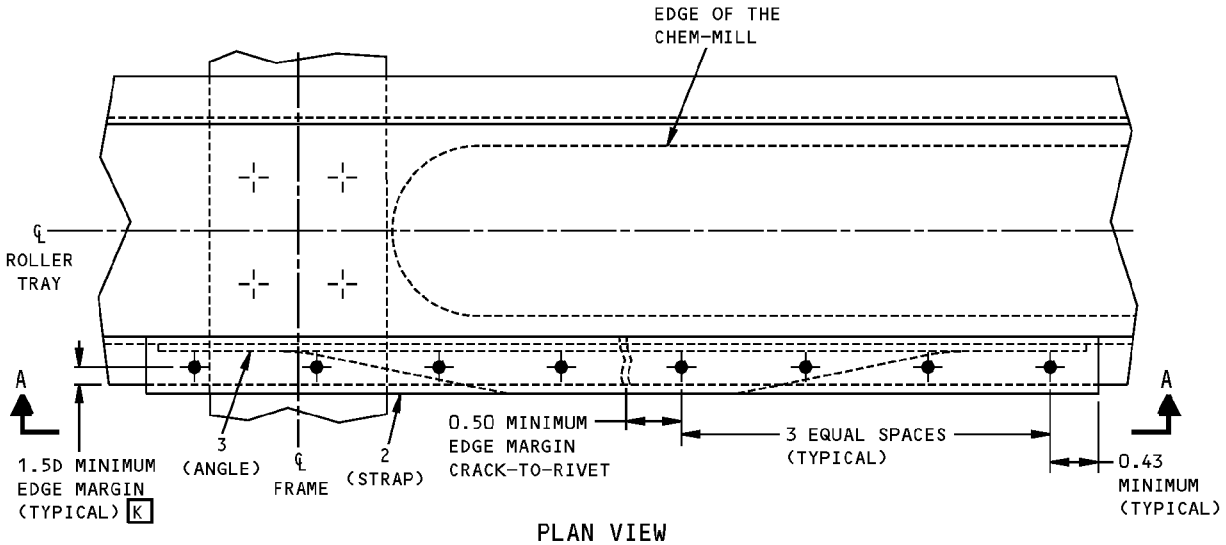
TYPE OF DAMAGE		REPAIR DETAIL
ONE SIDE OF THE TRAY IS CRACKED OR DAMAGED. THE CRACK OR DAMAGE STOPS 0.40 INCHES OR MORE FROM THE BASE OF THE ROLLER TRAY.		I [D]
ONE SIDE OF THE ROLLER TRAY IS CRACKED OR DAMAGED. THE CRACK OR DAMAGE EXTENDS INTO THE BASE OF THE TRAY BUT STOPS LESS THAN 60% ACROSS THE BASE.	THE DAMAGE IS 3.75 INCHES OR MORE FROM THE FRAME CENTERLINE.	II [D] [F]
	THE DAMAGE IS LESS THAN 3.75 INCHES FROM THE FRAME CENTERLINE.	III [D] [F]
- ONE SIDE OF THE ROLLER TRAY IS CRACKED OR DAMAGED. THE CRACK OR DAMAGE EXTENDS INTO THE BASE OF THE TRAY AND STOPS MORE THAN 60% ACROSS THE BASE. - THE TRAY IS CRACKED ON TWO SIDES. - THE TRAY IS CRACKED ALL THE WAY THROUGH.	THE DAMAGE IS 3.75 INCHES OR MORE FROM THE FRAME CENTERLINE.	IV [D] [F]
	THE DAMAGE IS LESS THAN 3.75 INCHES FROM THE FRAME CENTERLINE.	V [D] [F]
SPLICE	THE SPLICE IS 3.75 INCHES OR MORE FROM THE FRAME CENTERLINE.	IV [D] [E]
ONE OR BOTH SIDES OF THE TRAY HAVE MULTIPLE CRACKS OR DAMAGE. THE CRACK OR DAMAGE STOPS 0.40 INCHES OR MORE FROM THE BASE OF THE ROLLER TRAY.		VIII [A] [F] [H]
NEITHER SIDE OF THE TRAY IS CRACKED OR DAMAGED BUT THE CRACK OR DAMAGE IS IN THE CHEM-MILLED PORTION OF THE BASE.		IX
NEITHER SIDE OF THE TRAY IS CRACKED OR DAMAGED, BUT THE CRACK OR DAMAGE IS IN THE BASE OF THE NON-CHEM-MILLED SECTION OF THE TRAY.		X

TABLE II

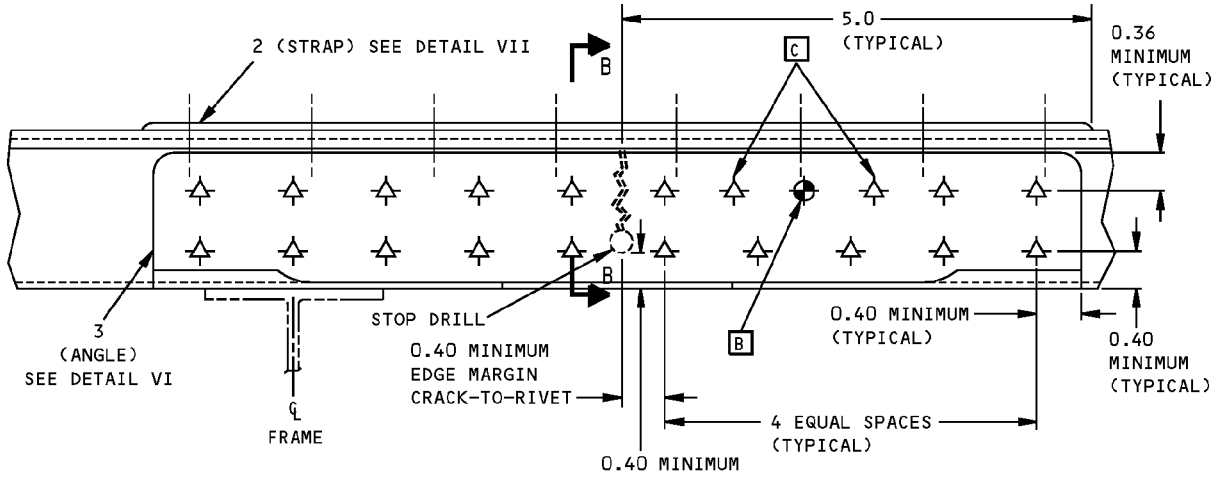
ADHESIVE TYPE	COMPONENTS	PARTS BY WEIGHT	POT LIFE OF MIXTURE	CURING TIME [J]
BMS 5-141 MANUFACTURER: HYSOL EA9394	PART A: GRAY PASTE PART B: BLACK LIQUID	PART A 100 ±4 PART B 17 ±2	100 MINUTES FOR A 1 POUND WEIGHT.	16 HOURS MINIMUM WITH CONTACT PRESSURE AT 70 ±10°F FOR HANDLING STRENGTH, FOLLOWED BY FULL CURE AS FOLLOWS: TEMPERATURE — TIME 70 ±10°F — 7 DAYS, MIN OR 150 ±20°F — 130 ±10 MIN

TABLE III

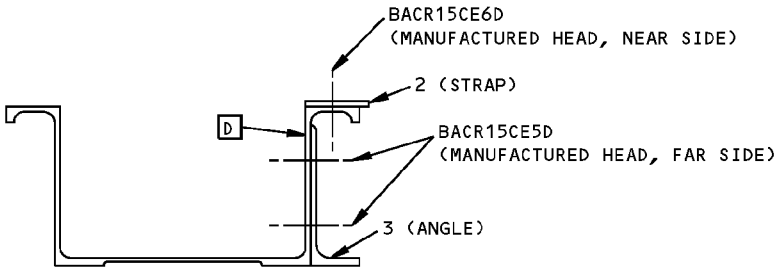
Roller Tray Repairs
Figure 201 (Sheet 3 of 14)



PLAN VIEW



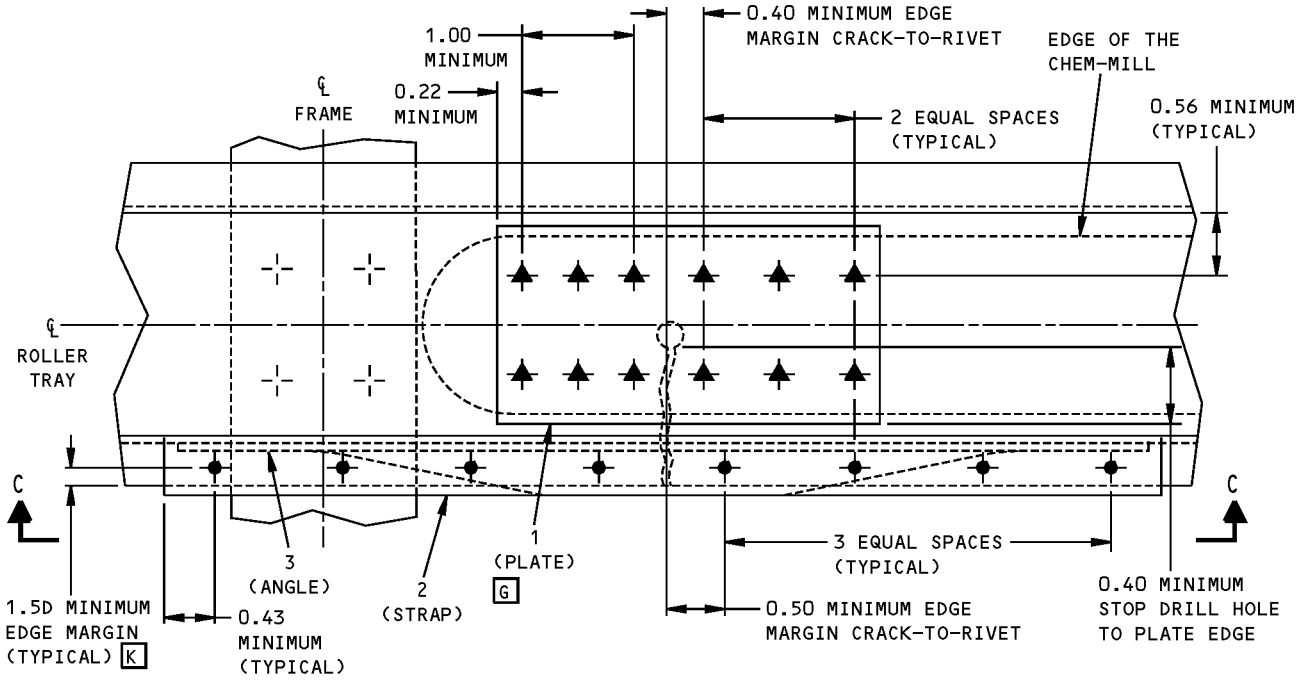
VIEW A-A



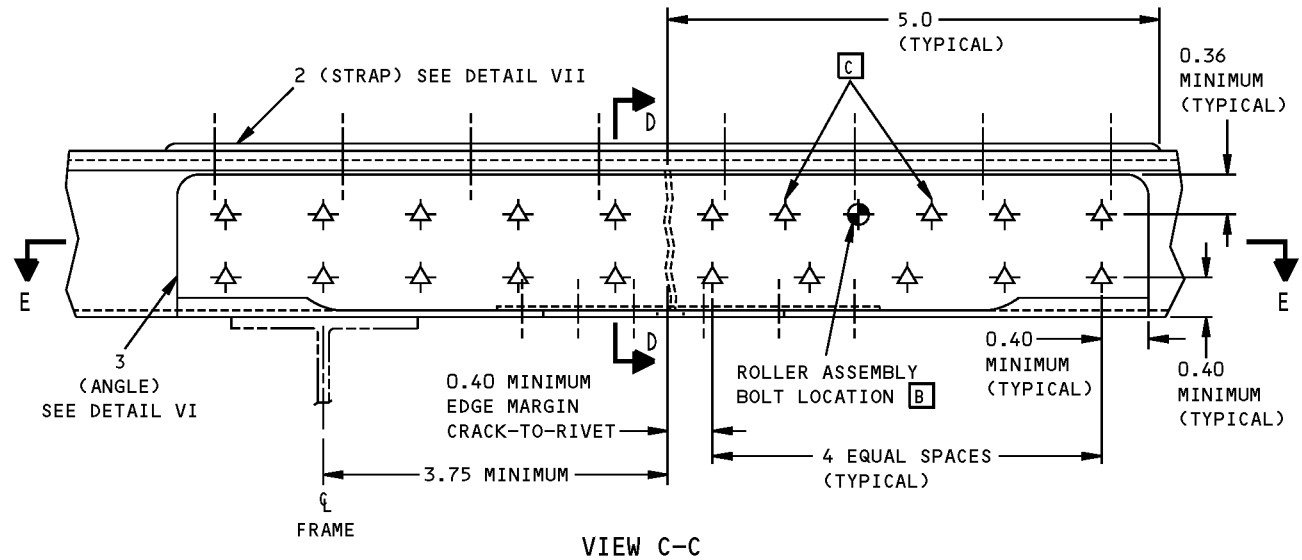
SECTION B-B

DETAIL I

Roller Tray Repairs
Figure 201 (Sheet 4 of 14)



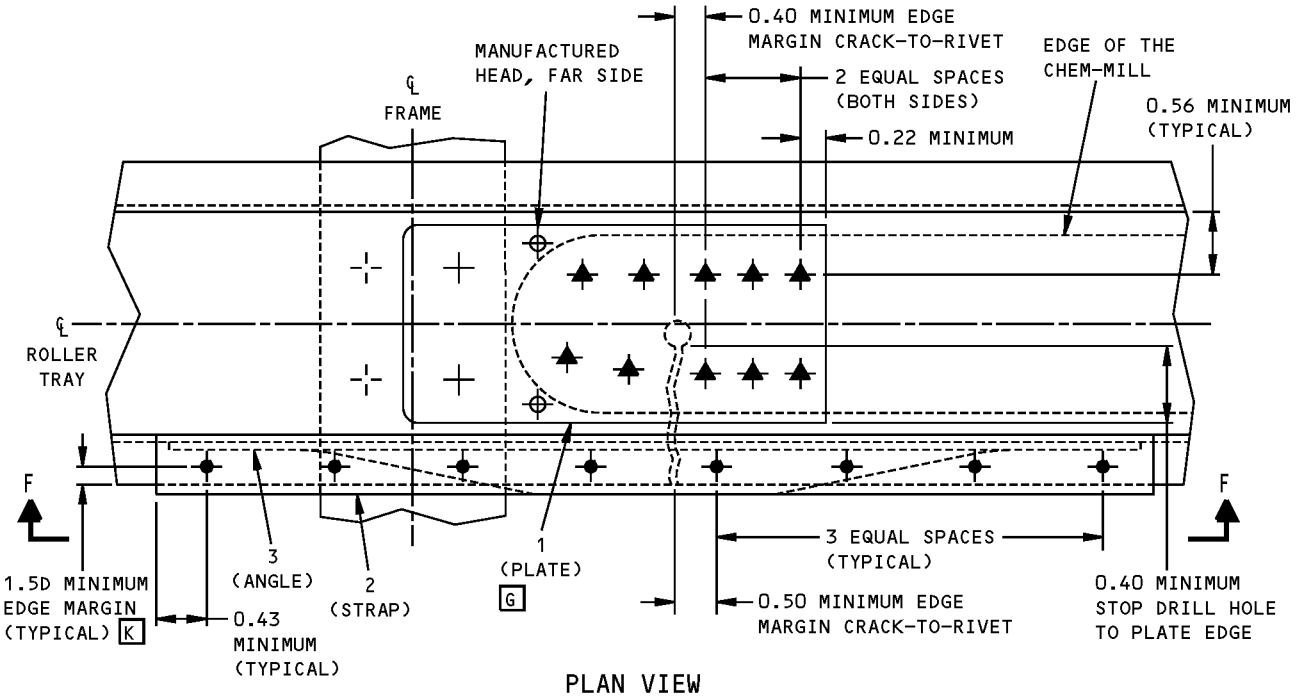
PLAN VIEW



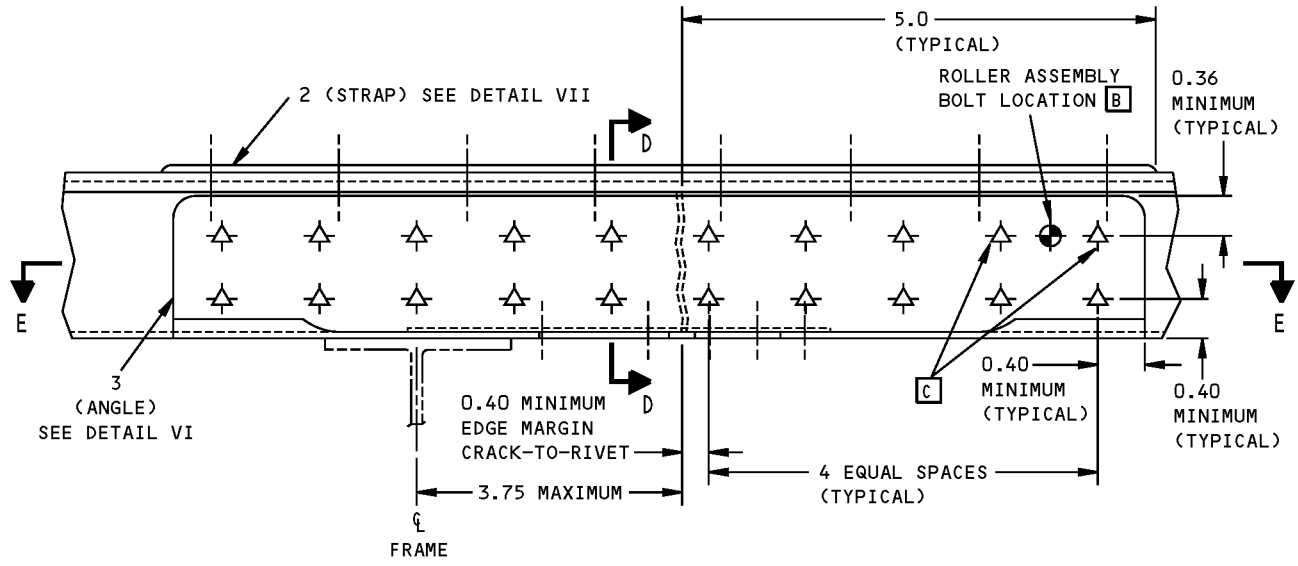
VIEW C-C

DETAIL II

Roller Tray Repairs
Figure 201 (Sheet 5 of 14)



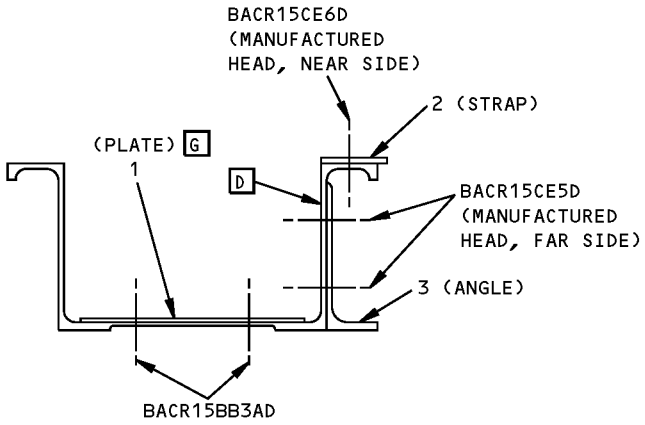
PLAN VIEW



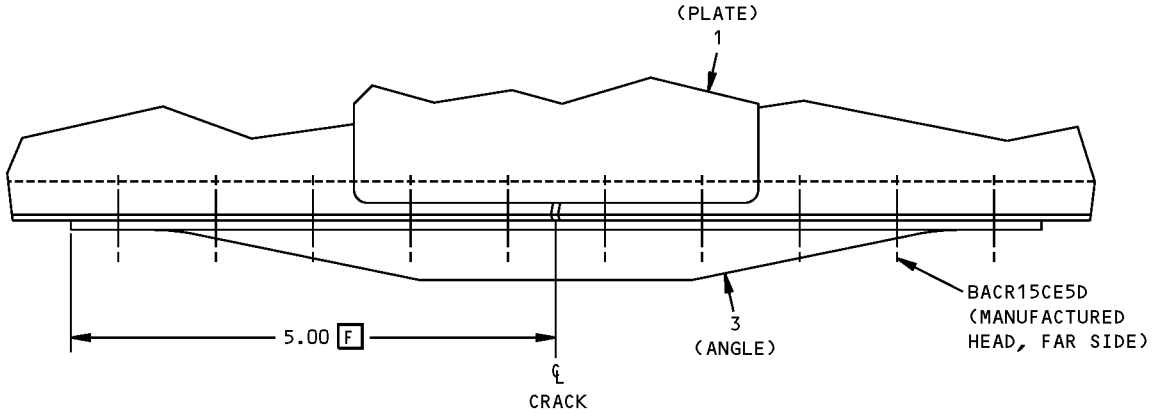
VIEW F-F

DETAIL III

Roller Tray Repairs
Figure 201 (Sheet 6 of 14)

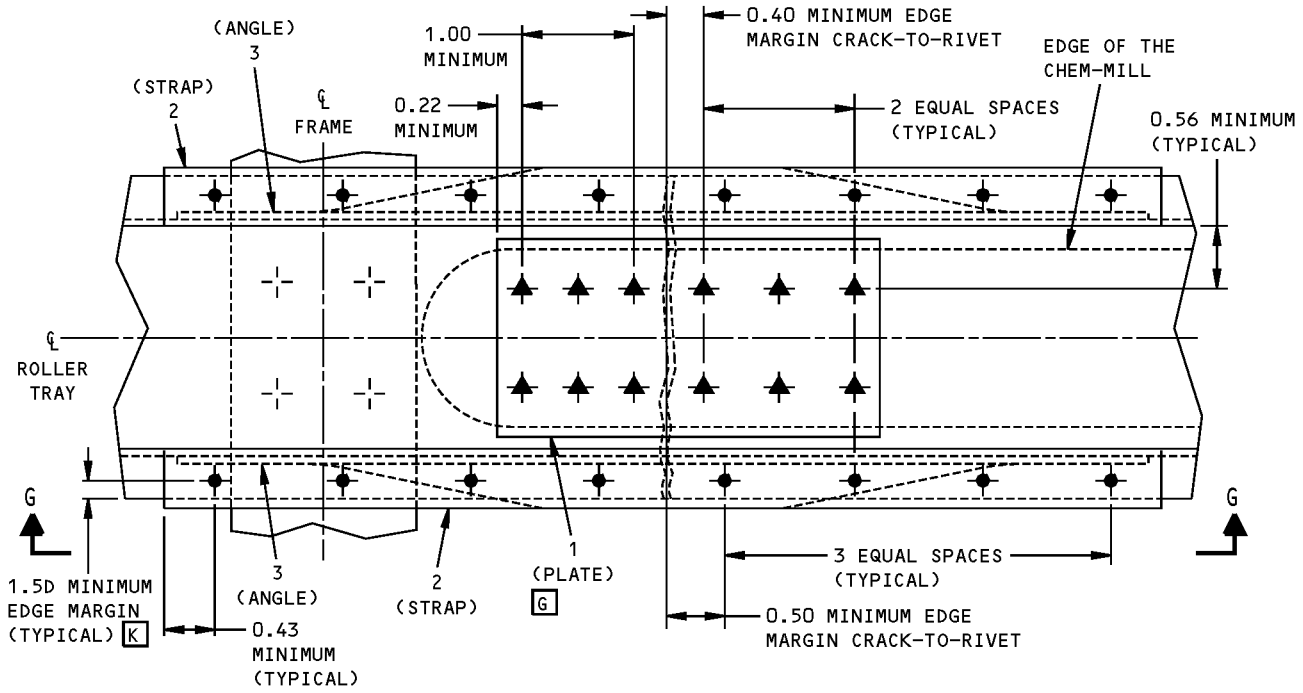


SECTION D–D

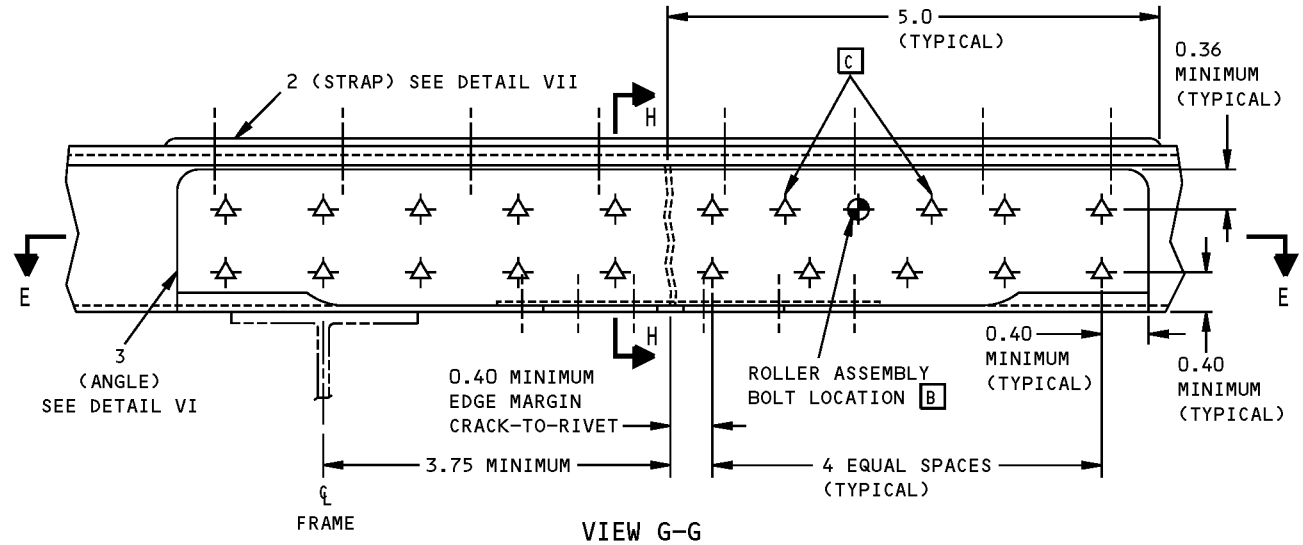


TYPICAL POSITION OF THE PART 3 (ANGLE) RELATIVE TO THE CRACK
SECTION E–E

Roller Tray Repairs
Figure 201 (Sheet 7 of 14)



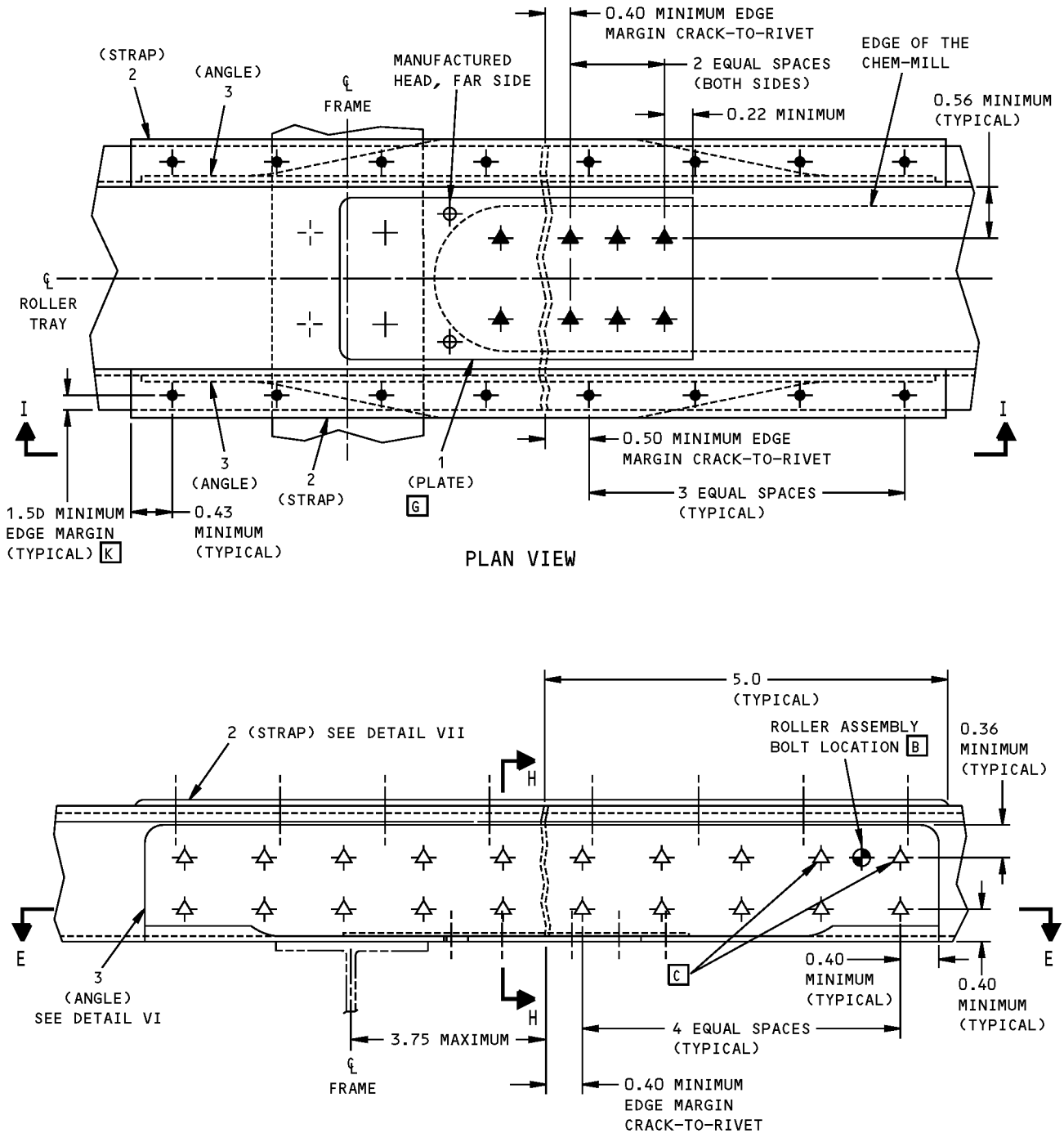
PLAN VIEW



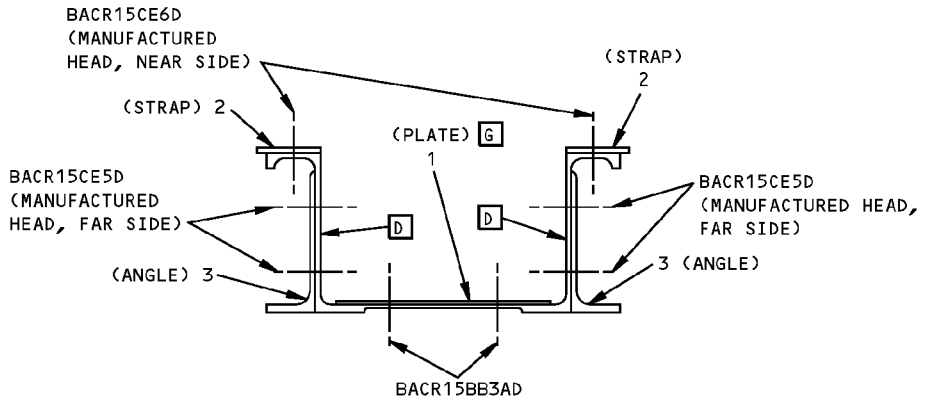
VIEW G-G

DETAIL IV

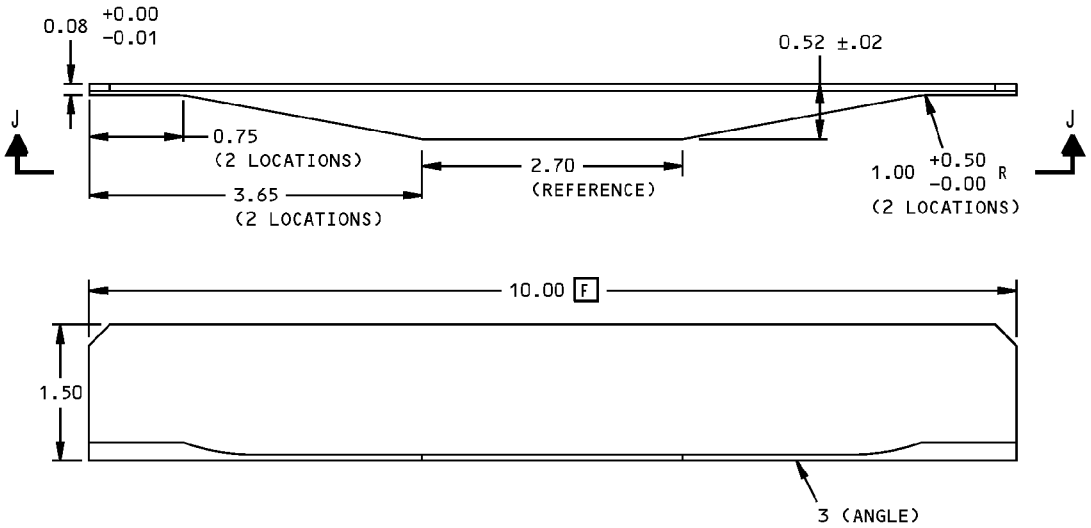
Roller Tray Repairs
Figure 201 (Sheet 8 of 14)



Roller Tray Repairs
Figure 201 (Sheet 9 of 14)

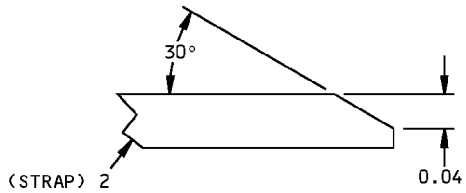


SECTION H-H



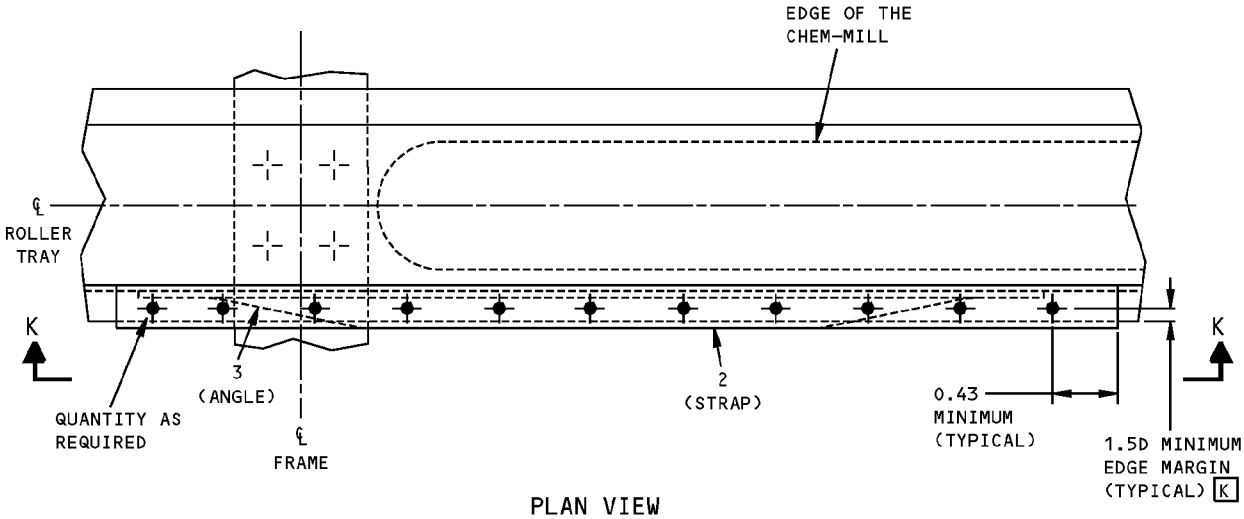
VIEW J-J

PART 3 ANGLE
DETAIL VI

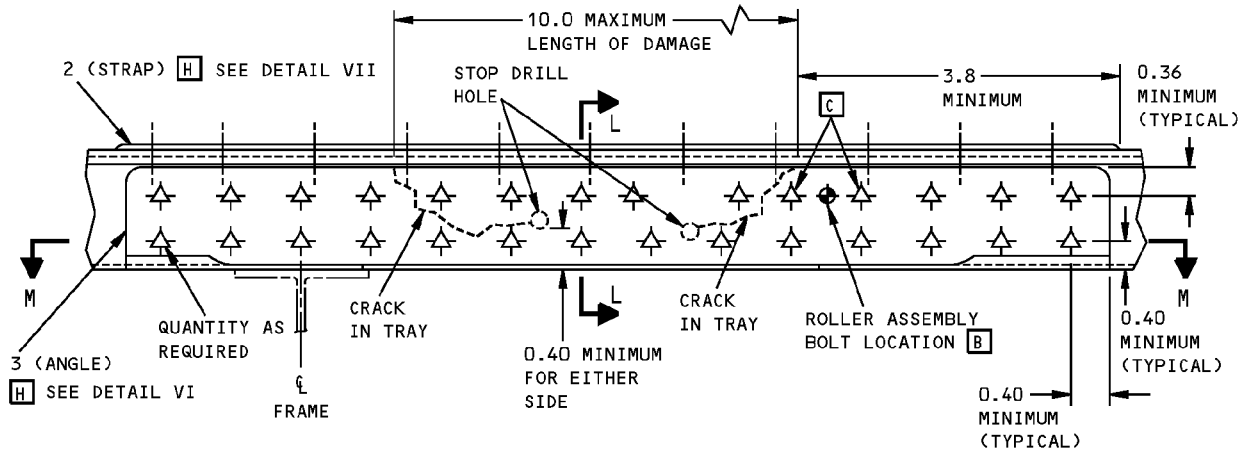


PART 2 STRAP
DETAIL VII

Roller Tray Repairs
Figure 201 (Sheet 10 of 14)



PLAN VIEW

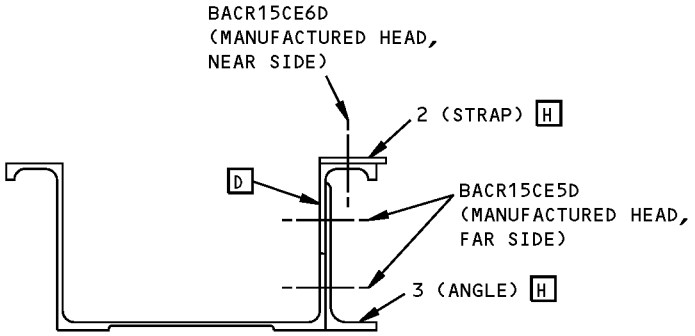


VIEW K-K

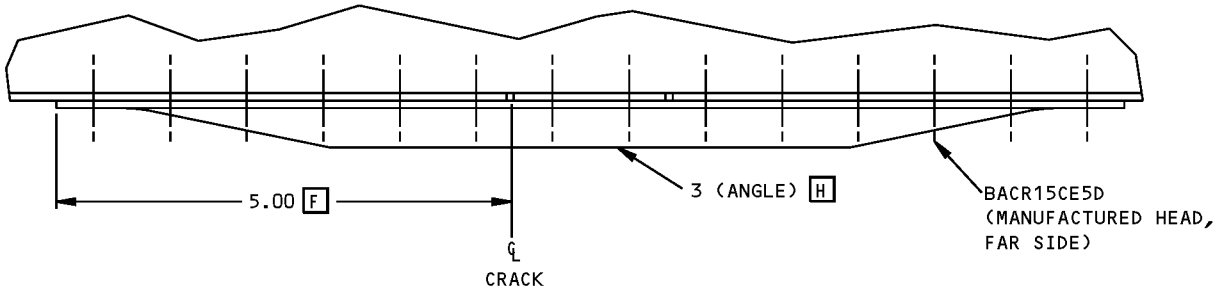
TIME-LIMITED REPAIR

DETAIL VIII A

Roller Tray Repairs
Figure 201 (Sheet 11 of 14)

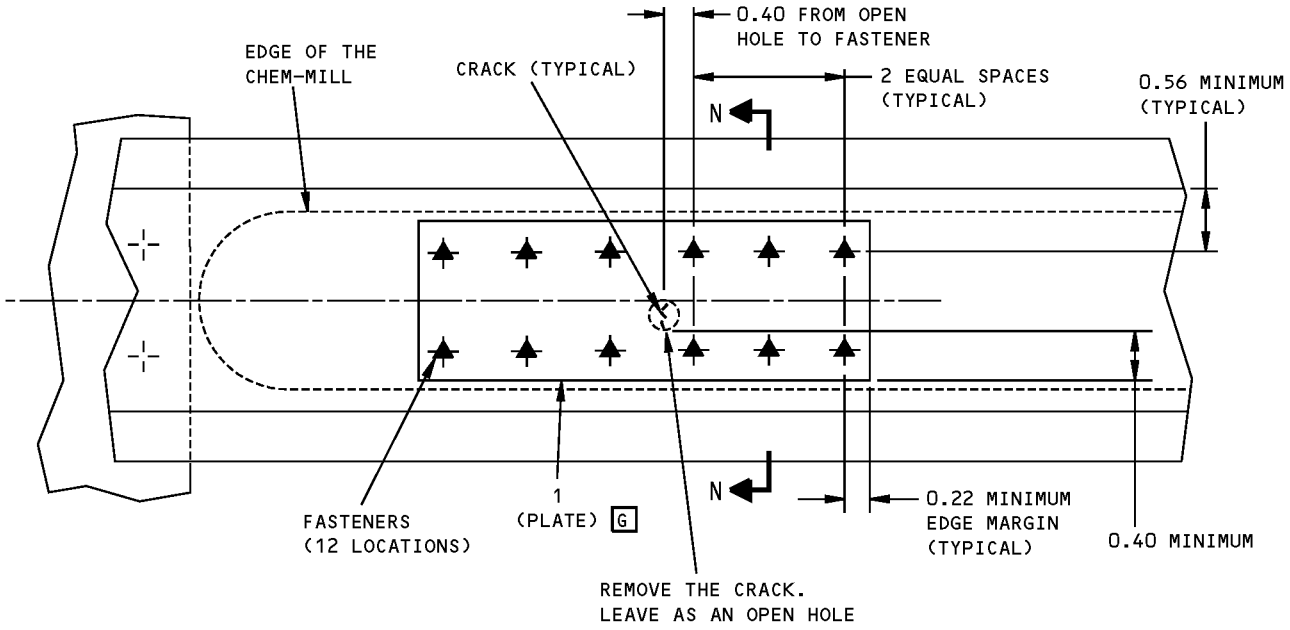


SECTION L-L

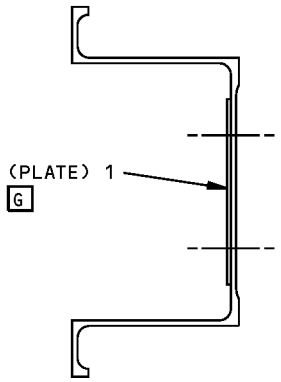


SECTION M-M

Roller Tray Repairs
Figure 201 (Sheet 12 of 14)



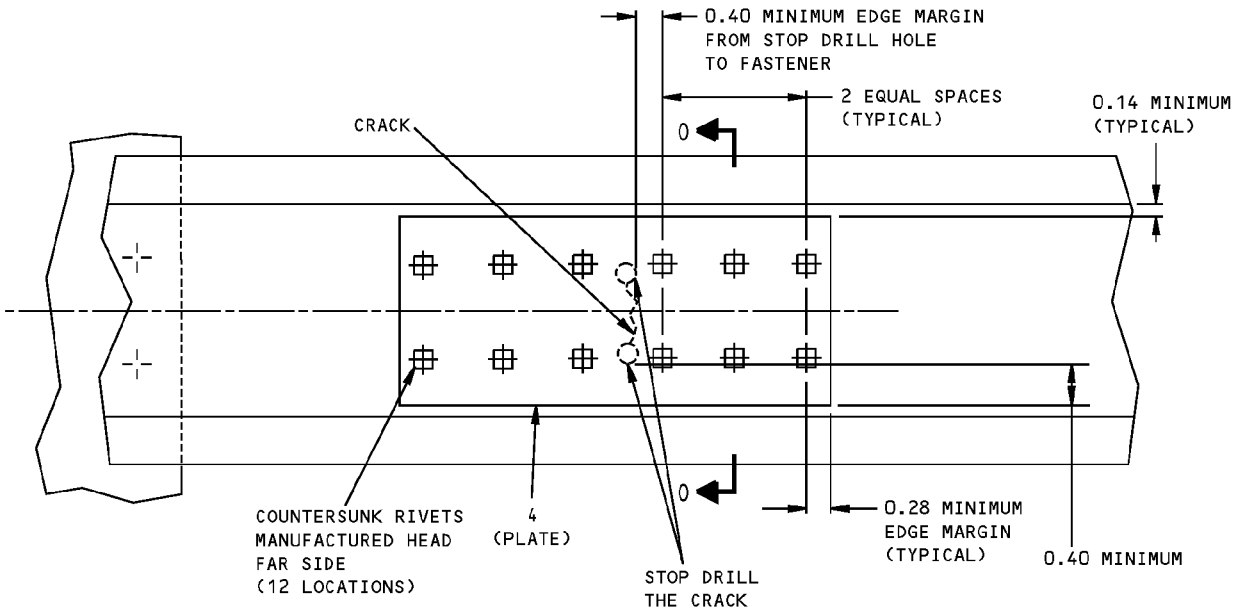
PLAN VIEW



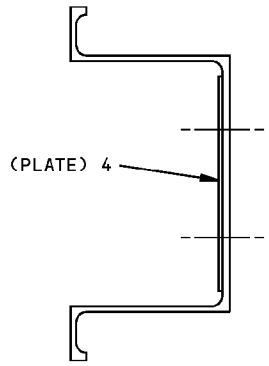
SECTION N-N

DETAIL IX

Roller Tray Repairs
Figure 201 (Sheet 13 of 14)



PLAN VIEW



SECTION O–O

DETAIL X

Roller Tray Repairs
Figure 201 (Sheet 14 of 14)

REPAIR 2 - BALL TRANSFER PANEL CRACK REPAIR

REPAIR INSTRUCTIONS

1. Get access to the damaged area. It may be necessary to remove additional fasteners to get clearance.
2. Do a dye penetrant inspection of the damaged area to find the end of the crack. Refer to SOPM 20-20-02.
3. Stop drill the end of the crack. Refer to SRM 51-10-02.
4. Make the repair part. See Table I.
5. Assemble the repair part and drill the fastener holes.
6. Disassemble the repair part.
7. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair and initial parts.
8. Apply a chemical conversion coating to the aluminum repair part and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
9. Apply one layer of BMS 10-11 primer to the repair part and to the bare surfaces of the initial parts. Refer to AMM 51-21-00.
10. Apply BMS 5-95 sealant to all of the mating surfaces.
11. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
12. Apply the finish to the repair area. Refer to AMM 51-21-00.
13. Apply BMS 3-23 corrosion inhibiting compound to the repair area. Refer to SRM 51-20-01.

NOTES

- D = FASTENER DIAMETER
- FASTENER EDGE MARGIN 2D (TYPICAL)
- FASTENER SPACING 4D-6D (TYPICAL)
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21-00 FOR INTERIOR AND EXTERIOR FINISHES
  - SOPM 20-20-02 FOR DYE PENETRANT INSPECTION PROCEDURES.
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40-00 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION.

INITIAL FASTENER LOCATION. INSTALL A BACR15BB6D() RIVET. AS AN ALTERNATIVE, INSTALL A BACR15FP6M() BLIND RIVET.

REPAIR FASTENER LOCATION. INSTALL A BACR15BB5D() RIVET. AS AN ALTERNATIVE, INSTALL A BACR15FP5MP() BLIND RIVET.

INITIAL FASTENER LOCATION. INSTALL A BACR15CE6D() RIVET IN A COUNTERSINK HOLE. AS AN ALTERNATIVE, INSTALL A BACR15FR6MP() BLIND RIVET IN A COUNTERSINK HOLE.

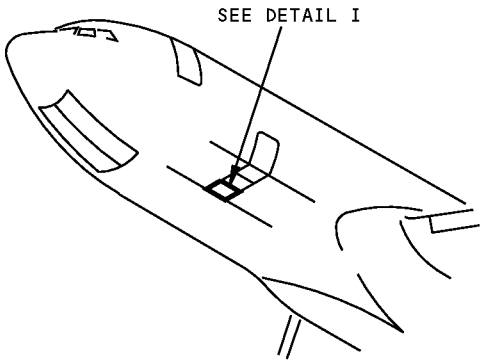
REPAIR FASTENER LOCATION. INSTALL A BACR15CE5D() RIVET IN A COUNTERSINK HOLE. AS AN ALTERNATIVE, INSTALL A BACR15FR5MP() BLIND RIVET IN A COUNTERSINK HOLE.

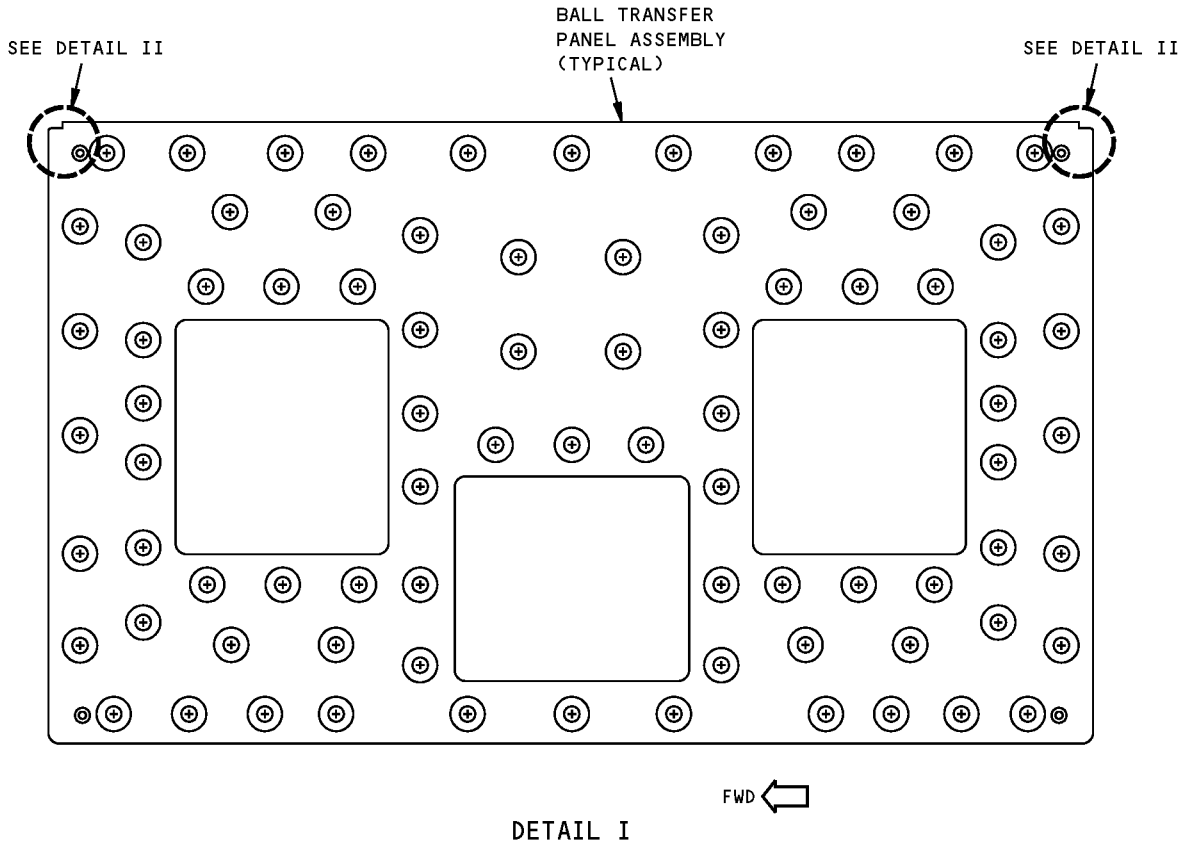
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	0.063 7075-T6 OR 2024-T3

TABLE I

Ball Transfer Panel Assembly Crack Repair
Figure 201 (Sheet 1 of 3)

REF DWG
451T1015

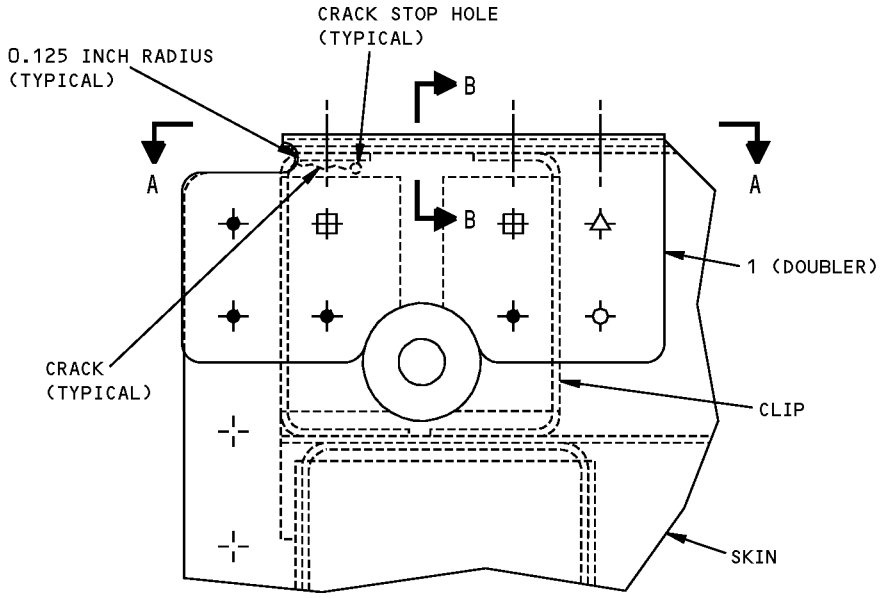




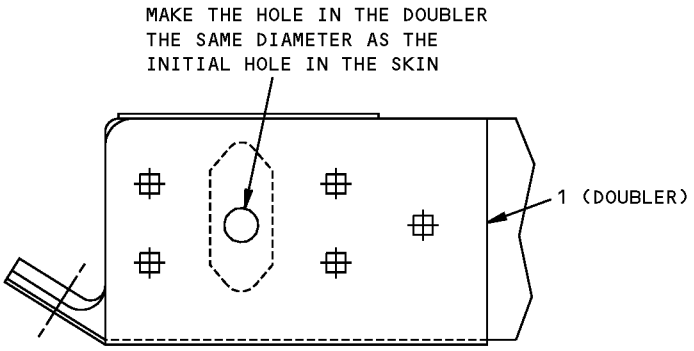
DETAIL I

Ball Transfer Panel Assembly Crack Repair
Figure 201 (Sheet 2 of 3)

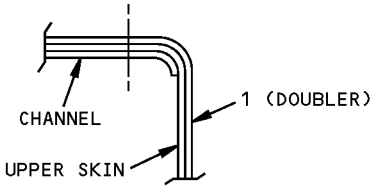
REF DWG
451T1015



DETAIL II



VIEW A-A



SECTION B-B

Ball Transfer Panel Assembly Crack Repair
Figure 201 (Sheet 3 of 3)

REPAIR 3 - TIME-LIMITED ROLLER TRAY REPAIR SHEETS

APPLICABILITY

THIS REPAIR IS ONLY APPLICABLE TO THE CHEM-MILLED AREA IN THE BOTTOM OF THE ROLLER TRAY. THE SIZE OF THE STOP-DRILLED CRACKS OR CUT OUT AREA MUST NOT BE MORE THAN THE LIMITS THAT FOLLOW (SEE DETAILS I AND II):

- 1.25 INCHES (31.8 mm) MAXIMUM IN THE ACROSS-TRAY DIRECTION (INBOARD/OUTBOARD)
- 2.0 INCHES (50.8 mm) MAXIMUM ALONG THE TRAY AXIS (FORWARD/AFT)
- 0.56 INCH (14.2 mm) MINIMUM MEASURED FROM THE INNER VERTICAL SIDE OF THE TRAY
- 0.50 INCH (12.7 mm) MINIMUM MEASURED FROM THE RADIUS OF THE CHEM-MILLING NEAR THE FRAME.

THIS REPAIR MUST BE INSPECTED AT EACH 'B' CHECK AS GIVEN IN [A]. IF DAMAGE HAS OCCURRED THAT IS MORE THAN THE LIMITS GIVEN IN THIS REPAIR, REFER TO THE PERMANENT REPAIR IN REPAIR 1. THE MIMIMUM PERMITTED SPACING BETWEEN TWO ADJACENT DAMAGED AREAS IN THE TRAY IS 6.0 INCHES (152 mm). SEE DETAILS I AND II. IF THE SPACING IS LESS THAN 6.0 INCHES (152 mm), REFER TO THE PERMANENT REPAIR IN REPAIR 1.

THIS REPAIR HAS FAA APPROVAL IF THE INSPECTIONS GIVEN IN THIS FIGURE ARE DONE AT THE SPECIFIED TIMES.

THIS REPAIR IS TIME-LIMITED AND MUST BE REPLACED WITH A PERMANENT REPAIR BY THE NEXT 'C' CHECK OR IN 18 MONTHS, WHICHEVER COMES FIRST.

REPAIR INSTRUCTIONS

1. Do a high-frequency eddy-current (HFEC) inspection of the roller tray to find the ends of the cracks. Refer to NDT Part 6, 51-00-00.
2. Stop-drill the ends of the cracks and clean out the cracks with a router. Refer to SRM 51-10-02. See Detail I for the Alternative I Repair.

   For damage worse than cracks, cut and remove the damaged area. Do not remove more than the dimensions as given and make a 0.25-inch (6 mm) minimum radius on the corners. See Detail II for the Alternative II Repair.
3. Remove the nicks, scratches, gouges, burrs, and sharp edges from the roller tray.
4. Clean and apply Alodine 1200S or 600 to the bare surfaces of the roller tray. Refer to SRM 51-20-01.
5. Apply one layer of BMS 10-11, Type I, Grade E primer to the bare surfaces of the roller tray. Refer to SOPM 20-41-02. Permit the primer to dry a minimum of 1 hour at room temperature before you use the tray.
6. After you complete steps 4 and 5 you can, as an option, apply aluminum foil (speed) tape over the refinished cutout area so that moisture will not pass through the roller tray.

NOTES

- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR THE APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS.

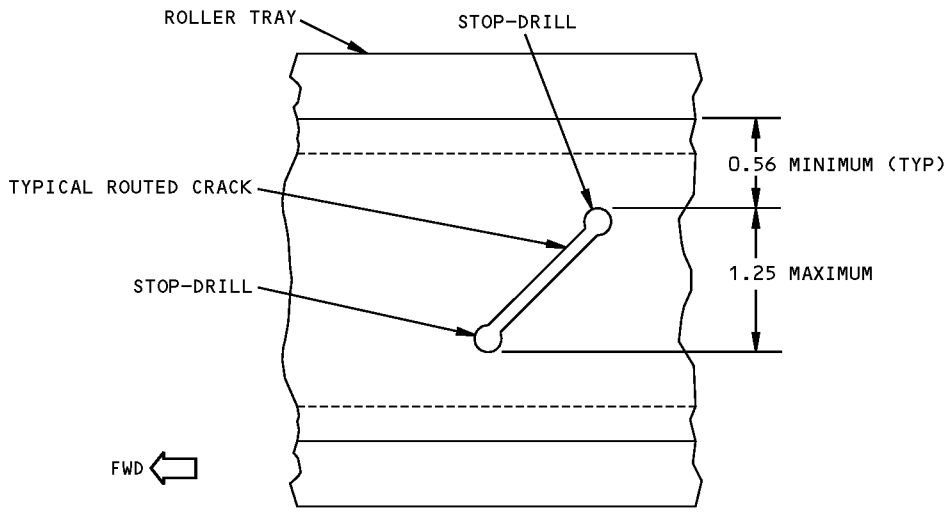
[A] AT EACH 'B' CHECK INSPECTION, INSPECT THE CRACK, HOLE, OR CUTOUT BY THE EDDY CURRENT METHOD AS GIVEN IN NDT PART 6, 51-00-00. IF ADDITIONAL CRACKS ARE FOUND, USE THESE REPAIR INSTRUCTIONS IF THE DAMAGE IS NOT MORE THAN THE LIMITS GIVEN IS THIS REPAIR. IF THE DAMAGE IS MORE THAN THE GIVEN LIMITS, REFER TO THE PERMANENT REPAIR IN REPAIR 1.

INSPECT FOR CORROSION AS GIVEN IN SRM 51-10-02. IF NECESSARY, REFINISH THE REWORKED AREA AS GIVEN IN THE REPAIR INSTRUCTIONS, STEPS 4. AND 5.

FASTENER SYMBOLS

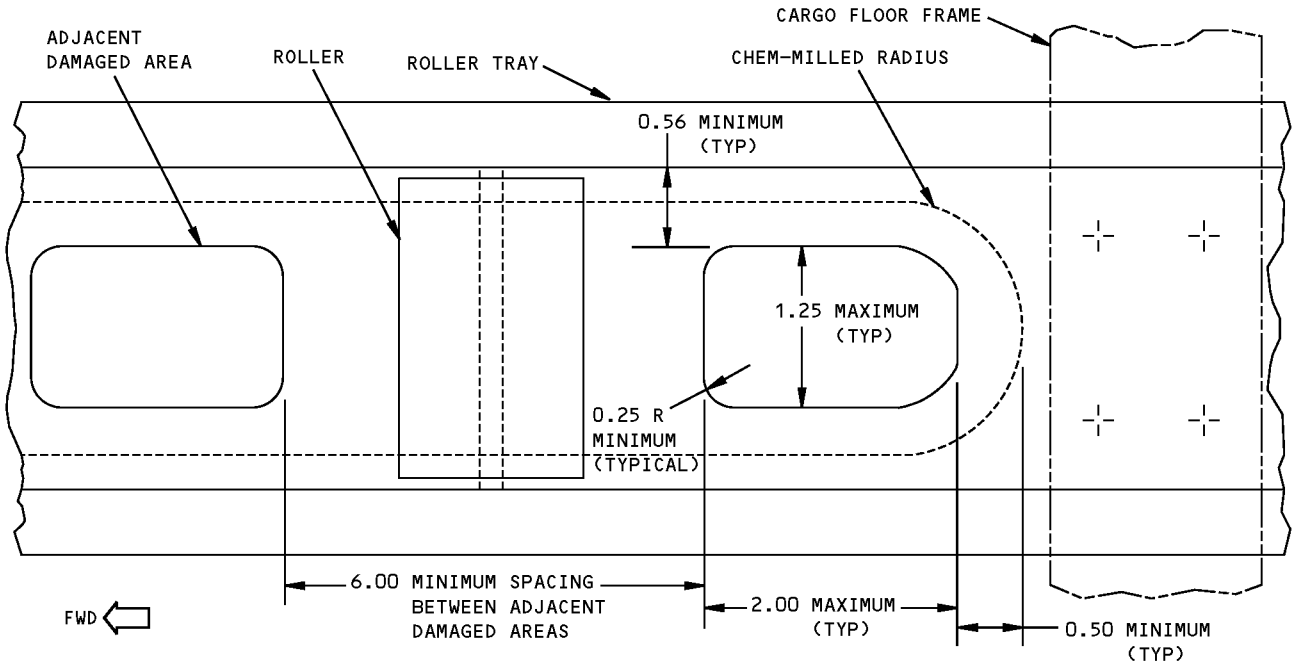
-|- REFERENCE FASTENER LOCATION.

Time-Limited Roller Tray Repair
Figure 201 (Sheet 1 of 2)



ALTERNATIVE I REPAIR

DETAIL I



ALTERNATIVE II REPAIR

DETAIL II

Time-Limited Roller Tray Repair
Figure 201 (Sheet 2 of 2)

REPAIR 4 - BALL TRANSFER PANEL ASSEMBLY REPAIRS

APPLICABILITY
THIS REPAIR IS APPLICABLE TO BALL TRANSFER PANELS FOUND AT THE FRONT AND REAR CARGO DOORS.

GENERAL

Four types of ball transfer panel (BTU) damage repairs are covered in this section. Refer to Detail I. Use the applicable repair.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. Penetrant inspect the crack area to verify location of end of crack. Refer to SOPM 20-20-02.

   CAUTION: DO NOT DRILL INTO UNDERLYING STRUCTURE. IF THERE IS UNDERLYING STRUCTURE IMMEDIATELY UNDERNEATH THE SKIN, REMOVE SURROUNDING FASTENERS, INSERT A PROTECTIVE STAINLESS STEEL SHIM IN BETWEEN THE TOP SKIN AND THE UNDERLYING STRUCTURE BEFORE STOP-DRILLING.

3. Repair cracks as follows:

   (a) For cracks on the upper skin which are less than one inch long, clean out the damage and stop drill the crack. Use 0.25 to 0.375 inch diameter drill. Install a 2017-T3 flush plug rivet. Inspect the crack every "B" check to make sure crack has not extended beyond the one inch limit. If crack has extended, refer to 3(b).

   (b) For cracks on the upper skin which are greater than one inch long, refer to Details II, III, and IV. [A] [D] [E]

   (c) For cracks on the lower skin refer to Detail V. [F]

4. Make the repair parts as required. See Table I.
5. Assemble the repair parts and drill the fastener holes.
6. Disassemble the repair parts.
7. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair part.
8. Apply a chemical conversion coating to the repair area and to the bare surfaces. Refer to SRM 51-20-01.
9. Apply one layer of BMS 10-11, Type I primer to the repaired part and to the bare surfaces of the skin. Refer to SOPM 20-41-02.
10. Bond the doubler, filler and skin using BMS 5-92, type I, grey adhesive. Refer to SRM 51-70-09.
11. Install the fasteners. Fasteners must be installed during the pot life of the adhesive.
12. Apply sprayable floor coating to the repair area. Refer to BAC5705, Type II.

NOTES

- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS
  - SRM 51-70-09 FOR METAL TO METAL STRUCTURAL BONDING.

[A] DO NOT DRILL INTO THE UNDERLYING STRUCTURE. IF THERE IS UNDERLYING STRUCTURE IMMEDIATELY UNDERNEATH THE SKIN, REMOVE SURROUNDING FASTENERS, INSERT A PROTECTIVE STAINLESS STEEL SHIM IN BETWEEN THE TOP SKIN AND THE UNDERLYING STRUCTURE.

[B] GAP BETWEEN DOUBLER AND BALL TRANSFER UNIT SHOULD BE 0.125-0.250 INCH (3.2-6.4 mm).

[C] END OF DOUBLER SHOULD BE TWO FASTENER ROWS BEYOND THE CRACK END. USE ONE ROW OF FASTENERS IF CRACK IS LOCATED NEAR THE EDGE OF THE BALL TRANSFER PANEL.

[D] IF SEVERAL SMALL CRACKS DEVELOP AT A LOCATION, TRIM OUT DAMAGED AREA AND USE A FILLER AND DOUBLER AS SHOWN IN DETAIL V. USE SAME SIZE MATERIAL AS THE SKIN FOR FILLER. USE ONE GAGE THICKER MATERIAL FOR DOUBLER.

[E] FILL OPEN COUNTERSINKS UNDER THE DOUBLER WITH REPAIR WASHERS INSTALLED WET WITH BMS 5-95 SEALANT. REPAIR WASHERS MAY BE MADE FROM THE HEADS OF BACR15CE5 RIVETS.

[F] FILL VOIDS BETWEEN SKIN DIMPLES AND DOUBLER OR SPLICE WITH BMS 5-95 SEALANT.

Ball Transfer Panel Assembly Repairs
Figure 201 (Sheet 1 of 8)

FASTENER SYMBOLS

⊕ INITIAL FASTENER LOCATION. INSTALL A BACR15FP6B() BLIND RIVET.

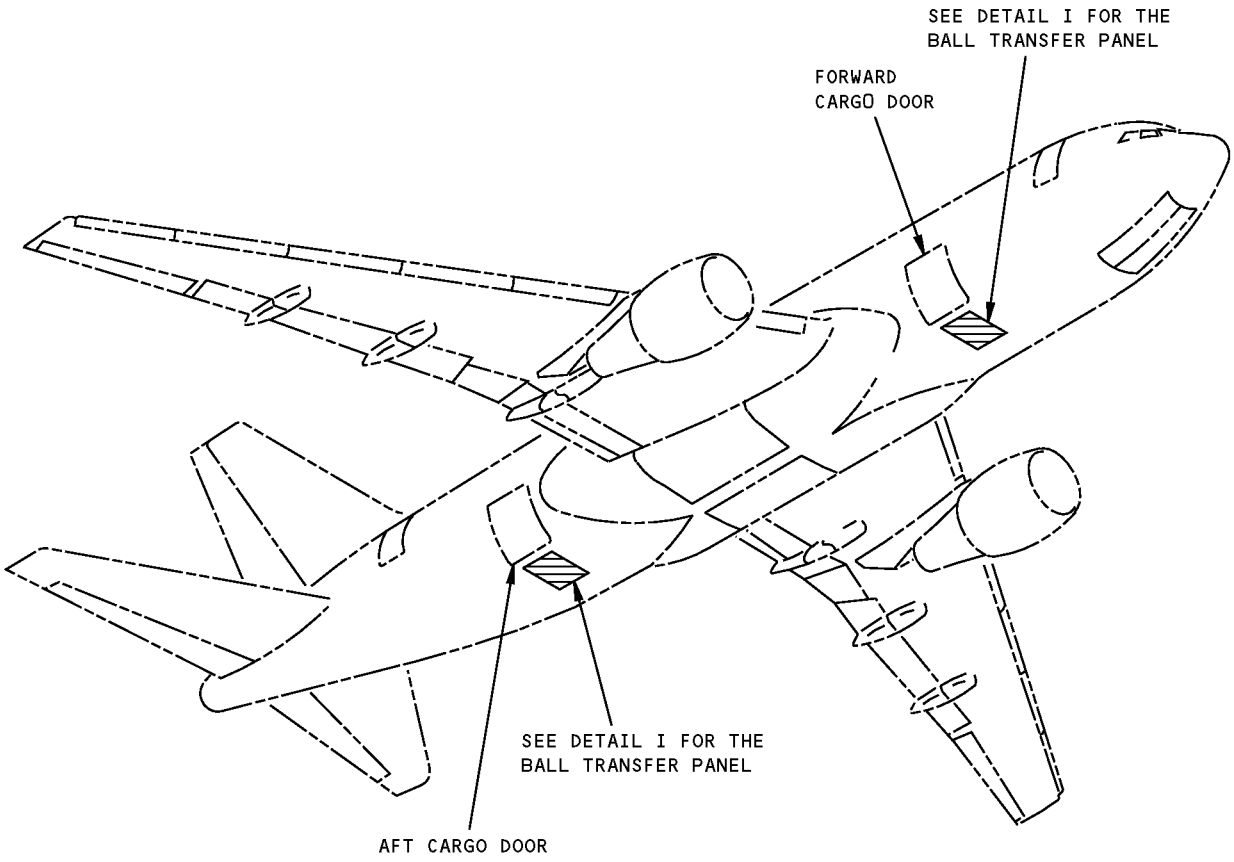
✦ REPAIR FASTENER LOCATION. INSTALL A BACR15FP6B() BLIND RIVET.

⊞ REPAIR FASTENER LOCATION. INSTALL A BACR15FR6B() BLIND RIVET.

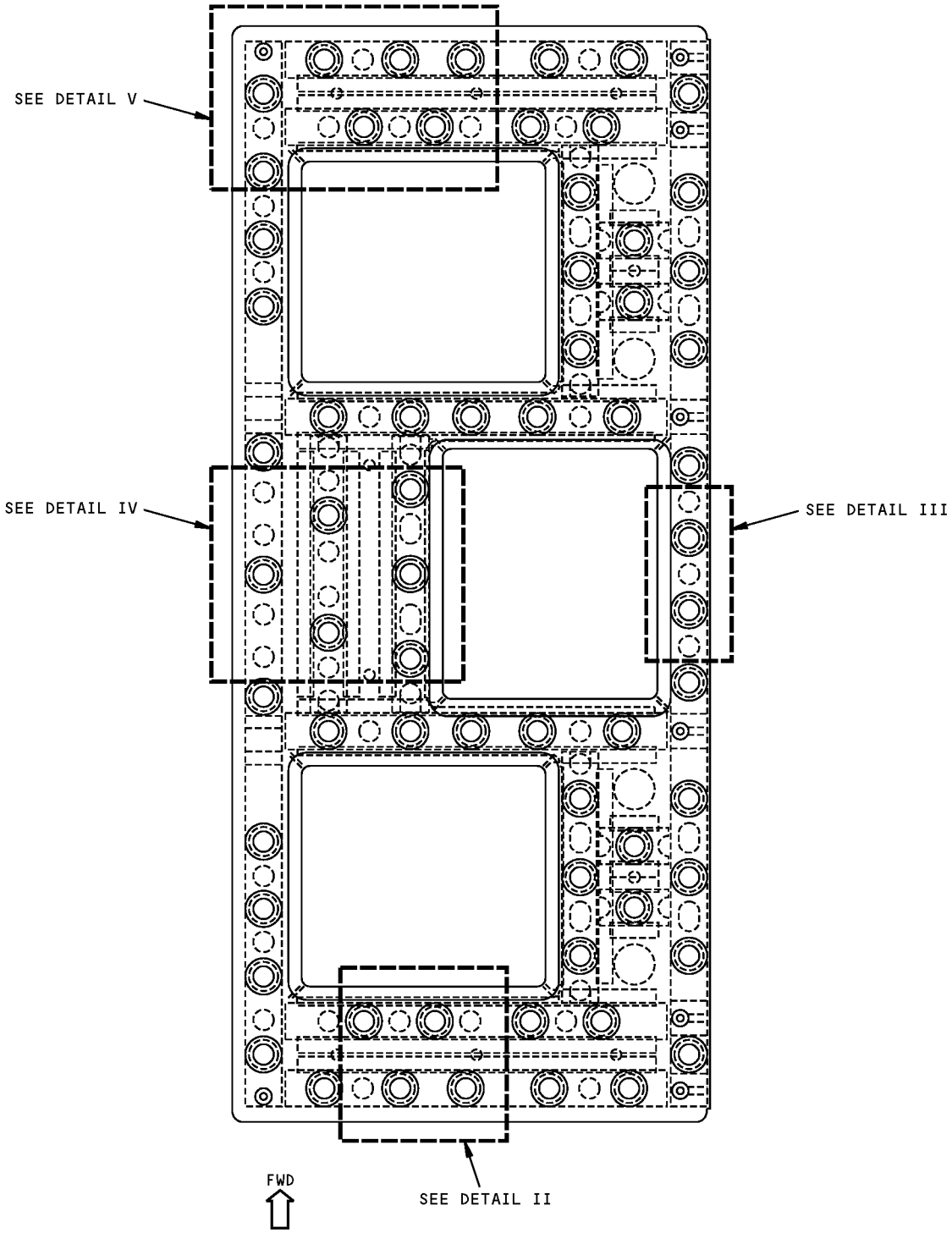
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER [C]	1	0.063 2024-T3 OR 7075-T6 CLAD SHEET
2	DOUBLER [C]	1	0.063 2024-T3 OR 7075-T6 CLAD SHEET
3	DOUBLER [C]	1	0.063 2024-T3 OR 7075-T6 CLAD SHEET
4	DOUBLER [C]	1	0.032 2024-T3 OR 7075-T6 CLAD SHEET
5	FILLER	1	0.020 2024-T3 OR 7075-T6 CLAD SHEET

TABLE I

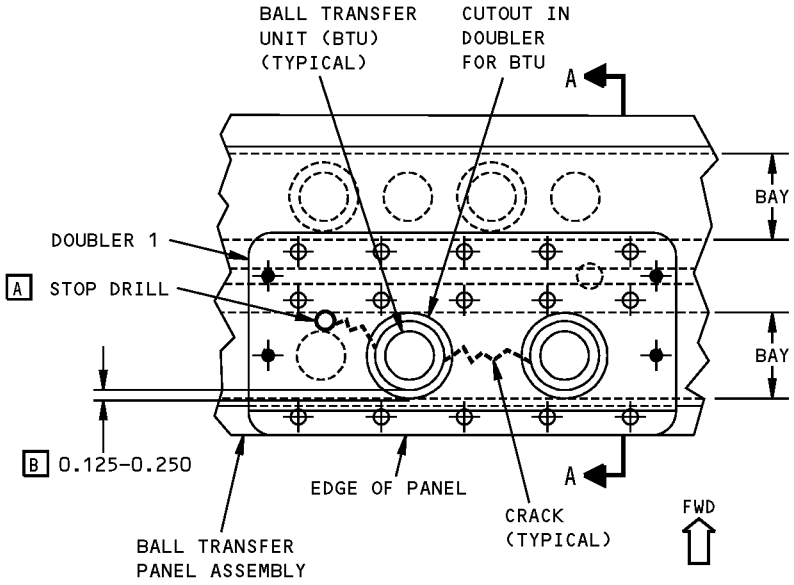
Ball Transfer Panel Assembly Repairs
Figure 201 (Sheet 2 of 8)



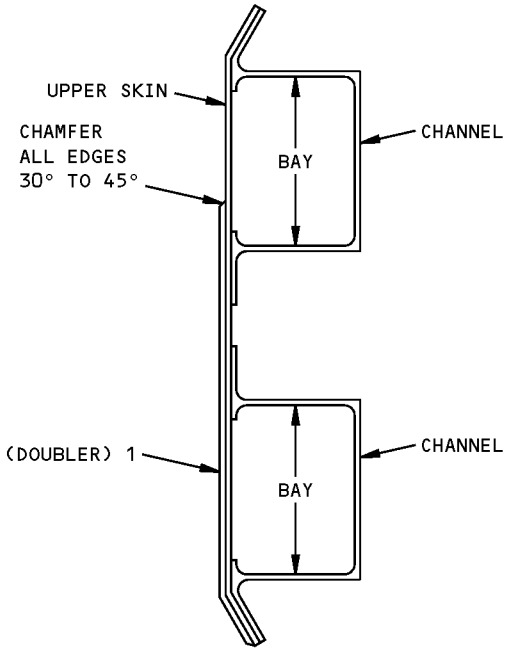
Ball Transfer Panel Assembly Repairs
Figure 201 (Sheet 3 of 8)



Ball Transfer Panel Assembly Repairs
Figure 201 (Sheet 4 of 8)

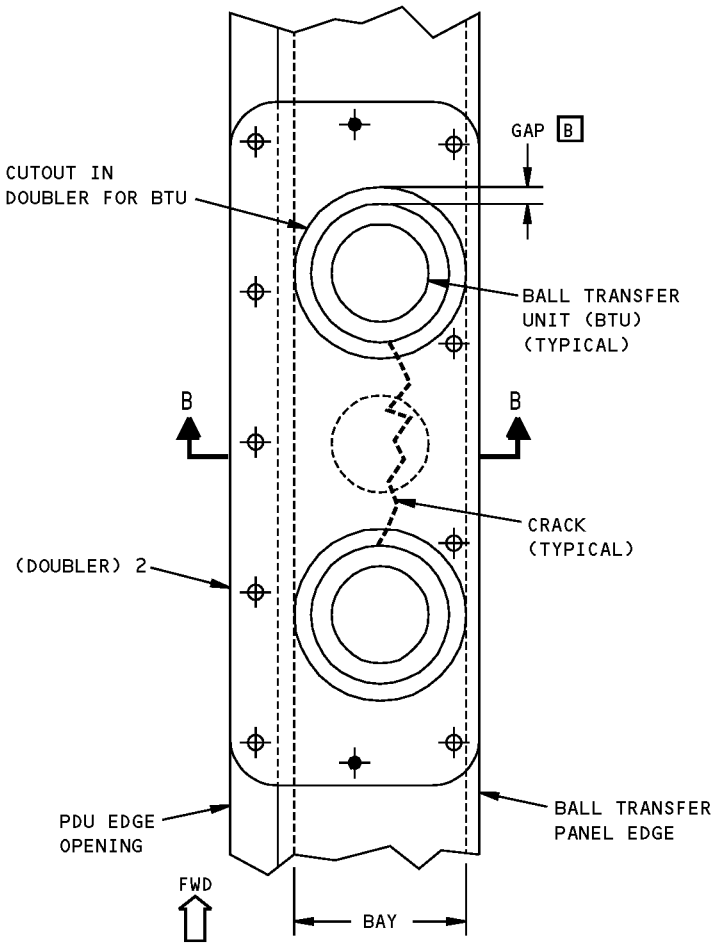


DETAIL II

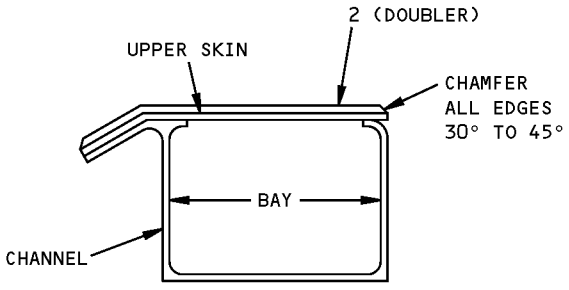


SECTION A-A

Ball Transfer Panel Assembly Repairs
Figure 201 (Sheet 5 of 8)

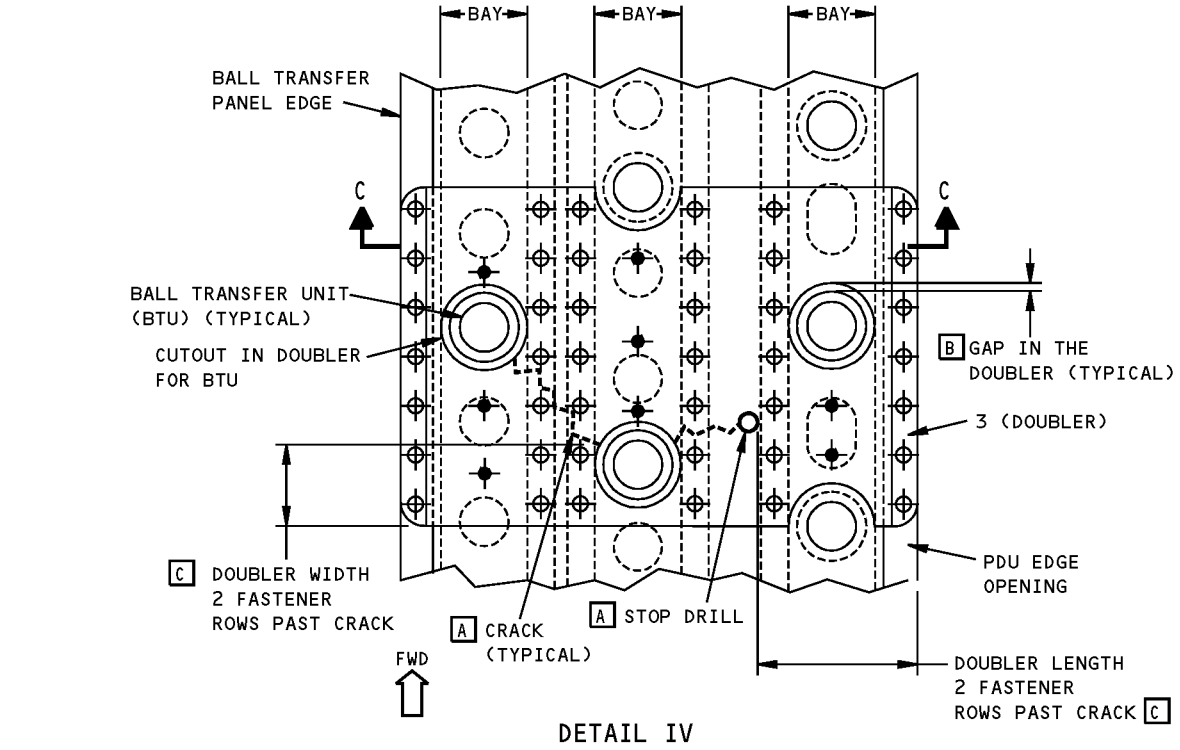


CRACK AT EDGE OF PANEL AND POWER DRIVE UNIT OPENING
DETAIL III

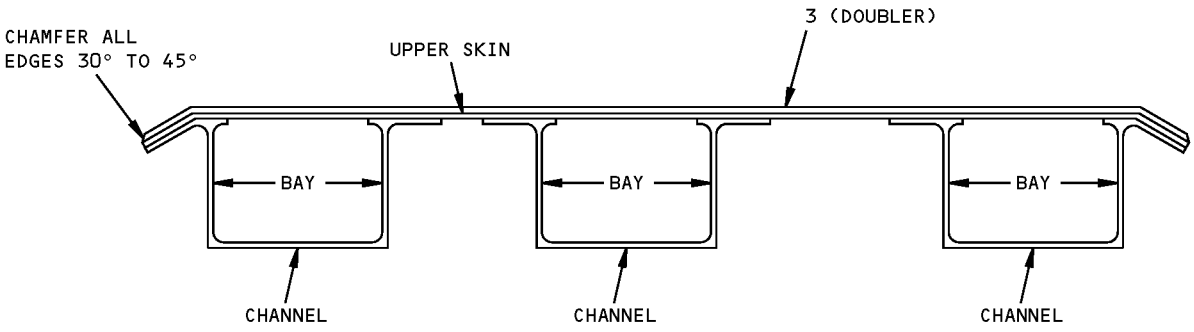


SECTION B–B

Ball Transfer Panel Assembly Repairs
Figure 201 (Sheet 6 of 8)

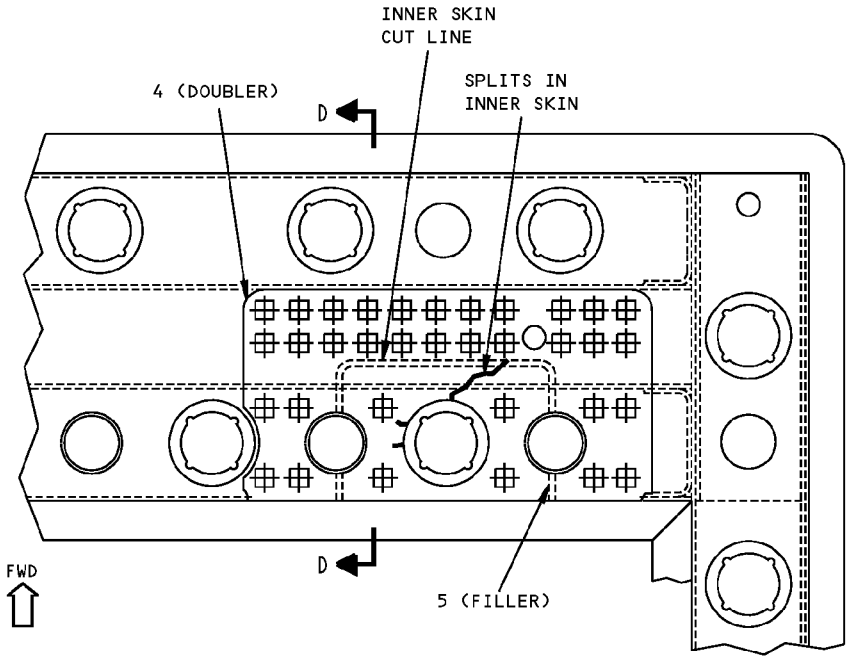


DETAIL IV



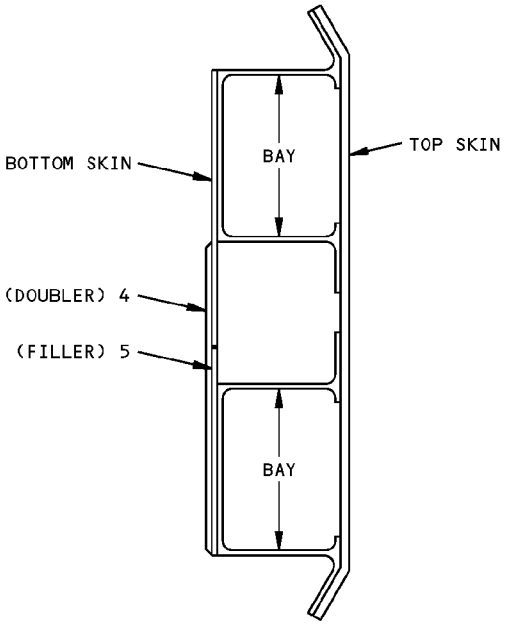
SECTION C–C

Ball Transfer Panel Assembly Repairs
Figure 201 (Sheet 7 of 8)



VIEW FROM UNDERSIDE OF BALL TRANSFER PANEL

TYPICAL INNER SKIN REPAIR
DETAIL V



SECTION D–D

Ball Transfer Panel Assembly Repairs
Figure 201 (Sheet 8 of 8)

REPAIR 5 - CARGO ROLLER TRAY, CHANNEL FLANGE DAMAGE REPAIR

APPLICABILITY

THIS REPAIR IS APPLICABLE TO ROLLER TRAY DAMAGES WHICH OCCUR IN THE FLANGE AREAS ONLY. THERE MUST BE NO DAMAGE ON THE CHANNEL VERTICAL WEB. THE DAMAGE LOCATION MUST BE AT LEAST TWO TIMES ITS LENGTH AWAY FROM ANY KIND OF CARGO FITTING SUCH AS A STOP OR A LOCK. THE DAMAGED FLANGE MUST BE BETWEEN TWO FRAMES AND MUST NOT EXTEND BEYOND THE FRAMES.

REPAIR INSTRUCTIONS

1. For repairs to roller tray mid span flange damage, use Detail I. For repairs to roller tray end flange damage, use Detail II.
2. Get access to the damaged area.
3. Cut and remove the damaged part of the roller tray flange. Refer to Details II and III.
4. Make the repair parts. See Table I.
5. Assemble the repair parts and drill fastener holes.
6. Disassemble the repair parts.
7. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the roller tray.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the roller tray. Refer to SRM 51-20-01.
9. Prime surfaces using DeSoto 515X346 (Courtaulds 515X346) corrosion inhibiting adhesive primer (CIAP). Refer to SRM 51-70-09.
10. Bond the repair parts to the roller tray with BMS 5-92, Type I, gray adhesive. Refer to SRM 51-70-09.
11. Install fasteners wet with BMS5-95 sealant. Fasteners must be installed within the pot life of the adhesive.
12. Seal the repair after the adhesive has cured to a tack free state. Refer to SRM 51-20-05 para 3.

NOTES

- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS.

[A] BEND ENDS OF RAMP 45° TO 60°.

FASTENER SYMBOLS

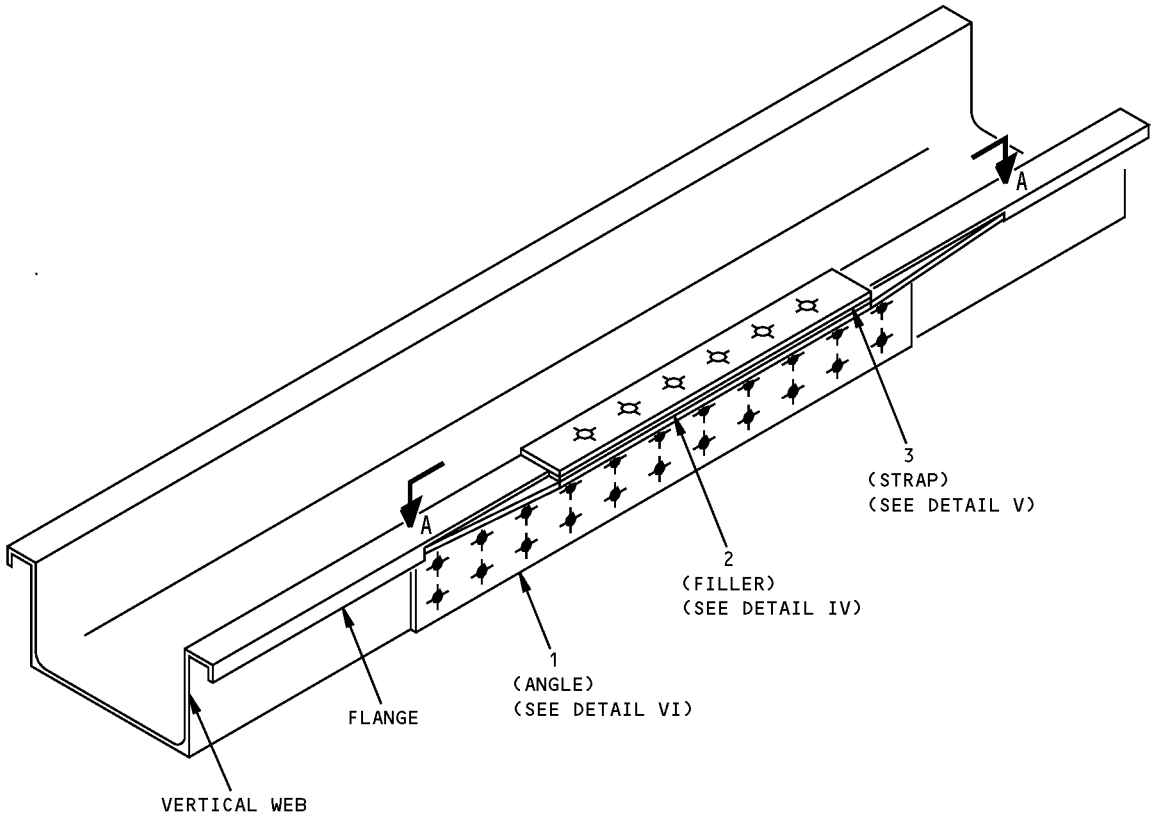
REPAIR FASTENER LOCATION. INSTALL A BACB30NW5K() HEX DRIVE BOLT WITH A BACC30M5 COLLAR.

REPAIR FASTENER LOCATION. INSTALL A BACB30MY5K() HEX DRIVE BOLT WITH A BACC30M COLLAR.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	ANGLE	1	BAC1503-100024, 7075-T6511
2	FILLER	1	0.063, 7075-T6
3	STRAP	1	0.063, 7075-T6
4	RAMP	1	0.100, 7075-0 FORM AND HEAT TREAT TO T6 CONDITION
5	RAMP SUPPORT	1	0.100, 7075-0 FORM AND HEAT TREAT TO T6 CONDITION
6	BRIDGE	1	0.100, 7075-T6

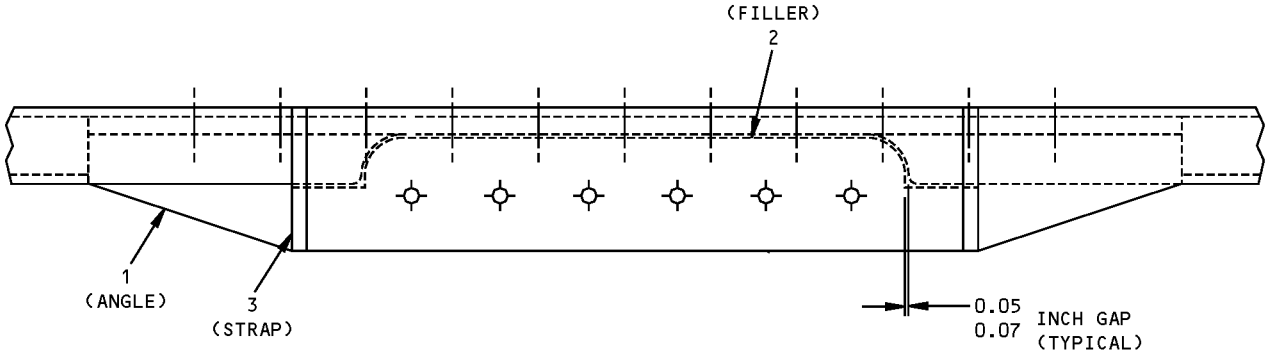
TABLE I

Cargo Roller Tray - Channel Flange Damage Repair
Figure 201 (Sheet 1 of 9)



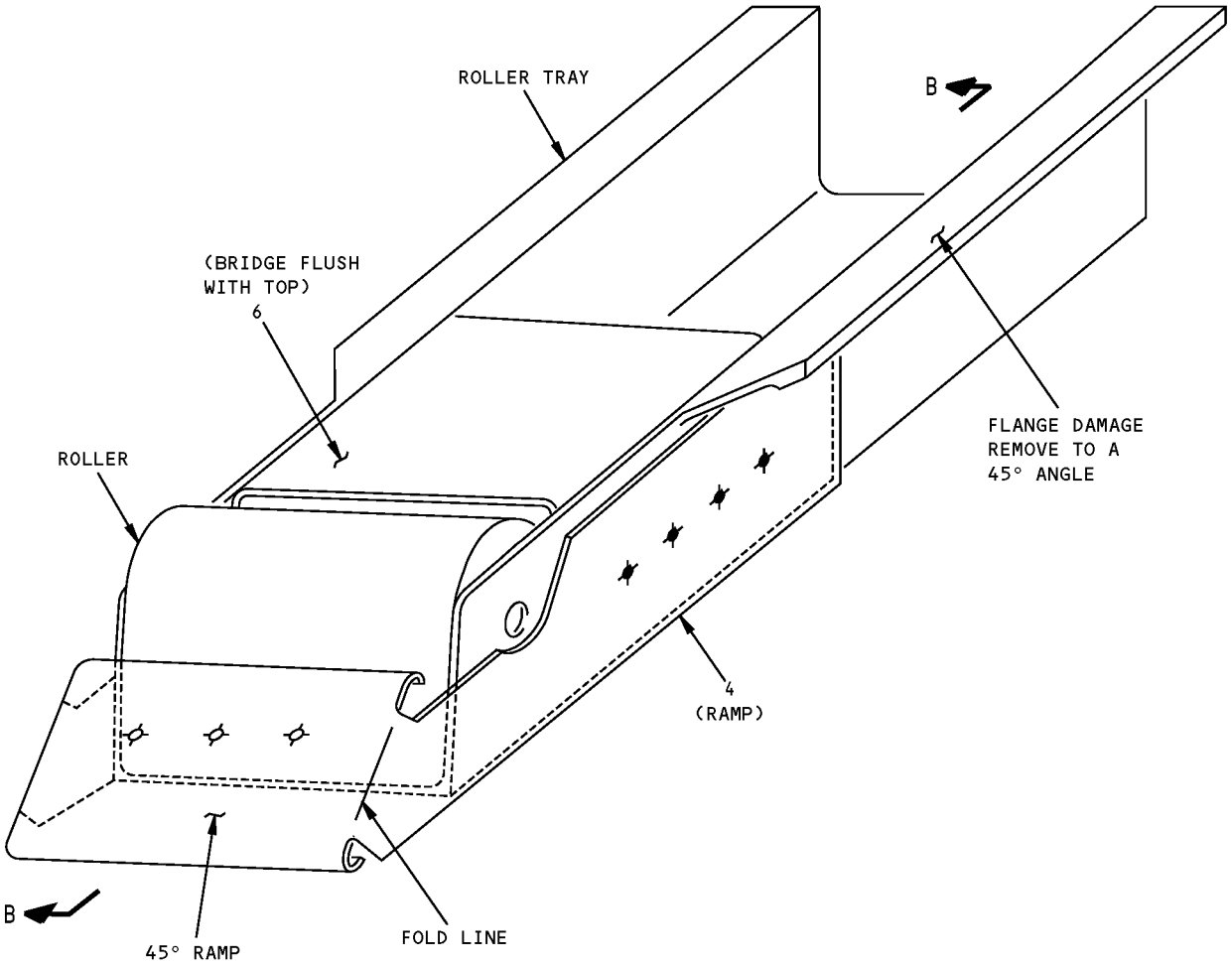
ROLLAR TRAY FLANGE MIDSPAN DAMAGE REPAIR

DETAIL I



VIEW A-A

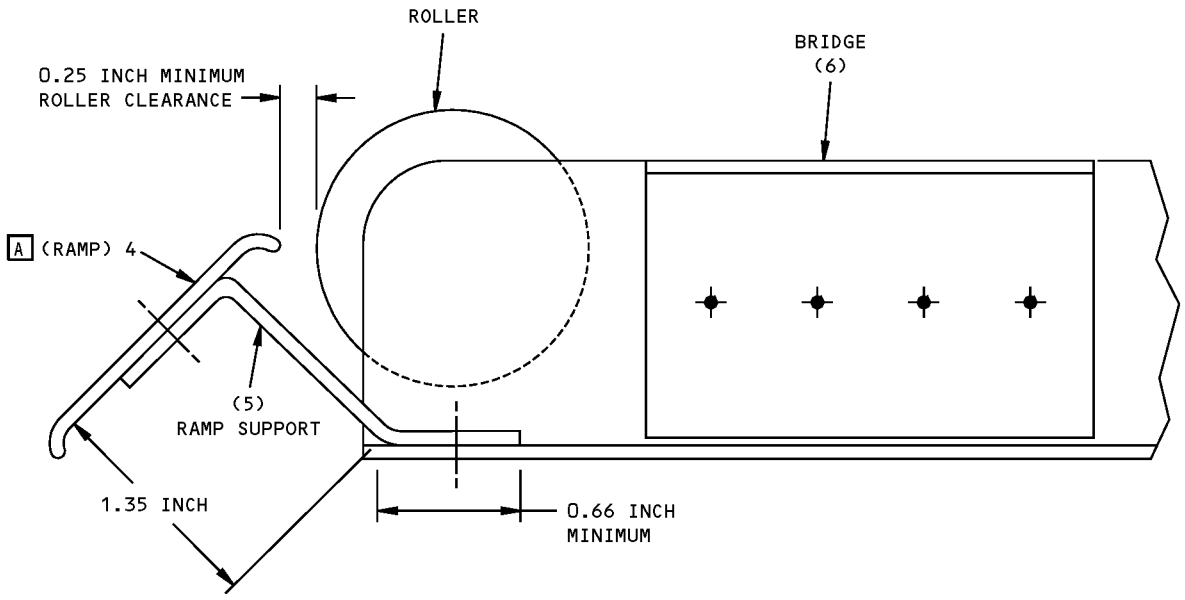
Cargo Roller Tray - Channel Flange Damage Repair
Figure 201 (Sheet 2 of 9)



ROLLAR TRAY FLANGE EDGE DAMAGE REPAIR

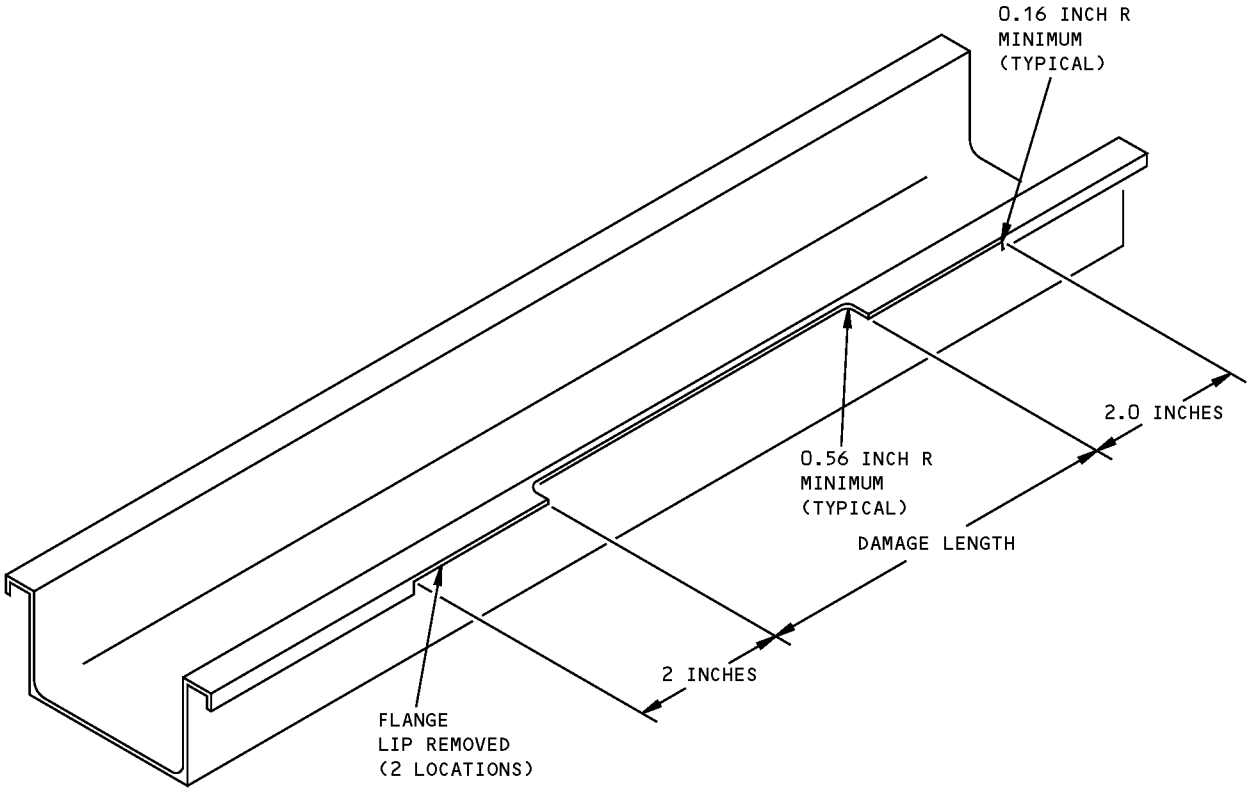
DETAIL II

Cargo Roller Tray - Channel Flange Damage Repair
Figure 201 (Sheet 3 of 9)



SECTION THROUGH ROLLER TRAY CENTERLINE
SECTION B-B

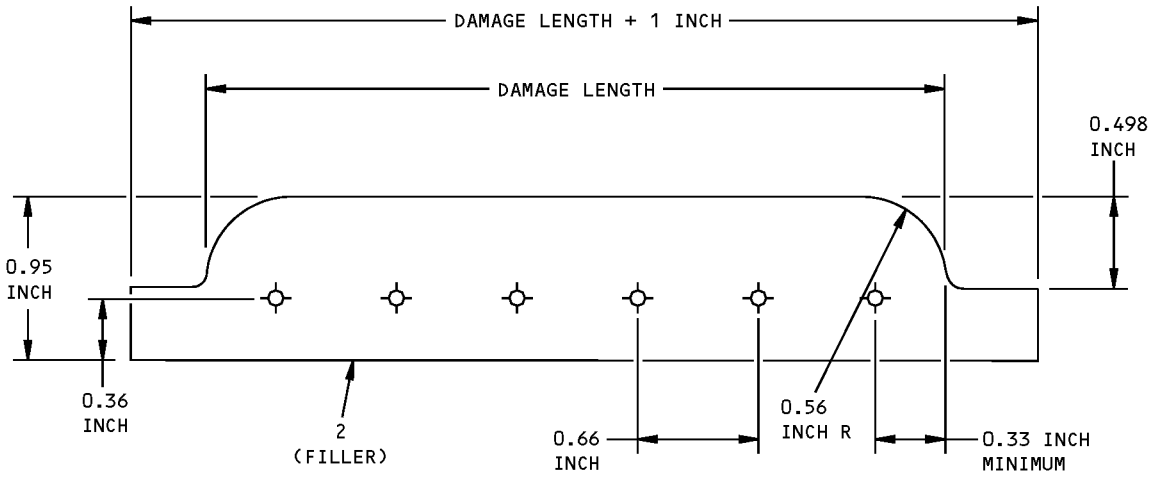
Cargo Roller Tray - Channel Flange Damage Repair
Figure 201 (Sheet 4 of 9)



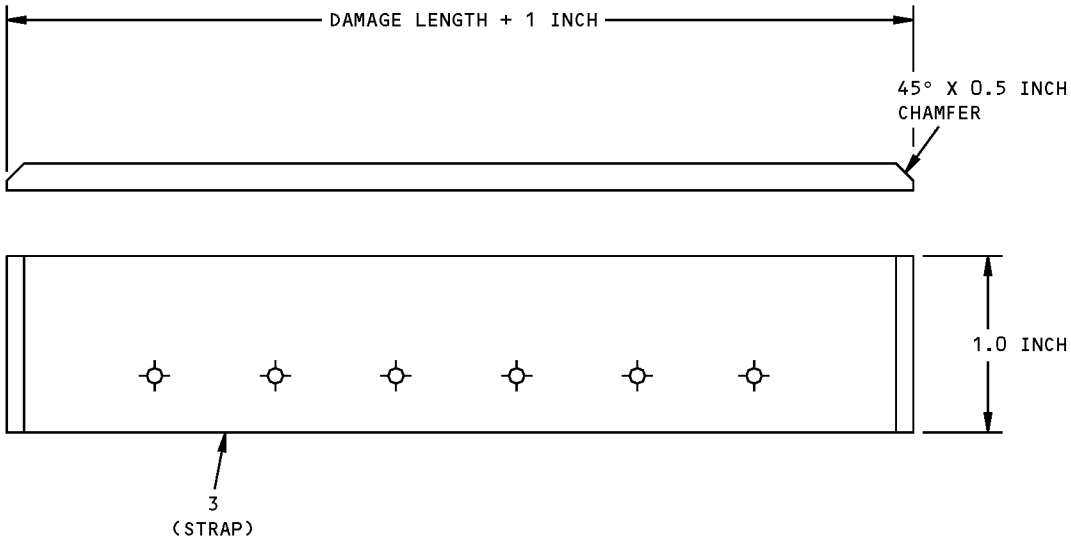
ROLLER TRAY MID-SPAN FLANGE DAMAGE REMOVAL

DETAIL III

Cargo Roller Tray - Channel Flange Damage Repair
Figure 201 (Sheet 5 of 9)

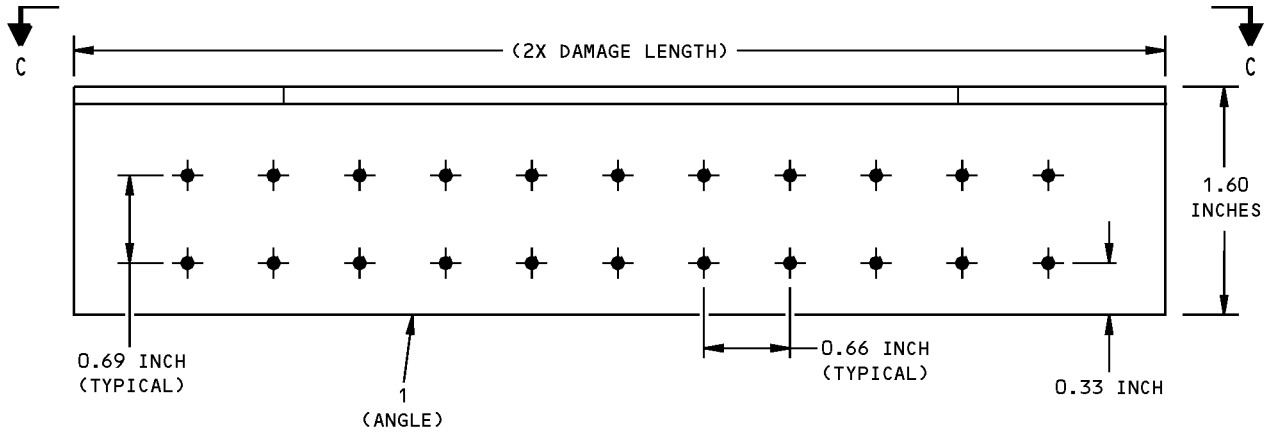


FILLER
DETAIL IV



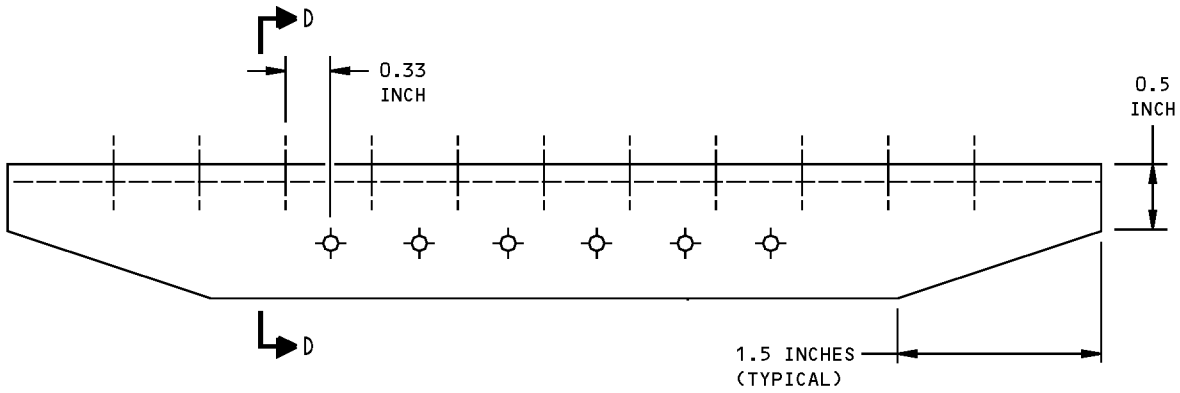
STRAP
DETAIL V

Cargo Roller Tray - Channel Flange Damage Repair
Figure 201 (Sheet 6 of 9)

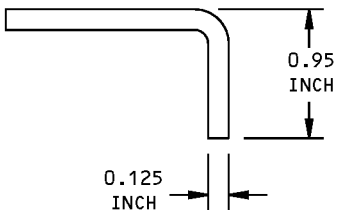


ANGLE

DETAIL VI

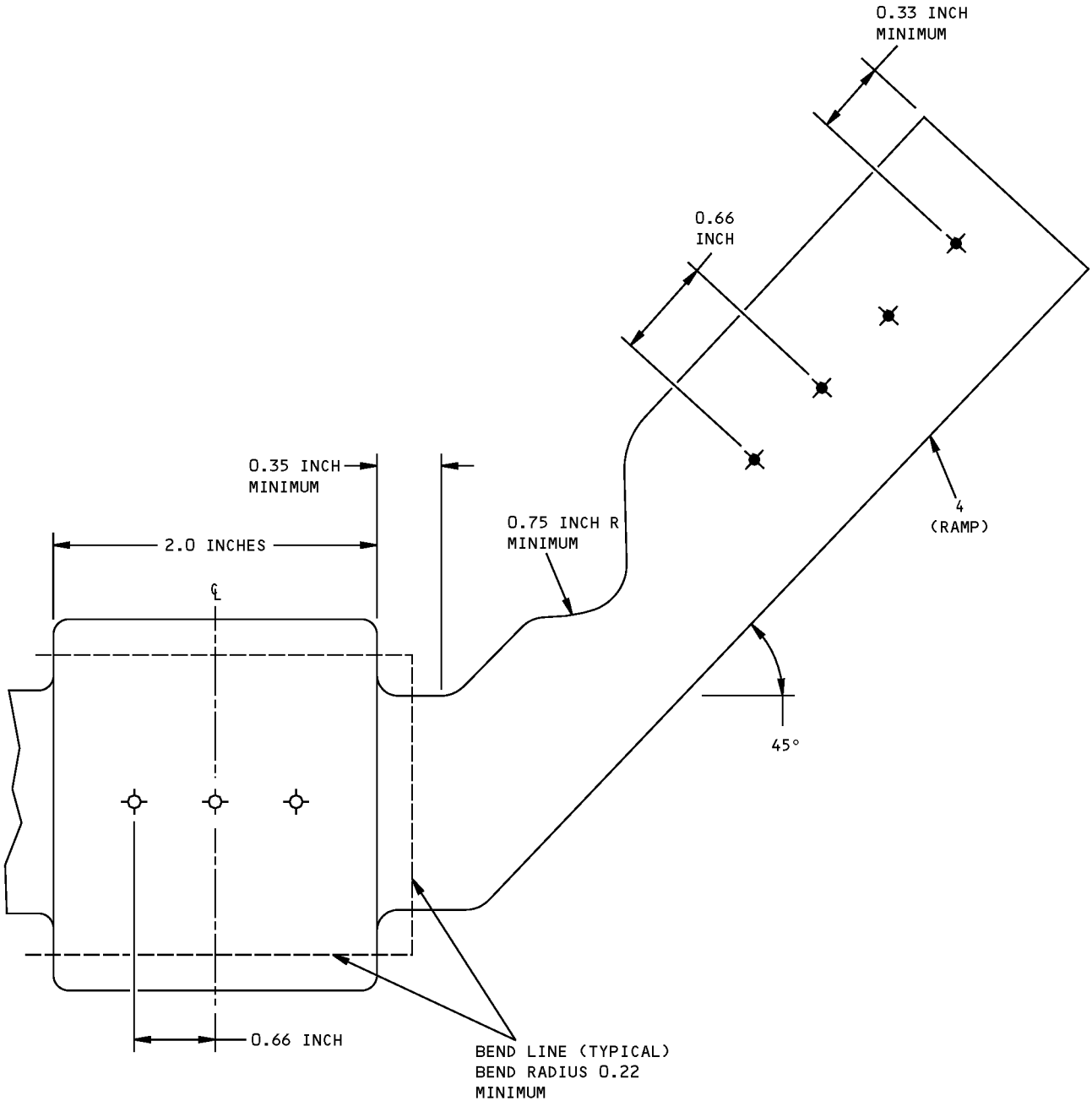


VIEW C–C



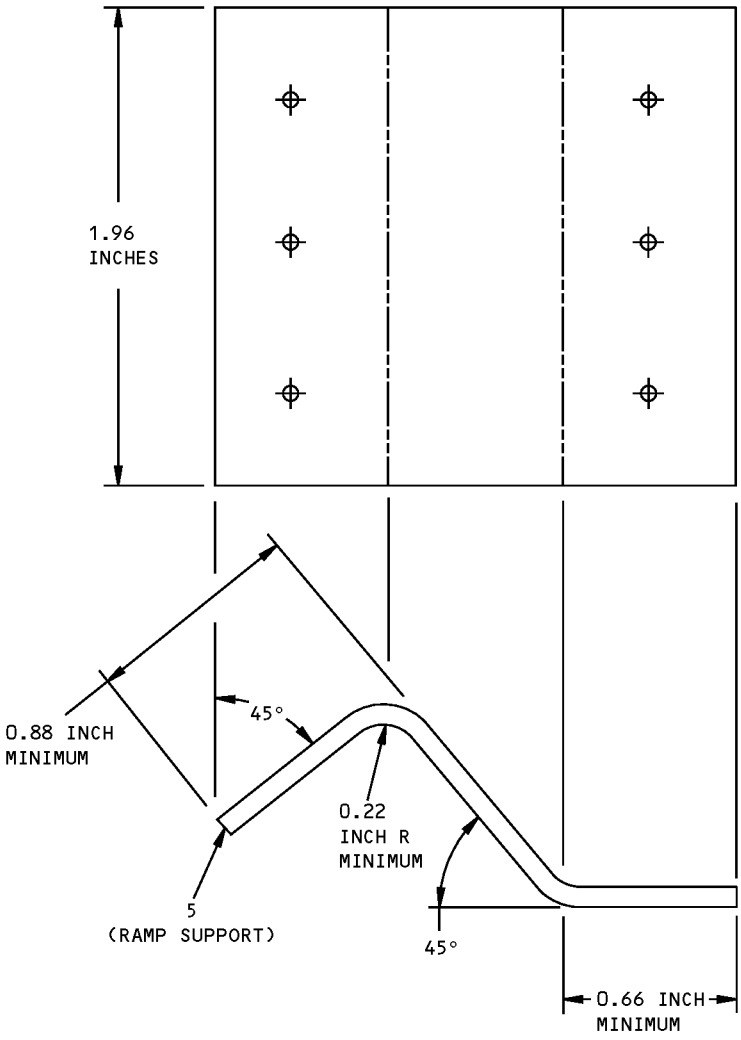
SECTION D–D

Cargo Roller Tray - Channel Flange Damage Repair
Figure 201 (Sheet 7 of 9)



FLAT PATTERN OF RAMP
DETAIL VII

Cargo Roller Tray - Channel Flange Damage Repair
Figure 201 (Sheet 8 of 9)



RAMP SUPPORT
DETAIL VIII

Cargo Roller Tray - Channel Flange Damage Repair
Figure 201 (Sheet 9 of 9)

REPAIR 6 - CARGO ROLLER TRAY, CHANNEL FLANGE TIME-LIMITED REPAIR

APPLICABILITY
THIS REPAIR IS APPLICABLE TO FLANGE DAMAGE OF ROLLER TRAY ENDS. THE REPAIR IS APPLICABLE TO ROLLER TRAY DAMAGES WHICH OCCUR ON ONE FLANGE ONLY. DO NOT USE THIS REPAIR IF THE DAMAGE IS ON BOTH FLANGES OF THE ROLLER TRAY. THE DAMAGE LOCATION MUST BE AT LEAST 44 INCHES (112 mm) (2 FRAME PITCHES) AWAY FROM A CARGO FITTING OR LOCK.

REPAIR INSTRUCTIONS

NOTE: This repair is a time-limited repair which must be replaced by a permanent repair at the next 'C' check. This repair can be accomplished on the airplane without removing the roller tray.

1. Get access to the damaged area.
2. For a 90° rolller tray lead-in see Detail I.
   For a 45° roller tray lead-in see Detail II.
   For a roller tray joint location see Detail III.
3. Remove the nearest roller if necessary.

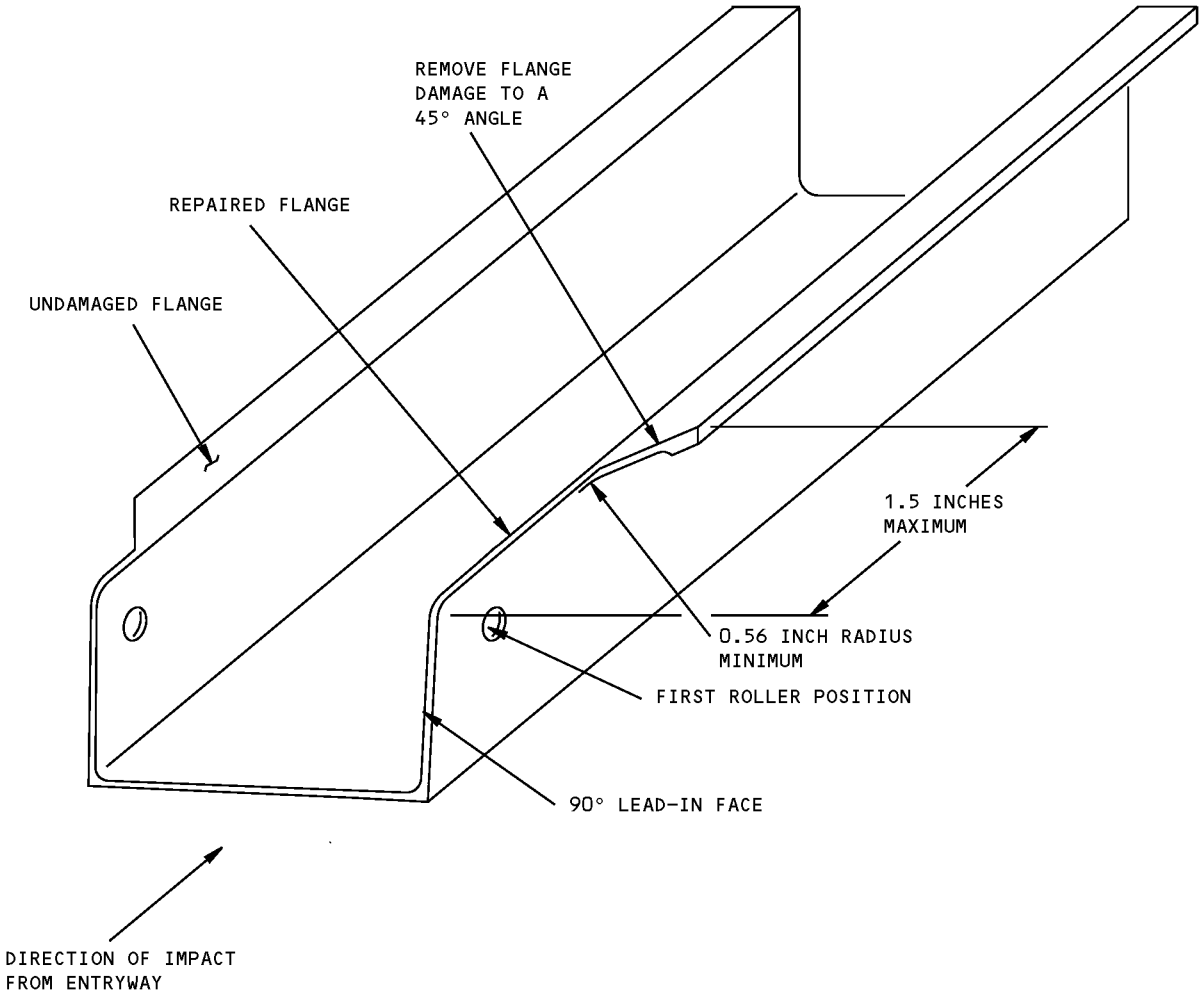
CAUTION: THE MAXIMUM LENGTH TO BE MACHINED OFF THE FLANGE IS 1.5 INCHES (38 mm).

4. Cut and remove the damaged part of the roller tray flange. The damaged flange must be machined off flush to the side of the tray vertical web and to a 45° angle. The fillet radii must be a minimum of 0.56 inch (14.2 mm).
5. Remove the nicks, scratches, gouges, burrs, and sharp edges from the roller tray.
6. Apply a chemical conversion coating to the bare surfaces of the roller tray. Refer to SRM 51-20-01.
7. Apply two layers of BMS 10-11, Type I primer to the bare surfaces of the roller tray. Refer to SOPM 20-41-02.

NOTES

- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS.

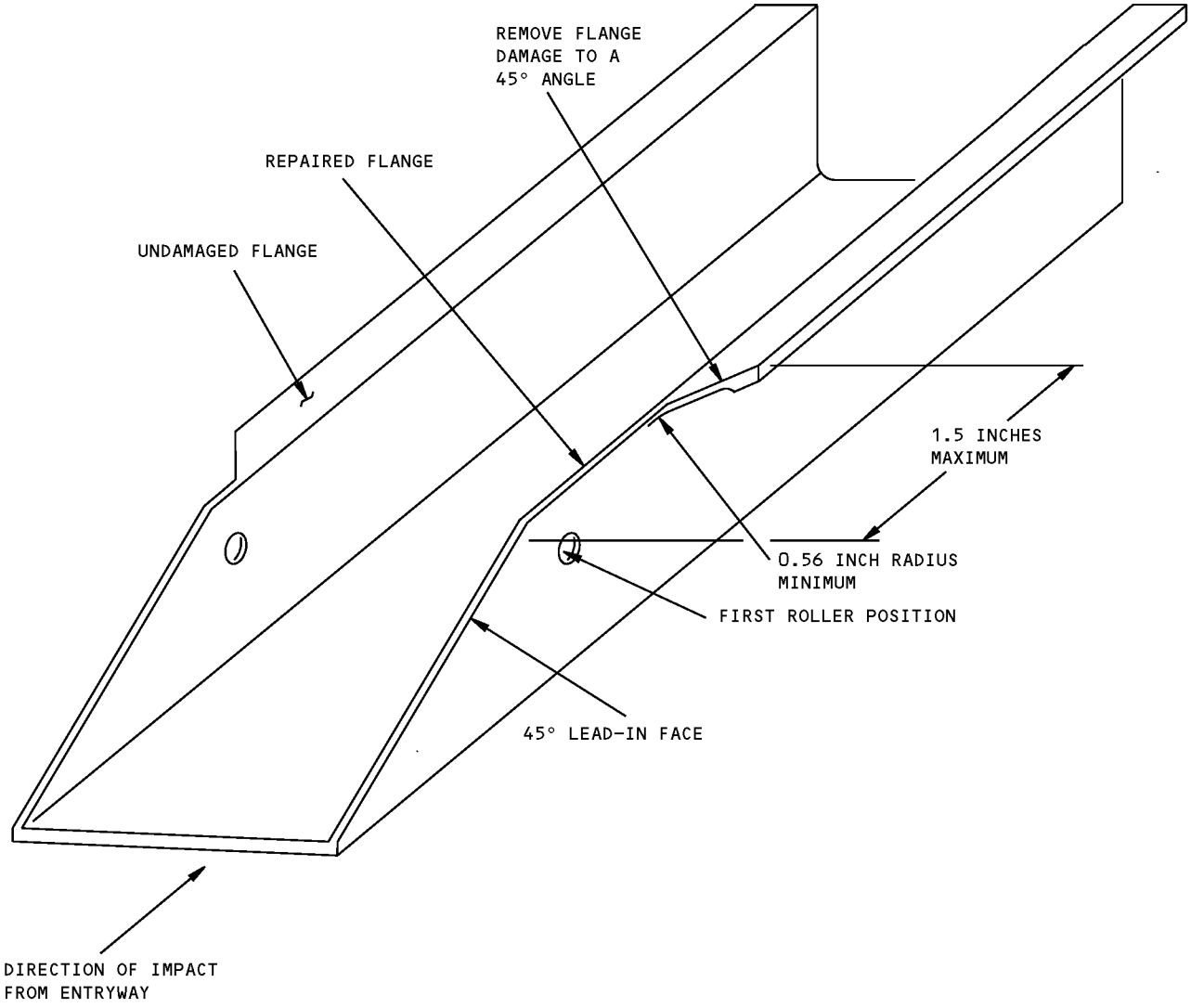
Cargo Roller Tray, Channel Flange Time-Limited Repair
Figure 201 (Sheet 1 of 4)



FLANGE REPAIR - 90 DEGREE ROLLER TRAY LEAD-IN

DETAIL I

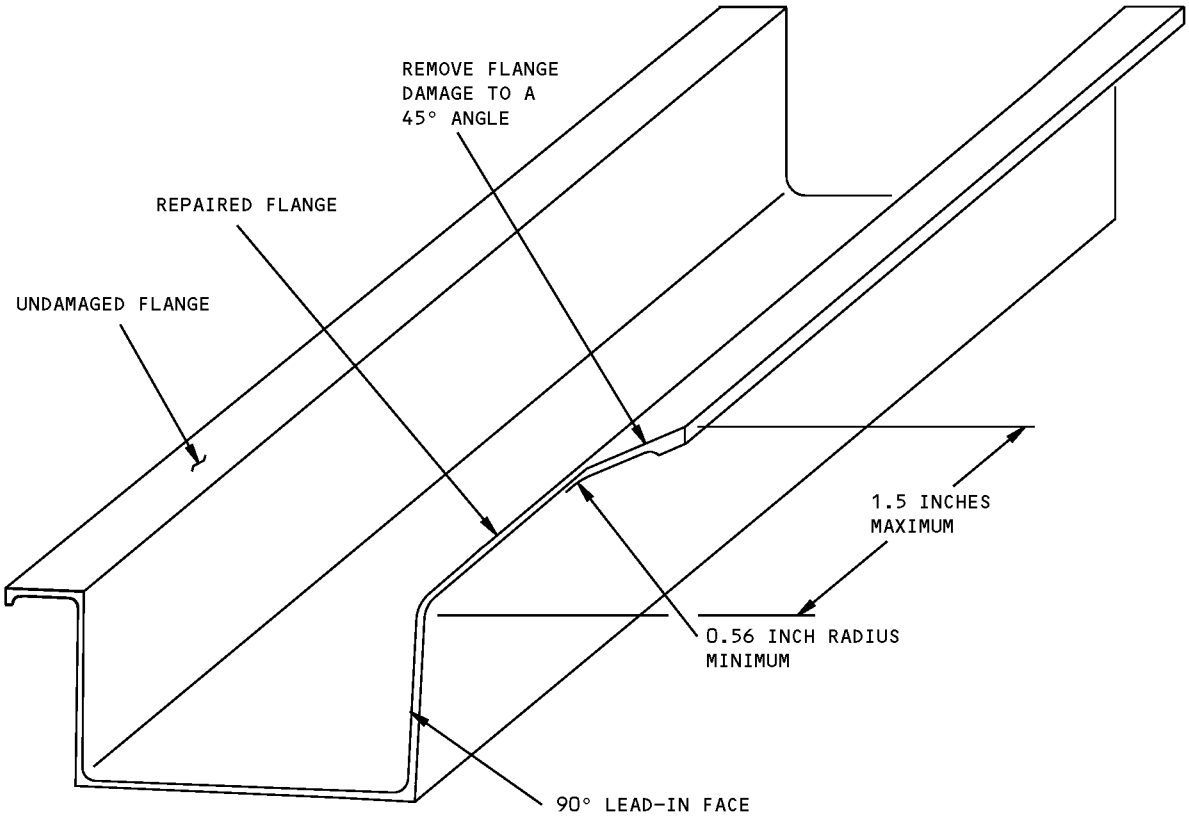
Cargo Roller Tray, Channel Flange Time-Limited Repair
Figure 201 (Sheet 2 of 4)



FLANGE REPAIR - 45 DEGREE ROLLER TRAY LEAD-IN

DETAIL II

Cargo Roller Tray, Channel Flange Time-Limited Repair
Figure 201 (Sheet 3 of 4)



FLANGE REPAIR – ROLLER TRAY JOINT LOCATION

DETAIL III

Cargo Roller Tray, Channel Flange Time-Limited Repair
Figure 201 (Sheet 4 of 4)

REPAIR 7 - TIME-LIMITED CARGO FLOOR PANEL REPAIR

APPLICABILITY
THIS REPAIR IS APPLICABLE TO CARGO FLOOR PANELS: • MADE FROM BMS 4-17 FIBERGLASS COMPOSITE-FACED WITH A NOMEX HONEYCOMB CORE THE DAMAGE OR DELAMINATION MUST NOT BE MORE THAN 12 INCHES IN DIAMETER ON THE TOP SKIN. DO NOT USE THIS REPAIR IF THE CORE OR THE BOTTOM SKIN OF THE FLOOR PANEL IS DAMAGED. THIS REPAIR IS TIME-LIMITED. YOU MUST REPLACE THE FLOOR PANEL OR MAKE A PERMANENT REPAIR BY THE NEXT 'C' CHECK.

REPAIR INSTRUCTIONS

CAUTION: DO NOT DRILL INTO THE FLOOR STRUCTURE. DAMAGE TO THE FLOOR STRUCTURE WILL OCCUR, AND MAKE ADDITIONAL REPAIRS NECESSARY.

1. Get access to the damaged area. See Detail III for limits on the location of the damage.

   NOTE: It is not necessary to remove the floor panel to do the floor panel repair.

2. If the floor panel is moist or wet, make it dry with a vacuum or with warm air.

3. Make the part 1 doubler. See Table I. Make the countersink repair washers. Refer to SRM 51-40-08. The doubler must:

   A. Extend from roller tray to roller tray for locations shown in Details I and II.

   B. Extend to the next forward or aft location of a floor beam which has no damage. Initial fastener locations to attach the floor panel to the floor beam must also be available.

4. Assemble the part 1 doubler on the floor panel. Drill fastener holes through the doubler at the initial floor panel fastener locations.

5. For a damaged floor panel with initial fasteners installed from below the floor structure, drill new fastener holes near the initial fastener holes. Do not drill into the floor structure. See Detail V.

6. If an object prevents access to part of a damaged floor panel, drill the repair fastener holes as shown in Detail III. Keep a minimum 2D edge margin. The repair fastener spacing shall not be more than the initial edge fastener spacing or 6.5 inches. Use the value that is less. Adjust the spacing as necessary so that you do not drill repair fastener holes in the floor structure below the floor panel.

7. Remove the part 1 doubler from the floor panel.

8. Replace the honeycomb core in the area of the repair fastener holes with potting compound or part 2 plugs. See Detail IV. If you use part 2 plugs, drill the fastener holes through the plugs before installation.

9. Remove the nicks, scratches, gouges, burrs, and sharp edges from the part 1 doubler.

10. Apply a chemical conversion coating to the part 1 doubler. Refer to SRM 51-20-01.

11. Apply two layers of BMS 10-11, Type I primer to the doubler. Refer to SOPM 20-41-02.

WARNING: THESE CHEMICALS CONTAIN TOXIC INGREDIENTS. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN WORKING IN A CONFINED SPACE OR AREA. AVOID CONTACT WITH SKIN, EYES, AND CLOTHING. WEAR EYE PROTECTION. KEEP AWAY FROM HEAT, FIRE, OR SPARKS. BREATHING VAPORS OR ALLOWING SOLVENT TO CONTACT THE SKIN OR EYES IS HAZARDOUS. FIRE, OR SPARKS CAN CAUSE AN EXPLOSION.

CAUTION: DO NOT USE PAINT STRIPPERS FOR THE REMOVAL OF FINISHES. DAMAGE TO THE ADHESIVE SYSTEM WILL OCCUR. DO NOT PERMIT STANDING SOLVENT TO REMAIN ON THE PART. DAMAGE TO THE PART WILL OCCUR.

12. Use a clean cloth that is moist with a ketone-based cleaning solvent and clean the top surface of the floor panel. Refer to SOPM 20-30-03.

13. Install the countersink repair washers at the initial fastener locations. Bond the part 1 doubler to the floor panel with BMS 5-92, Type 1 adhesive. Apply a fillet seal along the edges of the part 1 doubler with BMS 5-95 sealant.

14. Install the repair fasteners wet with BMS 5-95 sealant.

15. Install the floor panel with the initial fasteners. Use longer fasteners of the same type as necessary.

Time-Limited Cargo Floor Panel Repair
Figure 201 (Sheet 1 of 4)

NOTES

- D = FASTENER DIAMETER.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - SOPM 20-30-03 FOR GENERAL CLEANING PROCEDURES
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-30-03 FOR NON-METALLIC MATERIALS
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS
  - SRM 51-40-08 FOR COUNTERSINK REPAIR WASHERS.

[A] THE EDGE OF THE PART 1 DOUBLER MUST BE A MINMUM OF 2.0 INCHES (50 mm) FROM THE EDGE OF THE DAMAGED AREA OF THE FLOOR PANEL.

[B] THE REPAIR FASTENER SPACING SHALL NOT BE MORE THAN THE INITIAL EDGE FASTENER SPACING OR 6.5 INCHES (165 mm). USE THE VALUE THAT IS LESS.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION.

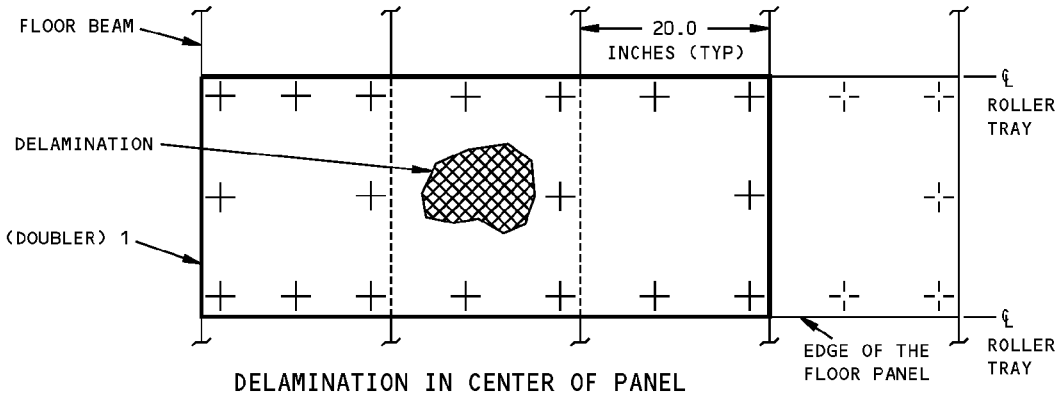
INITIAL FASTENER LOCATION. INSTALL THE SAME TYPE AND DIAMETER FASTENER AS THE INITIAL FASTENER. INCREASE THE GRIP LENGTH AS NECESSARY. USE COUNTERSINK REPAIR WASHERS IN THE INITIAL COUNTERSINKS IN THE FLOOR PANEL. REFER TO SRM 51-40-08. TIGHTEN SCREWS TO 25-35 IN-LBS TORQUE AND BOLTS TO 19-22 IN-LBS TORQUE.

REPAIR FASTENER LOCATION. INSTALL BACB30VF3K() BOLTS WITH BACW10BN()SP WASHERS AND BACN10JC3 NUTS. TIGHTEN THE BOLTS TO 19-22 IN-LBS TORQUE.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	0.063 BARE OR CLAD 7075-T6
2	PLUG	AS NECESSARY	0.050 INCH DIAMETER 7075-T6

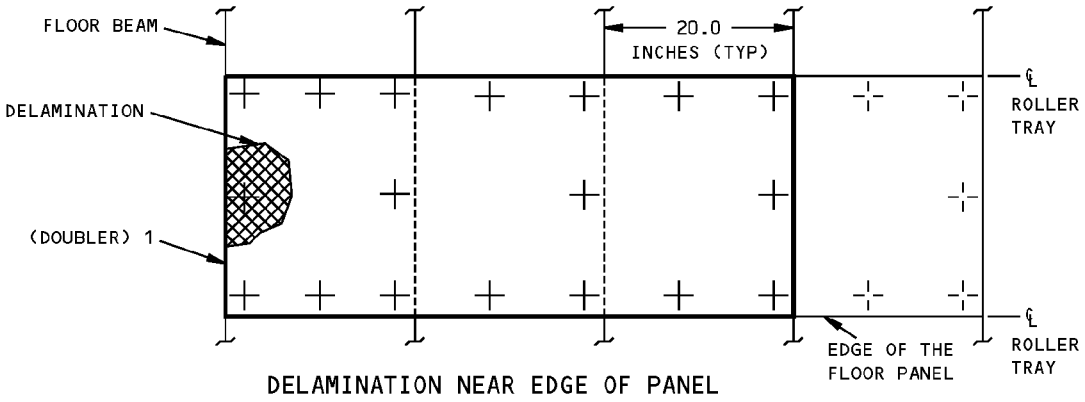
TABLE I

Time-Limited Cargo Floor Panel Repair
Figure 201 (Sheet 2 of 4)



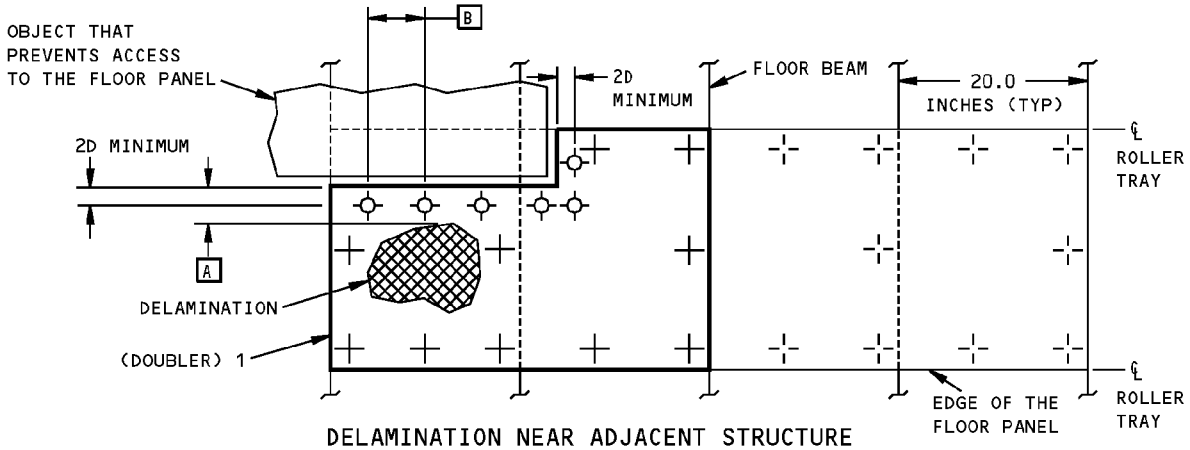
DELAMINATION IN CENTER OF PANEL

DETAIL I



DELAMINATION NEAR EDGE OF PANEL

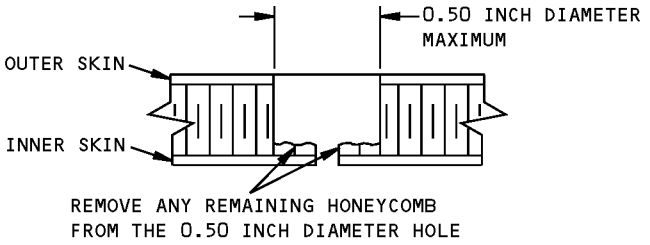
DETAIL II



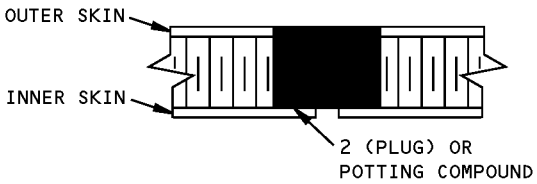
DELAMINATION NEAR ADJACENT STRUCTURE

DETAIL III

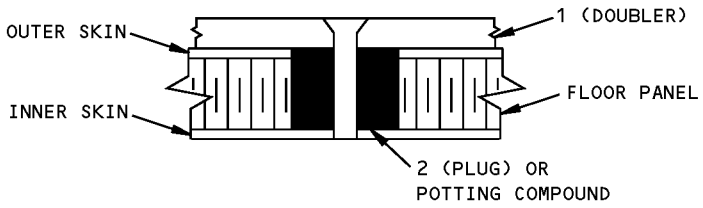
Time-Limited Cargo Floor Panel Repair
Figure 201 (Sheet 3 of 4)



1. DRILL A 0.50 INCH DIAMETER HOLE THROUGH THE OUTER SKIN AND INTO THE HONEYCOMB AT A REPAIR FASTENER HOLE LOCATION.

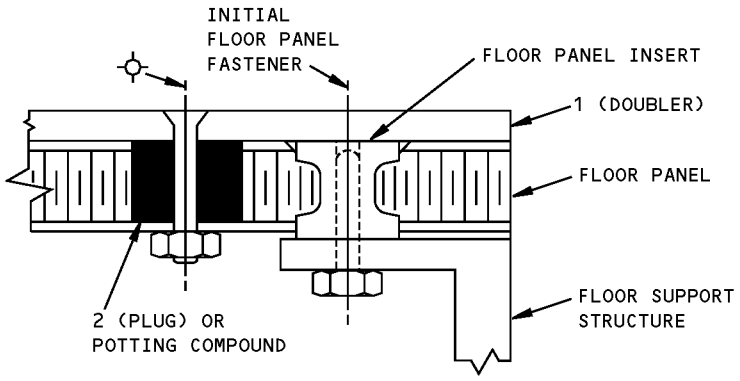


2. FILL THE CAVITY WITH EITHER:
   A. BMS 5-28, TYPE 6 POTTING COMPOUND OR
   B. A 7075 T-6 PLUG WITH A PREDRILLED FASTENER HOLE. INSTALL WET WITH BMS 5-95 SEALANT.



3. ASSEMBLE DOUBLER TO FLOOR PANEL. REDRILL THE FASTENER HOLE IF YOU USE POTTING COMPOUND.

INSTALLATION PROCEDURE FOR A PLUG OR POTTING COMPOUND
DETAIL IV



DETAIL V

Time-Limited Cargo Floor Panel Repair
Figure 201 (Sheet 4 of 4)

REPAIR 8 - DRAIN PAN CORNER CRACK REPAIR - CARGO DRIVE UNIT

APPLICABILITY
THIS REPAIR IS APPLICABLE TO CRACKED DRAIN PANS LOCATED IN THE FORWARD OR AFT CARGO BAYS. DRAIN PANS WITH AN INTEGRATED STIFFENER OR AN ATTACHED STIFFENER CAN BE REPAIRD WITH THIS FIGURE.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. Remove the fasteners in the damaged area of the drain pan if necessary. See Detail IV.
3. Cut and remove the crack damage.

   NOTE: Keep a minumum 0.25 inch (6.4 mm) radius at the corners of the trim and keep the roughness of the cut surface to 125 microinches Ra or better.
4. Do a penetrant inspection to make sure all cracks have been removed. Refer to SOPM 20-20-02.
5. Make the repair part. See Table I.
6. Assemble the repair part and drill the fastener holes. Refer to SRM 51-40-06.

   NOTE: Keep a 2D minimum edge margin and fastener spacing of 4D to 6D between fasteners.
7. Disassemble the repair parts.
8. Remove the nicks, scratches, gouges, burrs and sharp edges from the part 1 (strap) and the cut edge of the drain pan.
9. Apply a chemical conversion coating to the part 1 (strap) and the bare surfaces of the drain pan. Refer to SRM 51-20-01.
10. Apply two coats of BMS 10-11, Type II primer to the part 1 (strap) and the bare surfaces of the drain pan. Refer to SOPM 20-41-02.
11. Apply one coat of BMS 10-60, (color: BAC 702 white) protective enamel to the repair area. Refer to AMM 51-21.
12. Seal faying surfaces and install repair part and fasteners wet with BMS 5-95 sealant. Make sure there is sufficient sealing to prevent fluid leakage at repair area.

NOTES

- D=FASTENER DIAMETER.
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - SOPM 20-20-02 FOR DYE PENETRANT INSPECTION PROCEDURES
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS

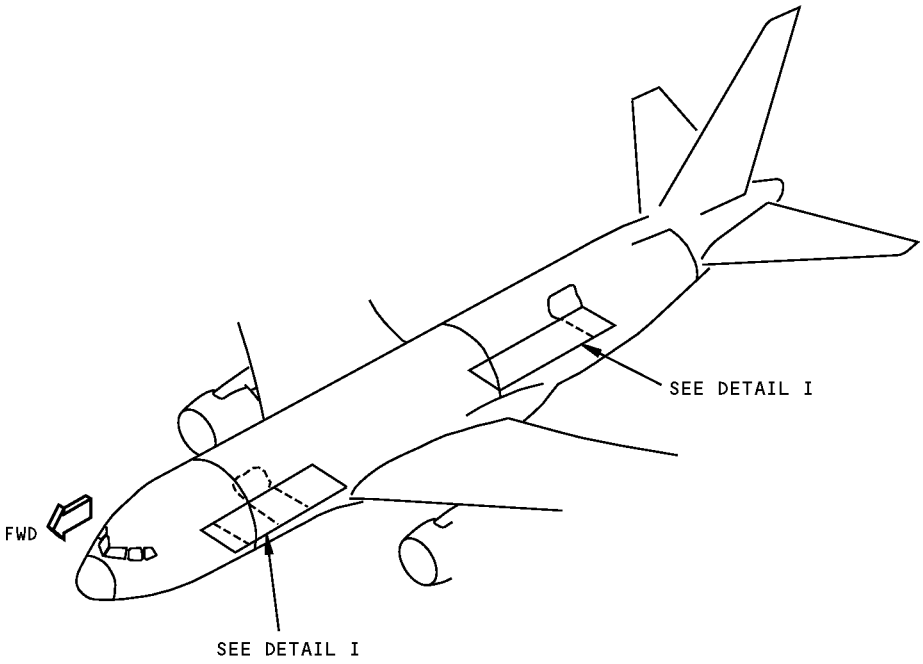
FASTENER SYMBOLS

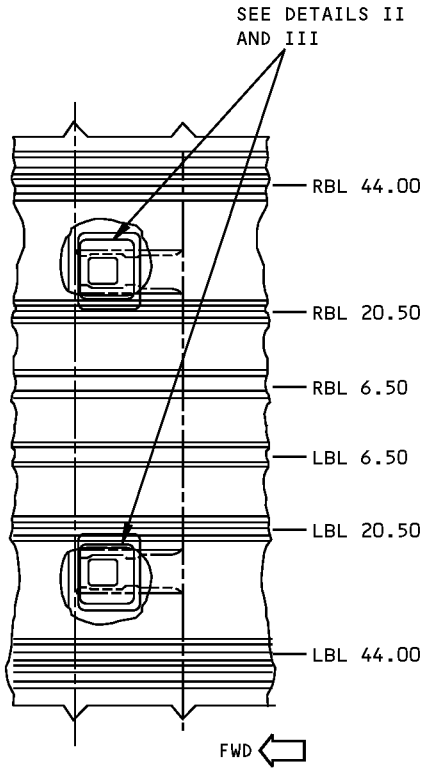
- INITIAL FASTENER LOCATION. INSTALL A BACR15BB6AD RIVET.
- REPAIR FASTENER LOCATION. INSTALL A BACR15BB5AD RIVET.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	STRAP	1	0.050 INCH (1.3 mm) CLAD 2024-0. HT TR TO T42 AFTER FORMING.

TABLE I

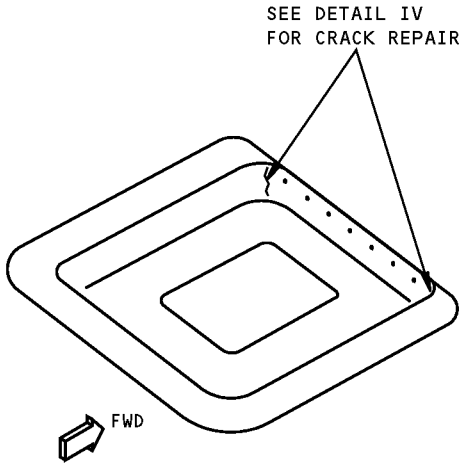
Drain Pan Corner Crack Repair - Cargo Drive Unit
Figure 201 (Sheet 1 of 7)



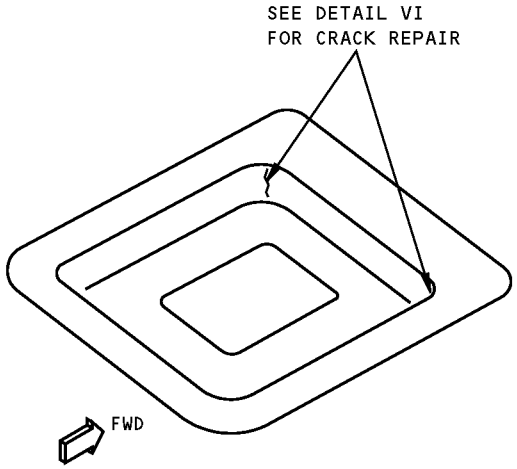


DETAIL I

Drain Pan Corner Crack Repair - Cargo Drive Unit
Figure 201 (Sheet 2 of 7)

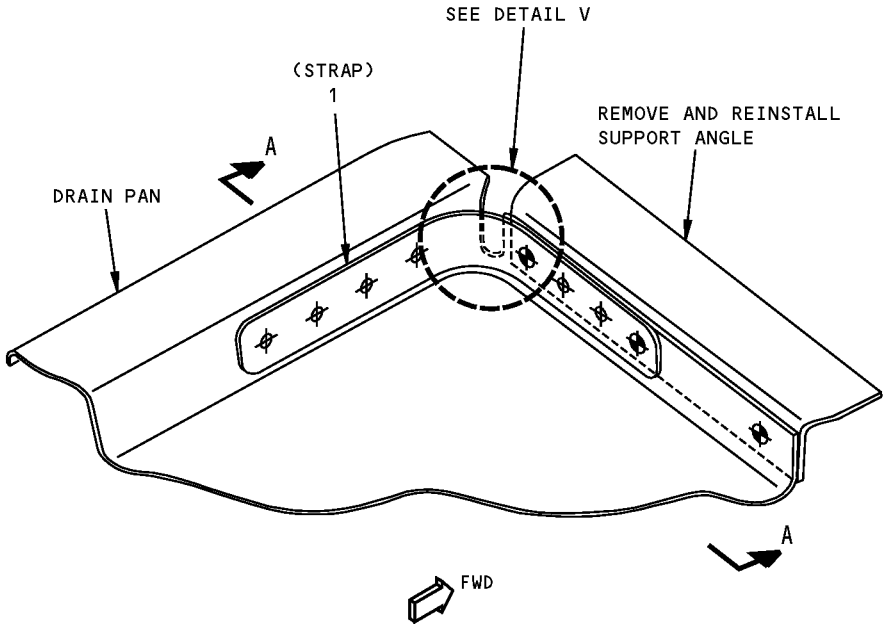


DRAIN PAN WITH ATTACHED STIFFENER
DETAIL II

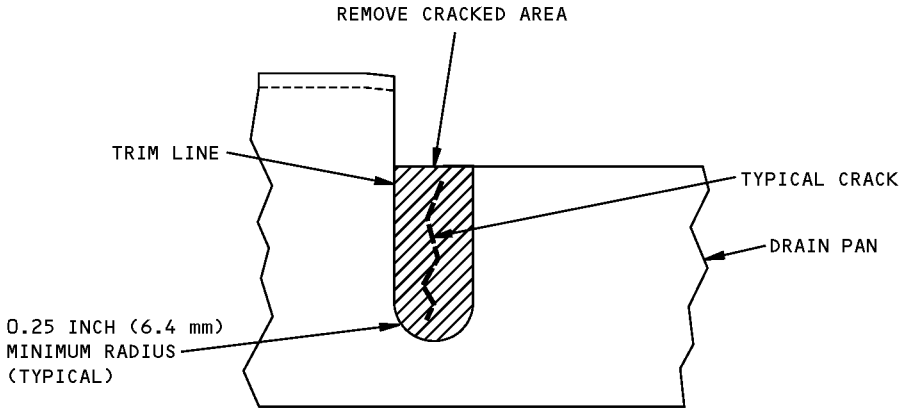


DRAIN PAN WITH INTEGRATED STIFFENER
DETAIL III

Drain Pan Corner Crack Repair - Cargo Drive Unit
Figure 201 (Sheet 3 of 7)

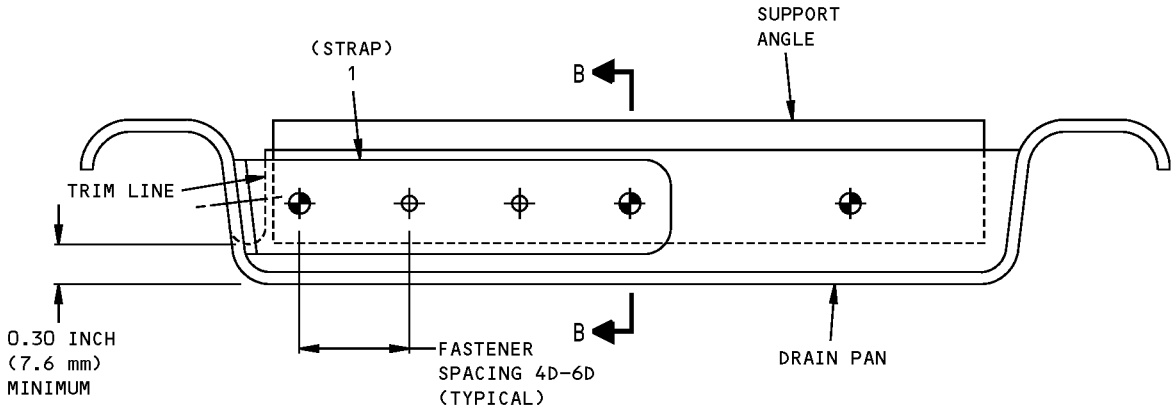


DRAIN PAN WITH ATTACHED STIFFENER
DETAIL IV



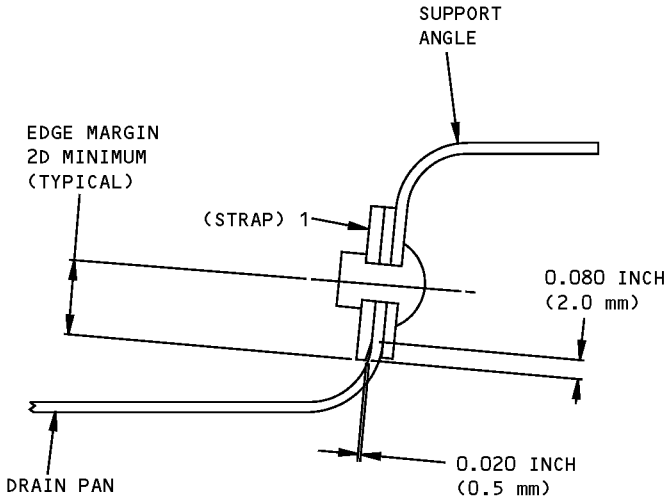
CRACKED CORNER
DETAIL V

Drain Pan Corner Crack Repair - Cargo Drive Unit
Figure 201 (Sheet 4 of 7)



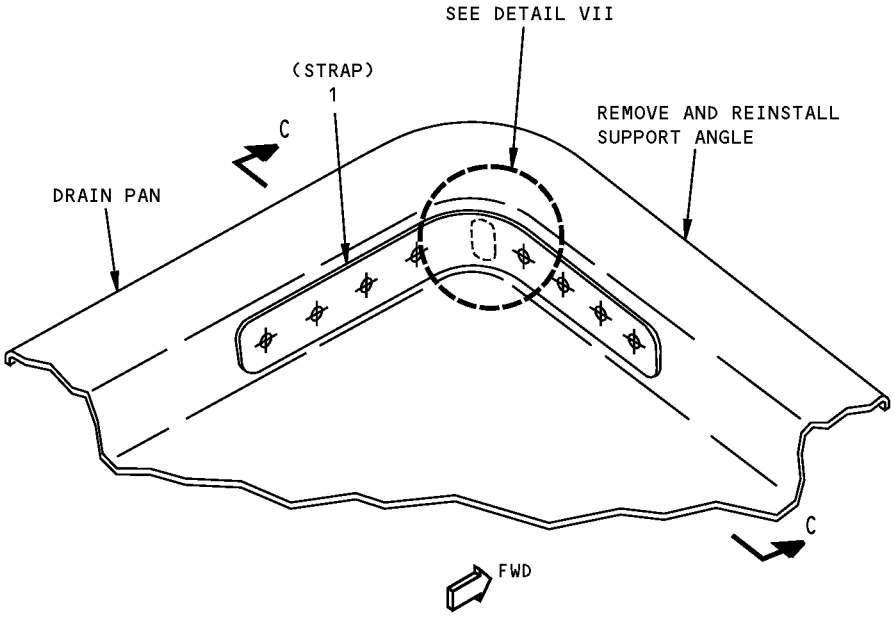
DRAIN PAN WITH ATTACHED STIFFENER

SECTION A-A

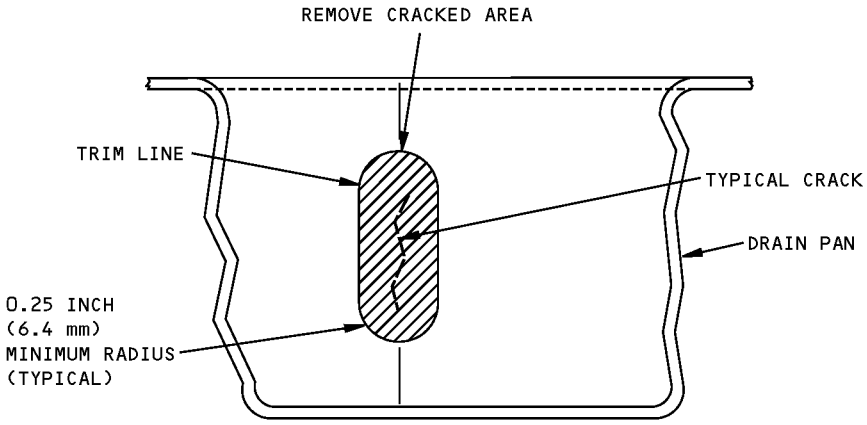


SECTION B-B

Drain Pan Corner Crack Repair - Cargo Drive Unit
Figure 201 (Sheet 5 of 7)

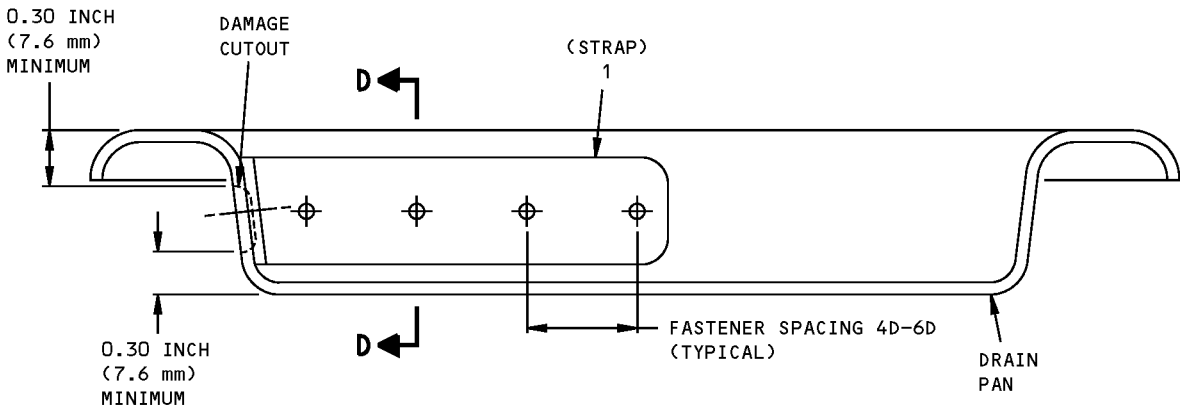


DRAIN PAN WITH INTEGRATED STIFFENER
DETAIL VI



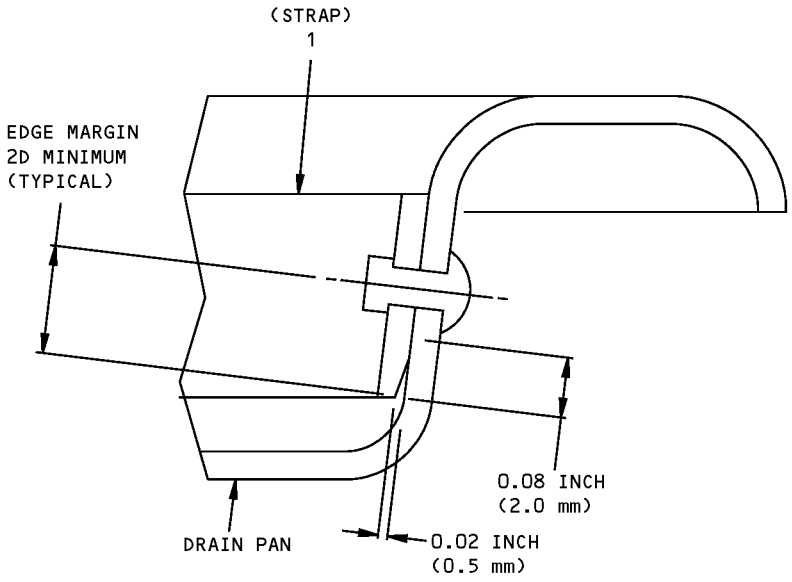
CRACKED CORNER
DETAIL VII

Drain Pan Corner Crack Repair - Cargo Drive Unit
Figure 201 (Sheet 6 of 7)



DRAIN PAN WITH INTEGRATED STIFFENER

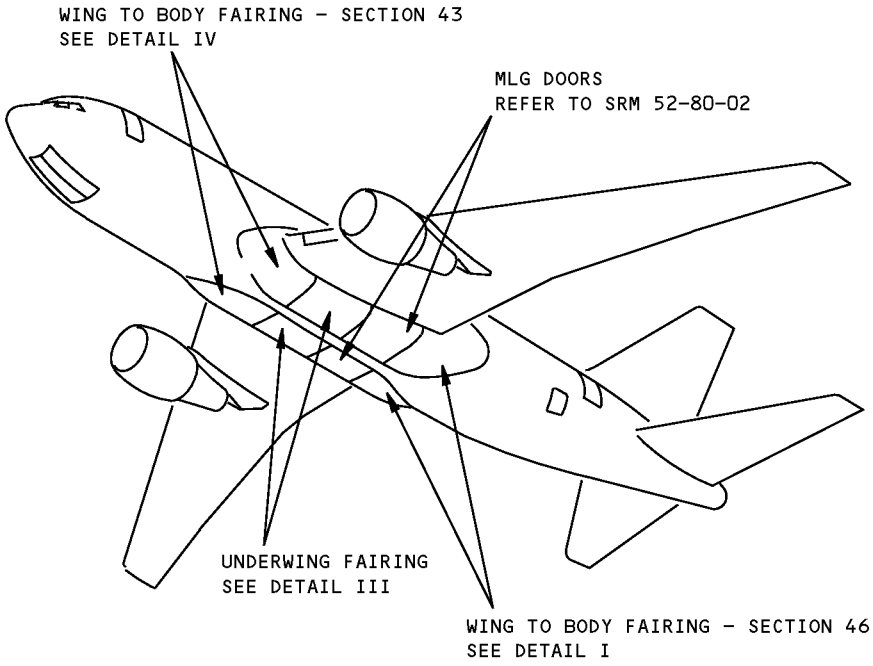
C-C

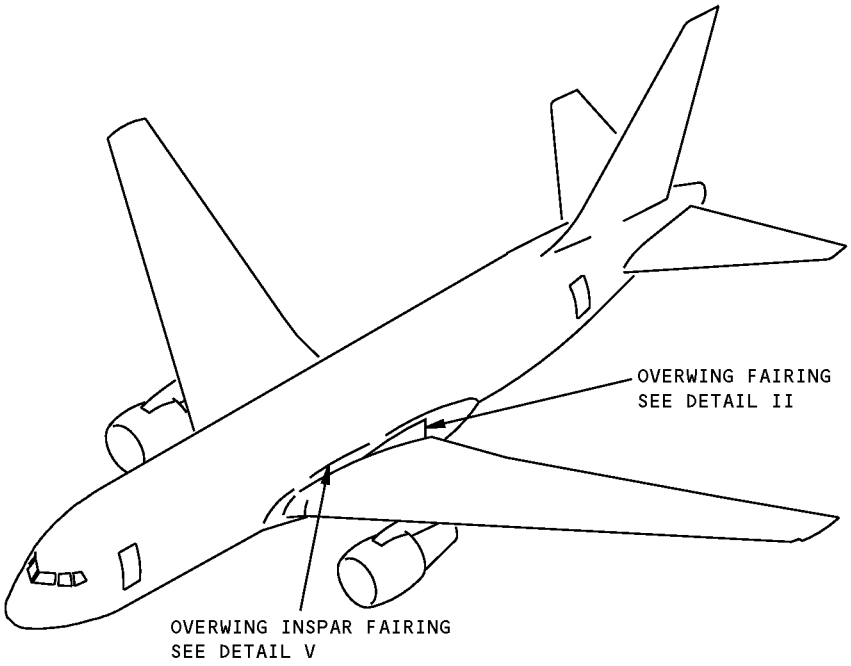


SECTION D-D

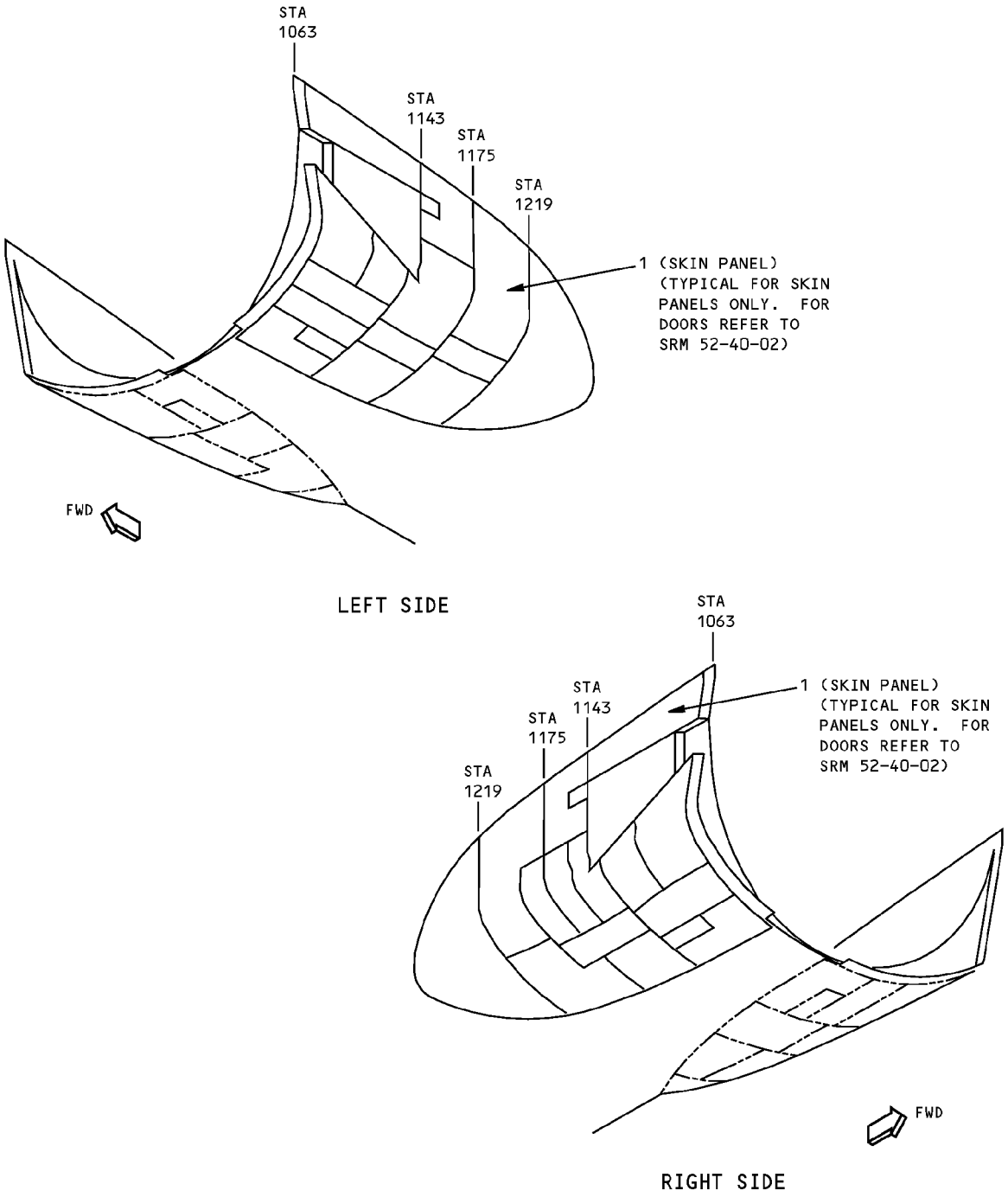
Drain Pan Corner Crack Repair - Cargo Drive Unit
Figure 201 (Sheet 7 of 7)

ALLOWABLE DAMAGE 1 - WING TO BODY FAIRING SKINS

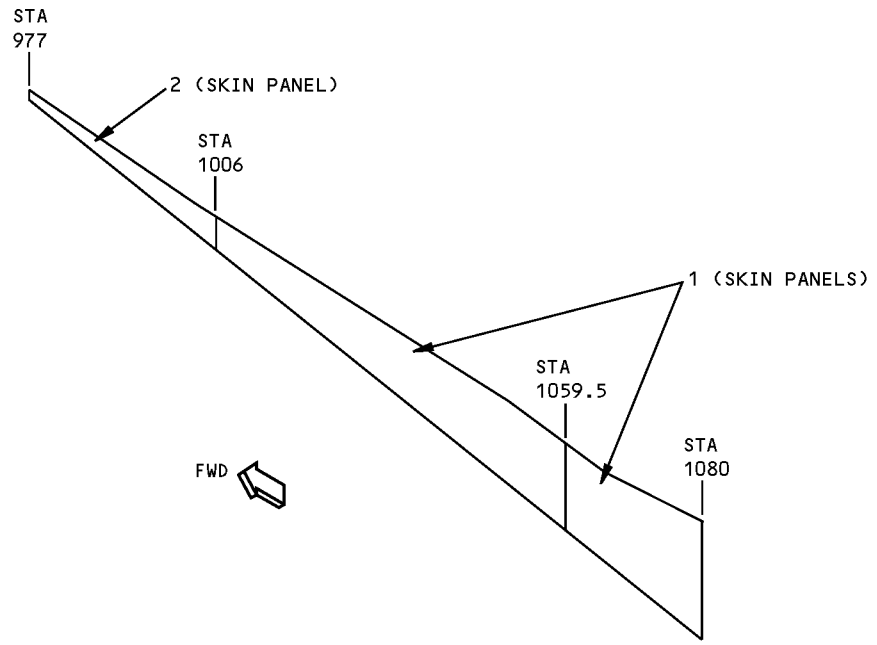




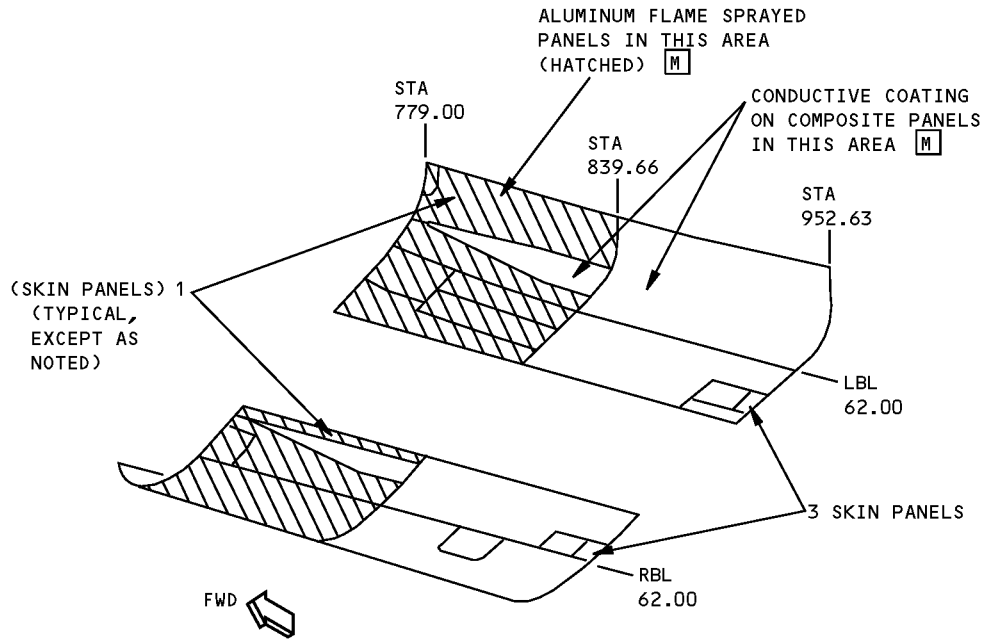
Allowable Damage - Wing to Body Fairing Skins
Figure 101 (Sheet 1 of 6)



Allowable Damage - Wing to Body Fairing Skins
Figure 101 (Sheet 2 of 6)

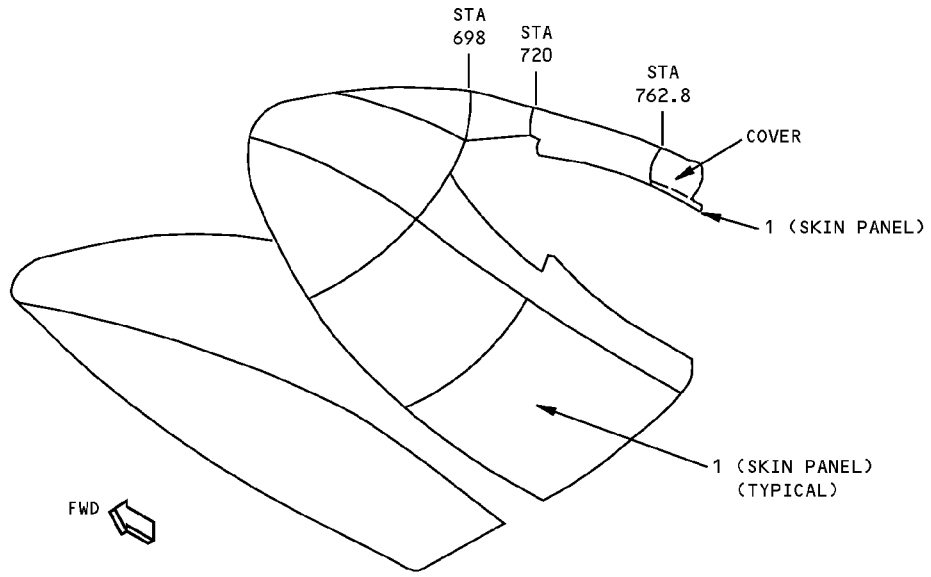


LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
OVERWING FAIRING
DETAIL II

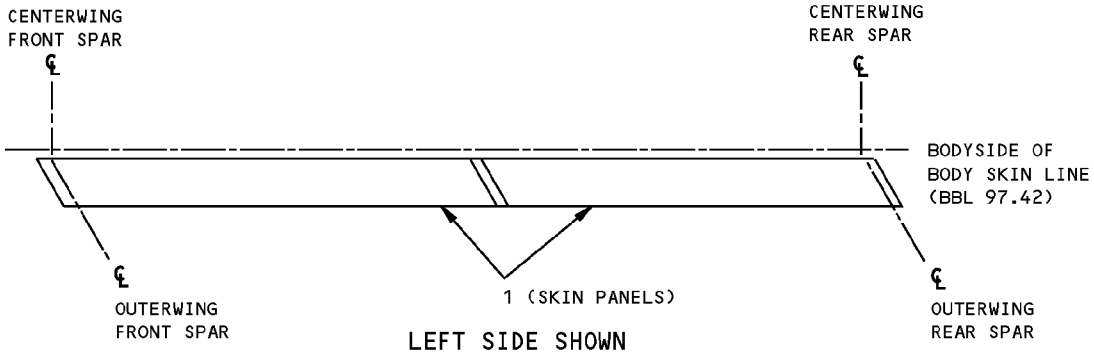


UNDERWING FAIRING
DETAIL III

Allowable Damage - Wing to Body Fairing Skins
Figure 101 (Sheet 3 of 6)



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
WING TO BODY FAIRING - SECTION 43
DETAIL IV



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
OVERWING INSPAR FAIRING SKINS
DETAIL V

ITEM		CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES	DELAMINATION
SKIN PANELS						
1	ARAMID/GRAPHITE W/HONEYCOMB CORE	B	C	D	E	F
2	ARAMID LAMINATE	G	C	NOT ALLOWED	H	I
3	ALUMINUM	J	K	SEE DETAIL VII	L	—
COVER		J	K	SEE DETAIL VII	L	—

Allowable Damage - Wing to Body Fairing Skins
Figure 101 (Sheet 4 of 6)

NOTES

- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN.
- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE DAMAGE EXCEEDS THE LIMITS SHOWN IN SRM 51-10-01, CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- REFINISH REWORKED AREAS PER AMM 51-20 OF THE 767 MAINTENANCE MANUAL.
- DAMAGE TO PANEL EDGES MAY BE CONFINED TO DELAMINATION OR MAY TAKE A FORM WHICH RESULTS IN DAMAGE TO FIBERS AND A LOSS OF EFFECTIVE CROSS-SECTIONAL AREA. THIS TYPE OF DAMAGE SHOULD BE REMOVED AND THE LIMITATIONS GIVEN FOR CRACKS APPLIED.

[A] REMOVE MOISTURE FROM DAMAGE AREA. USE OF VACUUM AND HEAT (MAX OF 125°F [52°C]) TO REMOVE MOISTURE FROM HONEYCOMB CELLS IS RECOMMENDED. PROTECT DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE). RECORD THE LOCATION AND INSPECT EACH STRUCTURES A-CHECK. REPLACE THE ALUMINUM FOIL TAPE IF ANY PEELING OR DETERIORATION IS EVIDENT. REPAIR NO LATER THAN NEXT STRUCTURES C-CHECK.

[B] 2.0 INCHES (50 mm) MAX LENGTH IN HONEYCOMB AREA IS ALLOWED PER SQUARE FOOT OF AREA AND A MINIMUM OF 6.0 INCHES (150 mm) FROM ANY OTHER CRACK. CLEAN UP EDGE CRACKS PER DETAIL VI. CRACKS THROUGH CONSECUTIVE FASTENERS OR THROUGH THE PANEL EDGEBAND ARE ALLOWED PROVIDED DAMAGE DOES NOT EXCEED 10% OF EDGEBAND LENGTH PER SIDE. [A]

[C] DAMAGE ALLOWED ON SURFACE RESIN ONLY. DAMAGE TO FIBERS NOT ALLOWED. CLEAN UP EDGE DAMAGE PER DETAIL VI.[A]

[D] DENTS GENERALLY RESULT IN FIBER DAMAGE OR DELAMINATION. HOWEVER, PROVIDED THAT THERE IS NO FIBER DAMAGE OR DELAMINATION, DENTS UP TO 1.50 INCH (38 mm) DIA MAX ARE ALLOWED. ONE DENT PER SQUARE FOOT OF AREA ALLOWED WHICH MUST BE A MINIMUM OF 6 INCHES (150 mm) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR PANEL EDGE. IF FIBER DAMAGE OR DELAMINATION IS PRESENT, REFER TO APPLICABLE DAMAGE DATA IN TABLE.

[E] 1.0 INCH (25 mm) MAX DIA IS ALLOWED IN HONEYCOMB AREA ONLY PROVIDED DAMAGE IS MIN OF 2.5 D FROM OTHER DAMAGE, NEAREST HOLE, OR MATERIAL EDGE. DO NOT CLEAN UP DAMAGE EXCEPT TO REMOVE RESIN BURRS EXTENDING INTO SURFACE CONTOUR. [A]

[F] 1.0 INCH (25 mm) MAX DIA IS ALLOWED IN HONEYCOMB AREA. A MAXIMUM OF 0.10 INCH (2.5 mm) DELAMINATION FROM EDGE IS ALLOWED. REPAIR DELAMINATION IN HONEYCOMB AREA PER 51-70 NO LATER THAN THE NEXT STRUCTURES C-CHECK. PROTECT EDGE DAMAGE PER [A].

[G] 1.0 INCH (25 mm) MAX LENGTH PER SQUARE FOOT OF AREA AND A MIN OF 6.0 INCHES (150 mm) FROM ANY OTHER CRACK. CLEAN UP EDGE CRACKS PER DETAIL VI. CRACKS THROUGH CONSECUTIVE FASTENERS FASTENERS THROUGH THE EDGEBAND ARE ALLOWED PROVIDED DAMAGE DOES NOT EXCEED 10% OF EDGEBAND LENGTH PER SIDE.[A]

[H] 1.0 INCH (25 mm) MAX DIA ALLOWED PROVIDED DAMAGE IS MIN OF 2.5 D FROM OTHER DAMAGE, NEAREST HOLE, OR MATERIAL EDGE. DO NOT CLEAN UP DAMAGE EXCEPT TO REMOVE RESIN BURRS EXTENDING INTO SURFACE CONTOUR. [A]

[I] 1.0 INCH (25 mm) MAX DIA IS ALLOWED. A MAXIMUM OF 0.10 INCH (2.5 mm) DELAMINATION FROM EDGE IS ALLOWED. PROTECT EDGE DAMAGE PER [A].

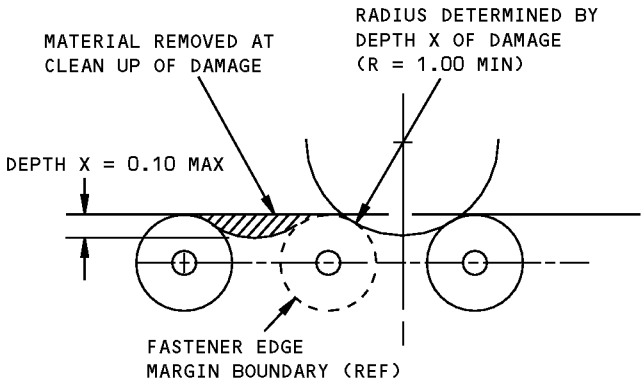
[J] CRACKS NOT ALLOWED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED PER DETAIL VI.

[K] REMOVE DAMAGE PER DETAILS VI AND VII.

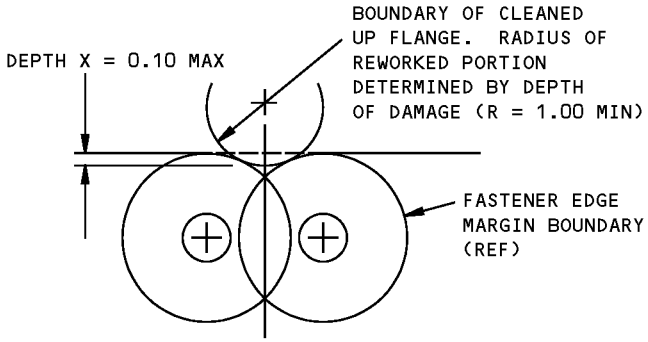
[L] CLEAN OUT DAMAGE UP TO 0.25 INCH (6 mm) MAX DIA AND NOT CLOSER THAN 1.0 INCH (25 mm) TO FASTENER HOLE OR OTHER DAMAGE. FILL HOLE WITH A 2117 ALUMINUM RIVET. ALL OTHER HOLES MUST BE REPAIRED.

[M] RESTORE DAMAGED ALUMINUM FLAME SPRAY OR CONDUCTIVE COATINGS PER SRM 51-70-14.

Allowable Damage - Wing to Body Fairing Skins
Figure 101 (Sheet 5 of 6)

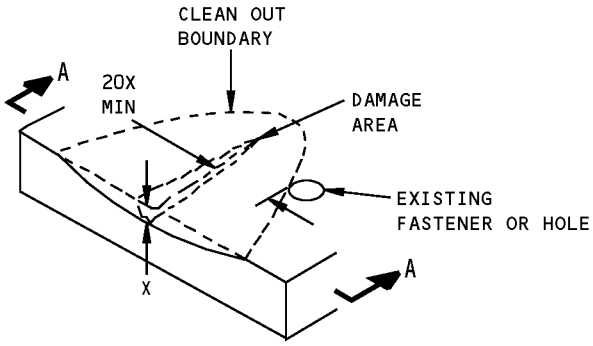


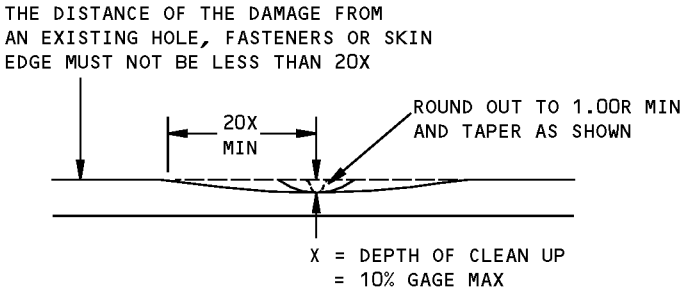
DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS OVERLAP

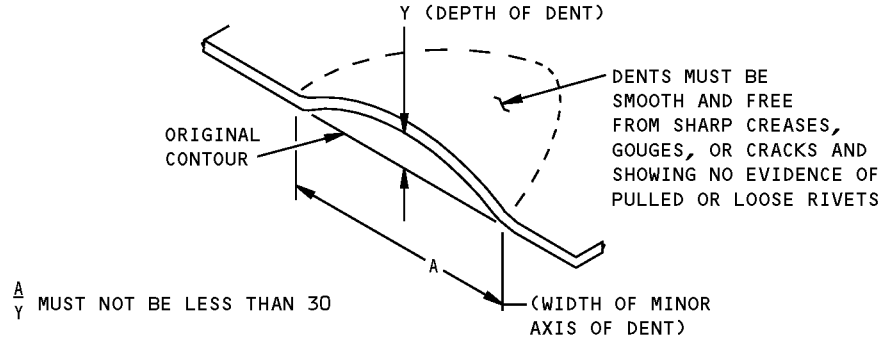
DETAIL VI





SECTION A–A

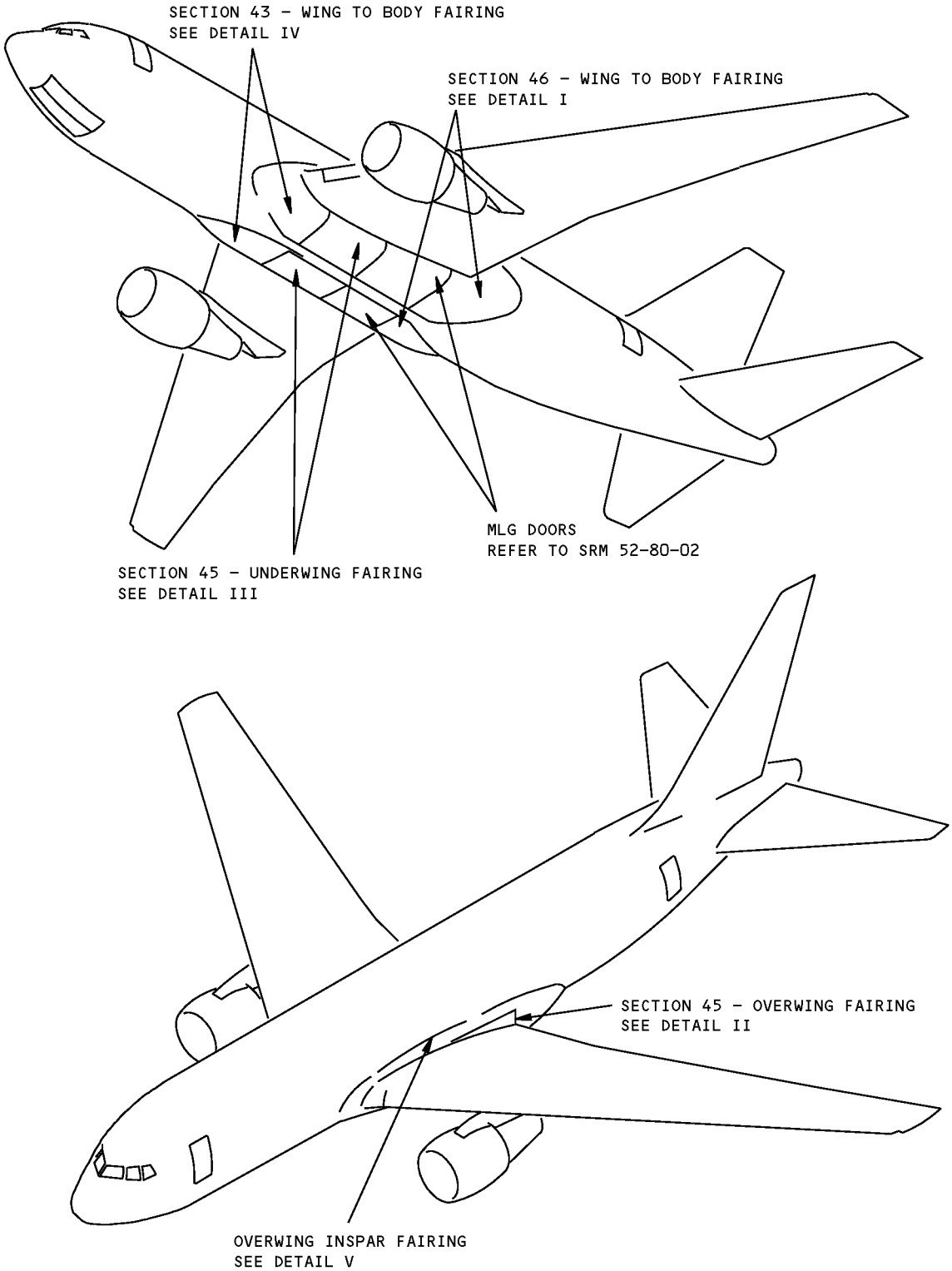
REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL VII



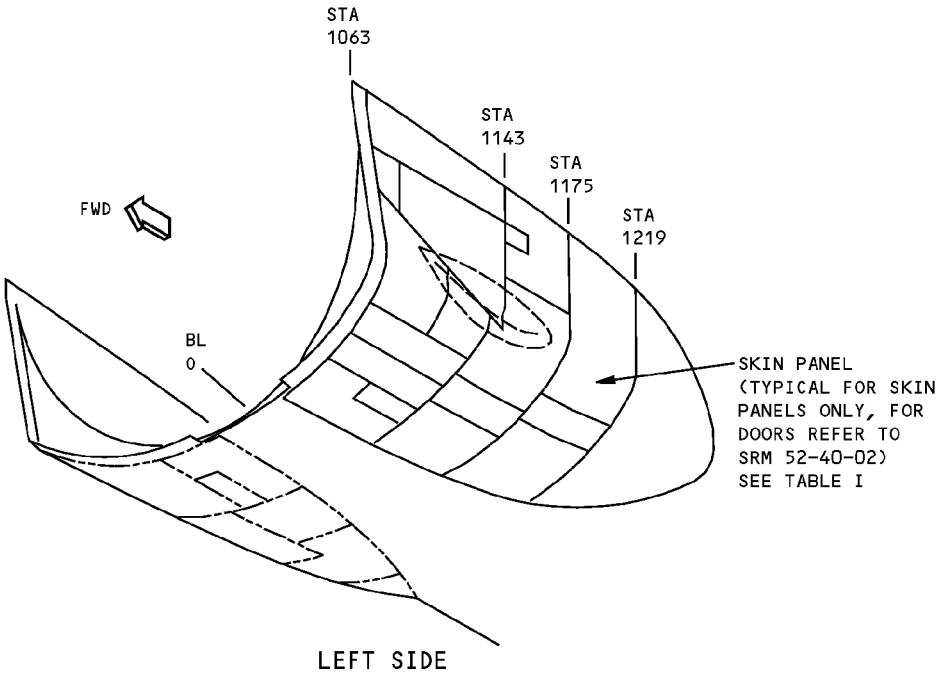
ALLOWABLE DAMAGE FOR DENT
DETAIL VIII

Allowable Damage - Wing to Body Fairing Skins
Figure 101 (Sheet 6 of 6)

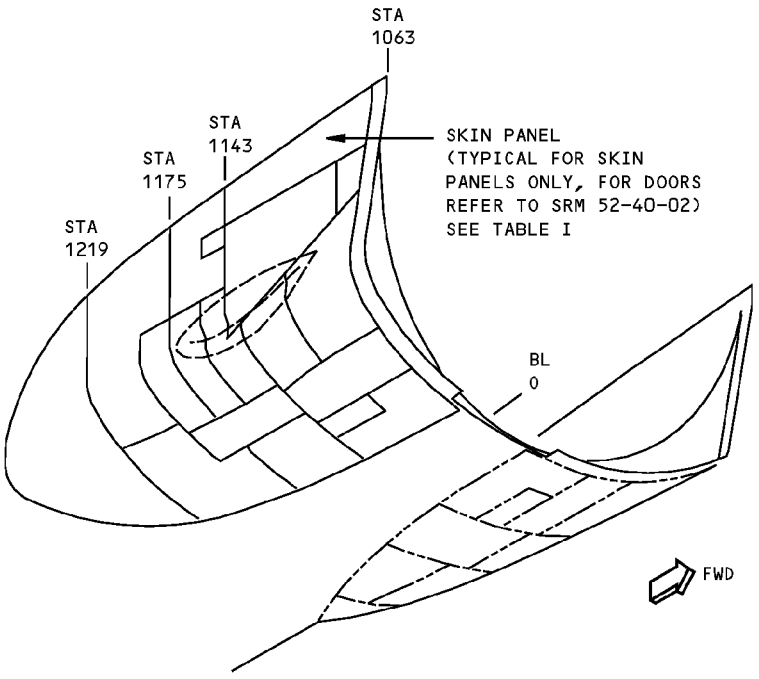
REPAIR 1 - WING TO BODY FAIRING SKIN



Wing to Body Fairing Skin Repairs
Figure 201 (Sheet 1 of 7)

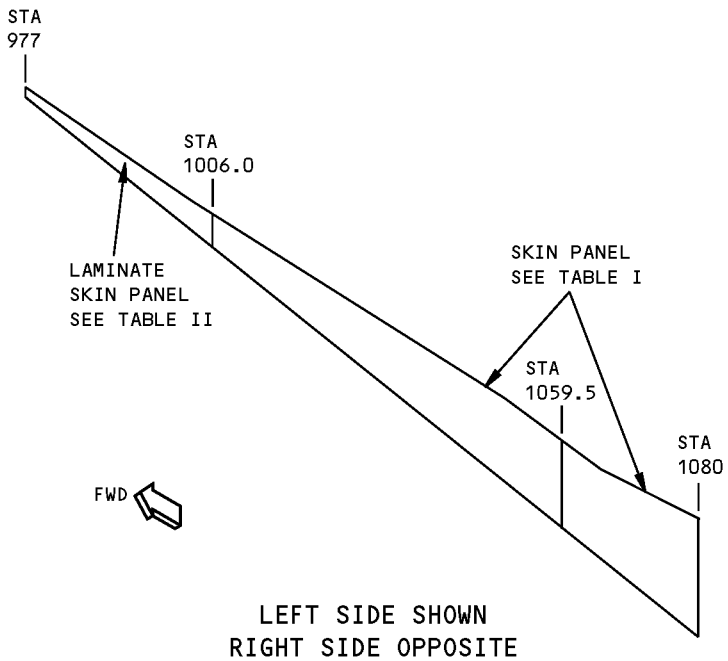


LEFT SIDE

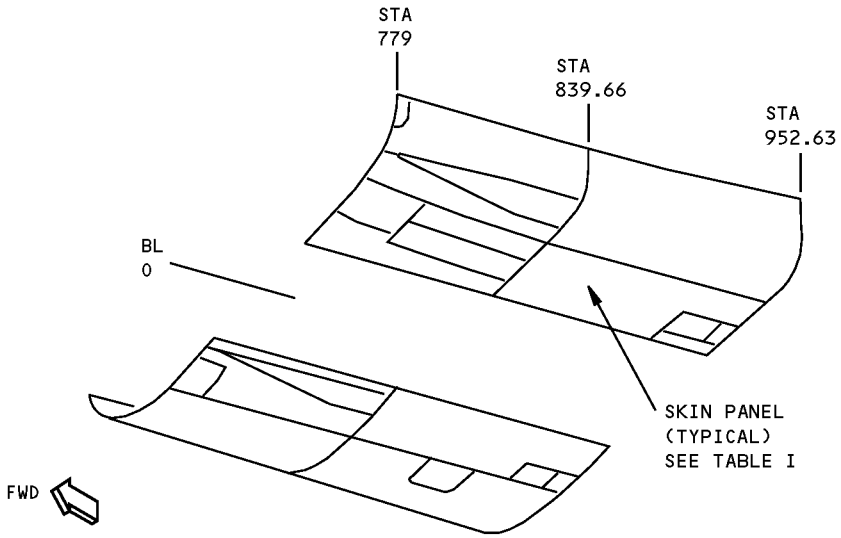


RIGHT SIDE
SECTION 46 - WING TO BODY FAIRING
DETAIL I

Wing to Body Fairing Skin Repairs
Figure 201 (Sheet 2 of 7)

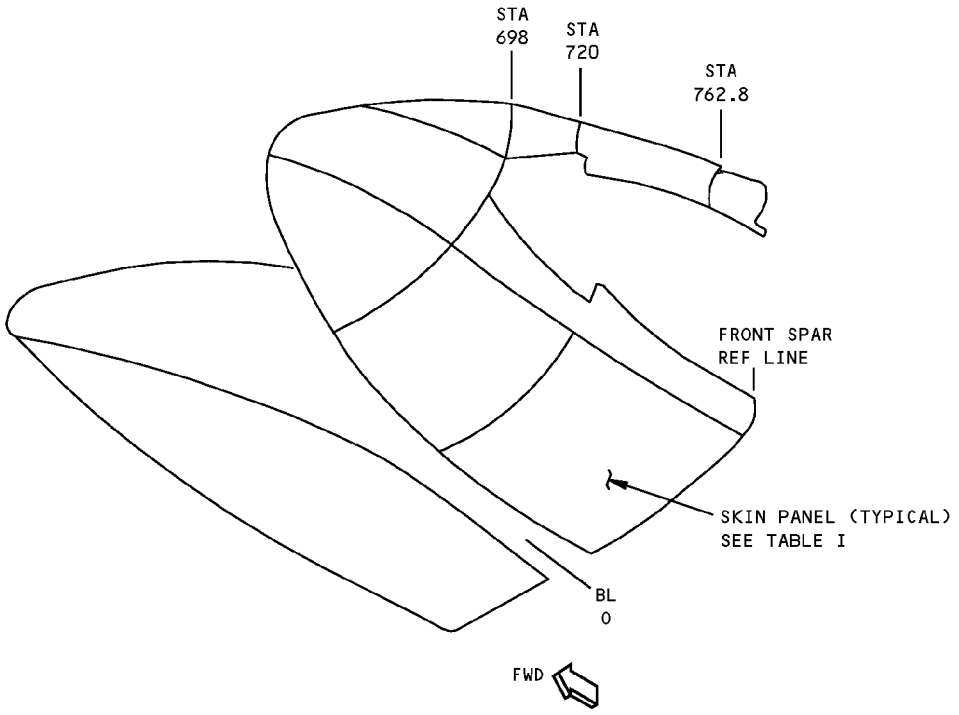


LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
SECTION 45 – OVERWING FAIRING
DETAIL II



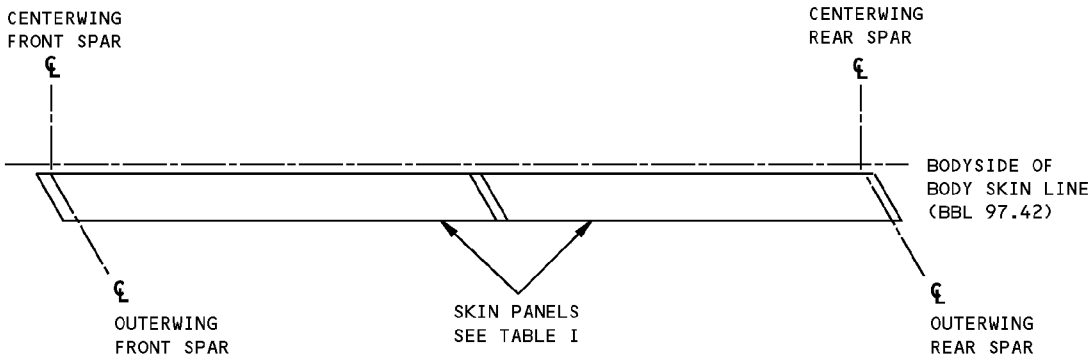
SECTION 45 – UNDERWING FAIRING
DETAIL III

Wing to Body Fairing Skin Repairs
Figure 201 (Sheet 3 of 7)



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
SECTION 43 - WING TO BODY FAIRING

DETAIL IV



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
OVERWING INSPAR FAIRING SKINS

DETAIL V

Wing to Body Fairing Skin Repairs
Figure 201 (Sheet 4 of 7)

NOTES

- REFER TO 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS. WHERE THE REPAIR EXCEEDS THE LIMITS SHOWN IN 51-10-01 CONSIDERATION SHOULD BE GIVEN TO THE LOSS OF PERFORMANCE INVOLVED
- REFER TO 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- RESTORE DAMAGED ALUMINUM FLAME SPRAY OR CONDUCTIVE COATING PER 51-70-14
- REFINISH REWORKED AREAS PER 51-21 OF THE 767 MAINTENANCE MANUAL

[A] DO NOT EXTEND GRAPHITE/EPOXY REPAIR PLIES INTO PANEL EDGEBAND

[B] MINIMUM SPACING (EDGE TO EDGE), 6.00 INCHES (150 mm) BETWEEN CORE REPAIRS

[C] LIMITED TO REPAIR OF ONE FACESHEET SKIN AND HONEYCOMB CORE. INSPECT INTERIM REPAIR USING INSTRUMENTED NDT METHODS OR "TAP" TEST EVERY "C" CHECK [G]

[D] INSPECT INTERIM REPAIR USING INSTRUMENTED NDT METHODS OR "TAP" TEST EVERY AIRPLANE "2A" CHECK [G]

[E] ONE REPAIR PER SQUARE FOOT OF AREA AND A MINIMUM OF 3.00 INCHES (75 mm) (EDGE TO EDGE) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR EDGE OF PANEL

[F] WHERE BMS 5-95 SEALANT IS APPLIED ON EXTERIOR SURFACES OF PANEL AT MANUFACTURE, REAPPLY BMS 5-95 SEALANT ON REWORKED AREAS PRIOR TO THE APPLICATION OF ENAMEL FINISH. REFER TO 51-21-12 OF THE 767 MAINTENANCE MANUAL

[G] FOR "TAP" TEST USE A SOLID METAL DISK AND TAP THE REPAIR AREA LIGHTLY BUT FIRMLY. VOID AREAS WILL PRODUCE A DULL SOUND AS OPPOSED TO A SHARP RING ON A SOLID BONDED AREA. PERMANENT REPAIR IS REQUIRED IF ANY DETERIORATION IS EVIDENT. REFER TO 51-70-03, PAR. 4.I. AND THE NONDESTRUCTIVE TEST MANUAL, D634T301. THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN

[H] TWO PLIES OF BMS 9-3 TYPE H-2, OR H-3 MAY BE SUBSTITUTED FOR EACH PLY OF BMS 8-168 TYPE I, CLASS 2, STYLE 3K-70-PW. THESE PLIES MUST MAINTAIN THE REQUIRED 1.0 INCH (25 mm) OVERLAP

Wing to Body Fairing Skin Repairs
Figure 201 (Sheet 5 of 7)

DAMAGE	INTERIM REPAIRS [C]	PERMANENT REPAIRS [A]		
	WET LAYUP ROOM TEMP/150°F (66°C) CURE (51-70-03) [H]	WET LAYUP 150°F (66°C) CURE (51-70-03)	WET LAYUP 200°F (93°C) CURE (51-70-17)	250°F (121°C) CURE (51-70-05)
CRACKS	UP TO 4.0 INCHES (100 mm) LONG, REPAIR WITH PATCH PER 51-70-03 [B]	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE
HOLES	4.0 INCH (100 mm) MAX DIA NOT TO EXCEED 30% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH PER 51-70-03 [B]	8.0 INCH (200 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES PER FACESHEET REPAIRED [B]	16.0 INCH (400 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION OF HONEYCOMB PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES PER FACESHEET REPAIRED	NO SIZE LIMIT
DELAMI-NATION	CUT OUT AND REPAIR AS HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES PER 51-70-03 IF FIBER DAMAGE OR DELAMINATION EXISTS, REPAIR AS A HOLE			
DENTS	UP TO 4.0 INCHES (100 mm) DIA WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH PER 51-70-03 OVER 4.0 INCHES (100 mm) DIA OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS HOLE			

REPAIR DATA FOR 250°F CURE ARAMID/GRAPHITE HONEYCOMB PANELS [F]
TABLE I

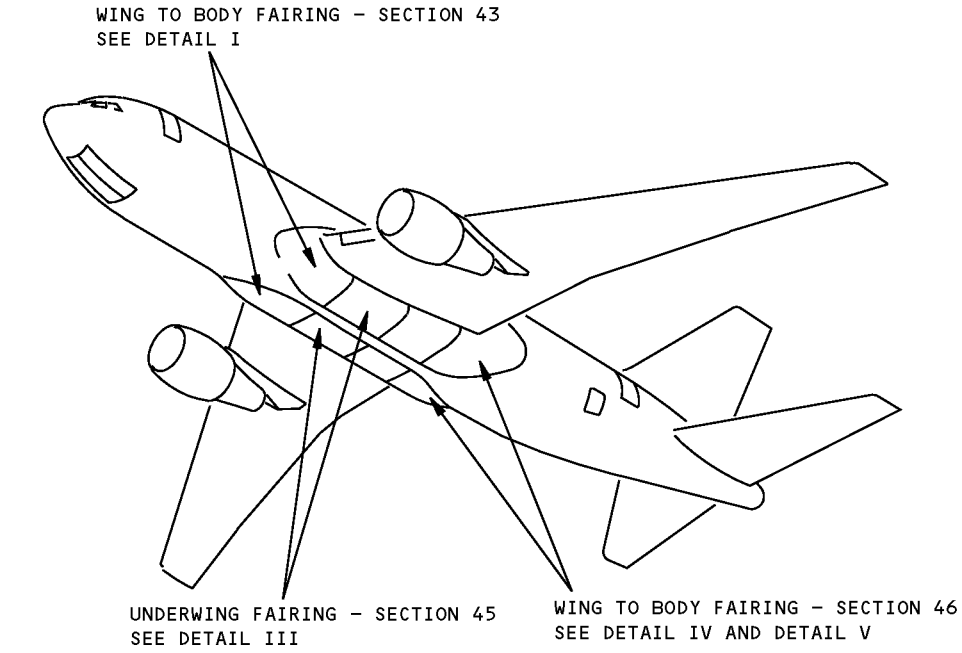
Wing to Body Fairing Skin Repairs
Figure 201 (Sheet 6 of 7)

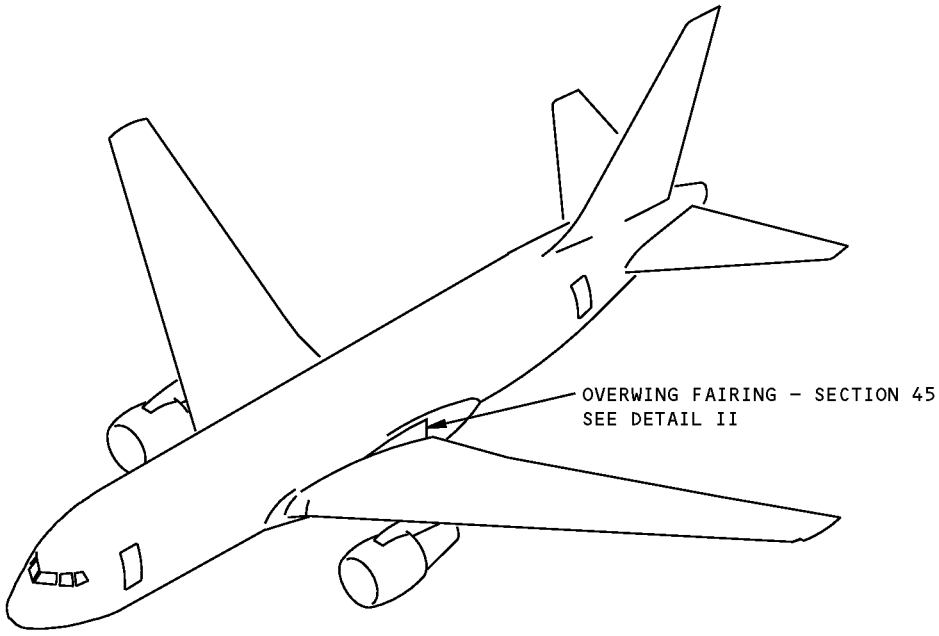
DAMAGE	INTERIM REPAIRS [D]	PERMANENT REPAIRS		
	WET LAYUP ROOM TEMP/150°F (66°C) CURE (51-70-03)	WET LAYUP 150°F (66°C) CURE (51-70-03)	WET LAYUP 200°F (93°C) CURE (51-70-17)	250°F (121°C) CURE (51-70-05)
CRACKS	UP TO 2.0 INCHES (50 mm) LONG, REPAIR WITH PATCH PER 51-70-03, PAR. 5.N. [E]	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE	CLEAN UP DAMAGE AND REPAIR AS HOLE
HOLES	2.0 INCH (50 mm) MAX DIA NOT TO EXCEED 30% OF SMALLEST DIMENSION ACROSS LAMINATE PANEL AT THE DAMAGE LOCATION. FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH PER 51-70-03, PAR. 5.N. [E]	5.0 INCH (125 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION ACROSS LAMINATE PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES PER SIDE [E]	10.0 INCH (250 mm) MAX DIA NOT TO EXCEED 50% OF SMALLEST DIMENSION ACROSS LAMINATE PANEL AT THE DAMAGE LOCATION. USE TWO EXTRA PLIES PER SIDE	NO SIZE LIMIT
DELAMI-NATION	CUT OUT AND REPAIR AS HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL NICKS OR GOUGES PER 51-70-03 IF FIBER DAMAGE OR DELAMINATION EXISTS, REPAIR AS A HOLE			
DENTS	UP TO 2.0 INCHES (50 mm) DIA WITH NO FIBER DAMAGE OR DELAMINATION, FILL WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND PATCH PER 51-70-03, PAR. 5.L. [E] OVER 2.0 INCHES (50 mm) DIA OR WITH FIBER DAMAGE OR DELAMINATION, REPAIR AS HOLE			

REPAIR DATA FOR 250°F CURE ARAMID LAMINATES [F]
TABLE II

Wing to Body Fairing Skin Repairs
Figure 201 (Sheet 7 of 7)

ALLOWABLE DAMAGE 1 - WING TO BODY FAIRING STRUCTURE





Wing to Body Fairing Structure Allowable Damage
Figure 101 (Sheet 1 of 10)

NOTES

- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN
- REFER TO 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- REFINISH REWORKED AREAS PER 51-21 OF THE 767 MAINTENANCE MANUAL
- DAMAGE TO PANEL EDGES MAY BE CONFINED TO DELAMINATION OR MAY TAKE A FORM WHICH RESULTS IN DAMAGE TO FIBERS AND A LOSS OF EFFECTIVE CROSS-SECTIONAL AREA. THIS TYPE OF DAMAGE SHOULD BE REMOVED AND THE LIMITATIONS GIVEN FOR CRACKS APPLIED

[A] CRACKS NOT ALLOWED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED PER DETAILS VI AND XII

[B] CRACKS NOT ALLOWED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED PER DETAILS VI AND XI

[C] CRACKS NOT ALLOWED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED PER DETAILS VI AND X

[D] REMOVE DAMAGE PER DETAILS VI,VII,IX,AND XII

[E] REMOVE DAMAGE PER DETAILS VI,VII,IX AND XI

[F] REMOVE DAMAGE PER DETAILS VI,VII,IX AND X

[G] FOR EDGE DAMAGE SEE DETAIL XII. FOR LUG DAMAGE, SEE DETAIL XIII. FOR OTHER DAMAGE, SEE DETAIL VII. DAMAGE NOT ALLOWED IN VICINITY OF BUSHINGS

[H] CLEAN OUT DAMAGE UP TO 0.25 MAX DIA AND NOT CLOSER THAN 1.0 INCH (50 mm) TO FASTENER HOLE, MATERIAL EDGE, OR OTHER DAMAGE. FILL HOLE WITH A 2117-T3 OR T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES TO BE REPAIRED

[I] 2.0 INCH (50 mm) MAX LENGTH IN HONEYCOMB AREA IS ALLOWED PER SQUARE FOOT OF AREA AND A MINIMUM OF 6.0 INCHES (150 mm) FROM ANY OTHER CRACK. CLEAN UP EDGE CRACKS PER DETAIL VI. CRACKS THROUGH CONSECUTIVE FASTENERS OR THROUGH THE PANEL EDGEBAND ARE ALLOWED PROVIDED DAMAGE DOES NOT EXCEED 10% OF EDGEBAND LENGTH PER SIDE. [N]

[J] DAMAGE ALLOWED ON SURFACE RESIN ONLY. DAMAGE TO FIBERS NOT ALLOWED. CLEAN UP EDGE DAMAGE PER DETAIL VI. [N]

[K] DENTS GENERALLY RESULT IN FIBER DAMAGE OR DELAMINATION. HOWEVER, PROVIDED THAT THERE IS NO FIBER DAMAGE OR DELAMINATION, DENTS UP TO 1.50 INCH (38 mm) DIA MAX ARE ALLOWED. ONE DENT PER SQUARE FOOT OF AREA ALLOWED WHICH MUST BE A MINIMUM OF 6 INCHES (150 mm) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR PANEL EDGE. IF FIBER DAMAGE OR DELAMINATION IS PRESENT, REFER TO APPLICABLE DAMAGE DATA IN TABLE

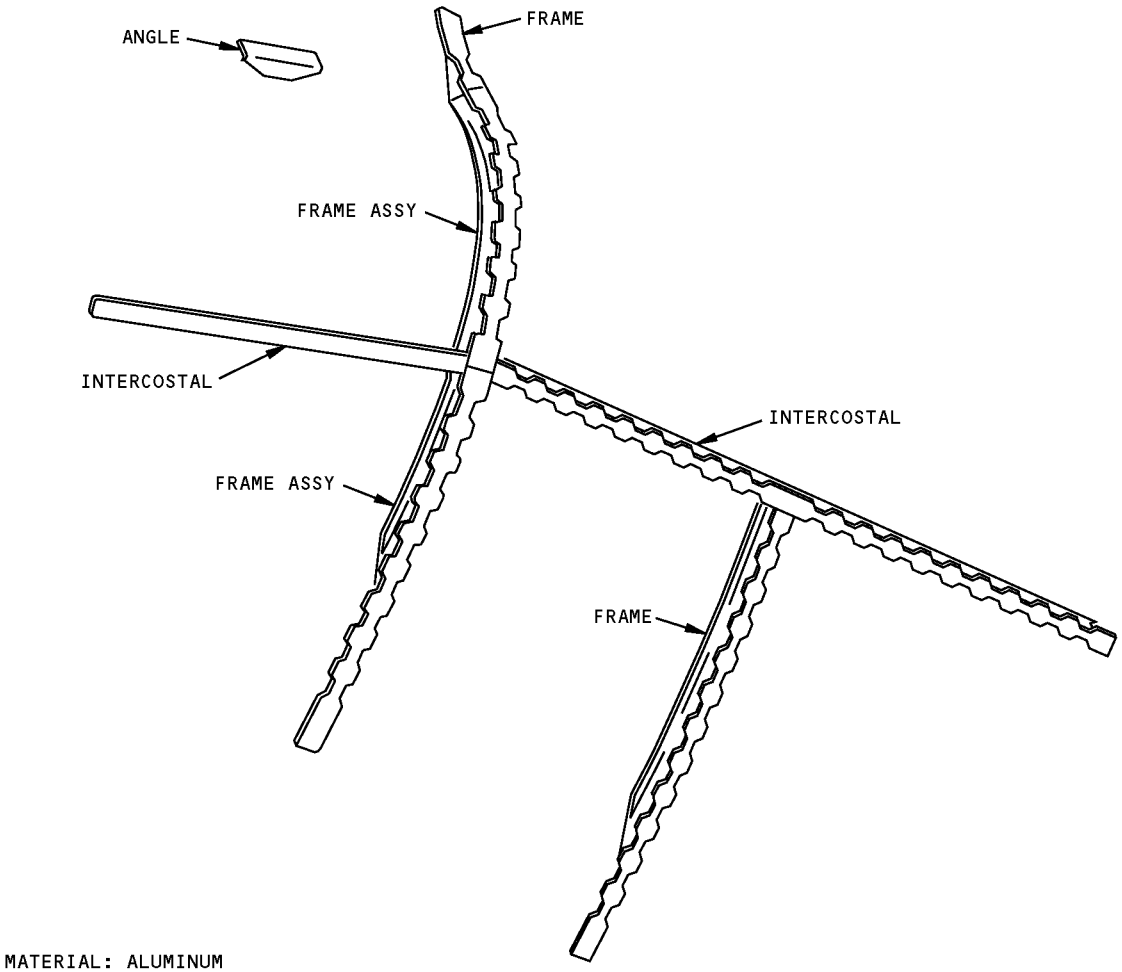
[L] 1.0 INCH (25 mm) MAX DIA IS ALLOWED IN HONEYCOMB AREA ONLY PROVIDED DAMAGE IS MIN OF 2.5 D FROM OTHER DAMAGE, NEAREST HOLE, OR MATERIAL EDGE. DO NOT CLEAN UP DAMAGE EXCEPT TO REMOVE RESIN BURRS EXTENDING INTO SURFACE CONTOUR. [N]

[M] 1.0 INCH (25 mm) MAX DIA IS ALLOWED IN HONEYCOMB AREA. A MAXIMUM OF 0.10 INCH (2.5 mm) DELAMINATION FROM EDGE IS ALLOWED. REPAIR DELAMINATION IN HONEYCOMB AREA PER 51-70 NO LATER THAN THE NEXT "C" CHECK. PROTECT EDGE DAMAGE PER [N]

[N] REMOVE MOISTURE FROM DAMAGE AREA. USE OF VACUUM AND HEAT (MAX OF 125°F [52°C]) TO REMOVE MOISTURE FROM HONEYCOMB CELLS IS RECOMMENDED. PROTECT DAMAGE FROM ENTRANCE OF WATER, SUNLIGHT OR OTHER FOREIGN MATTER BY SEALING WITH ALUMINUM FOIL TAPE (SPEED TAPE) 3M-Y346 OR EQUIVALENT. RECORD THE LOCATION AND INSPECT AT EACH AIRPLANE "A" CHECK. REPLACE THE ALUMINUM FOIL TAPE (SPEED TAPE) IF ANY PEELING OR DETERIORATION IS EVIDENT. REPAIR NO LATER THAN THE NEXT AIRPLANE "C" CHECK

[O] FOR MATING SURFACES, INSTALL LAMINATED SHIMS WITH BMS 5-95 SEALANT. THE GAP MUST BE LESS THAN OR EQUAL TO 0.003 INCH (0.076 mm) AFTER SHIMMING.

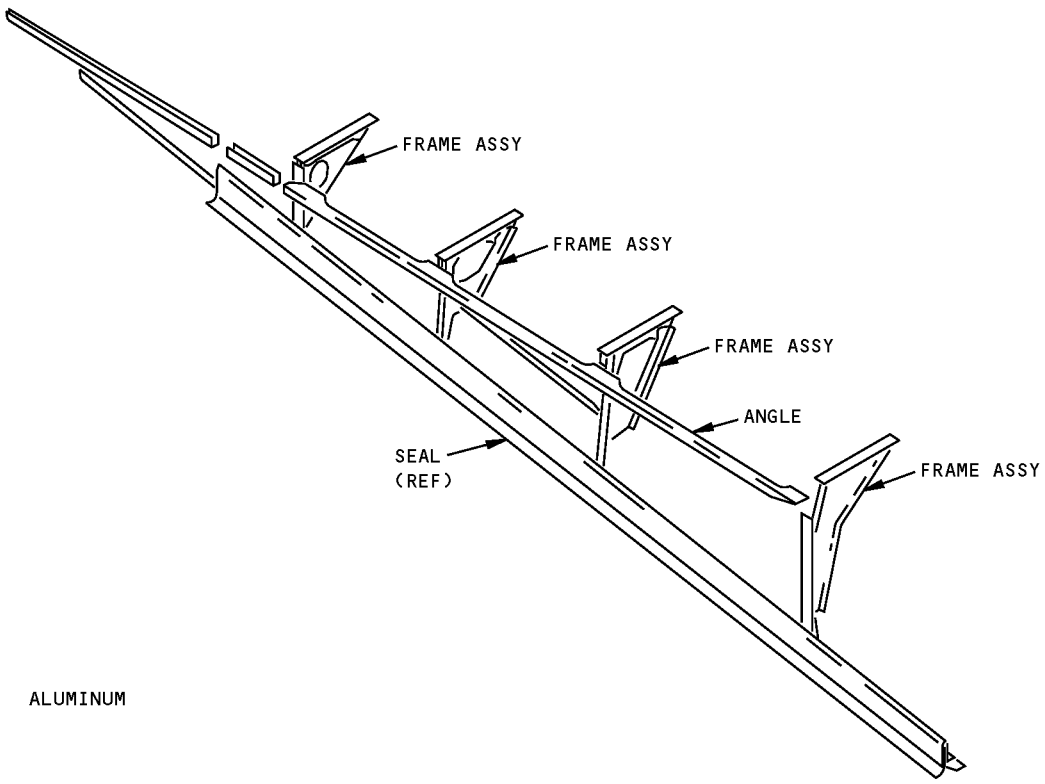
Wing to Body Fairing Structure Allowable Damage
Figure 101 (Sheet 2 of 10)



WING TO BODY FAIRING - SECTION 43
DETAIL I

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
FRAME ASSY				
INNER CHORD	A	D	NOT ALLOWED	NOT ALLOWED
WEB	C	F	SEE DETAIL VIII	H
OUTER CHORD	A	D	NOT ALLOWED	NOT ALLOWED
FRAME	A	D	NOT ALLOWED	ALLOWED IN WEB ONLY. SEE DETAIL XIV
INTERCOSTAL	A	D	NOT ALLOWED	ALLOWED IN WEB ONLY. SEE DETAIL XIV
ANGLE	B	E	SEE DETAIL VIII	H

Wing to Body Fairing Structure Allowable Damage
Figure 101 (Sheet 3 of 10)

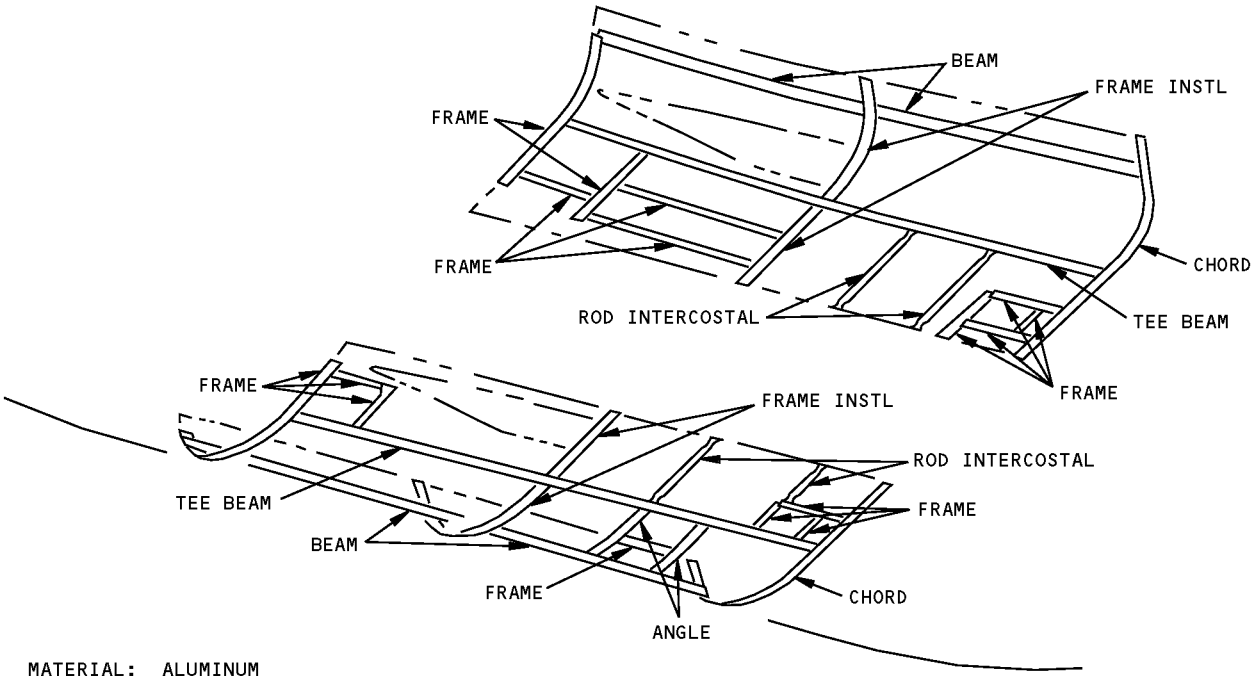


MATERIAL: ALUMINUM

OVERWING FAIRING - SECTION 45
DETAIL II

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
FRAME ASSY				
FRAME	B	E	SEE DETAIL VIII	H
TEES	A	D	NOT ALLOWED	NOT ALLOWED
ANGLE	A	D	NOT ALLOWED	H

Wing to Body Fairing Structure Allowable Damage
Figure 101 (Sheet 4 of 10)

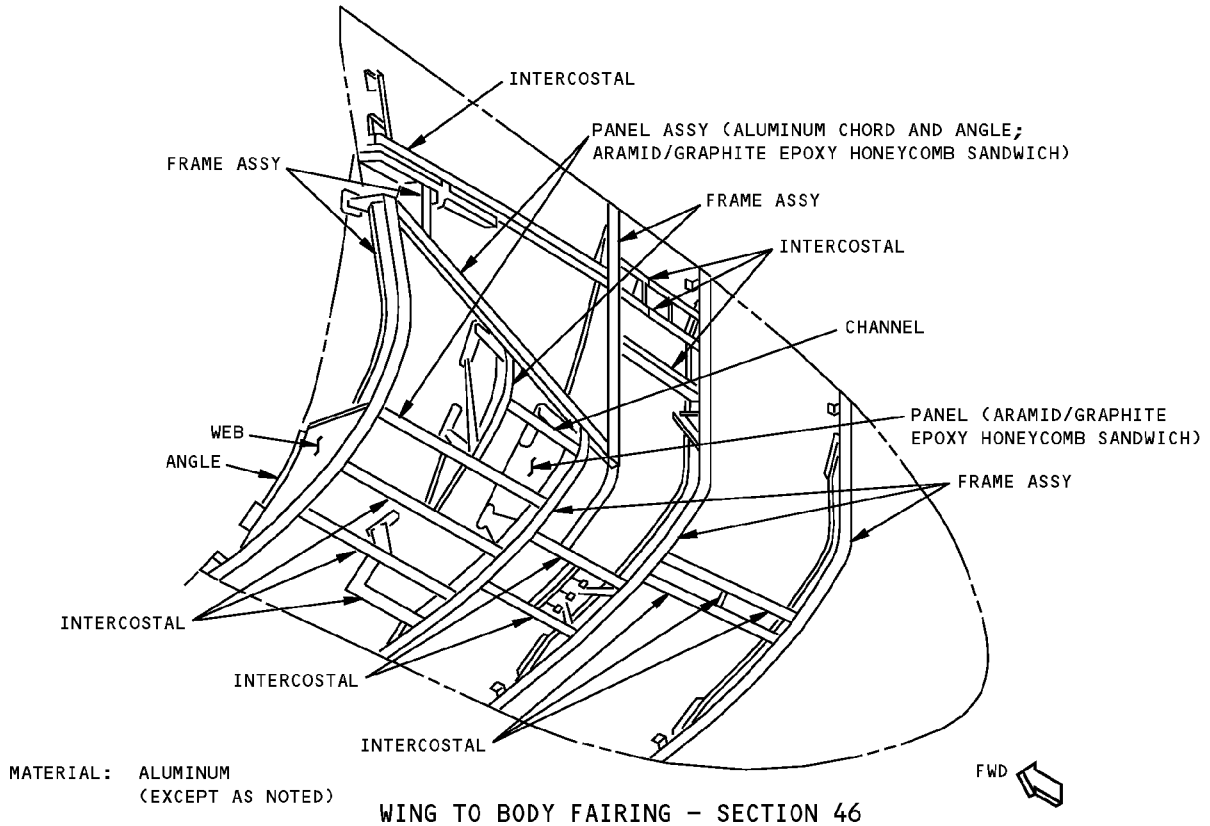


MATERIAL: ALUMINUM

UNDERWING FAIRING – SECTION 45
DETAIL III

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
FRAME	A	D	NOT ALLOWED	ALLOWED IN WEB ONLY. SEE DETAIL XIV
BEAM	B	E	SEE DETAIL VIII	H
TEE BEAM	A	D	NOT ALLOWED	ALLOWED IN WEB ONLY. SEE DETAIL XIV
FRAME INSTL				
INBOARD ("J" SECTION)	A	D	NOT ALLOWED	ALLOWED IN WEB ONLY. SEE DETAIL XIV
CENTER (UPPER TEE)	A	D	NOT ALLOWED	NOT ALLOWED
OUTBOARD (FORMED ANGLE)	B	E	SEE DETAIL VIII	H
ANGLE	B	E	SEE DETAIL VIII	H
CHORD	A	D	NOT ALLOWED	NOT ALLOWED
ROD INTERCOSTAL				
TUBE	NOT ALLOWED	SEE DETAIL XV	NOT ALLOWED	NOT ALLOWED
FORK END	G	G	NOT ALLOWED	NOT ALLOWED

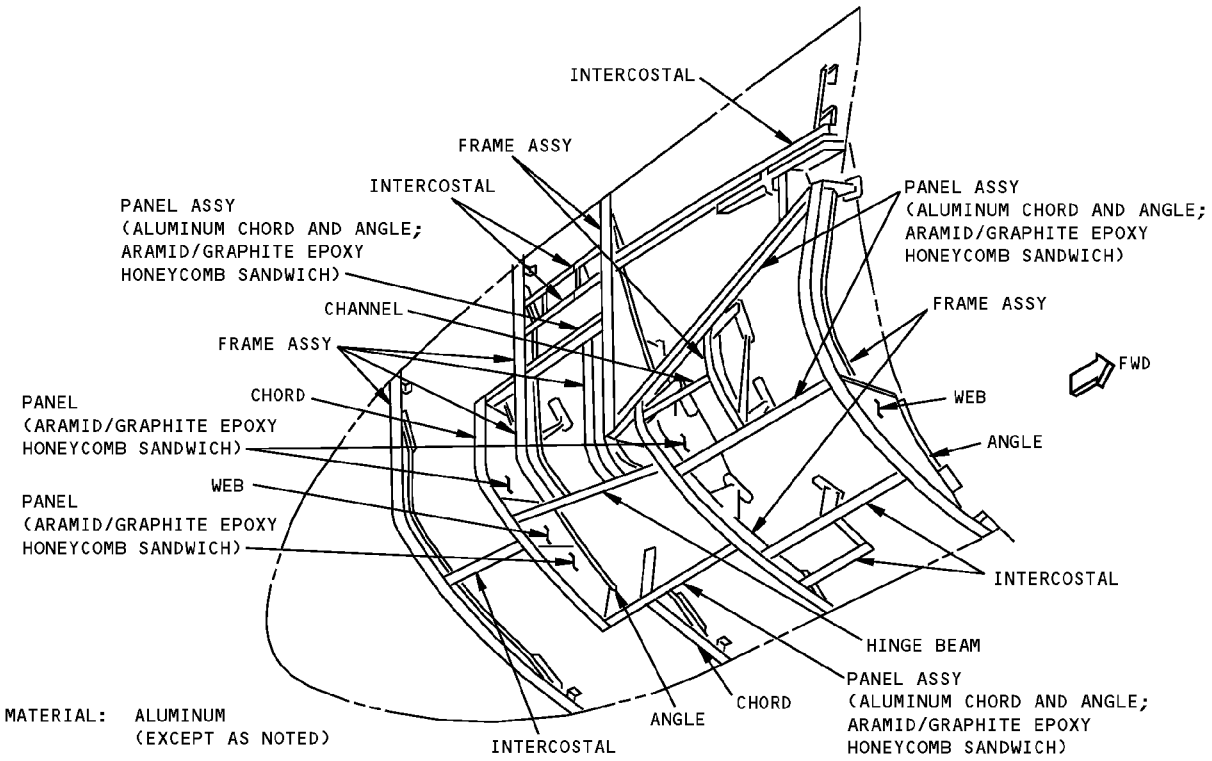
Wing to Body Fairing Structure Allowable Damage
Figure 101 (Sheet 5 of 10)



WING TO BODY FAIRING – SECTION 46
LEFT SIDE
DETAIL IV

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES	PANEL DELAMINATION
FRAME ASSY					
INNER CHORD	A	D	NOT ALLOWED	NOT ALLOWED	—
WEB	C	F	SEE DETAIL VIII	H	—
OUTER CHORD	A	D	NOT ALLOWED	NOT ALLOWED	—
PANEL ASSY					
CHORD	A	D	NOT ALLOWED	NOT ALLOWED	—
ANGLE	B	E	SEE DETAIL VIII	H	—
PANEL	I	J	K	L	M
PANEL	I	J	K	L	M
WEB	C	F	SEE DETAIL VIII	H	—
INTERCOSTAL	A	D	NOT ALLOWED	ALLOWED IN WEB ONLY. SEE DETAIL XIV	—
CHANNEL	B	E	SEE DETAIL VIII	H	—
ANGLE	B	E	SEE DETAIL VIII	H	—

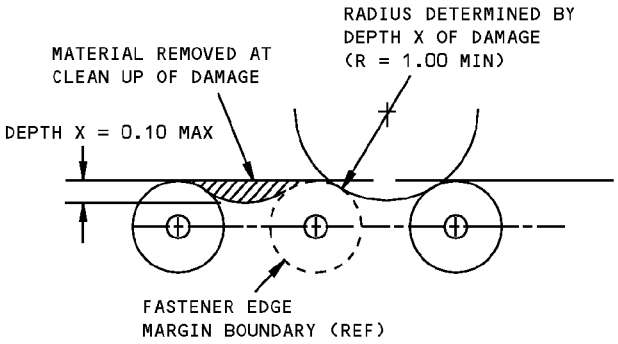
Wing to Body Fairing Structure Allowable Damage
Figure 101 (Sheet 6 of 10)



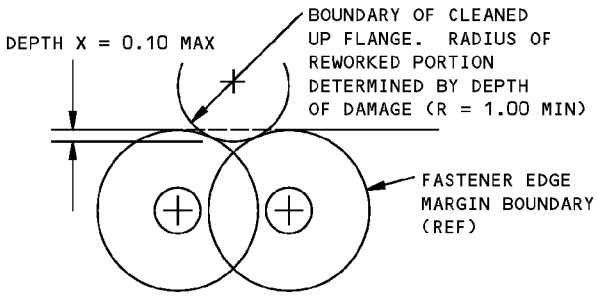
WING TO BODY FAIRING - SECTION 46
RIGHT SIDE
DETAIL V

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES	PANEL DELAMINATION
FRAME ASSY					
INNER CHORD	A	D	NOT ALLOWED	NOT ALLOWED	—
WEB	C	F	SEE DETAIL VIII	H	—
OUTER CHORD	A	D	NOT ALLOWED	NOT ALLOWED	—
PANEL ASSY					
CHORD	A	D	NOT ALLOWED	NOT ALLOWED	—
ANGLE	B	E	SEE DETAIL VIII	H	—
PANEL	I	J	K	L	M
PANEL	I	J	K	L	M
WEB	C	F	SEE DETAIL VIII	H	—
INTERCOSTAL	A	D	NOT ALLOWED	ALLOWED IN WEB ONLY. SEE DETAIL XIV	—
CHANNEL	B	E	SEE DETAIL VIII	H	—
ANGLE	B	E	SEE DETAIL VIII	H	—
CHORD	A	D	NOT ALLOWED	NOT ALLOWED	—
HINGE BEAM	A	D	NOT ALLOWED	NOT ALLOWED	—

Wing to Body Fairing Structure Allowable Damage
Figure 101 (Sheet 7 of 10)

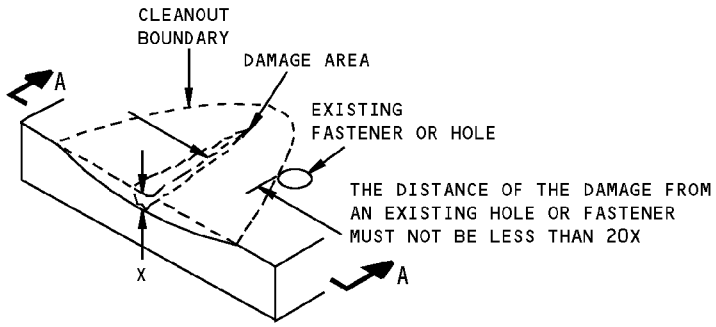


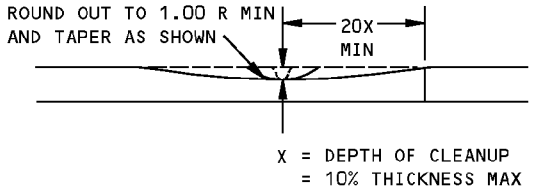
DAMAGE CLEANUP OF EDGES WHERE
FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEANUP OF EDGES WHERE
FASTENER EDGE MARGINS OVERLAP

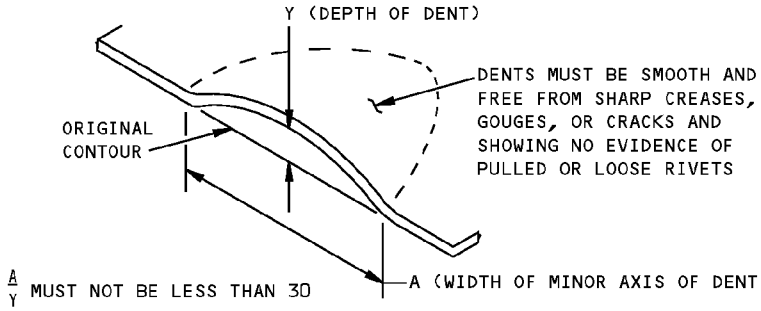
DETAIL VI





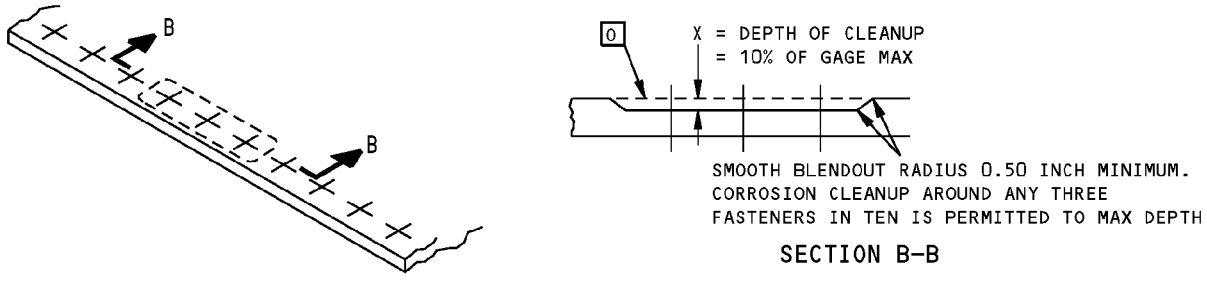
SECTION A-A

REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL VII

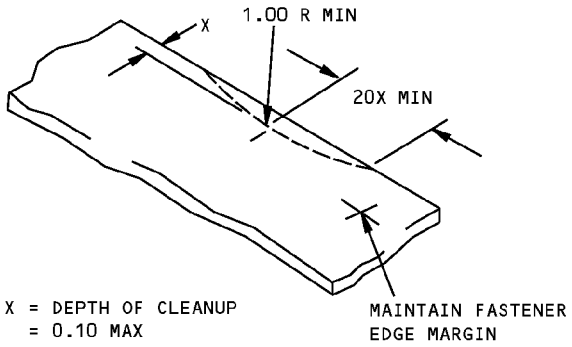


ALLOWABLE DAMAGE FOR DENT
DETAIL VIII

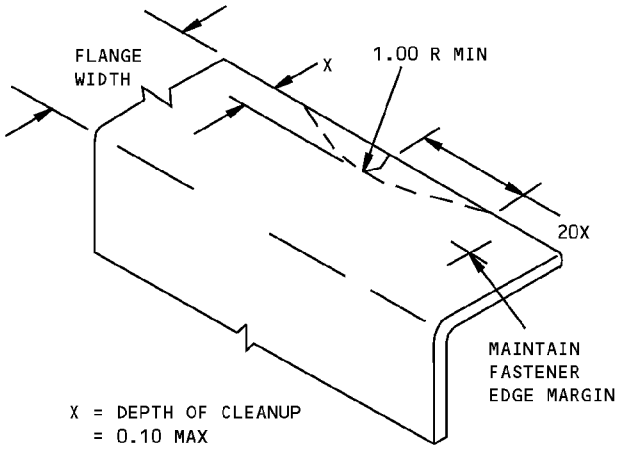
Wing to Body Fairing Structure Allowable Damage
Figure 101 (Sheet 8 of 10)



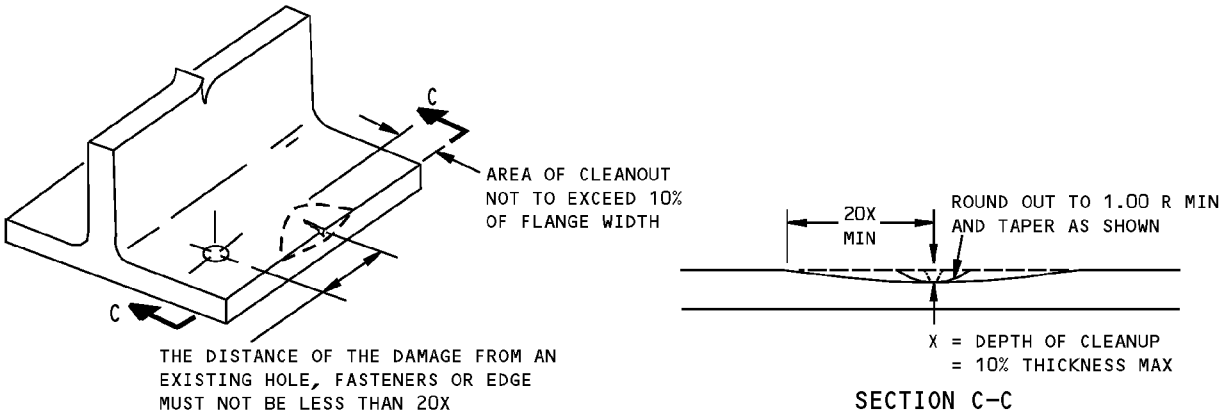
DAMAGE CLEANUP
DETAIL IX



REMOVAL OF DAMAGE ON AN EDGE
DETAIL X

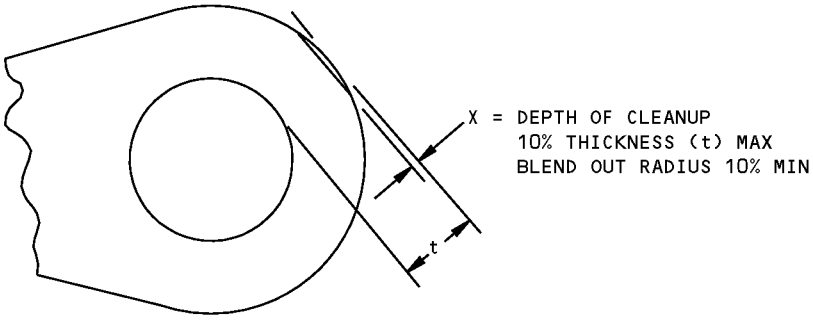


REMOVAL OF DAMAGE ON AN EDGE
DETAIL XI



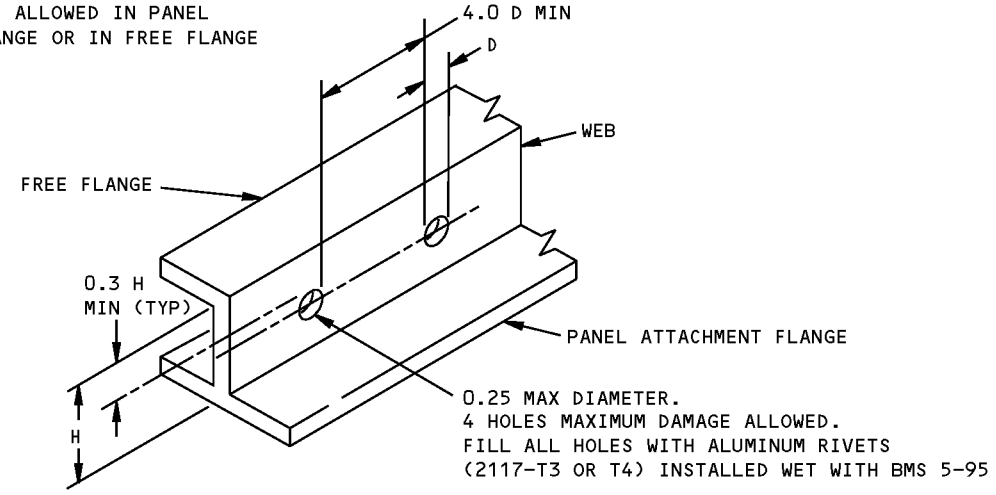
REMOVAL OF DAMAGE ON AN EDGE
DETAIL XII

Wing to Body Fairing Structure Allowable Damage
Figure 101 (Sheet 9 of 10)

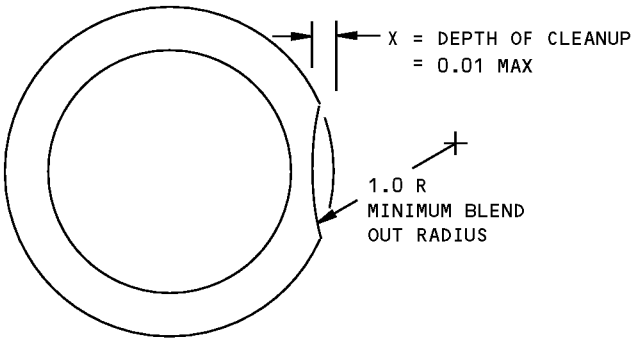


DAMAGE CLEANUP FOR EDGES OF LUG
DETAIL XIII

NOTE: NO HOLE DAMAGE ALLOWED IN PANEL ATTACHMENT FLANGE OR IN FREE FLANGE



ALLOWABLE DAMAGE LIMITS FOR HOLES IN EXTRUDED FRAME WEB
DETAIL XIV



REMOVAL OF DAMAGE ON A TUBE SURFACE
DETAIL XV

Wing to Body Fairing Structure Allowable Damage
Figure 101 (Sheet 10 of 10)

REPAIR 1 - UNDERWING FAIRING BUILT-UP SECTION OUTER CHORD

REPAIR INSTRUCTIONS

1. Make a template of the nutplate holes.
2. Remove damaged section of frame outer chord. See Detail I.
3. Make the repair parts, forming the parts to original contour.
4. Assemble the repair parts and drill the fastener holes.
5. Break sharp edges of original and repair parts 0.015 to 0.030 R.
6. Remove all nicks, scratches, burrs, sharp corners from original and repair parts.
7. Apply a chemical conversion coating to the repair parts and the bare surfaces of original parts.
8. Apply one coat of BMS 10-11, Type I primer and one coat of BMS 10-11 type 2 enamel to all surfaces (except outer surface [A]), of repair parts and reworked surfaces of original parts as given in SOPM 20-41-02.
9. Assemble the repair parts per Detail I, making a faying surface seal with BMS 5-95 sealant. Install fasteners wet with BMS 5-95 sealant.
10. Use template to drill holes for nutplates in repair tee.
11. Install NAS1803-3A5C nutplates with BACR15BA3AD* rivets.

NOTES

- THIS REPAIR IS A PERMANENT REPAIR AND NO DAMAGE TOLERANCE ASSESSMENT IS NECESSARY. REFER TO SRM 51-00-06 FOR REPAIR CLASSIFICATION
- REFER TO THE FOLLOWING WHEN USING THIS REPAIR:
  - AMM 51-31 FOR SEALS AND SEALING
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS

[A] APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER AND ONE COAT OF BMS 10-86, TYPE 1 OR 2 TEFLON ENAMEL COATING TO OUTER REWORKED SURFACE OF ORIGINAL OUTER CHORD AND TO OUTER SURFACE OF REPAIR TEE

FASTENER SYMBOLS

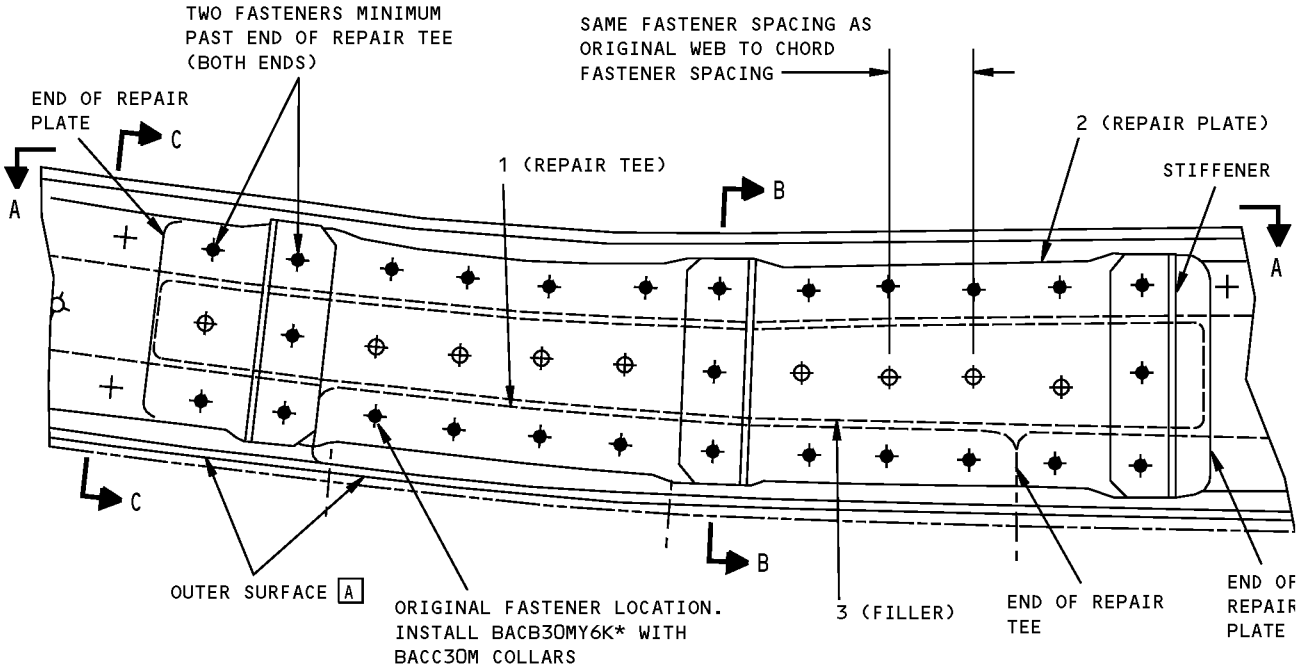
+ REFERENCE FASTENER LOCATION

⊕ ORIGINAL FASTENER LOCATION. INSTALL BACB30MY6K* BOLTS WITH BACC30M COLLARS

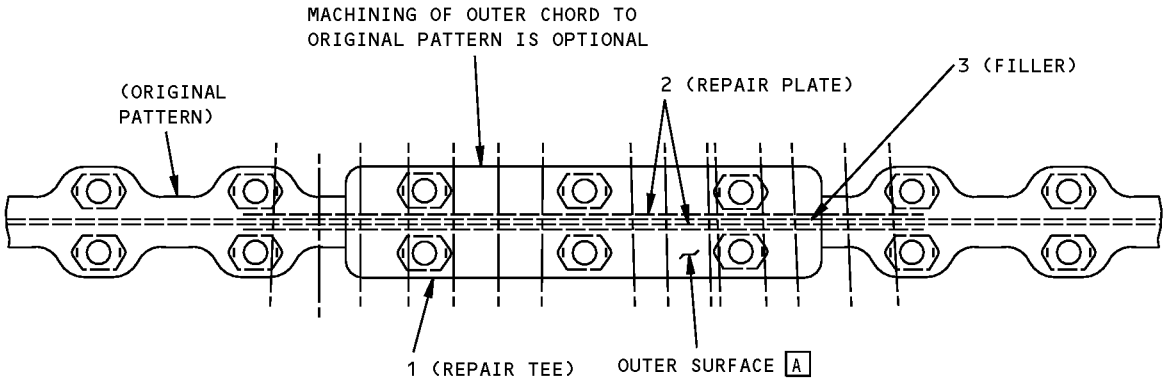
⊕ REPAIR FASTENER LOCATION. INSTALL BACB30MY6K* BOLTS WITH BACC30M COLLARS

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	REPAIR TEE	1	SAME MATERIAL AS ORIGINAL OUTER CHORD
2	REPAIR PLATE	2	7075-T6, SAME THICKNESS AS ORIGINAL OUTER CHORD WEB
3	FILLER	1	7075-T6, SAME THICKNESS AS ORIGINAL CHORD WEBS, SHIM IF NECESSARY

Underwing Fairing Built-Up Section Outer Chord Repair
Figure 201 (Sheet 1 of 3)

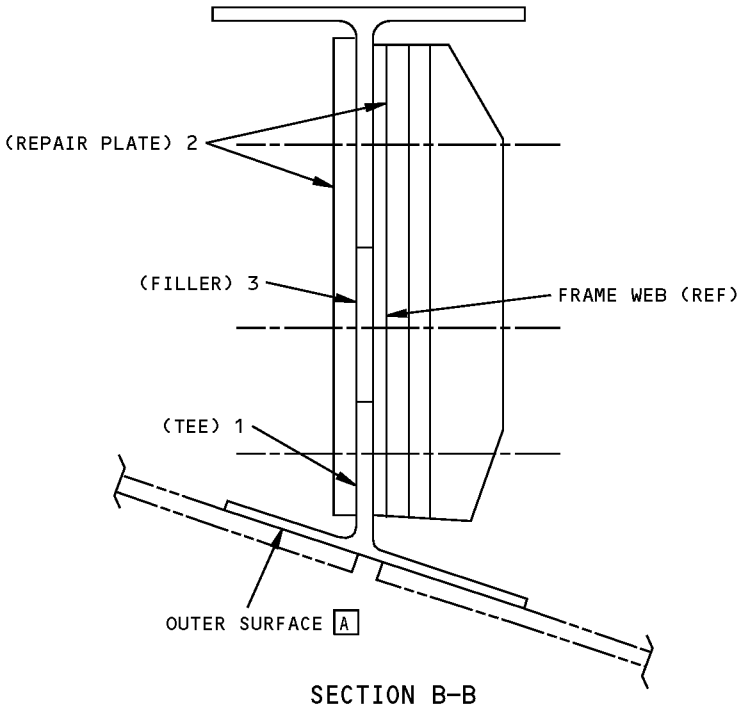


DETAIL I

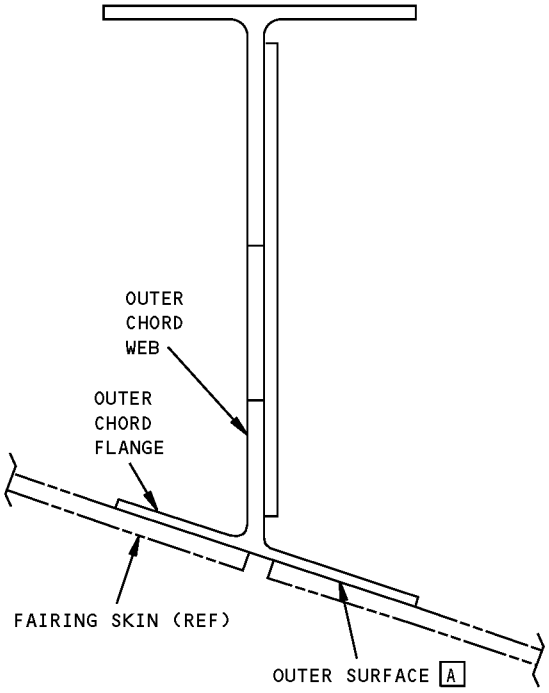


SECTION A-A

Underwing Fairing Built-Up Section Outer Chord Repair
Figure 201 (Sheet 2 of 3)



SECTION B–B



SECTION C–C

Underwing Fairing Built-Up Section Outer Chord Repair
Figure 201 (Sheet 3 of 3)

REPAIR 2 - UNDERWING FAIRING EXTRUDED SECTION STRUCTURE

REPAIR INSTRUCTIONS

1. Make a template of the nutplate holes.
2. Remove damaged section of frame. See Detail I.
3. Make the repair parts, forming the parts to original contour.
4. Assemble the repair parts and drill the fastener holes.
5. Break sharp edges of original and repair parts 0.015 to 0.030 R.
6. Remove all nicks, scratches, burrs, sharp corners from original and repair parts.
7. Apply a chemical conversion coating to the repair parts and the bare surfaces of original parts.
8. Apply one coat of BMS 10-11, Type I primer and one coat of BMS 10-11, type 2 enamel to all surfaces (except outer surface [A]), of repair parts and reworked surfaces of original parts as given in SOPM 20-41-02.
9. Assemble the repair parts per Detail I, making a faying surface seal with BMS 5-95 sealant. Install fasteners wet with BMS 5-95 sealant.
10. Use template to drill holes for nutplates in repair tee.
11. Install NAS1803-3A5C nutplates with BACR15BA3AD* rivets.

NOTES

- THIS REPAIR IS A PERMANENT REPAIR AND NO DAMAGE TOLERANCE ASSESSMENT IS NECESSARY. REFER TO SRM 51-00-06 FOR REPAIR CLASSIFICATION.
- REFER TO THE FOLLOWING WHEN USING THIS REPAIR:
  - AMM 51-31 FOR SEALS AND SEALING
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS

[A] APPLY ONE COAT OF BMS 10-11, TYPE 1 PRIMER AND ONE COAT OF BMS 10-86, TYPE 1 OR 2 TEFLON ENAMEL COATING TO OUTER REWORKED SURFACE OF ORIGINAL OUTER CHORD AND TO OUTER SURFACE OF REPAIR TEE

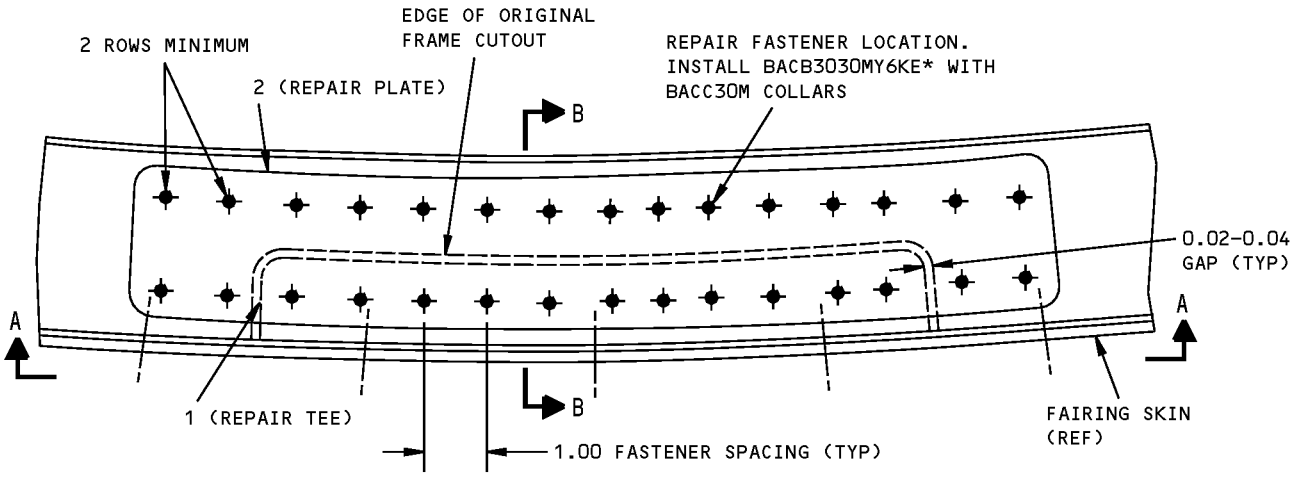
[B] OPTIONAL: USE A 2024-T3 EXTRUDED TEE WITH THE SAME DIMENSIONS AS THE REMOVED PORTION OF THE ORIGINAL FRAME

FASTENER SYMBOLS

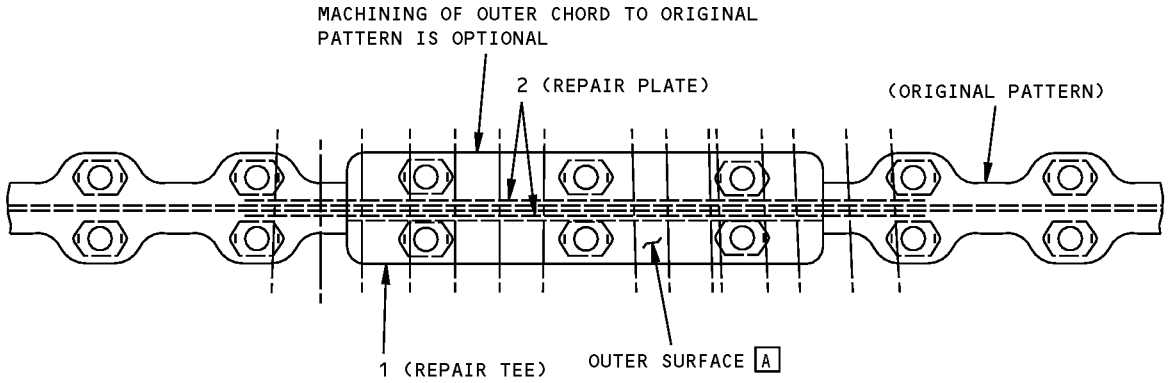
⌖ REPAIR FASTENER LOCATION. INSTALL BACB30MY6K* BOLTS WITH BACC30M COLLARS

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	REPAIR TEE	1	SAME MATERIAL AS ORIGINAL FRAME [B]
2	REPAIR PLATE	2	2024-T3 SAME GAGE AS WEB

Underwing Fairing Extruded Section Structure Repair
Figure 201 (Sheet 1 of 3)

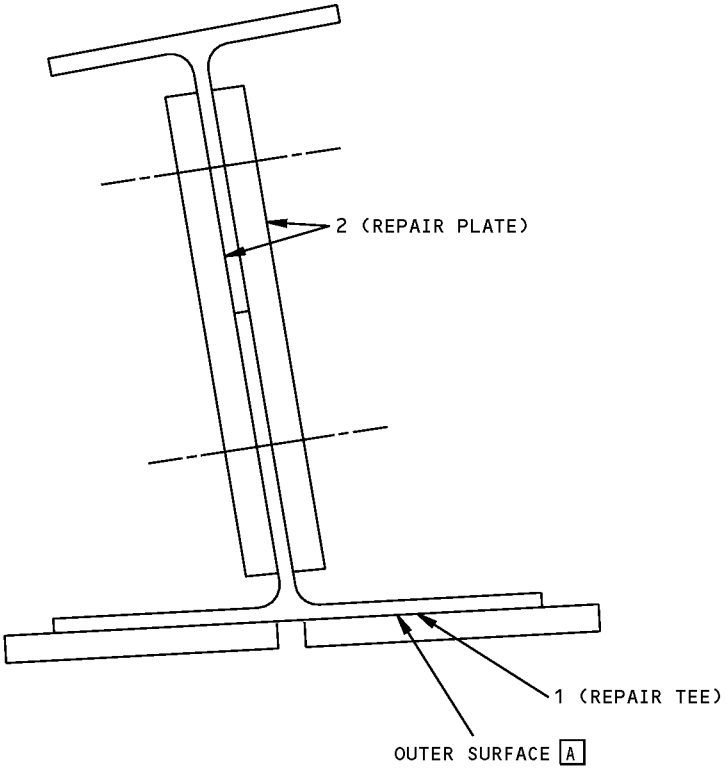


DETAIL I



SECTION A-A

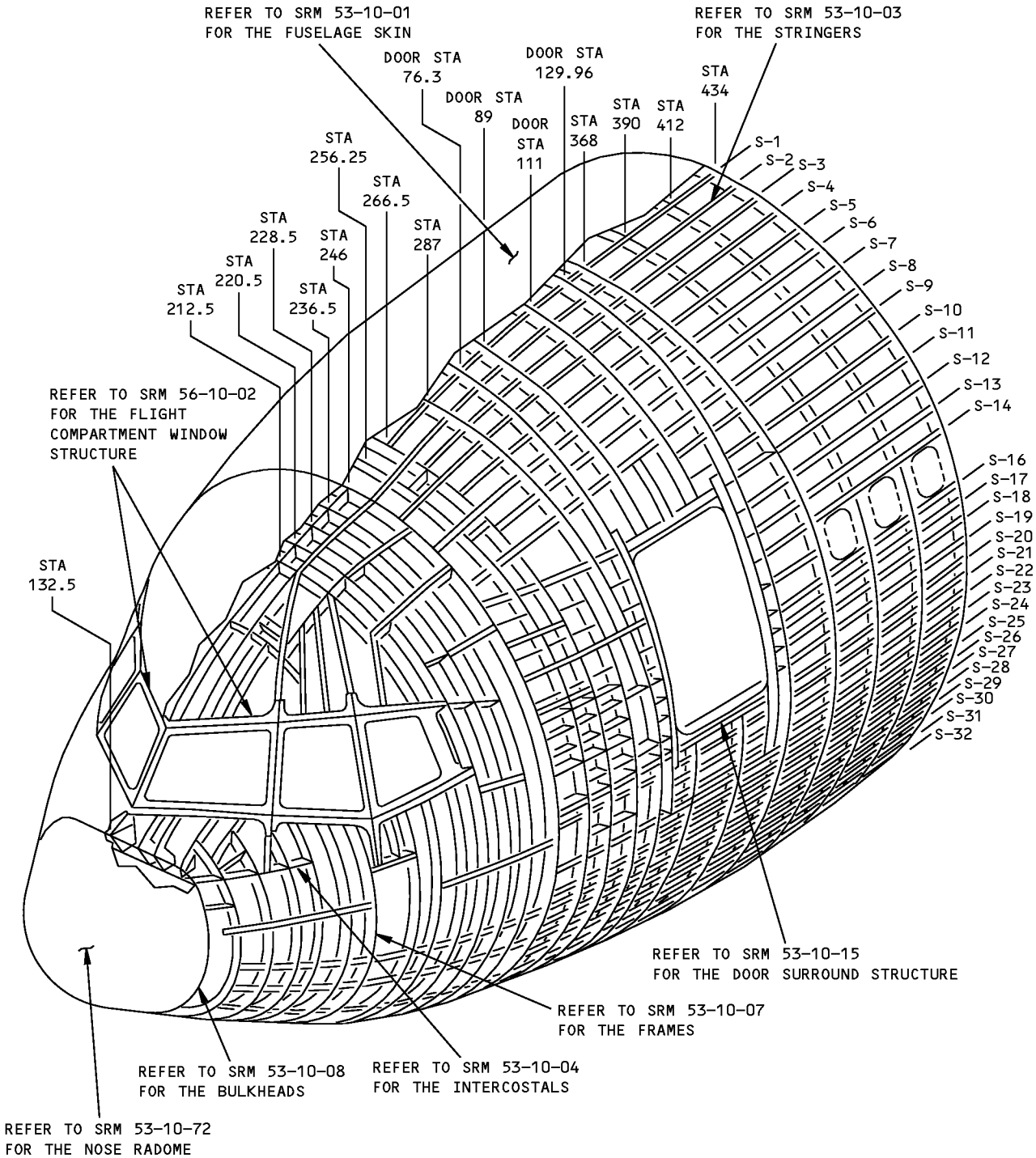
Underwing Fairing Extruded Section Structure Repair
Figure 201 (Sheet 2 of 3)



SECTION B-B

Underwing Fairing Extruded Section Structure Repair
Figure 201 (Sheet 3 of 3)

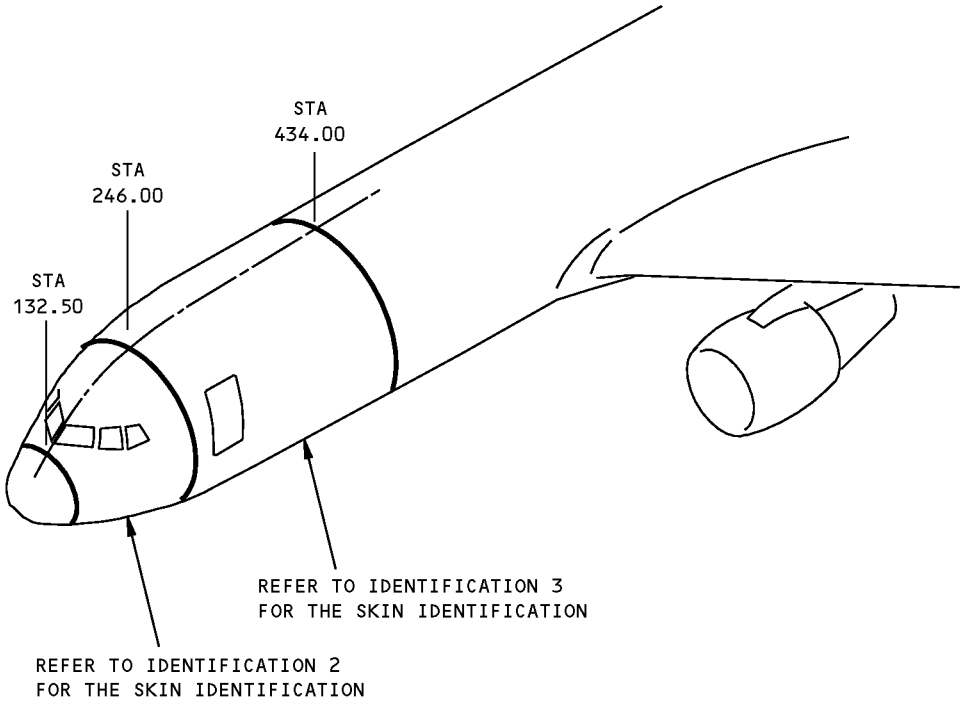
GENERAL - SECTION 41 STRUCTURE DIAGRAM



Section 41 Structure Diagram
Figure 1

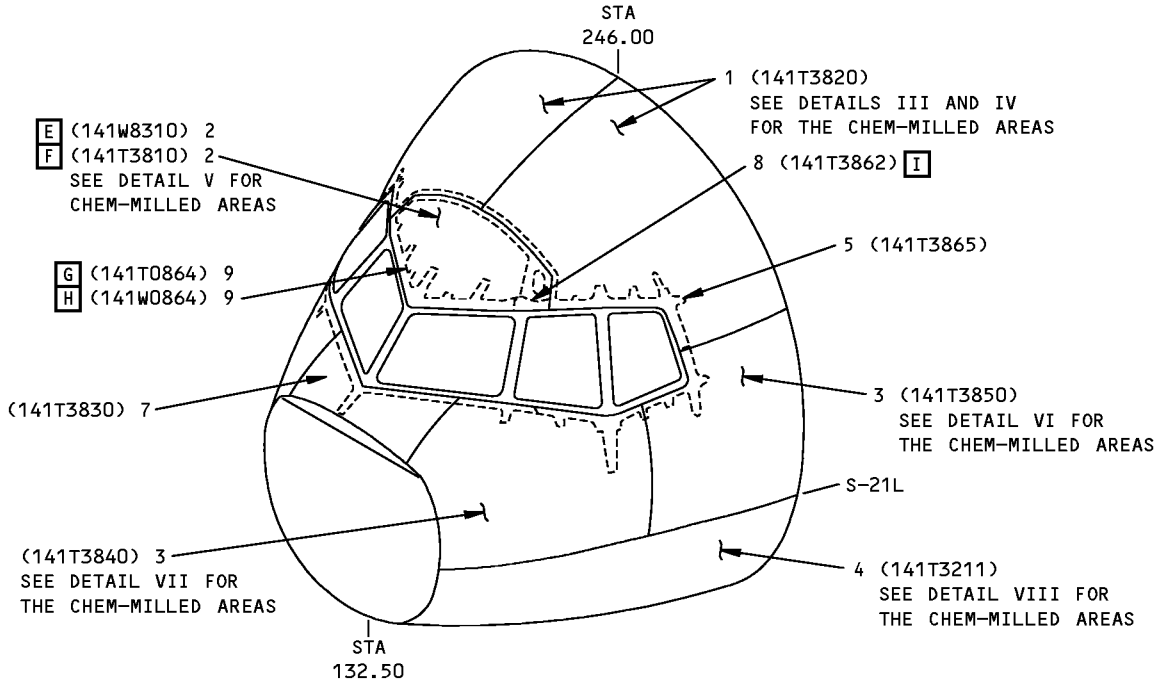
IDENTIFICATION 1 - SECTION 41 - SKIN

REFERENCE DRAWING
140T1521



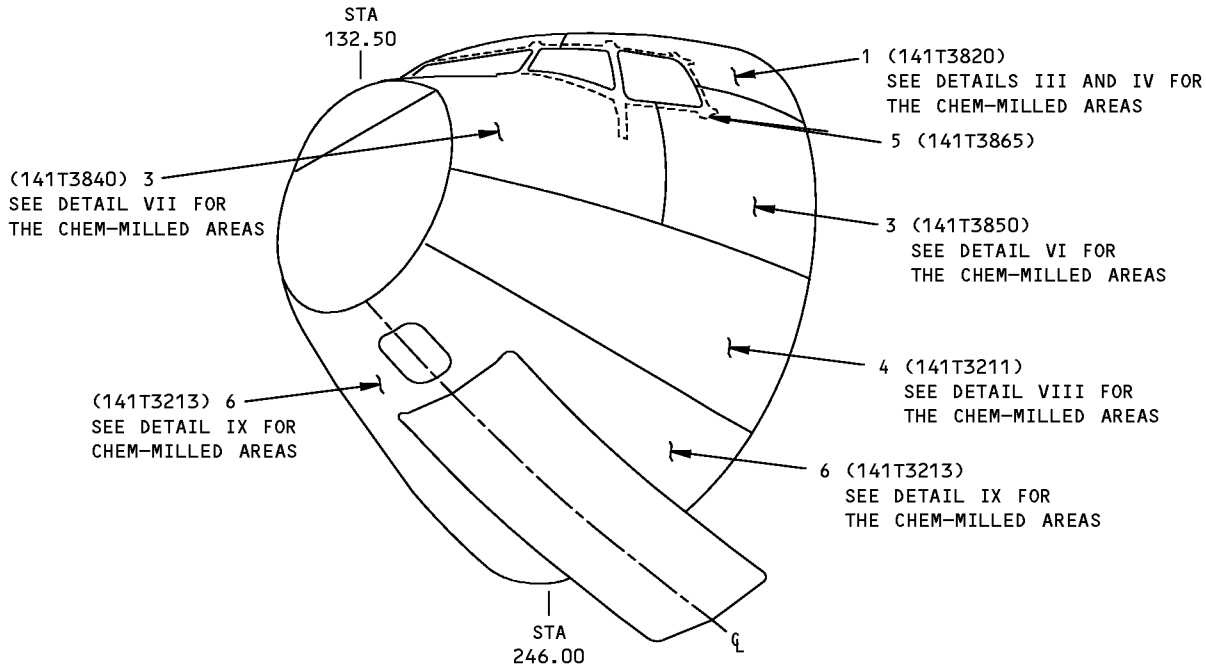
Section 41 - Skin Identification
Figure 1

IDENTIFICATION 2 - SECTION 41 - SKIN IDENTIFICATION - STATIONS 132.50 TO 246.00



LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

DETAIL I



LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

DETAIL II

Section 41 - Skin Identification - Stations 132.50 to 246.00
Figure 1 (Sheet 1 of 10)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.080	CLAD 2024-T3	
2	SKIN	0.125	CLAD 2024-T3	
3	SKIN	0.080	CLAD 2024-T3	
4	SKIN	0.080	CLAD 2024-T3	
5	SKIN	0.063	Ti - 6AL 4V SHEET, CODE AB-1, COND A (ANNEALED)	
6	SKIN	0.080	CLAD 2024-T3 OPTION: 0.125	
7	SKIN	0.080	CLAD 2024-T3	
8	TRIPLER	0.200	Ti - 6AL 4V SHEET, CODE AB-1 COND A (ANNEALED) THAT IS MACHINED TO THICKNESS BETWEEN 0.030 AND 0.200 INCH	
9	DOUBLER (OUTER) TRIPLER (INNER)	0.063 0.100	Ti - 6AL 4V SHEET, CODE AB-1, COND A, (ANNEALED) Ti - 6AL 4V SHEET, CODE AB-1, COND A, (ANNEALED)	

LIST OF MATERIALS FOR DETAILS I AND II

NOTES

[A] FOR CUM LINE NUMBERS 136 AND ON, EXCEPT FOR [B], [C], AND [D].

[B] FOR CUM LINE NUMBERS: 132, 148, 150, 174, 176, 177, 179, 185, 192, 193, 199, 212, 218, 222, 223, 224, 225, 245, 269, 271, 276, 277, 280, 285, 290, 295, 300, 327, 329, 336, 352, 377, 379, 381, 382, 401, 432, 439, 455, 458, 463, 465, 466, 470, 471, 510, 515, 516, 518, 519, 520, 537, 539, 543, 547, 548, 551, 553, 554, 556, 562, 567, 573, 581, 645, 651, 669, 680

[C] FOR CUM LINE NUMBERS" 265, 268, 281, 284, 286, 288, 293, 298, 335, 342, 363, 364, 365, 376, 384, 398, 418, 419, 421, 473, 476, 483, 490, 526, 529, 559, 608, 648

[D] FOR CUM LINE NUMBERS: 731, 759, 812

[E] FOR CUM LINE NUMBERS: 659 AND ON

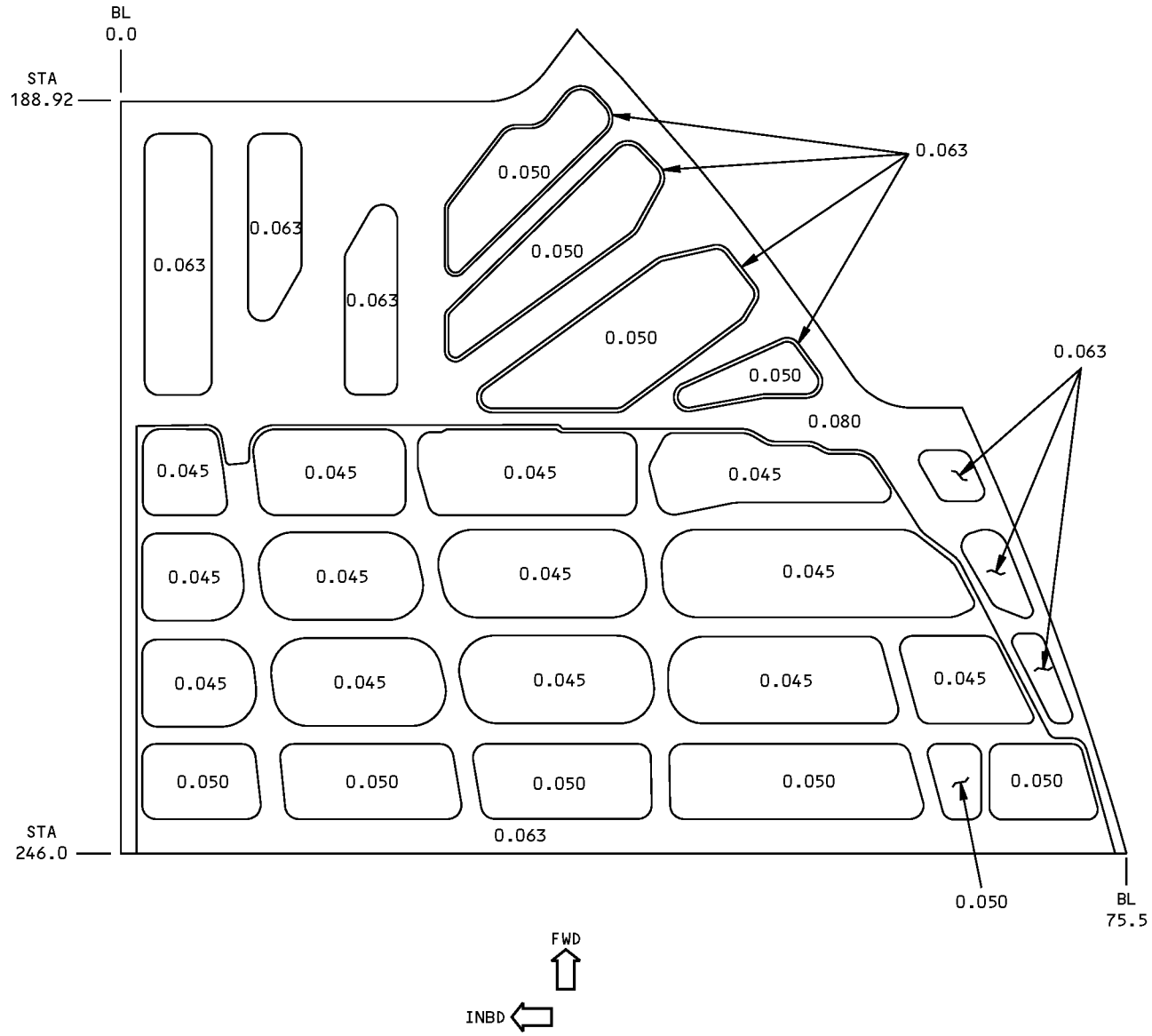
[F] FOR CUM LINE NUMBERS: 132 THRU 658

[G] FOR CUM LINE NUMBERS: 132 THRU 915

[H] FOR CUM LINE NUMBERS: 916 AND ON

[I] FOR CUM LINE NUMBERS: 132 AND ON

Section 41 - Skin Identification - Stations 132.50 to 246.00
Figure 1 (Sheet 2 of 10)



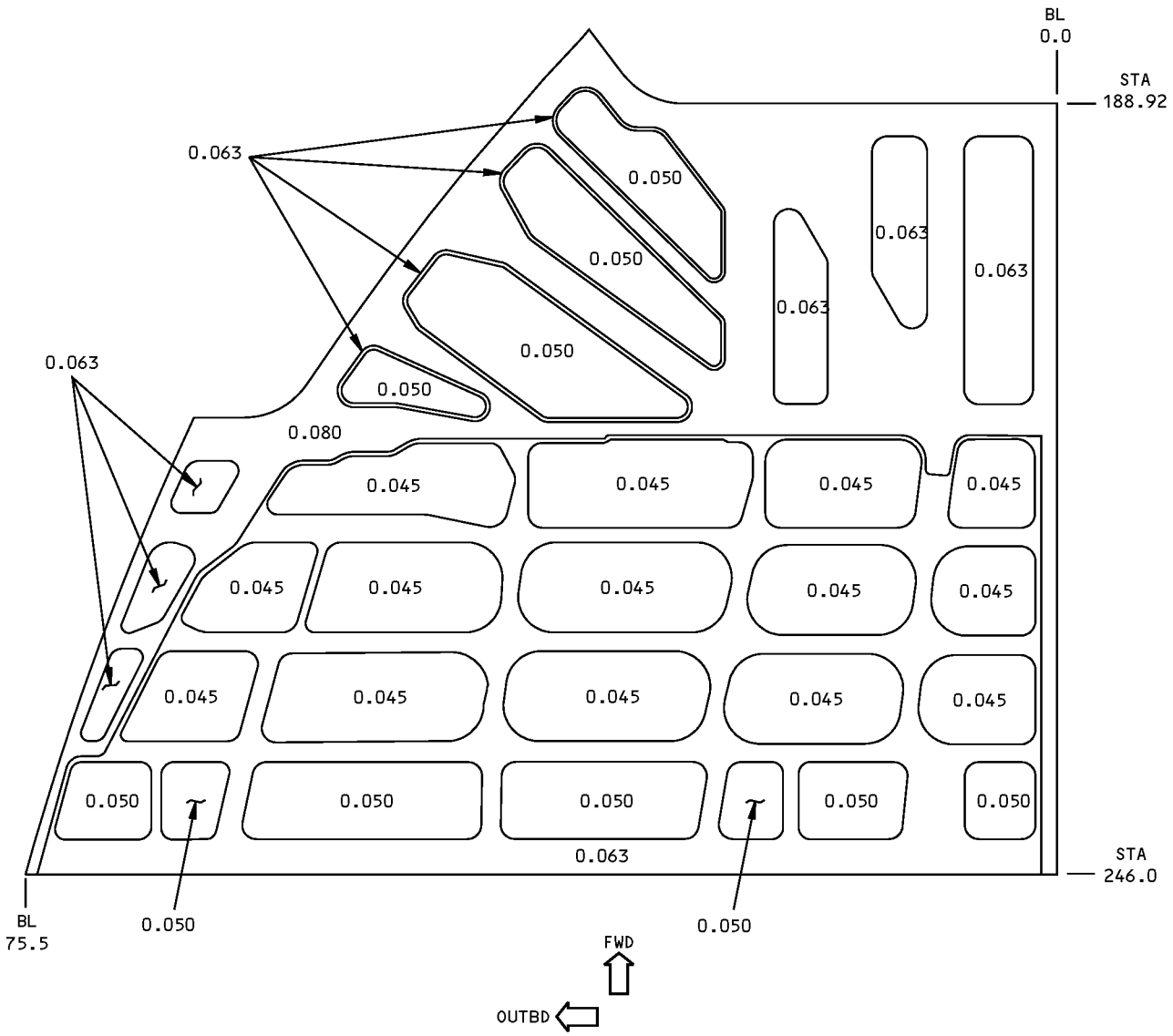
NOTE: ALL DIMENSIONS SHOWN ARE THICKNESSES IN INCHES.

LEFT SIDE IS SHOWN

VIEW ON INNER SURFACE OF SKIN

DETAIL III

Section 41 - Skin Identification - Stations 132.50 to 246.00
Figure 1 (Sheet 3 of 10)



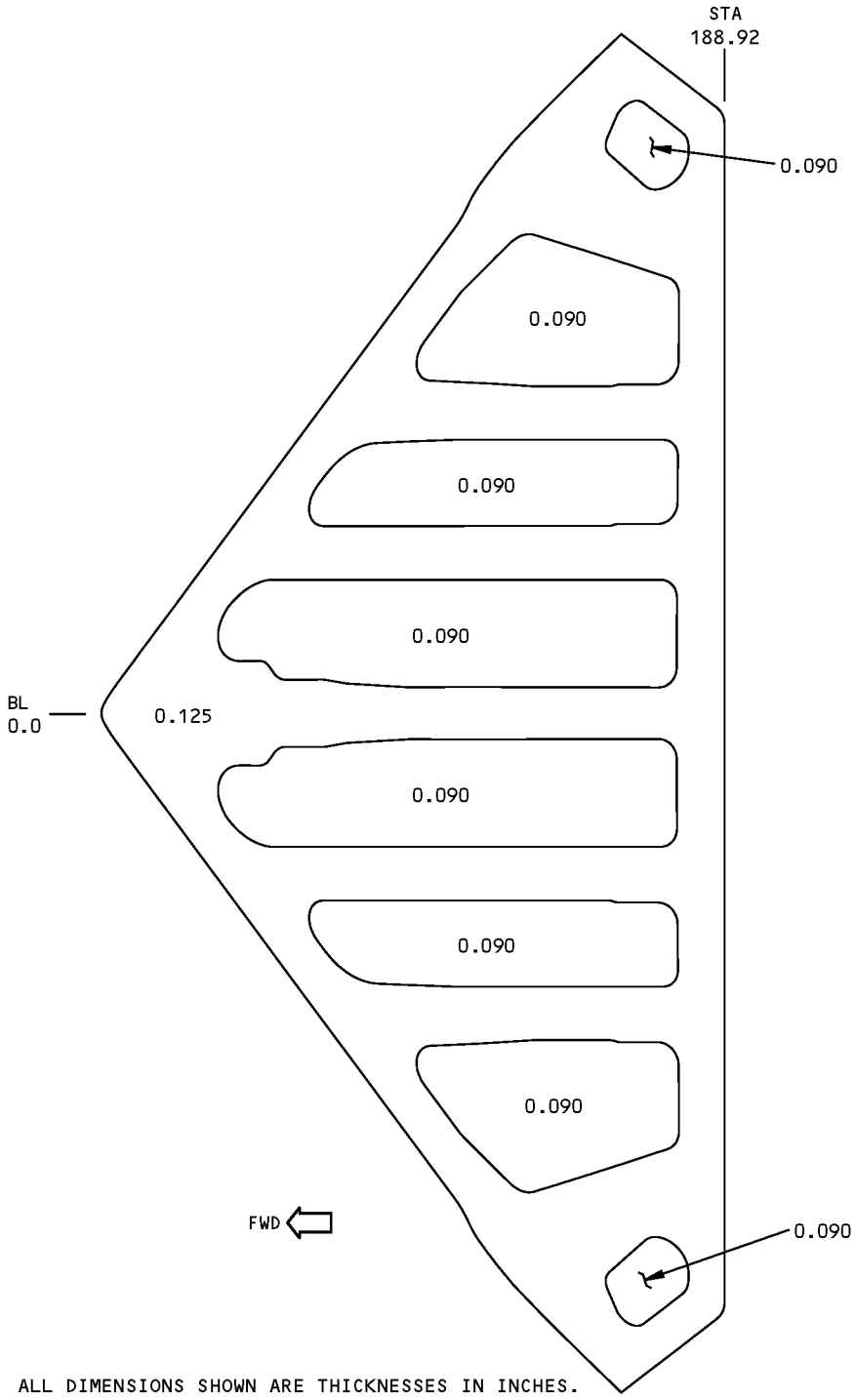
NOTE: ALL DIMENSIONS SHOWN ARE THICKNESSES IN INCHES.

RIGHT SIDE IS SHOWN

VIEW ON INNER SURFACE OF SKIN

DETAIL IV

Section 41 - Skin Identification - Stations 132.50 to 246.00
Figure 1 (Sheet 4 of 10)

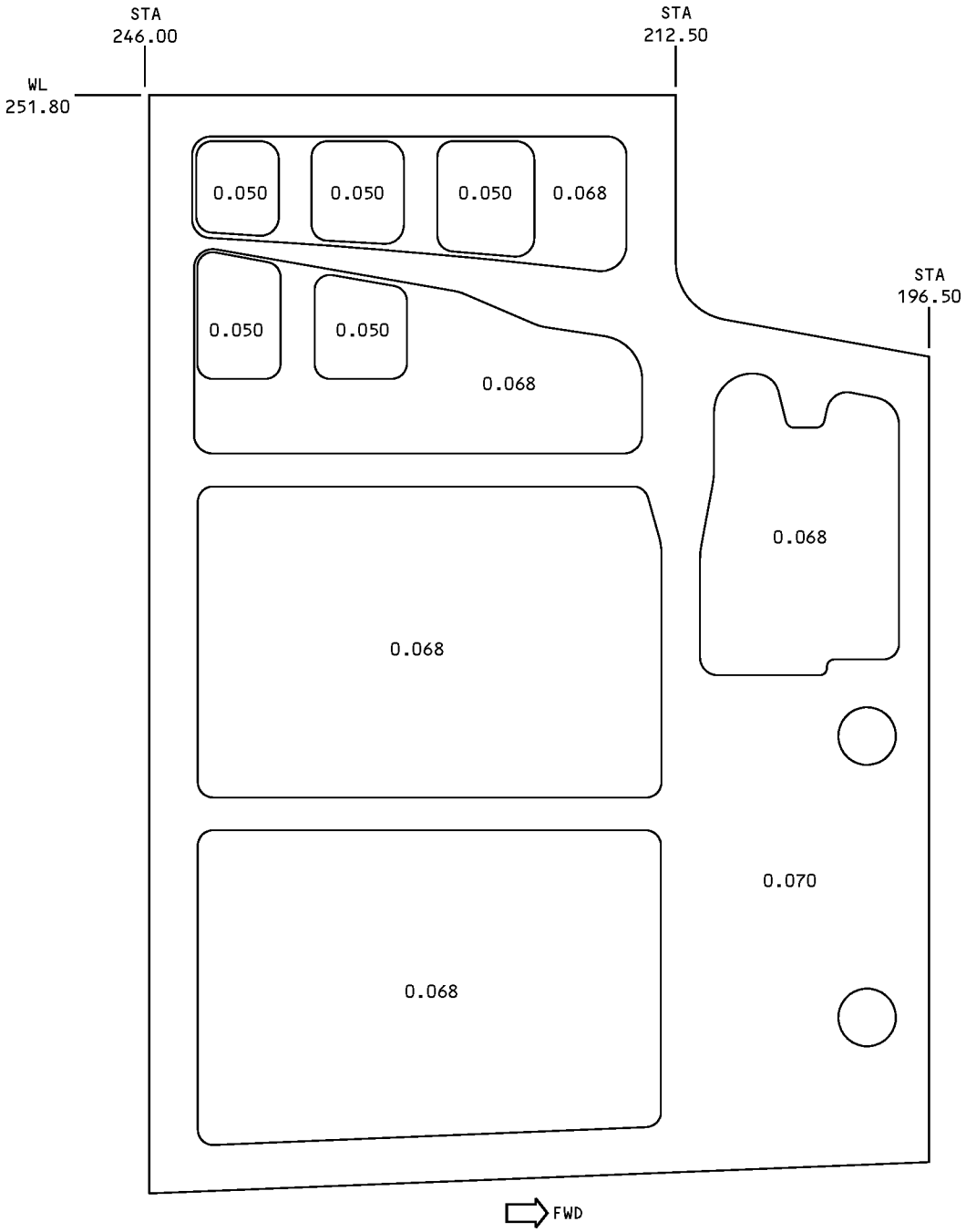


NOTE: ALL DIMENSIONS SHOWN ARE THICKNESSES IN INCHES.

VIEW ON INNER SURFACE OF SKIN

DETAIL V

Section 41 - Skin Identification - Stations 132.50 to 246.00
Figure 1 (Sheet 5 of 10)



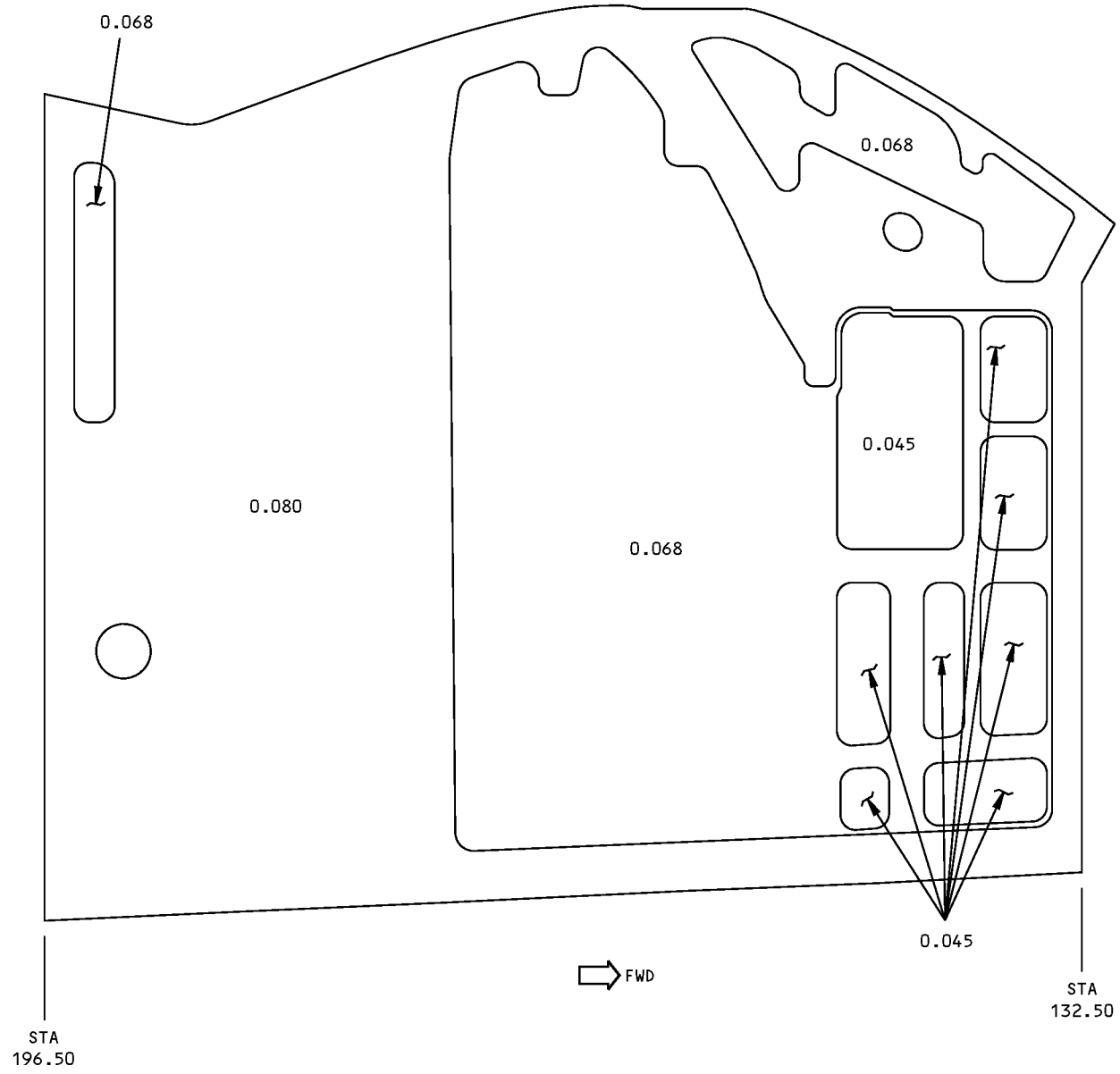
NOTE: ALL DIMENSIONS SHOWN ARE THICKNESSES IN INCHES.

LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

VIEW ON INNER SURFACE OF SKIN

DETAIL VI

Section 41 - Skin Identification - Stations 132.50 to 246.00
Figure 1 (Sheet 6 of 10)



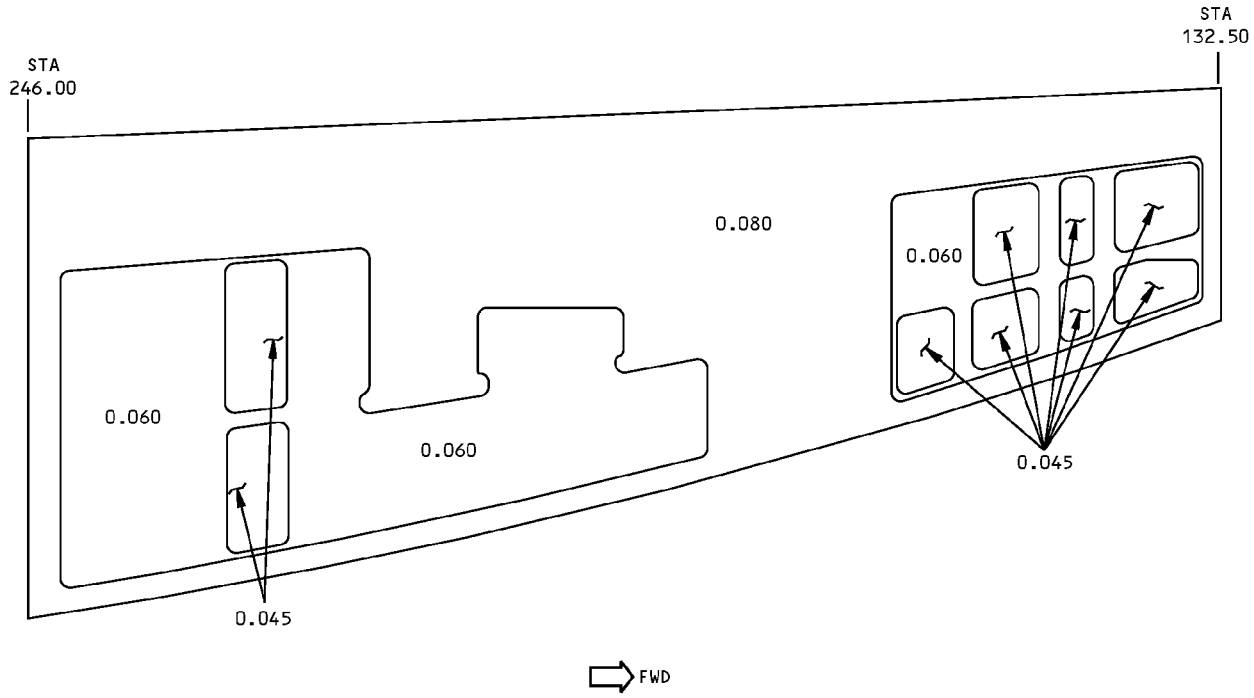
NOTE: ALL DIMENSIONS SHOWN ARE THICKNESSES IN INCHES.

LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

VIEW ON INNER SURFACE OF SKIN

DETAIL VII

Section 41 - Skin Identification - Stations 132.50 to 246.00
Figure 1 (Sheet 7 of 10)



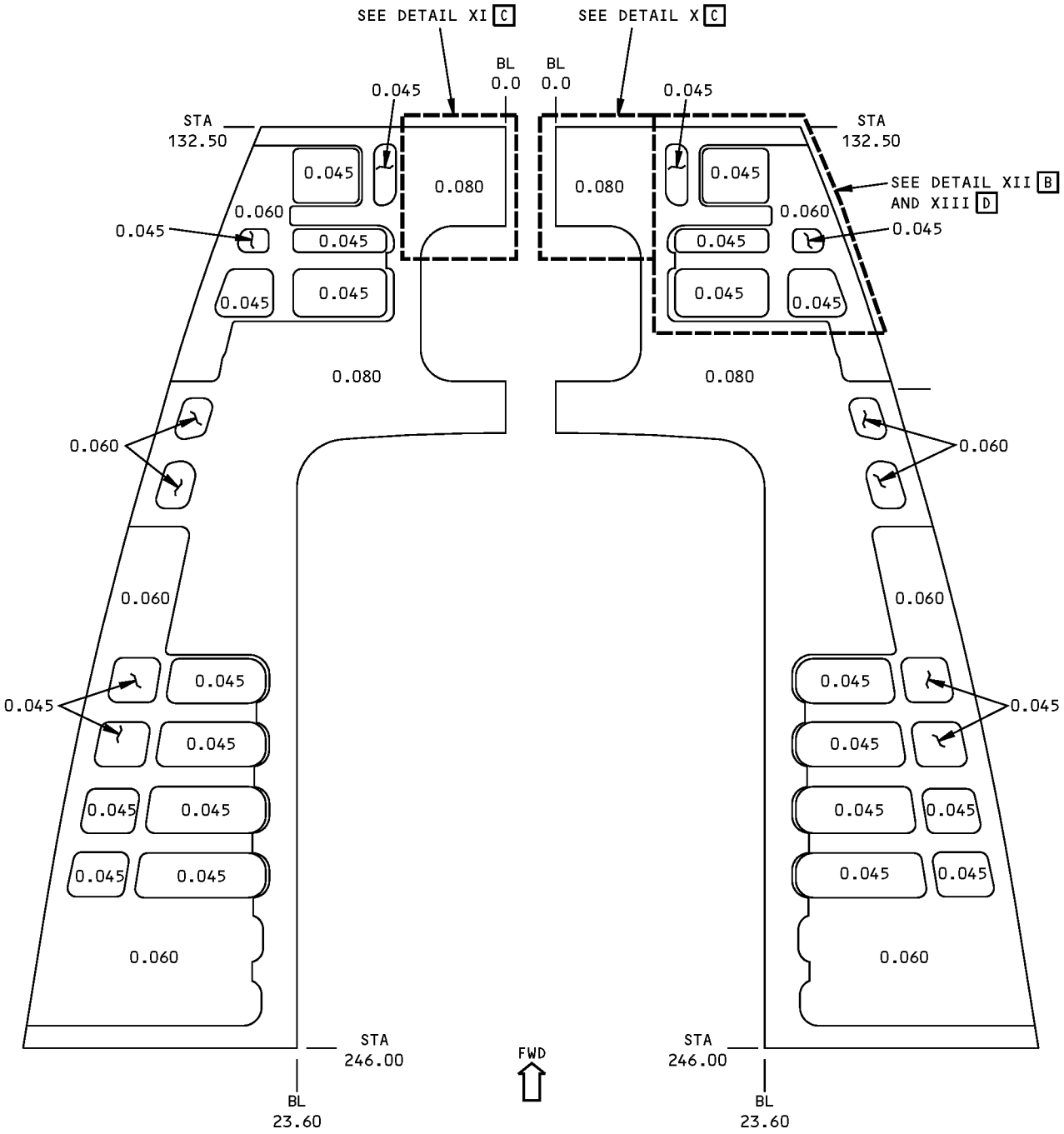
NOTE: ALL DIMENSIONS SHOWN ARE THICKNESSES IN INCHES.

LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

VIEW ON INNER SURFACE OF SKIN

DETAIL VIII

Section 41 - Skin Identification - Stations 132.50 to 246.00
Figure 1 (Sheet 8 of 10)

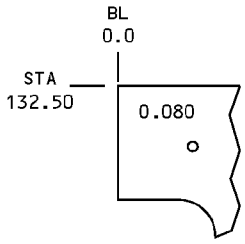


NOTE: ALL DIMENSIONS SHOWN ARE THICKNESSES IN INCHES.

VIEW ON INNER SURFACE OF SKIN

DETAIL IX A

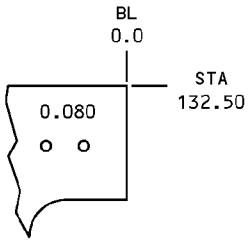
Section 41 - Skin Identification - Stations 132.50 to 246.00
Figure 1 (Sheet 9 of 10)



NOTE: ALL DIMENSIONS SHOWN ARE THICKNESSES IN INCHES.

VIEW ON INNER SURFACE OF SKIN

DETAIL X [C]



NOTE: ALL DIMENSIONS SHOWN ARE THICKNESSES IN INCHES.

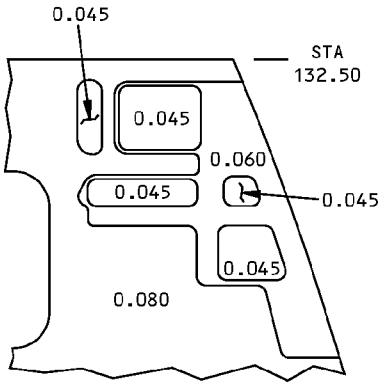
VIEW ON INNER SURFACE OF SKIN

DETAIL XI [C]

NOTE: ALL DIMENSIONS SHOWN ARE THICKNESSES IN INCHES.

VIEW ON INNER SURFACE OF SKIN

DETAIL XII [B]



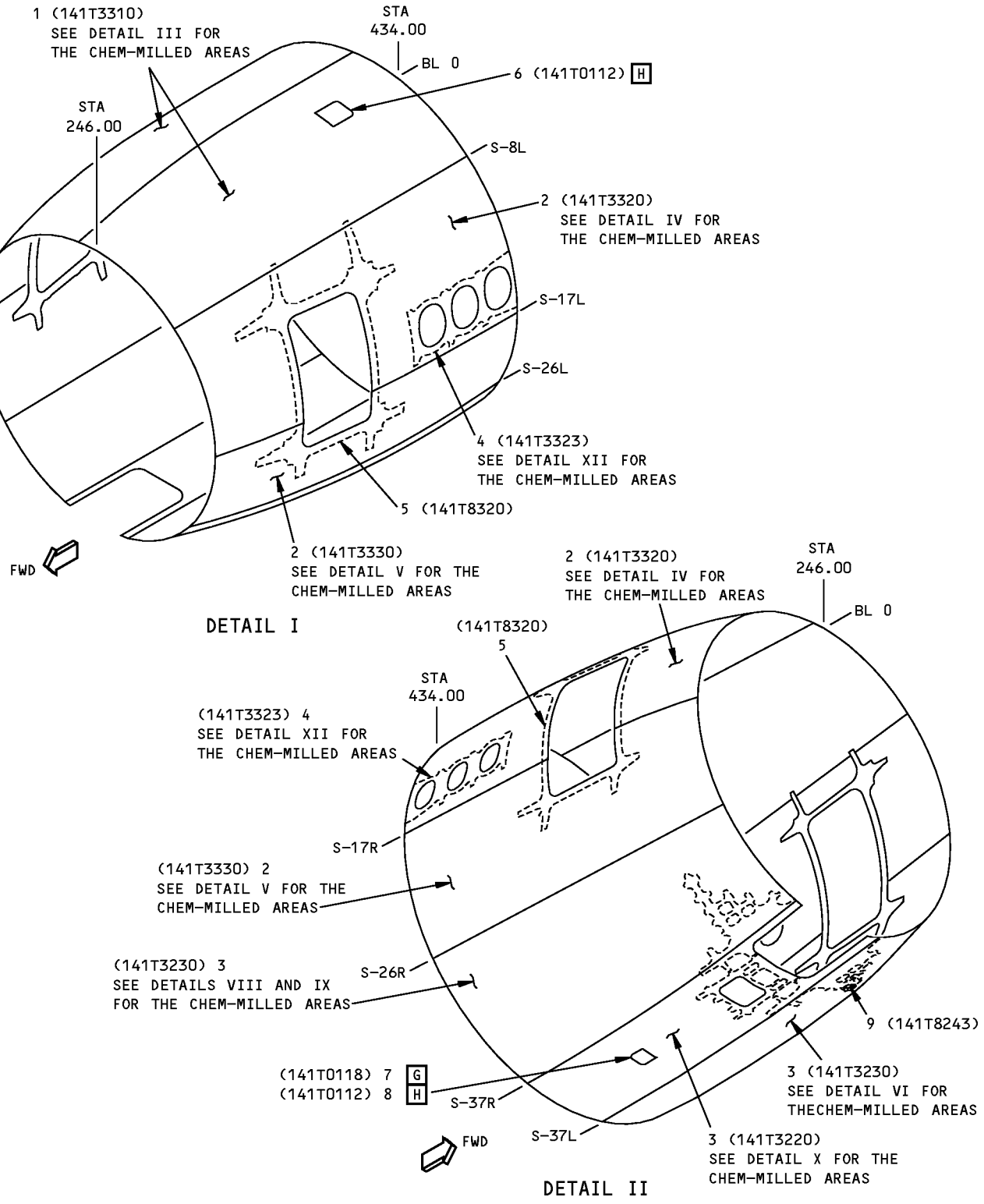
NOTE: ALL DIMENSIONS SHOWN ARE THICKNESSES IN INCHES.

VIEW ON INNER SURFACE OF SKIN

DETAIL XIII [D]

Section 41 - Skin Identification - Stations 132.50 to 246.00
Figure 1 (Sheet 10 of 10)

IDENTIFICATION 3 - SECTION 41 - SKIN IDENTIFICATION - STATION 246.00 TO 434.00



Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 1 of 16)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.063	CLAD 2024-T3	
2	SKIN	0.160	CLAD 2024-T3	
3	SKIN	0.125	CLAD 2024-T3	
4	DOUBLER	0.140	2024-T3	
5	DOUBLER (MACHINED)	0.160	2024-T3	
6	DOUBLER (OUTER)	0.300	2024-T351	
	TRIPLER (INNER)	0.160	2024-T3	
7	DOUBLER (INNER)	0.063	2024-T3	
	TRIPLER (OUTER)	0.071	2024-T3	
8	DOUBLER (OUTER)	0.300	2024-T351	
	TRIPLER (INNER)	0.160	2024-T3	
9	DOUBLER	0.071	2024-T3	

LIST OF MATERIAL FOR DETAILS I AND II

NOTES

- ALL DIMENSIONS ARE SHOWN AS THICKNESSES IN INCHES.

[A] FOR CUM LINE NUMBERS 132 AND ON, EXCEPT [B]

[B] FOR CUM LINE NUMBERS 136, 151 THRU 154, 162, 163, 188, 189, 200, 201, 203, 207, 209, 216, 304, 312, 313, 317, 318, 320, 341, 345, 346, 348, 349, 350, 353, 356, 374, 399, 410, 427, 428, 446, 461, 492, 496, 499, 506, 576, 585, 617, 631, 646, 653, 654, 664, 671, 675, 676, 679, 683, 685, 690, 696, 697, 706, 717, 719, 721, 723, 725, 735, 736, 740, 745, 749, 750, 751, 753, 755, 787, 788, 790, 794, 795, 797.

[C] FOR CUM LINE NUMBERS 132, 136, 148, 150, 151 THRU 154, 162, 163, 165, 174, 176, 177, 179, 185, 186, 188, 189, 191, 192, 193, 199 THRU 203, 205, 206, 207, 209, 211, 212, 213, 215, 216, 218 THRU 228, 230, 231, 235, 237, 238, 240, 241, 242, 244 THRU 249, 251, 255, 257, 258, 259, 260, 262, 263, 264, 265, 267, 268, 269, 270, 271, 273 THRU 286, 288 THRU 291, 293, 294, 295, 298, 300, 302, 304, 309 THRU 315, 317 THRU 320, 322 THRU 325, 327 THRU 332, 334, 335, 336, 337, 339 THRU 346, 348 THRU 360, 363 THRU 371, 374, 376 THRU 382, 384, 385, 386, 387, 389 THRU 393, 395 THRU 403, 405, 406, 408 THRU 421, 423, 424, 427, 428, 429, 432, 434, 436, 438, 439, 440, 442 THRU 446, 449 THRU 452, 454 THRU 466, 468, 470 THRU 474, 476 THRU 480, 483, 484, 485, 487, 488, 490 THRU 494, 496, 497, 499, 501 THRU 510, 513 THRU 516, 518 THRU 523, 525, 526, 528 THRU 531, 533, 534, 537, 538, 539, 542 THRU 556, 558 THRU 562, 567 THRU 579, 581 THRU 587, 589, 591, 592, 593, 595, 596, 597, 599, 602 THRU 615, 617, 619, 620, 621, 623, 625, 627, 631, 633, 635, 637, 639, 641, 643 THRU 659, 661 THRU 665, 667, 668, 669, 671, 673, 675, 676, 677, 679, 680, 681, 683 THRU 711, 713 THRU 717, 719 THRU 723, 725, 727, 729, 731, 733 THRU 755, 757

[D] FOR CUM LINE NUMBERS 759, 761, 762, 763, 765, 766, 767, 770, 771, 772, 775, 776, 777, 779 THRU 790, 792 THRU 798, 800, 802, 808, 812, 817, 822, 828, 829, 831, 832, 835, 836, 837, 838, 840, 841, 843, 844, 846, 847, 849, 850 THRU 853, 857 THRU 860, 862, 864, 865, 868, 871, 875, 876, 880, 881, 884, 885, 886, 888, 889, 890, 893, 894, 898, 900 AND ON.

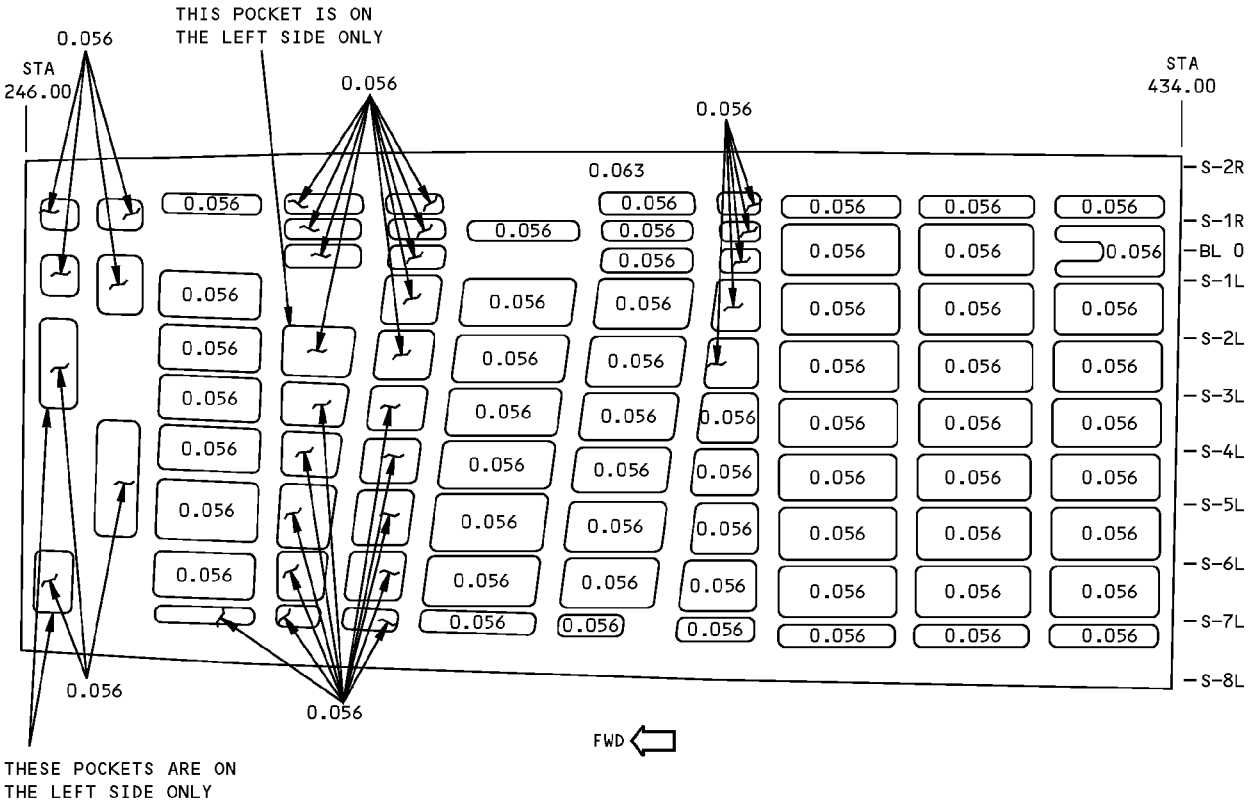
[E] FOR CUM LINE NUMBERS 132 THRU 257

[F] FOR CUM LINE NUBMERS 257 AND ON

[G] FOR CUM LINE NUMBERS 132 THRU 298 THAT HAVE SERVICE BULLETIN 767-53A0040 INCORPORATED, AND FOR AIRPLANES WITH CUM LNE NUMBERS 300, 302, AND 304

[H] FOR CUM LINE NUMBERS 309 AND ON

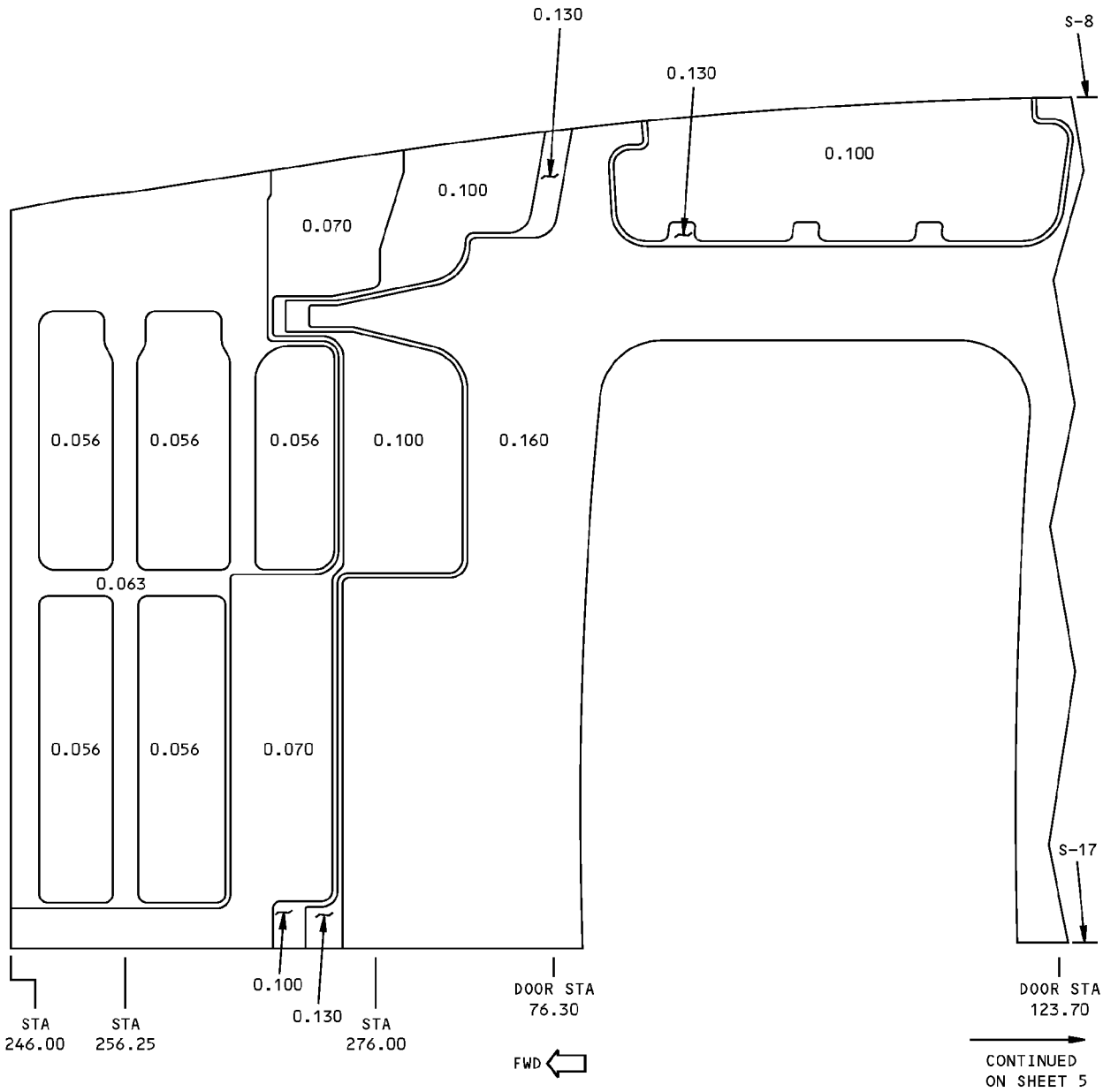
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 2 of 16)



VIEW ON INNER SURFACE OF SKIN
LEFT SIDE IS SHOWN. RIGHT SIDE IS THE OPPOSITE, EXCEPT AS NOTED

DETAIL III

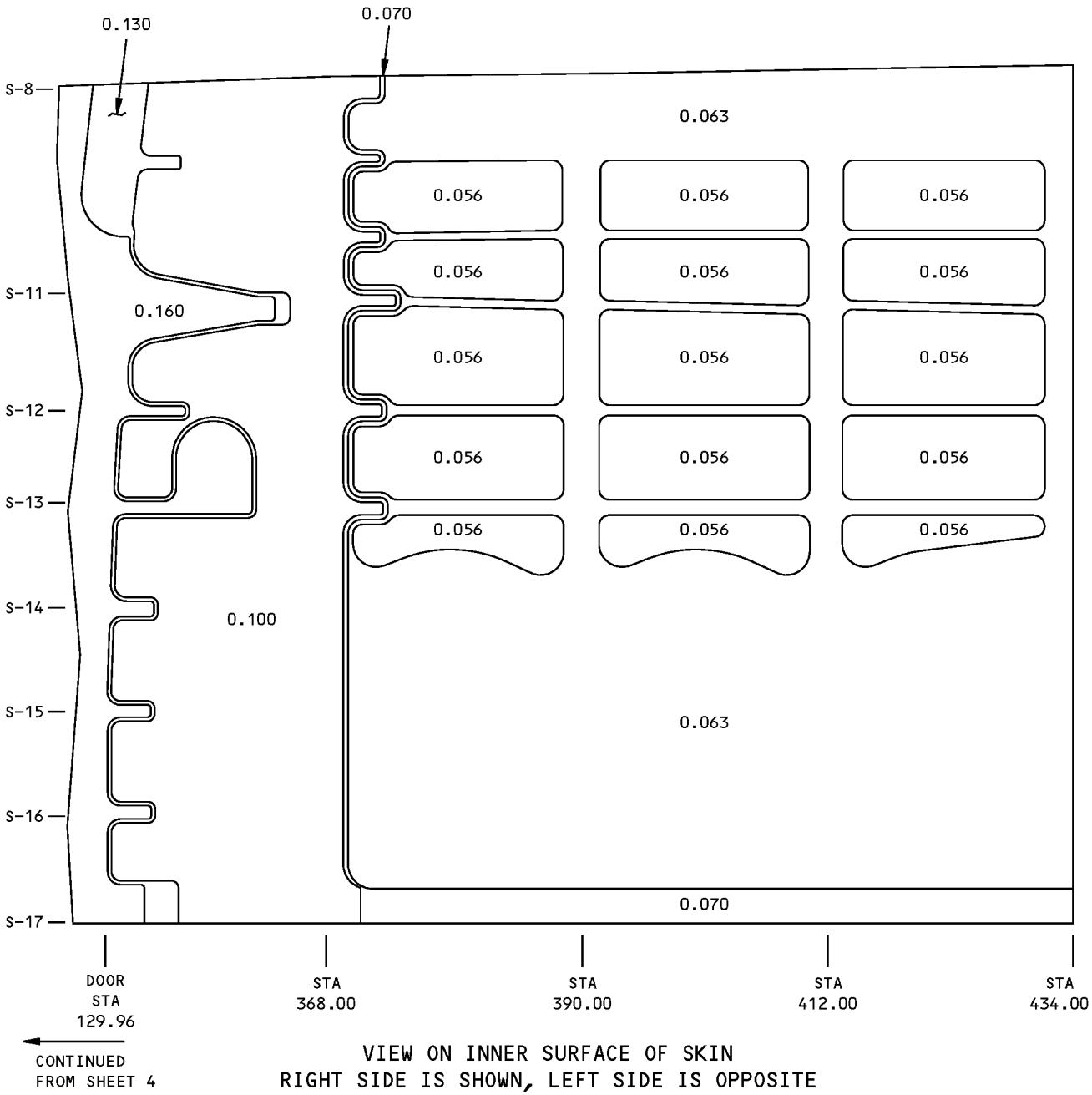
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 3 of 16)



VIEW ON INNER SURFACE OF SKIN
RIGHT SIDE IS SHOWN, LEFT SIDE IS OPPOSITE

DETAIL IV

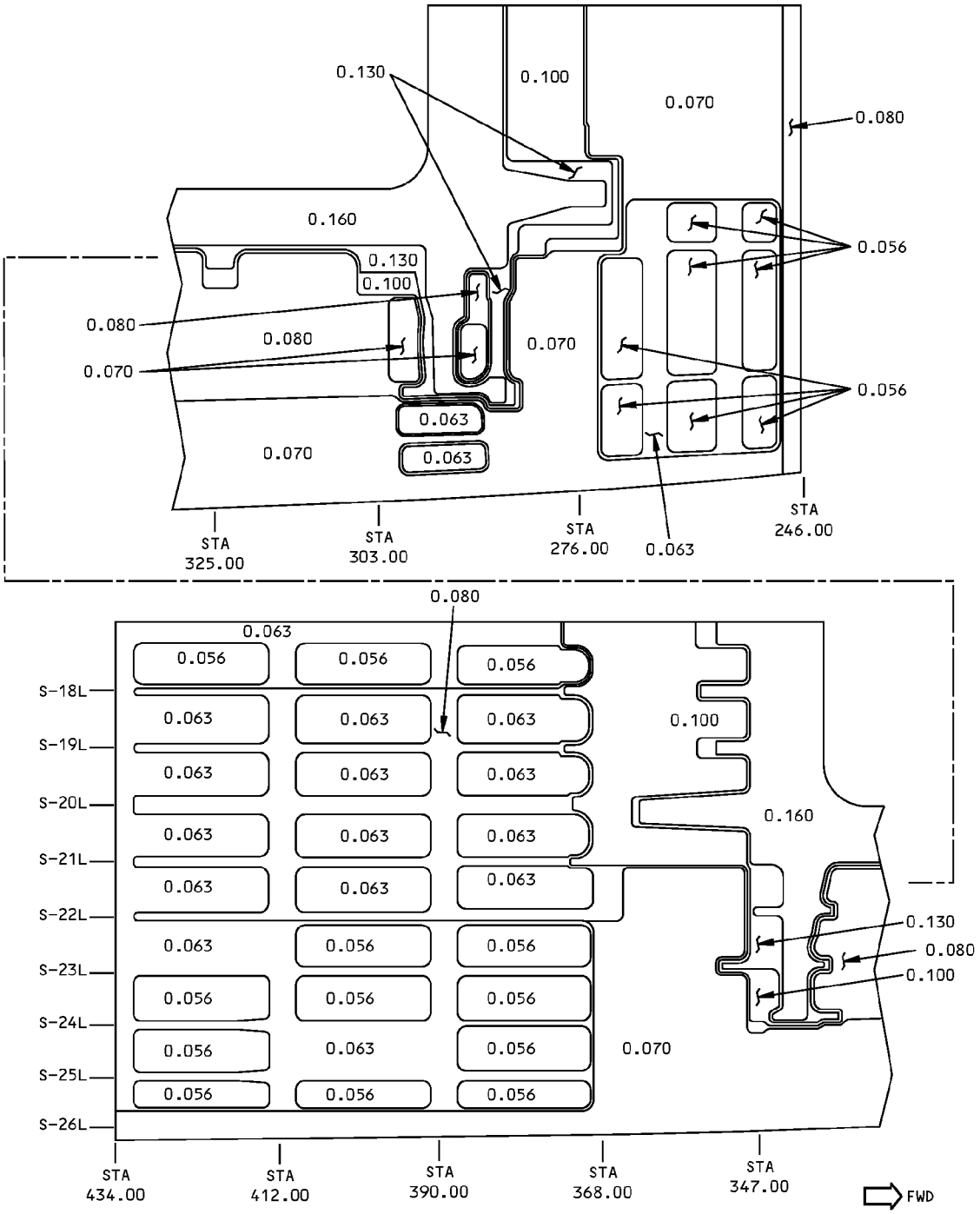
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 4 of 16)



VIEW ON INNER SURFACE OF SKIN
RIGHT SIDE IS SHOWN, LEFT SIDE IS OPPOSITE

DETAIL IV
(CONTINUED)

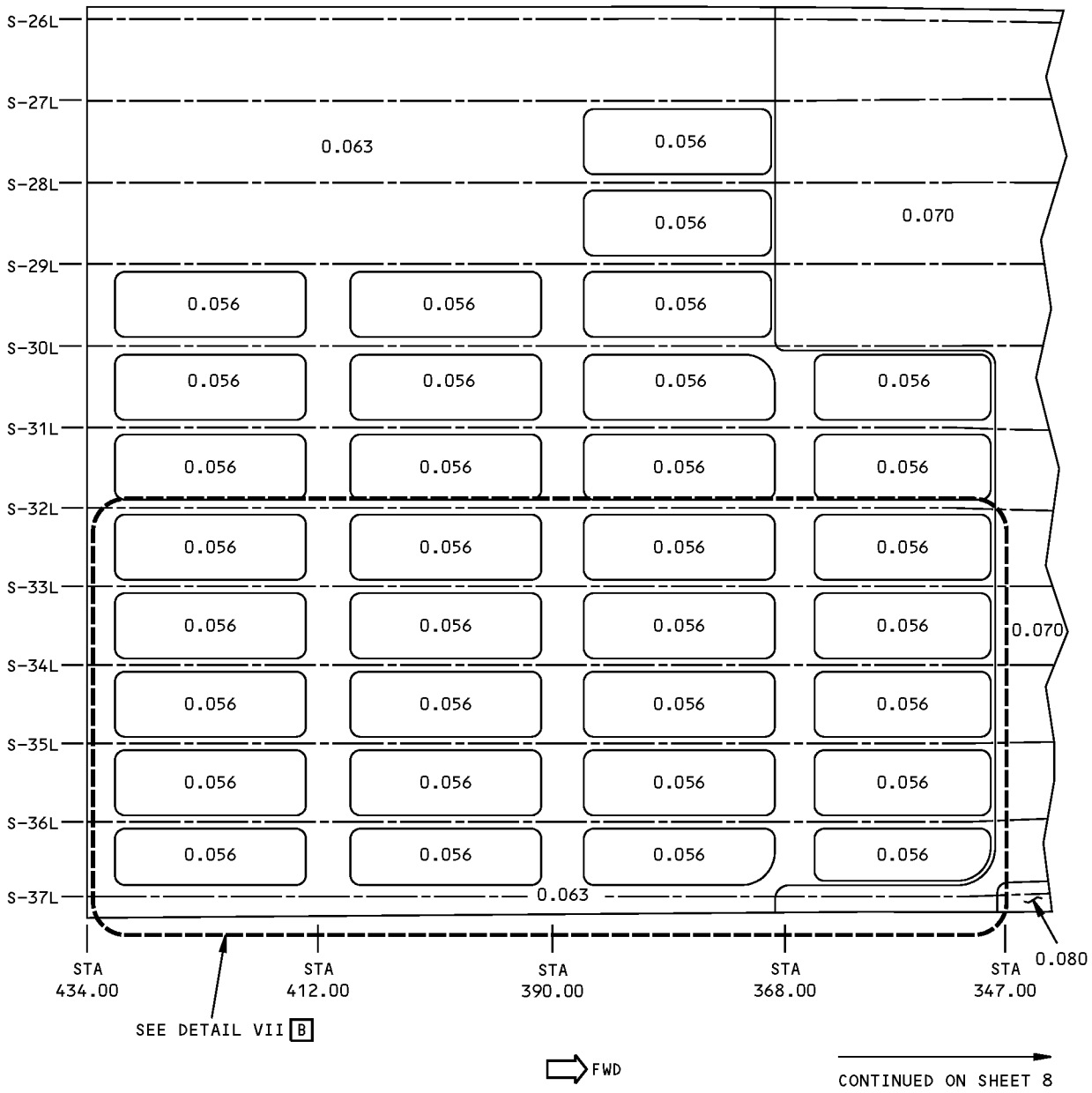
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 5 of 16)



VIEW ON INNER SURFACE OF SKIN
LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

DETAIL V

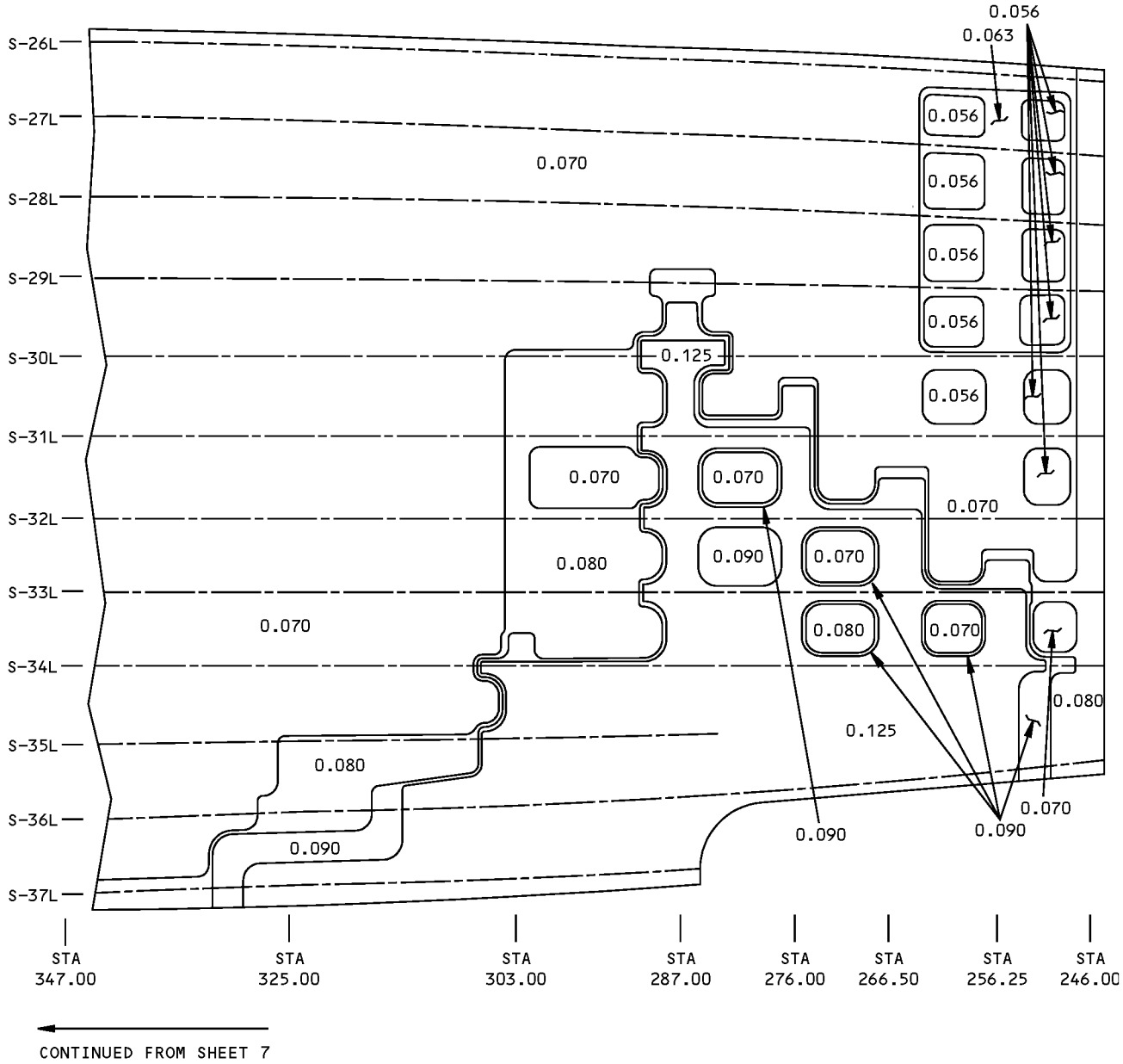
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 6 of 16)



VIEW ON INNER SURFACE OF SKIN

DETAIL VI A

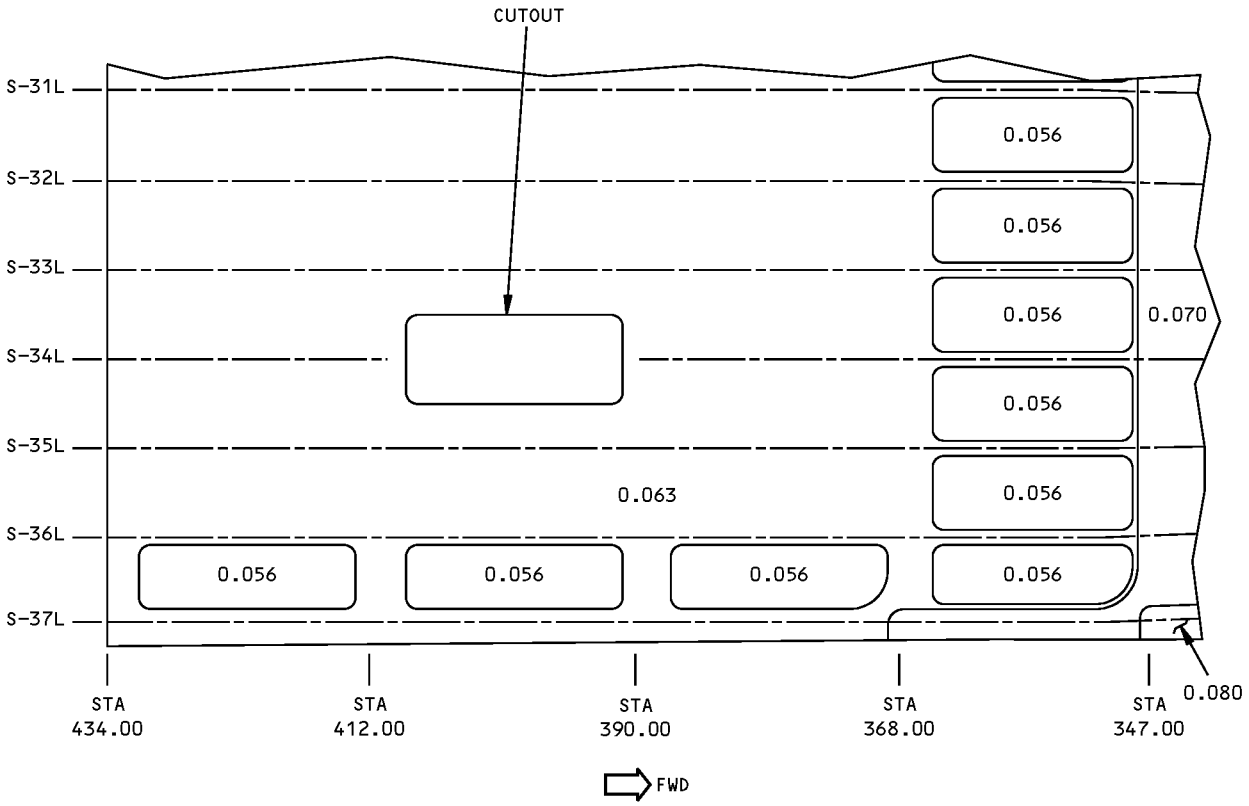
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 7 of 16)



VIEW ON INNER SURFACE OF SKIN

DETAIL VI A
(CONTINUED)

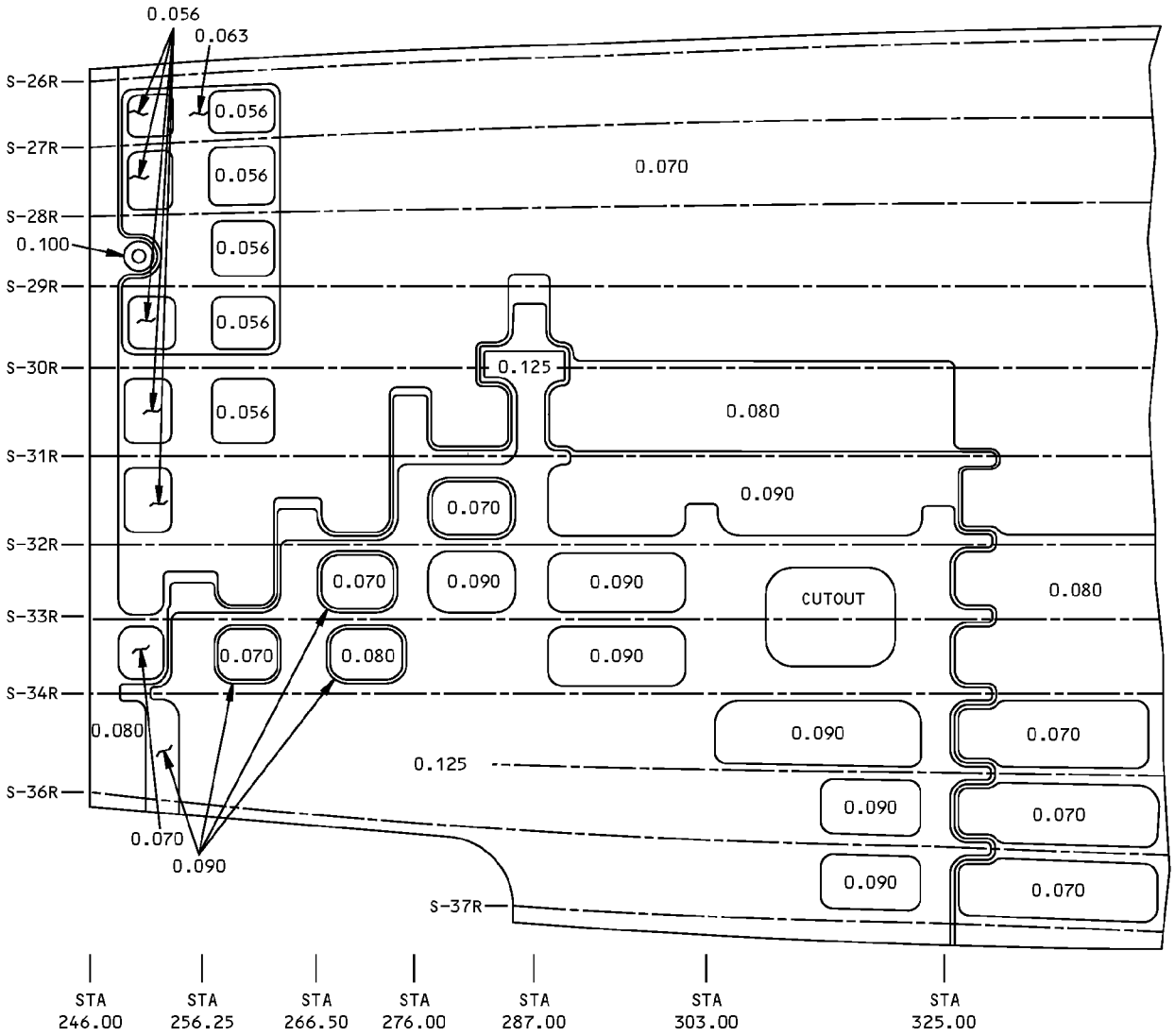
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 8 of 16)



VIEW ON INNER SURFACE OF SKIN
LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

DETAIL VII B

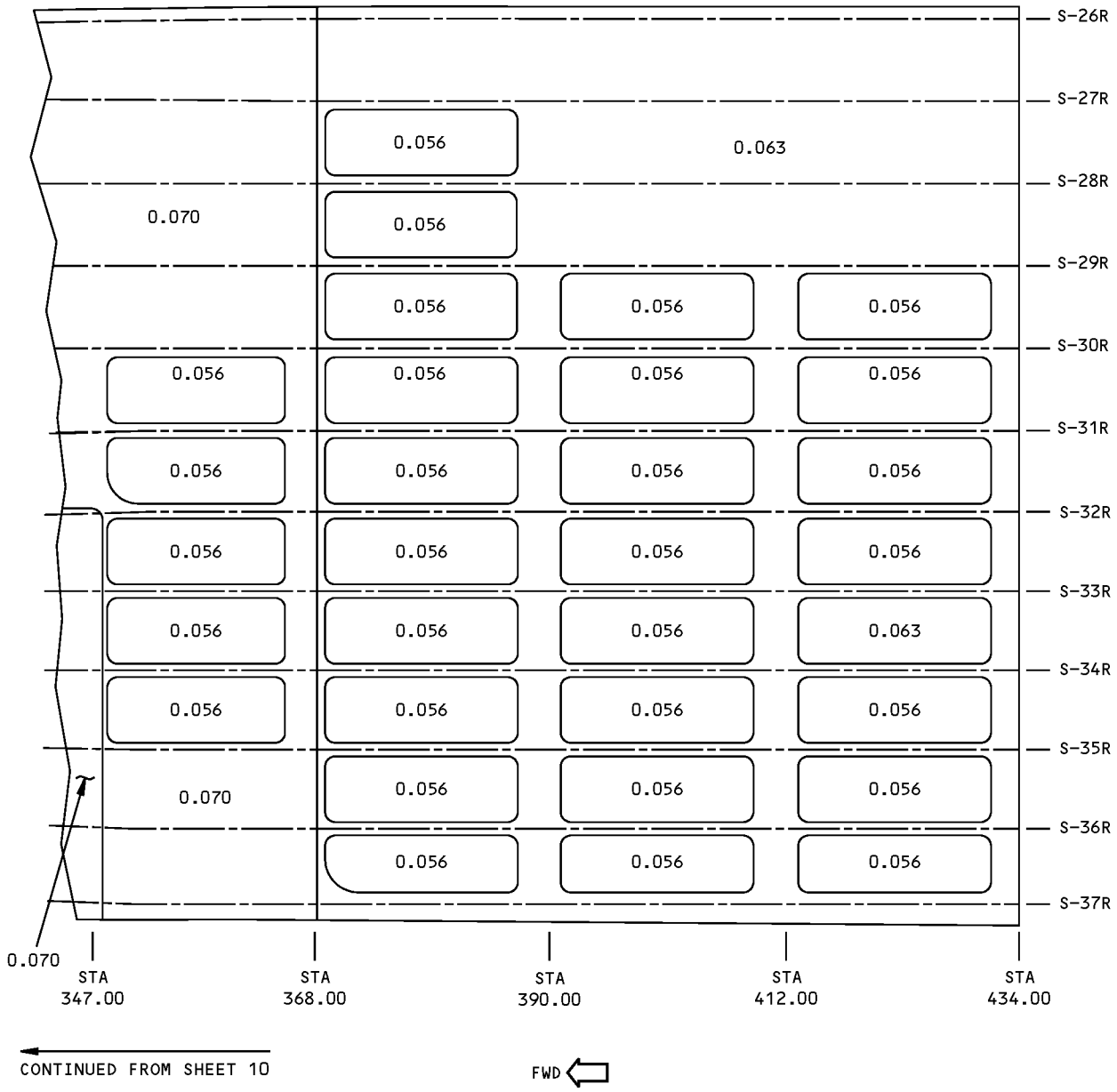
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 9 of 16)



VIEW ON INNER SURFACE OF SKIN

DETAIL VIII [C]

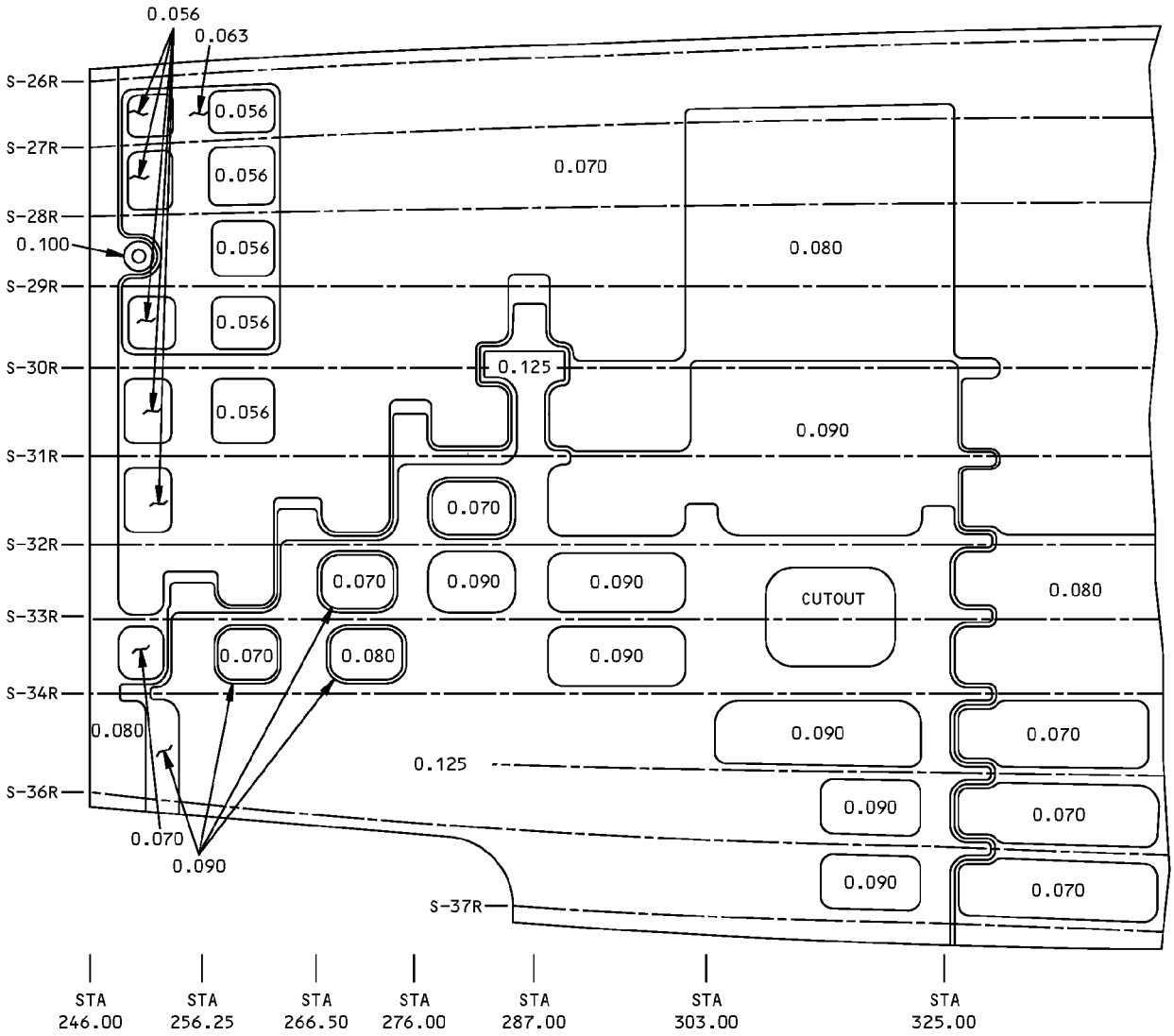
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 10 of 16)



VIEW ON INNER SURFACE OF SKIN

DETAIL VIII (CONTINUED) C

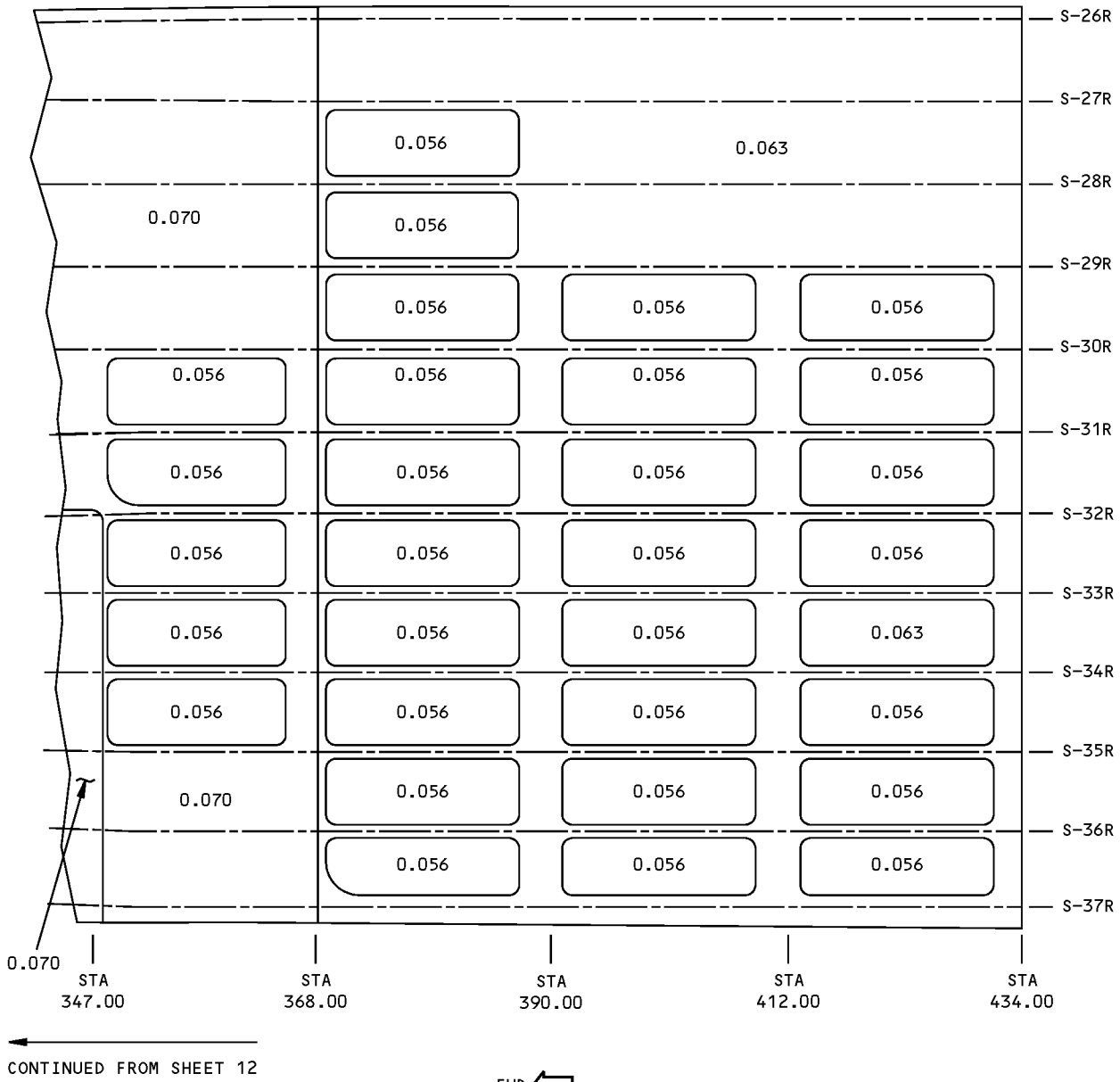
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 11 of 16)



VIEW ON INNER SURFACE OF SKIN

DETAIL IX D

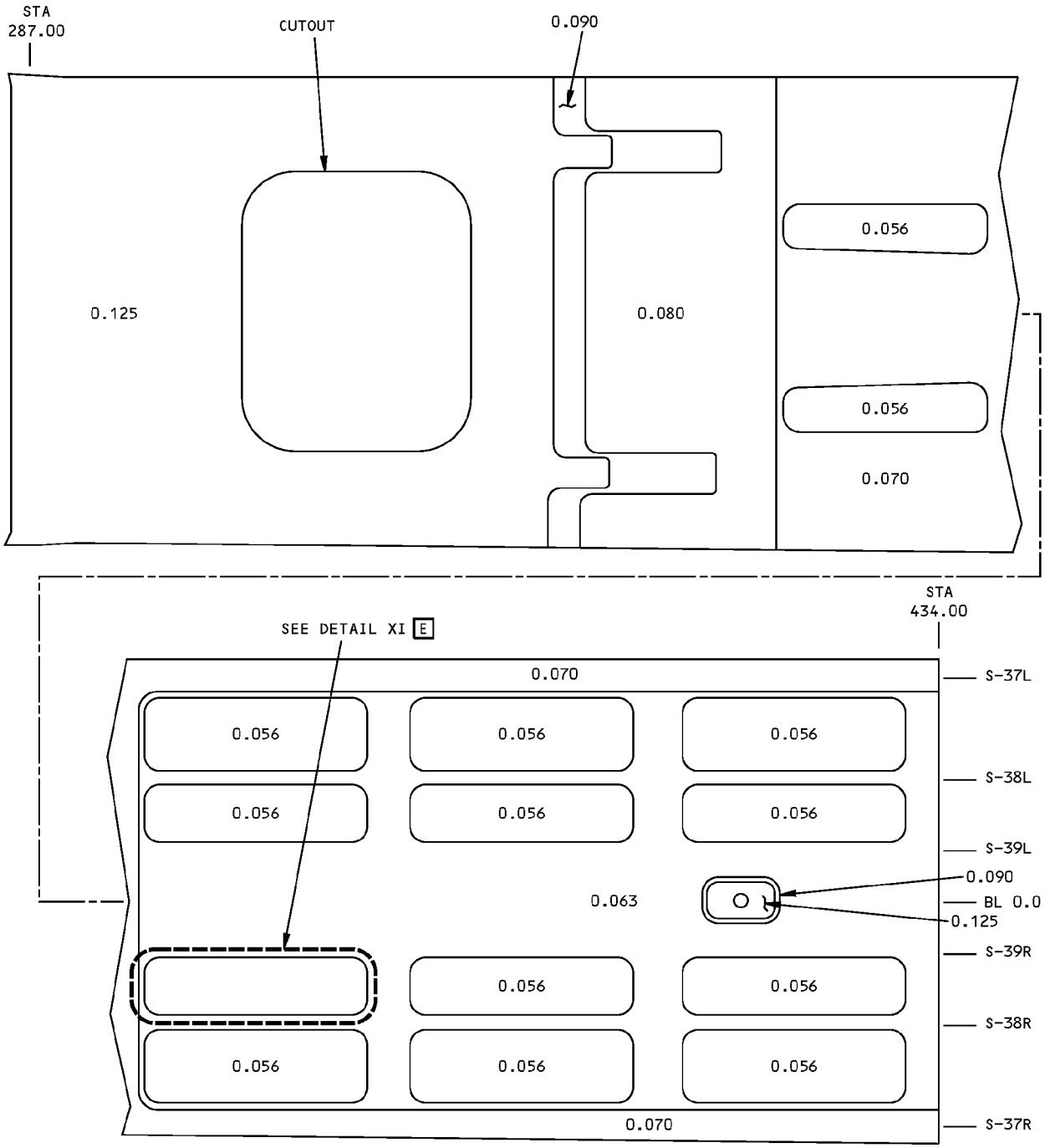
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 12 of 16)



VIEW ON INNER SURFACE OF SKIN

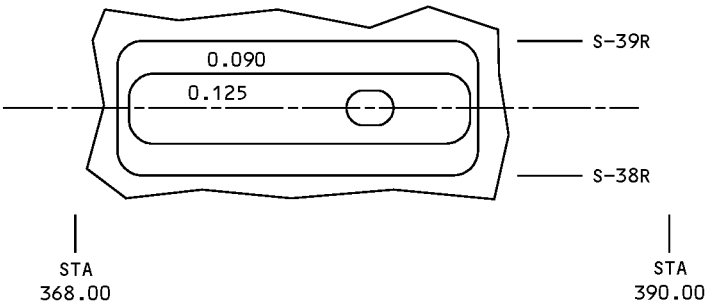
DETAIL IX (CONTINUED) D

Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 13 of 16)



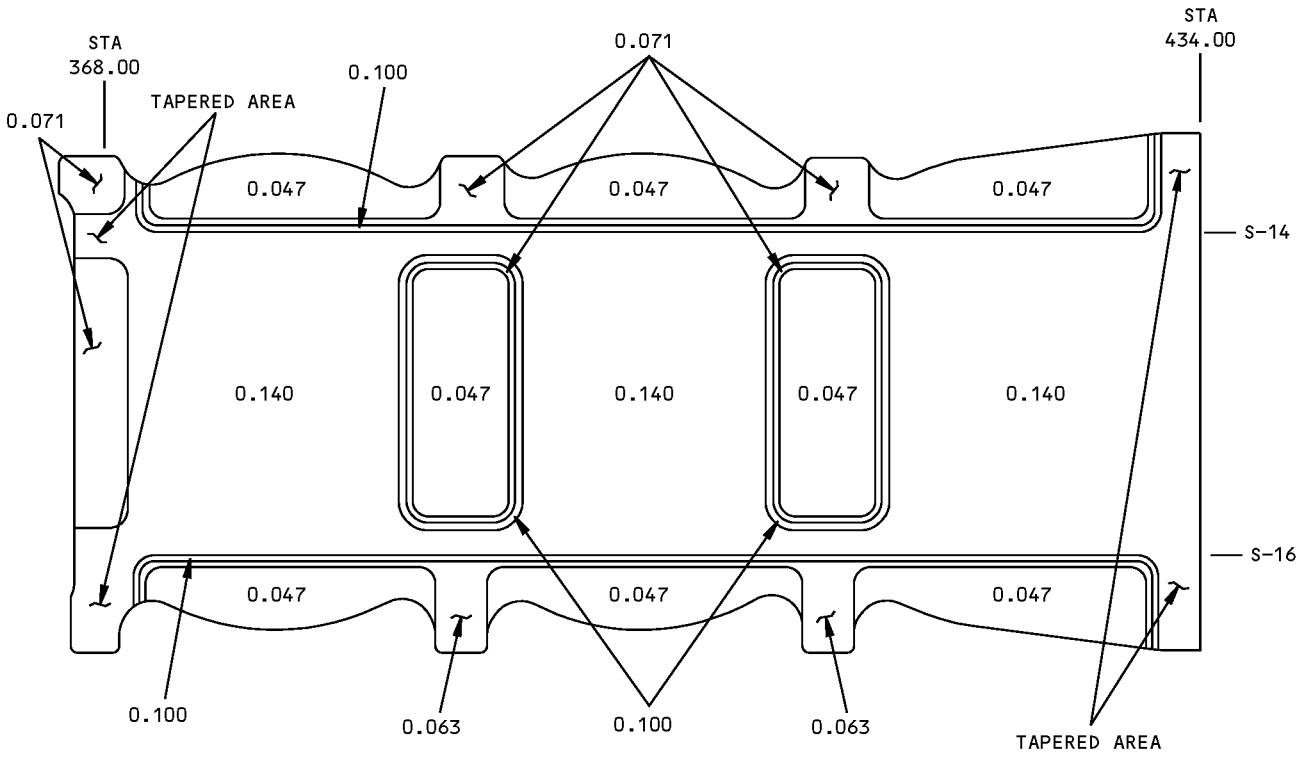
VIEW ON INNER SURFACE OF SKIN
DETAIL X F

Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 14 of 16)



DETAIL XI [E]

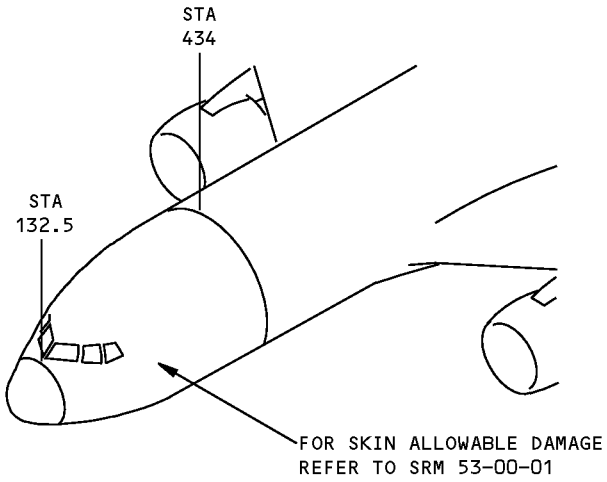
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 15 of 16)



DETAIL XII

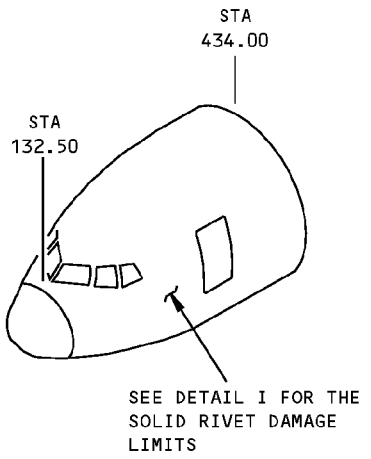
Section 41 - Skin Identification - Station 246.00 to 434.00
Figure 1 (Sheet 16 of 16)

ALLOWABLE DAMAGE GENERAL - SECTION 41 SKIN

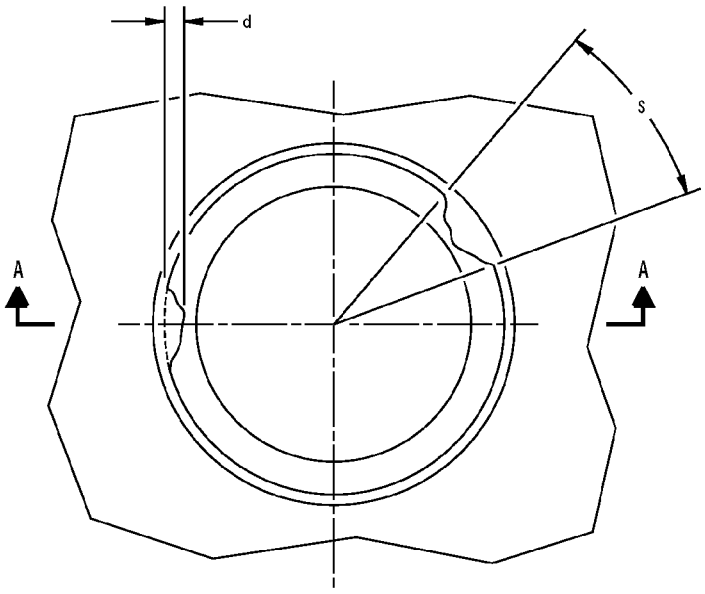


Section 41 Skin Allowable Damage
Figure 101

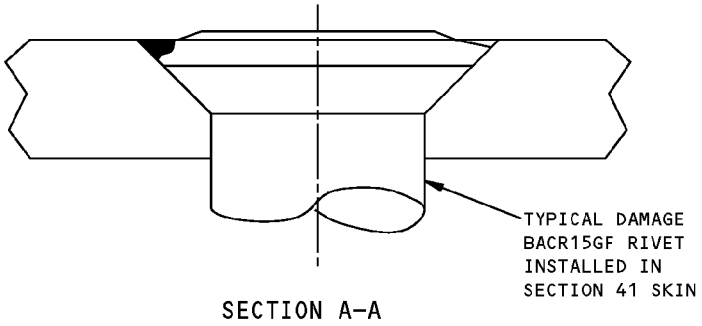
ALLOWABLE DAMAGE 1 - ALLOWABLE DAMAGE - SECTION 41 SOLID SHANK RIVETS



APPLICABILITY
THIS FIGURE IS ONLY APPLICABLE TO BACR15GF RIVETS INSTALLED IN SKIN TO STRINGER AND SKIN TO SHEAR TIE LOCATIONS BETWEEN STATION 246 AND 434 ON AIRPLANES WITH CUMULATIVE LINE NUMBERS 790 TO 845. RIVETS INSTALLED AT LAP SPLICES AND BUTT SPLICES ARE NOT COVERED BY THIS FIGURE. THESE LIMITS APPLY ONLY TO RIVETS DAMAGED DURING PRODUCTION. RIVETS WITH POST PRODUCTION INCIDENTAL DAMAGE ARE NOT COVERED BY THIS FIGURE.



DETAIL I



SECTION A-A

NOTES

- IF THE DAMAGE IS GREATER THAN SHOWN IN DETAIL I, REPLACE THE RIVET. REFER TO SRM 51-40-02.
- d = 0.040 INCH OR LESS
- S = 30° OR LESS

Allowable Damage - Section 41 Solid Shank Rivets
Figure 101

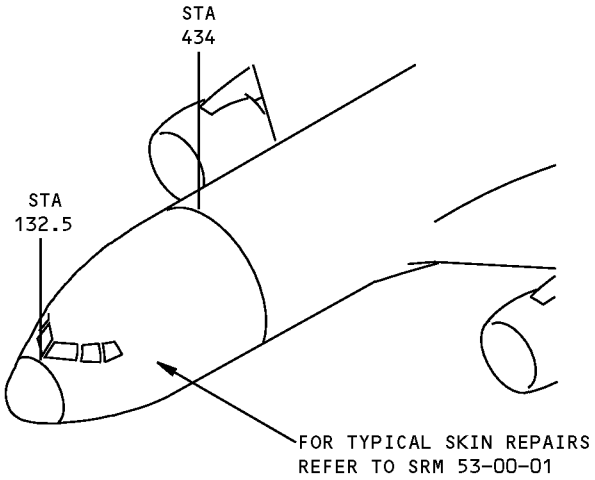
REPAIR GENERAL - SECTION 41 FUSELAGE SKINS

SERVICE BULLETIN REPAIRS

The following Service Bulletins contain repairs which are available for use where specific damage has been encountered. Usually, the Service Bulletin also covers preventive modification data which operators are encouraged to use to eliminate the need for repair.

DAMAGED AREA	CUM LINE NUMBER EFFECTIVITY	SB NUMBER
FUSELAGE - SECTION 41 - SKIN AND AUXILIARY STRUCTURE - LOWER VHF ANTENNA MOUNT - INSPECTION, REPAIR AND MODIFICATION	1 THRU 299	767-53A0040

Section 41 Fuselage Skins
Figure 201 (Sheet 1 of 2)



Section 41 Fuselage Skins
Figure 201 (Sheet 2 of 2)

REPAIR 1 - FORWARD DOOR CUTOUT AFT CORNER REPAIR

1. Applicability

A. This is a Category B repair for damage at the lower aft corner of the left hand side main entry door cutout. The repair may also be used at the right hand side forward service door cutout. Use this repair for crack damage in the fuselage skin and internal doubler.

2. General

A. This is a Category B repair. Supplemental inspections as given by Figure 202/REPAIR 1 must be incorporated into the airplane's maintenance program. Refer to 51-00-06, GENERAL for information on repair categories and damage tolerance.

B. Refer to 51-00-04, GENERAL for information on principal structural elements (PSEs).

C. Refer to SOPM 20-41-02 for application of finishes.

3. References

Reference	Title
51-00-04, GENERAL	Structural Classification
51-00-06, GENERAL	Structural Repair Definitions
51-20-01	PROTECTIVE TREATMENT OF METALLIC AND NONMETALLIC MATERIALS
51-40-08, GENERAL	Countersinking
51-40-09	COLD WORKING OF HOLES FOR FATIGUE IMPROVEMENT

4. Repair Instructions

A. Carefully trim out the damaged portion of skin. (The size and number of repair doublers necessary is based upon the final trimout depth and the condition of the bearstrap doubler).

B. Do a High Frequency Eddy Current (HFEC) inspection of the bearstrap for cracks.

(1) If you find cracks in the bearstrap, carefully trim out the damage. Use Figure 201 (Sheet 2) or Figure 201 (Sheet 3). If the bearstrap is trimmed, the skin must also be trimmed even if the skin is not cracked.

(2) If no cracks are found in the bearstrap and damage is limited to the skin only, use Figure 201 (Sheet 4).

C. Do an HFEC inspection around the edges of the trim to make sure there are no more cracks.

D. Remove another 0.04 inches of material as an insurance cut.

E. Keep a minimum corner radius of 1.5 inches.

F. Keep a minimum 2D fastener edge margin.

G. Make the repair parts. Do not end the repair parts at initial fastener rows through stringers or frames.

H. Assemble the repair parts.

I. Drill the fastener holes. Maintain 4-6D fastener spacing and 2D edge margin.

J. Disassemble the repair parts.

K. Remove all burrs, sharp edges, nicks, scratches, and gouges from the cut edges of the skin, bearstrap, and repair parts.

L. Make sure all edges of the repair parts and the initial parts have a surface smoothness of 63 microinches Ra or better.

M. Apply a chemical conversion coating. Refer to PROTECTIVE TREATMENT OF METALLIC AND NONMETALLIC MATERIALS, 51-20-01.

N. Apply two coats of BMS 10-79 Type I primer to all the bare surfaces and all the repair parts. Refer to SOPM 20-41-02.

O. Shim all the gaps greater than 0.005 inch before you install the fasteners.

P. Install countersink repair washers at initial countersink locations under the repair doubler. Refer to 51-40-08, GENERAL.

Q. Install the repair parts with BMS 5-95 sealant between the mating surfaces.

R. Install the fasteners. Install fasteners that are not made of aluminum wet with BMS5-95 sealant. Do not use flush fasteners where the countersink depth will be more than 80% of the material thickness. In this case, install protruding head fasteners. Refer to COLD WORKING OF HOLES FOR FATIGUE IMPROVEMENT, 51-40-09 where indicated in applicable Details.

S. After the repair has been installed and the BMS 5-95 sealant has cured, apply a layer of BMS 3-23 or an equivalent corrosion inhibiting compound to the internal surfaces of the repair area.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION.

INITIAL FASTENER LOCATION. INSTALL A BACB30NW*K*X HEX DRIVE BOLT WITH A BACC30M COLLAR.

REPAIR FASTENER LOCATION. INSTALL A BACB30NW8K* HEX DRIVE BOLT WITH A BACC30M COLLAR.

REPAIR FASTENER LOCATION. INSTALL A BACR15FV9KE() RIVET, DOUBLE FLUSH. COLD WORK HOLES AS GIVEN IN SRM 51-40-09, HIGH INTERFERENCE PROCESS (INSTALL A BACR15DS9KE RIVET AS AN ALTERNATE)

REPAIR FASTENER LOCATION. INSTALL A BACR15DS7KE() RIVET, DOUBLE FLUSH.

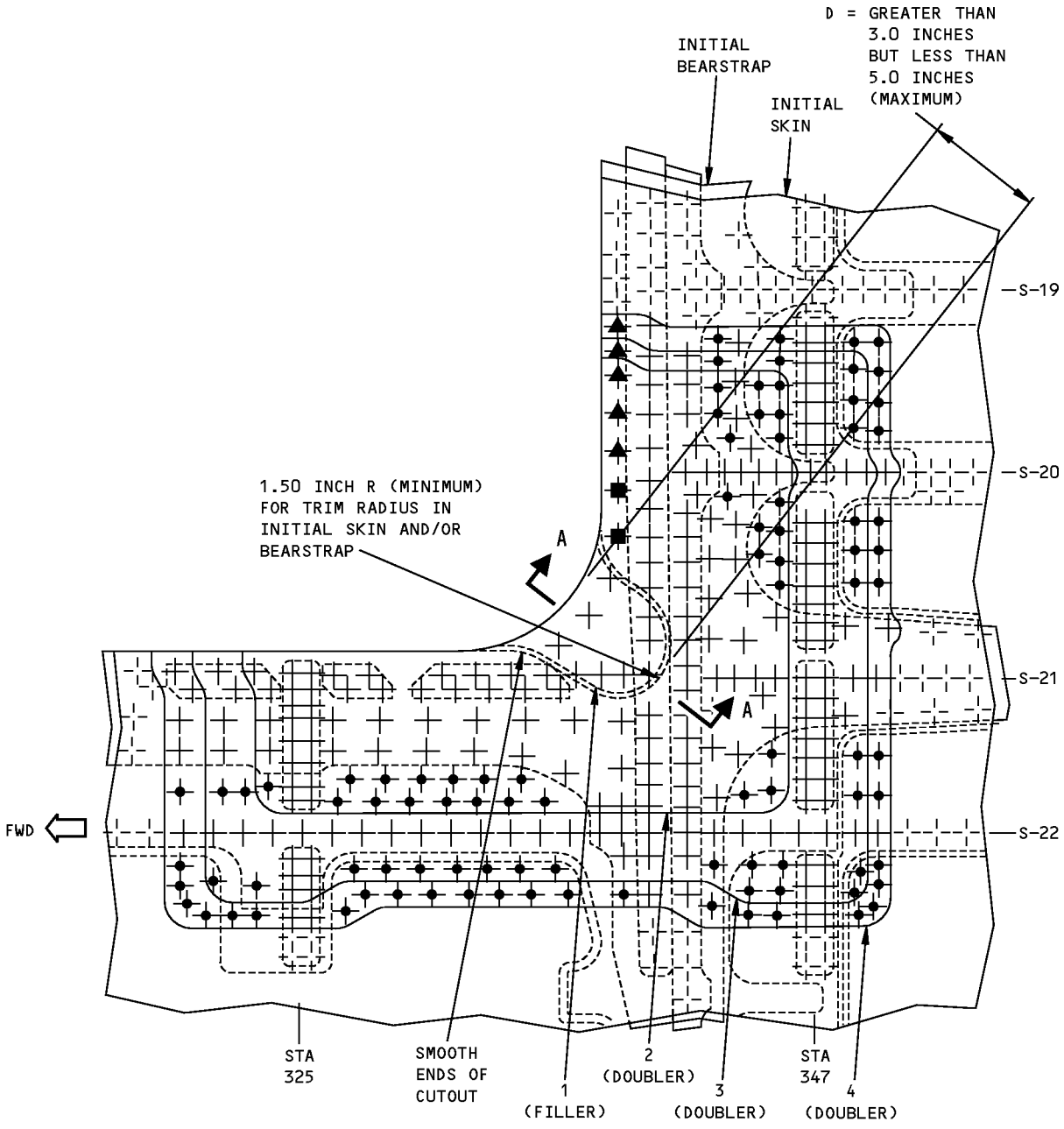
NOTE: DO NOT INSTALL FLUSH FASTENERS WHERE THE COUNTERSINK DEPTH WILL BE MORE THAN 80 PERCENT OF THE MATERIAL THICKNESS. IN THIS CASE, INSTALL PROTRUDING HEAD FASTENERS.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	FILLER	1	SAME THICKNESS AS MATERIAL REMOVED 2024-T3 CLAD
2	DOUBLER	1	0.125 INCH THICK 2024-T3 CLAD
3	DOUBLER	1	0.125 INCH THICK 2024-T3 CLAD
4	DOUBLER	1	0.10 INCH THICK 2024-T3 CLAD
5	DOUBLER	1	0.10 INCH THICK 2024-T3 CLAD
6	DOUBLER	1	0.10 INCH THICK 2024-T3 CLAD
7	FILLER	1	SAME THICKNESS AS MATERIAL REMOVED 2024-T3 CLAD

TABLE I

1499937 S0000272075_V1

Door Cutout Corner Repairs
Figure 201 (Sheet 1 of 5)

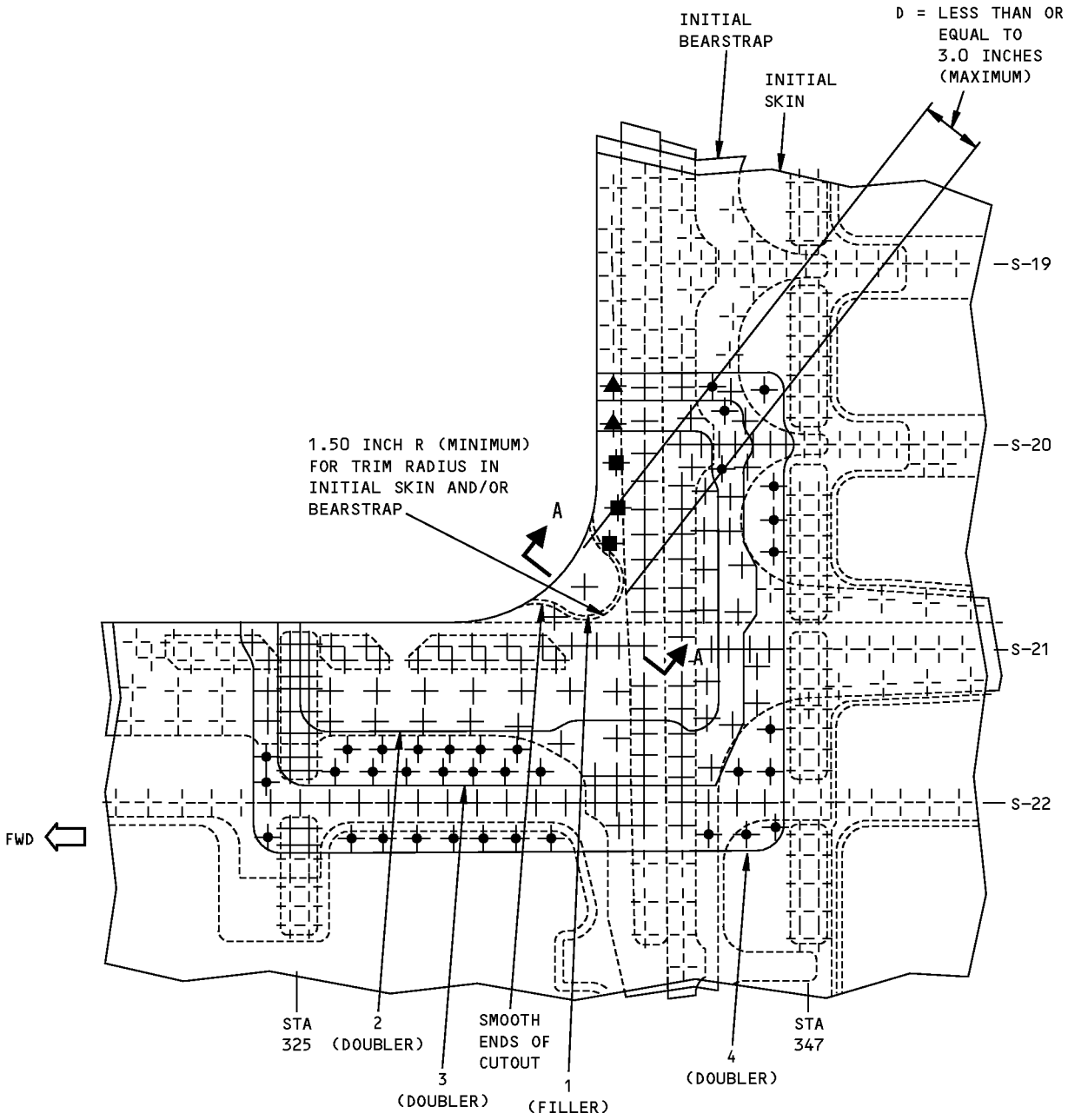


LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

SKIN AND BEARSTRAP DAMAGE
REPAIR FOR DAMAGE CUTOUTS GREATER THAN 3.0 INCHES BUT LESS THAN 5.0 INCHES
DETAIL I

1498176 S0000272070_V2

Door Cutout Corner Repairs
Figure 201 (Sheet 2 of 5)



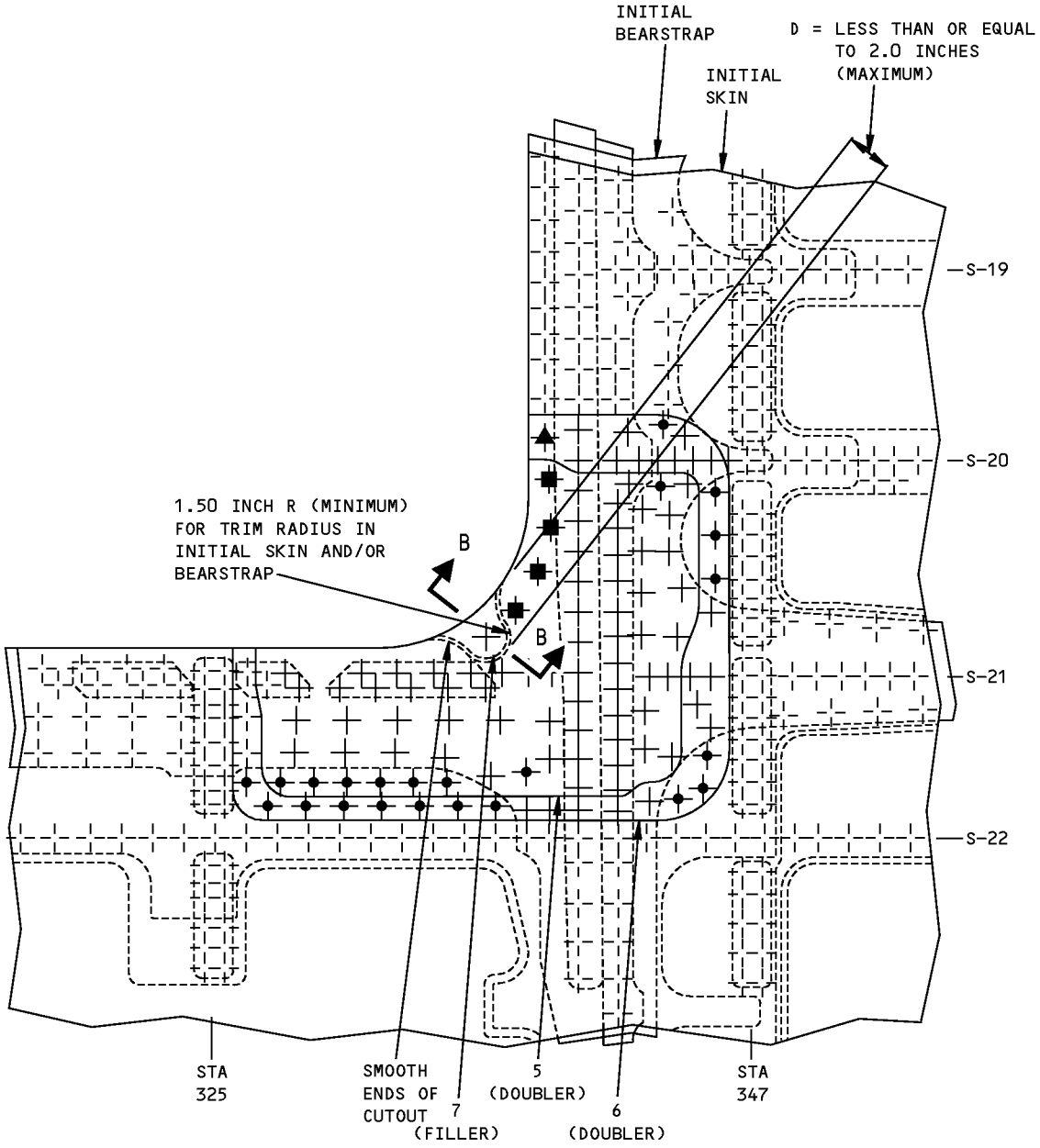
NOTE: EXACT LOCATION OF CUTOUT MAY VARY DEPENDING ON LOCATION.

LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

SKIN AND BEARSTRAP DAMAGE
REPAIR FOR DAMAGE CUTOUTS LESS THAN OR EQUAL TO 3.0 INCHES
DETAIL II

1499173 S0000272071_V2

Door Cutout Corner Repairs
Figure 201 (Sheet 3 of 5)



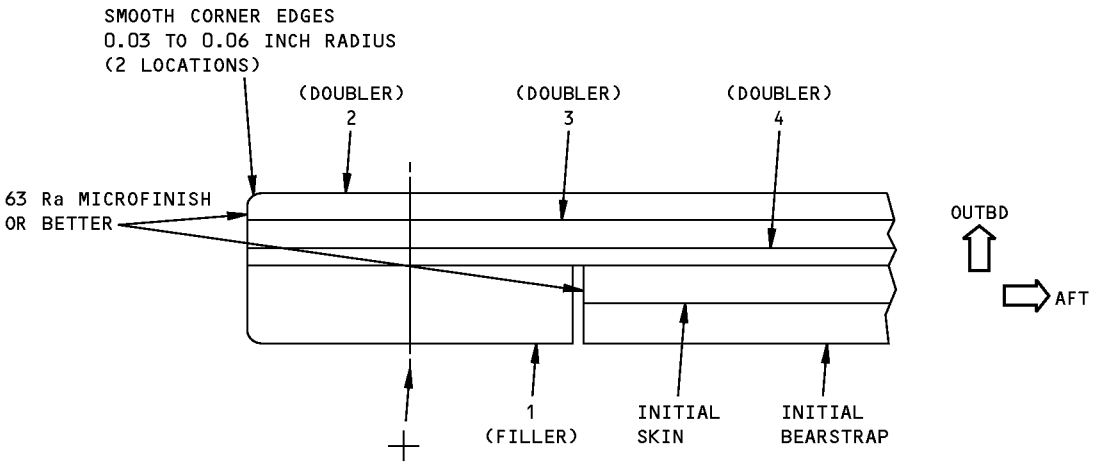
NOTE: EXACT LOCATION OF CUTOUT MAY VARY DEPENDING ON LOCATION.

LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

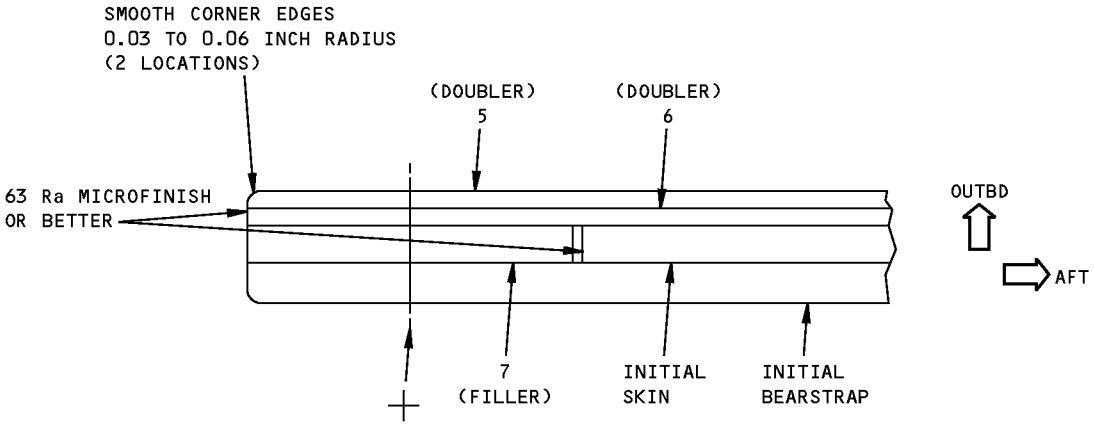
SKIN DAMAGE ONLY
REPAIR FOR DAMAGE CUTOUTS LESS THAN OR EQUAL TO 2.0 INCHES
DETAIL III

1499174 S0000272073_V2

Door Cutout Corner Repairs
Figure 201 (Sheet 4 of 5)



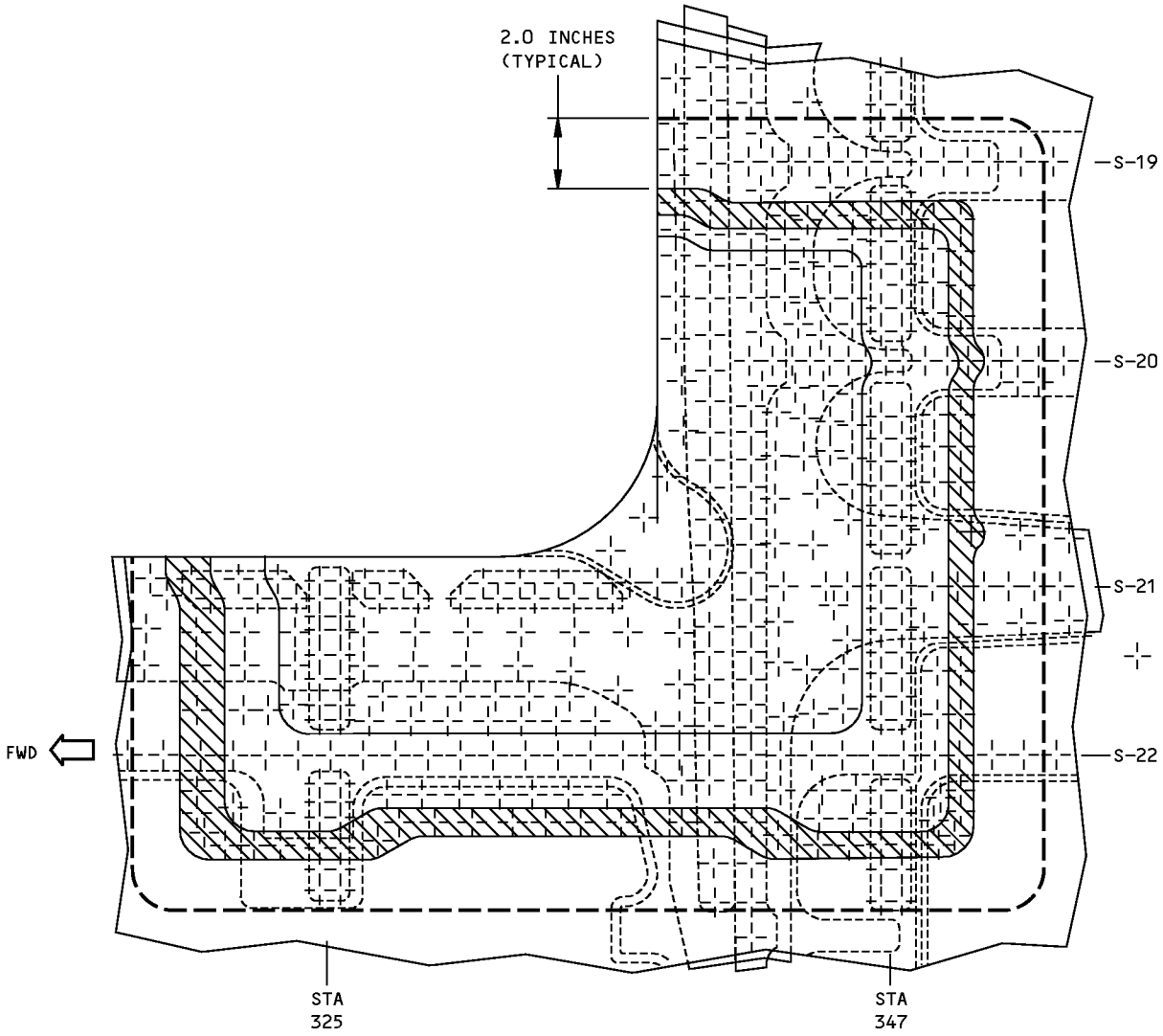
SECTION A-A



SECTION B-B

1499886 S0000272072_V1

Door Cutout Corner Repairs
Figure 201 (Sheet 5 of 5)



NOTES

- BEGIN INSPECTIONS AT 37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY

EXTERNAL LFEC INSPECTION - CHECK SKIN UNDER REPAIR STRUCTURE FOR CRACKS AT PERIMETER FASTENER ROW SHOWN COMMON TO REPAIR DOUBLER. REPEAT EVERY 3,000 FLIGHT CYCLES. REFER TO NDT PART 6, 51-00-06

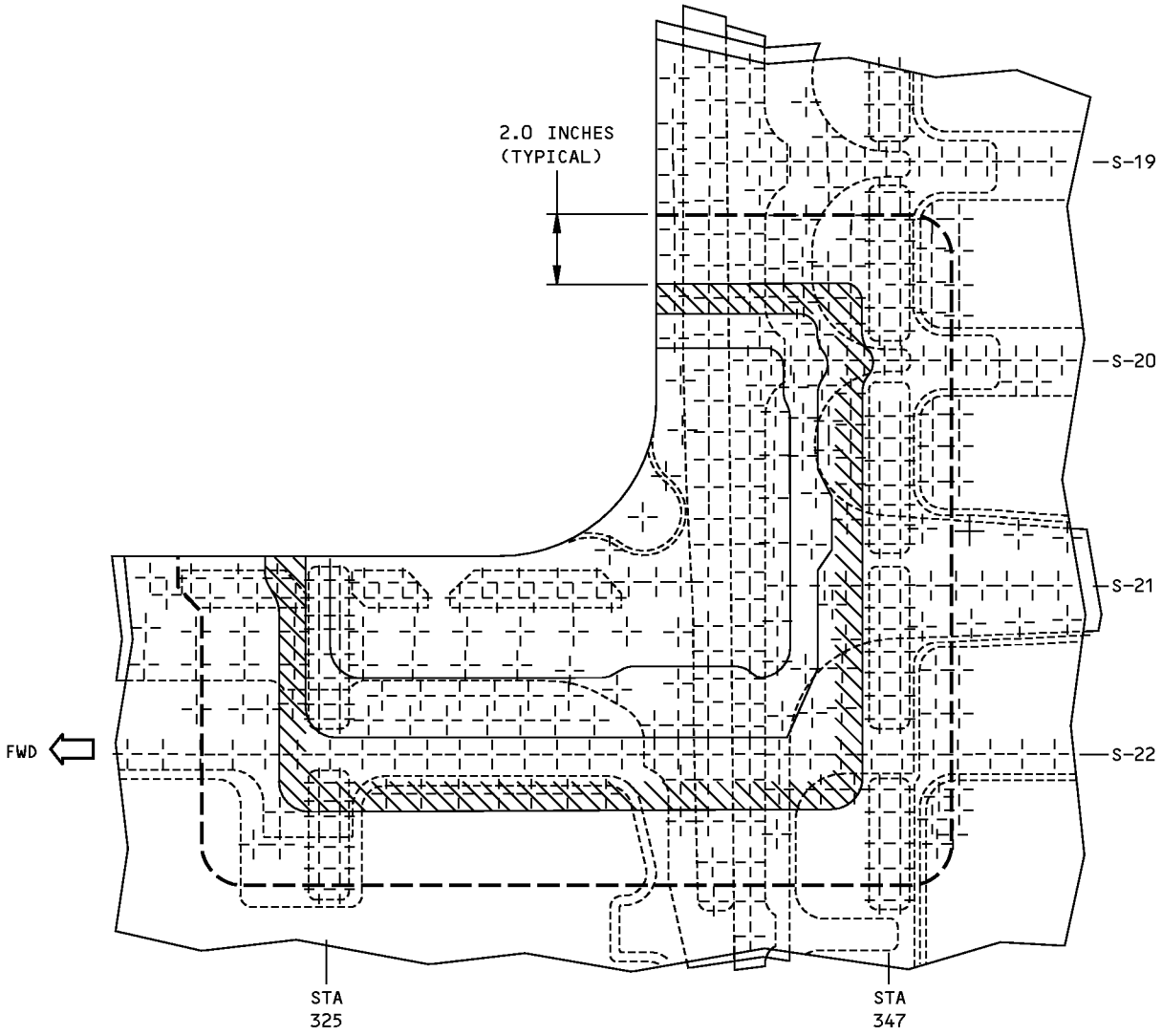
EXTERNAL DETAILED VISUAL INSPECTION - CHECK REPAIR STRUCTURE FOR CRACKS AND 2 INCHES OF SKIN 2 INCHES AROUND CIRCUMFERENCE OF REPAIR. REPEAT EVERY 3,000 FLIGHT CYCLES.

LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

INSPECTION REQUIREMENTS FOR FIGURE 201
DETAIL I AND DETAIL IV

1499967 S0000272076_V1

Inspection requirements
Figure 202 (Sheet 1 of 3)



NOTES

- BEGIN INSPECTIONS AT 37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY

EXTERNAL LFEC INSPECTION - CHECK SKIN UNDER REPAIR STRUCTURE FOR CRACKS AT PERIMETER FASTENER ROW SHOWN COMMON TO REPAIR DOUBLER. REPEAT EVERY 3,000 FLIGHT CYCLES. REFER TO NDT PART 6, 51-00-06

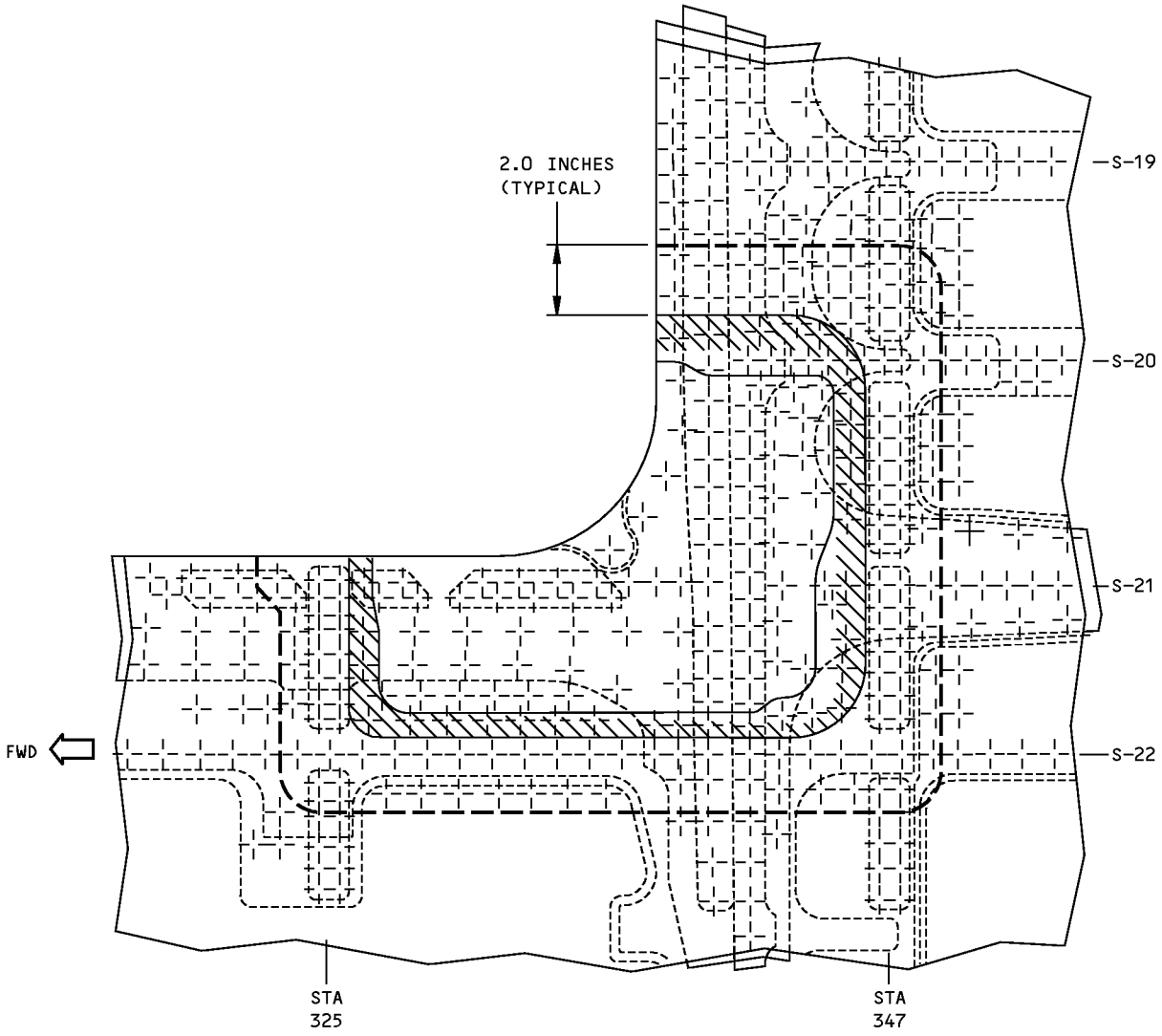
EXTERNAL DETAILED VISUAL INSPECTION - CHECK REPAIR STRUCTURE FOR CRACKS AND 2 INCHES OF SKIN 2 INCHES AROUND CIRCUMFERENCE OF REPAIR. REPEAT EVERY 3,000 FLIGHT CYCLES.

LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

INSPECTION REQUIREMENTS FOR FIGURE 201
DETAIL II AND DETAIL V

1499982 S0000272077_V1

Inspection requirements
Figure 202 (Sheet 2 of 3)



NOTES

- BEGIN INSPECTIONS AT 37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY

EXTERNAL LFEC INSPECTION - CHECK SKIN UNDER REPAIR STRUCTURE FOR CRACKS AT PERIMETER FASTENER ROW SHOWN COMMON TO REPAIR DOUBLER. REPEAT EVERY 3,000 FLIGHT CYCLES. REFER TO NDT PART 6, 51-00-06

EXTERNAL DETAILED VISUAL INSPECTION - CHECK REPAIR STRUCTURE FOR CRACKS AND 2 INCHES OF SKIN 2 INCHES AROUND CIRCUMFERENCE OF REPAIR. REPEAT EVERY 3,000 FLIGHT CYCLES.

LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

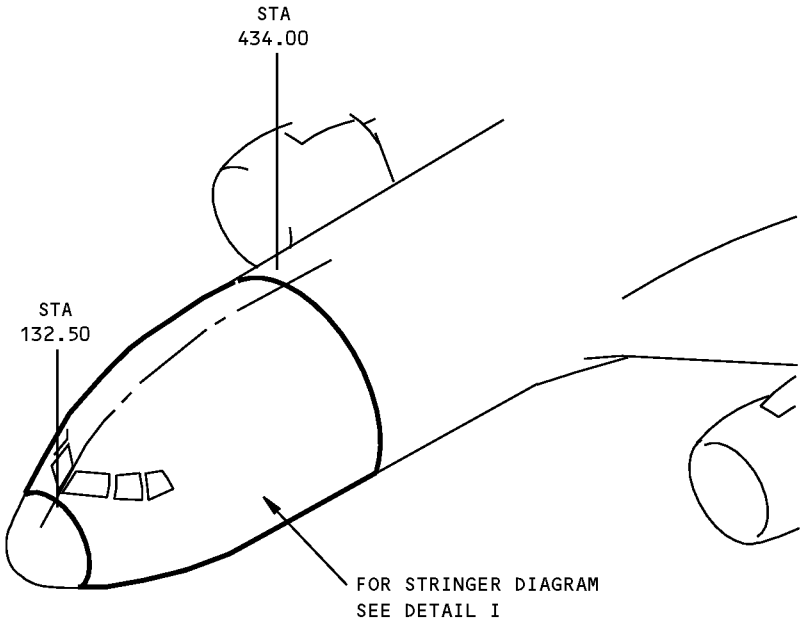
INSPECTION REQUIREMENTS FOR FIGURE 201
DETAIL III AND DETAIL VI

1500193 S0000272078_V1

Inspection requirements
Figure 202 (Sheet 3 of 3)

IDENTIFICATION 1 - SECTION 41 STRINGER

REF DWG
140T1520

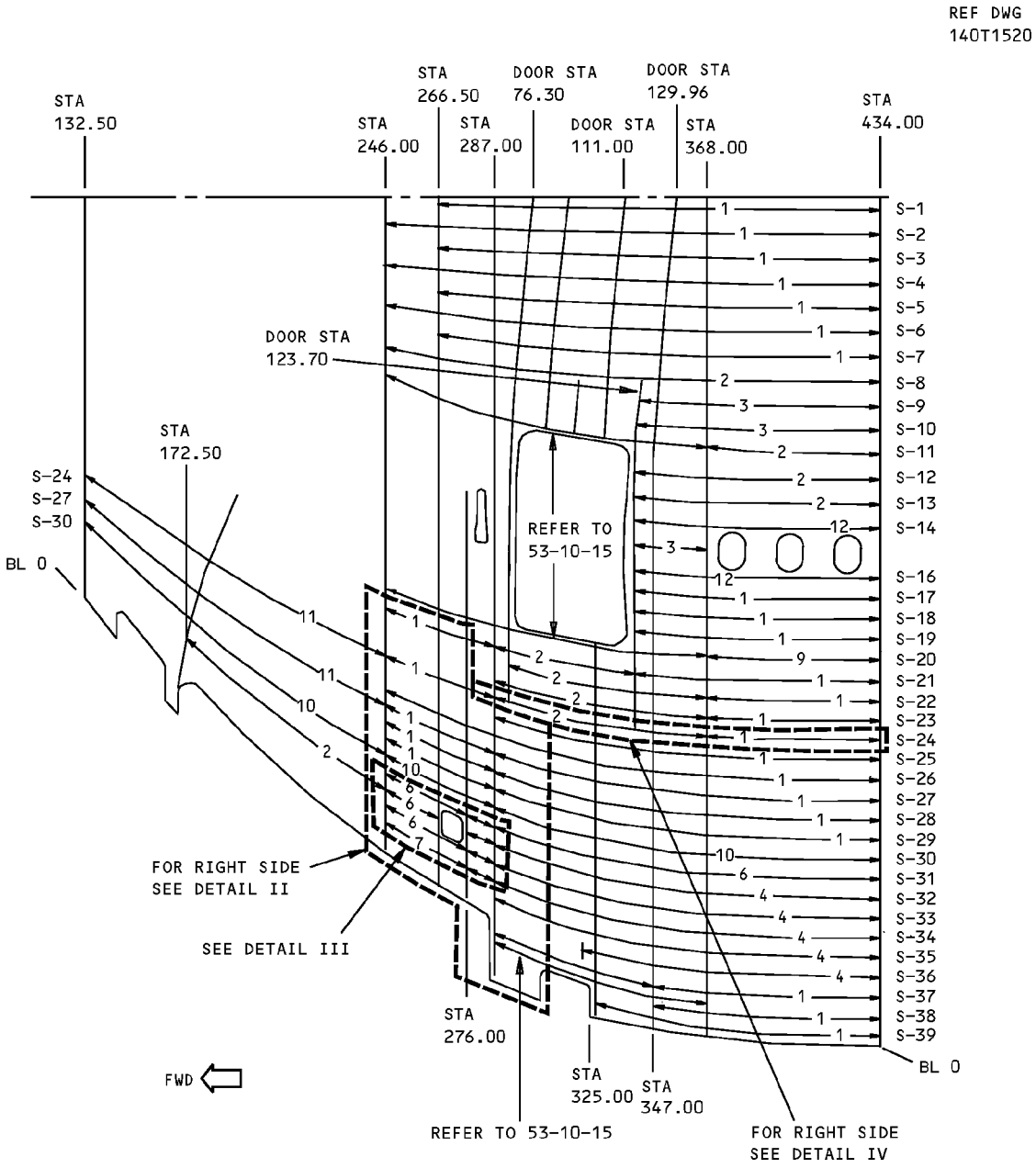


NOTES

- SKIN PANELS AND STRINGERS ARE ON THE SAME REFERENCE DRAWINGS. REFER TO SRM 53 10-01

[A] THE STRINGER IS TAPERED AND VARIES IN THICKNESS. REFER TO THE BOEING DRAWING TO DETERMINE THE LOCAL THICKNESS.

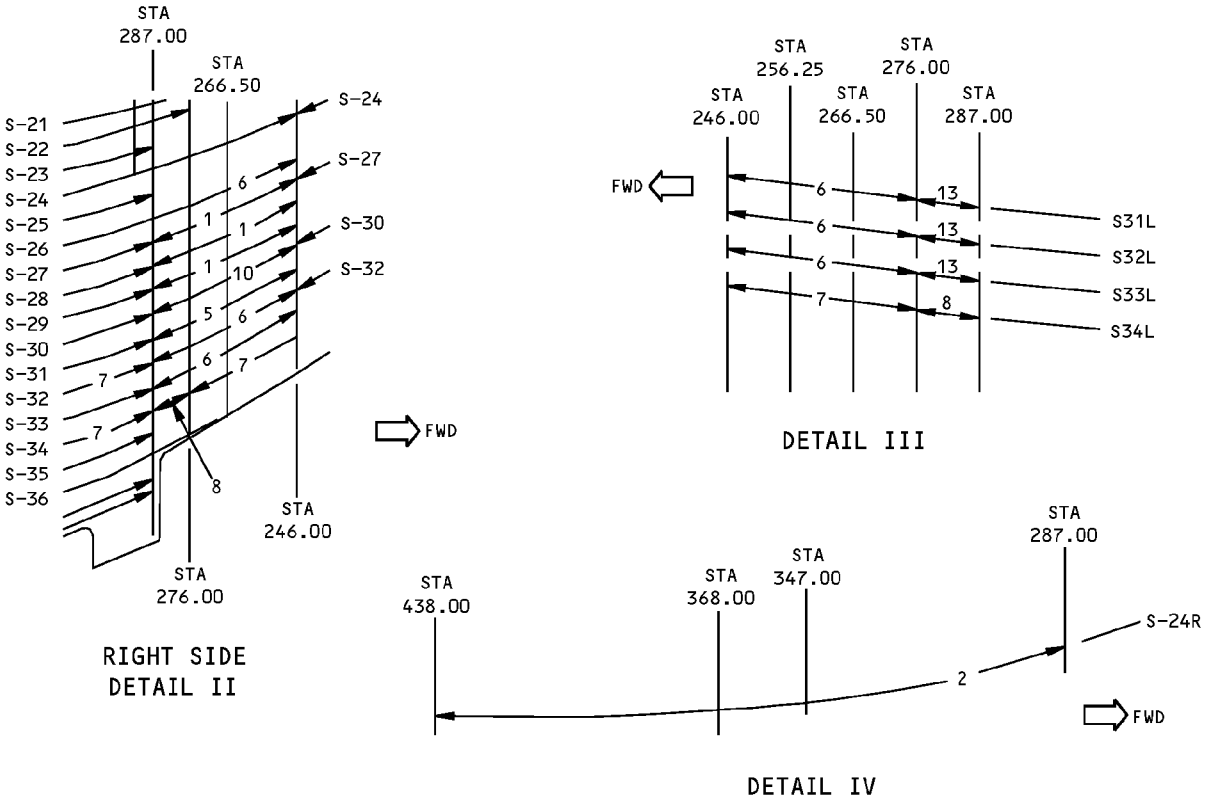
Section 41 Stringer Identification
Figure 1 (Sheet 1 of 3)



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE (EXCEPT AS NOTED)
DETAIL I

LIST OF MATL

Section 41 Stringer Identification
Figure 1 (Sheet 2 of 3)

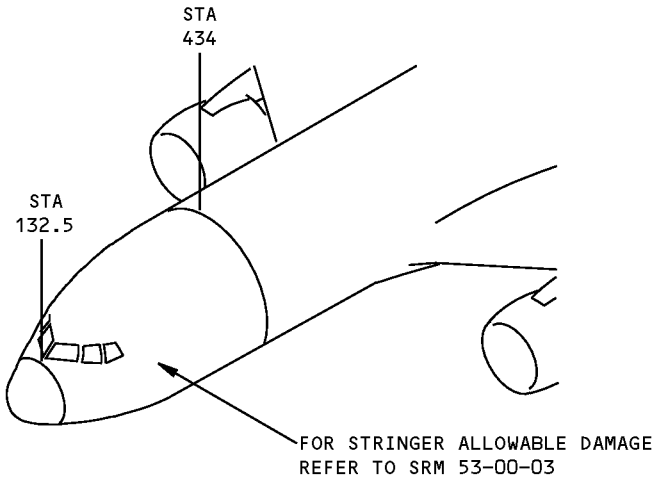


ITEM	GAGE	MATERIAL	SECTION NUMBER	STRINGER TYPE	REF DWG
1		7075-T6	BAC1498-205		141T3001
2		7075-T6	BAC1498-208		141T3001
3		7075-T6	BAC1498-206		141T3001
4		7075-T6 [A]	BAC1498-209		141T3001
5		7075-T6	BAC1498-203		141T3001
6		7075-T6	BAC1498-207		141T3001
7		7075-T6 [A]	BAC1498-210		141T3001
8		7075-T6	BAC1498-204		141T3001
9		7075-T3511	BAC1506-3122		141T3001
10		7075-T6	BAC1505-38979		141T3001
11	0.063	CLAD 2024-T3		STRAP	141T3210
12		7075-T6511	BAC1517-2116		141T3320
13		7075-T6	BAC1498-201		141T3001

LIST OF MATERIALS FOR DETAILS I THRU IV

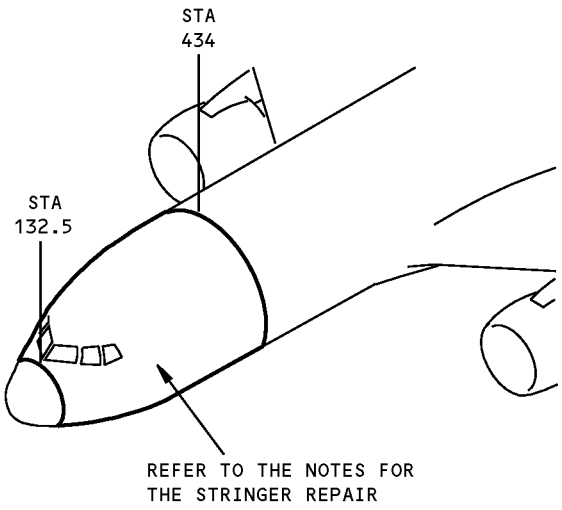
Section 41 Stringer Identification
Figure 1 (Sheet 3 of 3)

ALLOWABLE DAMAGE GENERAL - SECTION 41 STRINGERS



Section 41 Stringer Allowable Damage
Figure 101

REPAIR GENERAL - SECTION 41 STRINGERS



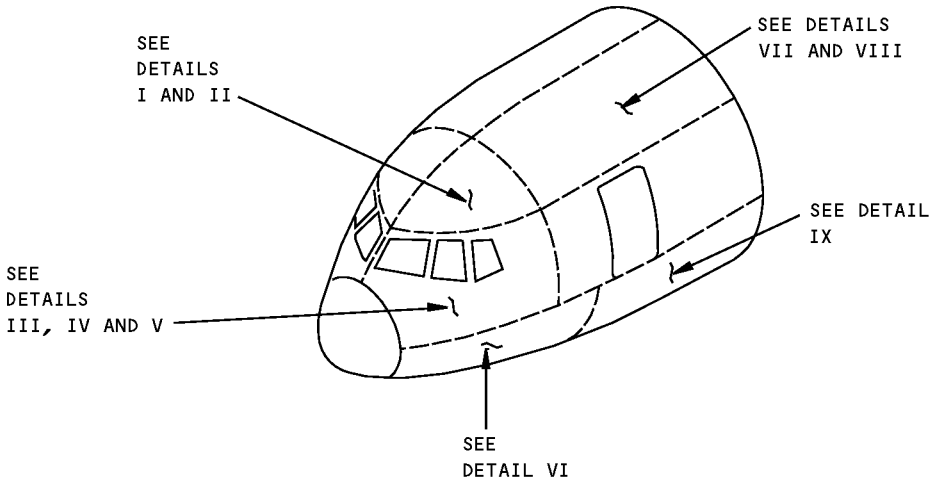
NOTES

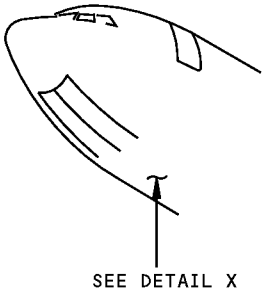
- REFER TO SRM 53-00-03, REPAIR 1 FOR STRINGERS S-1 THROUGH S-19.
- REFER TO SRM 53-00-03, REPAIR 2 FOR STRINGERS S-21 THROUGH S-39.
- CONTACT THE BOEING COMPANY FOR STRINGER S-20.

Section 41 Stringer Repair
Figure 201

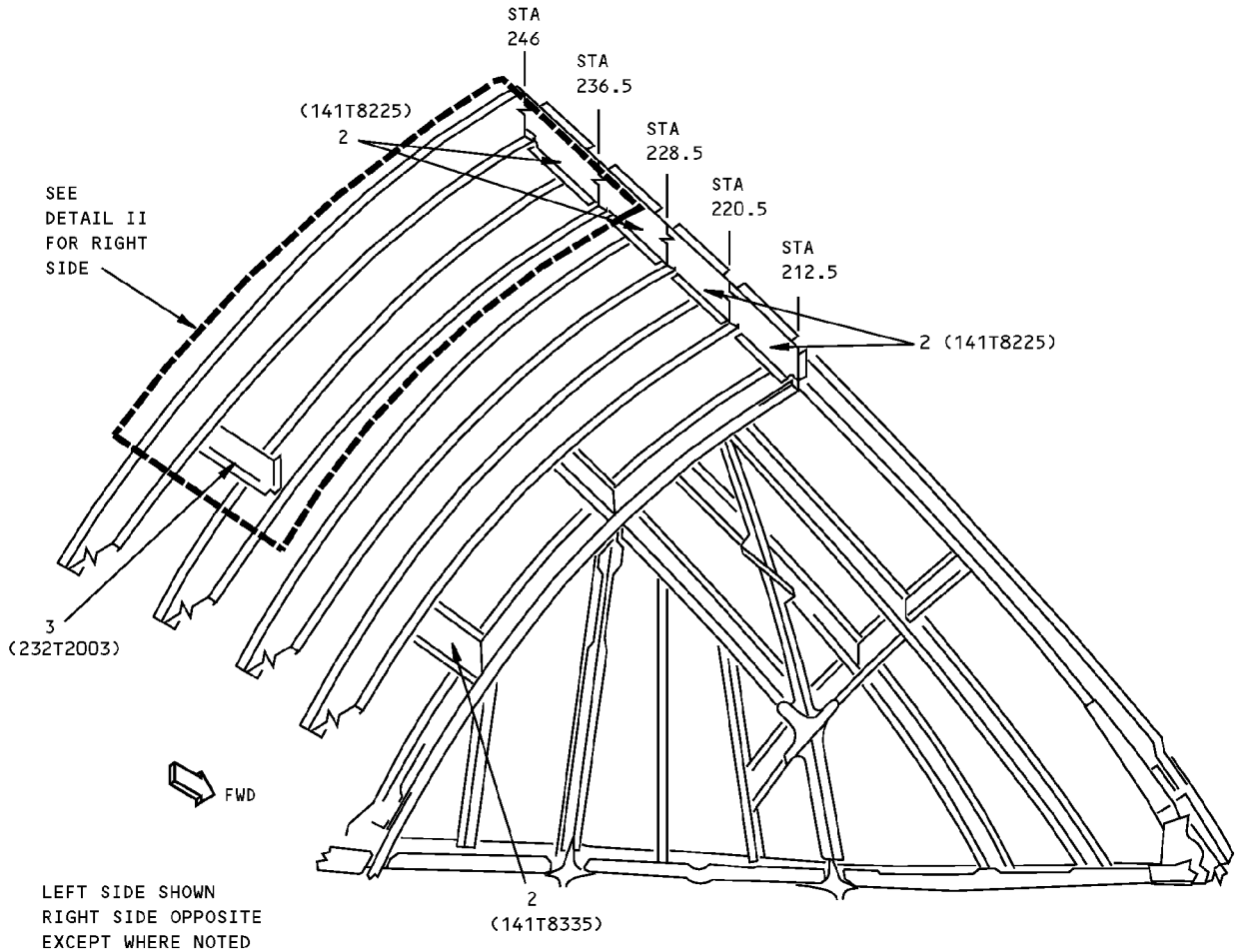
IDENTIFICATION 1 - SECTION 41 INTERCOSTAL

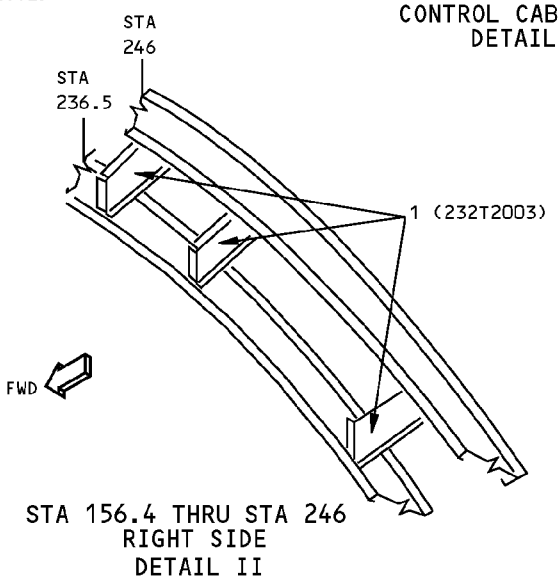
REF DWG
141T0800





Section 41 Intercostal Identification
Figure 1 (Sheet 1 of 11)





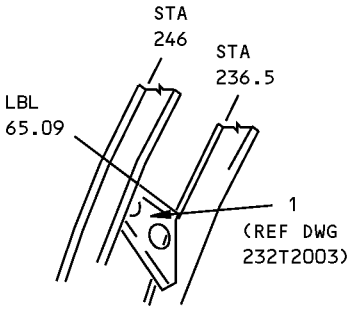
LIST OF MATL

Section 41 Intercostal Identification
Figure 1 (Sheet 2 of 11)

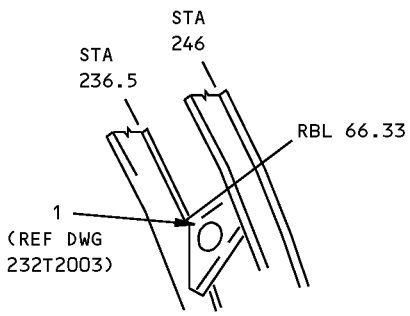
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	INTERCOSTAL	0.063	CLAD 2024-T42	
2	INTERCOSTAL	0.063	2024-T42	
3	INTERCOSTAL	0.050	CLAD 2024-T42	

LIST OF MATERIALS FOR DETAILS I AND II

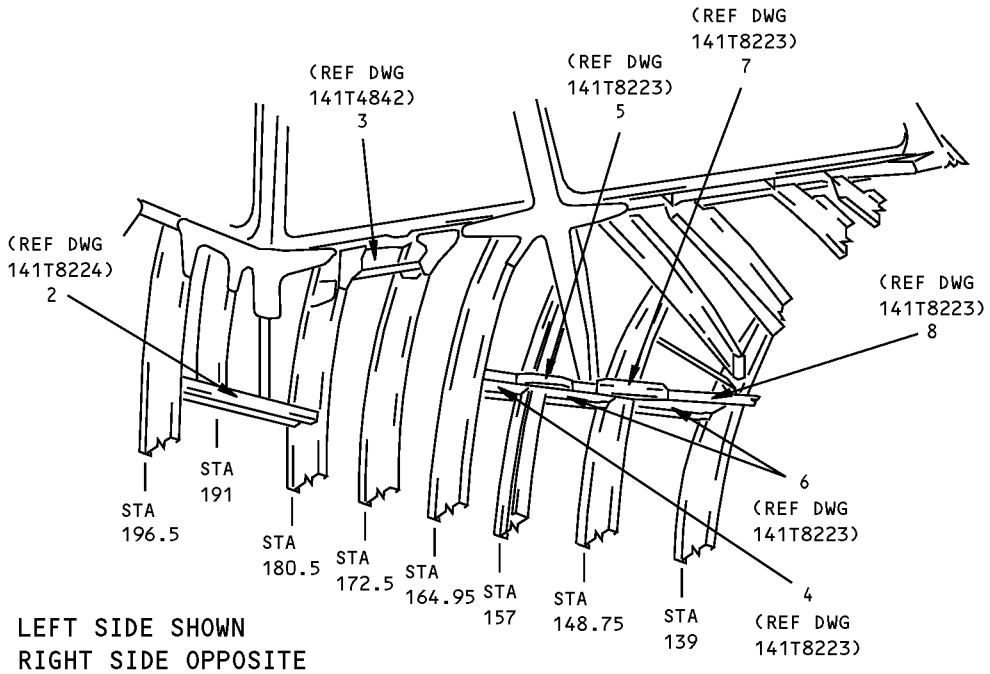
Section 41 Intercostal Identification
Figure 1 (Sheet 3 of 11)



DETAIL III
LEFT SIDE



DETAIL IV
RIGHT SIDE



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE

CONTROL CAB SIDEWALL
DETAIL V

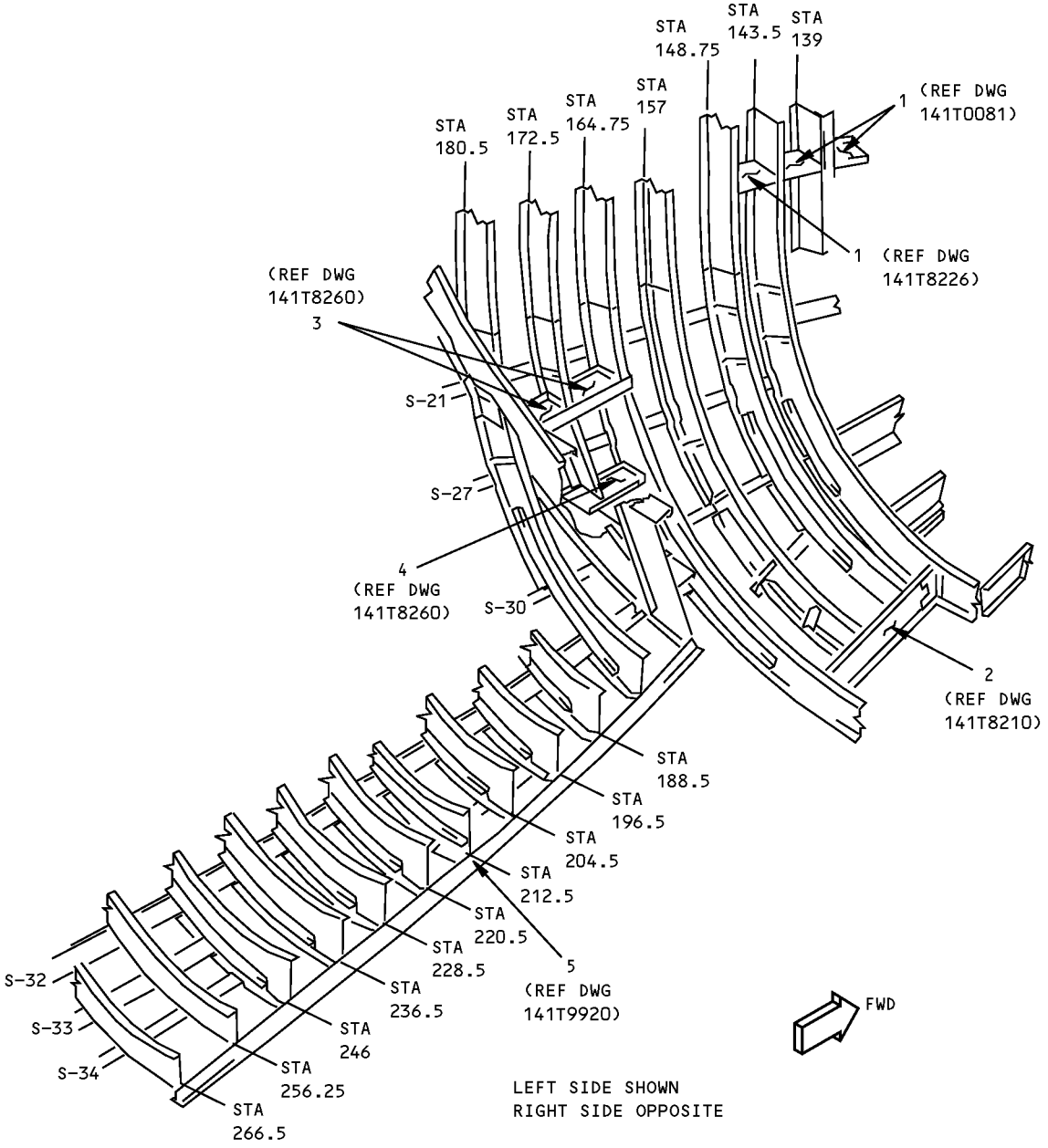
LIST OF MATL

Section 41 Intercostal Identification
Figure 1 (Sheet 4 of 11)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	INTERCOSTAL	0.063	CLAD 2024-T42	
2	INTERCOSTAL	0.063	2024-T42	
3	BRACKET	0.050	7075-T6	
4	INTERCOSTAL	0.071	2024-T42	
	CHANNEL	0.071	7075-T6	
5	CHANNEL	0.250	2024-T351	
6	INTERCOSTAL	0.071	2024-T42	
	CHANNEL	0.090	7075-T6	
7	CHANNEL	0.090	7075-T6	
8	INTERCOSTAL	0.080	7075-T6	

LIST OF MATERIALS FOR DETAILS III, IV AND V

Section 41 Intercostal Identification
Figure 1 (Sheet 5 of 11)



LOWER SIDEWALL
DETAIL VI

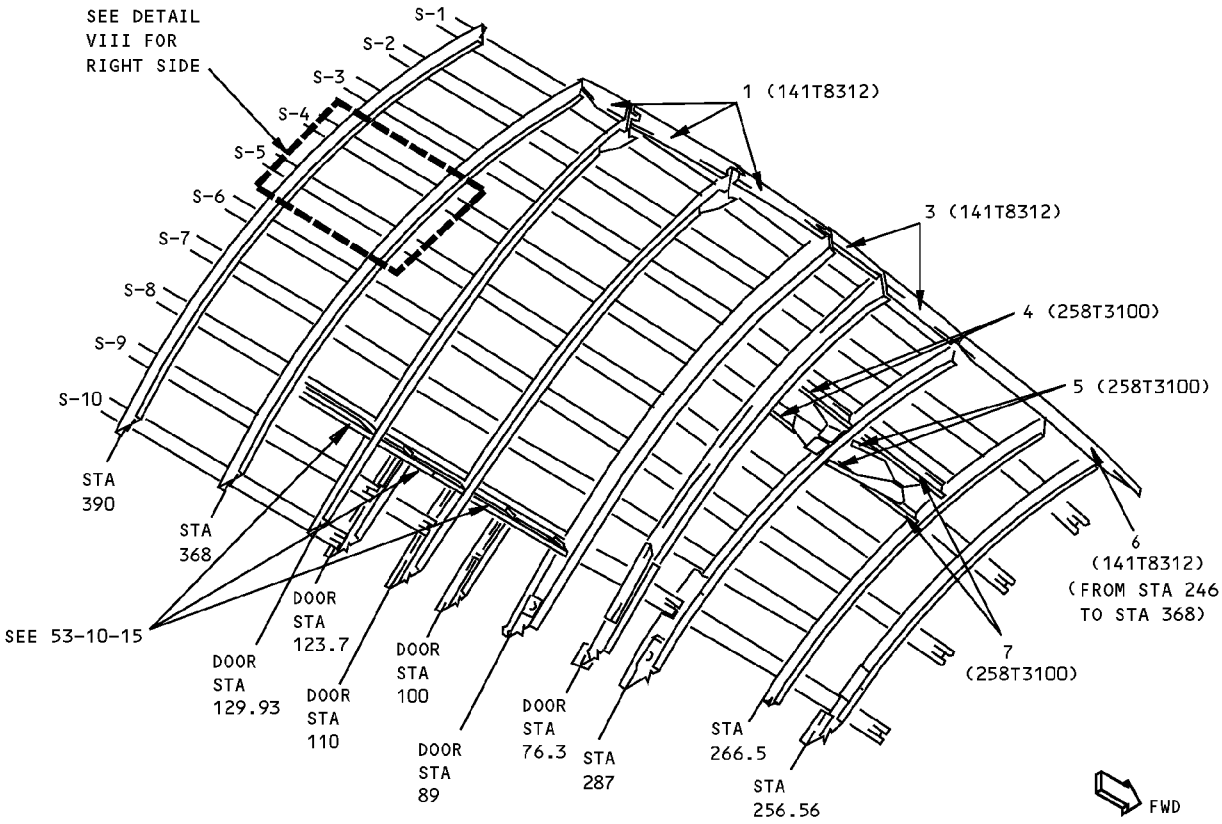
LIST OF MATL

Section 41 Intercostal Identification
Figure 1 (Sheet 6 of 11)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	J-SECTION	0.063	2024-T42	
	ANGLE	0.063	2024-T42	
	STRAP	0.071	CLAD 2024-T3	
2	OUTER CHORD		BAC1506-1700 2024-T42	
	WEB	0.063	CLAD 2024-T3	
	INNER CHORD		BAC1506-1700 2024-T42	
	STRAP PLATE	0.312	2024-T351	
3	INNER CHORD		AND10133-1001 2024-T42	
	FRAME	0.040	CLAD 2024-T42	
4	INNER CHORD		BAC1506-3157 2024-T42	
5	CHORD LWR		BAC1506-3179 2024-T42	

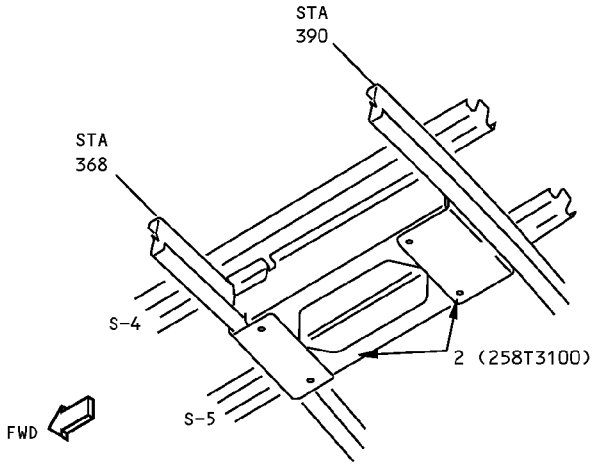
LIST OF MATERIALS FOR DETAILS VI

Section 41 Intercostal Identification
Figure 1 (Sheet 7 of 11)



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE EXCEPT AS NOTED

UPPER SIDEWALL
DETAIL VII



DETAIL VIII

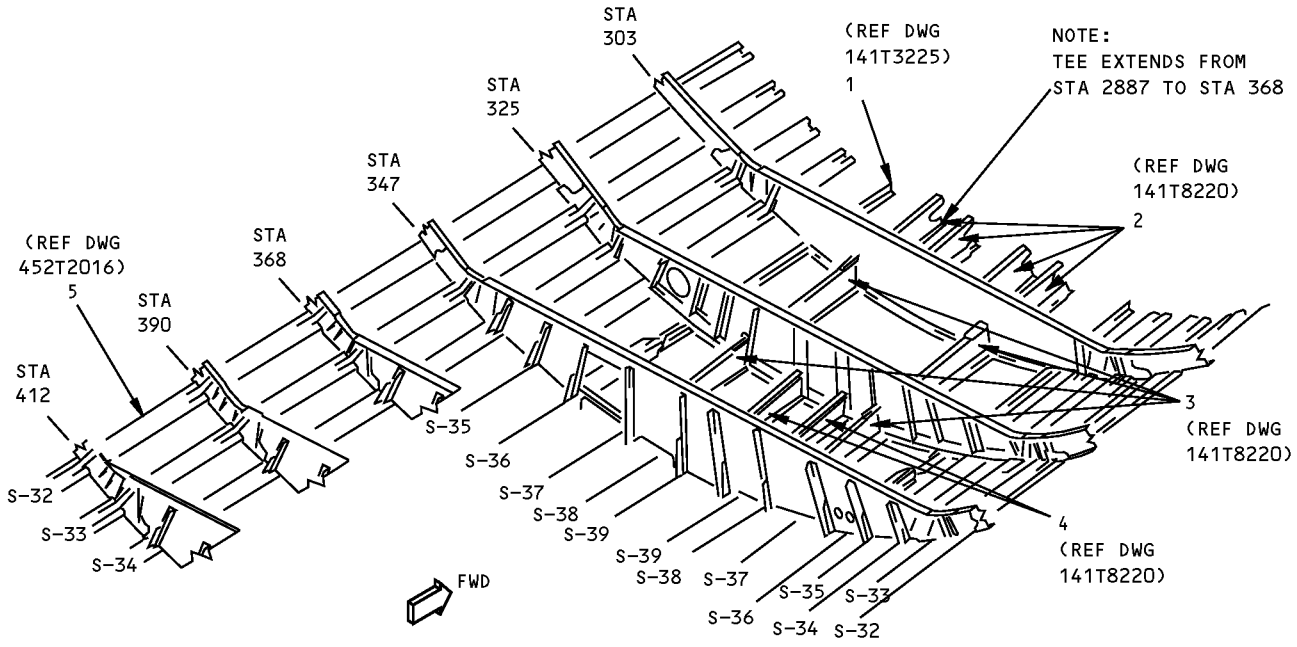
LIST OF MATL

Section 41 Intercostal Identification
Figure 1 (Sheet 8 of 11)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	WEB	0.080	CLAD 7075-T6	
2	ZEE SECTION	0.063	2024-T3	
3	WEB		BAC1490-2793 CLAD 2024-T42	
4	CHANNEL	0.063	2024-T3	
5	ANGLE	0.063	2024-T3	
6	OUTER CHORD		BAC1505-100962 2024-T42	
7	INNER CHORD		AND 10134-1404 2024-T42	
	WEB	0.040	CLAD 2024-T3	

LIST OF MATERIALS FOR DETAILS VII AND VIII

Section 41 Intercostal Identification
Figure 1 (Sheet 9 of 11)

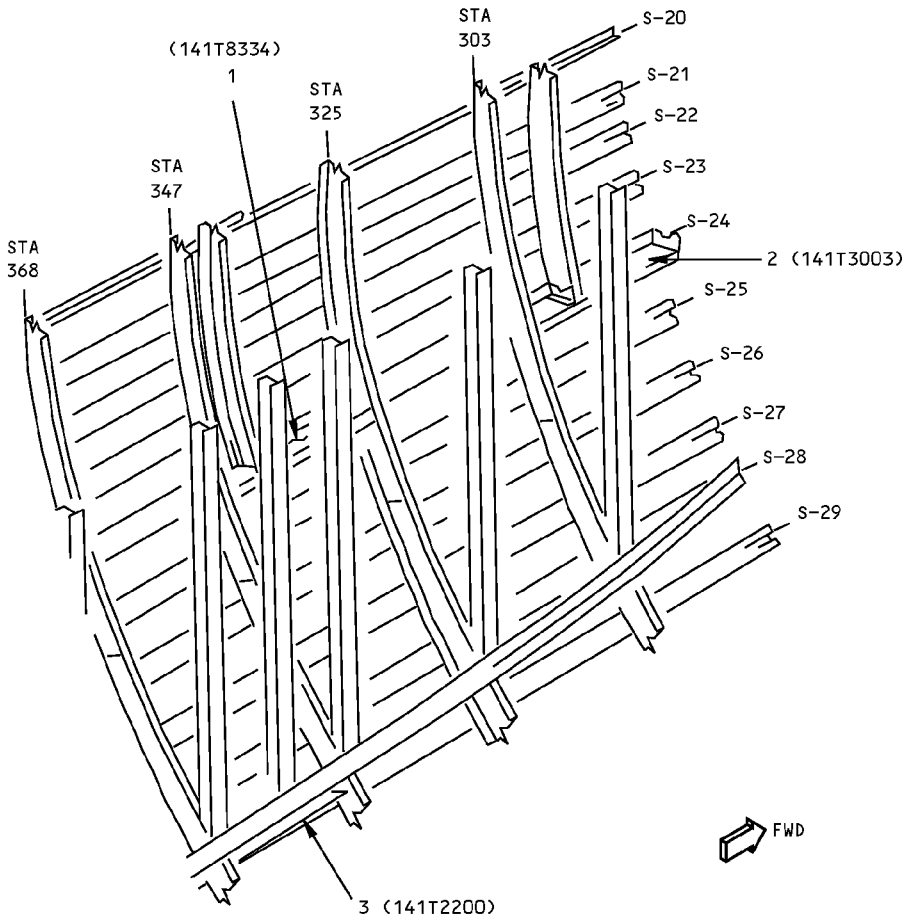


CARGO FLOOR
DETAIL IX
STA 303 THRU STA 412

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	LOWER CHORD		BAC1506-3179 7075-T73511	
2	TEE		BAC1506-3161 7075-T73511	
	ANGLE		AND10134-1206 2024-T3511	
	WEB	0.071	CLAD 2024-T3	
3	WEB	0.071	CLAD 2024-T42	
4	ANGLE		AND10134-0702 7075-T73511	
5	INTERCOSTAL			
	CHANNEL	0.063	CLAD 7075-T6	
	WEB	0.050	CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL IX

Section 41 Intercostal Identification
Figure 1 (Sheet 10 of 11)



CARGO AREA SIDEWALL
STA 303 THRU 368

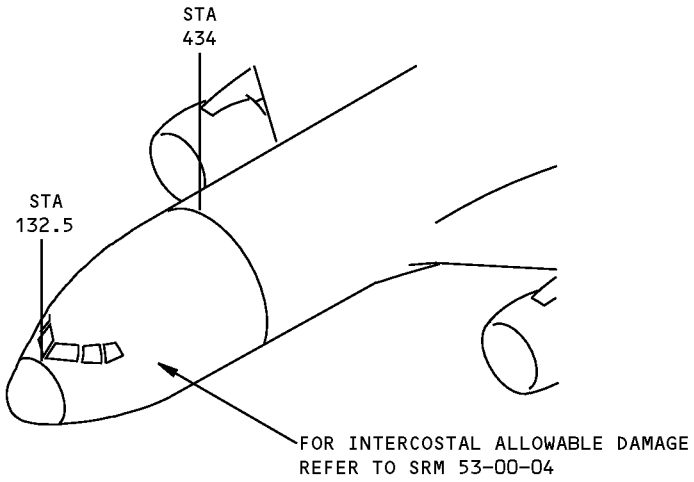
DETAIL X

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	WEB	0.063	CLAD 2024-T42	
2	WEB	0.071	CLAD 2024-T42	
3	INTERCOSTAL	0.063	CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL X

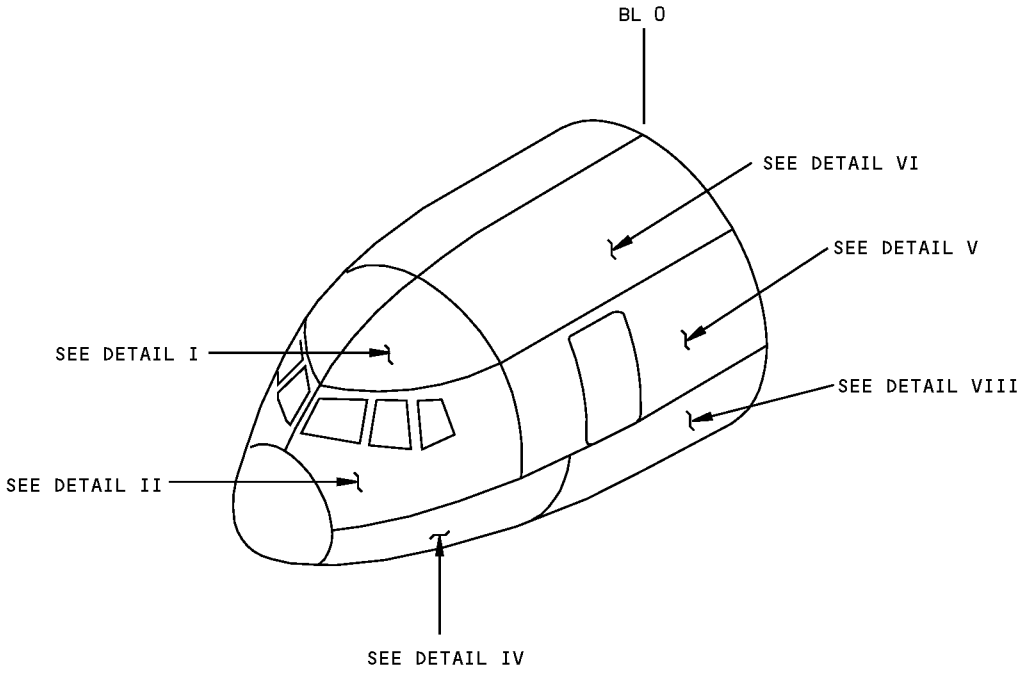
Section 41 Intercostal Identification
Figure 1 (Sheet 11 of 11)

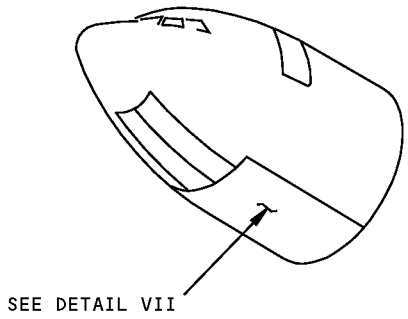
ALLOWABLE DAMAGE GENERAL - SECTION 41 INTERCOSTALS



Section 41 Intercostal Allowable Damage
Figure 101

IDENTIFICATION 1 - SECTION 41 FRAME



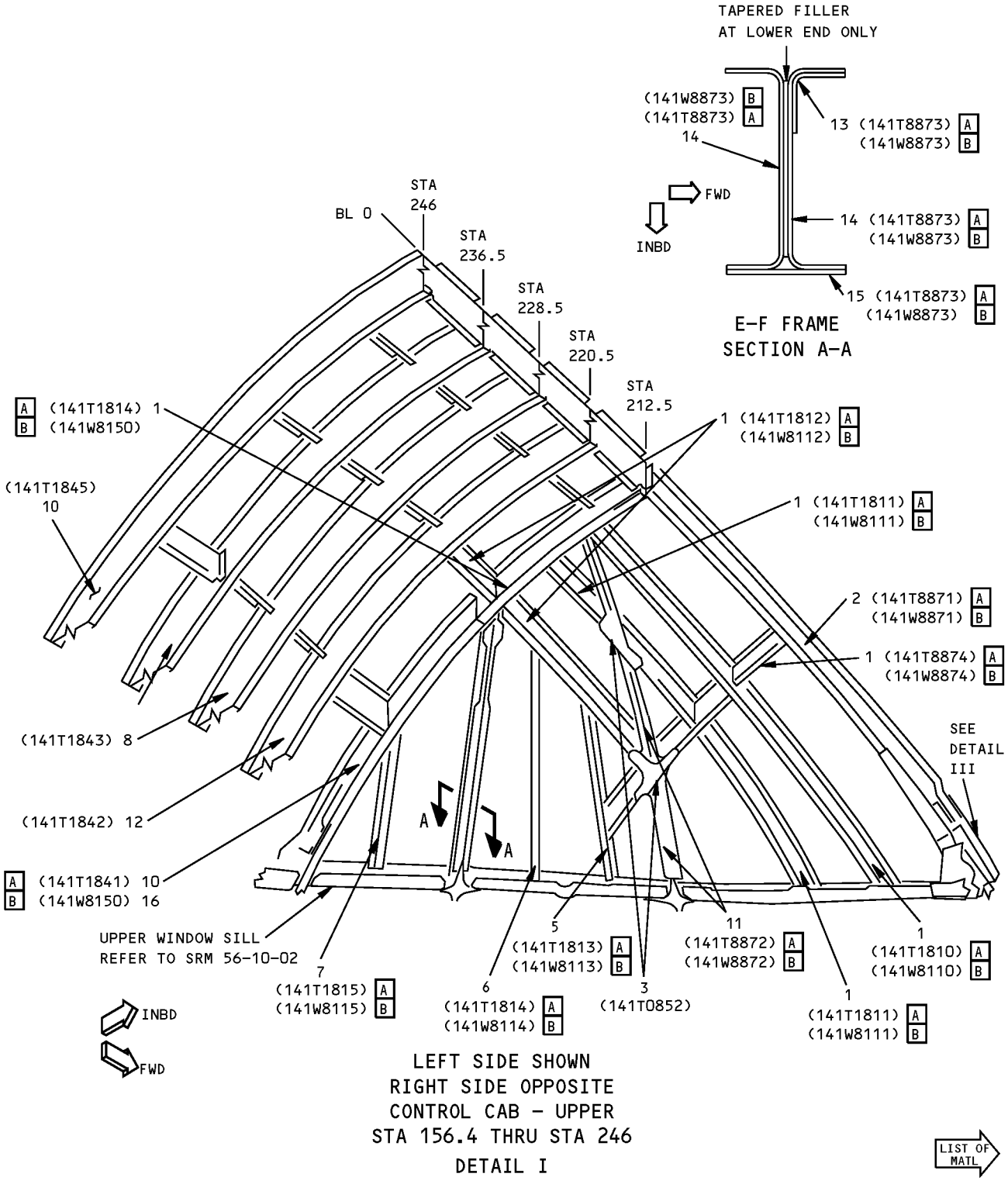


NOTES

A FOR CUM LINE NUMBERS: 1 THRU 658

B FOR CUM LINE NUMBERS: 659 AND ON

Section 41 Frame Identification
Figure 1 (Sheet 1 of 17)

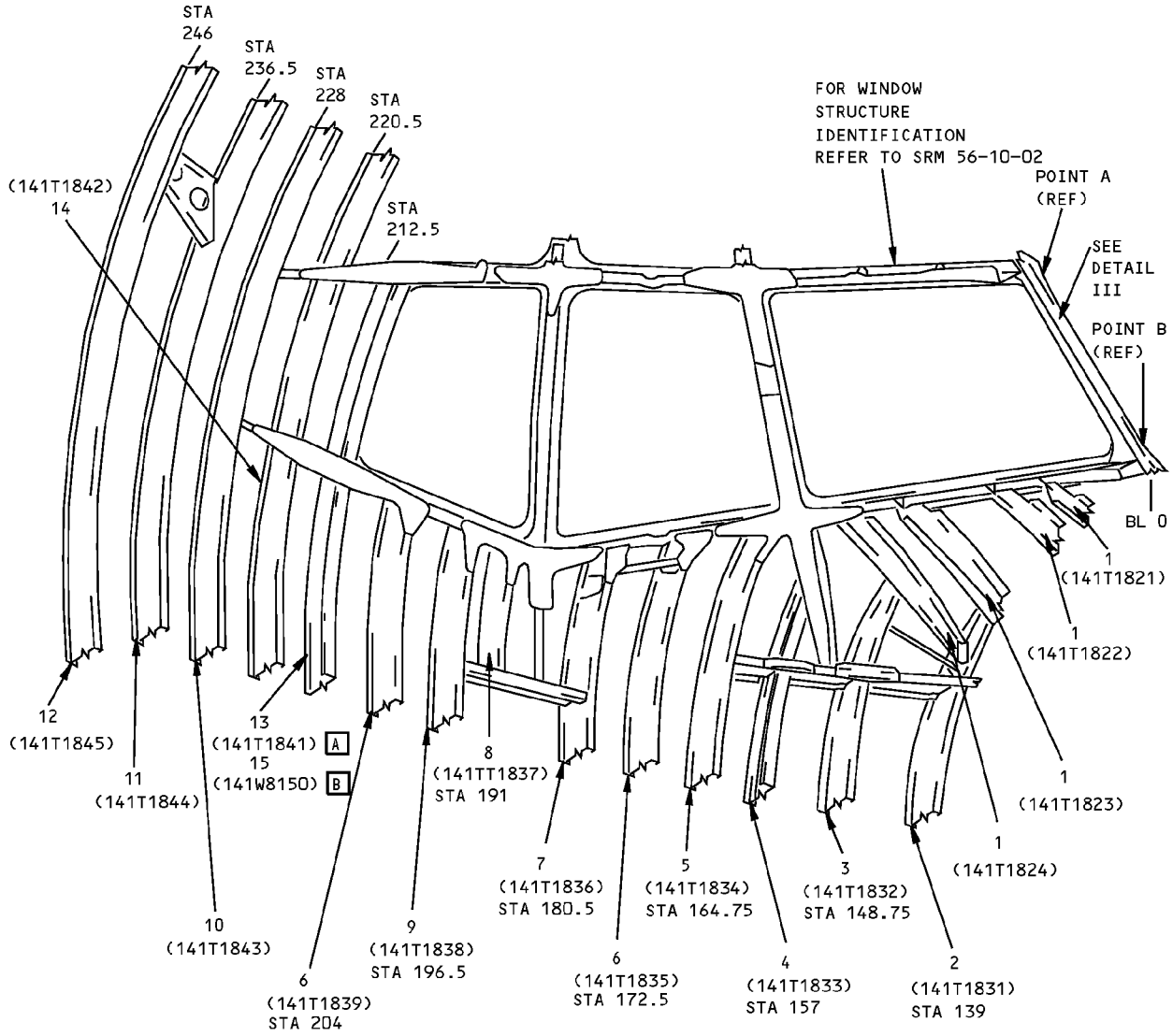


Section 41 Frame Identification
Figure 1 (Sheet 2 of 17)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME		PLATE 7075-T7351	
2	A-B FRAME		PLATE 7075-T7351	
3	INNER FRAME STRAP	0.125	TI-6AL-4V PER MIL-T-90461	
4	OUTER CHORD WEB		BAC1506-3154 2024-T42 BAC1493-688 CLAD 2024-T42	
5	FRAME	0.063	7075-T6	
6	FRAME	0.050	7075-T6	
7	FRAME	0.071	2024-T42	
8	OUTER CHORD WEB		BAC1514-2473 2024-T42 BAC1493-686 CLAD 2024-T42	
9	OUTER CHORD WEB		BAC1506-1332 2024-T42 BAC1493-686 CLAD 2024-T42	
10	FRAME INNER FAILSAFE CHORD OUTER CHORD		BAC1493-690 CLAD 7075-T6 BAC1493-691 CLAD 7075-T6 BAC1514-2455 2024-T42	
11	C - D FRAME		PLATE 7075-T7351	
12	OUTER CHORD WEB		BAC1506-3152 2024-T42 BAC1493-689 CLAD 7075-T6	
13	STIFFENER	0.071	7075-T73	
14	FRAME	0.080	7075-T6	
15	STRAP	0.080	7075-T73	
16	FRAME ASSEMBLY INNER CHORD OUTER CHORD INNER FAILSAFE CHORD OUTER CHORD DOUBLER	 0.032 0.080	 BAC1493-690 7075-T6 BAC1514-2455 2024-T42 CLAD 7075-T6 2024-T42	

LIST OF MATERIALS FOR DETAIL I

Section 41 Frame Identification
Figure 1 (Sheet 3 of 17)



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
CONTROL CAB LOWER
STA 132.5 THRU STA 246

DETAIL II

LIST OF MATL

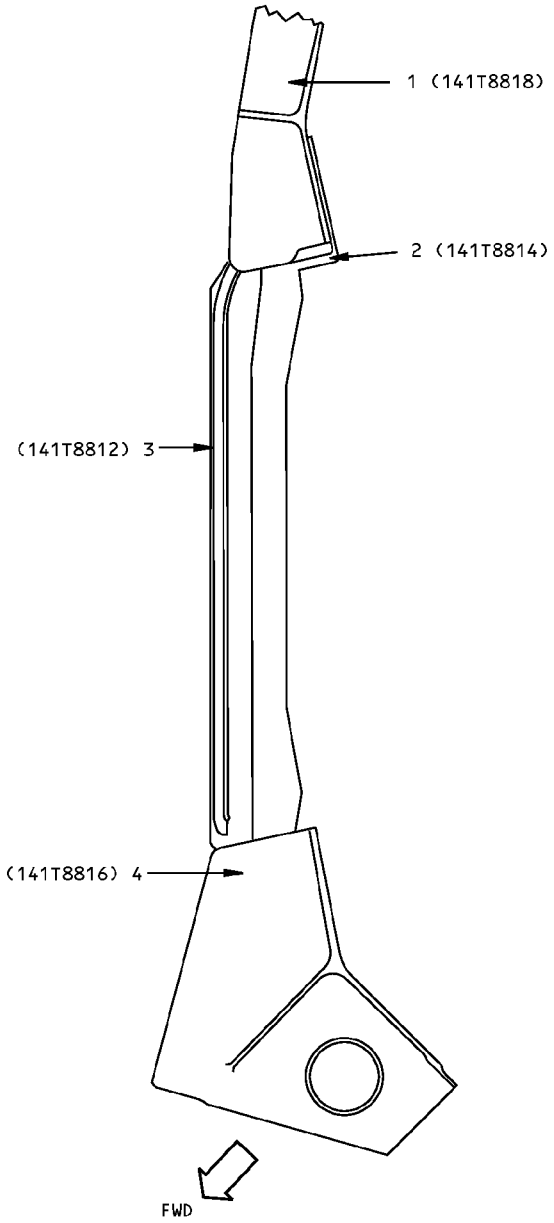
Section 41 Frame Identification
Figure 1 (Sheet 4 of 17)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME		FORGING 7075-T73	
2	OUTER CHORD		BAC1514-2521 2024-T42	
	INNER CHORD	0.050	CLAD 7075-T6	
	STIFFENER	0.040	CLAD 7075-T6	
3	OUTER CHORD		BAC1506-3183 2024-T42	
	INNER CHORD	0.050	CLAD 2024-T42	
	STIFFENER	0.050	CLAD 2024-T42	
4	INNER CHORD	0.063	CLAD 7075-T6	
	REINFORCING CHORD	0.063	CLAD 7075-T6	
	OUTER CHORD		BAC1506-3184 2024-T42	
	DOUBLER	0.063	CLAD 7075-T6	
5	INNER CHORD	0.063	CLAD 7075-T6	
	DOUBLER	0.063	CLAD 7075-T6	
	OUTER CHORD		BAC1506-3182 2024-T42	
	STIFFENER	0.063	CLAD 7075-T6	
6	INNER CHORD	0.063	7075-T6	
	INNER CHORD DOUBLER	0.063	7075-T6	
	OUTER CHORD		BAC1506-3185 2024-T42	
7	CHORD		BAC1506-3185 2024-T42	
	WEB	0.063	CLAD 7075-T6	
	DOUBLER	0.063	CLAD 7075-T6	
8	INNER CHORD	0.063	CLAD 2024-T42	
	STIFFENER	0.050	CLAD 2024-T42	
	OUTER CHORD		BAC1506-3182 2024-T42	
9	WEB	0.063	CLAD 7075-T6	
	INNER CHORD DOUBLER	0.063	CLAD 7075-T6	
	OUTER CHORD		BAC1506-3185 7075-T6	
10	OUTER CHORD		BAC1506-3153 2024-T42	
	WEB		BAC1493-686 2024-T42	
	REINFORCING ANGLE	0.080	CLAD 2024-T42	
11	OUTER CHORD		BAC1506-3153 2024-T42	
	WEB		BAC1493-686 CLAD 7075-T6	
	FRAME STIFFENER	0.063	CLAD 7075-T6	
12	OUTER CHORD		BAC1506-3154 2024-T42	
	WEB		BAC1493-688 CLAD 7075-T6	
13	FRAME		BAC1493-690 CLAD 7075-T6	
	OUTER CHORD		BAC1506-3158 2024-T42	
14	OUTER CHORD		BAC1506-3152 2024-T42	
	WEB		BAC1493-689 CLAD 7075-T6	
15	FRAME ASSEMBLY			
	OUTER CHORD		BAC1506-3158 2024-T42	
	INNER CHORD		BAC1493-690 7075-T6	
	INNER CHORD DOUBLER	0.071	7075-T6	
	OUTER CHORD DOUBLER	0.071	2024-T42	

LIST OF MATERIALS FOR DETAIL II

Section 41 Frame Identification
Figure 1 (Sheet 5 of 17)

REF DWG
141T8871



DETAIL III

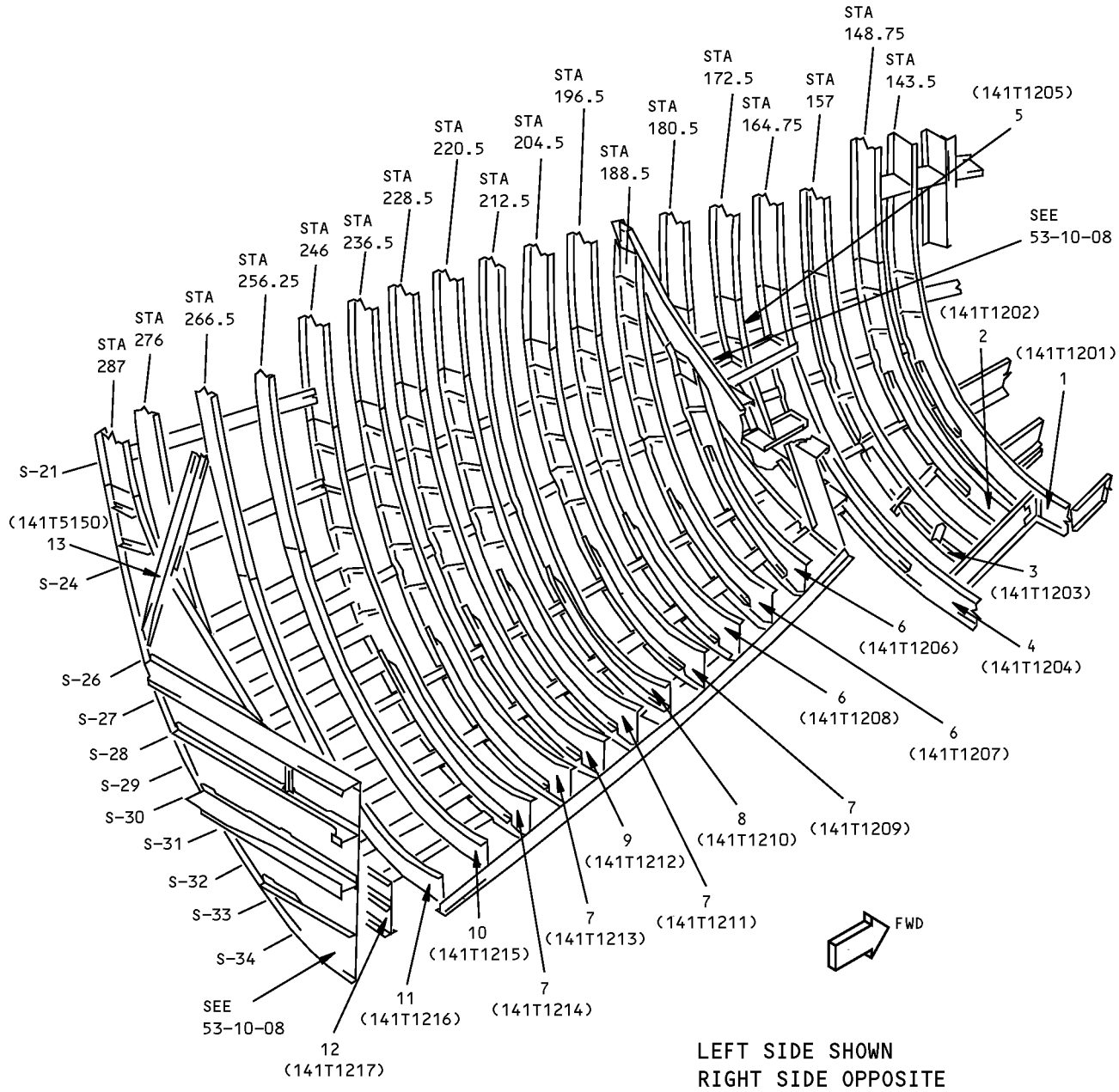
LIST OF MATL

Section 41 Frame Identification
Figure 1 (Sheet 6 of 17)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SPLICE		FORGING 7175-T736	
2	SPLICE		FORGING TI-6AL-4V	
3	A-B POST		FORGING TI-6AL-4V	
4	POINT B SPLICE		FORGING 7075-T73	

LIST OF MATERIALS FOR DETAIL III

Section 41 Frame Identification
Figure 1 (Sheet 7 of 17)



LOWER SIDEWALL
DETAIL IV
STA 143.5 THRU STA 287

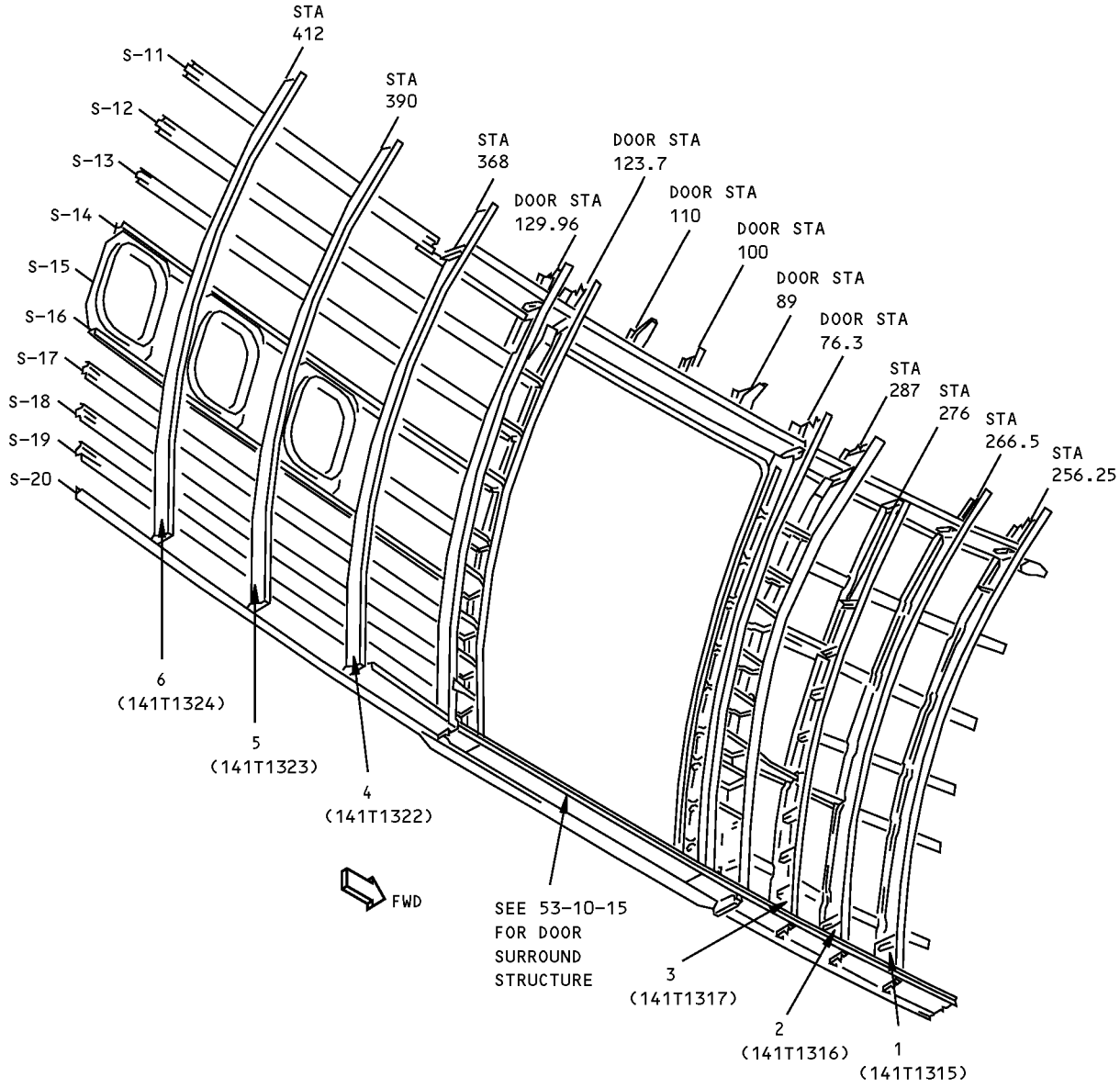
LIST OF MATL

Section 41 Frame Identification
Figure 1 (Sheet 8 of 17)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.063	CLAD 7075-T6	
	OUTER CHORD		BAC1506-3157 2024-T42	
	STRAP	0.080	CLAD 7075-T6	
2	FRAME	0.040	CLAD 7075-T6	
	OUTER CHORD		BAC1506-3157 2024-T42	
	FAILSAFE CHORD		BAC1505-100352 7075-T6	
3	OUTER CHORD			
	MIDDLE	0.063	7075-T6	
	UPPER		BAC1506-3157 2024-T42	
	LOWER		BAC1506-3157 2024-T42	
	FRAME	0.063	CLAD 7075-T6	
	FAILSAFE CHORD		BAC1506-3157 7075-T6	
4	OUTER CHORD			
	UPPER		BAC1506-3158 2024-T42	
	LOWER		BAC1506-3317 2024-T42	
	WEB	0.063	CLAD 7075-T6	
	REINFORCING ANGLE	0.063	CLAD 7075-T6	
	FAILSAFE CHORD		BAC1505-100352 7075-T6	
5	OUTER CHORD		BAC1506-3158 2024-T42	
	FRAME	0.063	CLAD 7075-T6	
6	OUTER CHORD		BAC1506-3158 2024-T42	
	FRAME	0.063	CLAD 7075-T6	
	FAILSAFE CHORD		BAC1505-100352 7075-T6	
7	OUTER CHORD		BAC1506-3159 2024-T42	
	FRAME	0.063	CLAD 7075-T6	
	FAILSAFE CHORD		BAC1505-100352 7075-T6	
8	OUTER CHORD		BAC1506-3159 2024-T42	
	FRAME	0.063	CLAD 7075-T6	
	FAILSAFE CHORD		BAC1506-3159 2024-T42	
9	OUTER CHORD		BAC1506-3159 2024-T42	
	FRAME	0.063	CLAD 7075-T6	
	FAILSAFE CHORD		BAC1506-100352 7075-T6	
10	OUTER CHORD		BAC1506-3160 2024-T42	
	INNER CHORD		BAC1503-100135 7075-T6	
			OPTION: AND10134-2001 7075-T6	
	WEB	0.063	CLAD 7075-T6	
	FAILSAFE CHORD		BAC1505-100352 7075-T6	
11	INNER CHORD		BAC1503-100135 7075-T6	
			OPTION: AND10134-2001 7075-T6	
	FRAME	0.063	CLAD 7075-T6	
	FAILSAFE CHORD		BAC1505-100352 7075-T6	
12	OUTER CHORD		BAC1506-3165 7075-T6	
	INNER CHORD		BAC1505-100869 7075-T6	
			OPTION: AND10136-3006 7075-T6	
	FRAME		CLAD 7075-T6	
	FAILSAFE CHORD			
	UPPER		BAC1505-100352 7075-T6	
	LOWER	0.100	CLAD 7075-T6	
13	STANCHION		BAC1518-729 7075-T6511	

LIST OF MATERIALS FOR DETAIL IV

Section 41 Frame Identification
Figure 1 (Sheet 9 of 17)



SIDEWALL
STA 256.25 THRU STA 412
DETAIL V

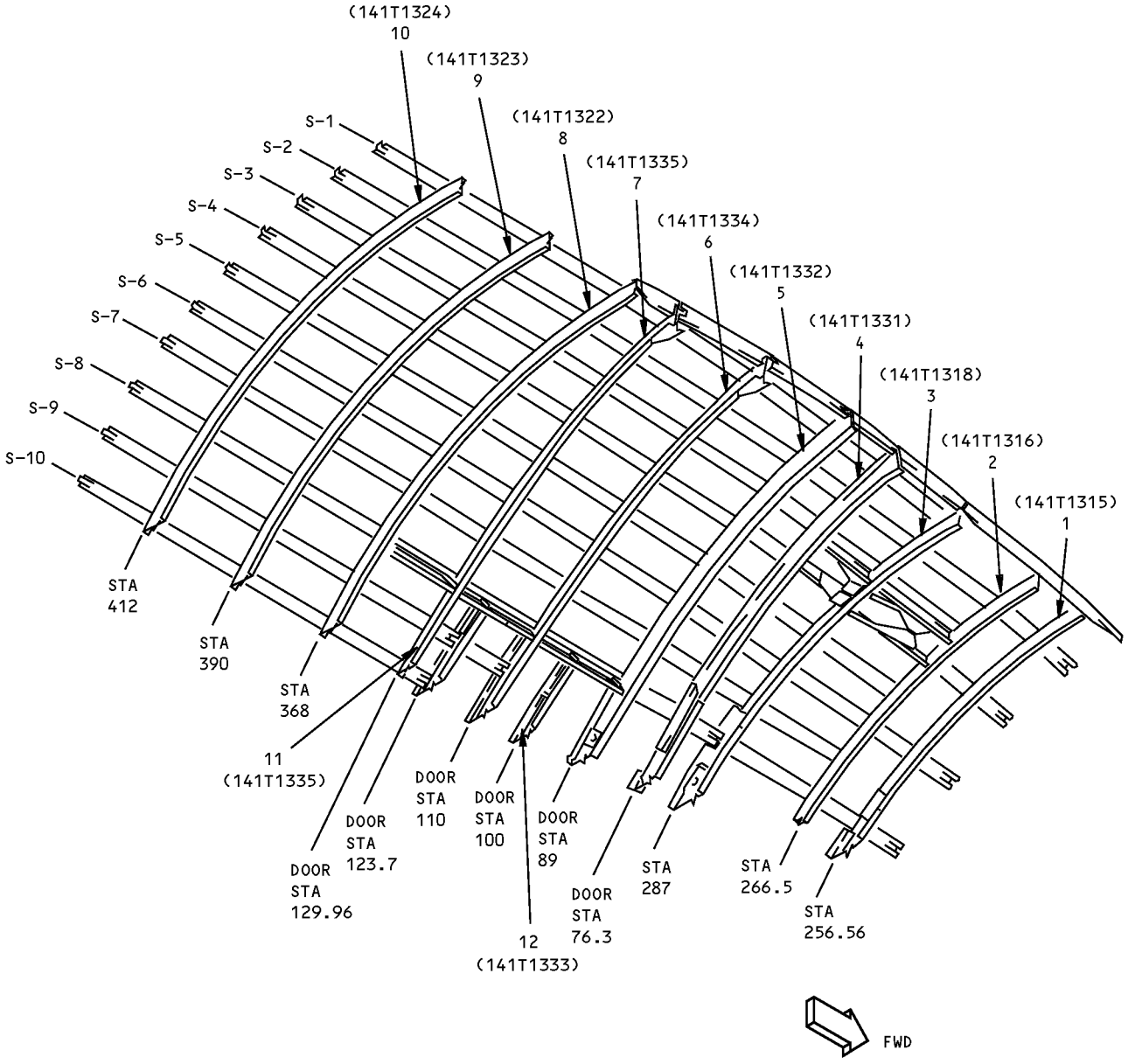
LIST OF MATL

Section 41 Frame Identification
Figure 1 (Sheet 10 of 17)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	OUTER CHORD		BAC1506-3159 2024-T42	
	FRAME WEB	0.063	CLAD 7075-T6	
	FAILSAFE CHORD		BAC1505-100352 7075-T6	
2	OUTER CHORD		BAC1506-3159 2024-T42	
	WEB	0.063	CLAD 7075-T6	
	FRAME STIFFENER	0.080	CLAD 7075-T6	
	FAILSAFE CHORD		BAC1505-100352 2024-T42	
3	OUTER CHORD		BAC1506-3160 2024-T42	
	SPLICE ANGLE	0.071	CLAD 7075-T6	
	WEB	0.063	CLAD 7075-T6	
	FAILSAFE CHORD		BAC1505-100352 7075-T6	
4	WEB		BAC1517-2179 CLAD 7075-T6	
5	FRAME		BAC1517-2180 CLAD 7075-T6	
6	WEB		BAC1517-2181 CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL V

Section 41 Frame Identification
Figure 1 (Sheet 11 of 17)



LEFT SIDE SHOWN
RIGHT SIDE SIMILAR

UPPER SIDEWALL
STA 256.56 THRU STA 412
DETAIL VI

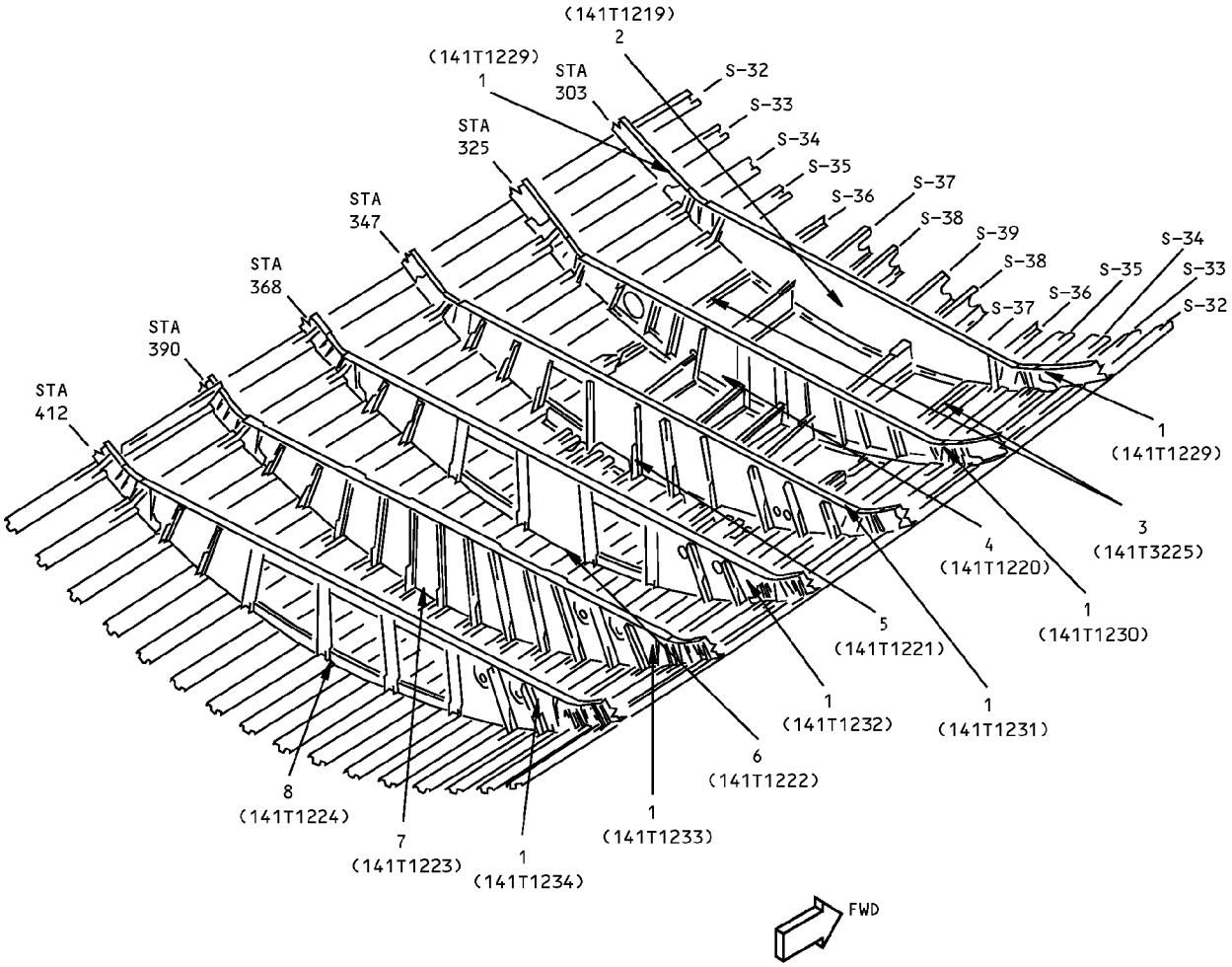
LIST OF MATL

Section 41 Frame Identification
Figure 1 (Sheet 12 of 17)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME WEB		BAC1517-2164 CLAD 7075-T6	
2	WEB		BAC1505-100352 CLAD 7075-T6	
3	FRAME ASSEMBLY WEB INNER CHORD FAILSAFE CHORD	0.050	7075-T6 OR CLAD 7075-T6 BAC1505-100244 7075-T6 BAC1505-100352 7075-T6	
4	FRAME		BAC1517-2179 CLAD 2024-T42	
5	FRAME ASSEMBLY FRAME INNER CHORD		BAC1493-682 CLAD 7075-T6 BAC1493-683 CLAD 7075-T6	
6	FRAME ASSEMBLY WEB INNER CHORD		BAC1493-681 CLAD 7075-T6 BAC1493-693 CLAD 7075-T6	
7	FRAME ASSEMBLY WEB INNER CHORD		BAC1517-2182 CLAD 7075-T6 BAC1493-684 CLAD 7075-T6	
8	WEB		BAC1517-2179 CLAD 7075-T6	
9	FRAME		BAC1517-2180 CLAD 7075-T6	
10	WEB		BAC1517-2181 CLAD 7075-T6	
11	FRAME ASSEMBLY UPPER WEB UPPER INNER CHORD		BAC1517-2182 CLAD 7075-T6 BAC1493-684 CLAD 7075-T6	
12	FRAME ASSEMBLY FRAME TEE	0.063	CLAD 7075-T6 BAC1506-3161 7075-T6511	

LIST OF MATERIALS FOR DETAIL VI

Section 41 Frame Identification
Figure 1 (Sheet 13 of 17)



CARGO FLOOR
STA 303 THRU STA 412
DETAIL VII

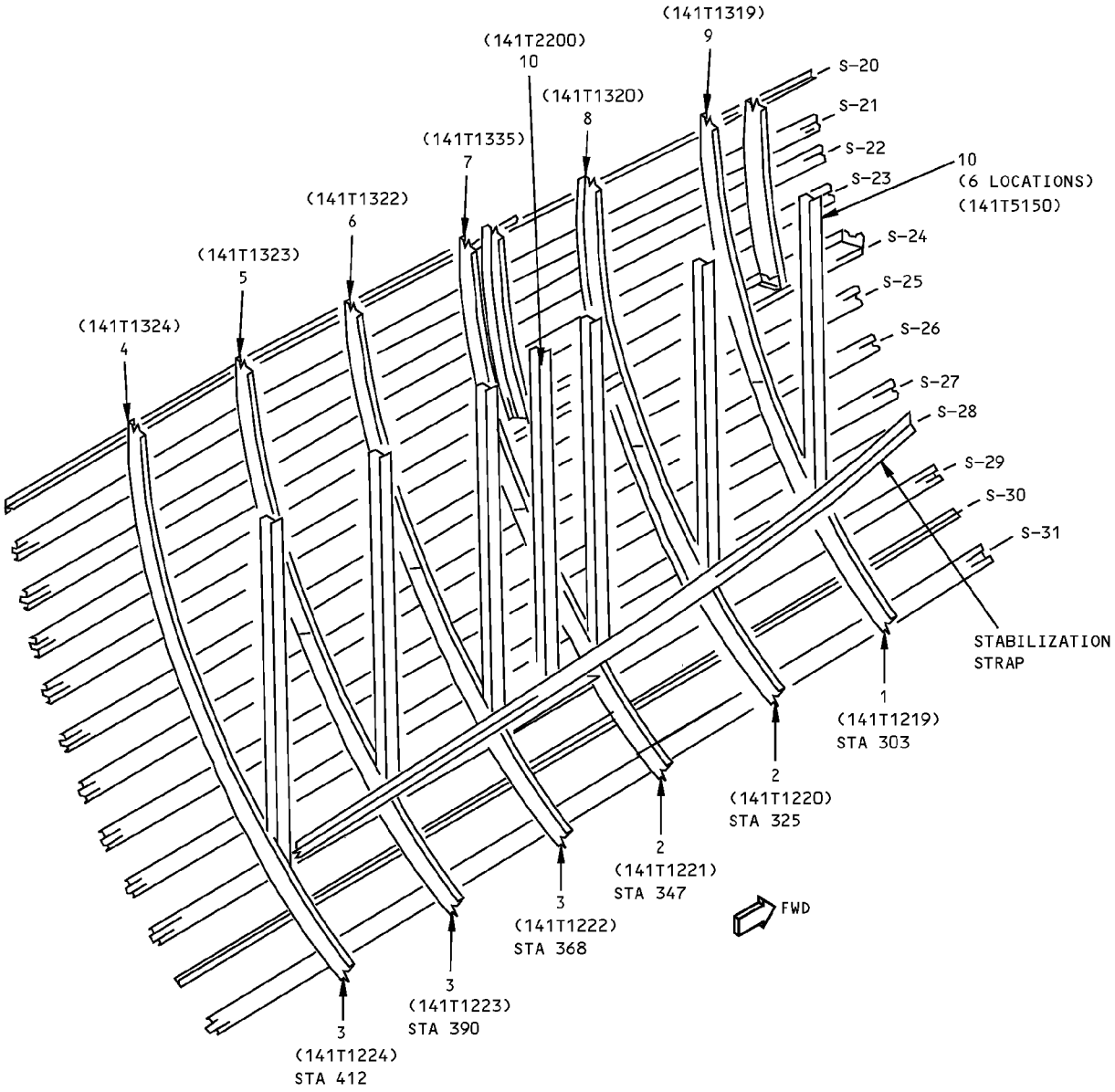
LIST OF MATL

Section 41 Frame Identification
Figure 1 (Sheet 14 of 17)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	KEEL FITTING		FORGING 7075-T73	
2	WEB KEEL KEEL INNER CHORD FAILSAFE CHORD INNER CHORD (UPPER) WEB (UPPER)	0.032 0.063	CLAD 7075-T6 AND10136-2007 7075-T6511 BAC1505-100352 7075-T6511 AND10134-1406 2024-T42 CLAD 7075-T6	
3	LOWER CHORD		BAC1506-3179 7075-T73511	
4	WEB INNER CHORD FAILSAFE CHORD	0.032	CLAD 7075-T6 AND10134-1406 7075-T6 BAC1505-100352 7075-T6	
5	WEB (UPPER) WEB (LOWER) INNER CHORD OUTER CHORD	0.032 0.020	CLAD 7075-T6 CLAD 7075-T6 BAC1493-677 7075-T6511 BAC1505-100352 7075-T6	
6	WEB (UPPER) WEB (LOWER) KEEL FRAME OUTER CHORD OUTER FAILSAFE CHORD	0.032 0.020 0.063	CLAD 7075-T6 CLAD 7075-T6 BAC1506-3123 7075-T6511 CLAD 7075-T6 BAC1505-100352 7075-T6	
7	WEB KEEL INNER CHORD FAILSAFE CHORD	0.032	CLAD 7075-T6 BAC1506-3123 7075-T6511 BAC1505-100352 7075-T6	
8	WEB KEEL INNER CHORD OUTER CHORD FAILSAFE CHORD	0.032 0.063	CLAD 7075-T6 BAC1506-3123 7075-T6511 CLAD 7075-T6 BAC1505-100352 7075-T6	

LIST OF MATERIALS FOR DETAIL VII

Section 41 Frame Identification
Figure 1 (Sheet 15 of 17)



LEFT SIDE SHOWN
RIGHT SIDE SIMILAR
CARGO AREA SIDEWALL
STA 303 THRU STA 412
DETAIL VIII

LIST OF MATL

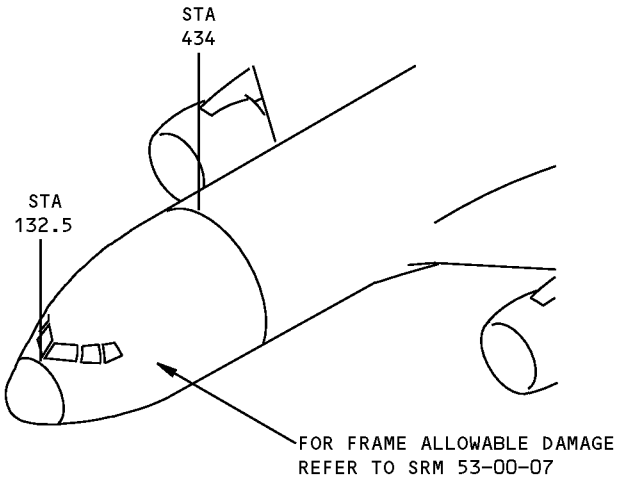
Section 41 Frame Identification
Figure 1 (Sheet 16 of 17)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	WEB	0.063	CLAD 7075-T6	
	INNER CHORD		AND10134-1406 2024-T42	
	INNER CHORD ANGLE		BAC1490-2695 CLAD 7075-T6	
2	WEB		BAC1493-677 CLAD 7075-T6	
	INNER CHORD ANGLE		BAC1490-2521 CLAD 7075-T6	
	INNER CHORD UPPER		AND10134-1406 7075-T6	
3	FRAME		BAC1493-678 CLAD 7075-T6	
	INNER CHORD UPPER		AND10134-1406 7075-T6	
4	REINFORCING ANGLE	0.080	CLAD 7075-T6	
	WEB		BAC1517-2181 CLAD 7075-T6	
5	FRAME		BAC1517-2180 CLAD 7075-T6	
6	FRAME		BAC1517-2179 CLAD 7075-T6	
7	WEB		BAC1493-681 CLAD 7075-T6	
	INNER CHORD		AND10134-1406 7075-T6	
	REINFORCING ANGLE	0.071	CLAD 7075-T6	
8	FRAME		BAC1517-2164 CLAD 7075-T6	
9	FRAME		BAC1517-2177 CLAD 7075-T6	
10	STANCHION		BAC1518-729 7075-T6511	

LIST OF MATERIALS FOR DETAIL VIII

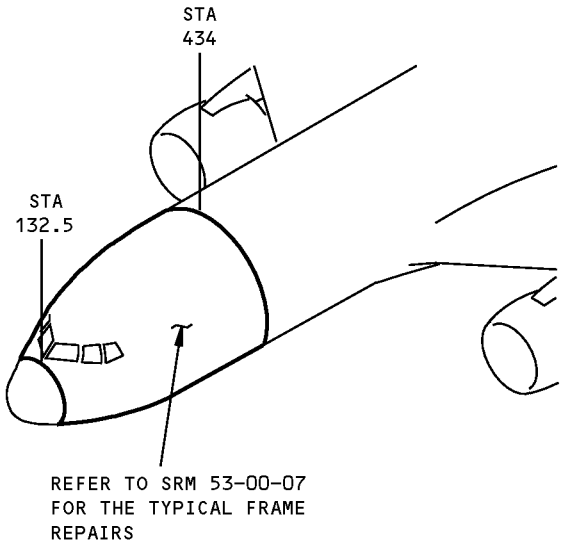
Section 41 Frame Identification
Figure 1 (Sheet 17 of 17)

ALLOWABLE DAMAGE GENERAL - SECTION 41 FRAMES



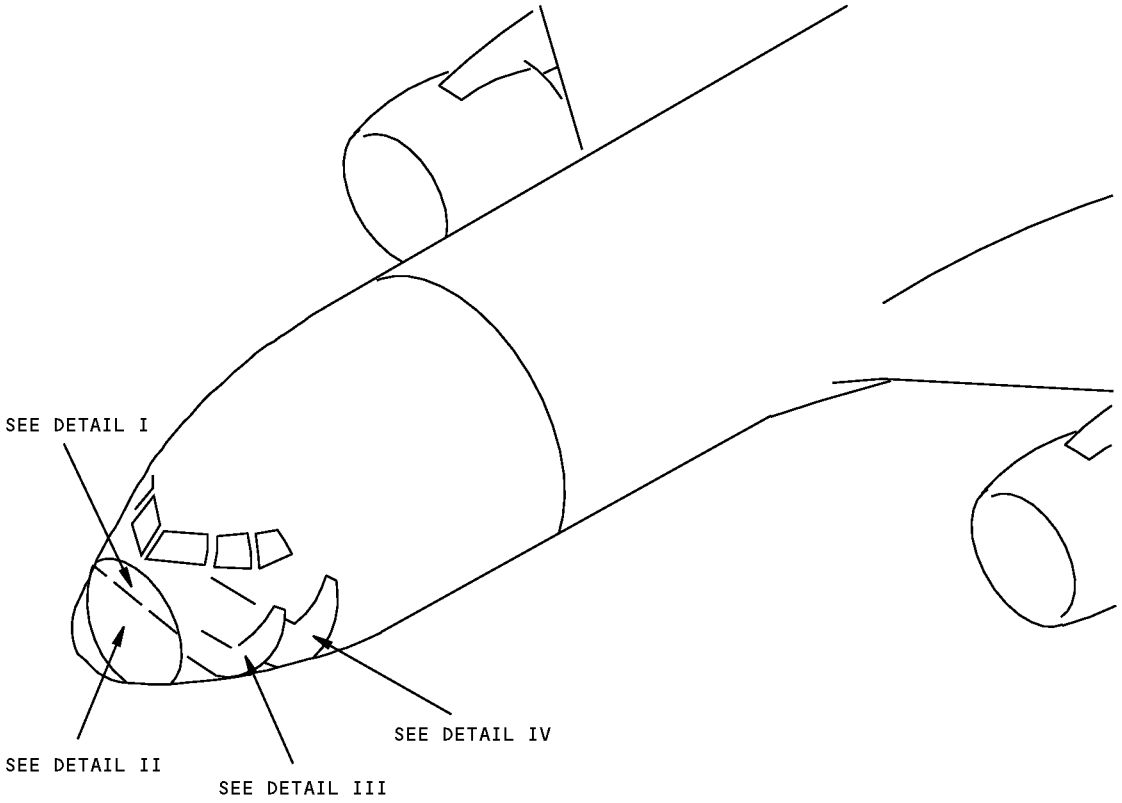
Section 41 Frame Allowable Damage
Figure 101

REPAIR GENERAL - SECTION 41 TYPICAL FRAME REPAIRS



Section 41 - Typical Frame Repairs
Figure 201

IDENTIFICATION 1 - SECTION 41 - BULKHEAD



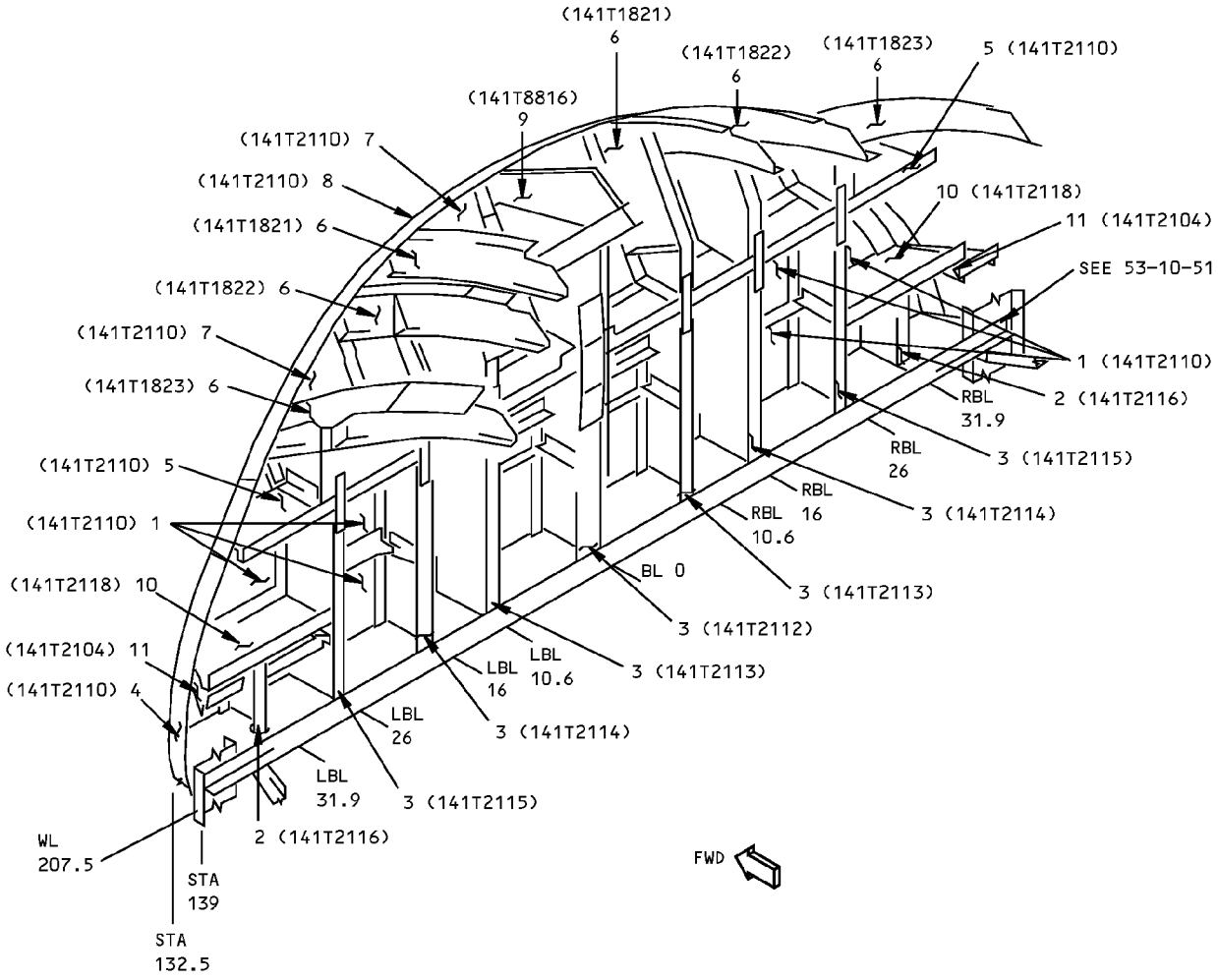
NOTES

A FOR CUM LINE NUMBERS:
132 THRU 192

B FOR CUM LINE NUMBERS:
193 AND ON

Section 41 - Bulkhead Identification
Figure 1 (Sheet 1 of 9)

REF DWG
141T2800



STA 132.5 UPPER BULKHEAD
DETAIL I

LIST OF MATL

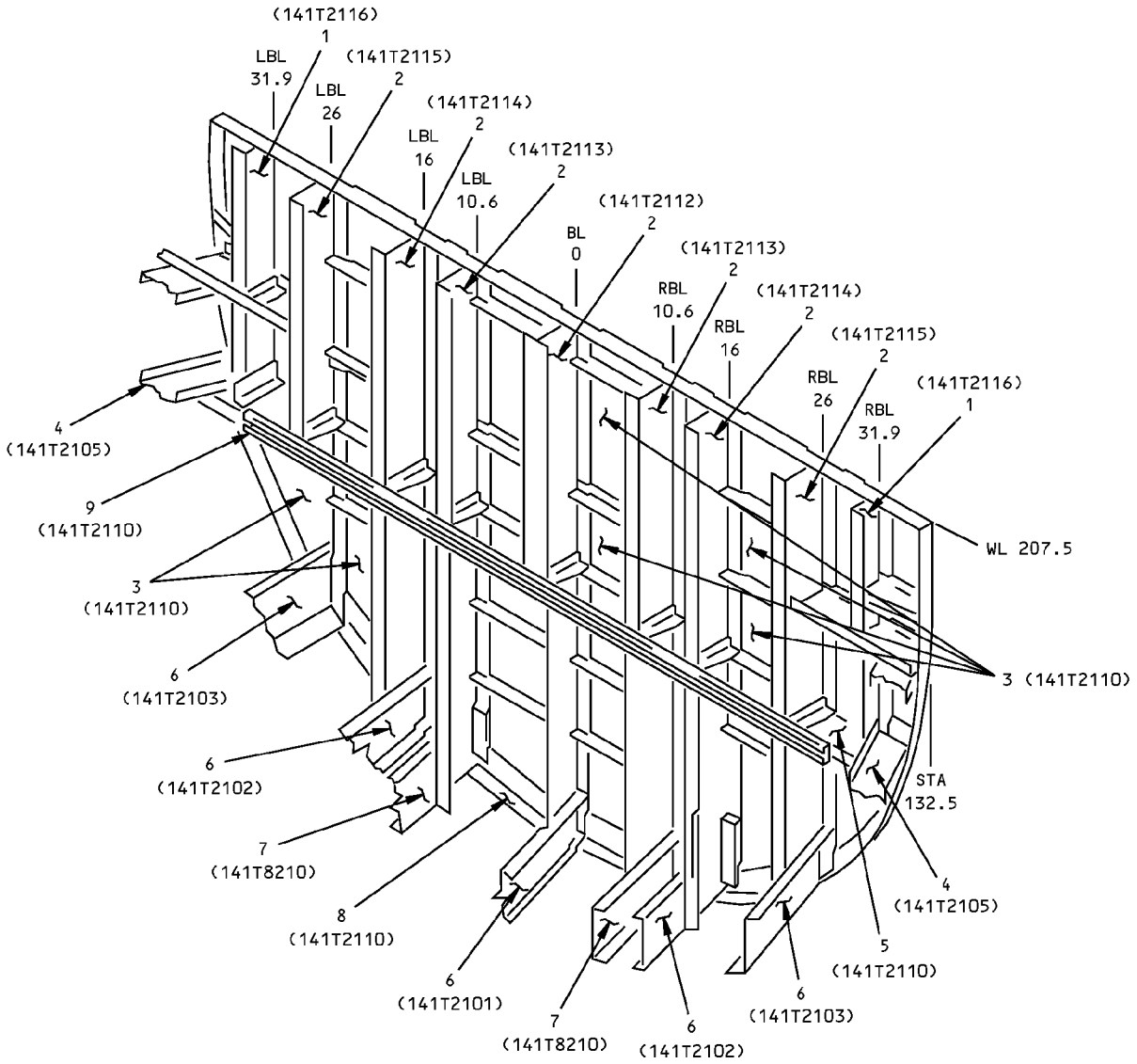
Section 41 - Bulkhead Identification
Figure 1 (Sheet 2 of 9)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	WEB	0.080	2024-T3 (CHEM-MILLED TO 0.040 MIN)	
2	BEAM		BAC1509-42035 2024-T3511	
3	BEAM		BAC1506-3129 2024-T3511	
4	CAP	0.080	CLAD 2024-T42	
5	BEAM ASSY Y CHORD WEB ANGLE	 0.080	 BAC1506-3147 2024-T3511 CLAD 2024-T3 AND10134-1603 2024-T3511	
6	FRAME		FORGING 7075-T73	
7	WEB	0.090	2024-T3 (CHEM-MILLED TO 0.040 MIN)	
8	CAP	0.090	CLAD 2024-T42	
9	POINT B SPLICE		FORGING 7075-T3	
10	ANGLE	0.063	CLAD 2024-T3	
	CHORD		BAC1505-47676 2024-T3511	
11	INTERCOSTAL	0.063	CLAD 2024-T3	

LIST OF MATERIALS FOR DETAIL I

Section 41 - Bulkhead Identification
Figure 1 (Sheet 3 of 9)

REFERENCE DRAWING
141T2110



STA 132.5 LOWER BULKHEAD
DETAIL II

LIST OF MATL

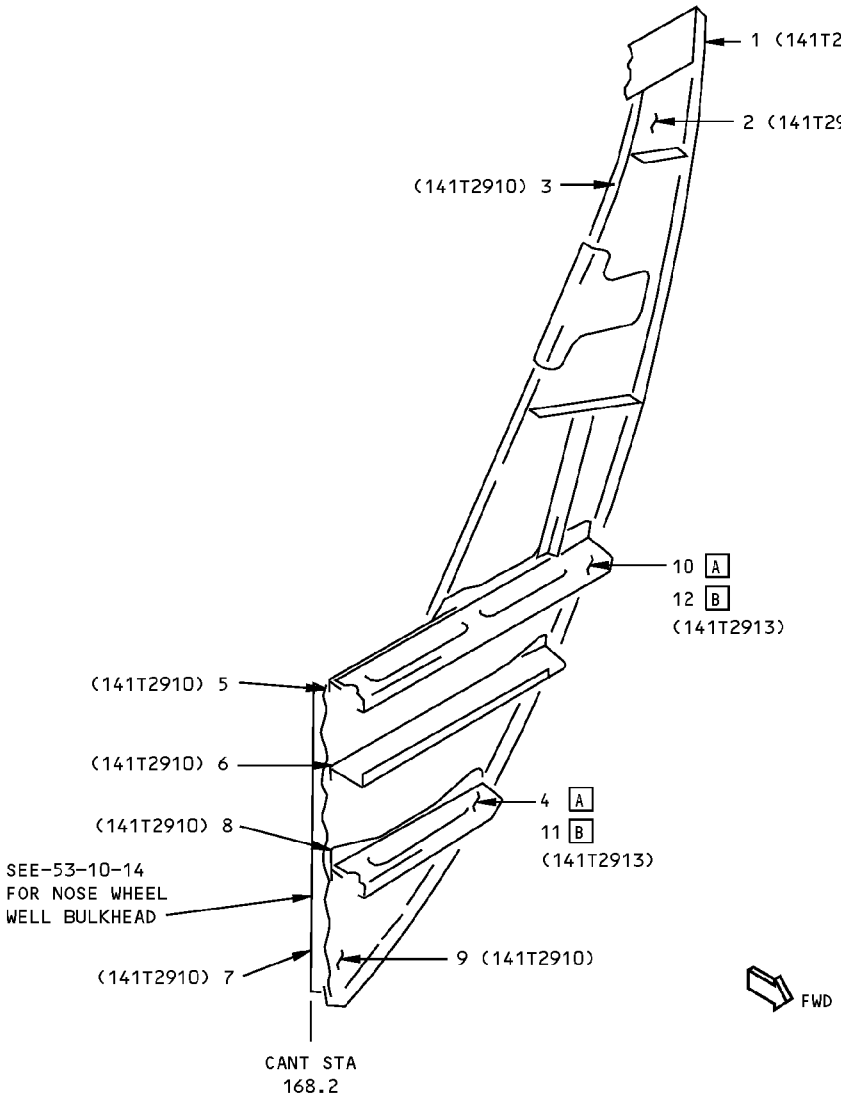
Section 41 - Bulkhead Identification
Figure 1 (Sheet 4 of 9)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	BEAM		BAC1509-42035 2024-T3511	
2	BEAM		BAC1506-3129 2024-T3511	
3	WEB	[A]	2024-T3	
4	INTERCOSTAL	0.063	CLAD 2024-T42	
5	ANGLE	0.063	CLAD 2024-T42	
6	INTERCOSTAL	0.080	CLAD 2024-T42	
7	BEAM ASSEMBLY CHORDS WEB	 0.063	 BAC1506-1700 2024-T42 CLAD 2024-T3	
8	CAP	0.080	CLAD 2024-T42	
9	CHANNEL		BAC1494-157 CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL II

Section 41 - Bulkhead Identification
Figure 1 (Sheet 5 of 9)

REF DWG
141T2910



CANT STA 168.2 BULKHEAD
LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE

DETAIL III

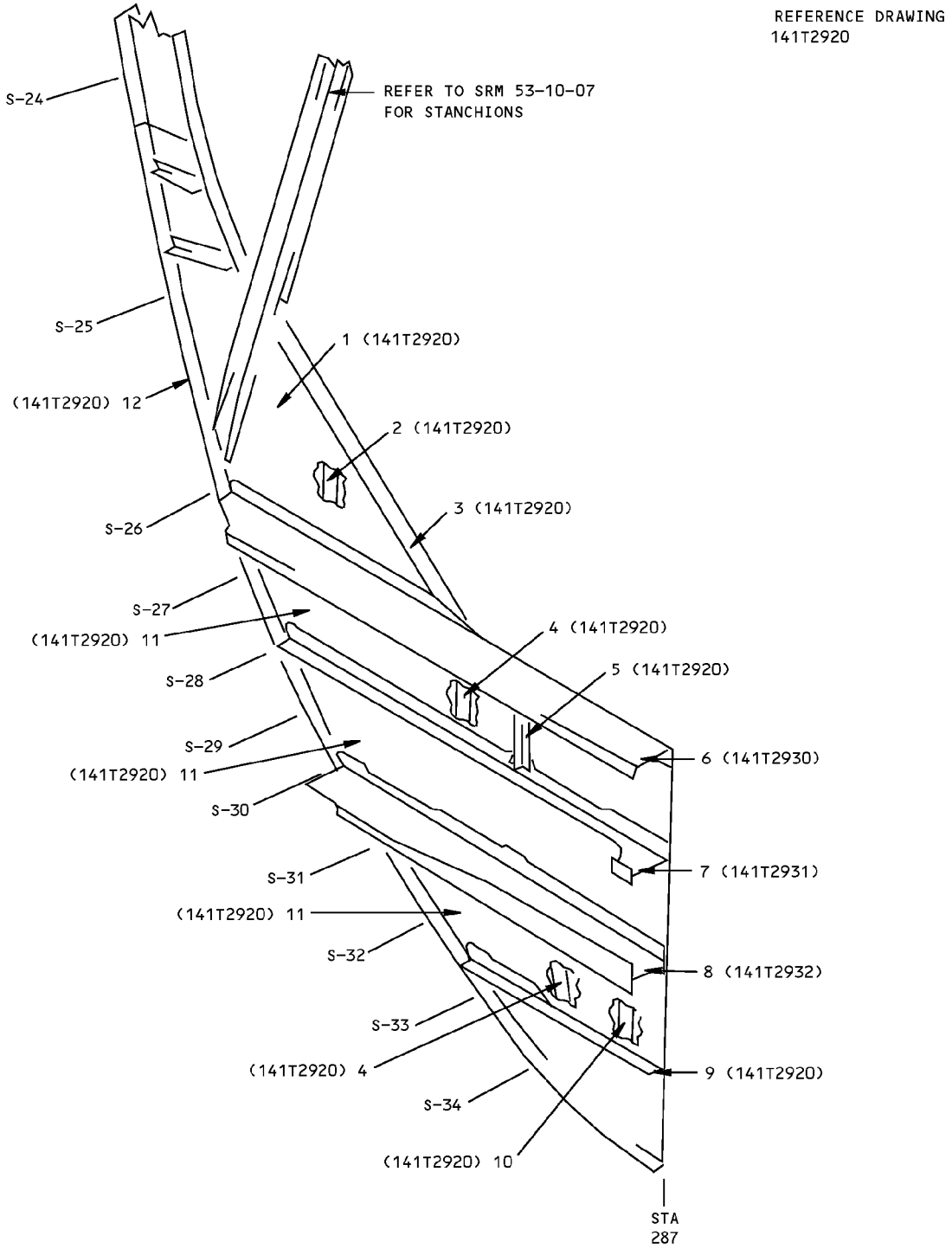
LIST OF MATL

Section 41 - Bulkhead Identification
Figure 1 (Sheet 6 of 9)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	CHORD (OUTER)		BAC1503-100600 2024-T42	
2	WEB	0.056	2024-T3	
3	INNER CHORD		AND10134-1604 2024-T42	
4	BEAM	0.071	7075-T6 (CHEM-MILLED TO 0.046 MIN)	A
5	CHORD		AND10136-2401 7075-T6511	
6	STIFFENER		BAC1506-1500 7075-T6511	
7	STIFFENER		BAC1503-100146 7075-T6511	
8	CHORD		AND10136-2005 7075-T6511	
9	WEB	0.080	2024-T3 (CHEM-MILLED TO 0.040 MIN)	
10	BEAM	0.080	7075-T6 (CHEM-MILLED TO 0.054 MIN)	A
11	BEAM	0.063	7075-T62 (CHEM-MILLED TO 0.039 MIN)	B
12	BEAM	0.071	7075-T62 (CHEM-MILLED TO 0.046 MIN)	B

LIST OF MATERIALS FOR DETAIL III

Section 41 - Bulkhead Identification
Figure 1 (Sheet 7 of 9)



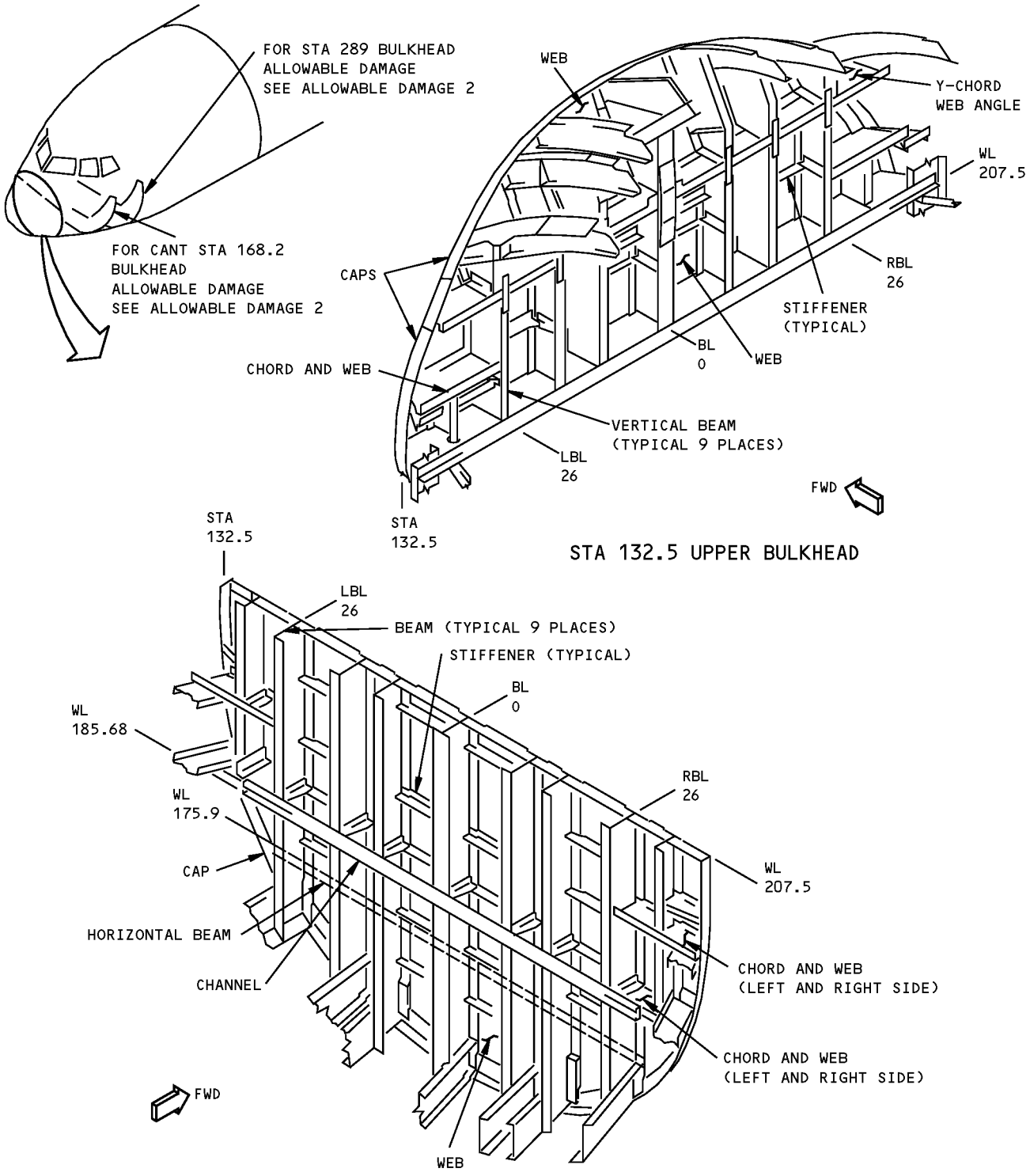
Section 41 - Bulkhead Identification
Figure 1 (Sheet 8 of 9)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	WEB	A	2024-T3	
2	STIFFENER		AND10134-1205 7075-T6511	
3	INNER CHORD		AND10134-2406 7075-T6	
4	STIFFENER		AND10136-2002 7075-T6511	
5	STIFFENER		AND10136-2401 7075-T6511	
6	BEAM		BAC1506-3277 7075-T6511	
7	BEAM		BAC1518-764 7075-T6511 OR FORGING 7075-T73	
8	BEAM		BAC1518-763 7075-T6511 OR FORGING 7075-T73	
9	STIFFENER		AND10136-2003 7075-T6511	
10	STIFFENER		AND10134-1401 7075-T6511	
11	WEB	A	2024-T3	
12	OUTER CHORD		BAC1503-100600 2024-T42	

LIST OF MATERIALS FOR DETAIL IV

Section 41 - Bulkhead Identification
Figure 1 (Sheet 9 of 9)

ALLOWABLE DAMAGE 1 - STA 132.5 BULKHEAD STRUCTURE



Sta 132.5 Bulkhead Structure Allowable Damage
Figure 101 (Sheet 1 of 4)

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
BEAMS (HORIZONTAL AND VERTICAL)	[A]	[C]	NOT ALLOWED	HOLES ALLOWED IN WEB ONLY [G]
Y-CHORD	[A]	[C]	NOT ALLOWED	NOT ALLOWED
CHORDS	[A]	[C]	NOT ALLOWED	HOLES ALLOWED IN FREE FLANGE ONLY [E]
CHANNEL	[A]	[C]	NOT ALLOWED	NOT ALLOWED
STIFFENERS	[A]	[C]	NOT ALLOWED	SEE DETAIL VII
WEBS	[B]	[D]	SEE DETAIL III	[E]
CAPS	[B]	[D]	NOT ALLOWED	NOT ALLOWED

NOTES

- REFINISH REWORKED AREAS PER 51-20 OF THE MAINTENANCE MANUAL.

[A] CRACKS NOT ALLOWED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED PER DETAILS I AND VI.

[B] CRACKS NOT ALLOWED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED PER DETAILS I AND V.

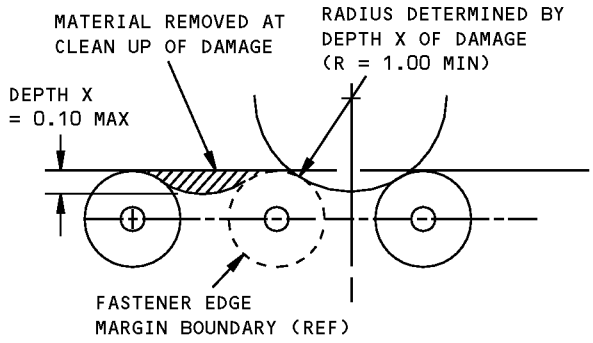
[C] REMOVE DAMAGE PER DETAILS I, II, IV AND VI.

[D] REMOVE DAMAGE PER DETAILS I, II, IV AND V.

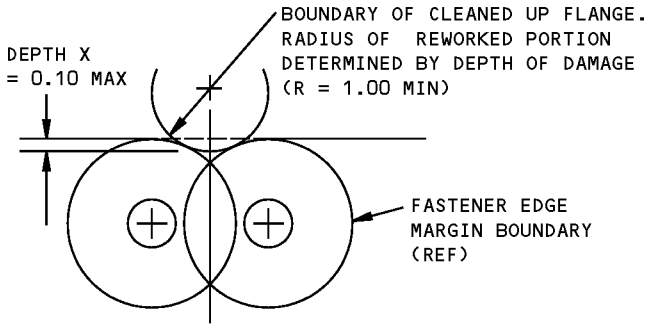
[E] CLEAN OUT DAMAGE UP TO 0.19 MAX DIA AND NOT CLOSER THAN 1.0 INCH TO FASTENER HOLE OR OTHER DAMAGE. FILL HOLE WITH A 2117-T3 OR T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES TO BE REPAIRED.

[F] FOR MATING SURFACES, INSTALL LAMINATED SHIMS WITH BMS 5-95 SEALANT. THE GAP MUST BE LESS THAN OR EQUAL TO 0.003 INCH AFTER SHIMMING.

Sta 132.5 Bulkhead Structure Allowable Damage
Figure 101 (Sheet 2 of 4)

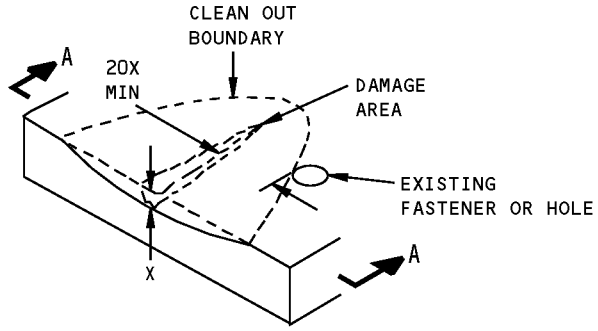


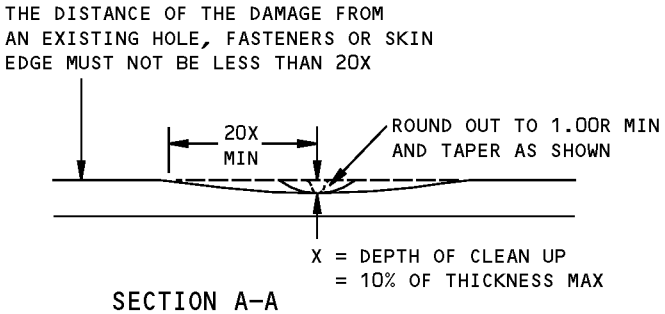
DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

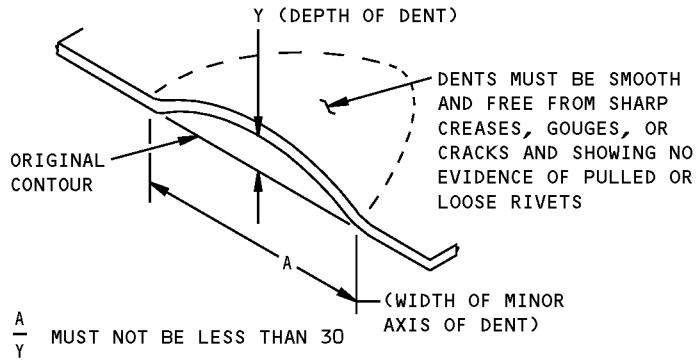
DETAIL I



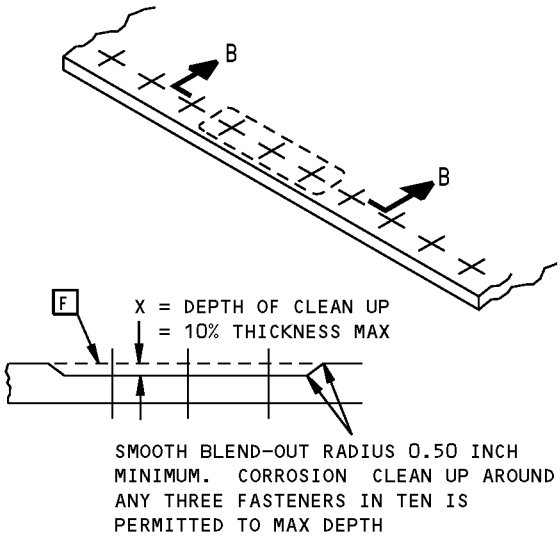


SECTION A–A

REMOVAL OF DAMAGE ON A SURFACE
DETAIL II

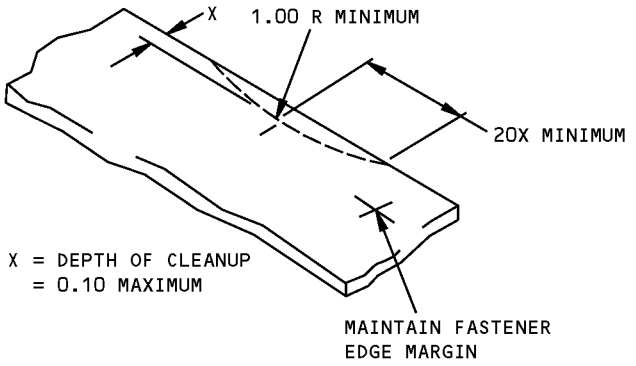


ALLOWABLE DAMAGE FOR DENT
DETAIL III

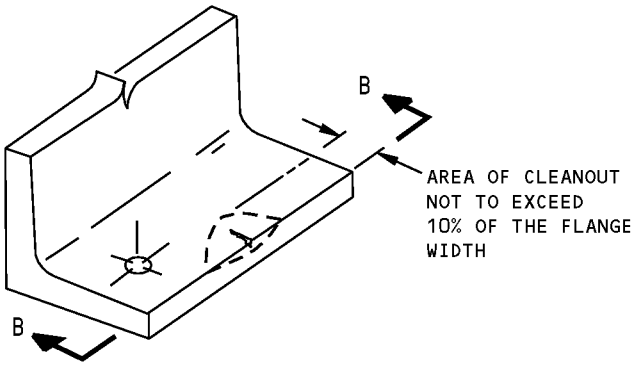


SECTION B–B
CLEANUP
DETAIL IV

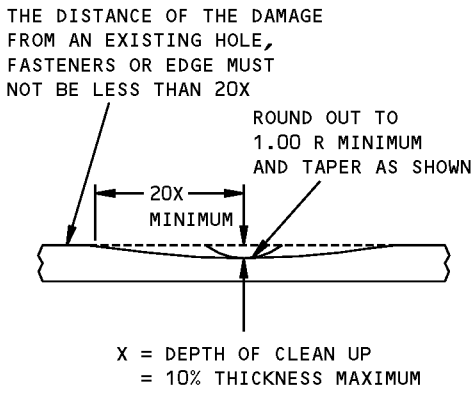
Sta 132.5 Bulkhead Structure Allowable Damage
Figure 101 (Sheet 3 of 4)



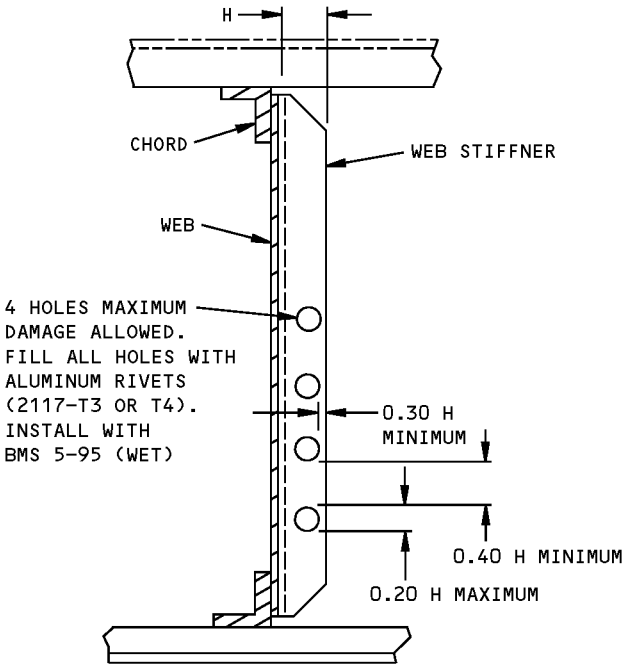
REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE
DETAIL V



REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE
DETAIL VI



SECTION B–B



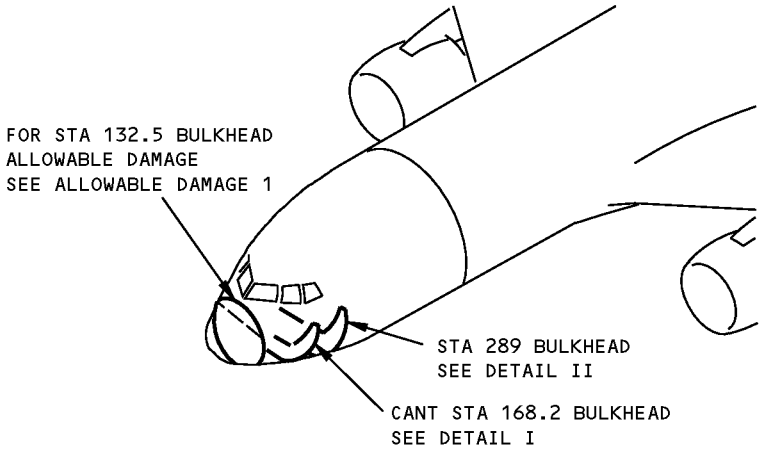
H = WIDTH OF STIFFNER FLANGE

NOTE: NO HOLE DAMAGE IS ALLOWED IN THE STIFFENER FLANGES FASTENED TO THE WEB.

ALLOWABLE DAMAGE LIMITS
FOR HOLES IN WEB STIFFENERS
DETAIL VII

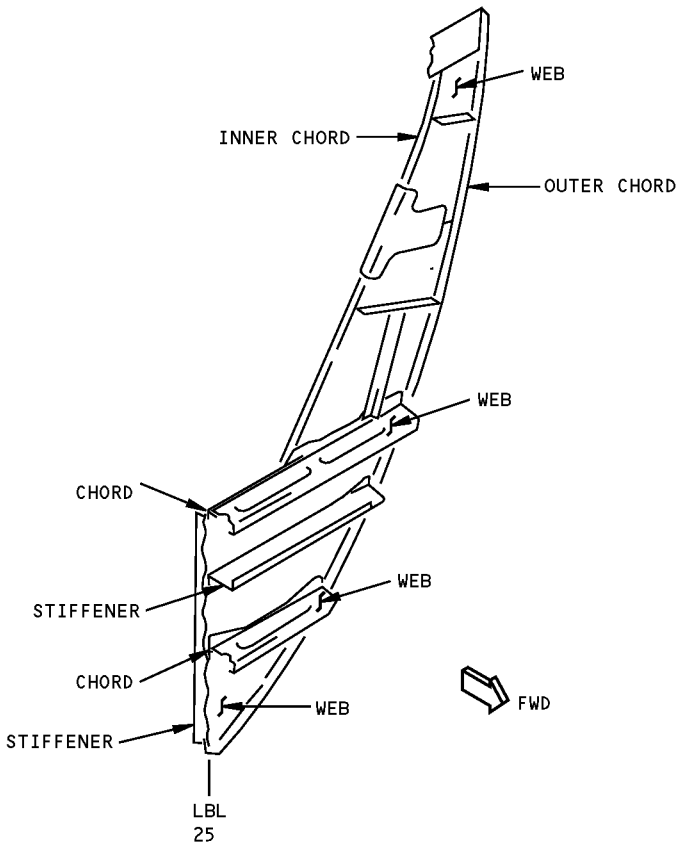
Sta 132.5 Bulkhead Structure Allowable Damage
Figure 101 (Sheet 4 of 4)

ALLOWABLE DAMAGE 2 - NOSE WHEEL WELL BULKHEAD STRUCTURE



Nose Wheel Well Bulkhead Structure Allowable Damage
Figure 101 (Sheet 1 of 6)

REF DWG
141T2910



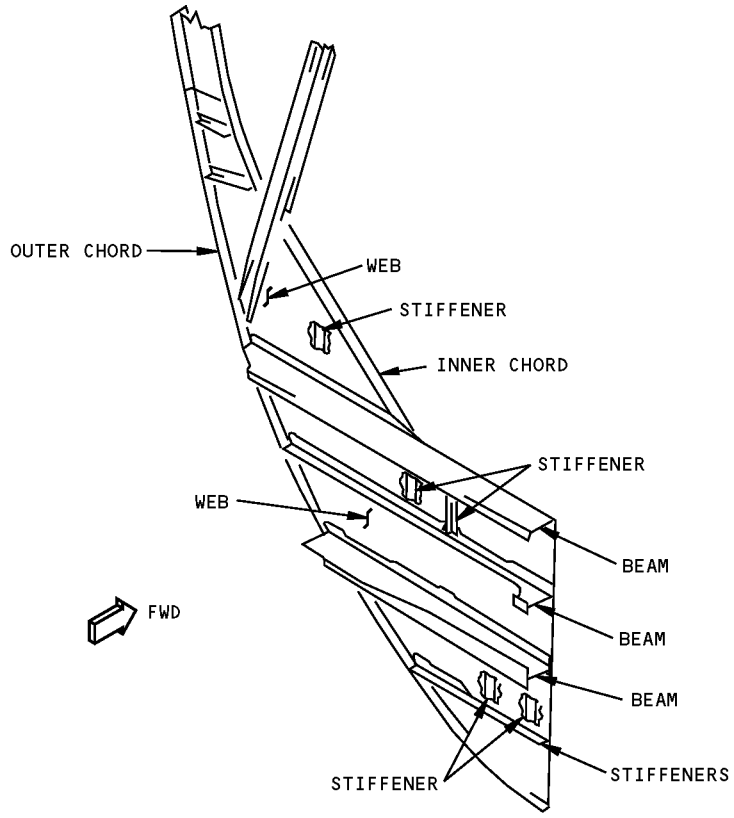
MATERIAL: ALUMINUM

CANT STA 168.2 BULKHEAD
LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL I

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
CHORDS OUTER CHORD	[F]	[H]	NOT ALLOWED	HOLES ALLOWED IN FREE FLANGE ONLY [E]
OTHER CHORD	[A]	[D]	NOT ALLOWED	NOT ALLOWED
WEBS	[B]	[C]	SEE DETAIL V	[E]
STIFFENERS	[A]	[D]	NOT ALLOWED	SEE DETAIL IX

Nose Wheel Well Bulkhead Structure Allowable Damage
Figure 101 (Sheet 2 of 6)

REF DWG
141T2920



MATERIAL: ALUMINUM

STA 289 BULKHEAD
LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL II

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
BEAMS	[A]	[D]	NOT ALLOWED	HOLES ALLOWED IN WEBS AND FREE FLANGES ONLY [E]
CHORDS INNER CHORD	[G]	[I]	NOT ALLOWED	HOLES ALLOWED IN FREE FLANGE ONLY [E]
OUTER CHORD	[A]	[D]	NOT ALLOWED	HOLES ALLOWED IN FREE FLANGE ONLY [E]
WEBS	[B]	[C]	SEE DETAIL V	[E]
STIFFENERS	[A]	[D]	NOT ALLOWED	SEE DETAIL IX

Nose Wheel Well Bulkhead Structure Allowable Damage
Figure 101 (Sheet 3 of 6)

NOTES

- REFINISH REWORKED AREAS PER 51-20 OF THE MAINTENANCE MANUAL

[A] CRACKS NOT ALLOWED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED PER DETAILS III AND VIII

[B] CRACKS NOT ALLOWED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED PER DETAILS III AND VII

[C] REMOVE DAMAGE PER DETAILS III, IV, VI AND VII

[D] REMOVE DAMAGE PER DETAILS III AND VIII

[E] CLEAN OUT DAMAGE UP TO 0.25 MAX DIA AND NOT CLOSER THAN 1.0 INCH TO FASTENER HOLE OR OTHER DAMAGE. FILL HOLE WITH A 2117-T3 OR T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES TO BE REPAIRED

[F] CRACKS NOT ALLOWED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED PER DETAILS III AND VIII. FOR CUM LINE NUMBERS 1 THRU 14, SHOT PEEN REWORKED AREA PER 20-10-03 OF THE COMPONENT MAINTENANCE MANUAL WITH SHOT NO. 230-550. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK, SEE 51-20-06

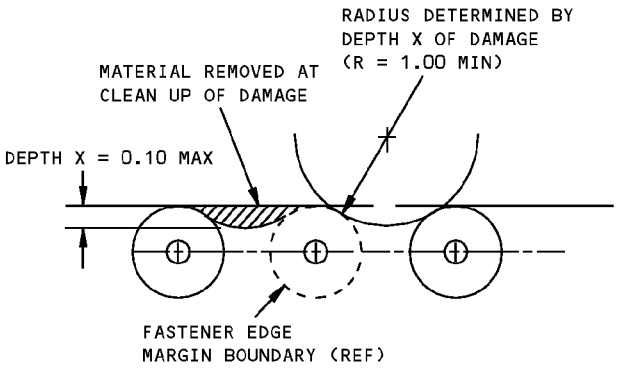
[G] CRACKS NOT ALLOWED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED PER DETAILS III AND VIII. SHOT PEEN REWORKED AREA PER 20-10-03 OF THE COMPONENT MAINTENANCE MANUAL WITH SHOT NO. 230-550. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK, SEE 51-20-06

[H] REMOVE DAMAGE PER DETAILS III, IV, VI AND VIII. FOR CUM LINE NUMBERS 1 THRU 14, SHOT PEEN REWORKED AREA PER 20-10-03 OF THE COMPONENT MAINTENANCE MANUAL WITH SHOT NO. 230-550. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK, SEE 51-20-06

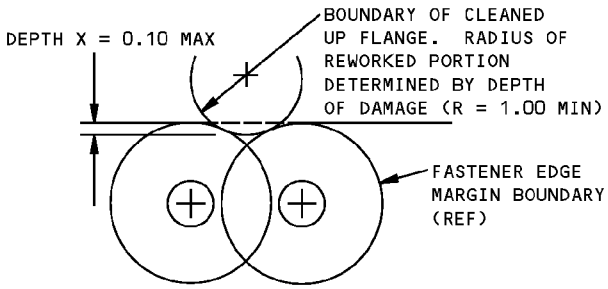
[I] REMOVE DAMAGE PER DETAILS III, IV, VI AND VIII. SHOT PEEN REWORKED AREA PER 20-10-03 OF THE COMPONENT MAINTENANCE MANUAL WITH SHOT NO. 230-550. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK, SEE 51-20-06.

[J] FOR MATING SURFACES, INSTALL LAMINATED SHIMS WITH BMS 5-95 SEALANT. THE GAP MUST BE LESS THAN OR EQUAL TO 0.003 INCH AFTER SHIMMING.

Nose Wheel Well Bulkhead Structure Allowable Damage
Figure 101 (Sheet 4 of 6)

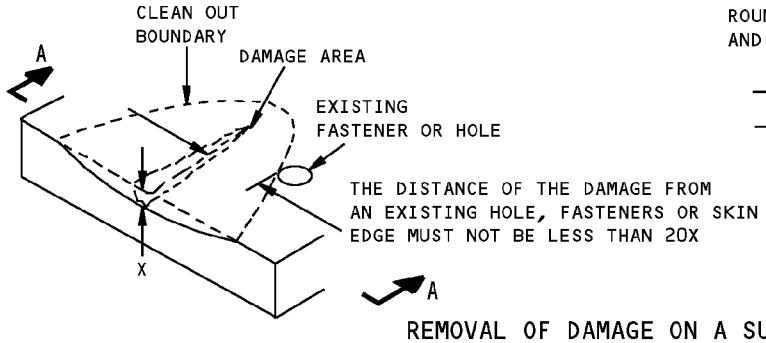


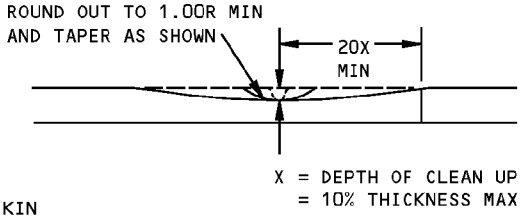
DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS OVERLAP

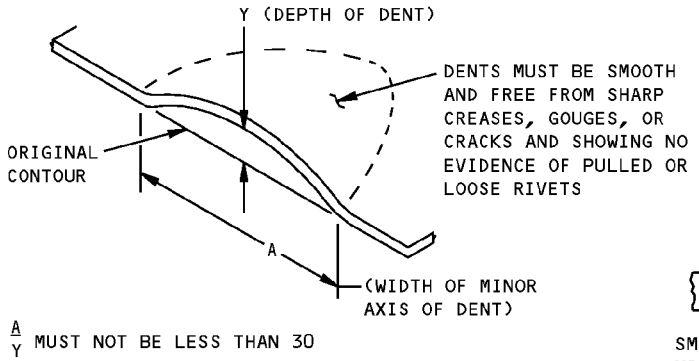
DETAIL III



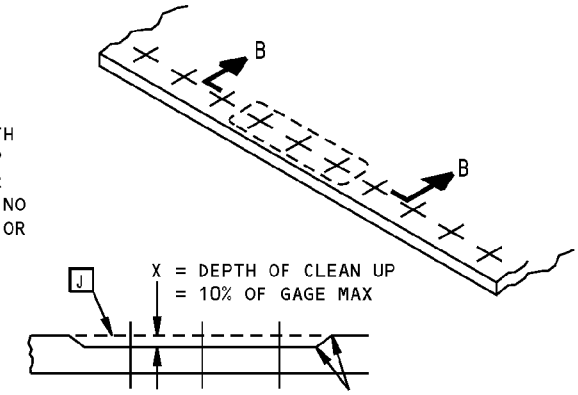


SECTION A-A

REMOVAL OF DAMAGE ON A SURFACE
DETAIL IV



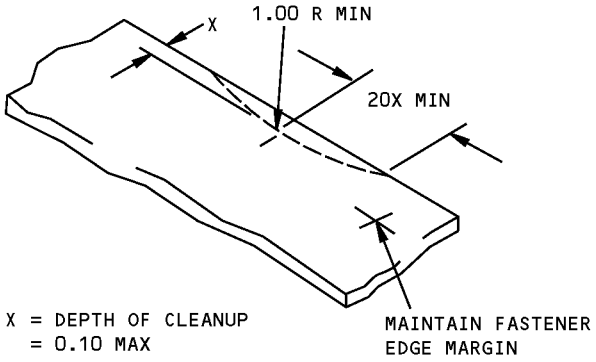
ALLOWABLE DAMAGE FOR DENT
DETAIL V



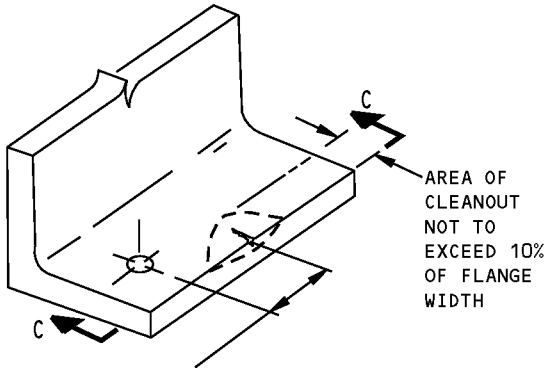
SECTION B-B

DAMAGE CLEANUP
DETAIL VI

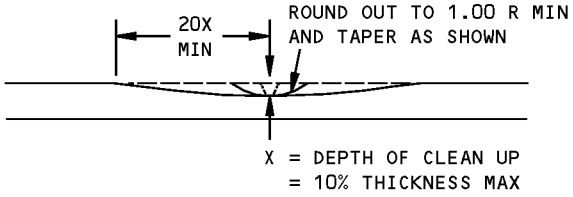
Nose Wheel Well Bulkhead Structure Allowable Damage
Figure 101 (Sheet 5 of 6)



REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE
DETAIL VII

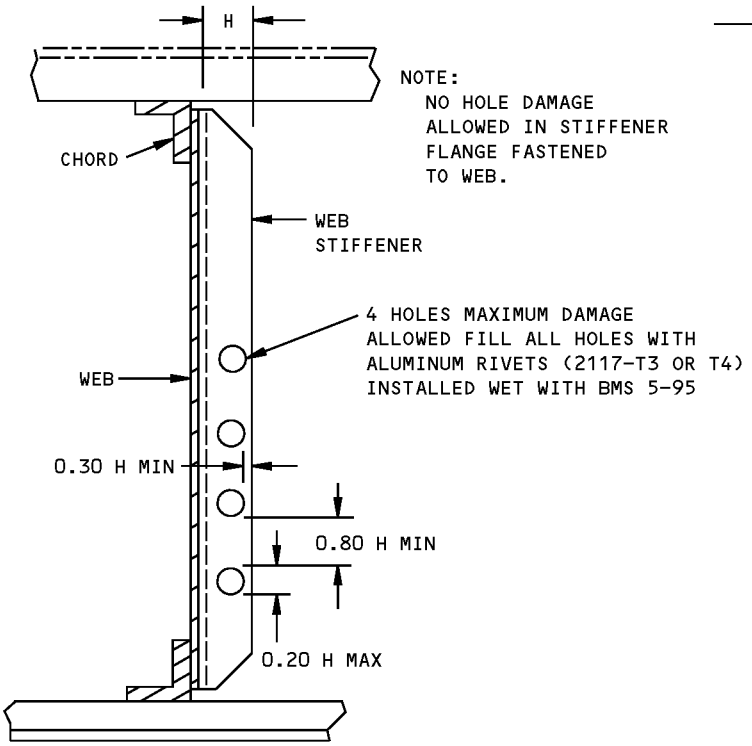


THE DISTANCE OF THE DAMAGE FROM AN EXISTING HOLE, FASTENERS OR EDGE MUST NOT BE LESS THAN 20X



SECTION C-C

REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE
DETAIL VIII

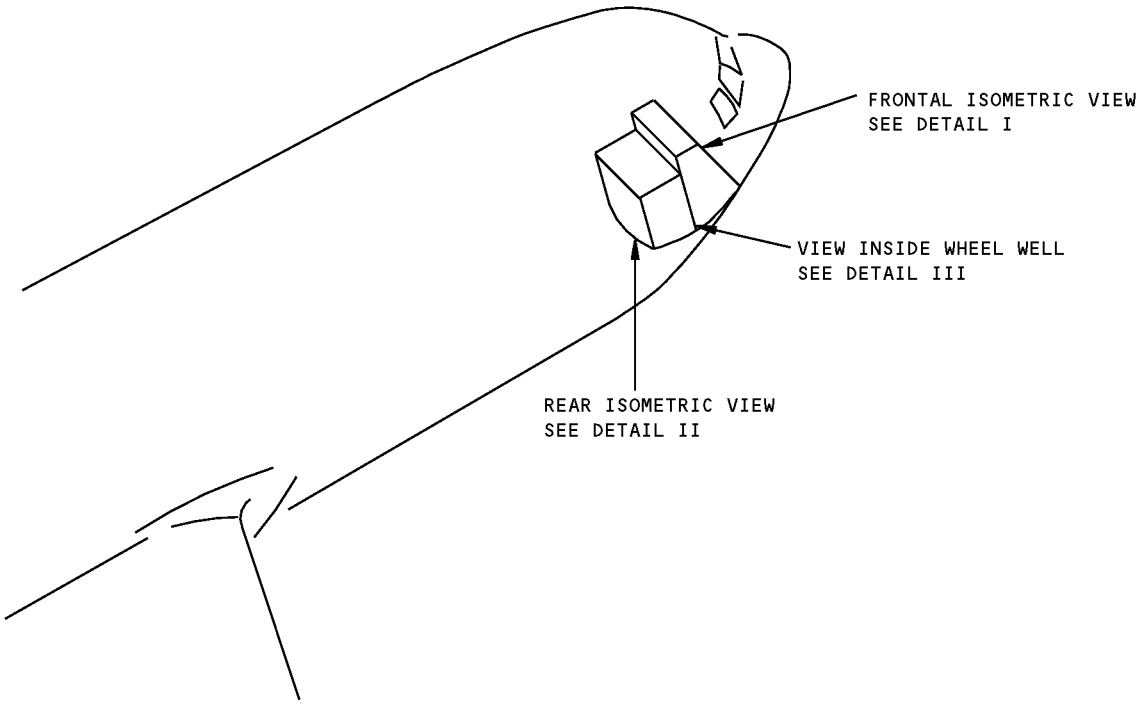


ALLOWABLE DAMAGE LIMITS FOR
HOLES IN WEB STIFFENERS
DETAIL IX

Nose Wheel Well Bulkhead Structure Allowable Damage
Figure 101 (Sheet 6 of 6)

IDENTIFICATION 1 - NOSE WHEEL WELL STRUCTURE

REF DWGS
141T0910
141T9910
141T9920
141T2910
141T2920



NOTES

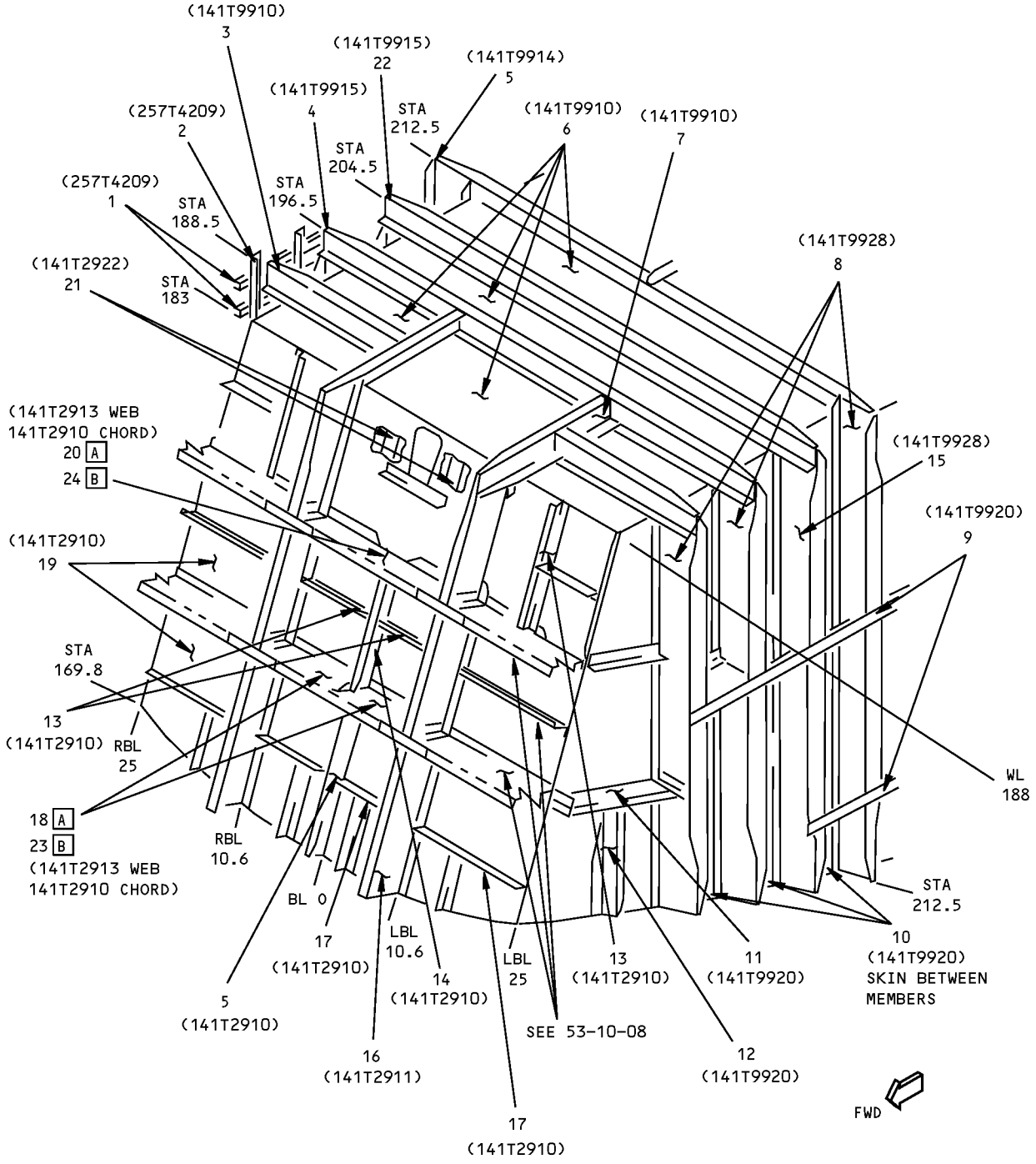
[A] FOR CUM LINE NUMBERS:
132 THRU 192

[B] FOR CUM LINE NUMBERS
193 AND ON

[C] FOR CUM LINE NUMBERS:
132 THRU 157

[D] FOR CUM LINE NUMBERS:
NOT LISTED IN [C]

Nose Wheel Well Structure Identification
Figure 1 (Sheet 1 of 7)



LEFT AND RIGHT SIDES SIMILAR
DETAIL I

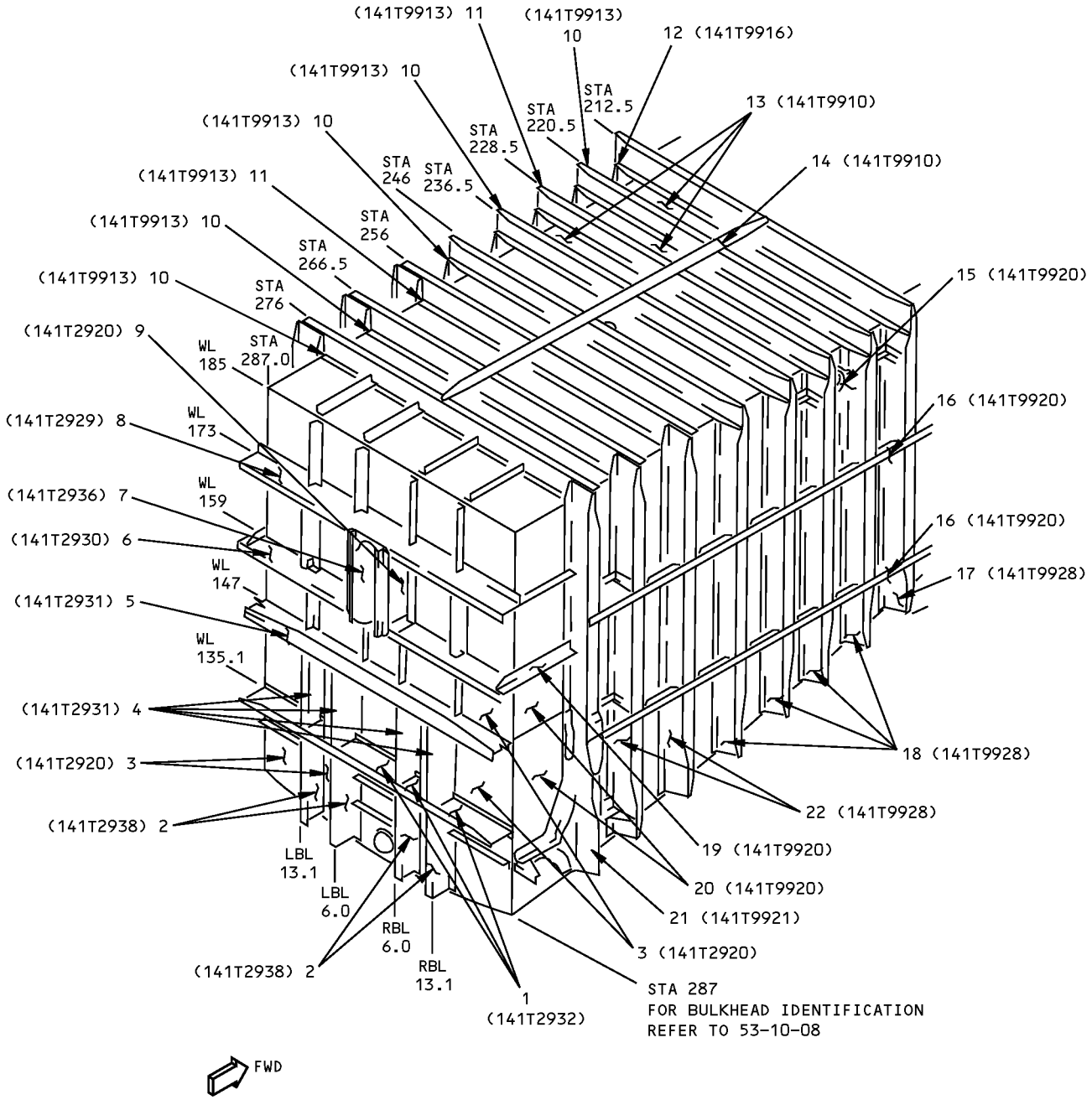
LIST OF MATL

Nose Wheel Well Structure Identification
Figure 1 (Sheet 2 of 7)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SUPPORT CHANNEL		AND10137-1207 2024-T42	
2	SUPPORT ANGLE		AND10133-1233 2024-T42	
3	STIFFENER		AND10138-2003 7075-T6511	
4	BEAM		BAC1506-3130 7075-T6511	
5	BEAM		BAC1509-100492 7075-T6511	
6	PRESSURE DECK WEB	0.080	2024-T3 (CHEM-MILLED TO 0.045 MIN)	
7	STIFFENER		BAC1520-2173 7075-T6511	
8	BEAM		BAC1518-712 7075-T6511	
9	ANGLE STABILIZER		AND10134-1201 7075-T6511	
10	WEB	0.125	2024-T3 (CHEM-MILLED TO 0.040 MIN)	
11	CHANNEL		AND10137-2201 7075-T6511	
12	CHORD BEAM TEE ANGLE		 BAC1505-100974 7075-T6511 BAC1503-100352 7075-T6511	
13	STIFFENER		AND10138-1007 7075-T6511	
14	STIFFENER		BAC1506-1500 7075-T6511	
15	BEAM		BAC1518-843 7075-T6511	
16	BEAM ASSY BEAM CHORD		 BAC1506-3268 7075-T6511 AND10136-3004 7075-T6511	
17	STIFFENER		AND10138-1603 7075-T6511	
18	BEAM ASSY WEB CHORD	 0.080	 7075-T6 (CHEM-MILLED TO 0.053 MIN) AND10136-2005 7075-T6511	A
19	BULKHEAD WEB	0.080	2024-T3 (CHEM-MILLED TO 0.040 MIN)	
20	BEAM ASSY WEB CHORD	 0.080	 7075-T6 (CHEM-MILLED TO 0.053 MIN) AND10136-2007 7075-T6511	A
21	LINK SUPPORT		FORGING 7075-T73	
22	BEAM		BAC1506-3405 7075-T6511	
23	BEAM ASSY WEB CHORD	 0.080	 7075-T62 (CHEM-MILLED TO 0.046 MIN) AND10136-2005 7075-T6511	B
24	BEAM ASSY WEB CHORD	 0.080	 7075-T62 (CHEM-MILLED TO 0.046 MIN) AND10136-2007 7075-T6511	B

LIST OF MATERIALS FOR DETAIL I

Nose Wheel Well Structure Identification
Figure 1 (Sheet 3 of 7)



DETAIL II

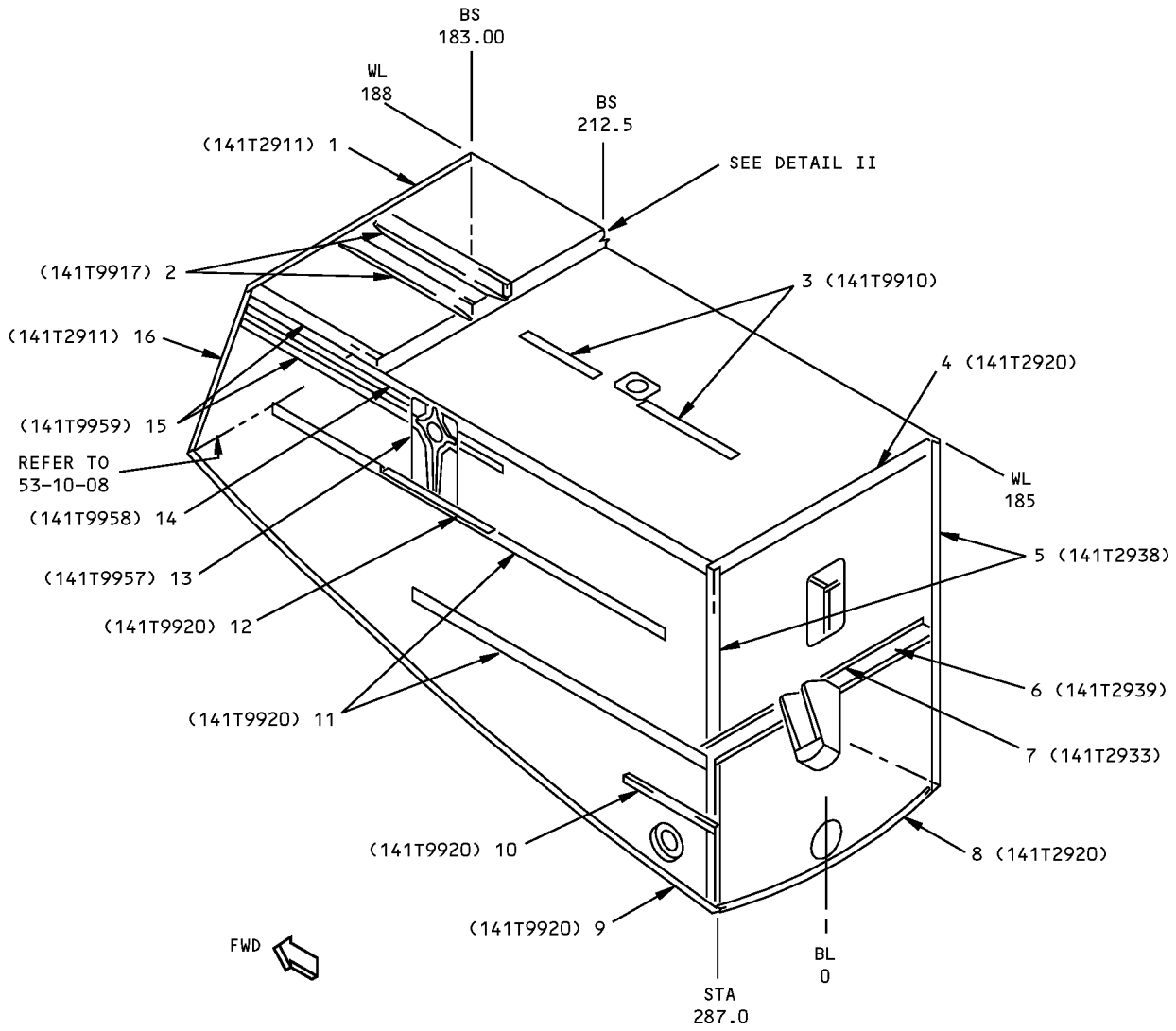
LIST OF MATL

Nose Wheel Well Structure Identification
Figure 1 (Sheet 4 of 7)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	BEAM		BAC1518-763 7075-T6511 OR FORGING 7075-T73	
2	STIFFENER		BAC1517-2107 7075-T6511	
3	WEB	0.100	2024-T3 (CHEM-MILLED TO 0.045 MIN)	
4	STIFFENER		AND10136-2407 7075-T6511	
5	BEAM		BAC1518-764 7075-T6511 OR FORGING 7075-T73	
6	BEAM		BAC1506-3277 7075-T6511	
7	PRESSSURE PAN	0.100	CLAD 2024-T42	
8	BEAM		BAC1517-2107 7075-T6511	
9	STIFFENER		AND10139-2005 7075-T6511	
10	BEAM		BAC1505-101137 7075-T6511	
11	BEAM		BAC1505-101136 7075-T6511	
12	BEAM		BAC1509-100442 7075-T6511	
13	PRESSURE DECK WEB	0.100	2024-T3 (CHEM-MILLED TO 0.045 MIN)	
14	STRAP		BAC1513-295 7075-T6511	
15	DOUBLER	0.040	CLAD 2024-T3	
16	ANGLE STABILIZER		AND10134-1201 7075-T6511	
17	BEAM		BAC1518-712 7075-T6511	
18	BEAM		BAC1518-772 7075-T6511	
19	STIFFENER		AND10136-2402 7075-T6511	
20	WEB + DOUBLER	0.125 0.125	CLAD 2024-T3 (CHEM-MILLED TO 0.040 MIN) CLAD 2024-T3	
21	TRUNNION FITTING		FORGING 7075-T73	
22	BEAM		BAC1518-842 7075-T6511	

LIST OF MATERIALS FOR DETAIL II

Nose Wheel Well Structure Identification
Figure 1 (Sheet 5 of 7)



VIEW LOOKING INSIDE NOSE
WHEEL WELL STRUCTURE
DETAIL III

LIST OF MATL

Nose Wheel Well Structure Identification
Figure 1 (Sheet 6 of 7)

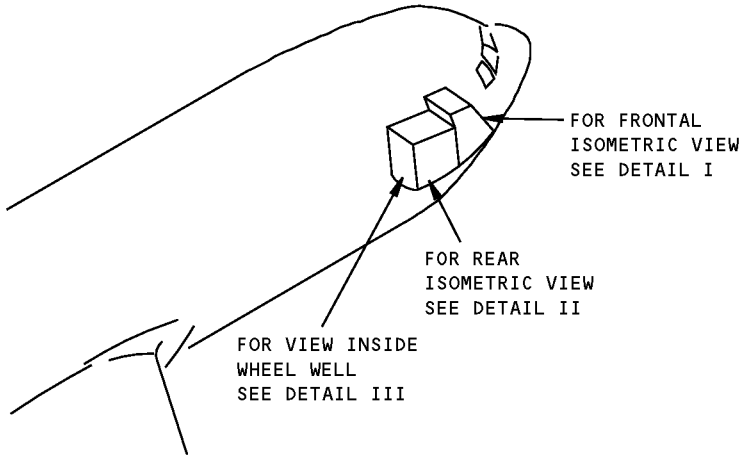
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	CHORD		BAC1514-2429 7075-T6511	
2	BEAM ASSY			
	TEE		AND10136-2006 7075-T6511	
	BRACKET	0.125	CLAD 7075-T6	
3	STRAP	0.100	2024-T3	
4	CHORD		AND10133-2401 7075-T6511	
5	TEE		AND10140-4005 7075-T6511	G
			BAC1518-740 7075-T73511 (OPTIONAL: BAC1505-101767)	H
6	BEAM		BAC1505-101143 7075-T6511	
7	STRAP	0.500	7075-T651	
8	OUTER CHORD			
9	LOWER CHORD		BAC1506-3596 2024-T42	
10	STIFFENER		BAC1503-100219 7075-T6511	
11	STRAP	0.125	CLAD 2024-T3	
12	STIFFENER		AND10133-1202 7075-T6511	
13	FITTING - DRAG BRACE		FORGING 7075-T73	
14	CHORD		BAC1503-8897 7075-T6511	
15	CHORD		BAC1509-100393 7075-T6511	
16	CHORD		AND10136-3004 7075-T6511	

LIST OF MATERIALS FOR DETAIL III

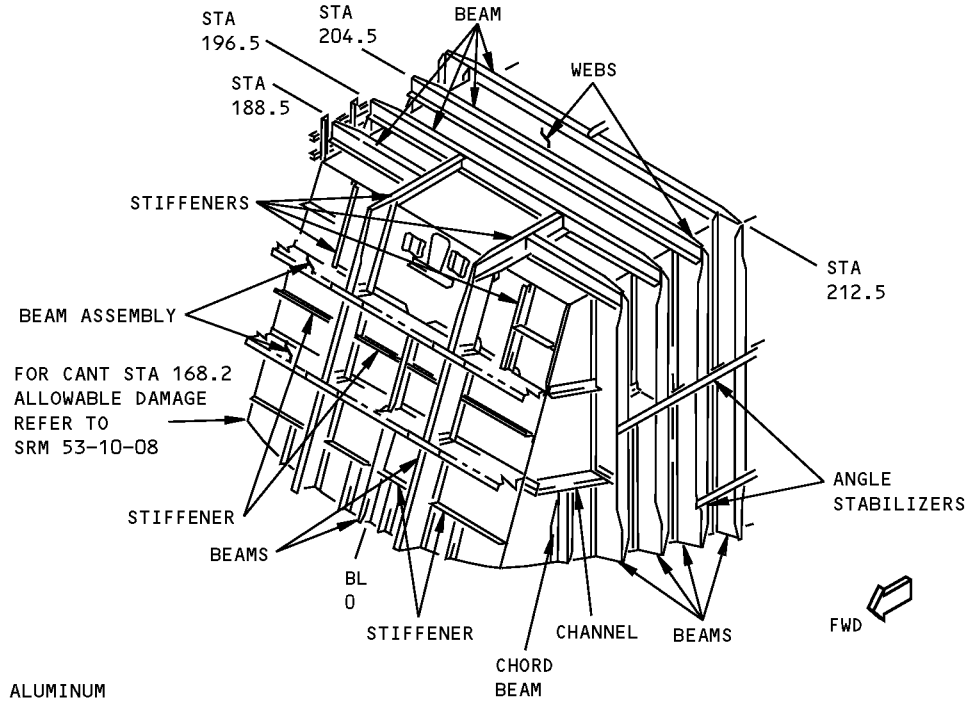
Nose Wheel Well Structure Identification
Figure 1 (Sheet 7 of 7)

ALLOWABLE DAMAGE 1 - NOSE WHEEL WELL STRUCTURE

REF DWGS
141T2910
141T2920
141T9910
141T9920



Nose Wheel Well Structure Allowable Damage
Figure 101 (Sheet 1 of 7)

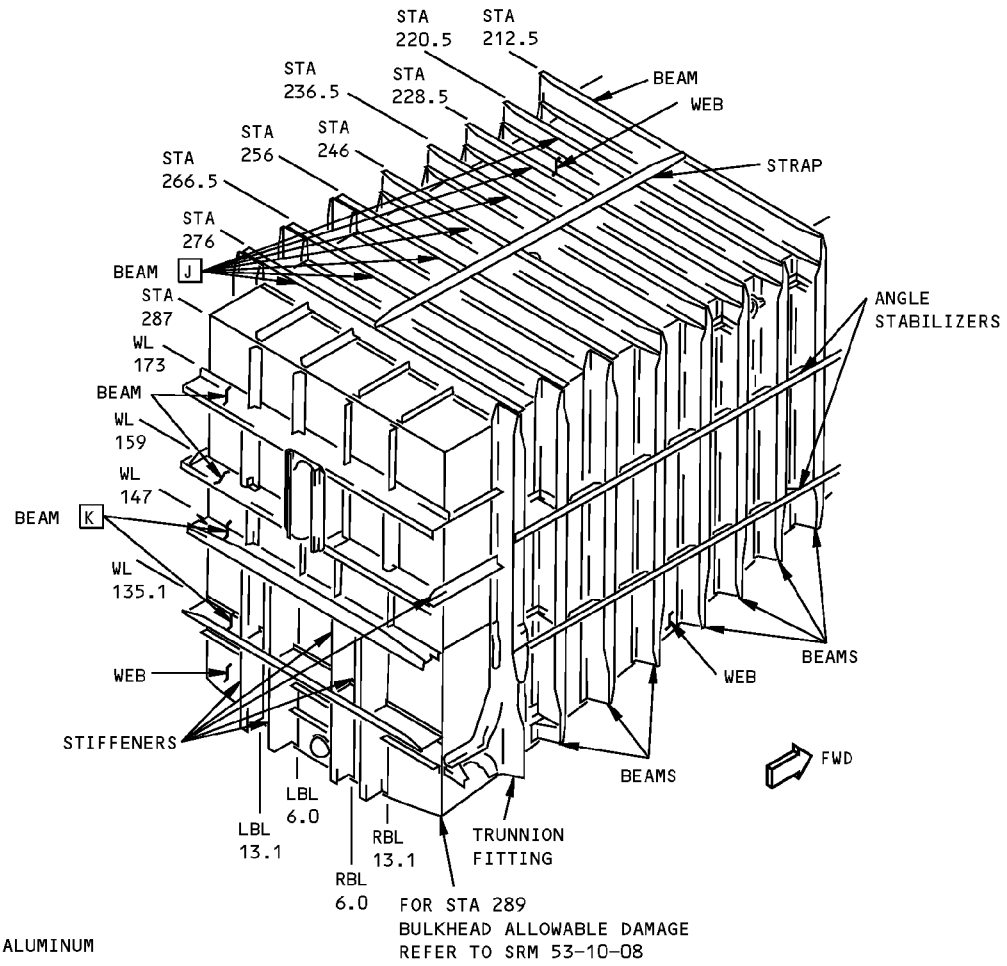


MATERIAL: ALUMINUM

LEFT AND RIGHT SIDES SIMILAR
DETAIL I

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
BEAMS	A	E	NOT PERMITTED	HOLES PERMITTED IN WEBS AND FREE FLANGES ONLY I
BEAM ASSEMBLY CHORD	A	E	NOT PERMITTED	NOT PERMITTED
WEB	B	F	SEE DETAIL VI	I
CHORD BEAM TEE	A	E	NOT PERMITTED	NOT PERMITTED
ANGLE	A	E	NOT PERMITTED	HOLES PERMITTED IN FREE FLANGE ONLY I
ANGLE STABILIZERS	A	E	NOT PERMITTED	I
STIFFENERS	A	E	NOT PERMITTED	SEE DETAIL X
CHANNEL	A	E	NOT PERMITTED	HOLES PERMITTED IN WEB ONLY I
WEBS	B	F	SEE DETAIL VI	I

Nose Wheel Well Structure Allowable Damage
Figure 101 (Sheet 2 of 7)

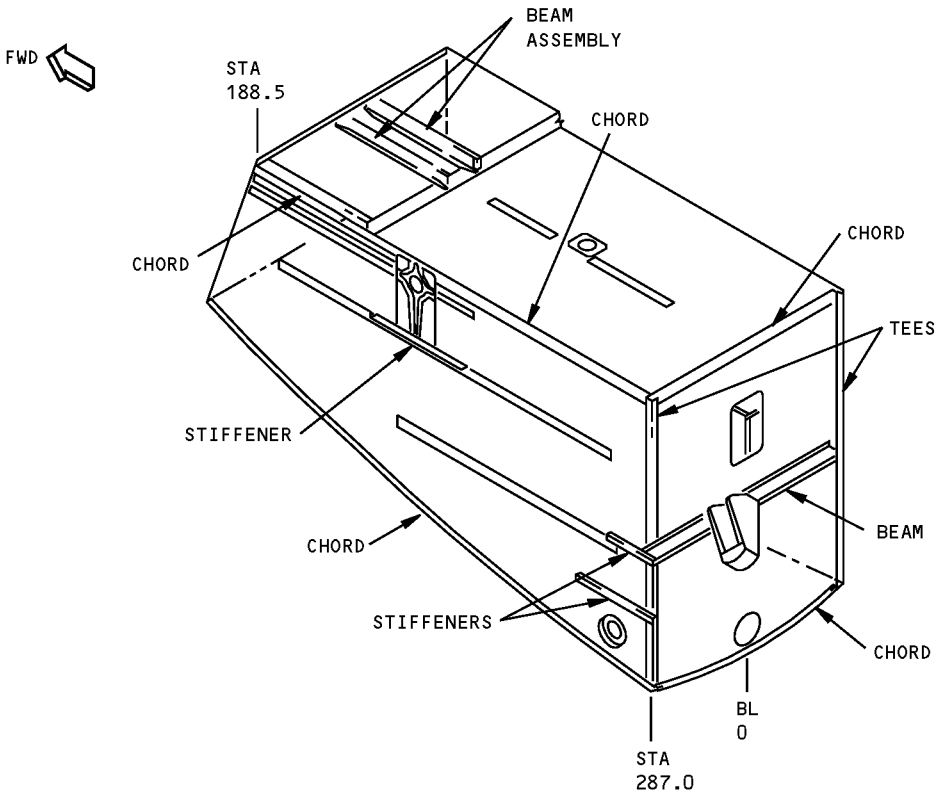


MATERIAL: ALUMINUM

LEFT AND RIGHT SIDES SIMILAR
DETAIL II

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
BEAMS	C	G	NOT PERMITTED	HOLES PERMITTED IN WEBS AND FREE FLANGES ONLY I
ANGLE STABILIZER	A	E	NOT PERMITTED	I
STIFFENERS	A	E	NOT PERMITTED	SEE DETAIL X
STRAP	A	E	NOT PERMITTED	I
WEBS	B	F	SEE DETAIL VI	I
TRUNNION FITTINGS	D	H	NOT PERMITTED	NOT PERMITTED

Nose Wheel Well Structure Allowable Damage
Figure 101 (Sheet 3 of 7)



MATERIAL: ALUMINUM

VIEW LOOKING INSIDE
DETAIL III

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
BEAM	[A]	[E]	NOT PERMITTED	HOLES PERMITTED IN WEBS AND FREE FLANGES ONLY [I]
BEAM ASSEMBLY TEE	[A]	[E]	NOT PERMITTED	NOT PERMITTED
BRACKET	[B]	[F]	SEE DETAIL VI	[I]
CHORDS	[A]	[E]	NOT PERMITTED	NOT PERMITTED
TEE	[A]	[E]	NOT PERMITTED	HOLES PERMITTED IN STEM ONLY [I]
STIFFENERS	[A]	[E]	NOT PERMITTED	SEE DETAIL X

Nose Wheel Well Structure Allowable Damage
Figure 101 (Sheet 4 of 7)

NOTES

- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS IV AND IX.

[B] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS IV AND VIII.

[C] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS IV AND IX. SEE DETAIL II FOR FOR APPLICABLE SHOT PEEN REQUIREMENTS.

[D] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAIL IX. SHOT PEEN REWORKED AREA AS GIVEN IN SOPM 20-10-03. USE SHOT NO. 230-550. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK. REFER TO SRM 51-20-06.

[E] REMOVE DAMAGE AS GIVEN IN DETAILS IV,V,VII AND IX.

[F] REMOVE DAMAGE AS GIVEN IN DETAILS IV,V,VII AND VIII.

[G] REMOVE DAMAGE AS GIVEN IN DETAILS IV AND IX. SEE DETAIL II FOR APPLICABLE SHOT PEEN REQUIREMENTS.

[H] FOR EDGE DAMAGE SEE DETAIL IX. FOR LUG DAMAGE SEE DETAIL XI. FOR OTHER DAMAGE SEE DETAIL V. DAMAGE IS NOT PERMITTED NEAR BUSHINGS. SHOT PEEN REWORKED AREA AS GIVEN IN SOPM 20-10-03. USE SHOT NO. 230-550.SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK. REFER TO SRM 51-20-06.

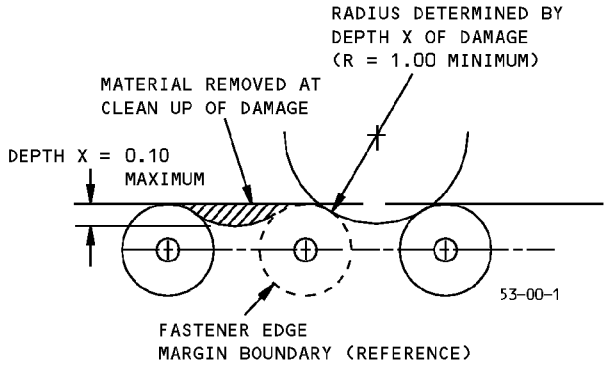
[I] CLEAN OUT DAMAGE UP TO 0.25 INCH MAXIMUM DIAMETER AND NOT CLOSER THAN 1.0 INCH TO FASTENER HOLE OR OTHER DAMAGE. FILL THE HOLE WITH A 2117-T3 OR T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES MUST BE REPAIRED.

[J] SHOT PEEN REWORKED AREA AS GIVEN IN SOPM 20-10-03. USE SHOT NO. 230-550. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK. REFER TO SRM 51-20-06.

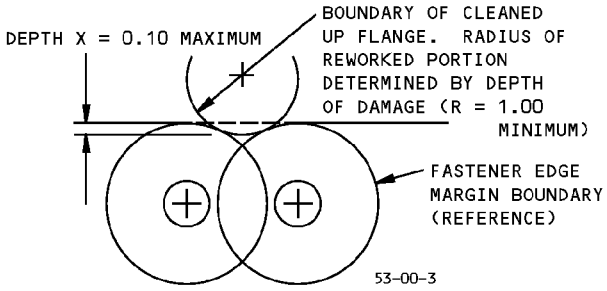
[K] FOR CUM LINE NUMBERS 1 THRU 13, SHOT PEEN REWORKED AREA AS GIVEN IN SOPM 20-10-03. USE SHOT NO. 230-550. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK. REFER TO SRM 51-20-06.

[L] FOR MATING SURFACES, INSTALL LAMINATED SHIMS WITH BMS 5-95 SEALANT. THE GAP MUST BE LESS THAN OR EQUAL TO 0.003 INCH AFTER SHIMMING.

Nose Wheel Well Structure Allowable Damage
Figure 101 (Sheet 5 of 7)

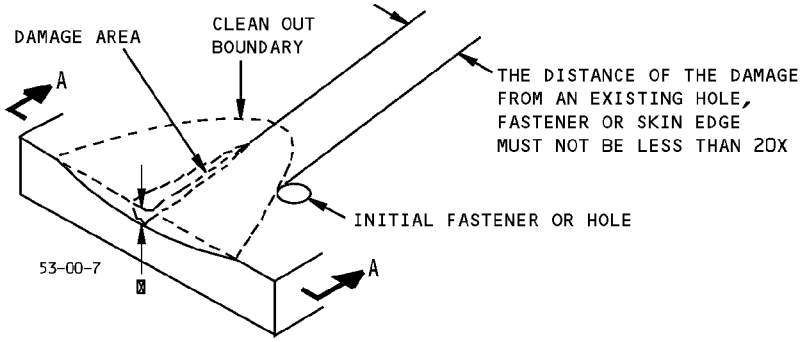


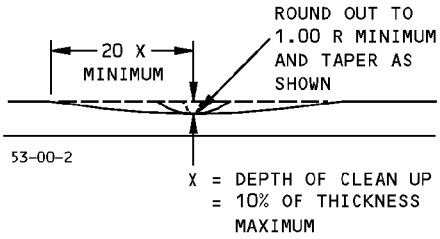
DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS OVERLAP

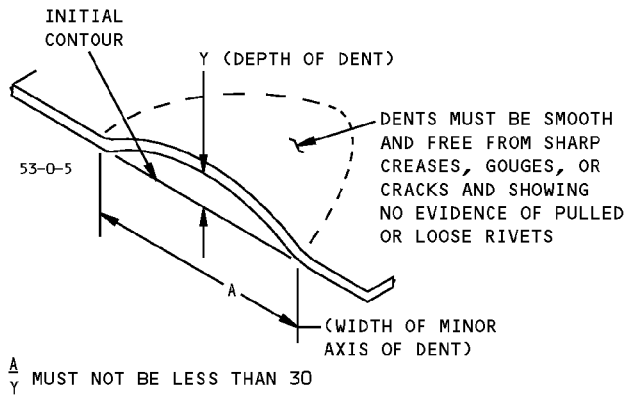
DETAIL IV



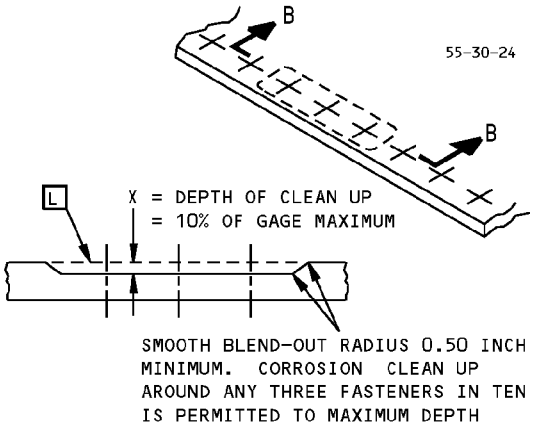


SECTION A-A

REMOVAL DAMAGE ON A SURFACE
DETAIL V



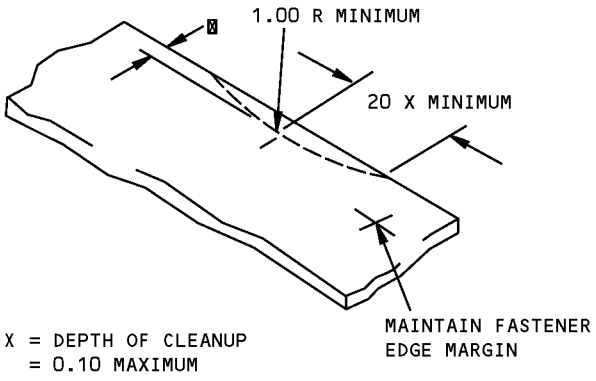
ALLOWABLE DAMAGE FOR DENT
DETAIL VI



SECTION B-B

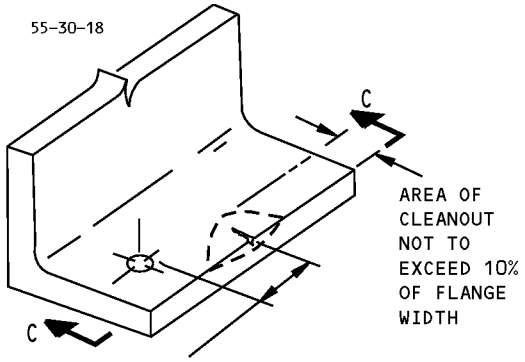
DAMAGE CLEANUP
DETAIL VII

Nose Wheel Well Structure Allowable Damage
Figure 101 (Sheet 6 of 7)

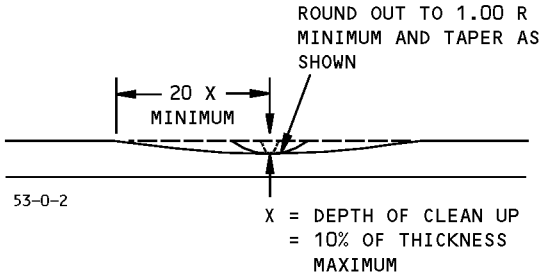


REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE

DETAIL VIII



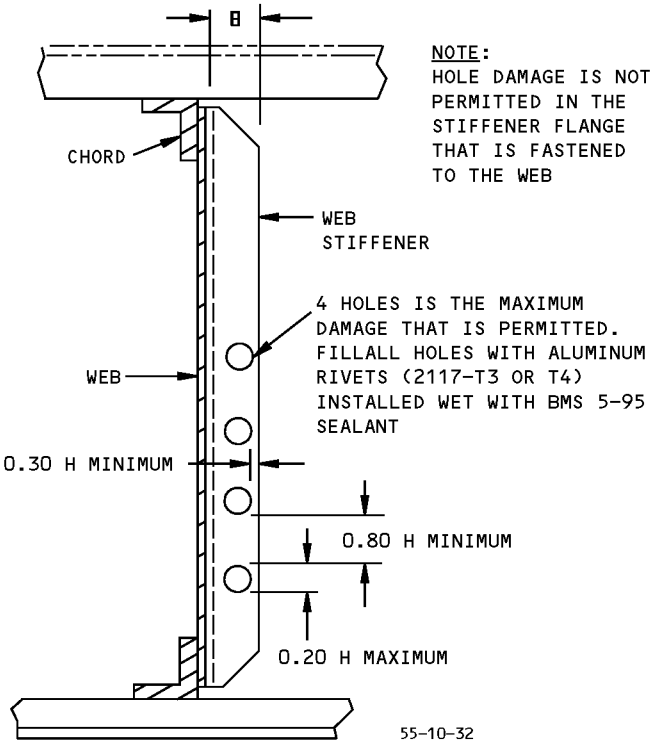
THE DISTANCE OF THE DAMAGE FROM AN EXISTING HOLE, FASTENER OR EDGE MUST NOT BE LESS THAN 20 X



SECTION C-C

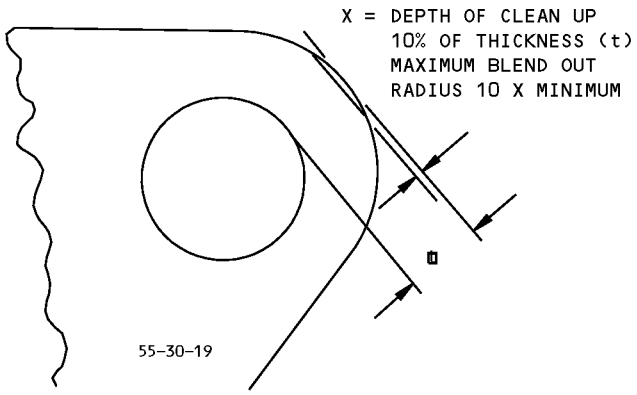
REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE

DETAIL IX



ALLOWABLE DAMAGE LIMITS FOR HOLES IN WEB STIFFENERS

DETAIL X



DAMAGE CLEAN UP FOR EDGES OF LUG

DETAIL XI

Nose Wheel Well Structure Allowable Damage
Figure 101 (Sheet 7 of 7)

REPAIR GENERAL - NOSE WHEEL WELL STRUCTURE

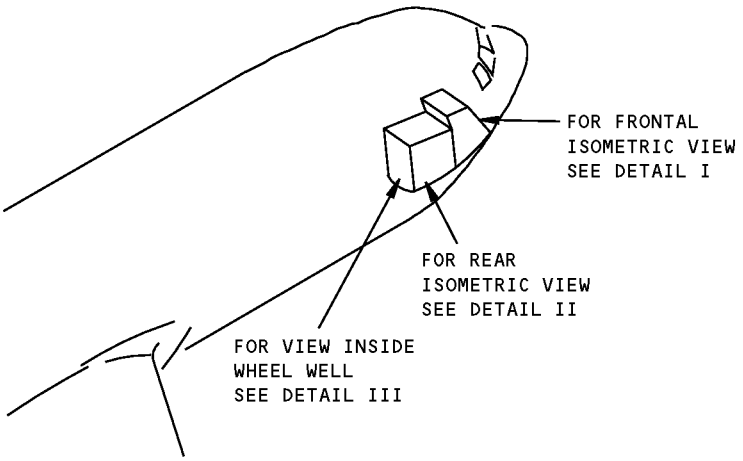
SERVICE BULLETIN REPAIRS

The following Service Bulletins contain repairs which are available for use where specific damage has been encountered. Usually, the Service Bulletin also covers preventive modification data which operators are encouraged to use to eliminate the need for repair.

DAMAGED AREA	CUM LINE NUMBER EFFECTIVITY	SB NUMBER
NOSE WHEELWELL AFT BULKHEAD STA 287	8,16,19,22 THRU 25,28,32, 34 THRU 36,40,44,47,51,52, 54,58,61,66,67,69,72,73,75, 80,82,84,85,87,88,91,92, 94 THRU 96	767-53-0012

Service Bulletin Repair Chart
Figure 201

REPAIR 1 - NOSE WHEEL WELL STRUCTURE

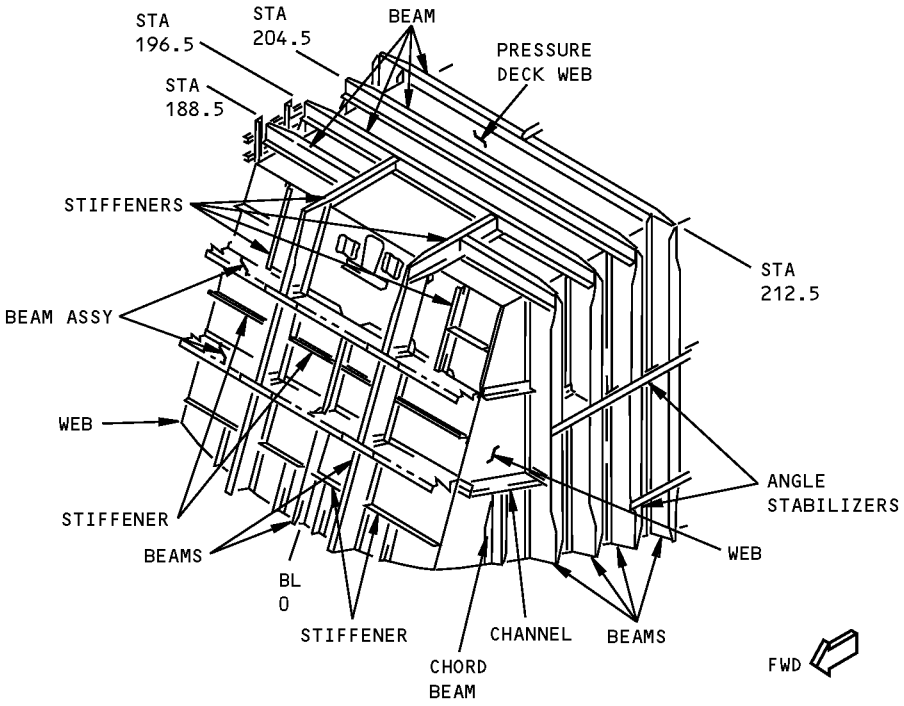


NOTES

- REFER TO SRM 51-70-11 FOR TYPICAL FORMED SECTION REPAIRS.
- REFER TO SRM 51-70-12 FOR TYPICAL EXTRUDED SECTION REPAIRS.
- REFER TO SRM 51-70-13 FOR TYPICAL WEB REPAIRS.

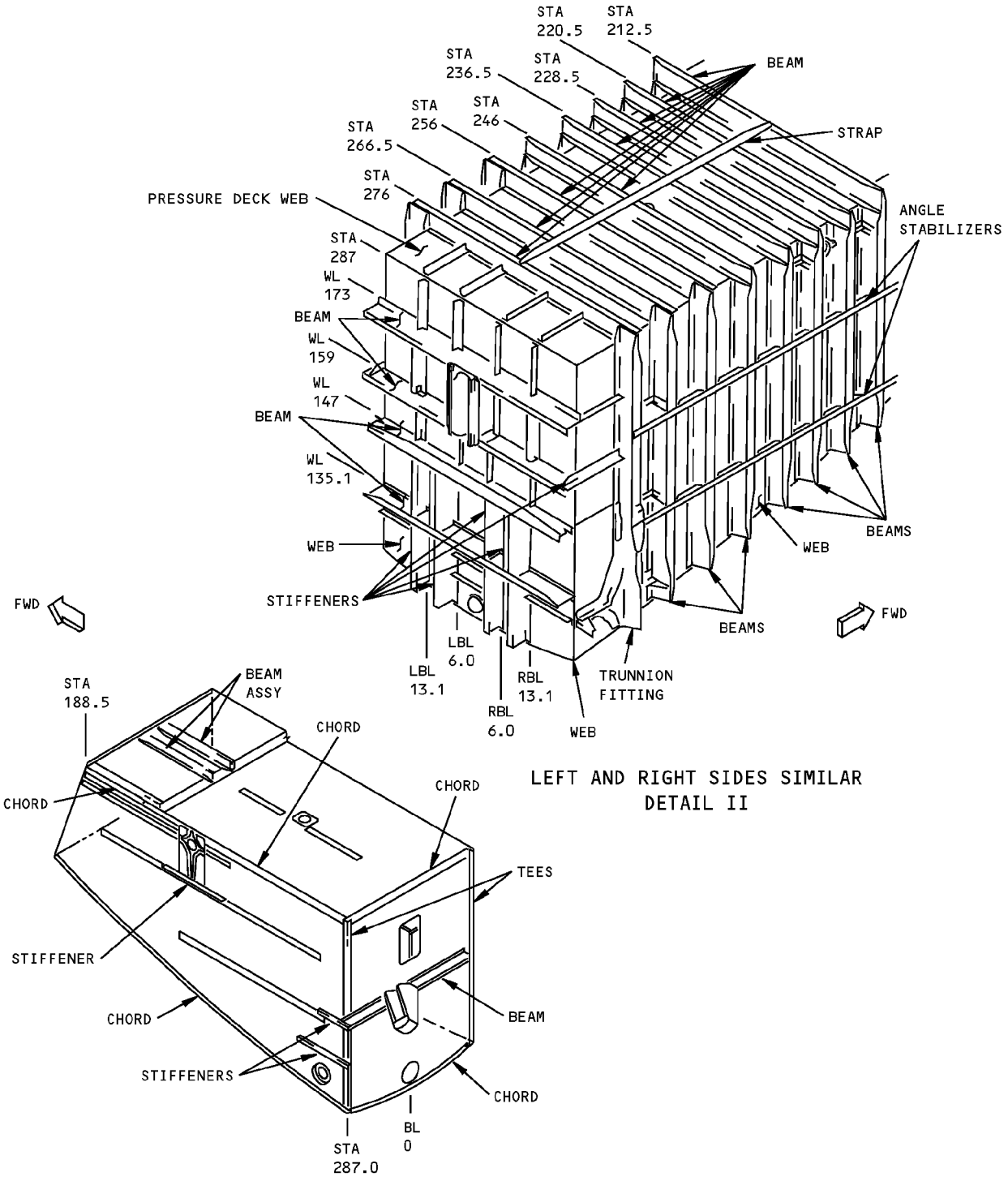
  NOTE: SRM 51-70-13 IS NOT APPLICABLE FOR REPAIRS TO THE PRESSURE DECK WEB.

Nose Wheel Well Structure Repair
Figure 201 (Sheet 1 of 3)



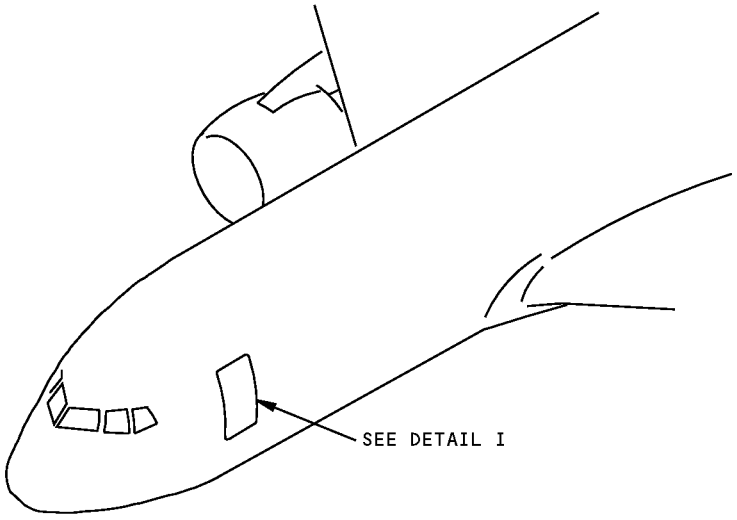
LEFT AND RIGHT SIDES SIMILAR
DETAIL I

Nose Wheel Well Structure Repair
Figure 201 (Sheet 2 of 3)

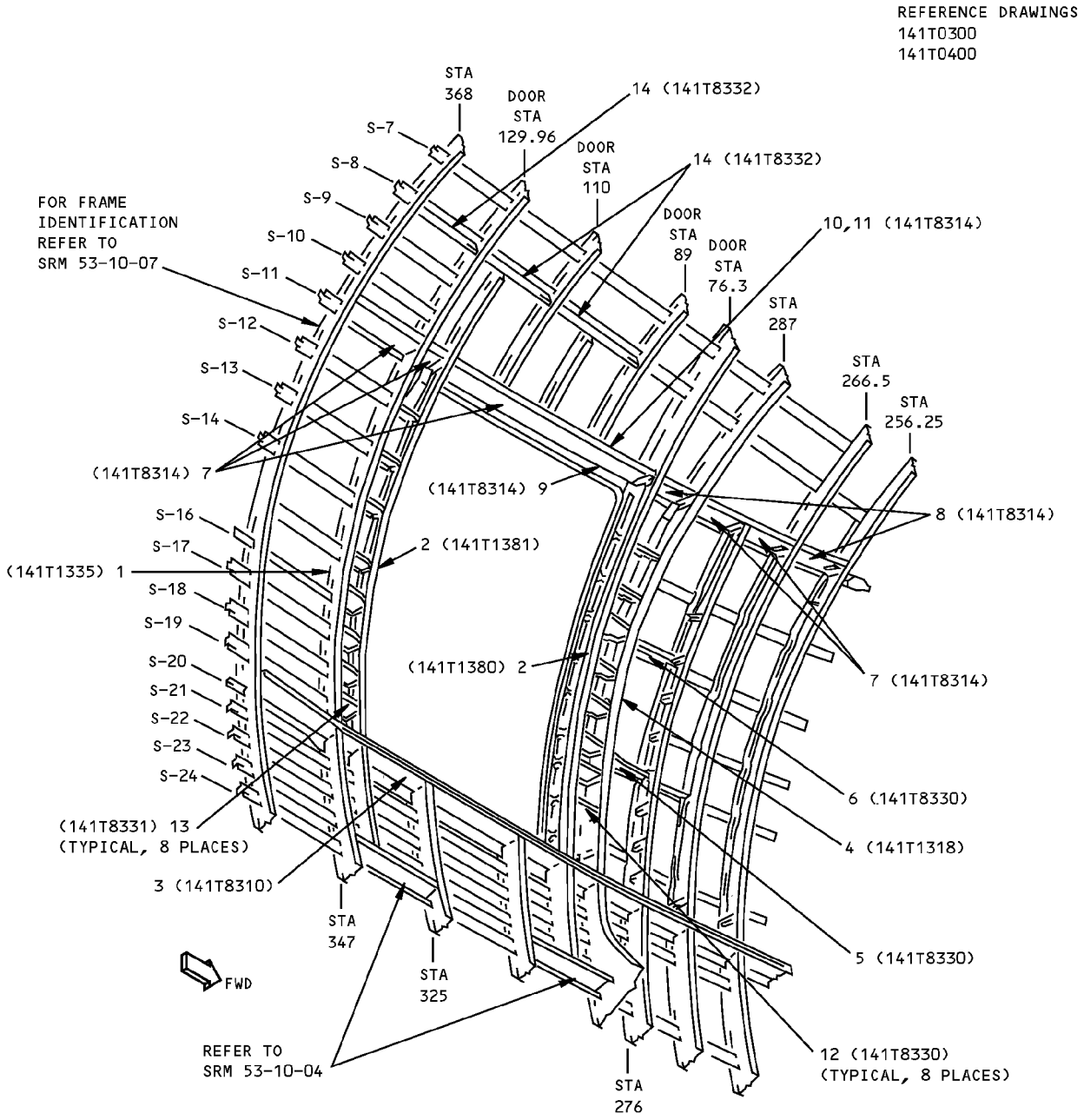


Nose Wheel Well Structure Repair
Figure 201 (Sheet 3 of 3)

IDENTIFICATION 1 - SECTION 41 - PASSENGER/CREW ENTRY DOOR SURROUND STRUCTURE



Section 41 - Passenger/Crew Entry Door Surround Structure Identification
Figure 1 (Sheet 1 of 3)



LEFT SIDE SHOWN
RIGHT SIDE SIMILAR

DETAIL I

LIST OF MATL

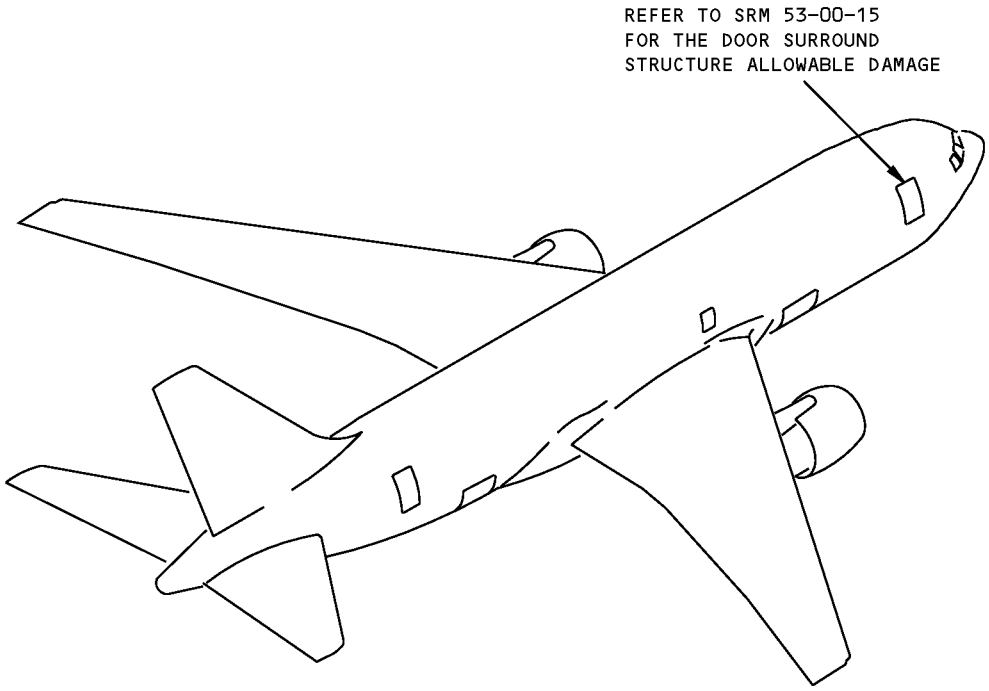
Section 41 - Passenger/Crew Entry Door Surround Structure Identification
Figure 1 (Sheet 2 of 3)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME			
	UPPER WEB		BAC1507-2182 CLAD 7075-T6	
	LOWER WEB		BAC1493-681 CLAD 7075-T6	
	UPPER INNER CHORD		BAC1493-684 CLAD 7075-T6	
	LOWER INNER CHORD		AND10134-1406 7075-T6	
2	FRAME			
	FRAME CHANNEL		BAC1510-1096 2024-T42 OPTIONAL: BAC1510-1069 2024-T42	
	DOOR STOP		BAC1503-100602 7075-T73	
	INNER CHORD FAILSAFE		BAC1514-2495 2024-T42	
3	LOWER MAIN SILL			
	WEB	0.100	CLAD 2024-T3	
	OUTER CHORD		BAC1514-2478 2024-T42	
	INNER CHORD		BAC1503-100640 2024-T42	
	FAILSAFE CHORD		BAC1503-100640 2024-T42	
	SPLASH GUARD		BAC1505-100915 2024-T42	
4	FRAME			
	WEB	0.050	7075-T6	
	OUTER CHORD		BAC1506-1514 2024-T42	
	INNER CHORD		BAC1505-100244 7075-T6	
	FAILSAFE CHORD		BAC1505-100352 7075-T6	
5	INTERCOSTAL		AND10134-1406 7075-T6	
6	INTERCOSTAL		BAC1517-1495 7075-T6	
7	WEB	0.040	CLAD 2024-T3	
8	WEB	0.032	CLAD 2024-T3	
9	OUTER CHORD		BAC1514-2479 2024-T42	
10	INNER CHORD		BAC1514-2518 2024-T42	
11	FAILSAFE CHORD		BAC1514-2518 2024-T42	
12	INTERCOSTAL	0.063	CLAD 2024-T42	
13	INTERCOSTAL	0.050	CLAD 2024-T42	
14	INTERCOSTAL			
	FWD WEB	0.032	CLAD 2024-T3	
	CTR WEB	0.040	CLAD 2024-T3	
	AFT WEB	0.032	CLAD 2024-T3	
	INNER CHORD		AND10134-1404 2024-T42	

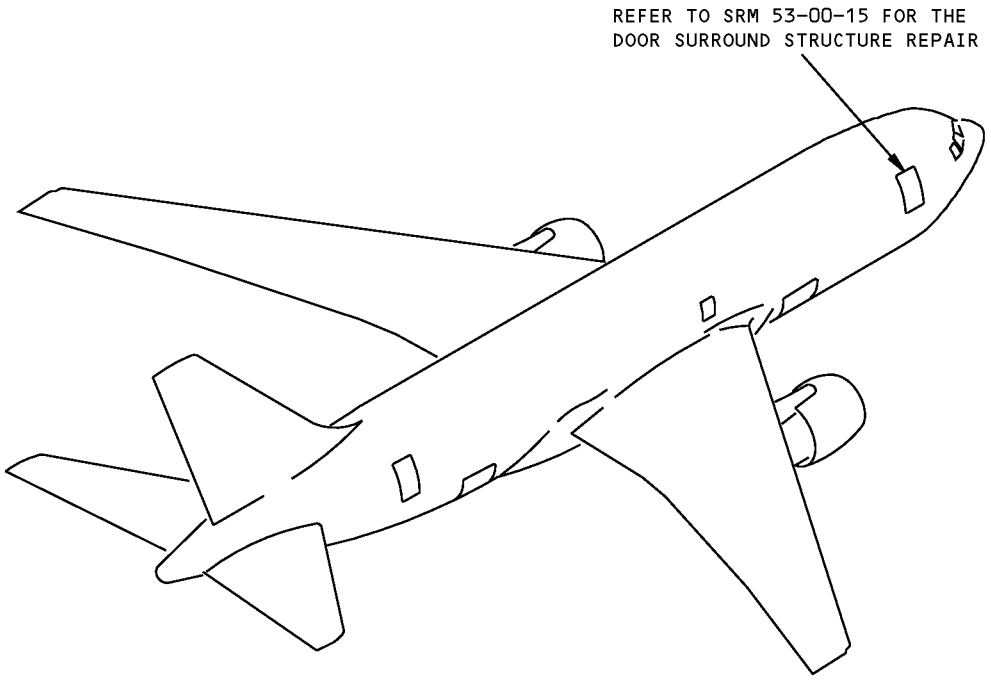
LIST OF MATERIAL FOR DETAIL I

Section 41 - Passenger/Crew Entry Door Surround Structure Identification
Figure 1 (Sheet 3 of 3)

ALLOWABLE DAMAGE 1 - SECTION 41 PASSENGER/CREW ENTRY DOOR SURROUND STRUCTURE

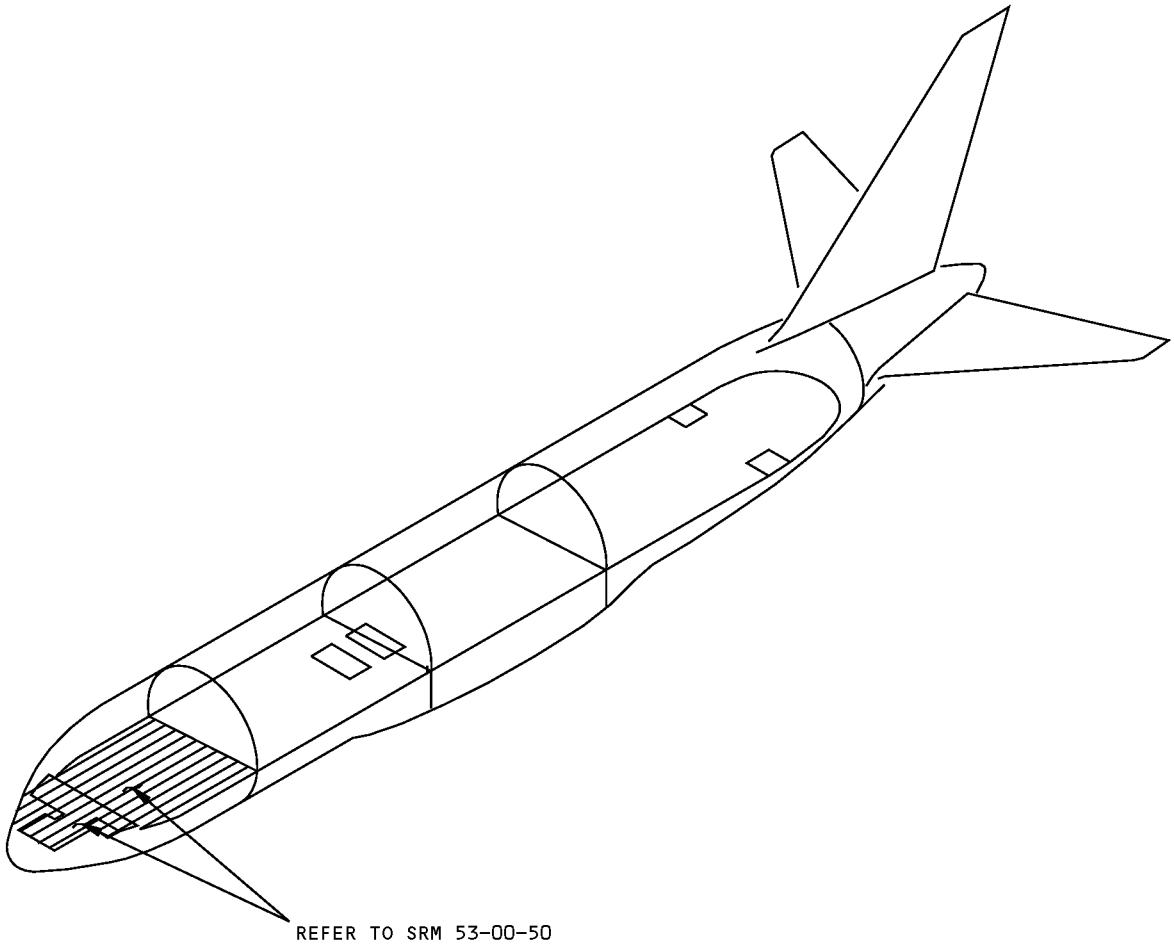


Section 41 Passenger/Crew Entry Door Surround Structure Allowable Damage
Figure 101



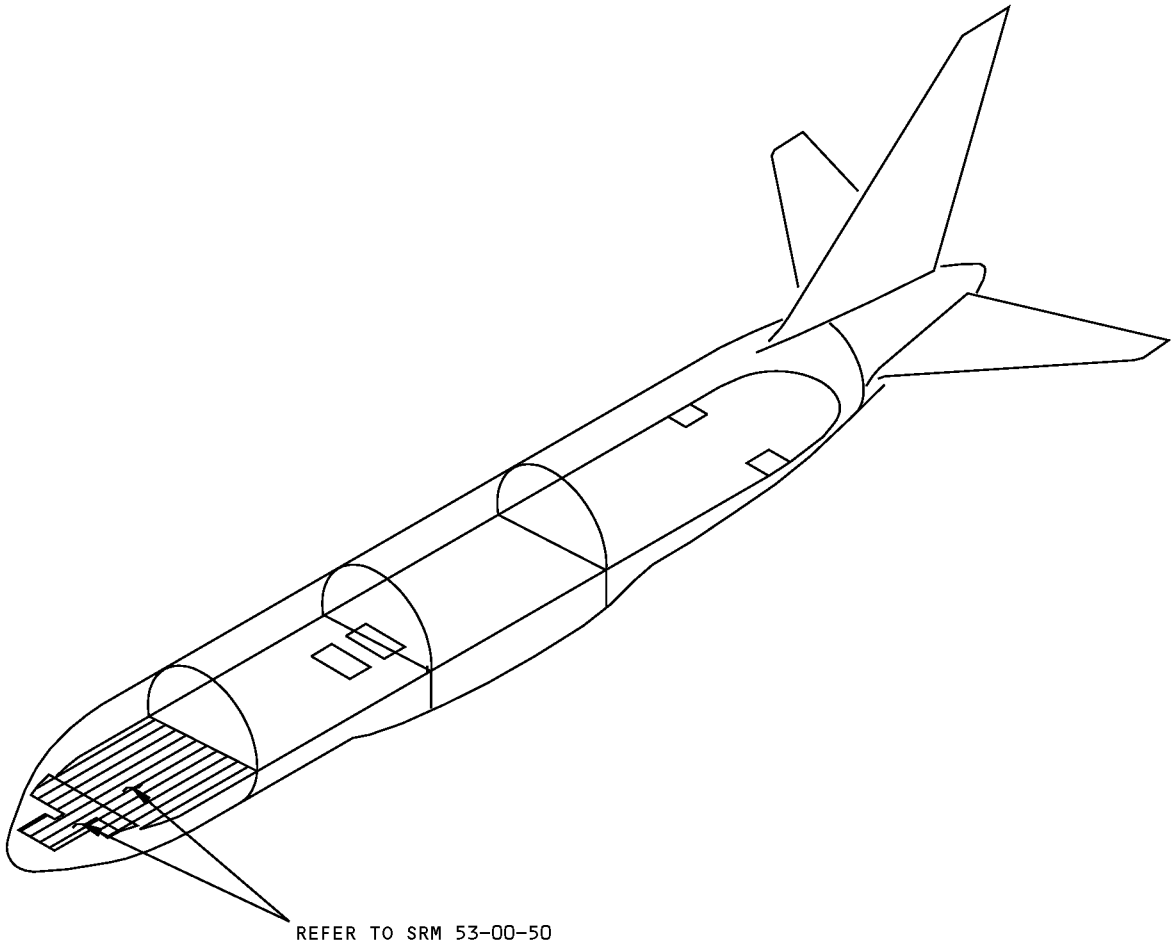
Section 41 Passenger/Crew Entry Door Surround Structure Repair
Figure 201

IDENTIFICATION 1 - SECTION 41 MAIN DECK FLOOR PANEL



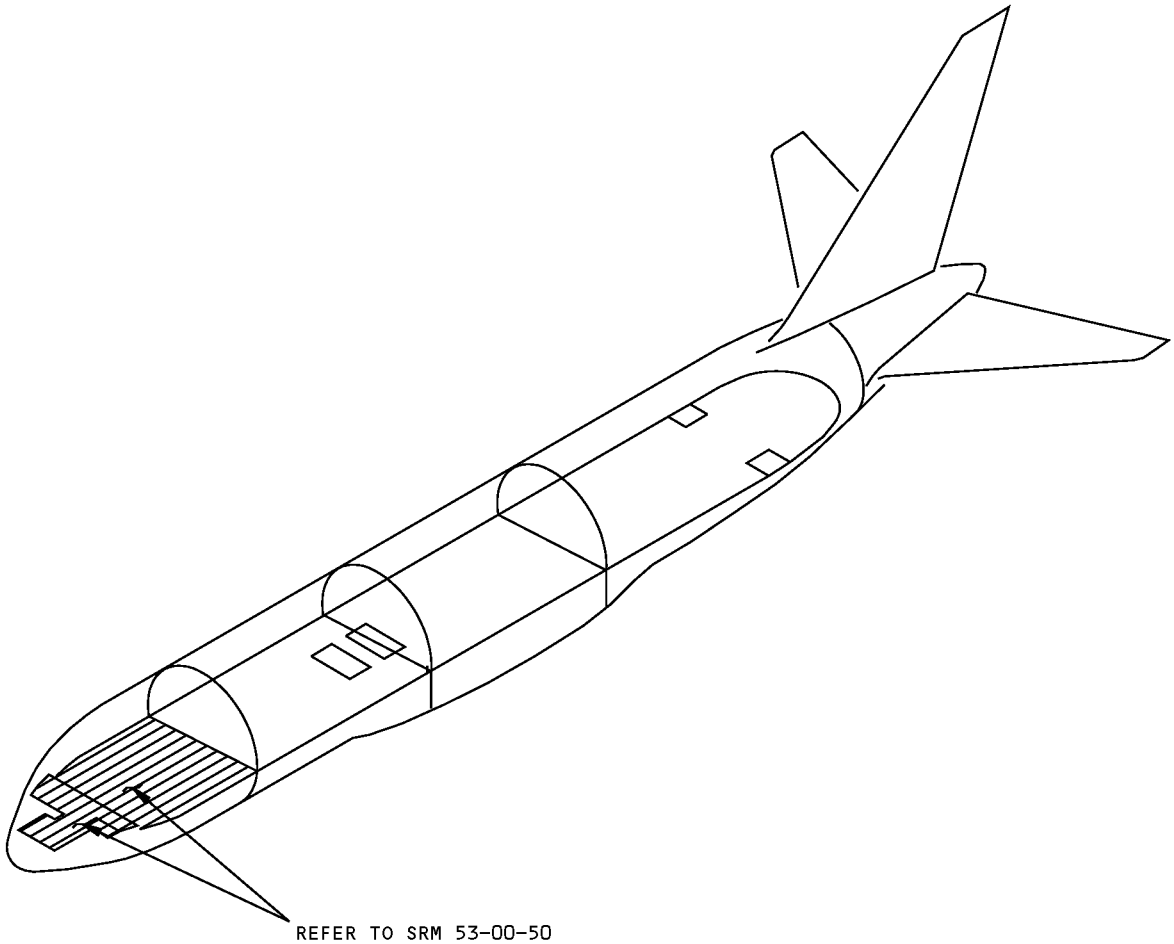
Section 41 Main Deck Floor Panel Identification
Figure 1

ALLOWABLE DAMAGE 1 - SECTION 41 MAIN DECK FLOOR PANEL



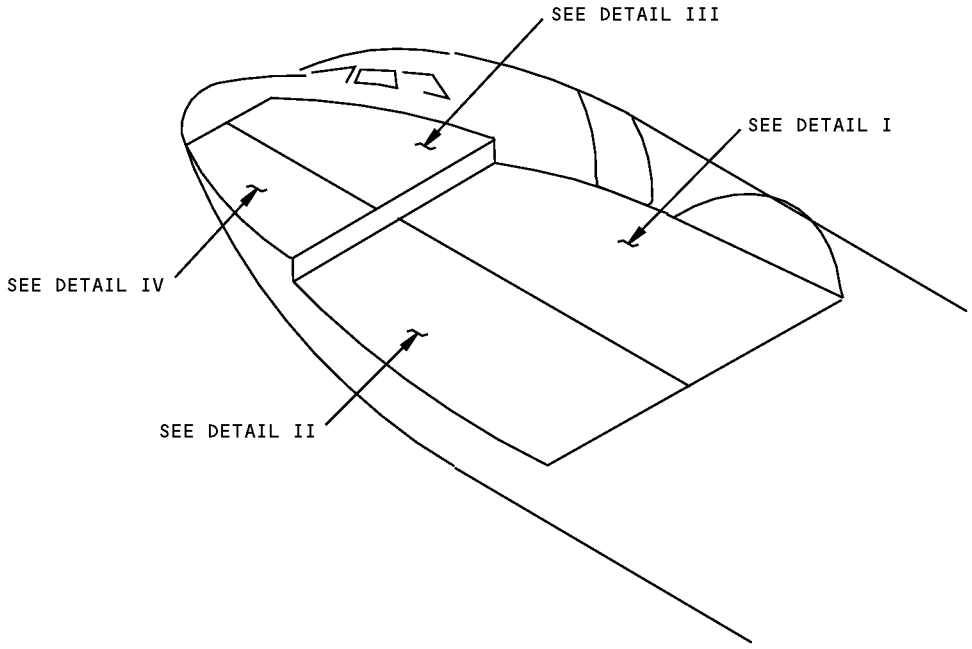
Section 41 Main Deck Floor Panel Allowable Damage
Figure 101

REPAIR 1 - SECTION 41 MAIN DECK FLOOR PANEL



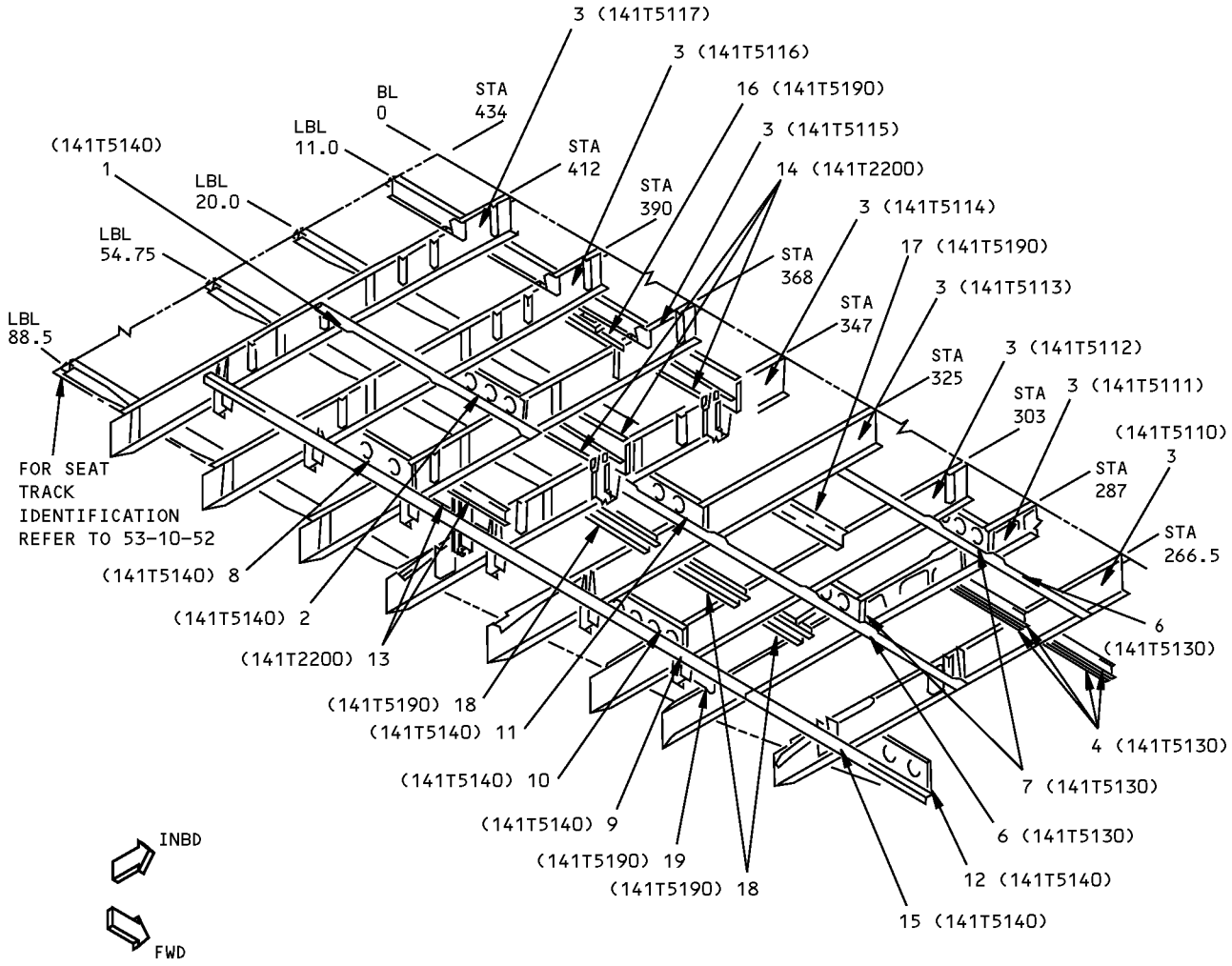
Section 41 Main Deck Floor Panel Repair
Figure 201

IDENTIFICATION 1 - SECTION 41 MAIN DECK FLOOR STRUCTURE



Section 41 Main Deck Floor Structure Identification
Figure 1 (Sheet 1 of 9)

REF DWG
141T0200



LEFT SIDE STA 246 TO STA 434
DETAIL I

LIST OF MATL

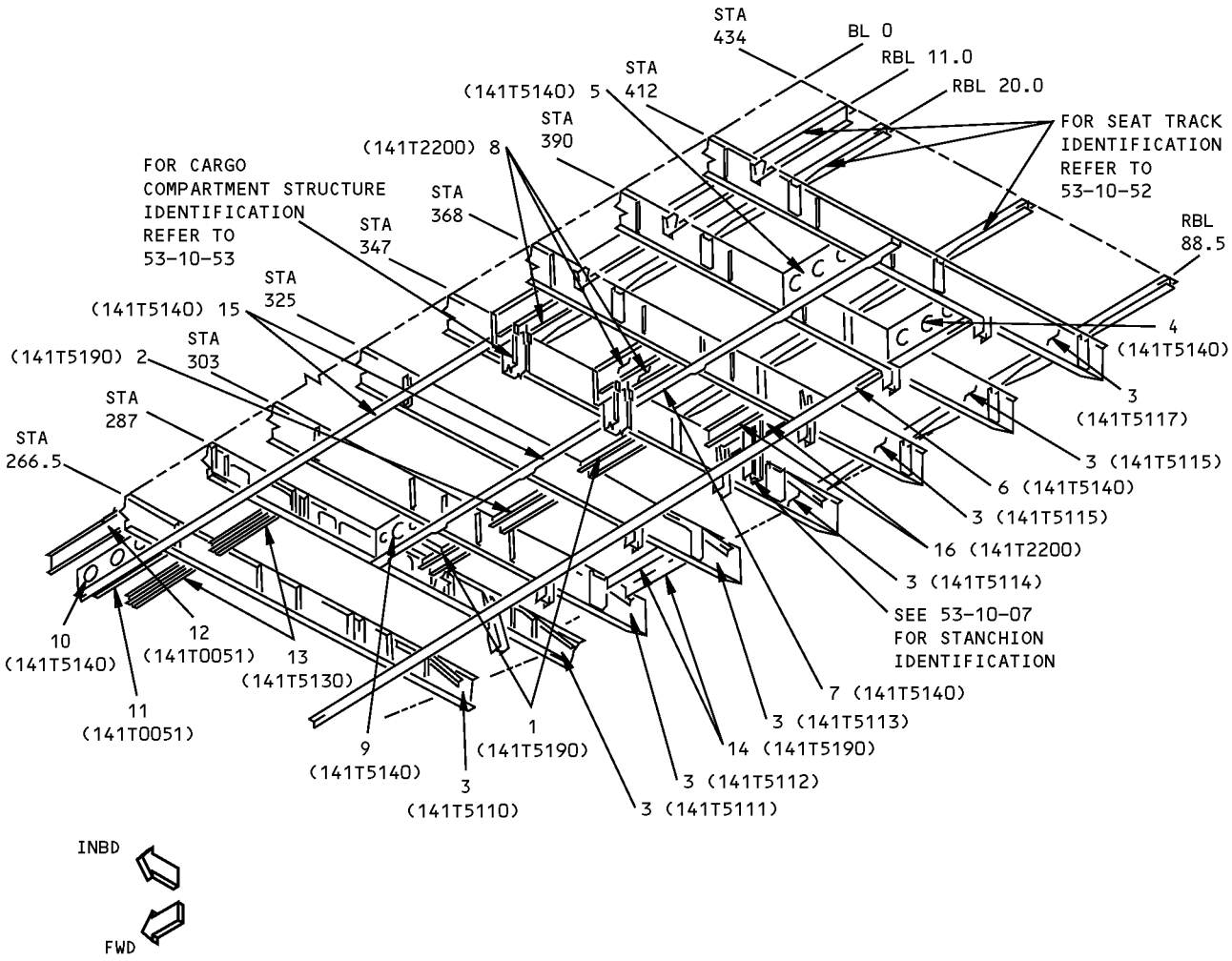
Section 41 Main Deck Floor Structure Identification
Figure 1 (Sheet 2 of 9)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	CHANNEL		BAC1493-577 7075-T6	
2	BEAM ASSY			
	UPPER CAP		BAC1490-2843 CLAD 7075-T6	
	WEB	0.025	CLAD 7075-T6	
	LOWER CAP		BAC1490-2639 CLAD 7075-T6	
3	BEAM		BAC1506-3116 7075-T6511	
4	CHANNEL	0.080	CLAD 7075-T6	
5	BEAM ASSY			
	UPPER CAP		BAC1503-100054 7075-T6511	
	WEB	0.025	CLAD 7075-T6	
	LOWER CAP		BAC1503-100131 7075-T6511	
6	ANGLE		AND10133-1401 7075-T6511	
7	BEAM ASSY			
	UPPER CAP		BAC1490-2843 CLAD 7075-T6	
	WEB	0.025	CLAD 7075-T6	
	LOWER CAP		BAC1490-2782 CLAD 7075-T6	
8	BEAM ASSY			
	UPPER CAP		BAC1490-2843 CLAD 7075-T6	
	WEB	0.025	CLAD 7075-T6	
9	ANGLE		BAC1490-2595 CLAD 7075-T6	
10	WEB	0.032	CLAD 7075-T6	
11	BEAM ASSY			
	ANGLE (UPPER)		BAC1490-2640 CLAD 7075-T6	
	WEB	0.025	CLAD 7075-T6	
	ANGLE (LOWER)		BAC1490-2782 CLAD 7075-T6	
12	BEAM ASSY			
	UPPER CAP	0.040	TI-6AL-4V	
	WEB	0.020	TI-6AL-4V	
13	INTERCOSTAL		BAC1493-534 CLAD 7075-T6	
14	SUPPORT CHANNEL		BAC1493-534 CLAD 7075-T6	
15	ANGLE	0.036	TI-6AL-4V	
16	SUPPORT ANGLE		BAC1490-2690 CLAD 7075-T6	
17	TEE SUPPORT		BAC1506-523 7075-T6511	
18	SUPPORT	0.032	TI-6AL-4V	
19	SUPPORT ANGLE		BAC1490-2844 CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL I

Section 41 Main Deck Floor Structure Identification
Figure 1 (Sheet 3 of 9)

REF DWG
141T0200



RIGHT SIDE STA 246-STA 434
DETAIL II

LIST OF MATL

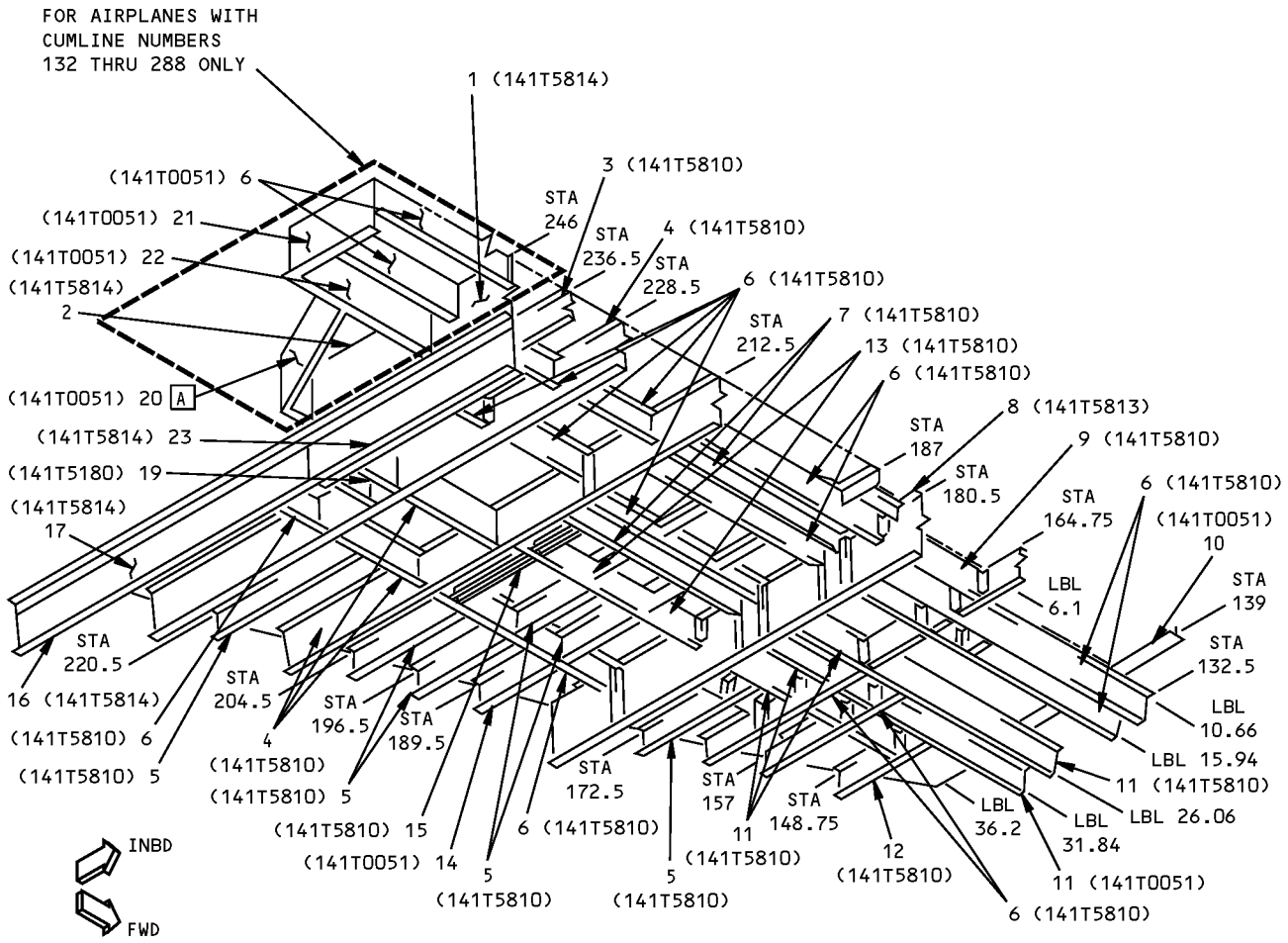
Section 41 Main Deck Floor Structure Identification
Figure 1 (Sheet 4 of 9)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SUPPORT	0.032	TI-6AL-4V	
2	SUPPORT	0.032	TI-6AL-4V	
3	BEAM		BAC1506-3116 7075-T6511	
4	BEAM ASSY			
	UPPER CAP		BAC1490-2583 CLAD 7075-T62	
	WEB	0.032	CLAD 7075-T6	
5	BEAM ASSY			
	UPPER CAP		BAC1490-2843 CLAD 7075-T6	
	WEB	0.025	CLAD 7075-T6	
	LOWER CAP		BAC1490-2843 CLAD 7075-T6	
6	ANGLE		BAC1490-2595 CLAD 7075-T6	
7	CHANNEL		BAC1493-577 7075-T6	
8	SUPPORT CHANNEL		BAC1493-534 CLAD 7075-T6	
9	BEAM ASSY			
	UPPER CAP		BAC1490-2843 CLAD 7075-T6	
	WEB	0.025	CLAD 7075-T6	
	LOWER CAP		BAC1490-2782 CLAD 7075-T6	
10	BEAM ASSY			
	UPR CHORD	0.050	CLAD 7075-T6	
	WEB	0.025	CLAD 7075-T6	
	LOWER CAP		BAC1490-2639 CLAD 7075-T6	
11	BEAM ASSY			
	UPPER CAP		BAC1503-100131 7075-T6511	
	WEB	0.025	CLAD 7075-T6	
	LOWER CAP		BAC1505-100954 7075-T6511	
12	FLOOR BEAM		BAC1506-1691 7075-T6511	
13	CHANNEL	0.063	TI-6AL-4V	
14	SUPPORT ANGLE		BAC1490-2779 CLAD 7075-T6	
15	CHANNEL		BAC1493-577 7075-T6	
16	INTERCOSTAL		BAC1493-534 CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL II

Section 41 Main Deck Floor Structure Identification
Figure 1 (Sheet 5 of 9)

REF DWG
141T5810



LEFT SIDE STA 132.5-STA 246
DETAIL III

LIST OF MATL

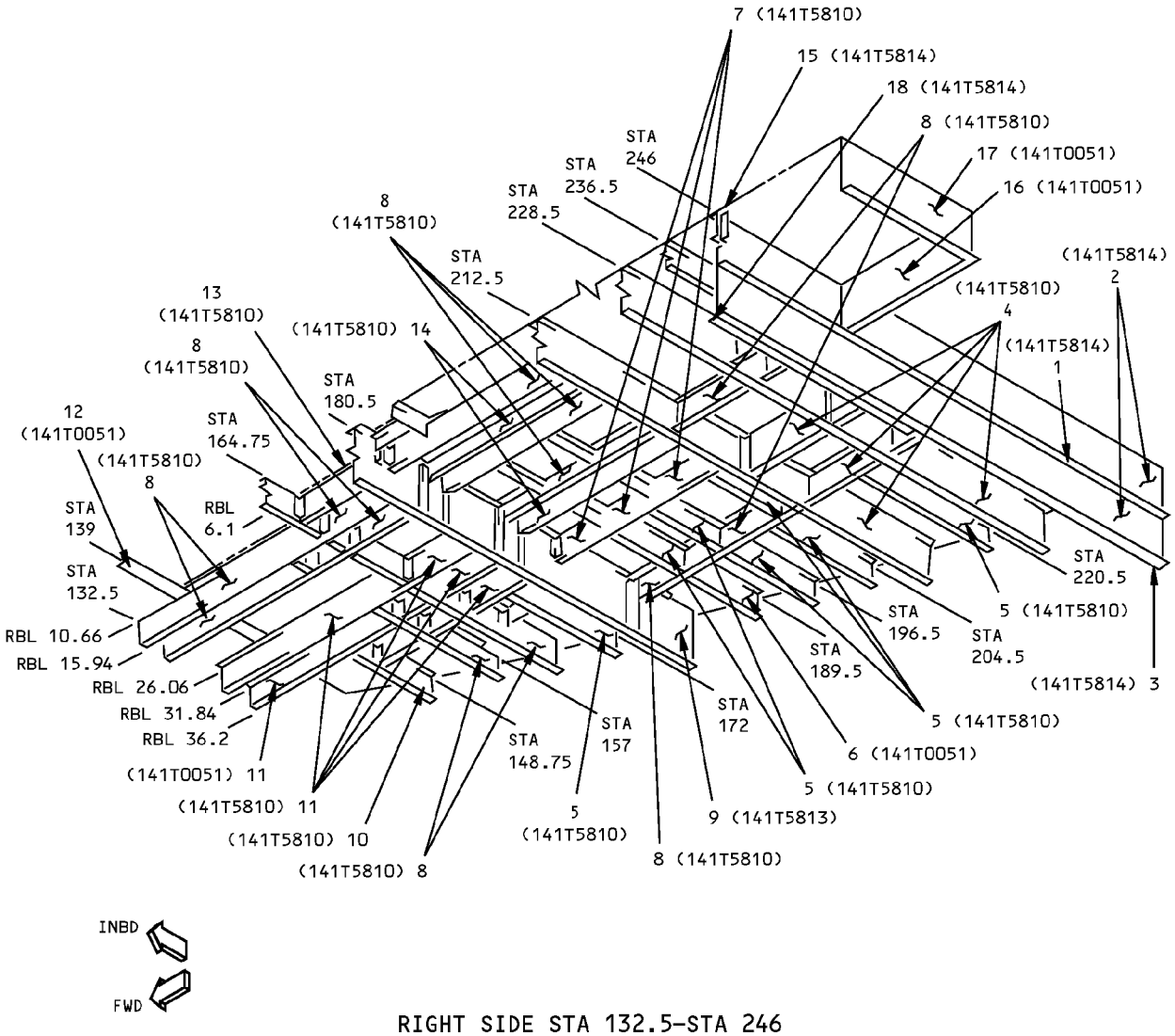
Section 41 Main Deck Floor Structure Identification
Figure 1 (Sheet 6 of 9)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	WEB	0.025	CLAD 7075-T6	
2	UPPER CHORD		BAC1505-100252 7075-T6511	
3	FLOOR BEAM	0.080	CLAD 7075-T6	
4	FLOOR BEAM		BAC1506-3121 7075-T6511	
5	FLOOR BEAM		BAC1493-697 CLAD 7075-T6	
6	FLOOR BEAM		BAC1506-1691 7075-T6511	
7	SEAT TRACK SUPPORT		BAC1518-209 7075-T6511	
8	BEAM ASSY UPPER CHORD WEB LOWER CHORD	 0.025 	 AND10136-2005 7075-T6511 CLAD 7075-T6 AND10134-1205 7075-T6511	
9	FLOOR BEAM		BAC1493-698 CLAD 7075-T6	
10	TEE		AND10136-2001 7075-T6511	
11	FLOOR BEAM		BAC1509-100015 7075-T6511	
12	FLOOR BEAM		BAC1493-694 CLAD 7075-T6	
13	BEAM ASSY UPPER CHORD WEB LOWER CHORD	 0.063 	 BAC1505-100954 7075-T6511 CLAD 7075-T6 AND10133-1001 7075-T6511	
14	BEAM	0.063	CLAD 7075-T6	
15	SEAT SUPPORT	0.063	CLAD 7075-T6	
16	LOWER CHORD		BAC1503-100028 7075-T6511	
17	WEB	0.040	CLAD 7075-T6	
18	MID CHORD		BAC1505-100954 7075-T6511	
19	BEAM UPPER CHORD WEB LOWER CHORD	 0.080	 AND10136-2404 7075-T6511 CLAD 7075-T6 BAC1503-3373 7075-T6511	
20	BEAM ASSY UPPER CAP WEB LOWER CAP	 0.050 	 BAC1503-100054 7075-T6511 CLAD 7075-T6 AND10133-1201 7075-T6511	
21	BEAM ASSY UPPER CAP WEB LOWER CAP	 0.025 	 BAC1503-100054 7075-T6511 CLAD 7075-T6 BAC1503-100131 7075-T6511	
22	BEAM ASSY UPPER CAP WEB LOWER CAP	 0.050 	 BAC1503-100131 7075-T6511 CLAD 7075-T6 BAC1505-100954 7075-T6511	
23	SUPPORT		BAC1503-2743 7075-T6511	

LIST OF MATERIALS FOR DETAIL III

Section 41 Main Deck Floor Structure Identification
Figure 1 (Sheet 7 of 9)

REF DWG
141T5810



RIGHT SIDE STA 132.5–STA 246

DETAIL IV

LIST OF MATL

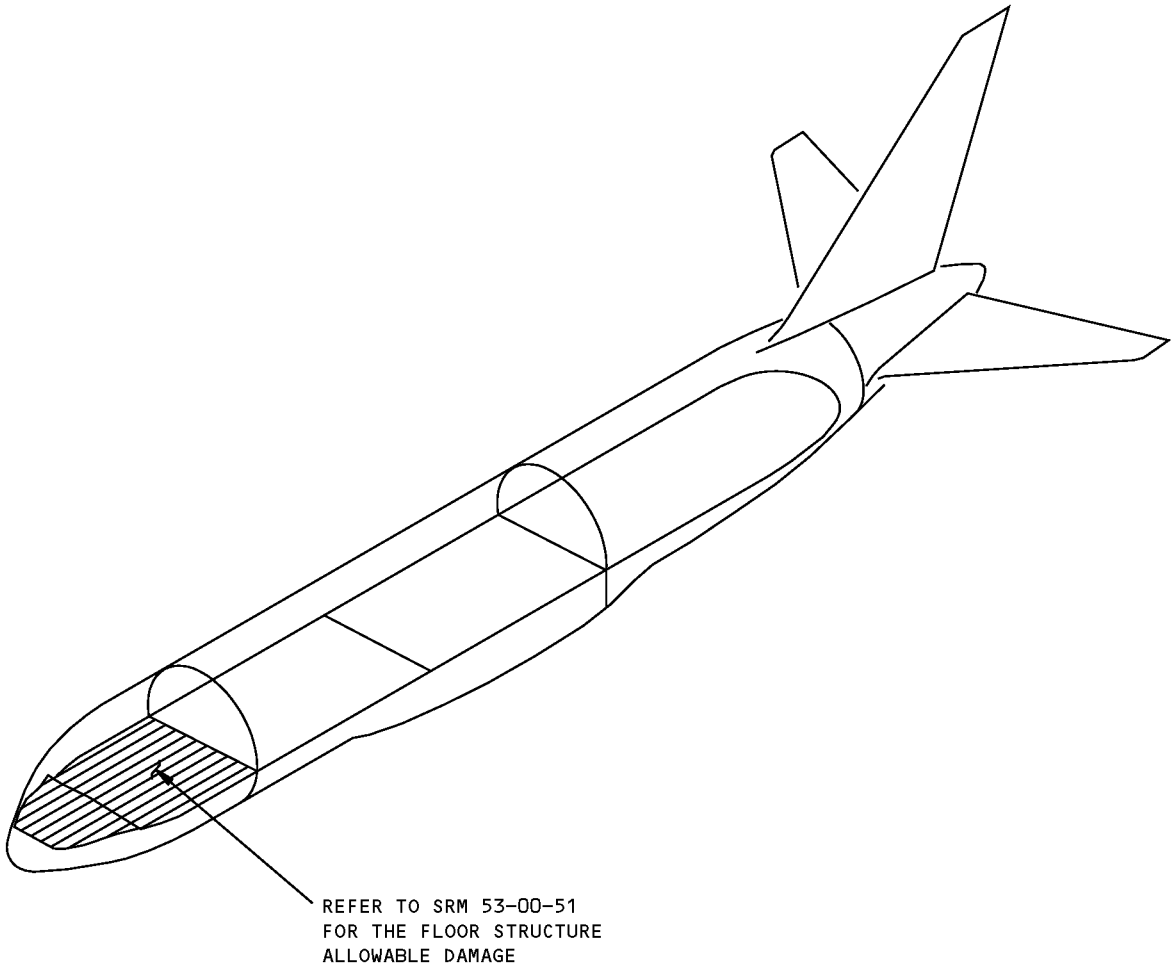
Section 41 Main Deck Floor Structure Identification
Figure 1 (Sheet 8 of 9)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	MID CHORD		BAC1505-100954 7075-T6511	
2	WEB	0.025	CLAD 7075-T6	
3	LOWER CHORD		BAC1503-100028 7075-T6511	
4	FLOOR BEAM		BAC1506-3121 7075-T6511	
5	FLOOR BEAM		BAC1493-697 CLAD 7075-T6	
6	BEAM	0.063	CLAD 7075-T6	
7	BEAM ASSY			
	UPPER CHORD		BAC1505-100954 7075-T6511	
	SHEAR WEB	0.063	CLAD 7075-T6	
	LOWER CHORD		AND10133-1001 7075-T6511	
8	FLOOR BEAM		BAC1506-1691 7075-T6511	
9	BEAM ASSY			
	UPPER CHORD		AND10136-2005 7075-T6511	
	WEB	0.025	CLAD 7075-T6	
	LOWER CHORD		AND10134-1205 7075-T6511	
10	FLOOR BEAM		BAC1493-694 CLAD 7075-T6	
11	FLOOR BEAM		BAC1509-100015 7075-T6511	
12	TEE		AND10136-2001 7075-T6511	
13	FLOOR BEAM		BAC1493-698 CLAD 7075-T6	
14	SEAT TRACK SUPPORT		BAC1518-209 7075-T6511	
15	UPPER CHORD		BAC1505-100252 7075-T6511	
16	INTERCOSTAL			
	UPPER CAP		BAC1503-100131 7075-T6511	
	WEB	0.025	CLAD 7075-T6	
	LOWER CAP		BAC1505-100954 7075-T6511	
17	FLOOR BEAM			
	UPPER CAP		BAC1505-100054 7075-T6511	
	WEB	0.050	CLAD 7075-T6	
	LOWER CAP		BAC1505-100252 7075-T6511	
18	SUPPORT		BAC1503-2743 7075-T6511	

LIST OF MATERIALS FOR DETAIL IV

Section 41 Main Deck Floor Structure Identification
Figure 1 (Sheet 9 of 9)

ALLOWABLE DAMAGE 1 - SECTION 41 FLOOR STRUCTURE



Section 41 Floor Structure Allowable Damage
Figure 101

REPAIR 1 - SECTION 41 FLOOR STRUCTURE STABILIZER STRAP CRACK

REPAIR INSTRUCTIONS

1. Remove the fasteners in the repair area that attach the stabilizer strap to the floor beam.
2. Drill a 0.25 inch diameter stop hole in the stabilizer strap at each end of the crack that does not end at an edge.
3. Make the part 1 plate. See Table I. See Details I and II for a repair at a floor beam near the end of a stabilizer strap. See Detail III for a repair at a floor beam location between the ends of a stabilizer strap.
4. Put the part 1 plate on the stabilizer strap and drill the fastener holes. Keep a 0.38 inch minimum edge margin between:
   - The fastener holes and the edges of the part 1 plate
   - The fastener holes and the nearer of the crack and the crack stop holes.
5. Remove the part 1 plate.
6. Remove the nicks, scratches, gouges, burrs, and sharp edges from the stabilizer strap and the part 1 plate.
7. Apply a chemical conversion coating to the part 1 plate and the bare edges of the crack in the stabilizer strap. Refer to SRM 51-20-01.
8. Apply two layers of BMS 10-11, Type I primer to the part 1 plate and the bare edges of the stabilizer strap. Refer to SOPM 20-41-02.
9. Install the part 1 plate with BMS 5-95 sealant between the mating surfaces. Refer to SRM 51-20-05.
10. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant. Refer to SRM 51-20-05.
11. Apply two layers of BMS 10-60, Type II enamel to the repair area. Refer to AMM 51-21.

NOTES

- ALL DIMENSIONS ARE IN INCHES UNLESS GIVEN DIFFERENTLY.
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - SOPM 20-41-02 FOR THE APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS.

[A] KEEP AN EDGE MARGIN OF 2D MINIMUM BETWEEN:
- THE REPAIR FASTENERS AND THE CRACK
- THE REPAIR FASTENERS AND THE STOP DRILL HOLE.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION.

INITIAL FASTENER LOCATION. INSTALL A BACR15FT6KE()C RIVET.

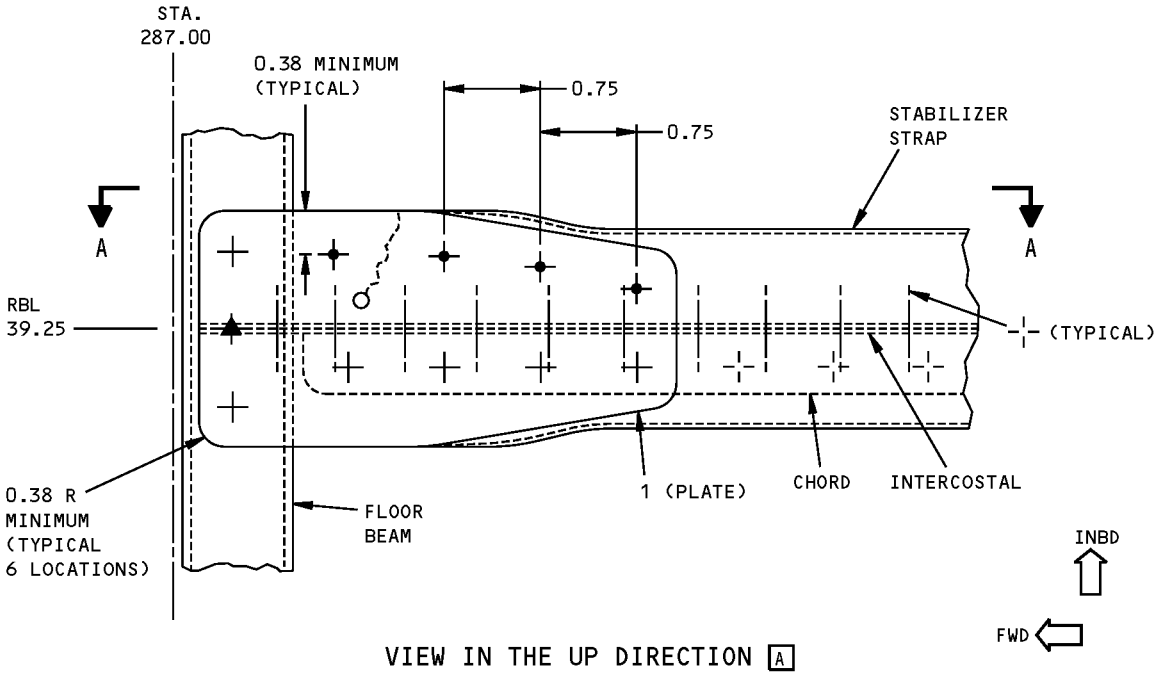
INITIAL FASTENER LOCATION. INSTALL A NAS1398D6 BLIND RIVET.

REPAIR FASTENER LOCATION. INSTALL A BACR15FT6KE()C RIVET.

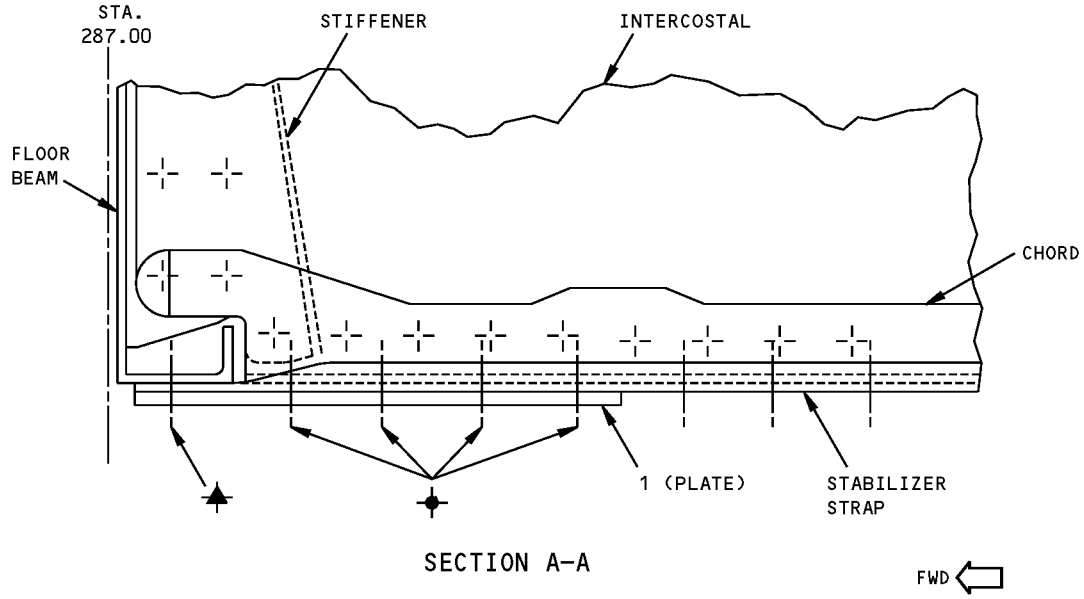
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	1	0.040 2024-T3, WIDTH 2.4 INCHES, LENGTH AND SHAPE AS NECESSARY

TABLE I

Section 41 Floor Structure Stabilizer Strap Crack Repair
Figure 201 (Sheet 1 of 4)



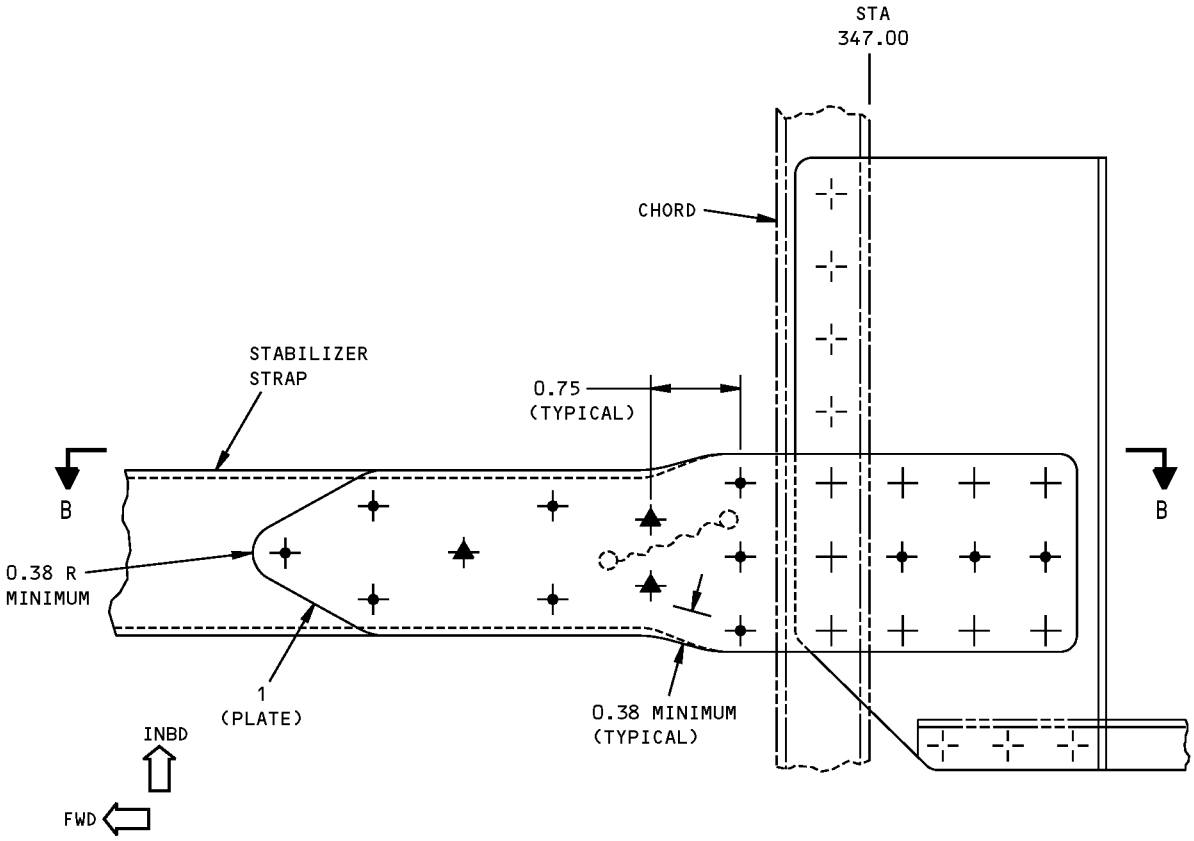
VIEW IN THE UP DIRECTION [A]



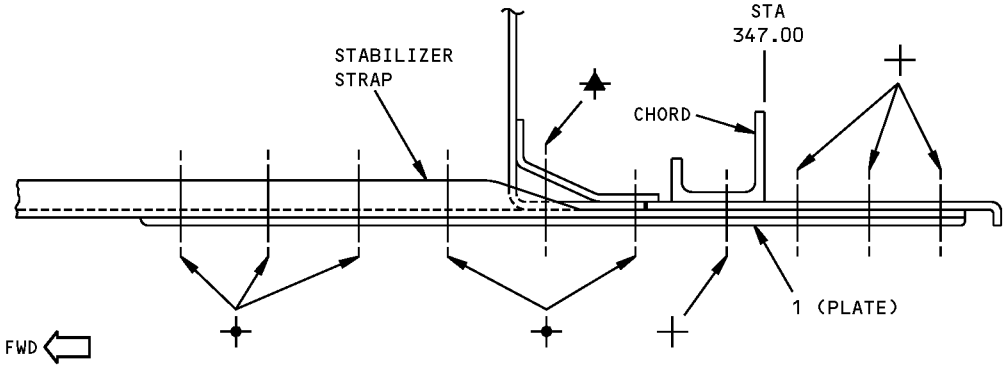
SECTION A–A

DETAIL I

Section 41 Floor Structure Stabilizer Strap Crack Repair
Figure 201 (Sheet 2 of 4)



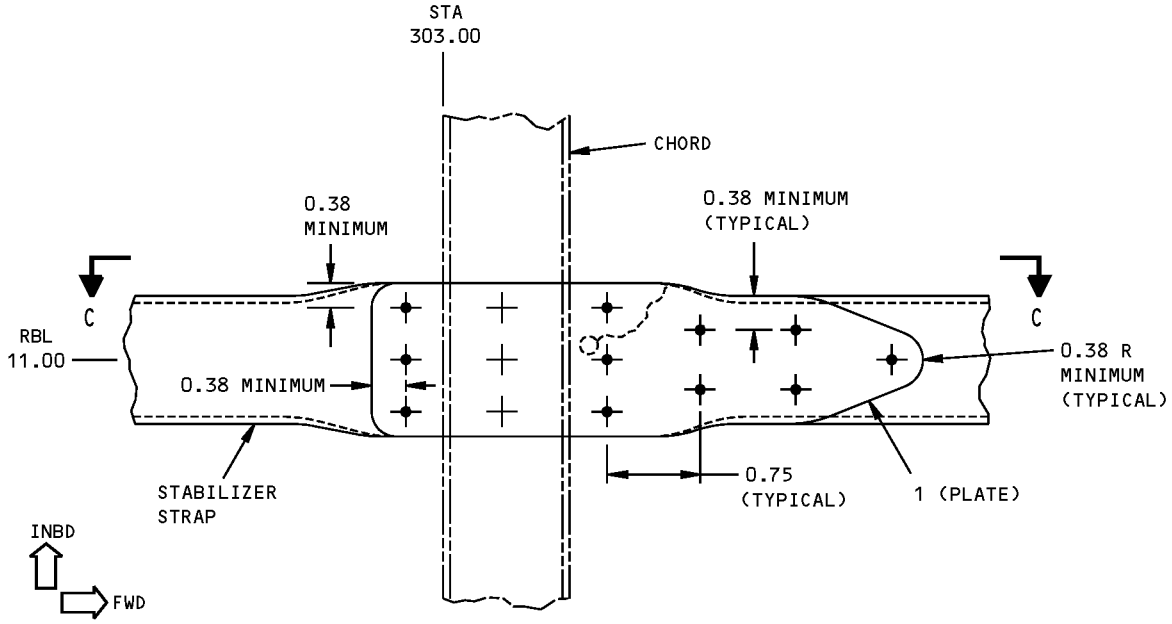
VIEW IN THE UP DIRECTION [A]



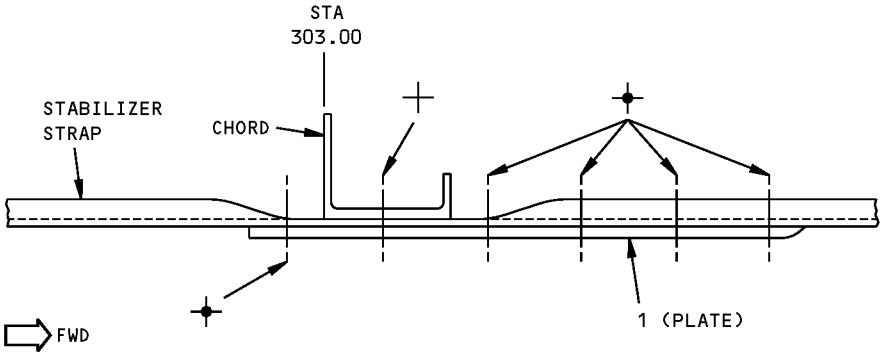
SECTION B–B

DETAIL II

Section 41 Floor Structure Stabilizer Strap Crack Repair
Figure 201 (Sheet 3 of 4)



VIEW IN THE UP DIRECTION [A]



SECTION C-C

DETAIL III

Section 41 Floor Structure Stabilizer Strap Crack Repair
Figure 201 (Sheet 4 of 4)

REPAIR 2 - SECTION 41 - STATION 246 FLOOR BEAM MID CHORD

REPAIR INSTRUCTIONS

NOTE: When you gain access to do this repair, you can also do the repairs in Repair 3, 4 and 5.

NOTE: DO NOT REMOVE THE CLIP FROM THE CONTROL CABLE SUPPORT UNLESS THE CLIP IS DAMAGED.

1. Get access to the damaged area. Remove the clips that attach to the STA 246 beam as necessary, so that the damage can be removed and the repair parts installed.
2. Cut and remove the damaged part of the chord. For mid chord repair at LBL 40.0, refer to Detail II. For mid chord repair at other locations, refer to Details III and IV.
3. Do a high frequency eddy current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-00-01.
4. Make the repair parts. See Table I. Make sure the contours of the repair parts are the same as the initial parts.
5. Assemble the repair parts and clips and drill the fastener holes. Use shims to make the clearance between the parts 0.010 inch or less before you install the fasteners.
6. Disassemble the repair parts.
7. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the chord.
8. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the chord. Refer to SRM 51-20-01.
9. Apply two layers of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the chord. Refer to SOPM 20-41-02.
10. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
11. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.

NOTES

- THIS REPAIR IS A CATEGORY 'A' REPAIR. REFER TO SRM 51-00-06 FOR THE DEFINITION OF THE DIFFERENT CATEGORIES OF REPAIR.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS.
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS.

[A] AT INITIAL FLOOR PANEL LOCATIONS, INSTALL SAME SIZE AND TYPE FASTENER. DO NOT USE THE FLOOR PANEL FASTENER LOCATIONS FOR THE REPAIR FASTENERS.

[B] USE ONE PART 3 ANGLE AND ONE PART 4 ANGLE FOR THE ONE-FLANGE MID CHORD REPAIR. SEE DETAIL III. USE PART 3 AND PART 4 ANGLES AND PART 7 AND PART 8 STRAPS FOR THE TWO-FLANGE MID CHORD REPAIR. SEE DETAIL IV.

[C] THE SHIM THICKNESS SHOULD BE EQUAL TO THE AMOUNT NECESSARY TO LIMIT THE PART PULL-UP TO 0.010 INCH (0.25 mm) MAXIMUM.

[D] A MINIMUM OF 5 FASTENERS MUST BE INSTALLED ON EACH SIDE OF THE REPAIR CUTOUT FOR ANGLE 3 AND STRAP 7. A MINIMUM OF 6 FASTENERS MUST BE INSTALLED ON EACH SIDE OF THE REPAIR CUTOUT FOR ANGLE 4 AND STRAP 8.

[E] THE END OF THE REPAIR ANGLES MUST EXTEND BY AT LEAST ONE FASTENER BEYOND THE STIFFENER OR CLIP LOCATION.

Section 41 - Station 246 Floor Beam Mid Chord Repair
Figure 201 (Sheet 1 of 7)

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION.

INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K() HEX-DRIVE BOLT WITH A BACC30M6 COLLAR. [A]

INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX-DRIVE BOLT WITH A BACC30M6 COLLAR.

INITIAL FASTENER LOCATION. INSTALL THE SAME DIAMETER AND TYPE FLOOR PANEL FASTENER AS THE INITIAL FASTENER.

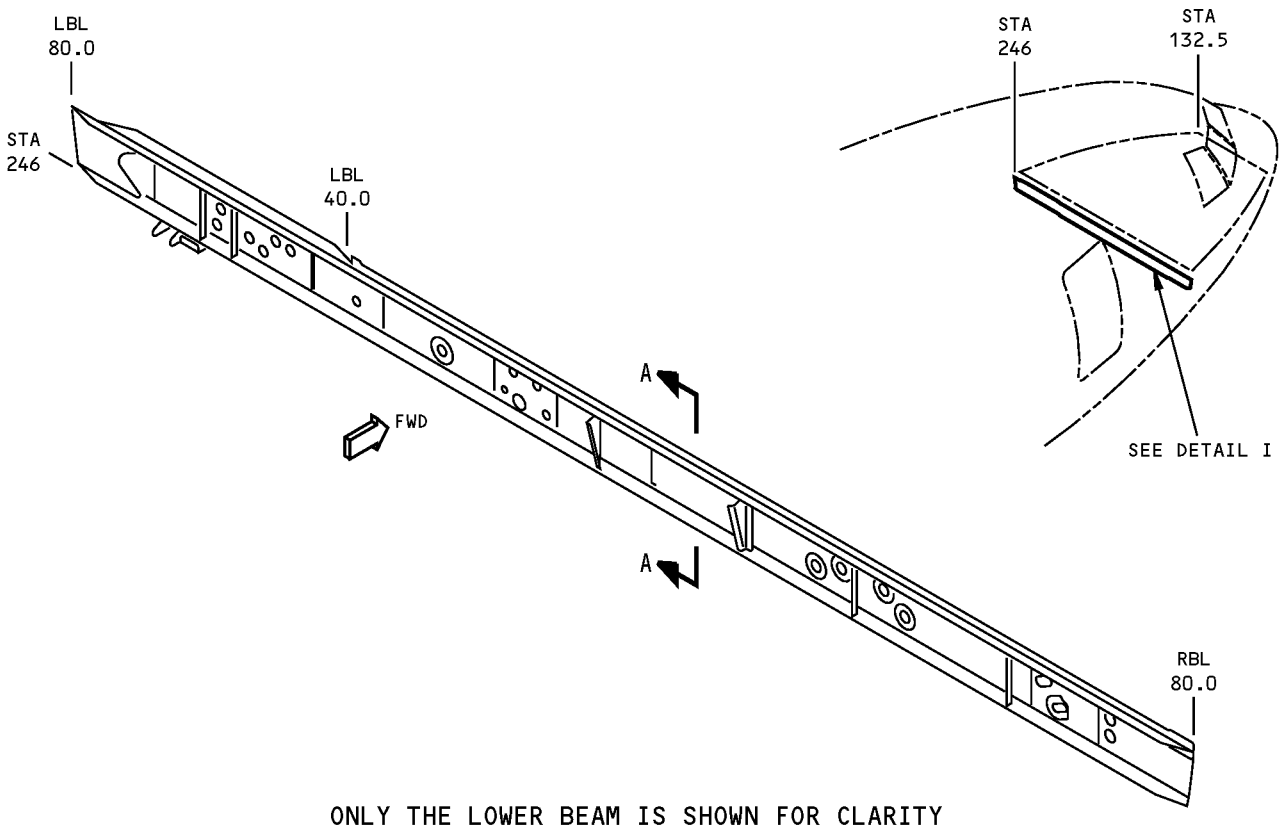
INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX-DRIVE BOLT WITH A BACC30M6 COLLAR AT THE INITIAL HEX-DRIVE BOLT LOCATIONS. INSTALL A BACB30MY6K()Y HEX-DRIVE BOLT WITH A BACC30R6 COLLAR AT THE INITIAL RIVET LOCATIONS.

INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K() HEX-DRIVE BOLT WITH A BACC30M6 COLLAR.

REPAIR MATERIAL			
PART NO.	PART	QUANTITY	MATERIAL
1	ANGLE	1	0.080 7075-T6 OR 7075-T73 CLAD
2	FILLER	AS REQUIRED	0.063 7075-T6 CLAD
3	ANGLE	[B]	0.050 7075-T6 CLAD
4	ANGLE	[B]	0.050 7075-T6 CLAD
5	SHIM	1	7075-T6 CLAD SHEET [C]
6	FILLER	1	7075-T6511, BAC1505-100954 EXTRUSION
7	STRAP	1	0.050 INCH 7075-T6 CLAD SHEET
8	STRAP	1	0.050 INCH 7075-T6 CLAD SHEET

TABLE I

Section 41 - Station 246 Floor Beam Mid Chord Repair
Figure 201 (Sheet 2 of 7)



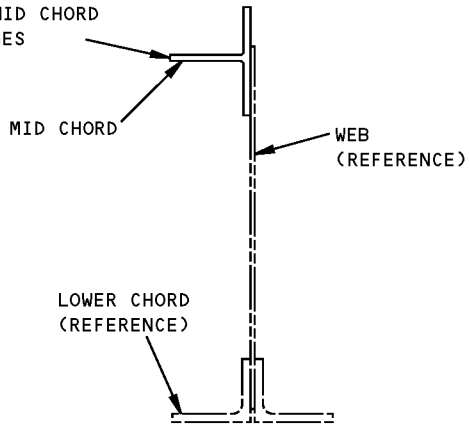
ONLY THE LOWER BEAM IS SHOWN FOR CLARITY

STATION 246 CAB FLOOR STRUCTURE
DETAIL I

SEE DETAIL II FOR REPAIR OF
LBL 40.0 FLOOR BEAM MID CHORD.

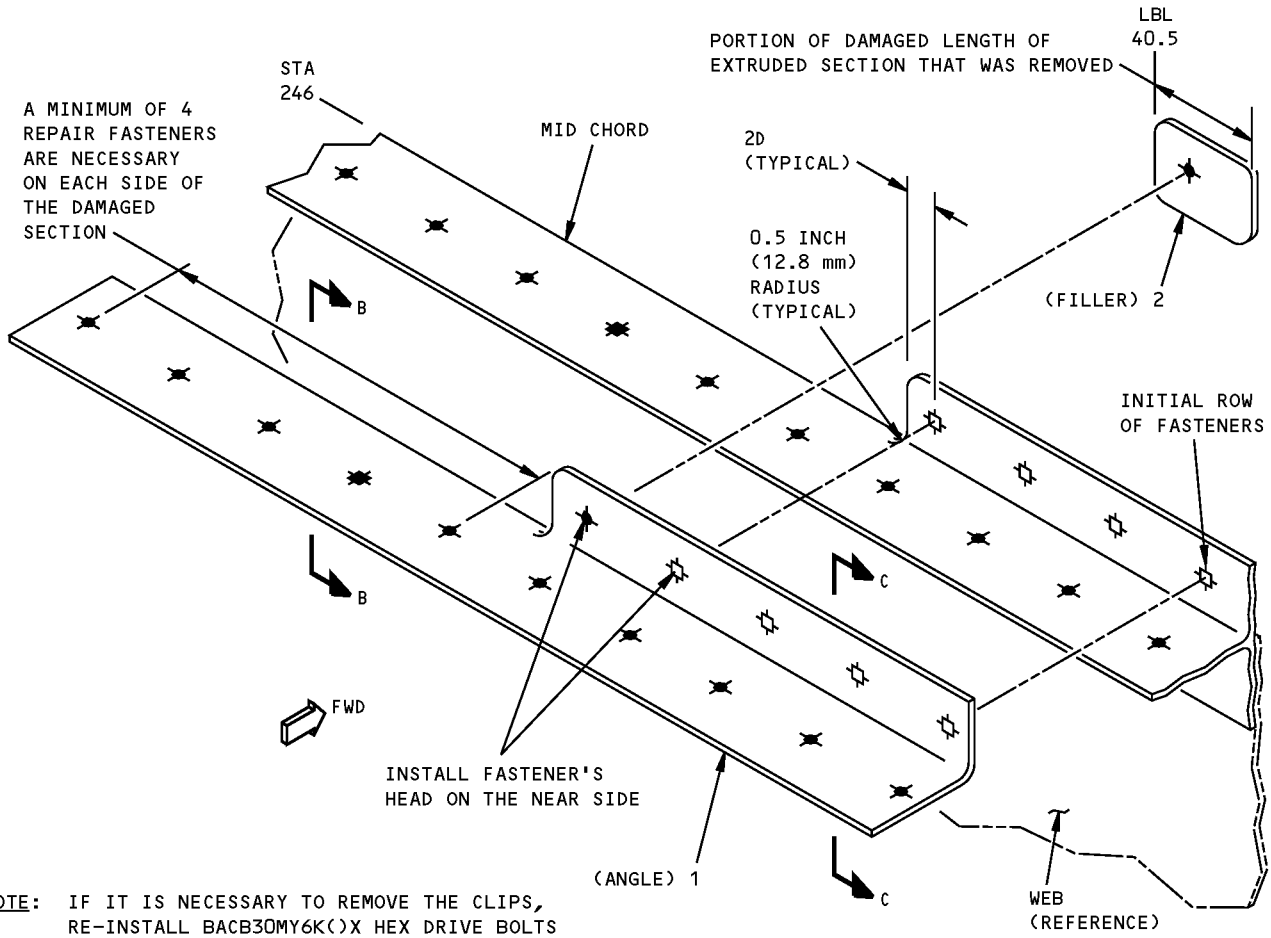
SEE DETAIL III FOR MID CHORD
REPAIR TO ONE FLANGE.

SEE DETAIL IV FOR MID CHORD
REPAIR TO TWO FLANGES



SECTION A-A

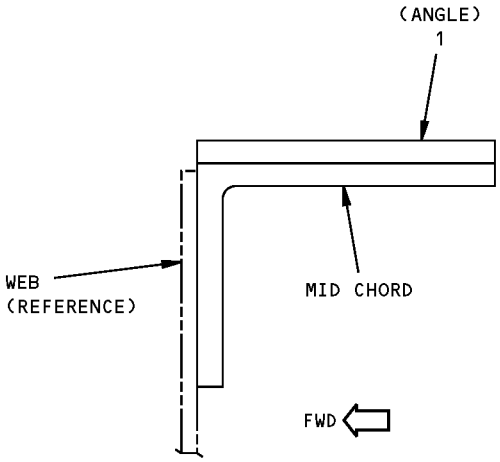
Section 41 - Station 246 Floor Beam Mid Chord Repair
Figure 201 (Sheet 3 of 7)



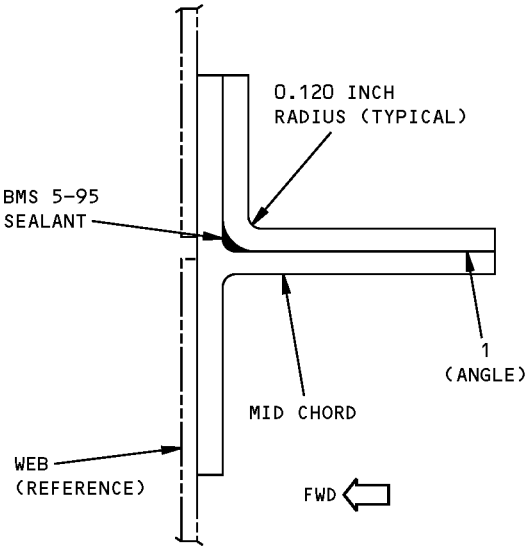
NOTE: IF IT IS NECESSARY TO REMOVE THE CLIPS, RE-INSTALL BACB30MY6K()X HEX DRIVE BOLTS WITH A BACC30M6 COLLAR AT INITIAL HEX DRIVE BOLT LOCATIONS. RE-INSTALL BACR15FT6D() RIVETS AT INITIAL RIVET LOCATIONS. AS AN ALTERNATIVE YOU CAN INSTALL BACB30VT6K() HEX DRIVE BOLTS WITH BACC30BL6 COLLARS IF NECESSARY FOR ACCESS AT INITIAL RIVET LOCATIONS.

STA 246 LBL 40.0 FLOOR BEAM MID CHORD REPAIR
DETAIL II

Section 41 - Station 246 Floor Beam Mid Chord Repair
Figure 201 (Sheet 4 of 7)

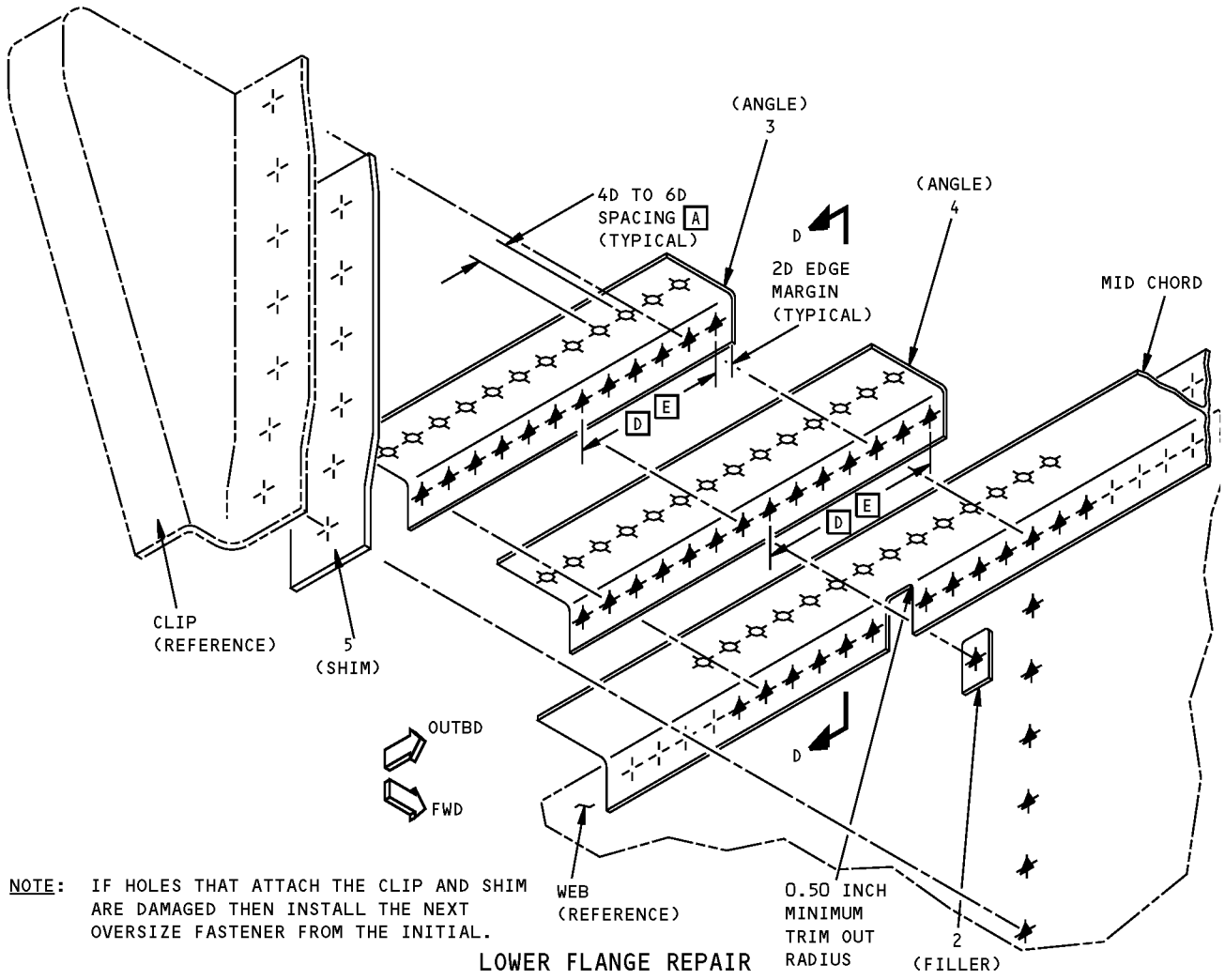


SECTION B-B



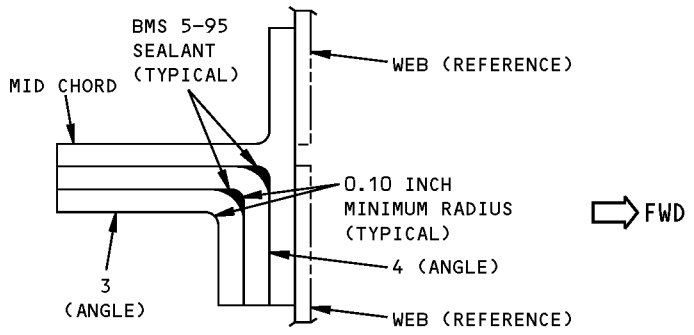
SECTION C-C

Section 41 - Station 246 Floor Beam Mid Chord Repair
Figure 201 (Sheet 5 of 7)



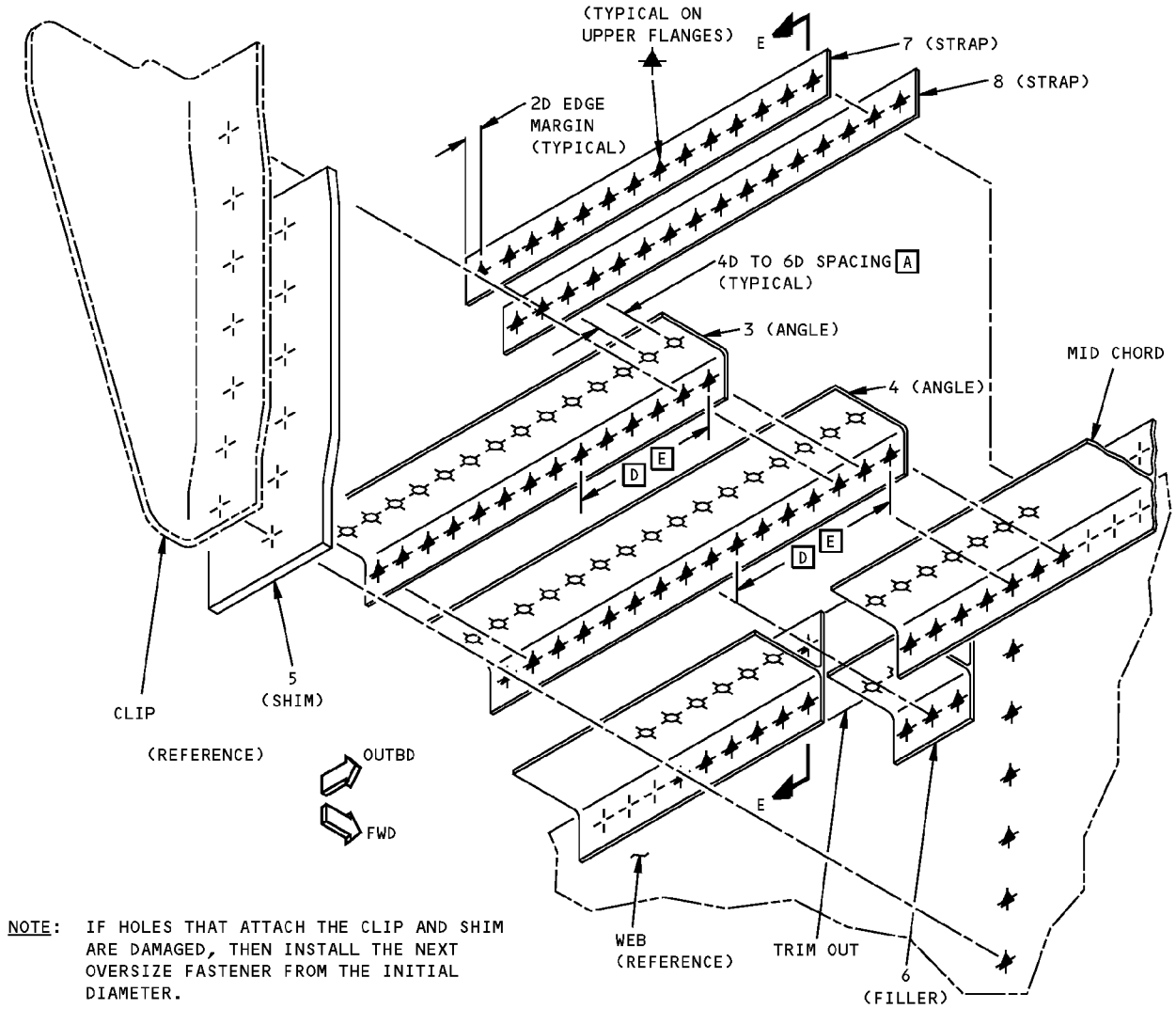
LOWER FLANGE REPAIR

STATION 246 PASSENGER FLOOR MID CHORD REPAIR TO ONE FLANGE
DETAIL III

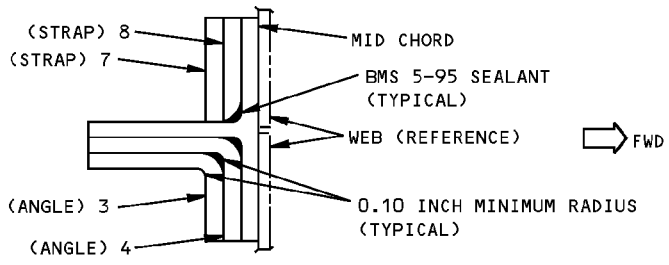


SECTION D-D

Section 41 - Station 246 Floor Beam Mid Chord Repair
Figure 201 (Sheet 6 of 7)



STATION 246 PASSENGER FLOOR MID CHORD REPAIR TO TWO FLANGES OR UPPER FLANGE
DETAIL IV



SECTION E-E

Section 41 - Station 246 Floor Beam Mid Chord Repair
Figure 201 (Sheet 7 of 7)

REPAIR 3 - SECTION 41 - STATION 246 STIFFENER

APPLICABILITY
FOR AIRPLANE CUMULATIVE LINE NUMBERS 1 TO 288 REFER TO SERVICE BULLETIN 767-53-0069, FOR REPAIRS AT RBL 26.06, LBL 17.0, RBL 10.6, AND RBL 20.0
THIS REPAIR IS APPLICABLE TO DAMAGE TO ALL THE STIFFENERS ALONG STA 246 FLOOR BEAM, EXCEPT TO THE STIFFENER AT LBL 40.0

REPAIR INSTRUCTIONS

NOTE: When you gain access to do this repair, you can also do the repairs in Repair 2, 4 and 5.

NOTE: A. IF YOU DO THIS REPAIR WITH BLIND FASTENERS, THIS REPAIR WILL BE A CATEGORY 'C' REPAIR AND THE REPAIR MUST BE INSPECTED AS GIVEN IN TABLE III OR REPLACED BY A CATEGORY 'B' REPAIR. THE CATEGORY 'C' REPAIR MUST BE REPLACED WITH A CATEGORY 'B' REPAIR AT OR BEFORE 4000 FLIGHT CYCLES OR 4 YEARS, WHICHEVER COMES FIRST.

B. IF YOU DO THIS REPAIR WITH PERMANENT FASTENERS, THIS REPAIR WILL BE A CATEGORY 'B' REPAIR. REFER TO TABLE IV FOR INSPECTION REQUIRMENTS.

CAUTION: BE CAREFUL NOT TO DAMAGE ANY ADJACENT STRUCTURE OR FASTENER HOLES. IF YOU DO NOT OBEY, YOU MAY NEED TO DO MORE REPAIRS.

CAUTION: IF THE DAMAGED CLIP IS A CONTROL PULLY BRACKET SUPPORT, REMOVE ONLY ONE CLIP AT A TIME TO MAINTAIN CABLE TENSION.

1. Get access to the damaged area.
2. Remove the damaged stiffener.
3. Make the repair parts. See Table I. Make sure the contour and dimension of the repair stiffener are the same as the initial parts. Make sure the part 2 radius fillers are big enough to pickup all fasteners common to the stiffener and mid-chord of the floor beam. Part 2 radius fillers are optional on the aft side of the floor beam when making a category 'C' repair.
4. Assemble the repair stiffener and the radius filler to the beam and drill the fastener holes.
5. Disassemble the repair parts.
6. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the beam.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the beam. Refer to SRM 51-20-01.
8. Apply two layers of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the beam. Refer to SOPM 20-41-02.
9. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
10. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant. Refer to Table II.

NOTES

- REFER TO SRM 51-00-06 FOR THE DEFINITION OF THE DIFFERENT CATEGORIES OF REPAIR.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - SOPM 20-10-03 FOR SHOT PEENING
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS.
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS.

[A] AS AN ALTERNATIVE, YOU CAN FORM FROM 7075-0 CLAD MATERIAL AND HEAT TREAT TO -T62, IF THE STIFFENER IS DIFFICULT TO FORM TO SHAPE. AS A SECOND ALTERNATIVE YOU CAN FORM FROM 7075-0 BARE MATERIAL, HEAT TREAT TO -T62 AND SHOT PEEN AS GIVEN IN SOPM 20-10-03. SHOT PEENING COVERAGE MUST BE 1.0. STRAIGHTEN PART AFTER SHOT PEENING AS GIVEN IN BAC 5300 AS REQUIRED. DO NOT SHOT PEEN CLAD MATERIAL.

Section 41 - Station 246 Stiffener Repair
Figure 201 (Sheet 1 of 3)

REPAIR MATERIAL			
PART NO.	PART	QUANTITY	MATERIAL
1	STIFFENER	1	7075-T6 OR 7075-T62 CLAD THICKNESS TO BE EQUAL TO THE INITIAL STIFFENER [A]
2	RADIUS FILLER	3	BACF3H, 7075-T6, THICKNESS TO BE 0.20 INCH, SIZE AS NECESSARY

TABLE I

REPAIR FASTENERS		
REPAIR CATEGORY	INITIAL FASTENER	REPAIR FASTENER
B	HEX DRIVE BOLTS	BACB30MY6K()X BOLT WITH BACC30M6 COLLAR
	RIVETS	BACR15FT()KE()C RIVETS OF THE SAME SIZE OR BACB30VT6K() HEX DRIVE BOLT WITH BACC30BL6 COLLAR (IF INITIAL RIVETS ARE SIZE 5) OR BACB30MY6K()Y HEX DRIVE BOLT WITH BACC30R6 COLLAR (IF INITIAL RIVETS ARE SIZE 6)
C	ALL LOCATIONS	MS90354 BLIND RIVET

TABLE II

INSPECTION INSTRUCTIONS FOR CATEGORY C REPAIRS:

DO AN INSPECTION OF THE STIFFENER FOR CRACKS AND LOOSE OR MISSING FASTENERS IN THE REPAIR AREA. REPAIR ANY DAMAGE FOUND. REFER TO TABLE III

CATEGORY C REPAIR INSPECTION REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTION ALTERNATIVES		
	METHOD	INTERVAL	REFERENCE
THE INSPECTION THRESHOLD IS THE TIME THE REPAIR WAS MADE.	DETAILED VISUAL INSPECTION	1000 FLIGHT CYCLES OR 1 YEAR. USE THE INTERVAL THAT OCCURS FIRST.	SRM 51-10-00

TABLE III

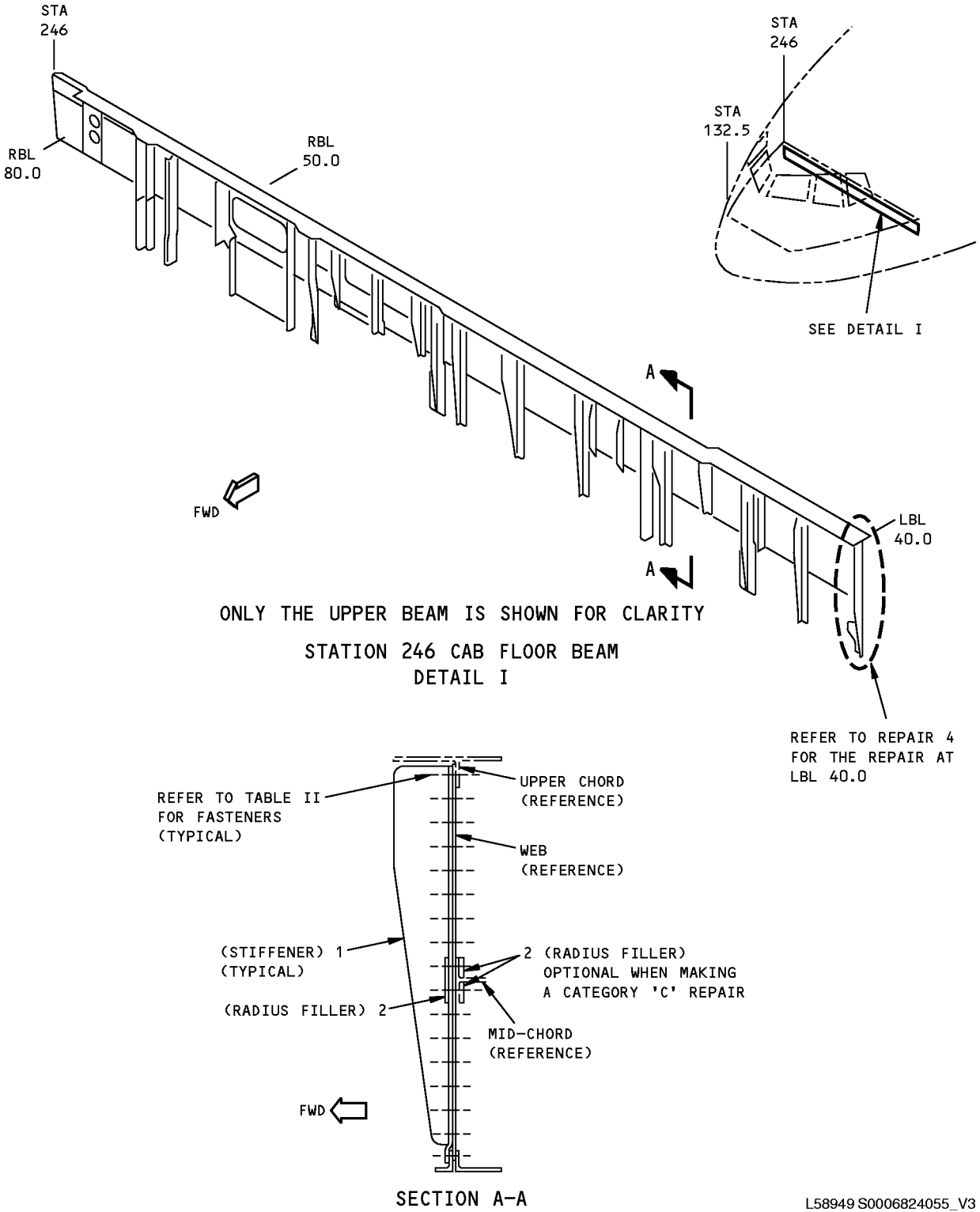
INSPECTION INSTRUCTIONS FOR CATEGORY B REPAIRS:

DO AN INSPECTION OF THE STIFFENER FOR CRACKS IN THE REPAIR AREA. REPAIR ANY DAMAGE FOUND. REFER TO TABLE IV

CATEGORY B REPAIR INSPECTION REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTION ALTERNATIVES		
	METHOD	INTERVAL	REFERENCE
THE INSPECTION THRESHOLD IS THE TIME THE REPAIR WAS MADE.	DETAILED VISUAL INSPECTION	INSPECT AT 3000 FLIGHT CYCLES OR 24 MONTHS WHICH EVER OCCURS FIRST.	SRM 51-10-00

TABLE IV

Section 41 - Station 246 Stiffener Repair
Figure 201 (Sheet 2 of 3)



Section 41 - Station 246 Stiffener Repair
Figure 201 (Sheet 3 of 3)

REPAIR 4 - SECTION 41 - STATION 246, LBL 40.0 STIFFENER

APPLICABILITY

THIS REPAIR IS APPLICABLE TO AIRPLANE CUMULATIVE LINE NUMBERS 289 AND ON. FOR AIRPLANE CUMULATIVE LINE NUMBERS 1 TO 288 REFER TO SERVICE BULLETIN 767-53-0069.

THIS REPAIR IS APPLICABLE TO DAMAGE TO THE STIFFENER AT LBL 40.0 STA 246 FLOOR BEAM.

REPAIR INSTRUCTIONS

NOTE: When you gain access to do this repair, you can also do the repairs in Repair 2, 3 and 5

NOTE: THIS REPAIR IS A CATEGORY "B" REPAIR. THIS REPAIR MUST BE INSPECTED AS GIVEN IN TABLE II.

CAUTION: BE CAREFUL NOT TO DAMAGE ANY ADJACENT STRUCTURE OR FASTENER HOLES. IF YOU DO NOT OBEY, YOU MAY NEED TO DO MORE REPAIRS.

1. Get access to the damaged area.
2. Remove the damaged stiffener. See Detail I. Cut the stiffener as shown to remove from the control cable.
3. Make the repair parts. See Table I.
   a. Make sure the contour and dimension of the repair stiffener are the same as the initial parts.
   b. Cut slot in stiffener to allow for installation over the control cable.
   c. Make sure the part 3 radius fillers are big enough to pick up all fasteners common to the stiffener and mid-chord of the floor beam.
4. Assemble the repair parts to the beam and drill the fastener holes. See Detail II.
5. Disassemble the repair parts.
6. Remove the nicks, scratches, gouges, burrs, and sharp edges from the beam.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the beam. Refer to SRM 51-20-01.
8. Apply two layers of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the chord. Refer to SOPM 20-41-02.
9. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
10. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.

NOTES

- WHEN YOU USE THIS REPAIR, REFER TO:
  - SOPM 20-10-03 FOR SHOT PEENING
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-00-06 FOR THE DEFINITION OF THE DIFFERENT CATEGORIES OF REPAIR.
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS.
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS.

[A] AS AN ALTERNATIVE, YOU CAN FORM FROM 7075-0 CLAD AND HEAT TREAT TO -T62, IF THE STIFFENER IS DIFFICULT TO FORM TO SHAPE. AS A SECOND ALTERNATIVE YOU CAN FORM FROM 7075-0 BARE MATERIAL, HEAT TREAT TO -T62, AND SHOT PEEN AS GIVEN IN SOPM 20-10-03. SHOTPEENING COVERAGE MUST BE 1.0. STRAIGHTEN PART AFTER SHOT PEENING AS GIVEN IN BAC 5300 AS REQUIRED. DO NOT SHOT PEEN CLAD MATERIAL.

[B] MAKE SURE THE SIZE OF THE PART 3 RADIUS FILLER IS BIG ENOUGH TO PICK UP ALL FASTENERS COMMON TO THE STIFFENER AND MID-CHORD OF THE FLOOR BEAM.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION.

REPAIR FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX-DRIVE BOLT WITH A BACC30M6 COLLAR.

INITIAL FASTENER LOCATION. INSTALL A BACB30VT6K() HEX-DRIVE BOLT WITH A BACC30BL6 COLLAR.

INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()Y HEX-DRIVE BOLT WITH A BACC30R6 COLLAR.

Section 41 - Station 246, LBL 40.0 Stiffener Repair
Figure 201 (Sheet 1 of 6)

REPAIR MATERIAL			
PART NO.	PART	QUANTITY	MATERIAL
1	STIFFENER	1	CLAD 7075-T6 OR 7075-T62 CLAD. THICKNESS TO BE EQUAL TO THE INITIAL STIFFENER THICKNESS [A]
2	DOUBLER	1	0.080 CLAD 7075-T6 SHEET
3	RADIUS FILLER	3	BACF3H, 7075-T6, THICKNESS TO BE 0.20 INCH, SIZE AS NECESSARY [B]

TABLE I

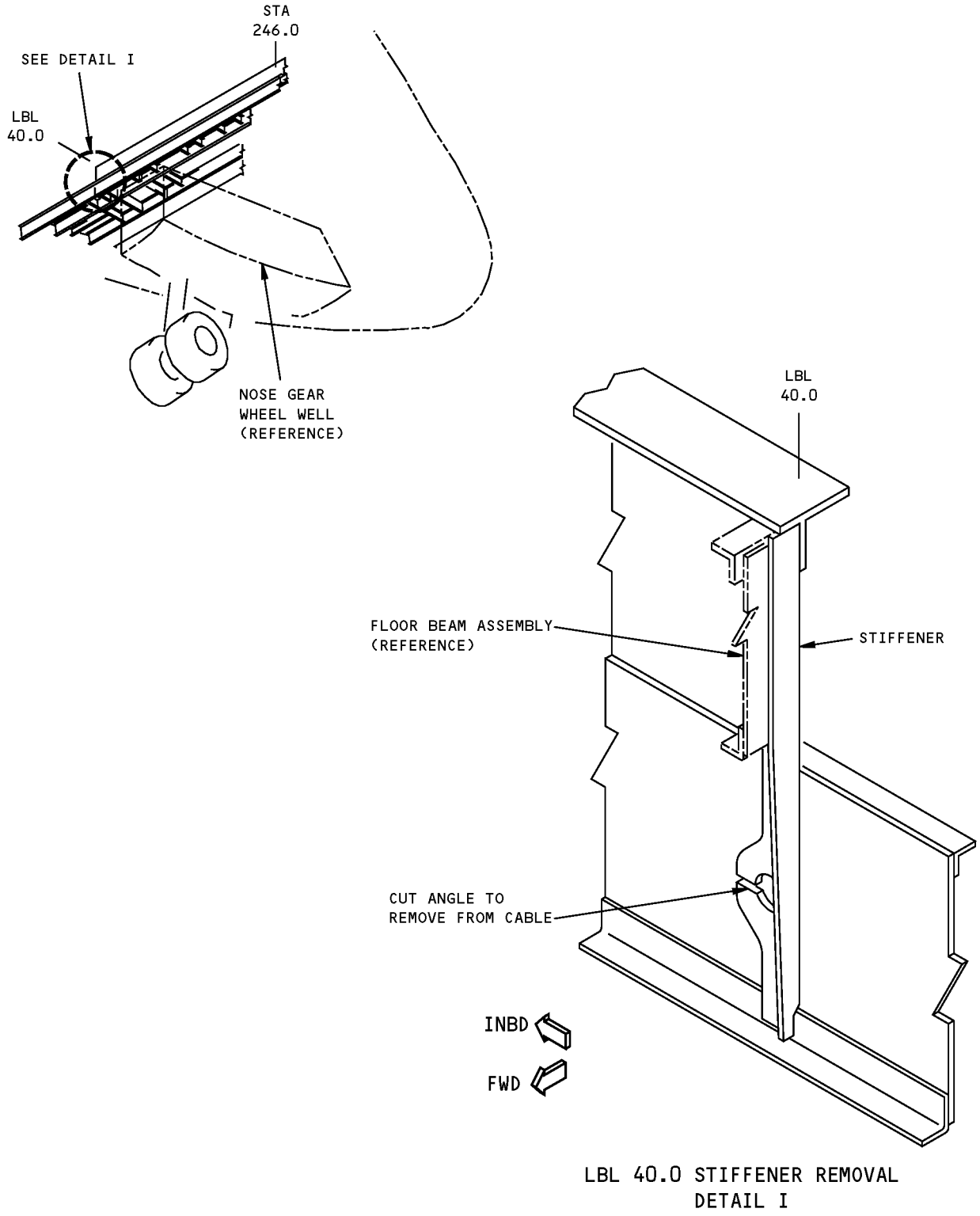
INSPECTION INSTRUCTIONS FOR CATEGORY B REPAIRS:

DO AN INSPECTION OF THE STIFFENER FOR CRACKS IN THE REPAIR AREA. REPAIR DAMAGE FOUND. REFER TO TABLE IV

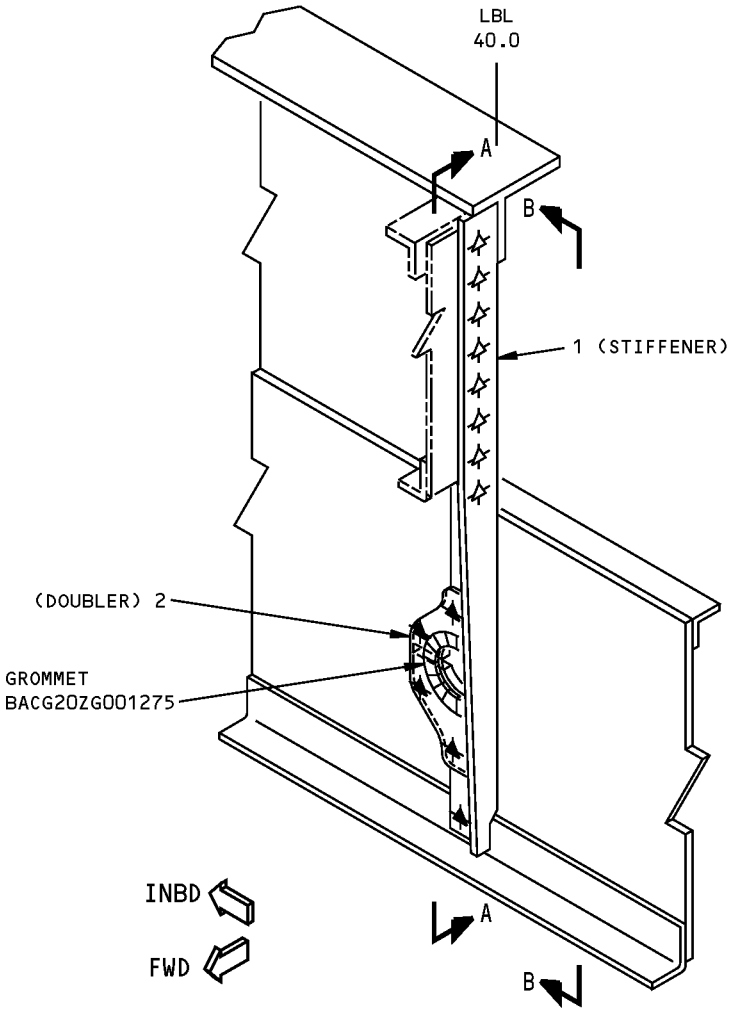
CATEGORY B REPAIR INSPECTION REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTION ALTERNATIVES		
	METHOD	INTERVAL	REFERENCE
THE INSPECTION THRESHOLD IS THE TIME THE REPAIR WAS MADE.	DETAILED VISUAL INSPECTION	INSPECT AT 3000 FLIGHT CYCLES OR 24 MONTHS WHICH EVER OCCURS FIRST.	SRM 51-10-00

TABLE II

Section 41 - Station 246, LBL 40.0 Stiffener Repair
Figure 201 (Sheet 2 of 6)

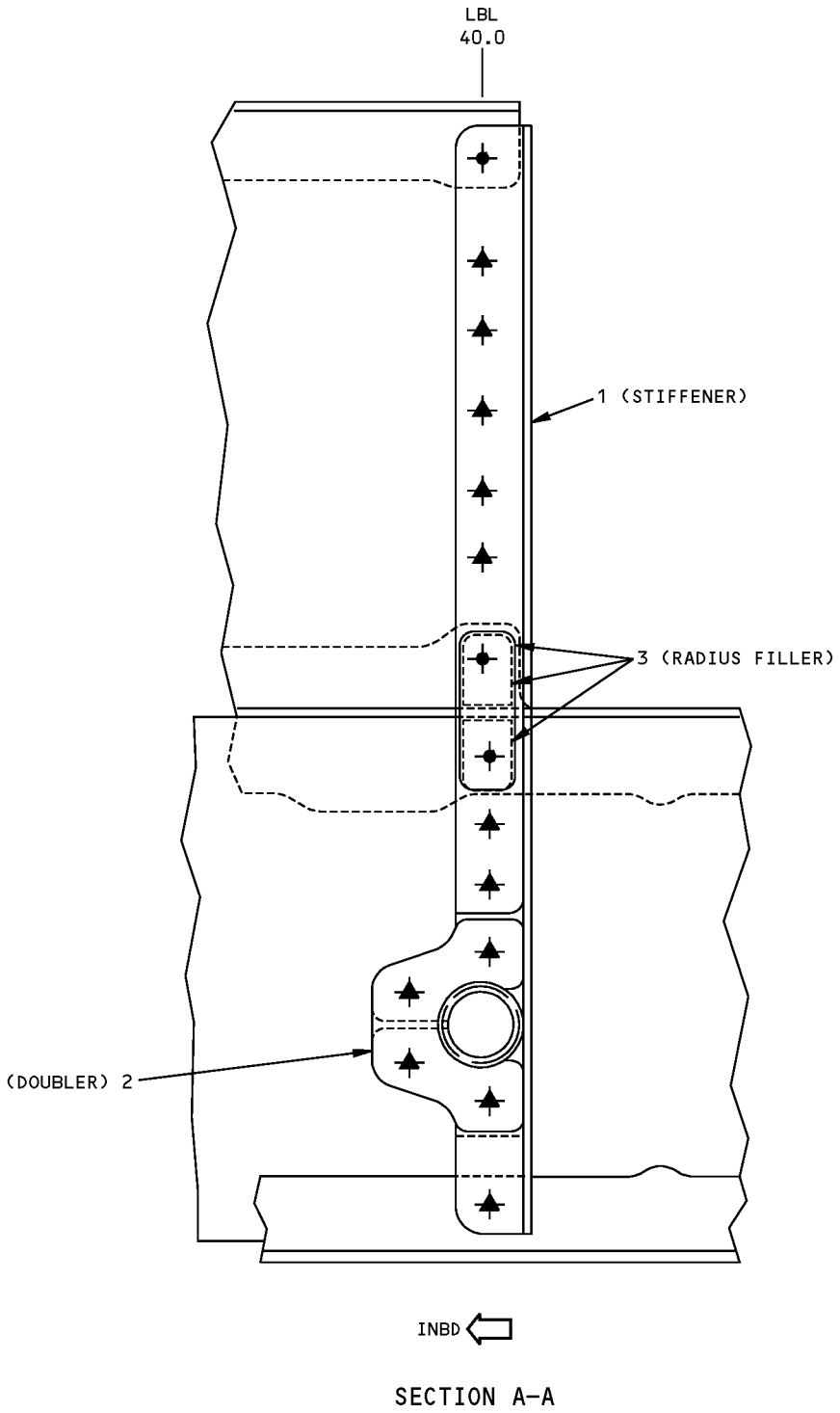


Section 41 - Station 246, LBL 40.0 Stiffener Repair
Figure 201 (Sheet 3 of 6)

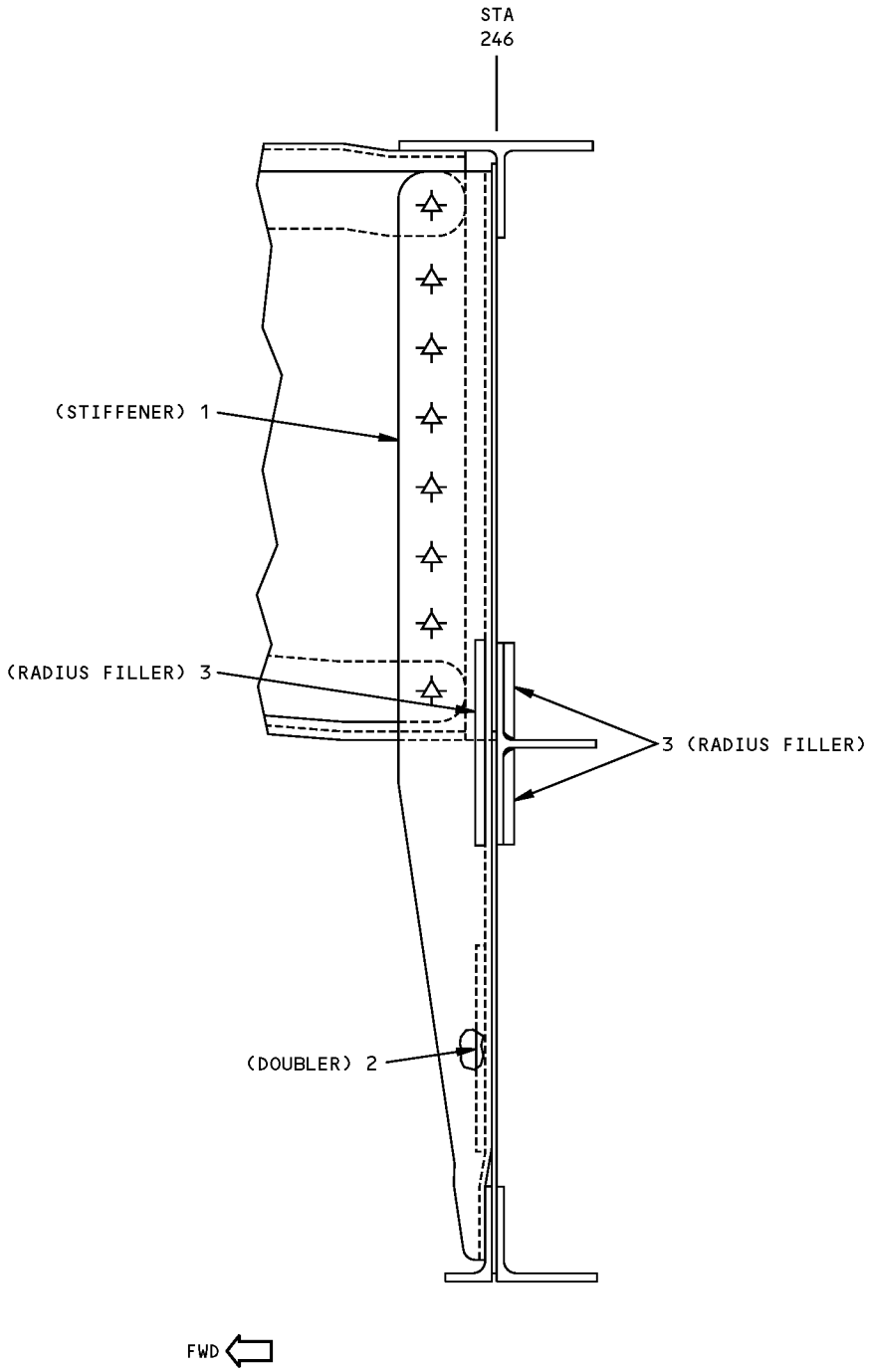


LBL 40.0 STIFFENER INSTALLATION
DETAIL II

Section 41 - Station 246, LBL 40.0 Stiffener Repair
Figure 201 (Sheet 4 of 6)



Section 41 - Station 246, LBL 40.0 Stiffener Repair
Figure 201 (Sheet 5 of 6)



SECTION B–B

Section 41 - Station 246, LBL 40.0 Stiffener Repair
Figure 201 (Sheet 6 of 6)

REPAIR 5 - SECTION 41 - STATION 246 FLOOR BEAM UPPER WEB

APPLICABILITY
THIS REPAIR IS APPLICABLE TO AIRPLANE CUMULATIVE LINE NUMBERS 289 AND ON. FOR AIRPLANE CUMULATIVE LINE NUMBERS 1 TO 288 REFER TO SERVICE BULLETIN 767-53-0069.
THIS REPAIR IS APPLICABLE TO DAMAGE OF STA 246 FLOOR UPPER BEAM WEB BETWEEN LBL 22.0 AND RBL 22.0. SEE DETAIL I.

REPAIR INSTRUCTIONS

NOTE: When you gain access to do this repair, you can also do the repairs in Repair 2, 3 and 4.

CAUTION: BE CAREFUL NOT TO DAMAGE ANY ADJACENT STRUCTURE OR FASTENER HOLES. IF YOU DO NOT OBEY, YOU MAY NEED TO DO MORE REPAIRS.

1. Get access to the damaged area.
2. Cut and remove the damaged web. See Detail II. Cut the web at an equal distance between fasteners to increase edge distance to a maximum. Cut the web at the most convenient location when you make the cut.
3. Make the repair parts. See Table I.
4. Assemble the repair parts to the beam and drill the fastener holes. See Detail II.
5. Disassemble the repair parts.
6. Remove the nicks, scratches, gouges, burrs, and sharp edges from the beam.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the beam. Refer to SRM 51-20-01.
8. Apply one layer of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the beam. Refer to SOPM 20-41-02.
9. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
10. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.

NOTES

- THIS REPAIR IS A CATEGORY "A" REPAIR. REFER TO SRM 51-00-06 FOR THE DIFFERENT DEFINITION OF THE DIFFERENT CATEGORIES OF REPAIR.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS.
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS.

[A] MACHINE PART 4 TAPERED FILLER SO THAT IT IS TAPERED ALONG THE VERTICAL DIRECTION. TAPERING IS REQUIRED AS THE UPPER AND LOWER CHORDS DON'T HAVE THE SAME FLANGE THICKNESS.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION.

REPAIR FASTENER LOCATION. INSTALL A BACR15FT6KE()C RIVET. AS AN ALTERNATIVE, YOU CAN INSTALL BACB30MY6K() HEX-DRIVE BOLTS WITH A BACC30M6 COLLAR, IF NECESSARY FOR ACCESS.

INITIAL FASTENER LOCATION. INSTALL A BACR15FT6KE()C RIVET. AS AN ALTERNATIVE, YOU CAN INSTALL BACB30MY6K() HEX-DRIVE BOLTS WITH A BACC30M6 COLLAR, IF NECESSARY FOR ACCESS.

INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX-DRIVE BOLT WITH A BACC30M6 COLLAR.

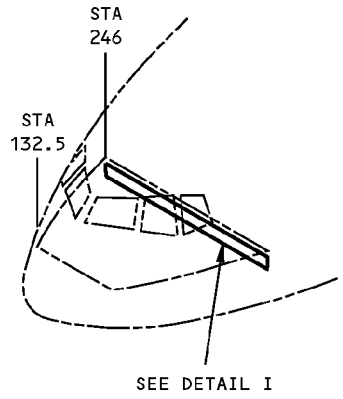
INITIAL FASTENER LOCATION. INSTALL A BACB30NT3K4 BOLT WITH BACN10YR3CD NUT AND NAS1149D0316J WASHER.

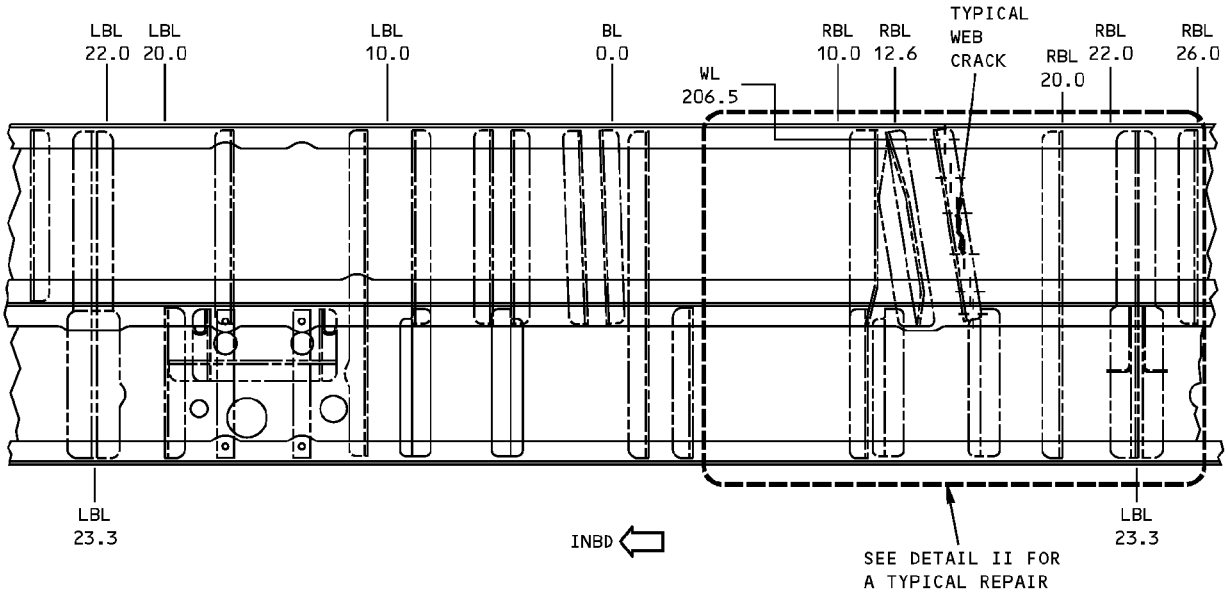
REPAIR MATERIAL

PART No.	PART	QUANTITY	MATERIAL
1	WEB	1	0.025 CLAD 7075-T6 SHEET
2	DOUBLER	2	0.032 CLAD 7075-T6 SHEET
3	STIFFENER	1	BAC 1505-100052 EXTRUSION 7075-T6511
4	TAPERED FILLER	1	CLAD 7075-T6, THICKNESS AS NECESSARY

TABLE I

Section 41 - Station 246 Floor Beam Upper Web Repair
Figure 201 (Sheet 1 of 3)

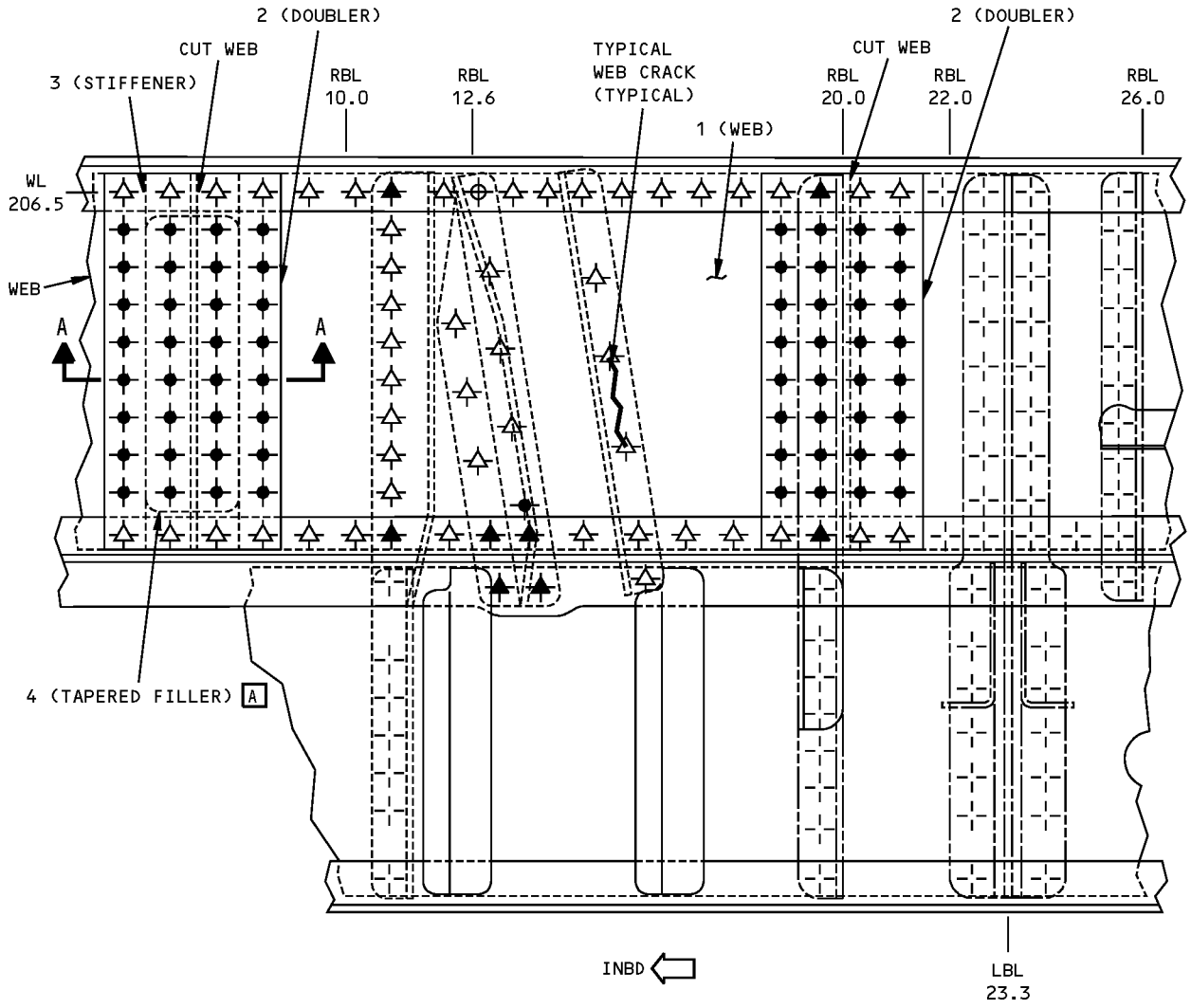




VIEW IS LOOKING FORWARD

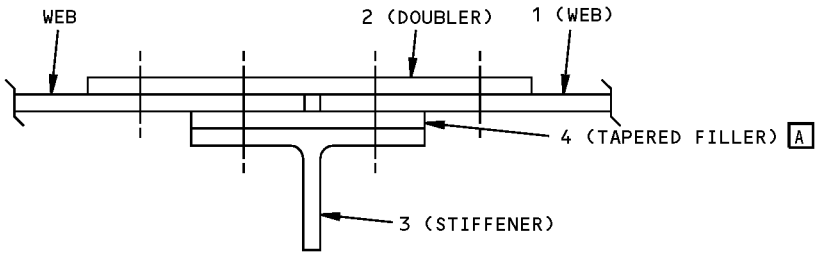
STATION 246 CAB FLOOR BEAM
DETAIL I

Section 41 - Station 246 Floor Beam Upper Web Repair
Figure 201 (Sheet 2 of 3)



VIEW LOOKING FORWARD

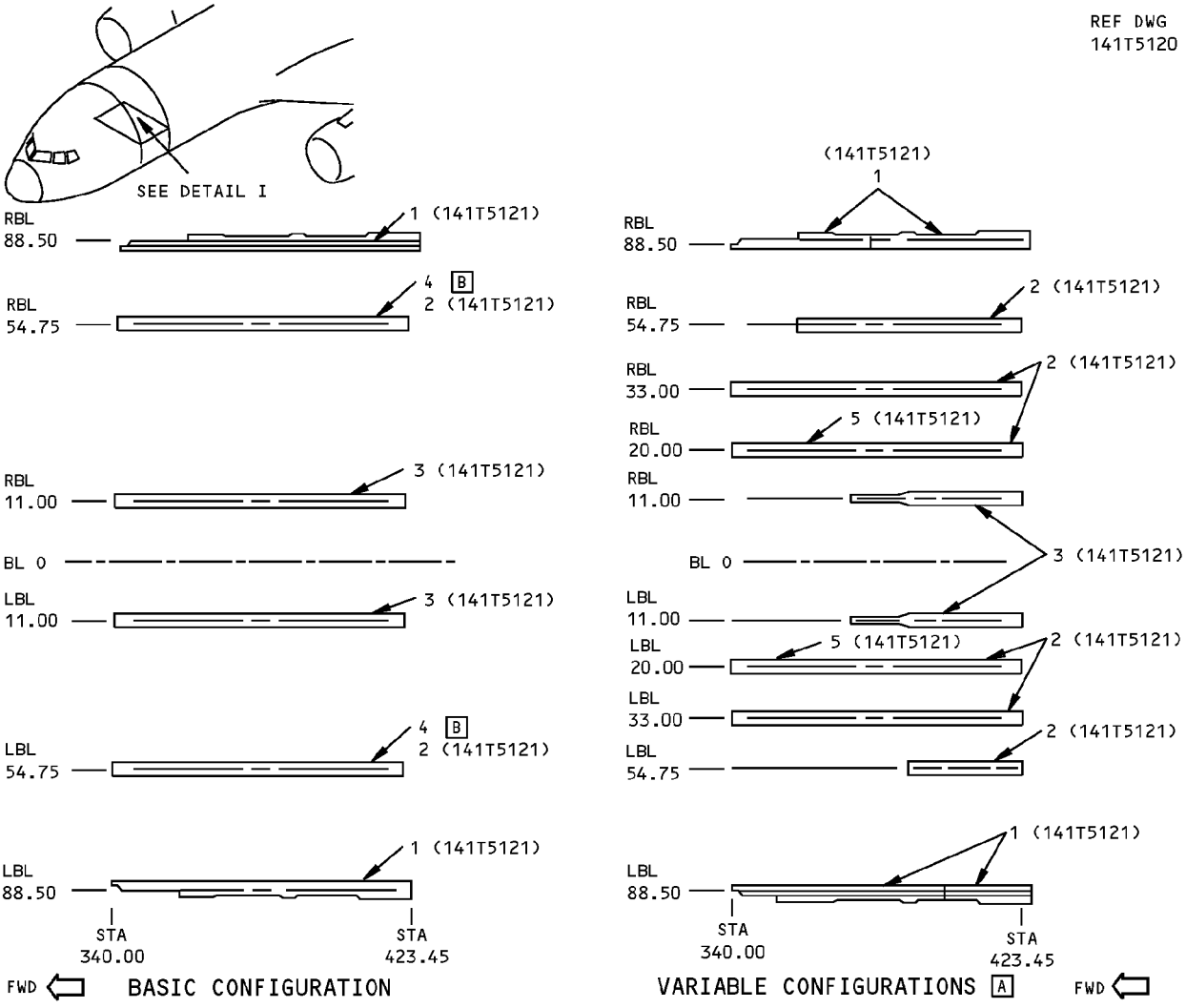
STATION 246 CAB FLOOR BEAM – UPPER WEB SPLICE REPAIR
DETAIL II



SECTION A–A

Section 41 - Station 246 Floor Beam Upper Web Repair
Figure 201 (Sheet 3 of 3)

IDENTIFICATION 1 - SECTION 41 SEAT TRACK



DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SEAT TRACK		BAC1520-2193 7075-T6511	
2	SEAT TRACK		BAC1520-2192 7178-T6511	
3	SEAT TRACK		BAC1520-1545 7178-T6511	
4	SEAT TRACK		BAC1520-2557 7178-T6511 (OPTIONAL: MAKEFROM BAC1520-2162 7178-T6511)	B
5	SEAT TRACK		BAC1520-2195 7178-T6511	

LIST OF MATERIALS

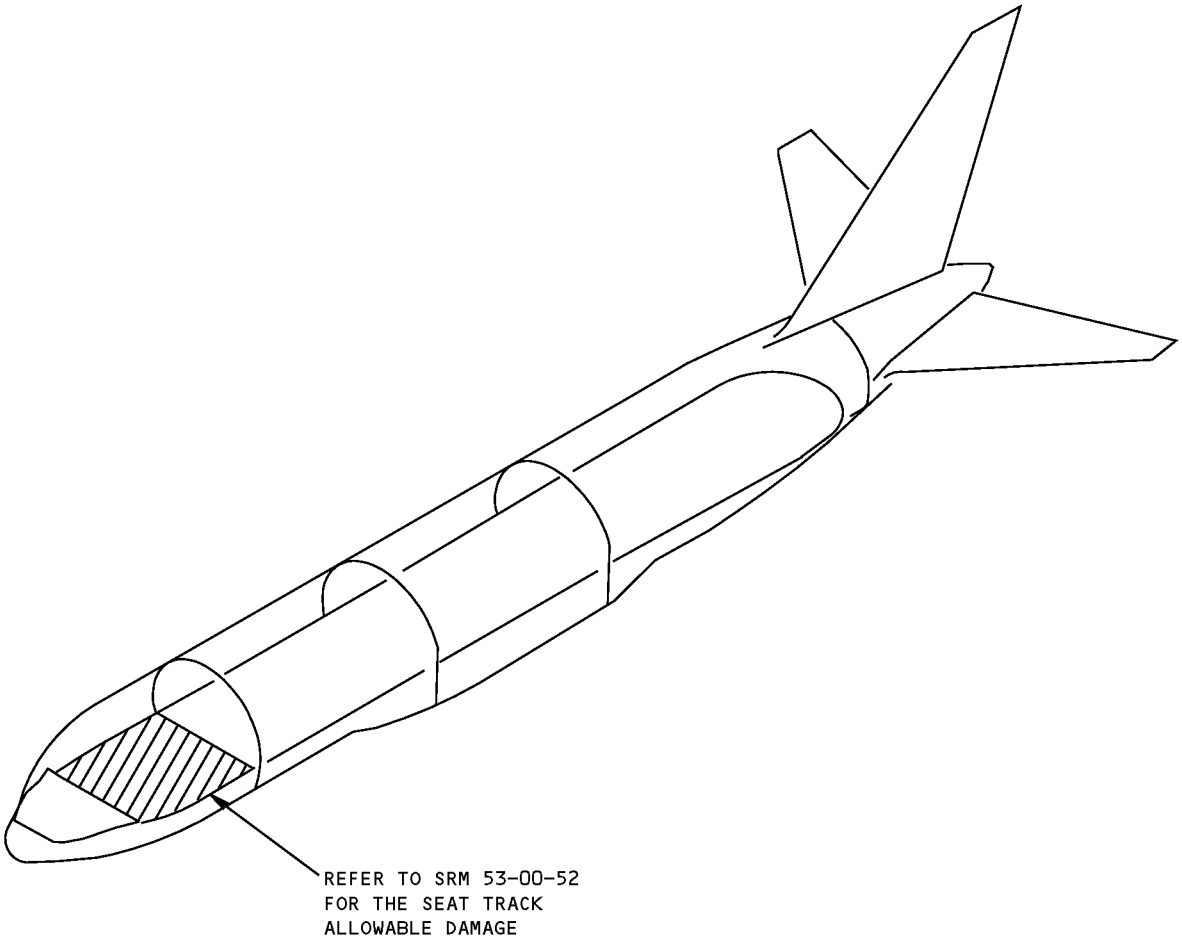
NOTES

A SEAT TRACKS DIFFER FROM BASIC IN AREAS SHOWN TO SUIT CUSTOMER REQUIREMENT. SEE DWG 141T5120 FOR INDIVIDUAL VARIABLE

B BASIC FOR EXTENDED RANGE AIRPLANES WITH TRI-CLASS SEATING

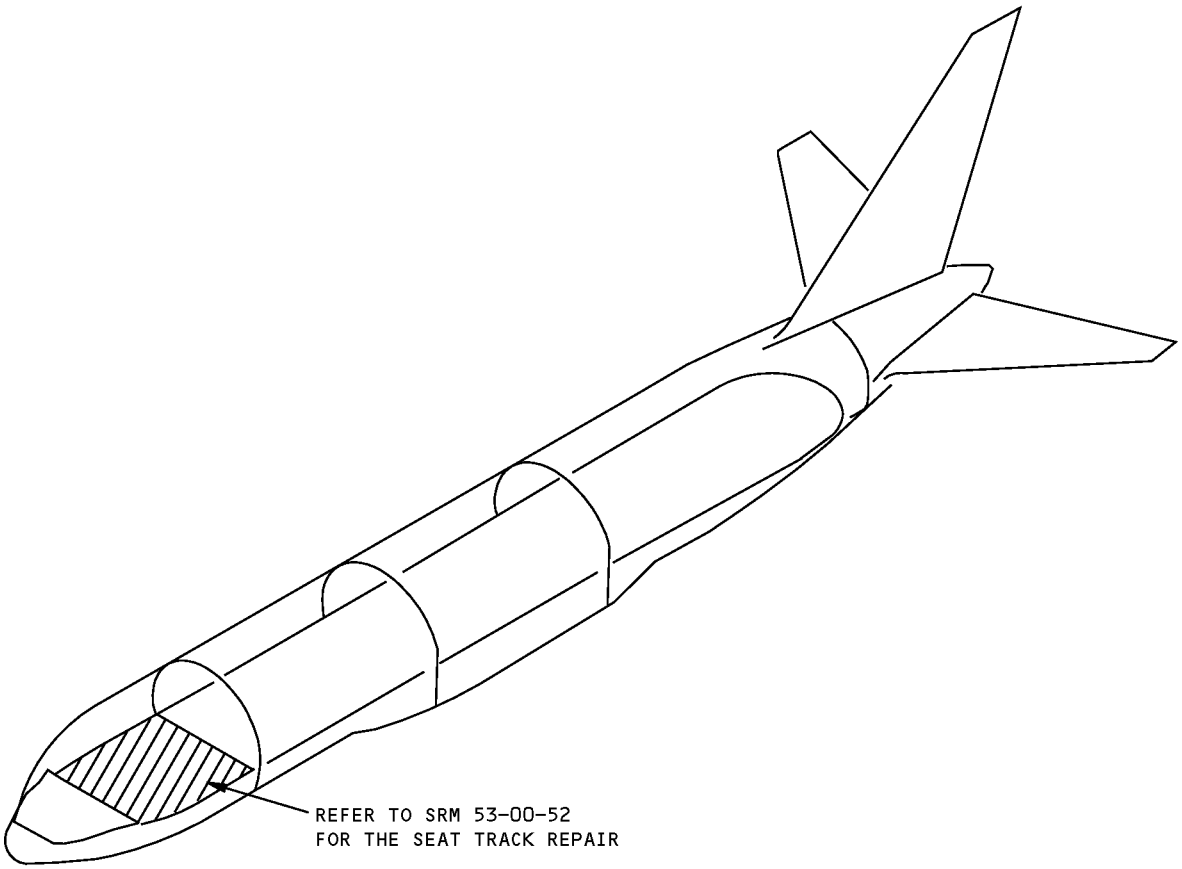
Section 41 Seat Track Identification
Figure 1

ALLOWABLE DAMAGE 1 - SECTION 41 SEAT TRACKS



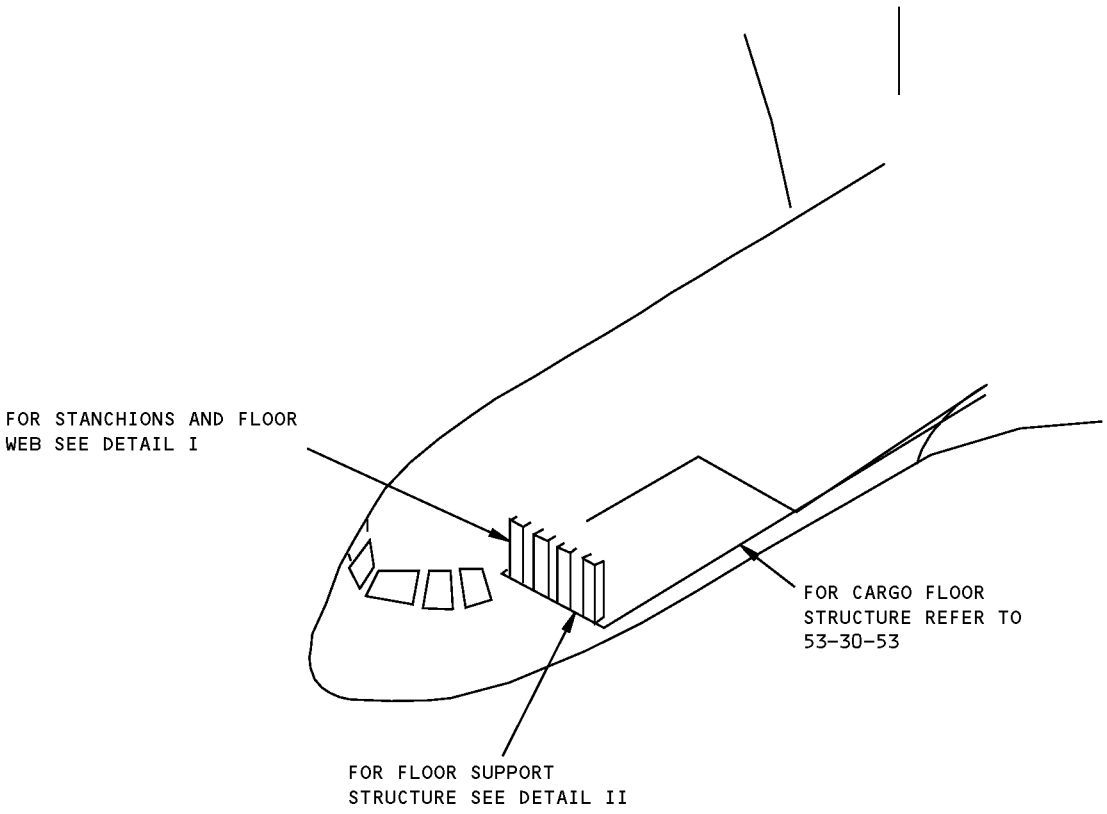
Section 41 Seat Tracks Allowable Damage
Figure 101

REPAIR 1 - SECTION 41 SEAT TRACK



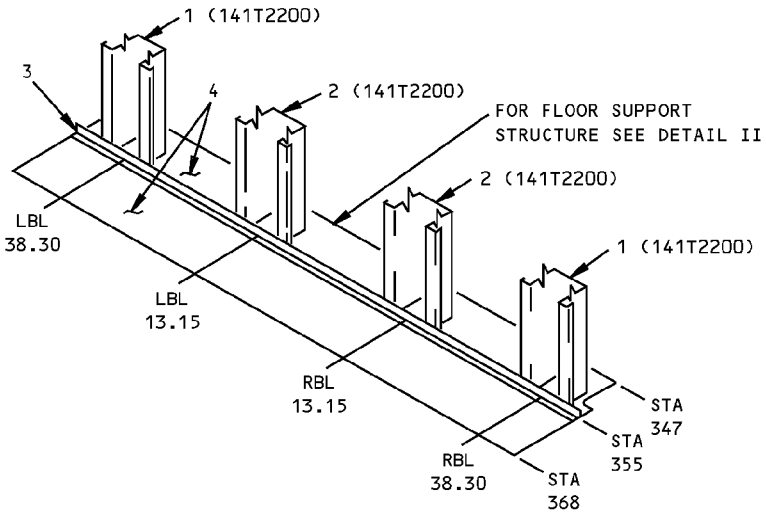
Section 41 Seat Track Repair
Figure 201

IDENTIFICATION 1 - SECTION 41 CARGO COMPARTMENT STRUCTURE

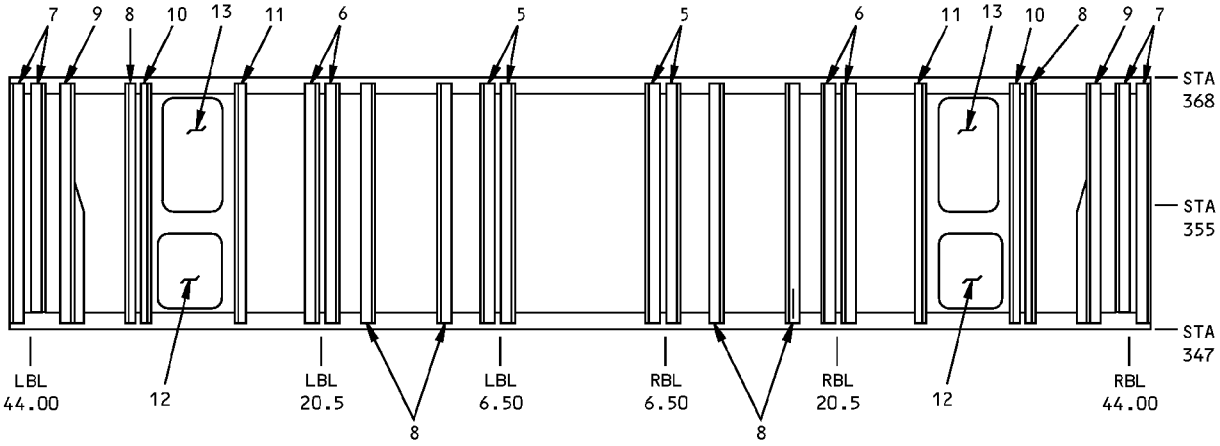


Section 41 Cargo Compartment Structure Identification
Figure 1 (Sheet 1 of 3)

REFERENCE DRAWING
141T5200



STANCHIONS AND FLOOR WEB
DETAIL I



FLOOR SUPPORT STRUCTURE
(VIEW LOOKING UP)

DETAIL II

LIST OF MATL

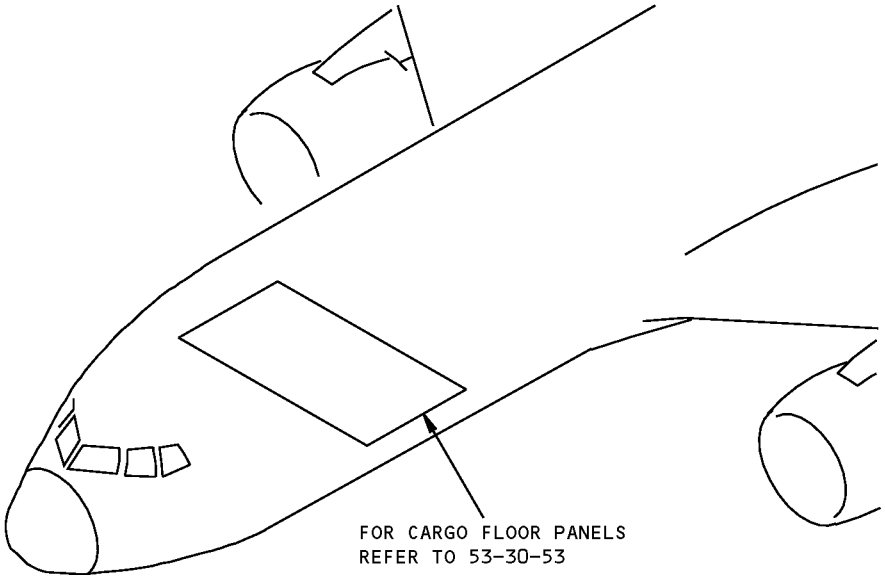
Section 41 Cargo Compartment Structure Identification
Figure 1 (Sheet 2 of 3)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	STANCHION	0.071	CLAD 7075-T6	
2	STANCHION	0.090	CLAD 7075-T6	
3	ANGLE		BAC1503-100135 7075-T6511	
4	WEB	0.040	CLAD 7075-T6	
5	STIFFENER		AND10134-2002 7075-T6511	
6	STIFFENER		AND10134-2003 7075-T6511	
7	STIFFENER		AND10134-2004 7075-T6511	
8	STIFFENER		BAC1503-100028 7075-T6511	
9	STIFFENER		AND10136-2401 7075-T6511	
10	STIFFENER		BAC1514-916 7075-T6511	
11	STIFFENER		BAC1503-100060 7075-T6511	
12	COVER PLATE	0.050	CLAD 7075-T6	
13	COVER PLATE	0.071	CLAD 7075-T6	

LIST OF MATERIALS FOR DETAILS I AND II

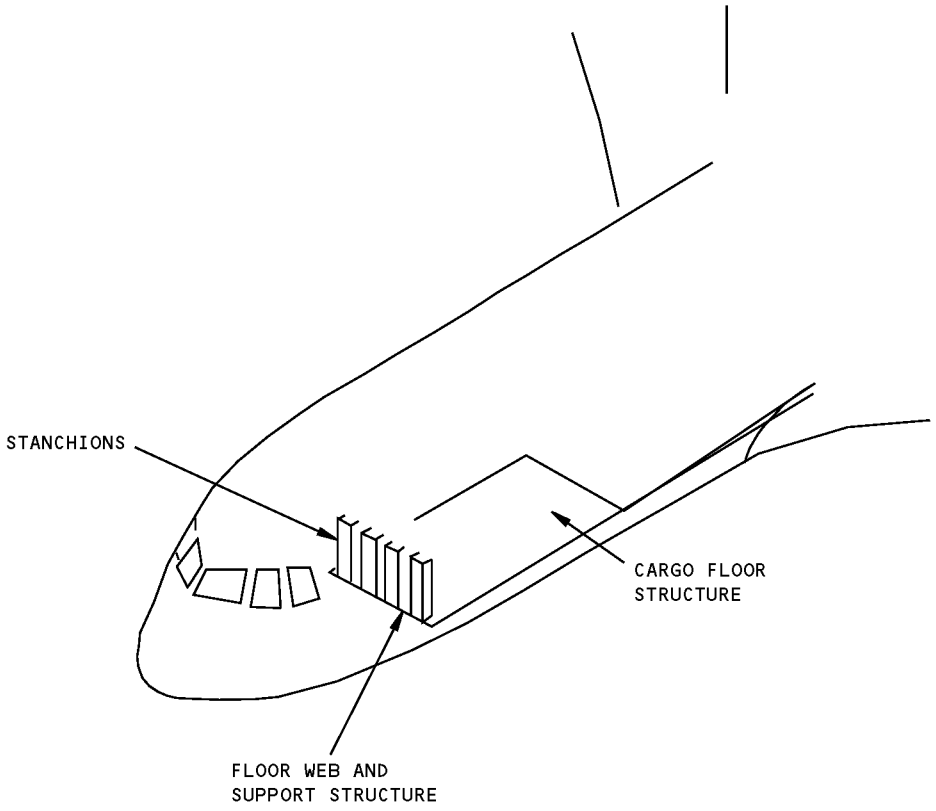
Section 41 Cargo Compartment Structure Identification
Figure 1 (Sheet 3 of 3)

ALLOWABLE DAMAGE 1 - SECTION 41 - CARGO FLOOR PANELS



Section 41 - Cargo Floor Panels Allowable Damage
Figure 101

REPAIR 1 - SECTION 41 CARGO COMPARTMENT STRUCTURE



REPAIR INSTRUCTIONS

Refer to SRM 51-70-11 for the typical formed section repairs.

Refer to SRM 51-70-12 for the typical extruded section repairs.

Refer to SRM 51-70-13 for the typical web repairs.

Refer to SRM 53-00-50 for the typical floor panel repairs.

NOTES

- REFER TO THE FOLLOWING WHEN USING THIS REPAIR:

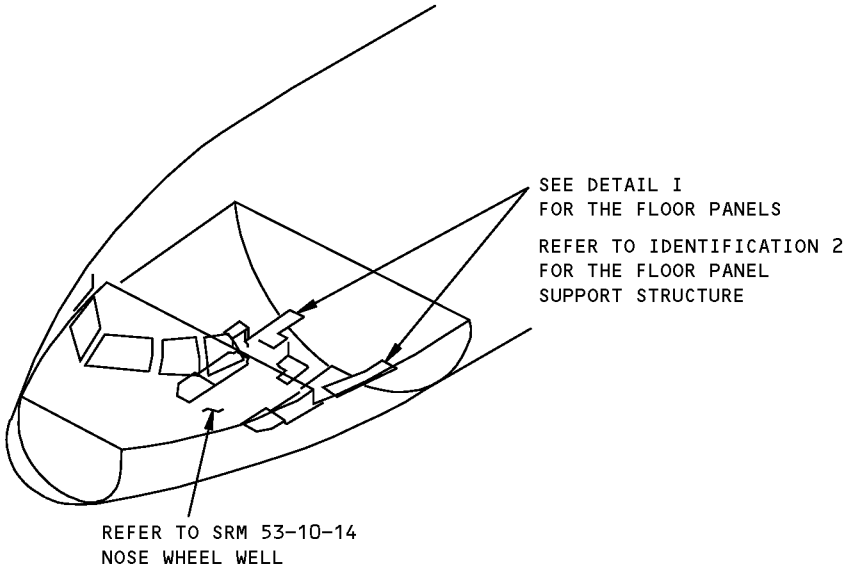
  SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE

  SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL

- NO TYPICAL REPAIR APPLICABLE TO PARTS MADE FROM FORGINGS OR MACHINED PLATE. SPECIFIC REPAIRS TO THESE PARTS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE

Section 41 Cargo Compartment Structure Repair
Figure 201

IDENTIFICATION 1 - FORWARD EQUIPMENT BAY FLOOR PANEL



NOTES

[A] FOR CUM LINE NUMBERS:
132 AND ON

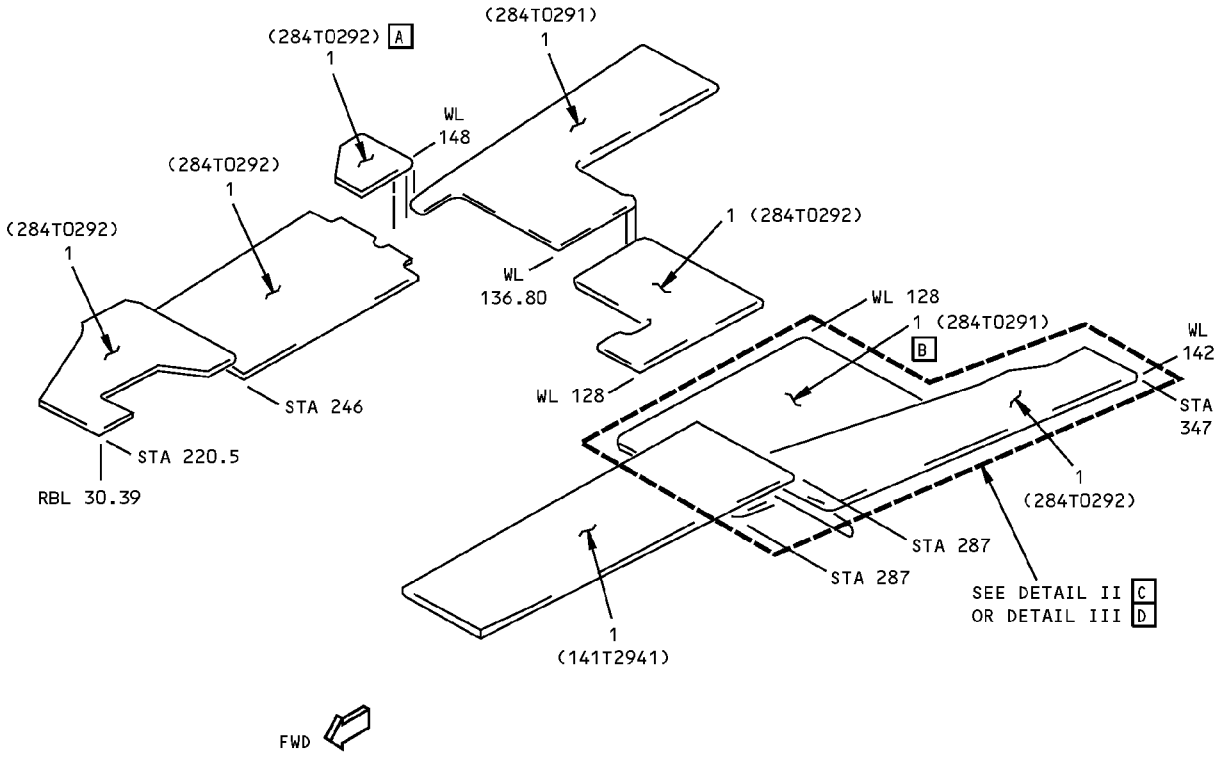
[B] FOR CUM LINE NUMBERS:
1 THRU 274

[C] FOR CUM LINE NUMBERS:
275 THRU 414

[D] FOR CUM LINE NUMBERS:
415 AND ON

Forward Equipment Bay Floor Panel Identification
Figure 1 (Sheet 1 of 3)

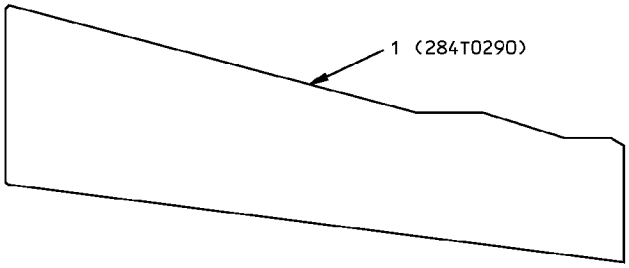
REF DWG
284T0290



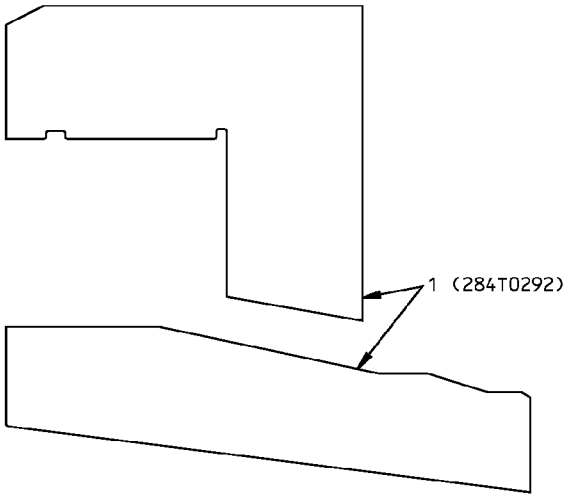
FLOOR PANELS
DETAIL I

LIST OF MATL

Forward Equipment Bay Floor Panel Identification
Figure 1 (Sheet 2 of 3)



DETAIL II C



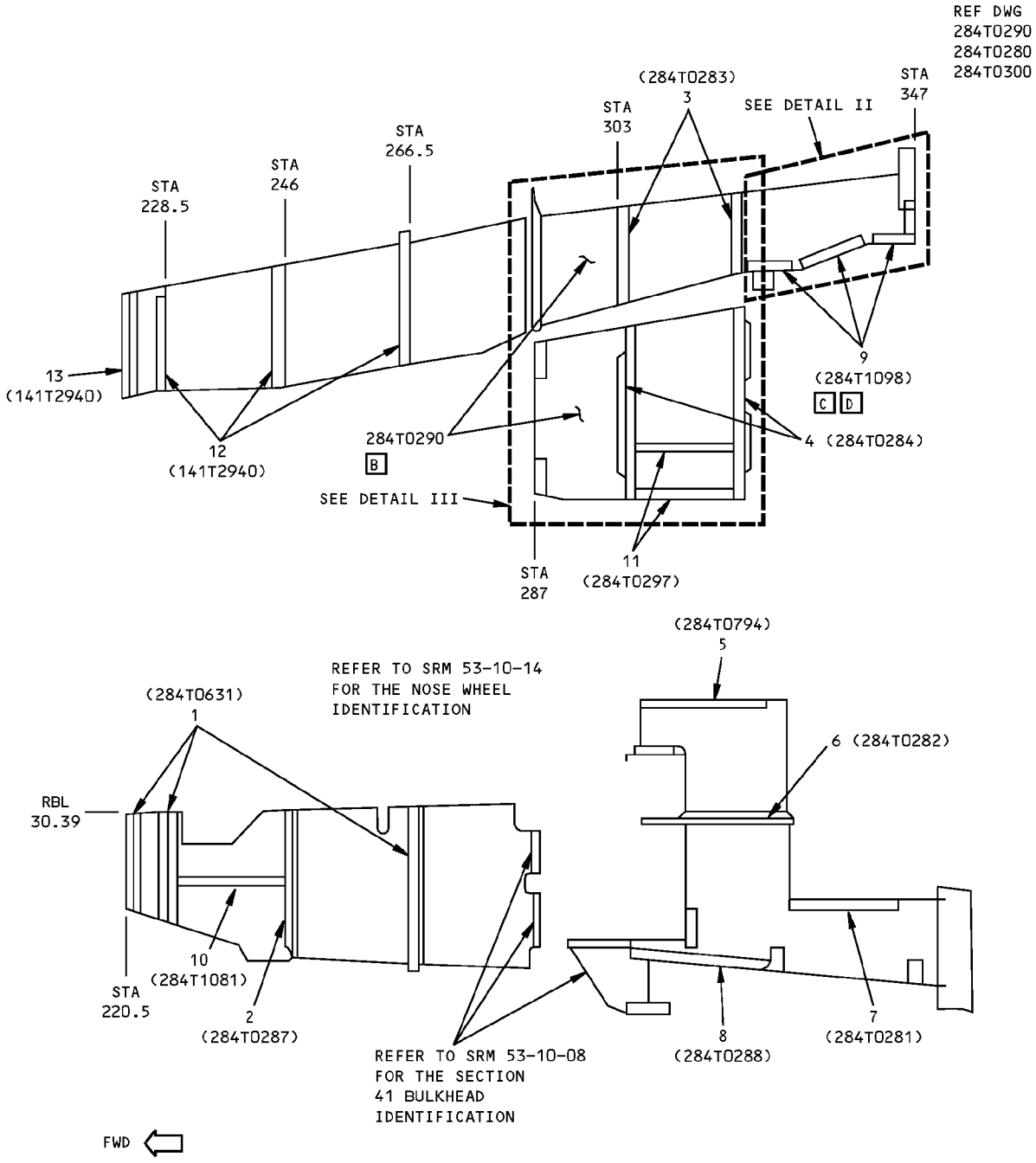
DETAIL III D

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FLOOR PANEL		FIBERGLASS-FACED NOMEX HONEYCOMB CORE PANEL (HIGH DENSITY CORE) PER BMS 4-17, TYPE III, GRADE 1 OR 2	

LIST OF MATERIALS FOR DETAILS I THRU III

Forward Equipment Bay Floor Panel Identification
Figure 1 (Sheet 3 of 3)

IDENTIFICATION 2 - FORWARD EQUIPMENT BAY FLOOR PANEL SUPPORT STRUCTURE



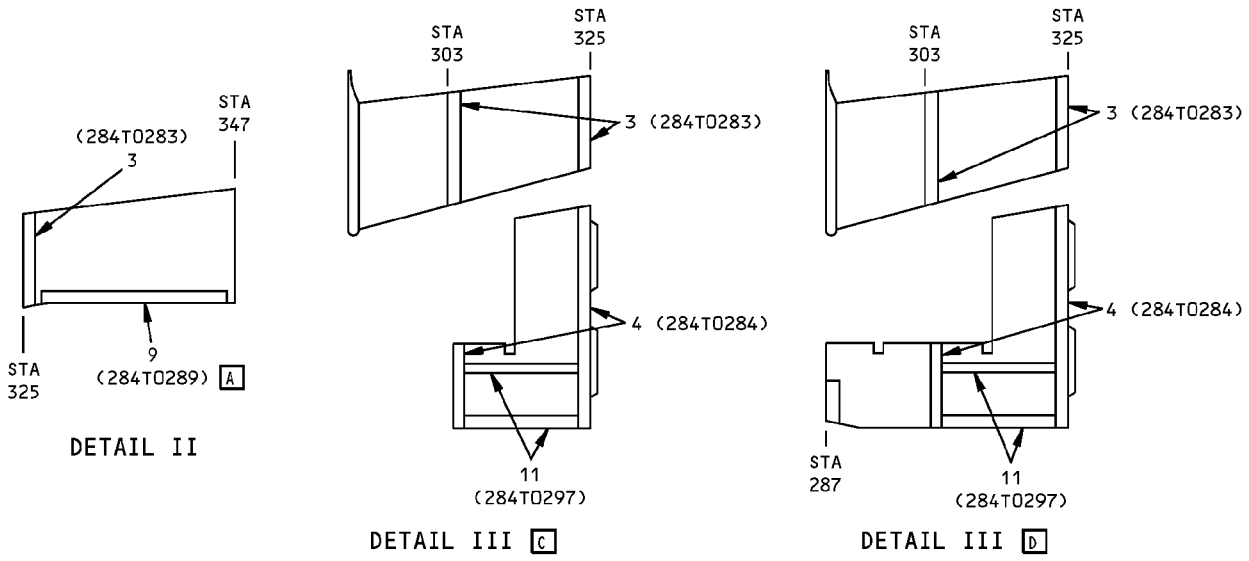
BOTTOM VIEW OF SUPPORT STRUCTURE
DETAIL I

LIST OF MATL

Forward Equipment Bay Floor Panel Support Structure Identification
Figure 1 (Sheet 1 of 2)

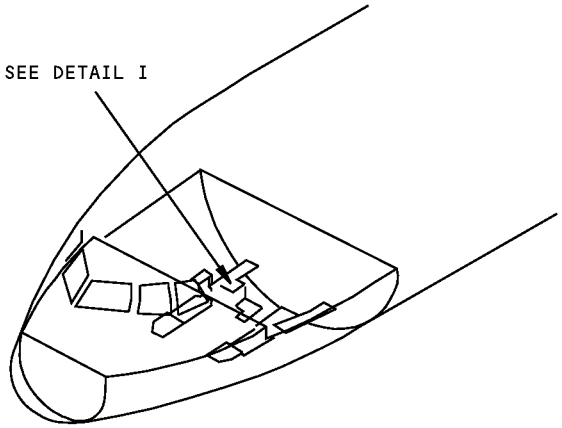
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SUPPORT ZEE		BAC1517-135 2024-T42	
2	SUPPORT ASSY			
	WEB	0.025	CLAD 2024-T3	
	DOUBLER	0.040	CLAD 2024-T3	
	SUPPORT	0.063	CLAD 2024-T42	
3	SUPPORT BRACKET	0.050	CLAD 2024-T42	
4	SUPPORT ZEE		BAC1517-1245 2024-T42	
5	SUPPORT ASSY			
	SUPPORT CHANNEL		AND10137-111 7075-T6511	
	SUPPORT ANGLE		AND10133-1601 7075-T6511	
6	SUPPORT ASSY			
	UPPER CHORD		BAC1505-100052 2024-T3511	
	WEB	0.025	CLAD 2024-T42	
	LOWER CHORD		BAC1503-100046 CLAD 2024-T3	
	DIAGONAL CHORD		BAC1503-100033 2024-T3511	
7	BRACKET	0.063	CLAD 2024-T42	
8	SUPPORT BRACKET		BAC1517-350 CLAD 2024-T3	
9	SUPPORT BRACKET		BAC1490-2695 CLAD 2024-T42	
10	SUPPORT TEE		BAC1505-18884 7075-T6511	
11	SUPPORT CHANNEL		AND10137-1303 2024-T3511	
12	CHANNEL	0.063	7075-T6	
13	ANGLE		AND10133-1401 7075-T6	

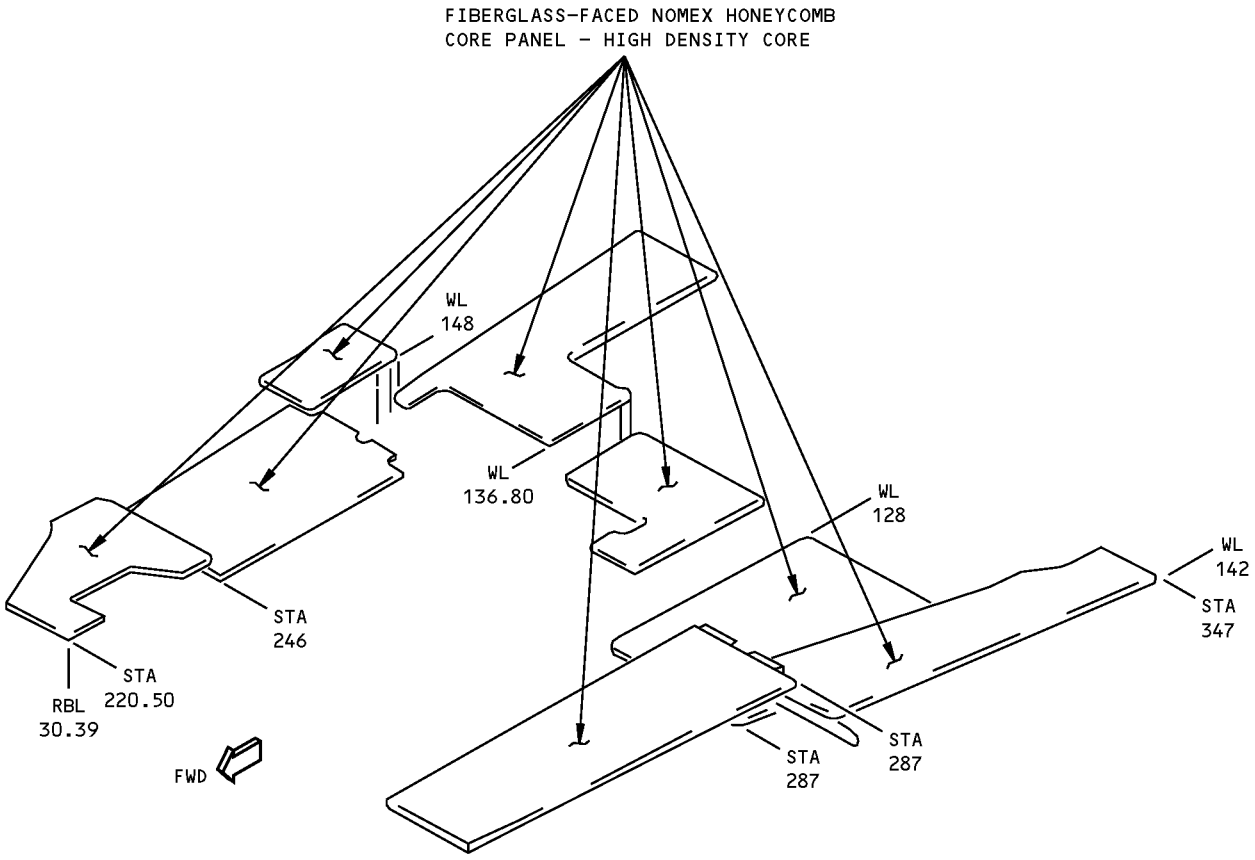
LIST OF MATERIALS FOR DETAIL I, II, AND III



Forward Equipment Bay Floor Panel Support Structure Identification
Figure 1 (Sheet 2 of 2)

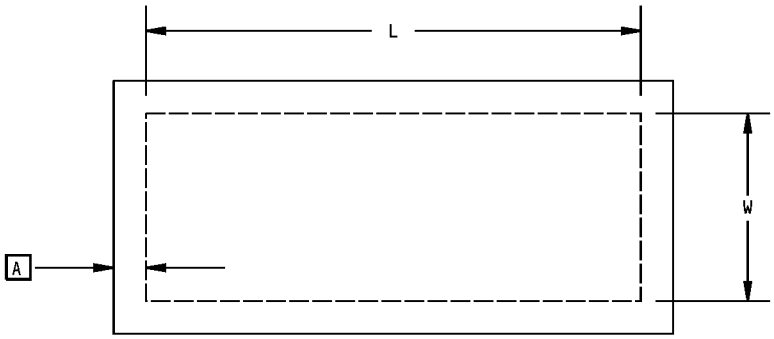
ALLOWABLE DAMAGE 1 - SECTION 41- FORWARD EQUIPMENT BAY FLOOR PANELS





TYPICAL FLOOR PANEL CONFIGURATION C
DETAIL I

Section 41- Forward Equipment Bay Floor Panels Allowable Damage
Figure 101 (Sheet 1 of 2)



EXAMPLE OF A FLOOR PANEL - PLAN VIEW

ALLOWABLE DAMAGE FOR ONE PANEL			
CRACKS	DENTS	HOLES	DELAMINATION
10.0 INCHES IN LENGTH MAXIMUM	UP TO 50.0 SQUARE INCHES [B]	UP TO 50.0 SQUARE INCHES [B]	UP TO 50.0 SQUARE INCHES [B]

NOTES

- THIS ALLOWABLE DAMAGE DATA IS APPLICABLE TO THE STRUCTURAL INTEGRITY ONLY. THIS DATA IS NOT APPLICABLE WHERE THE FUNCTION OF THE FLOOR PANEL WOULD BE LIMITED.

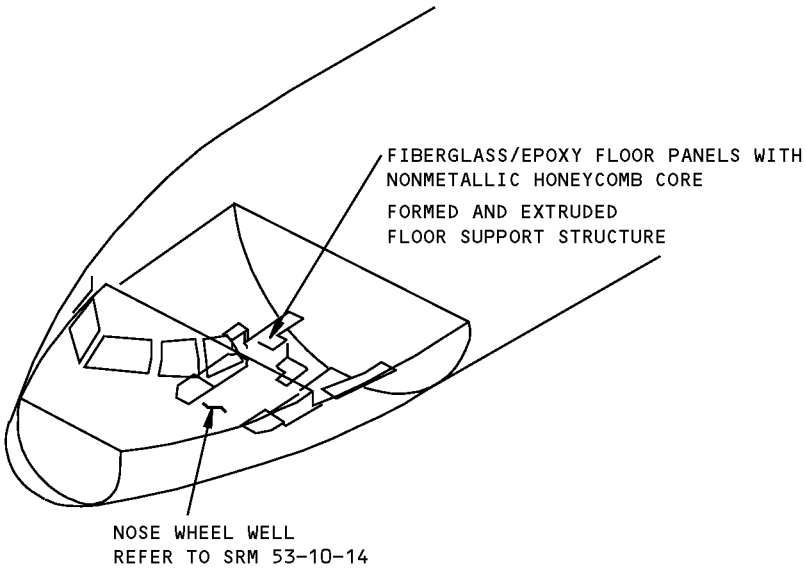
[A] PANEL DAMAGE THAT IS NEARER THAN 3.0 INCHES TO THE EDGE IS NOT PERMITTED. DAMAGE TO ONLY ONE FASTENER IS PERMITTED. DAMAGE TO A FASTENER INCLUDES DISBONDING OR CRACKS IN THE PANEL FASTENER INSERT, FASTENER THREADS THAT ARE STRIPPED, OR FASTENERS THAT ARE MISSING.

[B] THE TOTAL DAMAGE MUST NOT BE MORE THAN 30 PERCENT OF THE PANEL LENGTH IN THE -L- DIRECTION OR 30 PERCENT OF THE PANEL WIDTH IN THE -W- DIRECTION.

[C] FLOOR PANEL SHAPES MAY BE DIFFERENT. REFER TO THE IDENTIFICATION SECTION FOR A SPECIFIED CONFIGURATION AND EFFECTIVITIES.

Section 41- Forward Equipment Bay Floor Panels Allowable Damage
Figure 101 (Sheet 2 of 2)

REPAIR 1 - FORWARD EQUIPMENT BAY STRUCTURE

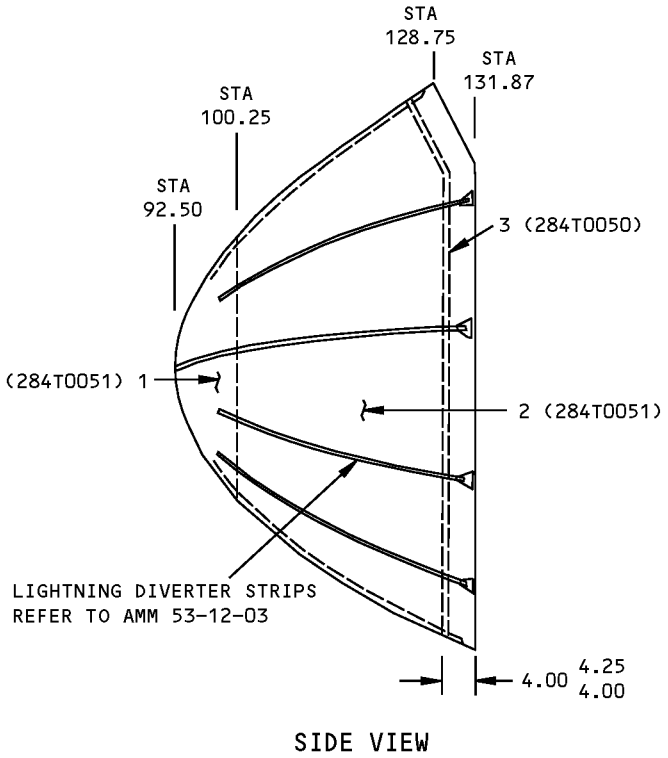


NOTES

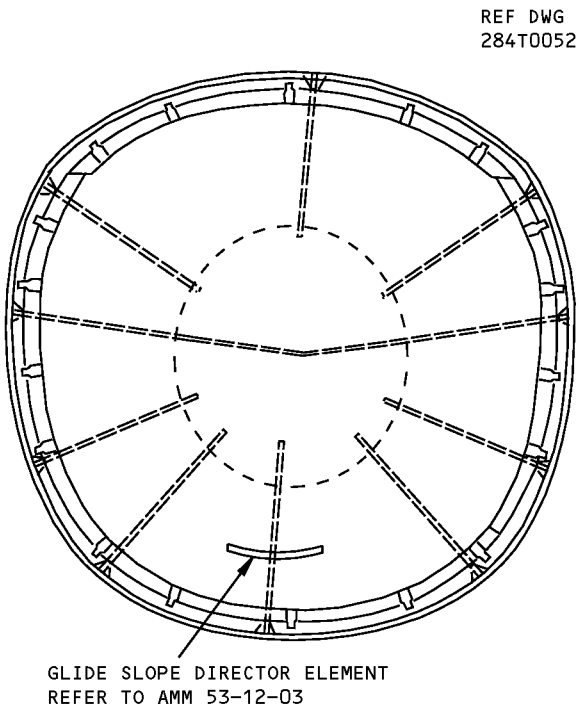
- REFER TO SRM 51-70-11 FOR TYPICAL FORMED SECTION REPAIRS.
- REFER TO SRM 51-70-12 FOR TYPICAL EXTRUDED SECTION REPAIRS.
- REFER TO SRM 51-70-13 FOR TYPICAL WEB REPAIRS.
- REFER TO SRM 53-00-50 FOR FLOOR PANEL REPAIR.

Forward Equipment Bay Structure Repair
Figure 201

IDENTIFICATION 1 - NOSE RADOME



SIDE VIEW



REAR VIEW

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	NOSE PIECE SKINS		FIBERGLASS/EPOXY FABRIC PER BMS 8-79, CLASS III, TYPE 1581, GRADE 1	
	CORE		NON-METALLIC HONEYCOMB HRH-10F/50-5.0	
2	SIDE PANEL [A] SKINS		FIBERGLASS/EPOXY FABRIC PER BMS 8-79, CLASS III, TYPE 1581, GRADE 1	
	CORE		NON-METALLIC HONEYCOMB PER BMS 8-124, CLASS I, TYPE I, GRADE 5.5	
3	SUPPORT RING	0.045	CLAD 2024-T42	

LIST OF MATERIALS

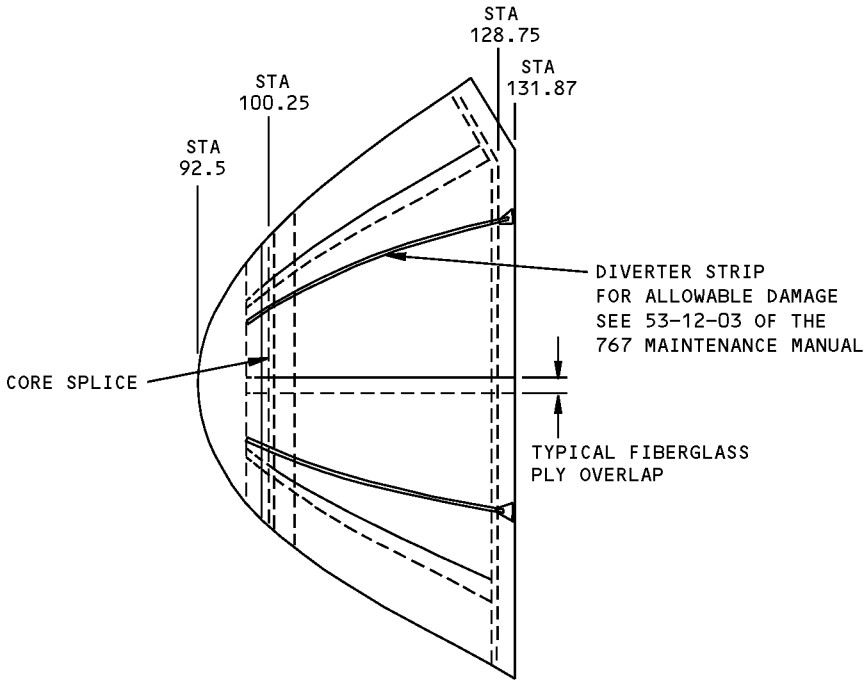
NOTES

- REFER TO REPAIR GENERAL FOR RADOME THICKNESS INFORMATION.

[A] SIDE PANELS CONSIST OF SEGMENTED CORE SECTIONS. REFER TO BOEING DRAWINGS FOR EDGE BAND CONFIGURATION.

Nose Radome Identification
Figure 1

ALLOWABLE DAMAGE 1 - NOSE RADOME



LEFT SIDE VIEW

AREA	CRACKS	NICKS, GOUGES AND EROSION	DENTS, DELAMINATIONS	HOLES
NOSE RADOME SHELL	EDGE CRACKS ONLY SEE DETAIL I.	[A] [B]	[A] [B] [D]	[A] [B]
SUPPORT RING	NO CRACKS ALLOWED EXCEPT FOR EDGE CRACKS. SEE DETAIL V.	FOR EDGE DAMAGE SEE DETAILS IV AND V. FOR OTHER AREAS SEE DETAIL II.	SEE DETAIL III FOR DENTS.	[C]

NOTES

- REFER TO 51-10-01 FOR AERODYNAMIC SMOOTHNESS REQUIREMENTS
- REFER TO 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- DAMAGE TO PANEL EDGES MAY BE CONFINED TO DELAMINATION OR MAY TAKE A FORM WHICH RESULTS IN DAMAGE TO FIBERS AND A LOSS OF EFFECTIVE CROSS-SECTIONAL AREA. THIS TYPE OF DAMAGE SHOULD BE REMOVED AND THE LIMITATIONS GIVEN FOR CRACKS APPLIED

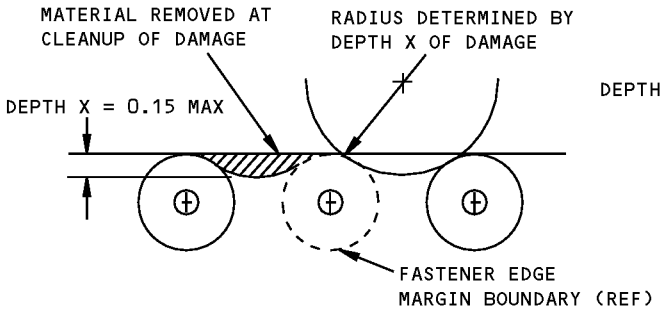
[A] AREAS OF DAMAGE, EACH NOT TO EXCEED ONE SQUARE INCH, DUE TO DETERIORATION, DELAMINATION, EROSION, GOUGES, SCRATCHES AND PUNCTURES ARE ALLOWED PROVIDED THAT:
1) THEY ARE NOT WITHIN 2 INCHES (50 mm) OF AN EDGE OR EDGE ATTACHMENT FASTENERS
2) MINIMUM SPACING BETWEEN ADJACENT UNREPAIRED DAMAGE AREAS IS 10 INCHES (250 mm)

[B] TEMPORARILY PROTECT UNREPAIRED DAMAGE FROM PENETRATION BY WATER OR OTHER FOREIGN MATTER BY SEALING WITH SCOTCHBRAND 853, PERMACEL P280 OR EQUIVALENT TAPE. RECORD THE LOCATION OF THE DAMAGE AND REPAIR AT THE EARLIEST OPPORTUNITY

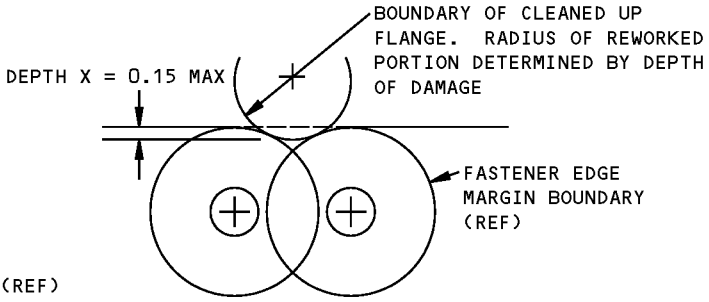
[C] HOLES UP TO 0.25-INCH (6 mm) DIAMETER ARE ALLOWED PROVIDED THAT THEY ARE NO CLOSER THAN 4D TO AN EXISTING HOLE OR OTHER DAMAGE

[D] DENTS GENERALLY RESULT IN FIBER DAMAGE OR DELAMINATION. HOWEVER, PROVIDED THAT THERE IS NO FIBER DAMAGE OR DELAMINATION, DENTS UP TO 1.50 INCH (38 mm) DIA MAX ARE ALLOWED. ONE DENT PER SQUARE FOOT OF AREA ALLOWED WHICH MUST BE A MINIMUM OF 6 INCHES (150 mm) FROM ANY OTHER DAMAGE, FASTENER HOLE, OR PANEL EDGE. IF FIBER DAMAGE IS PRESENT REFER TO APPLICABLE DAMAGE DATA IN TABLE

Nose Radome Allowable Damage
Figure 101 (Sheet 1 of 2)

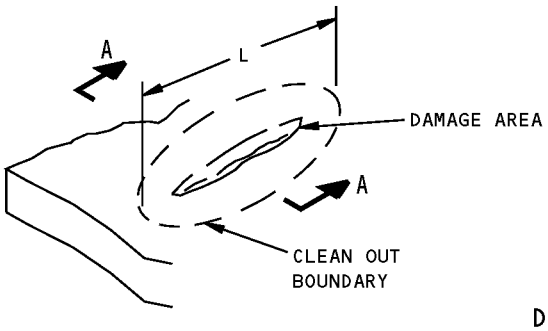


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

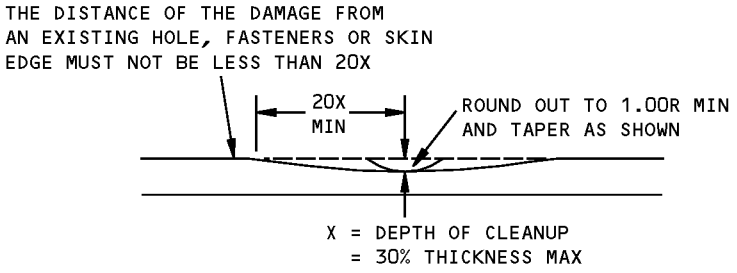


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

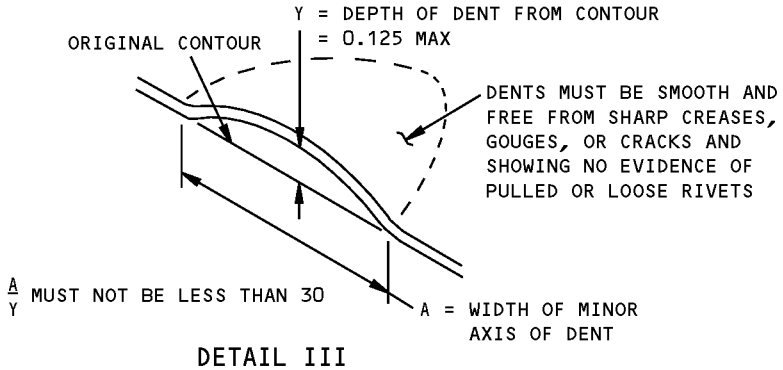
DETAIL I



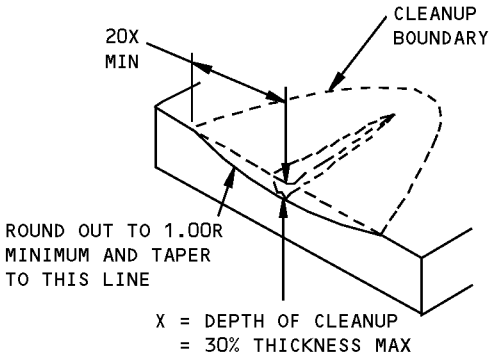
DETAIL II



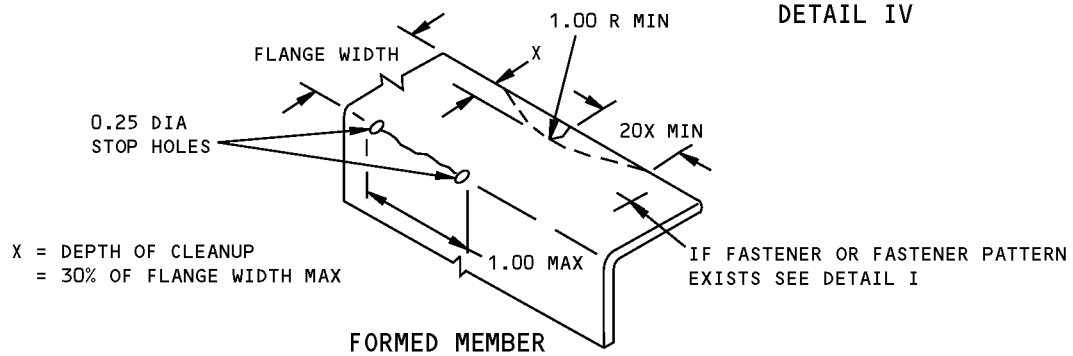
SECTION A – A



DETAIL III



DETAIL IV



FORMED MEMBER
DETAIL V

Nose Radome Allowable Damage
Figure 101 (Sheet 2 of 2)

REPAIR GENERAL - NOSE RADOME

1. Applicability

A. This repair section is applicable and approved for the repair of radomes as delivered or approved by Boeing for use on this model airplane. Repairs that are made from this repair section are not approved for radomes that have been modified, rebuilt or re-ringed using processes and materials that have not been approved by Boeing for use on this model airplane.

2. General

A. This subject contains repair data for X-Band Radomes with honeycomb core.

B. On the inside of the radome, keep a record of damage and the extent of the repairs that are made.

C. Electrical Test Requirements

(1) A new nose radome has the transmission requirements as given in RTCA/DO-213 for a Class B radome (the transmission efficiency is 87% average and 82% minimum). A 767 Class B radome can be repaired with the methods which follow in this document. A Class B radome repaired with the Alternative 2 repair in Figure 203/REPAIR GENERAL or the Alternative 4 repair in Figure 205/REPAIR GENERAL agrees with the transmission requirements given in RTCA/DO-213 for a Class C radome (the transmission efficiency is 84% average and 78% minimum). The interpretation of weather severity will be correct with a Class C radome and the standard 767 waveguide installation. Thus, post-repair electrical tests of the radome are not necessary. An operator can, however, do an electrical transmission efficiency test as given in Paragraph 2.C.(2)/REPAIR GENERAL to show better electrical transmission efficiency.

(2) A Class B radome repaired with the Alternative 1 repair in Figure 202/REPAIR GENERAL or the Alternative 3 repair in Figure 204/REPAIR GENERAL must be tested for electrical transmission efficiency (refer to par. D.(3)).

(3) If an operator thinks there is a question about the electrical performance of the radome, then it should be tested. Do an electrical transmission efficiency test as given in the Minimum Operations Performance Standards (MOPS) for Nose-Mounted Radomes, Document No. RTCA/D0-213, Paragraph 4./REPAIR GENERAL4.7.1. An operator can get a copy of this document from:

RTCA, Incorporated 1140 Connecticut Avenue Northwest, Suite 1020

Washington, D.C. 20036-4001

U.S.A

Telephone: 202-833-9339

Facsimile (FAX): 202-833-9434

(4) The radome that was repaired and has the primer, decorative paint, the rain errosion protection applied, and the lightning diverter strips installed, must have the transmission efficiency requirements that follow:

(a) The average transmission efficiency for any continuous scan of the antenna in the radome window area must not be less than 84%. The radome window area is between ± 80 degrees azimuth and ± 20 degrees elevation.

(b) The minimum transmission efficiency at any point in the radome window must not be less than 78%.

NOTE: Thicknesses of paint which are more than 0.010 inch can decrease the necessary radome transmissivity. A radome wall that has been repaired should be put back to its initial thickness. If this is not done, radome transmission efficiency will be decreased.

For repaired radomes on airplanes that have Predictive Wind Shear (PWS), and that are finished with CAAPCO erosion and p-static protection (Caapcoat B-274 as specified in BAC5880 and Caapcoat AS-P108), do a transmission efficiency test. The efficiency test must show the radome to be Class C or better.

D. For moisture removal from X-Band radomes with honeycomb core, see Paragraph 6./REPAIR GENERAL

E. For repair of damage caused by electrical discharge, see Paragraph 16./REPAIR GENERAL.

F. For small repairs, see Paragraph 17./REPAIR GENERAL.

G. For wet layup repairs, see Paragraph 8./REPAIR GENERAL and Figure 202/REPAIR GENERAL (Alternative 1 - Wet Layup Repair) or Figure 203/REPAIR GENERAL (Alternative 2 - Wet Layup Repair).

H. For repairs that use preimpregnated (prepreg) material, see Paragraph 9./REPAIR GENERAL and Figure 204/REPAIR GENERAL (Alternative 3 - Prepreg Repair) or Figure 205/REPAIR GENERAL (Alternative 4 - Prepreg Repair).

I. For aerodynamic smoothness requirements, refer to 51-10-01, GENERAL.

J. For investigation and cleanup of damage, refer to 51-10-02, GENERAL.

K. For a list of repair material sources, refer to 51-30-03, GENERAL.

L. For repairs to the lightning strike diverter strips and the glide slope director element, refer to AMM 53-12-03 and 53-12-05.

3. References

Reference	Title
51-10-01, GENERAL	Aerodynamic Smoothness Requirements
51-10-02, GENERAL	Inspection and Removal of Damage
51-30-03, GENERAL	Nonmetallic Materials
51-70-06, GENERAL	Glass Fabric Reinforced Epoxy Laminates and Nonmetallic Honeycomb Sandwich Repairs - Room Temperature – 150°F (66°C) Cure (Wet Layup)
53-10-72, IDENTIFICATION 1	Nose Radome
AMM 51-21-00	Aircraft Maintenance Manual
AMM 53-12-01	Aircraft Maintenance Manual
AMM 53-12-03 and 53-12-05	Aircraft Maintenance Manual
AMM 53-52-31	Aircraft Maintenance Manual
NDT Part 2, 51-00-01	Water Detection in Honeycomb Structure
NDT Part 4, 51-00-01	Bondline Delamination Inspection in Metal Bonded Parts and Non-metal Laminates
NDT Part 4, 51-00-02	Inspection of Laminate Structures
NDT Part 9, 51-00-01	Inspection for Ice or Water in Honeycomb Parts

4. Repair Limitations

A. Repair Limitations (Refer to Paragraph 16./REPAIR GENERAL Paragraph 17./REPAIR GENERAL, and Figure 207/REPAIR GENERAL).

5. Find the Extent of the Damage

CAUTION: DO NOT USE CHEMICAL PAINT STRIPPERS TO REMOVE THE PAINT BEFORE YOU MAKE AN ANALYSIS OF THE DAMAGE TO THE RADOME. DAMAGE TO THE ADHESIVE RESIN SYSTEM WILL OCCUR.

A. Examine the radome visually to find the level of the damage and look for the entry of oil, fuel, dirt or other unwanted material.

B. Examine the radome for delamination and moisture as given in 51-70-06, GENERAL or AMM 53-12-01and NDT Part 2, 51-00-01, NDT Part 4, 51-00-01, and NDT Part 9, 51-00-01.

NOTE: Delaminations can be found by instrumented nondestructive inspection (NDI) procedures. Refer to NDT Part 4, 51-00-02. If NDI equipment is not available, use the tap test procedure. Hit the damaged area lightly with a solid metal disk. An area with a delamination will have a dull sound when you hit it lightly. An area with no delaminations will have a sharp sound.

C. Examine the radome for damage to the lightning strike diverter strips and the glide slope director element (Figure 201/REPAIR GENERAL).

6. Moisture Removal from the Radome Honeycomb Structure

NOTE: There are two moisture removal methods.

A. Remove moisture from the honeycomb structure as given in Paragraph 6.B./REPAIR GENERAL or refer to 51-70-06, GENERAL, Paragraph 2.B.

NOTE: Paragraph 6.B./REPAIR GENERAL gives a moisture removal procedure which adds a fiberglass repair ply over the damaged area. Paragraph 8.A./REPAIR GENERAL and Paragraph 9.A./REPAIR GENERAL give skin replacement procedure. The skin replacement procedure is recommended. The skin replacement procedure does not add a repair ply. Thus, it does not cause a decrease in the transmission efficiency.

B. You can remove moisture from the honeycomb cells of the radome in an area with a maximum diameter of 3.5 inches.

(1) Find the level of the moisture contamination as given in AMM 53-12-01/601 or NDT Part 2, 51-00-01, NDT Part 4, 51-00-01, and NDT Part 9, 51-00-01.

(2) Put masking tape around the area as given in 51-70-06, GENERAL (2 inches away all around the moisture contamination).

(3) Remove the Tedlar cover (moisture barrier) from the internal surface 1 inch more all around than the damaged area. Use No. 240 or finer Scotch-Brite abrasive. Do not damage the fibers on the surface of the inner skin.

(4) On the inner surface, drill a 1/16-inch diameter hole into the approximate center of each cell that contains moisture. Do not damage the outer skin when you drill the holes.

(5) Apply a heat blanket on the outer surface as given in 51-70-06, GENERAL.

(6) The use of vacuum over the 1/16-inch diameter holes will increase the speed of the removal of moisture. Refer to 51-70-06, GENERAL.

(7) To ensure complete drying, check for water in the vacuum line with a desicant indicator.

(8) When the area is dry, clean it as given in Paragraph 7.C./REPAIR GENERAL.

(9) Put down one layer of fiberglass fabric and resin as given in Paragraph 8./REPAIR GENERAL, or one prepreg ply as given in par.Paragraph 9./REPAIR GENERAL Make the ply a sufficient size to go over the damaged area plus 1 inch more all around. This layer can be a maximum diameter of 5.5 inches.

(10) Apply a source of pressure to the layup as given in Paragraph 13./REPAIR GENERAL.

(11) Cure the fiberglass fabric and resin as given inParagraph 14./REPAIR GENERAL. Cure the prepreg as given in Paragraph 14./REPAIR GENERAL.

(12) Apply a finish to the repair area as given in Paragraph 15./REPAIR GENERAL.

7. Removal and Preparation of Damaged Area

A. Damage Removal

(1) When damage has occurred to skins only, remove the damaged laminations to a circular or oval shape. Take care not to damage the undamaged plies, core, or surrounding material.

NOTE: Remove only damaged plies.

(2) When the core is also damaged, remove the core by trimming to a circular or oval shape (Ref: 51-70-06, GENERAL for core removal procedure).

Take care to avoid cutting into an undamaged skin on the opposite side.

(3) Areas contaminated by moisture that cannot be dried out by heating (temperature not to exceed 180°F [83°C]) must be removed with the other damage.

B. Preparation of Damaged Area (Figure 202/REPAIR GENERAL, Figure 203/REPAIR GENERAL, Figure 204/REPAIR GENERAL, and Figure 205/REPAIR GENERAL)

(1) Determine the number of plies that have been cut. Mask off the area around the cutout allowing 1.00 inch for each ply replaced.

NOTE: Where damage is through both skins the repair patch overlap of each skin must be offset to each other (Figure 202/REPAIR GENERAL, Figure 203/REPAIR GENERAL, Figure 204/REPAIR GENERAL, and Figure 205/REPAIR GENERAL).

CAUTION: SANDING OR ABRADING MUST NOT EXPOSE OR DAMAGE FIBERGLASS FILAMENTS IN THE UNDAMAGED SKIN. STRUCTURAL STRENGTH OF THE SKIN WILL BE REDUCED.

(2) When damage has occurred to the internal skin, remove the Tedlar cover (moisture barrier) from the interior surface plus 1 inch more around the damaged area. Use No. 240 or finer Scotch-Brite abrasive.

CAUTION: DO NOT USE PAINT STRIPPERS FOR FINISH REMOVAL. DAMAGE TO THE FIBERGLASS RESIN SYSTEM WILL OCCUR.

(3) Remove exterior finishes using No. 180 or finer sandpaper.

(4) Protect exposed core with masking tape, metal plate, or equivalent.

WARNING: SANDING GIVES OFF A FINE DUST THAT MAY CAUSE SKIN IRRITATIONS. BREATHING OF AN EXCESSIVE AMOUNT OF THIS DUST MAY BE INJURIOUS. OBSERVE PRECAUTIONS FOR SKIN AND RESPIRATION PROTECTION.

(WARNING PRECEDES)

EXPLOSIONPROOF EQUIPMENT MUST BE USED WHERE THE POSSIBILITY OF VAPOR IGNITION EXISTS. PERSONNEL INJURY MAY OCCUR.

(5) Put a uniform taper around the repair with No. 180 sandpaper. Make the taper 3 inches (1 inch per ply) for the Alternative 1 wet layup, the Alternative 2 wet layup, and the Alternative 3 prepreg layup. Make the taper 1.5 inches (0.5 inch per ply) for the Alternative 4 prepreg layup.

NOTE: For sanding, use a flexible disk sander, a belt sander, a rotating pad sander, or sand by hand.

(6) When damage has occurred to the skins only, remove the damaged area of the skin only, and lightly sand the core where possible without reducing the core thickness.

CAUTION: BACK UP THE UNDAMAGED SKIN DURING SANDING TO AVOID DELAMINATION.

SANDING MUST NOT EXPOSE OR DAMAGE FIBERGLASS FILAMENTS IN THE UNDAMAGED SKIN. STRUCTURAL STRENGTH OF THE SKIN WILL BE REDUCED.

(7) Where the core is damaged, but the opposite skin is undamaged, sand the core bonding surface using No. 180 or finer sandpaper to remove resin fillets for the replacement core to seat properly.

C. Cleaning of Repair Area

WARNING: EXPLOSIONPROOF EQUIPMENT MUST BE USED WHERE THE POSSIBILITY OF VAPOR IGNITION EXISTS. PERSONNEL INJURY MAY OCCUR.

(1) Remove all sanding dust by applying oil-free compressed air and a vacuum cleaner.

WARNING: WHEN USING SOLVENTS AVOID BREATHING VAPORS. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN WORKING IN A CONFINED SPACE OR AREA. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. WEAR APPROVED GLOVES AND PROTECTIVE CLOTHING. WEAR EYE PROTECTION. KEEP AWAY FROM SOURCES OF HEAT, FIRE OR SPARKS.

BREATHING VAPORS OR ALLOWING SOLVENT TO CONTACT SKIN OR EYES IS HAZARDOUS. HEAT, FIRE OR SPARKS CAN CAUSE AN EXPLOSION.

CAUTION: DO NOT IMMERSE PARTS IN TRICHLOROETHANE OR ALLOW STANDING SOLVENT ON PARTS. DAMAGE TO PARTS WILL OCCUR.

(2) Wipe surfaces with a clean cloth moistened with a ketone base solvent. Allow solvent to evaporate before proceeding with the repair.

8. Repairs Using Wet Layup (Refer to Figure 202 and 203)

NOTE: The repairs as given in the steps of this paragraph must put the radome back to its initial thickness as shown in Figure 201/REPAIR GENERAL. Failure to make the radome that is repaired the same thickness as the initial thickness will decrease the electrical performance of the radome. If you do not know the thickness of the radome, measure the thickness as given in NDT, Part 6, 53-50-00, Figure 1.

CAUTION: DO NOT USE CHEMICAL PAINT STRIPPERS TO REMOVE THE PAINT. DAMAGE TO THE ADHESIVE RESIN SYSTEM WILL OCCUR.

A. Repair of the Skin Laminate (Refer to Figure 206/REPAIR GENERAL, Layups B and C)
   (1) Find the level of the damage as given in Paragraph 5./REPAIR GENERAL.
   (2) Remove the damaged plies and prepare the area for repair as given in Paragraph 7.A./REPAIR GENERAL.
   (3) Prepare the repair plies as given in Paragraph 10.A./REPAIR GENERAL.
   (4) Apply repair plies according to Paragraph 10.B./REPAIR GENERAL.
   (5) Apply pressure according to Paragraph 13.A./REPAIR GENERAL.
   (6) Cure the repair according to Paragraph 14./REPAIR GENERAL.
   (7) Refinish the repair according to Paragraph 15./REPAIR GENERAL.

B. Repair of damage to one skin and honeycomb core using replacement core (Refer to Figure 206/REPAIR GENERAL, Layups E and F.).
   (1) Determine extent of damage according to Paragraph 5./REPAIR GENERAL.
   (2) Remove damaged skin and core and prepare area according to Paragraph 7.A./REPAIR GENERAL.
   (3) Fabricate, clean and install honeycomb replacement core according to Paragraph 12./REPAIR GENERAL.
   (4) Prepare and apply repair plies according to Paragraph 10./REPAIR GENERAL.
   (5) Apply pressure according to Paragraph 13.A./REPAIR GENERAL.
   (6) Cure the repair according to Paragraph 14./REPAIR GENERAL.
   (7) Refinish the repair according to Paragraph 15./REPAIR GENERAL.

C. Repair of damage that extends through the interior and exterior skins that includes honeycomb core replacement (Refer to Figure 206/REPAIR GENERAL, Layups H and I).
   (1) Determine extent of damage according to Paragraph 5./REPAIR GENERAL
   (2) Remove damaged skins and core according to Paragraph 7.A./REPAIR GENERAL
   (3) Make a plaster backup mold as follows:
      (a) If the external skin is to be repaired first, fill the hole with a wooden plug or equivalent to provide an inner surface flush with the honeycomb core.

         NOTE: If it is advantageous to repair the internal skin first, the backup mold may be formed on the external skin surface and the procedures reversed accordingly. Where necessary the backup mold may be made from a comparable area on another radome.

      (b) Cover the area with a parting film on the internal skin.
      (c) Dam the area to give a mold thickness of at least 1.0 inch thick.
      (d) Pour a water plaster mixture into the dam.
      (e) When the plaster has hardened, remove it from the radome and dry it in an air circulating oven at 120°F (49°C) for approximately 24 hours.
   (4) Remove plug and the parting film from the internal skin.
   (5) Taper sand and clean the external skin according to Paragraph 7.B./REPAIR GENERAL and Paragraph 7.C./REPAIR GENERAL

(6) Cover the area with a clean parting film on the internal skin and secure the backup mold in position by means of clamps, props or lashing.

(7) Fabricate, clean and install honeycomb replacement core according to Paragraph 12./REPAIR GENERAL.

(8) Prepare and apply repair plies to the external skin according to Paragraph 10./REPAIR GENERAL.

(9) Apply pressure according to Paragraph 13.A./REPAIR GENERAL.

(10) Cure according to Paragraph 14./REPAIR GENERAL.

(11) Remove backup mold and solid parting film from internal skin.

(12) Taper sand and clean the internal skin according to Paragraph 7.B./REPAIR GENERAL and Paragraph 7.C./REPAIR GENERAL.

(13) Complete the repair according to Paragraph 8.A.(3)/REPAIR GENERAL thru Paragraph 8.A.(7)/REPAIR GENERAL.

9. Repairs Using Preimpregnated (Prepreg) Material (Refer to Figure 204 and 205)

NOTE: The repairs as given in the steps of this paragraph must put the radome back to its initial thickness as shown in Figure 201/REPAIR GENERAL. Failure to make the radome that is repaired the same thickness as the initial thickness will decrease the electrical performance of the radome. If you do not know the thickness of the radome after the repair, measure the thickness as given in NDT, Part 6, 53-10-01, Figure 1.

CAUTION: DO NOT USE CHEMICAL PAINT STRIPPERS TO REMOVE THE PAINT. DAMAGE TO THE ADHESIVE RESIN SYSTEM WILL OCCUR.

A. Repair of the Skin Laminate (Refer to Figure 206/REPAIR GENERAL, Layup A, Alternative 3)

(1) Find the level of the damage as given in Paragraph 5./REPAIR GENERAL

(2) Remove the damaged plies and prepare the area for repair as given in Paragraph 7./REPAIR GENERAL.

(3) Prepare the repair plies as given in Paragraph 11.A./REPAIR GENERAL.

(4) Put down a piece of adhesive film on the honeycomb core that has been sanded. The adhesive film will bond the prepreg repair to the honeycomb core. Refer to Figure 206/REPAIR GENERAL Layup A, Alternative 3.

(5) Install the repair plies as given in Paragraph 11.B./REPAIR GENERAL.

(6) Apply pressure according to Paragraph 13./REPAIR GENERAL.

(7) Cure the repair according to Paragraph 14./REPAIR GENERAL.

(8) Refinish the repair according to Paragraph 15./REPAIR GENERAL.

B. Repair of damage to one skin and honeycomb core using replacement core (refer to Figure 206/REPAIR GENERAL, Layup D).

(1) Determine extent of damage according to Paragraph 5./REPAIR GENERAL.

(2) Remove damaged skin and core and prepare area according to Paragraph 7.A./REPAIR GENERAL.

(3) Fabricate, clean and install honeycomb replacement core according to Paragraph 12./REPAIR GENERAL.

(4) Prepare and apply repair plies according to Paragraph 11.B./REPAIR GENERAL.

(5) Apply pressure according to Paragraph 13.A./REPAIR GENERAL.

(6) Cure the repair according to Paragraph 14./REPAIR GENERAL.

(7) Refinish the repair according to Paragraph 15./REPAIR GENERAL.

C. Repair of damage that extends through the interior and exterior skins that includes honeycomb core replacement (refer to Figure 206/REPAIR GENERAL, Layup G).

(1) Determine extent of damage according to Paragraph 5./REPAIR GENERAL

(2) Remove damaged skins and core according to Paragraph 7.A./REPAIR GENERAL.

(3) Make a plaster backup mold as follows:

(a) If the external skin is to be repaired first, fill the hole with a wooden plug or equivalent to provide an inner surface flush with the honeycomb core.

NOTE: If it is advantageous to repair the internal skin first, the backup mold may be formed on the external skin surface and the procedures reversed accordingly. Where necessary the backup mold may be made from a comparable area on another radome.

(b) Cover the area with a parting film on the internal skin.

(c) Dam the area to give a mold thickness of at least 1.0 inch thick.

(d) Pour a water plaster mixture into the dam.

(e) When the plaster has hardened, remove it from the radome and dry it in an air circulating oven at 120°F (49°C) for approximately 24 hours.

(4) Remove plug and the parting film from the internal skin.

(5) Taper sand and clean the external skin according to Paragraph 7.B./REPAIR GENERAL and Paragraph 7.C./REPAIR GENERAL.

(6) Cover the area with a clean parting film on the internal skin and secure the backup mold in position by means of clamps, props or lashing.

(7) Fabricate, clean and install honeycomb replacement core according to Paragraph 12./REPAIR GENERAL.

(8) Prepare and apply repair plies to the external skin according to Paragraph 11.B./REPAIR GENERAL.

(9) Apply pressure according to Paragraph 13.A./REPAIR GENERAL.

(10) Cure according to Paragraph 14./REPAIR GENERAL.

(11) Remove backup mold and parting film from internal skin.

(12) Taper sand and clean the internal skin according to Paragraph 7.B./REPAIR GENERAL and Paragraph 7.C./REPAIR GENERAL.

(13) Complete the repair according to Paragraph 9.A.(3)/REPAIR GENERAL thru Paragraph 9.A.(7)/REPAIR GENERAL.

D. Repair of Skin Laminate (Refer to Figure 206/REPAIR GENERAL, Layup A, Alternative 4).

(1) Find the level of the damage as given in Paragraph 5./REPAIR GENERAL.

(2) Remove the damaged plies and prepare the area for repair as given in Paragraph 7./REPAIR GENERAL.

(3) Prepare the repair plies as given in Paragraph 11.A./REPAIR GENERAL.

(4) Put down a piece of adhesive film on the skin that has been taper-sanded as given in Paragraph 7.B.(5)/REPAIR GENERAL The adhesive film will bond the prepreg repair to the taper-sanded skin. Refer to Figure 206/REPAIR GENERAL, Layup A, Alternative 4.

(5) Install the repair plies as given in Paragraph 11.B./REPAIR GENERAL.

(6) Apply pressure according to Paragraph 13./REPAIR GENERAL.

(7) Cure the repair according to Paragraph 14./REPAIR GENERAL.

(8) Refinish the repair according to Paragraph 15./REPAIR GENERAL.

10. Preparation and Application of Glass Fabric Repair Plies (Wet Layup)

NOTE: Refer to Figure 202/REPAIR GENERAL and Figure 203/REPAIR GENERAL.

A. Prepare the overlay patch.

(1) Cut the repair plies from BMS 9-3, Type H, H-2, H-3, Class 7, 10, 11, 13 and 19 fiberglass cloth.

(2) Cut two pieces of parting film approximately 3.0 inches larger all around than the glass fabric cloth and tape down one piece to a smooth surface.

NOTE: Use PVA film or other parting films.

(3) Spread Resin Mix 1, 2, or 3 prepared according to 51-70-06, GENERAL, over parting film and place the glass fabric cloth over the resin.

NOTE: Weight of resin approximately equal to the weight of the dry glass fabric cloth is required to impregnate the cloth.

(4) Cover the cloth on the parting film with the second piece of parting film.

(5) Press the resin through the cloth by working over the parting film with a sweep or roller in order to impregnate the cloth and to remove entrapped air.

(6) Cut the impregnated cloth to the required sizes for each individual ply of the patch. The parting film on both sides of the cloth decreases fraying of the edges while cutting the cloth. Direction of lengthwise parallel yarns in the patch must be in the same direction as lengthwise parallel yarns in the repair surface.

NOTE: Cut the first (smallest) ply of the patch 1.50 inches larger (using the repair on Figure 202/REPAIR GENERAL or 1 inch larger (using the repair on Figure 203/REPAIR GENERAL) all around than the preceeding inner edge of the taper. Cut each ply that follows 1 inch larger all around than the ply before it. Refer to Figure 202/REPAIR GENERAL and Figure 203/REPAIR GENERAL.

(7) To avoid excess resin buildup in the core cells which would have an adverse effect on the electrical properties, the area corresponding to the exposed core on each patch should be swept before layup to remove approximately one-third of the resin.

B. Apply the overlay plies (Refer to Figure 202/REPAIR GENERAL and Figure 203/REPAIR GENERAL)

NOTE: Where the damage has occurred at a lap joint in the initial laminates, it is not necessary to make a comparable lap in the repair plies.

(1) Remove the parting film from one side of the smallest ply of the patch and place the exposed face against the repair area, with the lengthwise parallel yarns in the ply in the same direction as the lengthwise parallel yarns of the repair surface. Refer to 53-10-72, IDENTIFICATION 1 for Structure Identification.

(2) Use a sweep over the parting film that covers the ply to remove wrinkles and entrapped air. Do not apply excessive pressure. Excessive pressure will produce a patch deficient in resin.

(3) After the parting film is removed from the contact faces, put the next larger size ply of the impregnated fiberglass cloth over the ply on the repair area with a 1.00-inch overlap all around. Refer to Figure 203/REPAIR GENERAL.

(4) Place succeeding plies of the patch as described in steps (2) and (3) above.

(5) After placing the last ply, cover the entire layup with a piece of parting film extending about 0.50 inch over edges of the patch.

(6) Sweep excess resin to edges of parting film, thereby fairing the edges of the patch to the contour of the repair surface. All loose threads must be embedded in the resin.

(7) Wipe off any excess resin that has been squeezed out at the edges of the parting film.

11. Preparation and Application of Preimpregnated (Prepreg) Glass Fabric Repair Plies

NOTE: Refer to Figure 204/REPAIR GENERAL and Figure 205/REPAIR GENERAL.

A. Prepare the repair plies.

CAUTION: THE PREIMPREGNATED MATERIAL MUST REMAIN FREE OF CONTAMINATION DURING CUTTING AND HANDLING. WEAR CLEAN WHITE GLOVES WHEN HANDLING.

(1) From fiberglass prepreg Style 1581, class III per BMS 8-79 material cut the required number of plies. Lengthwise parallel yarns in the plies must be in the same direction as the lengthwise parallel yarns in the repair surface. Refer to 53-10-72, IDENTIFICATION 1 for Structure Identification.

NOTE: Cut the first (smallest) ply of the patch 1.50 inches larger (using the repair in Figure 204/REPAIR GENERAL) or 0.50 inch larger (using the repair in Figure 205/REPAIR GENERAL) all around than the inner edge of the taper. Cut each ply that follows 1 inch larger (using the repair in Figure 204/REPAIR GENERAL) or 0.50 inch larger (using the repair in Figure 205/REPAIR GENERAL) all around than the ply before it. Refer to Figure 204/REPAIR GENERAL and Figure 205/REPAIR GENERAL.

(2) Refer to Figure 204/REPAIR GENERAL, Figure 205/REPAIR GENERAL, and Figure 206/REPAIR GENERAL Layups D and G for application of the adhesive.

B. Apply the repair plies.

NOTE: Where the damage has occurred at a lap joint in the initial laminates, it is not necessary to make a comparable lap in the repair plies.

(1) Apply repair plies starting with the smallest.

NOTE: Remove the polyethylene separator before placing each ply.

12. Fabrication, Cleaning and Installation of Honeycomb Replacement Core Plug (For Wet Layup Only)

A. Fabricate core plug.

(1) Cut a plug from honeycomb core material which is the same material as the inital core to fit the repair hole. Keep a maximum gap of 0.06 inch between the initial and repair core. Refer to Figure 202/REPAIR GENERAL, Figure 203/REPAIR GENERAL and Figure 204/REPAIR GENERAL.

B. Clean core plug.

WARNING: WHEN USING SOLVENTS AVOID BREATHING VAPORS. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN WORKING IN A CONFINED SPACE OR AREA. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. WEAR APPROVED GLOVES AND PROTECTIVE CLOTHING. WEAR EYE PROTECTION. KEEP AWAY FROM SOURCES OF HEAT, FIRE OR SPARKS.

(WARNING PRECEDES)

BREATHING VAPORS OR ALLOWING SOLVENT TO CONTACT SKIN OR EYES IS HAZARDOUS. HEAT, FIRE OR SPARKS CAN CAUSE AN EXPLOSION.

CAUTION: DO NOT USE CHLORINATED SOLVENTS. DAMAGE TO CORE MATERIAL WILL OCCUR.

(1) Clean contaminated core by dipping it in a ketone-based solvent bath for 60 seconds.

(2) Locally contaminated areas can be washed with a ketone-based solvent.

(3) The core must be completely free of solvent before installation.

C. Install the core plug.

(1) Where the damage does not extend through both skin layers, prepare one ply for wet layup to fit the repair hole and put it on the inside surface of the skin that is not damaged. Refer to Paragraph 10.A./REPAIR GENERAL and Paragraph 11./REPAIR GENERAL and Figure 206/REPAIR GENERAL, Layups D thru I.

(2) Apply potting compound to the core plug as follows:

(a) Coat the edges of the original core and the core plug with BMS 5-28 potting compound. (You can use BMS 5-28, Types 15, 17, 19.)

NOTE: Mix potting compound according to the manufacturer's instructions. Gel time is 60 to 90 minutes at 75°F ±5°F (24°C ±3°C). Full cure time is 7 days at 77°F ±2°F (25°C ±1°C), or 5 hours at 125°F ±5°F (52°C ±3°C). BMS 5-28 must gel at 75°F ±5°F (24°C ±3°C) for 60 minutes prior to cure.

(b) Install the core plug with honeycomb cells aligned with original core.

13. Application of Pressure

A. Application of pressure to repair.

(1) Remove the masking tape and clean the bonding area according to Paragraph 7.C./REPAIR GENERAL.

(2) Surround the area with the bleeder cloth. Lay cloth approx 1.0 inch away from the repair area and tape to hold in place. Refer to Figure 208/REPAIR GENERAL.

(3) Apply extruded sealing compound around the entire area and tie in the vacuum probe and thermocouple wire.

CAUTION: MYLAR, PVA, PVC, OR NYLON FILMS MUST NOT COME IN CONTACT WITH PREIMPREGNATED MATERIALS. THESE FILMS MUST BE SEPARATED FROM THE PREIMPREGNATED MATERIAL BY A PARTING FILM OR A TEDLAR FILM.

(4) Put a piece of vacuum bag material over all of the repair area and make a seal with sealing compound. Make pleats in the vacuum bag to ensure the vacuum bag will conform to the radome.

(5) Evacuate the space under the vacuum bag and keep a minimum vacuum of 22 inches of mercury.

(6) Apply a light coat of vaseline or oil on top of the vacuum bag to aid in sweeping.

CAUTION: HEAT WILL REDUCE THE POT LIFE OF THE RESIN.

(7) Sweep the repair area using squeegees or rollers. The motion of the sweep must be slow enough for the air in the part to move to the front of the wave of excess resin and thus be swept out. Sweeping must be done carefully so there is no displacement of fabric, and must be continued until all air bubbles and excess resin have been removed. Where repairs have been carried out over exposed cores, make all sweeping passes away from the exposed core area to keep excess resin out of the core cells. Do not sweep the exposed core area. Heat not to exceed 180°F (82°C) may be applied for not longer than 5 minutes to aid with the sweeping process.

(8) Care must be taken to avoid puncturing the vacuum bag. If any holes develop, immediately wipe the area with acetone-moistened rag to remove the lubricant and seal the hole with tape. Resweep to remove air.

14. Curing of Repair

NOTE: Heat can be applied with the use of an oven or a heat lamp, heat blanket, oven, or an autoclave. The rate of temperature increase should be 8°F per minute. When you use an oven, begin the cure in a cold oven. Refer to 51-70-06, GENERAL for cure times and temperature ranges. Remove trapped air bubbles as they arise during the cure.

CAUTION: THE APPLICATION OF HEAT IN EXCESS OF 180°F (83°F) WITHOUT THE APPLICATION OF PRESSURE DEVICES COULD RESULT IN FURTHER DELAMINATION OF THE SKIN-TO-CORE BOND. IT IS RECOMMENDED, WHEN YOU ACCELERATE THE CURE BY THE APPLICATION OF HEAT, TO VACUUM BAG ALL OF THE RADOME OR APPLY 3 TO 5 PSI PRESSURE TO THE REPAIR AREA WITH SHOT BAGS OR OTHER MECHANICAL METHODS.

A. Cure the room temperature, heat lamp, heat blanket, and oven repairs with a vacuum of 22 inches of mercury minimum.

B. Cure the repairs with the materials which follow:

(1) For repairs with BMS 8-79 and BMS 5-129, cure at 260°F ±10°F (127°C ±6°C) for 90 minutes. The rate of temperature increase is 8°F (4.5°C) per minute maximum.

(2) For repairs with BMS 8-301, class 1, cure at 200°F ±10°F (93°C ±6 °C) for 220 minutes. The rate of temperature increase is 1°F to 5°F (3°C) per minute maximum.

(3) For repairs with BMS 8-301, class 2, use one of the two cure procedures which follow:

(a) Cure at 150°F ±10°F (66°C ±6°C) for 180 minutes. The rate of temperature increase is 1°F to 5°F (3°C) per minute maximum.

(b) Cure at 70°F ±5°F (21°C ±3°C) for 5 days.

15. Refinish After Repair

CAUTION: DO NOT SAND INTO THE INITIAL STRUCTURE. FAILURE TO OBEY WILL DECREASE THE STRENGTH OF THE COMPONENT.

A. Lightly sand the edges of the repair area, and remove resin burrs with No. 180 or finer sandpaper. Remove any remaining mold release with No. 180 or finer sandpaper.

B. Clean the repair area as given in Paragraph 7.B./REPAIR GENERAL and Paragraph 7.C./REPAIR GENERAL and examine for defects.

NOTE: The repair area must not have pits, blisters, void areas, or excess resin deposits.

C. Seal any fibers that are open to the air with a thin layer of Resin Mix 1 or 6, prepared and cured as given in 51-70-06, GENERAL.

D. In areas where Tedlar (moisture barrier) on the inner surface of the radome has been removed, apply a thin layer of Resin Mix 3 prepared as given in 51-70-06, GENERAL. Remove excess resin before it gels. Cure the resin as given in 51-70-06, GENERAL.

E. Put a finish on the exterior surface of the radome as given in AMM 53-12-01.

F. If the glideslope director element (aluminum foil pressure sensitive tape) has been removed or damaged, install it as given in AMM 53-52-31.

16. Repair of Damage Caused by Electrical Discharge

CAUTION: DO NOT USE CHEMICAL PAINT STRIPPERS TO REMOVE PAINT BEFORE YOU FIND THE RANGE OF THE DAMAGE. CHEMICAL PAINT STRIPPERS WILL CAUSE DAMAGE TO THE RESIN SYSTEM

A. Clean the inner and outer surfaces. The radome must not have any moisture or dirt. Clean as given in AMM 51-21-00. Refer to Paragraph 6./REPAIR GENERAL for moisture removal procedures if necessary.

B. Find the damage on the inner skin surface. Remove the exterior finish from the outer skin directly opposite from the damage sufficient to show all of the damage. Refer to Paragraph 7.B.(3)/REPAIR GENERAL.

C. The performance of a leakage test with positive air pressure may help to locate outer skin defects which are not readily apparent.

(1) Coat the outer skin defect area with an uncatalyzed resin film.

(2) By using a flexible type funnel which encompasses the inner skin defect, apply a positive air pressure not to exceed 3 psi to this area.

(3) The bubbling in the resin film will pinpoint the outer skin defect.

NOTE: Maximum repairable size of a single instance of damage caused by electrical discharge is 1 square inch, including punctures in both the inner and outer skins and the delaminated area. Minimum allowable spacing between adjacent repairs is 3 inches, edge to edge. For damage exceeding these limits see Paragraph 8.A./REPAIR GENERAL (Wet Layup) or Paragraph 9.A./REPAIR GENERAL (Prepreg).

D. Drill a 0.06-inch dia hole in the center of the defect, then insert a hypodermic needle through the skin and fill the core cell with Resin Mix 1, prepared according to 51-70-06, GENERAL.

E. Insert the hypodermic needle between the delaminated plies of the skin and inject with Resin Mix 1.

F. Coat the defects with a thin film of Resin Mix 1 and cover with PVA or other parting film.

G. When the resin has gelled, remove the parting film.

H. Refinish the repair according to Paragraph 15./REPAIR GENERAL.

17. Small Repairs

NOTE: The small repairs described in this paragraph will not require electrical testing provided the thickness limits shown in Figure 201/REPAIR GENERAL are not exceeded.

CAUTION: DO NOT USE CHEMICAL PAINT STRIPPERS TO REMOVE PAINT BEFORE YOU FIND THE RANGE OF THE DAMAGE. CHEMICAL PAINT STRIPPERS WILL CAUSE DAMAGE TO THE RESIN SYSTEM.

A. Surface scratches not penetrating glass fabric.

(1) Remove scratches by sanding with No. 180 or finer sandpaper.

(2) Clean the area according to Paragraph 7.B./REPAIR GENERAL and Paragraph 7.C./REPAIR GENERAL.

(3) Apply a layer of Resin Mix 1 or 6, prepared as given in 51-70-06, GENERAL.

(4) Sweep area to fair in resin and remove any trapped air.

(5) Cure the repair according to Paragraph 14./REPAIR GENERAL.

(6) Refinish the repair according to Paragraph 15./REPAIR GENERAL.

B. Scratches penetrating one ply.

NOTE: This repair applies only where the damage does not exceed 2.0 inches long and 0.125 inch wide in one ply only. More extensive damage requires the replacement of plies.

(1) Sand out the scratch using No. 180 or finer sandpaper.

(2) Clean the area according to Paragraph 7.B./REPAIR GENERAL and Paragraph 7.C./REPAIR GENERAL

(3) Fill the scratch with Resin Mix 4 prepared as given in 51-70-06, GENERAL.

(4) Allow to cure for a minimum of 24 hours at 70°F ±5°F (21°C ±3°C), or according to 51-70-06, GENERAL.

(5) Apply a layer of Resin Mix 1 or 6 to the repair area, prepared as given in 51-70-06, GENERAL.

(6) Cure the repair according to Paragraph 14./REPAIR GENERAL.

(7) Refinish the repair according to Paragraph 15./REPAIR GENERAL.

C. Punctures less than 0.25 inch in diameter.

(1) Remove the damaged material from the vicinity of the puncture.

(2) Clean the area according to Paragraph 7.B./REPAIR GENERAL and Paragraph 7.C./REPAIR GENERAL

(3) Put the Resin Mix 4, prepared as given in 51-70-06, GENERAL, into the puncture.

NOTE: As an alternative use Presto Paste Resin consisting of 98 parts of Resin No. 49X2 and 2 parts of MEK Peroxide by weight.

(4) Allow resin to cure for 24 hours at 70°F (21°C), minimum.

(5) Sand to fair with surrounding surface.

(6) Refinish the repair according to Paragraph 15./REPAIR GENERAL.

D. Delamination of plies.

NOTE: This repair applies where delamination is confined to an area of 1.0 inch in diameter and where skin distortion is not excessive. Delamination which cannot be satisfactorily repaired by the following method, due to skin distortion or which exceed size limitations, should be repaired according to Paragraph 8.A./REPAIR GENERAL or Paragraph 9.A./REPAIR GENERAL.

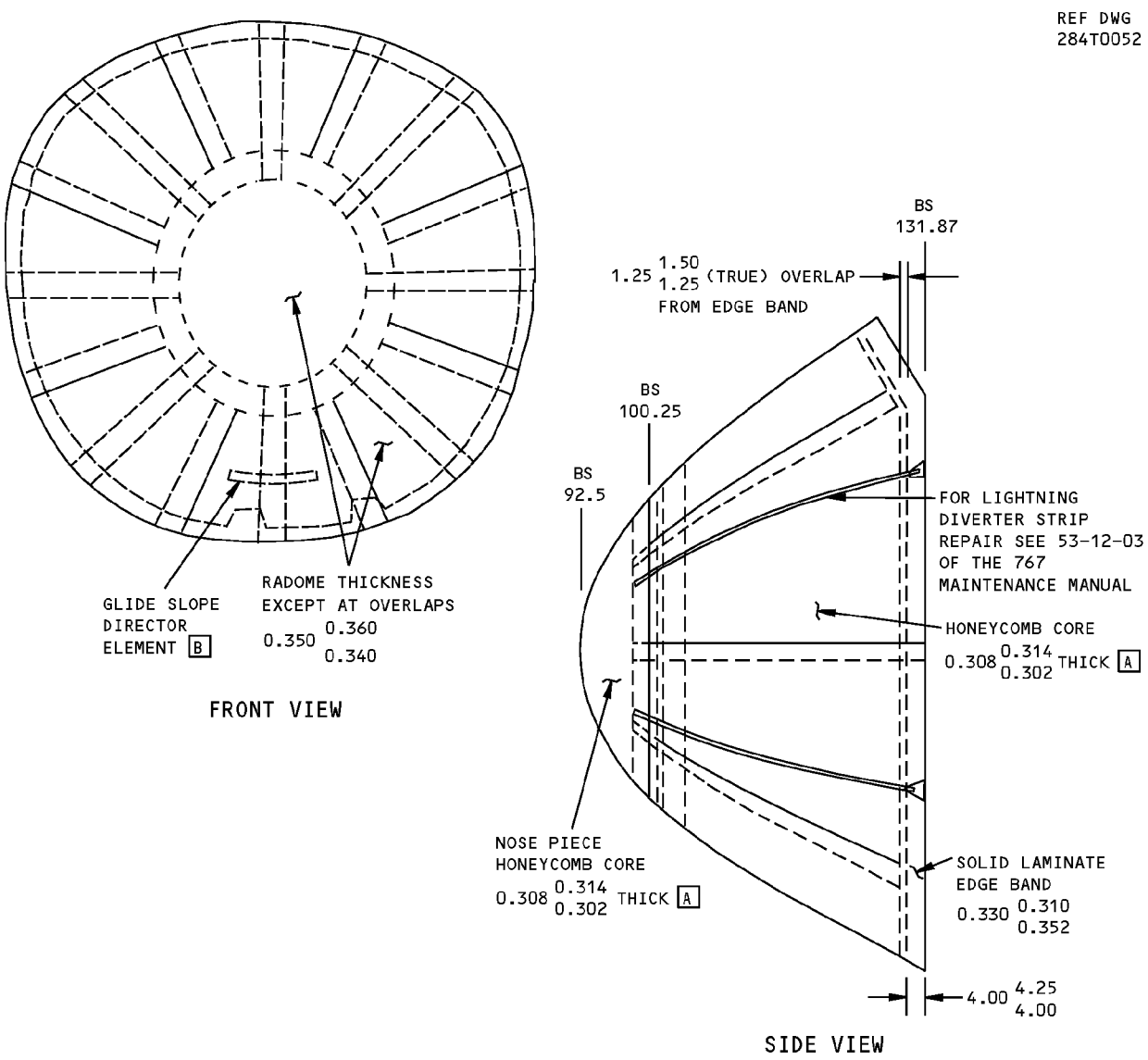
(1) Determine extent of delamination by tapping radome skin with a small metallic object such as a short socket extension.

(2) Inject Resin Mix 1, prepared according to 51-70-06, GENERAL, between the delaminated plies. Use a hypodermic needle for injecting the resin as described in Paragraph 16.D./REPAIR GENERAL and Paragraph 16.E./REPAIR GENERAL.

(3) Apply pressure according to Paragraph 13./REPAIR GENERAL.

(4) Cure the repair according to Paragraph 14./REPAIR GENERAL.

(5) Refinish the repair according to Paragraph 15./REPAIR GENERAL.



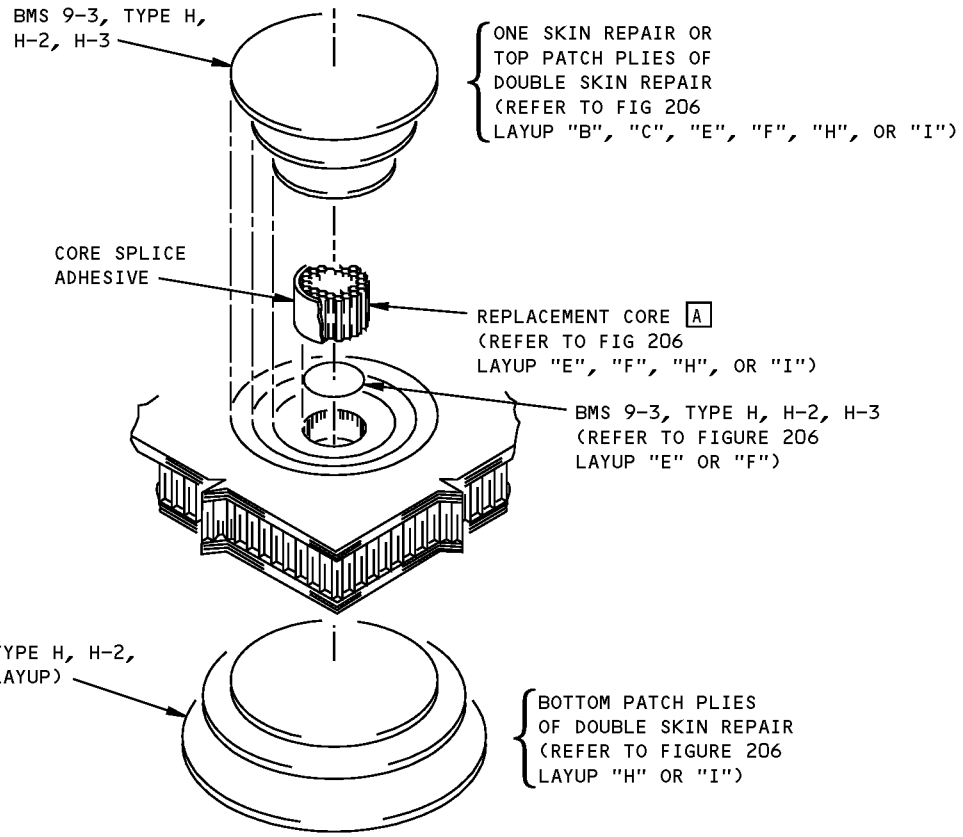
NOTES

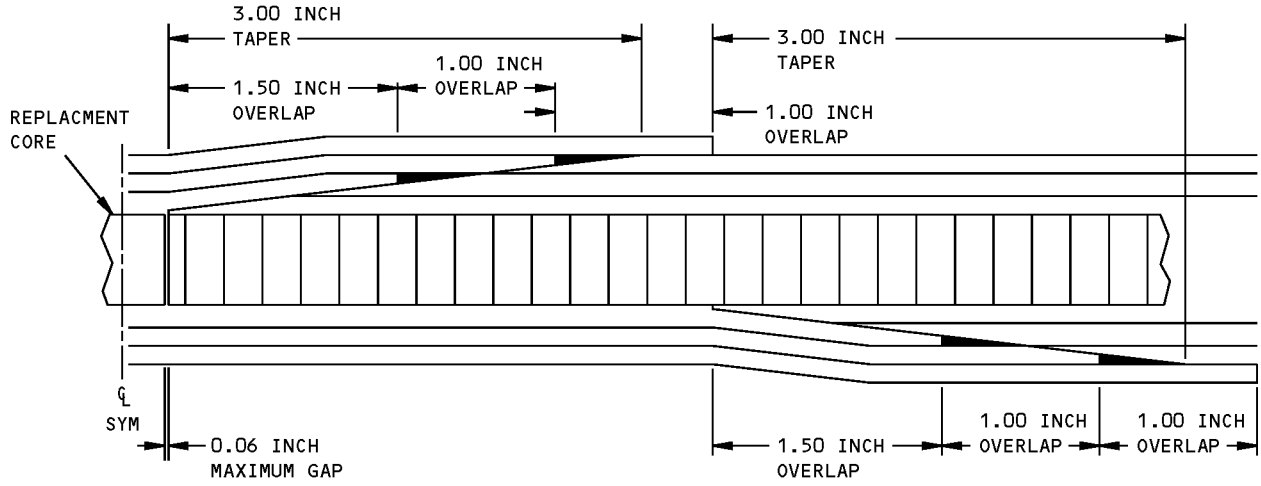
- THICKNESSES ARE BASED ON CURED SANDWICH THICKNESS BEFORE APPLICATION OF FINISHES OR RAIN EROSION COATINGS
- RADOME THICKNESS AFTER REPAIRMAY BE MEASURED USING THE EDDY CURRENT METHOD DESCRIBED IN THE NONDESTRUCTIVE TESTING MANUAL, D634T301, PART 6

A FOR REPAIR PURPOSES, CORE MATERIAL 0.005 INCH THINNER THAN ORIGINAL THICKNESS IS REQUIRED

B IF THE GLIDE SLOPE DIRECTOR ELEMENT (ALUMINUM FOIL PRESSURE SENSITIVE TAPE) HAS BEEN REMOVED OR DAMAGED, REINSTALL ACCORDING TO 53-12-05 OF THE 767 MAINTENANCE MANUAL

Thicknesses for Nose Radome
Figure 201





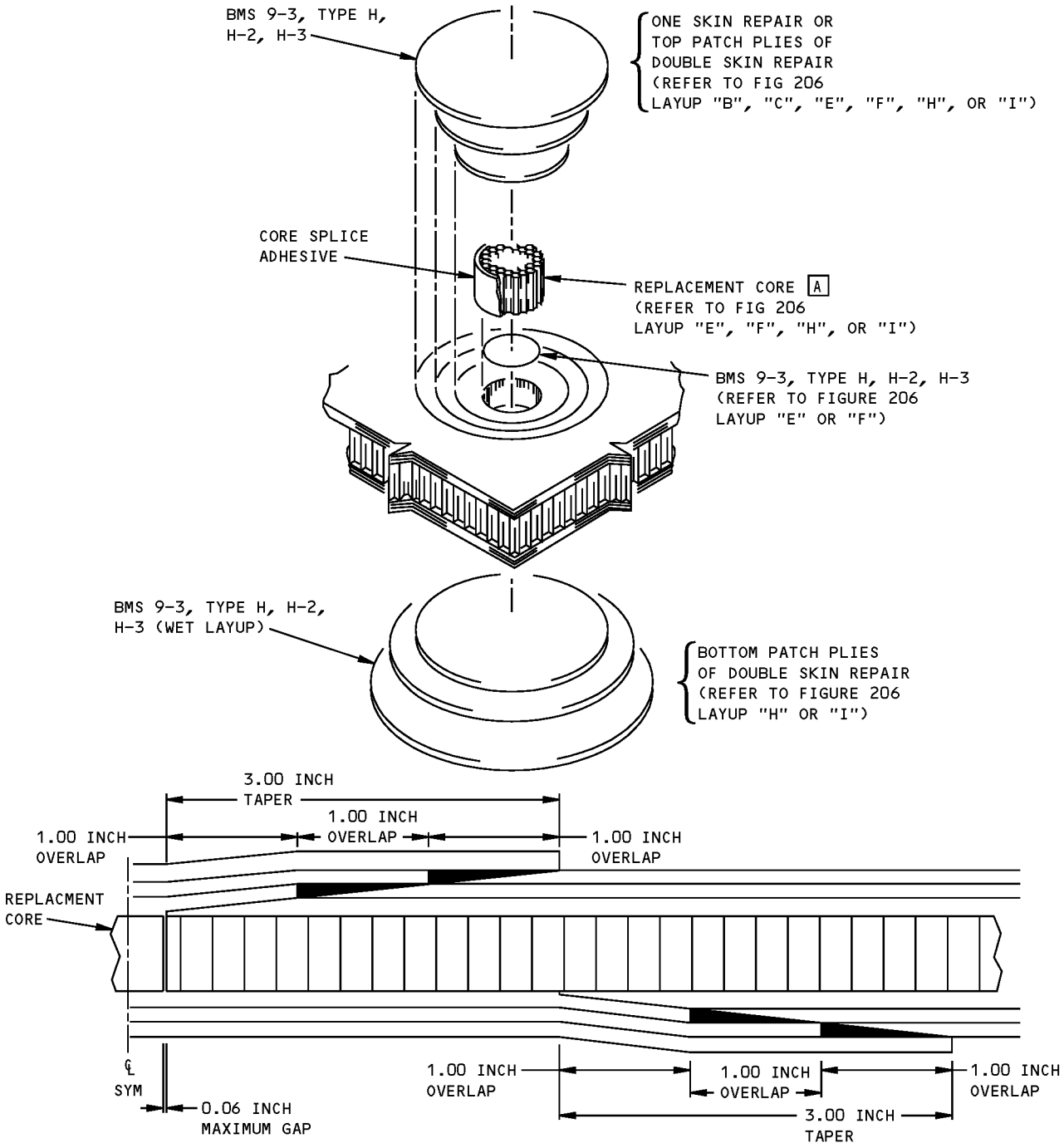
SECTION THROUGH REPAIR

NOTES

[A] CELL WALLS MUST BE ALIGNED IN THE SAME DIRECTION AS THE ORIGINAL HONEYCOMB

- AN ELECTRICAL TEST OF THE ALTERNATIVE 1 REPAIR IS NECESSARY. REFER TO PARAGRAPH 1.D

Alternative 1 - Wet Layup Repair
Figure 202

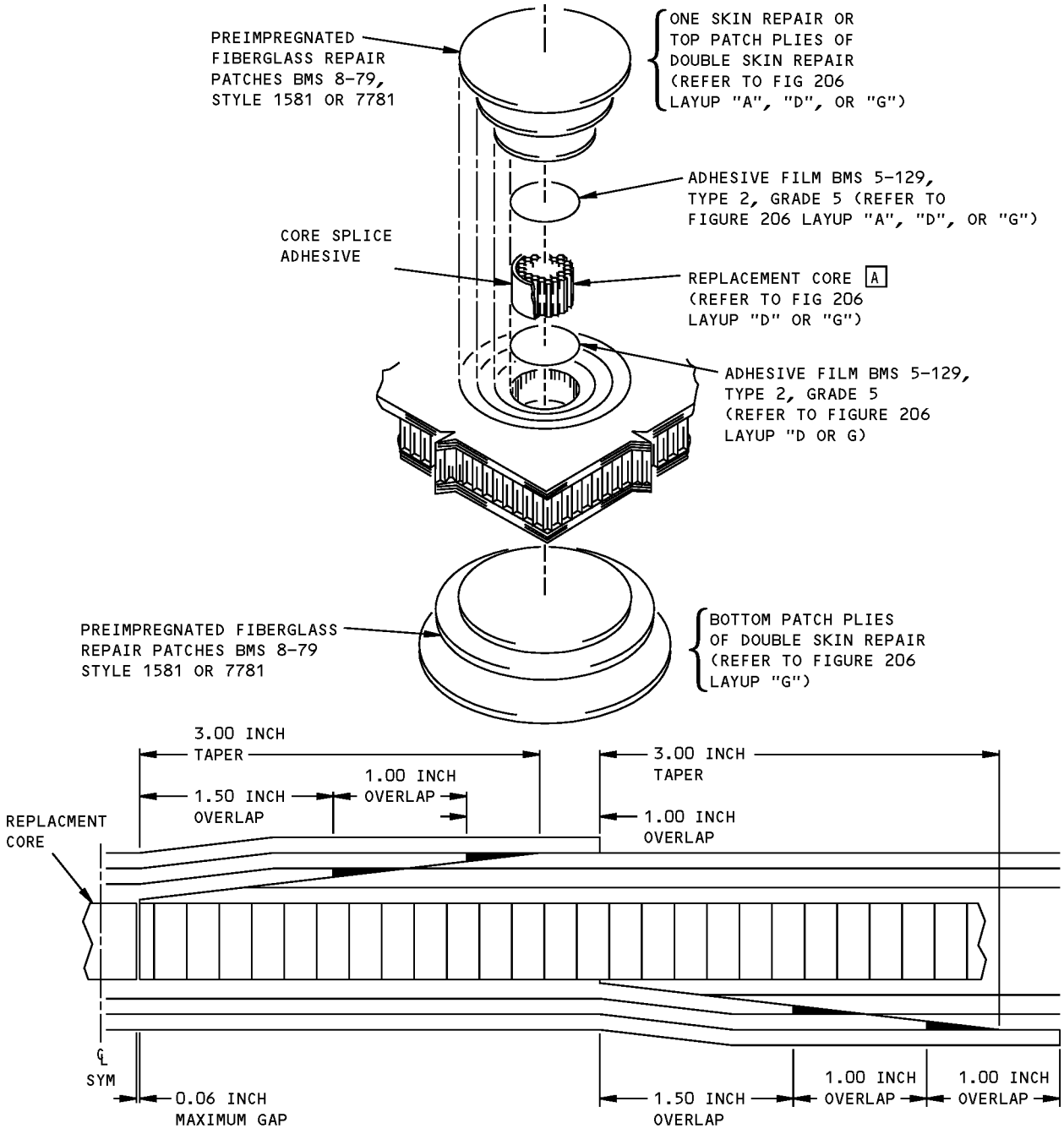


SECTION THROUGH REPAIR

NOTES

A CELL WALLS MUST BE ALIGNED IN THE SAME DIRECTION AS THE ORIGINAL HONEYCOMB

Alternative 2 - Wet Layup Repair
Figure 203



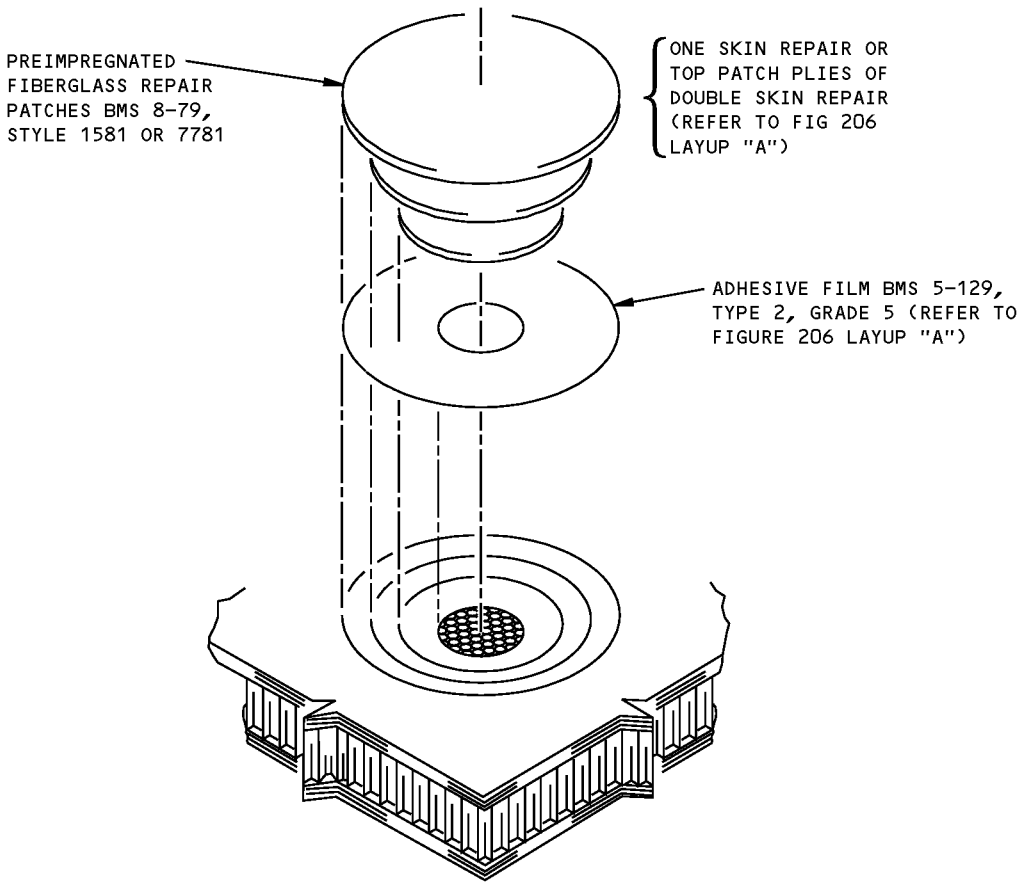
SECTION THROUGH REPAIR

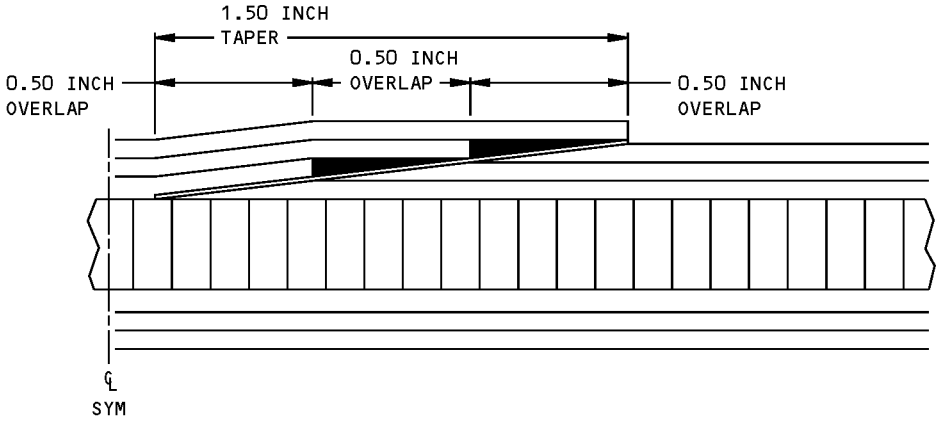
NOTES

[A] CELL WALLS MUST BE ALIGNED IN THE SAME DIRECTION AS THE ORIGINAL HONEYCOMB

- AN ELECTRICAL TEST OF THE ALTERNATIVE 3 REPAIR IS NECESSARY. REFER TO PARAGRAPH 1.D

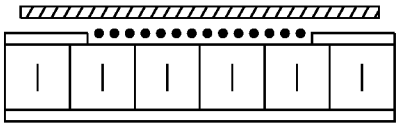
Alternative 3 - Prepreg Repair
Figure 204



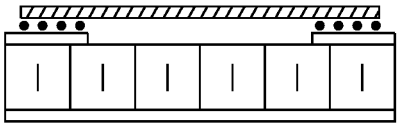


SECTION THROUGH REPAIR

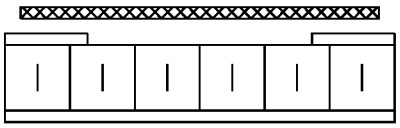
Alternative 4 - Prepreg Repair
Figure 205



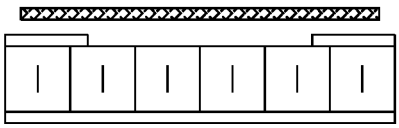
LAYUP "A" ALTERNATIVE 3
(PREPREG) FIGURE 204



LAYUP "A" ALTERNATIVE 4
(PREPREG) FIGURE 205



LAYUP "B"
(WET LAYUP)



LAYUP "C"
(WET LAYUP)

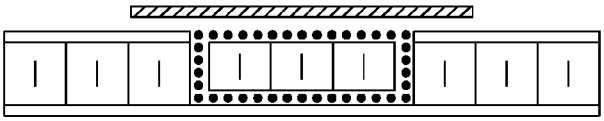
NOTES

- ALL FACE SHEET REPAIRS MUST BE TAPER SANDED.
- THE WARP DIRECTION OF ALL REPAIR PLIES MUST PARALLEL TO THE FORWARD/AFT DIRECTION OF THE RADOME.

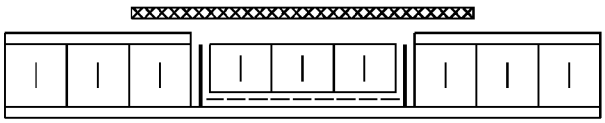
LEGEND

- ●●●●● BMS 5-129, TYPE 2, GRADE 5 ADHESIVE CURED AT 250°F (121°C)
- ———— 1 LAYER OF BMS 9-3, TYPE H, H2, OR H3 IMPREGNATED WITH BMS 8-301, CLASS 2 RESIN CURED AT 150°F ±10°F (66°C ±6°F) OR CLASS 1 CURED AT 200°F (93°C)
- ———--- 1 LAYER OF BMS 9-3, TYPE H, H2, OR H3 IMPREGNATED WITH BMS 8-301, CLASS 2 RESIN CURED AT ROOM TEMPERATURE
- INITAL BMS 8-79 FACE SHEET
- 3 PLIES BMS 8-79, STYLE 1581 OR STYLE 7781 CURED AT 250°F (121°C)
- 3 LAYERS OF BMS 9-3, TYPE H, H2, OR H3 IMPREGNATED WITH BMS 8-301, CLASS 2 RESIN CURED AT 150°F ±10°F (66°C ±6°F) OR CLASS 1 CURED AT 200°F (93°C)
- 3 LAYERS OF BMS 9-3, TYPE H, H2, OR H3 IMPREGNATED WITH BMS 8-301, CLASS 2 RESIN CURED AT ROOM TEMPERATURE
- BMS 5-28 TYPES 15 OR 19
- SAME AS INITIAL HONEYCOMB CORE

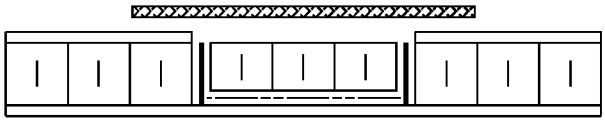
Nose Radome Repair Layups
Figure 206 (Sheet 1 of 2)



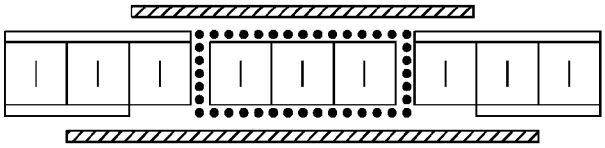
LAYUP "D"
(PREPREG)



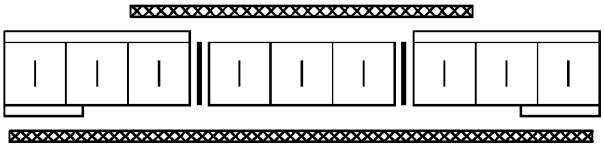
LAYUP "E"
(WET LAYUP)



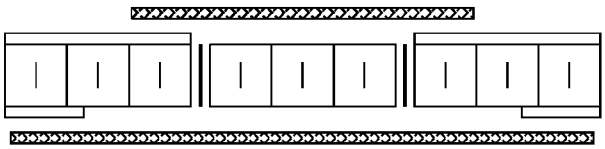
LAYUP "F"
(WET LAYUP)



LAYUP "G"
(PREPREG)



LAYUP "H"
(WET LAYUP)



LAYUP "I"
(WET LAYUP)

Nose Radome Repair Layups
Figure 206 (Sheet 2 of 2)

REPAIR TYPE	LAYUP TYPE				REPAIR SIZE MAXIMUM DIAMETER (INCHES)	REPAIR CLASSIFICATION	
	FIG. 202	FIG. 203	FIG. 204	FIG. 205			
FACE SHEET	"B" [D]		"A" [D]	"A"	NO LIMIT	PERMANENT	[A]
		"B"			0-4 4-30 30-50	PERMANENT PERMANENT TEMPORARY	[A] [B] [C]
		"C"			0-15	TEMPORARY	[C]
FACE SHEET AND CORE	"E"		"D"		NO LIMIT	PERMANENT	[D]
		"E"			0-4 4-25 25-40	PERMANENT PERMANENT TEMPORARY	[A] [B] [C]
		"F"			0-15	TEMPORARY	[C]
TWO FACE SHEETS AND CORE	"H"		"G"		NO LIMIT	PERMANENT	[D]
		"H"			0-10 10-20	PERMANENT TEMPORARY	[B] [C]
		"I"			0-10	TEMPORARY	[C]

RADOME REPAIR SIZES AND CLASSIFICATIONS
TABLE I

NOTES

- TWO SMALL REPAIRS NEAR EACH OTHER CAN BE MADE INTO ONE LARGER REPAIR AS GIVEN IN TABLE I.
- A REPAIR SHOWN AS A TEMPORARY REPAIR MUST HAVE A VISUAL AND TAP TEST INSPECTION OF THE REPAIR AREA AT EACH '2A' CHECK. REPLACE A TEMPORARY REPAIR WITH A PERMANENT REPAIR BY THE NEXT 'C' CHECK.
- THE MAXIMUM DIAMETER OF THE DAMAGE IS EQUAL TO THE MAXIMUM DIAMETER OF THE DAMAGED AREA AFTER CLEANUP OR THE MAXIMUM CUT OUT DIAMETER BEFORE TAPER SANDING. THE DIAMETER OF THE REPAIR IS MEASURED ALONG THE CONTOUR OF THE REPAIR.
- KEEP A MINIMUM DISTANCE OF 3.0 INCHES (EDGE-TO-EDGE OF THE LARGEST REPAIR PLIES) FROM ANY OTHER REPAIR PLIES (ON EITHER SIDE OF THE PANEL).
- INNER AND OUTER FACE SHEET REPAIRS WHICH ARE OPPOSITE EACH OTHER ARE NOT PERMITTED EXCEPT AS SHOWN IN LAYUPS "F" AND "G".

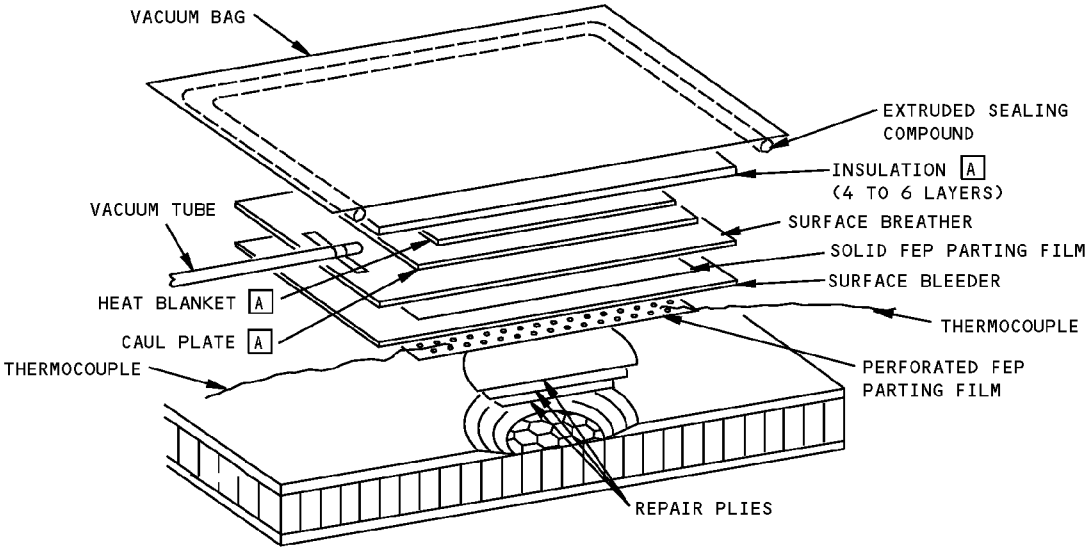
[A] MORE THAN ONE REPAIR IS PERMITTED.

[B] TWO OR MORE REPAIRS IN THIS CATEGORY ARE PERMITTED BUT ALL REPAIRS ARE THEN CLASSIFIED AS TEMPORARY.

[C] ONE REPAIR ONLY OF THIS SIZE IS PERMITTED.

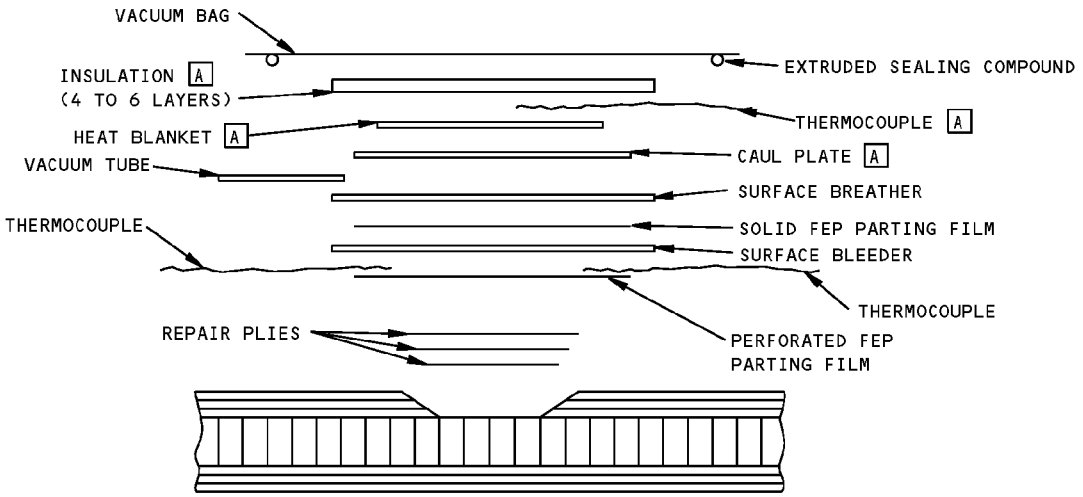
[D] ELECTRICAL EFFICIENCY TESTING REQUIRED. REFER TO PARAGRAPH 1.D.

Nose Radome Repair Sizes and Classifications
Figure 207



SECTION THRU HONEYCOMB PANEL

BAGGING SEQUENCE FOR CURING SKIN-TO-SKIN OR SKIN-TO-SKIN AND CORE OR CO-CURING SKIN AND CORE REPLACEMENT

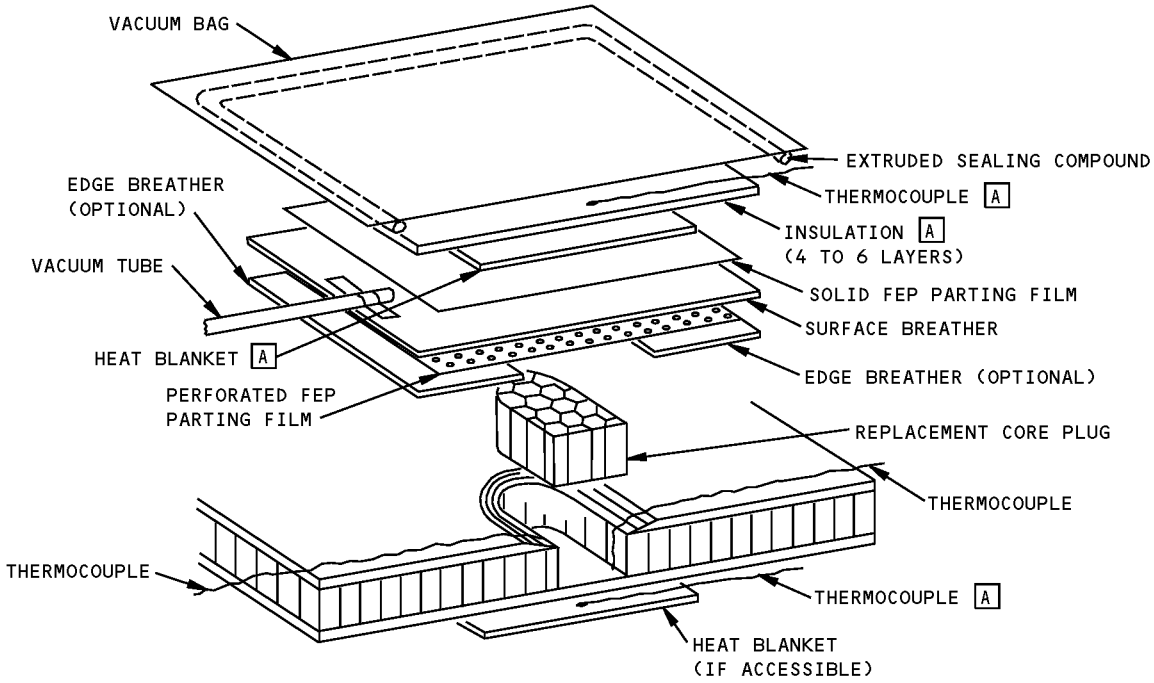


SECTION THRU SKIN-TO-SKIN AND CORE REPAIR

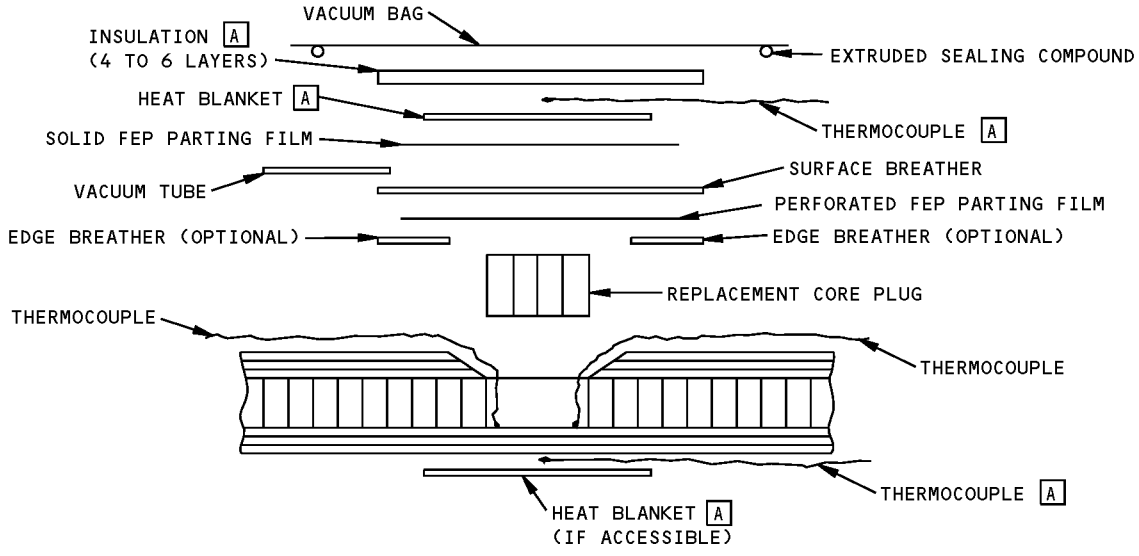
NOTES

[A] USE ONLY IF HEAT BLANKET IS USED AS A HEAT SOURCE

Application of Pressure During Cure
Figure 208 (Sheet 1 of 2)



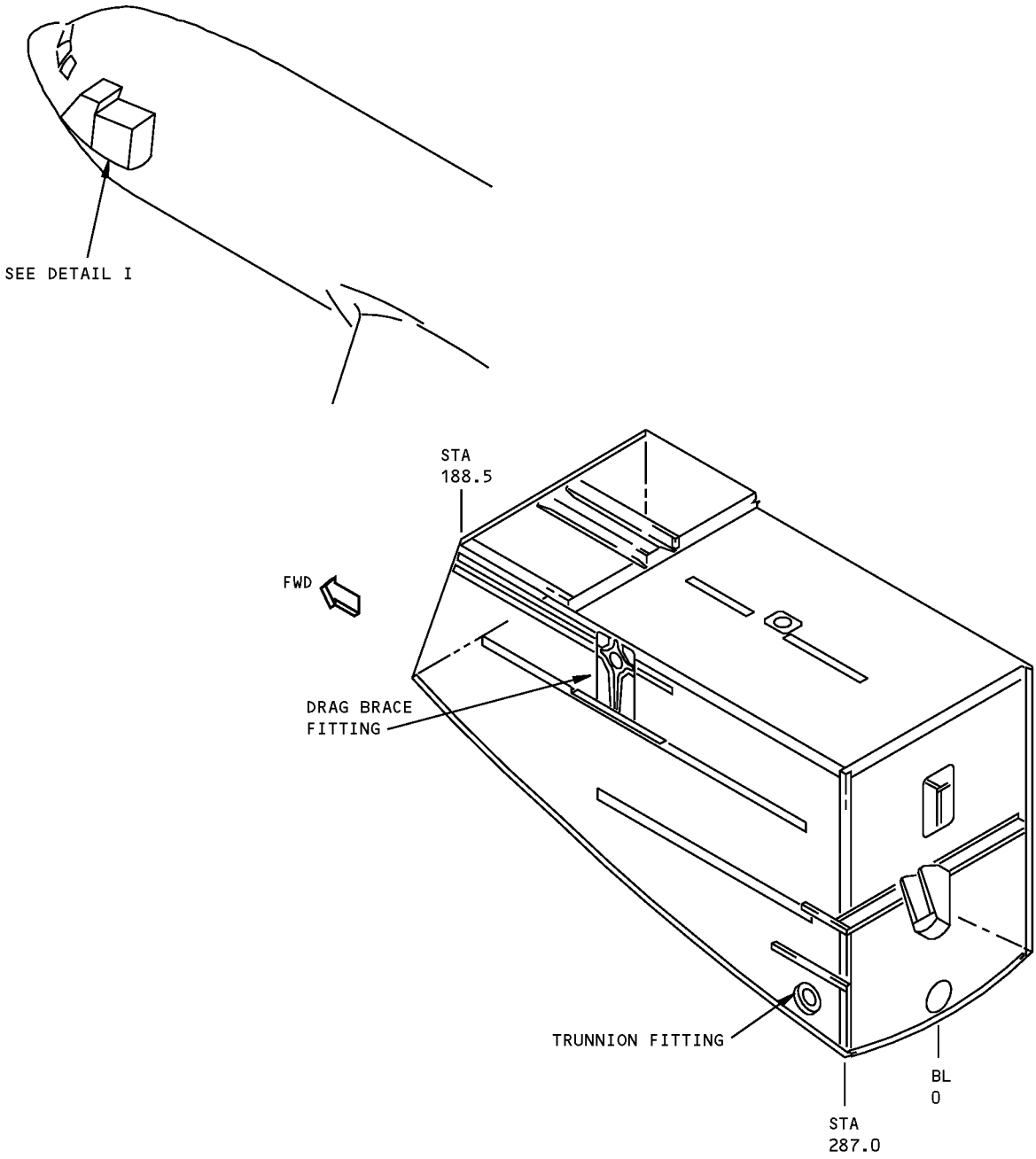
BAGGING SEQUENCE FOR CORE REPLACEMENT



SECTION THRU CORE REPLACEMENT REPAIR

Application of Pressure During Cure
Figure 208 (Sheet 2 of 2)

REPAIR GENERAL - NOSE WHEEL WELL STRUCTURE ATTACHMENT FITTINGS



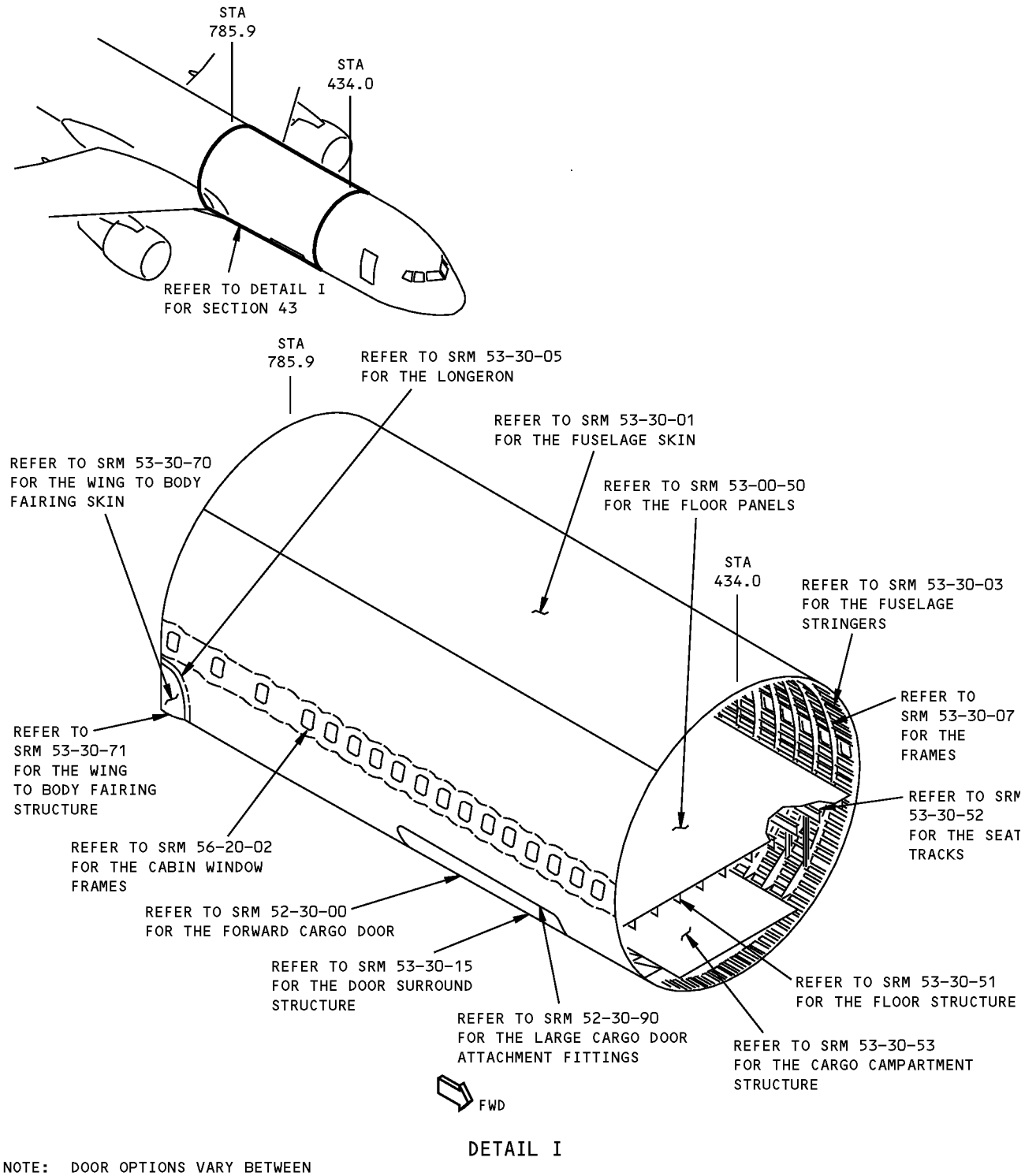
VIEW LOOKING INSIDE
DETAIL I

NOTES

- THERE ARE NO TYPICAL REPAIRS TO FITTINGS AVAILABLE. SPECIFIC REPAIRS TO FITTINGS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE.
- REFER TO SRM 53-10-14 FOR STRUCTURE IDENTIFICATION.

Nose Wheel Well Structure Attachment Fitting Repair
Figure 201

GENERAL - SECTION 43 STRUCTURE DIAGRAM



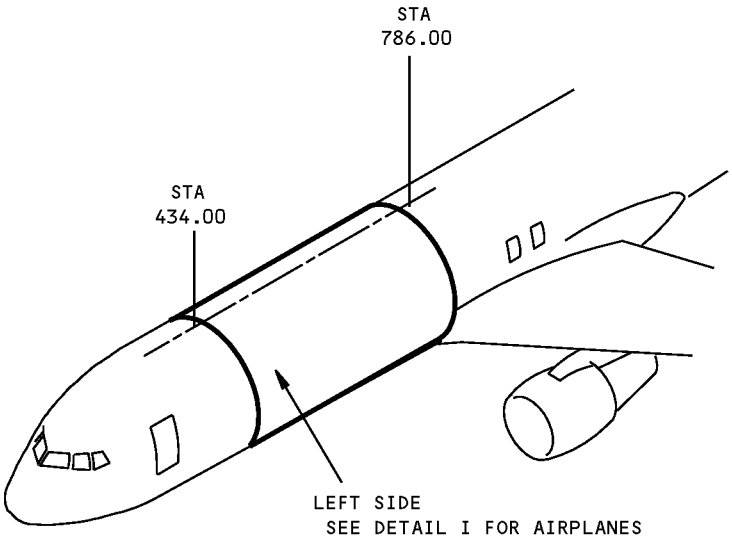
DETAIL I

NOTE: DOOR OPTIONS VARY BETWEEN AIRLINES.
THE LARGE CARGO DOOR IS SHOWN.

Section 43 Structure Diagram
Figure 1

IDENTIFICATION 1 - SECTION 43 - SKIN

REF DWG
140T1521

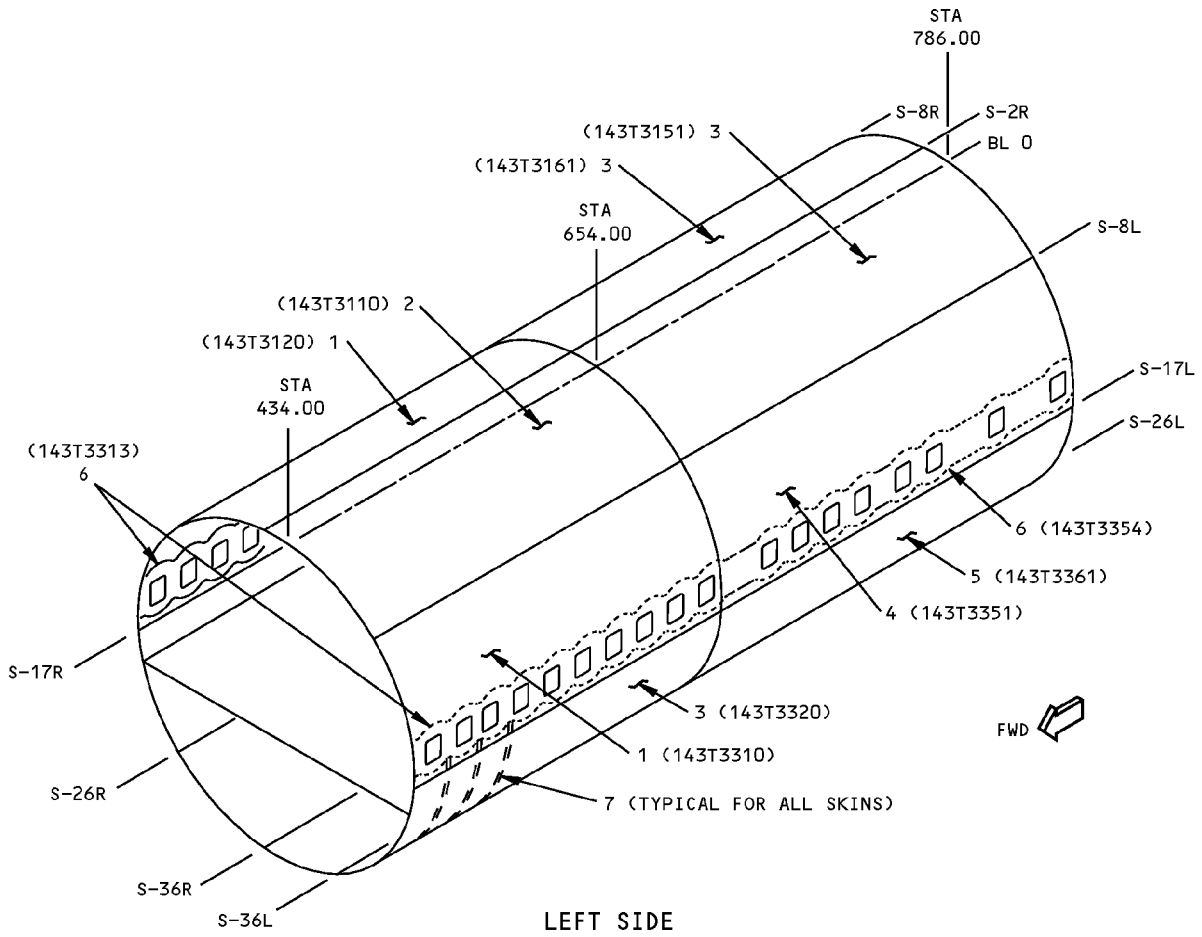


NOTES

[A] FOR AIRPLANES WITHOUT MIDENTRY DOOR

[B] FOR AIRPLANES WITH MIDENTRY DOOR

Section 43 - Skin Identification
Figure 1 (Sheet 1 of 5)

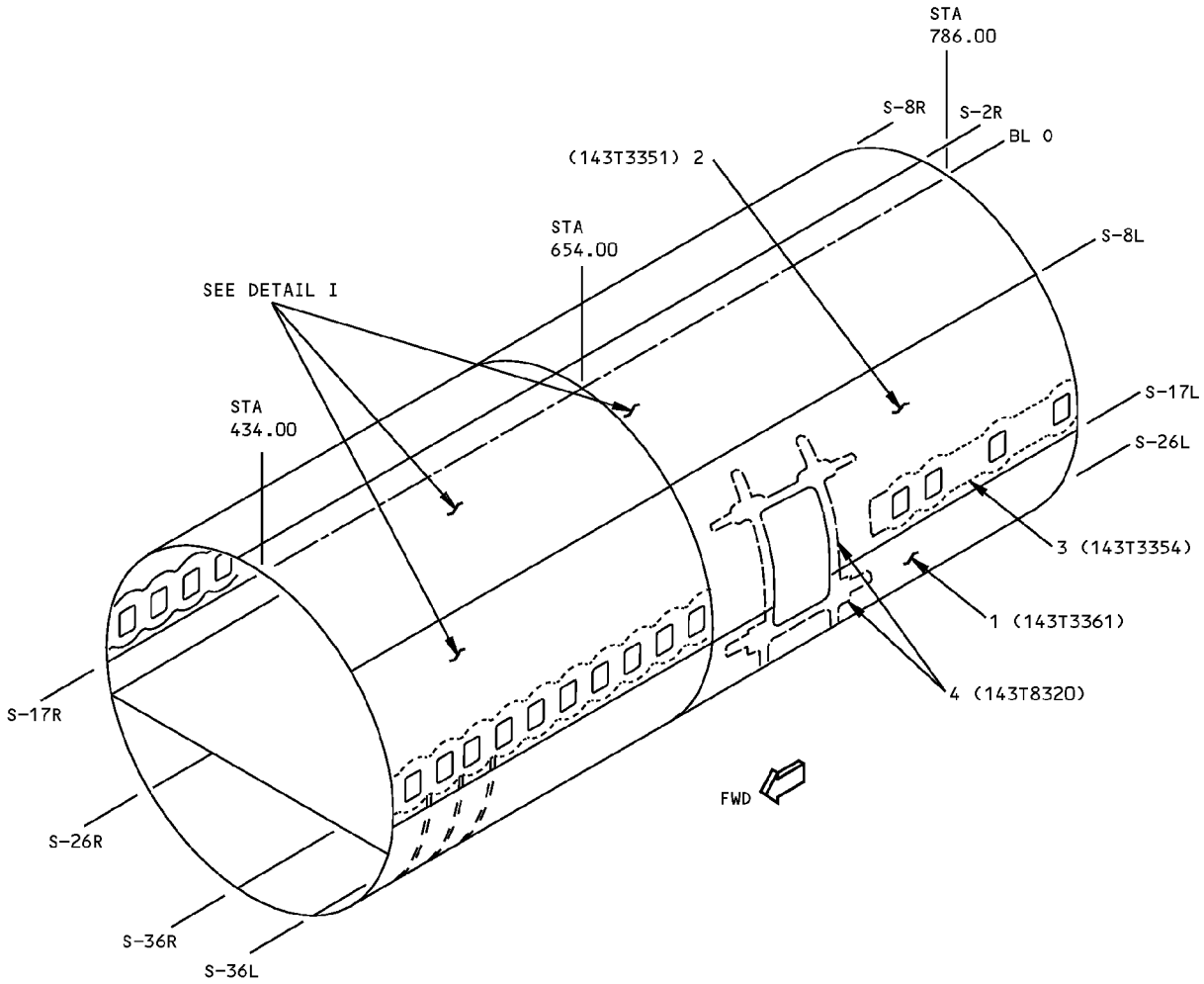


LEFT SIDE
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.090	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
2	SKIN	0.112	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
3	SKIN	0.140	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
4	SKIN	0.140	CLAD 2024-T3 (MACHINED TO 0.060 MIN)	
5	SKIN	0.190	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
6	DOUBLER	0.140	2024-T3 (MACHINED TO 0.047 MIN)	
7	TEAR STRAP	0.071	2024-T3	

LIST OF MATERIALS FOR DETAIL I

Section 43 - Skin Identification
Figure 1 (Sheet 2 of 5)

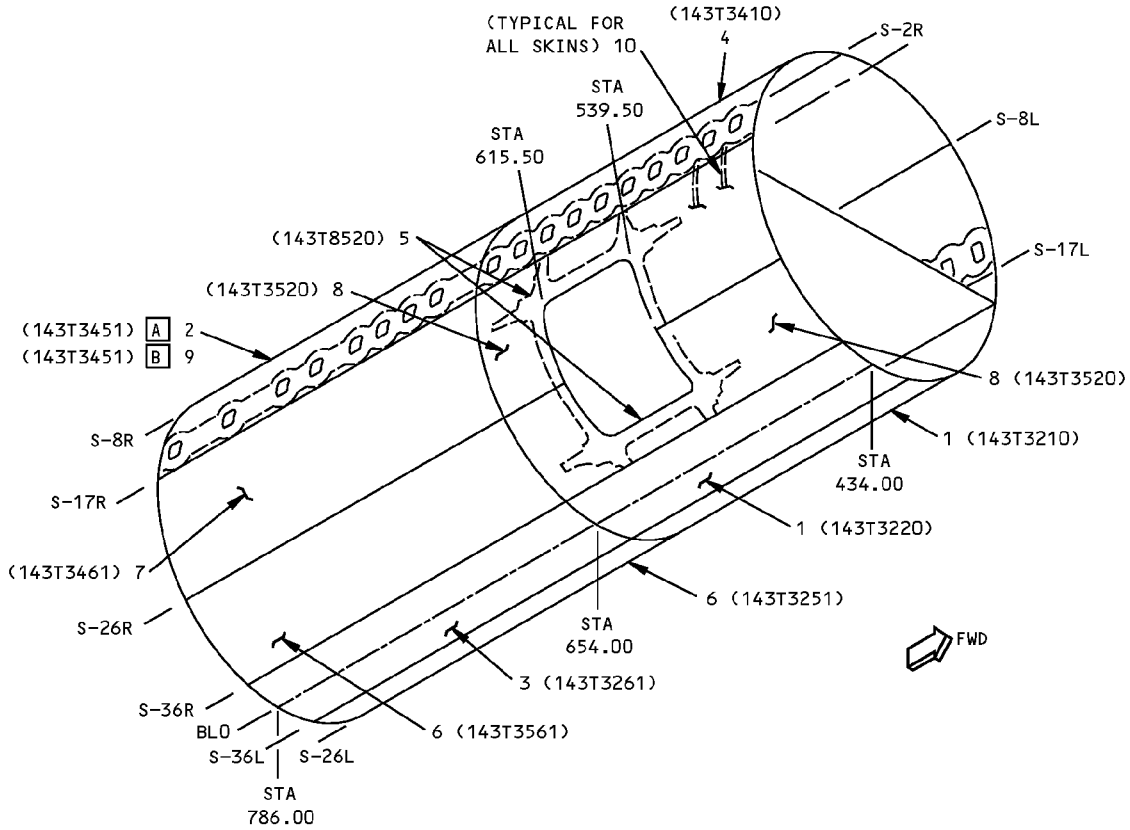


FOR AIRPLANES WITH MIDENTRY DOOR
LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.210	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
2	SKIN	0.210	CLAD 2024-T3 (MACHINED TO 0.070 MIN)	
3	DOUBLER	0.190	2024-T3 (MACHINED TO 0.060 MIN)	
4	BEARSTRAP DOUBLER	0.210	2024-T3	

LIST OF MATERIALS FOR DETAIL II

Section 43 - Skin Identification
Figure 1 (Sheet 3 of 5)

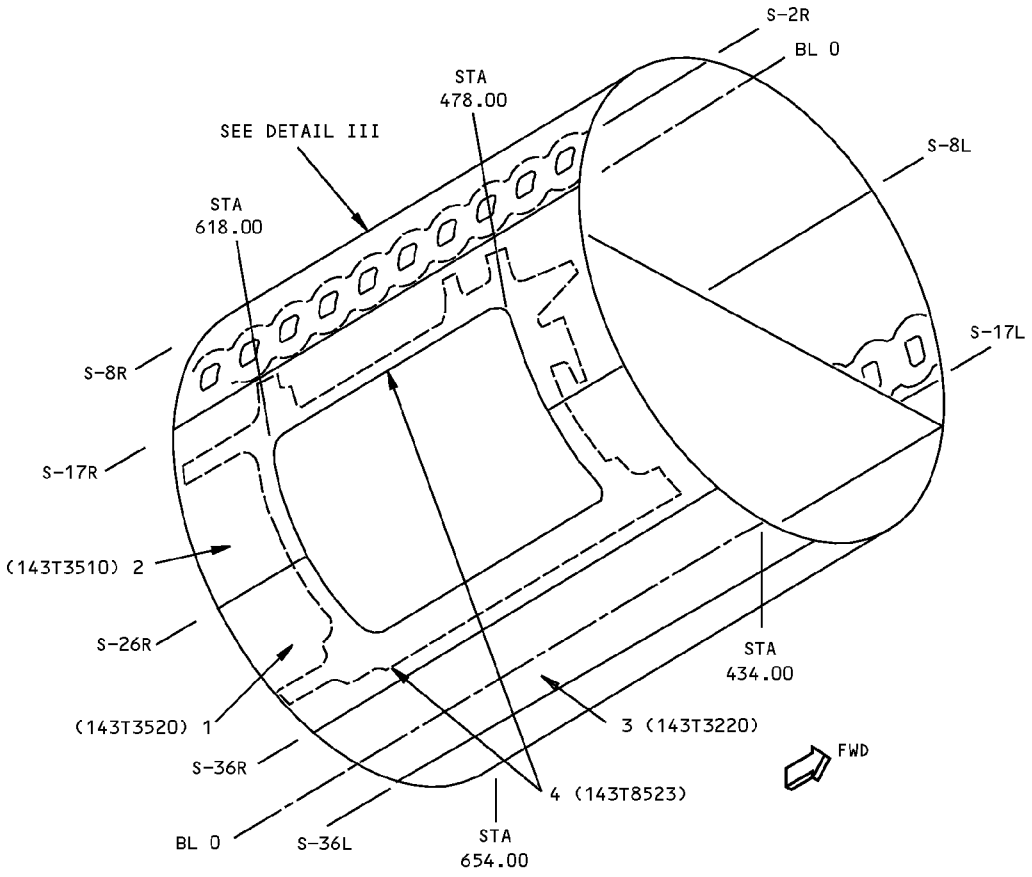


RIGHT SIDE FOR AIRPLANES WITH STANDARD CARGO DOOR
DETAIL III

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.140	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
2	SKIN	0.140	CLAD 2024-T3 (MACHINED TO 0.060 MIN)	A
3	SKIN	0.140	CLAD 2024-T3 (MACHINED TO 0.063 MIN)	
4	SKIN	0.150	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
5	BEARSTRAP DOUBLER	0.212	2024-T3	
6	SKIN	0.160	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
7	SKIN	0.190	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
8	SKIN	0.210	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
9	SKIN	0.210	CLAD 2024-T3 (MACHINED TO 0.070 MIN)	B
10	TEAR STRAP	0.071	2024-T3	

LIST OF MATERIALS FOR DETAIL III

Section 43 - Skin Identification
Figure 1 (Sheet 4 of 5)



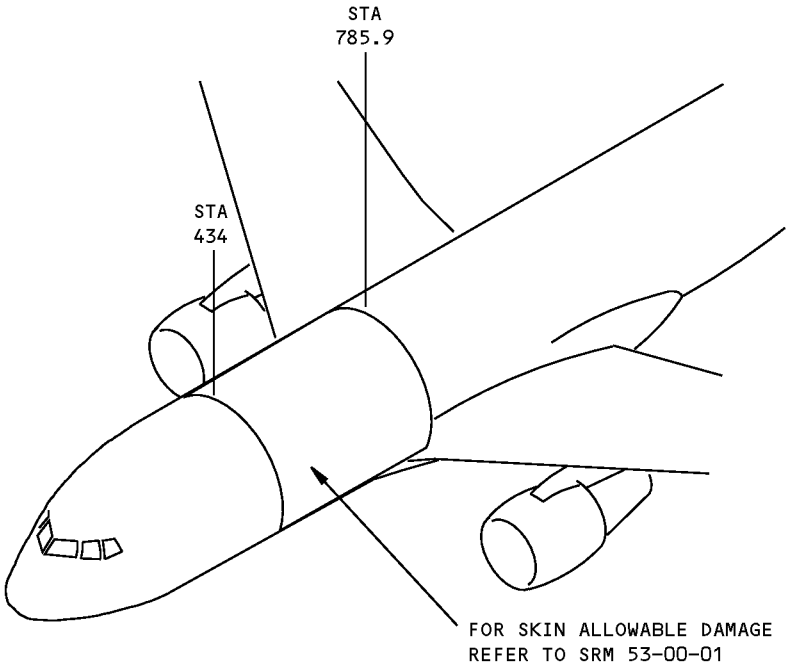
RIGHT SIDE FOR AIRPLANES WITH LARGE CARGO DOOR
DETAIL IV

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.160	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
2	SKIN	0.160	CLAD 2024-T3 (MACHINED TO 0.063 MIN)	
3	SKIN	0.140	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
4	BEARSTRAP DOUBLER	0.200	2024-T3	

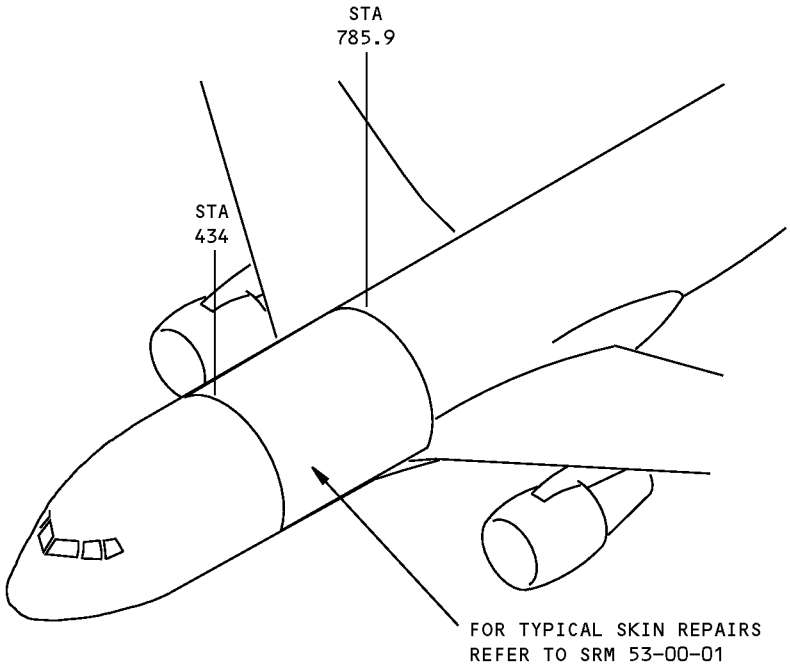
LIST OF MATERIALS FOR DETAIL IV

Section 43 - Skin Identification
Figure 1 (Sheet 5 of 5)

ALLOWABLE DAMAGE 1 - SECTION 43 SKIN



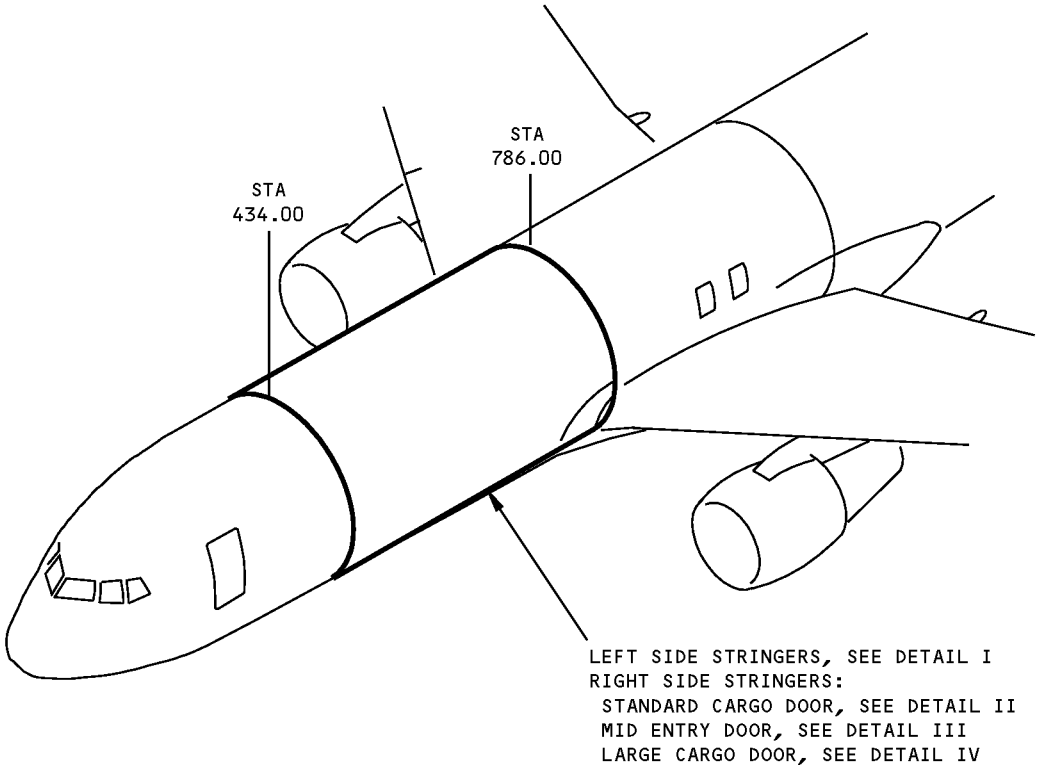
Section 43 Skin Allowable Damage
Figure 101



Section 43 - Typical Skin Repairs
Figure 201

IDENTIFICATION 1 - SECTION 43 - STRINGERS

REFERENCE
DRAWING
140T1520

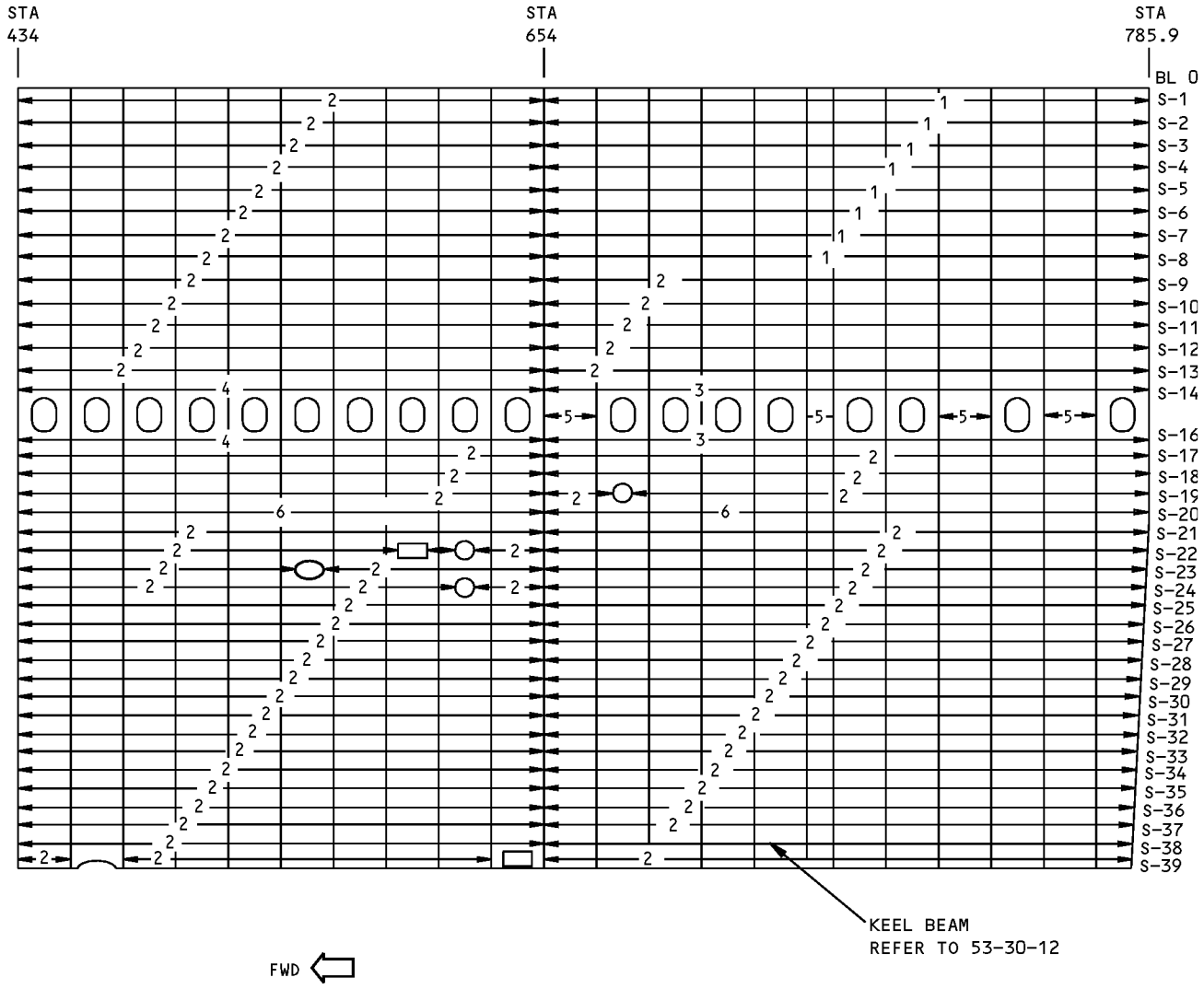


NOTES

- SKIN PANELS AND STRINGERS ARE ON SAME REFERENCE DRAWINGS. REFER TO 53-30-01

[A] SOME OF THE STRINGERS ARE TAPERED AND MACHINED, THEREFORE THE THICKNESS IS NOT CONSTANT. REFER TO THE ENGINEERING DRAWING TO FIND THE LOCAL THICKNESS.

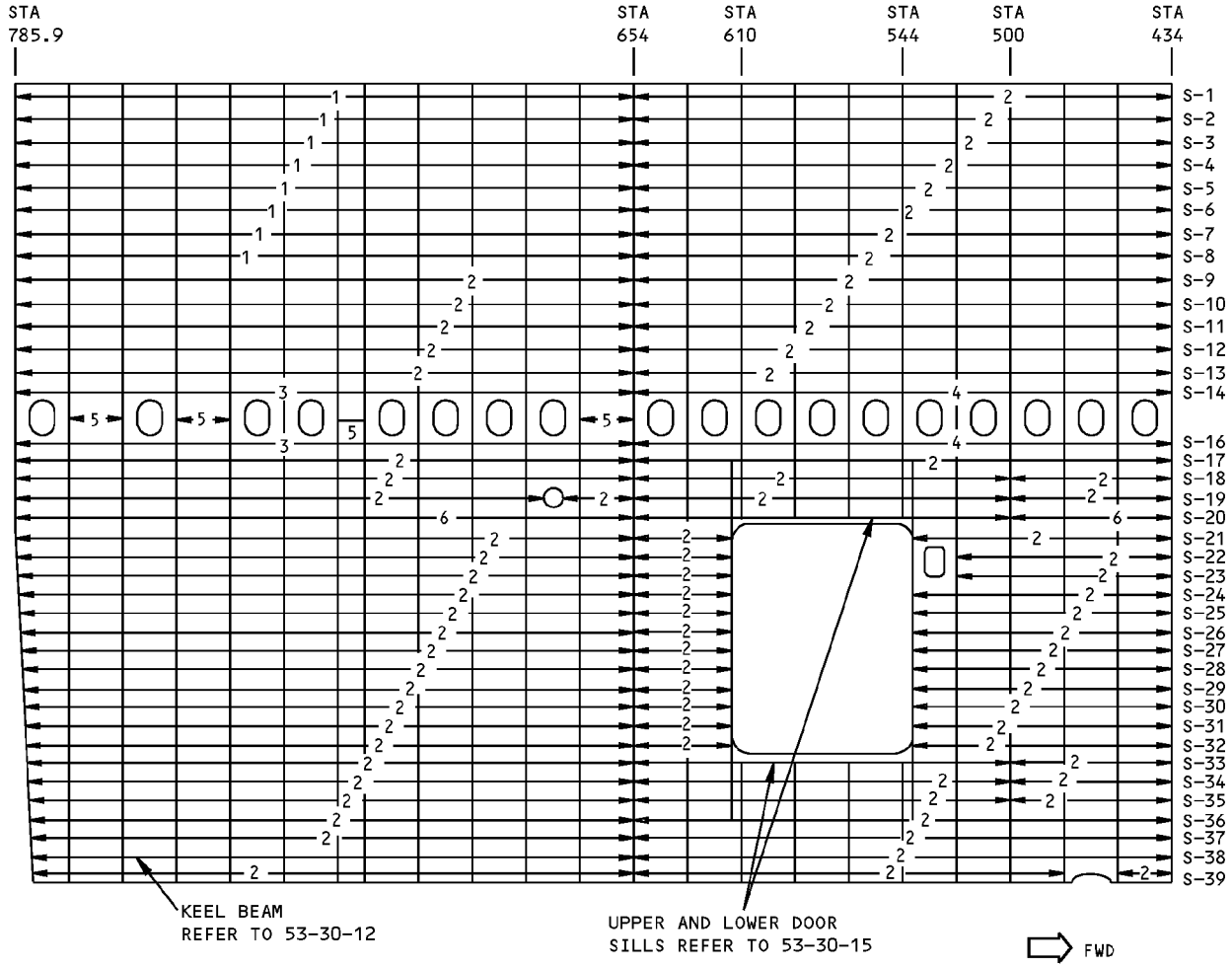
Section 43 - Stringers Identification
Figure 1 (Sheet 1 of 5)



LEFT SIDE SHOWN
DETAIL I

LIST OF MATL

Section 43 - Stringers Identification
Figure 1 (Sheet 2 of 5)

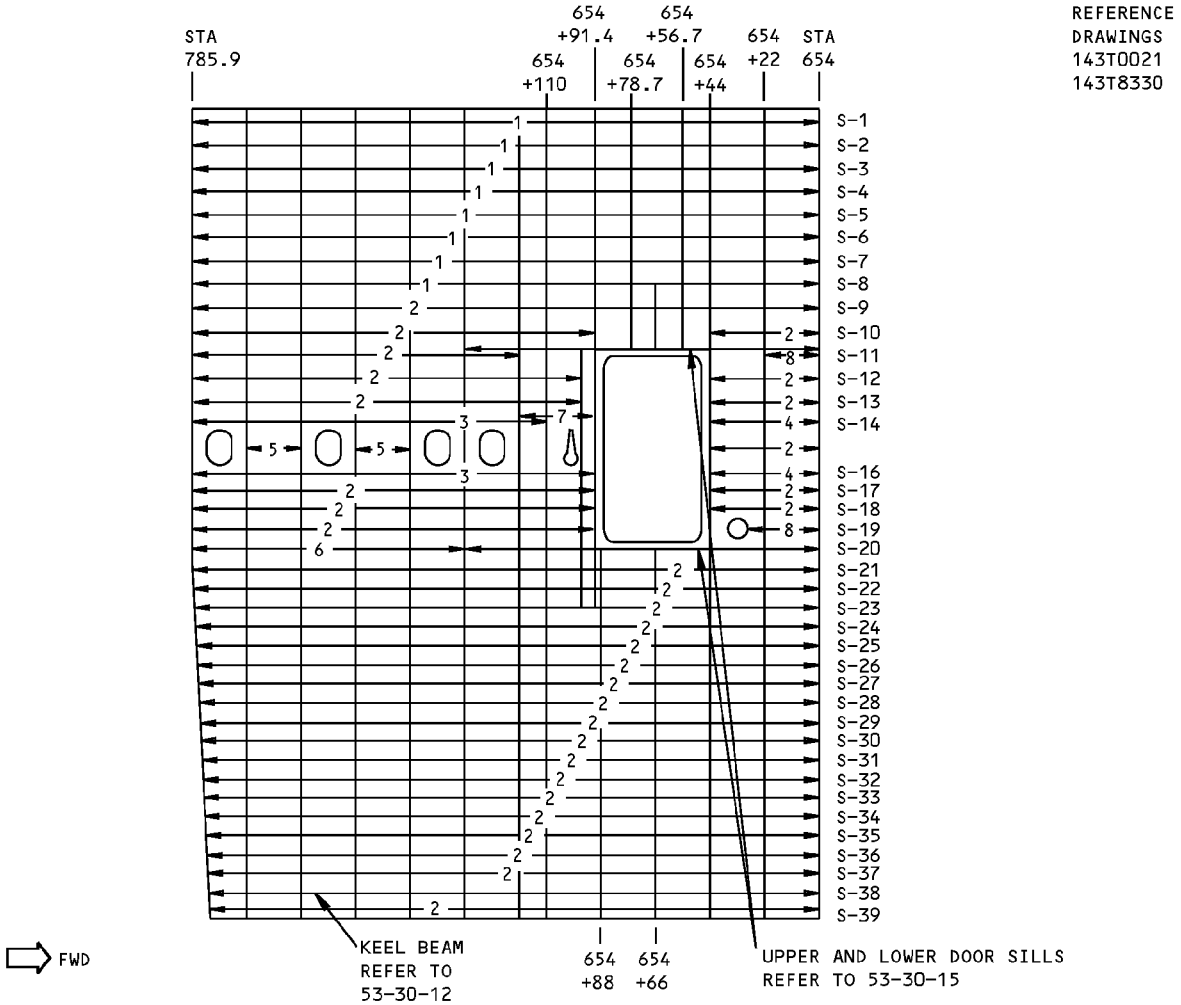


RIGHT SIDE FOR AIRPLANES WITH STANDARD CARGO DOOR
DETAIL II

ITEM	THICKNESS [A]	MATERIAL	SECTION NUMBER	STRINGER TYPE	REF DWG	EFFECTIVITY
1		7075-T6		⊔	143T3001	
2		7075-T6		⊔	143T3001	
3		7075-T6511	BAC1517-2144	⌊	143T3002	
4		7075-T6511	BAC1517-2116	⌊	143T3002	
5		7075-T6511	BAC1517-1679	⌊	143T3002	
6		7075-T6511	BAC1506-3141	⌊	143T3003	

LIST OF MATERIALS FOR DETAILS I AND II

Section 43 - Stringers Identification
Figure 1 (Sheet 3 of 5)

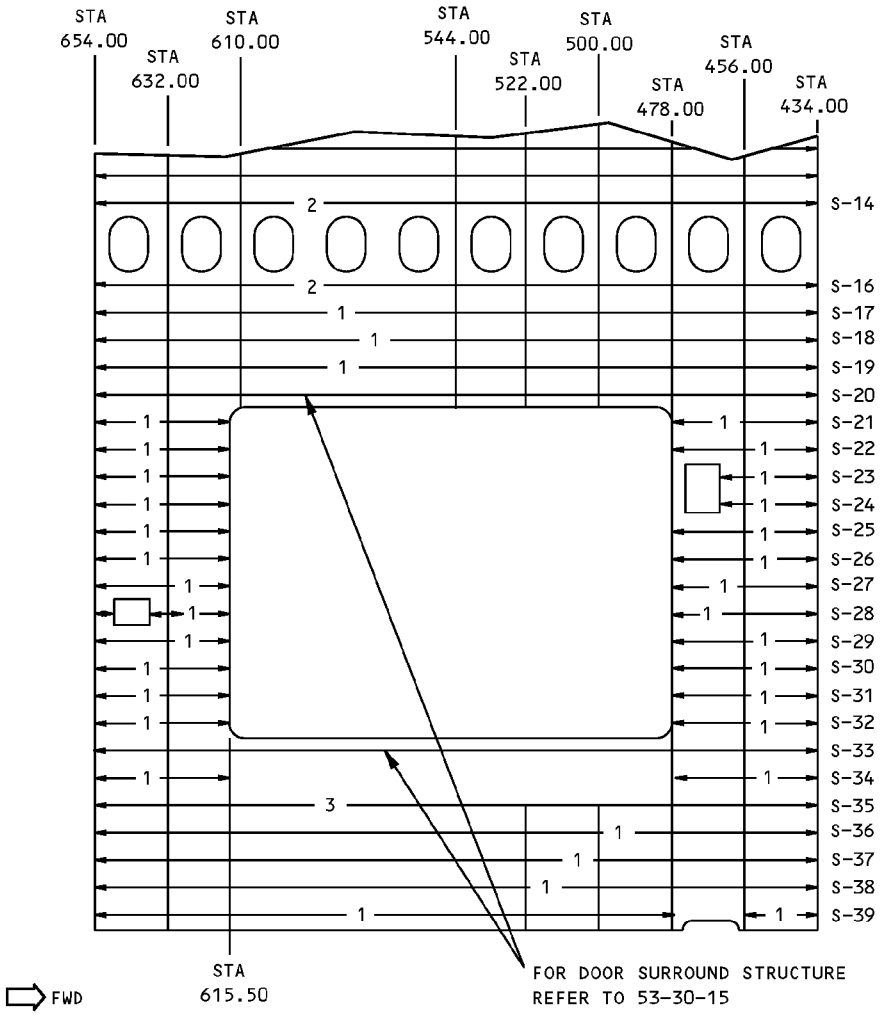


RIGHT SIDE FOR AIRPLANES WITH MID ENTRY DOOR
LEFT SIDE OPPOSITE
DETAIL III

ITEM	THICKNESS [A]	MATERIAL	SECTION NUMBER	STRINGER TYPE	REF DWG	EFFECTIVITY
1		7075-T6		⊔	143T3001	
2		7075-T6		⊔	143T3001	
3		7075-T73511	BAC1517-2144	⌊	143T3002	
4		7075-T6511	AND10138-1205	⌊	143T3002	
5		7075-T6511	BAC1517-1679	⌊	143T3002	
6		7075-T73511	BAC1506-3141	⌊	143T3003	
7		7075-T62	AND10138-1205	⌊	143T0320	
8		CLAD 7075-T6	BAC1498-203	⊔	143T0028	

LIST OF MATERIALS FOR DETAIL III

Section 43 - Stringers Identification
Figure 1 (Sheet 4 of 5)



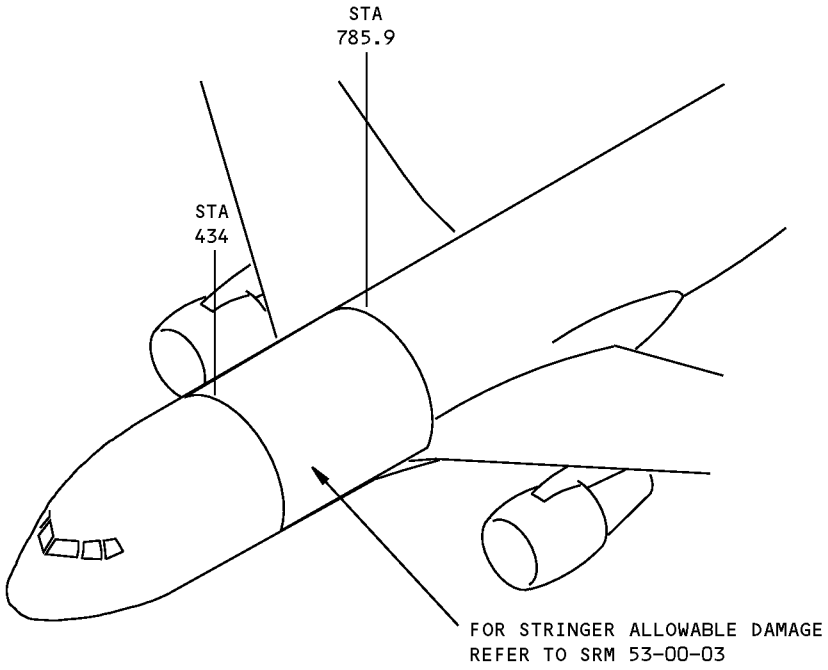
RIGHT SIDE FOR AIRPLANES WITH LARGE CARGO DOOR
DETAIL IV

ITEM	THICKNESS [A]	MATERIAL	SECTION NUMBER	STRINGER TYPE	REF DWG	EFFECTIVITY
1		7075-T6		⊓	143T3001	
2		7075-T6511	BAC1517-2116	⌐	143T3002	
3		7075-T73511	BAC1509-100287	⊔	143T3544	

LIST OF MATERIALS FOR DETAIL IV

Section 43 - Stringers Identification
Figure 1 (Sheet 5 of 5)

ALLOWABLE DAMAGE GENERAL - SECTION 43 FUSELAGE STRINGER



Section 43 Stringer Allowable Damage
Figure 101

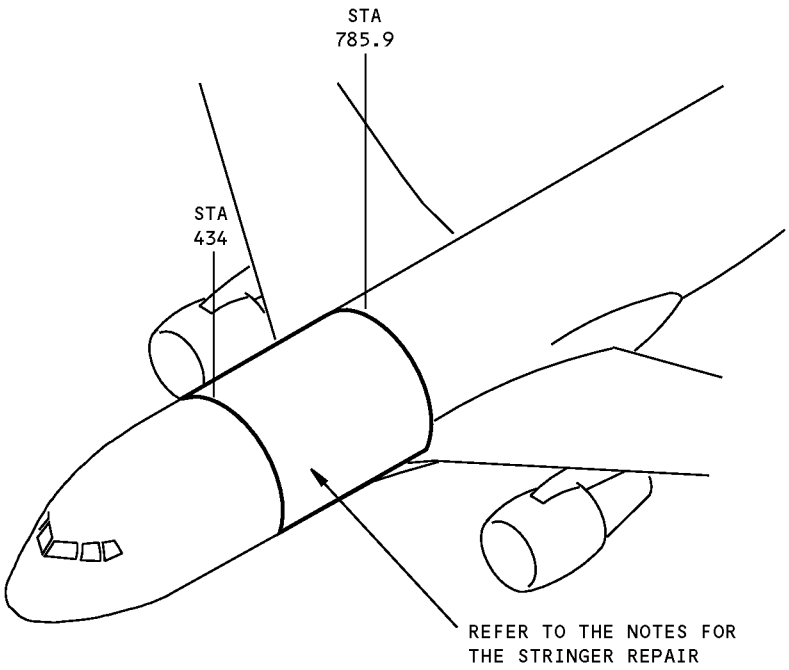
REPAIR GENERAL - SECTION 43 STRINGERS

SERVICE BULLETIN REPAIRS

The following Service Bulletins contain repairs which are available for use where specific damage has been encountered. Usually, the Service Bulletin also covers preventive modification data which operators are encouraged to use to eliminate the need for repair.

DAMAGED AREA	CUM LINE NUMBER EFFECTIVITY	SB NUMBER
FUSELAGE - SECTION 43 - MAIN FRAME - STRINGER 39 LEFT AND RIGHT CRACKS AT STATION 460 INSPECTION AND MODIFICATION	ALL 767 AIRPLANES CUM LINE NUMBERS 1 THRU 253	767-53-0035

Section 43 Stringers Repair
Figure 201 (Sheet 1 of 2)



NOTES

- REFER TO SRM 53-00-03, REPAIR 1 FOR STRINGERS S-1 THROUGH S-19.
- REFER TO SRM 53-00-03, REPAIR 2 FOR STRINGERS S-21 THROUGH S-39.
- CONTACT THE BOEING COMPANY FOR STRINGER S-20.

Section 43 Stringers Repair
Figure 201 (Sheet 2 of 2)

REPAIR 1 - STATION 434 FUSELAGE SPLICE FITTING AND STRINGER SPLICE REPAIR - S-32 TO S-39

APPLICABILITY

- THIS REPAIR IS APPLICABLE TO THE SECTION 41/43 STRINGER SPLICE BELOW THE CARGO FLOOR AT STA 434.
- THIS REPAIR IS APPLICABLE ONLY TO NARROW BRIM TYPE I STRINGER BETWEEN S-32 AND S-39. (REFER TO DETAIL II FOR THE DEFINITION OF TYPE I STRINGERS).
- THIS REPAIR DOES NOT APPLY IF THE THICKNESS OF THE STRINGER ON EITHER SIDE OF THE SPLICE, AT THE CUT LOCATION, IS GREATER THAN 0.063 INCH.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.

CAUTION: DO NOT GOUGE, SCRATCH OR BUCKLE STRUCTURE ADJACENT TO THE REPAIR.

2. Remove the existing stringer splice fitting and discard. Cut and remove the damaged part of the stringer. Cut the minimum amount of material required to remove the damage. Keep a 2D edge margin on all initial holes.

NOTE: USE DETAIL III FOR A JOGGLED SPLICE REPAIR. AS AN ALTERNATIVE, YOU CAN USE DETAIL IV FOR A NON-JOGGLED SPLICE REPAIR.

3. Make the repair parts. See Table I.
4. Assemble the repair parts as shown in Detail III or IV and drill the fastener holes.
5. Disassemble the repair parts.
6. Remove all nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the stringers.
7. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the initial parts. Refer to SRM 51-20-01.
8. Apply one layer of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the initial parts. Refer to SOPM 20-41-02.
9. Install the repair parts wet with BMS 5-95 sealant between mating surfaces.
10. Install the fasteners. See Table II and III for the type and number of fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant. Overdrive BACR15FV()KE rivets to make the driven head diameter 1.5D.
11. Apply a layer of BMS 3-23 corrosion inhibiting compound to the internal structure of the repair area. Refer to SRM 51-20-01.

NOTES

- THIS REPAIR IS A CATEGORY A REPAIR. THE INSPECTIONS GIVEN IN THE MAINTENANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERANCE OF THE INITIAL STRUCTURE WITH THIS CATEGORY A REPAIR INSTALLED.
- D = FASTENER DIAMETER
- DETAILS III AND IV SHOW AN UNDAMAGED FORWARD STRINGER AND A DAMAGED AFT STRINGER. THIS REPAIR CAN BE USED FOR DAMAGE TO THE SPLICE FITTING AND EITHER THE FORWARD STRINGER, AFT STRINGER OR BOTH. THE MAXIMUM PERMITTED LENGTH OF THE REPAIR SPLICE FITTING IS 22 INCHES (56 cm).
- IF THE DAMAGE OCCURS AT A TAPERED STRINGER, USE TAPERED FILLERS.
- THE MAXIMUM PULL-UP PERMITTED PRIOR TO FASTENER INSTALLATION IS 0.006 INCH (0.15 mm).
- MAINTAIN A MINIMUM OF 2D EDGE MARGIN ON ALL REPAIR PARTS.

  WHEN YOU USE THIS REPAIR REFER TO:

  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SOPM 20-44-04 FOR APPLICATION OF URETHANE COMPATIBLE PRIMERS
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR SEALING PROCEDURES AND ALTERNATE SEALANTS
  - SRM 51-20-08 FOR INSTALLATION OF SHIMS
  - SRM 51-40-02 FOR FASTENER INSTALLATION AND REMOVAL
  - SRM 51-40-03 FOR FASTENER SUBSTITUTIONS
  - SRM 51-40-05 FOR FASTENER HOLE SIZES
  - SRM 51-40-06 FOR FASTENER EDGE MARGINS.

Station 434 Fuselage Splice Fitting and Stringer Splice Repair - S-32 to S-39
Figure 201 (Sheet 1 of 7)

[A] SEE TABLE IV AND DETAIL II FOR THE REPAIR SECTION NUMBER.

[B] USE SHIMS WHEN NECESSARY. WHEN YOU USE SHIMS, MAKE SURE THAT THE REPAIR SPLICE FITTING FITS TIGHTLY INTO THE STRINGERS. INSTALL A SHIM IF THE GAP IS MORE THAN 0.006 INCH BEFORE FASTENER INSTALLATION. GAPS SMALLER THAN 0.006 INCH MAY BE FILLED WITH BMS 5-95 SEALANT.

[C] USE THE SAME TYPE AND SIZE FASTENER.

[D] IF THE INITIAL FASTENER HOLE IS DAMAGED, UP TO A 1/32 INCH DIAMETER OVERSIZE IS PERMITTED. REFER TO SRM 51-40-05.

[E] THIS IS THE MINIMUM NUMBER OF FASTENERS REQUIRED ON EACH SIDE OF THE DAMAGE AND IN EACH ROW.

[F] USE INITIAL HOLE LOCATIONS WHERE PRESENT. IF INITIAL FASTENERS ARE HEX-DRIVE BOLTS INSTALL 1/64 INCH OVERSIZE BOLTS AND COLLARS.

[G] ANY NEW FASTENER HOLES THROUGH THE STRINGER BRIMS AND SIDES SHOULD BE STAGGERED TO AVOID FASTENER INTERFERENCE, UNLESS OTHERWISE NOTED.

[H] USE ALL HEX-DRIVE BOLTS OR ALL RIVETS ON BOTH SIDES OF THE SPLICE THROUGH THE STRINGER BRIMS AND SIDES.

[I] WHEN YOU MAKE THE FILLER, SELECT A THICKNESS THAT WILL KEEP A MAXIMUM PULL-UP OF 0.006 INCH BEFORE FASTENER INSTALLATION.

[J] SEE DETAIL I FOR THE DIMENSIONS OF A TYPE I STRINGER.

[K] YOU CAN USE EITHER A DETAIL III OR DETAIL IV TYPE REPAIR. DETAIL III IS THE PREFERRED REPAIR.

[L] MAKE A SECTION SIMILAR TO BAC 1498-203, BUT WITH A THICKNESS OF 0.056 INCH. REFER TO TABLE V FOR STANDARD BEND RADII.

[M] IF THE FILLERS OR SHIMS ARE GREATER THAN 0.030 INCH THICK, THEY MUST BE MADE STRUCTURAL. EXTEND THESE FILLERS A MINIMUM OF TWO FASTENERS BEYOND THE END OF THE STRINGER SPLICE FITTING. REFER TO SRM 51-20-08.

[N] AS AN ALTERNATIVE, YOU CAN USE BAC 1498-293.

FASTENER SYMBOLS

INITIAL FASTENER LOCATION. USE THE FASTENERS SPECIFIED IN TABLE II AND III. [D] [F]

REPAIR FASTENER LOCATION. USE THE FASTENERS SPECIFIED IN TABLE II AND III. [G] [H]

Station 434 Fuselage Splice Fitting and Stringer Splice Repair - S-32 to S-39
Figure 201 (Sheet 2 of 7)

REPAIR MATERIAL			
PART		QUANTITY	MATERIAL
1	SPLICE FITTING	1	BARE 7075-T6, JOGGLED AT 6 TO 1 MINIMUM. MAKE FROM 7075-TO THEN HEAT TREAT TO -T6. [A]
2	FILLER [I]	AS REQUIRED	CLAD 7075-T6, SAME GAGE AS INITIAL STRINGER
3	SHIM [B]	1	CLAD 7075-T6, THICKNESS AS REQUIRED TO FILL GAP BETWEEN SPLICE PLATE AND SPLICE FITTING
4	SHIM [B] [M]	4	CLAD 7075-T6
5	SHIM [B] [M]	4	CLAD 7075-T6
6	SPLICE FITTING	1	BARE 7075-T6 [A]
7	FILLER [I]	AS REQUIRED	CLAD 7075-T6, SAME GAGE AS INITIAL STRINGER
8	FILLER [I] [M]	1	CLAD 7075-T6, THICKNESS AS REQUIRED TO FILL GAP BETWEEN STRINGER AND SPLICE FITTING
9	FILLER [I] [M]	1	CLAD 7075-T6, THICKNESS AS REQUIRED TO FILL GAP BETWEEN STRINGER AND SPLICE FITTING
10	SHIM [B] [M]	4	CLAD 7075-T6
11	SHIM [B] [M]	4	CLAD 7075-T6

TABLE I

DETAIL NO.	INITIAL STRINGER MAXIMUM THICKNESS	INITIAL FASTENER		REPAIR FASTENER	
		TYPE	QUANTITY	TYPE [C]	MINIMUM QUANTITY [E]
III AND IV	0.032 THRU 0.045	BACR15FV6KE	3	BACR15FV6KE	4
III AND IV	0.050 THRU 0.063	BACR15FV6KE	3	BACR15FV6KE	4

FASTENERS COMMON TO SKIN, STRINGER AND SPLICE FITTING
TABLE II

Station 434 Fuselage Splice Fitting and Stringer Splice Repair - S-32 to S-39
Figure 201 (Sheet 3 of 7)

DETAIL NO.	INITIAL STRINGER MAXIMUM THICKNESS	INITIAL FASTENER		REPAIR FASTENER		PART
		TYPE	QUANTITY	TYPE [G] [H]	MINIMUM QUANTITY [E]	
III AND IV	0.032 THRU 0.045	BACR15FT6D	4			STRINGER
		BACR15FT6AD	4	BACR15FT6AD	4	BRIMS
		BACB30VT6K	3			SIDES
		BACB30MY6K	3			
III AND IV	0.050 THRU 0.063	BACR15FT6D	4			STRINGER
		BACR15FT6AD	4	BACB30VT6K	4	BRIMS
		BACB30VT6K	3			SIDES
		BACB30MY6K	3			

FASTENER COMMON TO STRINGER BRIMS, SIDES AND SPLICE FITTING
TABLE III

INITIAL SECTION GAGE OF FORWARD AND AFT STRINGER	INITIAL STRINGER TYPE [J]	REPAIR SECTION [K] GAGE (REFERENCE)
0.032	TYPE I	BAC1498-200 t = 0.036
0.036	TYPE I	BAC1498-201 t = 0.040 [N]
0.040	TYPE I	BAC1498-202 t = 0.050
0.045	TYPE I	t = 0.056 [L]
0.050	TYPE I	BAC1498-203 t = 0.063
0.056	TYPE I	BAC1498-203 t = 0.063
0.063	TYPE I	BAC1498-203 t = 0.063

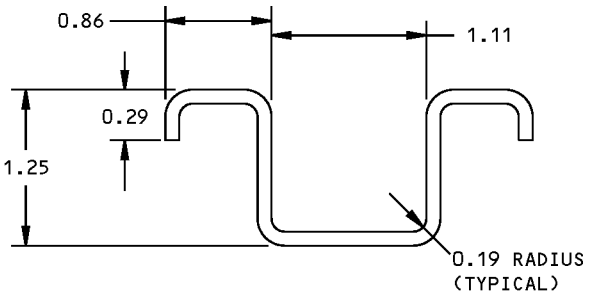
TABLE IV

GAGE	ALLOY	
	7075-O	7075-T6
0.032	0.06	0.16
0.036	0.06	0.19
0.040	0.06	0.19
0.045	0.09	0.25
0.050	0.09	0.25
0.056	0.12	0.28
0.063	0.12	0.31

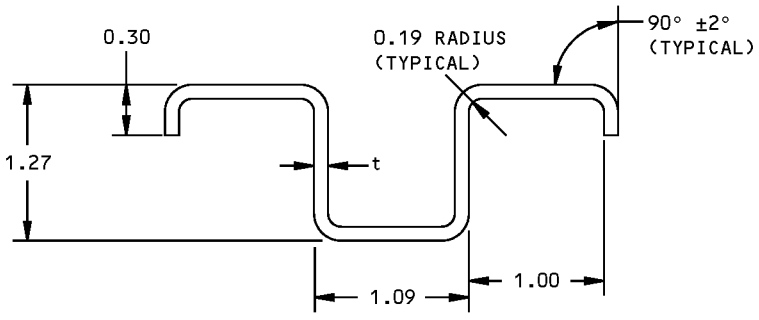
MINIMUM STANDARD BEND RADIUS FOR
FORMING ALUMINUM AT ROOM TEMPERATURE

TABLE V

Station 434 Fuselage Splice Fitting and Stringer Splice Repair - S-32 to S-39
Figure 201 (Sheet 4 of 7)



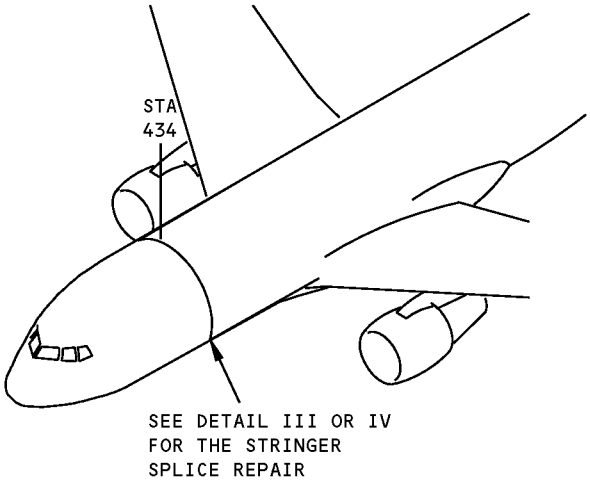
EXISTING STRINGER TYPE I
DETAIL I

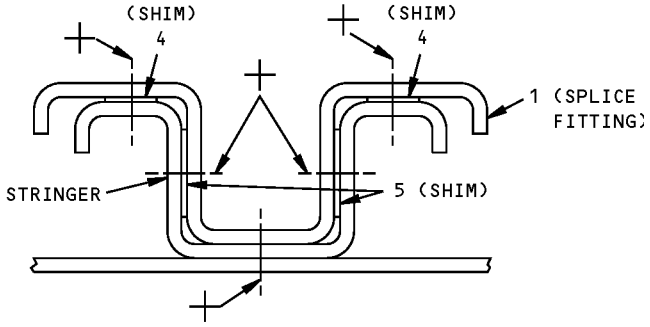


BAC1498	
DASH NO.	t
-199	0.032
-200	0.036
-201	0.040
-202	0.050
-203	0.063

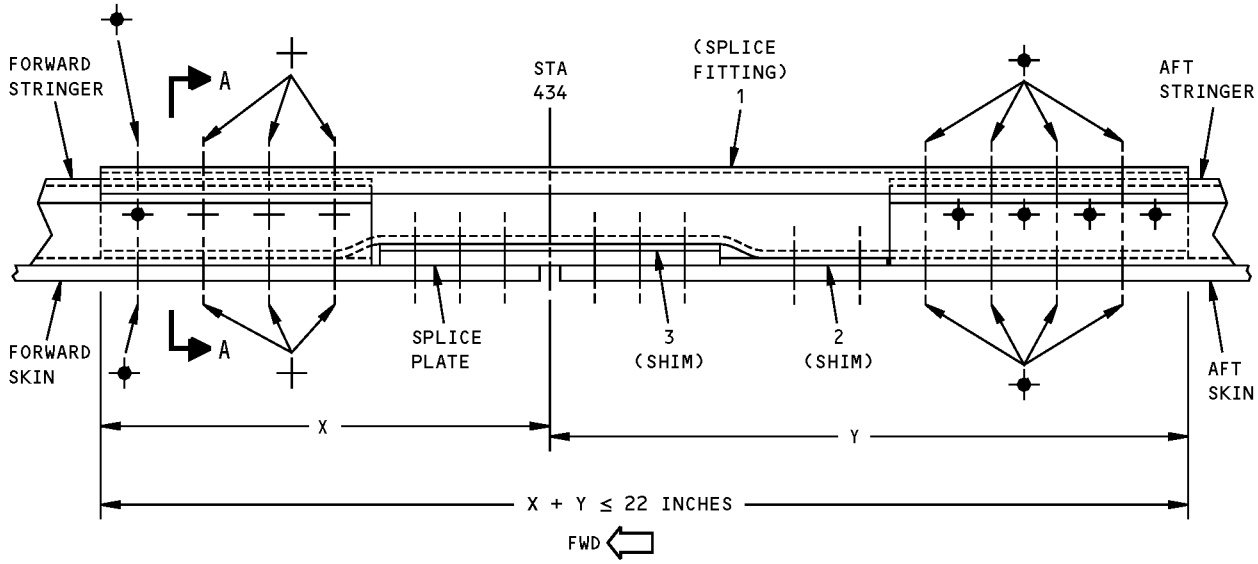
REPAIR SECTIONS FOR STRINGER SPLICE FITTING AND STRINGER TYPE I
DETAIL II

Station 434 Fuselage Splice Fitting and Stringer Splice Repair - S-32 to S-39
Figure 201 (Sheet 5 of 7)





SECTION A-A

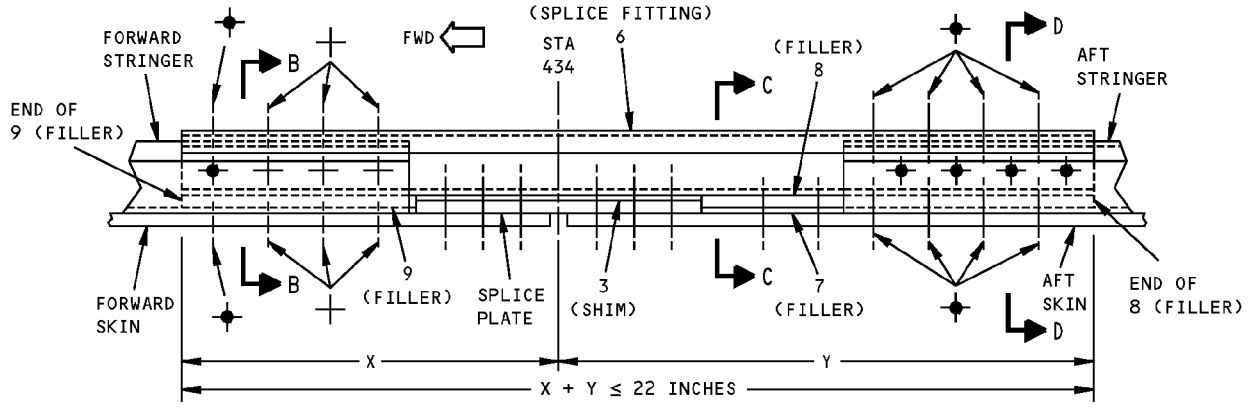


JOGGLED SPLICE FITTING WITH UNDAMAGED FORWARD STRINGER AND DAMAGED AFT STRINGER
(SOME PARTS ARE NOT SHOWN FOR CLARITY)

DETAIL III

NOTE: USE HEX-DRIVE BOLTS OR ALL RIVETS ON BOTH SIDES OF THE SPLICE THRU STRINGER BRIMS AND SIDES. USE DRAWING TYPE FASTENERS THRU THE SKIN.

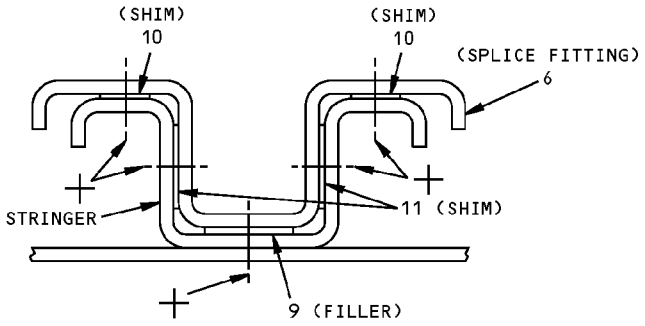
Station 434 Fuselage Splice Fitting and Stringer Splice Repair - S-32 to S-39
Figure 201 (Sheet 6 of 7)



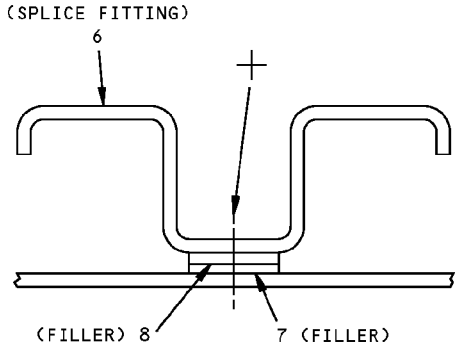
NOTE: USE HEX-DRIVE BOLTS OR ALL RIVETS ON BOTH SIDES OF THE SPLICE, THRU STRINGER BRIMS AND SIDES. USE DRAWING TYPE FASTENERS THRU THE SKIN.

NON-JOGGLED SPLICE FITTING WITH UNDAMAGED FORWARD STRINGER AND DAMAGED AFT STRINGER
(SOME PARTS ARE NOT SHOWN FOR CLARITY)

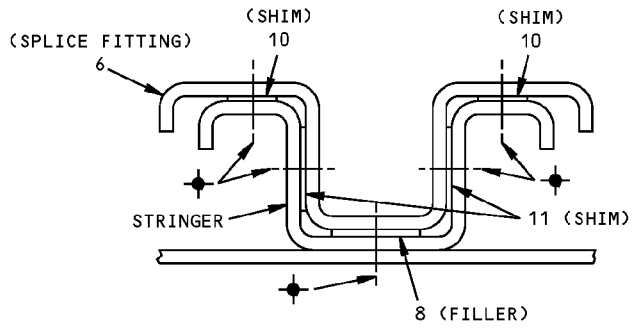
DETAIL IV



SECTION B-B



SECTION C-C

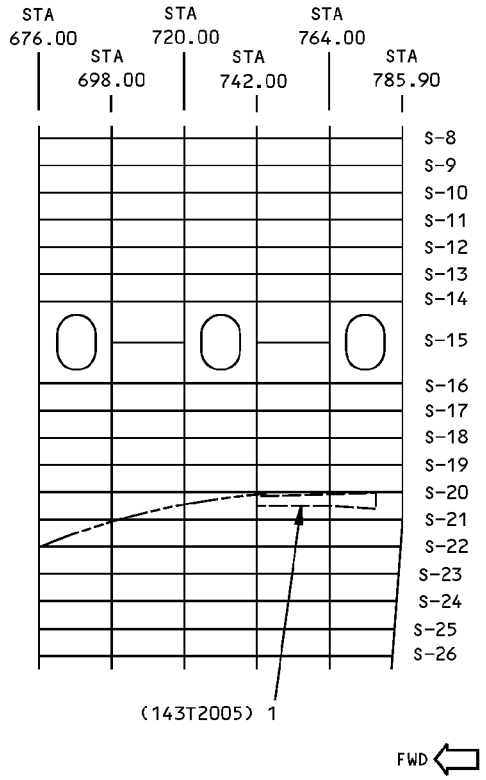


SECTION D-D

Station 434 Fuselage Splice Fitting and Stringer Splice Repair - S-32 to S-39
Figure 201 (Sheet 7 of 7)

IDENTIFICATION 1 - SECTION 43 - LONGERON

REF DWG
143T2009



ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	STIFFENER - FRONT SPAR LONGERON		7075-T7351 BAR OPTIONAL: 7075-T73 FORGED BLOCK OR 7075-73511 EXTRUDED BAR	

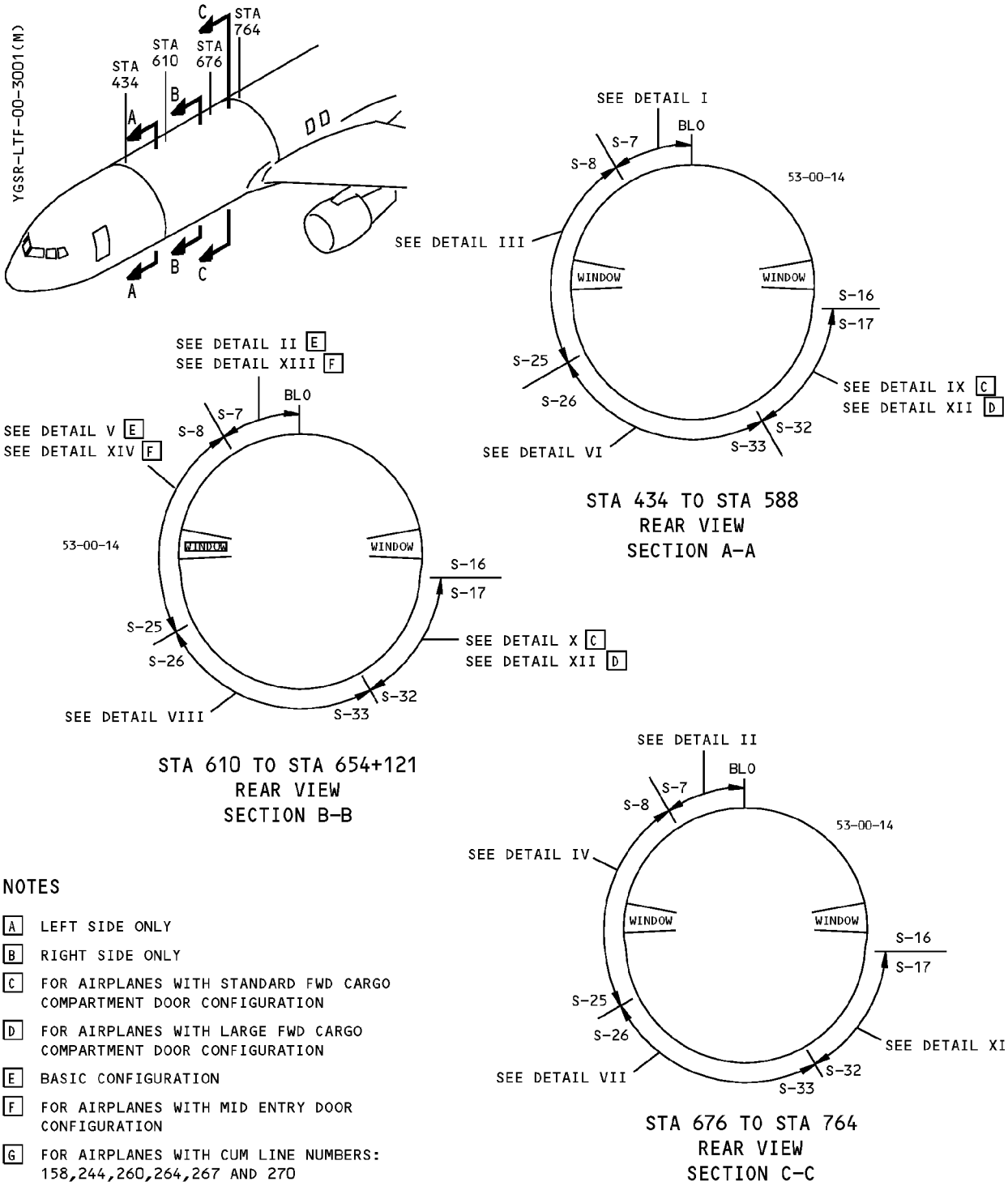
LIST OF MATERIALS

NOTES

- REFER TO 53-50-05 FOR LONGERON IDENTIFICATION IN SECTION 45
- REFER TO 53-60-05 FOR LONGERON IDENTIFICATION IN SECTION 46

Section 43 - Longeron Identification
Figure 1

IDENTIFICATION 1 - SECTION 43 - FRAME

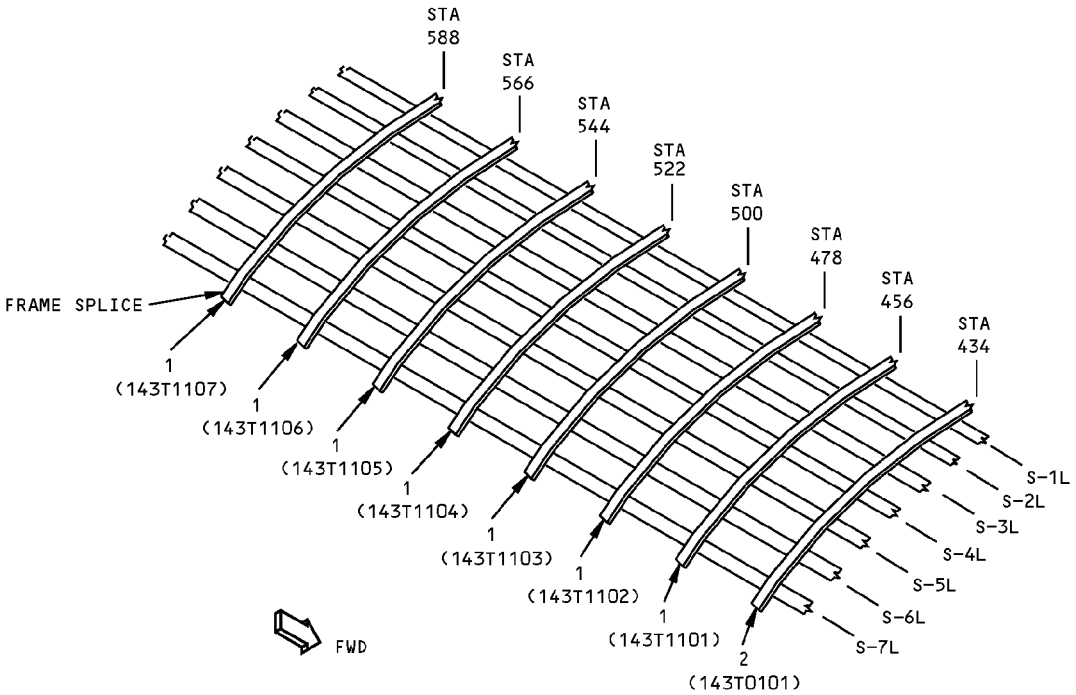


NOTES

- A LEFT SIDE ONLY
- B RIGHT SIDE ONLY
- C FOR AIRPLANES WITH STANDARD FWD CARGO COMPARTMENT DOOR CONFIGURATION
- D FOR AIRPLANES WITH LARGE FWD CARGO COMPARTMENT DOOR CONFIGURATION
- E BASIC CONFIGURATION
- F FOR AIRPLANES WITH MID ENTRY DOOR CONFIGURATION
- G FOR AIRPLANES WITH CUM LINE NUMBERS: 158,244,260,264,267 AND 270

Section 43 - Frame Identification
Figure 1 (Sheet 1 of 25)

REF DWG
143T0100



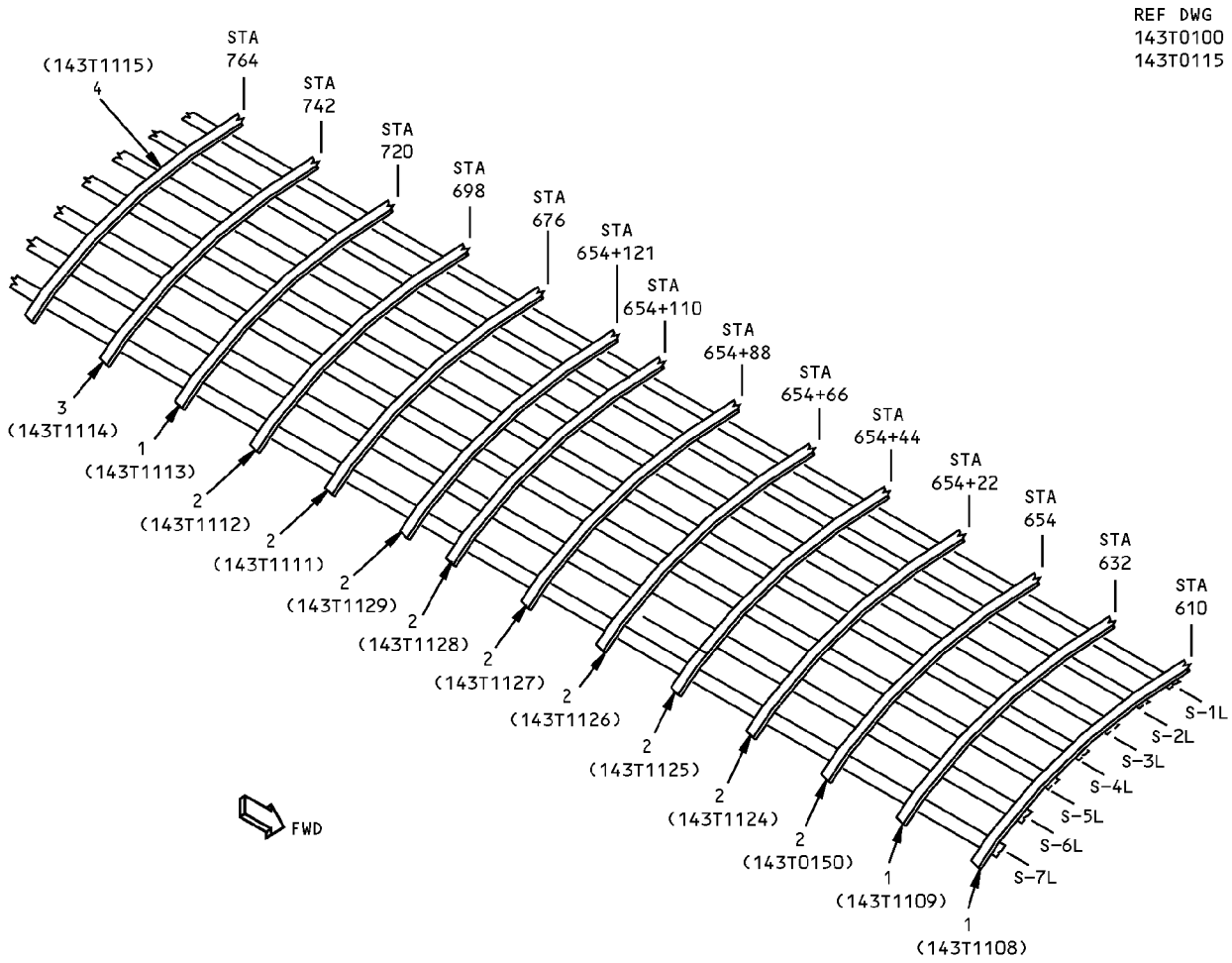
LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE

DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.063	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.037 MIN)	
2	FRAME	0.063	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.032 MIN)	

LIST OF MATERIALS FOR DETAIL I

Section 43 - Frame Identification
Figure 1 (Sheet 2 of 25)

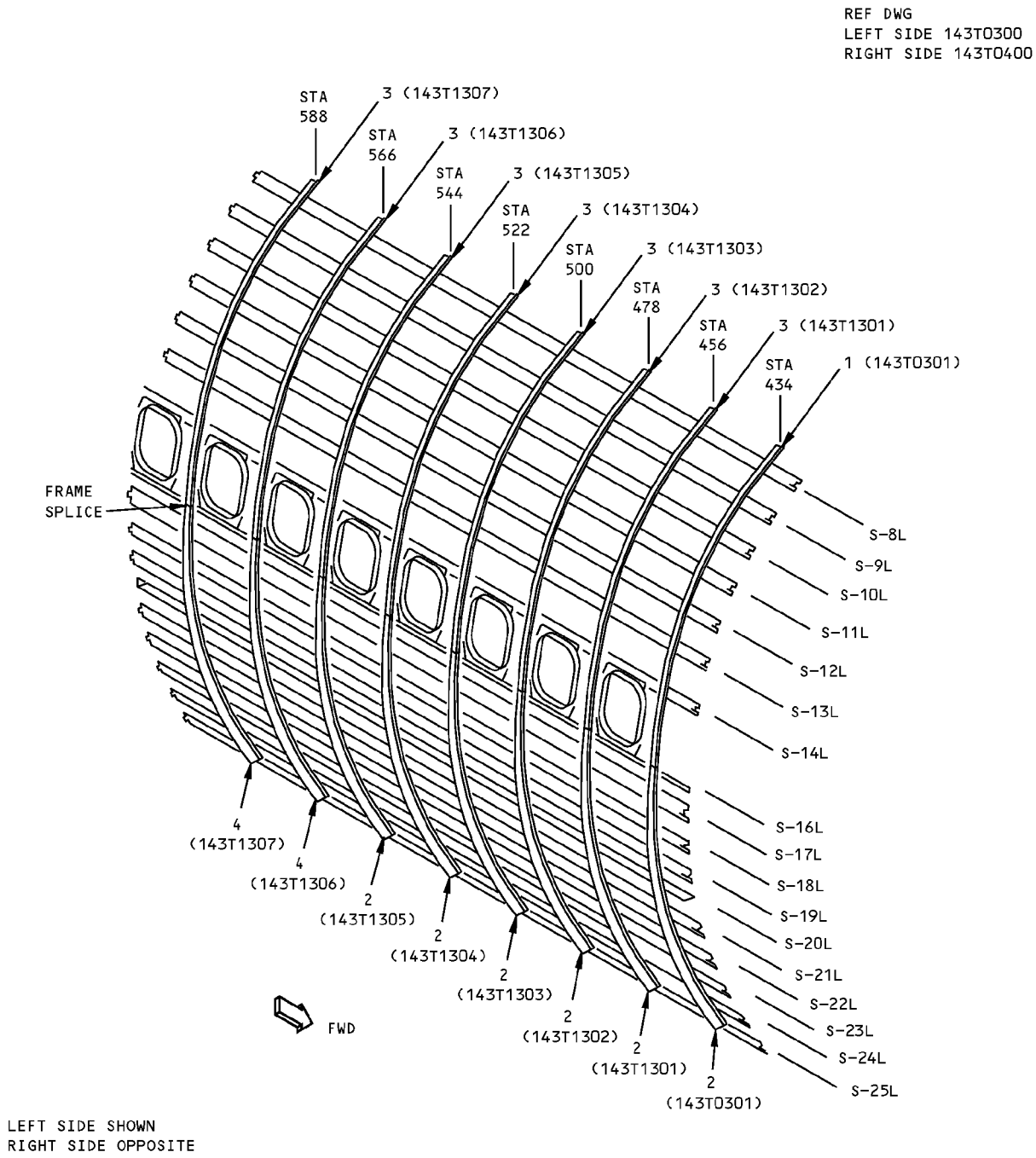


LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.063	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.037 MIN)	
2	FRAME	0.063	7075-T62 (CHEM-MILLED TO 0.032 MIN)	
3	FRAME	0.080	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.035 MIN)	
4	FRAME	0.080	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.040 MIN)	

LIST OF MATERIALS FOR DETAIL II

Section 43 - Frame Identification
Figure 1 (Sheet 3 of 25)



DETAIL III

LIST OF MATL

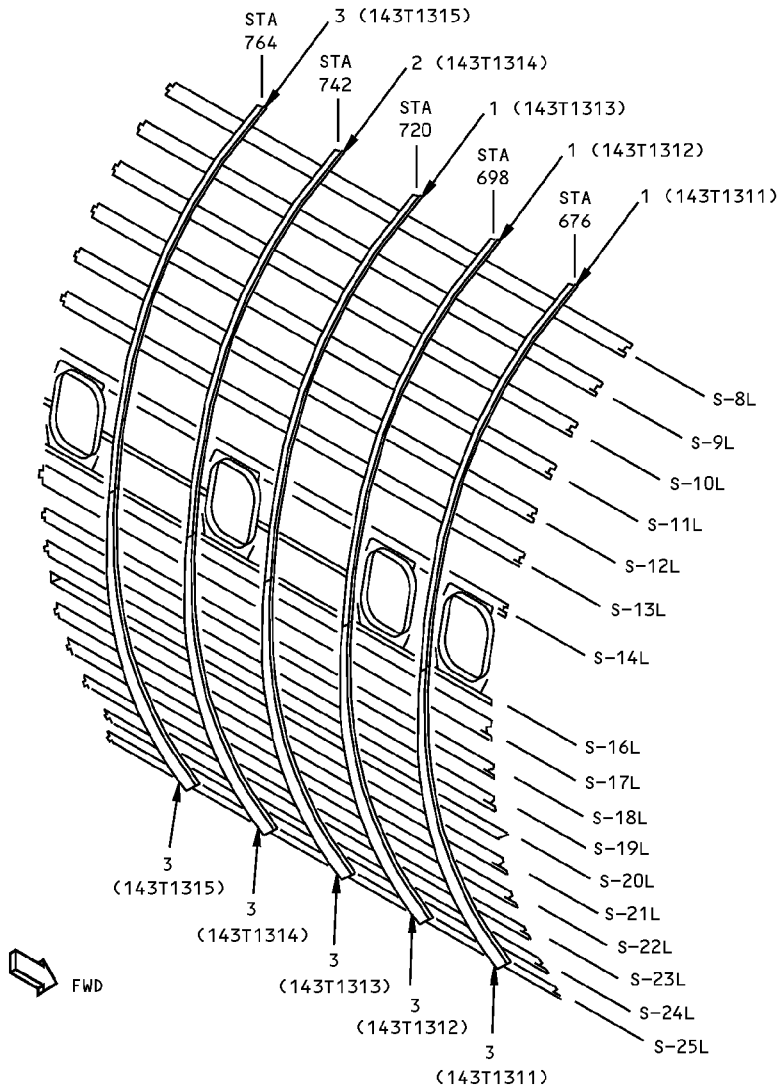
Section 43 - Frame Identification
Figure 1 (Sheet 4 of 25)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	FRAME	0.063	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.032 MIN)	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
2	FRAME	0.063	CLAD 7075-T6	
3	FRAME ASSY			
	FRAME	0.063	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.037 MIN)	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
4	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	

LIST OF MATERIALS FOR DETAIL III

Section 43 - Frame Identification
Figure 1 (Sheet 5 of 25)

REF DWG
LEFT SIDE 143T0300
143T0315
RIGHT SIDE 143T0400
143T0415



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE

DETAIL IV

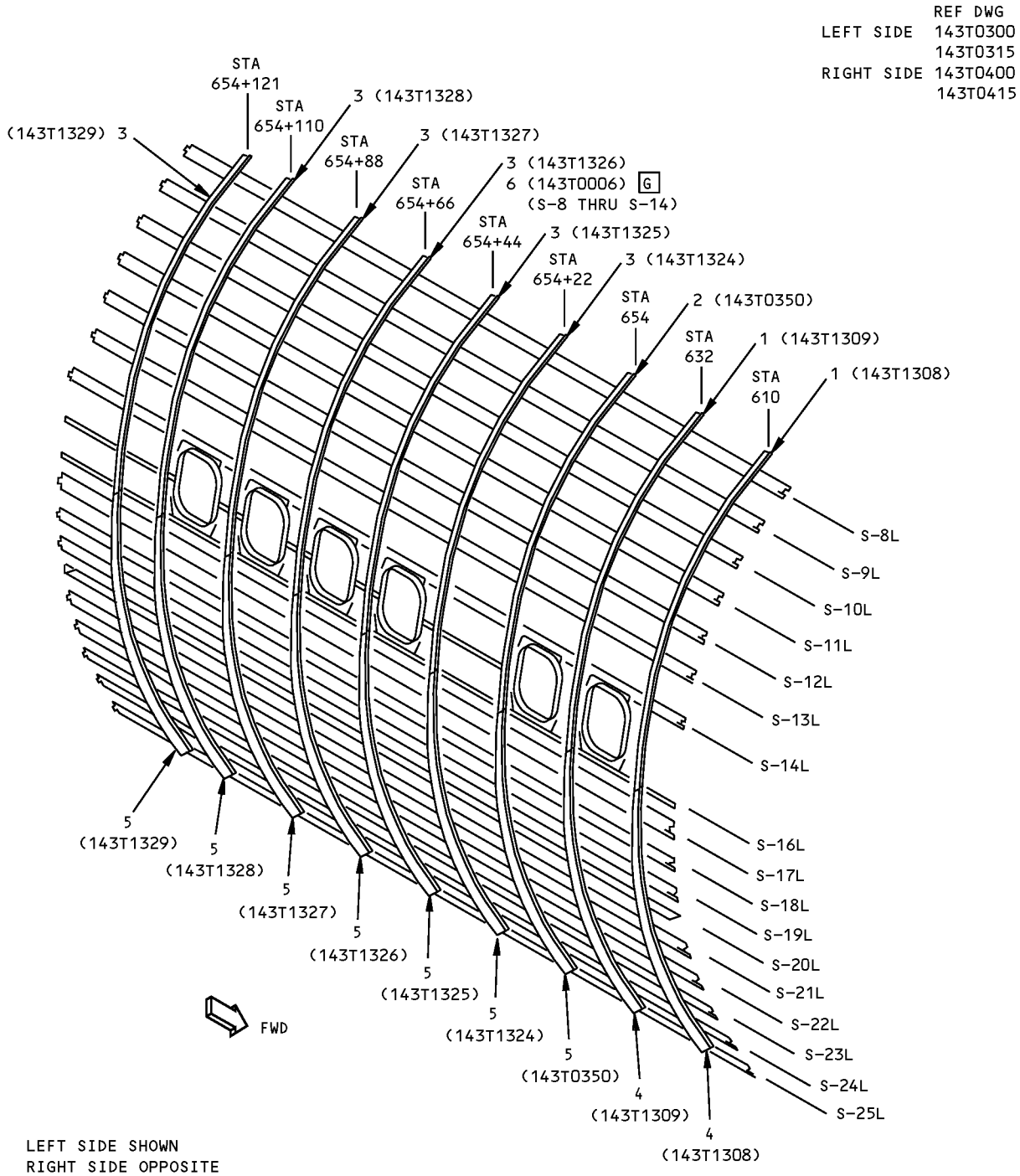
LIST OF MATL

Section 43 - Frame Identification
Figure 1 (Sheet 6 of 25)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	FRAME	0.063	7075-T62 (CHEM-MILLED TO 0.032 MIN)	
	CHORD		BAC1503-100613 7075-T62	
2	FRAME ASSY			
	FRAME	0.080	7075-T62 (CHEM-MILLED TO 0.035 MIN)	
	CHORD		BAC1503-100613 7075-T62	
3	FRAME ASSY			
	FRAME	0.080	7075-T62 (CHEM-MILLED TO 0.040 MIN)	
	CHORD		BAC1503-100613 7075-T62	
4	FRAME	0.063	CLAD 7075-T62	

LIST OF MATERIALS FOR DETAIL IV

Section 43 - Frame Identification
Figure 1 (Sheet 7 of 25)



DETAIL V

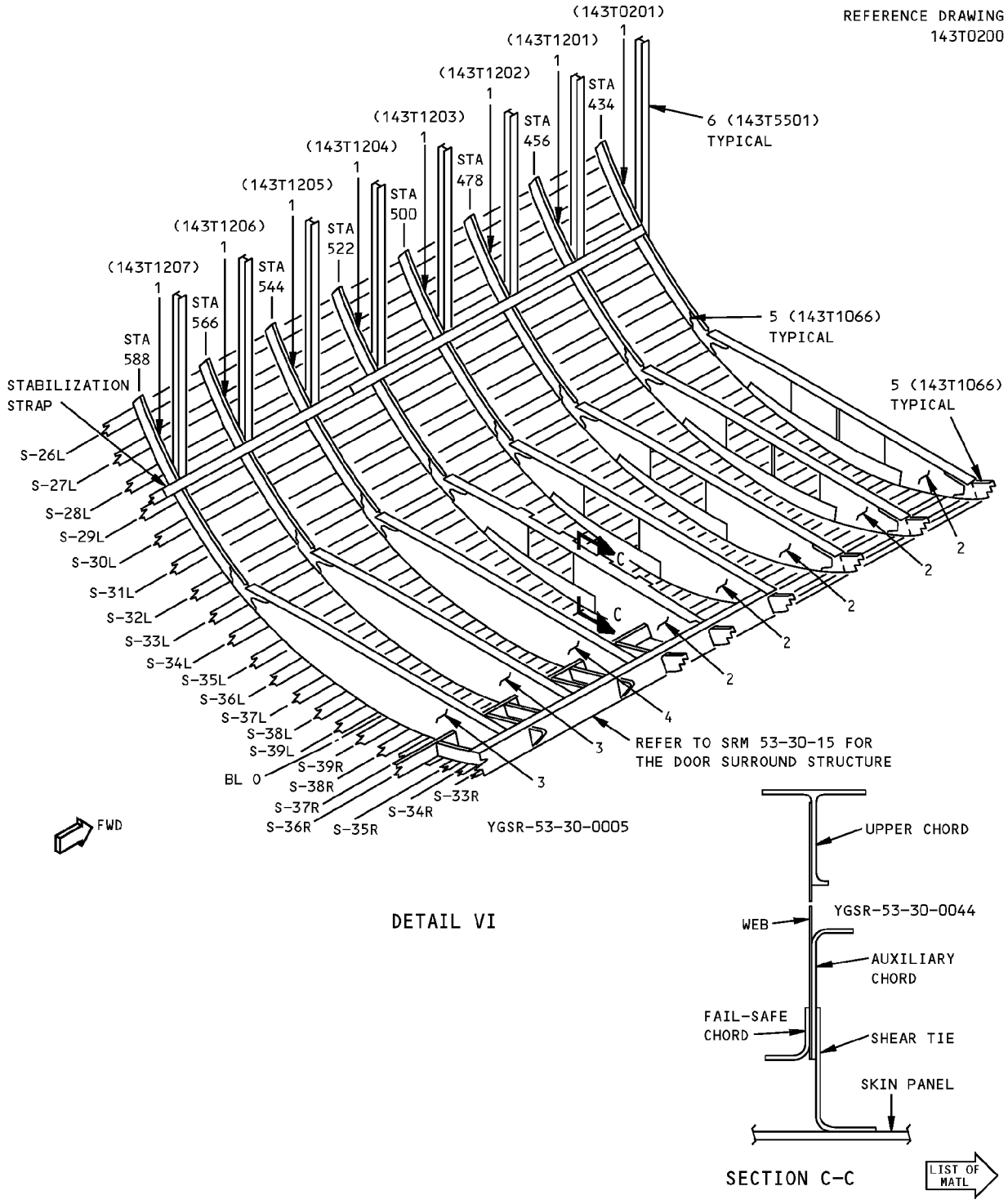
LIST OF MATL

Section 43 - Frame Identification
Figure 1 (Sheet 8 of 25)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	FRAME	0.063	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.037 MIN)	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
2	FRAME ASSY			
	FRAME	0.063	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.032 MIN)	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
3	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.037 MIN)	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	A
			BAC1503-100613 7075-T62	B
4	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
5	FRAME	0.063	CLAD 7075-T6	
6	STRAP	0.250	2024-T3	G

LIST OF MATERIALS FOR DETAIL V

Section 43 - Frame Identification
Figure 1 (Sheet 9 of 25)



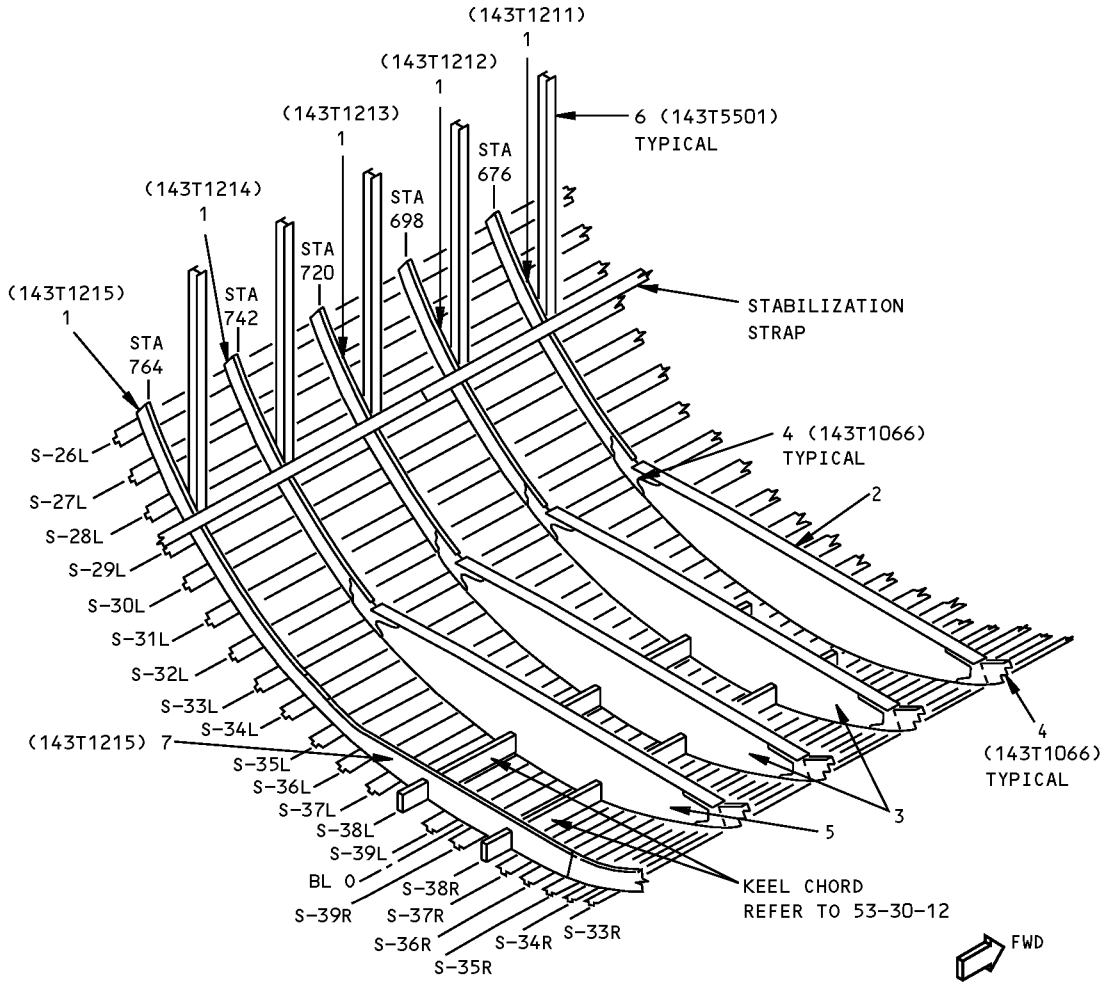
Section 43 - Frame Identification
Figure 1 (Sheet 10 of 25)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T6	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
2	FRAME ASSY			
	UPPER CHORD		BAC1506-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6	
	FAIL-SAFE CHORD	0.063	CLAD 7075-T6	
	AUX CHORD	0.063	CLAD 7075-T6	
3	FRAME ASSY			
	UPPER CHORD		BAC1506-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MINIMUM)	
	FAIL-SAFE CHORD	0.063	CLAD 7075-T6	
4	FRAME ASSY			
	UPPER CHORD		BAC1506-3400 7075-T6511, OPTIONAL: BAC1506-2275	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MINIMUM)	
	FAIL-SAFE CHORD	0.063	CLAD 7075-T6	
5	SPLICE FITTING	1.25	7075-T7351	
6	STANCHION		BAC1518-762 7075-T6511	

LIST OF MATERIALS FOR DETAIL VI

Section 43 - Frame Identification
Figure 1 (Sheet 11 of 25)

REF DWG
143T0200
143T0215



DETAIL VII

LIST OF MATL

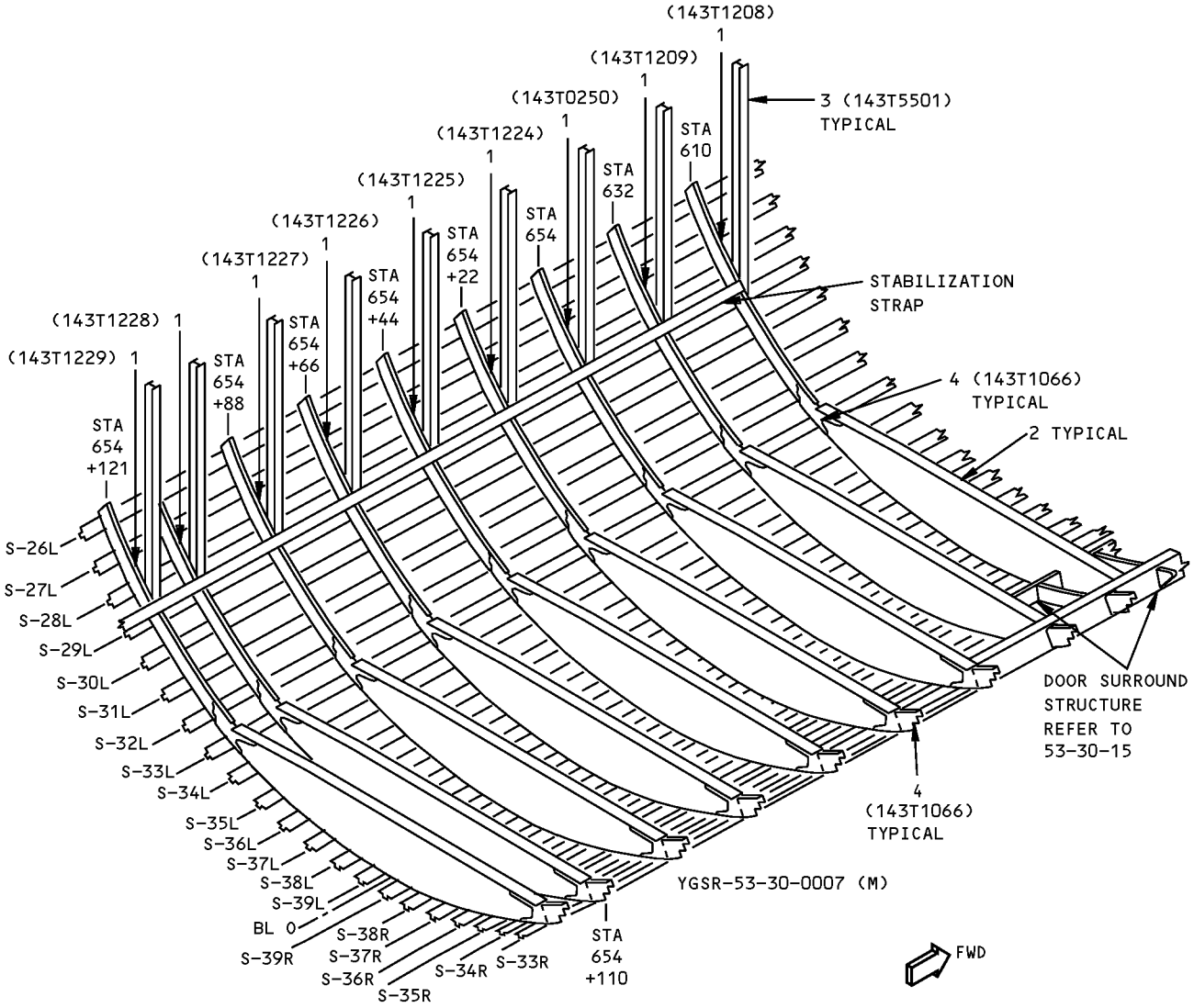
Section 43 - Frame Identification
Figure 1 (Sheet 12 of 25)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T6	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
2	FRAME ASSY			
	UPPER CHORD		BAC1506-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	FAIL-SAFE CHORD	0.063	CLAD 7075-T6	
3	FRAME ASSY			
	UPPER CHORD		BAC1506-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6	
	FAIL-SAFE CHORD	0.063	CLAD 7075-T6	
4	SPLICE FITTING	1.25	7075-T7351	
5	FRAME ASSY			
	WEB	0.032	CLAD 7075-T6	
	AUX CHORD	0.063	CLAD 7075-T6	
	UPPER CHORD		BAC1506-3123 7075-T6511	
	FAIL-SAFE CHORD	0.063	CLAD 7075-T6	
6	STANCHION		BAC1518-762 7075-T6511	
7	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T6	
	AUX CHORD	0.071	CLAD 7075-T62	
	INNER CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	

LIST OF MATERIALS FOR DETAIL VII

Section 43 - Frame Identification
Figure 1 (Sheet 13 of 25)

REF DWG
143T0200
143T0215



DETAIL VIII

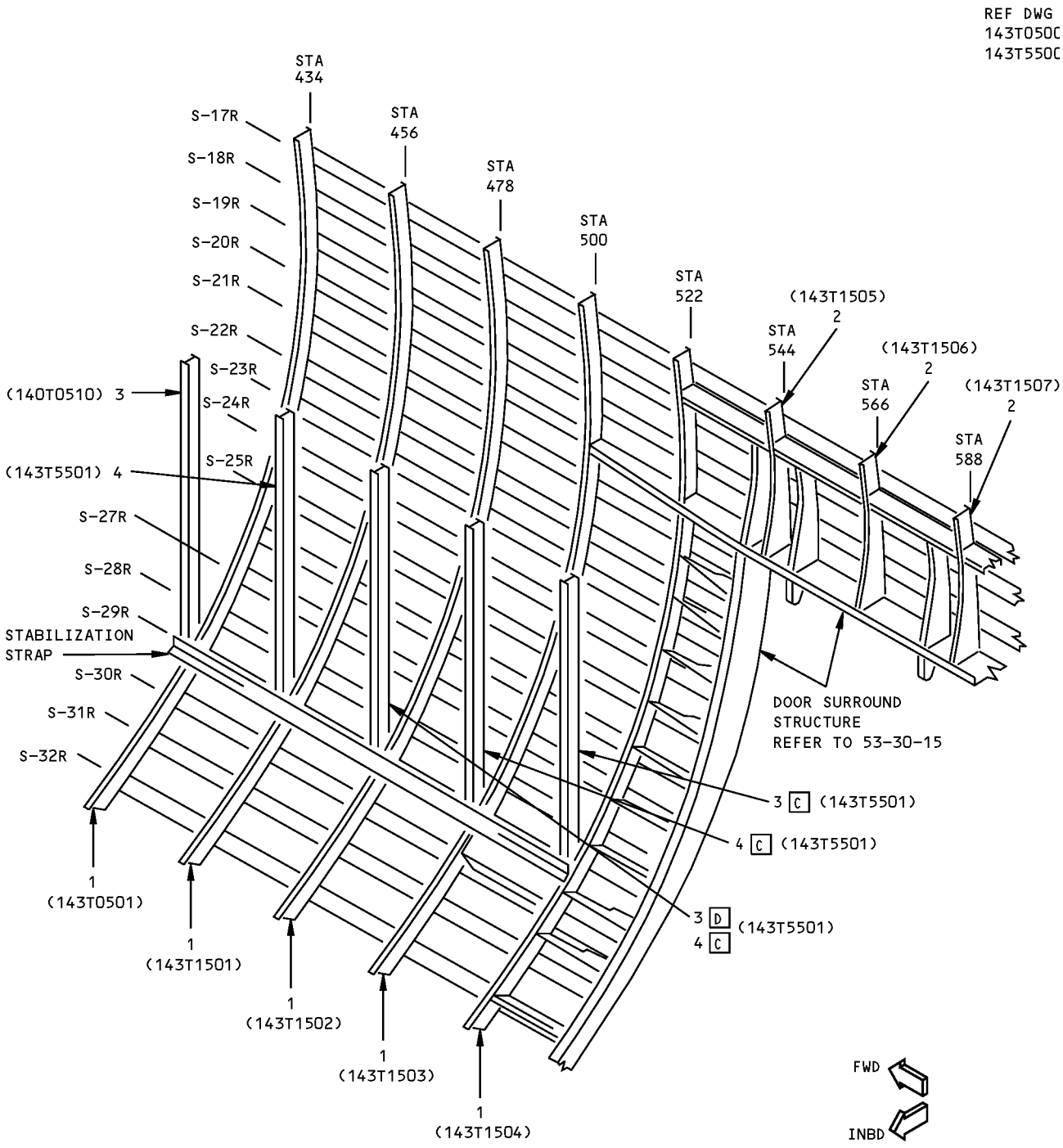
LIST OF MATL

Section 43 - Frame Identification
Figure 1 (Sheet 14 of 25)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T6	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
2	FRAME ASSY			
	UPPER CHORD		BAC1506-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	FAIL-SAFE CHORD	0.063	CLAD 7075-T6	
3	STANCHION		BAC1518-762 7075-T6511	
4	SPLICE FITTING	1.25	7075-T7351	

LIST OF MATERIALS FOR DETAIL VIII

Section 43 - Frame Identification
Figure 1 (Sheet 15 of 25)



DETAIL IX

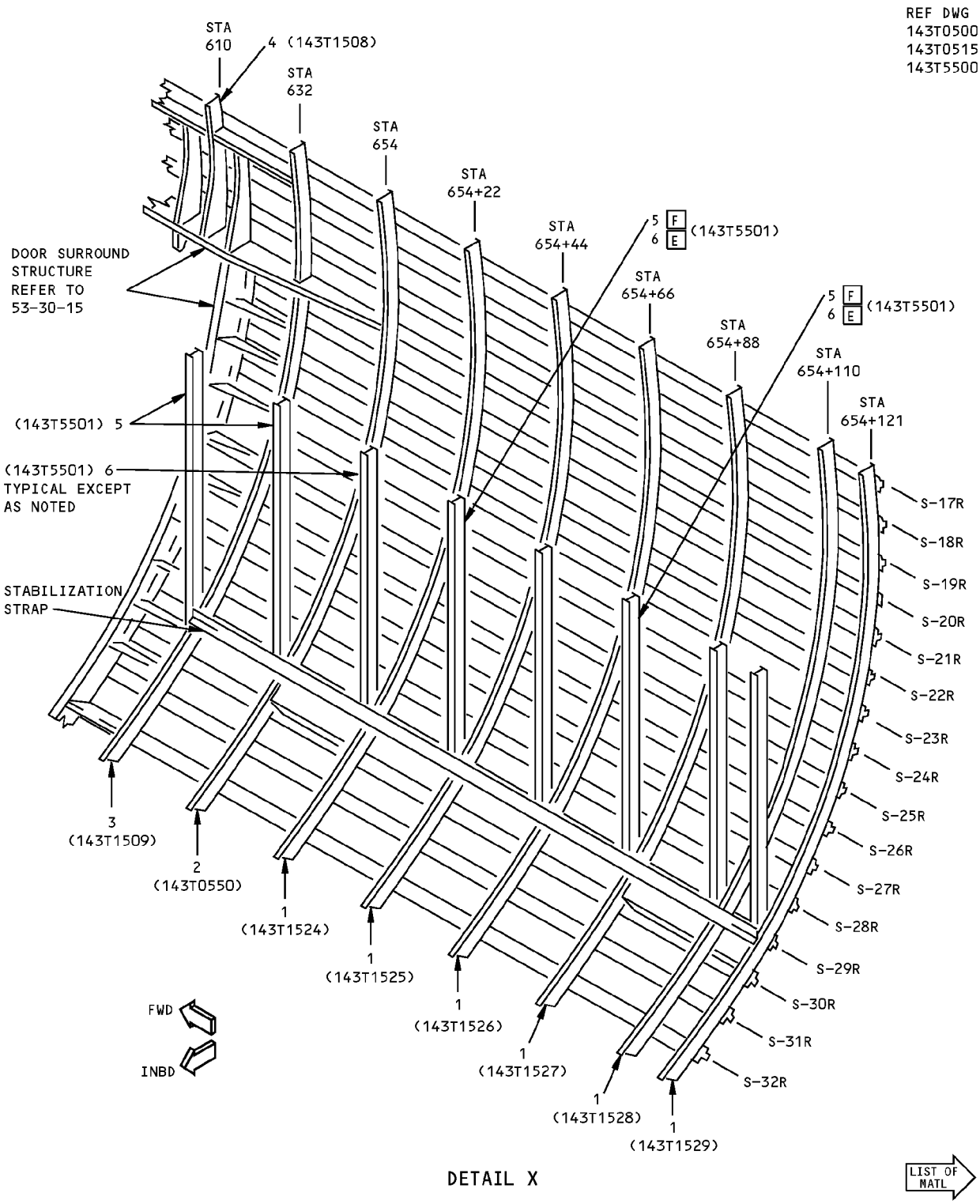
LIST OF MATL

Section 43 - Frame Identification
Figure 1 (Sheet 16 of 25)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY FRAME CHORD	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN) BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
2	FRAME ASSY FRAME CHORD	0.063	CLAD 7075-T6 BAC1503-100449 7075-T6 OPTIONAL: 7075-T6511	
3	STANCHION		BAC1518-729 7075-T6511	
4	STANCHION		BAC1518-762 7075-T6511	

LIST OF MATERIALS FOR DETAIL IX

Section 43 - Frame Identification
Figure 1 (Sheet 17 of 25)

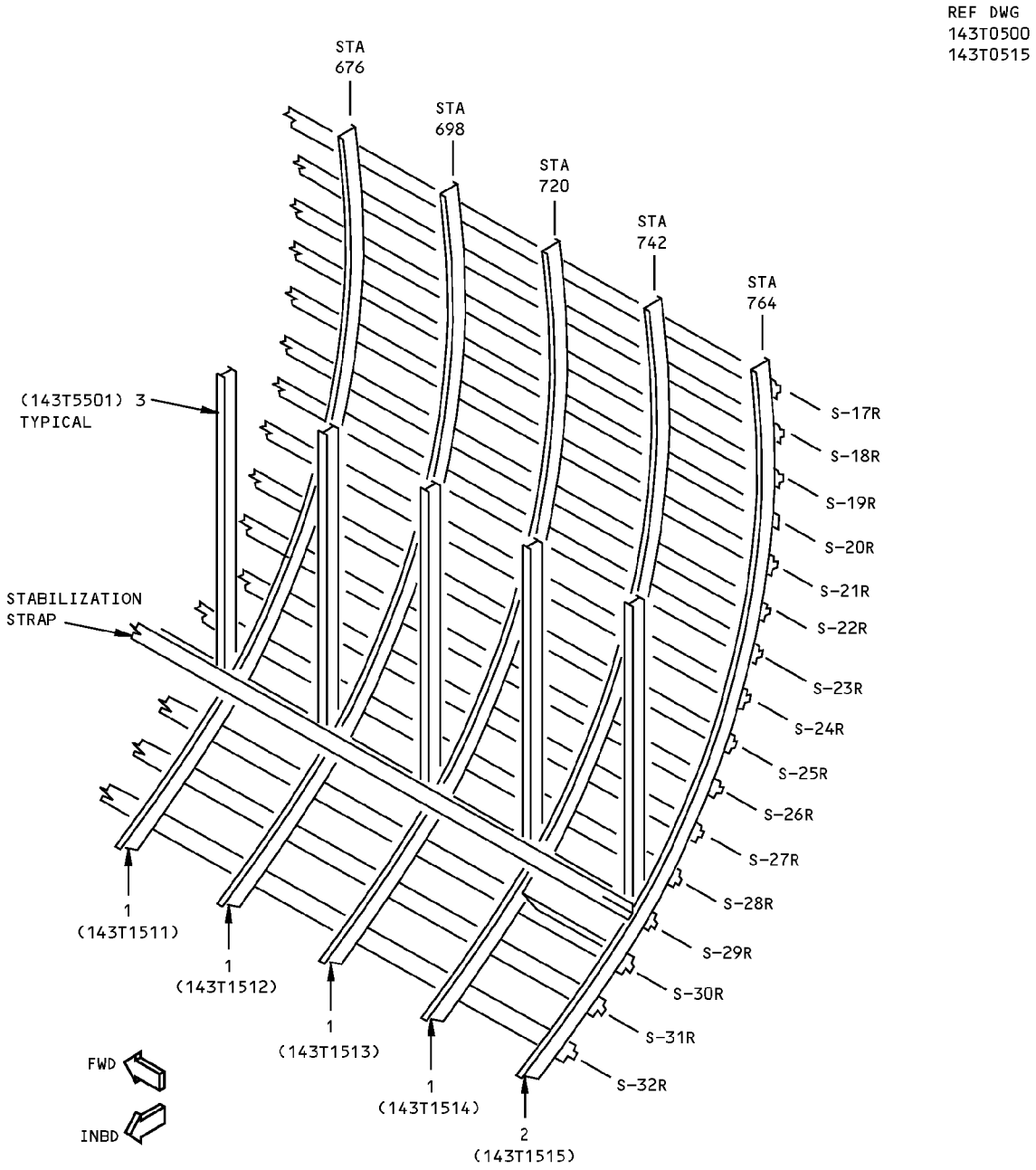


Section 43 - Frame Identification
Figure 1 (Sheet 18 of 25)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T62	
	CHORD		BAC1503-100613 7075-T62	
2	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
3	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T6	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
4	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T6	
	CHORD		BAC1503-100449 7075-T6 OPTIONAL: 7075-T6511	
5	STANCHION		BAC1518-729 7075-T6511	
6	STANCHION		BAC1518-762 7075-T6511	

LIST OF MATERIALS FOR DETAIL X

Section 43 - Frame Identification
Figure 1 (Sheet 19 of 25)



DETAIL XI

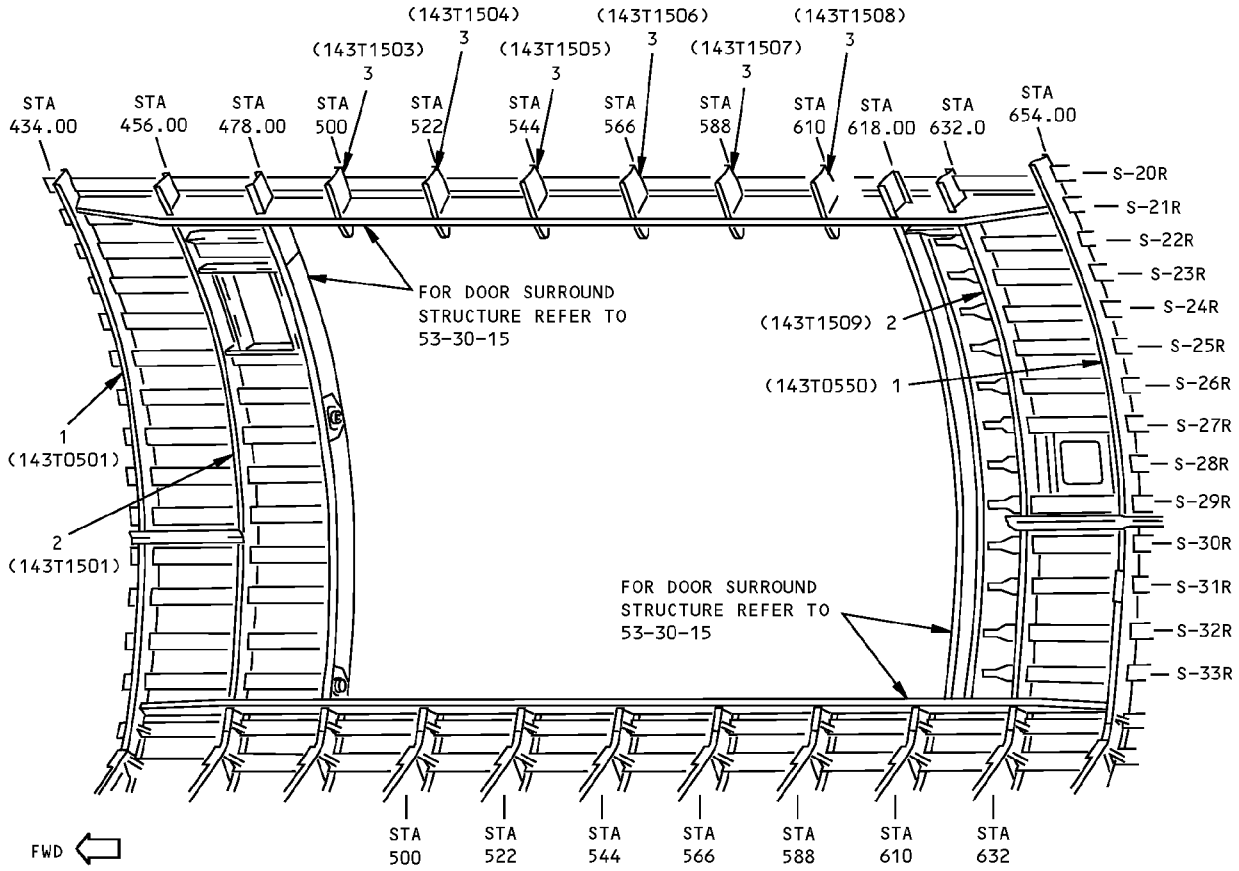
LIST OF MATL

Section 43 - Frame Identification
Figure 1 (Sheet 20 of 25)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T62	
	CHORD		BAC1503-100613 7075-T62	
2	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
3	STANCHION		BAC1518-762 7075-T6511	

LIST OF MATERIALS FOR DETAIL XI

Section 43 - Frame Identification
Figure 1 (Sheet 21 of 25)

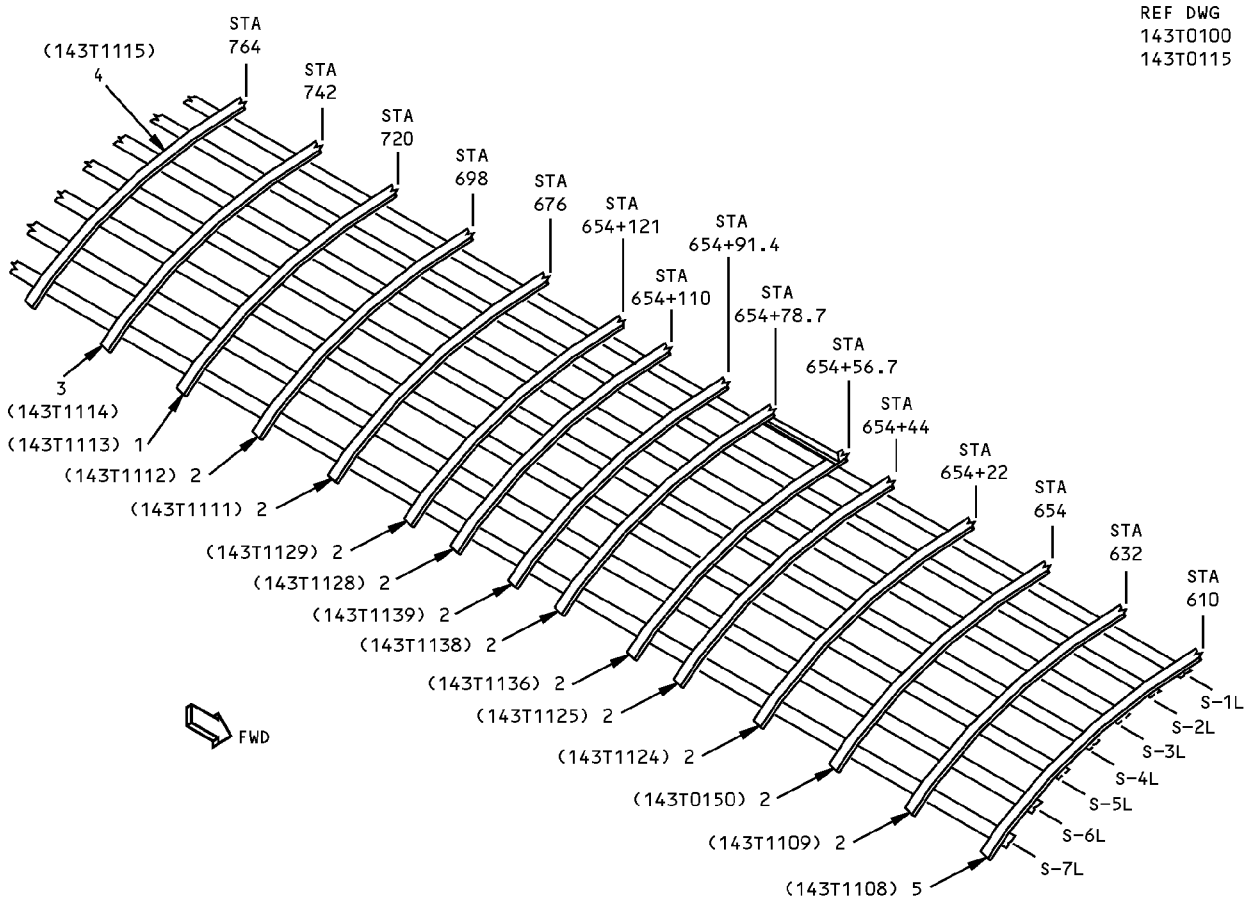


STRUCTURE FOR LARGE CARGO DOOR
DETAIL XII

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY FRAME CHORD	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN) BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
2	FRAME ASSY FRAME CHORD	0.063	CLAD 7075-T6 BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
3	FRAME ASSY FRAME CHORD	0.063	CLAD 7075-T6 BAC1503-100449 7075-T6 OPTIONAL: 7075-T6511	

LIST OF MATERIALS FOR DETAIL XII

Section 43 - Frame Identification
Figure 1 (Sheet 22 of 25)



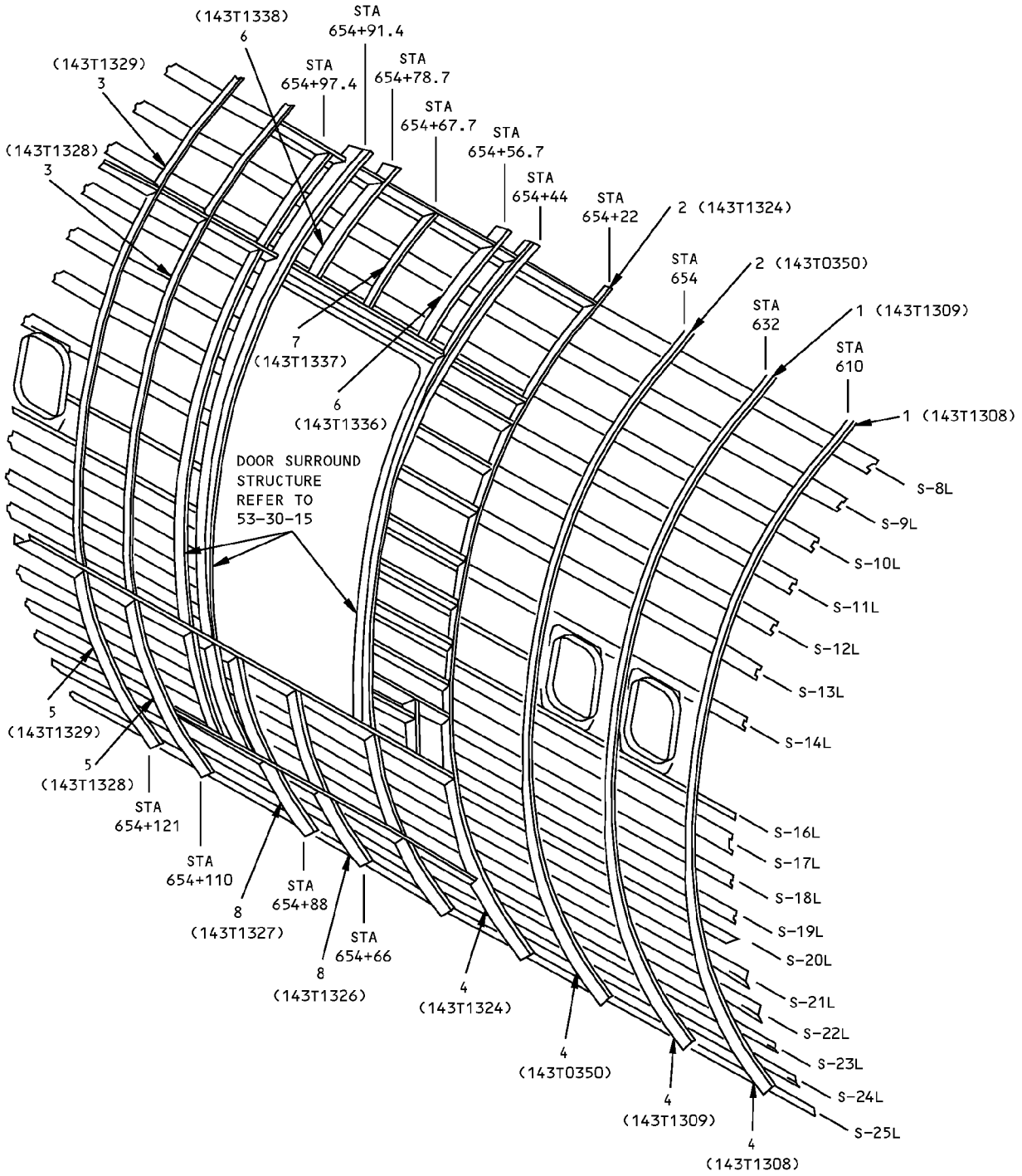
LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
MID ENTRY DOOR CONFIGURATION

DETAIL XIII

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.063	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.037 MIN)	
2	FRAME	0.063	7075-T62 (CHEM-MILLED TO 0.032 MIN)	
3	FRAME	0.080	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.035 MIN)	
4	FRAME	0.080	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.040 MIN)	
5	FRAME	0.063	7075-T62 (CHEM-MILLED TO 0.037 MIN)	

LIST OF MATERIALS FOR DETAIL XIII

Section 43 - Frame Identification
Figure 1 (Sheet 23 of 25)



STRUCTURE FOR MID ENTRY DOOR
DETAIL XIV

LIST OF MATL

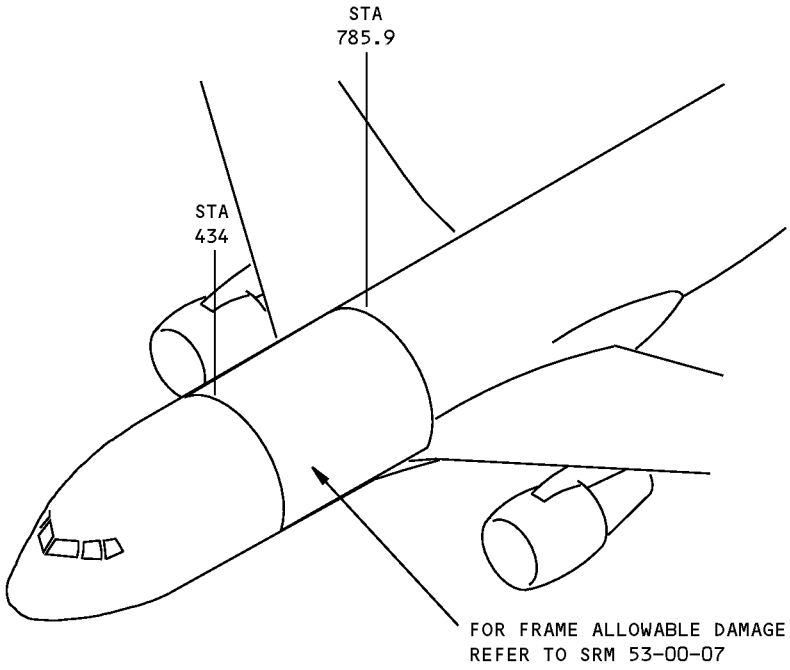
Section 43 - Frame Identification
Figure 1 (Sheet 24 of 25)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	FRAME	0.063	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.037 MIN)	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
2	FRAME ASSY			
	FRAME	0.063	7075-T6 OPTIONAL: CLAD 7075-T6 (CHEM-MILLED TO 0.032 MIN)	
	CHORD		BAC1503-100613 7075-T6 OPTIONAL: 7075-T6511	
3	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.037 MIN)	
	CHORD		BAC1503-100613 7075-T62	
4	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
5	FRAME	0.063	CLAD 7075-T62	
6	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T62	
	ANGLE	0.063	CLAD 7075-T62	
7	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T62	
	DOUBLER	0.063	CLAD 7075-T62	
8	FRAME ASSY			
	FRAME	0.063	CLAD 7075-T62	
	CHORD		BAC 1503-100613 7075-T62	

LIST OF MATERIALS FOR DETAIL XIV

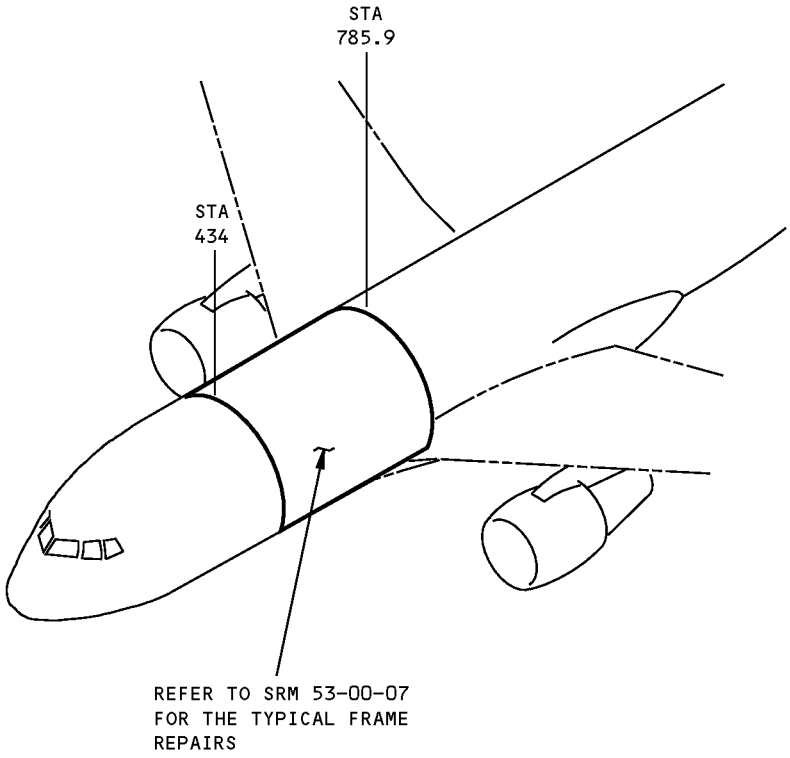
Section 43 - Frame Identification
Figure 1 (Sheet 25 of 25)

ALLOWABLE DAMAGE GENERAL - SECTION 43 FUSELAGE FRAMES



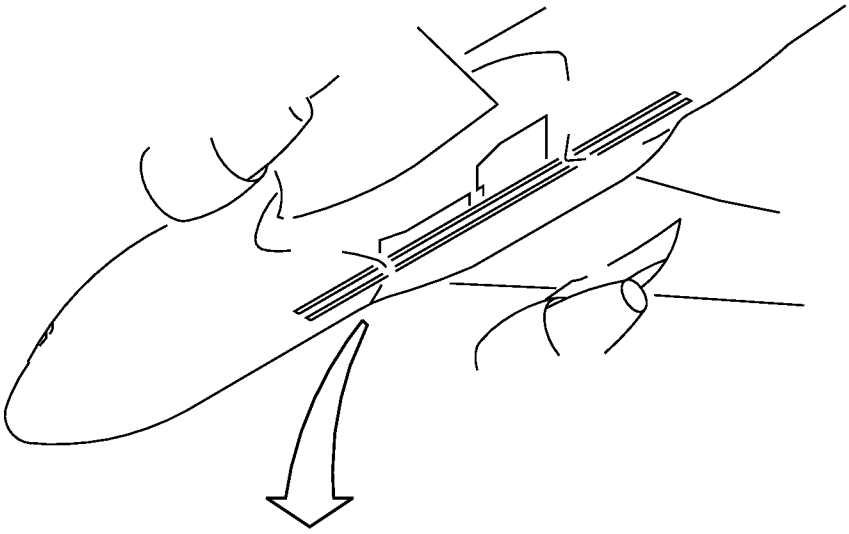
Section 43 Frame Allowable Damage
Figure 101

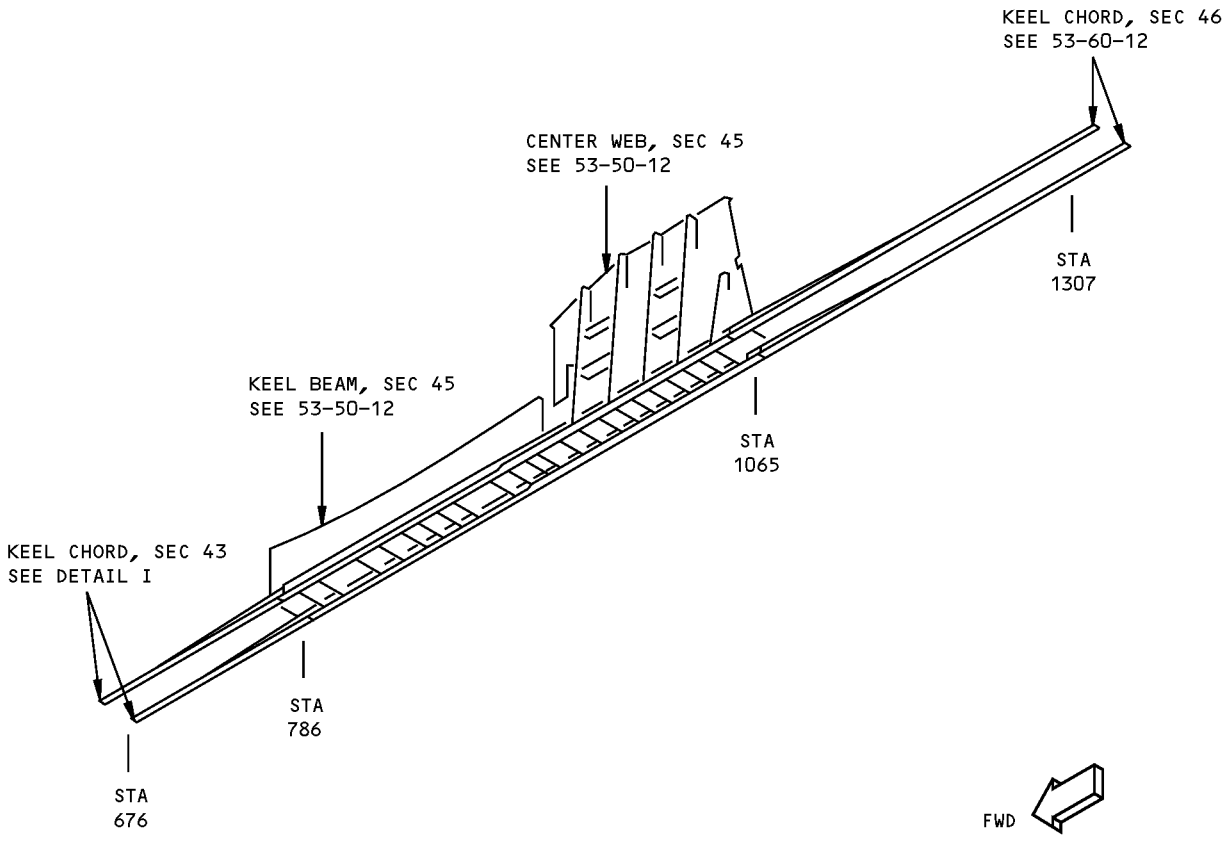
REPAIR 1 - SECTION 43 - TYPICAL FRAME REPAIRS



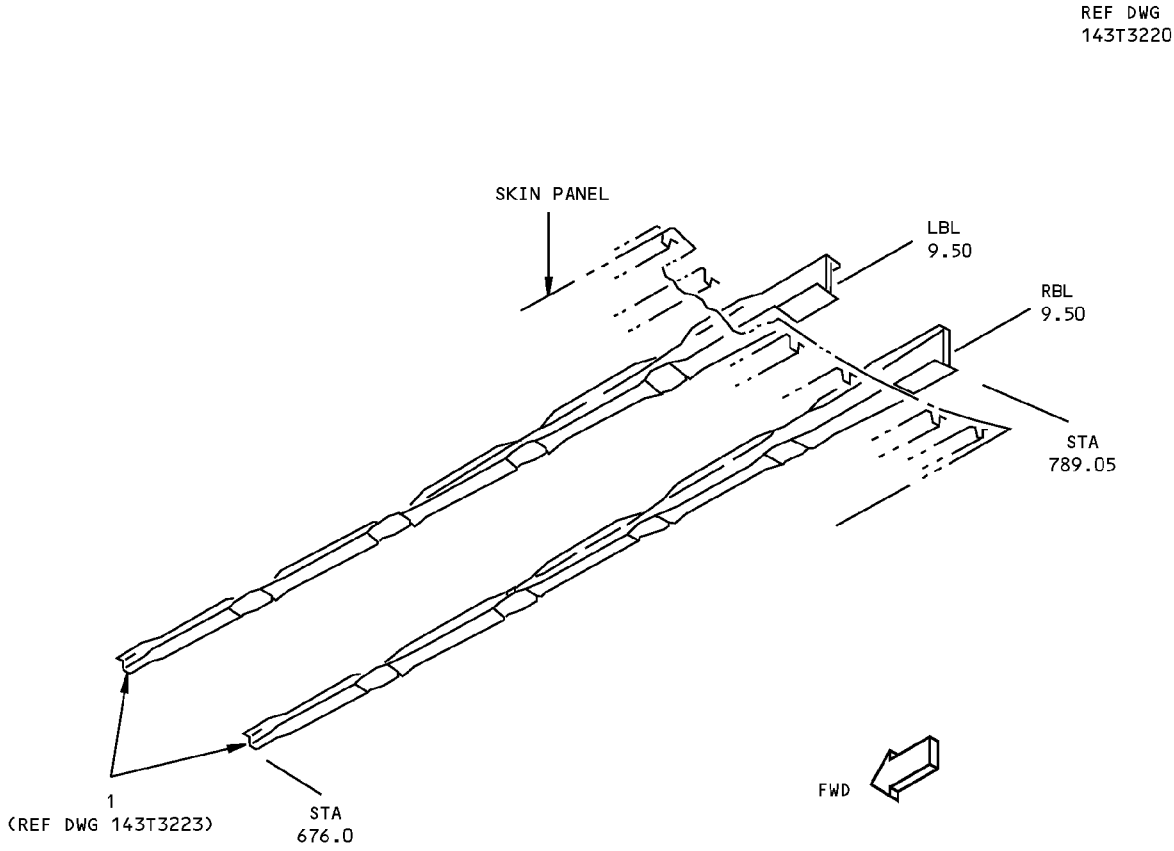
Section 43 - Typical Frame Repairs
Figure 201

IDENTIFICATION 1 - KEEL BEAM STRUCTURE





Keel Beam Structure Identification
Figure 1 (Sheet 1 of 2)



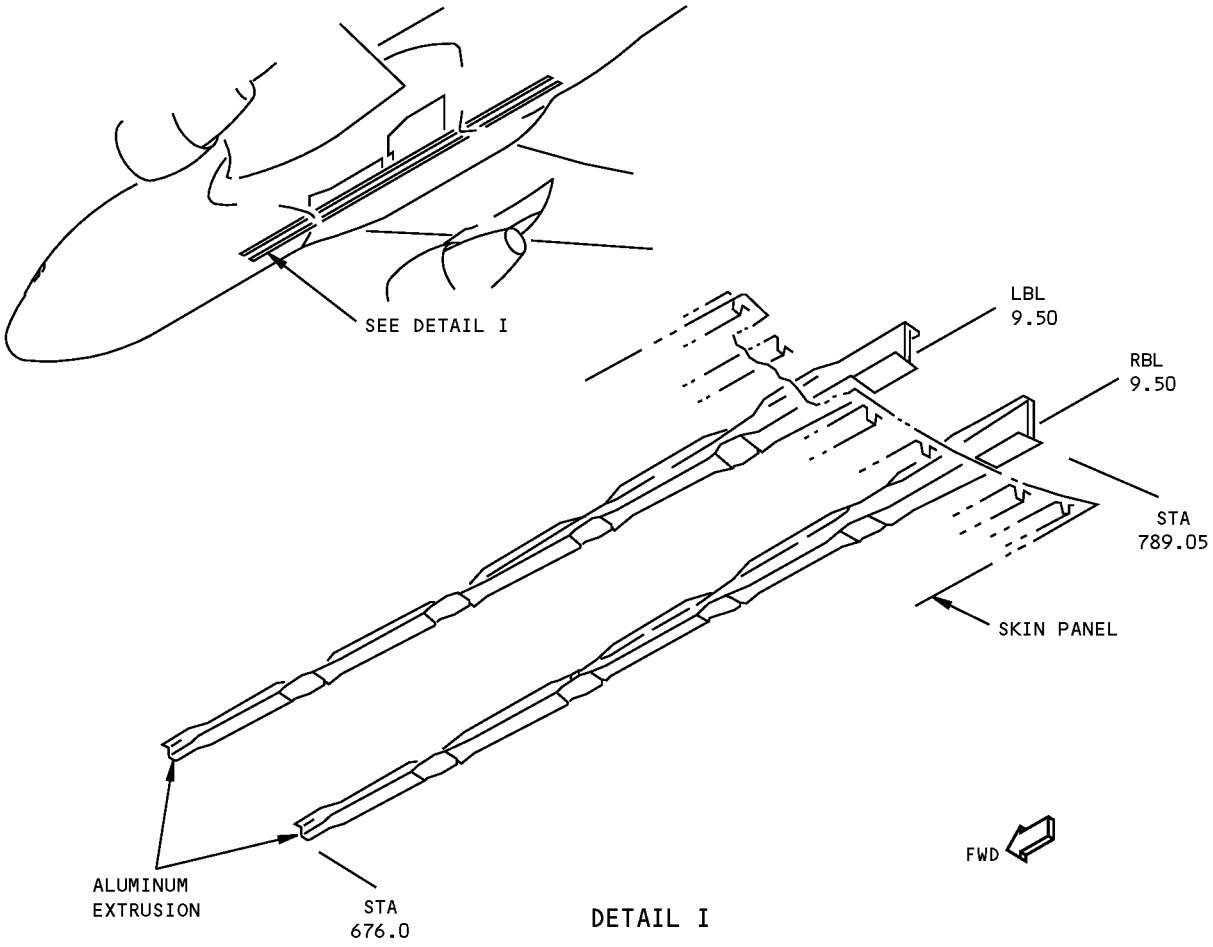
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	KEEL CHORD		BAC1506-3175 7075-T7351	

LIST OF MATERIALS FOR DETAIL I

Keel Beam Structure Identification
Figure 1 (Sheet 2 of 2)

ALLOWABLE DAMAGE 1 - KEEL CHORDS



DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
CHORDS	[A]	[B]	NOT PERMITTED	NOT PERMITTED

NOTES

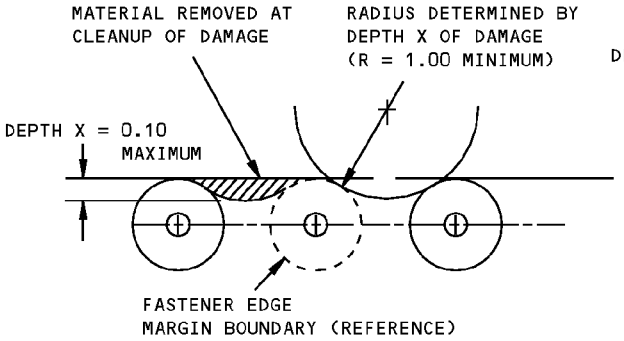
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS II AND IV. AT OTHER LOCATIONS, REPLACE OR REPAIR THE PART.

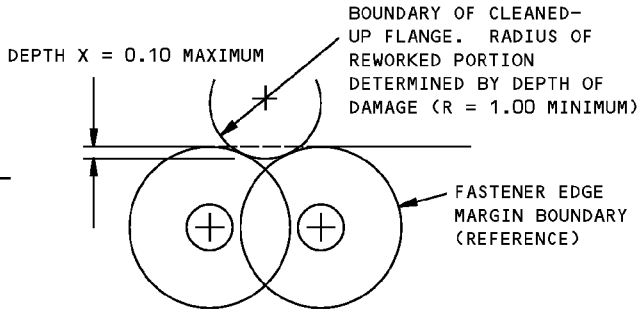
[B] REMOVE DAMAGE AS GIVEN IN DETAILS II,III,IV AND V. THE TOTAL CROSS-SECTIONAL AREA REMOVED MUST NOT BE MORE THAN 10% OF THE INITIAL CROSS-SECTIONAL AREA OF THE FLANGE.

[C] FOR MATING SURFACES, INSTALL LAMINATED SHIMS WITH BMS 5-95 SEALANT. THE GAP MUST BE LESS THAN OR EQUAL TO 0.003 INCH (0.076 mm) AFTER SHIMMING.

Keel Chords Allowable Damage
Figure 101 (Sheet 1 of 2)

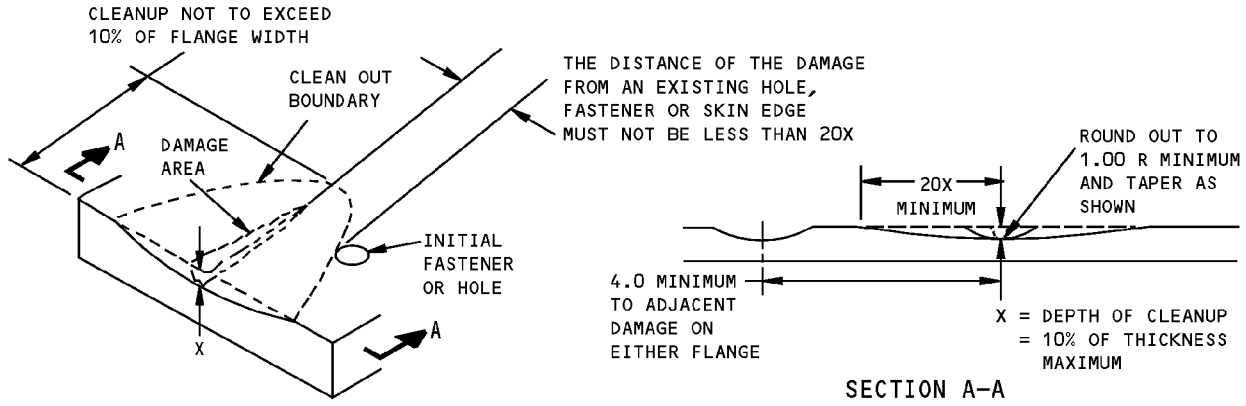


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



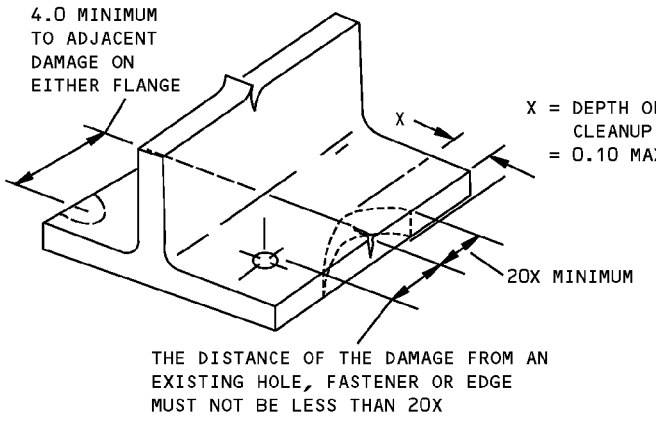
DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL II

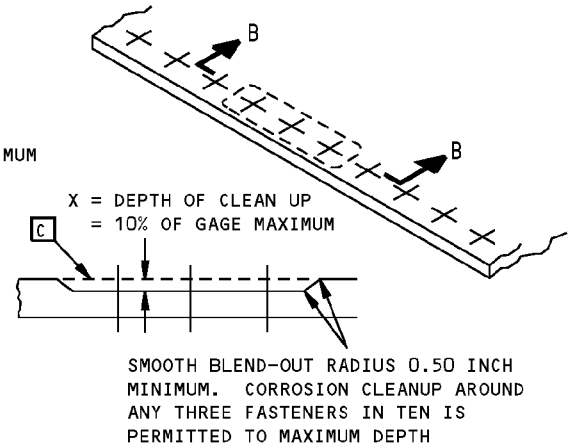


SECTION A-A

REMOVAL OF DAMAGE ON A SURFACE
DETAIL III



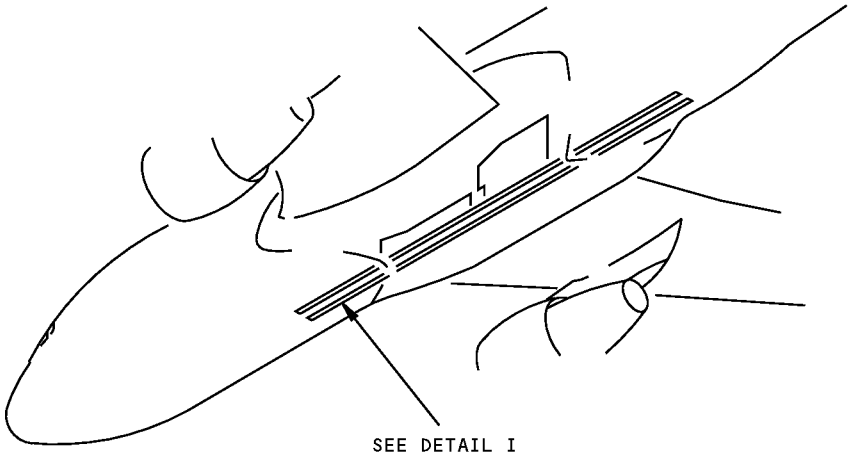
REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE
DETAIL IV

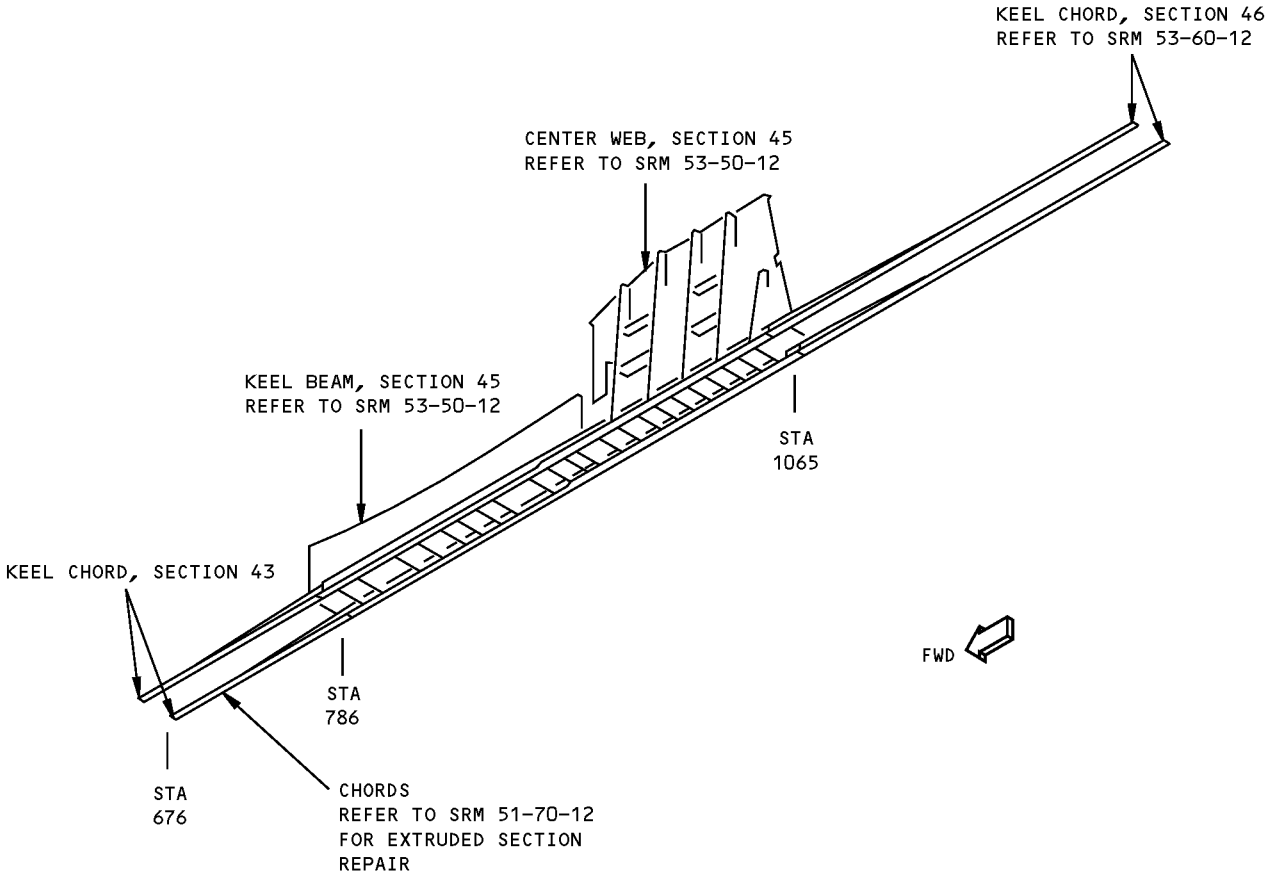


SECTION B-B
DAMAGE CLEANUP
DETAIL V

Keel Chords Allowable Damage
Figure 101 (Sheet 2 of 2)

REPAIR 1 - KEEL CHORD

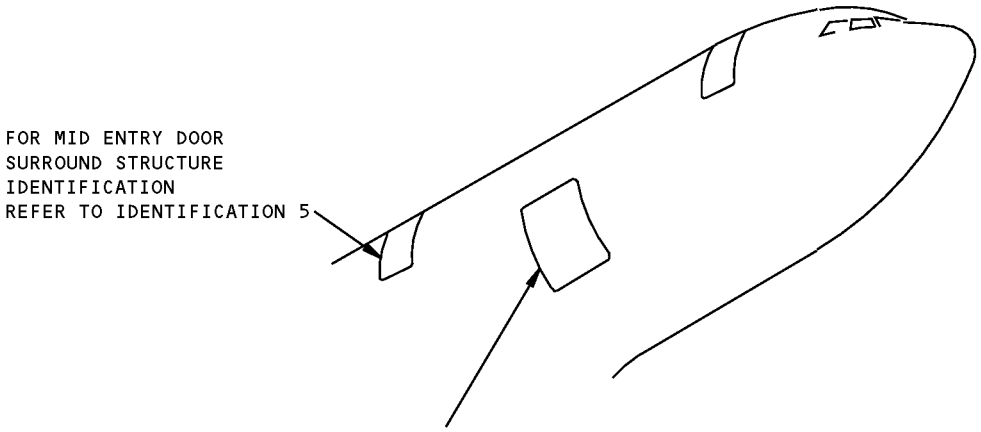




DETAIL I

Keel Chord Repair
Figure 201

IDENTIFICATION 1 - SECTION 43 - CARGO DOOR SURROUND STRUCTURE- STANDARD CARGO DOOR

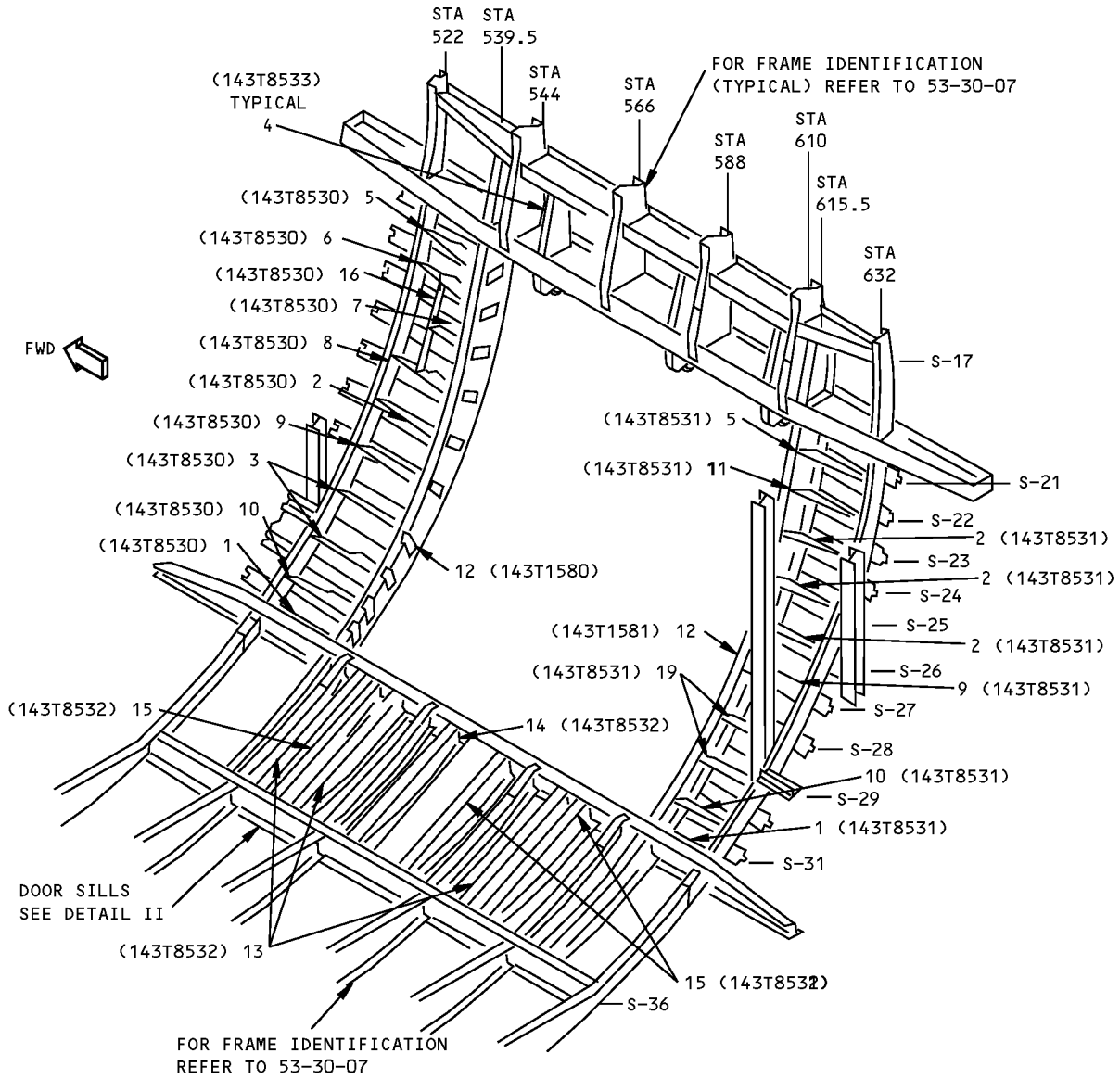


NOTES

[A] FOR AIRPLANES WITH CUM LINE NUMBERS:
158,244,260,264,267 AND 270

Section 43 - Cargo Door Surround Structure Identification - Standard Cargo Door
Figure 1 (Sheet 1 of 5)

REF DWG
143T0500



DETAIL I

LIST OF MATL

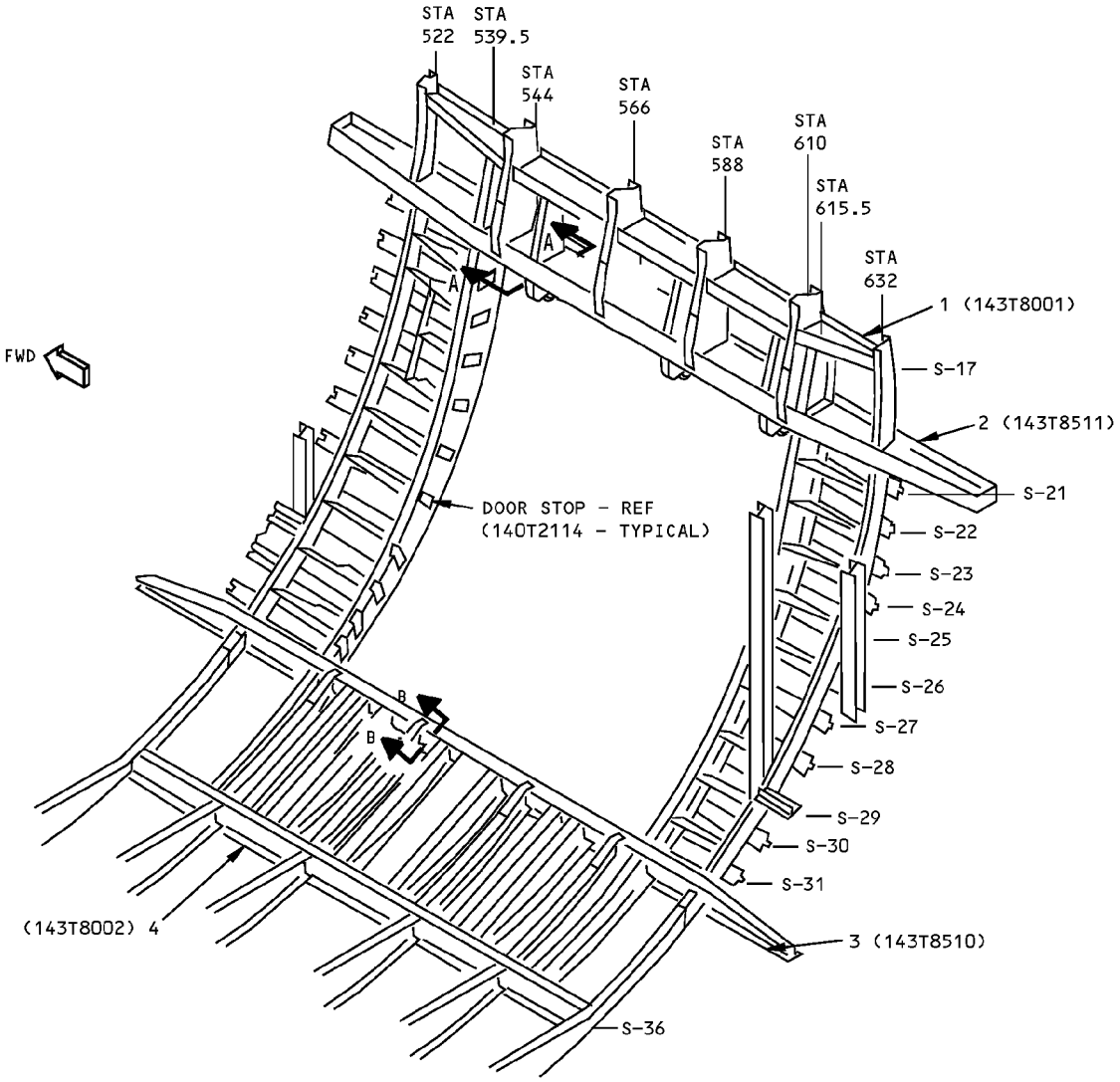
Section 43 - Cargo Door Surround Structure Identification - Standard Cargo Door
Figure 1 (Sheet 2 of 5)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	INTERCOSTAL			
	WEB	0.071	CLAD 2024-T42	
	ANGLE	0.080	2024-T42	
2	INTERCOSTAL			
	WEB	0.063	2024-T42	
	ANGLE	0.071	2024-T42	
3	INTERCOSTAL			
	WEB	0.056	CLAD 2024-T42	
	ANGLE	0.071	2024-T42	
4	INTERCOSTAL INSTL			
	FRAME	0.063	2024-T42	
	INNER CHORD		AND10133-1204 2024-T3511	
	INNER CHORD		BAC1503-100449 2024-T3511	
5	INTERCOSTAL			
	WEB	0.080	2024-T42	
	ANGLE	0.080	2024-T42	
6	INTERCOSTAL			
	WEB	0.071	2024-T42	
	ANGLE	0.080	2024-T42	
7	INTERCOSTAL			
	WEB	0.100	2024-T42	
	WEB	0.063	2024-T42	
	ANGLE	0.071	2024-T42	
8	INTERCOSTAL			
	WEB	0.063	2024-T3	
	ANGLE	0.071	2024-T42	
9	INTERCOSTAL	0.063	2024-T42	
10	INTERCOSTAL			
	WEB	0.063	CLAD 2024-T42	
	ANGLE	0.080	2024-T42	
11	INTERCOSTAL			
	WEB	0.063	CLAD 2024-T42	
	ANGLE	0.071	2024-T42	
12	FRAME ASSY			
	WEB	0.090	7075-T6	
	INNER CHORD		BAC1503-100610 7075-T62	
	OUTER CHORD		BAC1503-100611 2024-T42	
	FAIL-SAFE CHORD		PLATE 7075-T651	
13	INTERCOSTAL	0.063	7075-T6	
14	INTERCOSTAL			
	WEB	0.063	7075-T6	
	CHORD	0.063	7075-T6	
15	INTERCOSTAL			
	WEB	0.063	2024-T42	
	CHORD	0.090	2024-T42	
16	WEB	0.063	2024-T42	

LIST OF MATERIALS FOR DETAIL I

Section 43 - Cargo Door Surround Structure Identification - Standard Cargo Door
Figure 1 (Sheet 3 of 5)

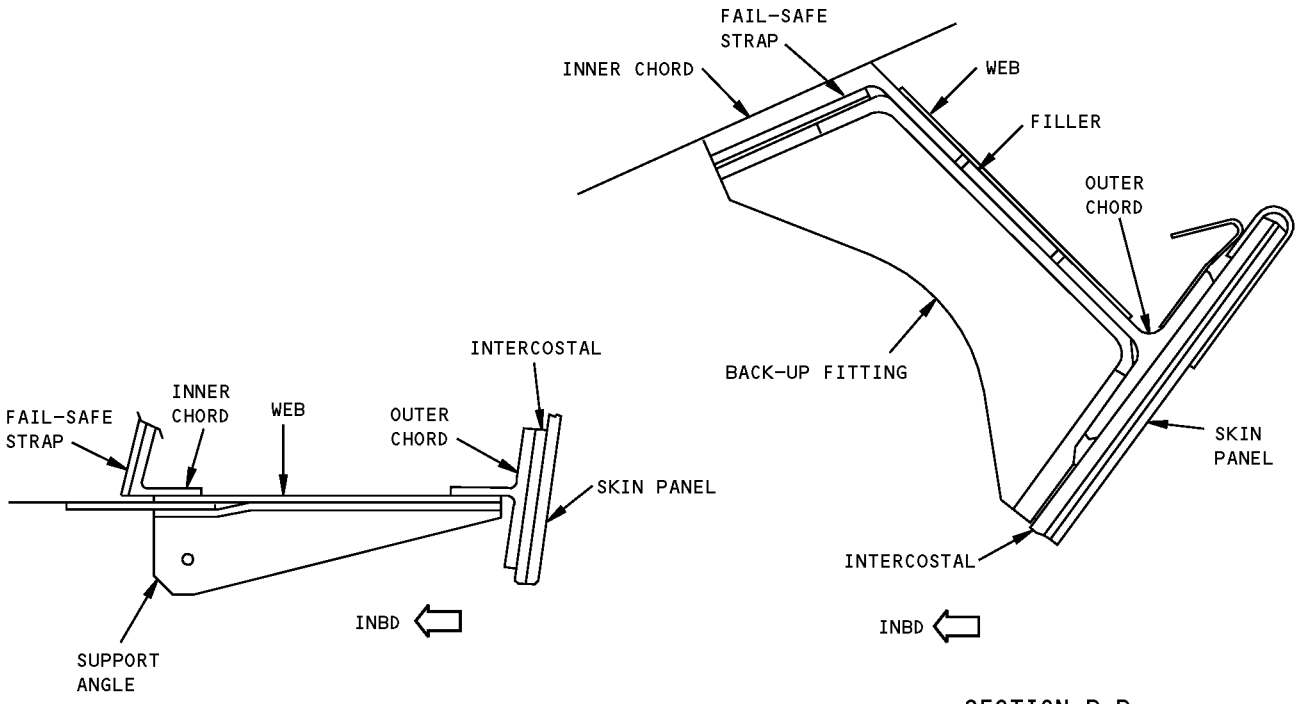
REF DWG
143T0500



DETAIL II

LIST OF MATL

Section 43 - Cargo Door Surround Structure Identification - Standard Cargo Door
Figure 1 (Sheet 4 of 5)

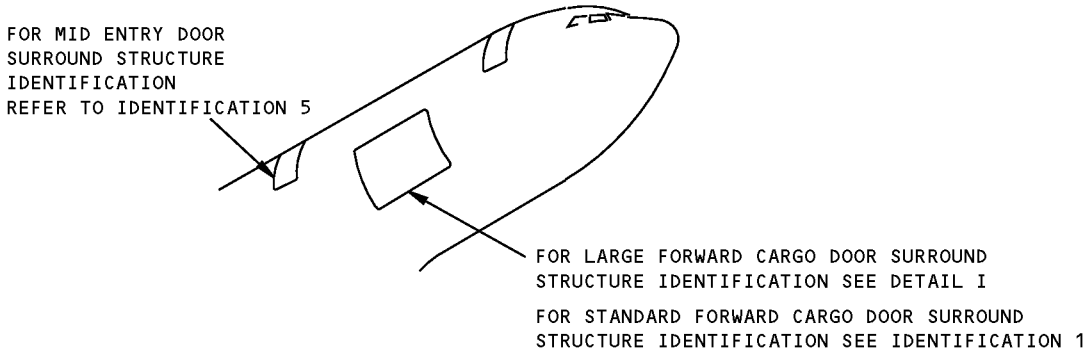


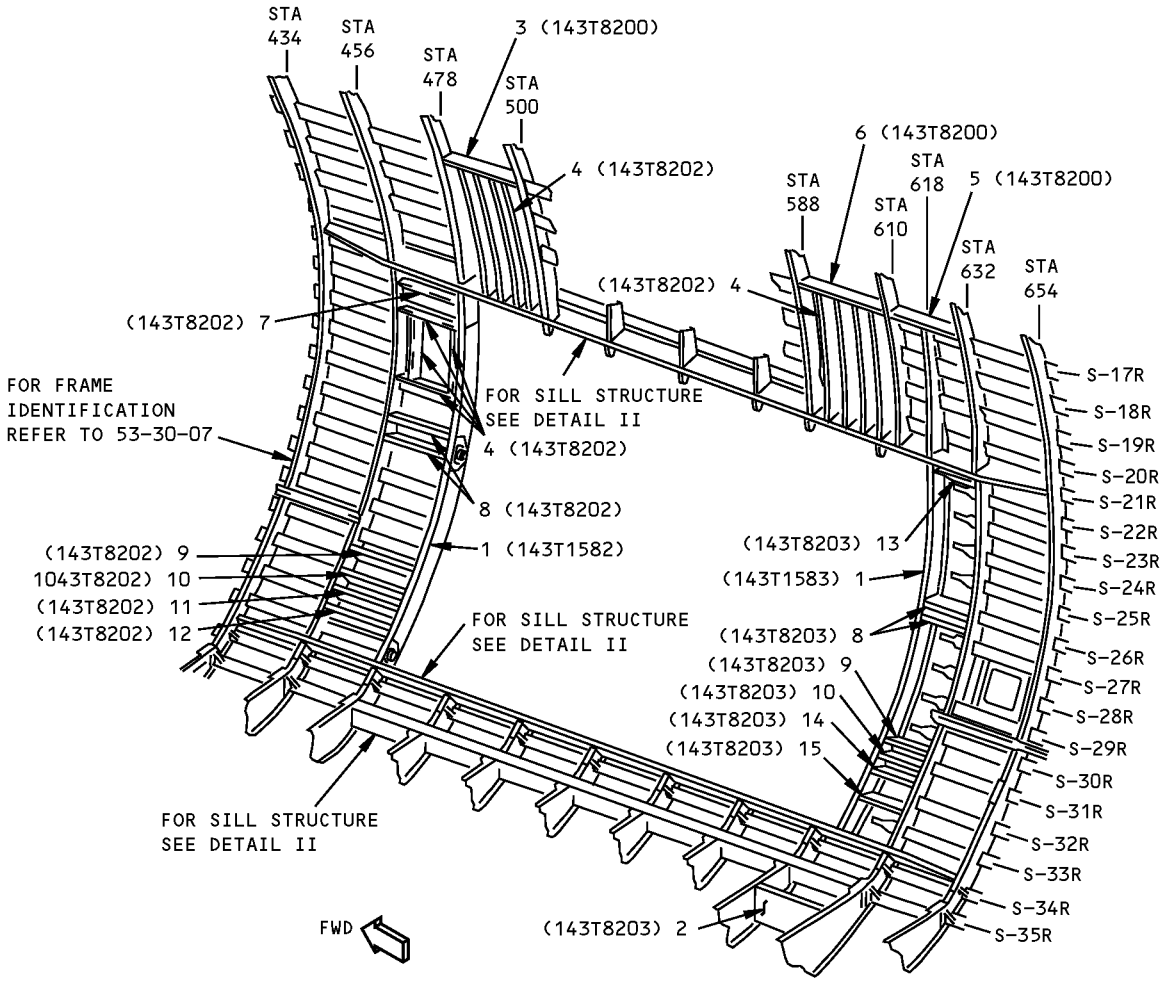
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	UPPER AUX SILL			
	WEB	0.040	CLAD 2024-T3	
	CHORD		BAC1503-100748 7075-T6511	
2	UPPER SILL			
	WEB	0.100	7075-T6 (CHEM-MILLED TO 0.050 MIN)	
	INNER CHORD		BAC1514-2446 7075-T6511	
	OUTER CHORD		BAC1506-2483 2024-T3511	
	FAIL-SAFE STRAP	0.200	7075-T6	
3	LOWER SILL			
	WEB, STA 500 TO 522, STA 632 TO 654	0.050	CLAD 7075-T6	
	WEB, STA 522 TO 544, STA 615.5 TO 632	0.063	7075-T6	
	WEB, STA 544 TO 615.5	0.125	7075-T6 (CHEM-MILLED TO 0.063 MIN)	
	OUTER CHORD		BAC1506-3142 2024-T3511	
	INNER CHORD		BAC1514-2434 7075-T6511	
	FAIL-SAFE STRAP	0.200	7075-T6	
4	LOWER AUX SILL			
		0.040	CLAD 2024-T3	
			BAC1503-100239 7075-T6511	

LIST OF MATERIALS FOR DETAIL II

Section 43 - Cargo Door Surround Structure Identification - Standard Cargo Door
Figure 1 (Sheet 5 of 5)

IDENTIFICATION 2 - SECTION 43 - CARGO DOOR SURROUND STRUCTURE - LARGE CARGO DOOR





DETAIL I

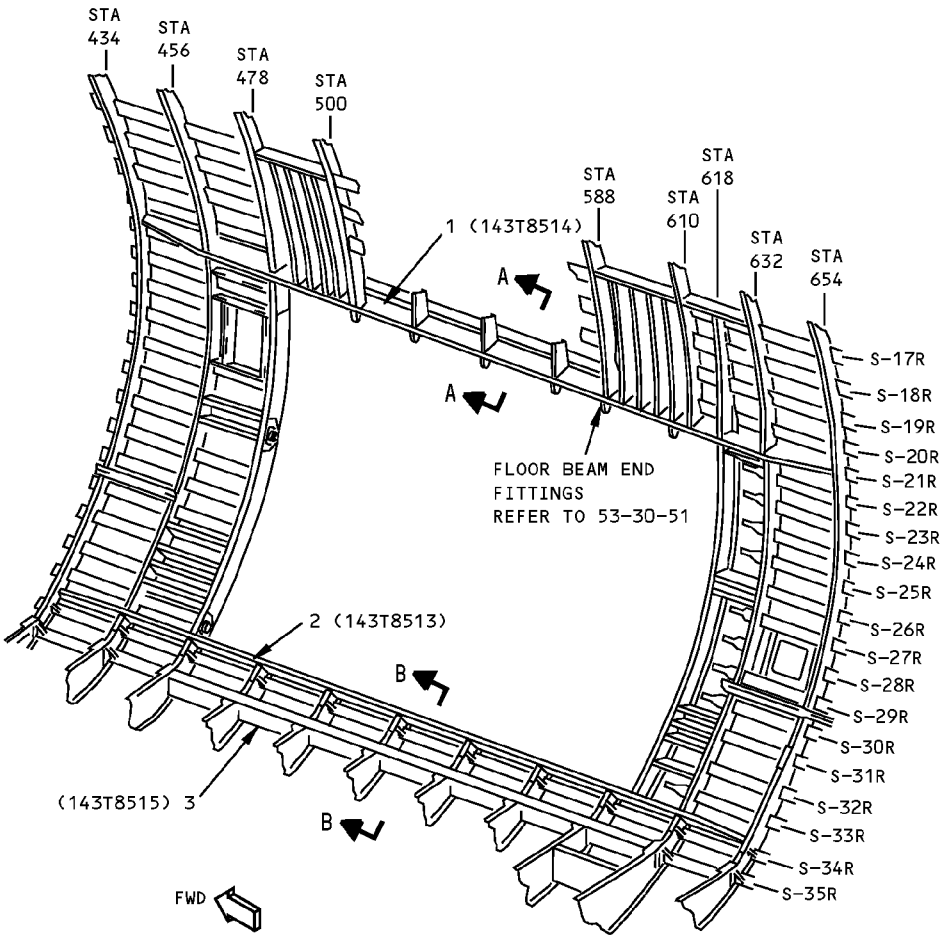
LIST OF MATL

Section 43 - Cargo Door Surround Structure Identification - Large Cargo Door
Figure 1 (Sheet 1 of 4)

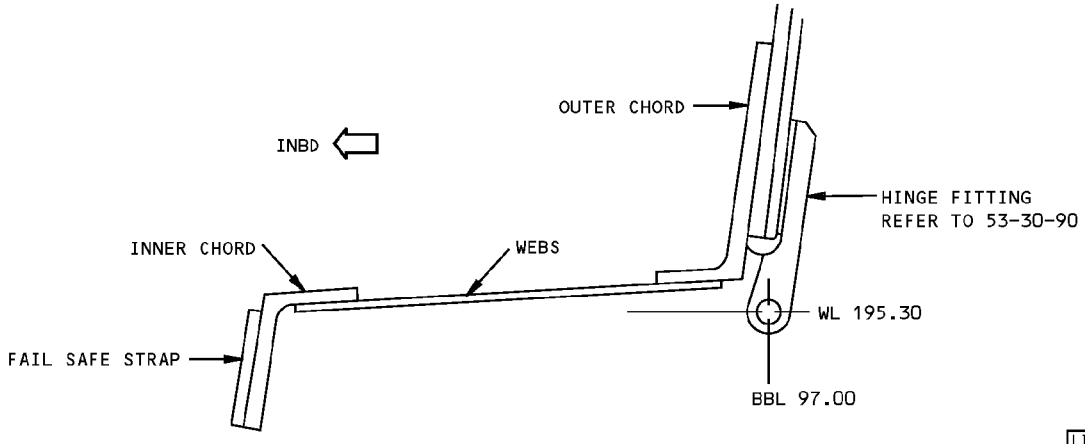
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	WEB	0.071	7075-T6	
	DOUBLER	0.056	CLAD 7075-T6	
	OUTER CHORD		BAC1503-100749 2024-T42	
			OPTIONAL: BAC1503-100611 2024-T42	
	INNER CHORD		BAC1503-100610 7075-T62	
	FAIL SAFE STRAP	0.190	7075-T6	
2	INTERCOSTAL	0.063	7075-T6	
3	INTERCOSTAL	0.040	CLAD 7075-T6	
4	INTERCOSTAL	0.050	CLAD 7075-T6	
5	INTERCOSTAL			
	WEB	0.056	CLAD 7075-T6	
	CHORD		BAC1503-100142 7075-T6511	
6	INTERCOSTAL			
	WEB	0.040	CLAD 7075-T6	
	CHORD		BAC1503-100142 7075-T6511	
7	INTERCOSTAL			
	WEB	0.040	CLAD 7075-T6	
	CHORD		BAC1505-100299 7075-T6511	
8	INTERCOSTAL			
	WEB	0.040	CLAD 7075-T6	
	CHORD		AND10133-1401 7075-T6511	
	ANGLE	0.040	CLAD 7075-T6	
9	INTERCOSTAL	0.080	7075-T6	
10	INTERCOSTAL			
	WEB	0.080	7075-T6	
	ANGLE	0.080	7075-T6	
11	INTERCOSTAL			
	WEB	0.063	7075-T6	
	CHORD		BAC1503-100462 7075-T6511	
12	INTERCOSTAL			
	WEB	0.063	7075-T6	
	CHORD		AND10134-1205 7075-T6	
	ANGLE	0.080	7075-T6	
13	INTERCOSTAL			
	WEB	0.050	7075-T6	
	CHORD		BAC1505-100818 7075-T6511	
14	INTERCOSTAL			
	WEB	0.071	7075-T6	
	CHORD		BAC1503-100462 7075-T6	
	ANGLE	0.080	7075-T6	
15	INTERCOSTAL			
	WEB	0.071	7075-T6	
	CHORD		AND10134-1205 7075-T6511	
	ANGLE	0.080	7075-T6	

LIST OF MATERIALS FOR DETAIL I

Section 43 - Cargo Door Surround Structure Identification - Large Cargo Door
Figure 1 (Sheet 2 of 4)



DETAIL II

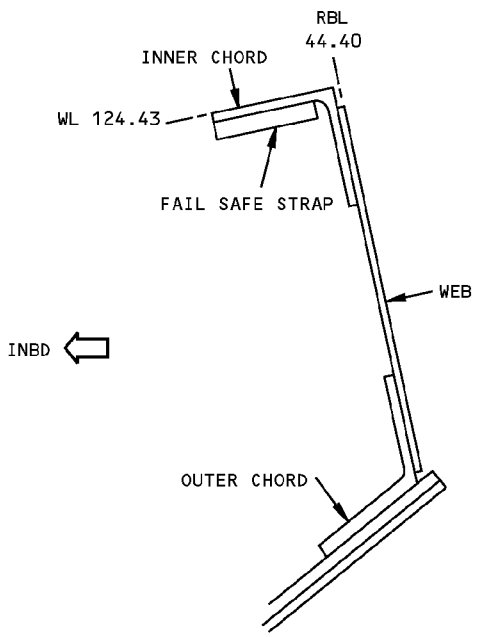


SECTION A-A THRU UPPER SILL

LIST OF MATL

Section 43 - Cargo Door Surround Structure Identification - Large Cargo Door
Figure 1 (Sheet 3 of 4)

REF DWG
143T8514
143T8513



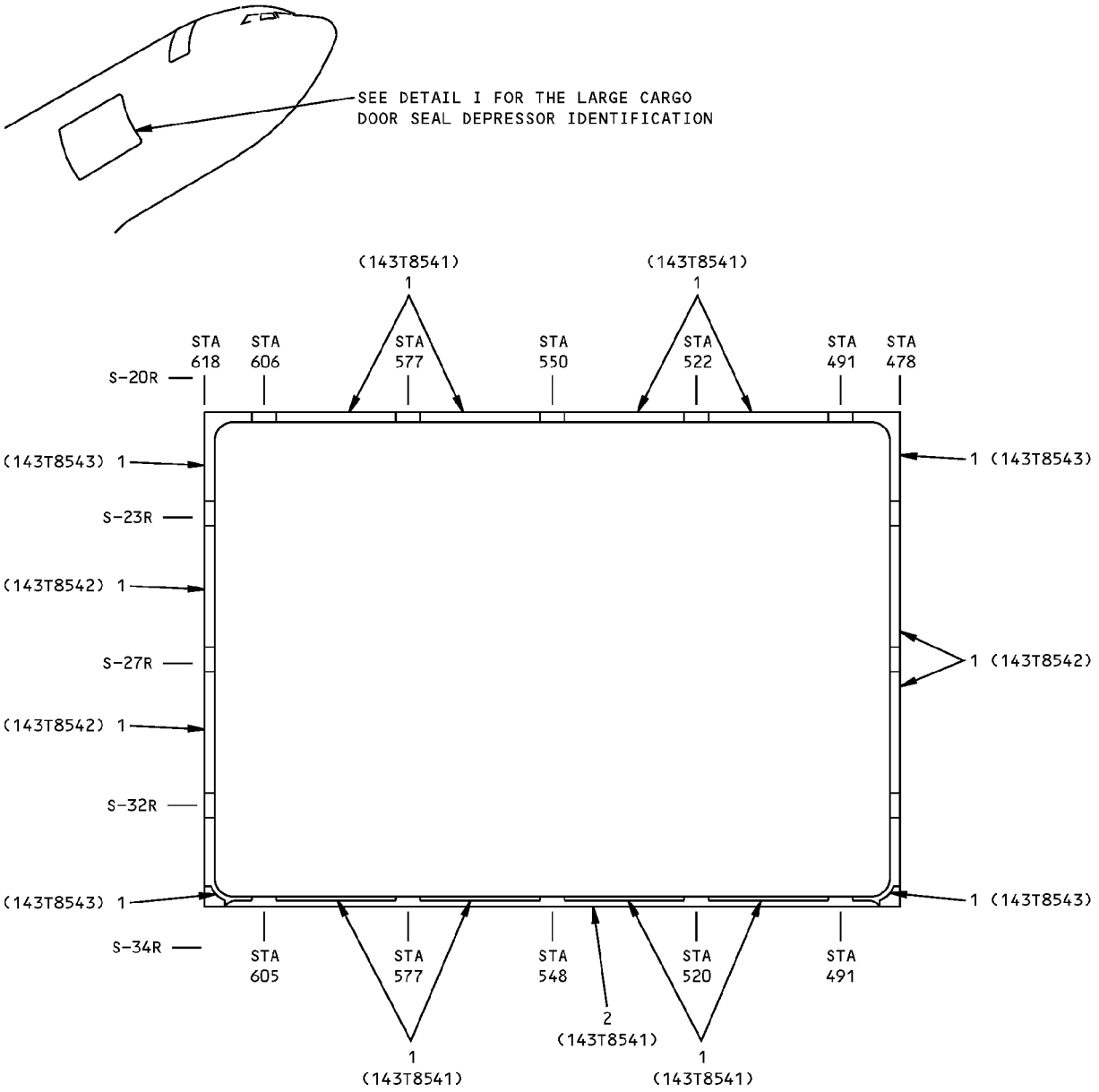
SECTION B-B THRU LOWER SILL

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	UPPER MAIN SILL			
	WEB, STA 434 TO 456, STA 632 TO 654	0.071	7075-T6 (CHEM-MILLED TO 0.050 MIN)	
	WEB, STA 456 TO 478, STA 618 TO 632	0.050	7075-T6	
	WEB, STA 478 TO 618	0.100	7075-T6 (CHEM-MILLED TO 0.072 MIN)	
	OUTER CHORD		BAC1514-1785 2024-T3511	
	INNER CHORD		BAC1514-1785 7075-T6511	
	FAIL-SAFE STRAP	0.200	7075-T651	
2	LOWER MAIN SILL			
	WEB, STA 434 TO 456	0.080	7075-T6 (CHEM-MILLED TO 0.063 MIN)	
	WEB, STA 456 TO 478, STA 618 TO 632	0.063	7075-T6	
	WEB, STA 478 TO 618	0.125	7075-T6	
	WEB, STA 632 TO 654	0.100	7075-T6 (CHEM-MILLED TO 0.063 MIN)	
	OUTER CHORD		BAC1514-1290 2024-T3511	
	INNER CHORD		AND10133-2403 7075-T6511	
	FAIL-SAFE STRAP	0.313	7075-T651	
3	AUX SILL			
	WEB	0.040	CLAD 7075-T6	
	CHORD		BAC1514-2696 7075-T6511	

LIST OF MATERIALS FOR DETAIL II

Section 43 - Cargo Door Surround Structure Identification - Large Cargo Door
Figure 1 (Sheet 4 of 4)

IDENTIFICATION 3 - SECTION 43 - LARGE FORWARD CARGO DOOR SEAL DEPRESSOR



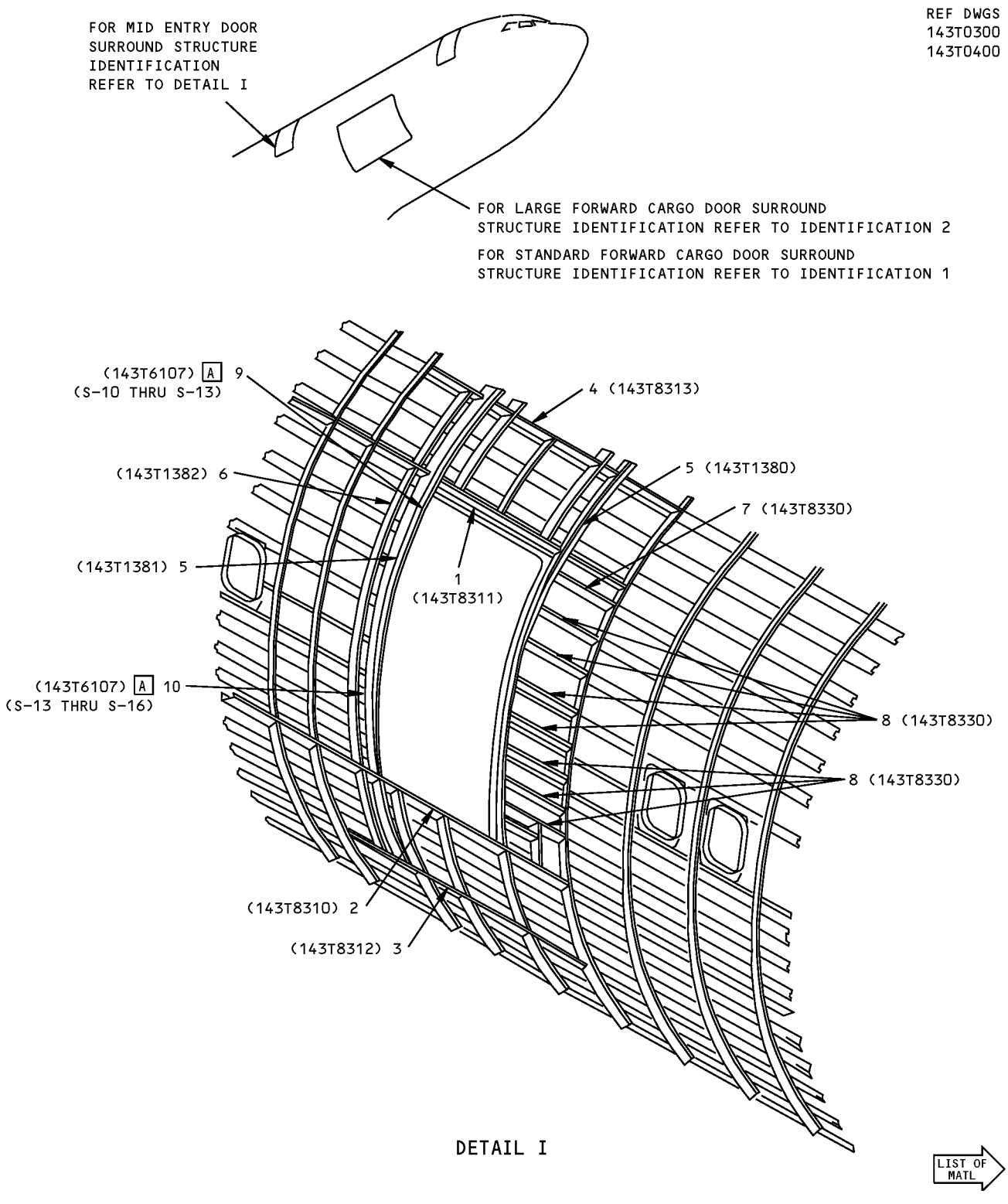
SEAL DEPRESSOR INSTALLATION
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	DEPRESSOR	0.063	CLAD 2024-T42	
2	DEPRESSOR	0.071	CLAD 2024-T42	

LIST OF MATERIALS FOR DETAIL I

Section 43 - Large Forward Cargo Door Seal Depressor Identification
Figure 1

IDENTIFICATION 5 - MID ENTRY DOOR SURROUND STRUCTURE



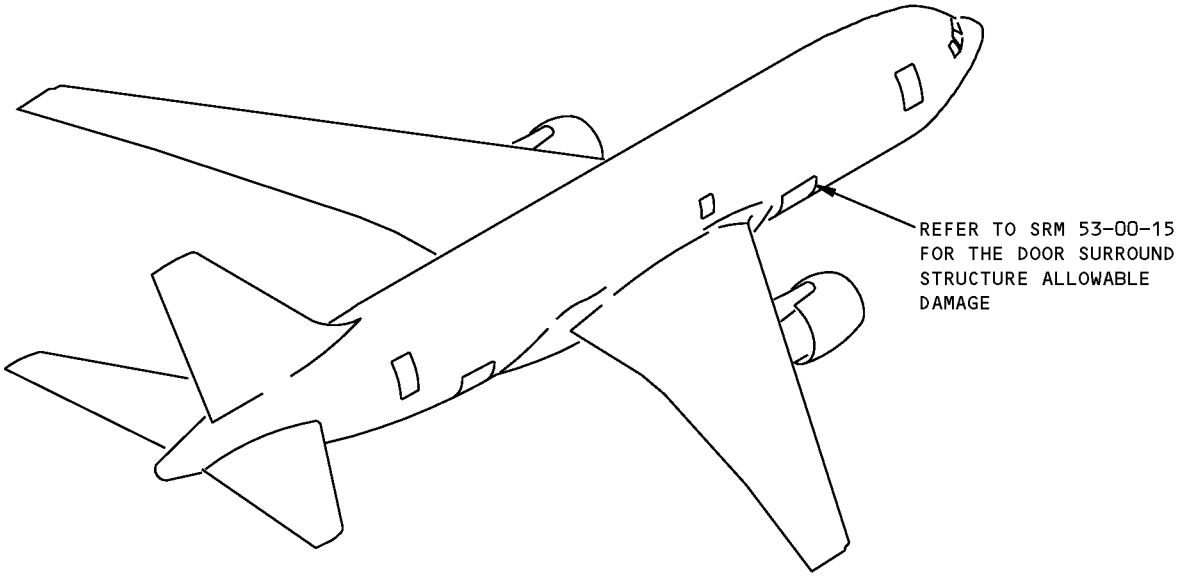
Mid Entry Door Surround Structure Identification
Figure 1 (Sheet 1 of 2)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	UPR SILL			
	OUTER CHORD		BAC1514-2431 2024-T3511	
	WEB	0.050	CLAD 7075-T6	
	INNER CHORD		BAC1514-2432 7075-T6511	
	FAILSAFE CHORD		BAC1512-3395 7075-T6511	
2	LWR SILL			
	OUTER CHORD		BAC1514-2433 2024-T42	
	WEB	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.040 MIN)	
	INNER CHORD		BAC1503-100309 7075-T73511	
	FAILSAFE CHORD		BAC1512-685 7075-T6511	
3	LWR AUX SILL			
	WEB	0.040	CLAD 7075-T6	
	CHORD		AND10134-1205 7075-T6511	
4	UPR AUX SILL			
	WEB	0.040	CLAD 7075-T6	
	CHORD		AND10133-0702 7075-T6511	
5	FRAME ASSY			
	FRAME		BAC1510-1069 2024-T42	
	ANGLE		AND10134-1204 7075-T6511	
	TEE		BAC1505-101154 7075-T6511	
	FAILSAFE CHORD		BAC1514-2495 2024-T42	
6	FRAME ASSY			
	UPR FRAME	0.063	CLAD 7075-T62	
	UPR CHORD	0.063	CLAD 7075-T62	
	LWR FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.040 MIN)	
	TEE		BAC1505-101100 2024-T3511	
	ANGLE		AND10134-1204 7075-T6511	
7	INTERCOSTAL			
	WEB	0.056	CLAD 7075-T62	
	INBD ANGLE	0.063	CLAD 7075-T62	
	OUTBD ANGLE	0.063	CLAD 7075-T62	
8	INTERCOSTAL	0.056	CLAD 7075-T62	
9	SHROUD	0.040	CLAD 2024-T42	A
10	SHROUD	0.050	CLAD 7075-T6	A

LIST OF MATERIALS FOR DETAIL I

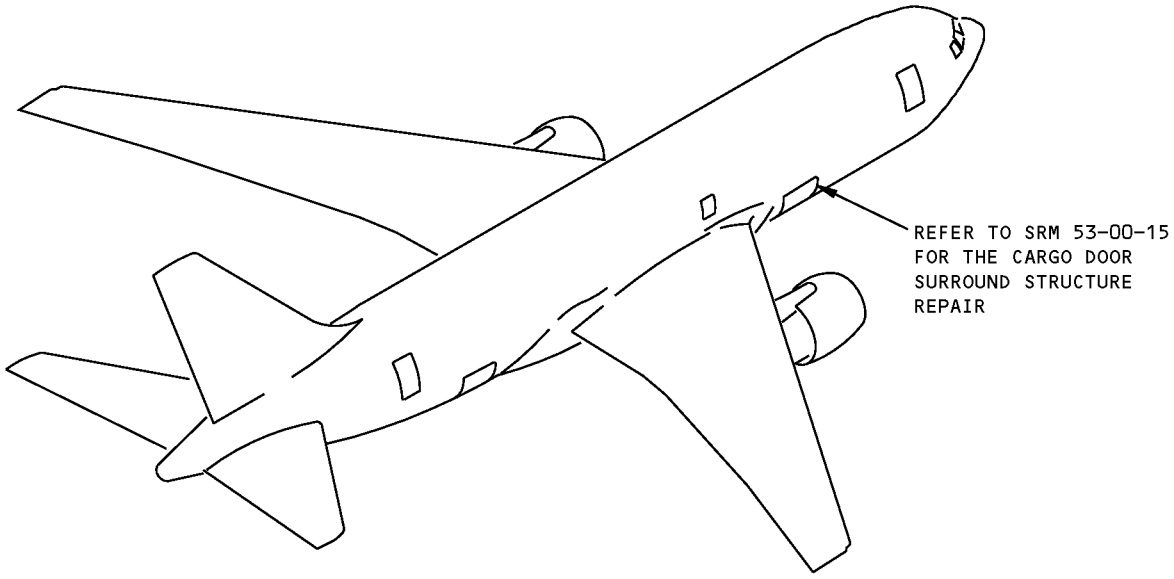
Mid Entry Door Surround Structure Identification
Figure 1 (Sheet 2 of 2)

ALLOWABLE DAMAGE 1 - SECTION 43 CARGO DOOR SURROUND STRUCTURE



Section 43 Cargo Door Surround Structure Allowable Damage
Figure 101

REPAIR GENERAL - SECTION 43 CARGO DOOR SURROUND STRUCTURE



Section 43 Cargo Door Surround Structure Repair
Figure 201

REPAIR 1 - FORWARD AND AFT CARGO DOOR BEAR STRAP CORROSION REPAIR AT THE CONTROL PANEL SKIN CUTOUT

REPAIR INSTRUCTIONS

1. Remove the External Cargo Door Control Module. Refer to AMM 25-53-05. Remove the Eight Direction Selector Switch. Refer to AMM 25-53-06.
2. Visually examine the Control Module door sill area for corrosion on the bear strap. If the damage goes underneath the pan assembly, go to 3. If the damage is limited to the area above the pan assembly, go to 4.
3. Remove the pan and door installation by removing all the fasteners around the perimeter of the pan and door installation.

   NOTE: REMOVAL OF THE PAN ASSEMBLY WILL ALLOW ACCESS TO THE ENTIRE CORRODED AREA OF THE BEAR STRAP.

   THE BEAR STRAP BLENDOUT IS PERMITTED ONLY TO THE EDGE MARGIN OF THE FASTENERS WHICH ATTACH THE PAN ASSEMBLY TO THE BEAR STRAP.
4. Blend out the corrosion from the bear strap as shown in Detail III. Make sure there is a minimum edge margin of 1D from the edge of the blend out to the center of the adjacent fastener. Refer to SRM 53-00-15.
5. Visually inspect the blended out area at a magnification of 10X to make sure that all the corrosion has been removed.
6. Measure the thickness of the thinnest area of the bear strap at the blend location. The minimum permitted thickness of the bear strap after blend out is 90 percent of the nominal thickness. Refer to Section A-A. Nominal thickness of the bear strap for the standard forward and aft cargo doors is 0.212. The nominal thickness for the large forward cargo door bear strap is 0.200.
7. Flap peen the blend out area at an intensity of 0.005A2, shot size no. 280, coverage 200 percent. Refer to SOPM 20-10-03.
8. Apply a chemical conversion coating to the bare surfaces of the bear strap and the repair area. Refer to SRM 51-20-01.
9. Apply two layers of BMS 10-11, Type I primer to the bare surfaces of the repair area. Refer to SOPM 20-41-02. If the pan and door assembly are not removed, go to 12. If the pan and door assembly are removed, go to 10.
10. Install the pan and door assemblies with BMS 5-95 sealant between the mating surfaces.
11. Install the fasteners around the perimeter of the pan assembly wet with BMS 5-95 sealant. Refer to Detail IV.
12. Apply a layer of BMS 3-23, Type II corrosion inhibiting compound to the repaired area.
13. Make a fillet pressure seal with BMS 5-95 around the entire inner perimeter of the pan assembly. Fair the fillet at the bottom of the inner pan assembly and the bear strap to make sure there is no possibility of water accumulation. See Section B-B.
14. Examine the bear strap contact area of the door latches. This area should have an abrasion resistant teflon filled urethane coating on it. See Section C-C.
15. If the abrasion resistant protective coating is worn off the latch contact area of the bear strap, apply BMS 10-86 Type I or II abrasion resistant coating. Refer to SOPM 20-44-01.
16. Install the External Cargo Door Control Module and the Eight Directional Selector Switch. Refer to AMM 25-53-05 and AMM 25-53-06.

NOTES

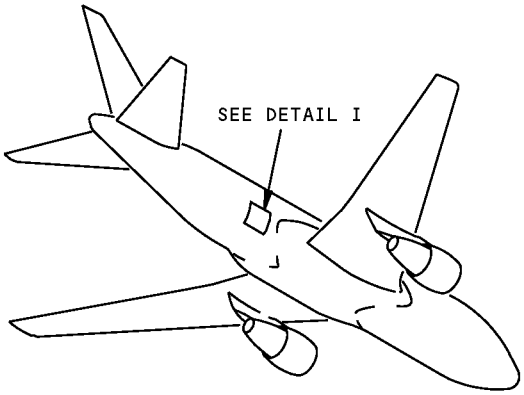
- THIS REPAIR IS A CATEGORY A REPAIR. THE INSPECTIONS GIVEN IN THE MAINTENANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERANCE OF THE INITIAL STRUCTURE WITH THIS REPAIR INSTALLED. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- ALL DIMENSIONS ARE IN INCHES.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-00-06 FOR STRUCTURAL REPAIR DEFINITIONS.
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING.
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS.

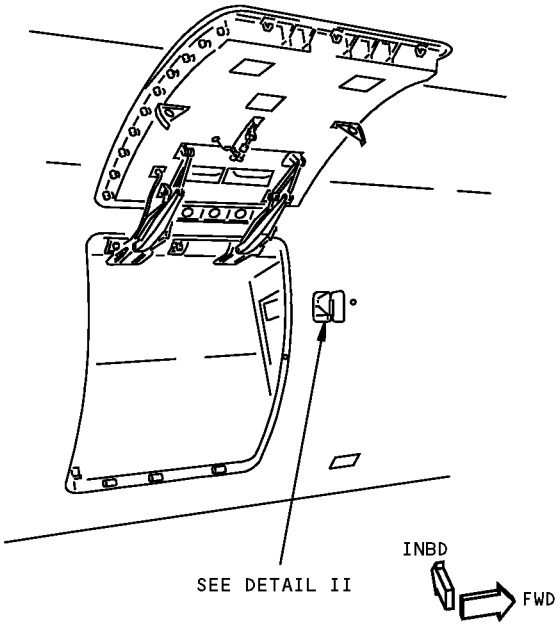
FASTENER SYMBOLS

┼ INITIAL FASTENER LOCATION. INSTALL THE SAME TYPE AND DIAMETER FASTENER AS THE INITIAL FASTENER (UP TO 1/32 INCH DIAMETER OVERSIZE).

G45075 S0006824459_V3

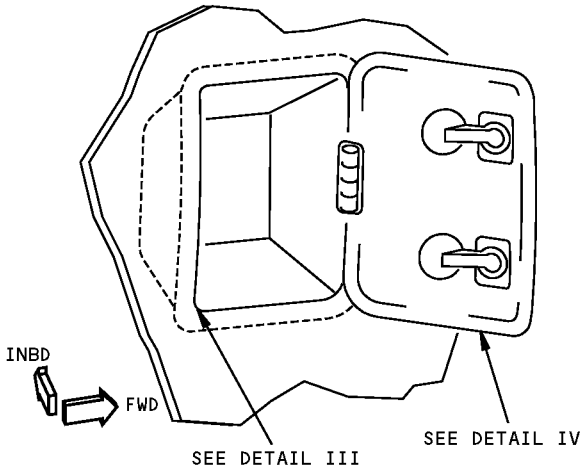
Forward and Aft Cargo Door Bear Strap Corrosion Repair at the Control Panel Skin Cutout
Figure 201 (Sheet 1 of 3)





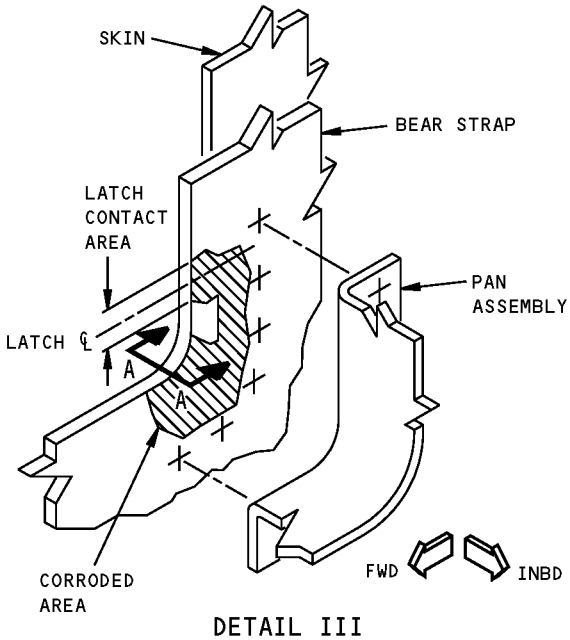
AFT CARGO DOOR IS SHOWN,
FORWARD CARGO DOOR IS SIMILAR

DETAIL I

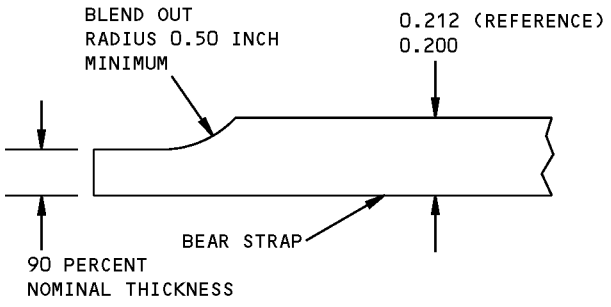


CARGO SYSTEM CONTROL PANEL

DETAIL II

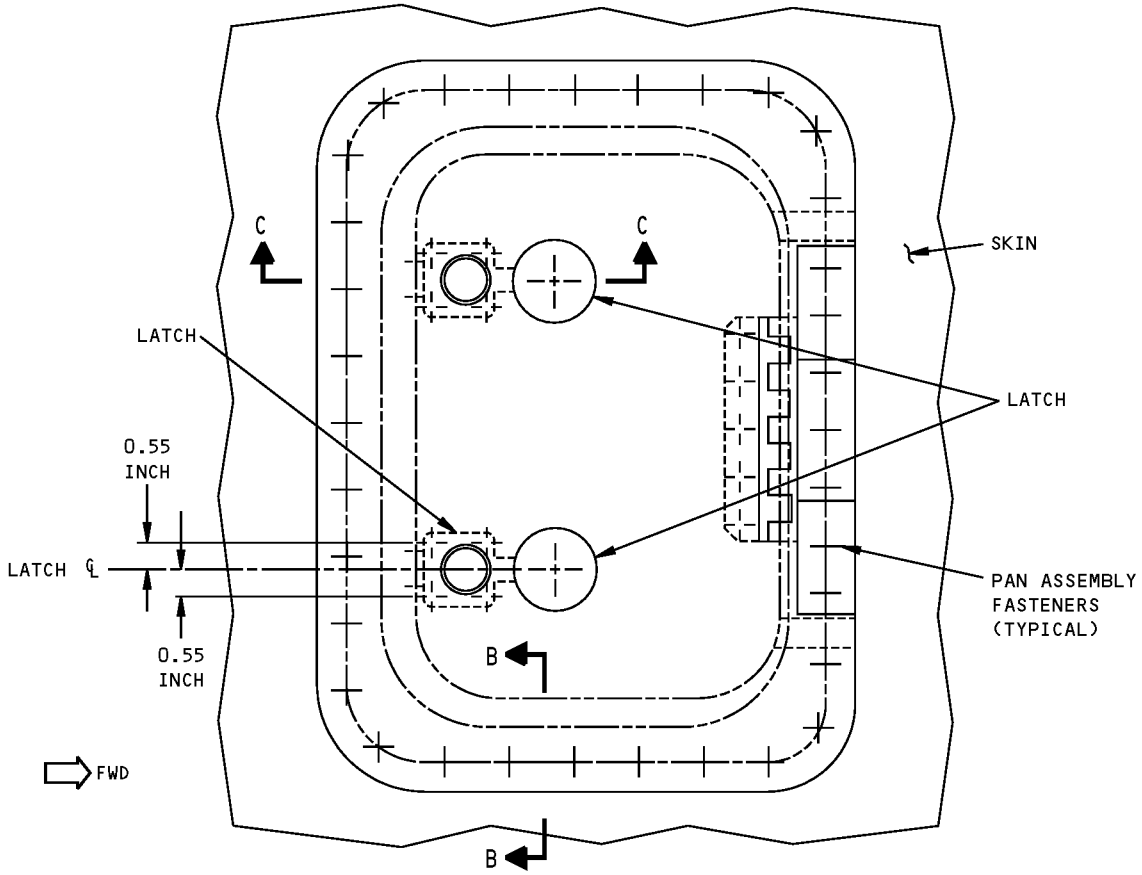


DETAIL III

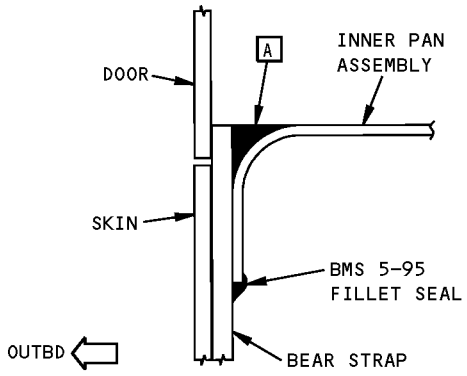


SECTION A–A

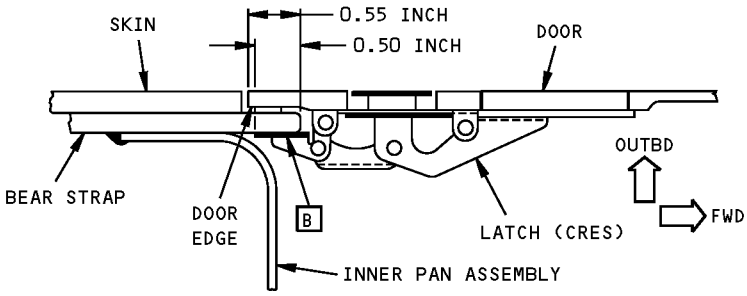
Forward and Aft Cargo Door Bear Strap Corrosion Repair at the Control Panel Skin Cutout
Figure 201 (Sheet 2 of 3)



DETAIL IV



SECTION B-B



SECTION C-C
(TYPICAL AT EACH LATCH)

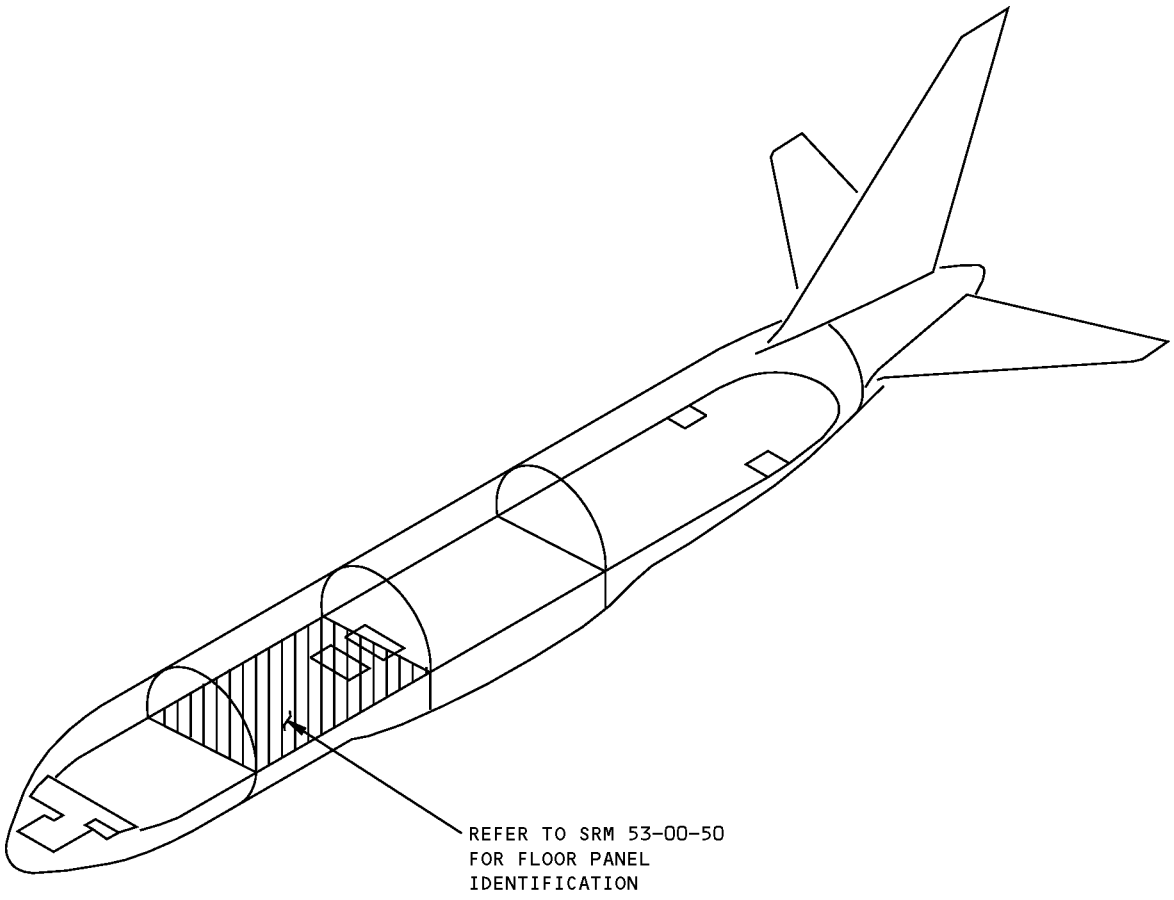
NOTES

A APPLY BMS 5-95 AS A WEATHER FILLET SEAL AROUND THE INNER PERIMETER OF THE PAN ASSEMBLY.

B APPLY BMS 10-86, TYPE I OR II PROTECTIVE COATING TO THE LATCH CONTACT SURFACES OF THE BEAR STRAP.

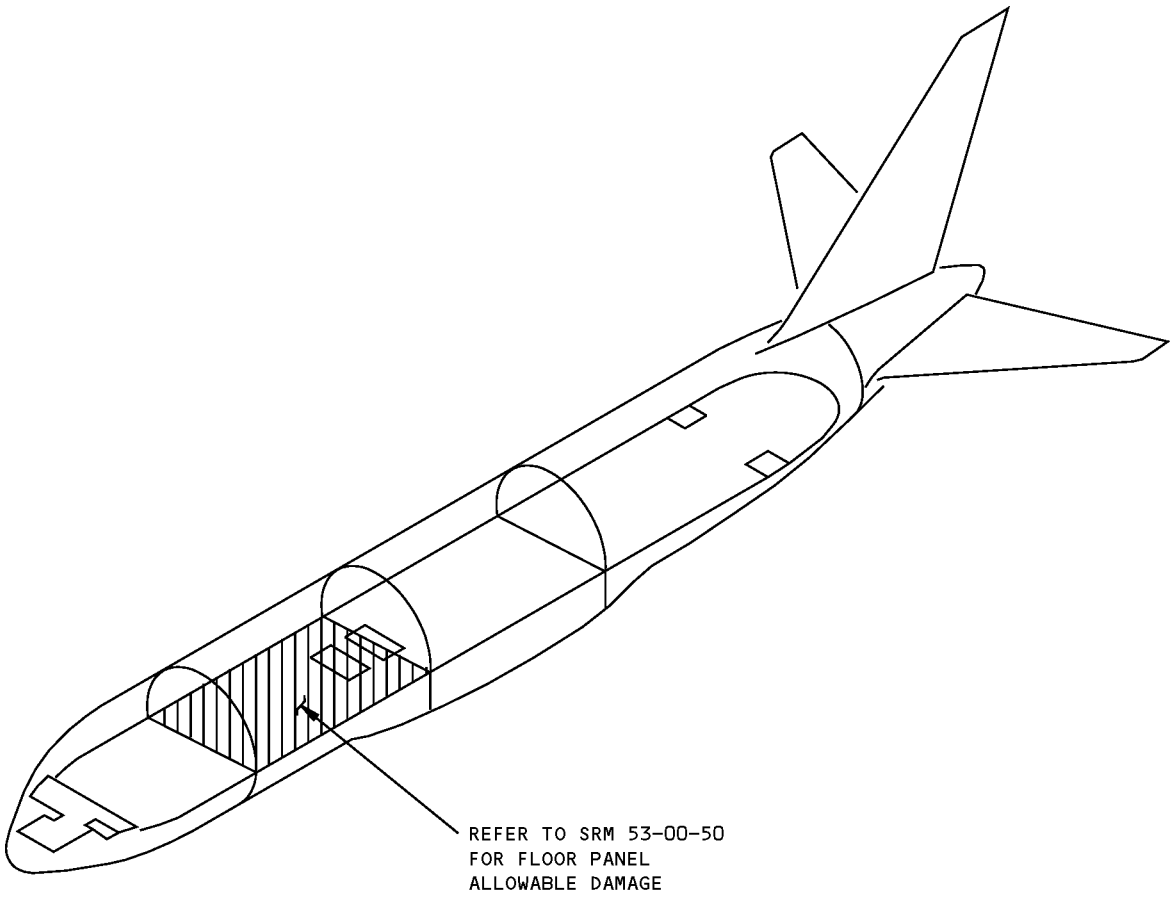
Forward and Aft Cargo Door Bear Strap Corrosion Repair at the Control Panel Skin Cutout
Figure 201 (Sheet 3 of 3)

IDENTIFICATION 1 - SECTION 43 MAIN DECK FLOOR PANEL



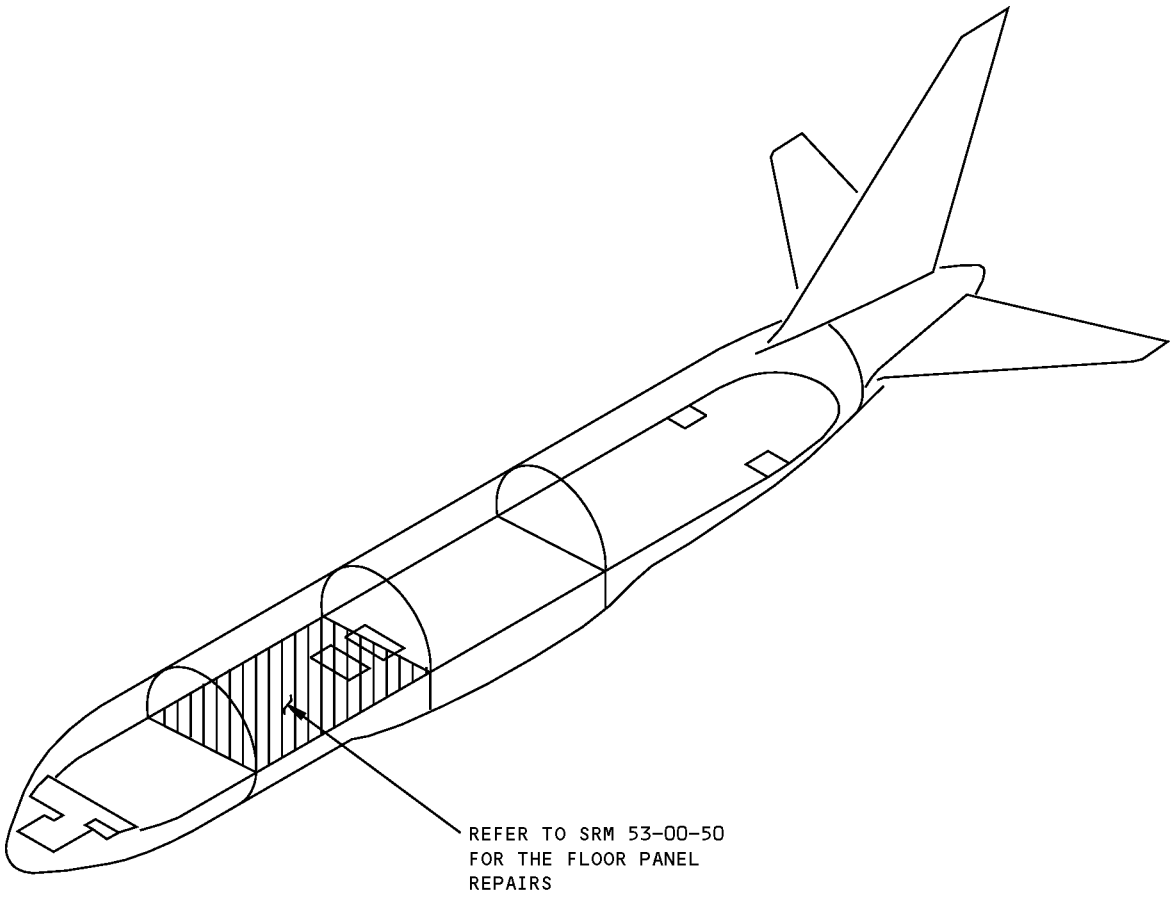
Section 43 Main Deck Floor Panel Identification
Figure 1

ALLOWABLE DAMAGE 1 - SECTION 43 MAIN DECK FLOOR PANEL



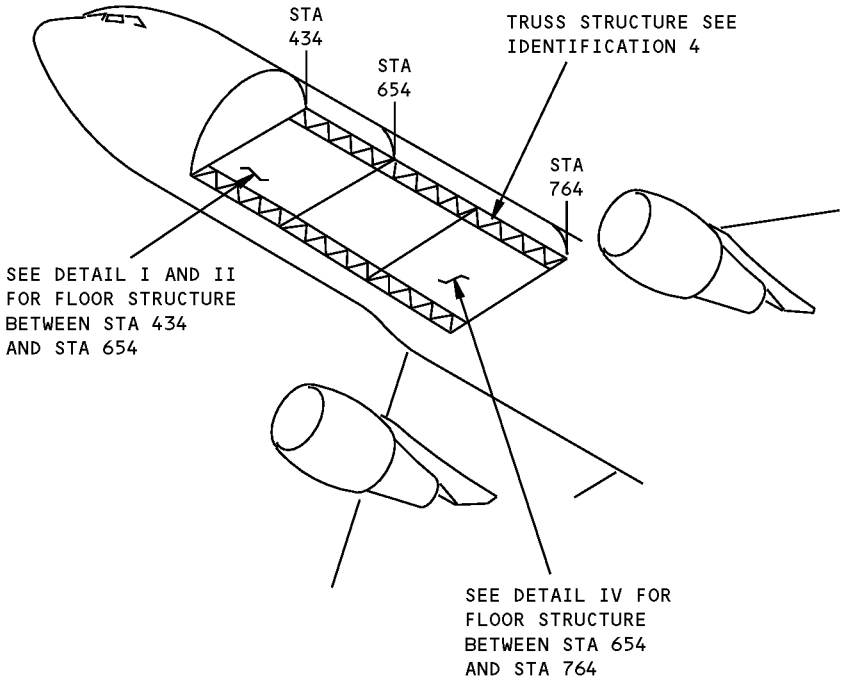
Section 43 Main Deck Floor Panel Allowable Damage
Figure 101

REPAIR GENERAL - SECTION 43 MAIN DECK FLOOR PANELS



Section 43 Main Deck Floor Panel Repair
Figure 201

IDENTIFICATION 1 - SECTION 43 MAIN DECK FLOOR STRUCTURE - STANDARD CARGO DOOR AIRPLANES

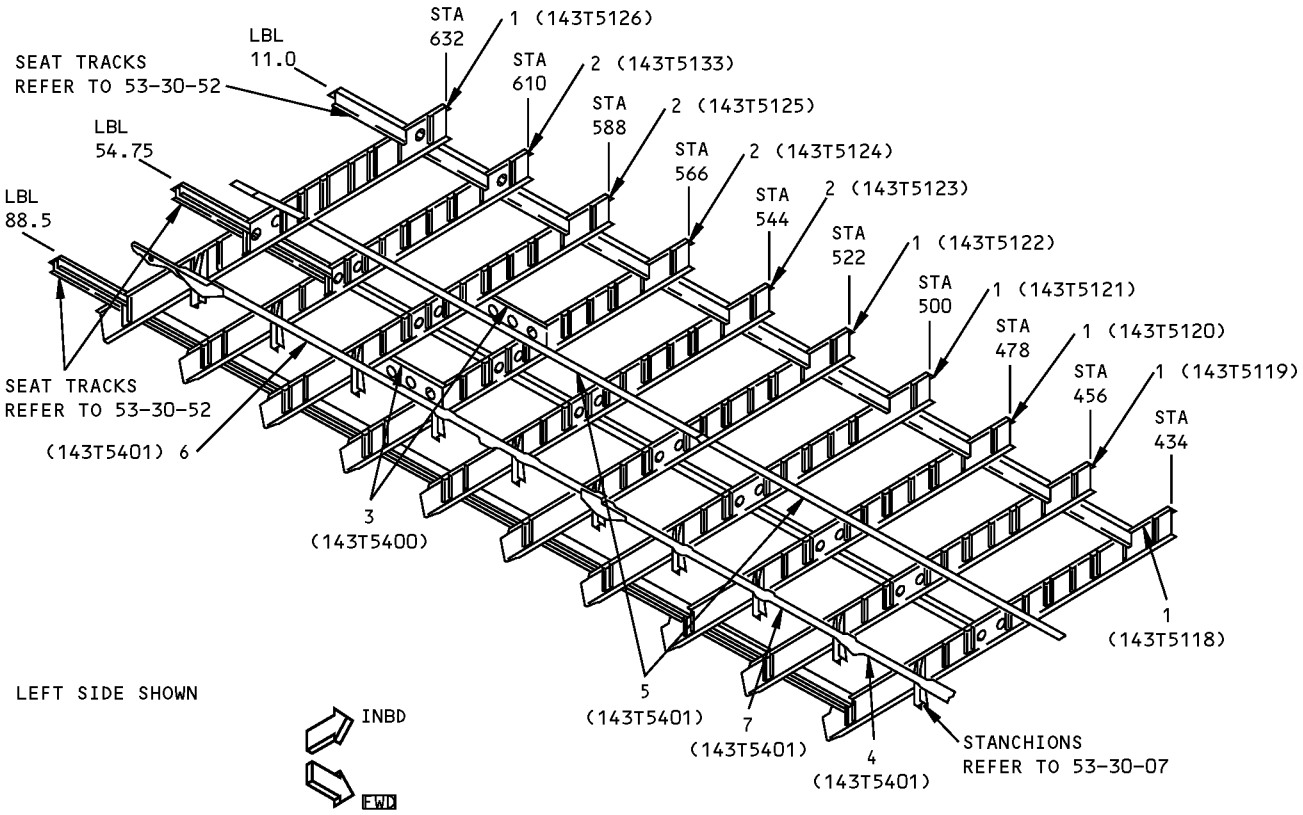


NOTES

- FLOOR STRUCTURE FOR AIRPLANES WITH STANDARD CARGO DOOR SHOWN. SEE IDENTIFICATION 2 FOR AIRPLANES WITH LARGE CARGO DOOR (STA 434 TO STA 654 RIGHT SIDE ONLY)

Section 43 Main Deck Floor Structure Identification - Standard Cargo Door Airplanes
Figure 1 (Sheet 1 of 7)

REF DWG
143T5200
143T5400



DETAIL I

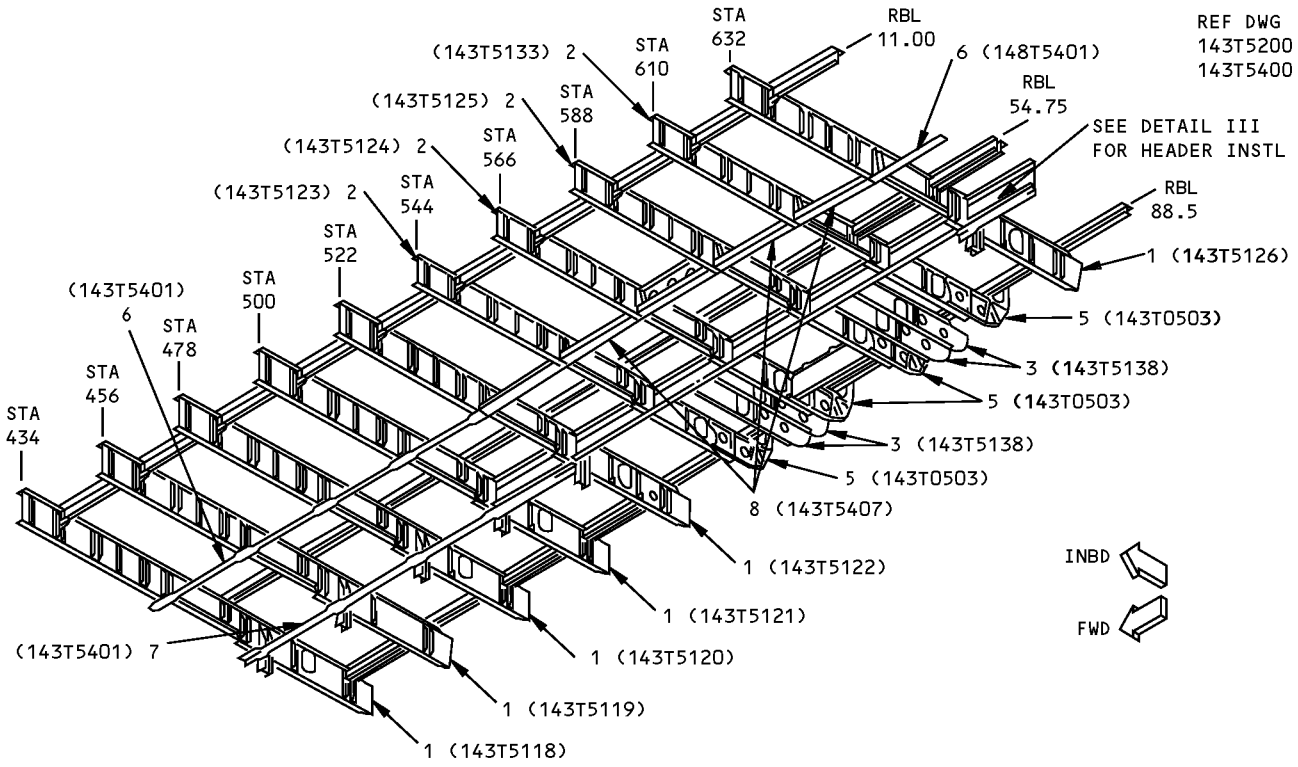
LIST OF MATL

Section 43 Main Deck Floor Structure Identification - Standard Cargo Door Airplanes
Figure 1 (Sheet 2 of 7)

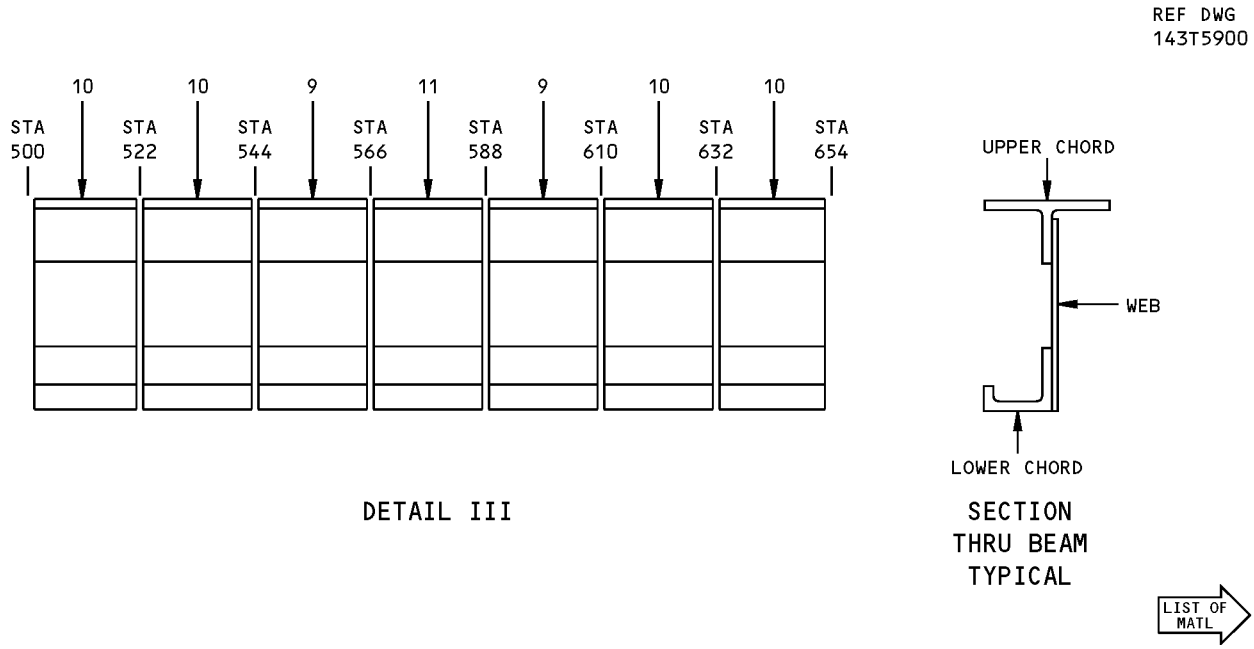
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	BEAM ASSY			
	BEAM		BAC1506-3116 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
	LWR CHORD		AND10137-1207 7075-T6511	
2	BEAM ASSY			
	BEAM		BAC1506-3117 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
	LWR CHORD		AND10136-1303 7075-T6511	
	LWR CHORD		BAC1505-100275 7075-T6511	
3	INTERCOSTAL			
	UPR CHORD		BAC1490-2843 CLAD 7075-T62	
	WEB	0.025	CLAD 7075-T6	
4	ANGLE		BAC1490-2803 7075-T6	
5	STRAP		BAC1493-692 7075-T6	
6	ANGLE		BAC1490-2866 7075-T6	
7	ANGLE		BAC1490-2863 7075-T6	

LIST OF MATERIALS FOR DETAIL I

Section 43 Main Deck Floor Structure Identification - Standard Cargo Door Airplanes
Figure 1 (Sheet 3 of 7)



RIGHT SIDE
DETAIL II



DETAIL III

SECTION
THRU BEAM
TYPICAL

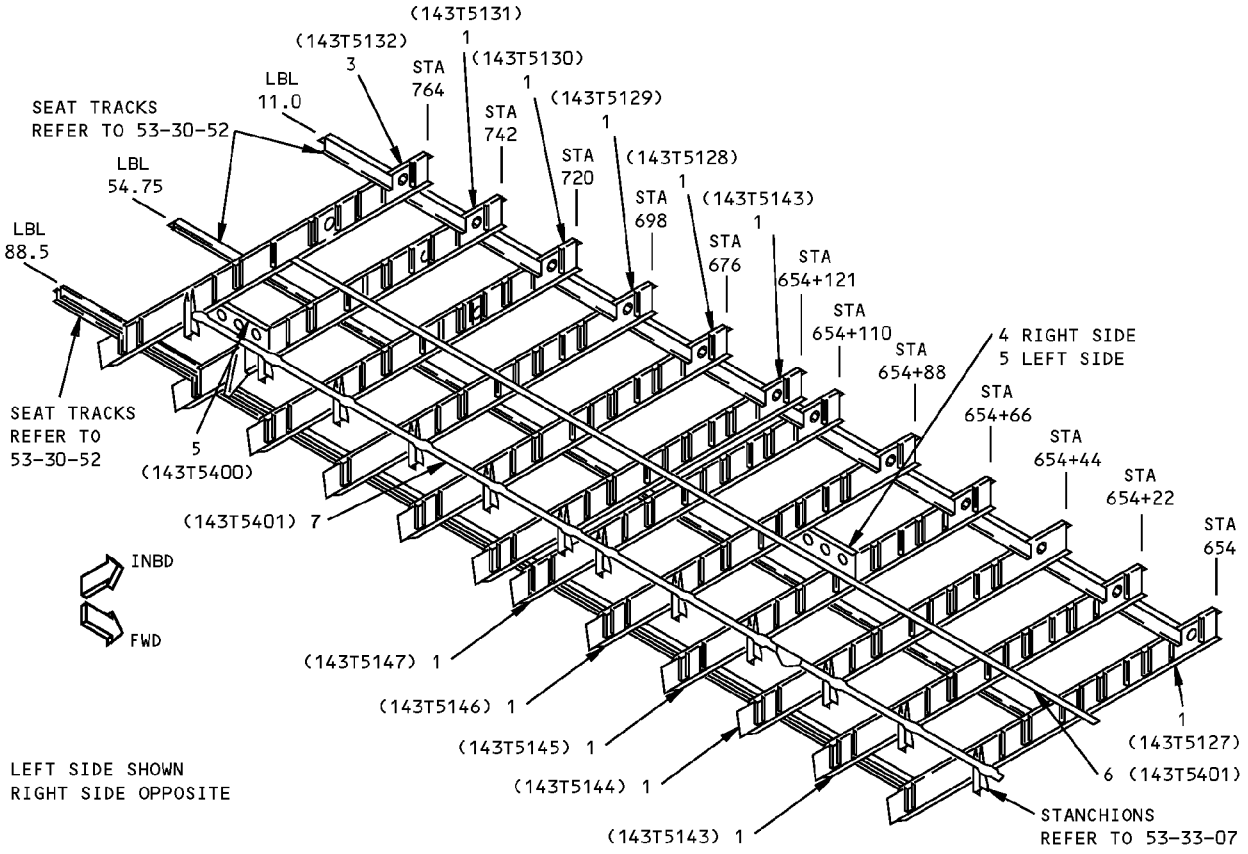
Section 43 Main Deck Floor Structure Identification - Standard Cargo Door Airplanes
Figure 1 (Sheet 4 of 7)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	BEAM ASSY			
	BEAM		BAC1506-3116 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
	LWR CHORD		AND10137-1207 7075-T6511	
2	BEAM ASSY			
	BEAM		BAC1506-3117 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
	LWR CHORD		AND10136-1303 7075-T6511	
	LWR CHORD		BAC1505-100275 7075-T6511	
3	ACTUATOR SUPPORT BEAM		BAC1506-3117 7075-T6511	
4	INTERCOSTAL			
	UPR CHORD		BAC1490-2851 CLAD 7075-T62	
	WEB	0.025	CLAD 7075-T62	
5	FITTING		FORGING 7075-T73	
6	STRAP		BAC1493-692 7075-T6	
7	ANGLE		BAC1490-2863 7075-T6	
8	CHANNEL	0.032	CLAD 7075-T62	
9	BEAM ASSY			
	LWR CHORD		AND10137-1112 7075-T6511	
	WEB	0.025	CLAD 7075-T6	
	UPR CHORD		BAC1505-28902 7075-T6511	
10	BEAM ASSY			
	LWR CHORD		AND10137-1114 7075-T6511	
	WEB	0.032	CLAD 7075-T6	
	UPR CHORD		BAC1505-100802 7075-T6511	
11	BEAM ASSY			
	LWR CHORD		AND10137-1205 7075-T6511	
	WEB	0.025	CLAD 7075-T6	
	UPR CHORD		BAC1505-28902 7075-T6511	

LIST OF MATERIALS FOR DETAILS II AND III

Section 43 Main Deck Floor Structure Identification - Standard Cargo Door Airplanes
Figure 1 (Sheet 5 of 7)

REF DWG
143T5200
143T5400



DETAIL IV

LIST OF MATL

Section 43 Main Deck Floor Structure Identification - Standard Cargo Door Airplanes
Figure 1 (Sheet 6 of 7)

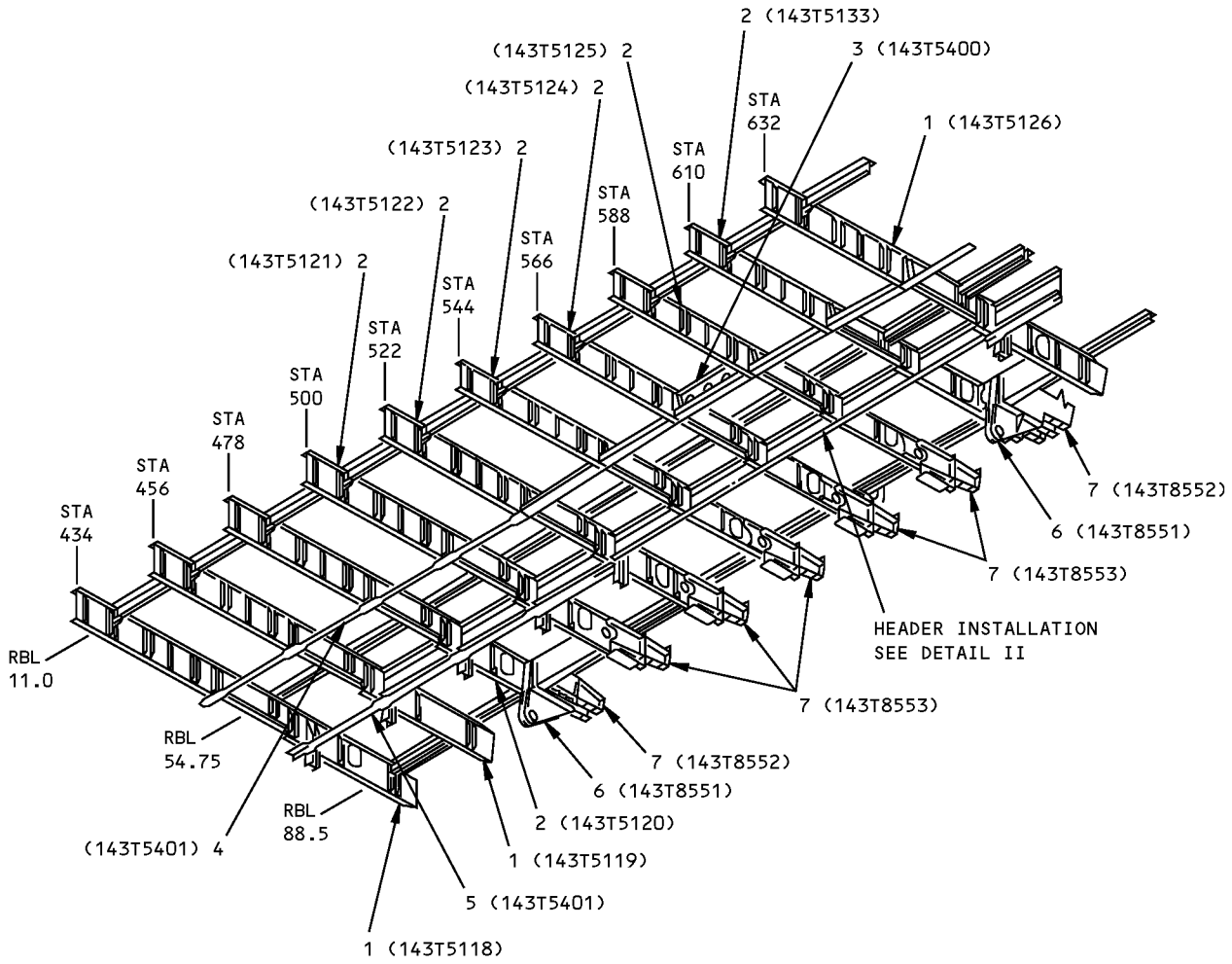
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	BEAM ASSY			
	BEAM		BAC1506-3116 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
	LWR CHORD		AND10137-1207 7075-T6511	
2	BEAM ASSY			
	BEAM		BAC1506-3117 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
	LWR CHORD		AND10136-1303 7075-T6511	
	LWR CHORD		BAC1505-100275 7075-T6511	
3	BEAM		BAC1506-3116 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
4	INTERCOSTAL			
	UPR CHORD		BAC1490-2843 CLAD 7075-T62	
	WEB	0.025	CLAD 7075-T62	
5	INTERCOSTAL			
	UPR CHORD		BAC1490-2843 CLAD 7075-T62	
	WEB	0.025	CLAD 7075-T6	
6	STRAP		BAC1493-692 7075-T6	
7	ANGLE		BAC1490-2863 7075-T6	

LIST OF MATERIALS FOR DETAIL IV

Section 43 Main Deck Floor Structure Identification - Standard Cargo Door Airplanes
Figure 1 (Sheet 7 of 7)

IDENTIFICATION 2 - SECTION 43 MAIN DECK FLOOR STRUCTURE - LARGE CARGO DOOR AIRPLANES

REF DWG
143T5200
143T5400



MAIN DECK FLOOR STRUCTURE
LARGE CARGO DOOR CONFIGURATION
DETAIL I

LIST OF MATL

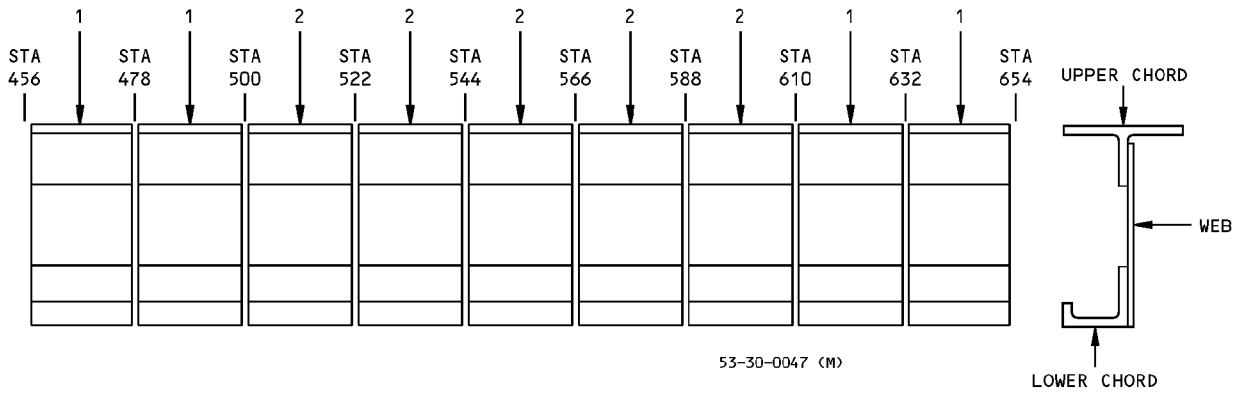
Section 43 Main Deck Floor Structure Identification - Large Cargo Door Airplanes
Figure 1 (Sheet 1 of 3)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	BEAM ASSY			
	BEAM		BAC1506-3116 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
	LWR CHORD		AND10137-1207 7075-T6511	
2	BEAM ASSY			
	BEAM		BAC1506-3117 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
	LWR CHORD		AND10136-1303 7075-T6511	
	LWR CHORD		BAC1505-100275 7075-T6511	
3	INTERCOSTAL			
	UPR CHORD		BAC1490-2851 CLAD 7075-T62	
	WEB	0.025	CLAD 7075-T62	
4	ANGLE		BAC1493-692 7075-T6	
5	ANGLE		BAC1490-2863 7075-T6	
6	ACTUATOR FTG		FORGING 7075-T73 OPTIONAL: PLATE 7075-T7351	
7	FITTING	1.500	PLATE 7075-T7351	

LIST OF MATERIALS FOR DETAIL I

Section 43 Main Deck Floor Structure Identification - Large Cargo Door Airplanes
Figure 1 (Sheet 2 of 3)

REF DWG
143T5200
143T5900



SECTION
THRU BEAM
TYPICAL

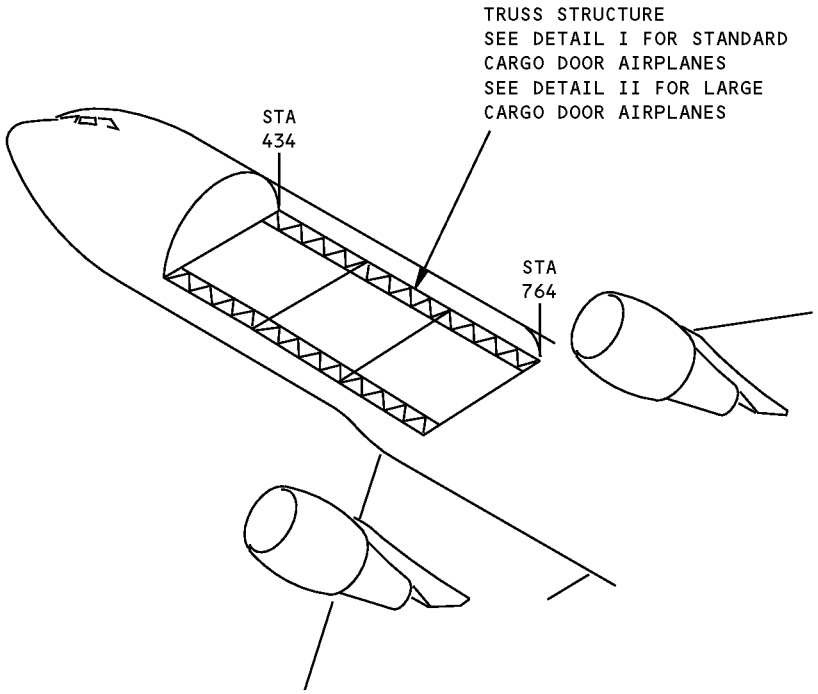
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	BEAM ASSY			
	LWR CHORD		AND10137-1207 7075-T6511	
	UPR CHORD		BAC1505-100802 7075-T6511	
	WEB	0.063	7075-T6	
2	BEAM ASSY			
	LWR CHORD		AND10137-1112 7075-T6511	
	UPR CHORD		BAC1505-28902 7075-T6511	
	WEB	0.032	CLAD 7075-T6	

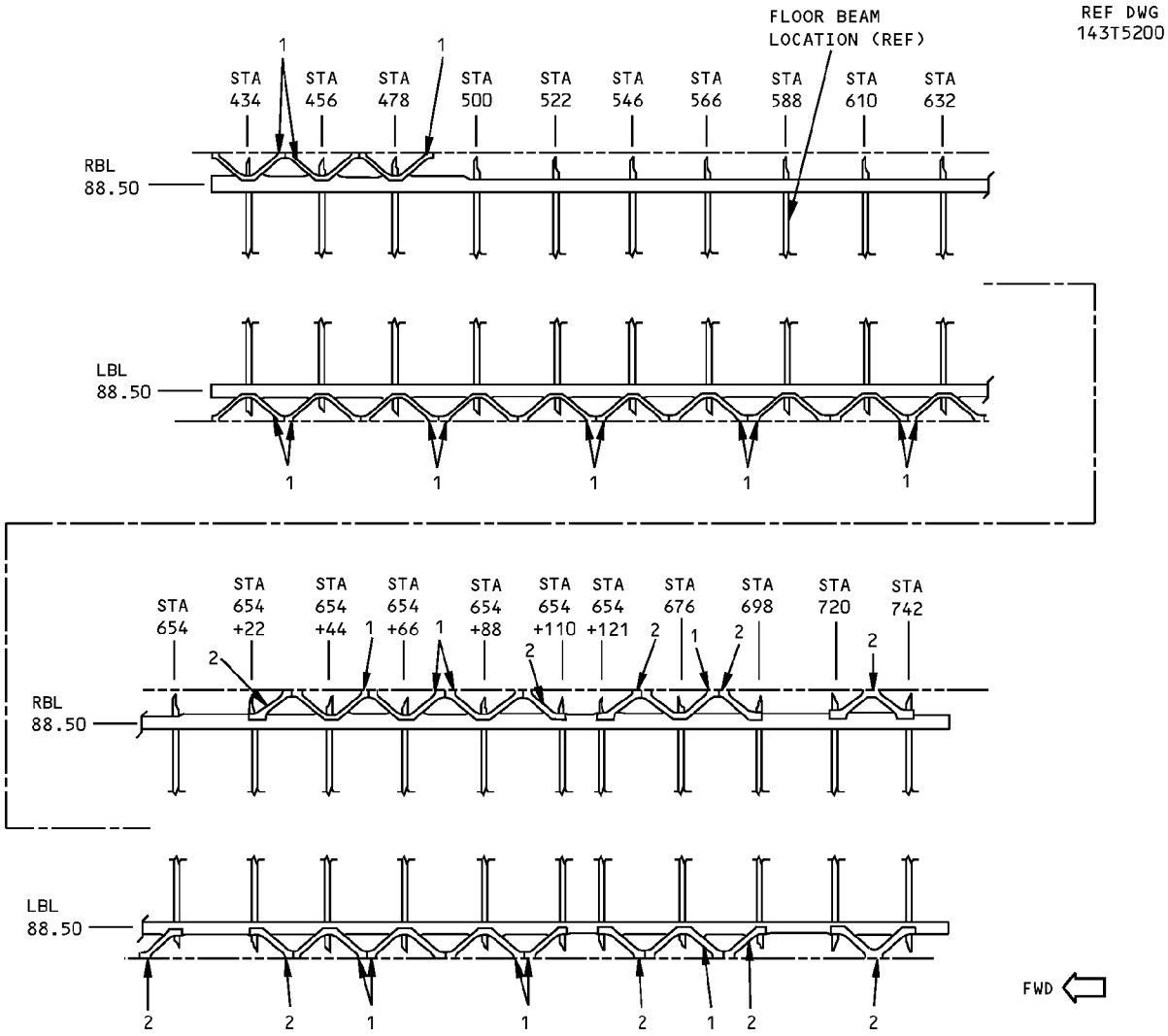
LIST OF MATERIALS FOR DETAIL III

Section 43 Main Deck Floor Structure Identification - Large Cargo Door Airplanes
Figure 1 (Sheet 3 of 3)

IDENTIFICATION 4 - SECTION 43 - FLOOR STRUCTURE - TRUSS



Section 43 - Main Deck Floor Structure - Truss Identification
Figure 1 (Sheet 1 of 3)

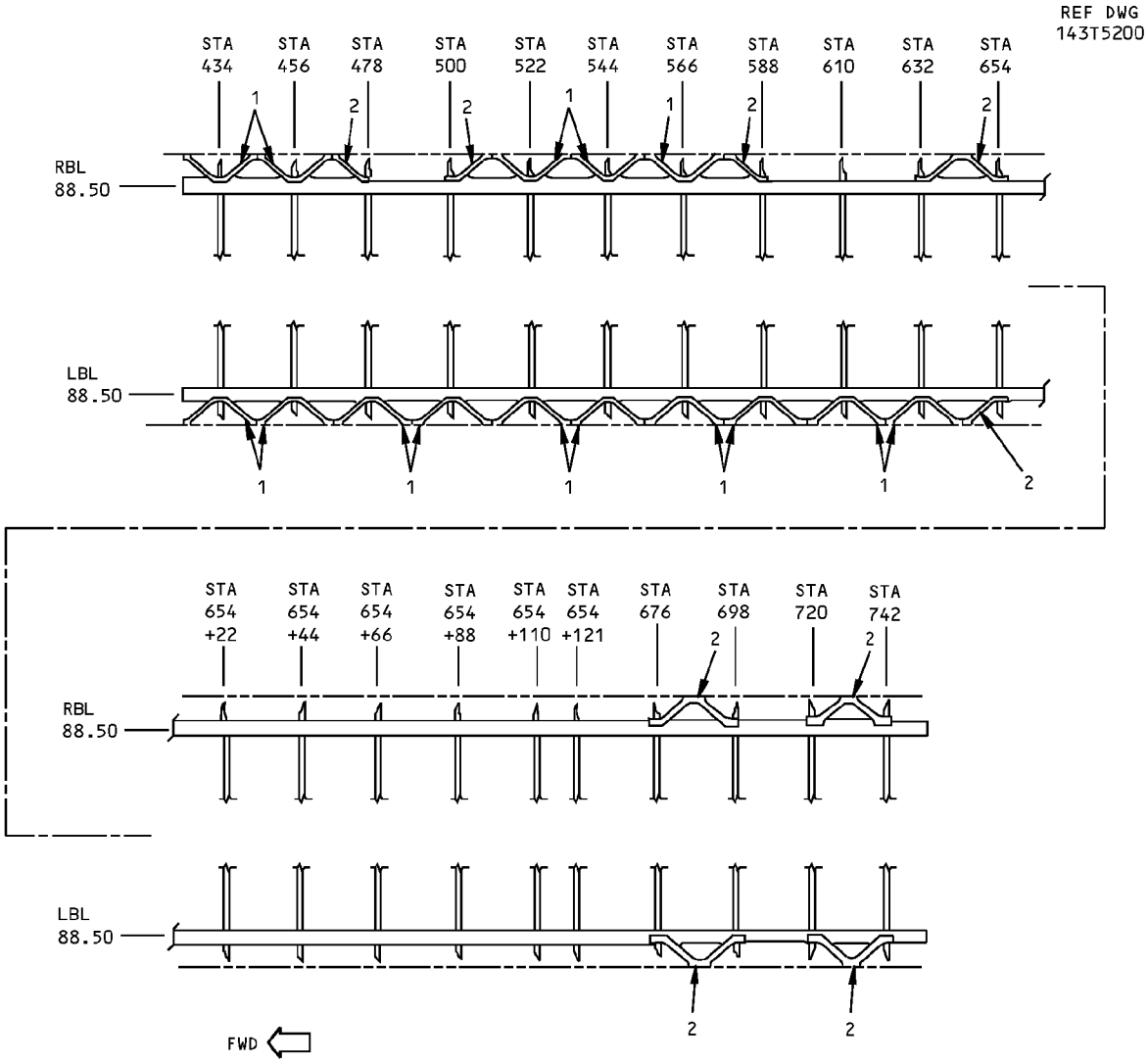


FLOOR TRUSS DIAGRAM
STANDARD CARGO DOOR CONFIGURATION
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	TRUSS	0.090	7075-T62	
2	TRUSS	0.100	7075-T62	

LIST OF MATERIALS FOR DETAIL I

Section 43 - Main Deck Floor Structure - Truss Identification
Figure 1 (Sheet 2 of 3)



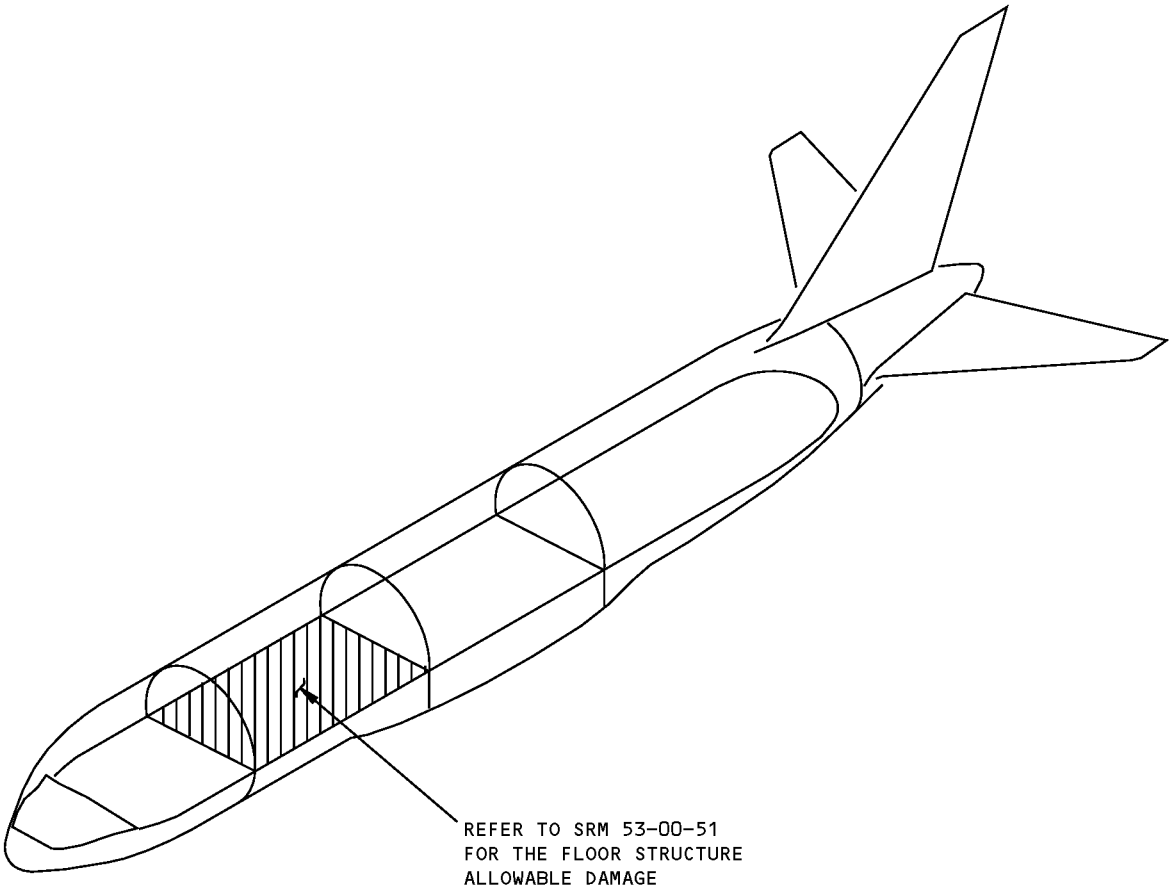
FLOOR TRUSS DIAGRAM
LARGE CARGO DOOR CONFIGURATION
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	TRUSS	0.090	7075-T62	
2	TRUSS	0.100	7075-T62	

LIST OF MATERIALS FOR DETAIL II

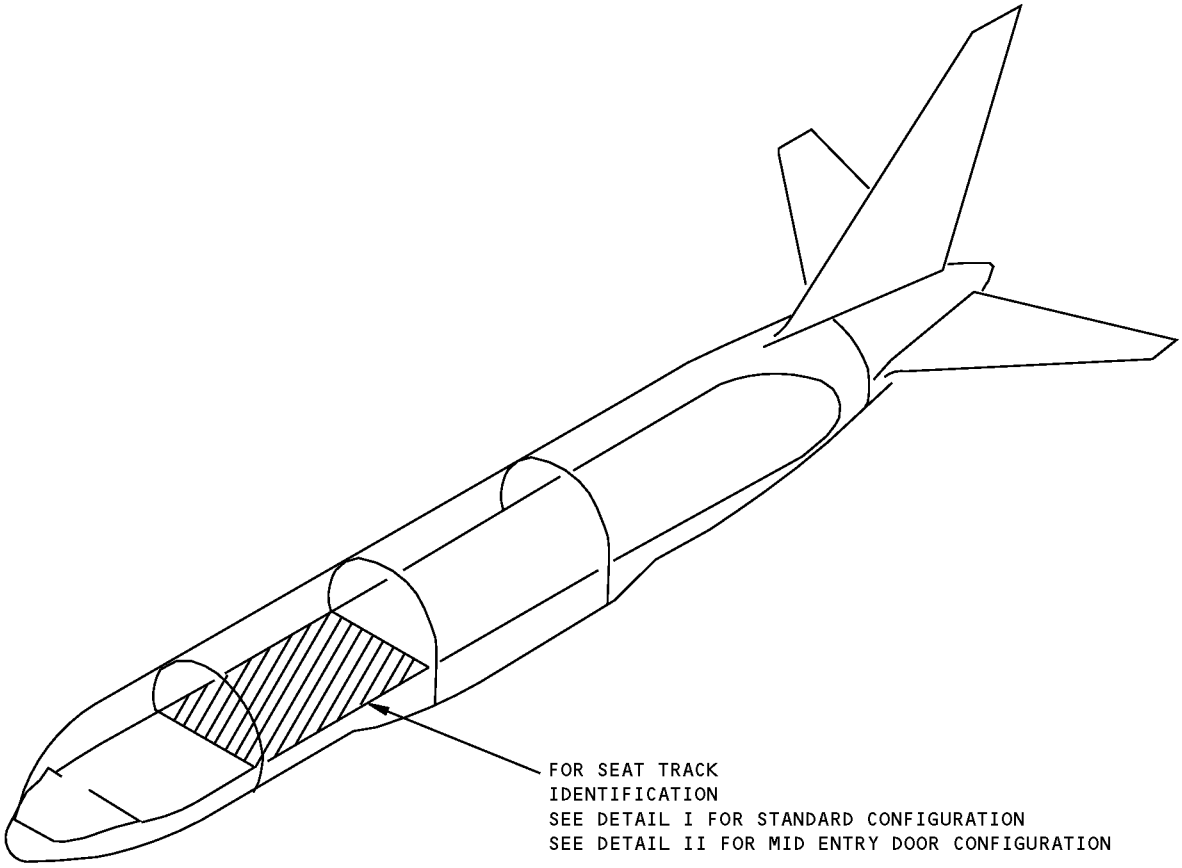
Section 43 - Main Deck Floor Structure - Truss Identification
Figure 1 (Sheet 3 of 3)

ALLOWABLE DAMAGE 1 - SECTION 43 FLOOR STRUCTURE



Section 43 Floor Structure Allowable Damage
Figure 101

IDENTIFICATION 1 - SECTION 43 - SEAT TRACK



NOTES

- SEAT TRACKS AT BL 88.5, 54.75 AND 11.00 ARE THE BASIC CONFIGURATION AND VARIATIONS TO THE CONFIGURATION ARE PROVIDED AS OPERATOR OPTIONS

[A] ALTERNATE FIRST CLASS ARRANGEMENT

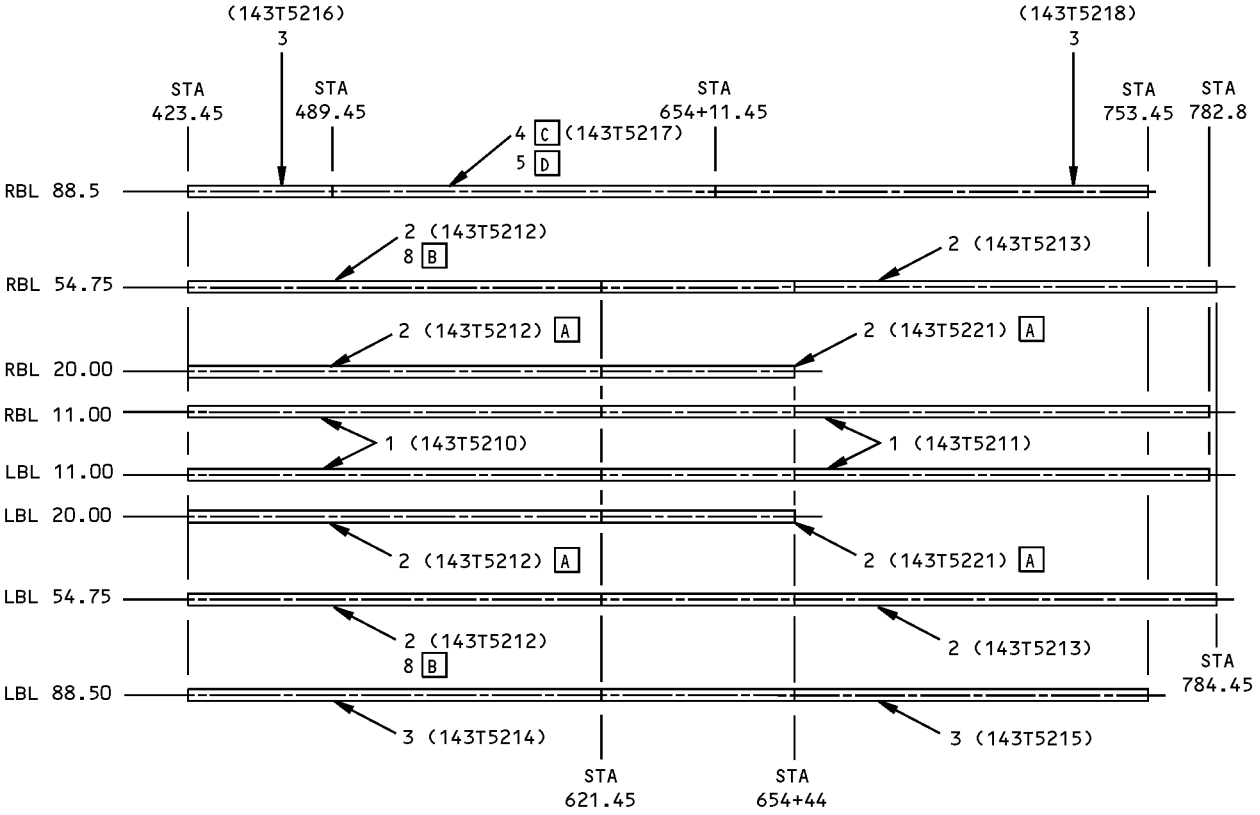
[B] BASIC FOR EXTENDED RANGE AIRPLANES WITH TRI-CLASS SEATING

[C] FOR AIRPLANES WITH A SMALL CARGO DOOR

[D] FOR AIRPLANES WITH A LARGE CARGO DOOR

Section 43 - Seat Track Identification
Figure 1 (Sheet 1 of 3)

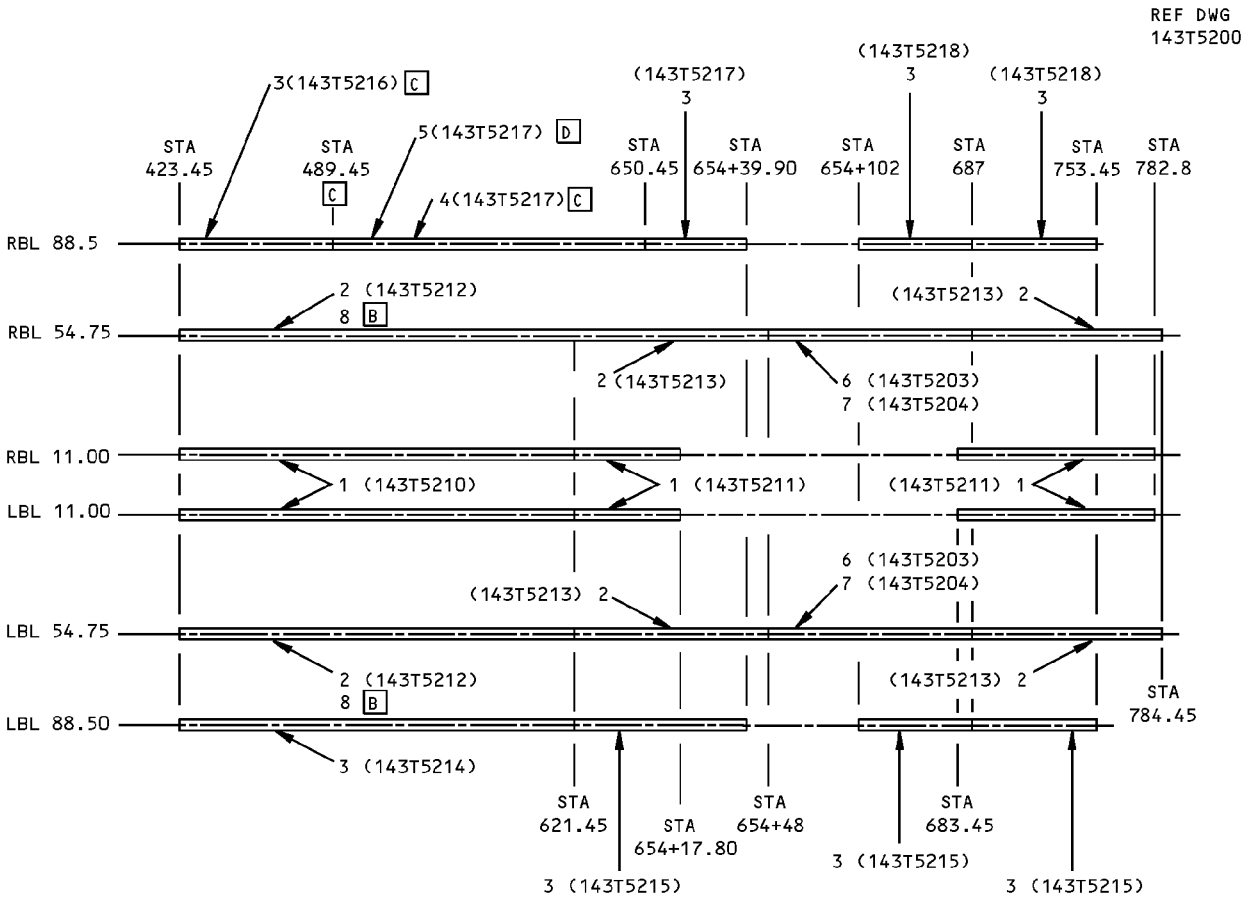
REF DWG
143T5200



STANDARD CONFIGURATION
DETAIL I

LIST OF MATL

Section 43 - Seat Track Identification
Figure 1 (Sheet 2 of 3)



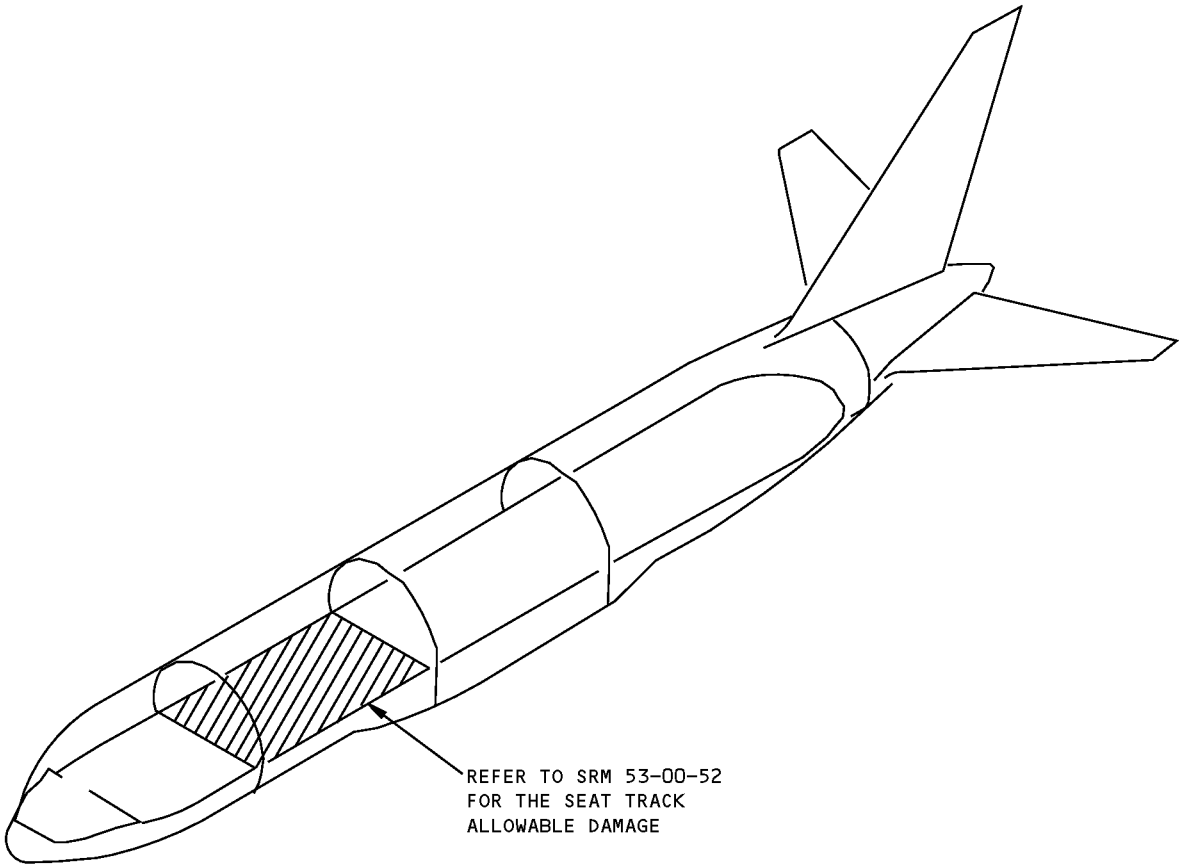
MID ENTRY DOOR CONFIGURATION
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SEAT TRACK		BAC1520-1545 7178-T6511 AS GIVEN IN QQ-A-200/13	
2	SEAT TRACK		BAC1520-2192 7178-T6511 AS GIVEN IN QQ-A-200/13	
3	SEAT TRACK		BAC1520-2193 7075-T6511 AS GIVEN IN QQ-A-200/11	
4	SEAT TRACK		BAC1520-2196 7075-T6511 AS GIVEN IN QQ-A-200/11	C
5	SEAT TRACK		BAC1520-2332 7075-T6511 AS GIVEN IN QQ-A-200/11	D
6	STRAP	0.071	7075-T6	
7	INTERCOSTAL		BAC1498-215 7075-T62	
8	SEAT TRACK		BAC1520-2557 7178-T6511 AS GIVEN IN QQ-A-200/13	B

LIST OF MATERIALS FOR DETAILS I AND II

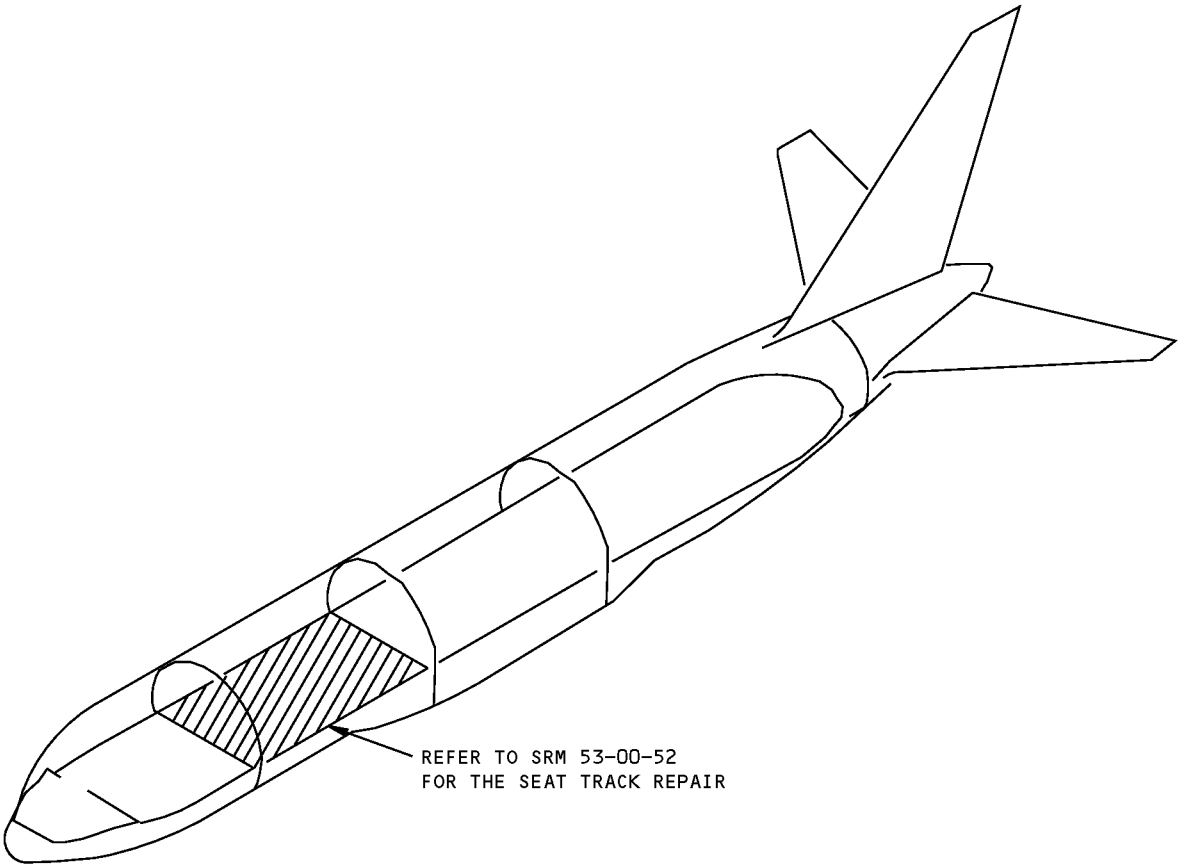
Section 43 - Seat Track Identification
Figure 1 (Sheet 3 of 3)

ALLOWABLE DAMAGE 1 - SECTION 43 SEAT TRACKS



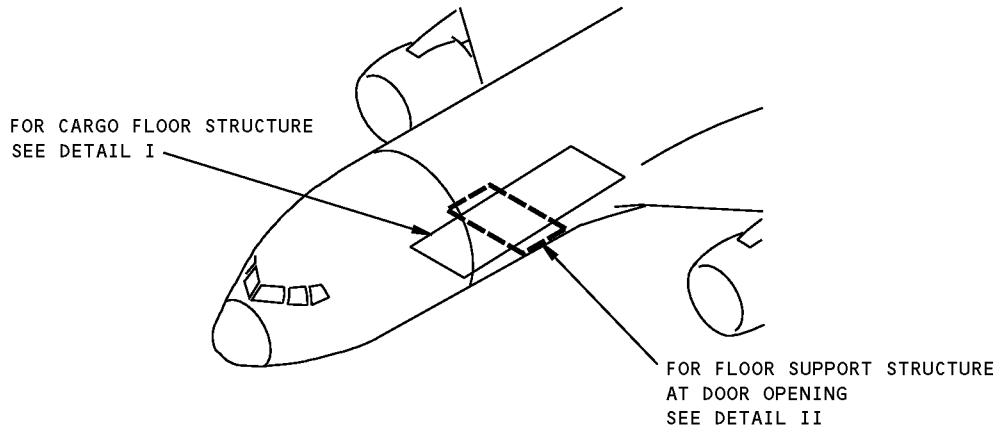
Section 43 Seat Tracks Allowable Damage
Figure 101

REPAIR GENERAL - SECTION 43 SEAT TRACK



Section 43 Seat Track Repair
Figure 201

IDENTIFICATION 1 - SECTION 43 - CARGO COMPARTMENT STRUCTURE - STANDARD CARGO DOOR



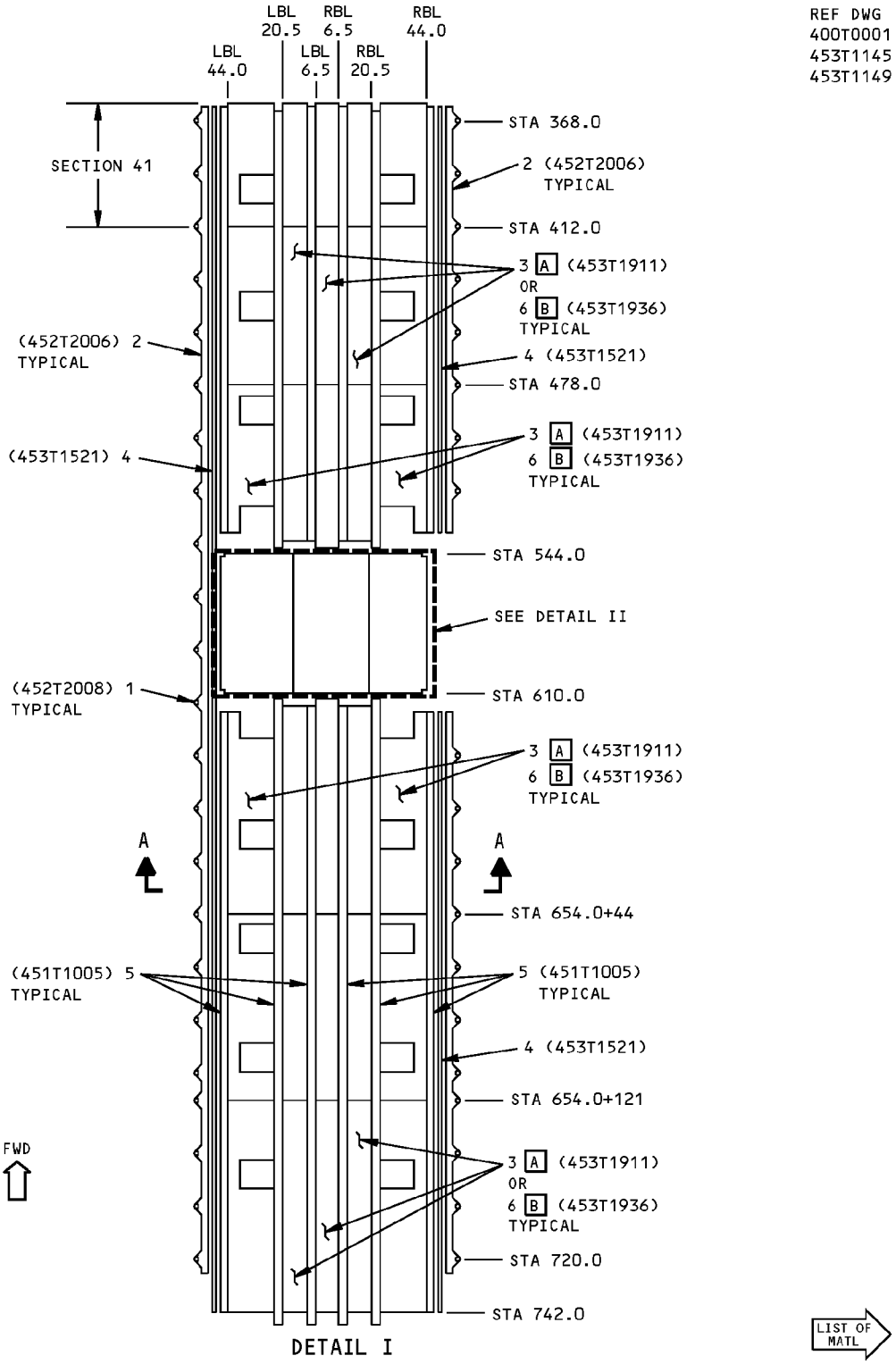
NOTES

- REFER TO IDENTIFICATION 2 FOR AIRPLANES WITH LARGE CARGO DOOR

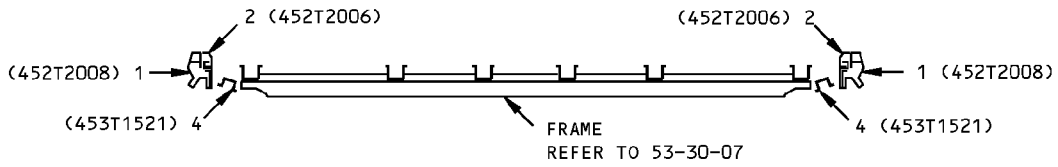
[A] FOR AIRPLANES WITH FIBERGLASS FLOOR PANELS (BASIC CONFIGURATION)

[B] FOR AIRPLANES WITH ALUMINUM/BALSA FLOOR PANELS (CUSTOMER OPTION)

Section 43 - Cargo Compartment Structure Identification - Standard Cargo Door
Figure 1 (Sheet 1 of 5)



Section 43 - Cargo Compartment Structure Identification - Standard Cargo Door
Figure 1 (Sheet 2 of 5)

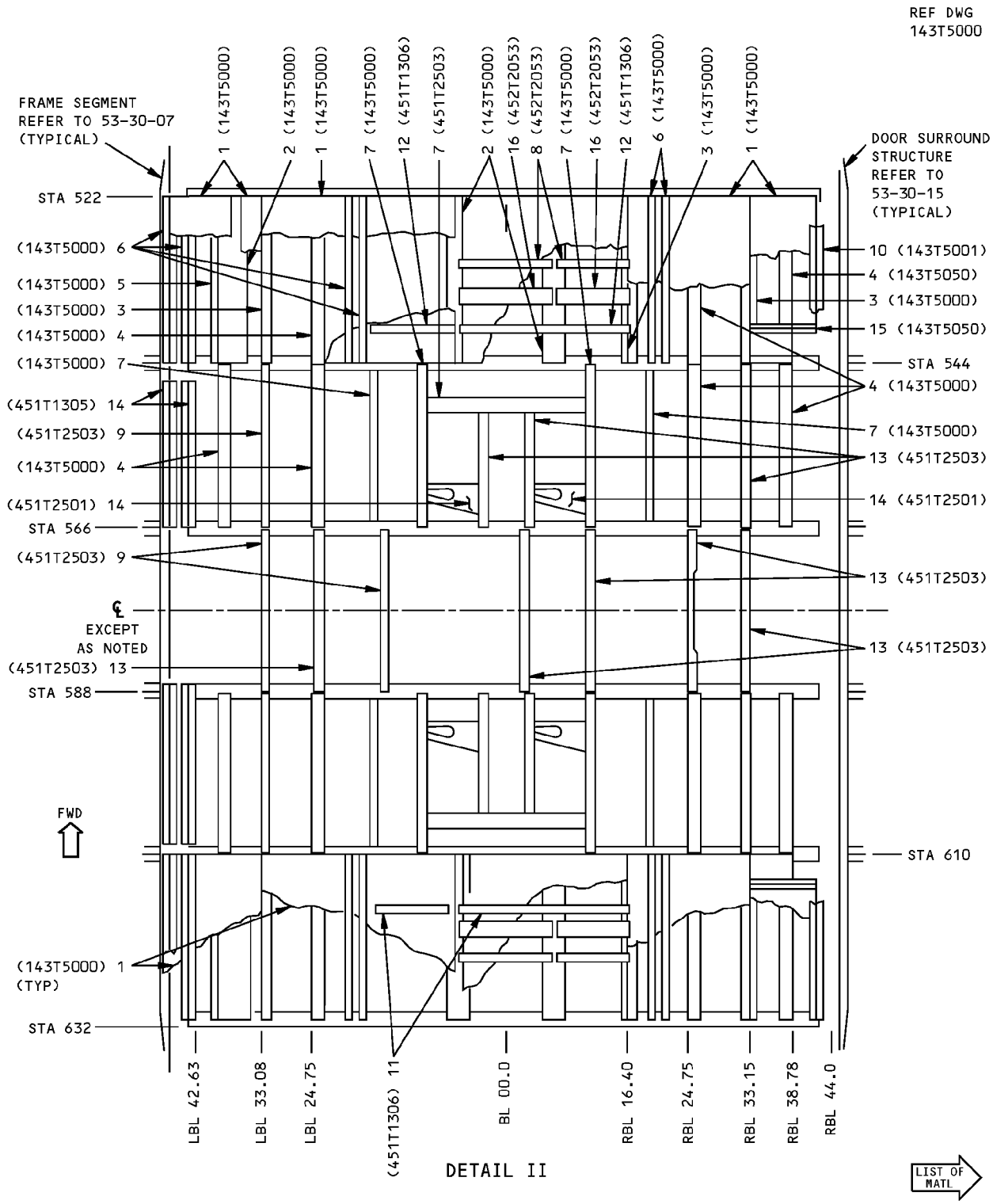


SECTION A-A

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SUPPORT FITTING		FORGING 7075-T73	
2	RAIL		BAC1520-2199 7075-T73511	
3	PANEL		FIBERGLASS FACED HONEYCOMB CORE SANDWICH PER BMS 4-17, CLASS I, TYPE IV, GRADES A OR B	
4	BEAM		BAC1493-451 2024-T3	
5	ROLLER TRAY		BAC1510-822 7075-T6511 OPTIONAL: BAC1510-1171 7075-T6511	
6	PANEL		ALUMINUM FACED BALSA CORE SANDWICH PER BMS 4-10, TYPE I, GRADE H OPTIONAL: BMS 4-10-2E	

LIST OF MATERIALS FOR DETAIL I

Section 43 - Cargo Compartment Structure Identification - Standard Cargo Door
Figure 1 (Sheet 3 of 5)



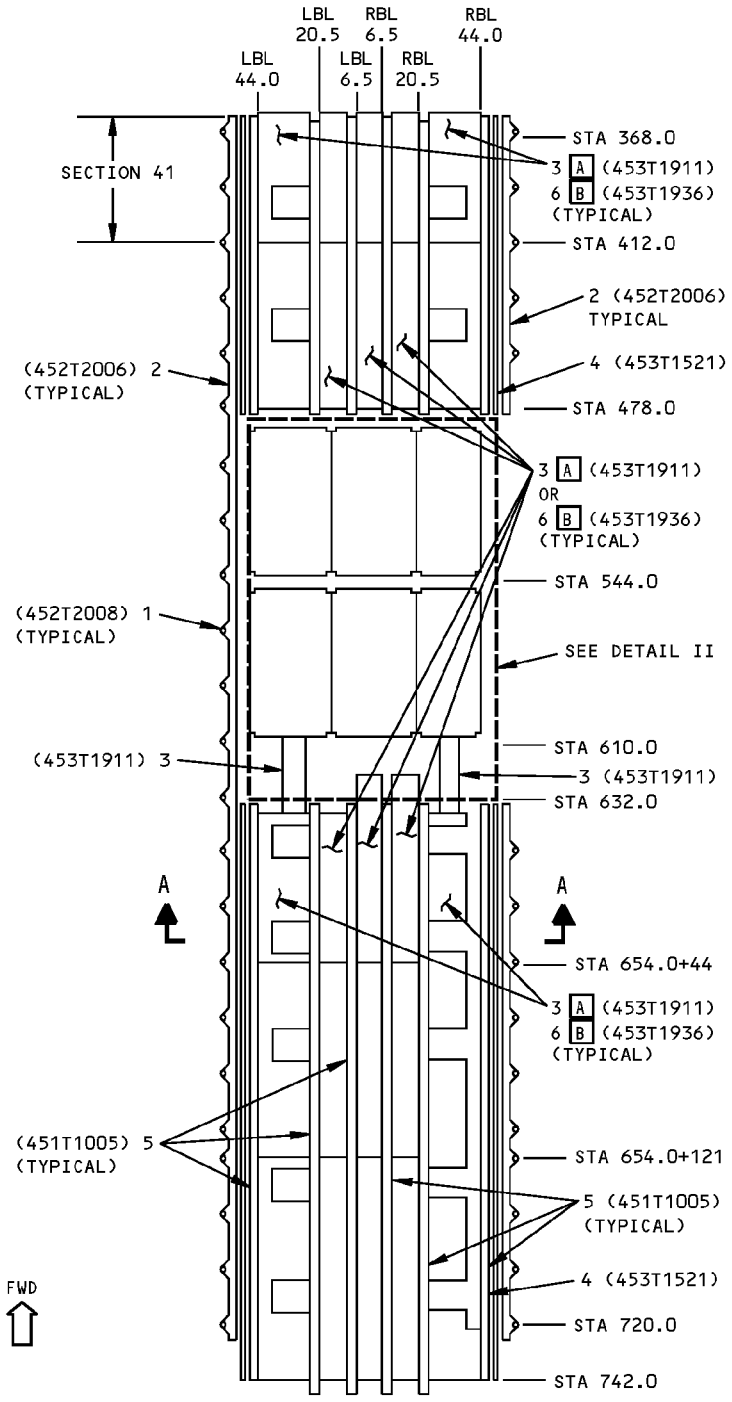
Section 43 - Cargo Compartment Structure Identification - Standard Cargo Door
Figure 1 (Sheet 4 of 5)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	WEB	0.071	7075-T6	
2	SUPPORT		BAC1509-100443 7075-T6511	
3	SUPPORT		BAC1506-3227 7075-T6511	
4	SUPPORT		BAC1500-6223 7075-T62	
5	SUPPORT		AND10134-1005 7075-T6511	
6	SUPPORT		AND10138-1402 7075-T6511	
7	SUPPORT		AND10137-2404 7075-T6511	
8	BEAM		AND10137-1205 7075-T73511	
9	BEAM SUPPORT		BAC1510-1067 7075-T6511	
10	SILL CLIP		BAC1514-2460 7075-T6511	
11	SUPPORT		AND10137-1405 7075-T6511	
12	SUPPORT	0.063	CLAD 7075-T62	
13	BEAM SUPPORT		BAC1510-1070 7075-T6511	
14	SUPPORT	0.080	7075-T62	
15	TEE - CLIP		AND10136-2405 7075-T6511	
16	BEAM		AND10138-1206 7075-T73511 OPTIONAL: BAC1517-1679 7075-T73511	

LIST OF MATERIALS FOR DETAIL II

Section 43 - Cargo Compartment Structure Identification - Standard Cargo Door
Figure 1 (Sheet 5 of 5)

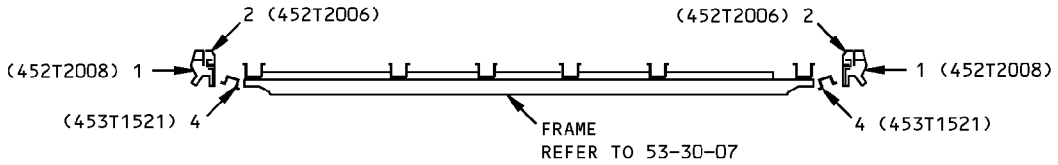
IDENTIFICATION 2 - SECTION 43 - CARGO COMPARTMENT STRUCTURE - LARGE CARGO DOOR



DETAIL I

LIST OF MATL

Section 43 - Cargo Compartment Structure Identification - Large Cargo door
Figure 1 (Sheet 1 of 4)



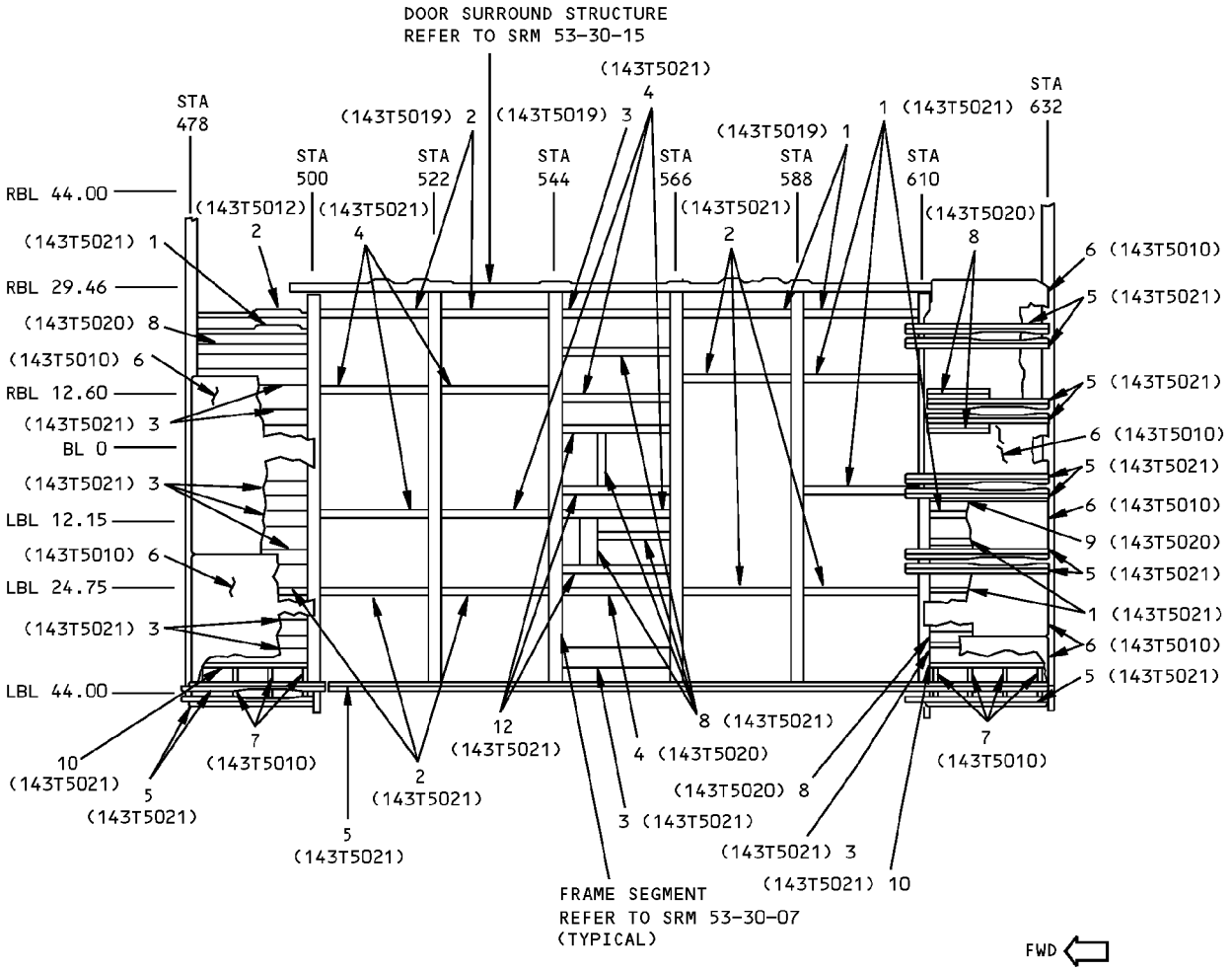
SECTION A-A

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SUPPORT FITTING		FORGING 7075-T73	
2	RAIL		BAC1520-2199 7075-T73511	
3	PANEL		FIBERGLASS FACED HONEYCOMB CORE SANDWICH PER BMS 4-17, CLASS I, TYPE I, GRADES 1 AND 2	
4	BEAM		BAC1493-451 2024-T3	
5	ROLLER TRAY		BAC1510-822 7075-T6511 OPTIONAL: BAC1510-1171 7075-T6511	
6	PANEL		ALUMINUM FACED BALSA CORE SANDWICH PER BMS 4-10, TYPE I, GRADE 8 OPTIONAL: BMS 4-10-2E	

LIST OF MATERIALS FOR DETAIL I AND SECTION A-A

Section 43 - Cargo Compartment Structure Identification - Large Cargo door
Figure 1 (Sheet 2 of 4)

REFERENCE DRAWING
143T5010



DETAIL II

LIST OF MATL

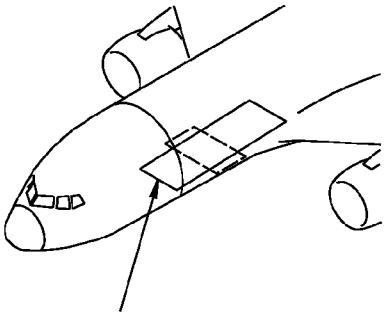
Section 43 - Cargo Compartment Structure Identification - Large Cargo door
Figure 1 (Sheet 3 of 4)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	INTERCOSTAL		BAC1510-1067 7075-T6511	
2	INTERCOSTAL		BAC1510-1070 7075-T6511	
3	INTERCOSTAL		BAC1509-100443 7075-T6511	
4	INTERCOSTAL		AND10137-2404 7075-T6511	
5	INTERCOSTAL		AND10138-1402 7075-T6511	
6	WEB	0.071	7075-T6	
7	STIFFENER		AND10133-0702 7075-T6511	
8	INTERCOSTAL		BAC1500-6228 7075-T62	
9	INTERCOSTAL	0.071	7075-T62	
10	ANGLE		AND10134-1205 7075-T6511	
11	INTERCOSTAL		BAC1500-6223 7075-T6511	
12	INTERCOSTAL		AND10137-3001 7075-T6511	

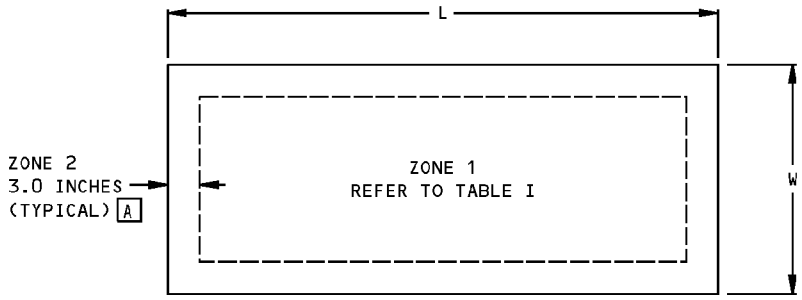
LIST OF MATERIALS FOR DETAIL II

Section 43 - Cargo Compartment Structure Identification - Large Cargo door
Figure 1 (Sheet 4 of 4)

ALLOWABLE DAMAGE 1 - SECTION 43 - CARGO FLOOR PANELS



CARGO FLOOR STRUCTURE
SEE DETAIL III FOR THE STANDARD CARGO DOOR
SEE DETAIL IV FOR THE LARGE CARGO DOOR



EXAMPLE OF A FLOOR PANEL - PLAN VIEW

ALLOWABLE DAMAGE FOR ONE PANEL - ZONE 1			
CRACKS	DENTS	HOLES	DELAMINATION
10.0 INCHES IN LENGTH MAXIMUM	UP TO 50.0 SQUARE INCHES B	UP TO 50.0 SQUARE INCHES B	UP TO 50.0 SQUARE INCHES B

TABLE I

NOTES

- THIS ALLOWABLE DAMAGE DATA APPLIES TO FIBERGLASS PANELS ONLY AND APPLIES TO THE STRUCTURAL INTEGRITY ONLY. THIS DATA WILL NOT APPLY WHERE THE FUNCTION OF THE FLOOR PANEL WOULD BE LIMITED.

A THE ALLOWABLE DAMAGE LIMITS IN ZONE 2 ARE AS FOLLOWS:

(1) CRACKS, NICKS, SCRATCHES, OR GOUGES TO THE PANEL SKIN LESS THAN 1.0 INCH IN LENGTH AND MORE THAN 1.0 INCH FROM THE CENTER OF A PANEL INSERT ARE PERMITTED. SEE DETAIL I.

(2) A MAXIMUM OF ONE DAMAGED PANEL FASTENER OR ONE DAMAGED PANEL INSERT FOR EACH PANEL IS PERMITTED. DAMAGE TO A PANEL FASTENER OR INSERT INCLUDES:

(a) PANEL INSERT DISBONDING

(b) PANEL INSERT CRACKS

(c) PANEL FASTENER STRIPPED THREADS

(d) MISSING FASTENER

(e) A SINGLE CRACK, NICK, SCRATCH OR GOUGE TO THE PANEL SKIN LESS THAN 1.0 INCH IN LENGTH BUT LESS THAN 1.0 INCH FROM THE CENTER OF A PANEL INSERT. THIS TYPE OF DAMAGE IS EQUIVALENT TO A MISSING FASTENER. SEE DETAIL II.

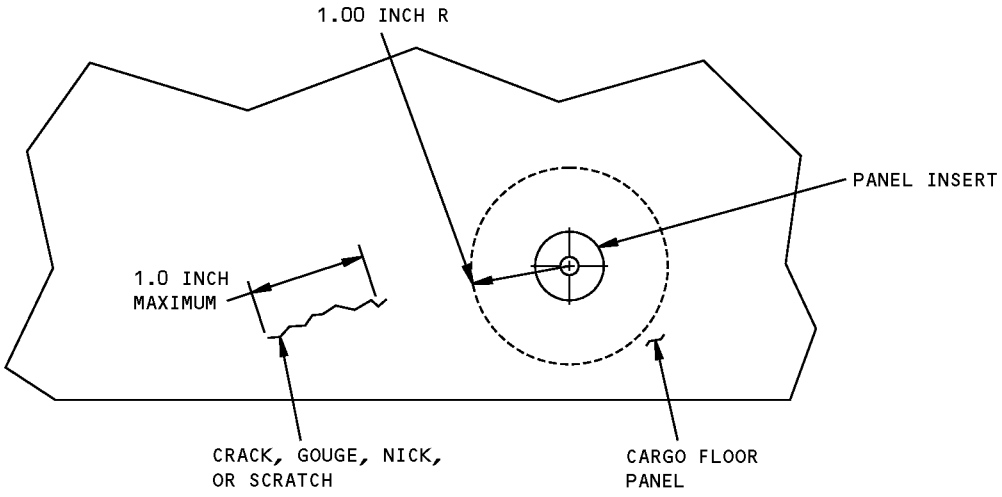
B THE TOTAL DAMAGE MUST NOT BE MORE THAN 30 PERCENT OF THE PANEL LENGTH IN THE -L- DIRECTION OR 30 PERCENT OF THE PANEL WIDTH IN THE -W- DIRECTION.

C REMOVE ANY CONTAMINATION AND MOISTURE FROM THE DAMAGED AREA. USE A VACUUM AND APPLY HEAT (A MAXIMUM OF 125°F (52°C) TO REMOVE MOISTURE FROM THE DAMAGED AREA. DO ONE OF THE STEPS THAT FOLLOW:

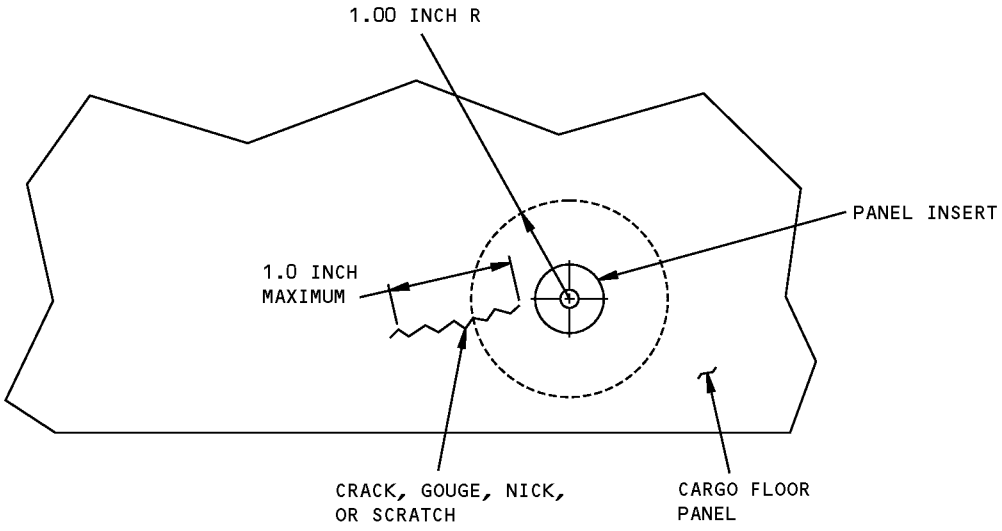
- SEAL THE DAMAGED AREA WITH ALUMINUM FOIL TAPE (SPEED TAPE). KEEP A RECORD OF THE LOCATION AND MAKE AN INSPECTION EVERY "A" CHECK. REPLACE THE TAPE IF ANY DAMAGE IS FOUND. REPAIR THE DAMAGE AT THE NEXT "C" CHECK, OR
- APPLY A SEALING RESIN AS SPECIFIED IN SRM 51-70-06.

- IN ZONE 1 OF FIBERGLASS-FACED PANELS, NICKS, SCRATCHES, AND GOUGES THAT DO NOT DAMAGE ANY PLIES ARE PERMITTED. C
- IN ZONE 2 OF FIBERGLASS-FACED PANELS, NICKS, SCRATCHES, AND GOUGES THAT DO NOT DAMAGE MORE THAN 1 PLY ARE PERMITTED. C

Section 43 - Cargo Floor Panels Allowable Damage
Figure 101 (Sheet 1 of 4)

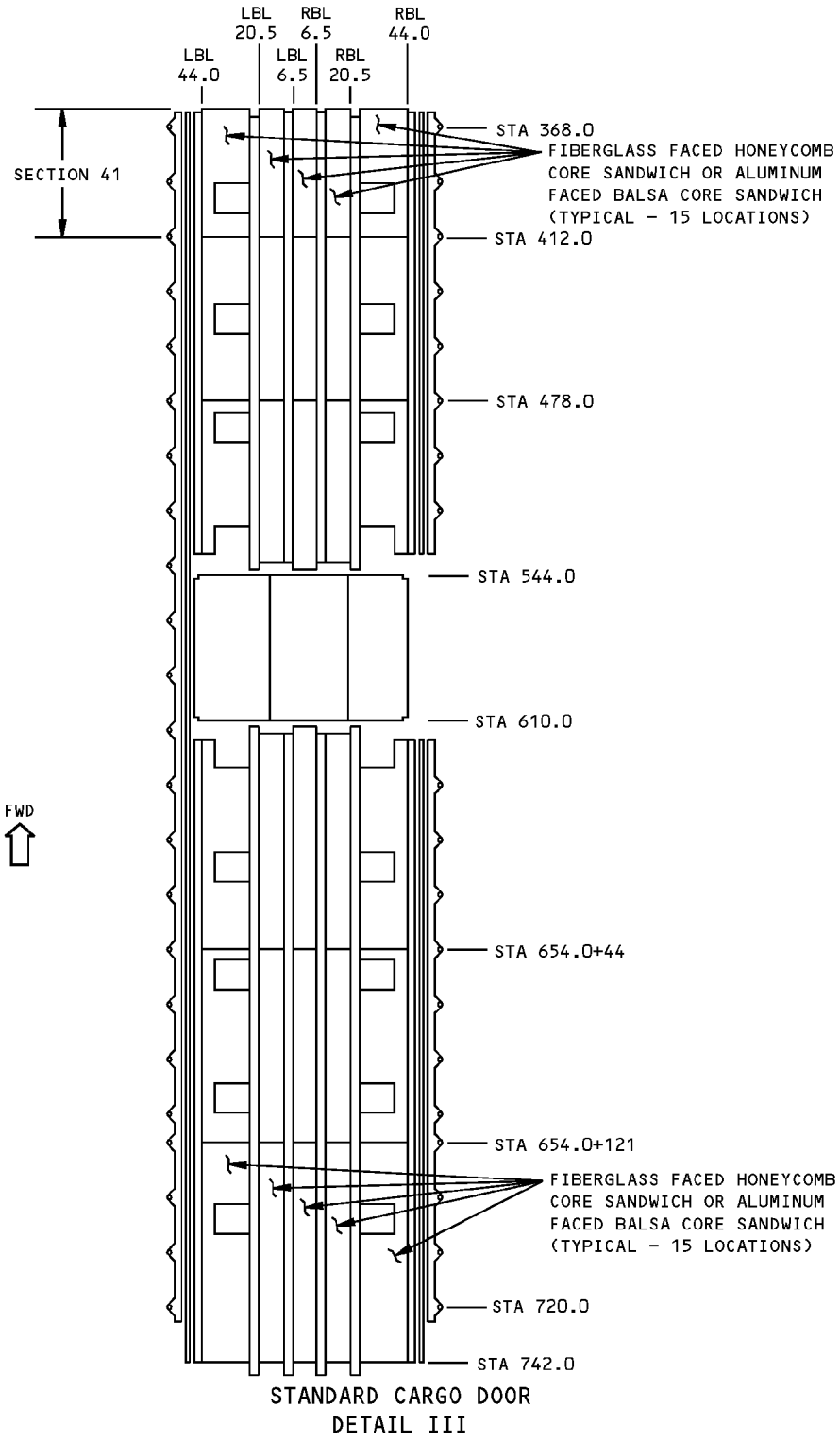


DETAIL I

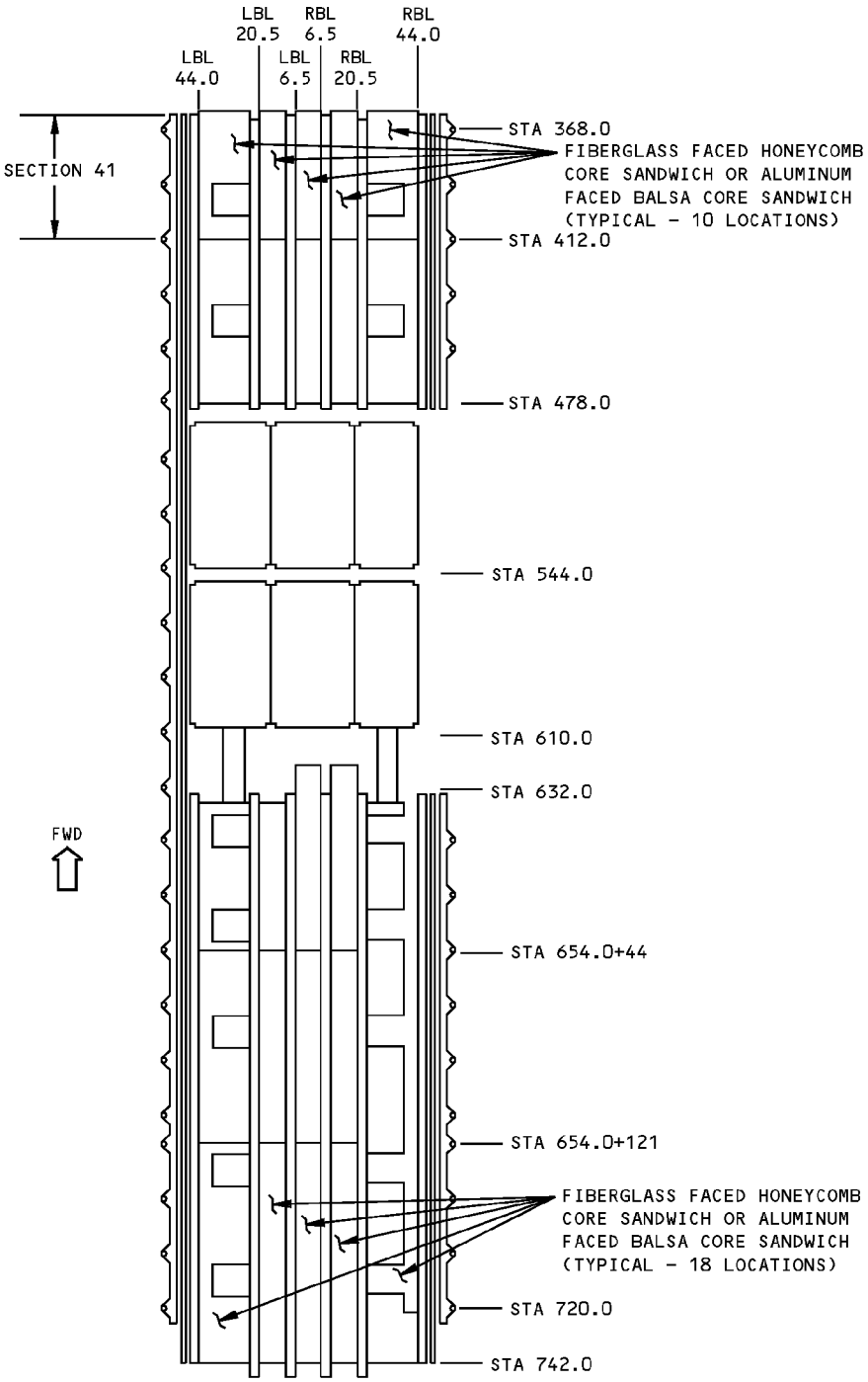


DETAIL II

Section 43 - Cargo Floor Panels Allowable Damage
Figure 101 (Sheet 2 of 4)



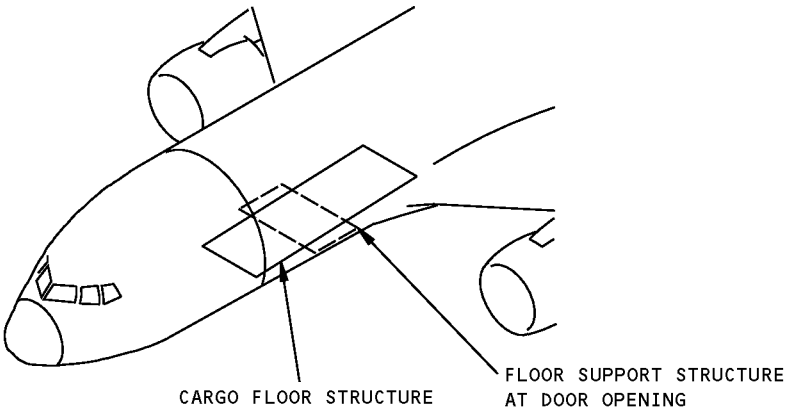
Section 43 - Cargo Floor Panels Allowable Damage
Figure 101 (Sheet 3 of 4)



LARGE CARGO DOOR
DETAIL IV

Section 43 - Cargo Floor Panels Allowable Damage
Figure 101 (Sheet 4 of 4)

REPAIR 1 - SECTION 43 CARGO COMPARTMENT STRUCTURE



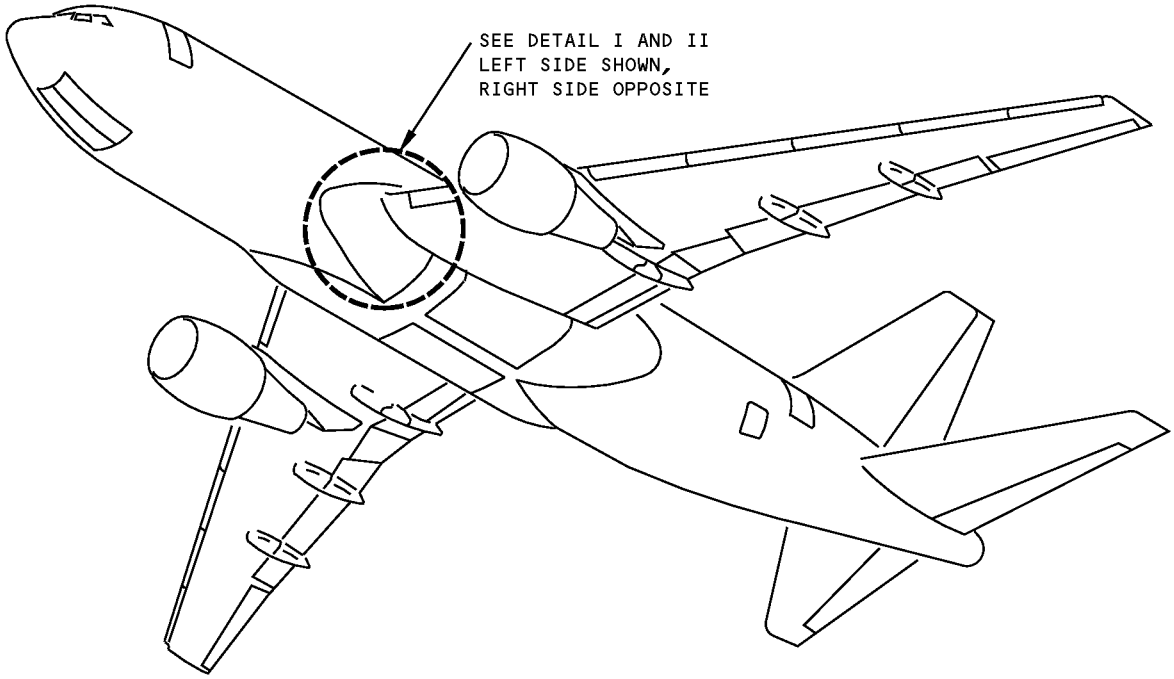
NOTES

- REFER TO SRM 51-70-11 FOR TYPICAL FORMED SECTION REPAIRS.
- REFER TO SRM 51-70-12 FOR TYPICAL EXTRUDED SECTION REPAIRS.
- REFER TO SRM 51-70-13 FOR TYPICAL WEB REPAIRS.
- REFER TO SRM 53-00-50 FOR COMPOSITE AND ALUMINUM FACED BALSA CORE FLOOR PANEL REPAIRS.
- REFER TO SRM 53-00-53 FOR ROLLER TRAY REPAIRS.
- REFER TO SRM 53-00-53 FOR BALL TRANSFER PANEL REPAIRS.
- THERE ARE NO TYPICAL REPAIRS FOR PARTS THAT ARE MADE FROM FORGINGS OR MACHINED PLATE. SPECIFIC REPAIRS TO THESE PARTS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE.

Section 43 Cargo Compartment Structure Repair
Figure 201

IDENTIFICATION 1 - SECTION 43 FAIRING SKIN

REFERENCE DRAWING
149T7100



NOTES

[A] PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION.

[B] GRAPHITE/EPOXY PER BMS 8-168, TYPE II, CLASS 2, STYLE 3K-70-PW, 250°F (121°C) CURE

[C] GRAPHITE/EPOXY TAPE PER BMS 8-168, TYPE II, CLASS 1, GRADE 190, 250°F (121°C) CURE

[D] NORMAL OR PARALLEL TO EDGE LINE OF PART WITHIN 15 DEG

[E] KEVLAR PREPREG PER BMS 8-219, STYLE 285, 250°F (121°C) CURE

[F] KEVLAR PREPREG PER BMS 8-219, STYLE 120 250°F (121°C) CURE

[G] MOISTURE BARRIER OF TEDLAR FILM ON INSIDE SURFACE OF PANEL

[H] FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 1581, CLASS III, GRADE 1

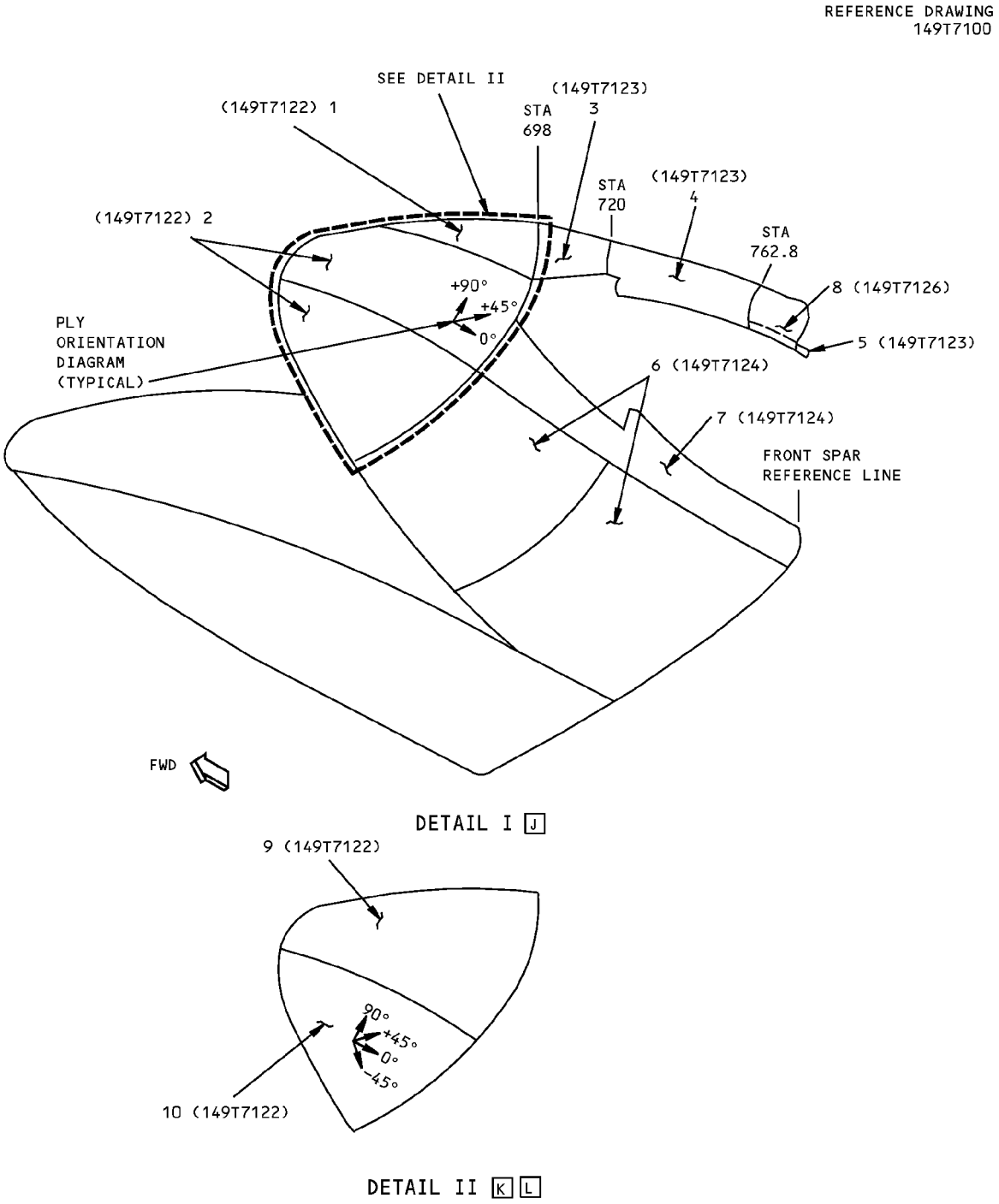
[I] MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS.

[J] FOR CUM LINE NUMBERS: 1 THRU 167, 204.

[K] FOR CUM LINE NUMBERS: 168 THRU 211 EXCEPT 204.

[L] FOR CUM LINE NUMBERS: 212 AND ON.

Section 43 Fairing Skin Identification
Figure 1 (Sheet 1 of 6)

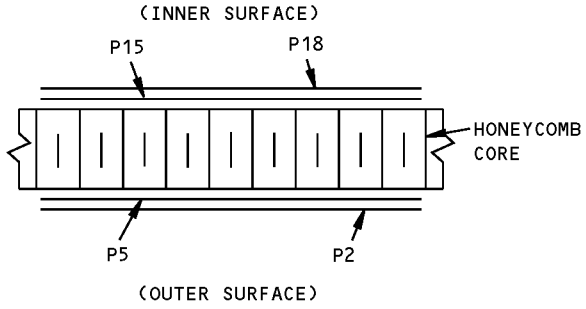


Section 43 Fairing Skin Identification
Figure 1 (Sheet 2 of 6)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	PANEL ASSY			
	SKIN		SEE DETAIL III	
	CORE	0.50	NON-METALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
2	PANEL ASSY			
	SKIN		SEE DETAIL III	
	CORE	1.00	NON-METALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
3	PANEL ASSY			
	SKIN		SEE DETAIL III	
	CORE	0.50	NON-METALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
4	PANEL ASSY			
	SKIN		SEE DETAIL IV	
	CORE	0.25	NON-METALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
5	PANEL ASSY			
	SKIN		SEE DETAIL IV	
	CORE	0.50	NON-METALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
6	PANEL ASSY			
	SKIN		SEE DETAIL V	
	CORE	1.00	NON-METALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
7	PANEL ASSY			
	SKIN		SEE DETAIL V	
	CORE	0.50	NON-METALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
8	COVER	0.080	CLAD 7075-T6	
9	PANEL ASSY			
	SKIN		SEE DETAIL III	
	CORE	1.00	NON-METALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
10	PANEL ASSY			
	SKIN		SEE DETAIL III	
	CORE	1.00	NON-METALLIC HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	

LIST OF MATERIALS FOR DETAIL I AND II

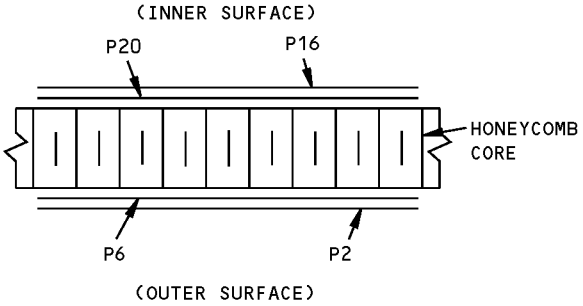
Section 43 Fairing Skin Identification
Figure 1 (Sheet 3 of 6)



SECTION THRU HONEYCOMB PANEL FOR ITEMS 1, 2 AND 3 [J]

ITEM NO.	PLY NO.	MATERIAL [G]	PLY ORIENTATION [A]
1, 2, 3,	P2	[E]	0° OR 90°
	P5	[B]	0° OR 90°
	P15	[B]	0° OR 90°
	P18	[F]	0° OR 90°

PLY TABLE [I] [J]



SECTION THRU HONEYCOMB PANEL FOR ITEMS 9 AND 10 [K] [L]

ITEM NO.	PLY NO.	MATERIAL [G]	PLY ORIENTATION [A]
9,10	P2	[E]	0° OR 90°
	P6	[B]	0° OR 90°
	P16	[B]	0° OR 90°
	P20	[F]	0° OR 90°

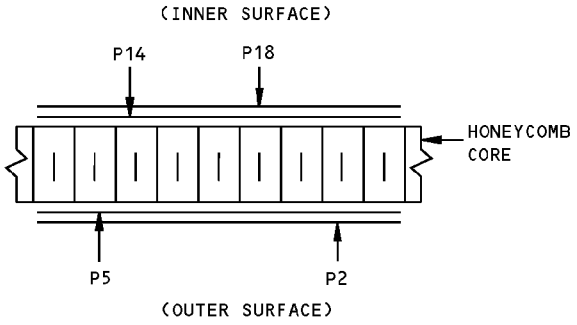
PLY TABLE [I] [K]

ITEM NO.	PLY NO.	MATERIAL [G]	PLY ORIENTATION [A]
9,10	P2	[H]	0° OR 90°
	P6	[B]	[D]
	P16	[B]	[D]
	P20	[F]	0°

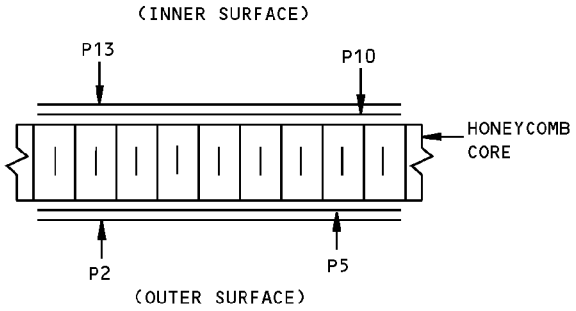
PLY TABLE [I] [L]

DETAIL III

Section 43 Fairing Skin Identification
Figure 1 (Sheet 4 of 6)



SECTION THRU HONEYCOMB PANEL
FOR ITEM 4



SECTION THRU HONEYCOMB PANEL
FOR ITEM 5

ITEM NO.	PLY NO.	MATERIAL [G]	PLY [A] ORIENTATION
4	P2	[E]	0° OR 90°
	P5	[B]	0° OR 90°
	P14	[E]	[D]
	P18	[F]	0° OR 90°
5	P2	[E]	0° OR 90°
	P5	[B]	0° OR 90°
	P10	[B]	0° OR 90°
	P13	[F]	0° OR 90°

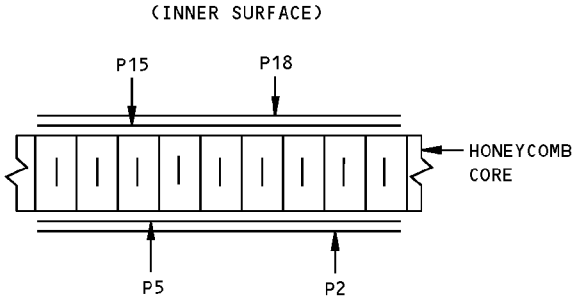
PLY TABLE [I] [J] [K]

ITEM NO.	PLY NO.	MATERIAL [G]	PLY [A] ORIENTATION
4	P2	[H]	0° OR 90°
	P5	[B]	0° OR 90°
	P14	[E]	[D]
	P18	[F]	0° OR 90°
5	P2	[H]	0° OR 90°
	P5	[B]	0° OR 90°
	P10	[B]	0° OR 90°
	P13	[F]	0° OR 90°

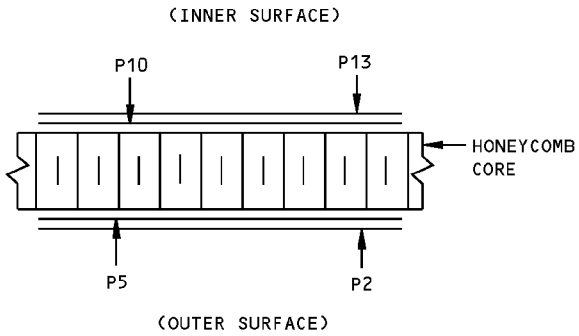
PLY TABLE [I] [L]

DETAIL IV

Section 43 Fairing Skin Identification
Figure 1 (Sheet 5 of 6)



SECTION THRU HONEYCOMB PANEL FOR ITEM 6



SECTION THRU HONEYCOMB PANEL FOR ITEM 7

ITEM NO.	PLY NO.	MATERIAL [G]	PLY [A] ORIENTATION
6	P2	[E]	0° OR 90°
	P5	[B]	0° OR 90°
	P15	[B]	0° OR 90°
	P18	[F]	0° OR 90°
7	P2	[E]	0° OR 90°
	P5	[B]	0° OR 90°
	P10	[B]	0° OR 90°
	P13	[F]	0° OR 90°

PLY TABLE [I] [J] [K]

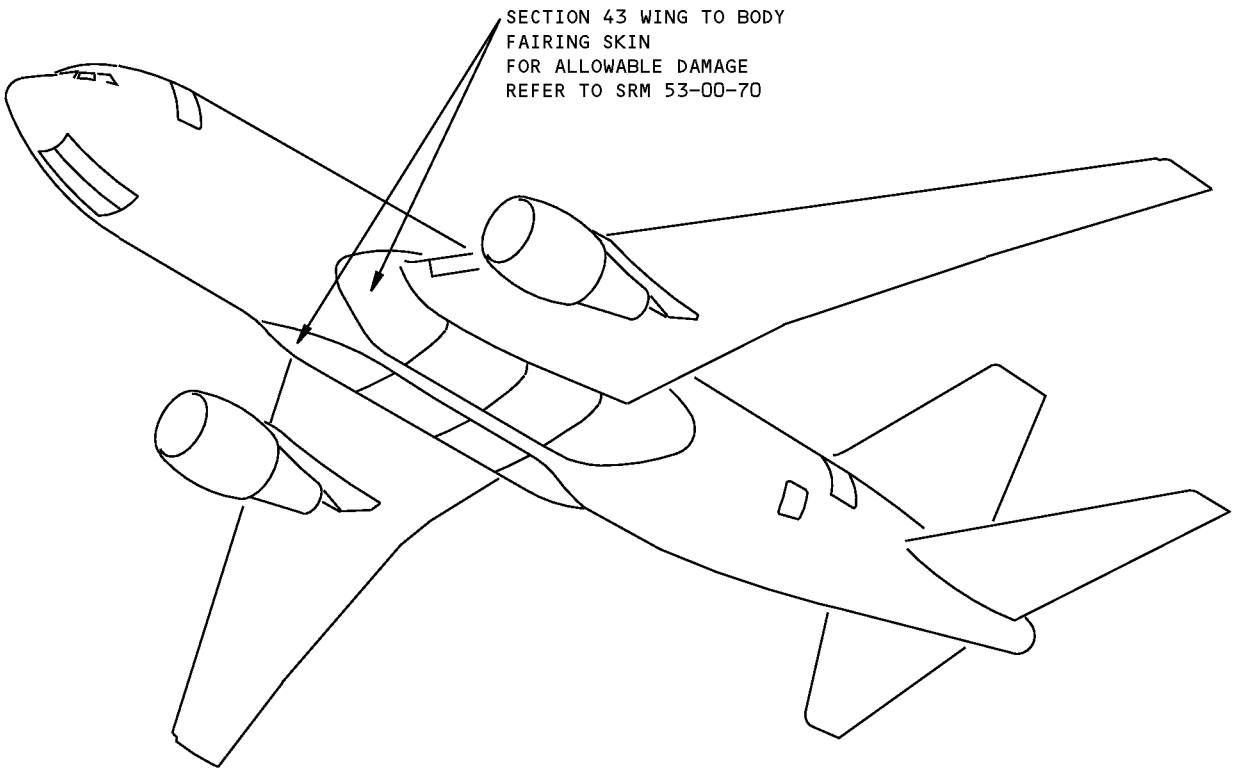
ITEM NO.	PLY NO.	MATERIAL [G]	PLY [A] ORIENTATION
6	P2	[H]	0° OR 90°
	P5	[B]	0° OR 90°
	P15	[B]	0° OR 90°
	P18	[F]	0° OR 90°
7	P2	[H]	0° OR 90°
	P5	[B]	0° OR 90°
	P10	[B]	0° OR 90°
	P13	[F]	0° OR 90°

PLY TABLE [I] [L]

DETAIL V

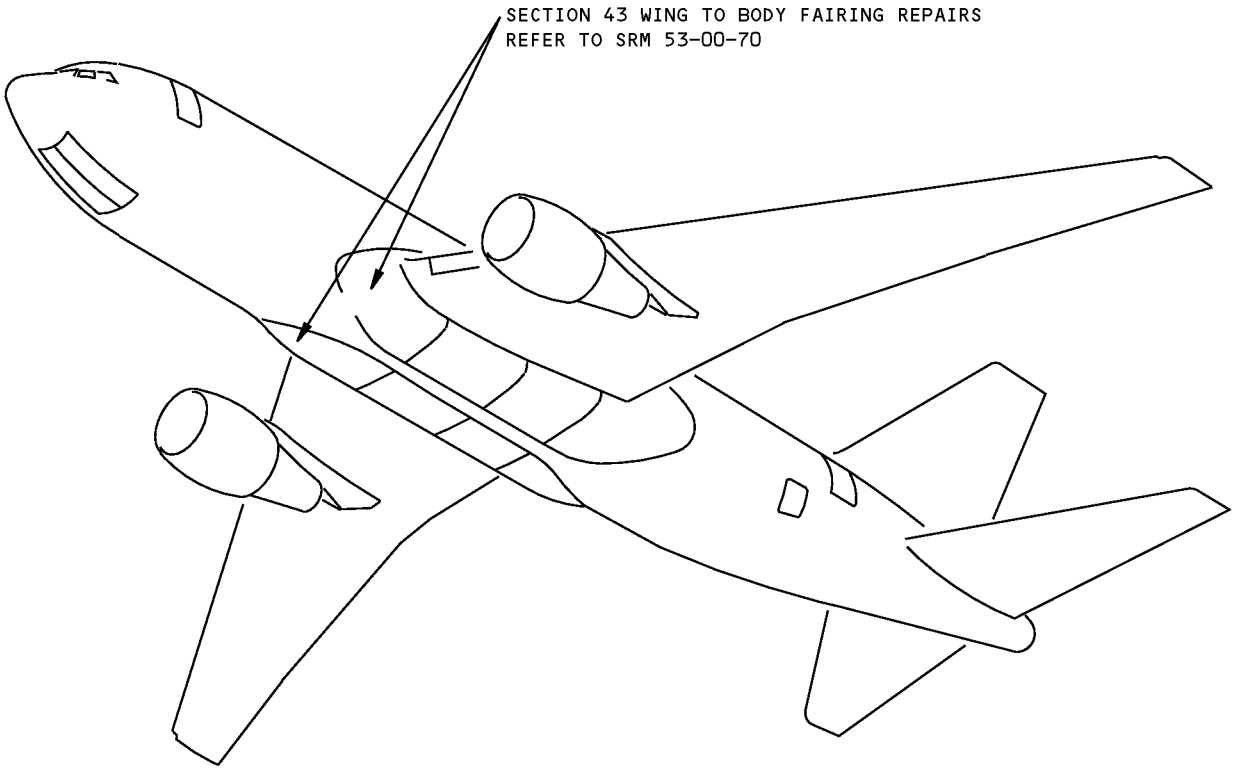
Section 43 Fairing Skin Identification
Figure 1 (Sheet 6 of 6)

ALLOWABLE DAMAGE 1 - SECTION 43 WING TO BODY FAIRING SKIN



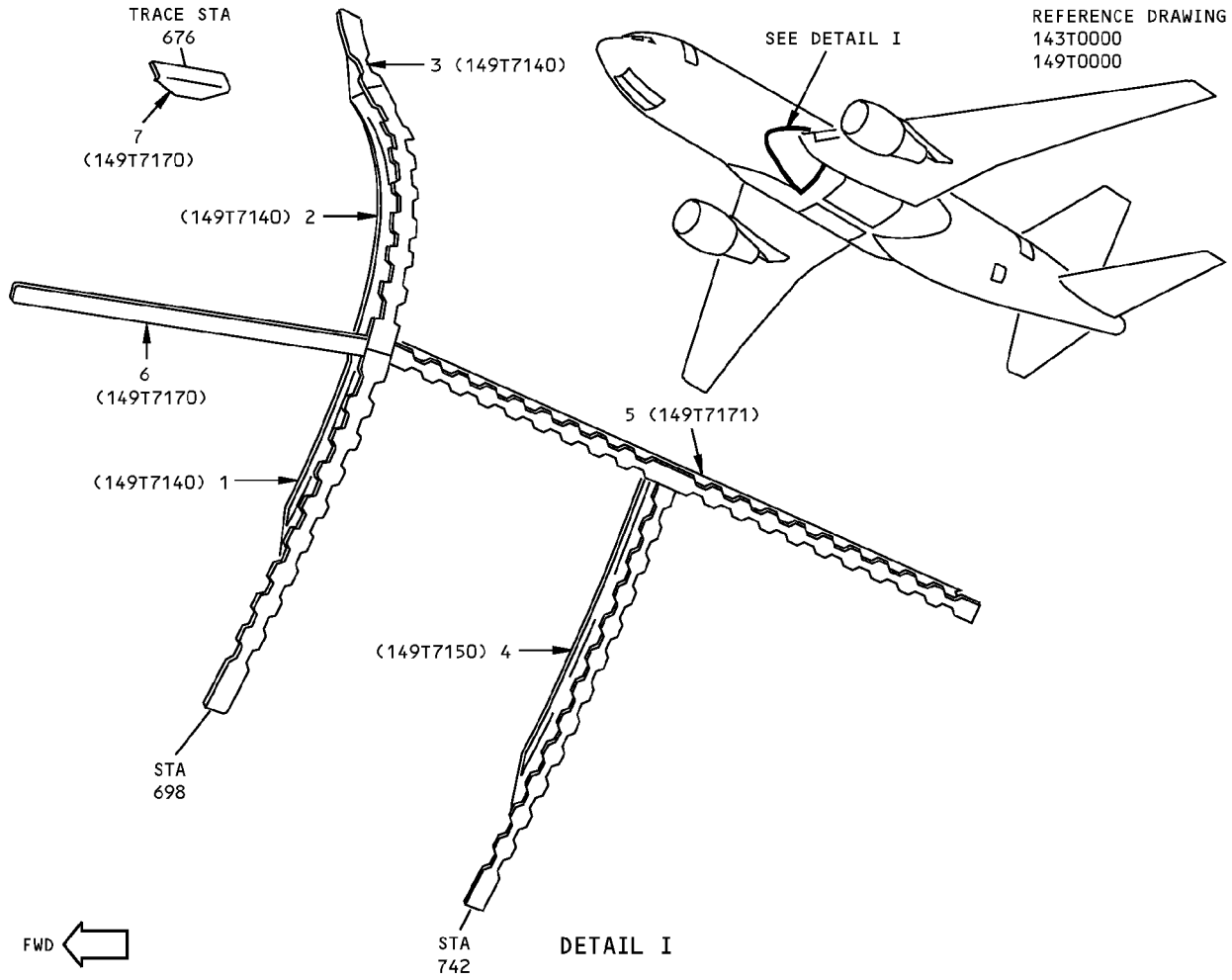
Section 43 Wing to Body Fairing Skin Allowable Damage
Figure 101

REPAIR 1 - SECTION 43 - WING TO BODY FAIRING SKIN



Section 43 - Wing to Body Fairing Skin Repairs
Figure 201

IDENTIFICATION 1 - WING-TO-BODY FAIRING STRUCTURE - SECTION 43

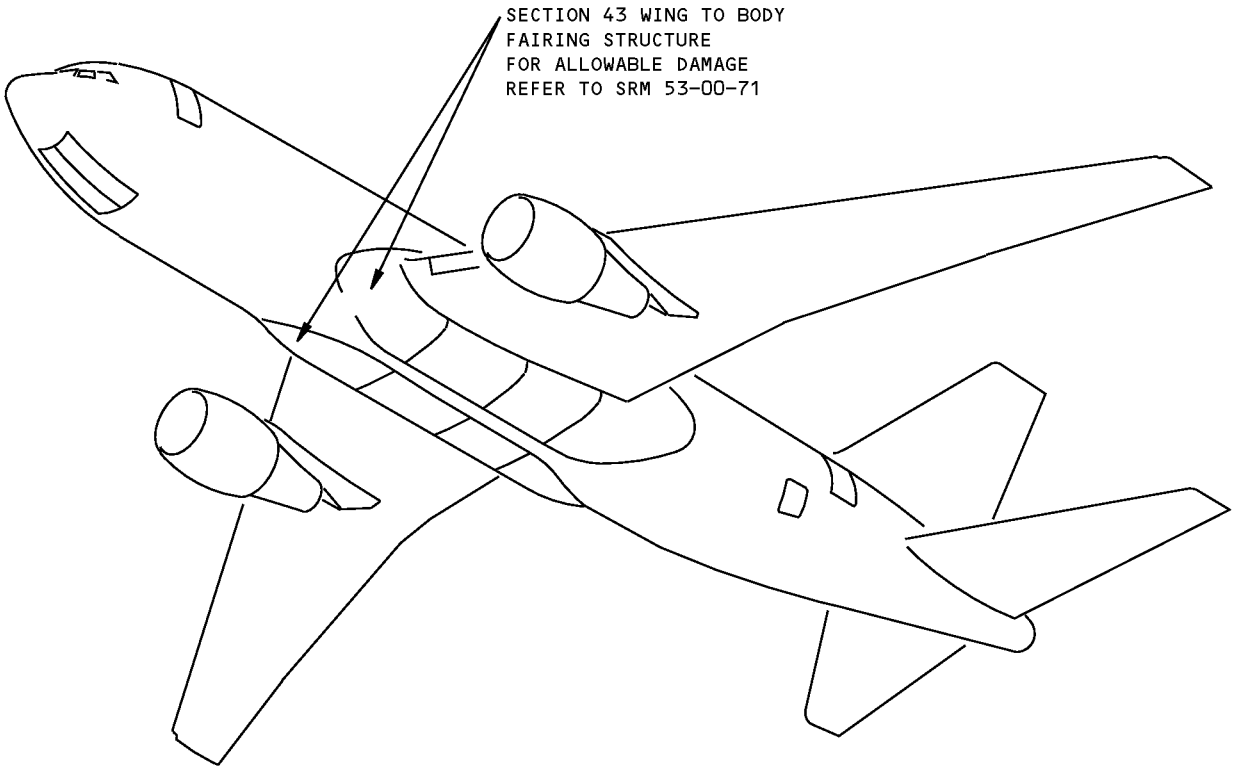


ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSEMBLY			
	INNER CHORD		BAC1505-100832 7075-T6	
	WEB	0.040	CLAD 7075-T6	
	OUTER CHORD		BAC1506-3230 7075-T6	
2	FRAME ASSEMBLY			
	INNER CHORD		BAC1505-100832 7075-T6	
	WEB	0.063	CLAD 7075-T6	
	OUTER CHORD		BAC1506-3231 7075-T6	
3	FRAME ASSEMBLY			
	OUTER CHORD		BAC1506-3230 7075-T6	
4	FRAME		BAC1518-741 7075-T6	
5	INTERCOSTAL		BAC1517-2122 7075-T6	
6	INTERCOSTAL		BAC1506-3249 7075-T6	
7	ANGLE	0.080	CLAD 7075-T6	

LIST OF MATERIALS

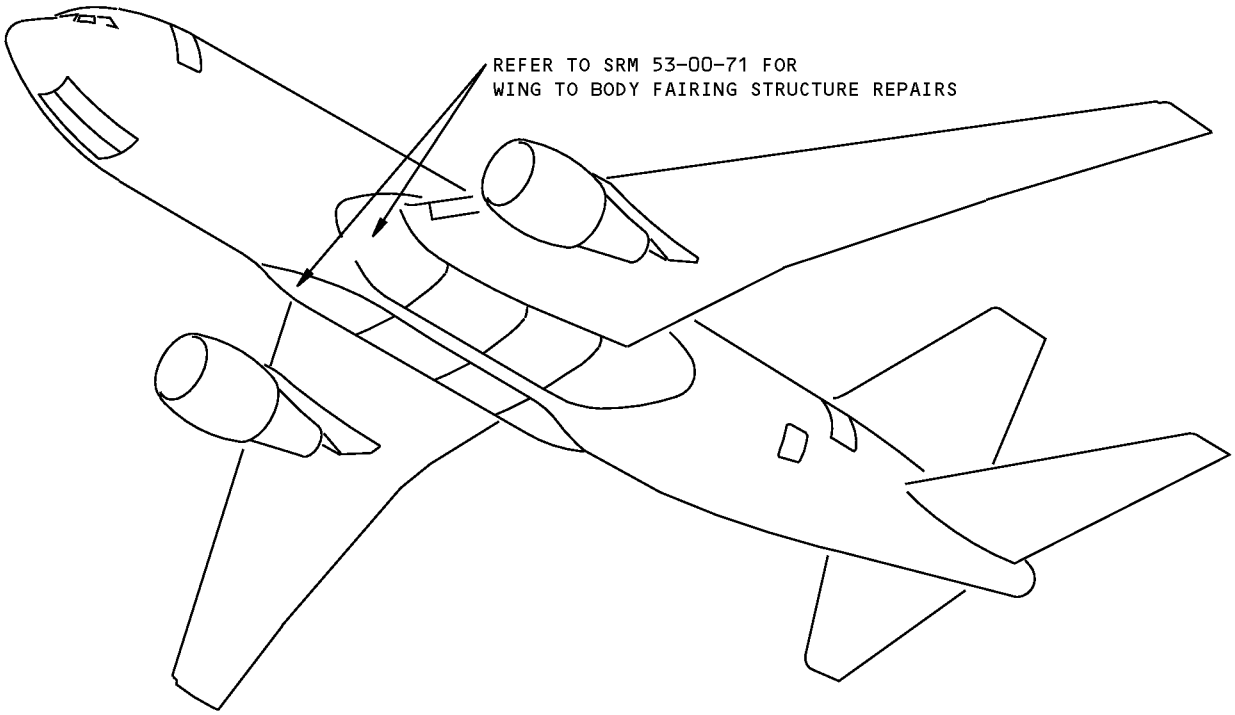
Wing-to-Body Fairing Structure Identification - Section 43
Figure 1

ALLOWABLE DAMAGE 1 - SECTION 43 - WING TO BODY FAIRING STRUCTURE



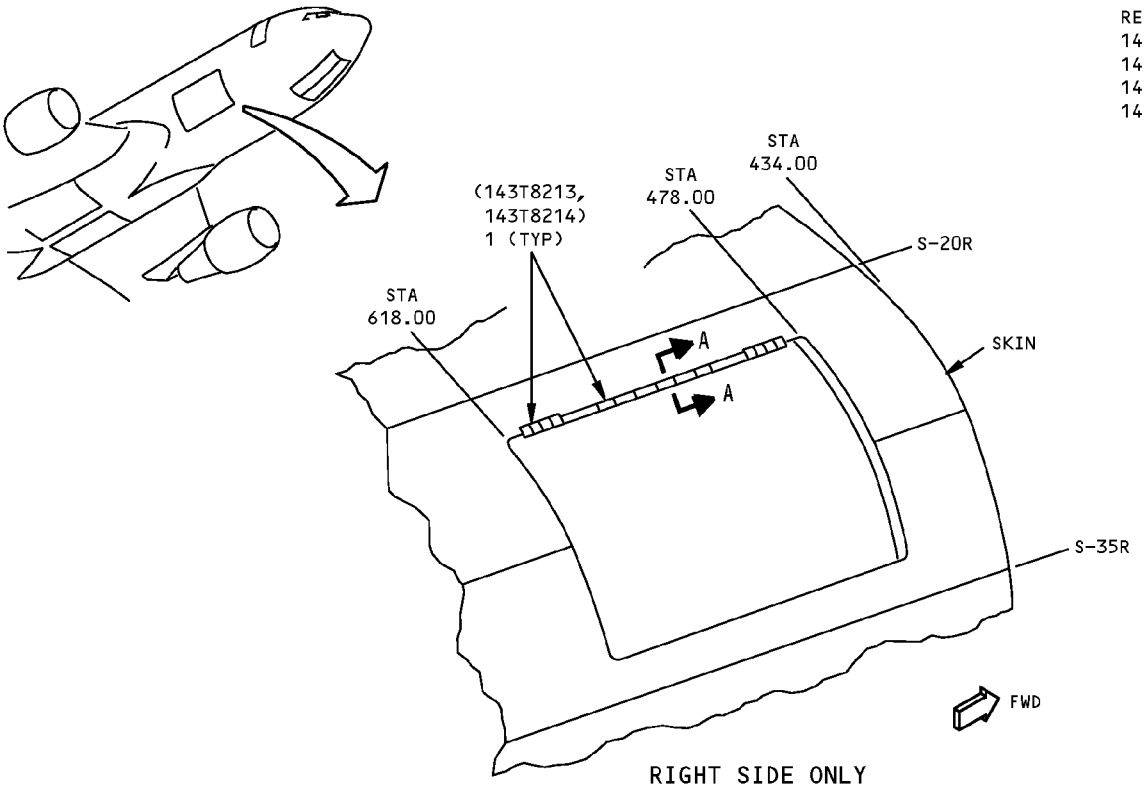
Section 43 - Allowable Damage - Wing to Body Fairing Structure
Figure 101

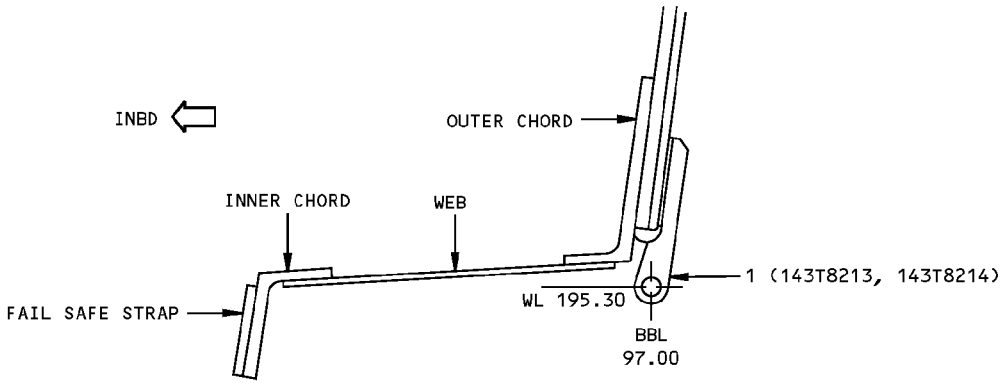
REPAIR 1 - SECTION 43 - WING TO BODY FAIRING STRUCTURE



Section 43 - Wing to Body Fairing Structure Repairs
Figure 201

IDENTIFICATION 1 - SECTION 43 - LARGE CARGO DOOR ATTACH FITTINGS





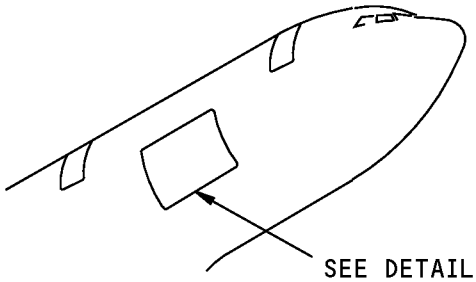
SECTION A-A THRU UPPER SILL

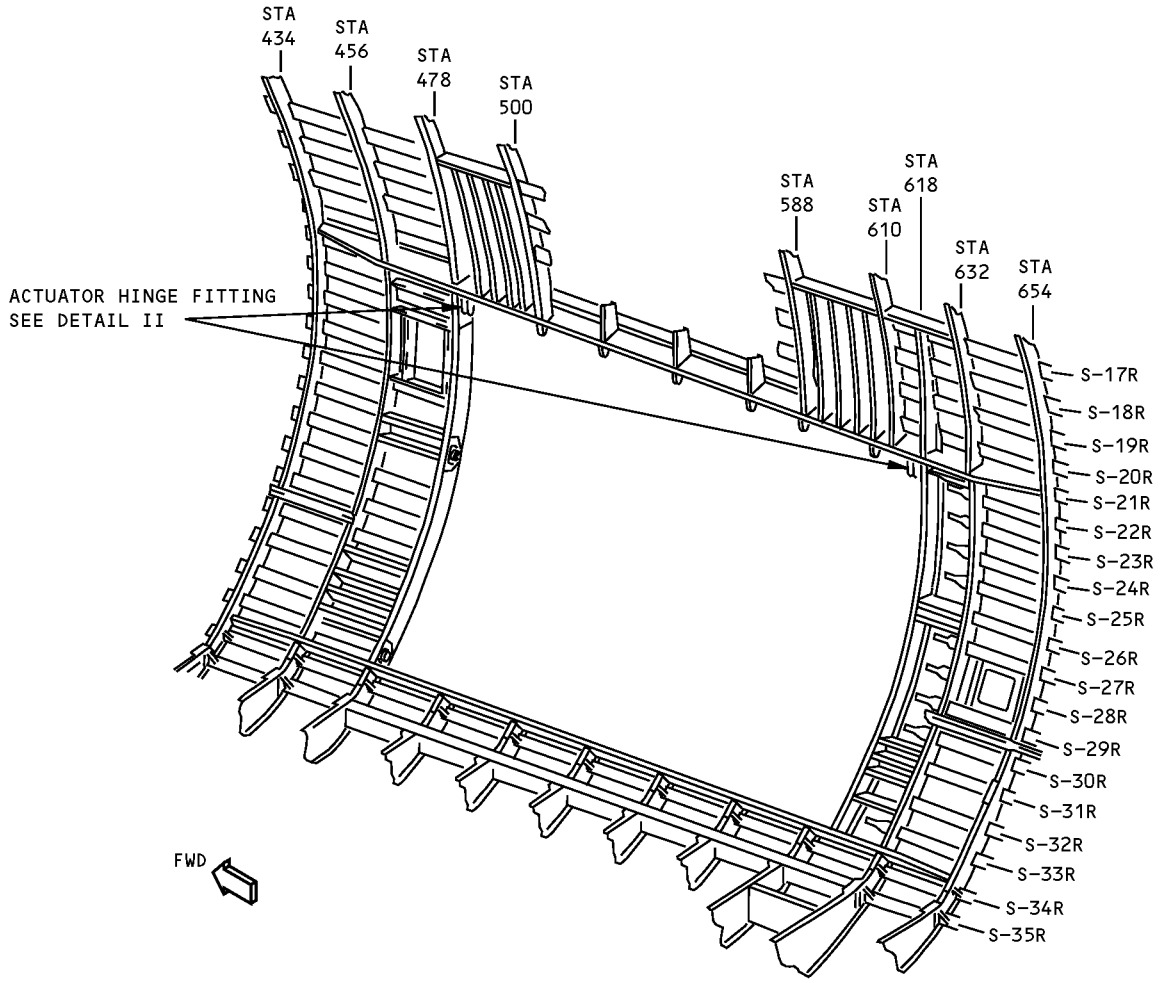
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	HINGE FITTINGS		15-5PH CRES FORGING HEAT-TREAT 180-200 KSI	

LIST OF MATERIAL

Section 43 - Large Cargo Door Attach Fittings Identification
Figure 1

ALLOWABLE DAMAGE 1 - SECTION 43 - ACTUATOR HINGE FITTING - LARGE CARGO DOOR

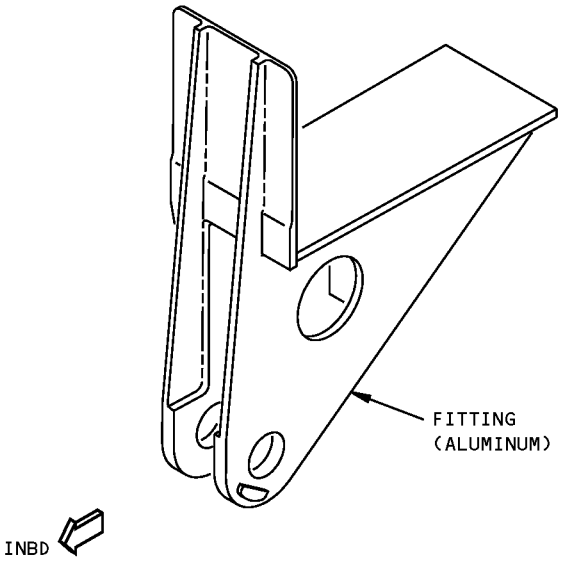




LARGE CARGO DOOR
DETAIL I

LIST OF MATL

Section 43 - Actuator Hinge Fitting Allowable Damage - Large Cargo Door
Figure 101 (Sheet 1 of 3)



ACTUATOR HINGE FITTING
DETAIL II

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
ACTUATOR HINGE FITTING	[A]	[B]	NOT PERMITTED	NOT PERMITTED

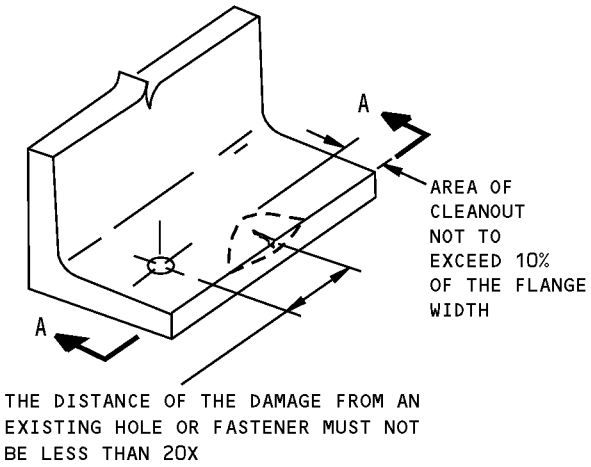
NOTES

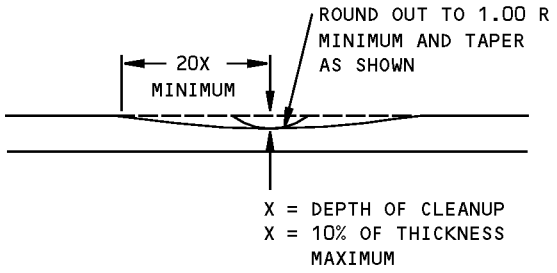
- DAMAGE
  - THAT OCCURS TO A PRINCIPAL STRUCTURAL ELEMENT (PSE) AS DEFINED IN SRM 51-00-04, AND
  - THAT IS WITHIN THE ALLOWABLE DAMAGE LIMITS OF THE BOEING SRM, DOES NOT HAVE AN EFFECT ON THE DAMAGE TOLERANCE PROPERTIES OF THE PSE. THEREFORE, INITIAL INSPECTION PROGRAMS REMAIN EFFECTIVE.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAIL III.

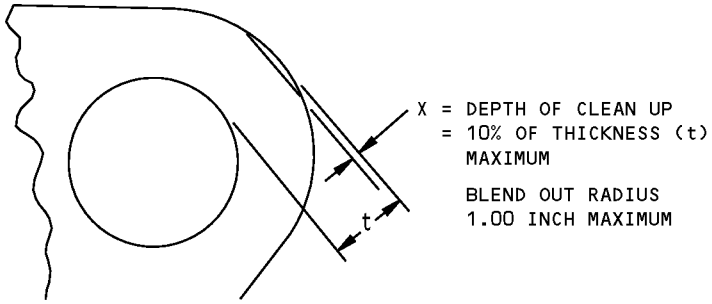
[B] FOR EDGE DAMAGE SEE DETAIL III. FOR LUG DAMAGE SEE DETAIL IV. FOR OTHER DAMAGE SEE DETAIL V. DAMAGE IS NOT PERMITTED NEAR BUSHINGS.

Section 43 - Actuator Hinge Fitting Allowable Damage - Large Cargo Door
Figure 101 (Sheet 2 of 3)



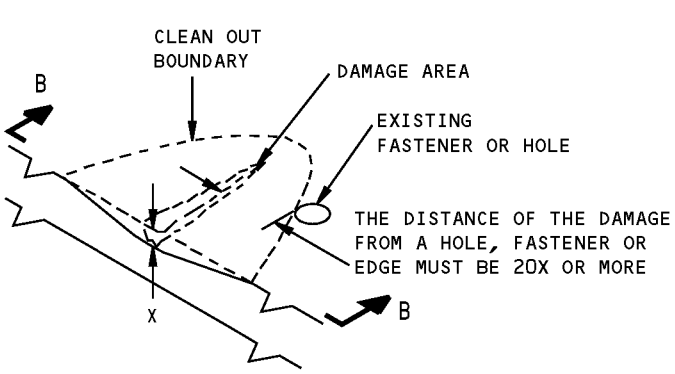


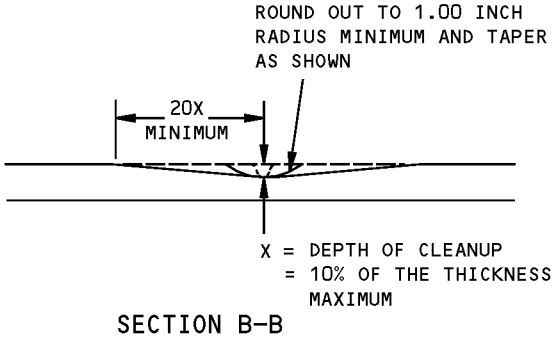
REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE
DETAIL III



DAMAGE CLEANUP FOR EDGES OF LUG

DETAIL IV



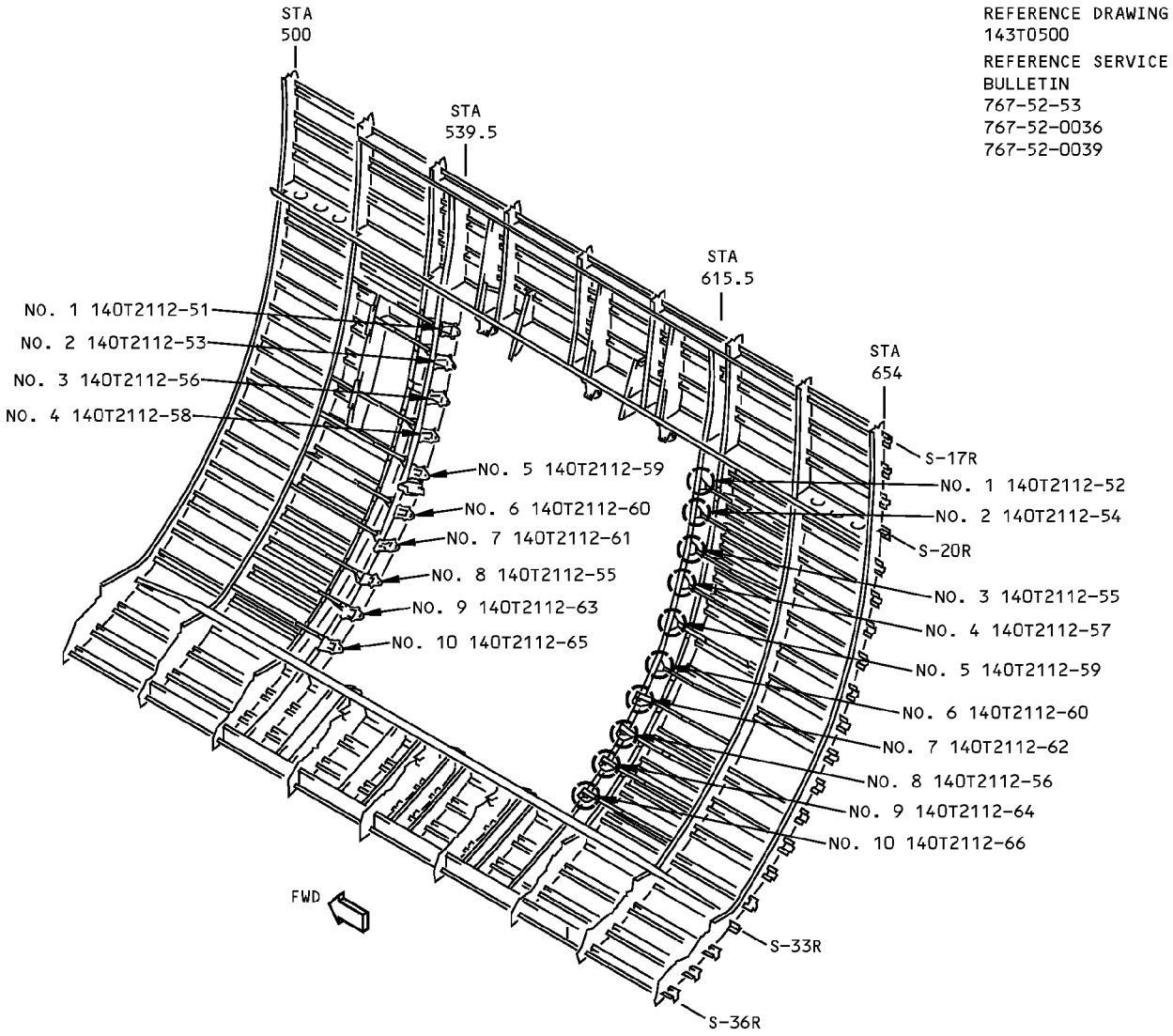


REMOVAL OF NICK, GOUGE, AND SCRATCH DAMAGE ON A SURFACE

DETAIL V

Section 43 - Actuator Hinge Fitting Allowable Damage - Large Cargo Door
Figure 101 (Sheet 3 of 3)

ALLOWABLE DAMAGE 2 - SECTION 43 - CARGO DOOR FITTINGS



LOCATION AND PART NUMBERS OF DOOR STOP FITTINGS

DESCRIPTION	CRACKS	NICKS, GOUGES, SCRATCHES AND CORROSION	DENTS	HOLES AND PUNCTURES
DOOR STOP FITTING	NOT PERMITTED	A B	NOT PERMITTED	NOT PERMITTED

ALLOWABLE DAMAGE FOR CARGO DOOR STOP FITTINGS

DETAIL I

Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 1 of 14)

NOTES

- ALL DIMENSIONS SHOWN ARE IN INCHES.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- AFTER THE CLEANUP, APPLY A CHEMICAL CONVERSION COATING TO THE BARE SURFACES. REFER TO SRM 51-20-01. THEN APPLY TWO COATS OF BMS 10-11, TYPE I PRIMER AND ONE COAT OF BMS 10-11, TYPE II FINISH.
- REFER TO SRM 51-20-06 FOR SHOT PEEN INTENSITIES REQUIRED WHEN YOU REMOVE THE DAMAGE

[A] SEE DETAIL II FOR ALLOWABLE DAMAGE LIMITS COMMON TO ALL DOOR STOP FITTINGS.

[B] REWORK LIMITS ARE RESTRICTED TO TWO ADJACENT DOOR STOP FITTINGS FOR EACH DOOR EDGE FRAME.

[C] SEE DETAILS VI TO XV FOR ALLOWABLE DAMAGE LIMITS APPLICABLE TO SPECIFIC DOOR STOP FITTINGS AT THIS LOCATION.

[D] DO THE FOLLOWING STEPS TO REMOVE DAMAGE:

CAUTION: MAKE SURE THE BEARING PLATE IS NOT DAMAGED AND IS FULLY SEATED AGAINST THE FITTING.

- REMOVE DAMAGE UP TO THE DEPTH SHOWN IN DETAILS VI TO XV WITH A 1.0 INCH (25 mm) RADIUS MINIMUM. TAPER OUT AT 20 X DEPTH. MAKE THE SURFACE FINISH 63 MICROINCHES Ra. MAKE SURE THE TRANSITION WITH THE ADJOINING SURFACES IS SMOOTH.
- DO A HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTION OF THE REPAIR AREA TO MAKE SURE ALL OF THE DAMAGE HAS BEEN REMOVED. REFER TO NDT PART 6, 51-00-01.
- SHOT PEEN AS SPECIFIED IN SRM 51-20-06
- APPLY A CHEMICAL CONVERSION COATING TO ALL BARE ALUMINUM SURFACES. REFER TO SRM 51-20-01
- APPLY TWO COATS OF BMS 10-11 TYPE I PRIMER TO THE REPAIR AREA.
- APPLY ONE COAT OF BMS 10-11 TYPE II FINISH TO THE REPAIR AREA

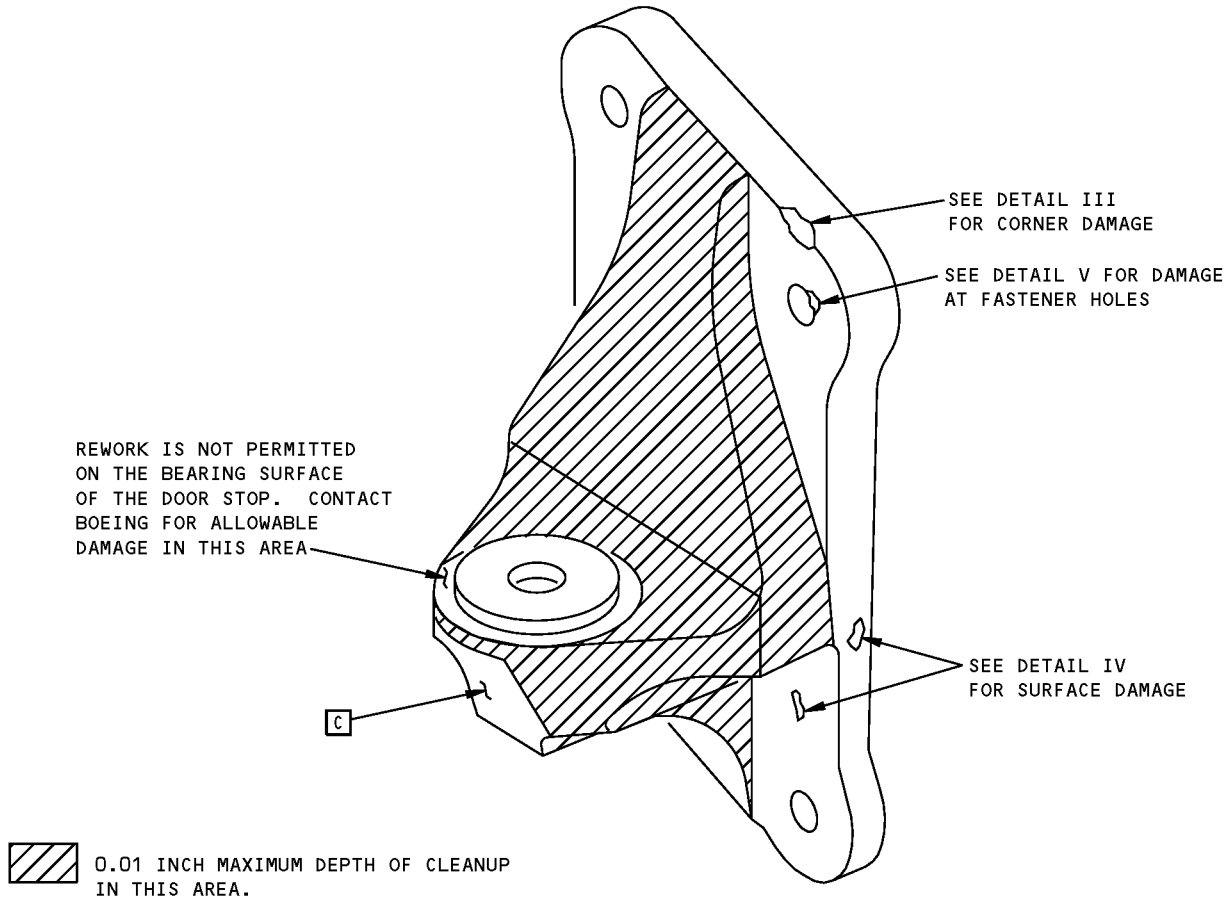
[E] CONTACT BOEING FOR LOCAL CHAMFERS AT THE EDGES OF THIS SURFACE WHICH ARE GREATER THAN THE DEPTH LIMIT SHOWN

[F] IF YOU REWORK THIS SURFACE, DO A LATERAL STOP GAP CHECK. THE AIRCRAFT MUST BE UNLOADED, AND ON IT'S LANDING GEAR, TO DO THIS CHECK. ADJUST ALL FOUR LATERAL STOPS. REFER TO AMM 52-34-00 FOR LATERAL CARGO DOOR AJUSTMENT.

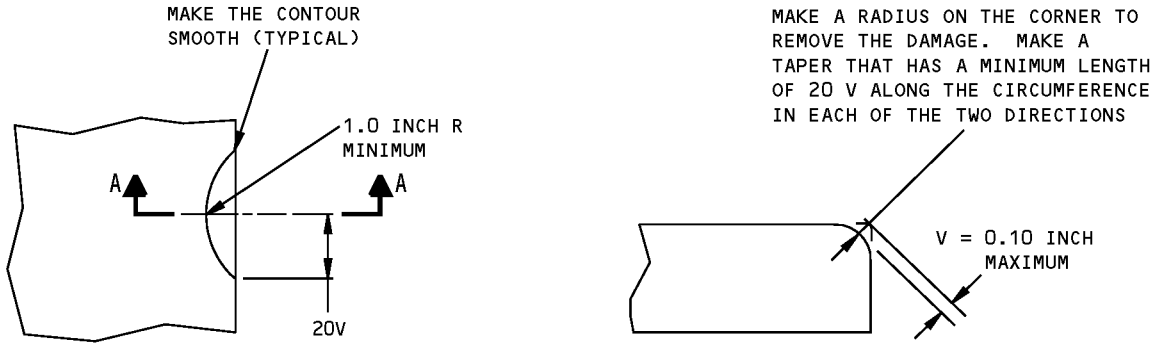
[G] KEEP A MINIMUM DISTANCE OF 0.040 INCH (1.02 mm) FROM THE EDGE OF THE BLENDOUT TO THE INBOARD FACE OF THE DOOR STOP FITTING. SEE SECTION D-D.

[H] DO NOT BLEND INTO THE SHADED SECTION OF THE FITTING. MAKE SURE THE BLENDED AREA IS LIMITED TO THE FLAT SURFACE NEAR THE FASTENER HOLE.

Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 2 of 14)



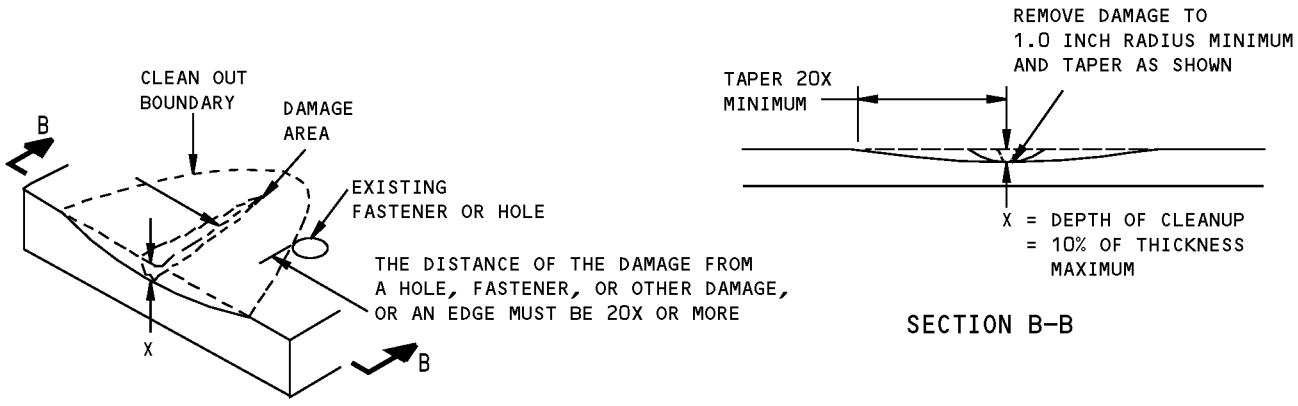
TYPICAL DOOR STOP
DETAIL II



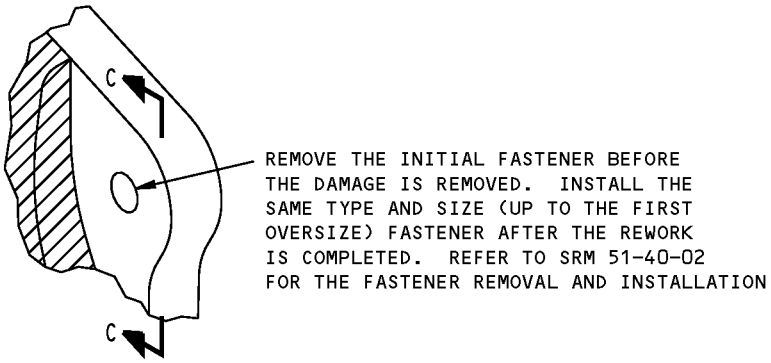
SECTION A–A

DETAIL III

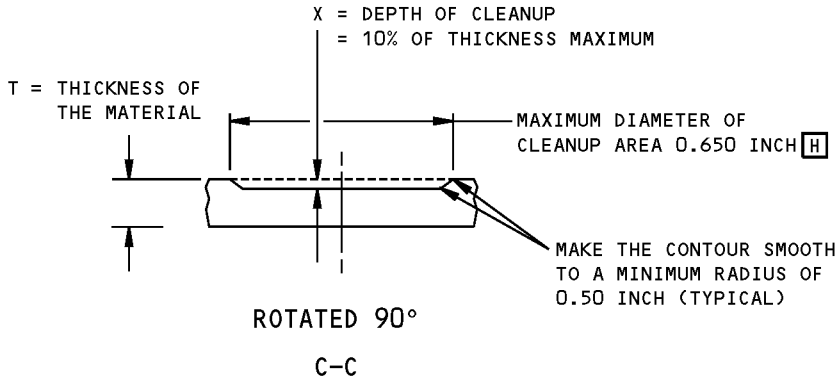
Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 3 of 14)



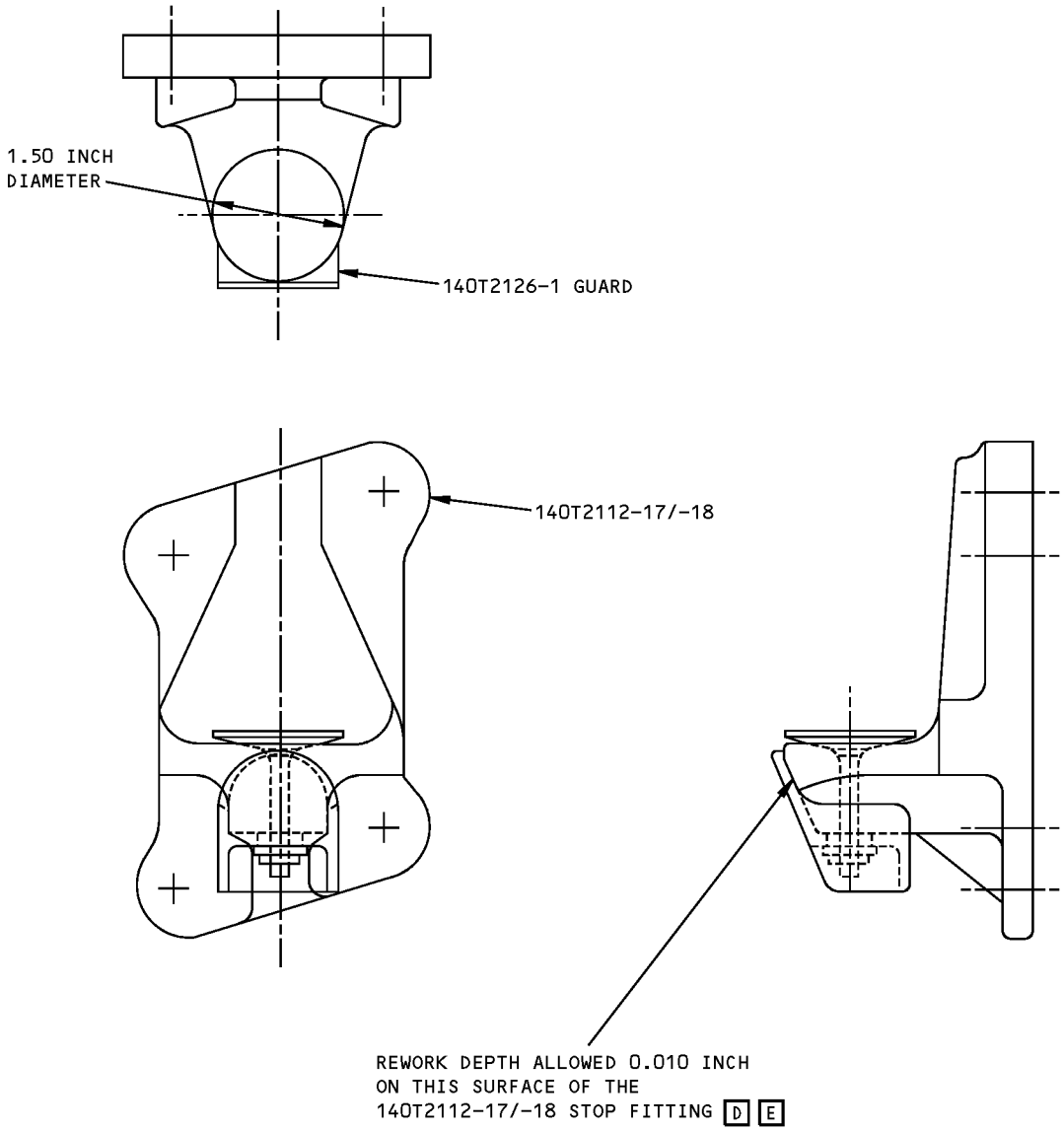
REMOVAL OF DAMAGED MATERIAL ON A SURFACE
DETAIL IV



REMOVAL OF DAMAGE AT A FASTENER HOLE
DETAIL V



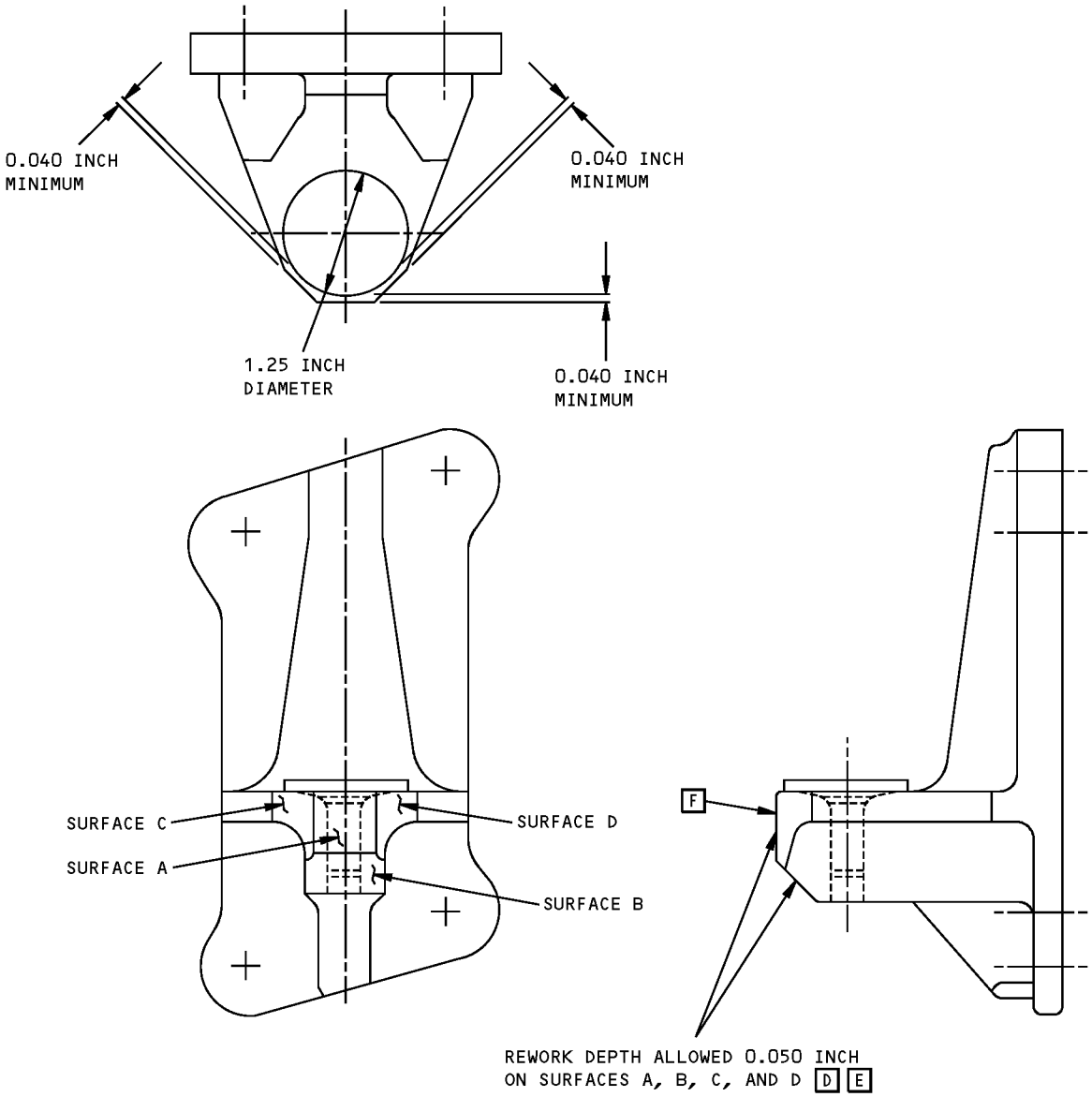
Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 4 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 1
PART NUMBER 140T2112-51/-52

DETAIL VI

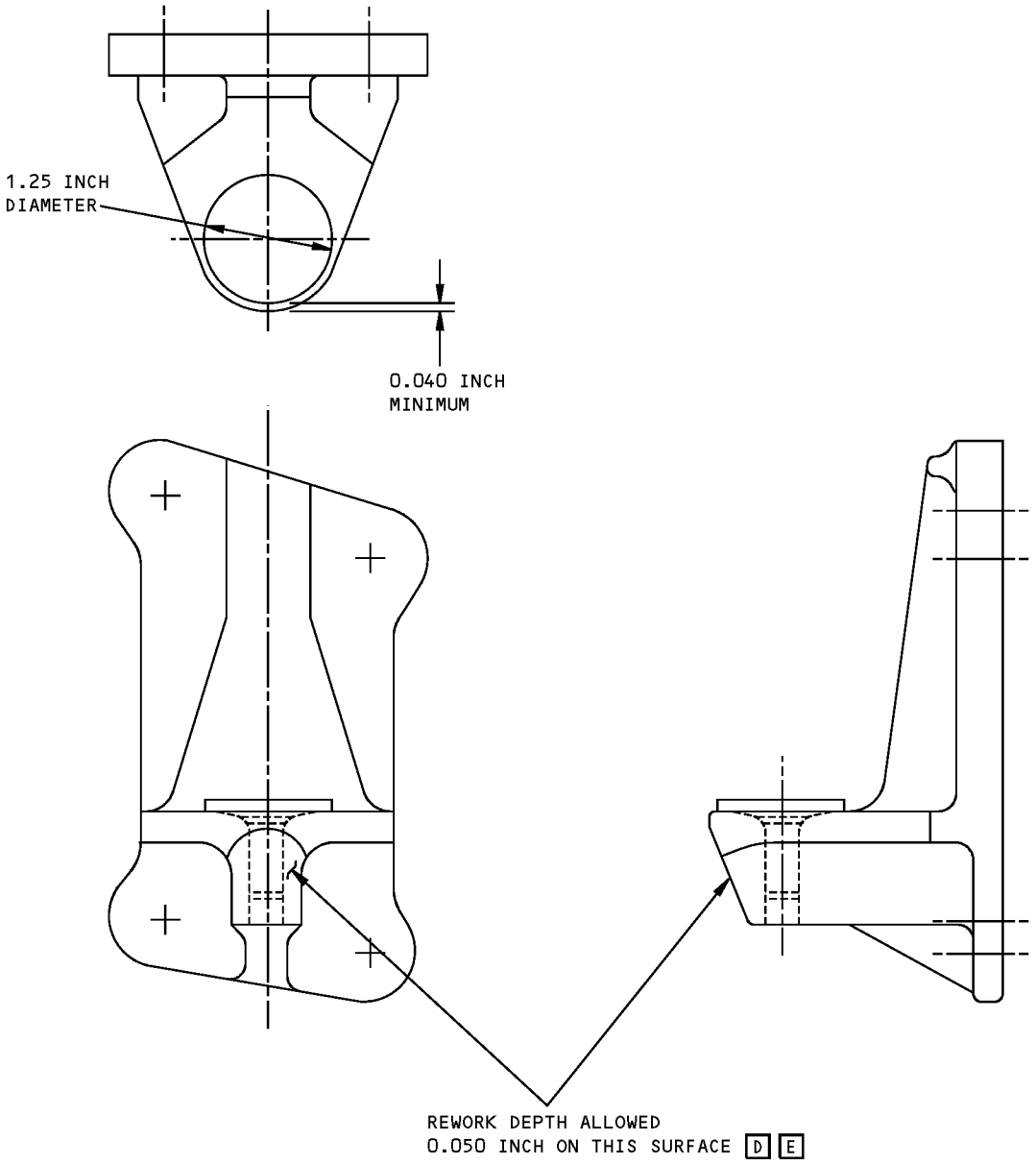
Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 5 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 2
PART NUMBER 140T2112-53/-54

DETAIL VII

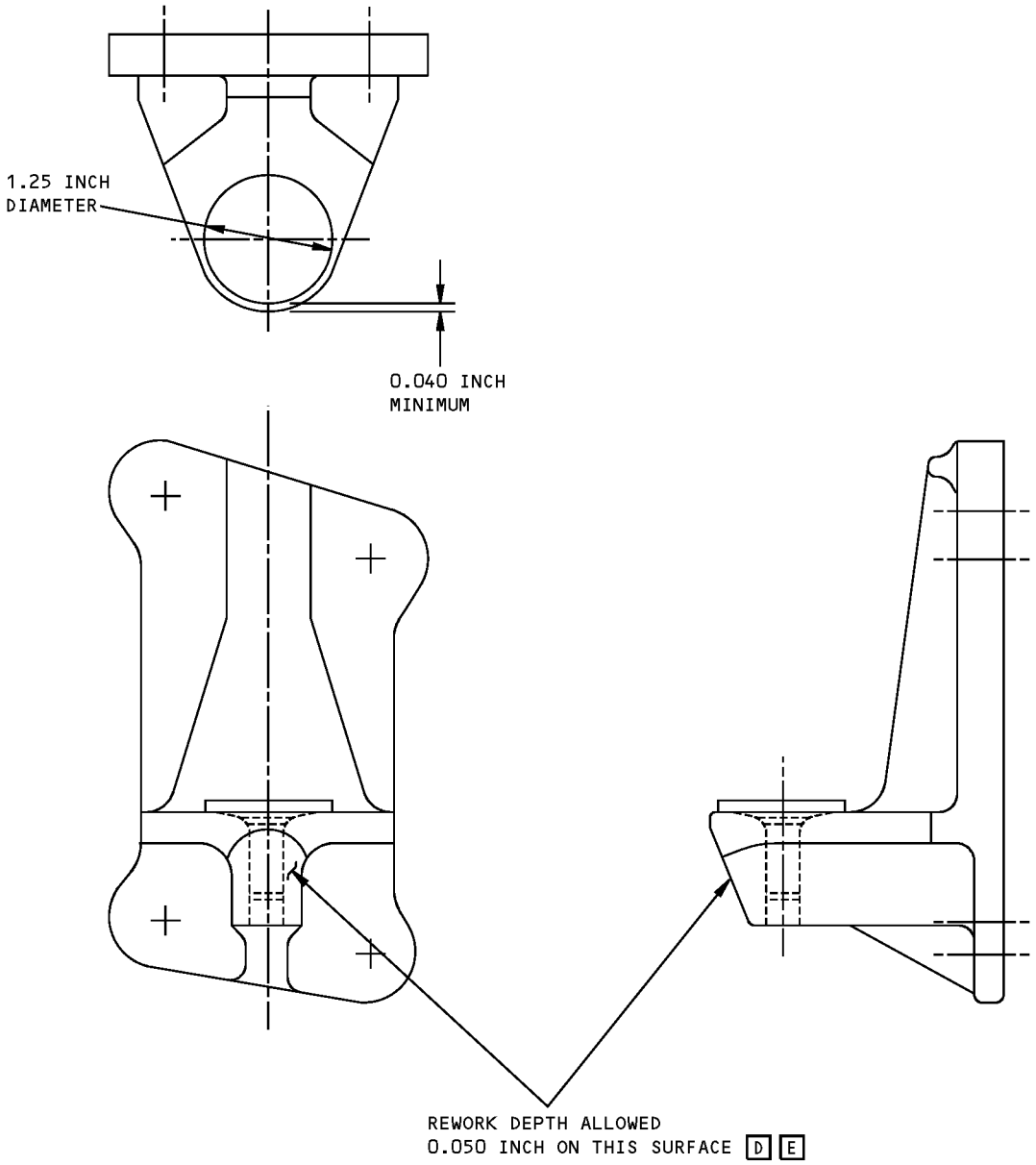
Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 6 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 3
PART NUMBER 140T2112-55/-56

DETAIL VIII

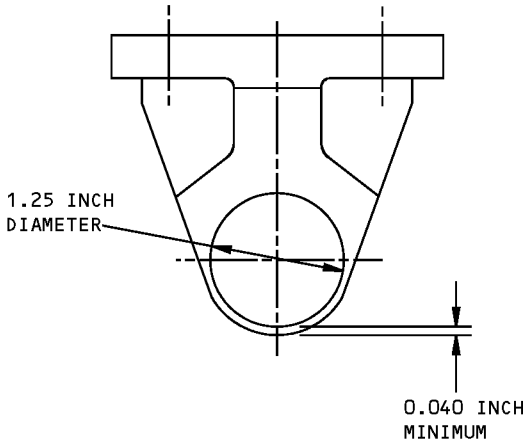
Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 7 of 14)

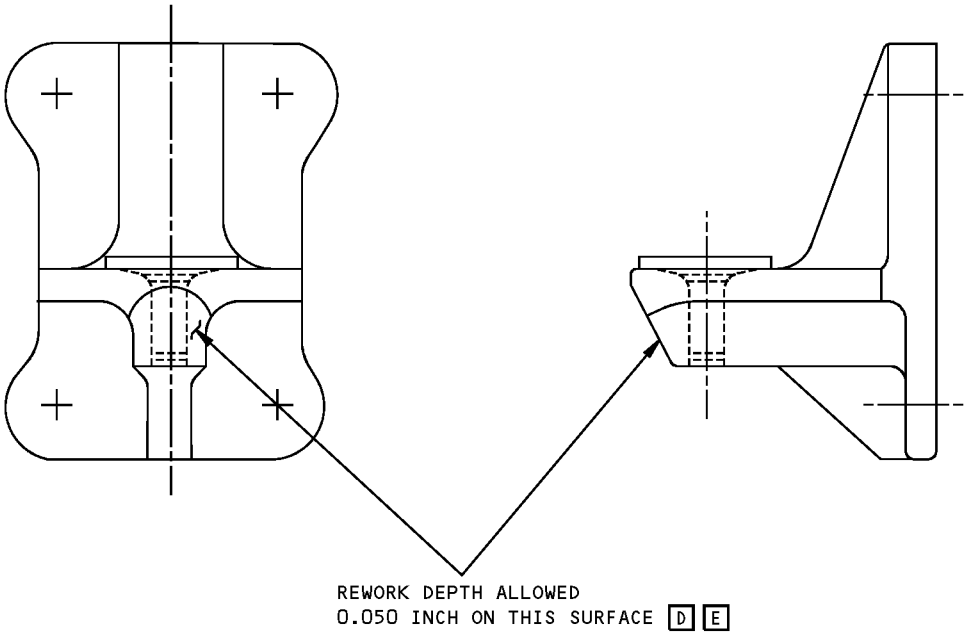


MAXIMUM REWORK LIMITS FOR STOP NUMBER 4
PART NUMBER 140T2112-57/-58

DETAIL IX

Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 8 of 14)

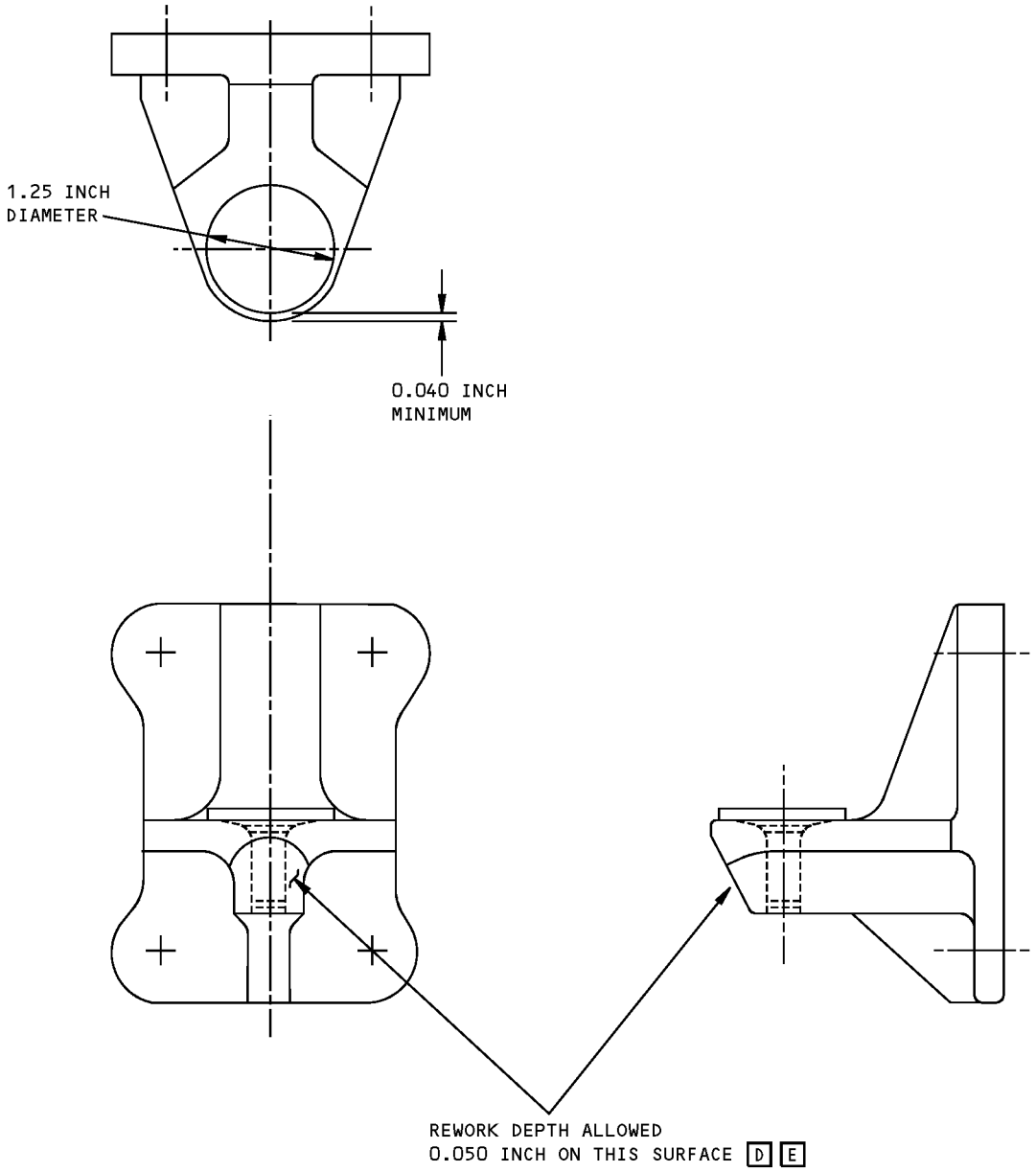




MAXIMUM REWORK LIMITS FOR STOP NUMBER 5
PART NUMBER 140T2112-59

DETAIL X

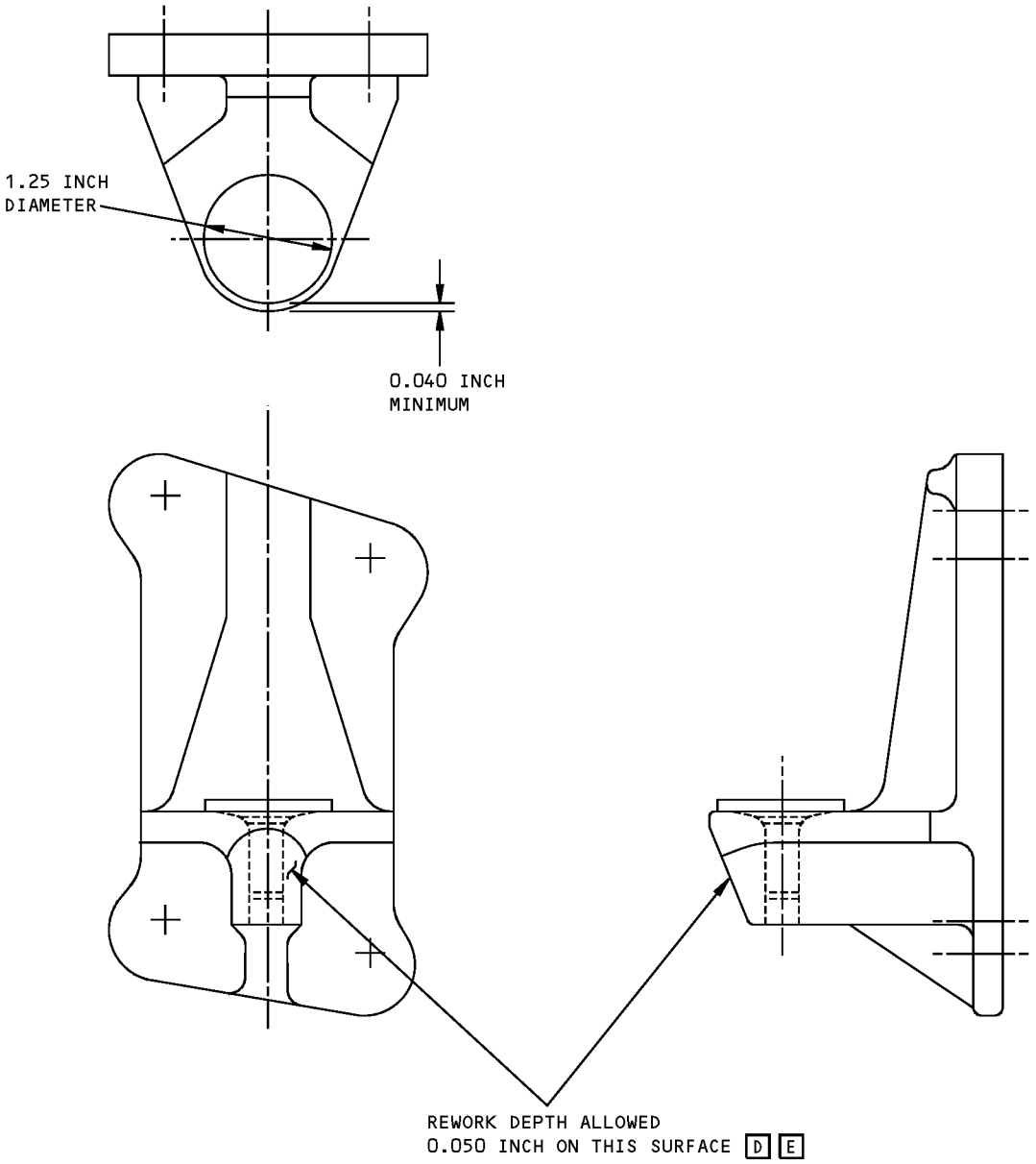
Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 9 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 6
PART NUMBER 140T2112-60

DETAIL XI

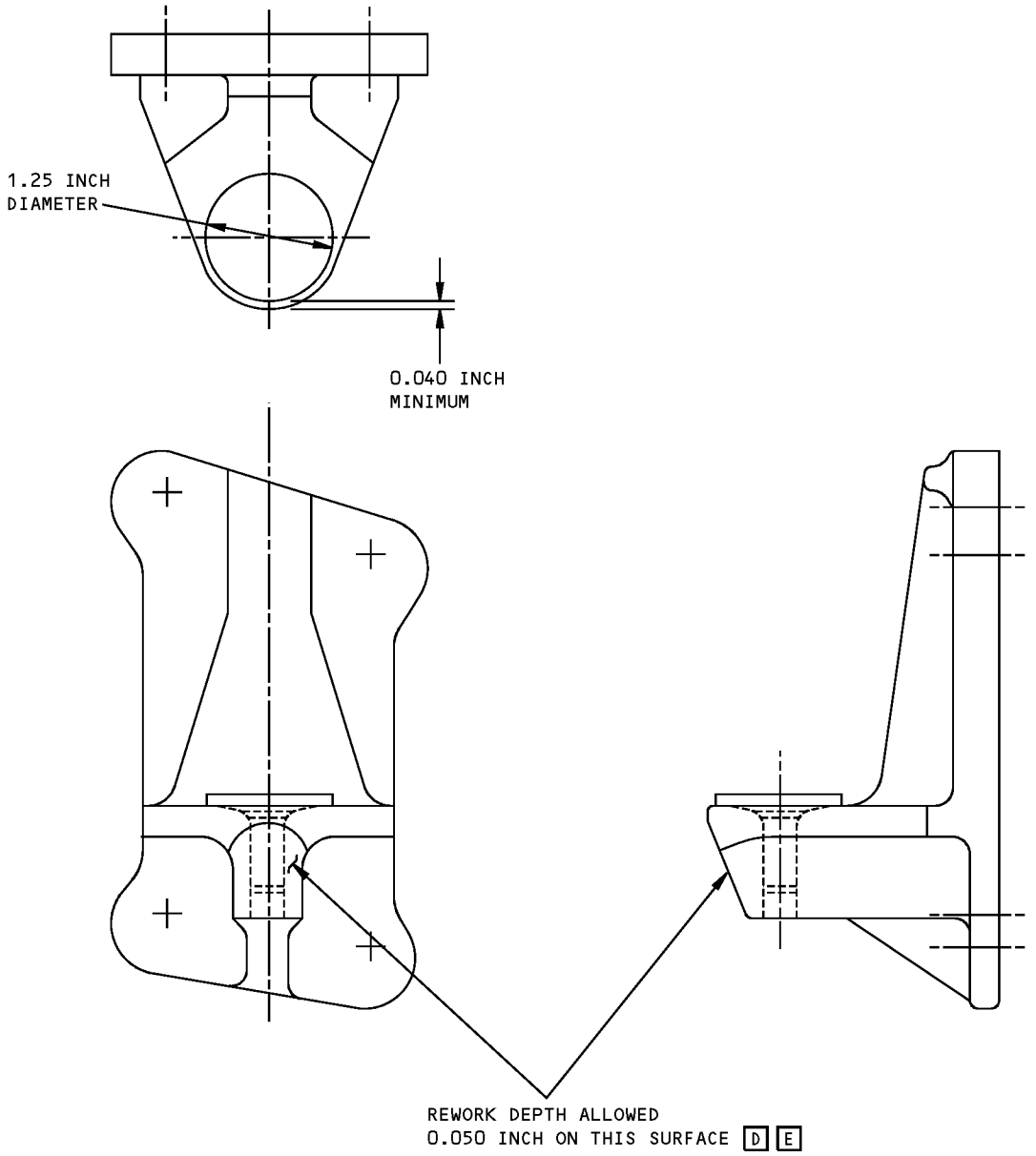
Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 10 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 7
PART NUMBER 140T2112-61/-62

DETAIL XII

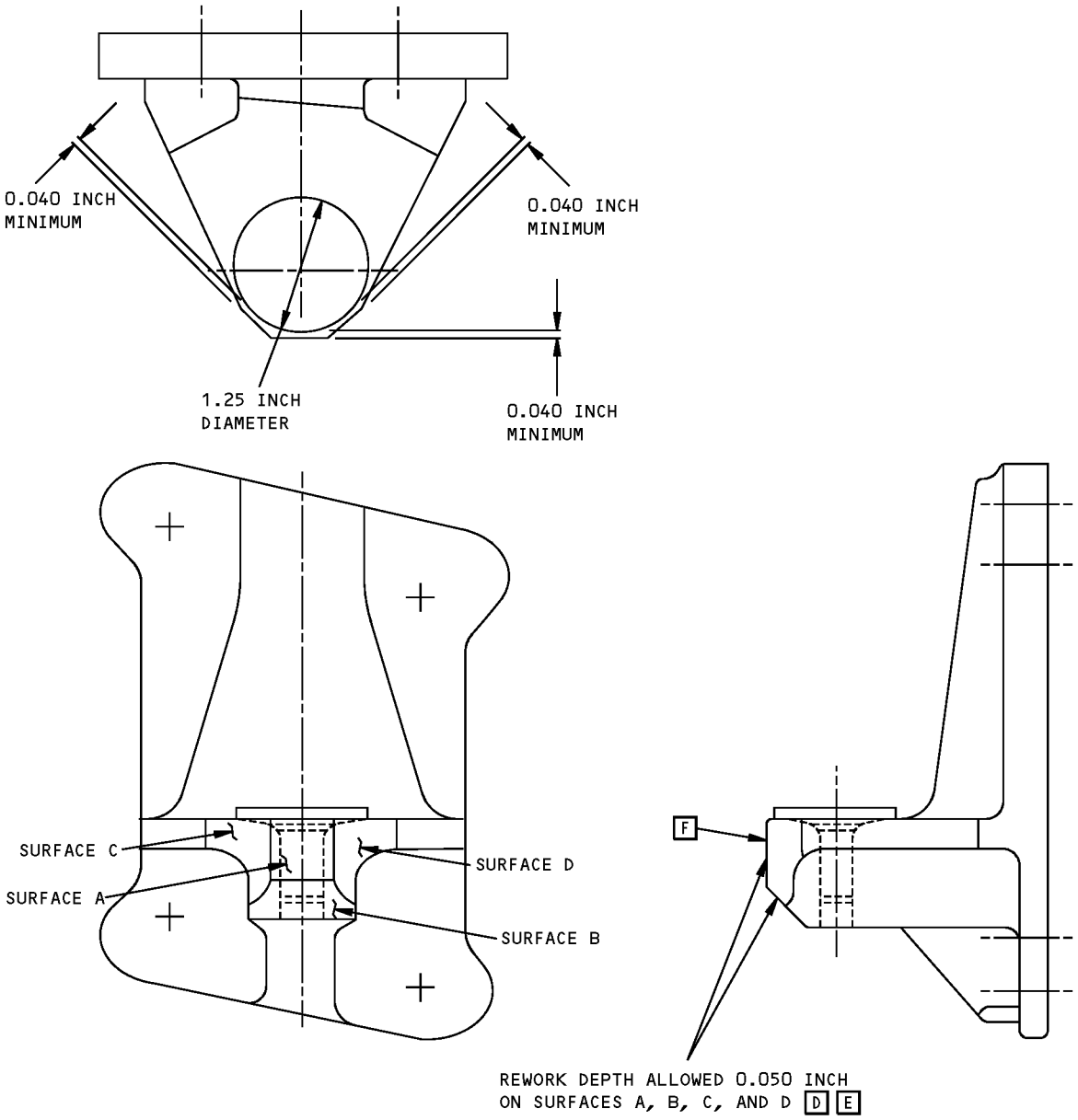
Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 11 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 8
PART NUMBER 140T2112-55/-56

DETAIL XIII

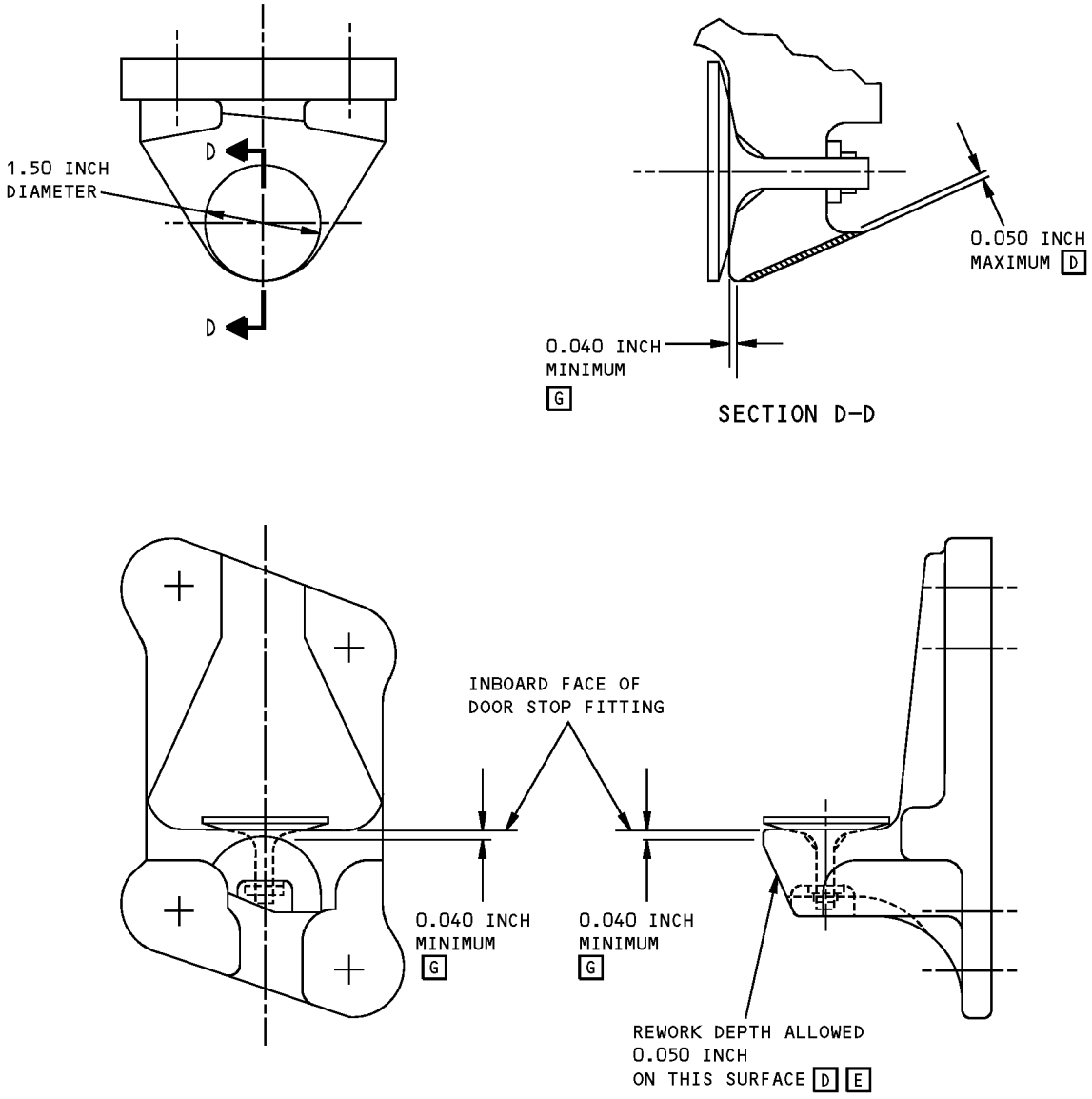
Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 12 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 9
PART NUMBER 140T2112-63/-64

DETAIL XIV

Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 13 of 14)

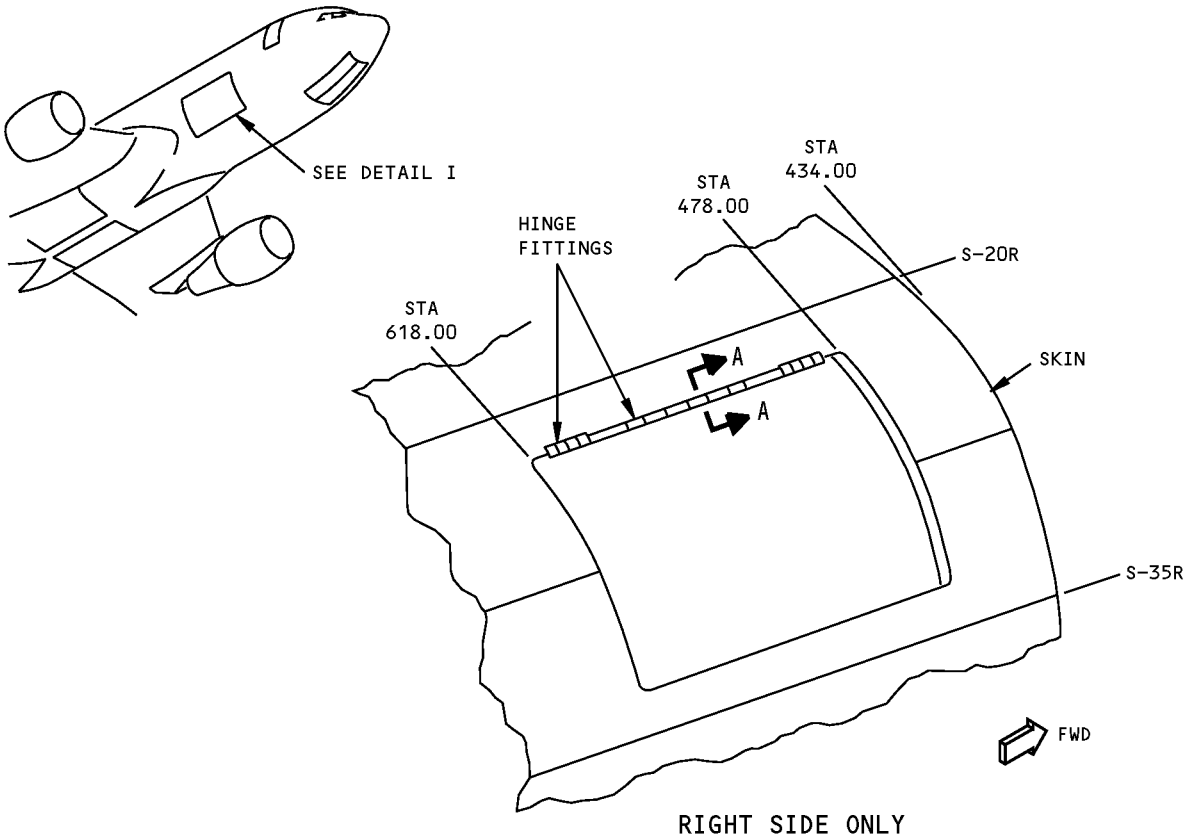


MAXIMUM REWORK LIMITS FOR STOP NUMBER 10
PART NUMBER 140T2112-65/-66

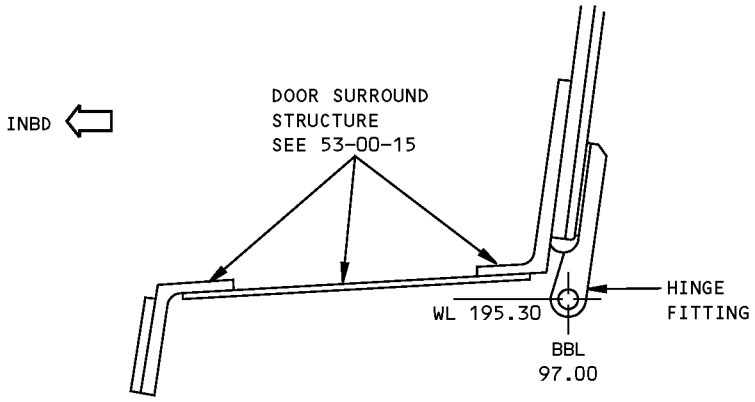
DETAIL XV

Section 43 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 14 of 14)

REPAIR 1 - SECTION 43 - LARGE CARGO DOOR ATTACH FITTING



RIGHT SIDE ONLY
DETAIL I



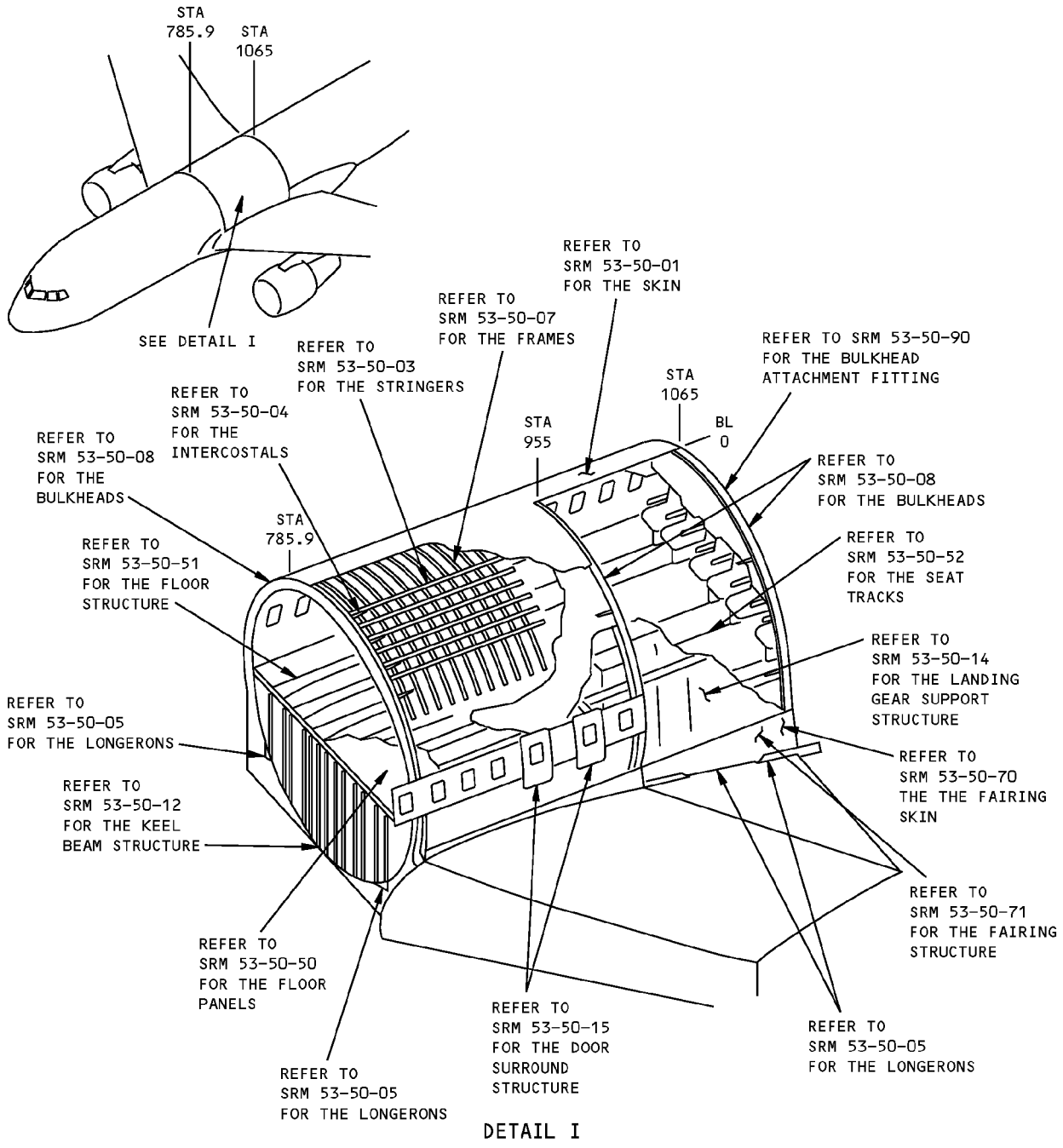
SECTION A-A THRU UPPER SILL

NOTES

- NO APPLICABLE REPAIRS TO HINGE FITTINGS AVAILABLE. REPAIRS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE

Section 43 - Large Cargo Door Attach Fitting Repair
Figure 201

GENERAL - SECTION 45 STRUCTURE DIAGRAM

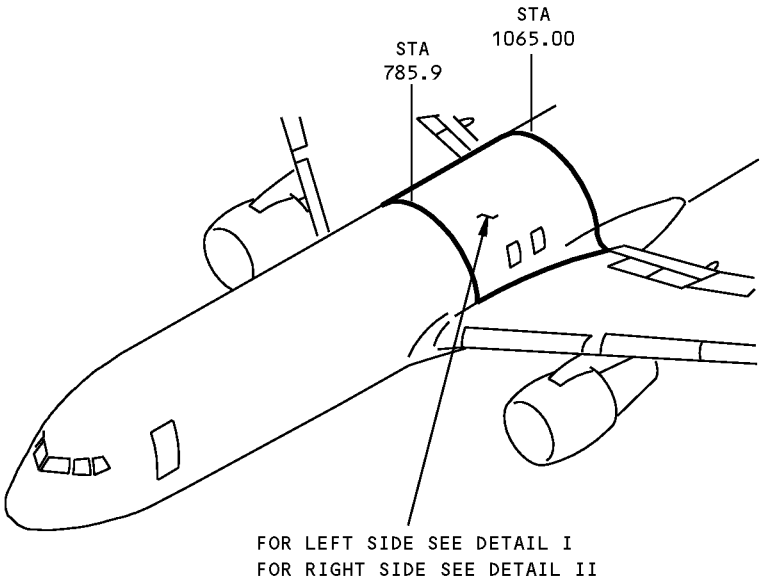


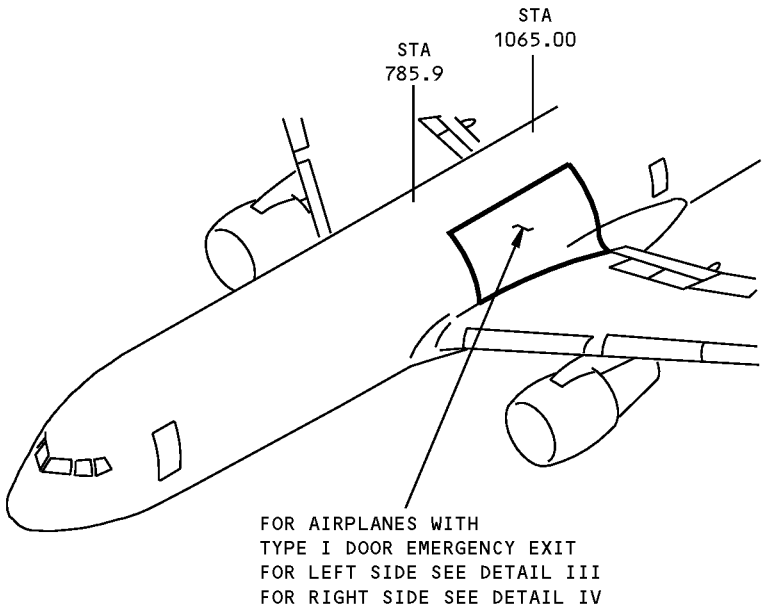
NOTES

- OVERWING EXIT DOOR OPTIONS VARY BETWEEN AIRLINES. DUAL OVERWING EXIT DOORS ARE SHOWN.

Section 45 Structure Diagram
Figure 1

IDENTIFICATION 1 - SECTION 45 - SKIN





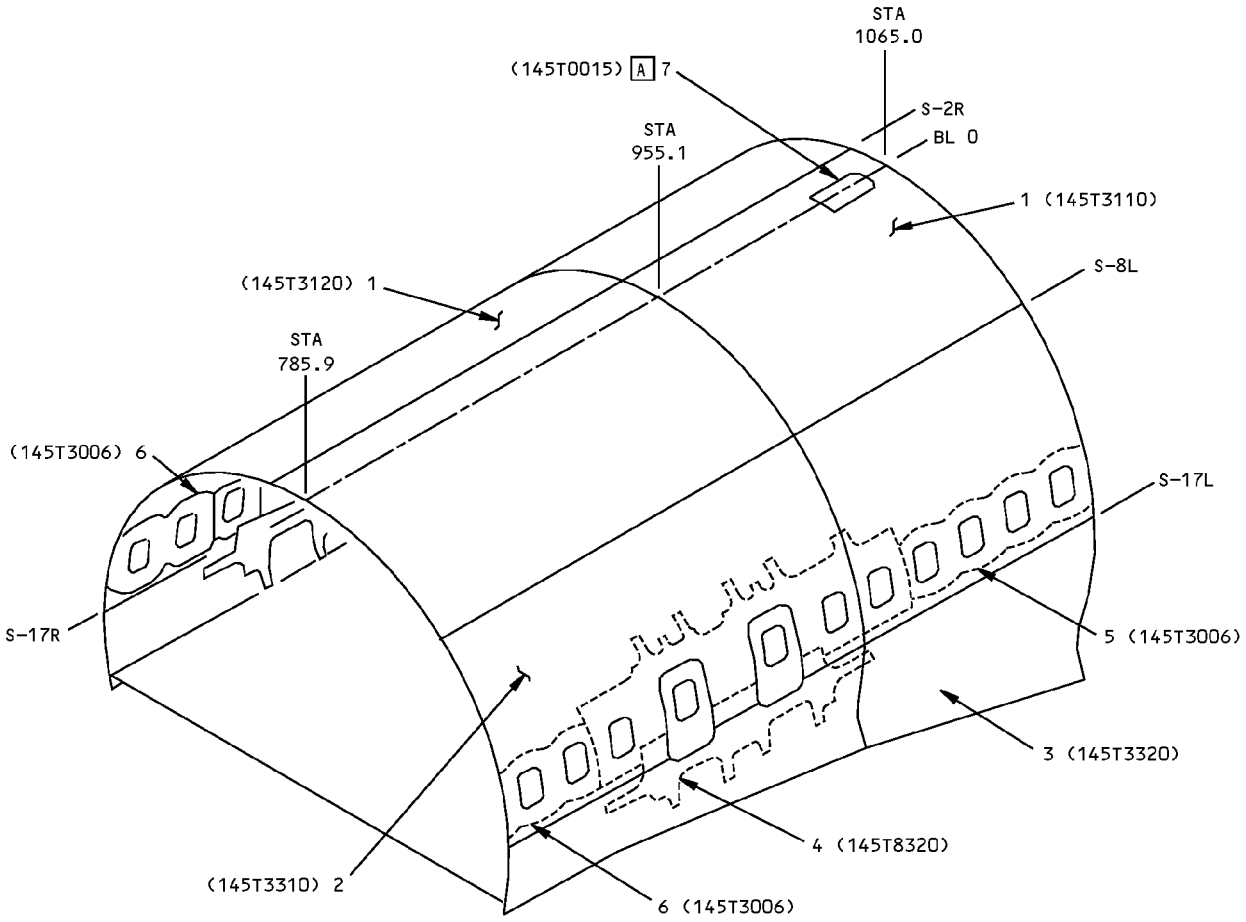
NOTES

[A] FOR AIRPLANES WITH MARCONI AND RACAL ANTENNAS.

[B] THE SKIN IS MACHINED AND TAPERED. REFER TO THE BOEING DRAWING TO DETERMINE THE LOCAL THICKNESS.

Section 45 - Skin Identification
Figure 1 (Sheet 1 of 5)

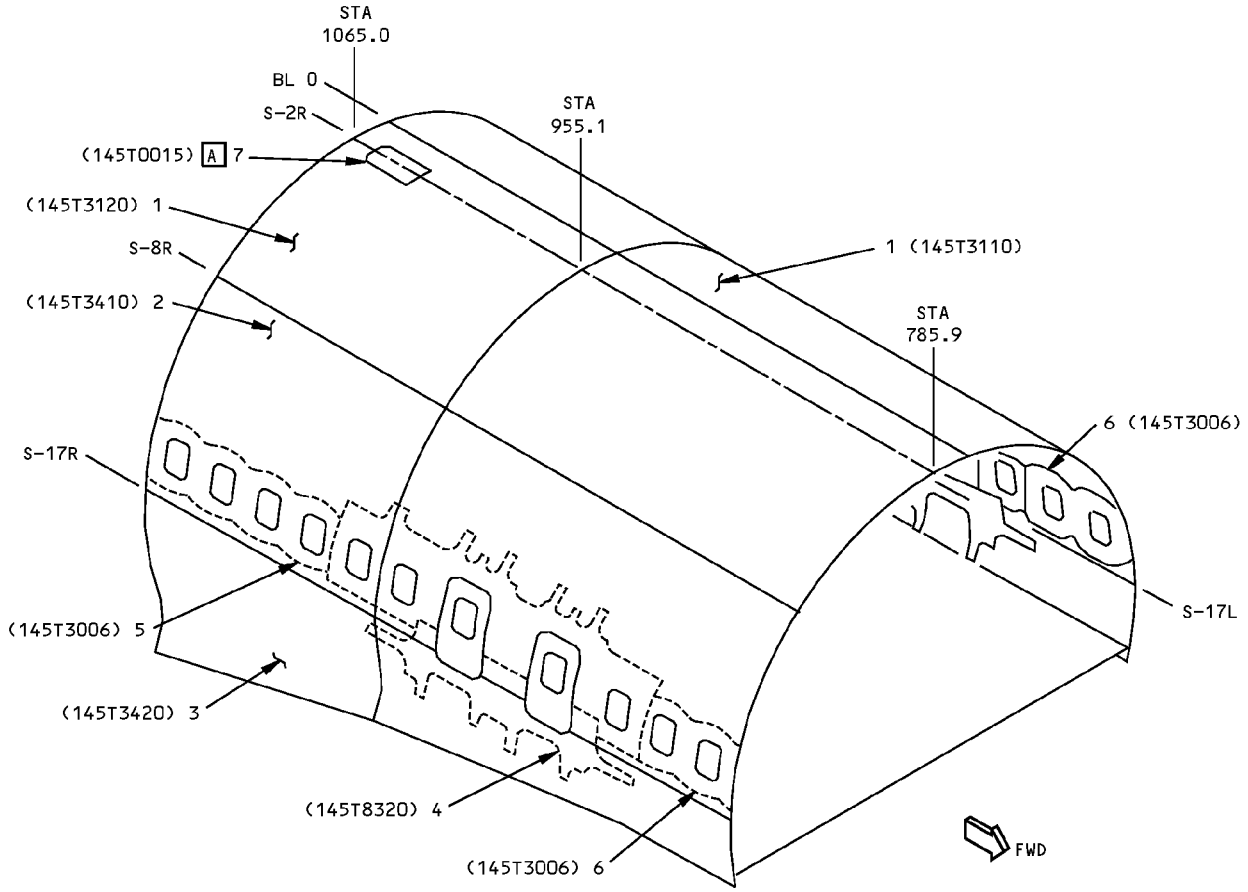
REF DWG
140T1521



LEFT SIDE
DETAIL I

LIST OF MATL

Section 45 - Skin Identification
Figure 1 (Sheet 2 of 5)

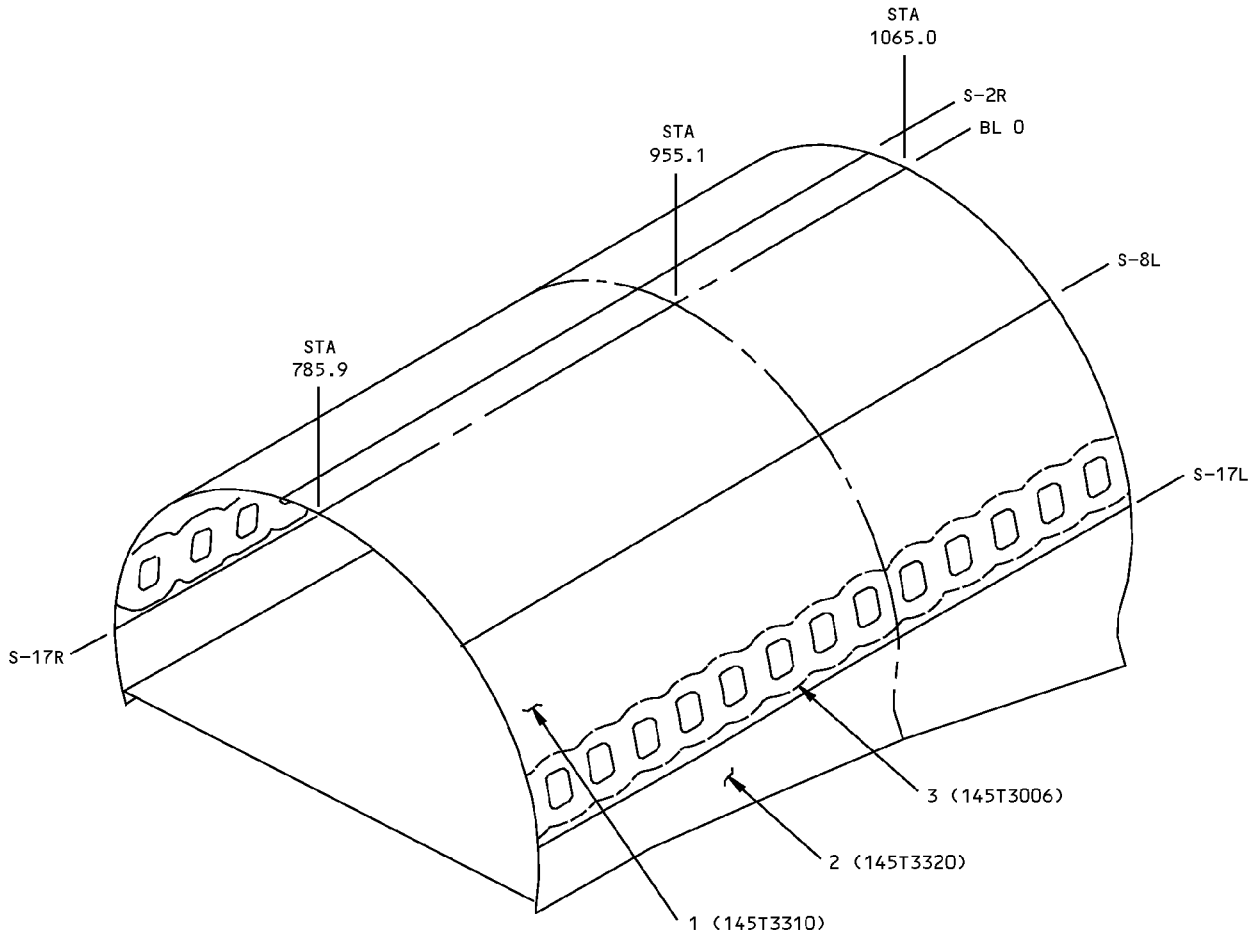


RIGHT SIDE
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	B	CLAD 2024-T3	
2	SKIN	B	CLAD 2024-T3	
3	SKIN	B	CLAD 2024-T351	
4	BEARSTRAP	B	2024-T351	
5	DOUBLER	B	2024-T3	
6	DOUBLER	B	2024-T351	
7	DOUBLER	0.071	2024-T3	A

LIST OF MATERIALS FOR DETAILS I AND II

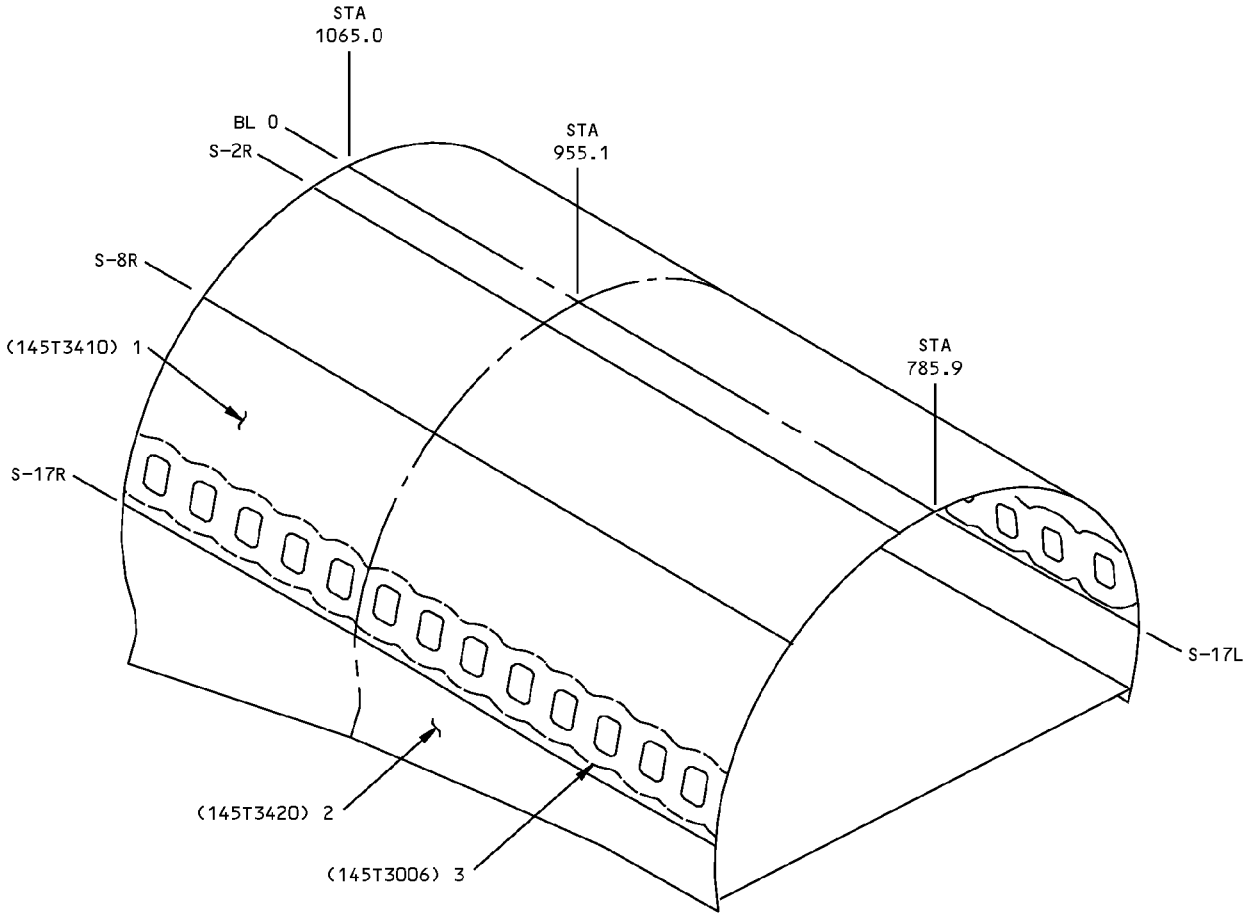
Section 45 - Skin Identification
Figure 1 (Sheet 3 of 5)



AIRPLANES WITH TYPE 1 DOOR EMERGENCY EXIT
LEFT SIDE
DETAIL III

LIST OF MATL

Section 45 - Skin Identification
Figure 1 (Sheet 4 of 5)



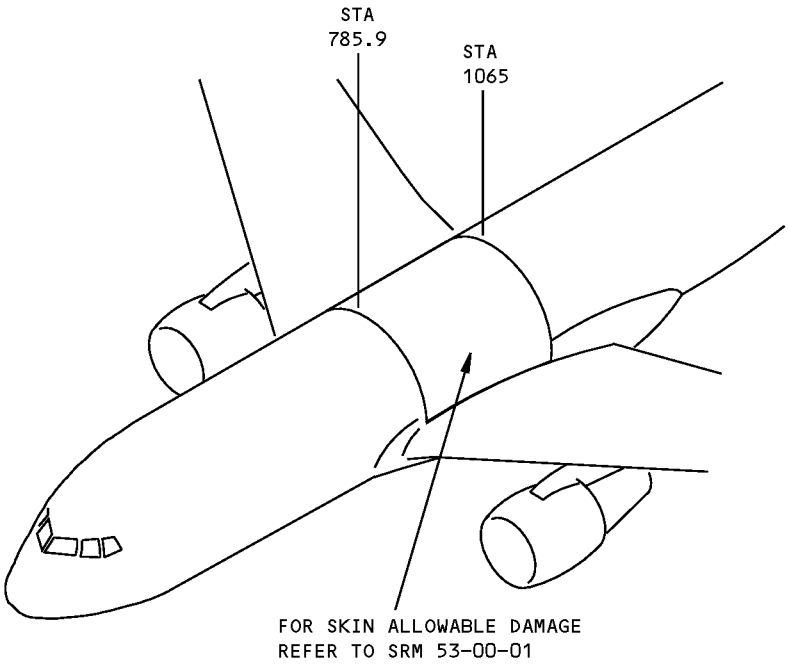
AIRPLANES WITH TYPE 1 DOOR EMERGENCY EXIT
RIGHT SIDE
DETAIL IV

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	B	CLAD 2024-T3	
2	SKIN	B	CLAD 2024-T351	
3	DOUBLER	B	BARE 2024-T3	

LIST OF MATERIALS FOR DETAILS III AND IV

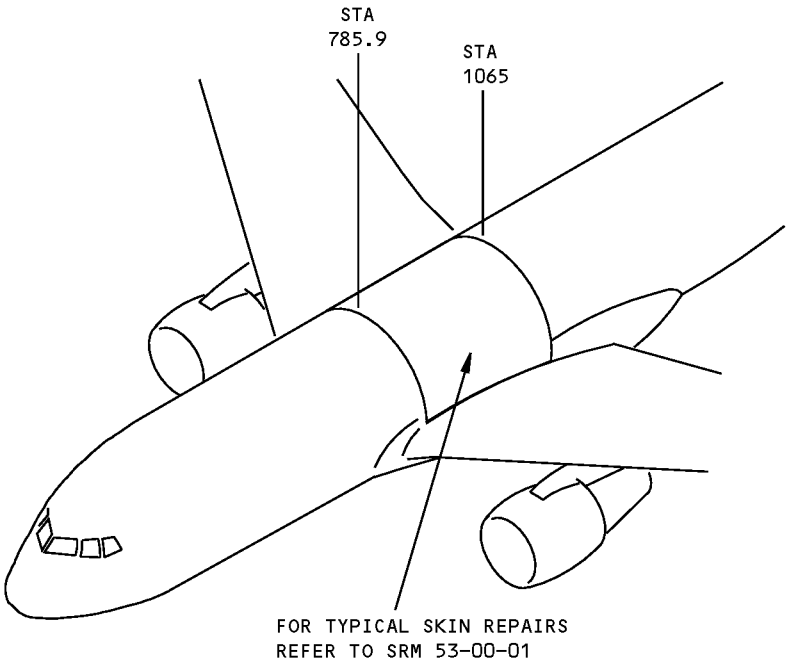
Section 45 - Skin Identification
Figure 1 (Sheet 5 of 5)

ALLOWABLE DAMAGE 1 - SECTION 45 - SKIN



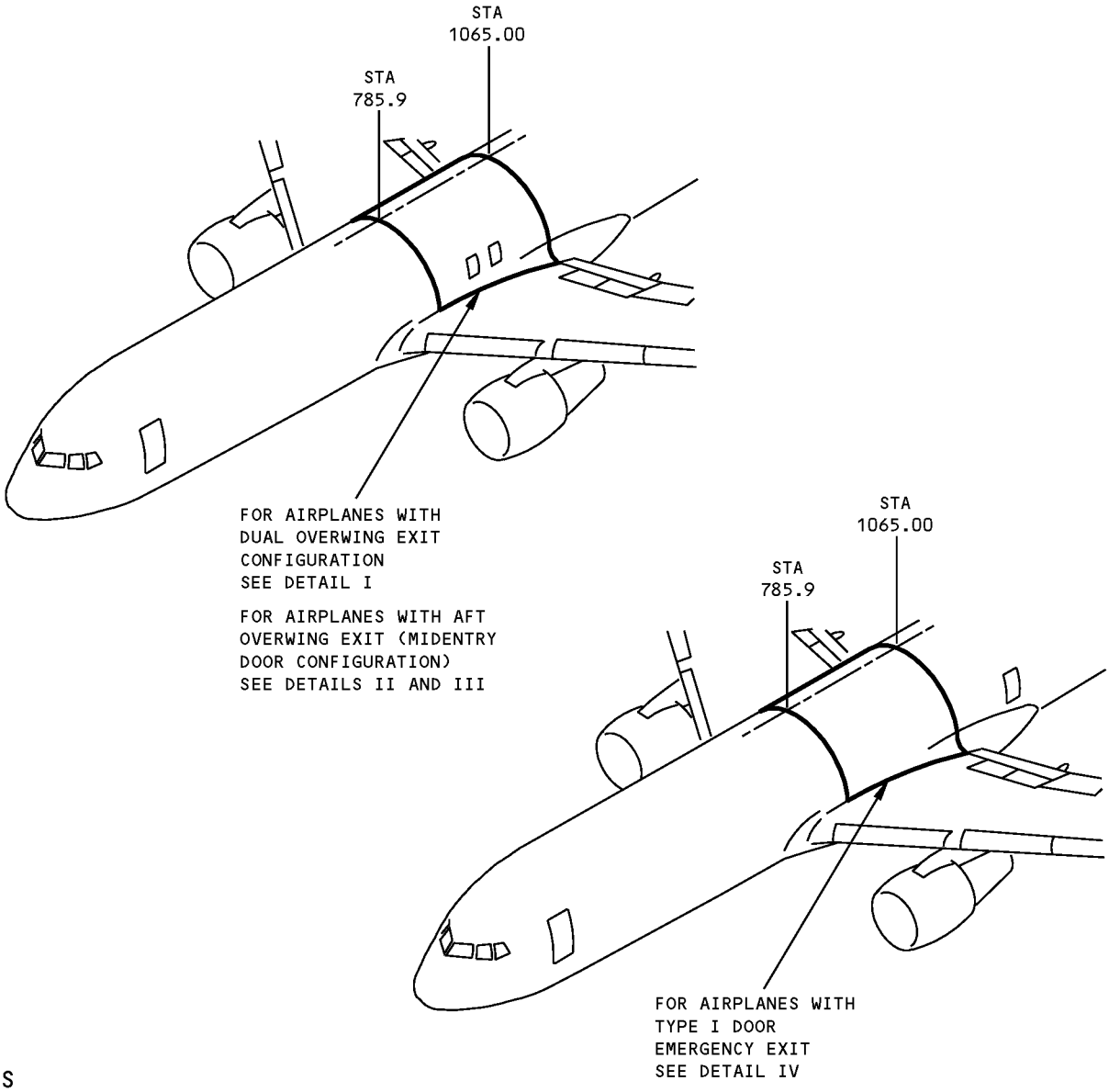
Section 45 - Skin Allowable Damage
Figure 101

REPAIR 1 - SECTION 45 - TYPICAL SKIN



Section 45 - Typical Skin Repairs
Figure 201

IDENTIFICATION 1 - STRINGER - SECTION 45



NOTES

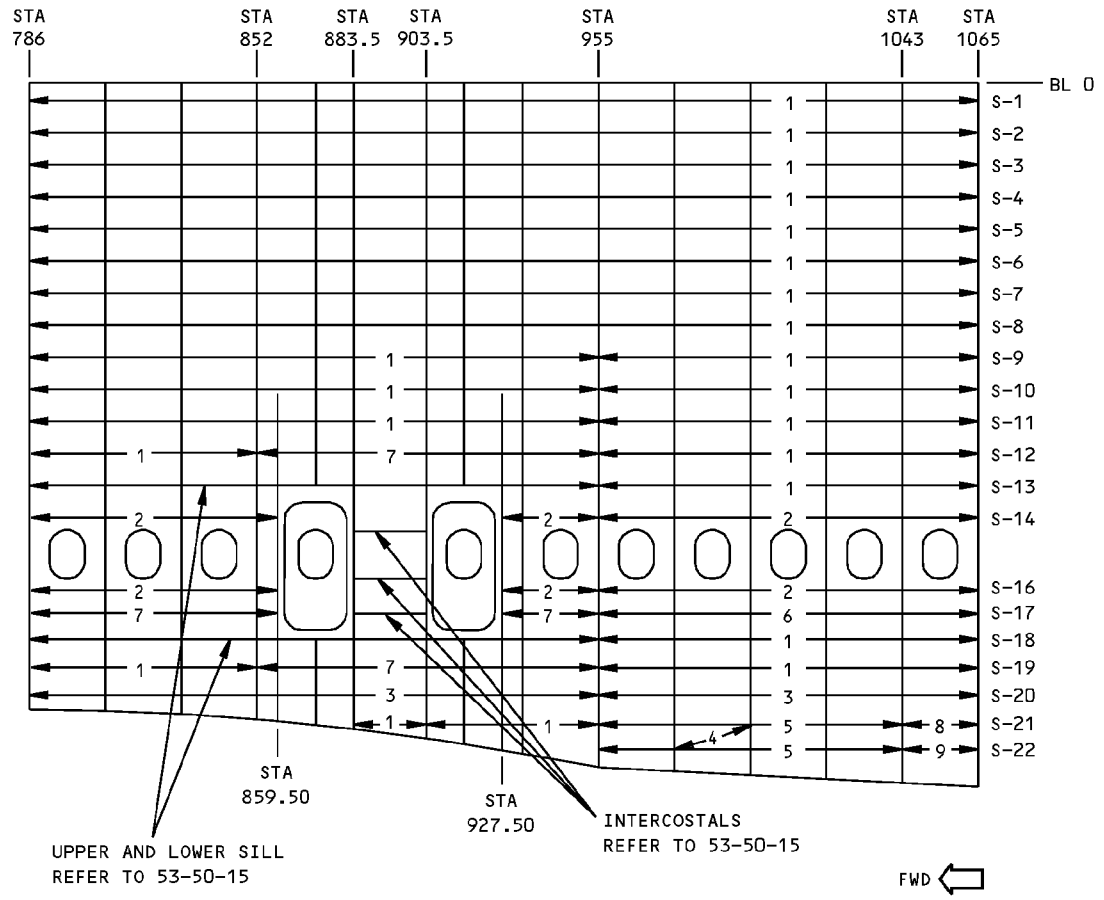
- SKIN PANELS AND STRINGERS ARE ON SAME REFERENCE DRAWINGS. REFER TO 53-50-01

[A] FOR CUM LINE NUMBERS: 158 AND 165

[B] FOR AIRPLANES WITH AFT OVERWING EXIT (MIDENTRY DOOR CONFIGURATION), CUM LINE NUMBERS: 245 AND ON

[C] SOME OF THE STRINGERS ARE TAPERED AND MACHINED, THEREFORE THE THICKNESS IS NOT CONSTANT. REFER TO THE ENGINEERING DRAWING TO FIND THE LOCAL THICKNESS.

Section 45 - Stringer Identification
Figure 1 (Sheet 1 of 5)

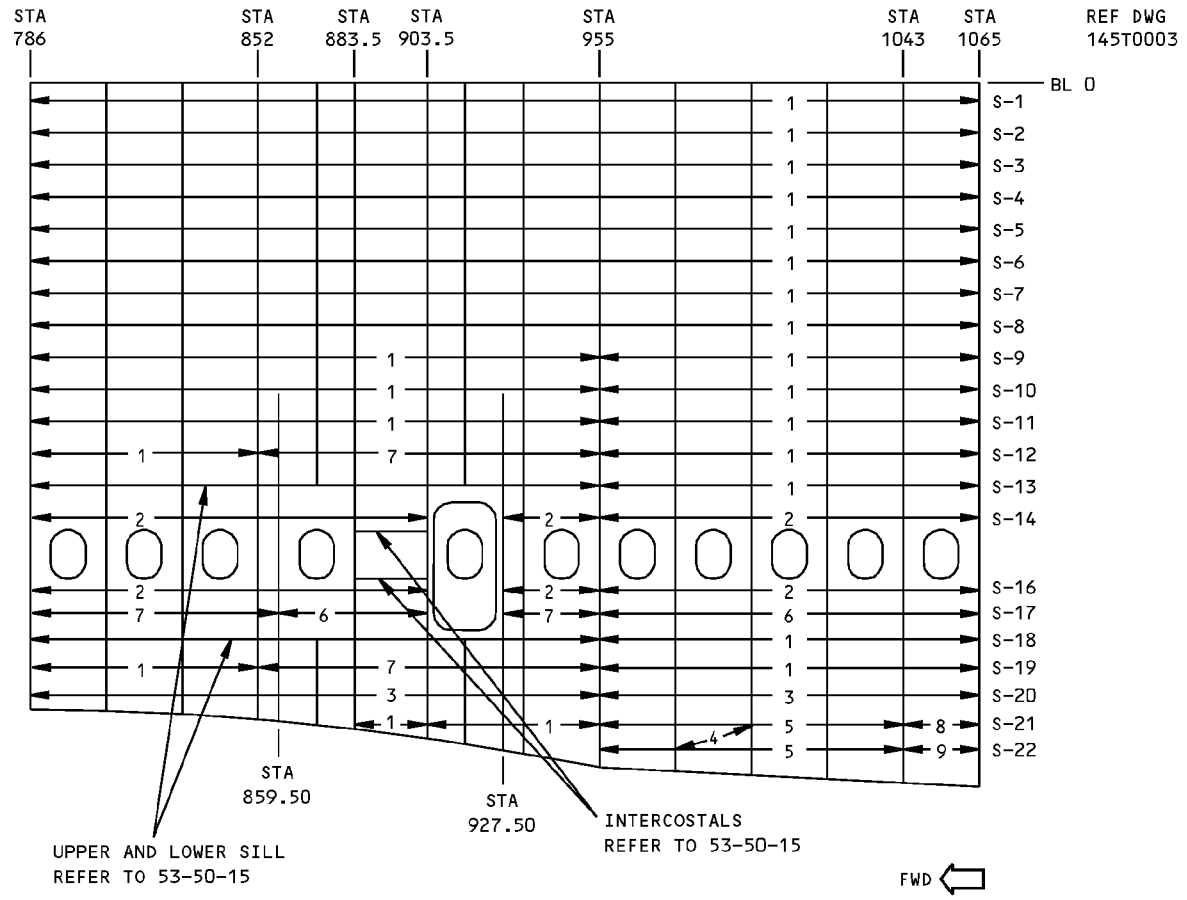


DETAIL I

ITEM	THICKNESS [C]	MATERIAL	SECTION NUMBER	STRINGER TYPE	REF DWG	EFFECTIVITY
1		7075-T62			145T3001	
2		7075-T6511	BAC1517-2144		145T3002	
3		7075-T6511	BAC1518-756		145T3003	
4		7075-T73511	BAC1505-100090		145T3005	
5		7075-T6511	BAC1518-757		145T3004	
6		7075-T6511	BAC1510-1170		145T3058	
7		7075-T73511	BAC1509-100517		145T3058	
8		7075-T73	FORGING		100T1441	
9		7075-T73	FORGING		100T1442	

LIST OF MATERIALS FOR DETAIL I

Section 45 - Stringer Identification
Figure 1 (Sheet 2 of 5)

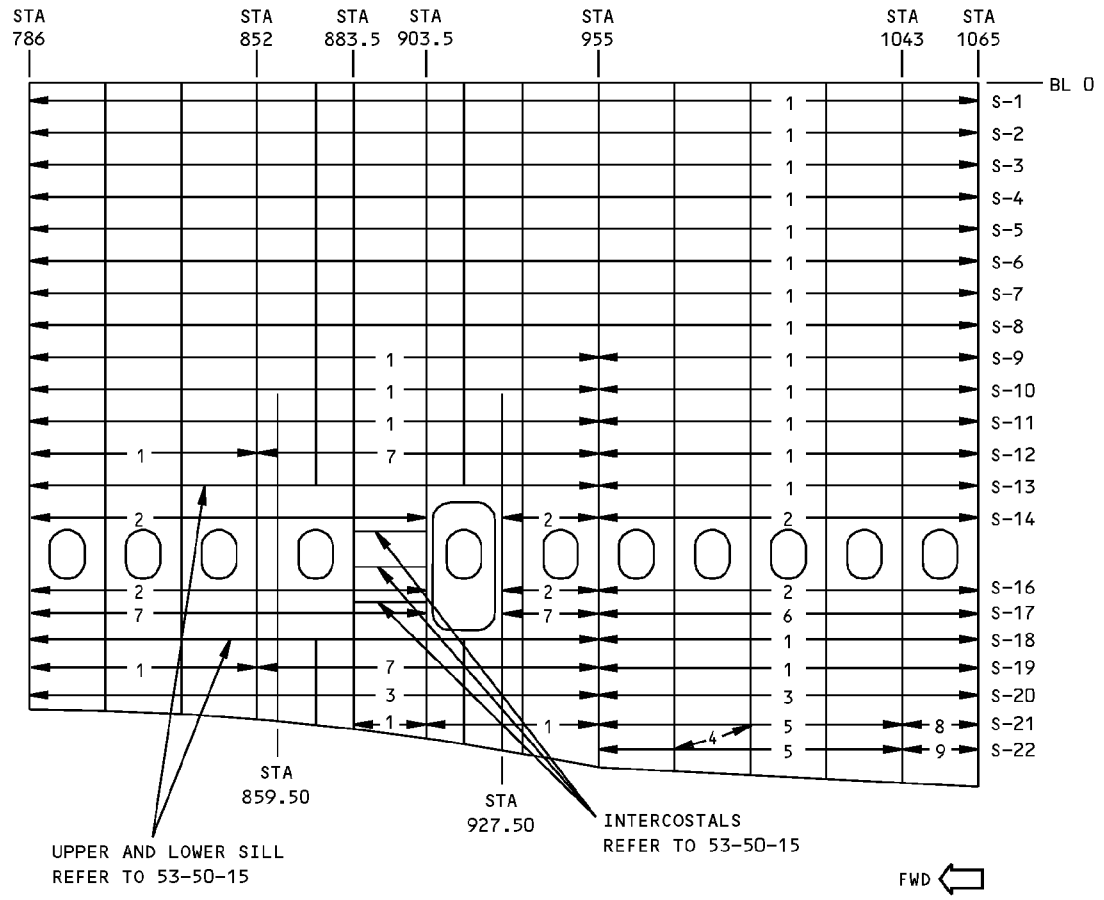


DETAIL II [A]

ITEM	THICKNESS [C]	MATERIAL	SECTION NUMBER	STRINGER TYPE	REF DWG	EFFECTIVITY
1		7075-T62			145T3001	
2		7075-T6511	BAC1517-2144		145T3002	
3		7075-T6511	BAC1518-756		145T3003	
4		7075-T73511	BAC1505-100090		145T3005	
5		7075-T6511	BAC1518-757		145T3004	
6		7075-T6511	BAC1510-1170		145T3058	
7		7075-T73511	BAC1509-100517		145T3058	
8		7075-T73	FORGING		100T1441	
9		7075-T73	FORGING		100T1442	

LIST OF MATERIALS FOR DETAIL II

Section 45 - Stringer Identification
Figure 1 (Sheet 3 of 5)

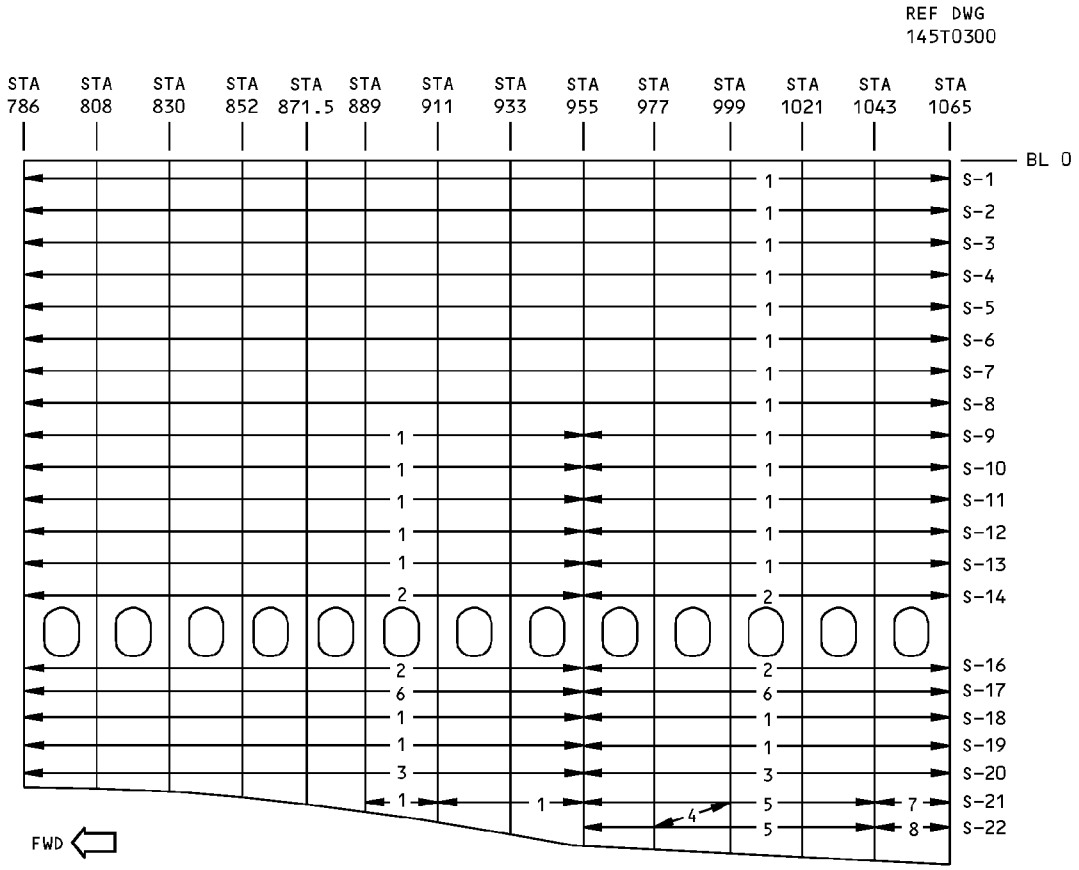


DETAIL III [B]

ITEM	THICKNESS [C]	MATERIAL	SECTION NUMBER	STRINGER TYPE	REF DWG	EFFECTIVITY
1		7075-T62			145T3001	
2		7075-T6511	BAC1517-2144		145T3002	
3		7075-T6511	BAC1518-756		145T3003	
4		7075-T73511	BAC1505-100090		145T3005	
5		7075-T6511	BAC1518-757		145T3004	
6		7075-T6511	BAC1510-1170		145T3058	
7		7075-T73511	BAC1509-100517		145T3058	
8		7075-T73	FORGING		100T1441	
9		7075-T73	FORGING		100T1442	

LIST OF MATERIALS FOR DETAIL III

Section 45 - Stringer Identification
Figure 1 (Sheet 4 of 5)



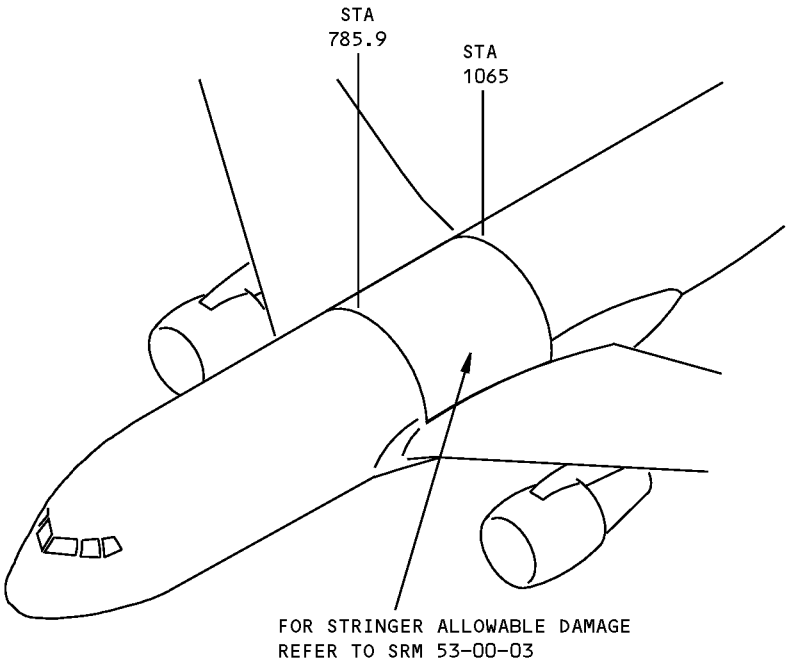
AIRPLANES WITH TYPE 1 DOOR EMERGENCY EXIT
DETAIL IV

ITEM	THICKNESS [C]	MATERIAL	SECTION NUMBER	STRINGER TYPE	REF DWG	EFFECTIVITY
1		7075-T62		⊔	145T3001	
2		7075-T6511	BAC1517-2144	⊥	145T3002	
3		7075-T6511	BAC1518-756	I	145T3003	
4		7075-T73511	BAC1505-100090	⊥	145T3005	
5		7075-T6511	BAC1518-757	I	145T3004	
6		7075-T6511	BAC1510-1170	⊔	145T3058	
7		7075-T73	FORGING	I	100T1441	
8		7075-T73	FORGING	⊥	100T1442	

LIST OF MATERIALS FOR DETAIL IV

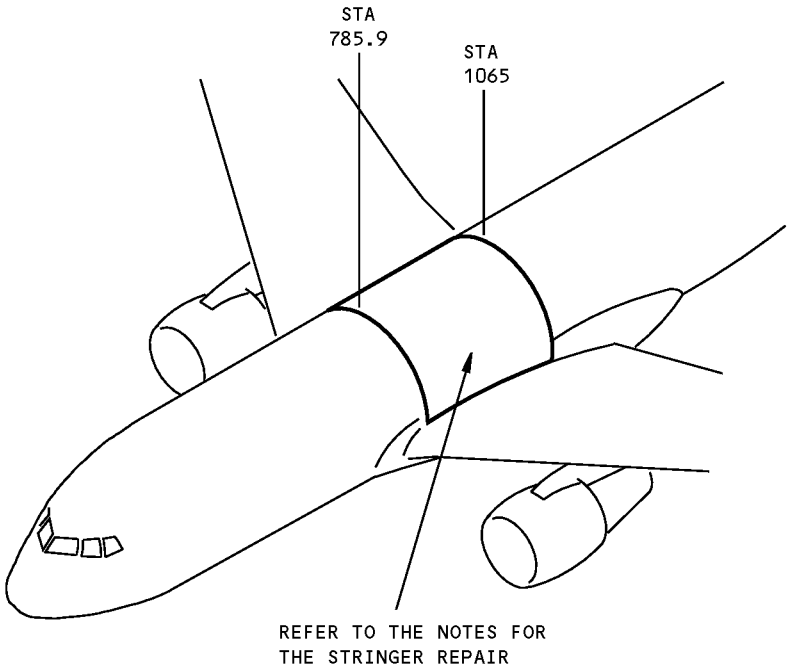
Section 45 - Stringer Identification
Figure 1 (Sheet 5 of 5)

ALLOWABLE DAMAGE GENERAL - SECTION 45 FUSELAGE STRINGERS



Allowable Damage - Section 45 Stringers
Figure 101

REPAIR GENERAL - SECTION 45 FUSELAGE STRINGERS



NOTES

- REFER TO SRM 53-00-03, REPAIR 1 FOR STRINGERS S-1 THROUGH S-19.
- REFER TO SRM 53-00-03, REPAIR 2 FOR STRINGERS S-21 THROUGH S-39.
- CONTACT THE BOEING COMPANY FOR STRINGER S-20.

Section 45 Stringer Repair
Figure 201

IDENTIFICATION 1 - SECTION 45 - INTERCOSTAL

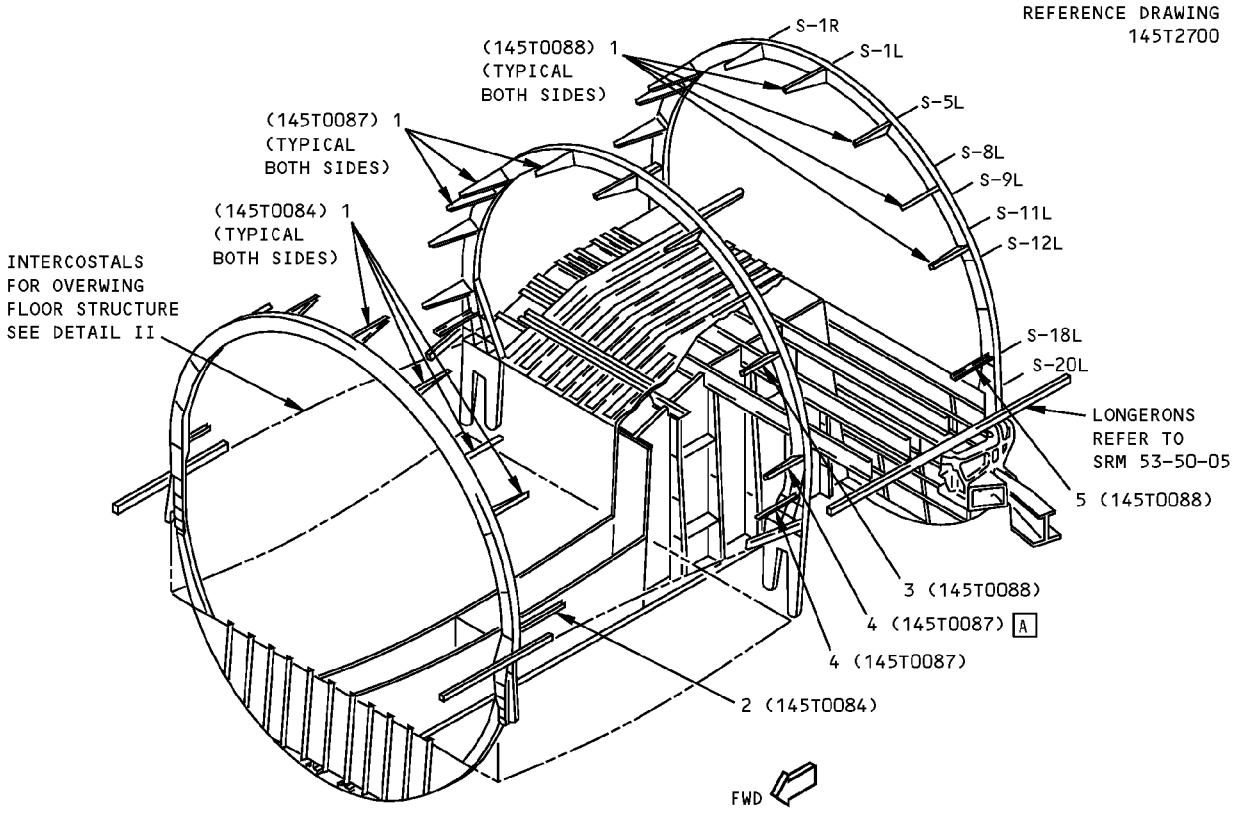
NOTES

[A] FOR AIRPLANES WITHOUT DUAL OVERWING EXIT ONLY.

[B] BASIC CONFIGURATION SHOWN. LOCATIONS OF INTERCOSTALS MAY VARY AS AN OPERATOR OPTION.

[C] FOR CUM LINE NUMBERS: 423 AND ON

[D] THE WEB IS CHEM-MILLED AND VARIES IN THICKNESS. REFER TO THE BOEING DRAWING TO DETERMINE LOCAL THICKNESS.



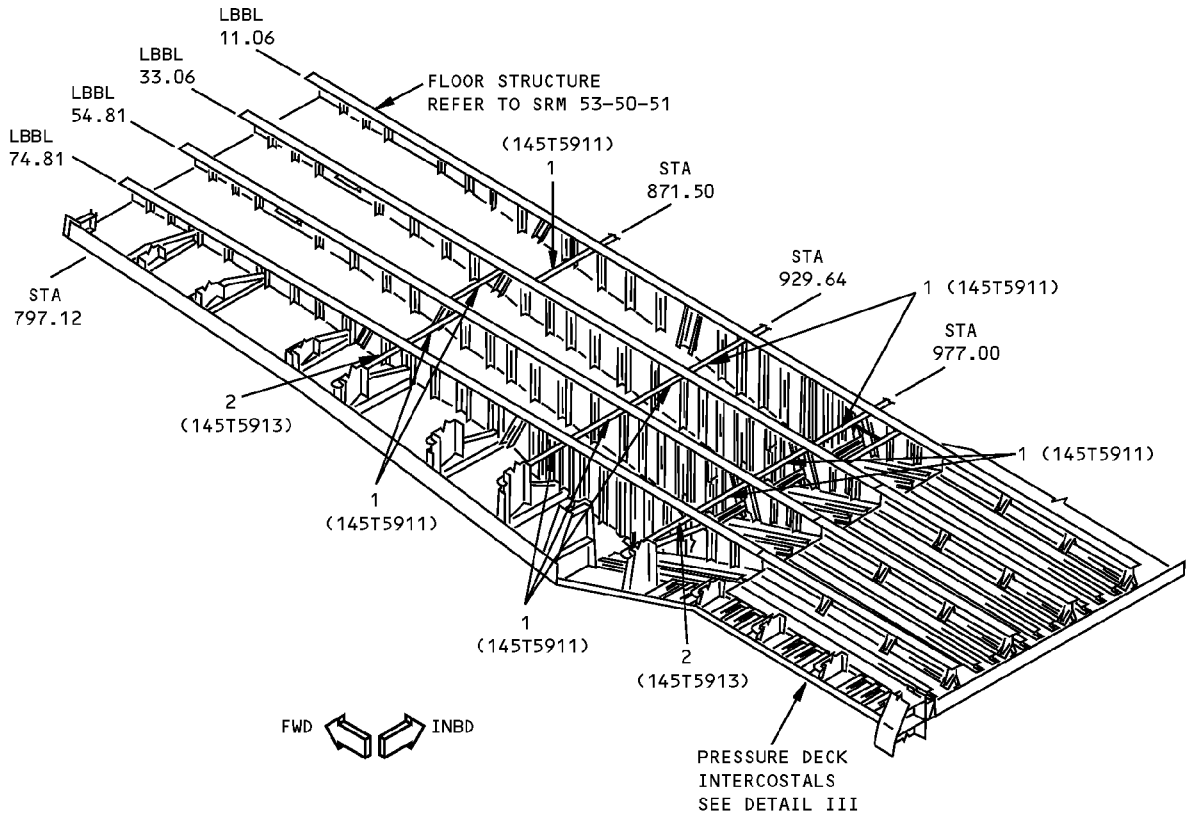
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	INTERCOSTAL	0.080	7075-T62	
2	INTERCOSTAL	0.100	7075-T62	
3	INTERCOSTAL	0.090	7075-T62	
4	INTERCOSTAL	0.160	7075-T62	
5	INTERCOSTAL	0.125	7075-T62	

LIST OF MATERIALS FOR DETAIL I

Section 45 - Intercostal Identification
Figure 1 (Sheet 1 of 3)

REFERENCE DRAWING
145T5900

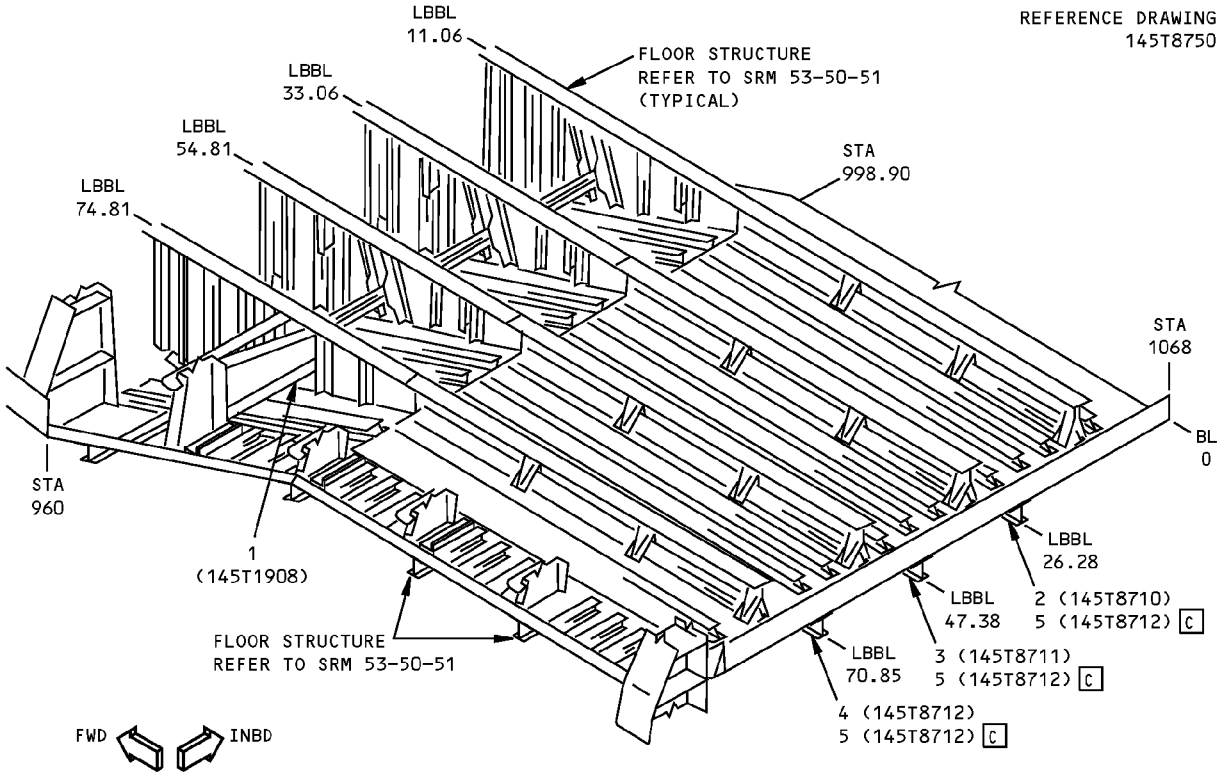


OVERWING FLOOR STRUCTURE B
LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	INTERCOSTAL		BAC1506-2480 7075-T6511	
2	INTERCOSTAL		AND10136-2008 7075-T6511	

LIST OF MATERIALS FOR DETAIL IV

Section 45 - Intercostal Identification
Figure 1 (Sheet 2 of 3)



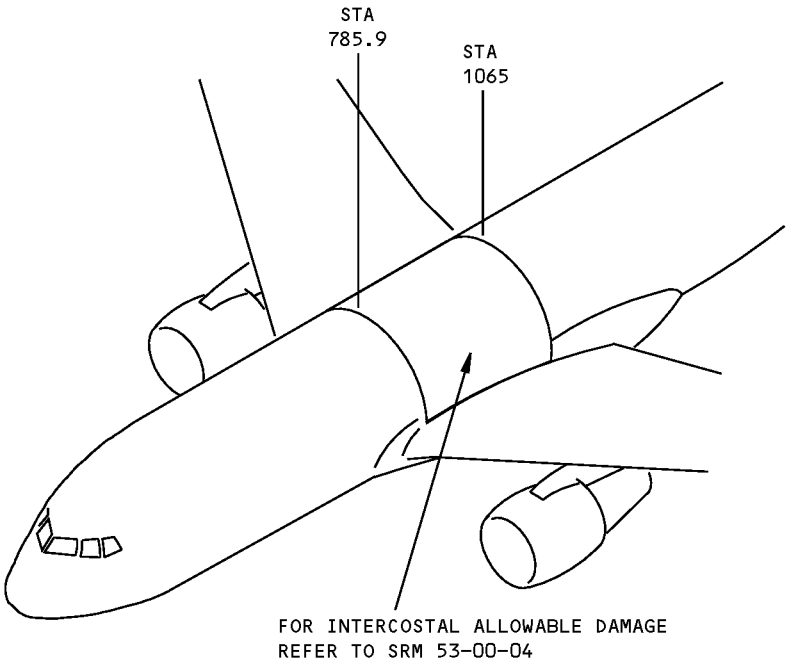
PRESSURE DECK
LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE
DETAIL III

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	INTERCOSTAL			
	UPPER CHORD		AND10133-2004 7075-T73511	
	WEB	D	7075-T6	
	LOWER CHORD		BAC1503-100449 7075-T73511	
2	INTERCOSTAL			
	UPPER CHORDS		BAC1503-100695 7075-T73511	
	WEB	0.200	CLAD 2024-T3	
	LOWER CHORDS		BAC1503-100694 7075-T73511	
3	INTERCOSTAL			
	UPPER CHORDS		BAC1503-100695 7075-T73511	
	WEB	0.160	CLAD 2024-T3	
	LOWER CHORDS		BAC1503-100694 7075-T73511	
4	INTERCOSTAL			
	UPPER CHORDS		BAC1503-100695 7075-T73511	
	WEB	0.125	CLAD 2024-T3	
	LOWER CHORDS		BAC1503-100694 7075-T73511	
5	INTERCOSTAL ASSEMBLY			
	UPPER CHORD		BAC1503-100694 7075-T73511	
	INTERCOSTAL		FORGING 7075-T73 OPTIONAL: 7075-T7351 PLATE	C
	LOWER CHORD		BAC1503-100670 7075-T73511	

LIST OF MATERIALS FOR DETAIL III

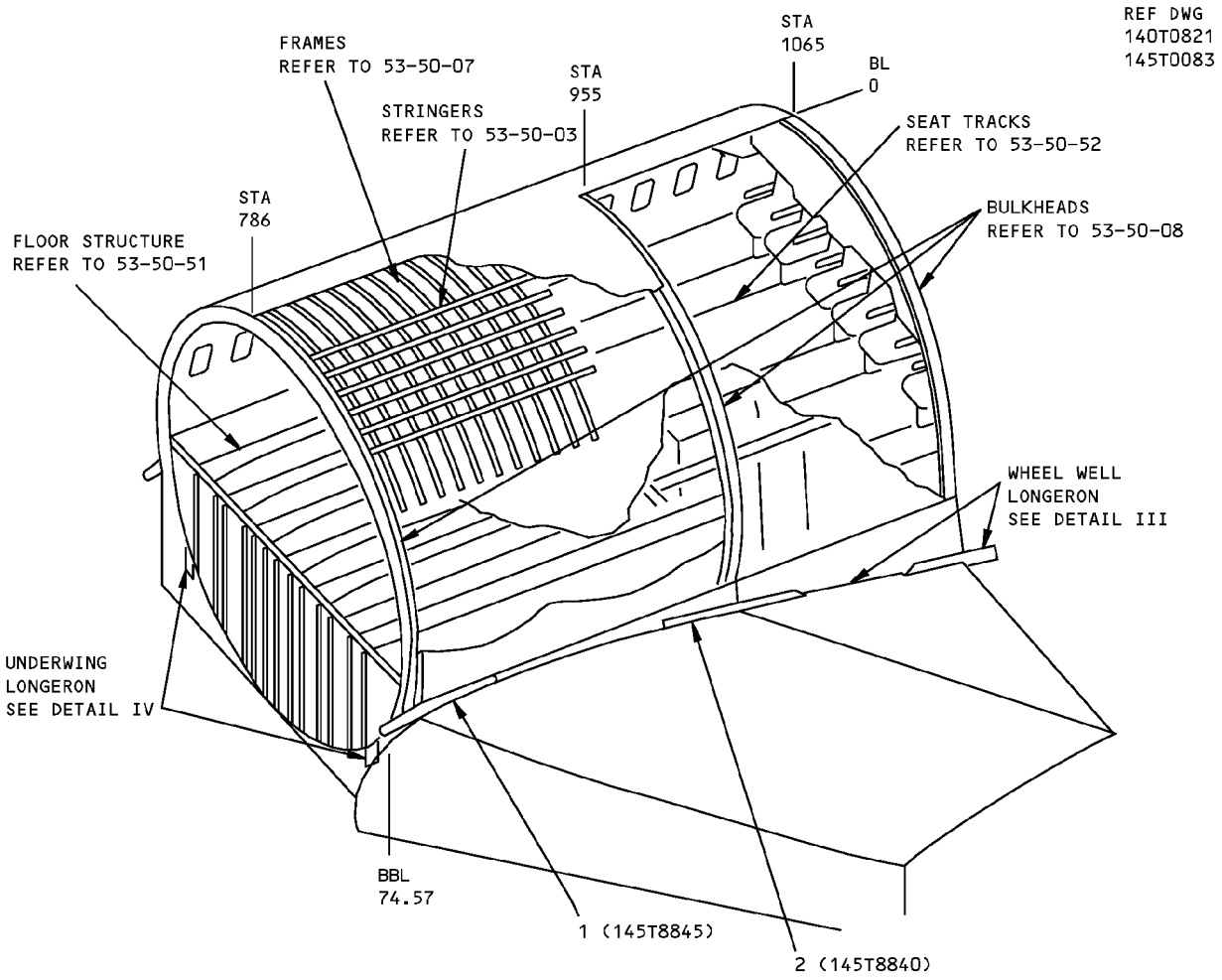
Section 45 - Intercostal Identification
Figure 1 (Sheet 3 of 3)

ALLOWABLE DAMAGE GENERAL - SECTION 45 FUSELAGE INTERCOSTALS



Section 45 - Allowable Damage - Intercostals
Figure 101

IDENTIFICATION 1 - SECTION 45 - LONGERON



OVERWING LONGERONS
DETAIL I

NOTES

- SEE DETAIL II FOR OVERWING LONGERON STIFFENERS

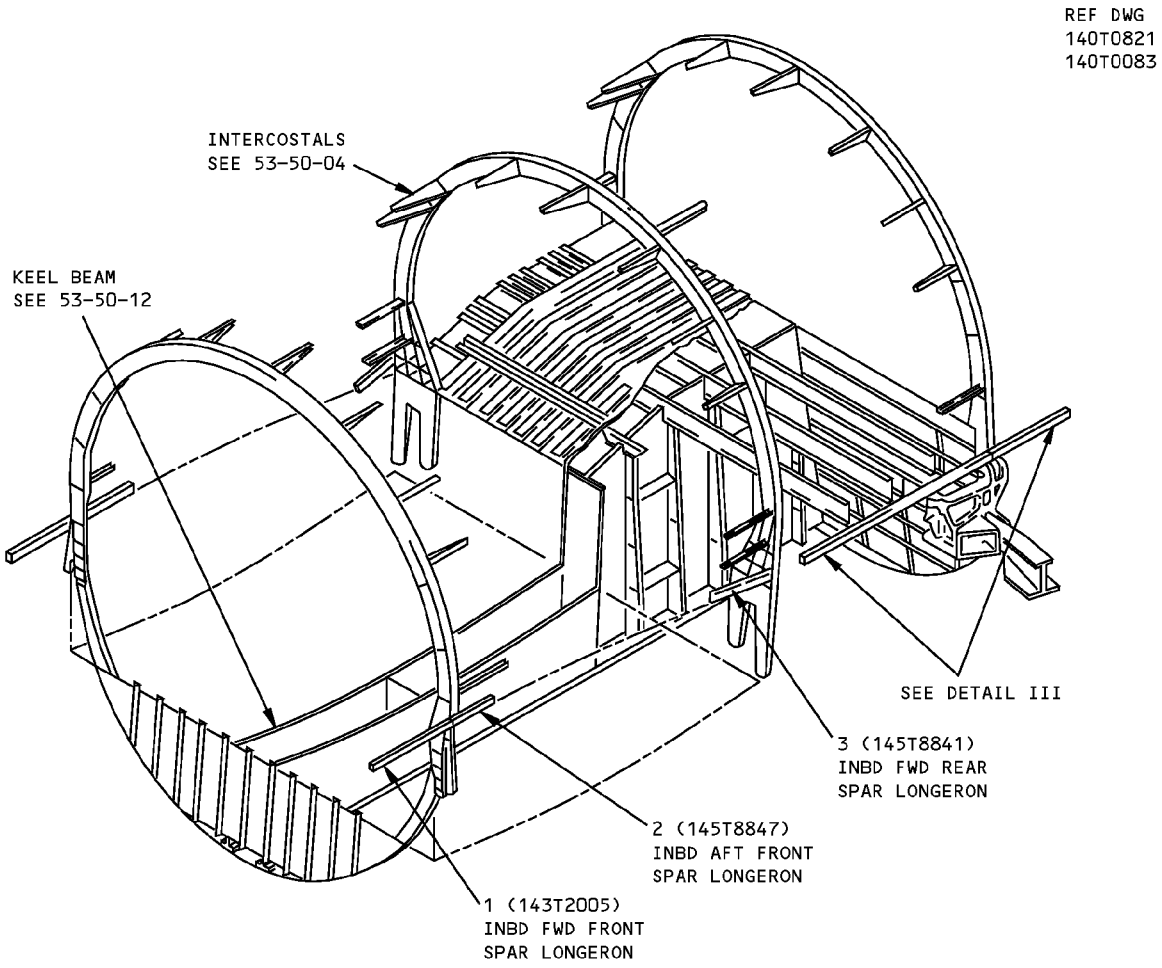
[A] FOR CUM LINE NUMBERS:
132 THRU 230

[B] FOR CUM LINE NUMBERS:
231 AND ON

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SPLICE PLATE	1.50	PLATE 7150-T651	
2	SPLICE PLATE	1.31	PLATE 7150-T651	

LIST OF MATERIALS FOR DETAIL I

Section 45 - Longeron Identification
Figure 1 (Sheet 1 of 4)



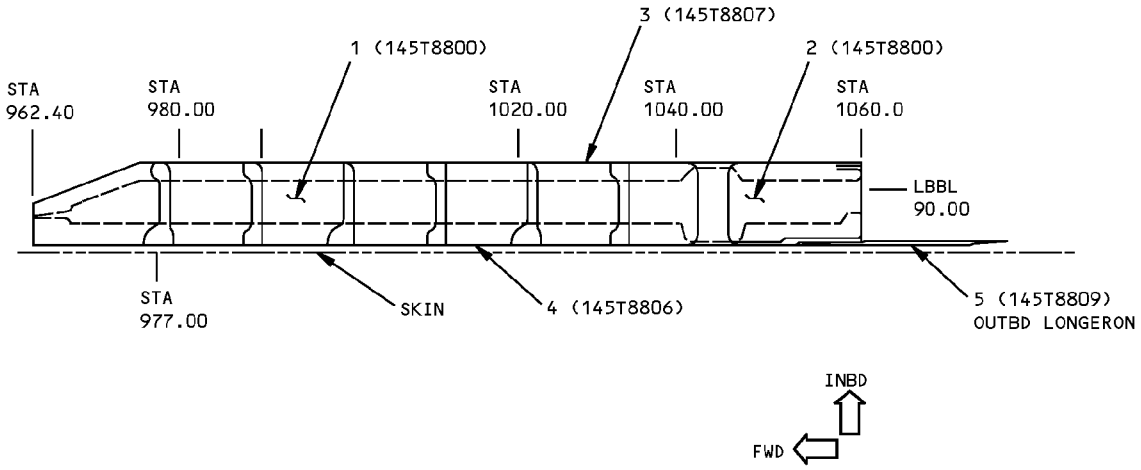
OVERWING LONGERON STIFFENERS
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	STIFFENER		BAR 7075-T7351 OR T73511 OPTIONAL: FORGING 7075-T73	
2	STIFFENER		BAC1518-793 7075-T73511	
3	STIFFENER		BAC1518-791 7075-T73511	

LIST OF MATERIALS FOR DETAIL II

Section 45 - Longeron Identification
Figure 1 (Sheet 2 of 4)

REF DWG
140T0831
145T8800

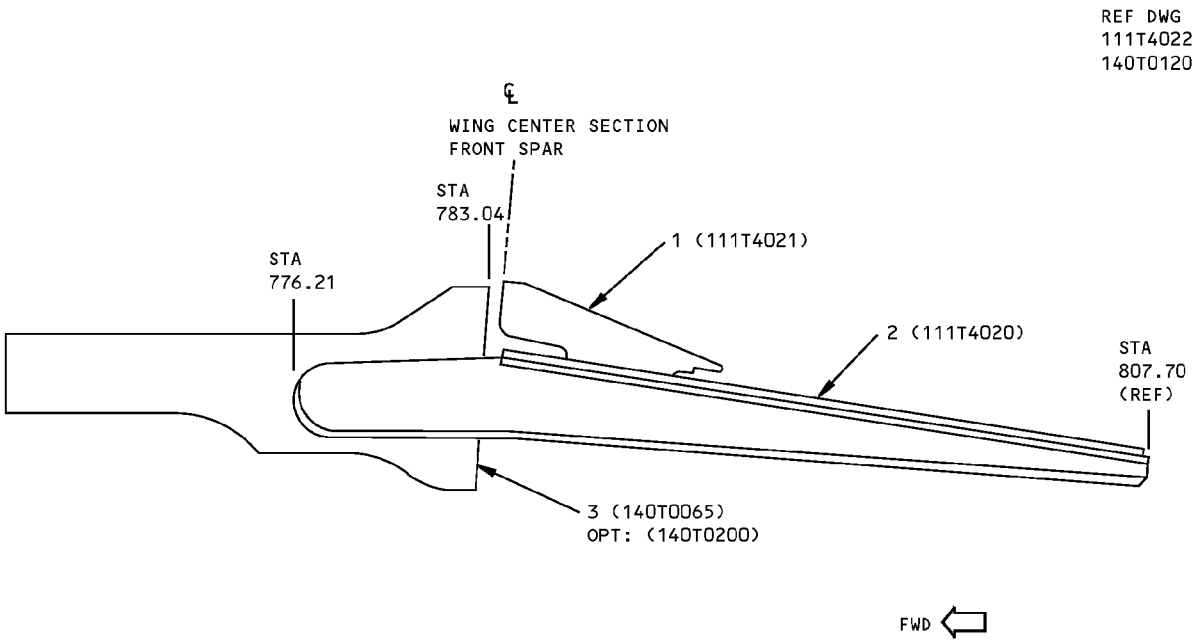


WHEEL WELL LONGERON
LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE
DETAIL III

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FORWARD WEB	0.080	CLAD 7075-T6	
2	AFT WEB	0.150	CLAD 7075-T6	
3	INBOARD CHORD		BAC1505-101307 7075-T6, OPTIONAL: BAC1505-101037 7075-T6	
4	OUTBOARD CHORD		BAC1506-3148 7150-T6511 BAC1506-3148 7150-T7E95	A B
5	SPLICE PLATE	0.900	PLATE 7150-T651	

LIST OF MATERIALS FOR DETAIL III

Section 45 - Longeron Identification
Figure 1 (Sheet 3 of 4)



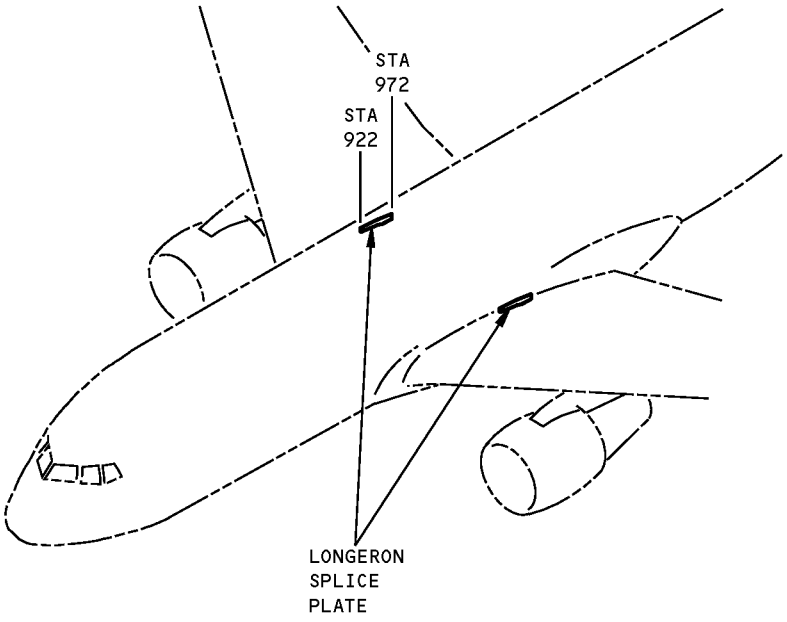
LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
UNDERWING LONGERON
DETAIL IV

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	UPPER FITTING		FORGING 7175-T736	
2	LOWER FITTING		BAC1506-3197 7075-T73511	
3	SPLICE FITTING		FORGING 7075-T73	

LIST OF MATERIALS FOR DETAIL IV

Section 45 - Longeron Identification
Figure 1 (Sheet 4 of 4)

ALLOWABLE DAMAGE 1 - LONGERON



NOTES

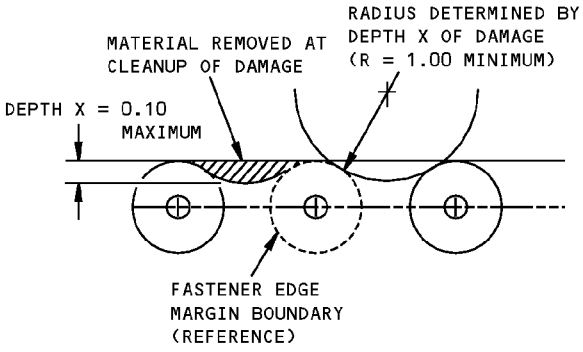
- DAMAGE
  - THAT OCCURS TO A PRINCIPAL STRUCTURAL ELEMENT (PSE) AS DEFINED IN SRM 51-00-04, AND
  - THAT IS WITHIN THE ALLOWABLE DAMAGE LIMITS OF THE BOEING SRM, DOES NOT HAVE AN EFFECT ON THE DAMAGE TOLERANCE PROPERTIES OF THE PSE. THEREFORE, INITIAL INSPECTION PROGRAMS REMAIN EFFECTIVE.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- MAKE SURE THE PART IS CORROSION FREE BY USING THE HIGH FREQUENCY EDDY CURRENT INSPECTION PROCEDURE AS GIVEN IN NON DESTRUCTIVE MANUAL.
- SHOT PEEN PART AS GIVEN IN SOPM 20-10-03.
- APPLY A PROTECTIVE ALODINE COATING ON THE REWORKED ALLUMINUM SURFACE AS GIVEN IN SRM 51-20-01.
- REFINISH THE REWORKED AREA AS GIVEN IN SRM 51-20-01.

[A] REMOVE THE DAMAGE AS SHOWN IN DETAILS I AND II. OTHER CRACKS ARE NOT PERMITTED.

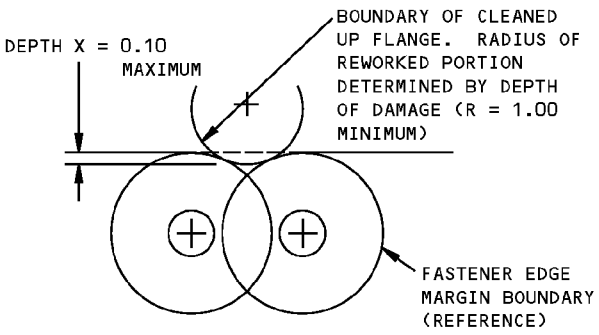
[B] REMOVE SURFACE DAMAGE AS SHOWN IN DETAIL III.

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
SPLICE PLATE	[A]	[B]	NOT PERMITTED	NOT PERMITTED

Longeron Allowable Damage
Figure 101 (Sheet 1 of 2)

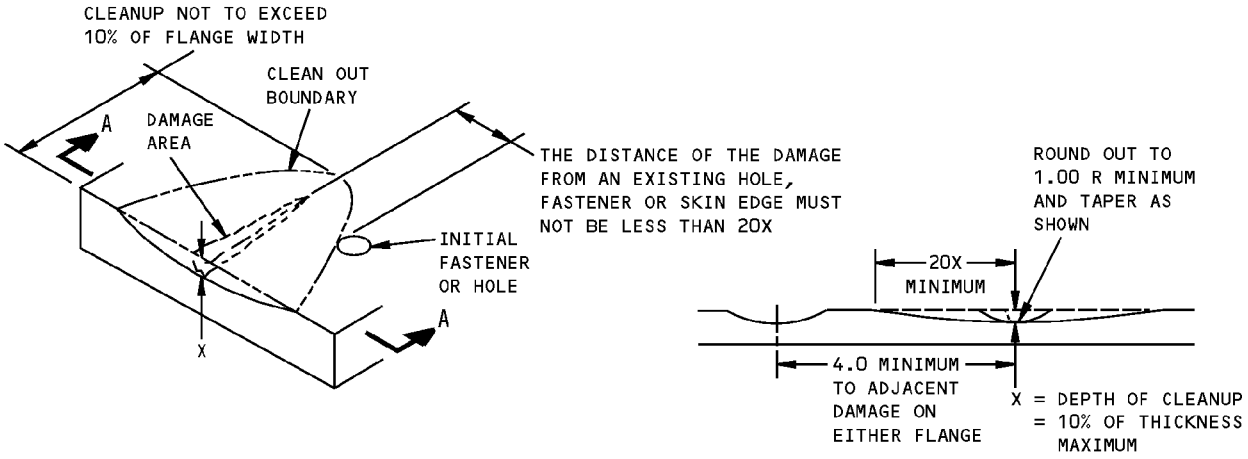


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



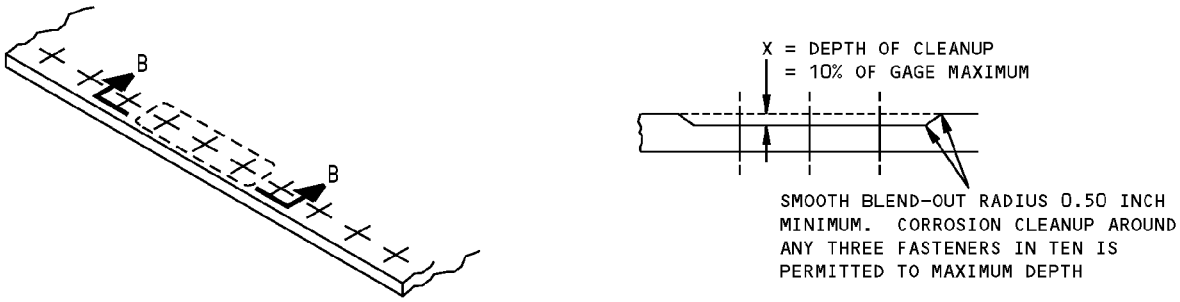
DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL I



SECTION A–A

REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL II

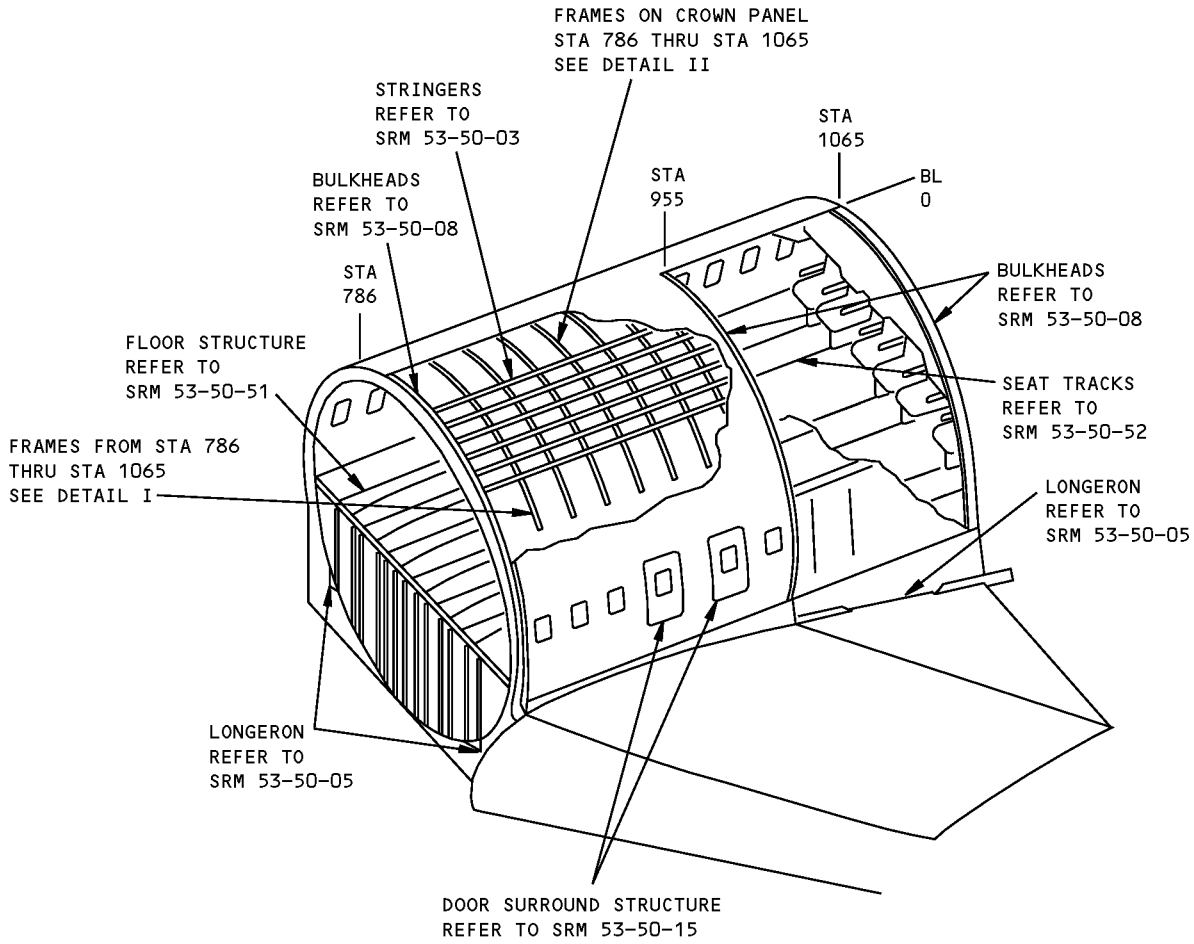


SECTION B–B

CORROSION CLEANUP
DETAIL III

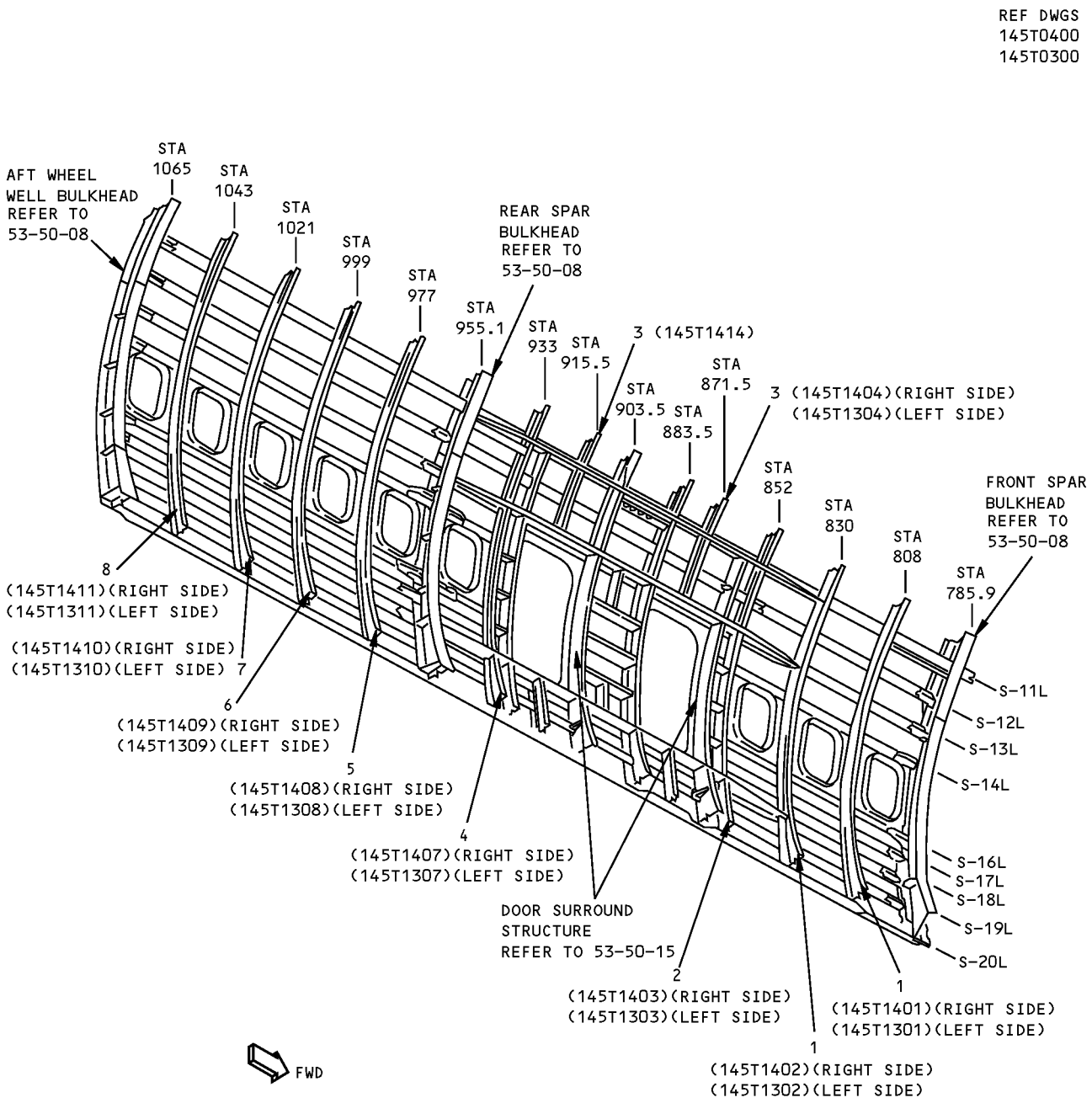
Longeron Allowable Damage
Figure 101 (Sheet 2 of 2)

IDENTIFICATION 1 - SECTION 45 - FRAME



NOTE: FOR AIRPLANES WITH TYPE I DOOR EMERGENCY EXIT AT STATION 1153, SEE DETAIL III.

Section 45 - Frame Identification
Figure 1 (Sheet 1 of 6)



LEFT SIDE SHOWN
DETAIL I

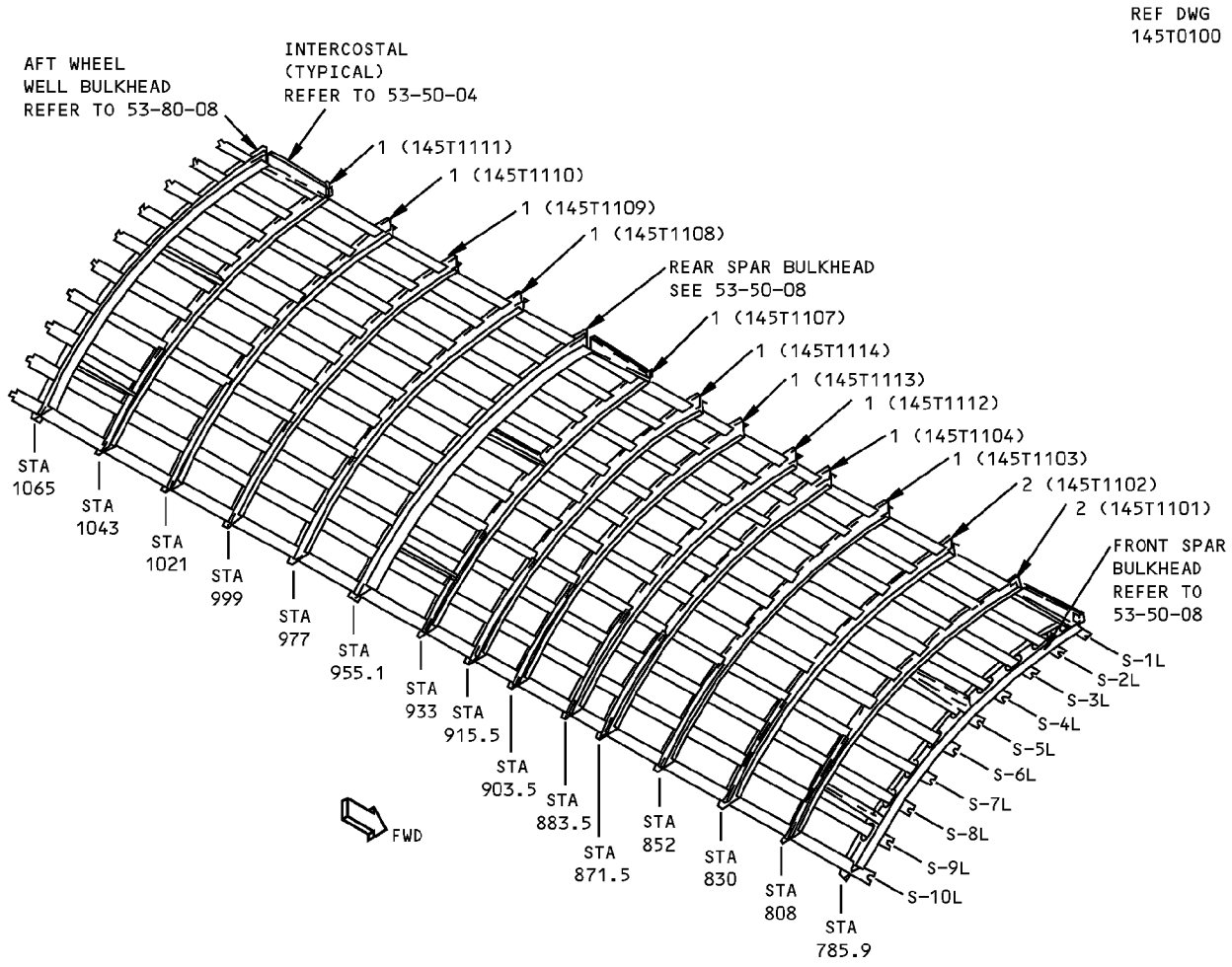
LIST OF MATL

Section 45 - Frame Identification
Figure 1 (Sheet 2 of 6)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME			
	INNER CHORD		BAC1503-100528 7075-T62	
	WEB	0.080	7075-T6 (CHEM-MILLED TO 0.045 MIN)	
	OUTER CHORD		BAC1503-100018 7075-T62	
2	FRAME			
	INNER CHORD		BAC1503-100018 7075-T62	
	WEB	0.071	7075-T6	
	OUTER CHORD		BAC1503-100018 7075-T62	
3	FRAME			
	FRAME	0.080	7075-T6 (CHEM-MILLED TO 0.050 MIN)	
	OUTER CHORD		BAC1503-100007 7075-T62	
4	FRAME			
	INNER CHORD		BAC1503-100749 7075-T62	
	WEB	0.125	7075-T6 (CHEM-MILLED TO 0.080 MIN)	
	OUTER CHORD		BAC1503-4223 7075-T62	
5	FRAME			
	INNER CHORD		BAC1503-100749 7075-T62	
	WEB	0.100	7075-T6 (CHEM-MILLED TO 0.080 MIN)	
	OUTER CHORD		BAC1503-4223 7075-T62	
6	FRAME			
	INNER CHORD		BAC1514-1589 7075-T62	
	WEB	0.071	7075-T6 (CHEM-MILLED TO 0.050 MIN)	
	OUTER CHORD		BAC1503-100018 7075-T62	
7	FRAME			
	INNER CHORD		BAC1514-1589 7075-T62	
	WEB	0.071	7075-T6 (CHEM-MILLED TO 0.045 MIN)	
	OUTER CHORD		BAC1503-100018 7075-T62	
8	FRAME			
	INNER CHORD		BAC1503-100751 7075-T62	
	WEB	0.063	CLAD 7075-T6	
	OUTER CHORD		BAC1503-100018 7075-T62	

LIST OF MATERIALS FOR DETAIL I

Section 45 - Frame Identification
Figure 1 (Sheet 3 of 6)

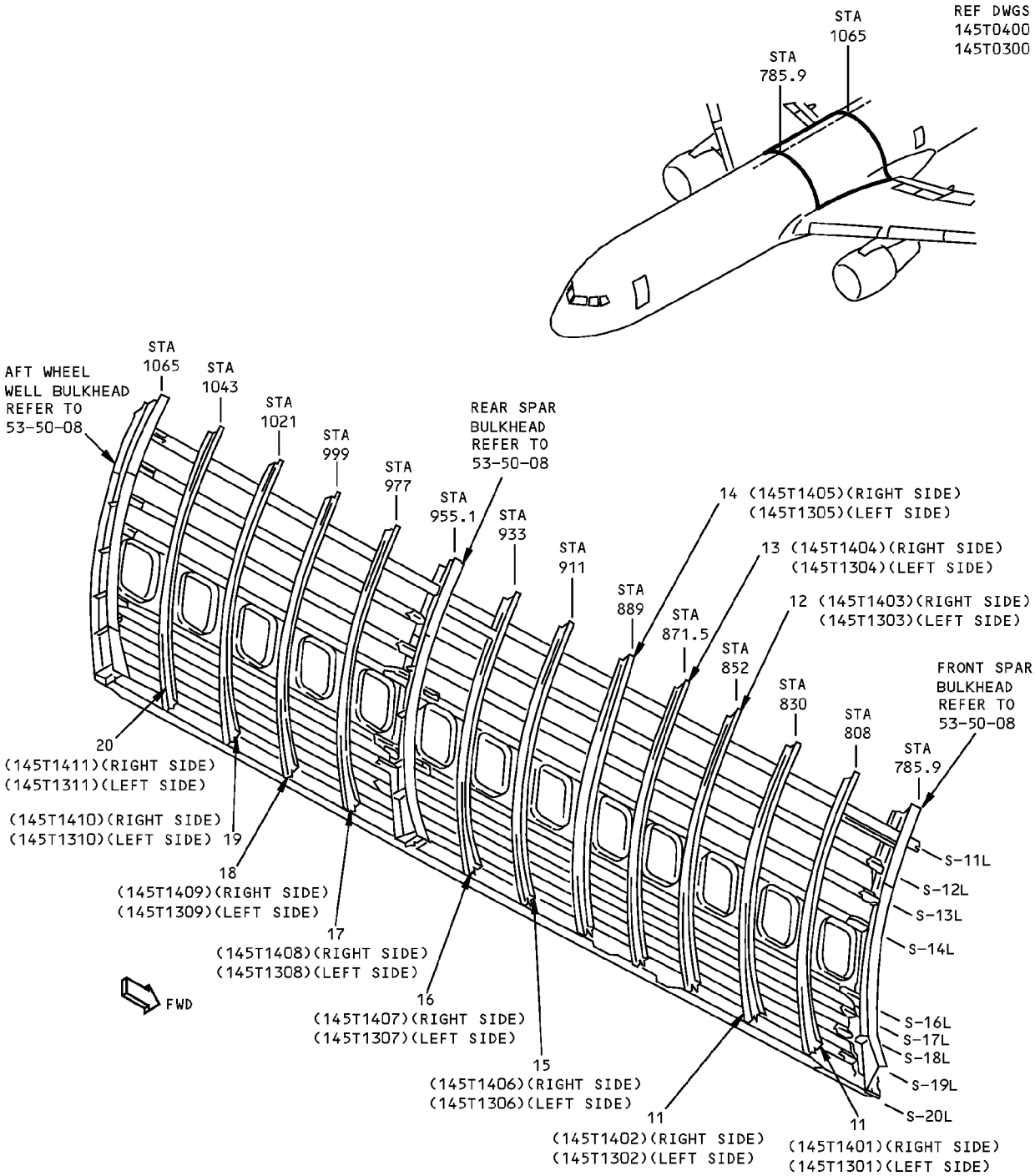


LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.080	CLAD 7075-T62 OPTIONAL: 7075-T62 (CHEM-MILLED TO 0.050 MIN)	
2	FRAME	0.063	CLAD 7075-T62 OPTIONAL: 7075-T62 (CHEM-MILLED TO 0.045 MIN)	

LIST OF MATERIALS FOR DETAIL II

Section 45 - Frame Identification
Figure 1 (Sheet 4 of 6)



LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE
AIRPLANES WITH TYPE I DOOR EMERGENCY EXIT

DETAIL III

LIST OF MATL

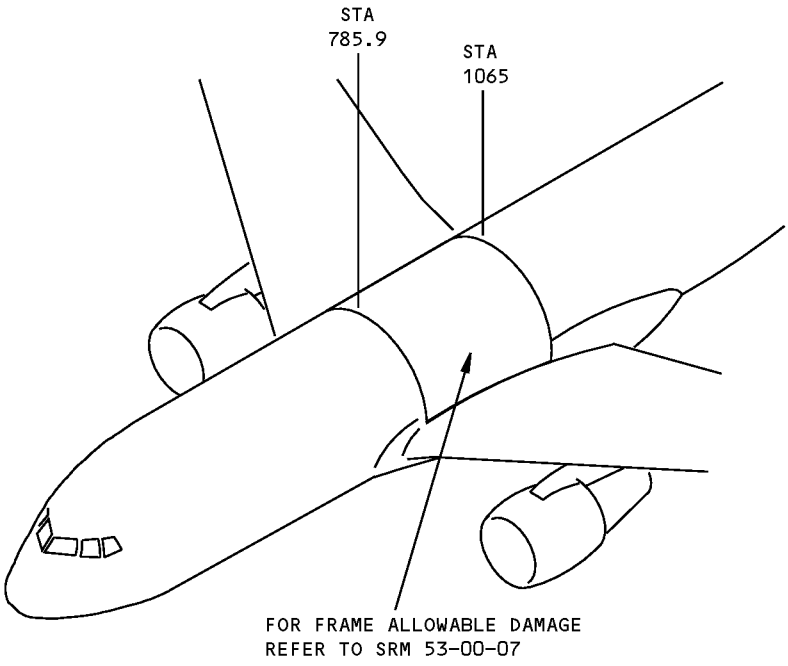
Section 45 - Frame Identification
Figure 1 (Sheet 5 of 6)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
11	FRAME			
	INNER CHORD		BAC1503-100528, 7075-T62	
	WEB	0.080	7075-T6 (CHEM-MILLED TO 0.045 MIN)	
	OUTER CHORD		BAC1503-100018, 7075-T62	
12	FRAME			
	INNER CHORD		BAC1503-10052B, 7075-T62	
	WEB	0.080	7075-T6 (CHEM-MILLED TO 0.063 MIN)	
	OUTER CHORD		BAC1503-100018, 7075-T62	
13	FRAME			
	INNER CHORD		BAC1503-100751, 7075-T62	
	WEB	0.080	7075-T6	
	OUTER CHORD		BAC1503-100018, 7075-T62	
14	FRAME			
	INNER CHORD		BAC1503-100200, 7075-T62	
	WEB	0.112	7075-T6 (CHEM-MILLED TO 0.080 MIN)	
	OUTER CHORD		BAC1503-4223 7075-T62	
15	FRAME			
	INNER CHORD		BAC1503-100200, 7075-T62	
	WEB	0.112	7075-T6 (CHEM-MILLED TO 0.080 MIN)	
	OUTER CHORD		BAC1503-4223 7075-T62	
16	FRAME			
	INNER CHORD		BAC1503-100749, 7075-T62	
	WEB	0.125	7075-T6 (CHEM-MILLED TO 0.080 MIN)	
	OUTER CHORD		BAC1503-4223, 7075-T62	
17	FRAME			
	INNER CHORD		BAC1503-100200, 7075-T62	
	WEB	0.080	7075-T6 (CHEM-MILLED TO 0.050 MIN)	
	OUTER CHORD		BAC1503-100696, 7075-T62	
18	FRAME			
	INNER CHORD		BAC1514-1589, 7075-T62	
	WEB	0.071	7075-T6 (CHEM-MILLED TO 0.050 MIN)	
	OUTER CHORD		BAC1503-100018, 7075-T62	
19	FRAME			
	INNER CHORD		BAC1514-1589, 7075-T62	
	WEB	0.071	7075-T6 (CHEM-MILLED TO 0.045 MIN)	
	OUTER CHORD		BAC1503-100018, 7075-T62	
20	FRAME			
	INNER CHORD		BAC1503-100751, 7075-T62	
	WEB	0.063	CLAD 7075-T6	
	OUTER CHORD		BAC1503-100018, 7075-T62	

LIST OF MATERIALS FOR DETAIL III

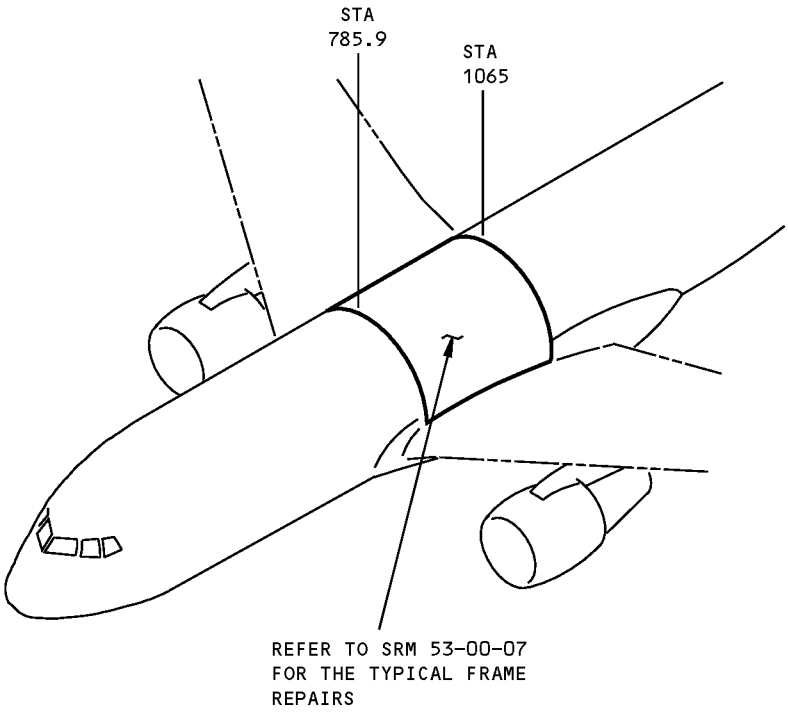
Section 45 - Frame Identification
Figure 1 (Sheet 6 of 6)

ALLOWABLE DAMAGE 1 - SECTION 45 - FRAMES



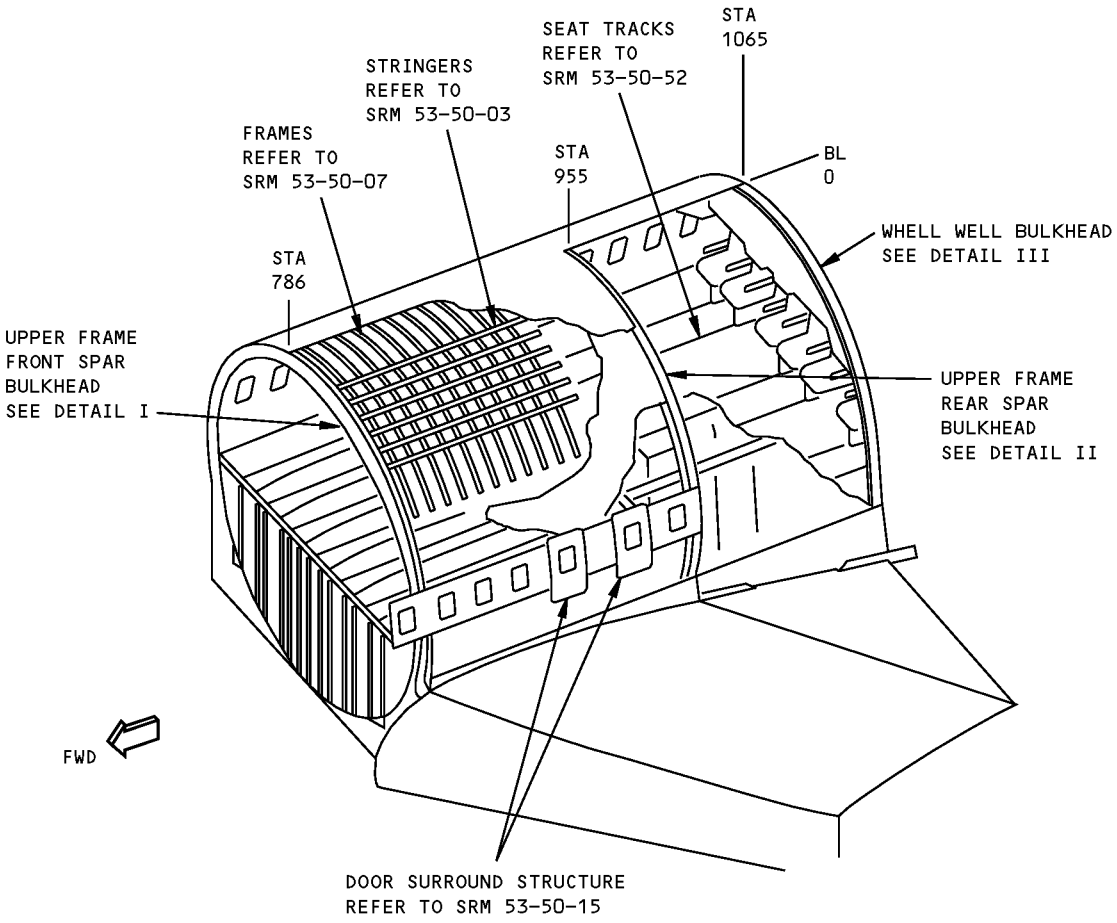
Section 45 - Allowable Damage - Frames
Figure 101

REPAIR GENERAL - SECTION 45 TYPICAL FRAMES



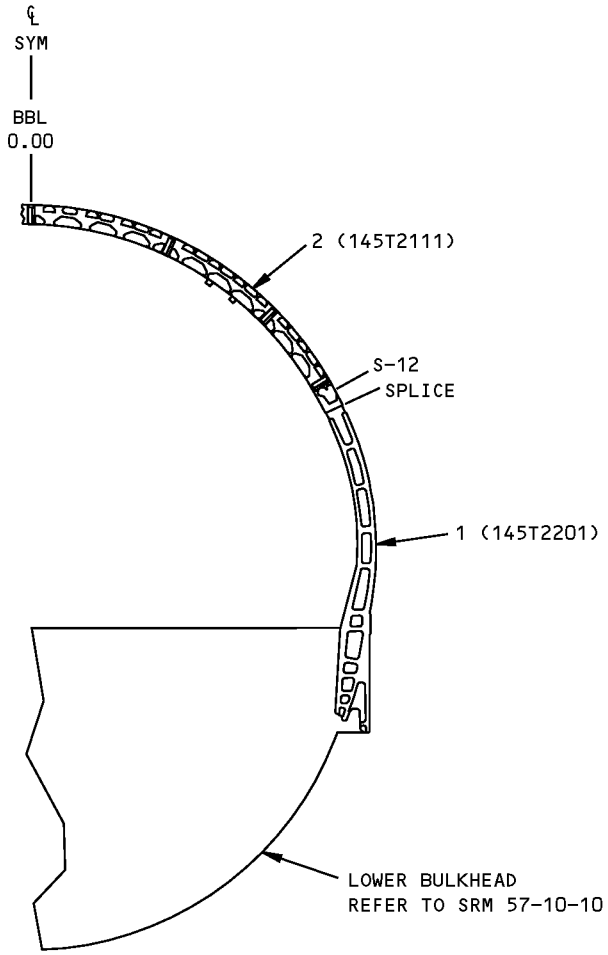
Section 45 - Typical Frame Repairs
Figure 201

IDENTIFICATION 1 - SECTION 45 - BULKHEAD STRUCTURE



Section 45 - Bulkhead Structure Identification
Figure 1 (Sheet 1 of 5)

REFERENCE DRAWINGS
145T2110
145T2203

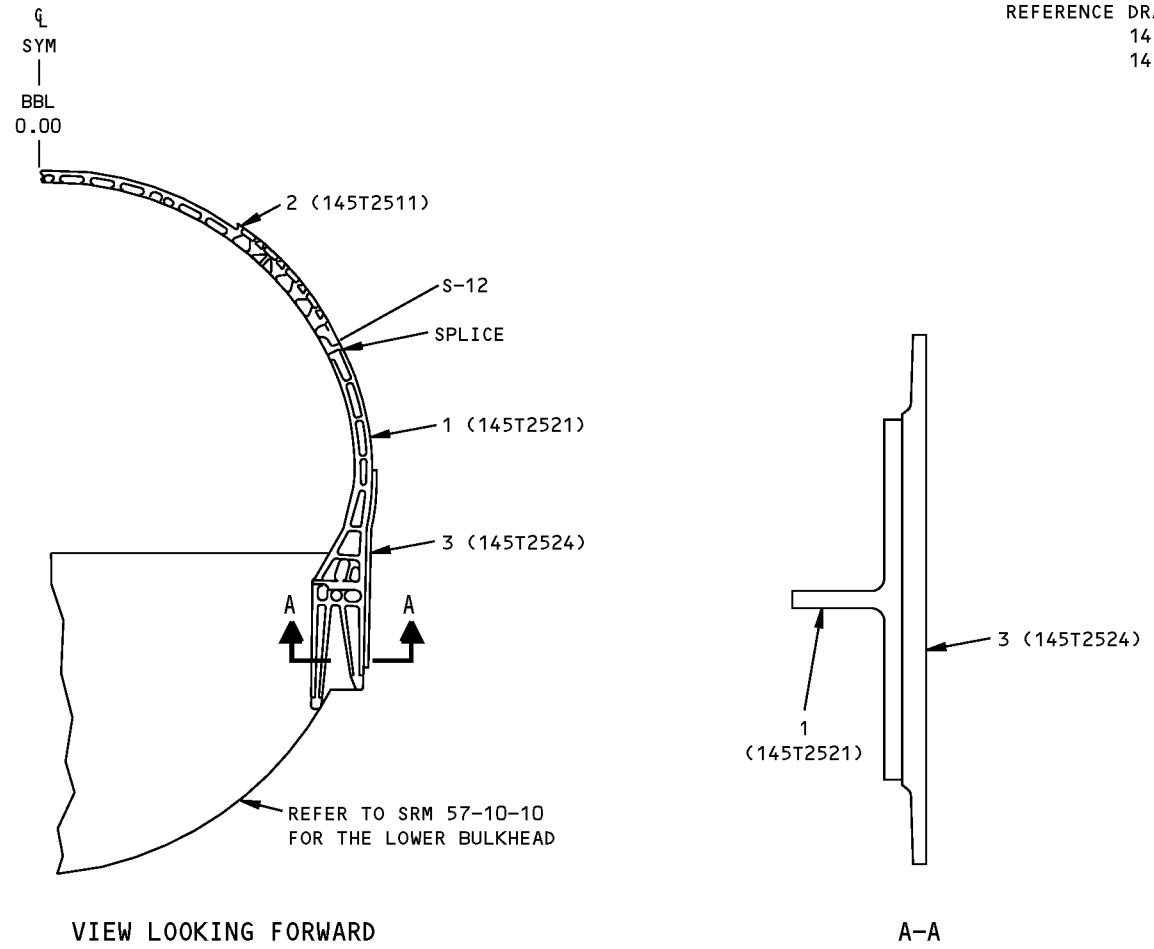


UPPER FRAME FRONT SPAR BULKHEAD
VIEW LOOKING FORWARD
RIGHT SIDE IS SHOWN, LEFT SIDE IS OPPOSITE
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SIDE FRAME		DIE FORGING 7075-T73	
2	UPPER FRAME		BAC1518-799 7075-T62 OPTIONAL: BAC1518-713 7075-T62	

LIST OF MATERIALS FOR DETAIL I

Section 45 - Bulkhead Structure Identification
Figure 1 (Sheet 2 of 5)



VIEW LOOKING FORWARD

A-A

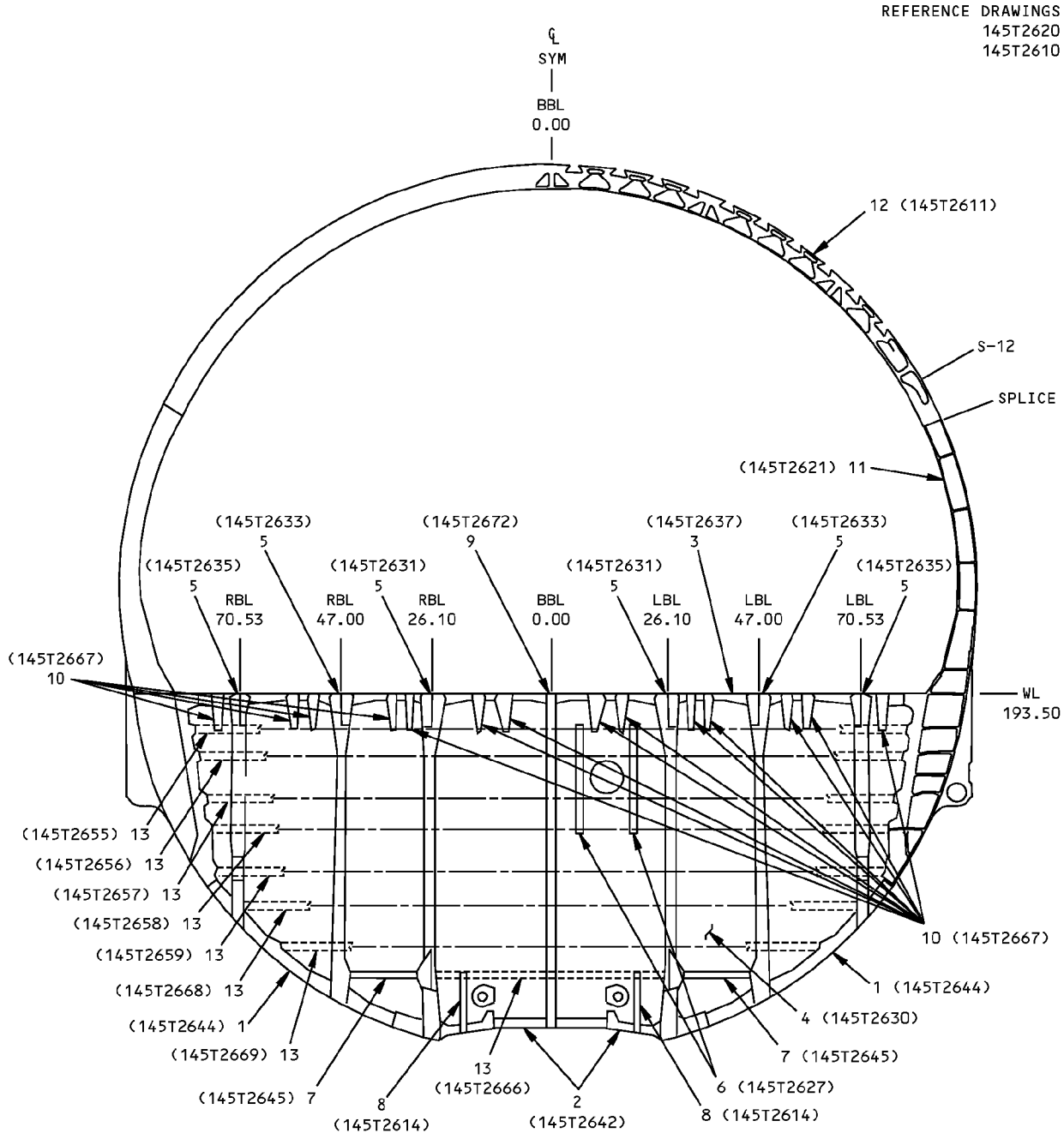
RIGHT SIDE IS SHOWN,
LEFT SIDE IS OPPOSITE

UPPER FRAME REAR SPAR BULKHEAD
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SIDE FRAME		DIE FORGING 7175-T736	
2	UPPER FRAME		BAC1518-799 7075-T62 OPTIONAL: BAC1518-713 7075-T62	
3	FAILSAFE STRAP	0.75	PLATE MACHINED TO SIZE, 2024-T351	

LIST OF MATERIALS FOR DETAIL II

Section 45 - Bulkhead Structure Identification
Figure 1 (Sheet 3 of 5)



MLG WHEEL WELL BULKHEAD
VIEW LOOKING AFT
LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE (EXCEPT AS SHOWN)
DETAIL III

LIST OF MATL

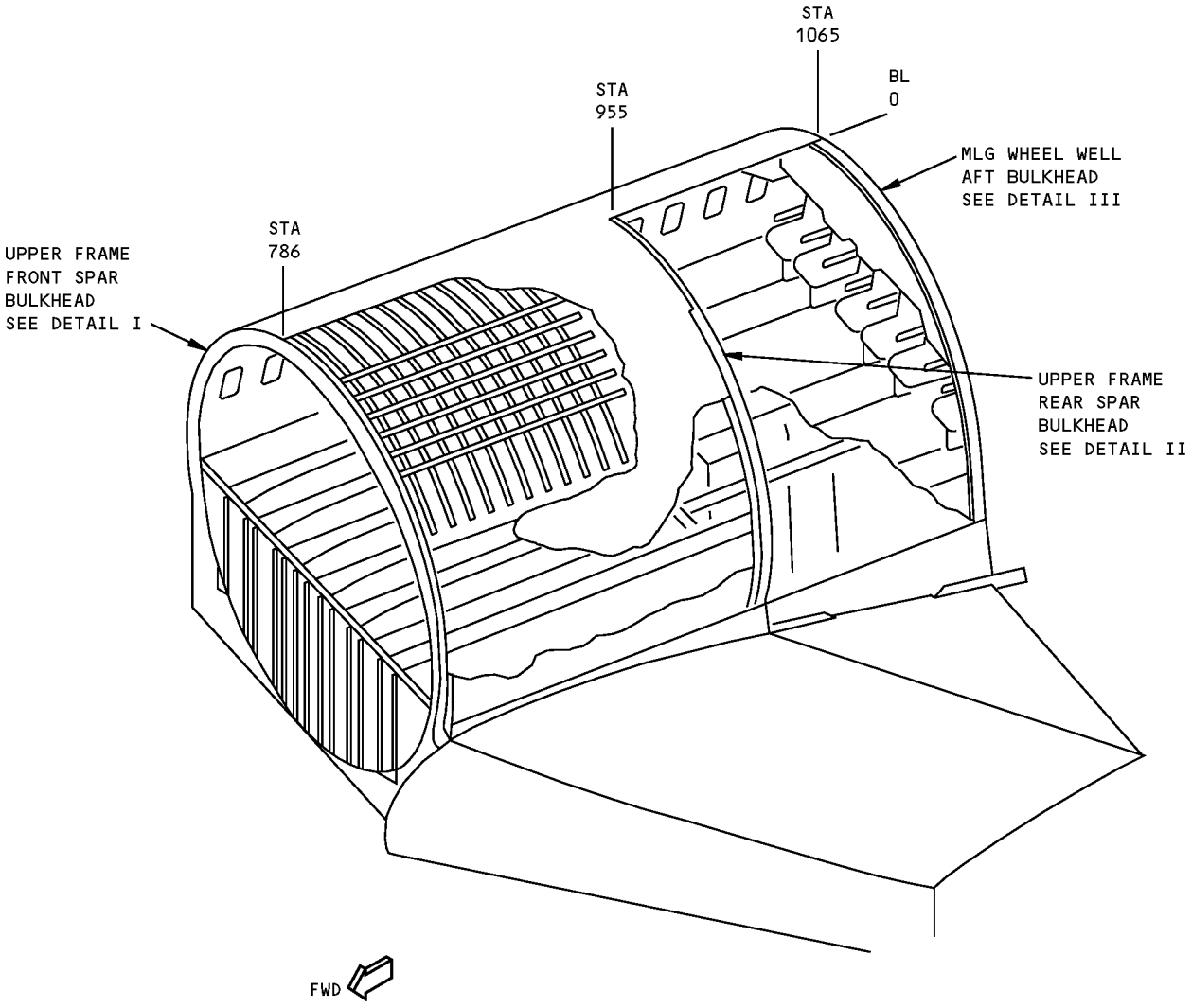
Section 45 - Bulkhead Structure Identification
Figure 1 (Sheet 4 of 5)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	LOWER CHORD		BAC1514-2462 7075-T73511 OPTIONAL: BAC1514-2597 7075-T73511	
2	LOWER CHORD (OVER KEEL)		DIE FORGING 7075-T73	
3	CHORD - PRESSURE WEB		BAC1514-2461 7075-T73511 OPTIONAL: BAC1514-2643 7075-T73511	
4	WEB	0.180 0.250	2024-T351 OPTIONAL: 2024-T351	
5	BEAM		DIE FORGING 7175-T736	
6	ANGLE		BAC1518-738 7075-T7351 OPTIONAL: AND10133-1204 7075-T7351 BAC1506-2131 7075-T7351	
7	INTERCOSTAL	0.140	7075-T62	
8	ANGLE	0.125	2024-T42	
9	TEE		BAC1505-39281 7075-T73511	
10	PYLON FITTING		DIE FORGING 7075-T73	
11	SIDE FRAME		DIE FORGING 7175-T736	
12	UPPER FRAME		BAC1518-799 7075-T62 OPTIONAL: BAC1518-713B 7075-T62	
13	STIFFENER		BAC1506-2131 7075-T6511 OPTIONAL: BAC1518-738 7075-T6511	

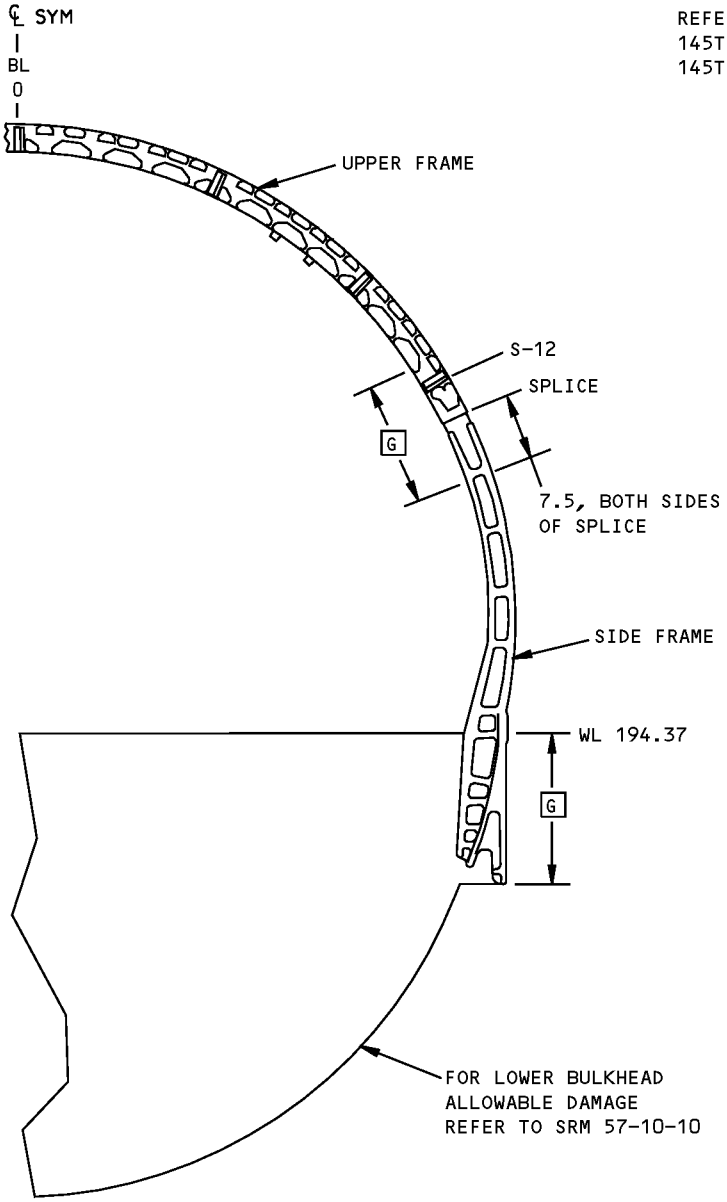
LIST OF MATERIALS FOR DETAIL III

Section 45 - Bulkhead Structure Identification
Figure 1 (Sheet 5 of 5)

ALLOWABLE DAMAGE 1 - SECTION 45 - BULKHEAD STRUCTURE



Section 45 - Allowable Damage - Bulkhead Structure
Figure 101 (Sheet 1 of 7)

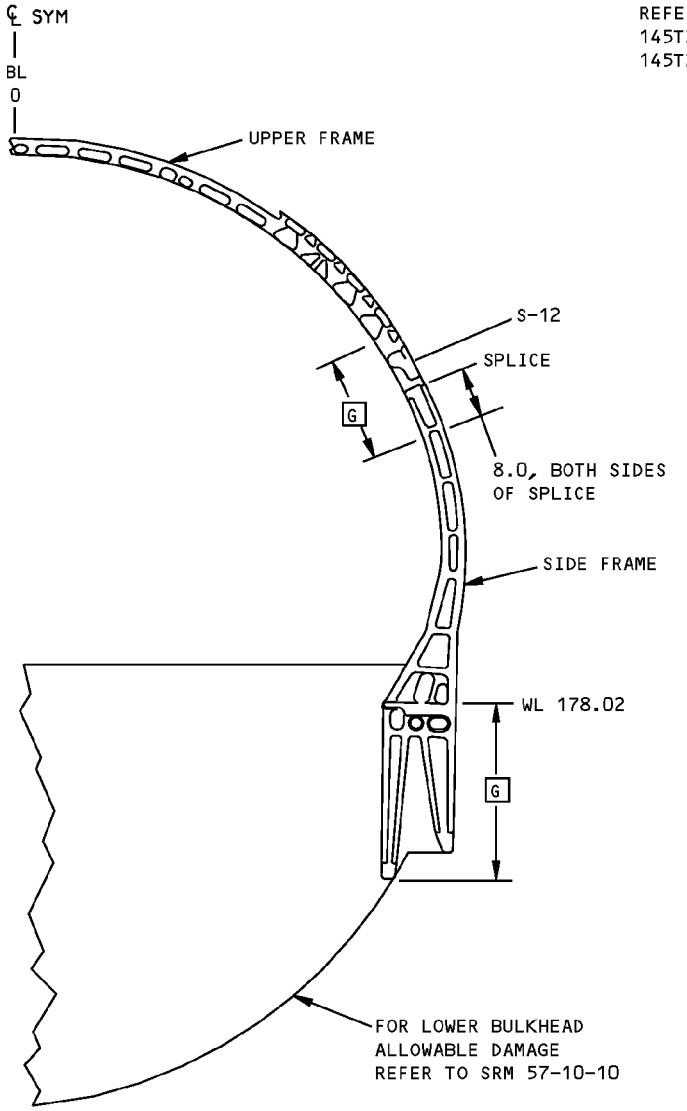


MATERIAL: ALUMINUM

UPPER FRAME
FRONT SPAR BULKHEAD
AFT VIEW
DETAIL I

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
UPPER FRAME [F]	[A]	[C]	NOT PERMITTED	NOT PERMITTED
SIDE FRAME [F]	[A]	[C]	NOT PERMITTED	NOT PERMITTED

Section 45 - Allowable Damage - Bulkhead Structure
Figure 101 (Sheet 2 of 7)

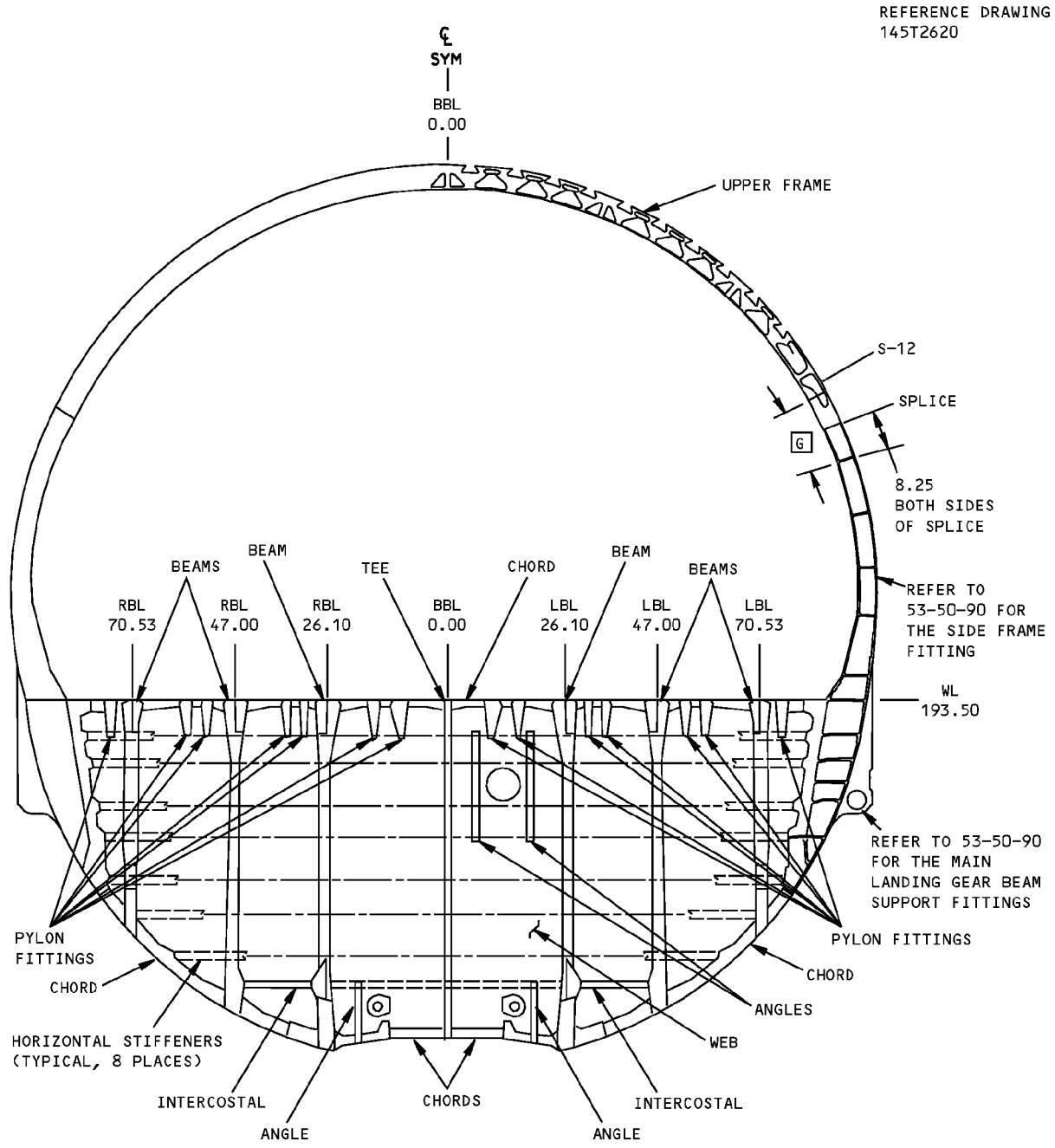


MATERIAL: ALUMINUM

UPPER FRAME
REAR SPAR BULKHEAD
AFT VIEW
DETAIL II

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
UPPER FRAME [F]	[A]	[C]	NOT PERMITTED	NOT PERMITTED
SIDE FRAME [F]	[A]	[C]	NOT PERMITTED	NOT PERMITTED

Section 45 - Allowable Damage - Bulkhead Structure
Figure 101 (Sheet 3 of 7)



MATERIAL: ALUMINUM

STA 1065
MLG WHEEL WELL
AFT BULKHEAD
FRONT VIEW
DETAIL III

Section 45 - Allowable Damage - Bulkhead Structure
Figure 101 (Sheet 4 of 7)

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
UPPER FRAME [F]	[A]	[C]	NOT PERMITTED	NOT PERMITTED
CHORDS [F]	[A]	[C]	NOT PERMITTED	NOT PERMITTED
BEAMS [F]	[A]	[C]	NOT PERMITTED	NOT PERMITTED
TEES	[A]	[C]	NOT PERMITTED	NOT PERMITTED
HORIZONTAL STIFFENER [F]	[A]	[C]	NOT PERMITTED	NOT PERMITTED
PYLON FITTINGS [F]	[A]	[C]	NOT PERMITTED	NOT PERMITTED
WEB [F]	[B]	[D]	SEE DETAIL VI	[E]
INTERCOSTALS	[B]	[D]	SEE DETAIL VI	[E]
ANGLES	[B]	[D]	NOT PERMITTED	[E]

ALLOWABLE DAMAGE FOR DETAIL III

NOTES

- SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- REFER TO AMM 51-21 TO APPLY THE FINISH TO THE REWORKED AREA.

[A] REMOVE THE EDGE CRACKS AS SHOWN IN DETAILS IV AND VIII. OTHER CRACKS ARE NOT PERMITTED.

[B] REMOVE THE EDGE CRACKS AS SHOWN IN DETAILS IV AND IX. OTHER CRACKS ARE NOT PERMITTED.

[C] REMOVE THE DAMAGE AS SHOWN IN DETAILS IV, V,VII AND VIII.

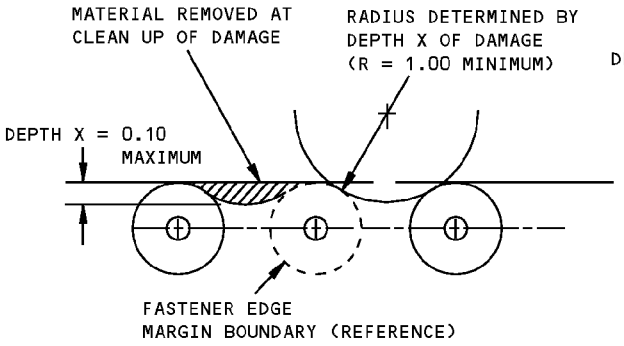
[D] REMOVE THE DAMAGE AS SHOWN IN DETAILS IV, V,VII AND IX.

[E] REMOVE THE DAMAGE TO A MAXIMUM DIAMETER OF 0.25 INCH (6 mm). THE EDGE OF THE DAMAGE CLEANUP MUST BE MORE THAN ONE INCH FROM AN ADJACENT HOLE OR OTHER DAMAGE. FILL THE HOLE WITH A 2117-T4 RIVET INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES MUST BE REPAIRED.

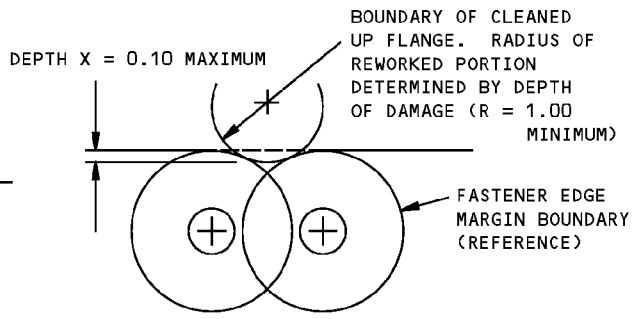
[F] SHOT PEEN THE REWORKED SURFACES. REFER TO SRM 51-20-06 FOR SHOT PEENING.

[G] THIS IS A CRITICAL AREA. CORROSION CLEANUP AS SHOWN IN DETAIL VII IS NOT PERMITTED. GET INSTRUCTIONS FROM THE BOEING COMPANY.

Section 45 - Allowable Damage - Bulkhead Structure
Figure 101 (Sheet 5 of 7)

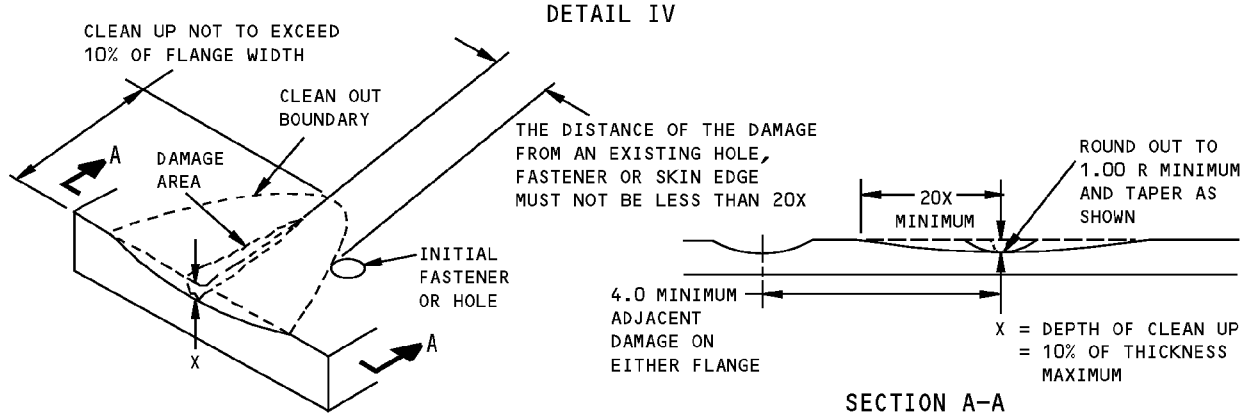


DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



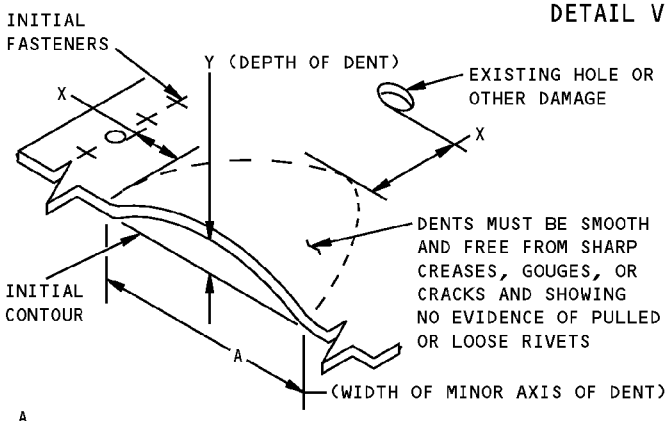
DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL IV



SECTION A-A

REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL V

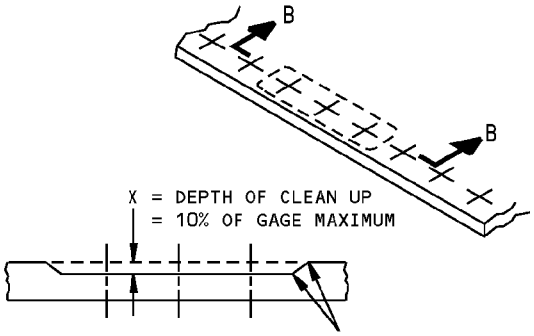


$\frac{A}{Y}$ MUST NOT BE LESS THAN 30

Y MUST BE LESS THAN OR EQUAL TO 0.125

X MUST BE GREATER THAN OR EQUAL TO 1.0

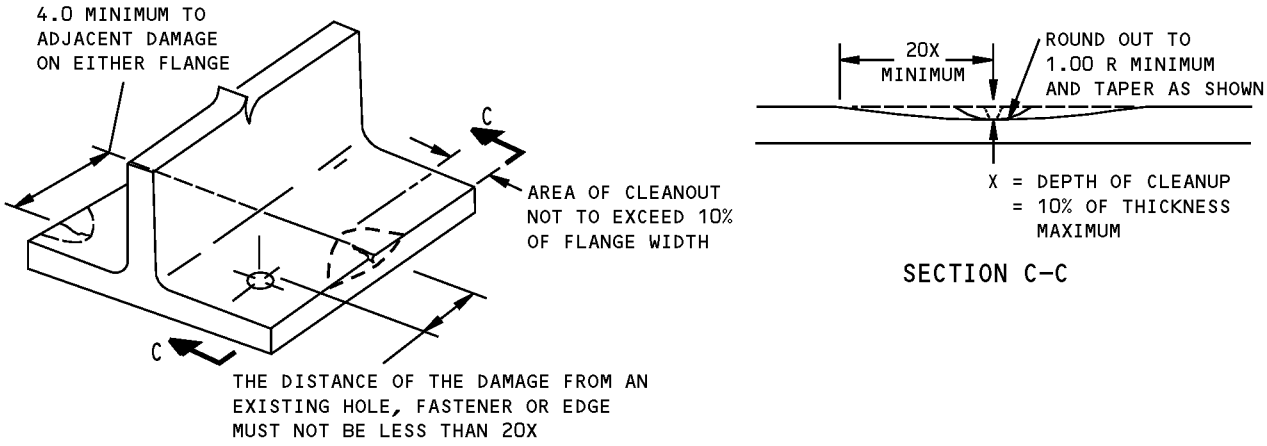
ALLOWABLE DAMAGE FOR DENT
DETAIL VI



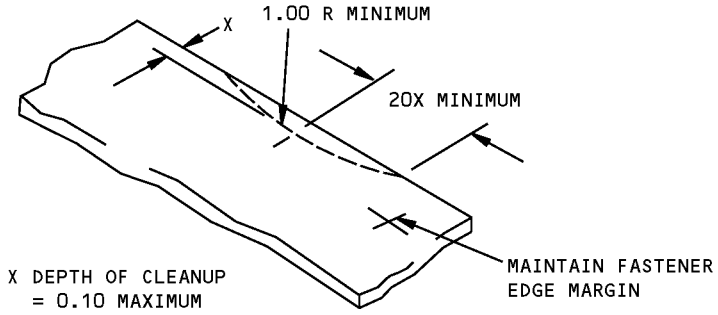
SECTION B-B

CORROSION CLEANUP
DETAIL VII

Section 45 - Allowable Damage - Bulkhead Structure
Figure 101 (Sheet 6 of 7)



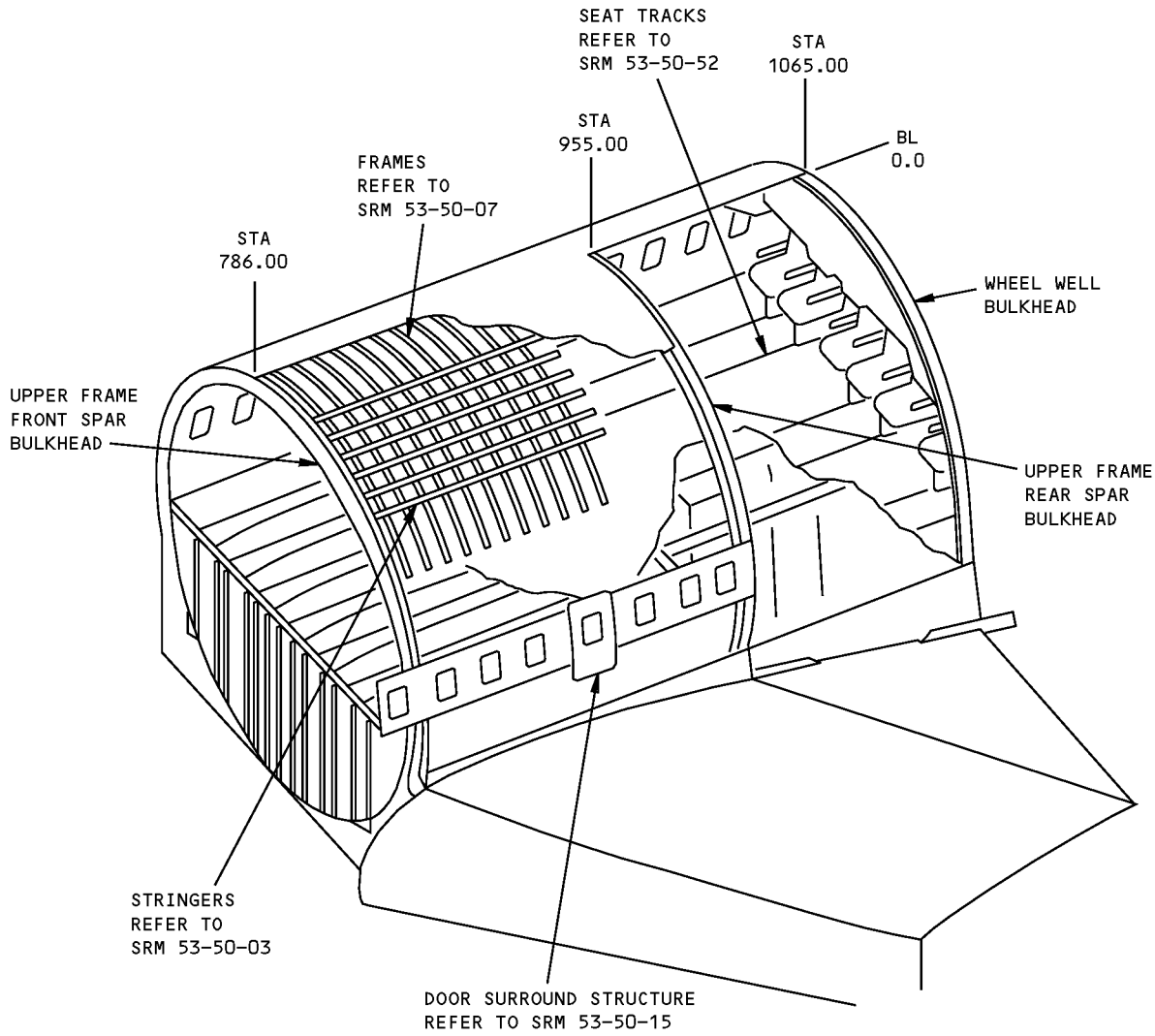
REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE
DETAIL VIII



REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE
DETAIL IX

Section 45 - Allowable Damage - Bulkhead Structure
Figure 101 (Sheet 7 of 7)

REPAIR 1 - SECTION 45 - BULKHEAD STRUCTURE



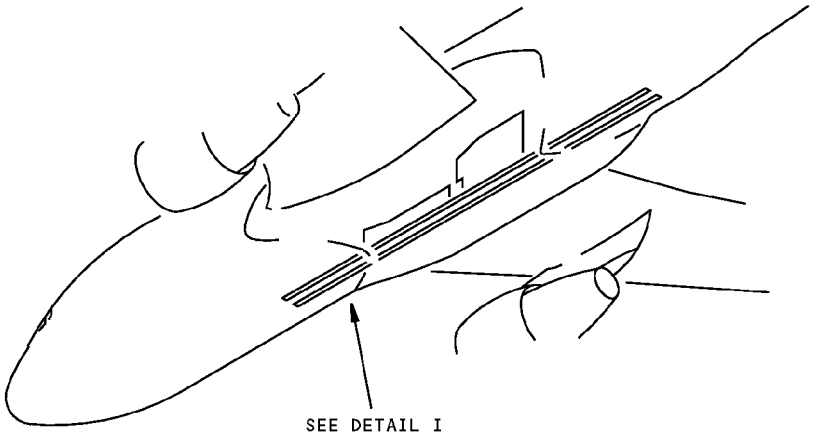
NOTES

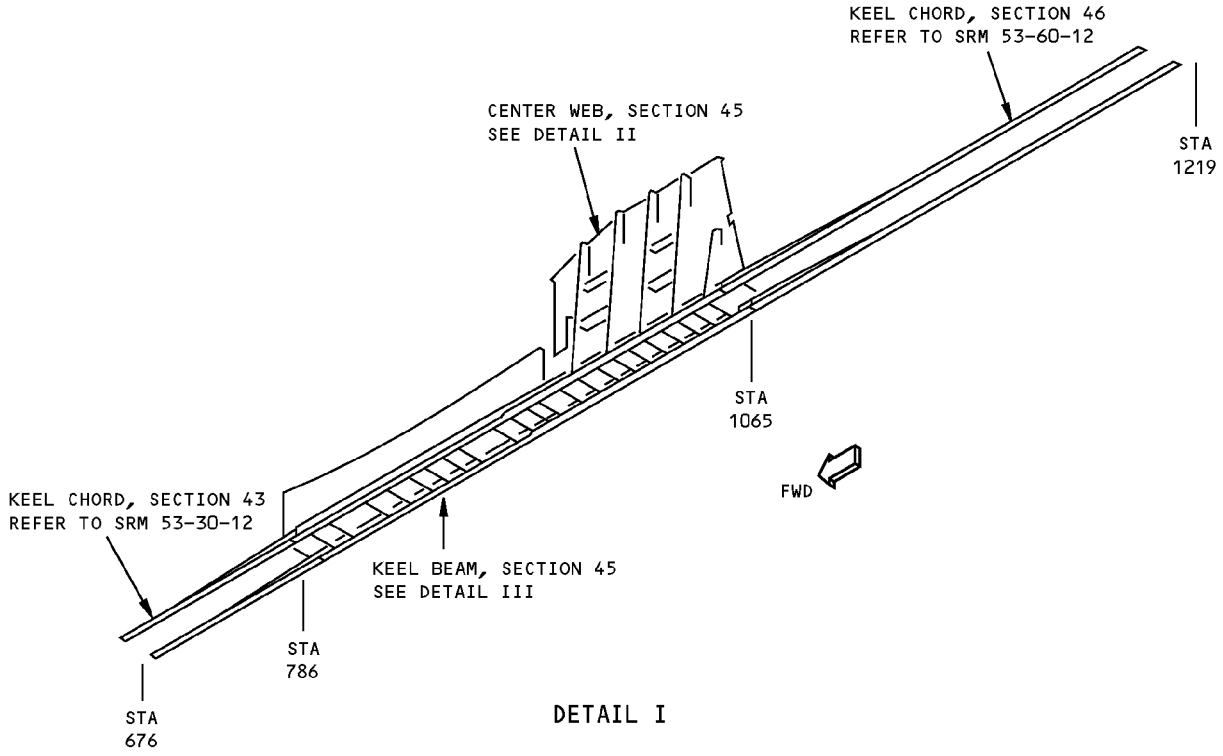
- NO TYPICAL REPAIR TO BULKHEADS. SPECIFIC REPAIRS TO BULKHEADS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE.
- REFER TO SRM 53-50-90 FOR REPAIRS TO STATION 1065 BULKHEAD FITTINGS.

Section 45 - Bulkhead Structure Repair
Figure 201

IDENTIFICATION 1 - SECTION 45 - KEEL BEAM STRUCTURE

REF DWG
145T8700





DETAIL I

NOTES

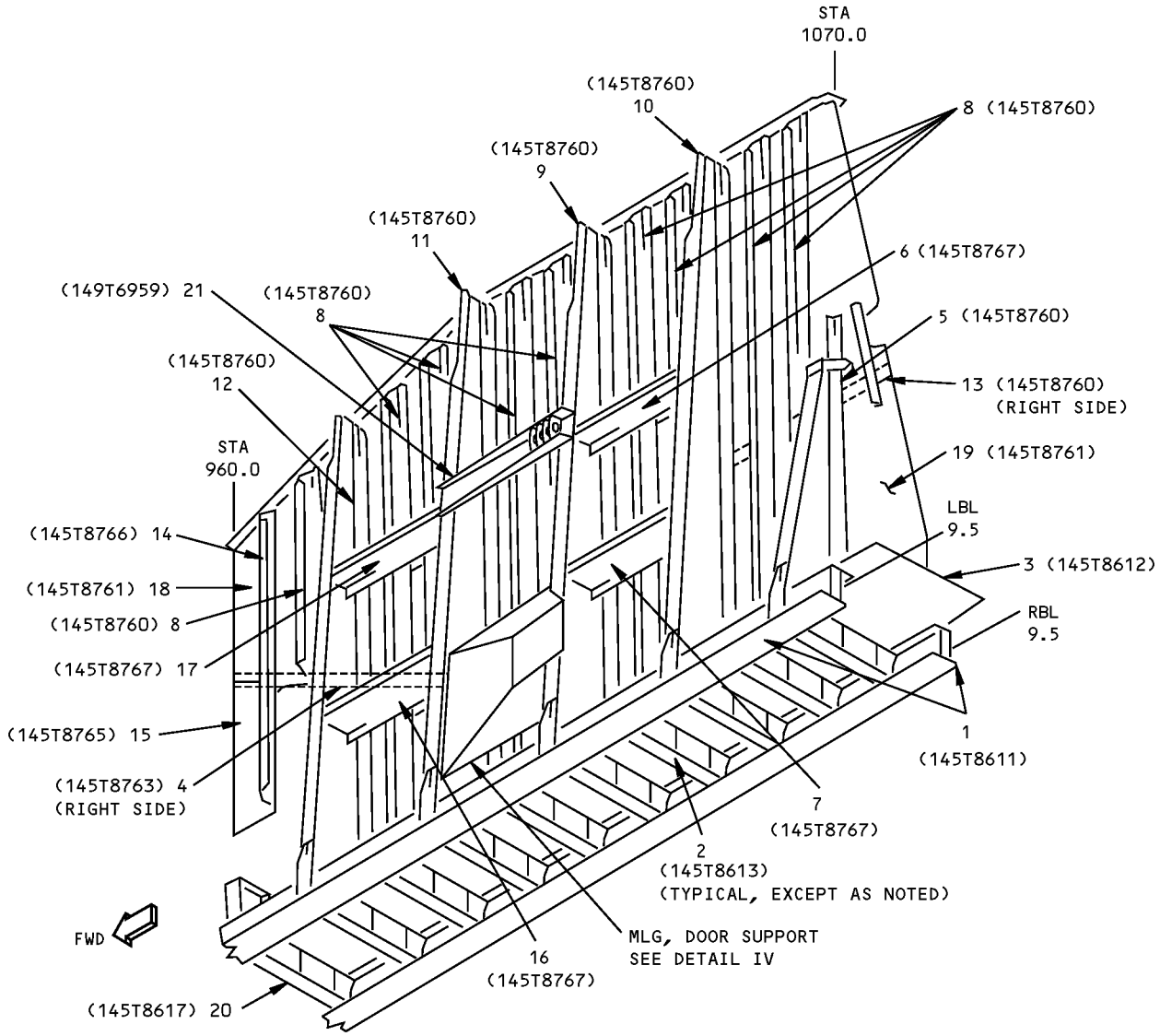
[A] FOR CUM LINE NUMBERS:
132 THRU 230

[B] FOR CUM LINE NUMBERS:
231 AND ON

[C] THE WEB IS CHEM-MILLED AND VARIES IN THICKNESS. REFER TO THE BOEING DRAWING TO DETERMINE LOCAL THICKNESS.

Keel Beam Structure Identification
Figure 1 (Sheet 1 of 7)

REF DWG
145T8740
145T8760



DETAIL II

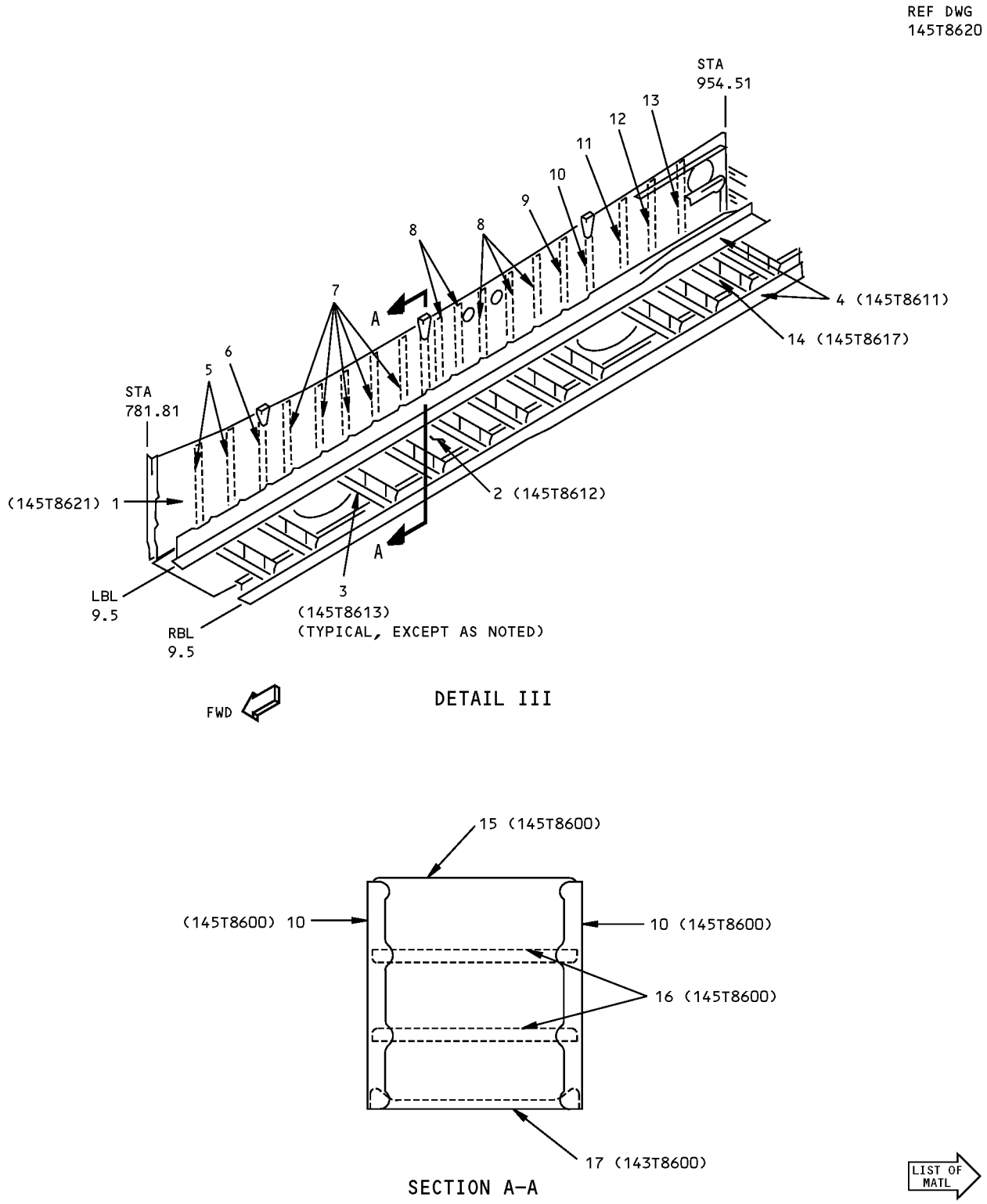
LIST OF MATL

Keel Beam Structure Identification
Figure 1 (Sheet 2 of 7)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	KEEL CHORD KEEL CHORD		BAC1520-2436 7150-T6511 BAC1520-2436 7150-T7E95	[A] [B]
2	STIFFENER		FORGING 7175-T736	
3	HORIZONTAL WEB	[C]	CLAD 7075-T6	
4	CANTED CHORD		BAC 1506-1363 7075-T6511	
5	STA 1063 A-FRAME OUTER CHORDS WEB STIFFENERS INNER CHORDS	 0.063 	 BAC1505-100512 7075-T6511 CLAD 7075-T6 AND10133-1202 7075-T6511 AND10136-2404 7075-T6511	
6	INTERCOSTAL	0.063	CLAD 7075-T6	
7	INTERCOSTAL WEB CHORD	 0.071 	 CLAD 7075-T6 BAC1503-100398 7075-T6511	
8	J-STIFFENER		BAC1506-3258 7075-T6511 OPTIONAL: 7075-T651	
9	STA 1021 A-FRAME OUTER CHORDS WEB STIFFENERS INNER CHORDS	 [C] 	 AND10136-3006 7075-T6511 CLAD 7075-T6 AND10136-1022 CLAD 7075-T6 BAC1505-100081 7075-T6511	
10	STA 1043 A-FRAME OUTER CHORDS WEB STIFFENERS INNER CHORDS	 0.050 	 AND10136-3004 7075-T6511 CLAD 7075-T6 AND10133-1203 7075-T6511 AND10136-2404 7075-T6511	
11	STA 999 A-FRAME OUTER CHORDS WEB STIFFENER INNER CHORDS	 0.050 	 AND10136-3004 7075-T6511 CLAD 7075-T6 AND10133-1202 7075-T6511 AND10136-2404 7075-T6511	
12	STA 977 A-FRAME CHORDS STIFFENERS WEB	 0.050	 AND10136-3004 7075-T6511 AND10133-1202 7075-T6511 CLAD 7075-T6	
13	STIFFENER		BAC1518-870 7075-T6511	
14	STIFFENER		BAC1517-1757 7075-T73511	
15	REAR SPAR BEAM WEB	[C]	2024-T3	
16	INTERCOSTAL WEB CHORD	 0.071 	 CLAD 2024-T3 BAC1503-100398 7075-T6511	
17	INTERCOSTAL	0.063	CLAD 2024-T3	
18	BL 0 WEB (FORWARD)	[C]	2024-T3	
19	BL 0 WEB (AFT)	[C]	2024-T3	
20	STIFFENER		7075-T73511	
21	ATTACH FITTING	1.700	7075-T7351	

LIST OF MATERIALS FOR DETAIL II

Keel Beam Structure Identification
Figure 1 (Sheet 3 of 7)



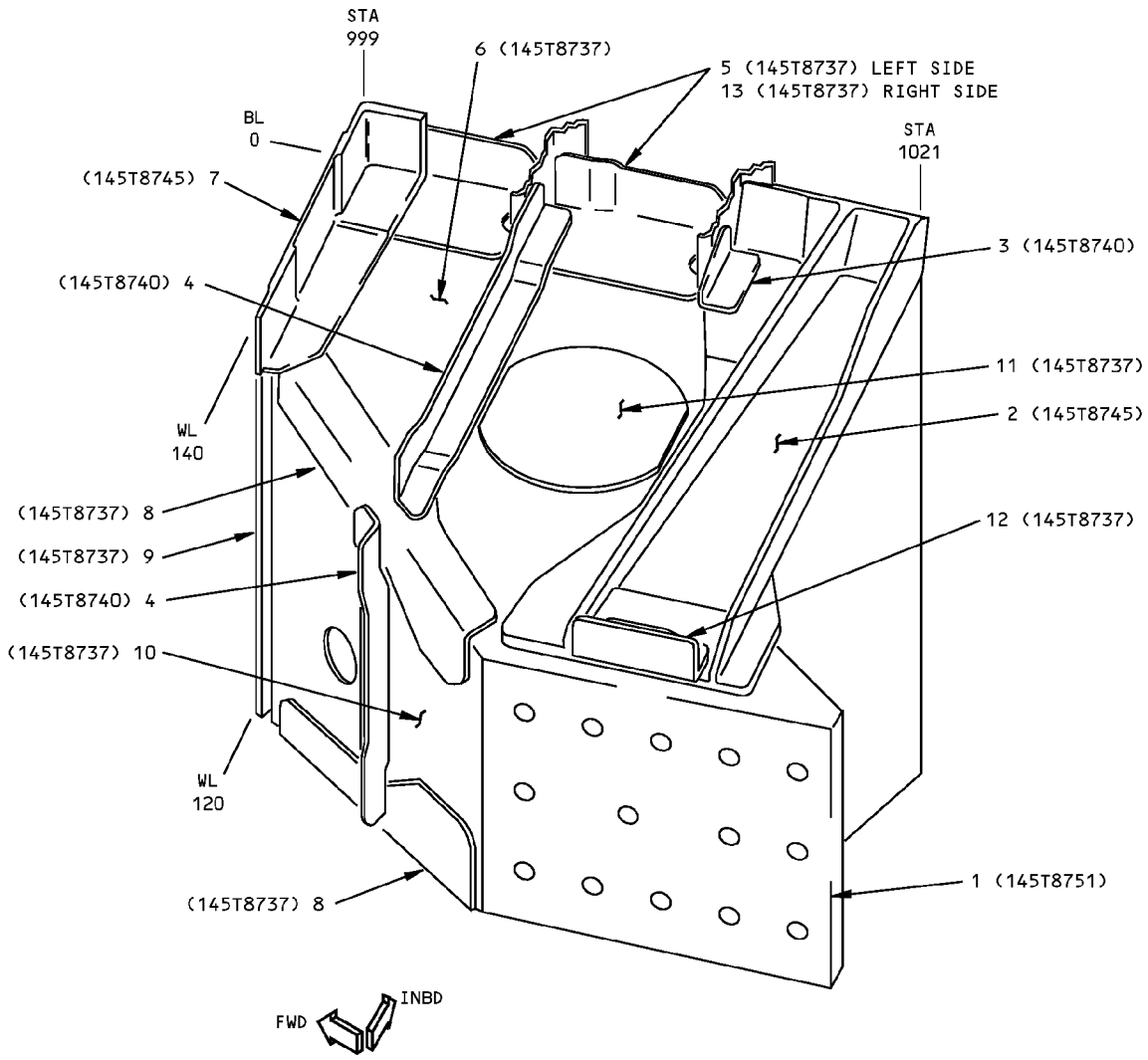
Keel Beam Structure Identification
Figure 1 (Sheet 4 of 7)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	WEB	[C]	CLAD 7075-T6	
2	HORIZONTAL WEB	[C]	CLAD 7075-T6	
3	STIFFENER		FORGING 7175-T736	
4	KEEL CHORD		BAC1520-2436 7150-T6511 BAC1520-2436 7150-T7E95	[A] [B]
5	STIFFENER		AND10133-1203 7075-T6511	
6	STIFFENER		AND10133-2004 7075-T6511	
7	STIFFENER		BAC1503-100115 7075-T6511	
8	STIFFENER		BAC1517-205 7075-T6511	
9	STIFFENER		AND10133-3002 7075-T6511	
10	STIFFENER		AND10133-2403 7075-T6511	
11	STIFFENER		AND10134-1603 7075-T6511	
12	STIFFENER		AND10133-1602 7075-T6511	
13	STIFFENER		AND10133-2401 7075-T6511	
14	STIFFENER		BAR 7075-T73511	
15	WEB	0.063	2024-T3	
16	STIFFENER		AND10134-1405 7075-T6511	
17	STIFFENER		BAC1503-100195 7075-T6511	

LIST OF MATERIALS FOR DETAIL III

Keel Beam Structure Identification
Figure 1 (Sheet 5 of 7)

REF DWG
145T8740



LEFT SIDE IS SHOWN
DETAIL IV

LIST OF MATL

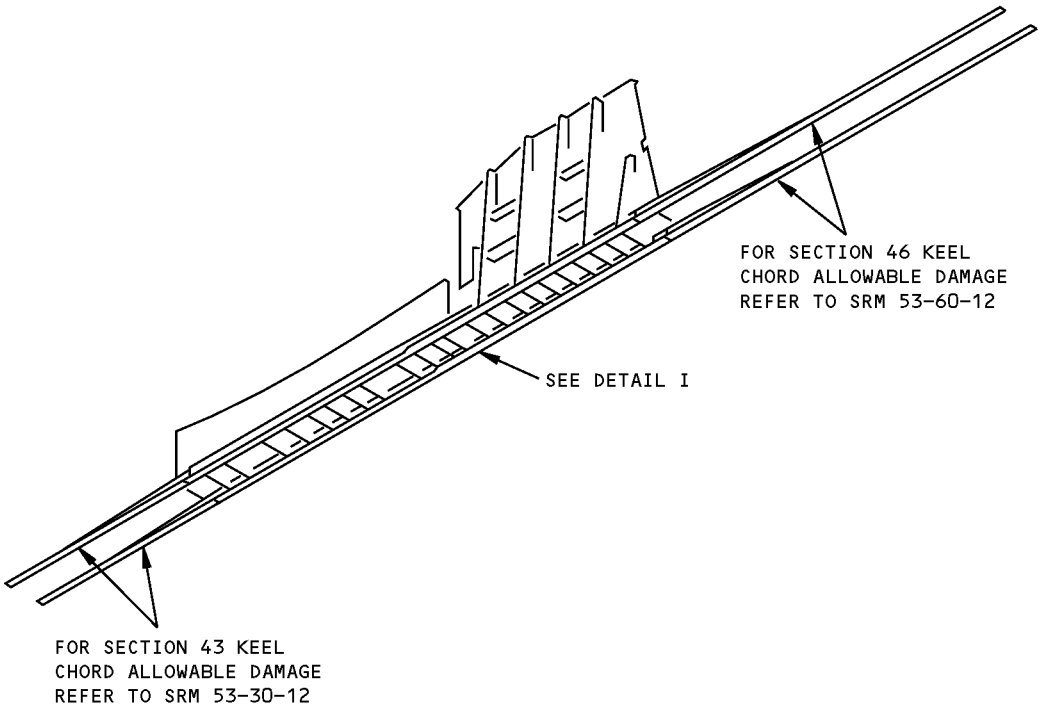
Keel Beam Structure Identification
Figure 1 (Sheet 6 of 7)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SUPPORT FITTING		FORGING 7075-T73	
2	SUPPORT FITTING		FORGING 7075-T73	
3	CLIP		BAC1503-100090 7075-T6511	
4	STIFFENER		BAC1503-100090 7075-T6511	
5	SHEAR TIE	0.100	7075-T6	
6	WEB	0.080	CLAD 2024-T42	
7	FITTING		FORGING 7075-T73	
8	CHORD	0.090	CLAD 7075-T6	
9	ANGLE	0.080	CLAD 7075-T6	
10	WEB	0.080	CLAD 2024-T3	
11	COVER PLATE	0.090	CLAD 2024-T3	
12	ANGLE	0.050	CLAD 2024-T3	
13	ANGLE	0.125	7075-T6	

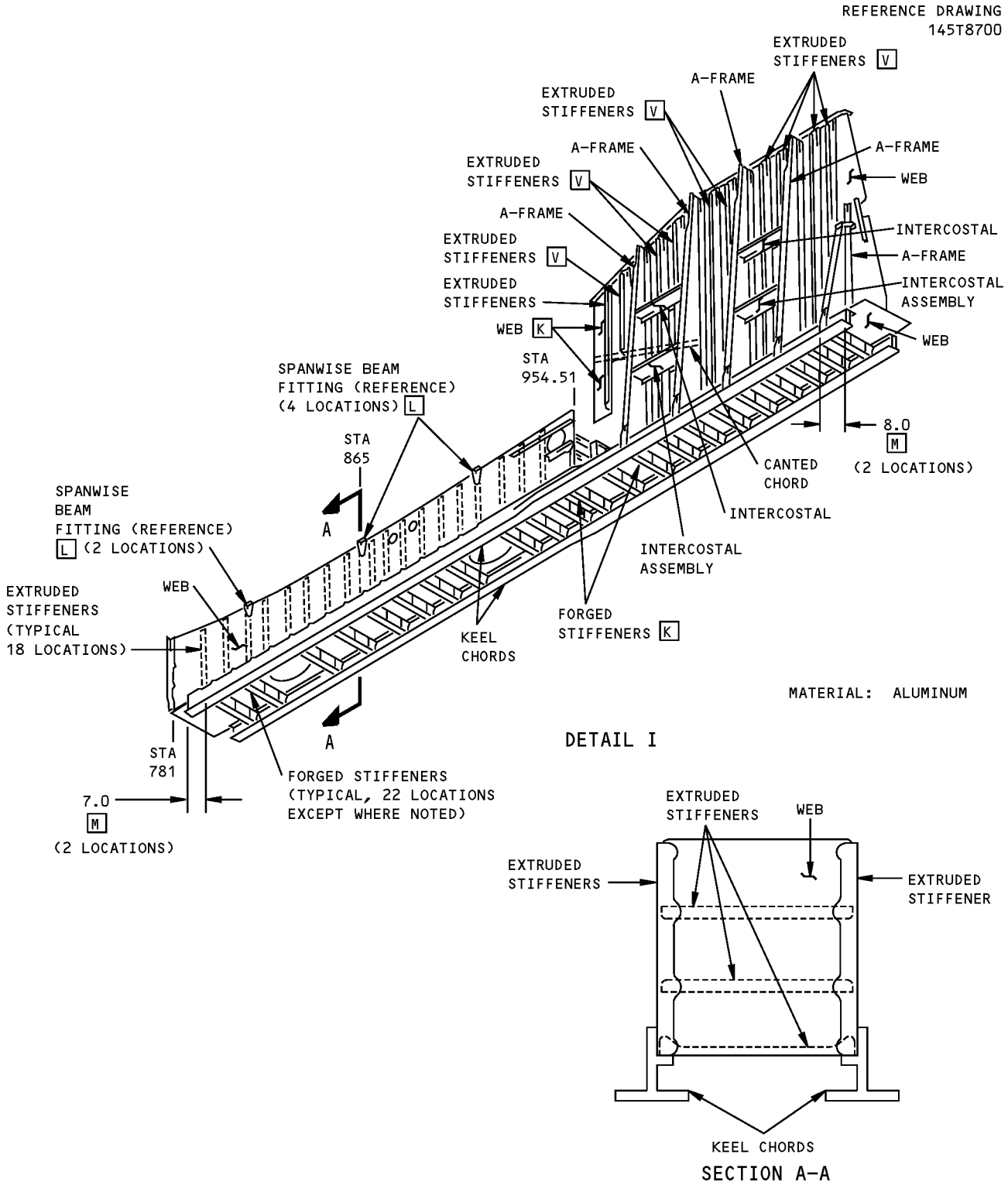
LIST OF MATERIALS FOR DETAIL IV

Keel Beam Structure Identification
Figure 1 (Sheet 7 of 7)

ALLOWABLE DAMAGE 1 - SECTION 45 KEEL BEAM STRUCTURE



Section 45 Keel Beam Structure Allowable Damage
Figure 101 (Sheet 1 of 10)



Section 45 Keel Beam Structure Allowable Damage
Figure 101 (Sheet 2 of 10)

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
KEEL CHORDS [K]	[N]	[N]	NOT PERMITTED	NOT PERMITTED
CANTED CHORD [K]	[A]	[E]	NOT PERMITTED	NOT PERMITTED
WEBS	[B]	[F]	SEE DETAIL IV	[I]
STIFFENERS				
EXTRUDED	[C]	[G]	NOT PERMITTED	SEE DETAIL VIII
FORGED	[C]	[G]	NOT PERMITTED	[J]
A-FRAMES				
OUTER CHORDS [K]	[A]	[E]	NOT PERMITTED	HOLES ARE PERMITTED IN THE FREE FLANGE ONLY [I]
INNER CHORDS	[A]	[E]	NOT PERMITTED	NOT PERMITTED
WEBS - STA 1021 [K]	[D]	[H]	SEE DETAIL IV	[I]
OTHER WEBS	[D]	[H]	SEE DETAIL IV	[I]
STIFFENERS	[A]	[E]	NOT PERMITTED	SEE DETAIL VIII
INTERCOSTALS	[D]	[H]	SEE DETAIL IV	[I]
INTERCOSTAL ASSEMBLY				
CHORDS	[A]	[E]	NOT PERMITTED	HOLES ARE PERMITTED IN THE FREE FLANGE ONLY [I]
WEBS	[D]	[H]	SEE DETAIL IV	[I]

TABLE I

Section 45 Keel Beam Structure Allowable Damage
Figure 101 (Sheet 3 of 10)

NOTES

- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-21.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAILS II AND VII.

[B] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAILS II AND IV. SEE DETAIL I FOR APPLICABLE SHOT PEEN REQUIREMENTS.

[C] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAILS II AND VII. SEE DETAIL I FOR APPLICABLE SHOT PEEN REQUIREMENTS.

[D] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAILS II AND VI.

[E] REMOVE DAMAGE AS SHOWN IN DETAILS II,III,V AND VII.

[F] REMOVE DAMAGE AS SHOWN IN DETAILS II AND VI. SEE DETAIL I FOR APPLICABLE SHOT PEEN REQUIREMENTS.

[G] REMOVE DAMAGE AS SHOWN IN DETAILS II AND VII. SEE DETAIL I FOR APPLICABLE SHOT PEEN REQUIREMENTS.

[H] REMOVE DAMAGE AS SHOWN IN DETAILS II,III,V AND VI.

[I] CLEAN OUT DAMAGE UP TO 0.25 INCH MAXIMUM DIAMETER AND NOT CLOSER THAN 1.0 INCH (25 mm) TO A FASTENER HOLE OR OTHER DAMAGE. FILL THE HOLE WITH A 2117-T3 OR T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES MUST BE REPAIRED.

[J] CLEAN OUT DAMAGE UP TO 0.25 INCH (6 mm) MAX DIAMETER. DAMAGE IS PERMITTED IN WEB ONLY WITH ONE HOLE PER BAY MAXIMUM. FILL THE HOLE WITH A 2117-T3 OR T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES MUST BE REPAIRED.

[K] SHOT PEEN REWORKED AREA AS GIVEN IN SOPM 20-10-03. USE SHOT NO. 230-550. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK. REFER TO SRM 51-20-06.

[L] THE UPPER 6.0 INCHES (150 mm) OF THE EXTRUDED STIFFENER, WHERE THE SPANWISE BEAM FITTING IS FASTENED, IS A CRITICAL AREA. CORROSION CLEANUP (AS SHOWN IN DETAIL V) IS NOT PERMITTED. CONTACT THE BOEING COMPANY.

[M] THIS IS A CRITICAL AREA. DAMAGE CLEANUP (AS SHOWN IN DETAIL IX) IS PERMITTED ONLY IN THE FAIRING ATTACHMENT FLANGE. CONTACT THE BOEING COMPANY IF THERE IS DAMAGE IN OTHER AREAS.

[N] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAILS II AND IX. REMOVE OTHER DAMAGE AS SHOWN IN DETAILS II AND IX.

[O] ON EXPOSED METAL SURFACES, APPLY A CHEMICAL CONVERSION COATING (ALODINE 1200, IRIDITE 14, OR IRIDITE 14-2). THEN APPLY A FINISH COAT OF BMS 10-79, TYPE III PRIMER.

[P] LIGHTLY SAND THE EXTERIOR FINISH OF THE EXPOSED EXTERIOR SURFACE. APPLY BMS 5-95 CLASS F SEALANT. CURE 2 TO 24 HOURS. APPLY BMS 10-60 DECORATIVE ENAMEL. TO THE MATING SURFACE OF THE KEEL BEAM-FAIRING PANEL APPLY A FINISH COATING OF BMS 10-86, TYPE I TEFLON ENAMEL COATING.

[Q] APPLY BMS 10-60 OVER BMS 10-11 WHITE ENAMEL ON SURFACES OTHER THAN EXTERIOR SURFACES, OR WHERE TEFLON ENAMEL COATING IS APPLIED.

[R] X_1, X_2 ≤ MAXIMUM ALLOWABLE REDUCTION X FOR GENERAL DAMAGE AS SHOWN IN TABLE II.

[S] X_1, X_2 ≤ MAXIMUM ALLOWABLE REDUCTION X FOR LOCAL DAMAGE AS SHOWN IN TABLE II.

[T] BY DEFINITION, GENERAL DAMAGE IS FOR LESS DEPTH THAN LOCAL DAMAGE, BUT IT HAS NO SIZE RESTRICTION AND THERE IS NO MINIMUM DISTANCE LIMITATION BETWEEN TWO GENERAL DAMAGE LOCATIONS.

[U] BY DEFINITION, LOCAL DAMAGE IS FOR A LARGER DEPTH OF DAMAGE THAN GENERAL DAMAGE, BUT IT IS LIMITED IN SIZE AND DISTANCE FROM OTHER DAMAGE.

Section 45 Keel Beam Structure Allowable Damage
Figure 101 (Sheet 4 of 10)

NOTES (CONTINUED)

[V] FOR CUM LINE NUMBERS 1 THRU 8, SHOT PEEN REWORKED AREA AS GIVEN IN SOPM 20-10-03. USE SHOT NO. 230-550. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK. REFER TO SRM 51-20-06.

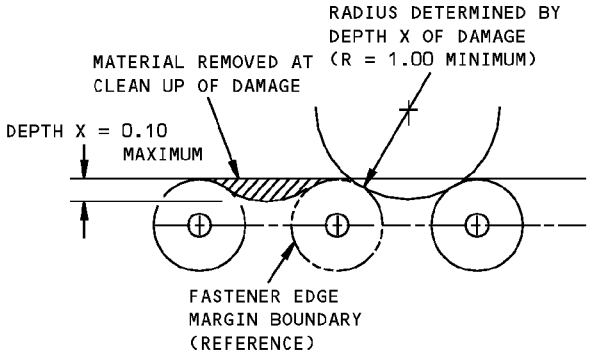
[W] FOR BLENDOUTS NEAR FASTENER HOLES ON THE LOWER SIDE OF THE KEEL BEAM FLANGE:

- APPLY FINISH TO REWORKED AREAS AS GIVEN IN NOTES [O] AND [P] .
- FILL VOIDS WITH BMS 5-95 SEALANT.
- LOOSELY ATTACH THE FAIRING PANEL WITH PARTING FILM BETWEEN THE SEALANT AND THE PANEL.
- LET THE SEALANT BOND TO THE FLANGE.
- REMOVE THE PARTING FILM AND INSTALL THE FAIRING PANEL. (NOTE: THE SEALANT WILL SUPPORT AND PREVENT DAMAGE TO THE FAIRING PANEL.)

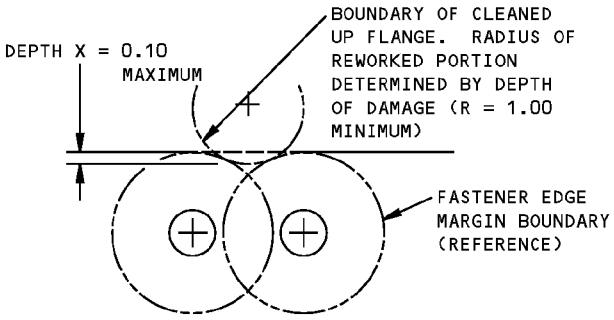
[X] THE MAXIMUM ALLOWABLE REDUCTION FOR LOCAL DAMAGE ON ONLY THE TWO LOWER FAIRING ATTACHMENT FLANGES IS 0.75t.

[Y] FOR MATING SURFACES, INSTALL LAMINATED SHIMS WITH BMS 5-95 SEALANT. THE GAP MUST BE LESS THAN OR EQUAL TO 0.003 INCH AFTER SHIMMING.

Section 45 Keel Beam Structure Allowable Damage
Figure 101 (Sheet 5 of 10)

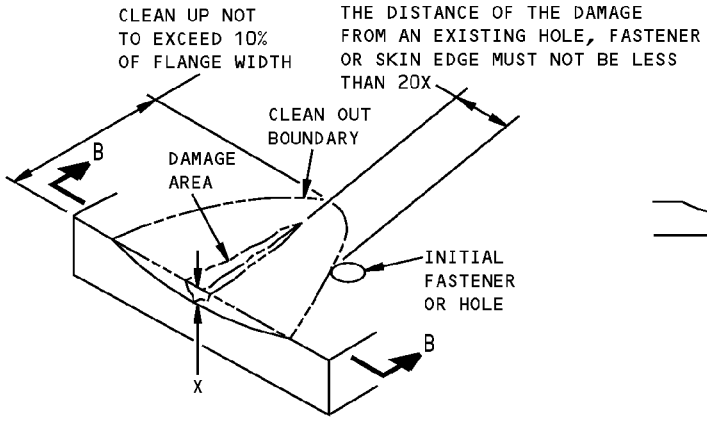


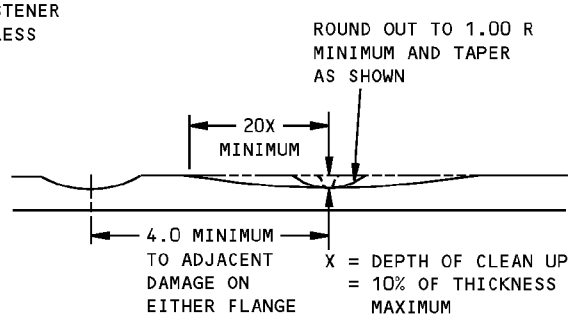
DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

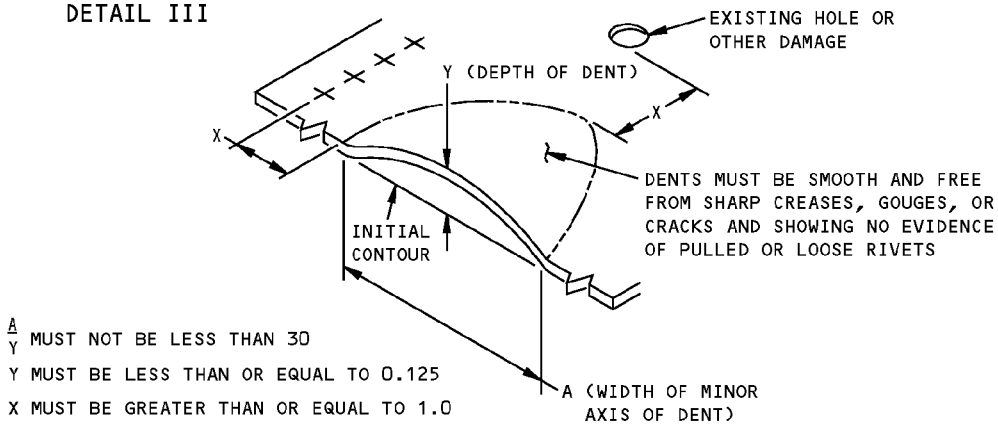
DETAIL II





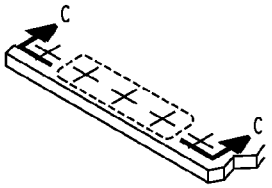
SECTION B–B

REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL III

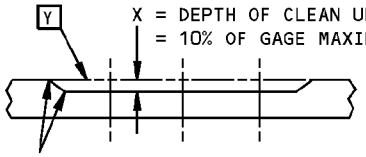


ALLOWABLE DAMAGE FOR DENT
DETAIL IV

Section 45 Keel Beam Structure Allowable Damage
Figure 101 (Sheet 6 of 10)

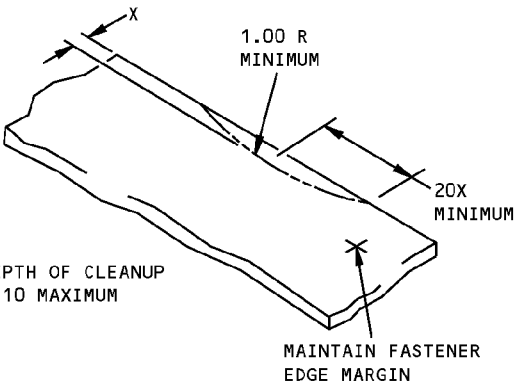


CORROSION CLEANUP
DETAIL V

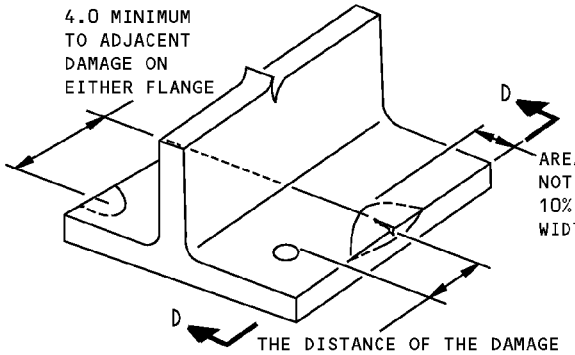


SMOOTH BLEND-OUT RADIUS 0.50 INCH MINIMUM. CORROSION CLEAN UP AROUND ANY THREE FASTENERS IN TEN IS PERMITTED TO MAXIMUM DEPTH

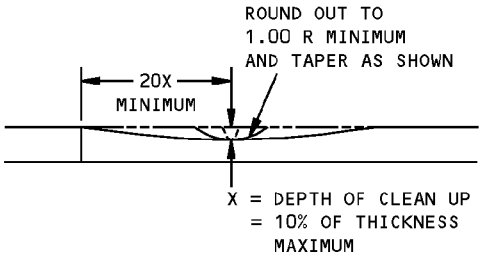
SECTION C-C



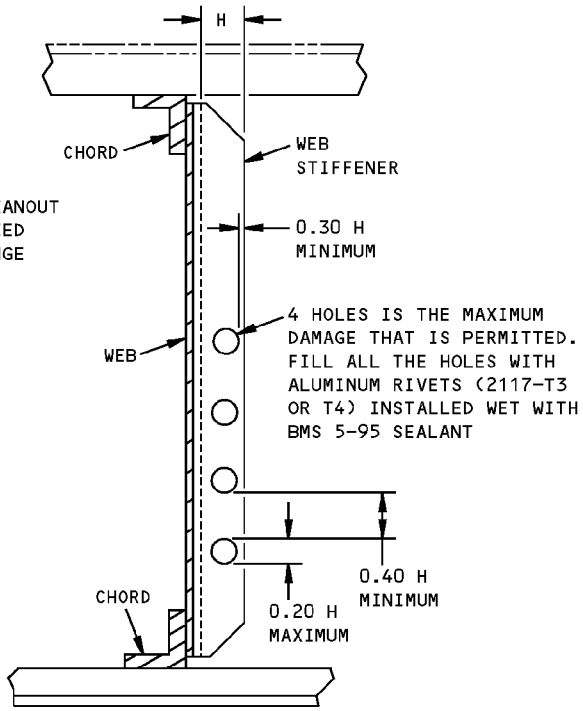
REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE
DETAIL VI



REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE
DETAIL VII



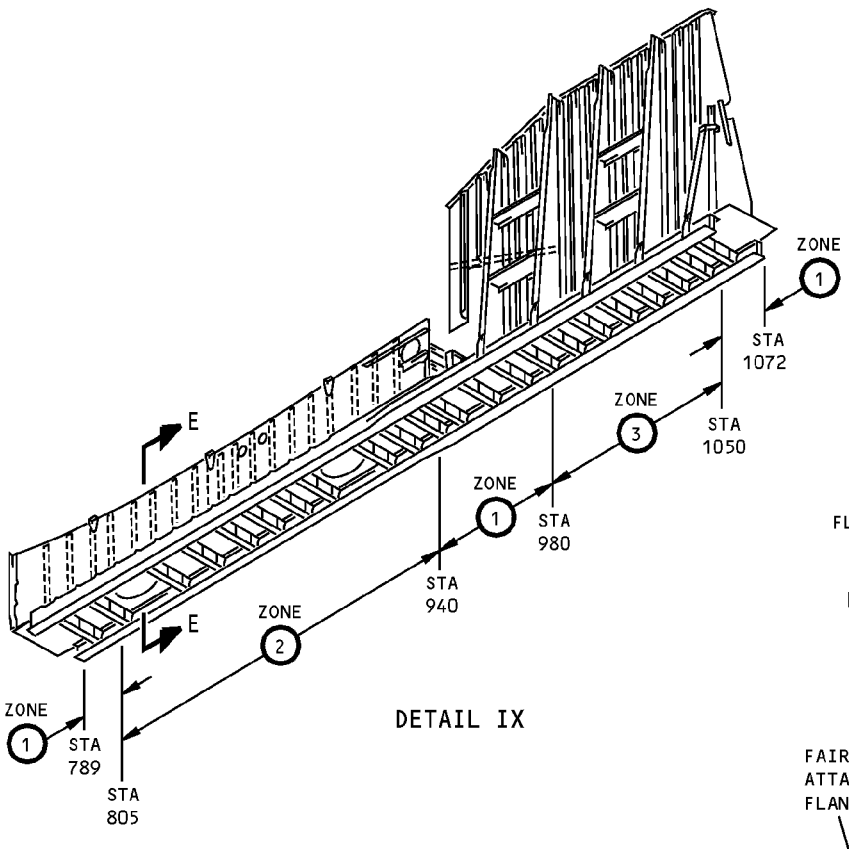
SECTION D-D



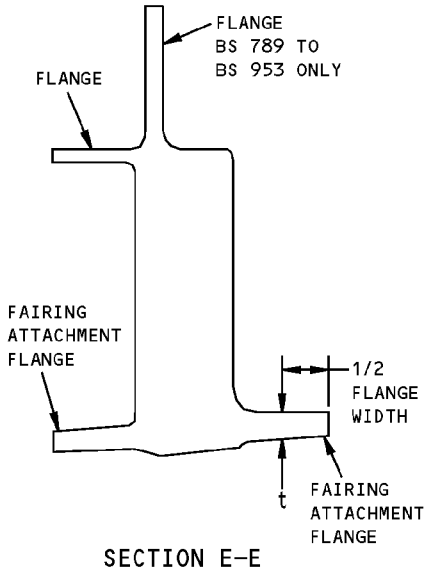
NOTE: HOLE DAMAGE IS NOT PEMITTED IN THE STIFFENER FLANGE THAT IS FASTENED TO THE WEB.

ALLOWABLE DAMAGE LIMITS FOR
HOLES IN WEB STIFFENERS
DETAIL VIII

Section 45 Keel Beam Structure Allowable Damage
Figure 101 (Sheet 7 of 10)



DETAIL IX

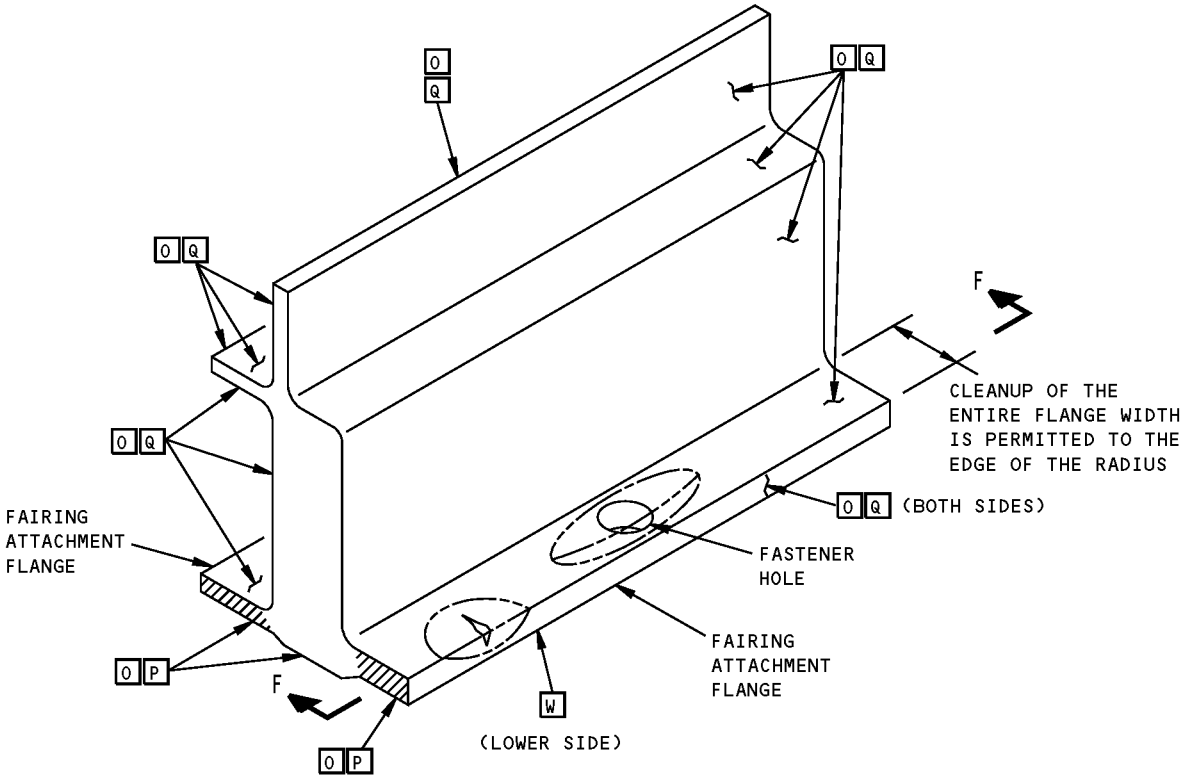


SECTION E-E

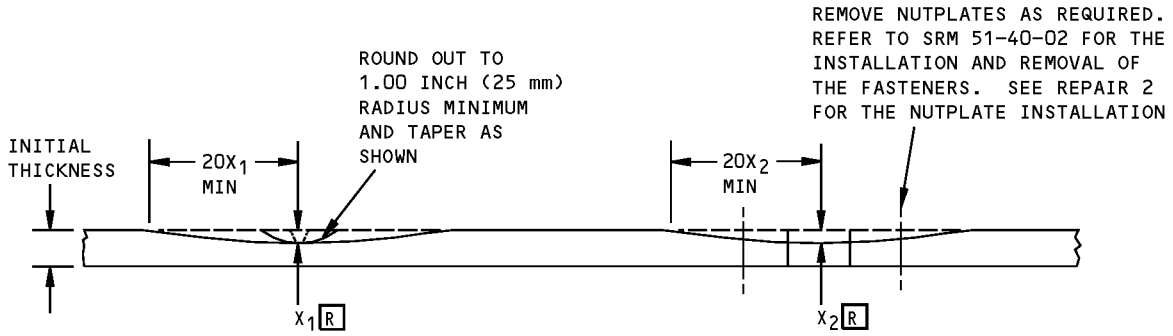
NUMBER OF REWORKED FLANGES AT ANY GIVEN STATION	MAXIMUM ALLOWABLE REDUCTION (X) IN FLANGE THICKNESS (t) AFTER DAMAGE CLEANUP IS COMPLETE					
	GENERAL DAMAGE ONLY [T] (SEE DETAIL X)			LOCAL DAMAGE ONLY [U] (SEE DETAIL XI)		
	ZONE (1)	ZONE (2)	ZONE (3)	ZONE (1)	ZONE (2)	ZONE (3) [X]
ANY 1 FLANGE	0.25t	0.25t	0.25t	0.50t	0.50t	0.50t
ANY 2 FLANGES	0.20t	0.25t	0.25t	0.40t	0.50t	0.50t
ANY 3 OR 4 FLANGES	0.15t	0.17t	0.25t	0.30t	0.35t	0.50t

TABLE II

Section 45 Keel Beam Structure Allowable Damage
Figure 101 (Sheet 8 of 10)



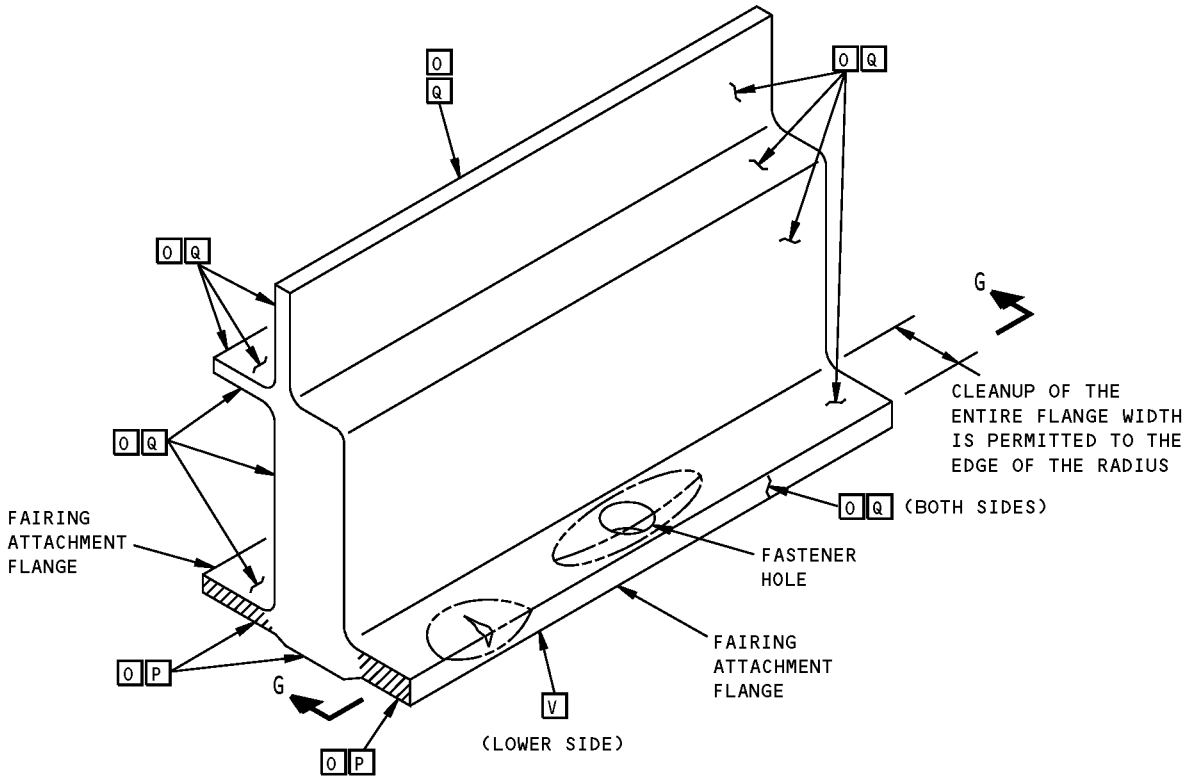
REMOVAL OF GENERAL DAMAGE T
FROM KEEL CHORD SURFACE
DETAIL X



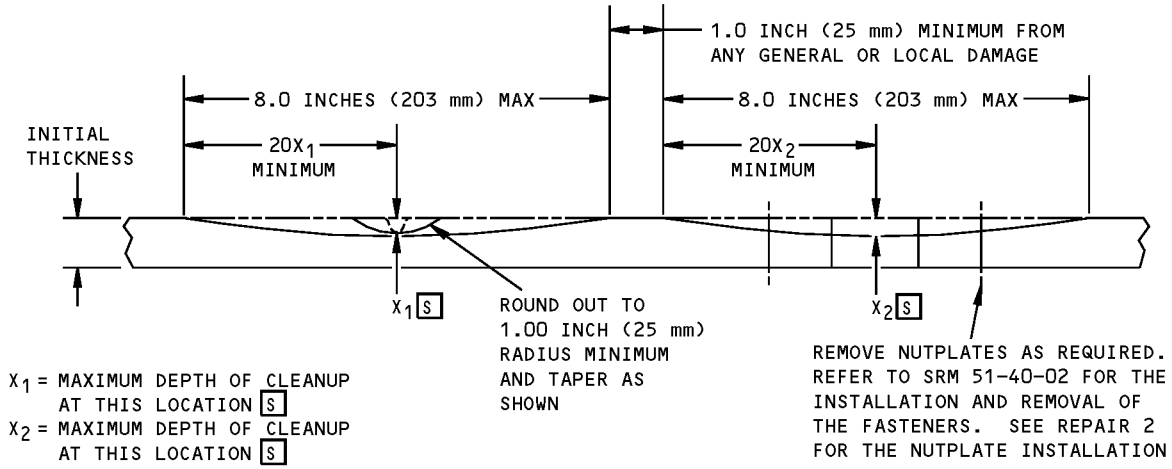
X_1 = MAXIMUM DEPTH OF CLEANUP AT THIS LOCATION R
X_2 = MAXIMUM DEPTH OF CLEANUP AT THIS LOCATION R

SECTION F–F

Section 45 Keel Beam Structure Allowable Damage
Figure 101 (Sheet 9 of 10)



REMOVAL OF LOCAL DAMAGE U
FROM KEEL CHORD SURFACE
DETAIL XI

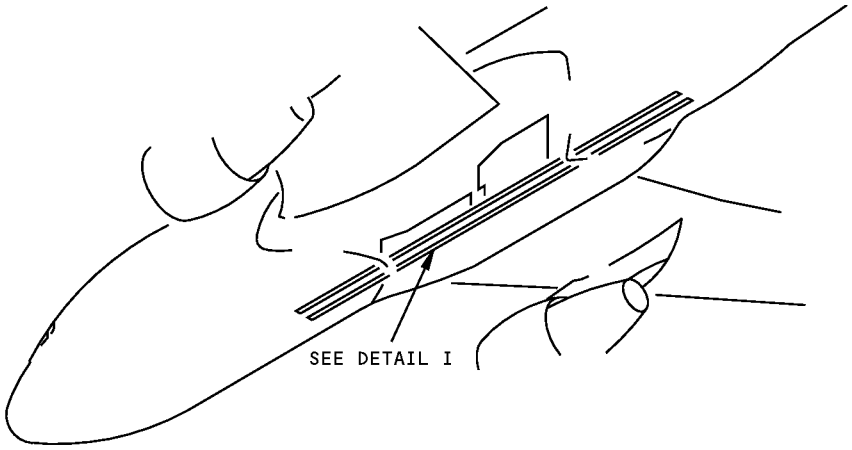


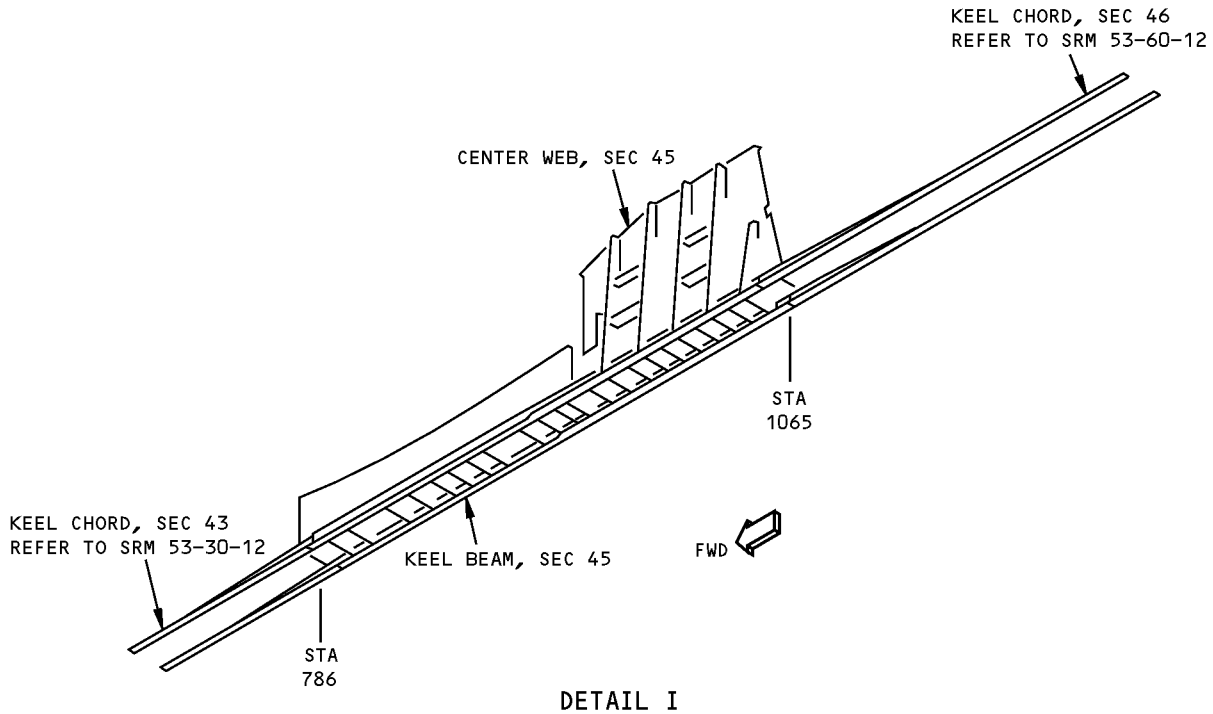
SECTION G-G

Section 45 Keel Beam Structure Allowable Damage
Figure 101 (Sheet 10 of 10)

REPAIR GENERAL - KEEL BEAM STRUCTURE

REF DWG
145T8700





DETAIL I

NOTES

- REFER TO SRM 51-70-11 FOR FORMED SECTION REPAIRS.
- REFER TO SRM 51-70-12 FOR EXTRUDED SECTION REPAIRS.
- WEB REPAIR IN 51-70-13 DOES NOT APPLY TO KEEL BEAM WEBS.
- FOR MORE KEEL BEAM REPAIRS THAT ARE APPLICABLE TO SECTION 45, REFER TO OTHER FIGURES IN THIS SUBJECT.

Keel Beam Structure Repair
Figure 201

REPAIR 1 - KEEL BEAM LOWER CHORD FLANGE

APPLICABILITY
THIS REPAIR IS APPLICABLE TO THE INBOARD AND OUTBOARD FLANGE OF THE LOWER KEEL BEAM CHORD. THE INBOARD FLANGE MAY BE REPAIRED FOR ALL LOCATIONS FROM BS 964 TO 1065 EXCEPT AT THE HINGED ACCESS PANEL LOCATED BETWEEN BS 1010 AND 1033. FOR REPAIRS AT THE HINGED PANEL, GET INSTRUCTIONS FROM BOEING. THE OUTBOARD FLANGE MAY BE REPAIRED FOR ALL LOCATIONS BETWEEN BS 977 AND 1063. FOR REPAIRS OUT OF THIS AREA, GET INSTRUCTIONS FROM BOEING.

REPAIR INSTRUCTIONS FOR INBOARD FLANGE (SUPPORT FOR THE FAIRING PANEL)

1. Get access to the damaged area.
2. Cut and remove the full section of the damaged inboard flange of the lower keel beam chord between the adjacent lateral tie fittings. Refer to Section C-C. Use a 1.0 inch or larger radius. The repaired section of the keel beam can affect the panel splice area. Refer to steps 22 thru 36.
3. Make the two part 1 clips, one for each lateral tie fitting. Refer to Table I and Detail II. The combination of the two clips and the intercostal installed between the lateral tie fittings will be the support for the fairing panel. Make the length of the intercostal the same as the distance between the lateral tie fittings. The lower flange of the intercostal is the fastener support for the fairing panel. The clips are opposite parts to each other.
4. Make the part 2 intercostal. Refer to Table I and Detail III. Make the intercostal shape align with the contour of the fairing panel.
5. Assemble the repair parts and the fairing panel and drill the fastener holes. Refer to Section B-B. Make sure that the holes in the bottom flange of the intercostal align with the holes in the fairing panel. Keep a minimum of 4D spacing between the fasteners and 2D +0.05 edge margins. Refer to SRM 51-40.
6. Assemble the BACN10JQ32CD nutplates to the part 2 intercostal and drill the fastener holes for their attachment.
7. Disassemble the repair parts, and the nutplates from the part 2 intercostal.
8. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts, the lower keel beam chord, and the lateral tie fittings.
9. Apply a bright cadmium plate finish to the part 1 clips. Refer to SOPM 20-42-05.
10. Apply a chemical conversion coating to the part 2 intercostal and the bare surfaces of the lower keel beam chord and the lateral tie fittings. Refer to SRM 51-20-01.
11. Apply two layers of BMS 10-11, Type I primer to the part 1 clips. Apply one layer of BMS 10-11, Type I primer to the bare internal surfaces of the lower keel beam chord, the part 2 intercostal (except the bottom surface of the lower flange), and the bare surfaces of the lateral tie fittings. Refer to SOPM 20-41-02.
12. Apply one layer of BMS 10-79, Type III primer to the bare external surfaces of the lower keel beam chord, and the bottom surface of the lower flange of the part 2 intercostal.
13. Install the BACN10JQ32CD nutplates to the lower flange of the part 2 intercostal with BMS 5-95 sealant on the mating surfaces. The sealant must not interfere with the nutplate float. The nutplates are used to attach the fairing panel to the lower keel beam chord and the part 2 intercostal.
14. Install the nutplate attach rivets wet with BMS 5-95 sealant.
15. Install the part 2 intercostal to the part 1 clips with BMS 5-95 sealant on the mating surfaces.
16. Install the fasteners wet with BMS 5-95 sealant. Refer to SRM 51-02-05.
17. Install the part 1 clips and the part 2 intercostal to the lateral tie fittings with BMS 5-95 sealant on the mating surfaces. Refer to SRM 51-20-05.
18. Install the fasteners wet with BMS 5-95 sealant. Refer to SRM 51-20-05.
19. Apply BMS 10-11, Type II enamel to the part 1 clips, the bare internal surfaces of the lower keel beam chord, the part 2 intercostal (except the bottom surface of the lower flange), and the bare surfaces of the lateral tie fittings. Refer to SOPM 20-41-02.
20. Apply BMS 5-95, Class F sprayable sealant and then BMS 10-60 enamel to the bare external surfaces of the lower keel beam chord, and the bottom surface of the lower flange of the part 2 intercostal.
21. Apply BMS 10-86, Type I (Teflon) finish to the bottom outer flange of the part 2 intercostal that will touch the fairing panel.

Keel Beam Lower Chord Flange Repair
Figure 201 (Sheet 1 of 12)

REPAIR INSTRUCTIONS INBOARD FLANGE (SUPPORT FOR THE FAIRING PANEL) (CONTINUED)

22. If the panel splice area is affected, do as follows (refer to Section A-A):
    a. Make the part 3 clip. See Table I and Detail IV.
    b. Remove and replace the initial splice tee fitting with a new panel splice fitting. See Table I and Detail V.

    NOTE: The part 3 clip attaches the part 4 splice tee fitting to the part 2 intercostal.

23. Assemble the repair parts and drill the fastener holes. Refer to Section A-A. Refer to SRM 51-40.
24. If a new splice tee is used, assemble the BACN10JN3CD nutplates to the part 4 splice tee and drill the fastener holes for their attachment.
25. Dissassemble the repair parts, and the nutplates from the part 4 splice tee.
26. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts.
27. Apply a chemical conversion coating to the part 3 clip and the part 4 splice tee fitting, and the bare surfaces of the part 2 intercostal. Refer to SRM 51-20-01.
28. Apply one layer of BMS 10-11, Type I primer to the part 3 clip and the part 4 splice tee fitting (except the bottom of the splice tee fitting that touches the fairing panel). Refer to SOPM 20-41-02.
29. Apply one layer of BMS 10-79, Type III primer to the bottom of the splice tee fitting that touches the fairing panel.
30. Install the BACN10JN3CD nutplates to the part 4 splice tee wet with BMS 5-95 sealant on the mating surfaces. Sealant must not interfere with the nutplate float.
31. Install the nutplate attach rivets wet with BMS 5-95 sealant.
32. Install the parts with BMS 5-95 sealant on each mating surface. Refer to SRM 51-20-05.
33. Install the fasteners wet with BMS 5-95 sealant. Refer to SRM 51-20-05.
34. Apply BMS 10-11 Type II enamel to the part 3 clip and the part 4 splice tee fitting except at the bottom of the splice tee fitting that touches the fairing panel. Refer to SOPM 20-41-02.
35. Apply BMS 5-95 Class F sprayable sealant and BMS 10-60 enamel to the bottom of the splice tee fitting.
36. Apply BMS 10-86 Type I (Teflon) on the bottom side of the part 4 splice tee fitting and the part 2 intercostal that touches the fairing panel.
37. Apply corrosion inhibitng compound (CIC) to the internal surfaces of the repair area. Use a layer of BMS 3-23, Type II followed by BMS 3-26, or use BMS 3-29. Do not apply the CIC to external surfaces that can be seen from out of the airplane. Do not apply CIC to the bottom of the splice tee fitting or the bottom surface of the lower flange of the part 2 intercostal that touches the fairing panel.
38. Install the fairing panel to the part 4 splice tee fitting and the part 2 intercostal with BMS 5-95 on the mating surfaces. Refer to SRM 51-20-05.

REPAIR MATERIAL FOR INBOARD FLANGE

PART		QTY	MATERIAL
1	CLIP	2	0.032 301 CRES 1/2 HARD
2	INTERCOSTAL	1	0.10 CLAD 7075-T6
3	CLIP	1	0.080 CLAD 7075-T6
4	SPLICE TEE FITTING	1	AND10136-2401 7075-T6511

TABLE I

Keel Beam Lower Chord Flange Repair
Figure 201 (Sheet 2 of 12)

REPAIR INSTRUCTIONS OUTBOARD FLANGE (SUPPORT FOR THE SEAL DEPRESSOR PANEL)

1. Cut and remove the full section of the damaged outboard flange of the lower keel beam chord between adjacent "A" frame fittings. Refer to Section J-J. Use a 1.0 1.0 inch or larger radius.
2. Make the two part 5 clips. Refer to Table II and Detail VI. These clips attach the intercostal to the "A" frame fittings. The clips are opposite parts to each other. Refer to Section I-I for installation. Make the part 6 intercostal and part 7 filler. Refer to Table II, Detail VII, Section I-I. Make the length of the lower flange of the intercostal long enough to align with the edge of seal depressor panel. The combination of the repair clip and the repair intercostal installed at the the "A" frame fitting will be the support for the seal depressor panel.
3. Assemble the repair parts and drill the fastener holes. Refer to Section I-I. Make sure that the holes in the lower flange of the part 6 intercostal align with the holes in the seal depressor panel. The lower intercostal flange will be the support for the seal depressor panel. Keep a minimum of 4D spacing between the fasteners and 2D +0.05 edge margins. Refer to SRM 51-40.
4. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the "A" frame fitting.
5. Apply a bright cadmium plate finish to the part 5 clips. Refer to SOPM 20-42-05.
6. Apply a chemical conversion coating to the part 6 intercostal and the part 7 filler and to the bare surfaces of the lower keel beam chord. Refer to SRM 51-20-01.
7. Apply two layers of BMS 10-11, Type I primer to the part 5 clips. Apply one layer of BMS 10-11, Type I primer to the part 7 filler and the part 6 intercostal (except the bottom surface of the lower flange), and to the bare surfaces of the "A" frame fitting. Refer to SOPM 20-41-02.
8. Apply one layer of BMS 10-79, Type III primer to the bare external surfaces of the lower keel beam chord, and the bottom surface of the lower flange of the part 6 intercostal.
9. Install the part 5 clips to the part 6 intercostal with BMS 5-95 sealant on the mating surfaces.
10. Install the fasteners wet with BMS 5-95. Refer to SRM 51-20-05.
11. Install the part 5 clips and the part 6 intercostal to the aft face of the "A" frame fitting with BMS 5-95 sealant on the mating surfaces. Refer to Section I-I.
12. Install the fasteners wet with BMS 5-95 sealant. Refer to SRM 51-20-05.
13. Install the part 7 repair filler with BMS 5-95 sealant on the mating surfaces. Push the part 7 filler against the intercostal with a clamp until the sealant is cured.
14. Apply BMS 10-11, Type II enamel to the part 5 clips, the bare internal surfaces of the lower keel beam chord, the part 6 intercostal (except the bottom surface of the lower flange), and the bare surfaces of the "A" frame fitting. Refer to SOPM 20-41-02.
15. Apply BMS 5-95, Class F sprayable sealant and then BMS 10-60 enamel to the bare external surfaces of the lower keel beam chord, and the bottom surface of the lower flange of the part 6 intercostal.
16. Apply BMS 10-86, Type I (Telflon) finish to the bottom side of the part 6 intercostal that will touch the seal depressor panel.
17. Apply corrosion inhibiting compound (CIC) to the internal surfaces of the repair area. Use one layer of BMS 3-23, Type III followed by BMS 3-26, or use BMS 3-29. Do not apply the CIC to external surfaces that can be seen while out of the airplane. Refer to SRM 51-20-01. Do not apply CIC to the bottom surface of the lower flange of the part 6 intercostal that touches the seal depressor panel.
18. Install the seal depressor panel to the part 6 intercostal and the part 7 filler with BMS 5-95 sealant on the mating surfaces. Refer to SRM 51-20-05.

REPAIR MATERIAL FOR OUTBOARD FLANGE

PART		QTY	MATERIAL
5	REPAIR CLIP	2	0.032 301 CRES 1/2 HARD
6	INTERCOSTAL	1	0.10 CLAD 7075-T6
7	FILLER	1	7075-T6

TABLE II

Keel Beam Lower Chord Flange Repair
Figure 201 (Sheet 3 of 12)

NOTES

- THIS REPAIR IS A CATEGORY A REPAIR. THE INSPECTIONS GIVEN IN THE MAINTERNANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERANCE OF THE INITIAL STRUCTURE WITH THIS REPAIR INSTALLED. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- D = FASTENER DIAMETER.
- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR THE APPLICATION OF FINISHES
  - SOPM 20-42-05 FOR BRIGHT CADMIUM PLATING
  - SRM 51-00-06 FOR STRUCTURAL REPAIR DEFINITIONS.
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS.

FASTENER SYMBOLS

INITIAL FASTENER LOCATION. INSTALL THE SAME TYPE AND DIAMETER FASTENER AS THE INITIAL FASTENER.

REPAIR FASTENER LOCATION. INSTALL A BACB30MY6K() HEX-DRIVE BOLT WITH A BACC30M6 COLLAR.

REPAIR FASTENER LOCATION. INSTALL A BACB30VT6K() HEX-DRIVE BOLT WITH A BACC30BL6 COLLAR.

INITIAL FASTENER LOCATION. USE THE INITIAL FASTENER, WASHER, AND NUTPLATE AGAIN. OTHERWISE, INSTALL A BACB30NN3K() BOLT, BACW10U-C10P WASHER, AND BACN10JQ32CD NUTPLATE. USE BACR15CE3D() RIVETS TO ATTACH THE NUTPLATE.

INITIAL FASTENER LOCATION. USE THE INITIAL BOLT, WASHER, AND NUTPLATE AGAIN. OTHERWISE, INSTALL A BACB30NN3K() BOLT, BACW10U-C10P WASHER, AND BACN10JN3CD NUTPLATE. USE BACR15CE3D() RIVETS TO ATTACH THE NUTPLATE.

INITIAL FASTENER LOCATION. USE THE INITIAL BOLT, WASHERS, AND NUT AGAIN. OTHERWISE, INSTALL A BACB30NN3K() BOLT, AN960XC10 AND BACW10U-C10P WASHERS, AND A BACN10JC-3CM NUT.

INITIAL FASTENER LOCATION. USE THE INITIAL BOLT, WASHERS, AND NUT AGAIN. OTHERWISE, INSTALL A BACB30NN3K() BOLT, BACW10U-C10P AND BACW10AU3 WASHERS, AND A BACN10MT3 NUT.

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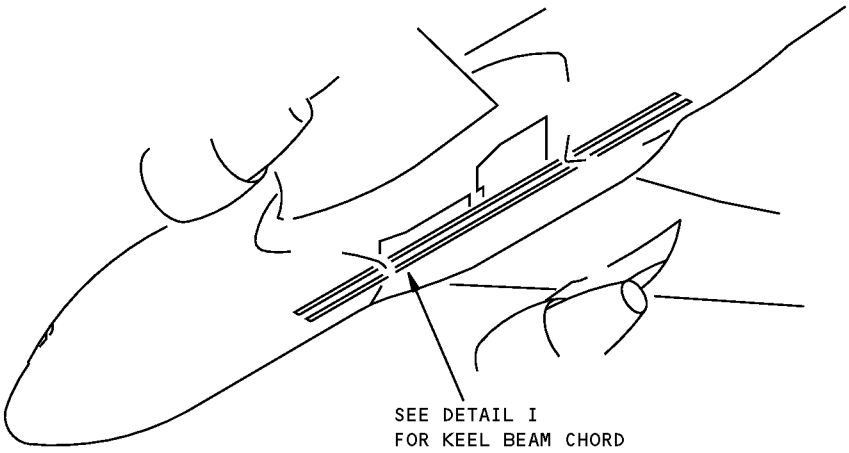
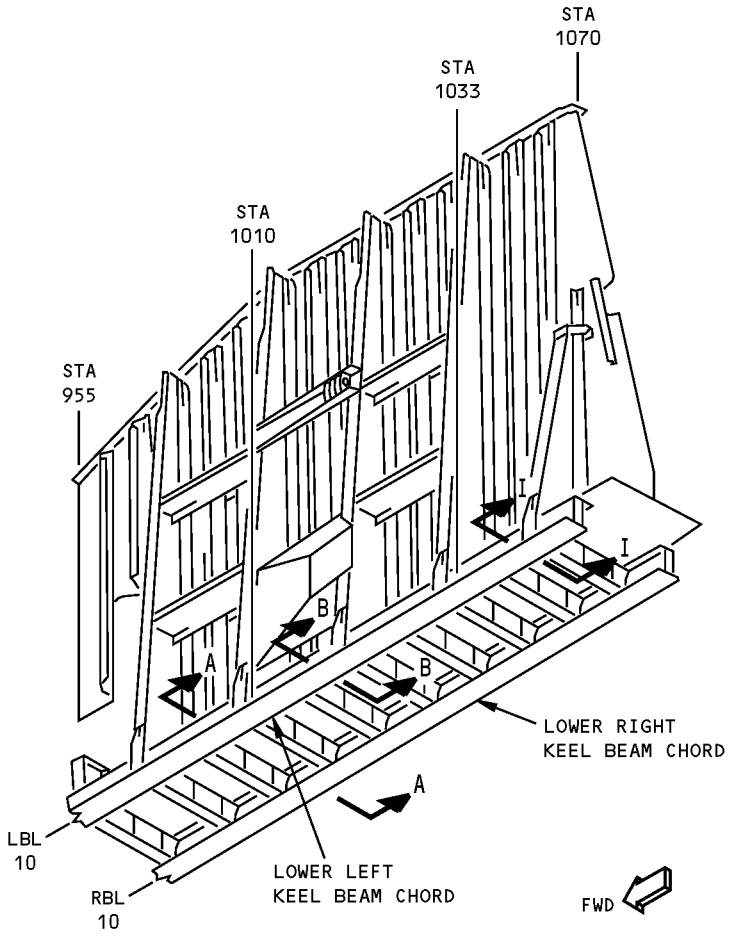
Keel Beam Lower Chord Flange Repair
Figure 201 (Sheet 4 of 12)

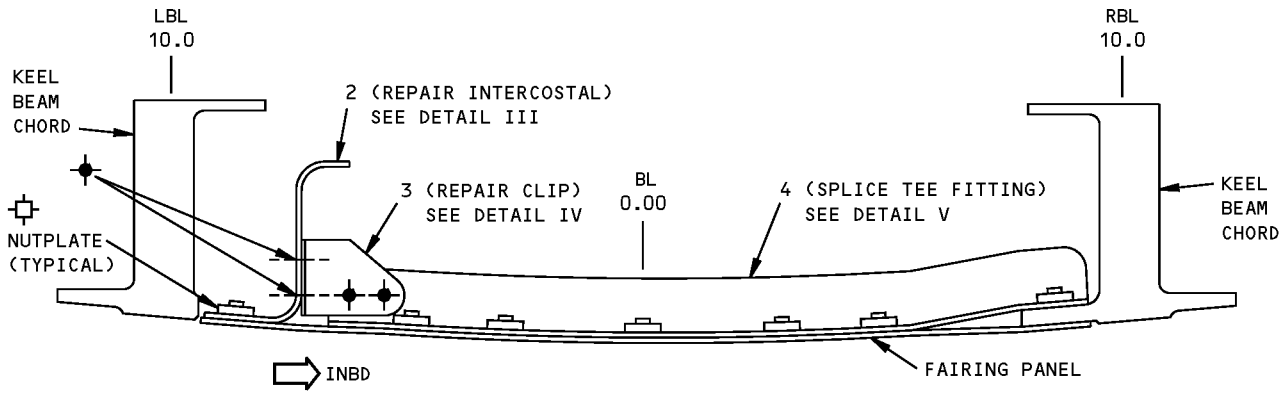
REF DWG
145T8700





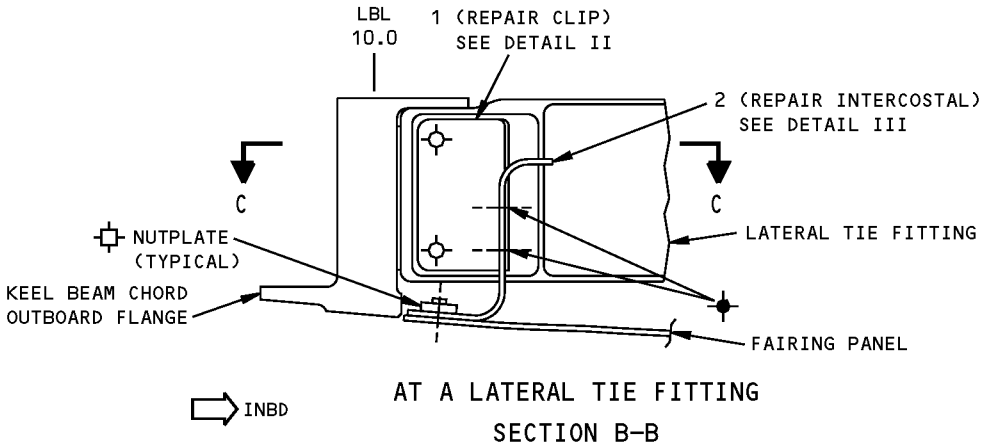
KEEL BEAM CHORD
DETAIL I

Keel Beam Lower Chord Flange Repair
Figure 201 (Sheet 5 of 12)



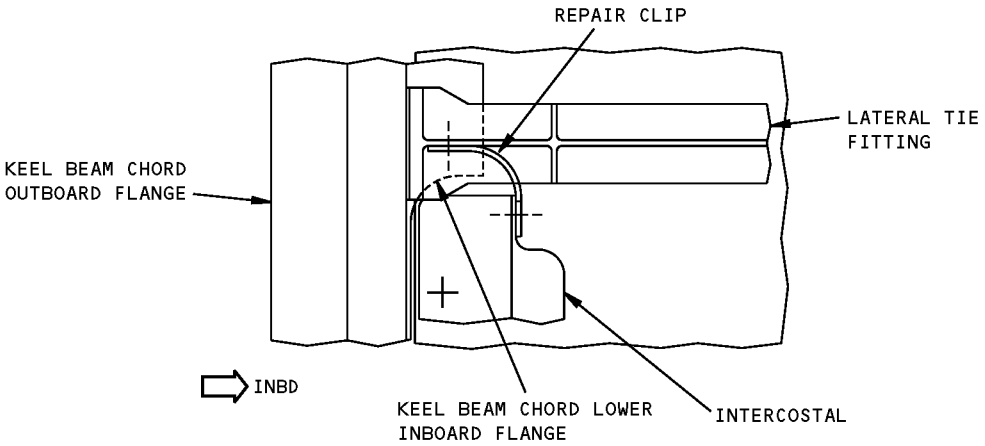
BETWEEN LATERAL TIE FITTINGS

SECTION A-A



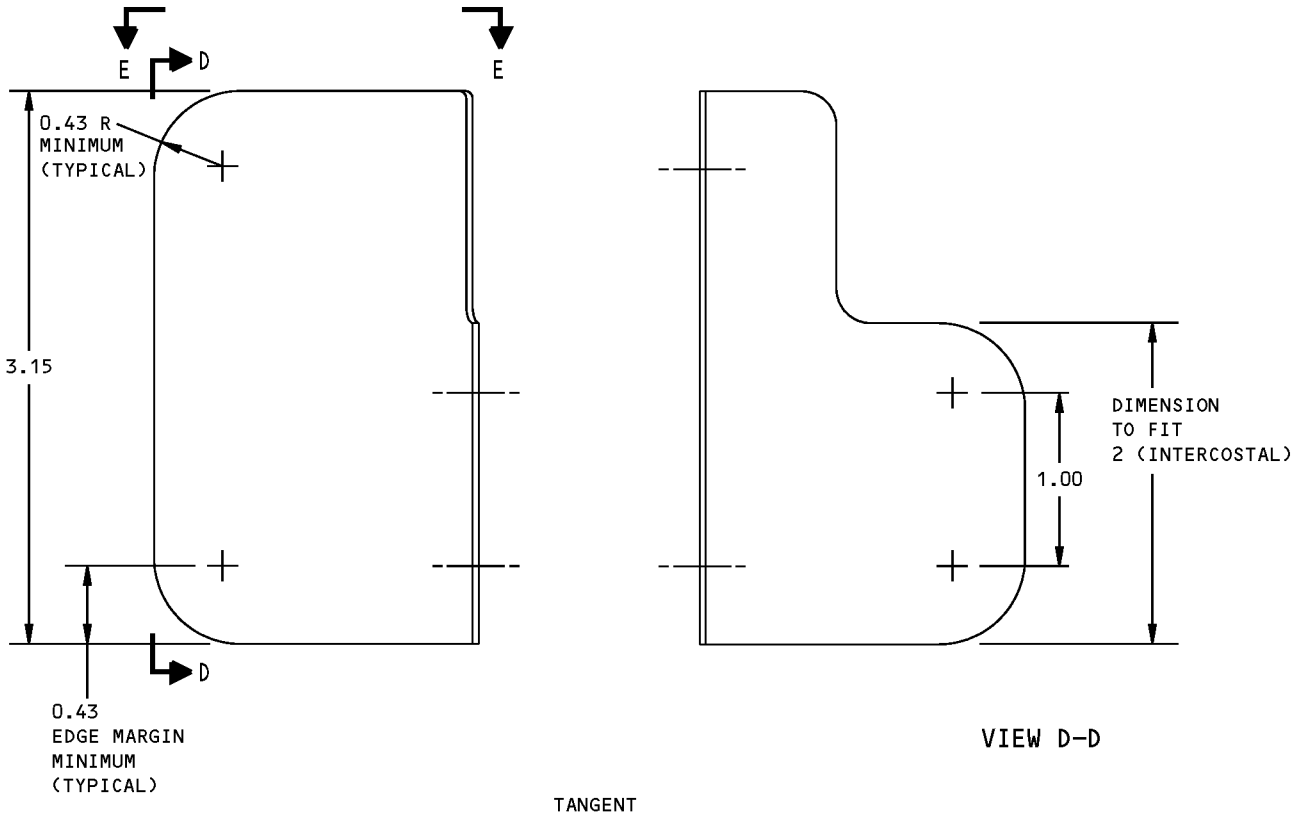
AT A LATERAL TIE FITTING

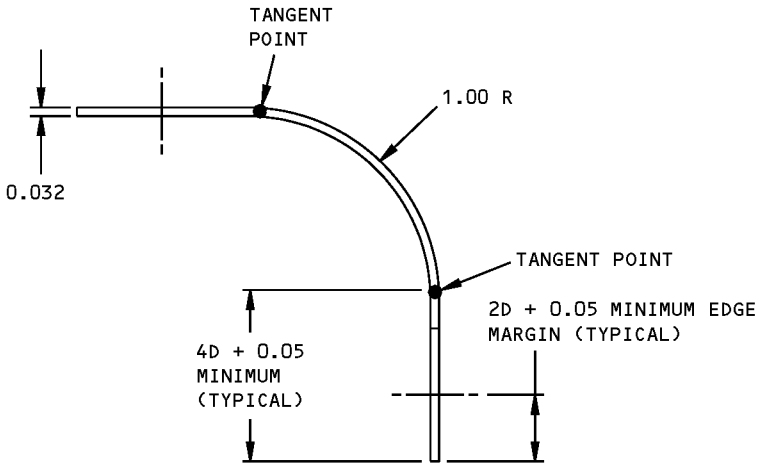
SECTION B-B



SECTION C-C

Keel Beam Lower Chord Flange Repair
Figure 201 (Sheet 6 of 12)

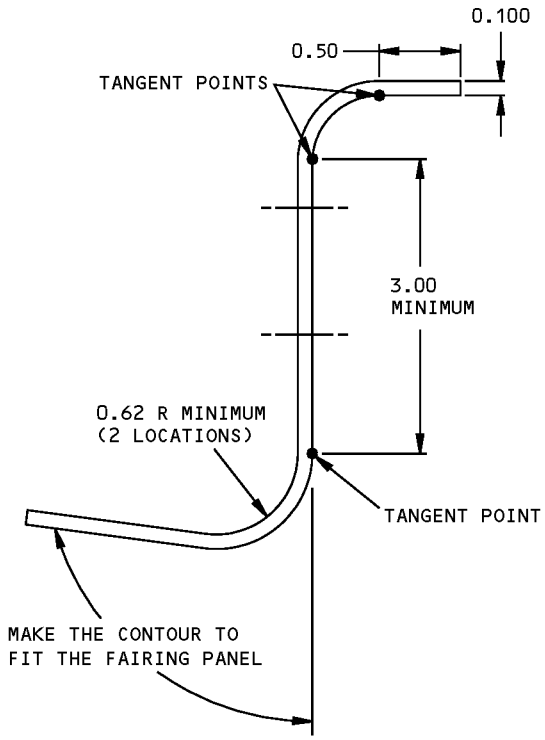




REPAIR CLIP (PART 1)

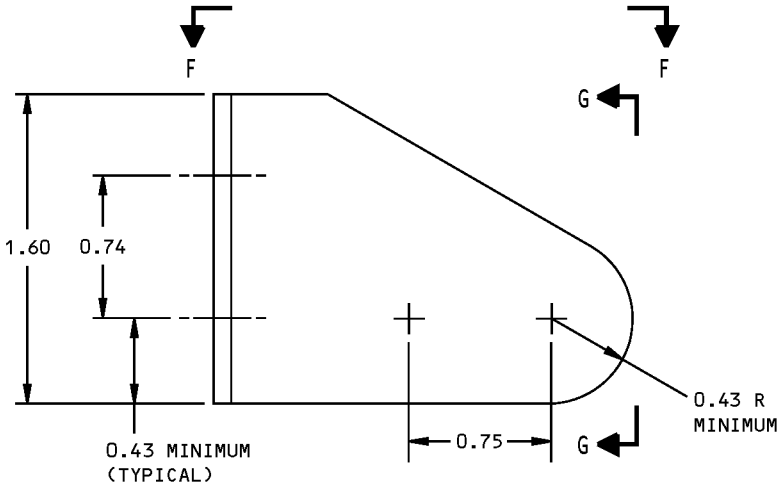
DETAIL II

Keel Beam Lower Chord Flange Repair
Figure 201 (Sheet 7 of 12)



INTERCOSTAL (PART 2)

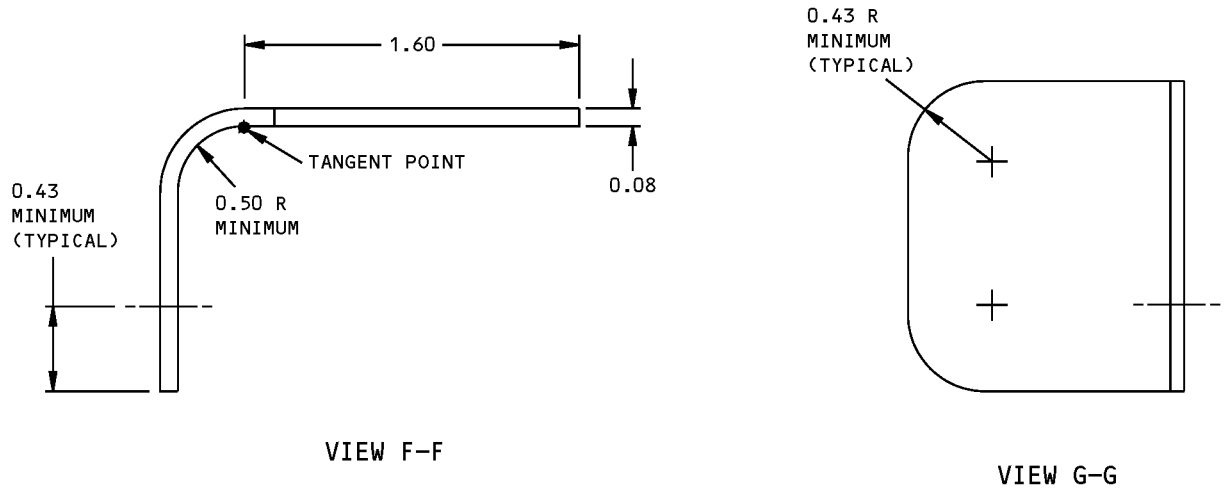
DETAIL III



CLIP (PART 3)

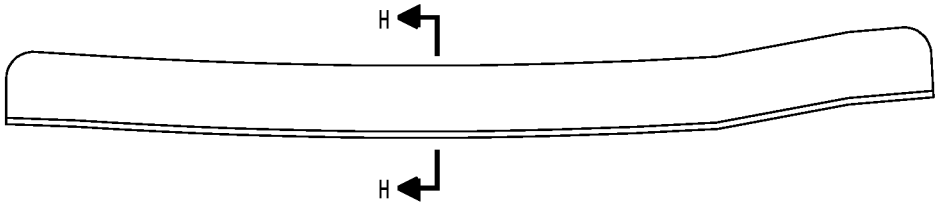
DETAIL IV

Keel Beam Lower Chord Flange Repair
Figure 201 (Sheet 8 of 12)



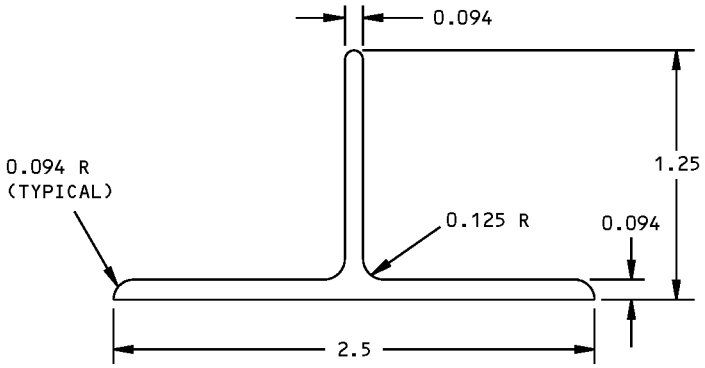
VIEW F-F

VIEW G-G



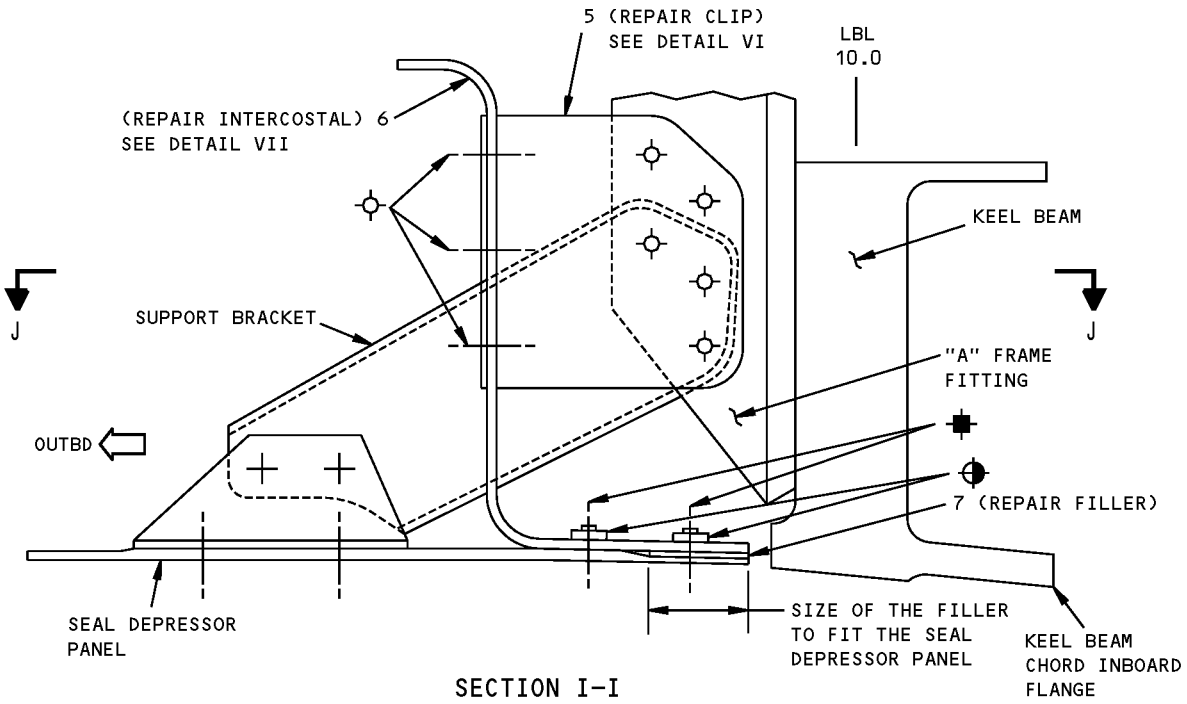
SPLICE TEE FITTING (PART 4)

DETAIL V

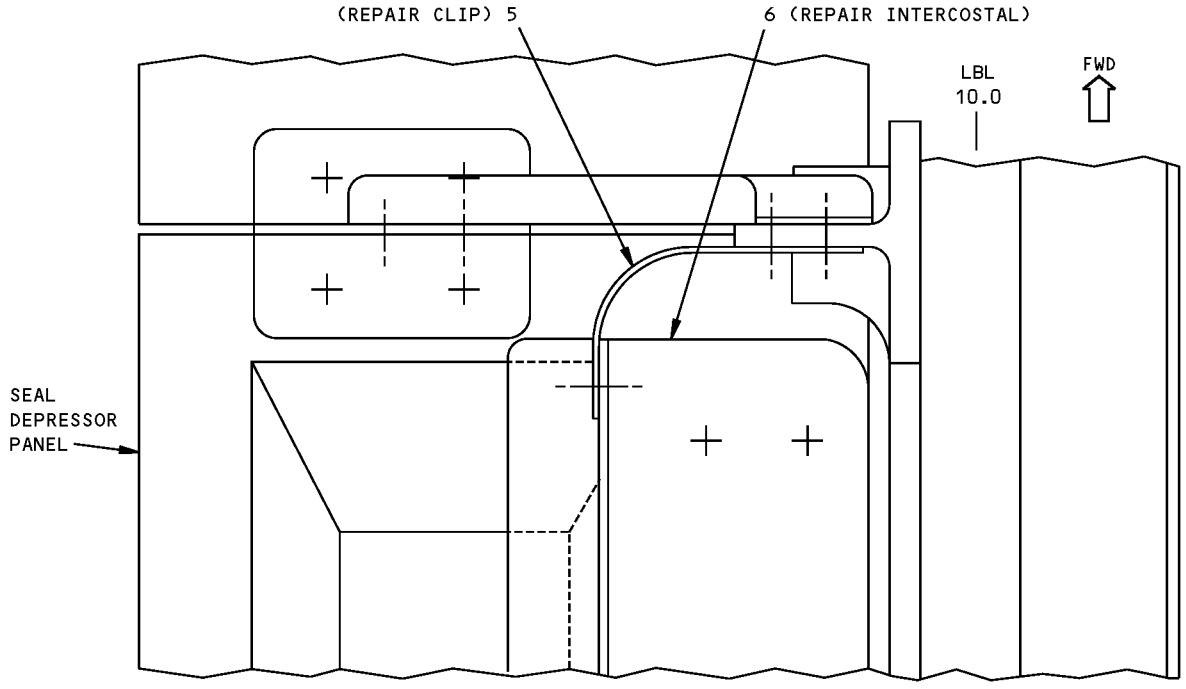


SECTION H-H

Keel Beam Lower Chord Flange Repair
Figure 201 (Sheet 9 of 12)

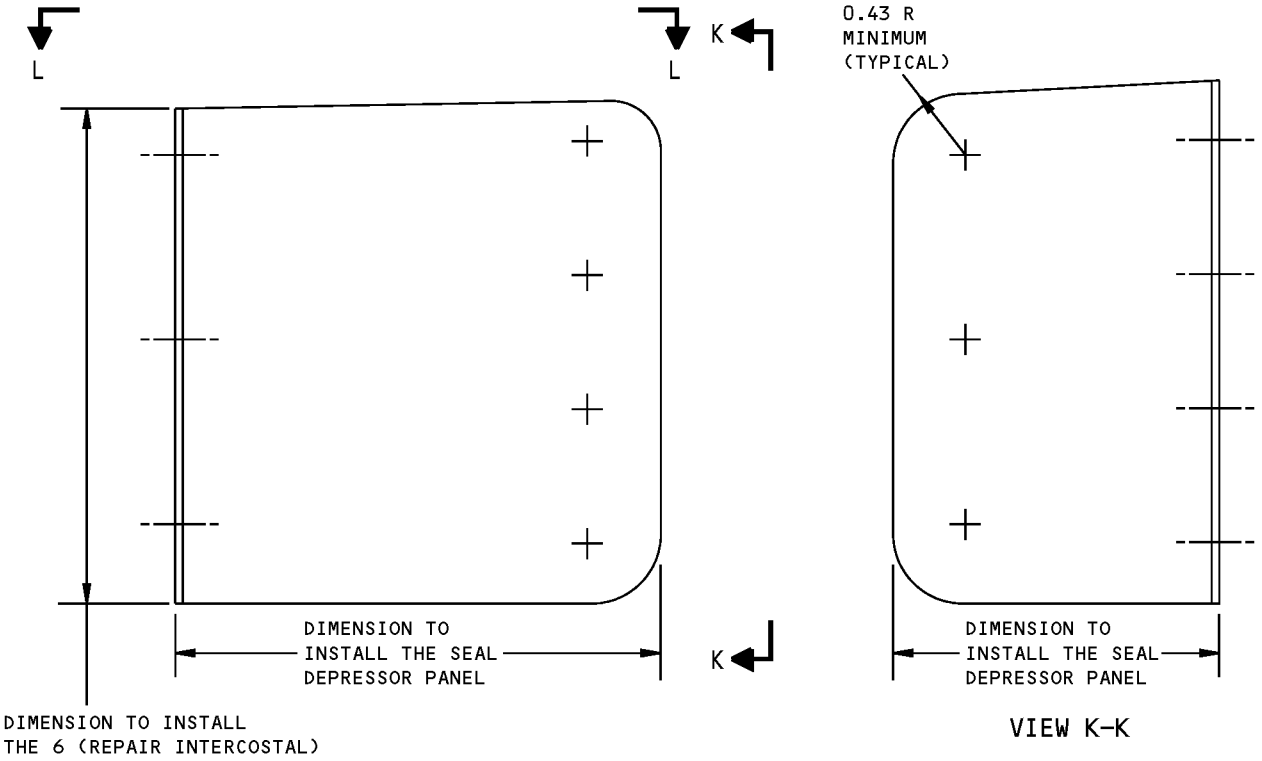


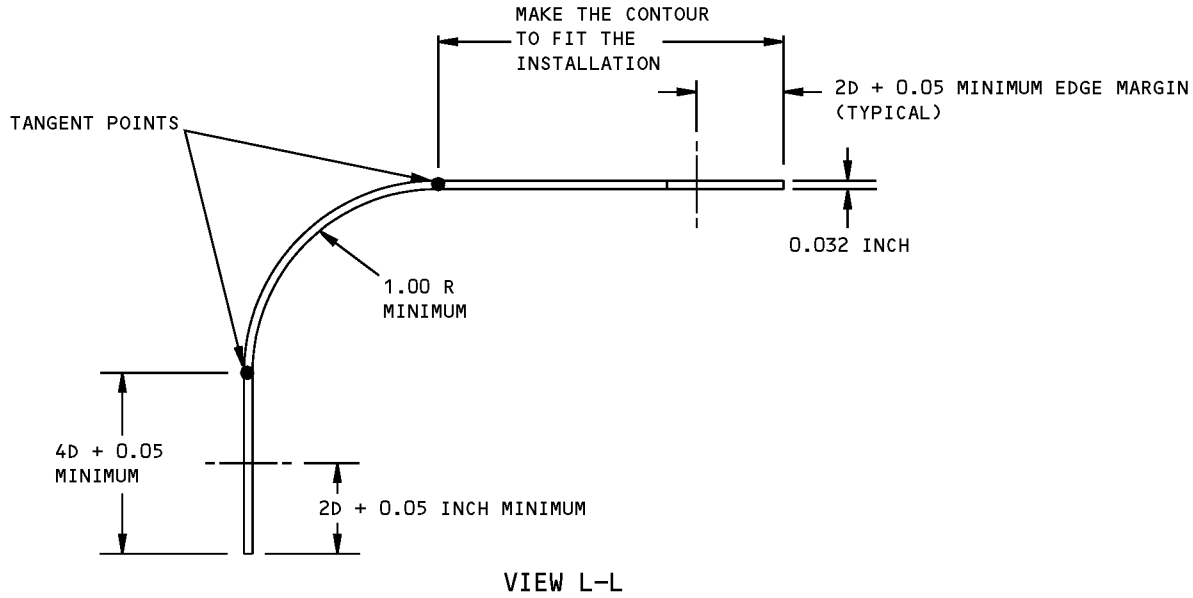
SECTION I–I
(AFT VIEW)



SECTION J–J

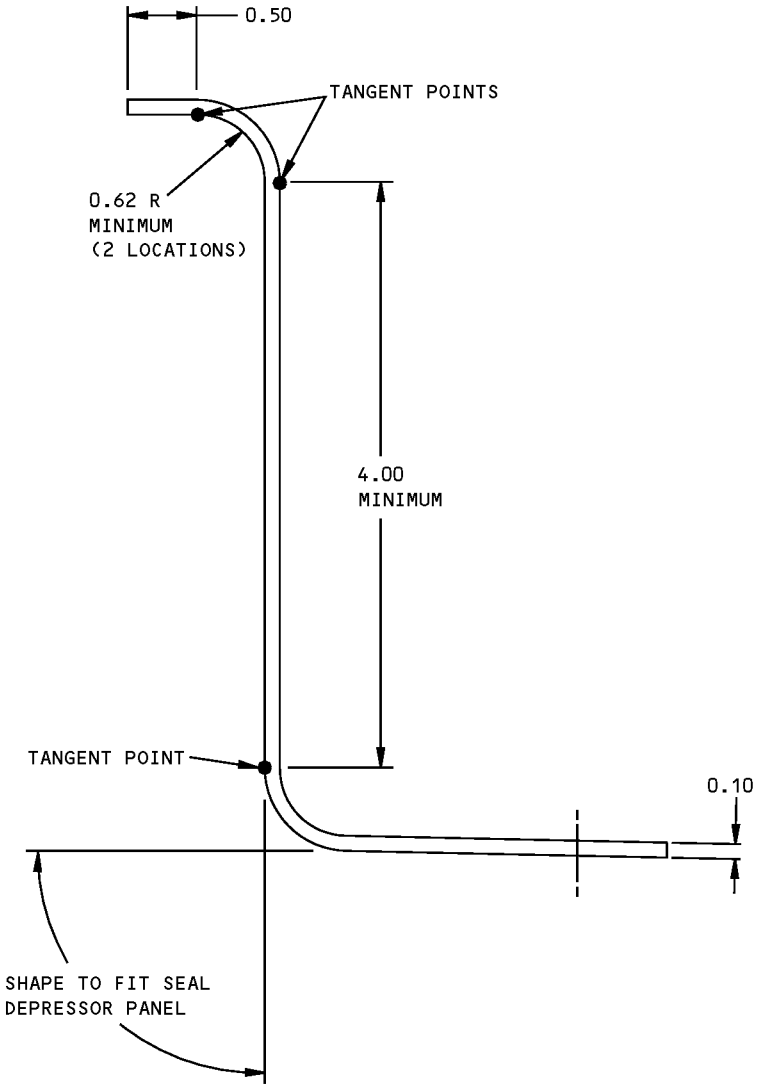
Keel Beam Lower Chord Flange Repair
Figure 201 (Sheet 10 of 12)





CLIP (PART 5)
DETAIL VI

Keel Beam Lower Chord Flange Repair
Figure 201 (Sheet 11 of 12)



INTERCOSTAL (PART 6)

DETAIL VII

Keel Beam Lower Chord Flange Repair
Figure 201 (Sheet 12 of 12)

REPAIR 2 - KEEL BEAM CHORD FLANGE CORROSION REPAIR AT A FAIRING PANEL ATTACH HOLE

APPLICABLILITY
THIS REPAIR IS APPLICABLE TO KEEL BEAM CORROSION AT A FAIRING PANEL ATTACH HOLE

REPAIR INSTRUCTIONS

1. Get access to the damaged flange.
2. Remove the nutplate from the damaged flange.
3. Make the Part 1 retainer. Refer to Table I.
4. Assemble the repair part and drill the fastener holes.
5. Disassemble the repair part.
6. Increase the diameter of the fairing panel attach hole until the damage is removed. The maximum hole diameter is 0.35 inch (8.9 mm).
7. Holes larger than 0.35 inch (8.9 mm) and less than 0.65 inch (16.5 mm) in diameter can be plugged using a fabricated freeze plug made from 7075-T73 Bar stock, (optional 7075-T6). Refer to SRM 51-20-07.
8. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair part and the keel beam chord flange as given in allowable damage 1.
9. Shot peen the reworked areas as given in SOPM 20-10-03.
10. Apply a chemical conversion coating to the repair part and to the bare surfaces of the keep beam chord flange. Refer to SRM 51-10-02.
11. Apply two layers of BMS 10-11, Type I primer to the repair part and to the bare surfaces of the keel beam chord flange. Refer to SOPM 20-41-02.
12. Install the nutplate on the Part 1 retainer using countersink rivets. Flush on the lower surface.
13. Install the retainer with BMS 5-95 sealant between the mating surfaces. Make sure the edge in contact with the keel beam chord is completely sealed and that the sealant is smooth to prevent the entrapment of moisture. Fill the void between the keel beam and the Part 1 retainer with BMS 5-95 sealant.
14.
    compound to the repair area. Refer to SRM 51-20-21.
15. Install the fairing attachment fasteners with MIL-C-11796, Class 3 corrosion preventative compound or equivalent. Refer to SRM 51-20-01. Increase fastener grip length as required.

NOTES

- THIS REPAIR IS A CATEGORY A REPAIR. THE INSPECTIONS GIVEN IN THE MAINTENANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERANCE OF THE INITIAL STRUCTURE WITH THIS REPAIR INSTALLED. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - SRM 51-00-06 FOR STRUCTURAL REPAIR DEFINITIONS
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS.

FASTENER SYMBOLS

┼ REPAIR FASTENER LOCATION. INSTALL A BACR15BA3AD OR BACR15CE3AD COUNTERSINK RIVET.

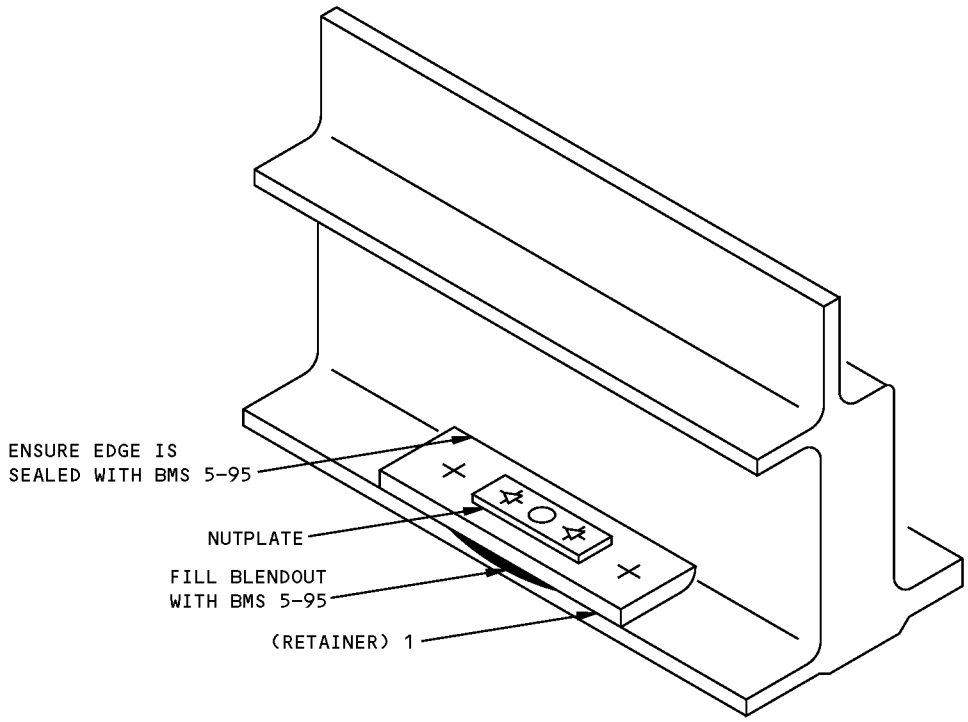
⏃ REPAIR FASTENER LOCATION. INSTALL A BACN10YF32CD NUTPLATE. USE BACR15BA3AD OR BACR15CE3AD COUNTERSINK RIVETS TO ATTACH THE NUTPLATE.

REPAIR MATERIAL			
PART NO.	PART	QUANTITY	MATERIAL
1	RETAINER	1	0.080, 7075-T73, OPTIONAL: 7075-T6 OR 2024-T3 2.25 INCHES LONG, 0.25 INCH RADIUS TO MATCH KEEL BEAM CHORD

TABLE I

K32045 S0006824979_V3

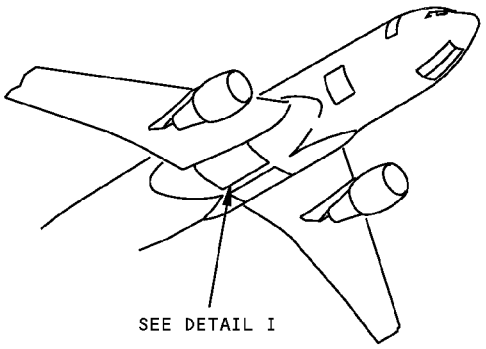
Keel Beam Chord Flange Corrosion Repair at a Fairing Panel Attach Hole
Figure 201 (Sheet 1 of 2)



KEEL BEAM CHORD

Keel Beam Chord Flange Corrosion Repair at a Fairing Panel Attach Hole
Figure 201 (Sheet 2 of 2)

IDENTIFICATION 1 - SECTION 45 MAIN LANDING GEAR SUPPORT STRUCTURE



REF DWG
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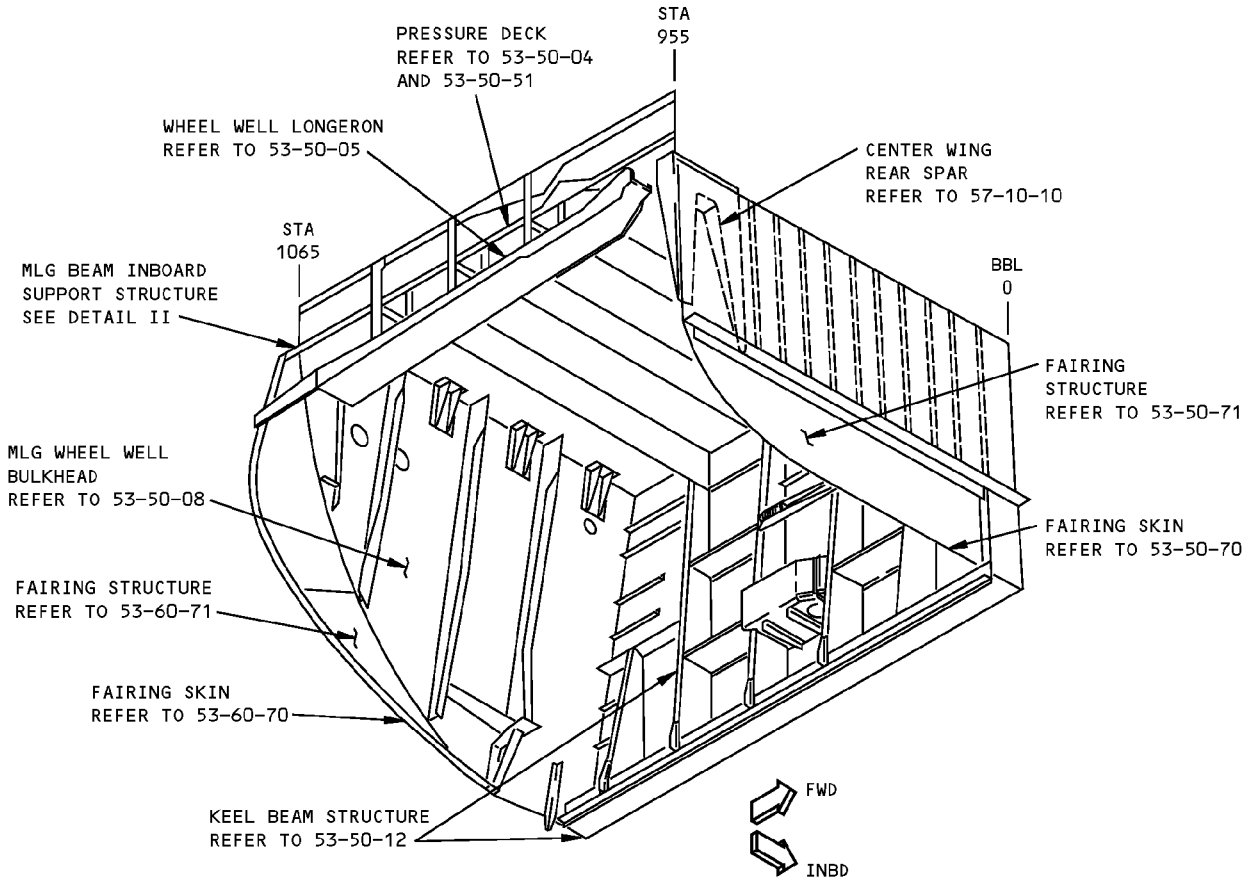
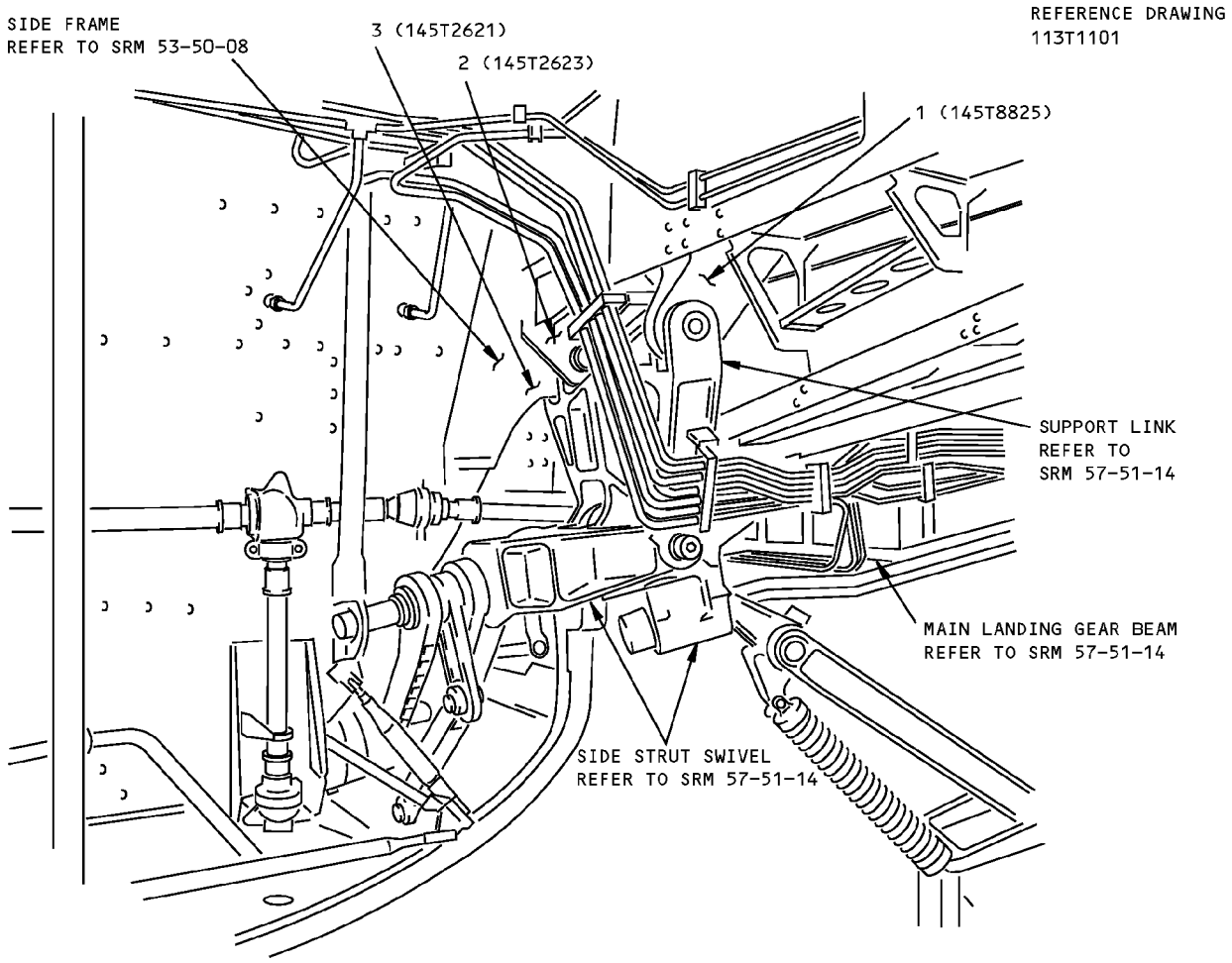
145T2620
145T8700
145T8740
145T8750
145T8760
145T8800
149T0000
149T7200
149T7601



RIGHT SIDE SHOWN
LEFT SIDE OPPOSITE

DETAIL I

Section 45 Main Landing Gear Support Structure Identification
Figure 1 (Sheet 1 of 2)



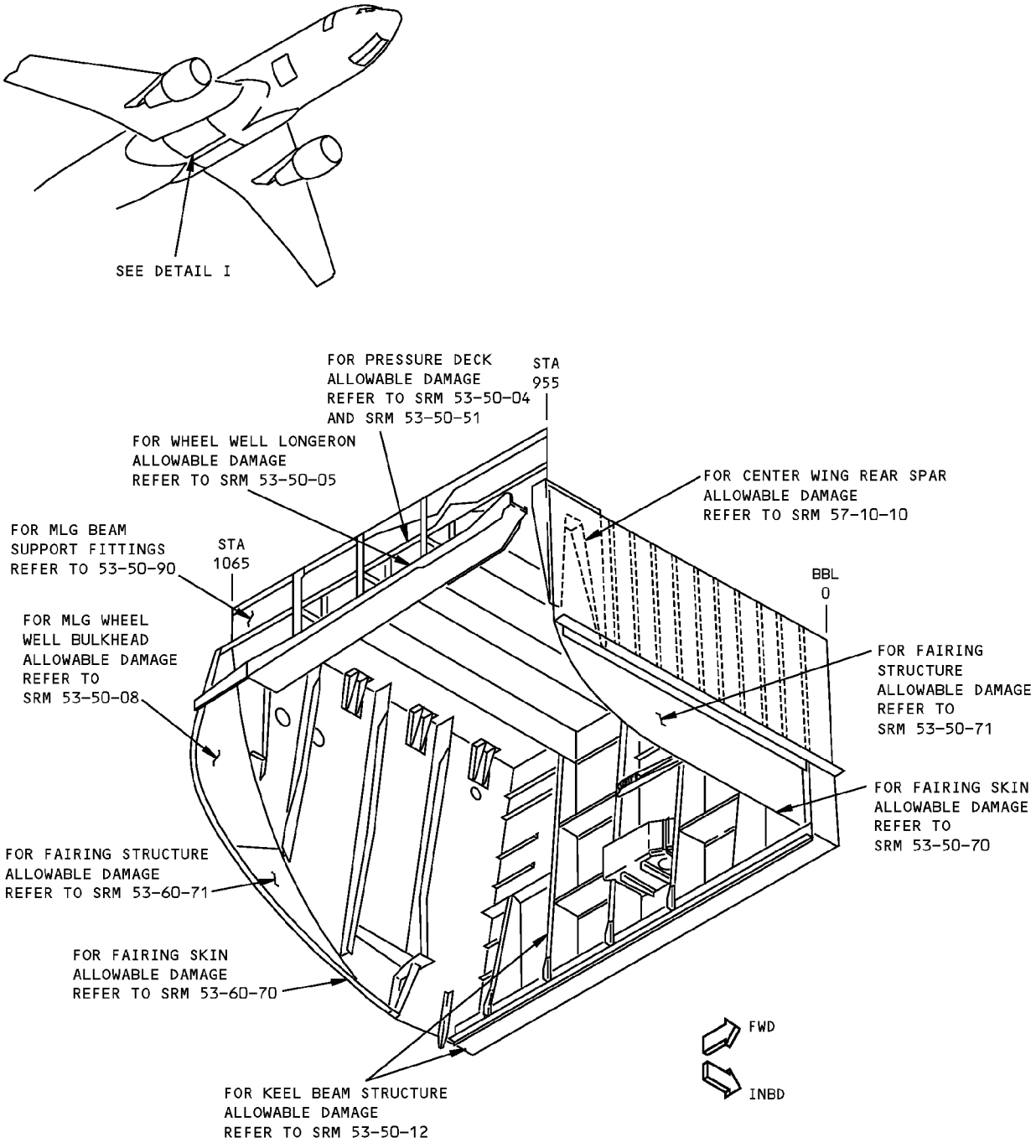
LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
MAIN LANDING GEAR WHEEL WELL
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	STA 1043 MAIN LANDING GEAR BEAM SUPPORT FITTING		FORGING 7175-T736	
2	FAIL SAFE FITTING		FORGING 7050-T736	
3	STATION 1065 MAIN LANDING GEAR BEAM SUPPORT FITTING		FORGING 7175-T736	

LIST OF MATERIALS FOR DETAIL II

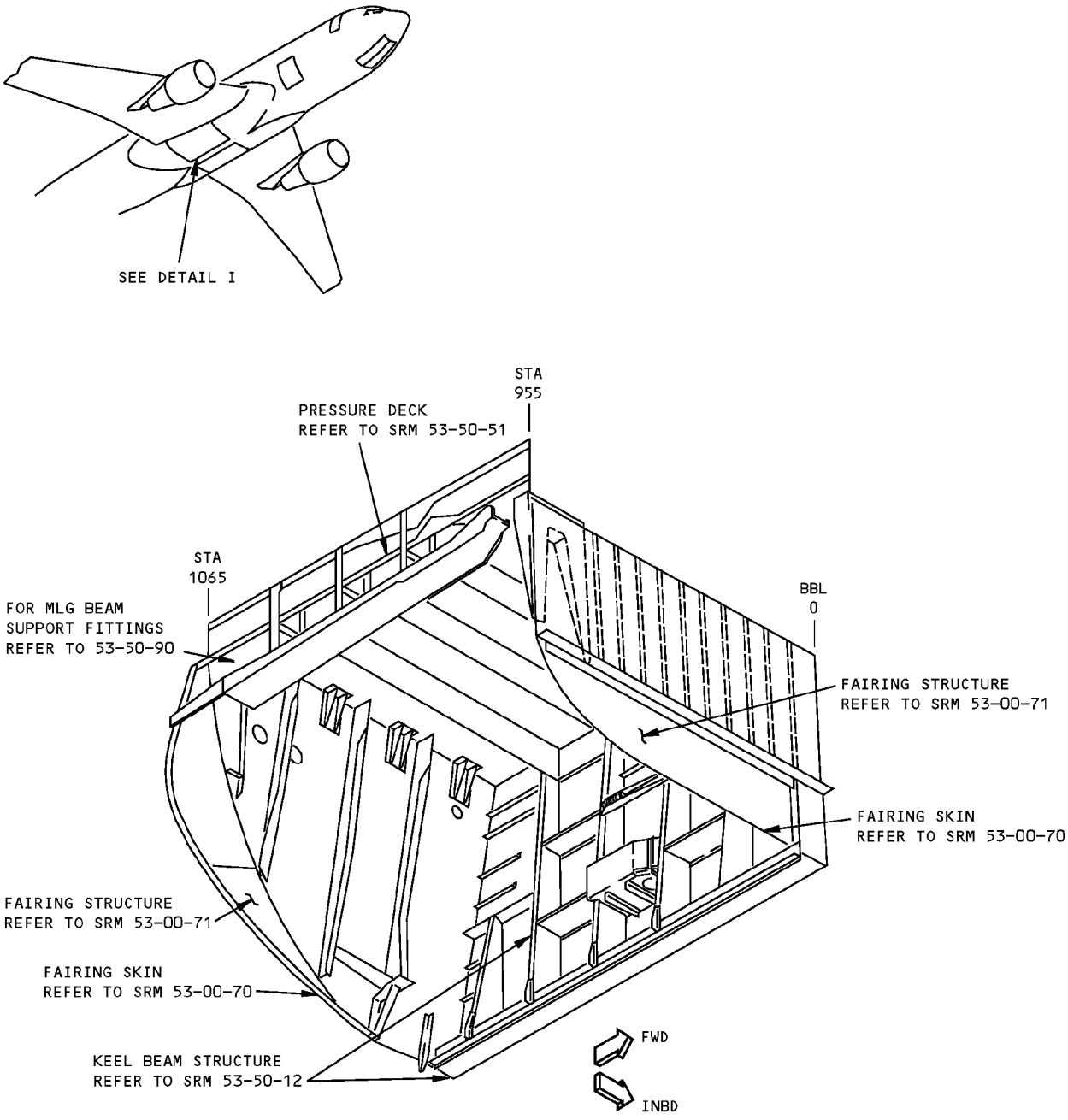
Section 45 Main Landing Gear Support Structure Identification
Figure 1 (Sheet 2 of 2)

ALLOWABLE DAMAGE 1 - SECTION 45 - MAIN LANDING GEAR SUPPORT STRUCTURE



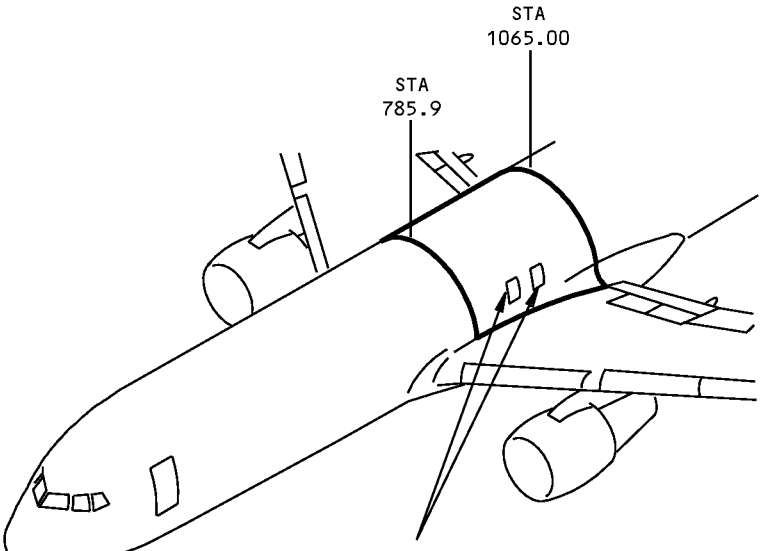
Section 45 - Main Landing Gear Support Structure Allowable Damage
Figure 101

REPAIR 1 - SECTION 45 MAIN LANDING GEAR SUPPORT STRUCTURE



Section 45 Main Landing Gear Support Structure Repair
Figure 201

IDENTIFICATION 1 - SECTION 45 - DOOR SURROUND STRUCTURE



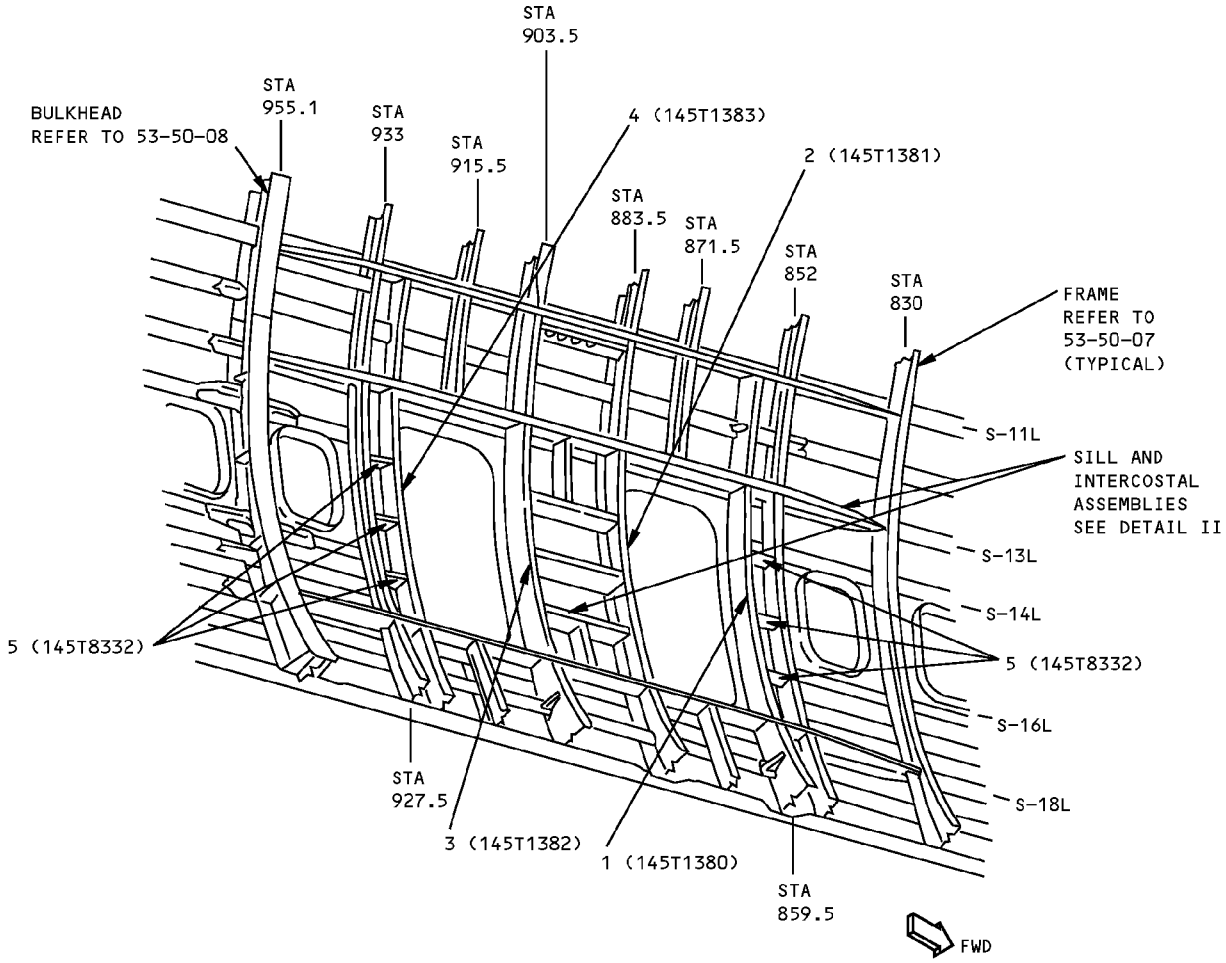
NOTES

[A] FOR CUM LINE NUMBERS: 158 AND 165

[B] FOR AIRPLANES WITH AFT OVERWING EXIT (MIDENTRY DOOR CONFIGURATION), CUM LINE NUMBERS: 245 AND ON

Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 1 of 13)

REF DWGS
145T0300
145T0400



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL I

LIST OF MATL

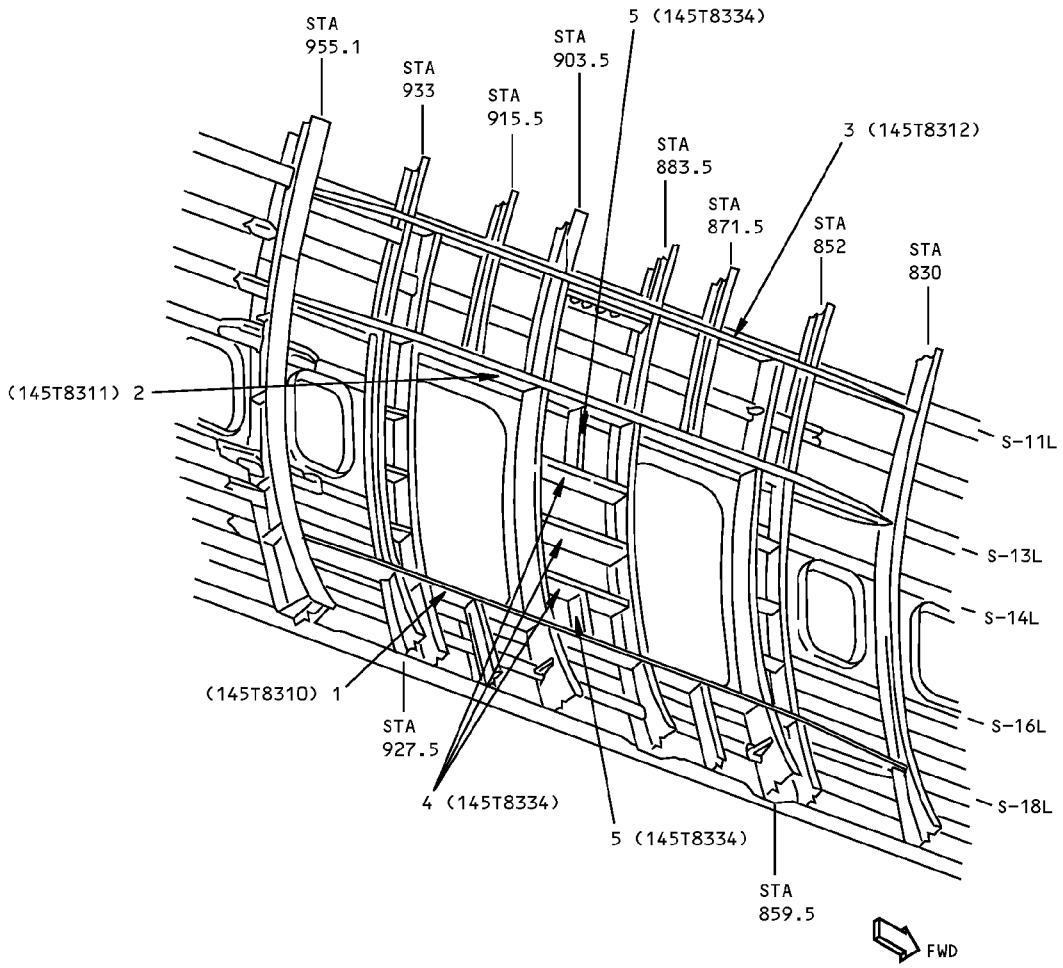
Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 2 of 13)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	INNER CHORD		BAC1503-100753 7075-T62	
			OPTIONAL: BAC1503-9437 7075-T62	
	WEB	0.071	CLAD 7075-T6	
	OUTER CHORD		BAC1503-100296 2024-T42	
	FAIL-SAFE CHORD	0.250	7075-T651	
2	FRAME ASSY			
	INNER CHORD		BAC1503-9437 7075-T62	
	WEB	0.080	CLAD 7075-T6	
	OUTER CHORD		BAC1503-100296 2024-T42	
	FAIL-SAFE CHORD	0.312	7075-T651	
3	FRAME ASSY			
	INNER CHORD			
	UPPER		BAC1503-4223 7075-T62	
	LOWER		BAC1503-9437 7075-T62	
	WEB	0.080	CLAD 7075-T6	
	OUTER CHORD			
	UPPER		BAC1503-100018 7075-T62	
	MAIN		BAC1503-100296 2024-T42	
	LOWER		BAC1503-100528 7075-T6511	
	FAIL-SAFE CHORD	0.250	7075-T651	
4	FRAME ASSY			
	INNER CHORD		BAC1503-9437 7075-T62	
	WEB	0.080	CLAD 7075-T6	
	OUTER CHORD		BAC1503-100296 2024-T42	
	FAIL-SAFE CHORD	0.160	7075-T6	
5	INTERCOSTAL	0.056	CLAD 7075-T62	

LIST OF MATERIALS FOR DETAIL I

Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 3 of 13)

REF DWGS
145T0300
145T0400



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL II

LIST OF MATL

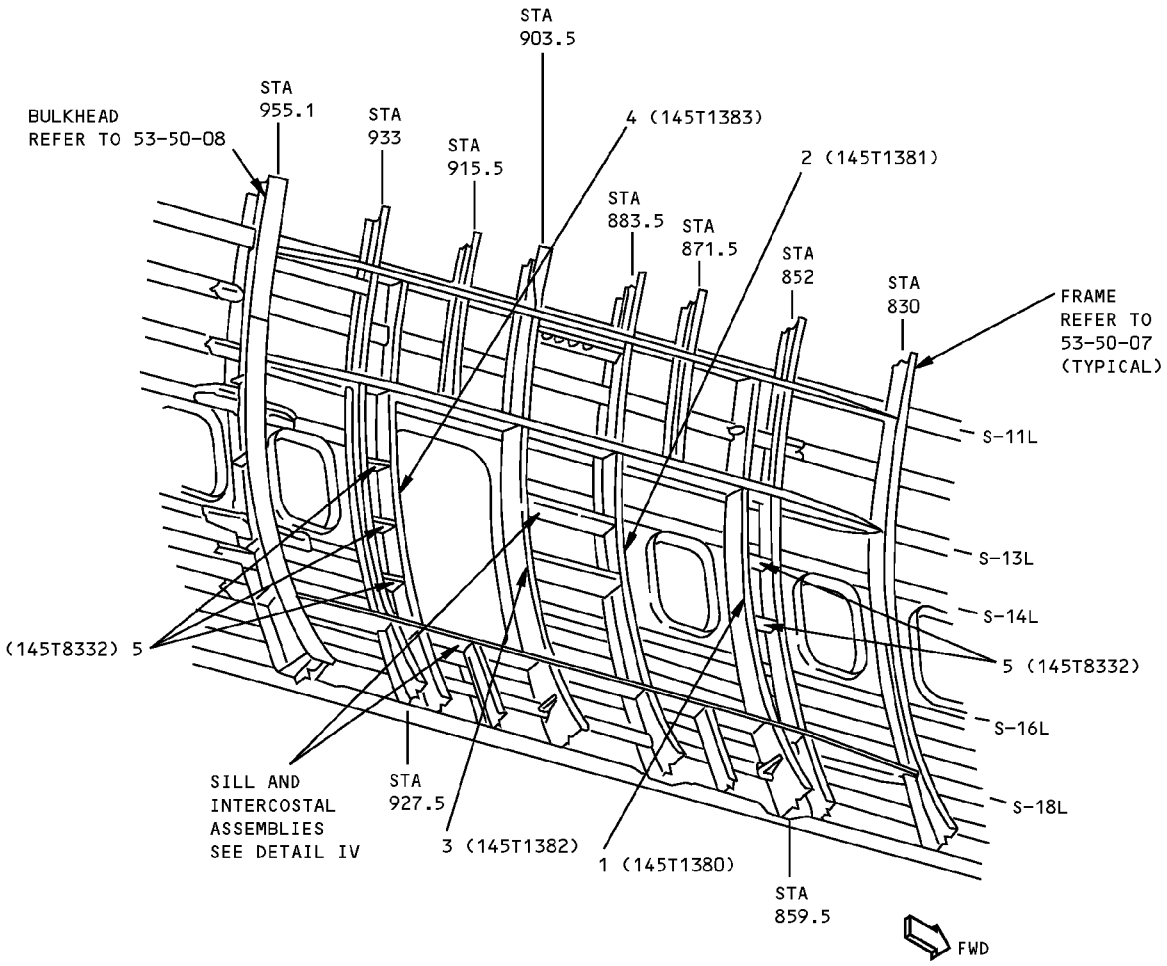
Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 4 of 13)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	LOWER SILL			
	INNER CHORD		BAC1503-100385 7075-T62	
	FAIL-SAFE STRAP	0.125	7075-T6	
	WEB			
	STA 830 TO 852	0.050	CLAD 7075-T6	
	STA 852 TO 859.5	0.071	CLAD 7075-T6	
	STA 859.5 TO 955.1	0.063	CLAD 7075-T6	
	OUTER CHORD		BAC1510-1124 2024-T3511	
2	UPPER SILL			
	INNER CHORD		BAC1503-100170 7075-T62	
	FAIL-SAFE STRAP	0.160	7075-T6	
	WEB			
	STA 830 TO 852	0.040	CLAD 7075-T6	
	STA 852 TO 859.5	0.050	CLAD 7075-T6	
	STA 859.5 TO 883.5	0.056	CLAD 7075-T6	
	STA 883.5 TO 903.5	0.071	CLAD 7075-T6	
	STA 903.5 TO 927.5	0.056	CLAD 7075-T6	
	STA 927.5 TO 933	0.050	CLAD 7075-T6	
	STA 933 TO 955.1	0.040	CLAD 7075-T6	
	OUTER CHORD		BAC1510-1124 2024-T3511	
3	AUX SILL			
	WEB			
	STA 830 TO 915.5	0.040	CLAD 7075-T6	
	STA 915.5 TO 955.1	0.050	CLAD 7075-T6	
	CHORD		BAC1503-100170 7075-T62	
	FAIL-SAFE STRAP	0.140	7075-T6	
4	INTERCOSTAL			
	WEB	0.090	CLAD 7075-T62	
	CHORD		BAC1505-100712 7075-T73	
5	INTERCOSTAL			
	WEB	0.070	CLAD 7075-T62	
	CHORD		BAC1505-100712 2024-T42 OPTIONAL: 7075-T73	

LIST OF MATERIALS FOR DETAIL II

Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 5 of 13)

REF DWGS
145T0003
145T0300
145T0400



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL III A

LIST OF MATL

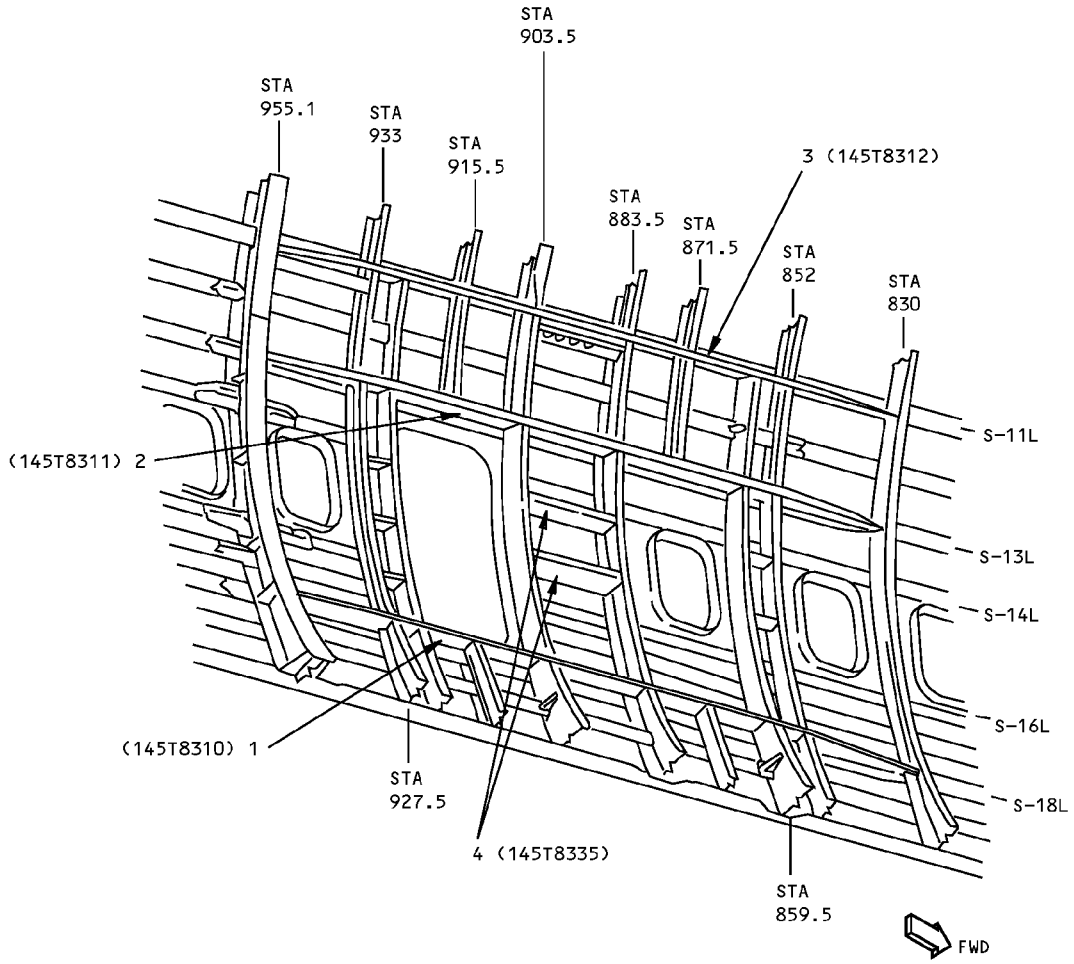
Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 6 of 13)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	INNER CHORD		BAC1503-100753 7075-T62	
			OPTIONAL: BAC1503-9437 7075-T62	
	WEB	0.071	CLAD 7075-T6	
	OUTER CHORD		BAC1503-100296 2024-T42	
	FAIL-SAFE CHORD	0.250	7075-T651	
2	FRAME ASSY			
	INNER CHORD		BAC1503-9437 7075-T62	
	WEB	0.080	CLAD 7075-T6	
	OUTER CHORD		BAC1503-100296 2024-T42	
	FAIL-SAFE CHORD	0.312	7075-T651	
3	FRAME ASSY			
	INNER CHORD			
	UPPER		BAC1503-4223 7075-T62	
	LOWER		BAC1503-9437 7075-T62	
	WEB	0.080	CLAD 7075-T6	
	OUTER CHORD			
	UPPER		BAC1503-100018 7075-T62	
	MAIN		BAC1503-100296 2024-T42	
	LOWER		BAC1503-100528 7075-T6511	
	FAIL-SAFE CHORD	0.250	7075-T651	
4	FRAME ASSY			
	INNER CHORD		BAC1503-9437 7075-T62	
	WEB	0.080	CLAD 7075-T6	
	OUTER CHORD		BAC1503-100296 2024-T42	
	FAIL-SAFE CHORD	0.160	7075-T6	
5	INTERCOSTAL	0.056	CLAD 7075-T62	

LIST OF MATERIALS FOR DETAIL III

Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 7 of 13)

REF DWGS
145T0003



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL IV [A]

LIST OF MATL

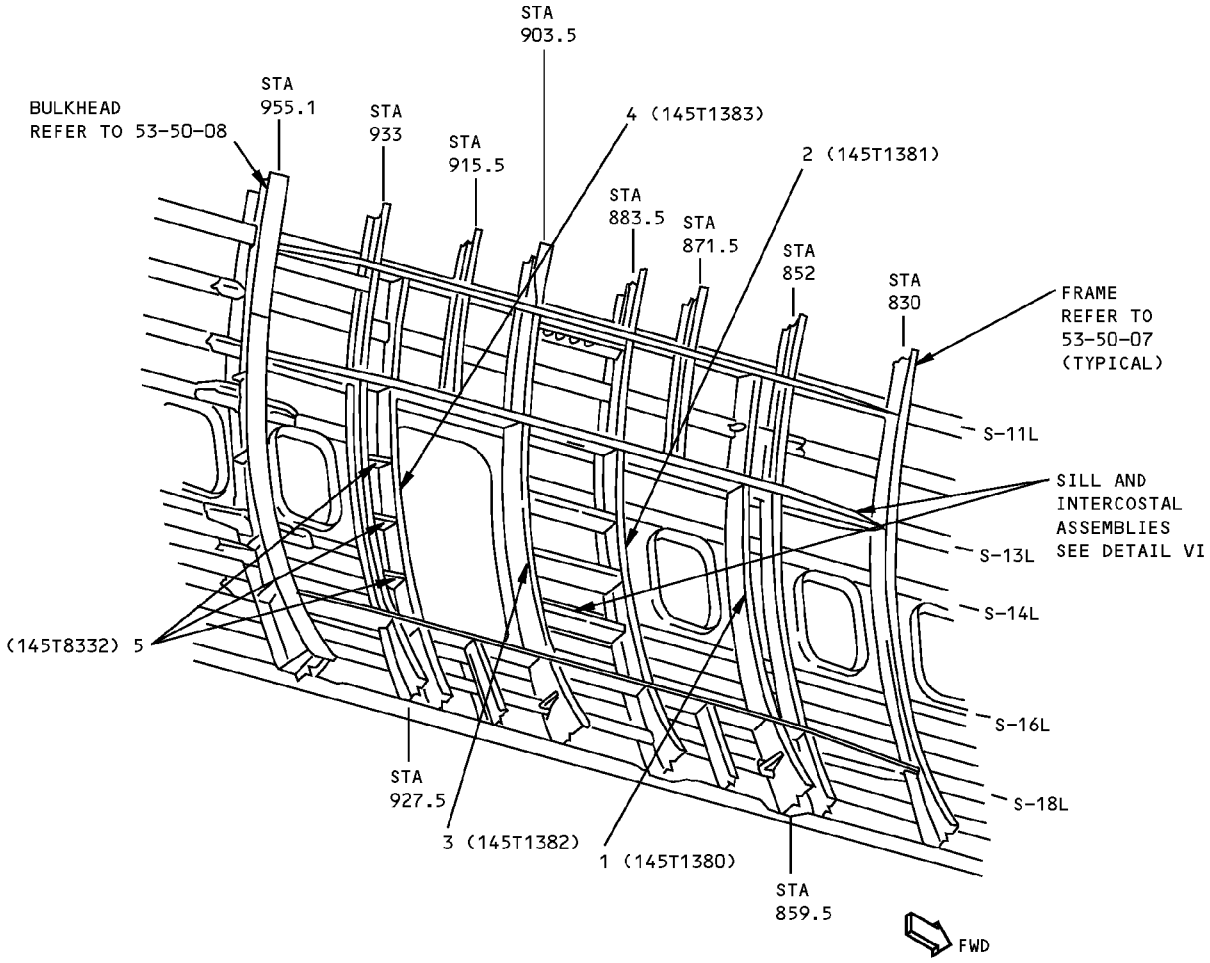
Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 8 of 13)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	LOWER SILL			
	INNER CHORD		BAC1503-100385 7075-T62	
	FAIL-SAFE STRAP	0.125	7075-T6	
	WEB			
	STA 830 TO 852	0.050	CLAD 7075-T6	
	STA 852 TO 859.5	0.071	CLAD 7075-T6	
	STA 859.5 TO 955.1	0.063	CLAD 7075-T6	
	OUTER CHORD		BAC1510-1124 2024-T3511	
2	UPPER SILL			
	INNER CHORD		BAC1503-100170 7075-T62	
	FAIL-SAFE STRAP	0.160	7075-T6	
	WEB			
	STA 830 TO 852	0.040	CLAD 7075-T6	
	STA 852 TO 859.5	0.050	CLAD 7075-T6	
	STA 859.5 TO 883.5	0.056	CLAD 7075-T6	
	STA 883.5 TO 903.5	0.071	CLAD 7075-T6	
	STA 903.5 TO 927.5	0.056	CLAD 7075-T6	
	STA 927.5 TO 933	0.050	CLAD 7075-T6	
	STA 933 TO 955.1	0.040	CLAD 7075-T6	
	OUTER CHORD		BAC1510-1124 2024-T3511	
3	AUX SILL			
	WEB			
	STA 830 TO 915.5	0.040	CLAD 7075-T6	
	STA 915.5 TO 955.1	0.050	CLAD 7075-T6	
	CHORD		BAC1503-100170 7075-T62	
	FAIL-SAFE STRAP	0.140	7075-T6	
4	INTERCOSTAL			
	WEB	0.090	CLAD 7075-T62	
	CHORD		BAC1505-100712 7075-T73	
5	INTERCOSTAL			
	WEB	0.070	CLAD 7075-T62	
	CHORD		BAC1505-100712 2024-T42 OPTIONAL: 7075-T73	

LIST OF MATERIALS FOR DETAIL IV

Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 9 of 13)

REF DWGS
145T0300
145T0400



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL V [B]

LIST OF MATL

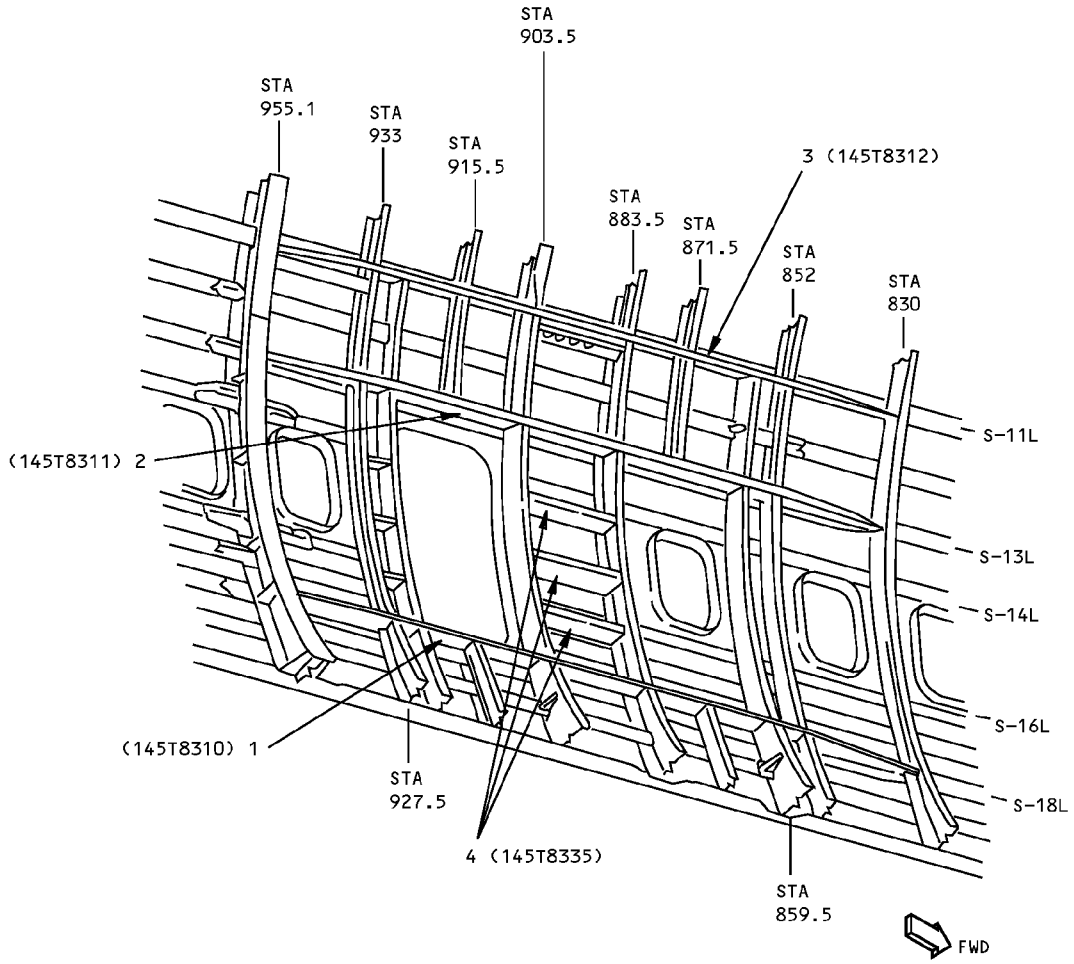
Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 10 of 13)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSY			
	INNER CHORD		BAC1503-100753 7075-T62	
			OPTIONAL: BAC1503-9437 7075-T62	
	WEB	0.071	CLAD 7075-T6	
	OUTER CHORD		BAC1503-100296 2024-T42	
	FAIL-SAFE CHORD	0.250	7075-T651	
2	FRAME ASSY			
	INNER CHORD		BAC1503-9437 7075-T62	
	WEB	0.080	CLAD 7075-T6	
	OUTER CHORD		BAC1503-100296 2024-T42	
	FAIL-SAFE CHORD	0.312	7075-T651	
3	FRAME ASSY			
	INNER CHORD			
	UPPER		BAC1503-4223 7075-T62	
	LOWER		BAC1503-9437 7075-T62	
	WEB	0.080	CLAD 7075-T6	
	OUTER CHORD			
	UPPER		BAC1503-100018 7075-T62	
	MAIN		BAC1503-100296 2024-T42	
	LOWER		BAC1503-100528 7075-T6511	
	FAIL-SAFE CHORD	0.250	7075-T651	
4	FRAME ASSY			
	INNER CHORD		BAC1503-9437 7075-T62	
	WEB	0.080	CLAD 7075-T6	
	OUTER CHORD		BAC1503-100296 2024-T42	
	FAIL-SAFE CHORD	0.160	7075-T6	
5	INTERCOSTAL	0.056	CLAD 7075-T62	

LIST OF MATERIALS FOR DETAIL V

Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 11 of 13)

REF DWGS
145T8330



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL VI

LIST OF MATL

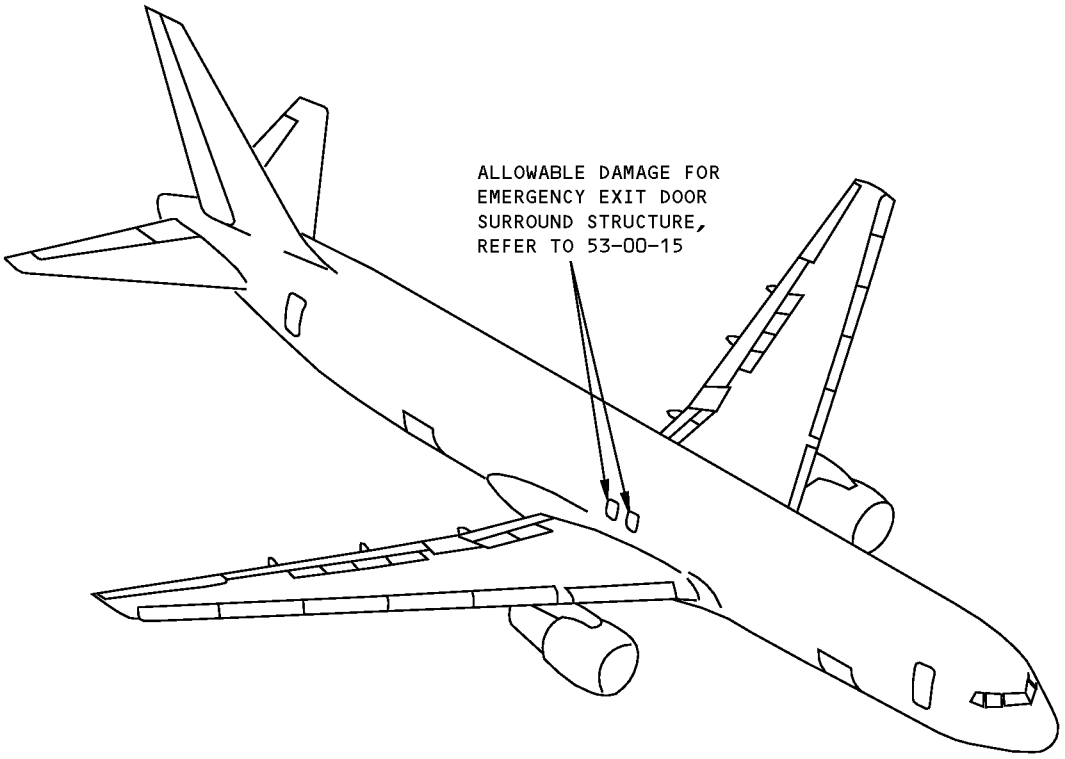
Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 12 of 13)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	LOWER SILL			
	INNER CHORD		BAC1503-100385 7075-T62	
	FAIL-SAFE STRAP	0.125	7075-T6	
	WEB			
	STA 830 TO 852	0.050	CLAD 7075-T6	
	STA 852 TO 859.5	0.071	CLAD 7075-T6	
	STA 859.5 TO 955.1	0.063	CLAD 7075-T6	
	OUTER CHORD		BAC1510-1124 2024-T3511	
2	UPPER SILL			
	INNER CHORD		BAC1503-100170 7075-T62	
	FAIL-SAFE STRAP	0.160	7075-T6	
	WEB			
	STA 830 TO 852	0.040	CLAD 7075-T6	
	STA 852 TO 859.5	0.050	CLAD 7075-T6	
	STA 859.5 TO 883.5	0.056	CLAD 7075-T6	
	STA 883.5 TO 903.5	0.071	CLAD 7075-T6	
	STA 903.5 TO 927.5	0.056	CLAD 7075-T6	
	STA 927.5 TO 933	0.050	CLAD 7075-T6	
	STA 933 TO 955.1	0.040	CLAD 7075-T6	
	OUTER CHORD		BAC1510-1124 2024-T3511	
3	AUX SILL			
	WEB			
	STA 830 TO 915.5	0.040	CLAD 7075-T6	
	STA 915.5 TO 955.1	0.050	CLAD 7075-T6	
	CHORD		BAC1503-100170 7075-T62	
	FAIL-SAFE STRAP	0.140	7075-T6	
4	INTERCOSTAL			
	WEB	0.090	CLAD 7075-T62	
	CHORD		BAC1505-100712 7075-T73	
5	INTERCOSTAL			
	WEB	0.070	CLAD 7075-T62	
	CHORD		BAC1505-100712 2024-T42 OPTIONAL: 7075-T73	

LIST OF MATERIALS FOR DETAIL VI

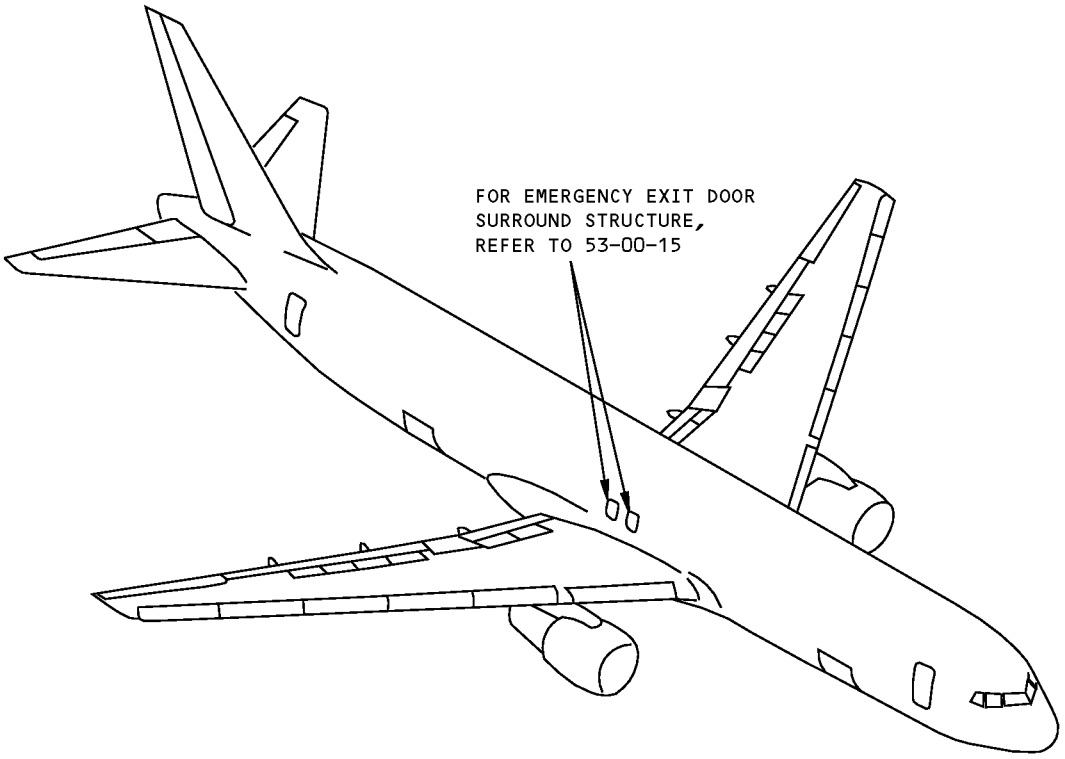
Section 45 - Door Surround Structure Identification
Figure 1 (Sheet 13 of 13)

ALLOWABLE DAMAGE 1 - SECTION 45 - EMERGENCY EXIT DOOR SURROUND STRUCTURE



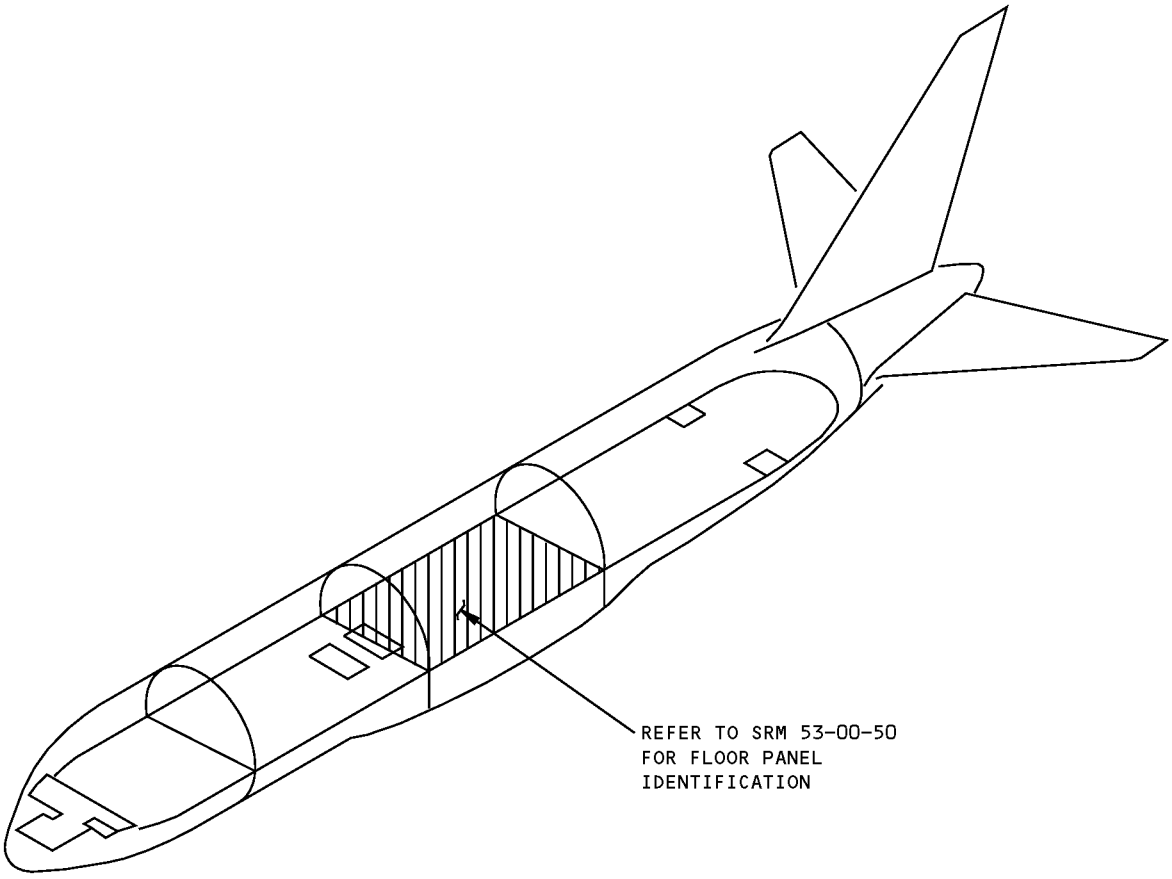
Section 45 - Emergency Exit Door Surround Structure Allowable Damage
Figure 101

REPAIR 1 - SECTION 45 - EMERGENCY EXIT DOOR SURROUND STRUCTURE



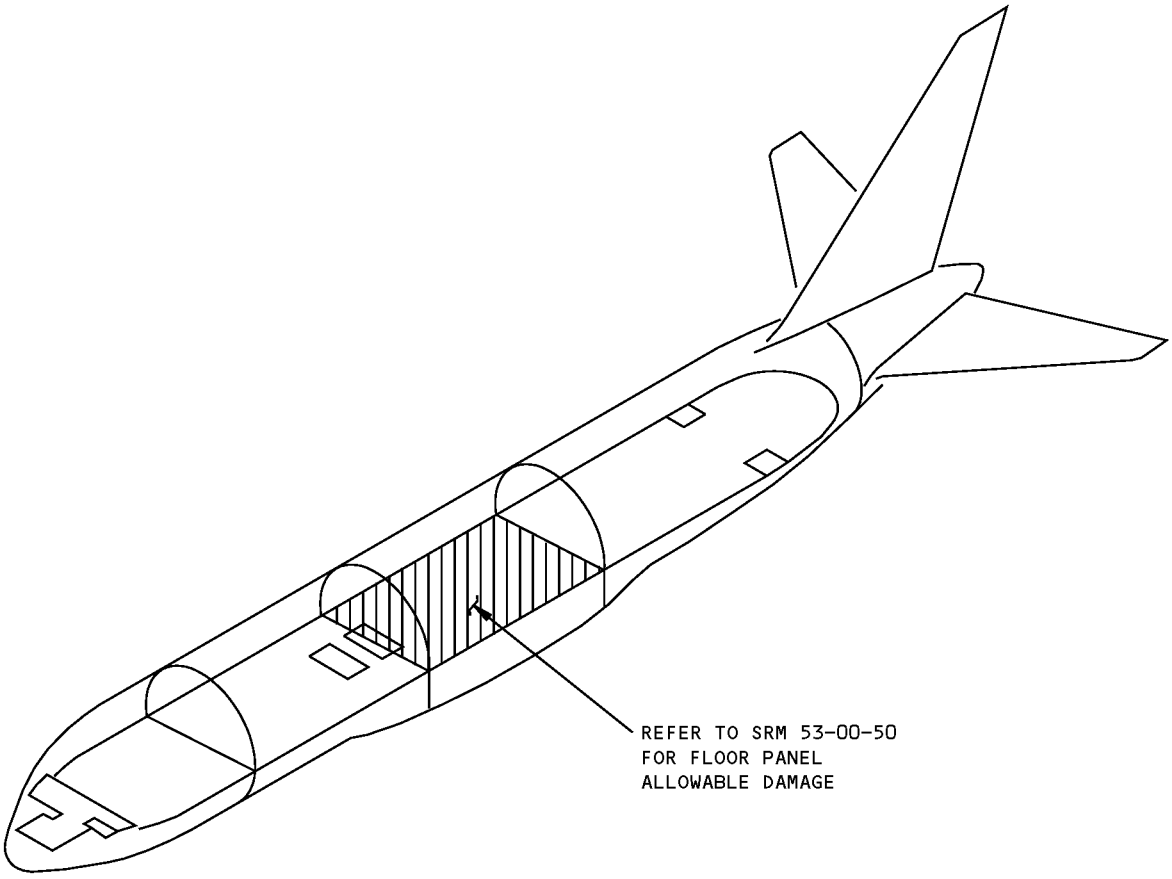
Section 45 - Emergency Exit Door Surround Structure Repair
Figure 201

IDENTIFICATION GENERAL - SECTION 45 FLOOR STRUCTURE



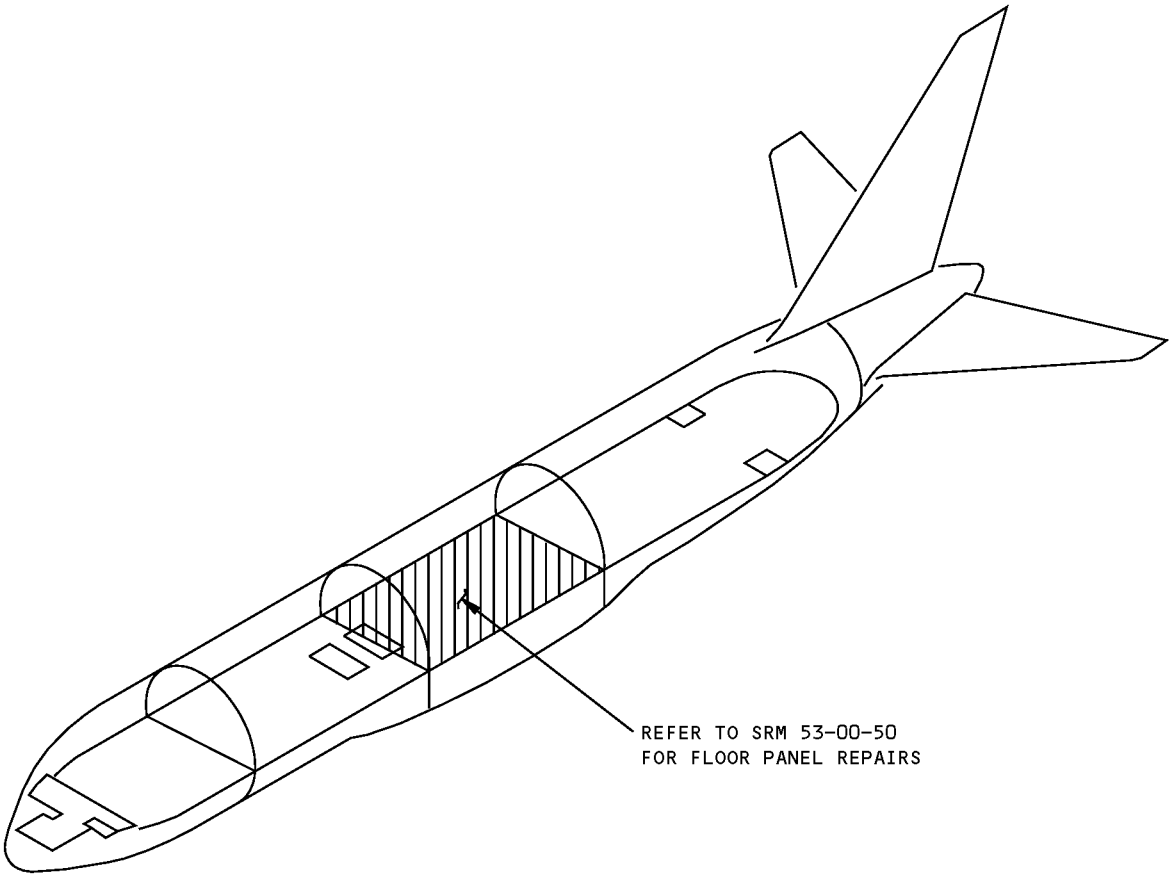
Section 45 Main Deck Floor Panel Identification
Figure 1

ALLOWABLE DAMAGE GENERAL - SECTION 45 MAIN DECK FLOOR PANELS



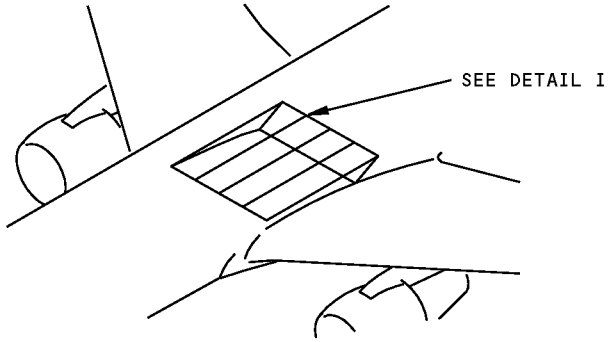
Section 45 Main Deck Floor Panel Allowable Damage
Figure 101

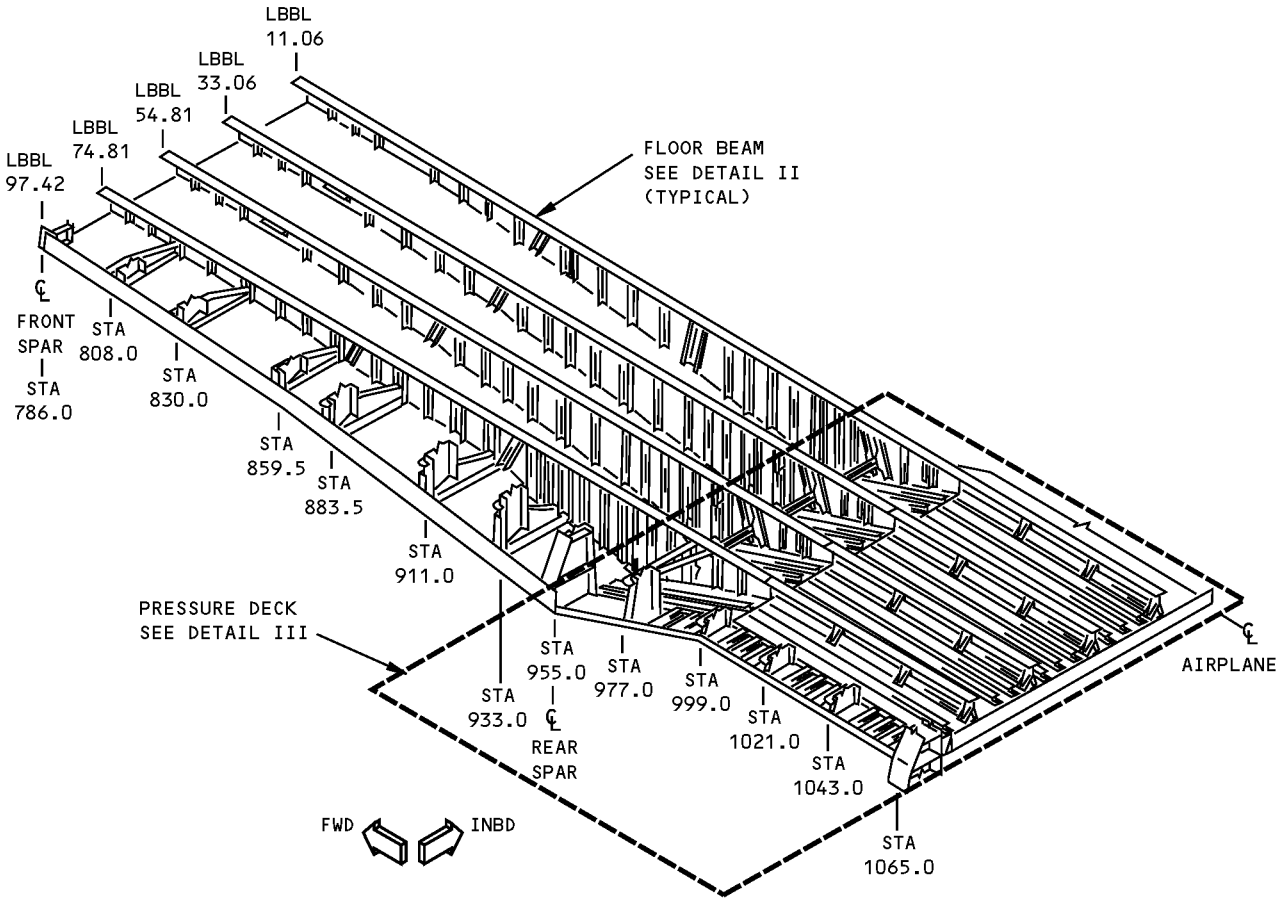
REPAIR GENERAL - SECTION 45 MAIN DECK FLOOR PANELS



Section 45 Main Deck Floor Panel Repair
Figure 201

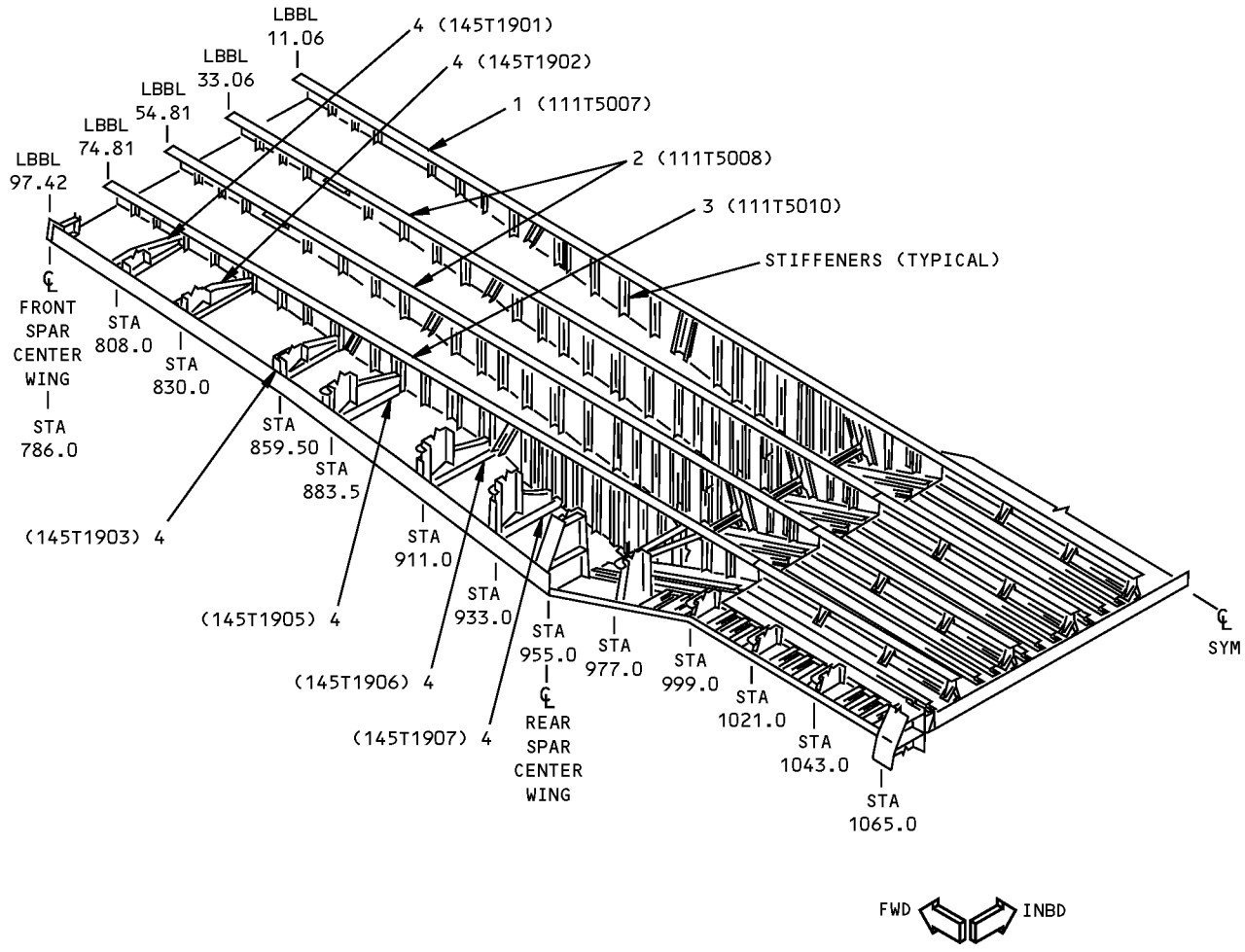
IDENTIFICATION GENERAL - SECTION 45 FLOOR STRUCTURE





LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL I

Section 45 Floor Structure Identification
Figure 1 (Sheet 1 of 5)



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
FLOOR STRUCTURE

DETAIL II

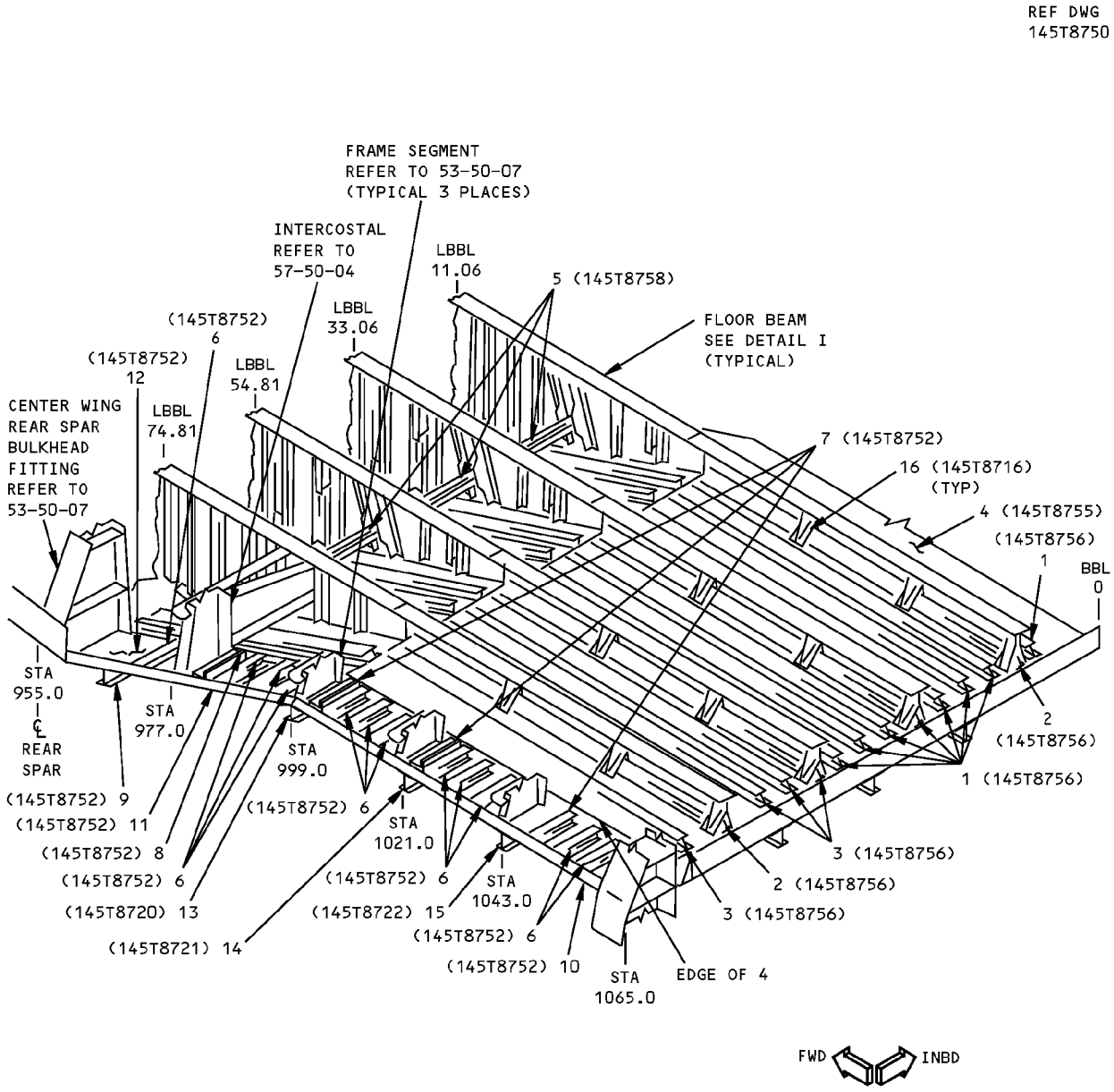
LIST OF MATL

Section 45 Floor Structure Identification
Figure 1 (Sheet 2 of 5)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FLOOR BEAM			
	UPPER CHORD		BAC1505-101155 7075-T73511	
	WEB	0.080	2024-T3 (CHEM-MIILLED TO 0.040 MINIMUM)	
	LOWER CHORD FORWARD		BAC1505-101146 7075-T62	
	AFT		BAC1505-101146 7075-T6	
2	FLOOR BEAM			
	UPPER CHORD		BAC1506-2066 7075-T73511	
	WEB	0.063	2024-T3 (CHEM-MILLED TO 0.040 MINIMUM)	
	LOWER CHORD		BAC1505-101146 7075-T62	
3	FLOOR BEAM			
	UPPER CHORD		BAC1505-101146 7075-T73511	
	WEB	0.080	2024-T3 (CHEM-MILLED TO 0.040 MINIMUM)	
	LOWER CHORD		BAC1505-101146 7075-T62	
4	STUB BEAM FITTING		FORGING 7075-T73	

LIST OF MATERIALS FOR DETAIL II

Section 45 Floor Structure Identification
Figure 1 (Sheet 3 of 5)



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
PRESSURE DECK

DETAIL III

LIST OF MATL

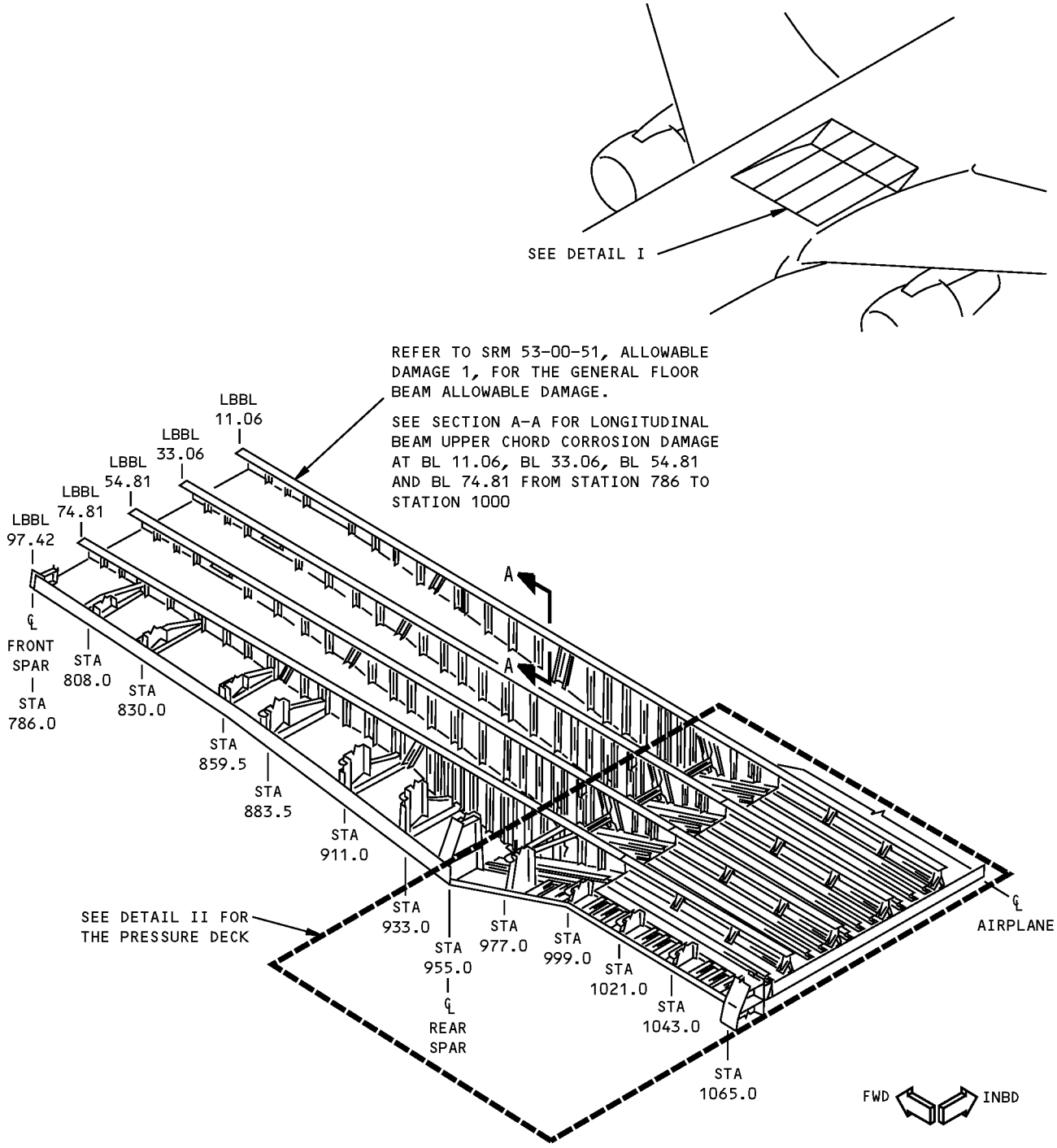
Section 45 Floor Structure Identification
Figure 1 (Sheet 4 of 5)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	STIFFENER		BAC1518-752 2024-T42	
2	STIFFENER		BAC1518-751 2024-T42	
3	STIFFENER		BAC1518-766 2024-T42	
4	WEB	0.125	CLAD 2024-T3 (CHEM-MILLED TO 0.042 MIN)	
5	SUPPORT BEAM			
	FORWARD ZEE	0.100	CLAD 2024-T42	
	AFT ZEE	0.100	CLAD 2024-T42	
6	STIFFENER		BAC1518-755 2024-T3511	
7	STIFFENER		AND10136-2006 2024-T3511	
8	STIFFENER		AND10136-1608 2024-T3511	
9	STIFFENER		BAC1518-751 2024-T3511	
10	WEB	0.100	CLAD 2024-T3 (CHEM-MILLED TO 0.060 MIN)	
11	WEB	0.100	2024-T3 (CHEM-MILLED TO 0.060 MIN)	
12	WEB	0.125	CLAD 2024-T3 (CHEM-MILLED TO 0.100 MIN)	
13	TRANSVERSE BEAM			
	UPPER CHORD			
	FORWARD		BAC1514-2523 7075-T6511	
	AFT		BAC1514-2524 7075-T6511	
	LOWER CHORD			
	FORWARD & AFT		AND10133-2402 7075-T6511	
	WEB	0.100	CLAD 2024-T3 (CHEM-MILLED TO 0.033 MIN)	
14	TRANSVERSE BEAM			
	UPPER AND			
	LOWER CHORD			
	FORWARD		AND10133-2401 2024-T3511	
	AFT		AND10133-2401 2024-T3511	
	WEB	0.125	CLAD 2024-T3 (CHEM-MILLED TO 0.033 MIN)	
15	TRANSVERSE BEAM			
	UPPER AND			
	LOWER CHORD			
	FORWARD		AND10133-3001 2024-T3511	
	AFT		AND10133-3001 2024-T3511	
	WEB	0.160	CLAD 2024-T3 (CHEM-MILLED TO 0.034 MIN)	
16	PYLON		FORGING 7075-T73	

LIST OF MATERIALS FOR DETAIL III

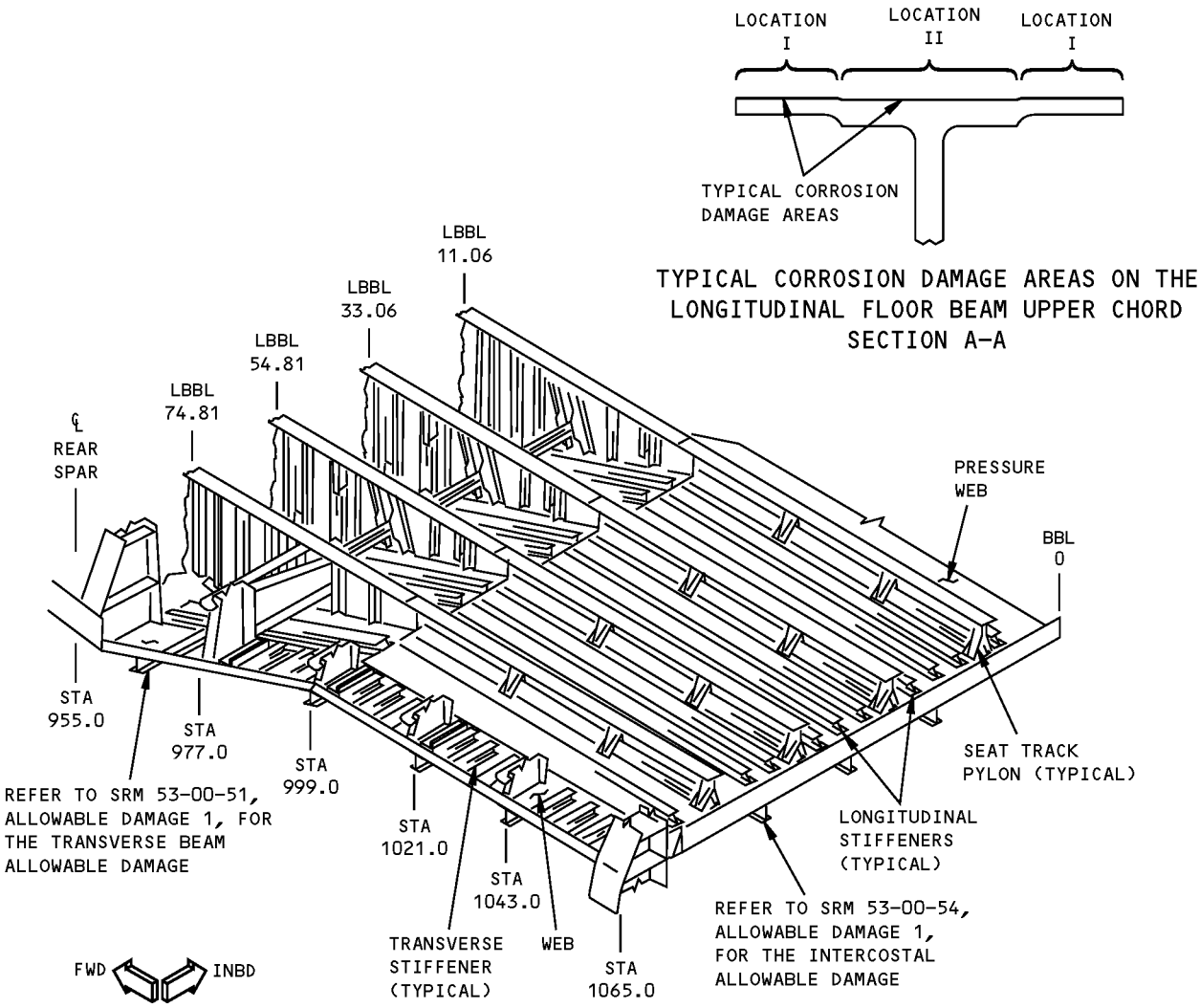
Section 45 Floor Structure Identification
Figure 1 (Sheet 5 of 5)

ALLOWABLE DAMAGE GENERAL - SECTION 45 FLOOR STRUCTURE



LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE
DETAIL I

Section 45 Floor Structure Allowable Damage
Figure 101 (Sheet 1 of 5)



DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
PRESSURE WEB [F]	[B]	[D]	SEE DETAIL V	[E]
LONGITUDINAL & TRANSVERSE STIFFENERS [F]	[A]	[C]	NOT PERMITTED	NOT PERMITTED
SEAT TRACK PYLONS [F]	[A]	[C]	NOT PERMITTED	NOT PERMITTED
LONGITUDINAL FLOOR BEAM UPPER CHORD	[A]	[H] SEE DETAIL IX	NOT PERMITTED	NOT PERMITTED

Section 45 Floor Structure Allowable Damage
Figure 101 (Sheet 2 of 5)

NOTES

- REFER TO AMM 53-01-01 FOR INSTALLATION AND REMOVAL OF FLOOR PANELS.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED PER DETAILS III AND VIII

[B] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED PER DETAILS III AND VII

[C] REMOVE DAMAGE PER DETAILS III,IV,VI AND VIII

[D] REMOVE DAMAGE PER DETAILS III,IV,VI AND VII

[E] CLEAN OUT DAMAGE UP TO 0.25 INCH (6 mm) MAX DIA AND NOT CLOSER THAN 1.0 INCH (25 mm) TO FASTENER HOLE OR OTHER DAMAGE. FILL HOLE WITH A 2117-T3 OR T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES TO BE REPAIRED

[F] AFTER DAMAGE CLEANUP, RESTORE THE FINISH AS FOLLOWS:

(A) APPLY A CHEMICAL CONVERSION COATING AS GIVEN IN SRM 51-20-01.

(B) APPLY TWO COATS OF BMS 10-11, TYPE I PRIMER.

(C) APPLY BMS 10-60 BOEING COLOR 702, WHITE GLOSS ENAMEL.

(D) APPLY (UPPER SURFACE ONLY) WATER DISPLACING CORROSION INHIBITING COMPOUND ACCORDING TO 51-20-01.

[G] FOR MATING SURFACES, INSTALL LAMINATED SHIMS WITH BMS 5-95 SEALANT. THE GAP MUST BE LESS THAN OR EQUAL TO 0.003 INCH (0.076 mm) AFTER SHIMMING.

[H] REMOVE CORROSION DAMAGE AND RESTORE FINISH AS FOLLOWS:

(A) REMOVE THE CORROSION DAMAGE AT LOCATION I AND II AS GIVEN IN SRM 51-10-00. USE A MINIMUM BLEND RADIUS OF 1.0 INCH (25 mm) AND A 20:1 BLEND RATIO. REMOVE ONLY THE MINIMUM AMOUNT OF MATERIAL REQUIRED TO REMOVE DAMAGE. THE DEPTH OF MATERIAL REMOVED FROM EITHER LOCATION I OR II MUST NOT BE MORE THAN TO 0.030 (0.76 mm) INCH.

(B) DO A 10X MAGNIFICATION VISUAL INSPECTION OF THE REWORKED AREA TO MAKE SURE ALL THE CORROSION IS REMOVED.

(C) DO A HIGH FREQUENCY EDDY CURRENT INSPECTION OF ALL FASTENER HOLES IN THE BLENDED AREA TO MAKE SURE THERE ARE NO CRACKS OR CORROSION.

(D) FLAP PEEN THE REWORKED AREA AS GIVEN IN SOPM 20-10-03.

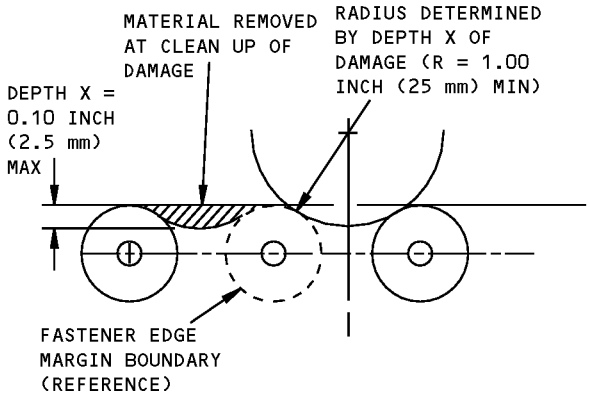
(E) FOR CORROSION AT LOCATION I, INSTALL SHIMS IN THE BLENDED AREA AT THE FLOOR PANEL FASTENER LOCATION UNLESS 50% OF THE EDGE OF THE INSERT IS IN CONTACT WITH THE FLOOR BEAM CHORD WHEN PRESSED BY HAND.

(F) APPLY A CHEMICAL CONVERSION COATING TO THE BLENDED AREA AND SHIMS. REFER TO SRM 51-20-01.

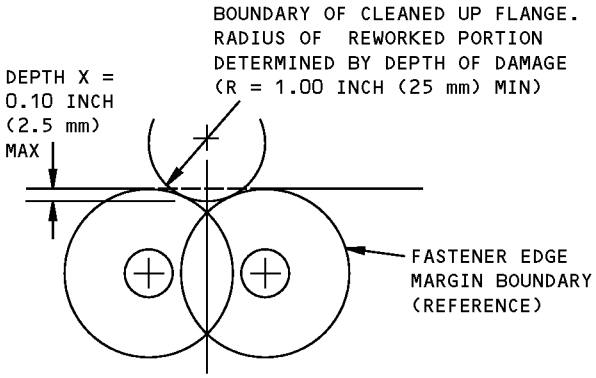
(G) APPLY TWO COATS OF BMS 10-11, TYPE I PRIMER TO THE BLENDED AREA AND SHIMS.

(H) FILL THE BLENDED AREA WITH BMS 5-95 SEALANT, TO PREVENT MOISTURE ACCUMULATION.

(I) APPLY A LAYER OF BMS 3-29 CORROSION INHIBITING COMPOUND TO THE REPAIR AREA. REFER TO SRM 51-20-01.



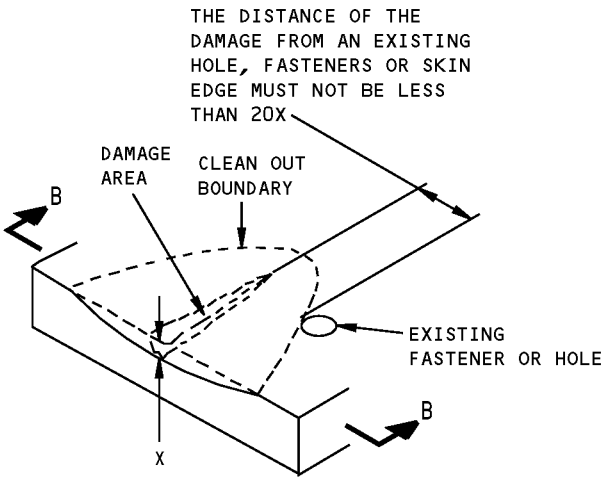
DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



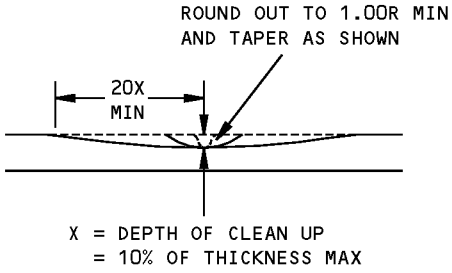
DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL III

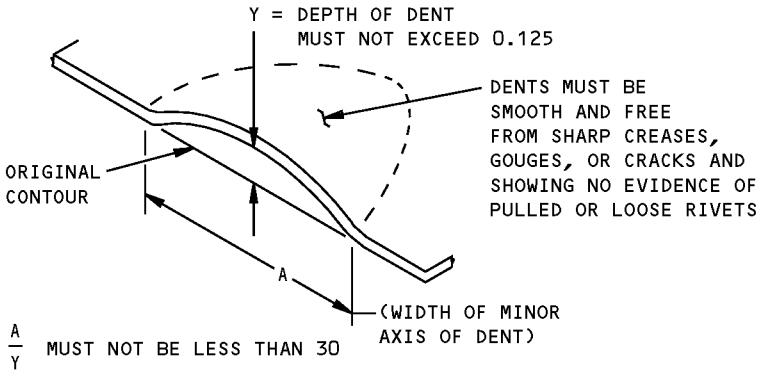
Section 45 Floor Structure Allowable Damage
Figure 101 (Sheet 3 of 5)



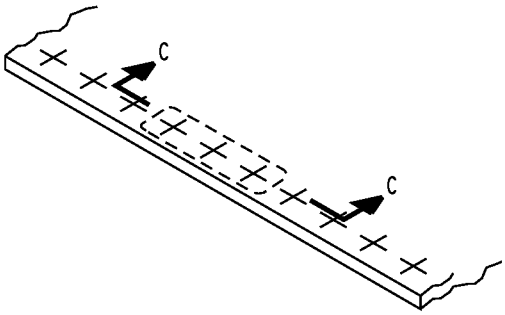
REMOVAL OF DAMAGE ON A SURFACE
DETAIL IV



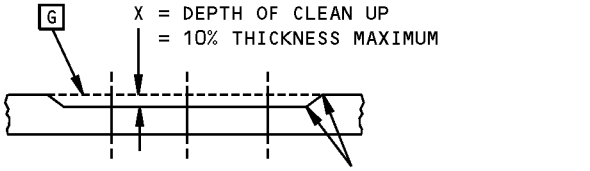
SECTION B–B



ALLOWABLE DAMAGE FOR DENT
DETAIL V

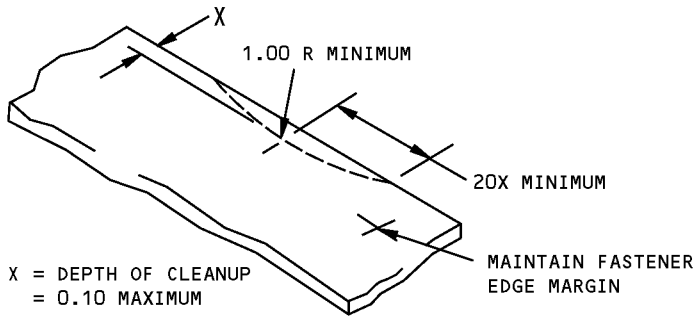


DAMAGE CLEANUP
DETAIL VI

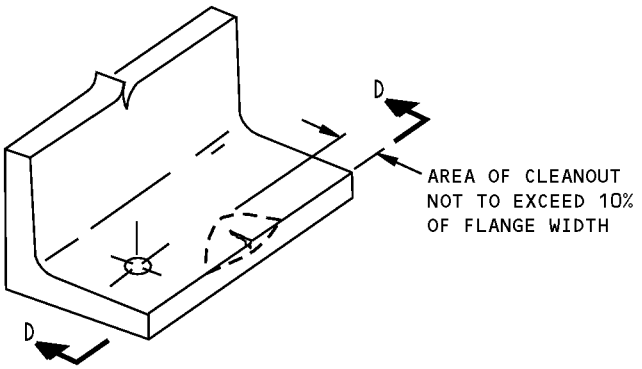


SECTION C–C

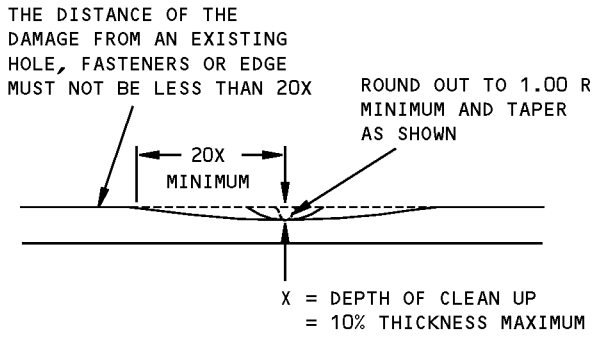
Section 45 Floor Structure Allowable Damage
Figure 101 (Sheet 4 of 5)



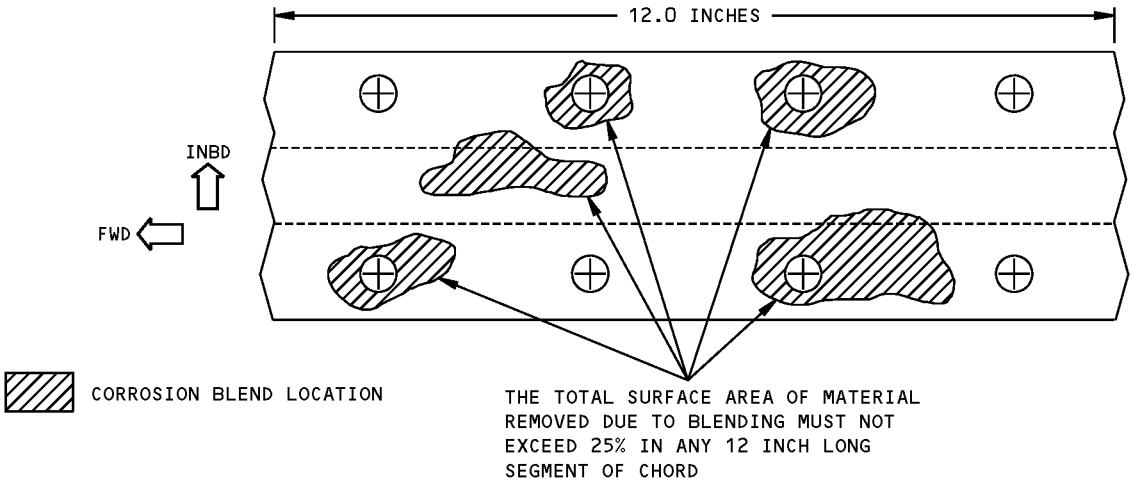
REMOVAL OF DAMAGE ON AN EDGE
DETAIL VII



REMOVAL OF DAMAGE ON AN EDGE
DETAIL VIII



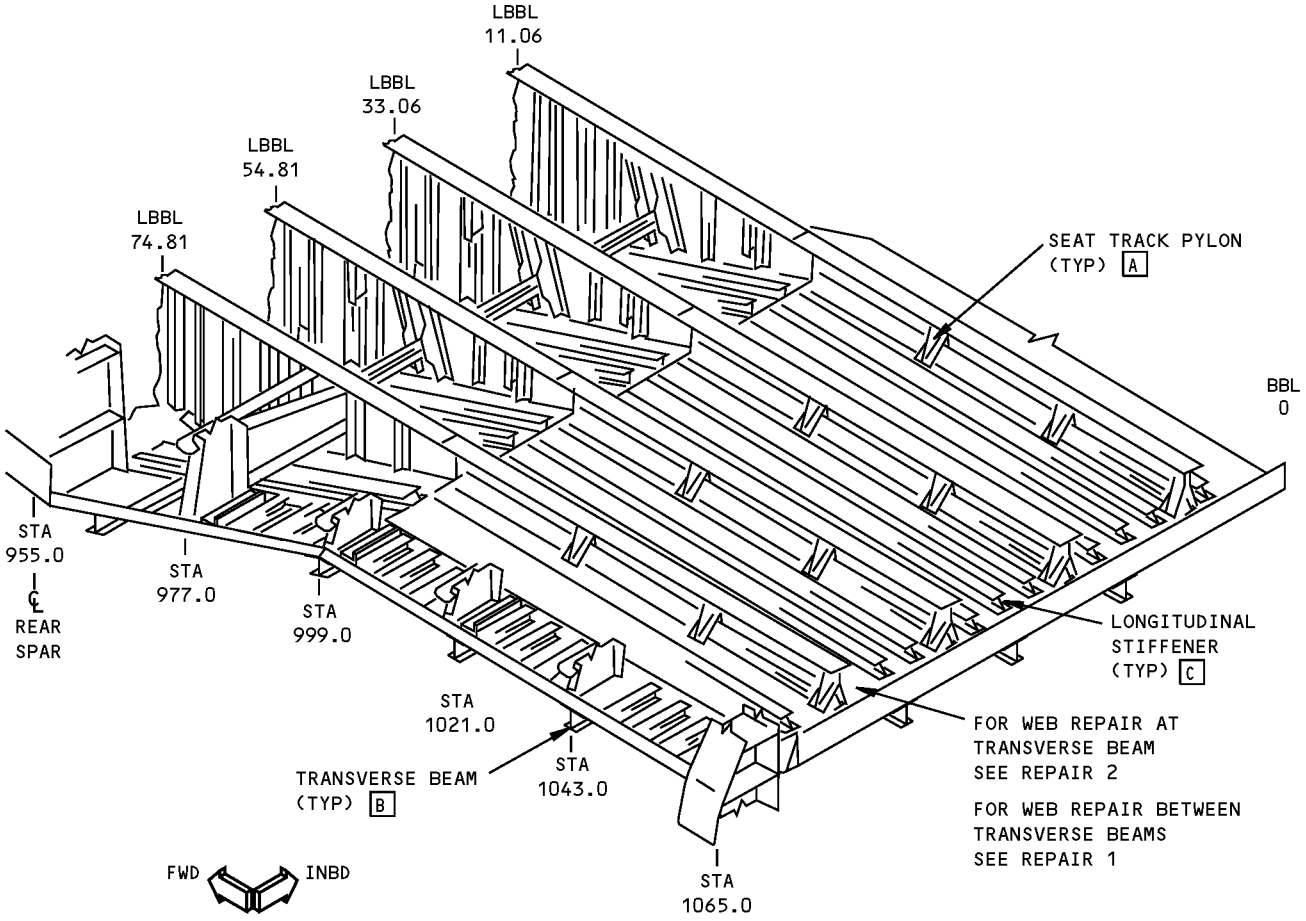
SECTION D–D



VIEW LOOKING DOWN ON THE FLOOR BEAM UPPER CHORD
DETAIL IX

Section 45 Floor Structure Allowable Damage
Figure 101 (Sheet 5 of 5)

REPAIR GENERAL - WHEEL WELL PRESSURE DECK REPAIRS - STATION 954 TO STATION 1065



LEFT SIDE SHOWN RIGHT SIDE OPPOSITE
PRESSURE DECK

NOTES

- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- REFINISH REWORKED AREAS PER 51-21 OF THE 767 MAINTENANCE MANUAL

[A] NO TYPICAL REPAIR APPLICABLE TO PARTS MADE FROM FORGINGS OR MACHINED PLATE. SPECIFIC REPAIRS TO THESE PARTS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE

[B] SEE 51-70-12 FOR EXTRUDED SECTION REPAIR
SEE 51-70-13 FOR WEB REPAIR

[C] SEE 51-70-12 FOR EXTRUDED SECTION REPAIR

Wheel Well Pressure Deck Repairs - Station 954 to Station 1065
Figure 201

REPAIR 1 - WHEEL WELL PRESSURE DECK WEB REPAIR BETWEEN BEAMS - STATION 954 TO STATION 1065

REPAIR INSTRUCTIONS

WARNING: INSTALL LANDING GEAR AND DOOR LOCKS AS GIVEN IN 32-00-00 OF THE 767 MAINTENANCE MANUAL. RETRACTION OF LANDING GEAR AND RAPID ACTION OF DOORS MAY INJURE PERSONNEL OR DAMAGE EQUIPMENT IF LOCKS ARE NOT PROPERLY INSTALLED. PLACARD THE LANDING GEAR CONTROL HANDLE IN THE COCKPIT TO PREVENT ACCIDENTAL GEAR RETRACTION.

1. Remove floor panels and miscellaneous clips and brackets to get access to pressure deck web.
2. Cut out web as given in note [A]. Maintain fastener edge margins and a minimum 1.00 inch (2.5 cm) radius at corners.
3. Remove damaged area of web.

   NOTE: Take care not to damage stiffeners or beam chords.
4. Make repair parts.
5. Break all sharp edges of initial and repair parts 0.015 to 0.030 inch (0.38 to 0.76 mm).
6. Assemble repair parts and drill fastener holes.
7. Disassemble the repair parts and remove all nicks, scratches, burrs and sharp corners from the initial web and the repair parts.
8. Apply a chemical conversion coating to the repair parts and the bare surfaces of the web. Refer to SRM 51-20-01.
9. Apply two coats of BMS 10-11, Type I primer all over repair parts and to edge of web cutout.
10. Install repair parts with a faying surface seal of BMS 5-95 between all parts as given in SRM 51-10-05.
11. Install fasteners wet with BMS 5-95.
12. Reinstall clips and brackets initially removed.
13. Apply BMS 10-60 Boeing color 702, white gloss enamel to top and bottom surfaces of repair. Refer to AMM 51-21.
14. Apply water displacing corrosion inhibiting compound as given in SRM 51-20-01 to top surface of repair only.
15. Reinstall floor panels and seal if initially sealed.

623614 S0006825090_V2

Wheel Well Pressure Deck Web Repair Between Beams - Station 954 to Station 1065
Figure 201 (Sheet 1 of 6)

NOTES

- THIS REPAIR IS A CATEGORY B REPAIR. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE II. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- REPAIR MAY BE AS SMALL AS TWO STIFFENER BAYS BETWEEN THREE SUCESSIVE STIFFENERS OR AS LONG AS REQUIRED TO TERMINATE DAMAGED AREA. REPAIR IS LIMITED TO PRESSURE DECK WITH "I" SECTION LONGITUDINAL STIFFENERS.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR DECORATIVE EXTERIOR FINISHES, CLEANING AND PAINTING
  - SRM 51-00-06 FOR STRUCTURAL REPAIR DEFINITIONS.
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS.

[A] WEB CUTOUT EDGES MUST BE LOCATED FAR ENOUGH FROM STIFFENERS OR BEAM CHORD FLANGE TO ALLOW ROOM FOR A MINIMUM OF TWO ROWS OF FASTENERS ON EACH SIDE

[B] INSTALL FASTENERS IN TRANSITION FIT HOLES AS SHOWN IN SRM 51-40-05

FASTENER SYMBOLS

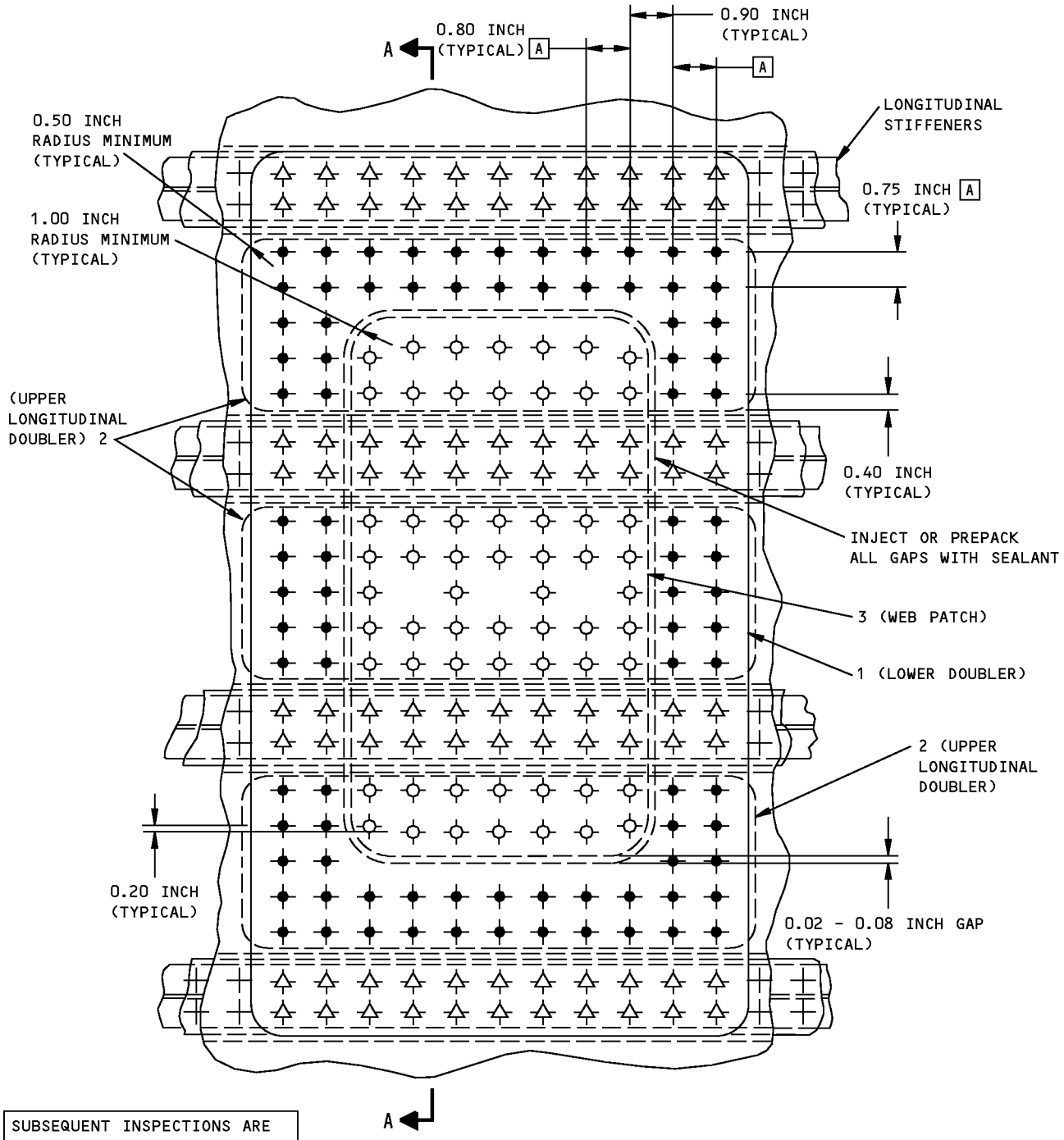
- INITIAL FASTENER HOLES
- REPAIR FASTENER BACR15FT6KE RIVET
- REPAIR FASTENER BACB30MY6K HEX-DRIVE AND BACC30M-6 COLLAR [B]
- INITIAL FASTENER LOCATION REPLACE WITH BACB30MY6K-X HEX-DRIVE AND BACC30M-6 COLLAR [B]

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	LOWER DOUBLER	2	CLAD 2024-T3 ONE GAGE HEAVIER THAN WEB AT ITS GREATEST THICKNESS IN CUTOUT AREA
2	UPPER LONGITUDINAL DOUBLER	AS REQUIRED	CLAD 2024-T3 ONE GAGE HEAVIER THAN WEB AT ITS GREATEST THICKNESS IN CUTOUT AREA
3	WEB PATCH	1	CLAD 2024-T3 SAME GAGE AS WEB AT ITS GREATEST THICKNESS IN CUTOUT AREA
4	SHIM	AS REQUIRED	BACS 1534 LAMINATED ALUMINUM

TABLE I

623616 S0006825091_V3

Wheel Well Pressure Deck Web Repair Between Beams - Station 954 to Station 1065
Figure 201 (Sheet 2 of 6)

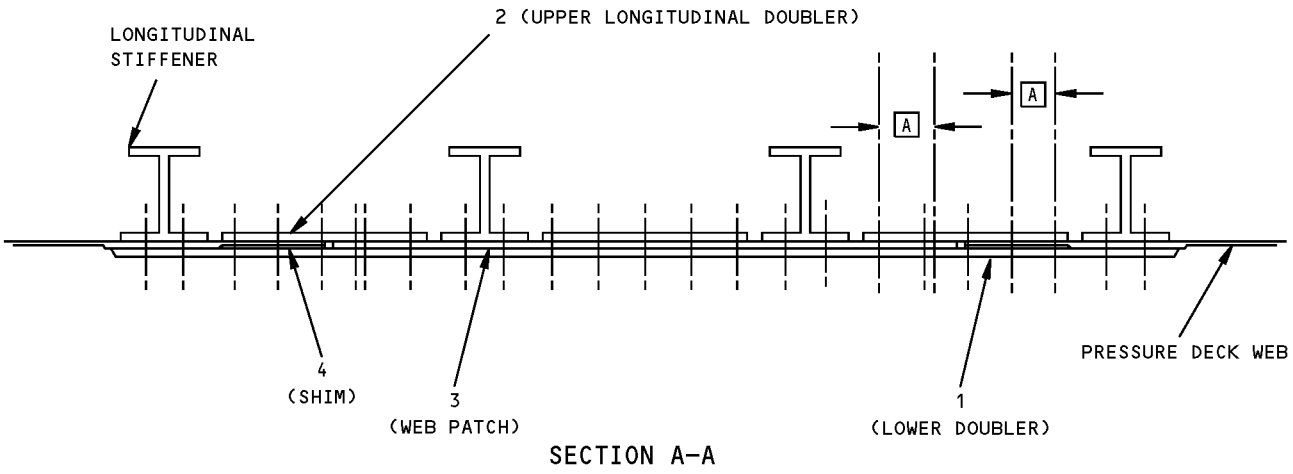


SUBSEQUENT INSPECTIONS ARE NECESSARY FOR CATEGORY B REPAIRS. REFER TO TABLE II FOR INSPECTION REQUIREMENTS.

VIEW OF LOWER SURFACE
DETAIL I

621381 S0006825092_V2

Wheel Well Pressure Deck Web Repair Between Beams - Station 954 to Station 1065
Figure 201 (Sheet 3 of 6)



Wheel Well Pressure Deck Web Repair Between Beams - Station 954 to Station 1065
Figure 201 (Sheet 4 of 6)

CATEGORY B REPAIR INSPECTION REQUIREMENTS		
INSPECTION THRESHOLD	REPEAT INSPECTIONS	
	METHOD	INTERVAL
35,000 FLIGHT CYCLES AFTER AIRPLANE DELIVERY (1)	LFEC (2)	3,000 FLIGHT CYCLES
	DETAILED VISUAL (3)	3,000 FLIGHT CYCLES

NOTE:

(1) OR DO THE INSPECTION AT 12,000 FLIGHT CYCLES AFTER THE REPAIR IS INSTALLED, WHICHEVER IS LATER.

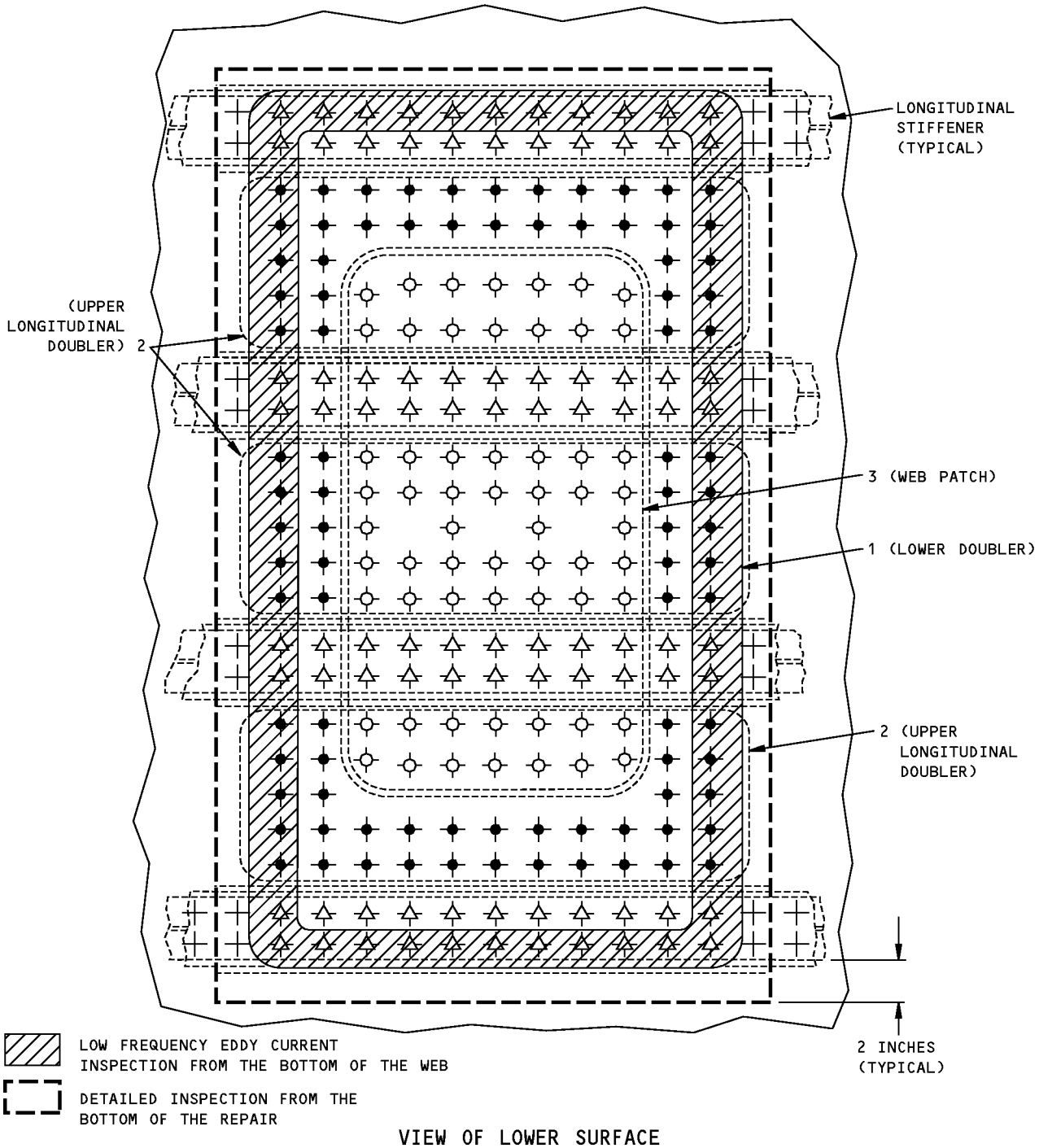
(2) DO A SURFACE LFEC INSPECTION OF THE WEB COMMON TO 1 (LOWER DOUBLER) AT THE PERIPHERY FASTENER ROW AS SHOWN IN DETAIL II. DO THE INSPECTION FROM BELOW THE REPAIR. REFER TO 767 NDT MANUAL (D634T301), PART 6, 53-00-06.

(3) DO A DETAILED VISUAL INSPECTION OF THE REPAIR, AND A 2.0 INCHES WIDE ZONE AROUND THE REPAIR AS SHOWN IN DETAIL II. DO THE INSPECTION FROM BELOW THE REPAIR.

TABLE II

1613836 S0000299206_V1

Wheel Well Pressure Deck Web Repair Between Beams - Station 954 to Station 1065
Figure 201 (Sheet 5 of 6)



VIEW OF LOWER SURFACE
DETAIL II

1634186 S0000299217_V1

Wheel Well Pressure Deck Web Repair Between Beams - Station 954 to Station 1065
Figure 201 (Sheet 6 of 6)

REPAIR 2 - WHEEL WELL PRESSURE DECK WEB REPAIR AT A BEAM - STATION 954 TO STATION 1065

REPAIR INSTRUCTIONS

WARNING: INSTALL LANDING GEAR AND DOOR LOCKS PER 32-00-00 OF THE 767 MAINTENANCE MANUAL. RETRACTION OF LANDING GEAR AND RAPID ACTION OF DOORS MAY INJURE PERSONNEL OR DAMAGE EQUIPMENT IF LOCKS ARE NOT PROPERLY INSTALLED. PLACARD THE LANDING GEAR CONTROL HANDLE IN THE COCKPIT TO PREVENT ACCIDENTAL GEAR RETRACTION.

1. Remove floor panels and miscellaneous clips and brackets to gain access to pressure deck web.
2. Cut out web per note [A]. Maintain fastener edge margins and a minimum 1.00 inch radius at corners.
3. Remove damaged area of web.

   NOTE: Take care not to damage stiffeners or beam chords.
4. Make repair parts.
5. Break all sharp edges of original and repair parts 0.015 to 0.030 inches.
6. Assemble repair parts and drill fastener holes.

   NOTE: For web repair at a beam it may be necessary to replace seat track pylons due to added thickness of repair. To install new pylons, trim the short pylon leg as required to clear the seat track by 0.03 max. Trim the longer pylon leg to 5.71 minus the longitudinal doubler thickness and add 0.06 by 45 degree chamfer. Locate fastener holes in pylons using the old holes in the seat track.
7. Disassemble the repair parts and remove all nicks, scratches, burrs and sharp corners from the original web and the repair parts.
8. Alodine treat all unclad edges per 51-20-01.
9. Apply two coats of BMS 10-11, Type I primer all over repair parts and to edge of web cutout.
10. Install repair parts with a faying surface seal of BMS 5-95 between all parts per 51-10-05.
11. Install fasteners wet with BMS 5-95.
12. Reinstall miscellaneous clips and brackets previously removed.
13. Apply BMS 10-60 Boeing color 702, white gloss enamel to upper and lower surfaces of repair.
14. Apply water displacing corrosion inhibiting compound per 51-20-01 to top surface of repair only.
15. Reinstall floor panels and seal if previously sealed.

Wheel Well Pressure Deck Web Repair at a Beam - Station 954 to Station 1065
Figure 201 (Sheet 1 of 7)

NOTES

- THIS REPAIR IS A CATEGORY B REPAIR. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLIMENTAL INSPECTIONS GIVEN IN TABLE II. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- REPAIR MAY BE AS SMALL AS TWO STIFFENER BAYS BETWEEN THREE SUCCESSIVE STIFFENERS OR AS LONG AS REQUIRED TO TERMINATE DAMAGED AREA. REPAIR IS LIMITED TO PRESSURE DECK WITH "I" SECTION LONGITUDINAL STIFFENERS
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR FINSISHES INTERIOR AND EXTERIOR
  - SRM 51-00-06 FOR STRUCTURAL REPAIR DEFINITIONS
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL PARTS
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS

[A] WEB CUTOUT EDGES MUST BE LOCATED FAR ENOUGH FROM STIFFENERS OR BEAM CHORD FLANGE TO ALLOW ROOM FOR A MINIMUM OF TWO ROWS OF FASTENERS ON EACH SIDE

[B] INSTALL FASTENERS IN TRANSITION FIT HOLES ACCORDING TO SRM 51-40-05

FASTENER SYMBOLS

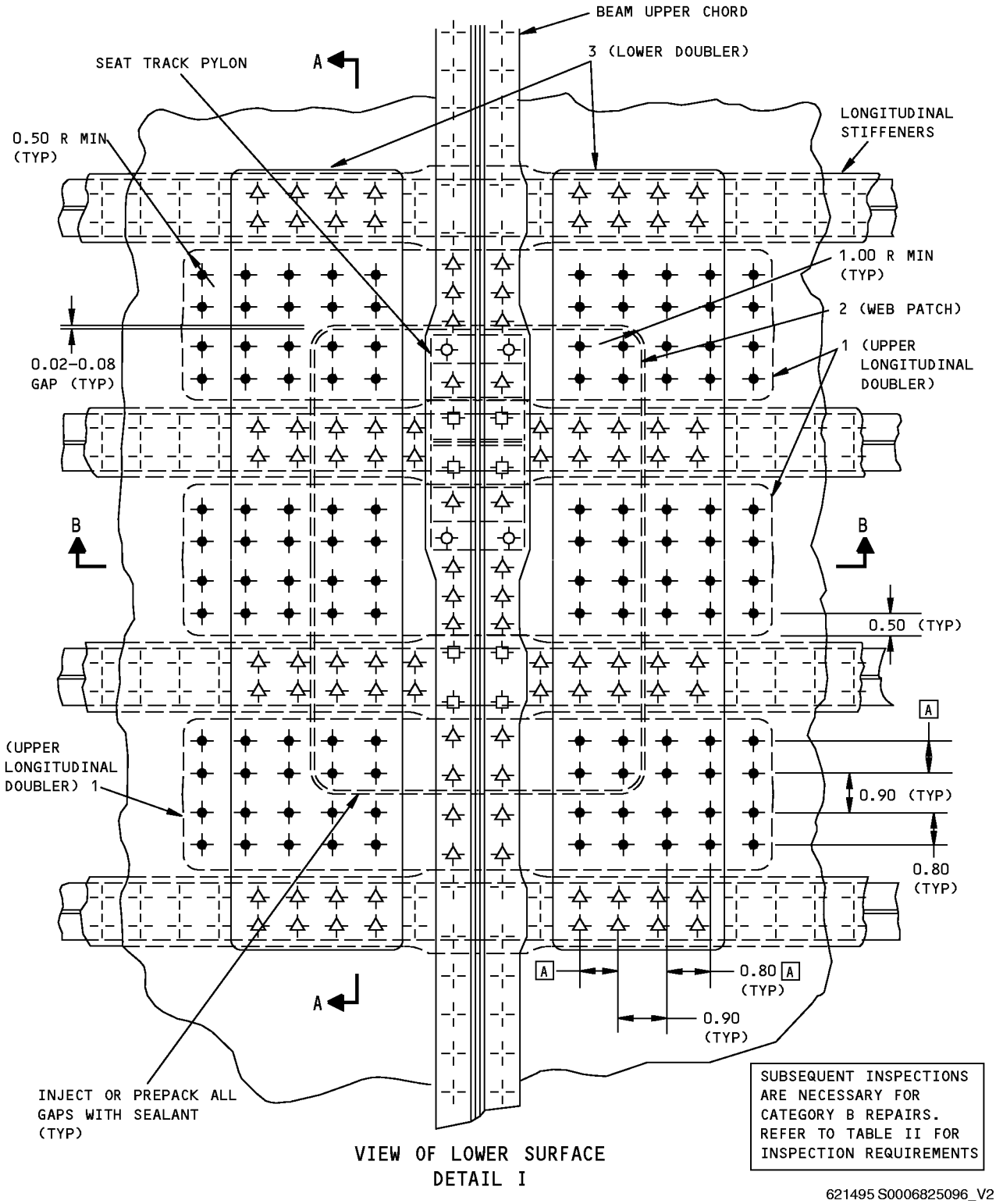
- REFERENCE FASTENER LOCATION
- REPAIR FASTENER BACB30MY6K HEX-DRIVE AND BACC30M-6 COLLAR [B]
- INITIAL FASTENER LOCATION REPLACE WITH BACB30MY6K-X HEX-DRIVE AND BACC30M-6 COLLAR [B]
- INITIAL FASTENER LOCATION REPLACE WITH BACB30MY6K-X HEX-DRIVE AND BACC30M-6 COLLAR [B]
- INITIAL FASTENER LOCATION REPLACE WITH BACB30NX6K-X HEX-DRIVE AND BACC30M-6 COLLAR [B]

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	UPPER LONGITUDINAL DOUBLER	AS REQUIRED	CLAD 2024-T3 ONE GAGE HEAVIER THAN WEB AT ITS GREATEST THICKNESS IN CUTOUT AREA
2	WEB PATCH	1	CLAD 2024-T3 SAME GAGE AS WEB AT ITS GREATEST THICKNESS IN CUTOUT AREA
3	LOWER DOUBLER	1	CLAD 2024-T3 ONE GAGE HEAVIER THAN WEB AT ITS GREATEST THICKNESS IN CUTOUT AREA
4	SHIM	AS REQUIRED	BACS1534 LAMINATED ALUMINUM

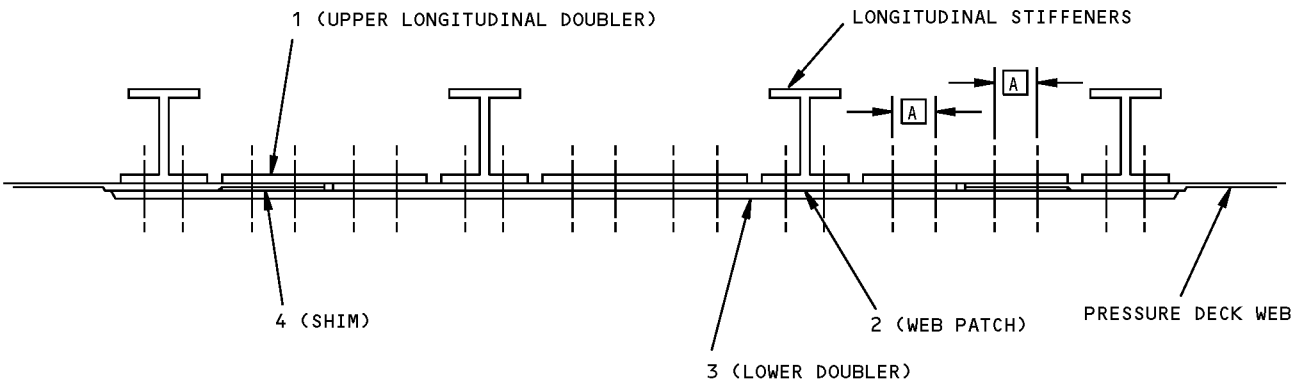
TABLE I

623621 S0006825095_V3

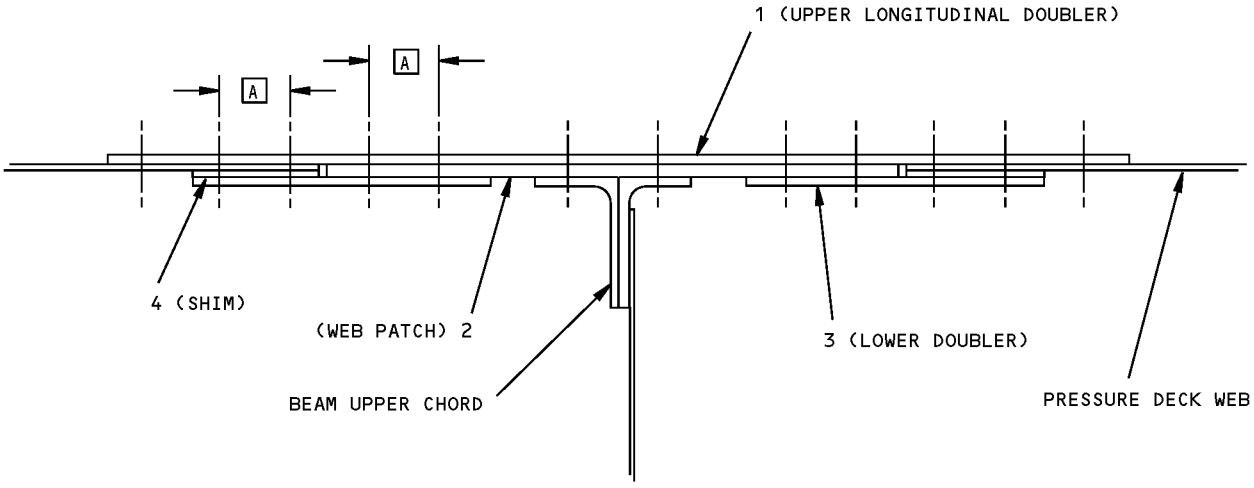
Wheel Well Pressure Deck Web Repair at a Beam - Station 954 to Station 1065
Figure 201 (Sheet 2 of 7)



Wheel Well Pressure Deck Web Repair at a Beam - Station 954 to Station 1065
Figure 201 (Sheet 3 of 7)



SECTION A-A



SECTION B-B

Wheel Well Pressure Deck Web Repair at a Beam - Station 954 to Station 1065
Figure 201 (Sheet 4 of 7)

CATEGORY B REPAIR INSPECTION REQUIREMENTS		
INSPECTION THRESHOLD	REPEAT INSPECTION	
	METHOD	INTERVAL
37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY (1)	HFEC (2)	3,000 FLIGHT CYCLES
	LFEC (3)	3,000 FLIGHT CYCLES
	DETAILED VISUAL (4)	3,000 FLIGHT CYCLES

NOTES: (1) OR DO THE INSPECTION WITHIN 6,000 FLIGHT CYCLES FROM THE REPAIR INSTALLATION, WHICHEVER COMES LAST.

(2) DO AN HFEC INSPECTION OF A 1.0 INCH ZONE AROUND THE REPAIR FROM THE LOWER SIDE OF THE PRESSURE DECK, EXCEPT WHERE THE WEB IS COVERED BY THE BEAM, AS SHOWN IN DETAIL II, SECTION C-C AND SECTION D-D.

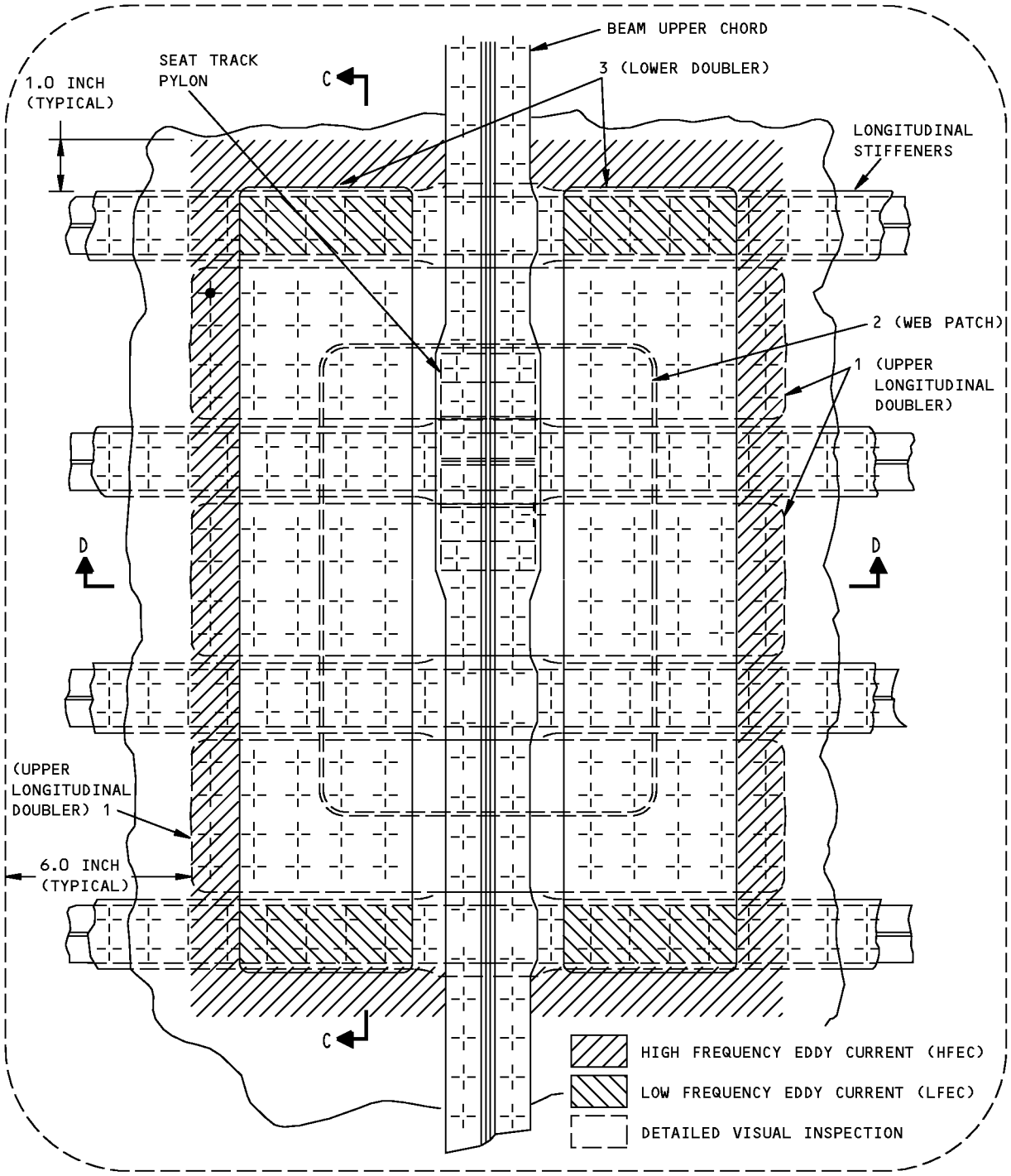
(3) DO AN LFEC INSPECTION AT THE LAST TWO FASTENER ROWS INBOARD AND OUTBOARD, COMMON TO THE REPAIR DOUBLERS FROM BELOW, AS SHOWN IN DETAIL II, SECTION C-C AND SECTION D-D.

(4) DO DETAILED VISUAL INSPECTION OF A 6.0 INCH WIDE ZONE AROUND THE REPAIR FROM THE LOWER SIDE OF THE PRESSURE DECK, AS SHOWN IN DETAIL II, SECTION C-C AND SECTION D-D.

TABLE II

1668978 S0000305199_V1

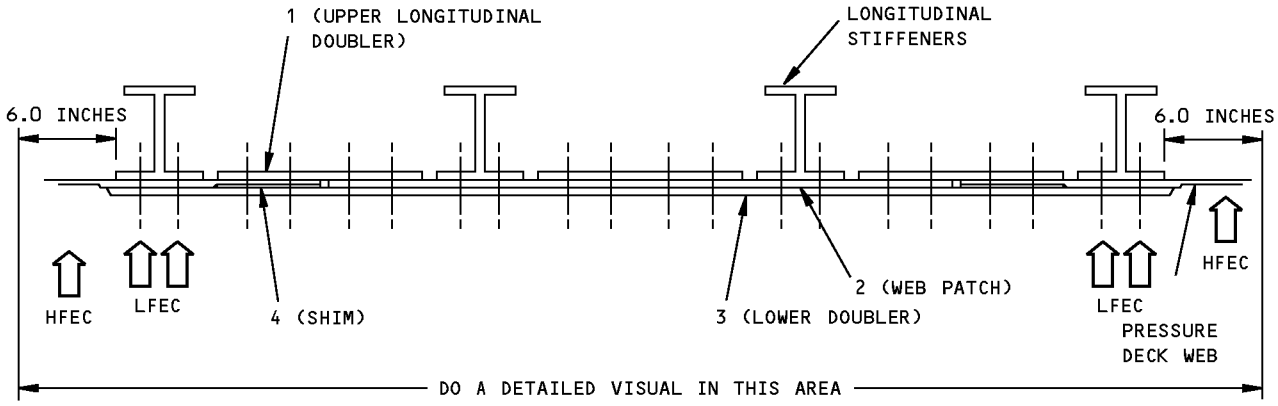
Wheel Well Pressure Deck Web Repair at a Beam - Station 954 to Station 1065
Figure 201 (Sheet 5 of 7)



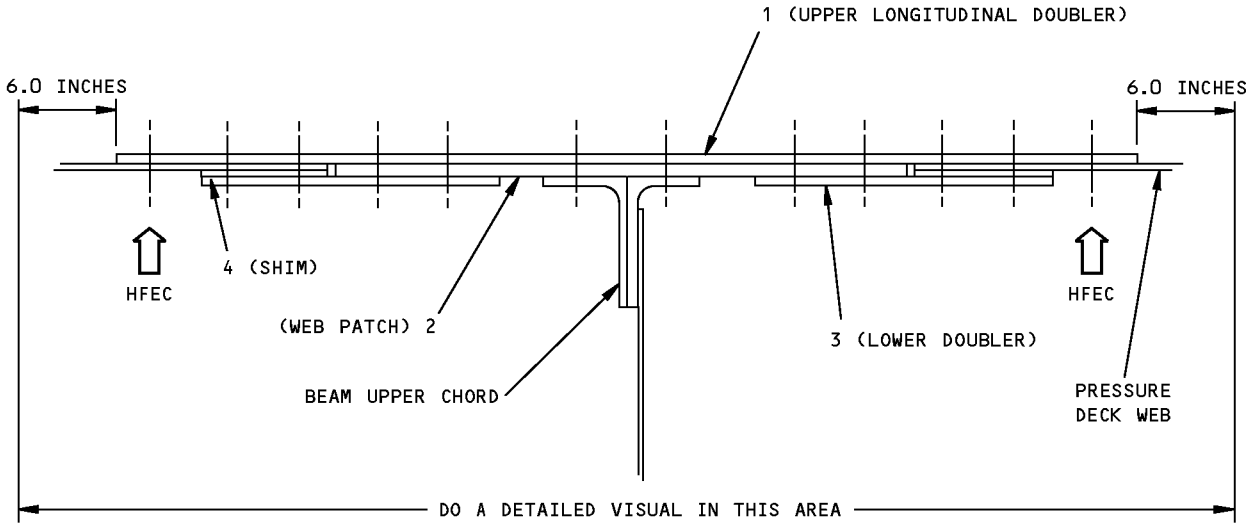
VIEW OF LOWER SURFACE
DETAIL II

1669028 S0000305200_V1

Wheel Well Pressure Deck Web Repair at a Beam - Station 954 to Station 1065
Figure 201 (Sheet 6 of 7)



SECTION C-C



SECTION D-D

1669118 S0000305201_V1

Wheel Well Pressure Deck Web Repair at a Beam - Station 954 to Station 1065
Figure 201 (Sheet 7 of 7)

REPAIR 3 - WHEEL WELL PRESSURE DECK WEB CRACK REPAIR - STATION 954 TO STATION 1065

REPAIR INSTRUCTIONS

WARNING: INSTALL LANDING GEAR AND DOOR LOCKS. REFER TO AMM 32-00-15. RETRACTION OF LANDING GEAR AND ACTION OF DOORS CAN CAUSE INJURY TO PERSONNEL OR DAMAGE EQUIPMENT IF LOCKS ARE NOT PROPERLY INSTALLED. PLACARD THE LANDING GEAR CONTROL HANDLE IN THE COCKPIT TO PREVENT ACCIDENTAL GEAR RETRACTION.

1. Get access to the damaged area. If necessary, remove additional fasteners to get clearance.
2. Do a high frequency eddy current (HFEC) inspection of the web to find the end of the crack. Refer to NDT Part 6, 51-00-00, Fig. 4.

   As an alternative, do a dye penetrant inspection of the web to find the end of the crack. Refer to SOPM 20-20-02.
3. Stop drill the end of the crack. Refer to SRM 51-10-02. See Details I, II, or III.
4. Make the repair parts. See Tables I, II, or III.
5. Assemble the repair parts and drill the fastener holes.
6. Disassemble the repair parts.
7. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the initial web.
8. Apply a chemical conversion coating to the aluminum repair parts and to the bare surfaces of the initial web. Refer to SRM 51-20-01.
9. Apply two layers of BMS 10-11 primer to the repair parts and to the bare surfaces of the initial web. Refer to AMM 51-21-00.
10. Install the repair parts with BMS 5-95 sealant on all the mating surfaces.
11. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
12. Apply BMS 10-60 Boeing color 702, white gloss enamel to the upper and lower surfaces of the repair.
13. Apply water displacing corrosion inhibiting compound to the the top surface of the repair area. Refer to AMM 51-00-59.

NOTES

- THE REPAIRS GIVEN IN DETAILS I AND II ARE CATEGORY C REPAIRS. THESE REPAIRS DO NOT REQUIRE INSPECTIONS. THESE REPAIRS MUST BE REPLACED WITHIN 12,000 FLIGHT CYCLES FROM THE REPAIR INSTALLATION. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- THE REPAIR AS GIVEN IN DETAIL III IS A CATEGORY C REPAIR. IT HAS FAA APPROVAL IF YOU DO THE INSPECTIONS AT THE SPECIFIED THRESHOLD AND INTERVAL GIVEN IN TABLE IV. THIS REPAIR MUST BE REPLACED WITHIN 12,000 FLIGHT CYCLES FROM THE REPAIR INSTALLATION. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- D = FASTENER DIAMETER
- FASTENER EDGE MARGIN 2D (TYPICAL)
- FASTENER SPACING 4D-6D (TYPICAL)
- ADJUST THE LENGTH OF THE REPAIR AS NECESSARY
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 32-00-15 FOR LANDING GEAR DOOR LOCKS
  - AMM 51-00-59 FOR CORROSION PREVENTION PRACTICES
  - AMM 51-21-00 FOR INTERIOR AND EXTERIOR FINISHES
  - NDT PART 6 51-00-00, D6-7170 FOR EDDY CURRENT INSPECTION PROCEDURES.
  - SOPM 20-20-02 FOR DYE PENETRANT INSPECTION PROCEDURES.
  - SRM 51-00-06 FOR STRUCTURAL REPAIR DEFINITIONS
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40-00 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS

C94158 S0006825098_V3

Wheel Well Pressure Deck Web Crack Repair - Station 954 to Station 1065
Figure 201 (Sheet 1 of 7)

FASTENER SYMBOLS

- REFERENCE FASTENER LOCATION.
- INITIAL FASTENER LOCATION. INSTALL A BACR15ET7D RIVET.
- REPAIR FASTENER LOCATION. INSTALL A BACR15BB6D RIVET.
- REPAIR FASTENER LOCATION. INSTALL A BACR15BB7D RIVET.
- INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K( )X HEX DRIVE BOLT WITH A BACC30M6 COLLAR.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	FILLER	1	CLAD 2024-T3 SAME GAGE AS CHEM-MILLED POCKET
2	DOUBLER	1	CLAD 2024-T3 ONE GAGE THICKER THAN CHEM-MILLED POCKET

TABLE I

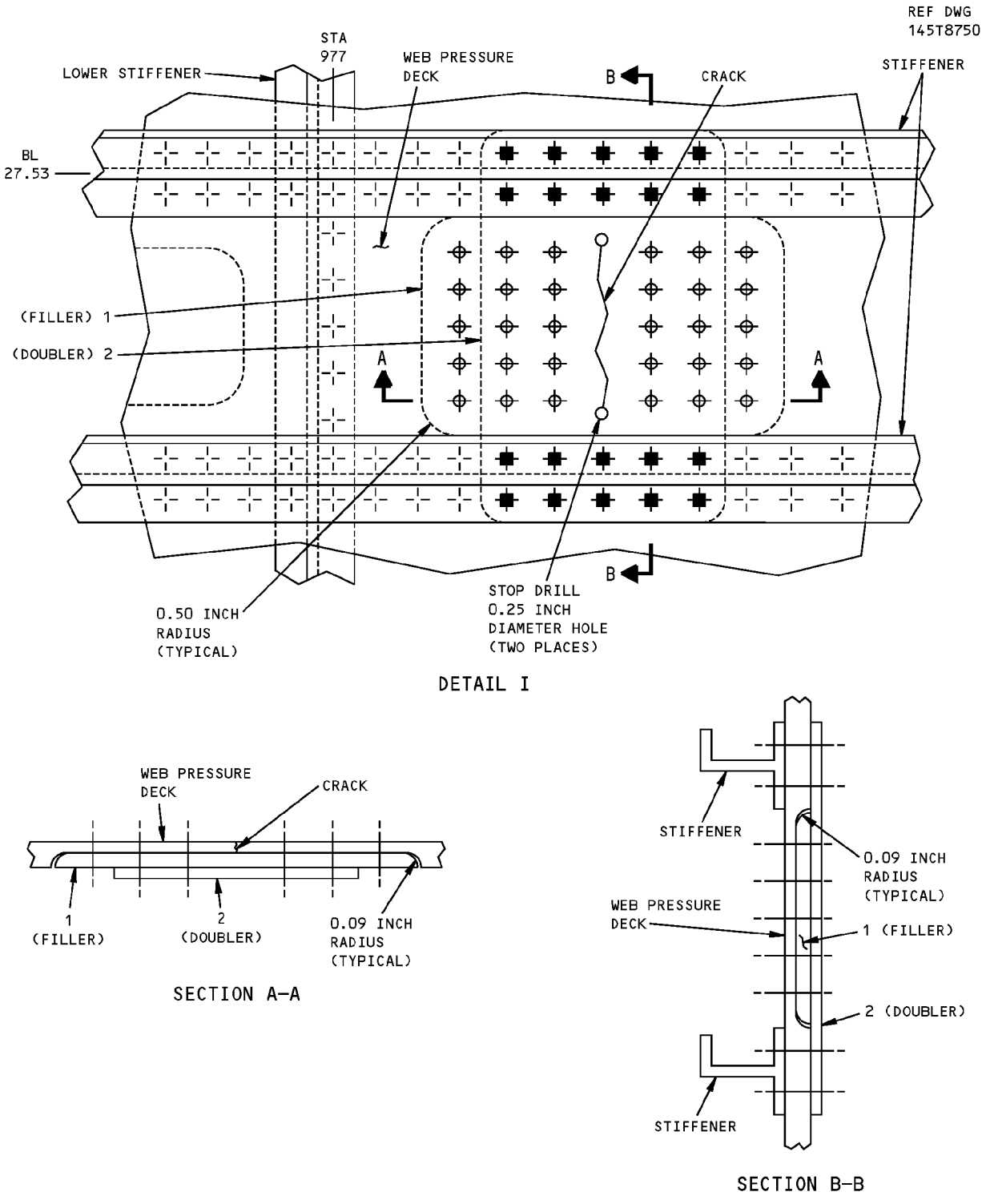
REPAIR MATERIAL			
PART		QTY	MATERIAL
3	DOUBLER	1	CLAD 2024-T3 SAME GAGE AS CHEM-MILLED POCKET

TABLE II

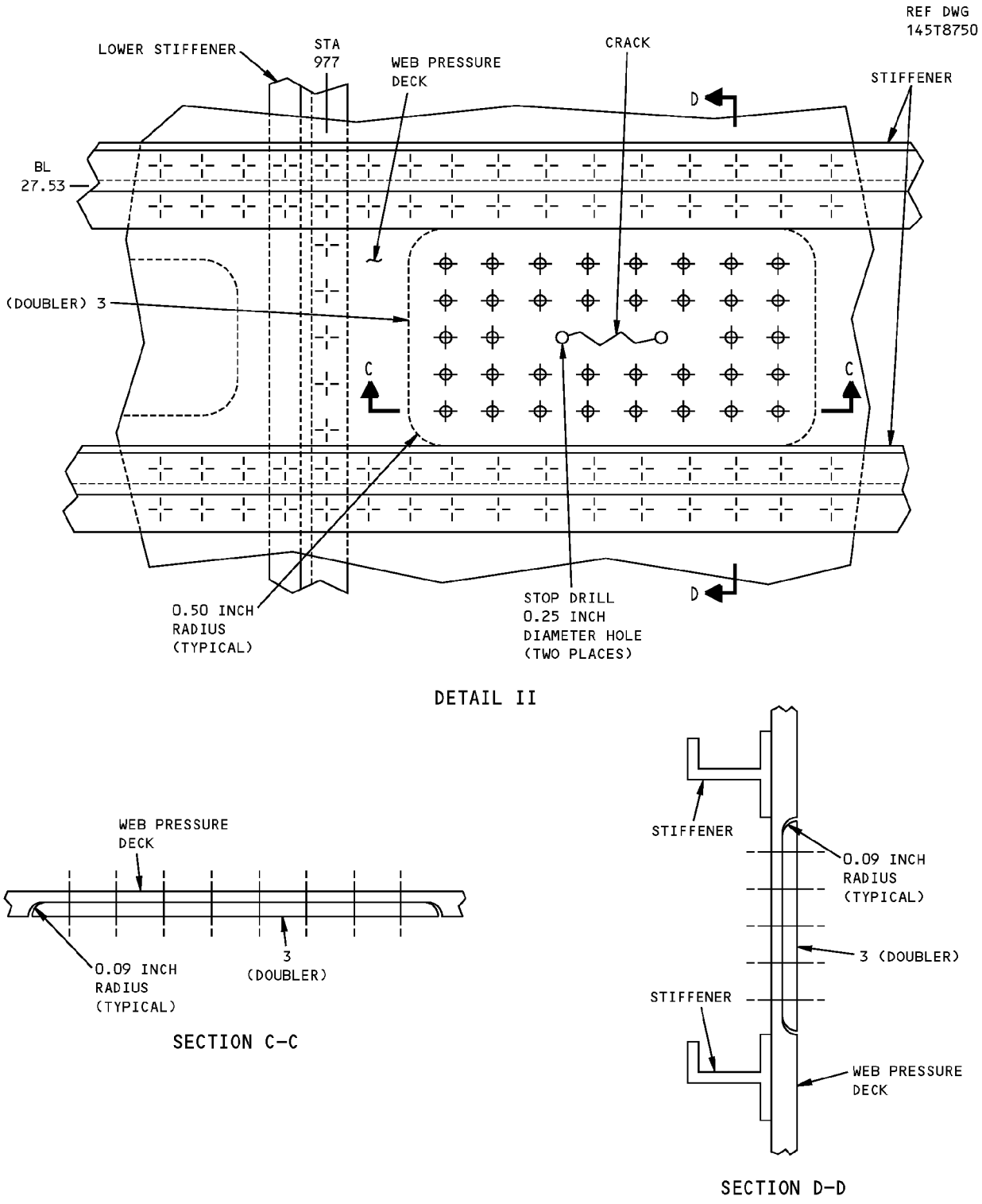
REPAIR MATERIAL			
PART		QTY	MATERIAL
4	FILLER	1	CLAD 2024-T3 SAME GAGE AS CHEM-MILLED POCKET
5	LOWER DOUBLER	1	CLAD 2024-T3 ONE GAGE THICKER THAN CHEM-MILLED POCKET
6	UPPER DOUBLER	1	CLAD 2024-T3 ONE GAGE THICKER THAN CHEM-MILLED POCKET

TABLE III

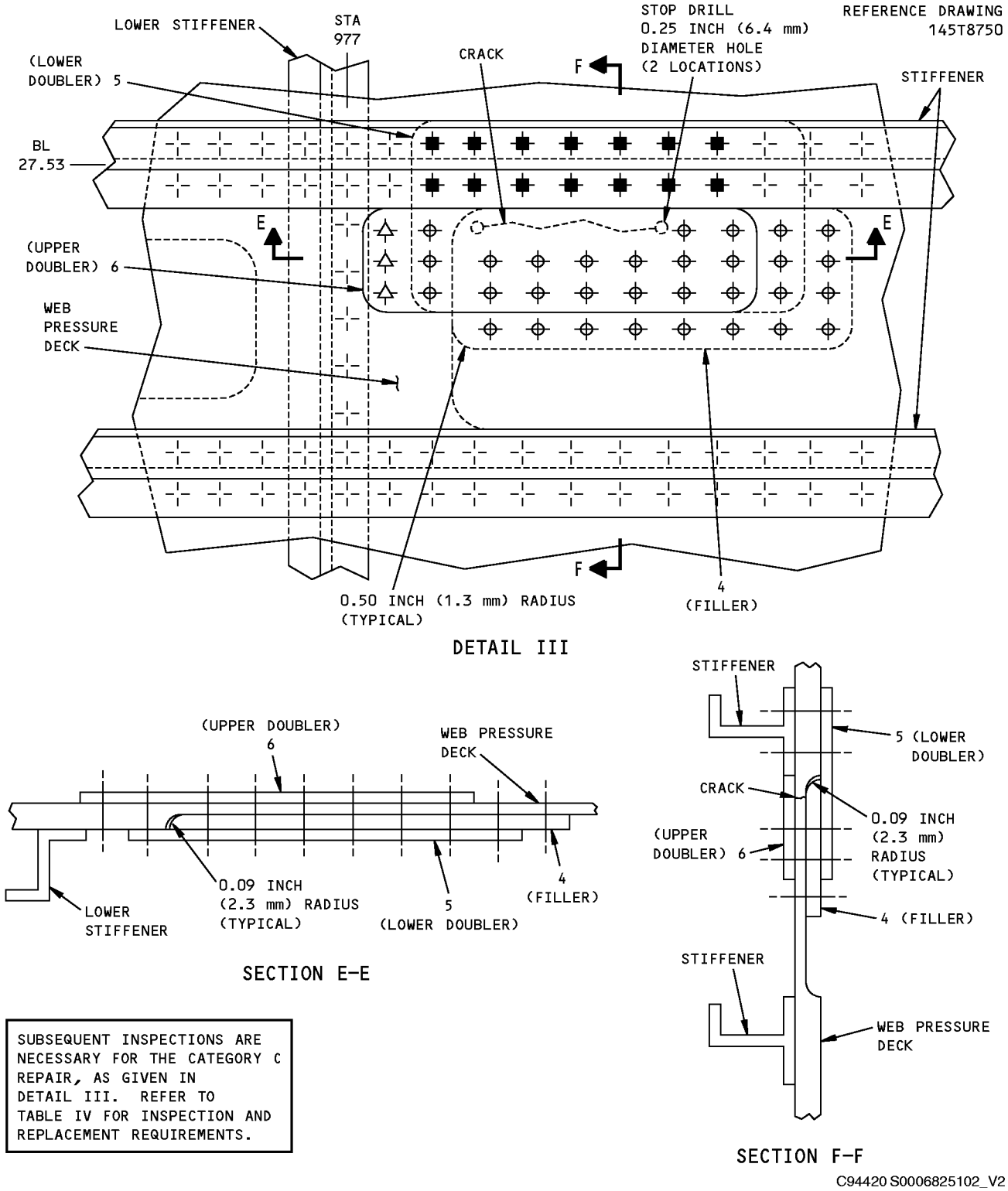
Wheel Well Pressure Deck Web Crack Repair - Station 954 to Station 1065
Figure 201 (Sheet 2 of 7)



Wheel Well Pressure Deck Web Crack Repair - Station 954 to Station 1065
Figure 201 (Sheet 3 of 7)



Wheel Well Pressure Deck Web Crack Repair - Station 954 to Station 1065
Figure 201 (Sheet 4 of 7)



Wheel Well Pressure Deck Web Crack Repair - Station 954 to Station 1065
Figure 201 (Sheet 5 of 7)

CATEGORY C REPAIR INSPECTION REQUIREMENTS			
INSPECTION THRESHOLD	REPEAT INSPECTION		TIME LIMIT
	METHOD	INTERVAL	
6,000 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	INTERNAL HFEC (1)	6,000 FLIGHT CYCLES	12,000 FLIGHT CYCLES AFTER REPAIR INSTALLATION
	INTERNAL LFEC (2)	6,000 FLIGHT CYCLES	
	DETAILED VISUAL (3)	6,000 FLIGHT CYCLES	

NOTES: (1) DO AN HFEC INSPECTION OF THE WEB COMMON TO 4 (FILLER) ON THE PERIPHERY FASTENER ROWS AS SHOWN IN DETAIL IV. DO THE INSPECTION FROM ABOVE THE WEB. REFER TO 767 NDT MANUAL (D634T301), PART 6, 51-00-01.

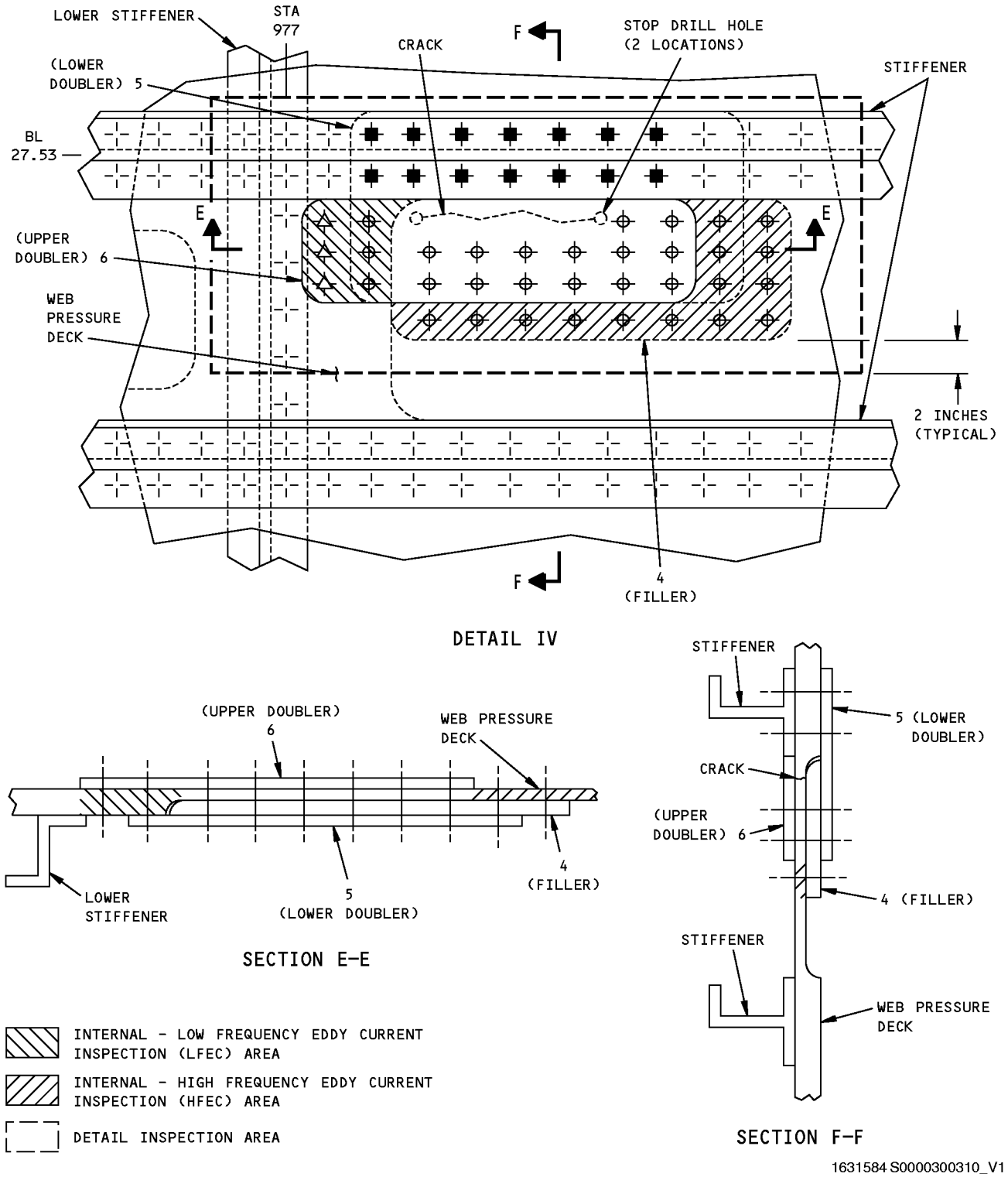
(2) DO AN LFEC INSPECTION OF THE WEB COMMON TO 6 (UPPER DOUBLER) AT THE TWO PERIPHERY FASTENER ROWS AS SHOWN IN DETAIL IV. DO THE INSPECTION FROM ABOVE THE WEB. REFER TO 767 NDT MANUAL (D634T301), PART 6, 51-00-06.

(3) DO A DETAILED VISUAL INSPECTION OF THE REPAIR AND THE ADJACENT STRUCTURE 2 INCHES FROM THE EDGE OF THE REPAIR AS SHOWN IN DETAIL IV. DO THE INSPECTION FROM ABOVE AND BELOW THE WEB.

TABLE IV

1631666 S0000300309_V2

Wheel Well Pressure Deck Web Crack Repair - Station 954 to Station 1065
Figure 201 (Sheet 6 of 7)



Wheel Well Pressure Deck Web Crack Repair - Station 954 to Station 1065
Figure 201 (Sheet 7 of 7)

REPAIR 4 - CENTER WING LONGITUDINAL FLOOR BEAM REPAIR - ELONGATED HOLES IN THE UPPER CHORD

APPLICABILITY
THIS REPAIR IS APPLICABLE TO THE UPPER CHORD OF THE CENTER WING LONGITUDINAL FLOOR BEAMS AT RBL 11.06, RBL 33.06, LBL 11.06, AND LBL 33.06 LOCATIONS.

REPAIR INSTRUCTIONS

1. Remove the floor panels at the repair location. Refer to AMM 53-01-01.
2. Get access to the damaged area. Locate the elongated holes in the cap of the upper chord. Remove miscellaneous support clips and brackets from the floor beam as necessary. See Details I and II.
3. Trim out the elongated holes with slots as shown in Detail III. Minimize material removal and trim the elongated holes with a full radius at the hole ends. Make the edges of the cut smooth to 63 microinches R_a or better.
4. Do a penetrant inspecton of the cut edges to make sure that any cracks or corrosion is removed. Refer to SOPM 20-20-02.
5. Make the repair parts. See Table I.
6. Assemble the repair parts and drill the fastener holes. See Detail III.
7. Position the floor panels and drill the floor panel holes. See Detail IV for floor panel hole sizes.
8. Remove the floor panels and the repair parts.
9. Align the floating type nutplates to the panel attach hole locations on the repair strap and drill the nutplate attach holes.
10. Remove all nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the floor beam.
11. Apply a chemical conversion coating to the bare aluminum surfaces. Refer to SRM 51-20-01.
12. Apply one coat of BMS 10-11, Type I primer to the repair parts and apply two coats of the same primer to the cut surfaces at the elongated hole locations. Refer to AMM 51-21.
13. Install the floor panel attach nutplates on the bottom of the repair strap as necessary. See Detail III, Section A-A. Do not install these fasteners wet with BMS 5-95 sealant.
14. Install the repair parts with BMS 5-95 sealant between the mating surfaces. Fill all voids with BMS 5-95 sealant.
15. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
16. Apply a layer of BMS 3-23, Type II or BMS 3-29 corrosion inhibiting compound to the repaired area. Refer to SRM 51-20-01.
17. Install the floor panels. Refer to AMM 53-01-01.

NOTES

- D = FASTENER DIAMETER
- ALL DIMENSIONS ARE GIVEN IN INCHES UNLESS SPECIFIED OTHERWISE.
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 53-01-01 FOR FLOOR PANEL REMOVAL AND INSTALLATION PROCEDURES
  - SOPM 20-20-02 FOR THE PENETRANT INSPECTION PROCEDURES
  - SOPM 20-41-02 FOR THE APPLICATION OF FINISHES
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS.

[A] MAKE SURE THAT THE REPAIR STRAPS DO NOT RIDE INTO THE RADII OF THE UPPER CHORD FLANGE STEP.

FASTENER SYMBOLS

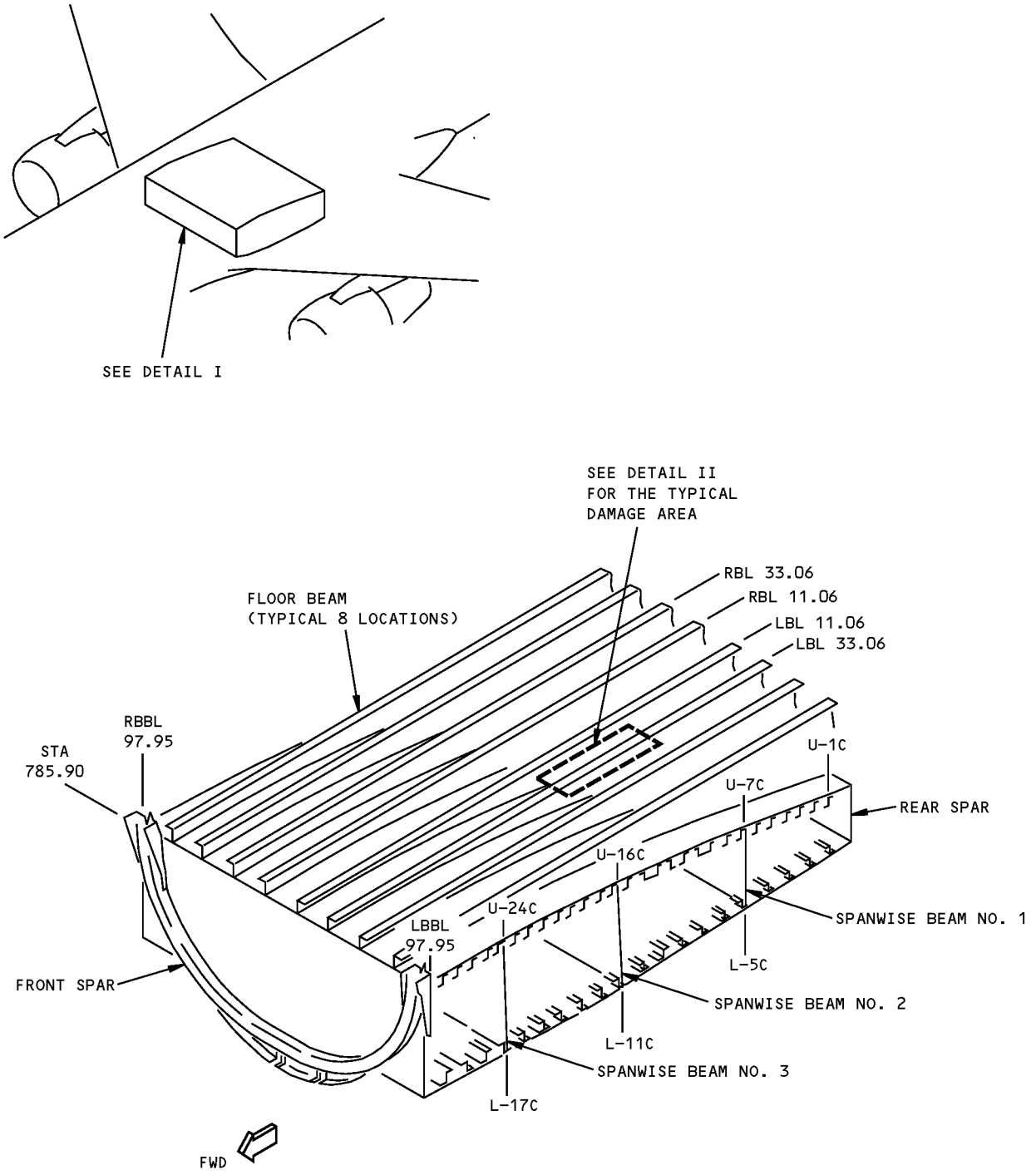
⊹ REPAIR FASTENER LOCATION. INSTALL A BACB30NW6K() HEX DRIVE BOLT WITH A BACC30M6() COLLAR.

┼ INITIAL FLOOR PANEL ATTACH FASTENER LOCATION. INSTALL THE SAME TYPE AND SIZE OF FASTENER AS THE INITIAL FASTENER EXCEPT INCREASE THE GRIP LENGTH AS NECESSARY.

REPAIR PARTS			
PART		QTY	MATERIAL
1	STRAP	AS REQUIRED	0.19 INCH 7075-T6 CLAD SHEET

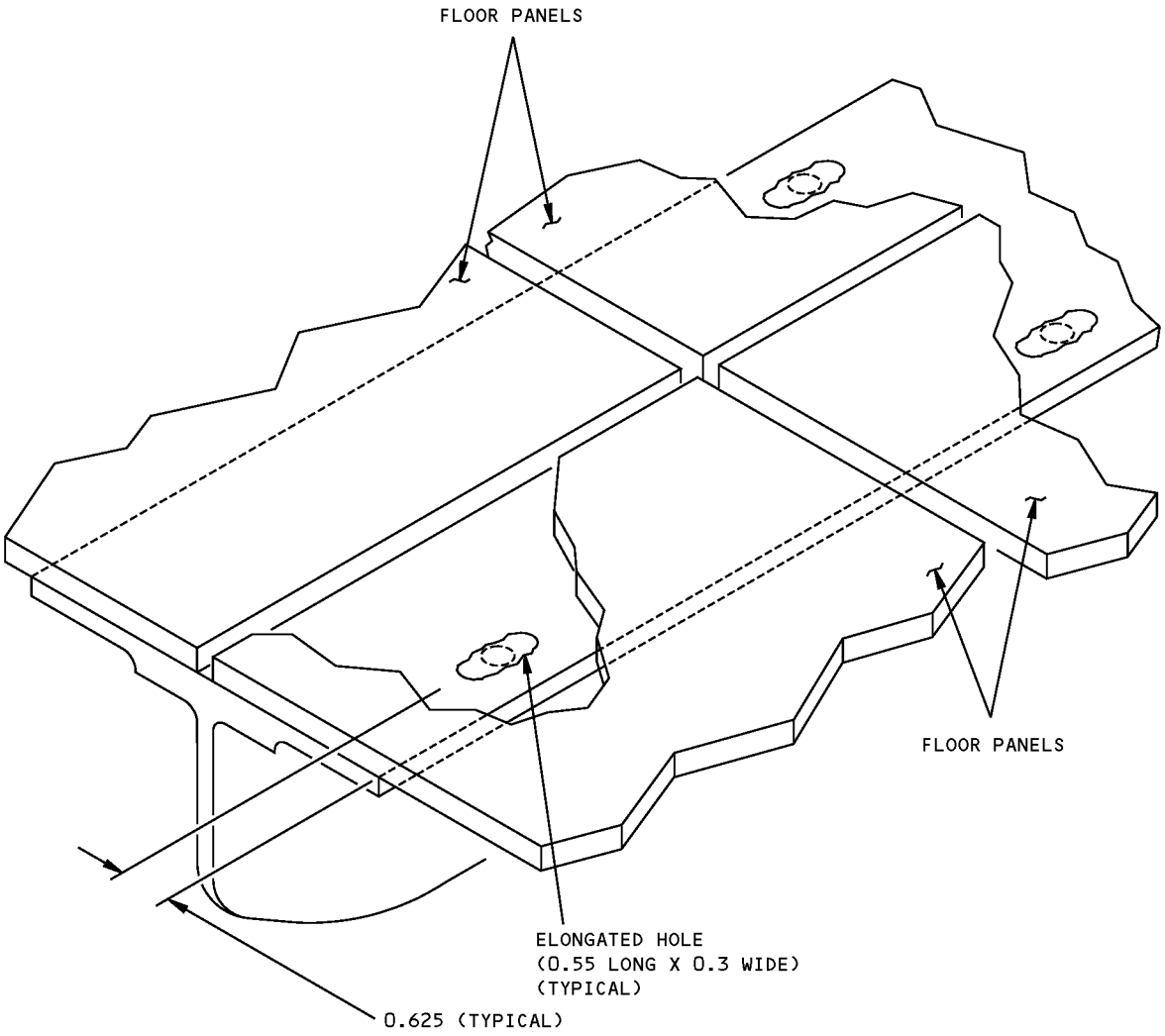
TABLE I

Center Wing Longitudinal Floor Beam Repair - Elongated Holes in the Upper Chord
Figure 201 (Sheet 1 of 5)



DETAIL I

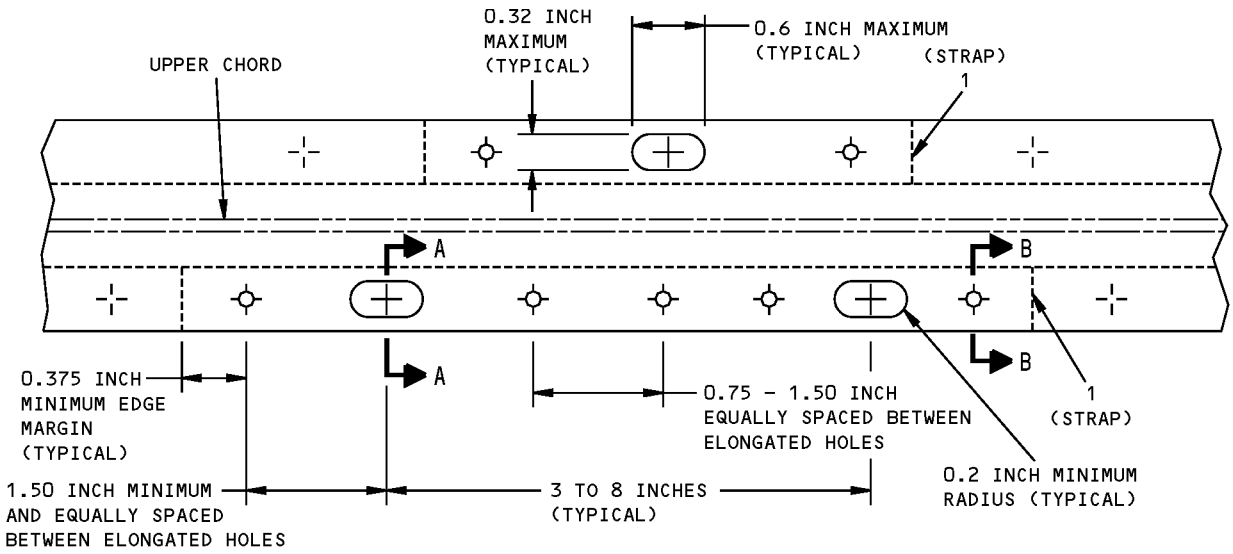
Center Wing Longitudinal Floor Beam Repair - Elongated Holes in the Upper Chord
Figure 201 (Sheet 2 of 5)



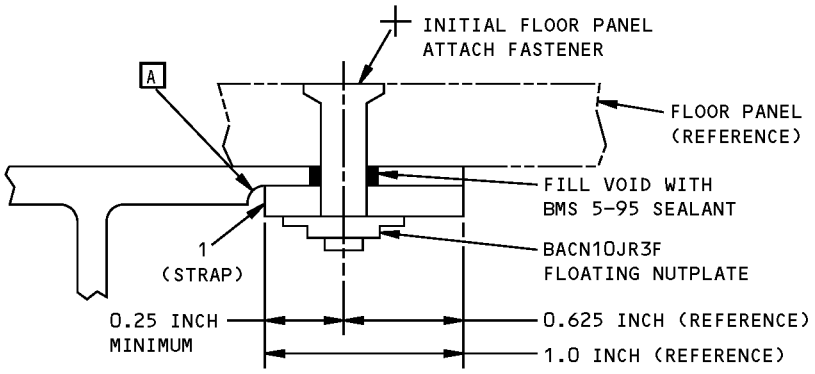
TYPICAL ELONGATED HOLES IN OVERWING FLOOR BEAM FLANGES

DETAIL II

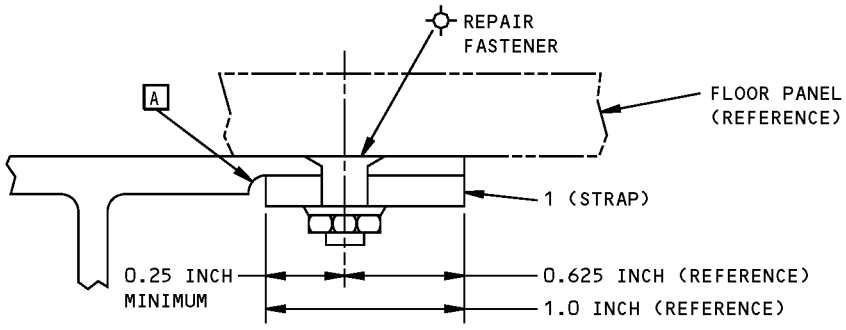
Center Wing Longitudinal Floor Beam Repair - Elongated Holes in the Upper Chord
Figure 201 (Sheet 3 of 5)



(FLOOR PANEL IS NOT SHOWN)
DETAIL III

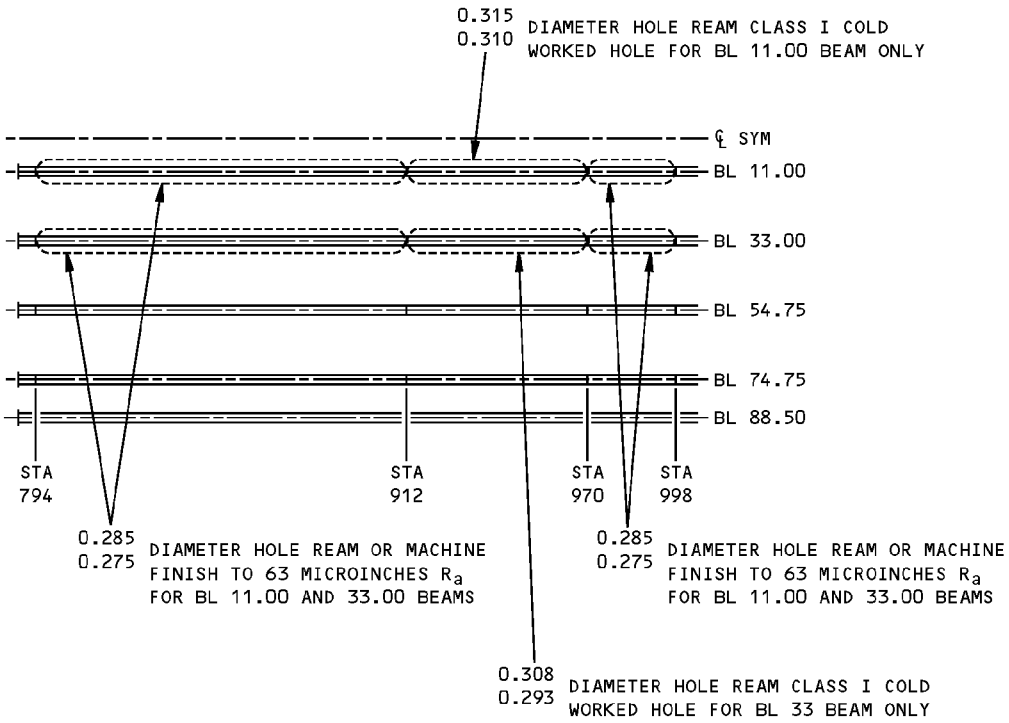


BL 33 FLOOR BEAM IS SHOWN, BL 11 FLOOR BEAM IS SIMILAR
SECTION A-A



BL 33 FLOOR BEAM IS SHOWN, BL 11 FLOOR BEAM IS SIMILAR
SECTION B-B

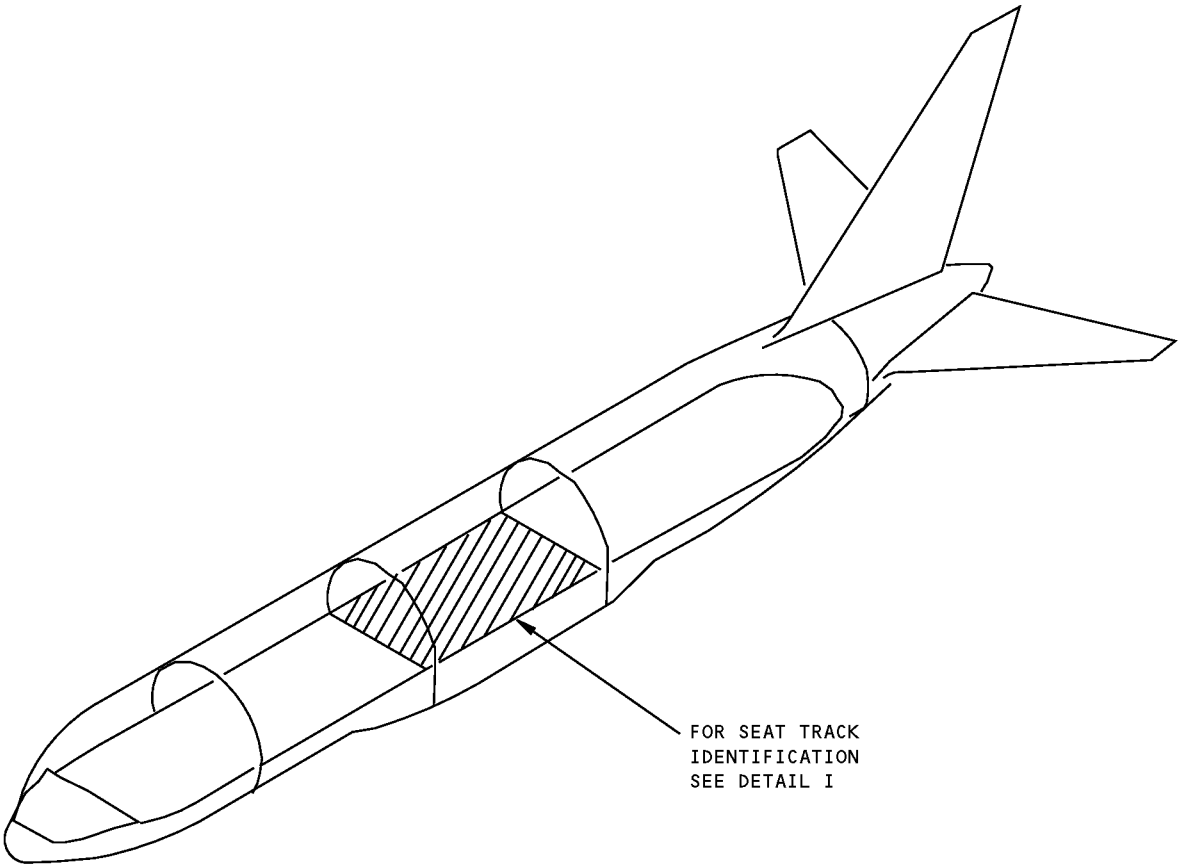
Center Wing Longitudinal Floor Beam Repair - Elongated Holes in the Upper Chord
Figure 201 (Sheet 4 of 5)



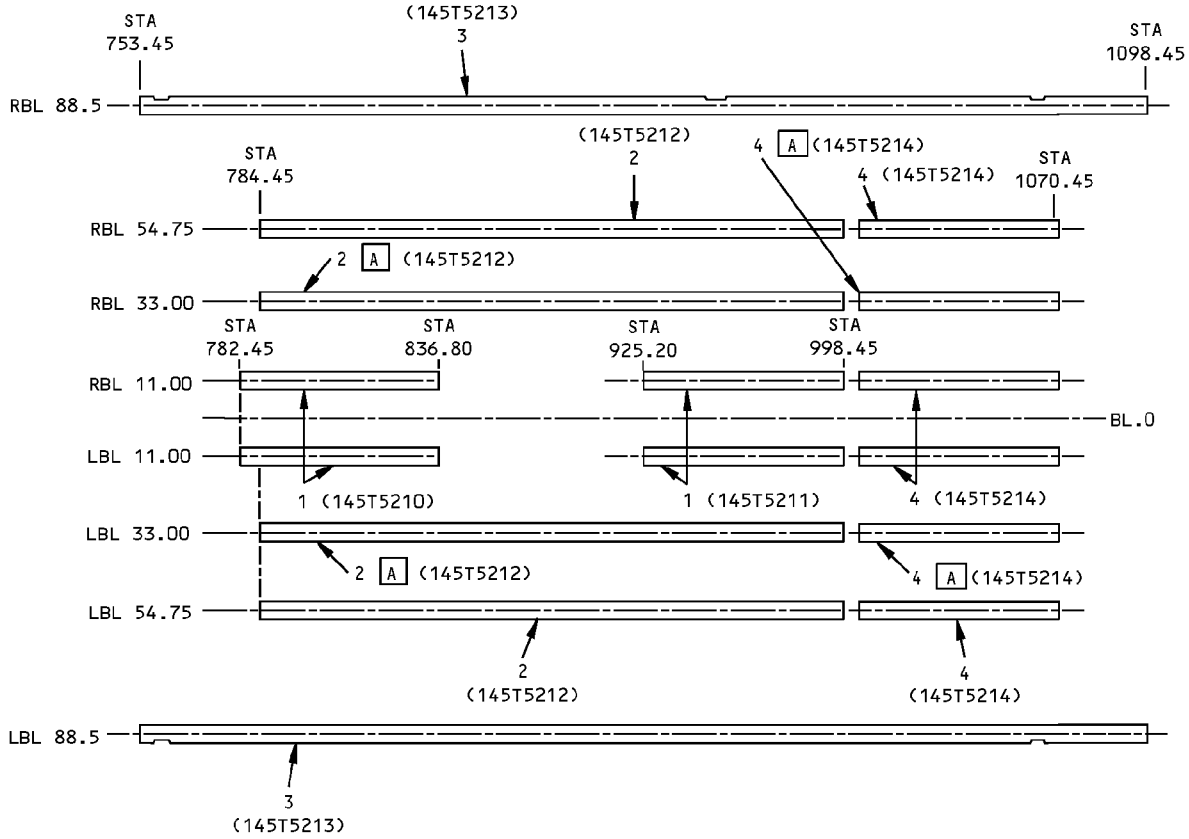
DETAIL IV

Center Wing Longitudinal Floor Beam Repair - Elongated Holes in the Upper Chord
Figure 201 (Sheet 5 of 5)

IDENTIFICATION 1 - SECTION 45 - SEAT TRACK



Section 45 - Seat Track Identification
Figure 1 (Sheet 1 of 2)



DETAIL I

NOTES

- SEAT TRACKS AT BL 88.5, 54.75, 11.00 ARE THE BASIC CONFIGURATION AND VARIATIONS PROVIDED AS OPERATOR OPTIONS. SEAT TRACKS AT OTHER B.L. ARE ALSO PROVIDED AS OPERATOR OPTIONS

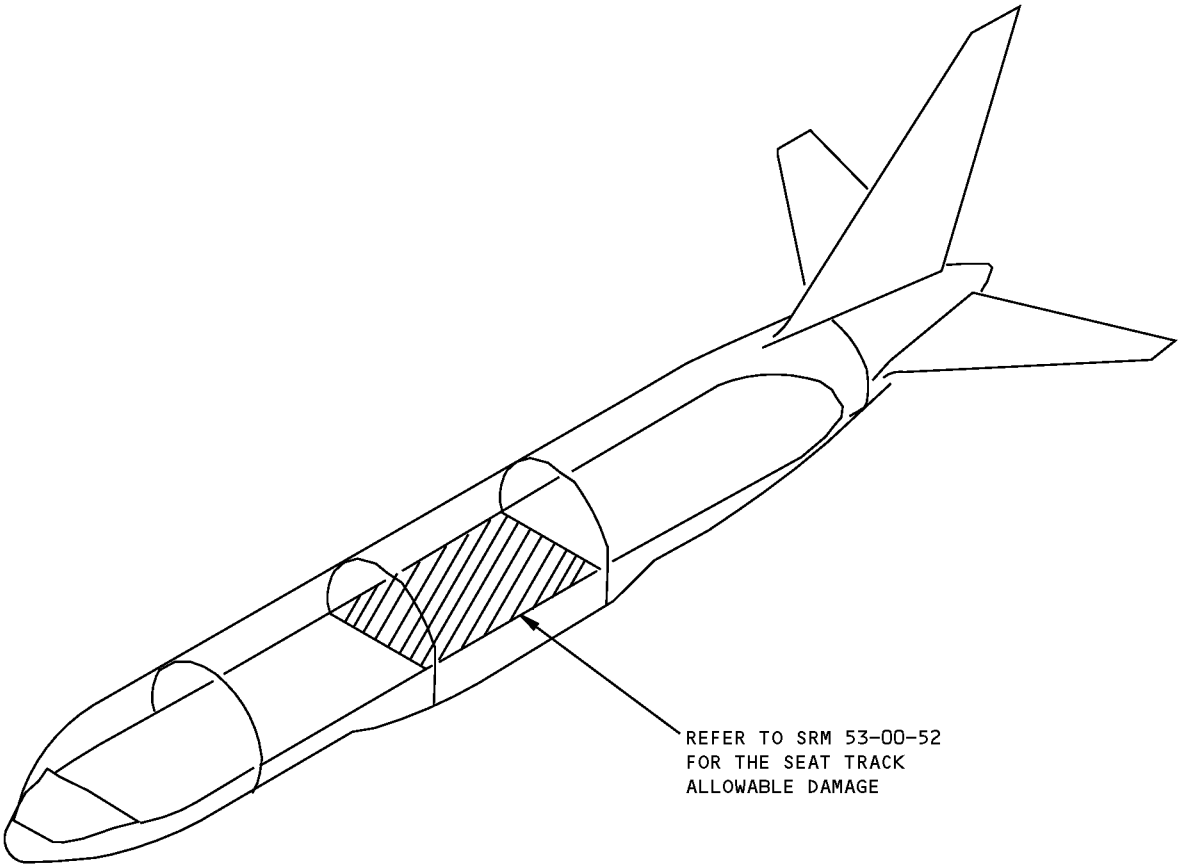
A FOR AIRPLANES WITH OPTIONAL 8 ABREAST SEATING

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SEAT TRACK CROWN		BAC1520-2194 7178-T6511	
2	SEAT TRACK CROWN		BAC1520-2195 7178-T6511	
3	SEAT TRACK		BAC1520-2193 7075-T6511	
4	SEAT TRACK		BAC1520-2192 7178-T6511	

LIST OF MATERIALS FOR DETAIL I

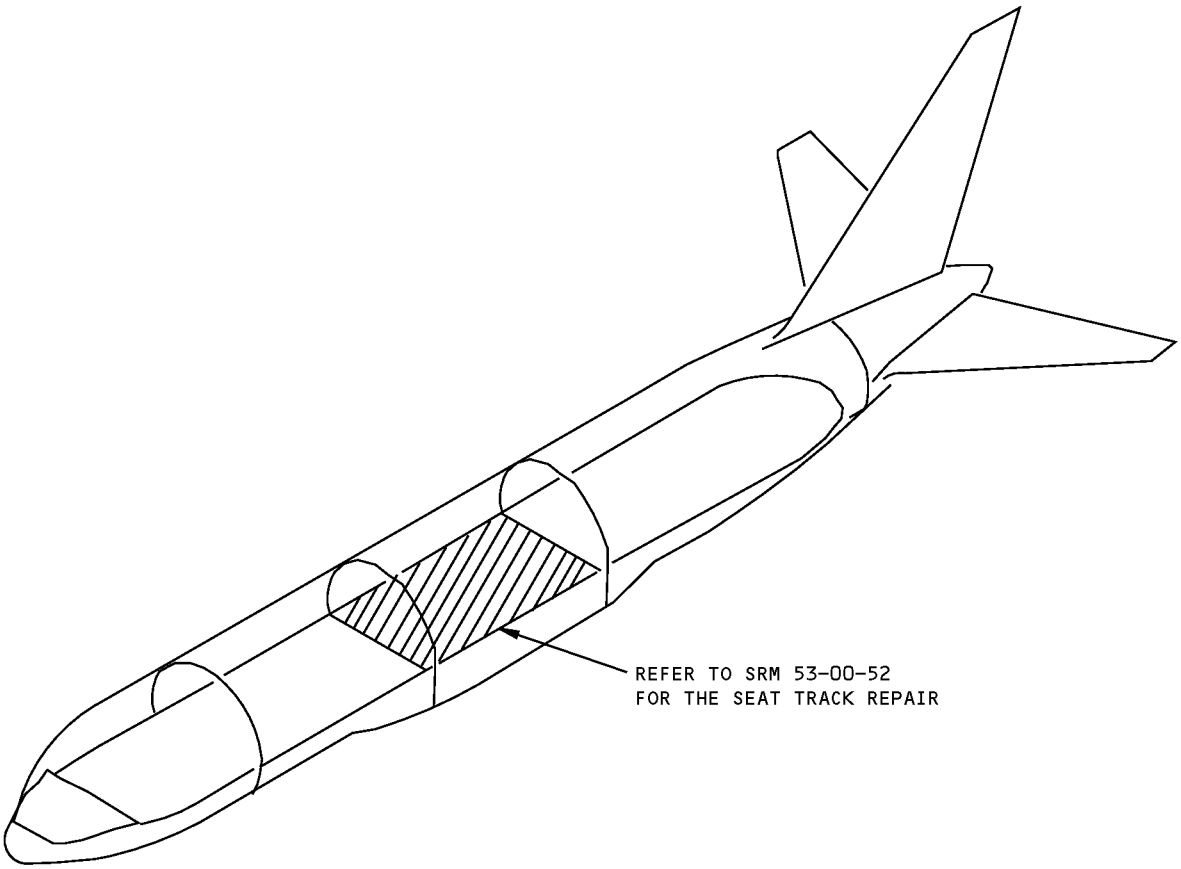
Section 45 - Seat Track Identification
Figure 1 (Sheet 2 of 2)

ALLOWABLE DAMAGE GENERAL - SECTION 45 SEAT TRACKS



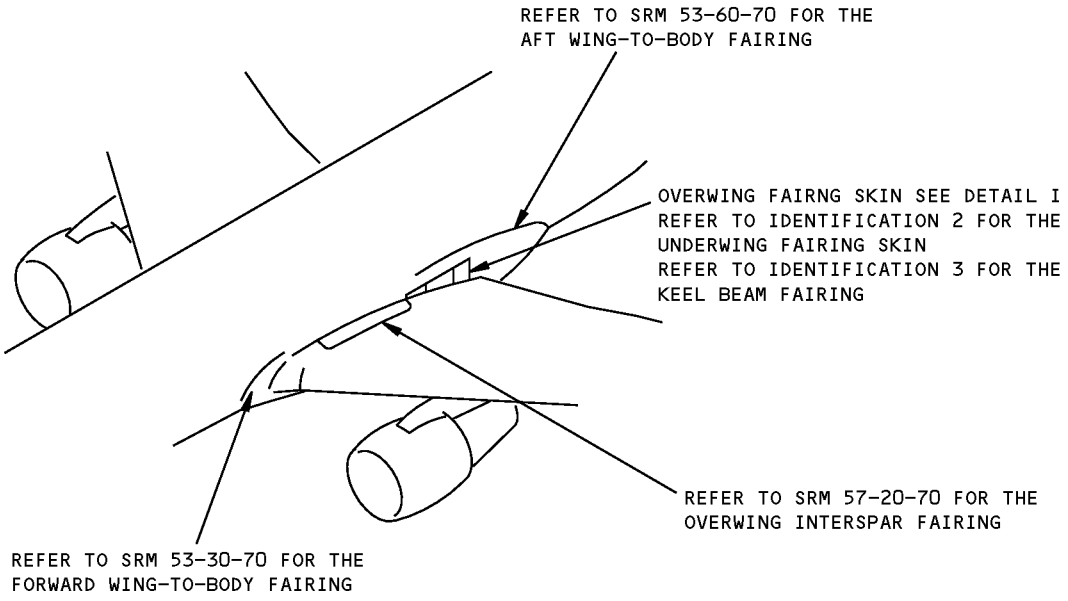
Section 45 Seat Tracks Allowable Damage
Figure 101

REPAIR GENERAL - SECTION 45 SEAT TRACKS



Section 45 Seat Track Repair
Figure 201

IDENTIFICATION 1 - OVERWING FAIRING SKIN



NOTES

- REFER TO SRM 53-50-71 FOR THE FAIRING STRUCTURE IDENTIFICATION

[A] PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION

[B] ARAMID/EPOXY FABRIC PER BMS 8-219, STYLE 285, 250°F (121°C) CURE

[C] GRAPHITE/EPOXY TAPE PER BMS 8-168, TYPE II, CLASS 1, GRADE 190, 250°F (121°C) CURE

[D] GRAPHITE/EPOXY FABRIC PER BMS 8-168, TYPE II, CLASS 2, STYLE 3K-70-PW, 250°F (121°C) CURE

[E] ARAMID/EPOXY FABRIC PER BMS 8-219, STYLE 120 250°F (121°C) CURE

[F] FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 120, 250°F (121°C) CURE

[G] DIAGRAM OF PLY ORIENTATION, SEE PLY TABLE FOR PLY ORIENTATION AND MATERIAL

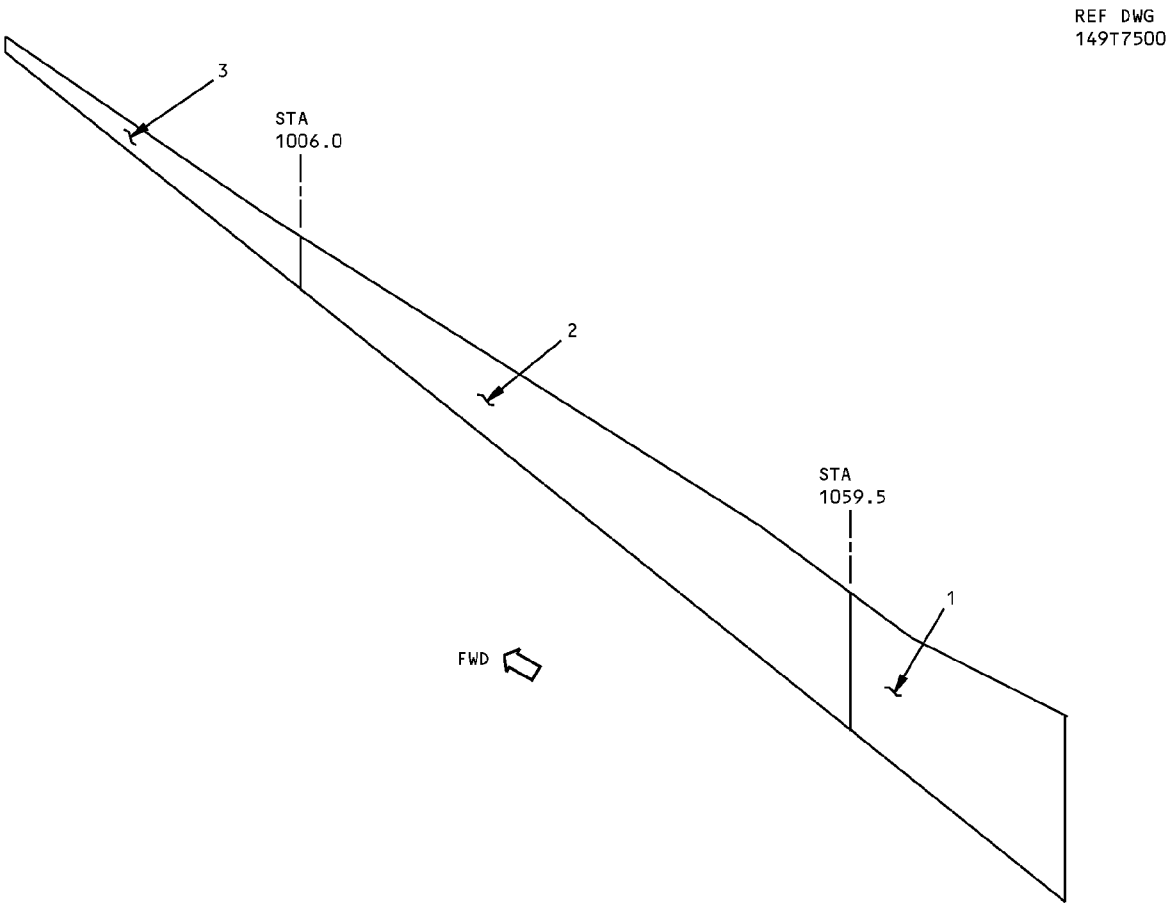
[H] MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS

[I] FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 1581, CLASS III, GRADE 1, 250° F (121° C) CURE

[J] FOR CUM LINE NUMBERS: 1 THRU 211

[K] FOR CUM LINE NUMBERS: 212 AND ON

Overwing Fairing Skin Identification
Figure 1 (Sheet 1 of 4)



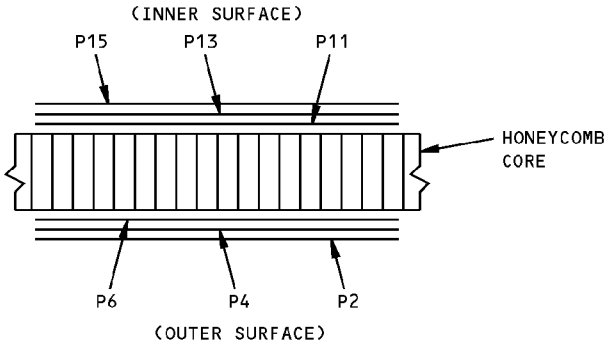
LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE

DETAIL I

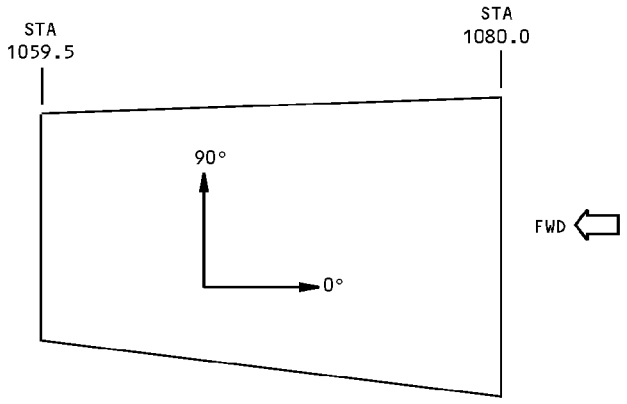
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	AFT PANEL		ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH	
	SKIN		SEE DETAIL II	
	CORE		HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0.	
2	MID PANEL		ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH	
	SKIN		SEE DETAIL III	
	CORE		HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0.	
3	FORWARD PANEL		ARAMID/EPOXY LAMINATE	
	SKIN		SEE DETAIL III	

LIST OF MATERIALS FOR DETAIL I

Overwing Fairing Skin Identification
Figure 1 (Sheet 2 of 4)



SECTION THRU PANEL
ITEM NO. 1



VIEW ON PANEL [G]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
1	2	[B]	0° OR 90°
	4	[C]	0°
	6	[D]	0° OR 90°
	11	[D]	0° OR 90°
	13	[C]	0°
	15	[E]	0° OR 90°

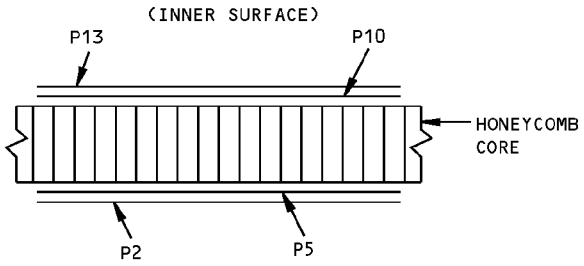
PLY TABLE [H] [J]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
1	2	[I]	0° OR 90°
	4	[C]	0°
	6	[D]	0° OR 90°
	11	[D]	0° OR 90°
	13	[C]	0°
	15	[E]	0° OR 90°

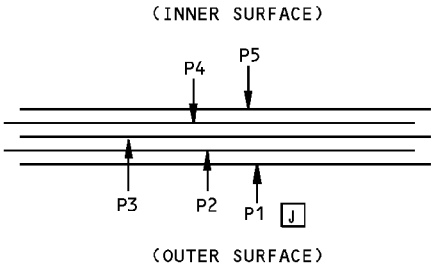
PLY TABLE [H] [K]

DETAIL II

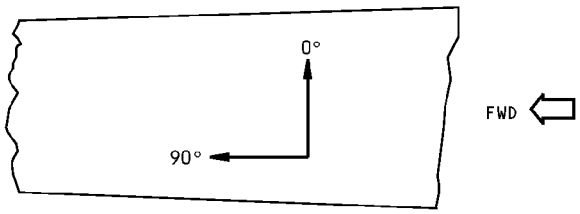
Overwing Fairing Skin Identification
Figure 1 (Sheet 3 of 4)



SECTION THRU PANEL
ITEM NO. 2



SECTION THRU PANEL
ITEM NO. 3



VIEW ON PANELS (TYP) G

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION A
2	2	B	0° OR 90°
	5	D	0° OR 90°
	10	D	0° OR 90°
	13	E	0° OR 90°
3	1	F	OPTIONAL
	2	B	0° OR 90°
	3	B	0° OR 90°
	4	B	0° OR 90°
	5	B	0° OR 90°

PLY TABLE H J

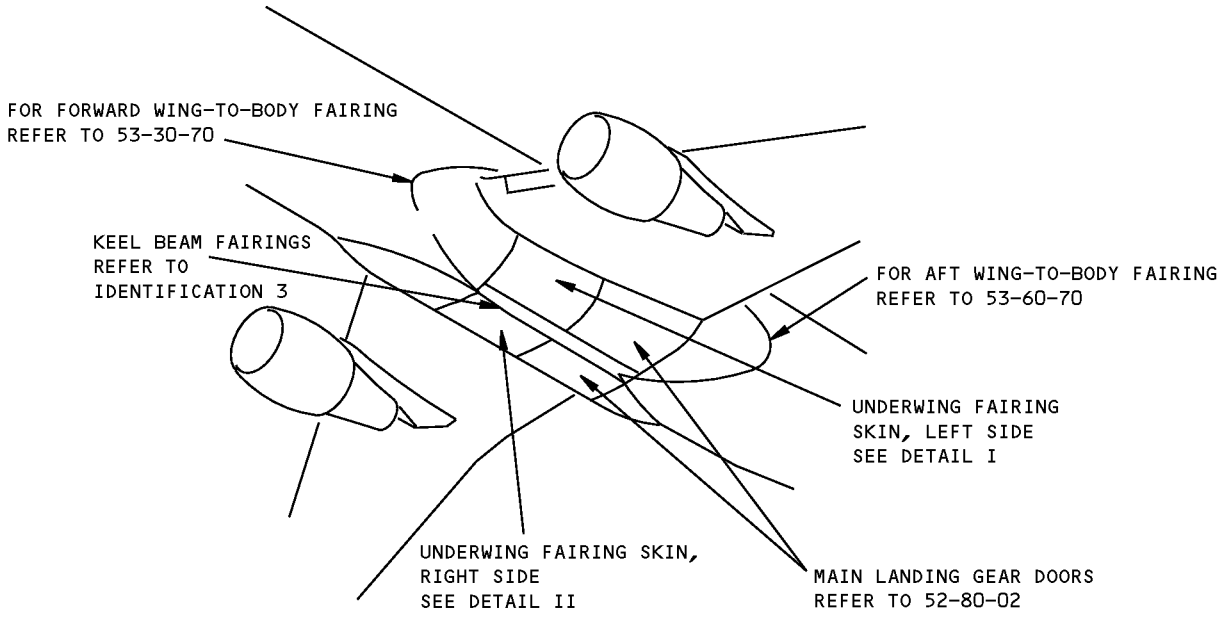
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION A
2	2	I	0° OR 90°
	5	D	0° OR 90°
	10	D	0° OR 90°
	13	E	0° OR 90°
3	2	I	0° OR 90°
	3	B	0° OR 90°
	4	B	0° OR 90°
	5	B	0° OR 90°

PLY TABLE H K

DETAIL III

Overwing Fairing Skin Identification
Figure 1 (Sheet 4 of 4)

IDENTIFICATION 2 - UNDERWING FAIRING SKIN



NOTES

[A] PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION

[B] ARAMID/EPOXY FABRIC PER BMS 8-219, STYLE 285, 250°F (121°C) CURE

[C] GRAPHITE/EPOXY TAPE PER BMS 8-168, TYPE II, CLASS 1, GRADE 190, 250°F (121°C) CURE

[D] GRAPHITE/EPOXY FABRIC PER BMS 8-168, TYPE II, CLASS 2, STYLE 3K-70-PW, 250°F (121°C) CURE

[E] ARAMID/EPOXY FABRIC PER BMS 8-219, STYLE 120, 250°F (121°C) CURE

[F] FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 1581, CLASS III, GRADE I, 250°F (121°C) CURE

[G] MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS

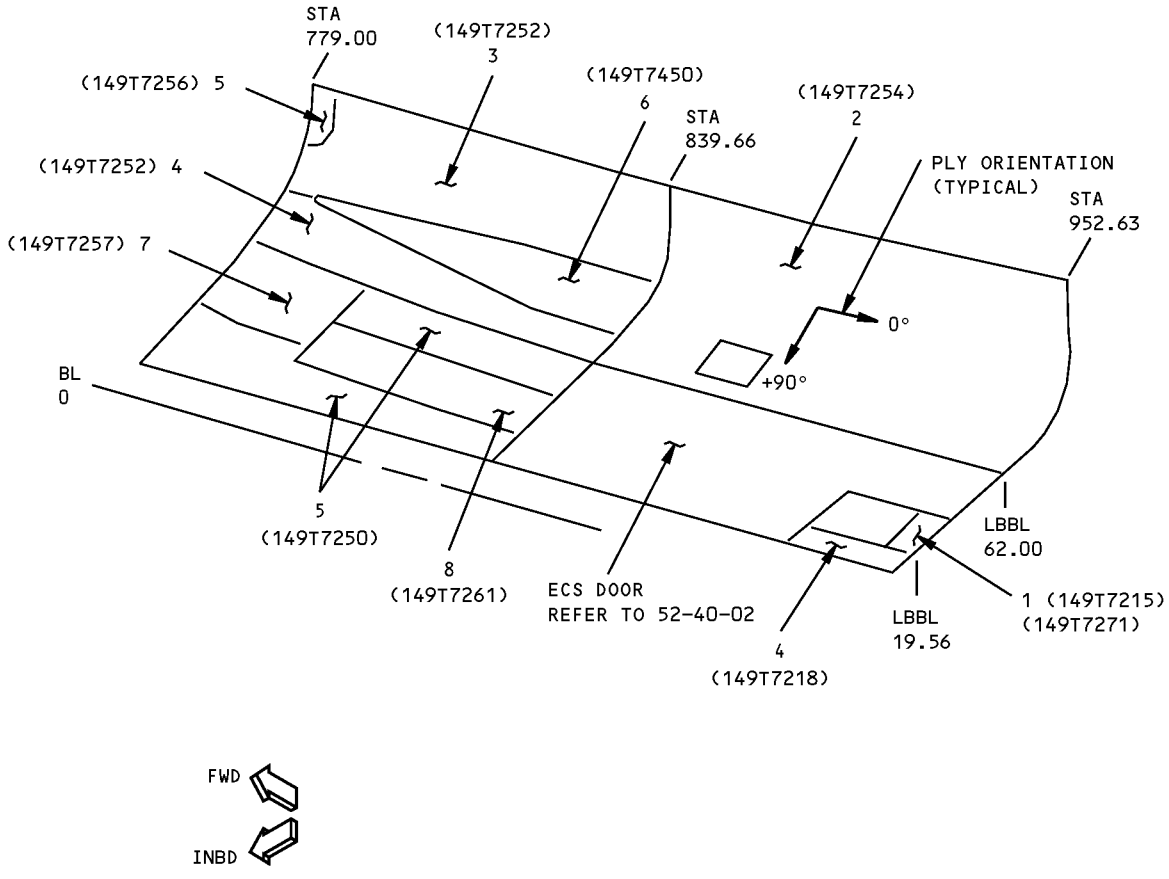
[H] FOR CUM LINE NUMBERS: 1 THRU 211

[I] FOR CUM LINE NUMBERS: 212 AND ON

[J] FOR CUM LINE NUMBERS: 1 THRU 360

[K] FOR CUM LINE NUMBERS: 384 AND ON

Underwing Fairing Skin Identification
Figure 1 (Sheet 1 of 13)



LEFT SIDE
DETAIL I

LIST OF MATL

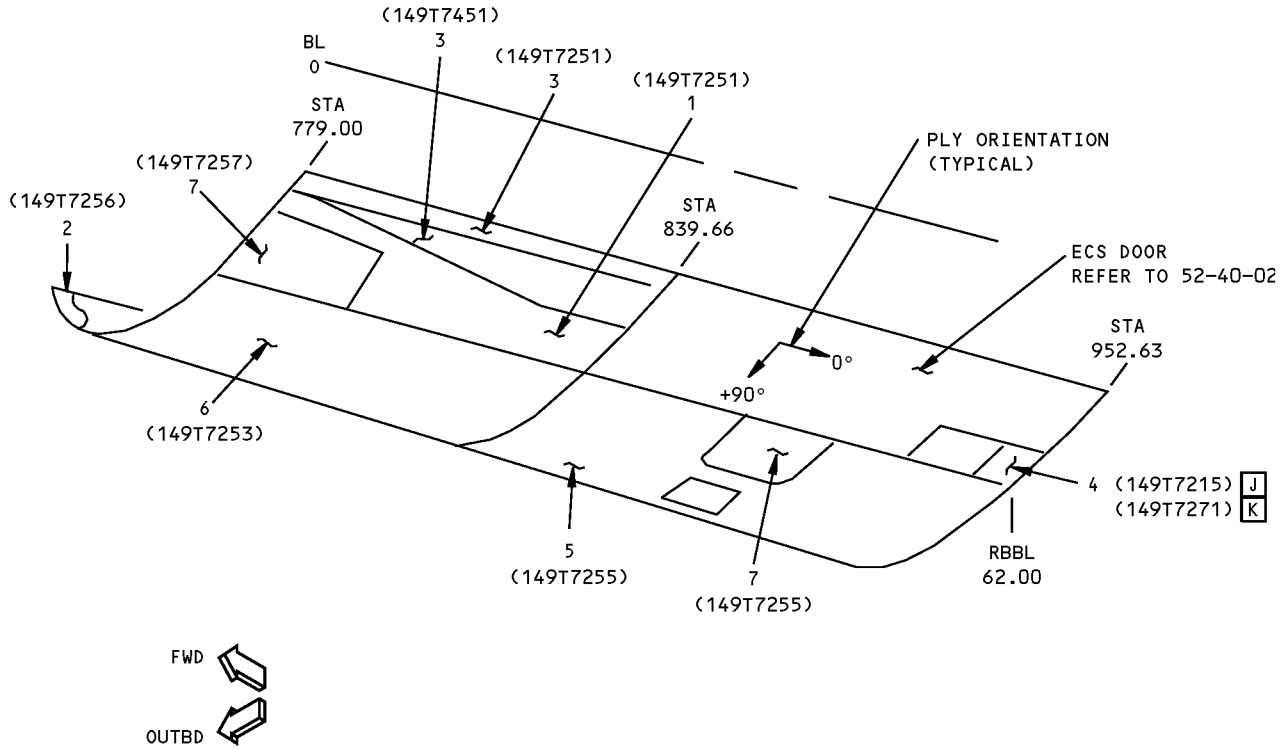
Underwing Fairing Skin Identification
Figure 1 (Sheet 2 of 13)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN PANEL	0.100	CLAD 2024-T3 FIBERITE VINYL ESTER VE49595 (OPTIONAL: QUANTUM LYTEX 9063)	J K
2	PANEL SKIN CORE	 1.000	ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH SEE DETAIL IV HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0	
3	PANEL SKIN CORE	 1.000	ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH SEE DETAIL V HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0	
4	PANEL SKIN CORE	 0.250	ARAMID/EPOXY HYBRID HONEYCOMB SANDWICH SEE DETAIL V HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0	
5	PANEL SKIN CORE	 0.500	ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH SEE DETAIL VI HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0	
6	PANEL SKIN CORE	 0.500	ARAMID/EPOXY HONEYCOMB SANDWICH SEE DETAIL VI HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0	
7	PANEL SKIN CORE	 0.500	ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH SEE DETAIL VII HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0	
8	PANEL SKIN CORE	 0.250	ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH SEE DETAIL VII FIBERGLASS PER BMS 8-124, CLASS 1, TYPE I, GRADE 4.0	

LIST OF MATERIALS FOR DETAIL I

Underwing Fairing Skin Identification
Figure 1 (Sheet 3 of 13)

REF DWG
149T7200



RIGHT SIDE
DETAIL II

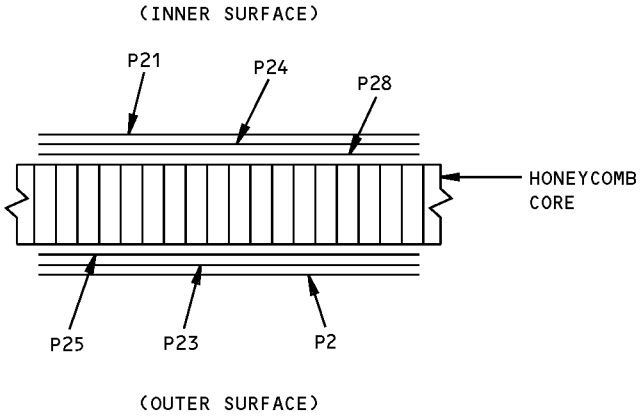
LIST OF MATL

Underwing Fairing Skin Identification
Figure 1 (Sheet 4 of 13)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	PANEL SKIN CORE	 0.250	ARAMID/EPOXY HONEYCOMB SANDWICH SEE DETAIL III HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0	
2	PANEL SKIN CORE	 0.250	ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH SEE DETAIL VI HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0	
3	PANEL SKIN CORE	 0.500	ARAMID/EPOXY HONEYCOMB SANDWICH SEE DETAIL VI HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0	
4	SKIN PANEL	0.100	CLAD 2024-T3 FIBERITE VINYL ESTER VE49595 (OPT: QUANTUM LYTEX 9063)	J K
5	PANEL SKIN CORE	 1.000	ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH SEE DETAIL VIII HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0	
6	PANEL SKIN CORE	 1.000	ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH SEE DETAIL IX HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0	
7	PANEL SKIN CORE	 0.500	ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH SEE DETAIL X HONEYCOMB PER BMS 8-124, CLASS 4, TYPE V, GRADE 3.0	

LIST OF MATERIALS FOR DETAIL II

Underwing Fairing Skin Identification
Figure 1 (Sheet 5 of 13)



ITEM NO. 1

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
1 DETAIL I AND DETAIL II	2	[B]	0° OR 90°
	21	[B]	0° OR 90°
	23	[C]	90°
	24	[C]	90°
	25	[D]	0° OR 90°
	28	[D]	0° OR 90°

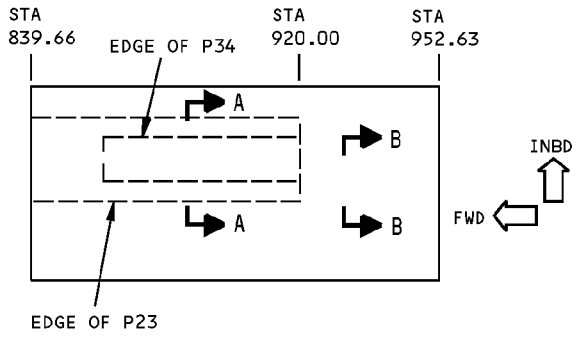
PLY TABLE [G] [H]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
1 DETAIL I AND DETAIL II	2	[F]	0° OR 90°
	21	[B]	0° OR 90°
	23	[C]	90°
	24	[C]	90°
	25	[D]	0° OR 90°
	28	[D]	0° OR 90°

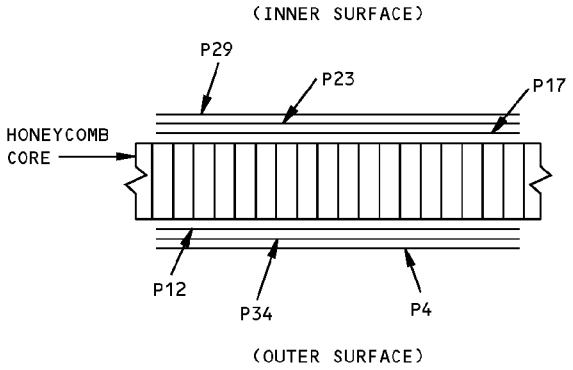
PLY TABLE [G] [I]

DETAIL III

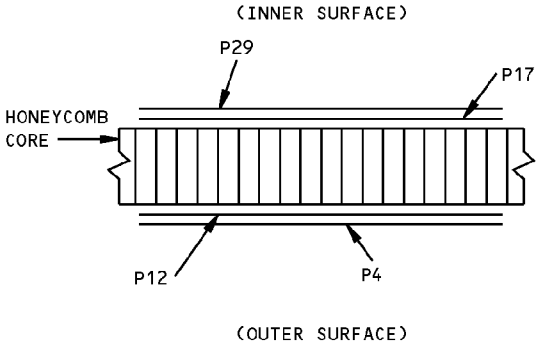
Underwing Fairing Skin Identification
Figure 1 (Sheet 6 of 13)



ITEM NO. 2



SECTION A–A



SECTION B–B

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
2 DETAIL I	4	[B]	0° OR 90°
	12	[D]	0° OR 90°
	17	[D]	0° OR 90°
	23	[D]	0° OR 90°
	29	[E]	0° OR 90°
	34	[D]	0° OR 90°

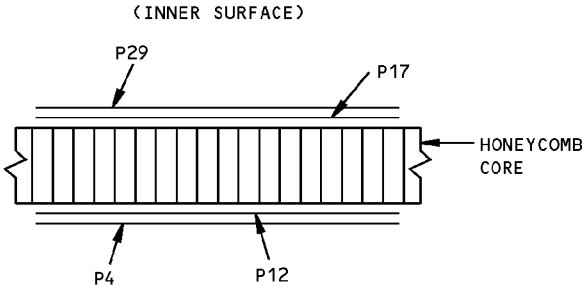
PLY TABLE [G] [H]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
2 DETAIL I	4	[F]	0° OR 90°
	12	[D]	0° OR 90°
	17	[D]	0° OR 90°
	23	[D]	0° OR 90°
	29	[E]	0° OR 90°
	34	[D]	0° OR 90°

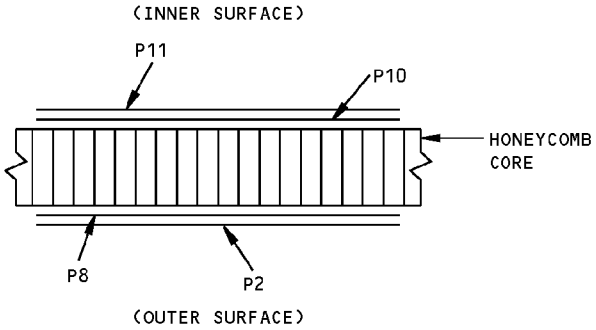
PLY TABLE [G] [I]

DETAIL IV

Underwing Fairing Skin Identification
Figure 1 (Sheet 7 of 13)



ITEM NO. 3



ITEM NO. 4

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
3 DETAIL I	4	[B]	0° OR 90°
	12	[D]	0° OR 90°
	17	[D]	0° OR 90°
	29	[E]	0° OR 90°
4 DETAIL I	2	[B]	0° OR 90°
	3	[B]	0° OR 90°
	10	[B]	0° OR 90°
	11	[E]	0° OR 90°

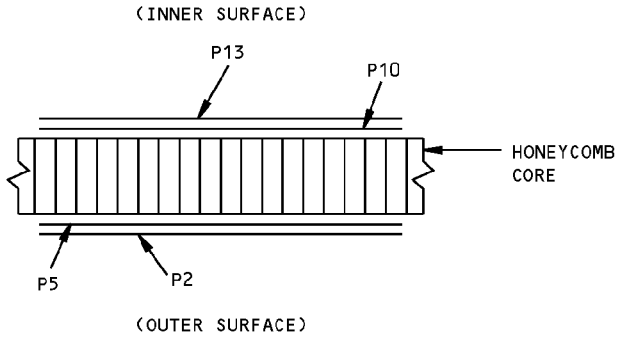
PLY TABLE [G] [H]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
3 DETAIL I	4	[F]	0° OR 90°
	12	[D]	0° OR 90°
	17	[D]	0° OR 90°
	29	[E]	0° OR 90°
4 DETAIL I	2	[F]	0° OR 90°
	3	[B]	0° OR 90°
	10	[B]	0° OR 90°
	11	[E]	0° OR 90°

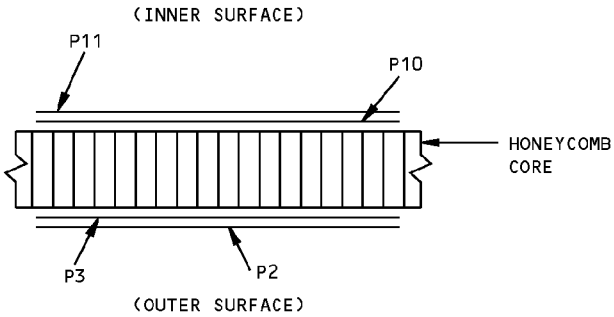
PLY TABLE [G] [I]

DETAIL V

Underwing Fairing Skin Identification
Figure 1 (Sheet 8 of 13)



ITEM NO. 5 (DETAIL I)
ITEM NO. 2 (DETAIL II)



ITEM NO. 6 (DETAIL I)
ITEM NO. 3 (DETAIL II)

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
5 DETAIL I	2	[B]	0° OR 90°
	5	[D]	0° OR 90°
2 DETAIL II	10	[D]	0° OR 90°
	13	[E]	0° OR 90°
6 DETAIL I	2	[B]	0° OR 90°
	3	[B]	0° OR 90°
3 DETAIL II	10	[B]	0° OR 90°
	11	[B]	0° OR 90°

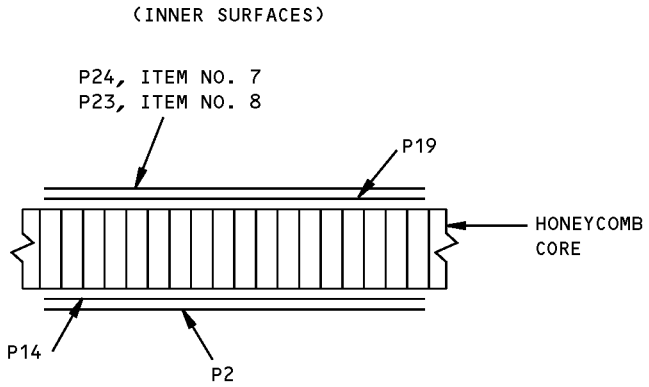
PLY TABLE [G] [H]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
5 DETAIL I	2	[F]	0° OR 90°
	5	[D]	0° OR 90°
2 DETAIL II	10	[D]	0° OR 90°
	13	[E]	0° OR 90°
6 DETAIL I	2	[F]	0° OR 90°
	3	[B]	0° OR 90°
3 DETAIL II	10	[B]	0° OR 90°
	11	[B]	0° OR 90°

PLY TABLE [G] [I]

DETAIL VI

Underwing Fairing Skin Identification
Figure 1 (Sheet 9 of 13)



ITEM NOS. 7 AND 8

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
7 DETAIL I	2	[B]	0° OR 90°
	14	[D]	0° OR 90°
	19	[D]	0° OR 90°
	24	[E]	0° OR 90°
8 DETAIL I	2	[B]	0° OR 90°
	14	[D]	0° OR 90°
	19	[D]	0° OR 90°
	23	[E]	0° OR 90°

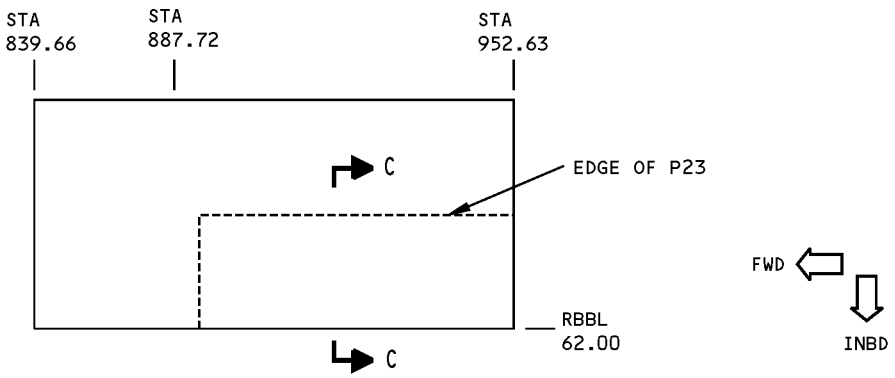
PLY TABLE [G] [H]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
7 DETAIL I	2	[F]	0° OR 90°
	14	[D]	0° OR 90°
	19	[D]	0° OR 90°
	24	[E]	0° OR 90°
8 DETAIL I	2	[F]	0° OR 90°
	14	[D]	0° OR 90°
	19	[D]	0° OR 90°
	23	[E]	0° OR 90°

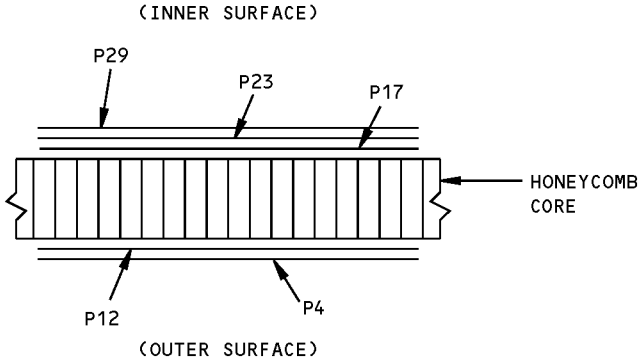
PLY TABLE [G] [I]

DETAIL VII

Underwing Fairing Skin Identification
Figure 1 (Sheet 10 of 13)



ITEM NO. 5



SECTION C-C

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
5 DETAIL II	4	[B]	0° OR 90°
	12	[D]	0° OR 90°
	17	[D]	0° OR 90°
	23	[D]	0° OR 90°
	29	[E]	0° OR 90°

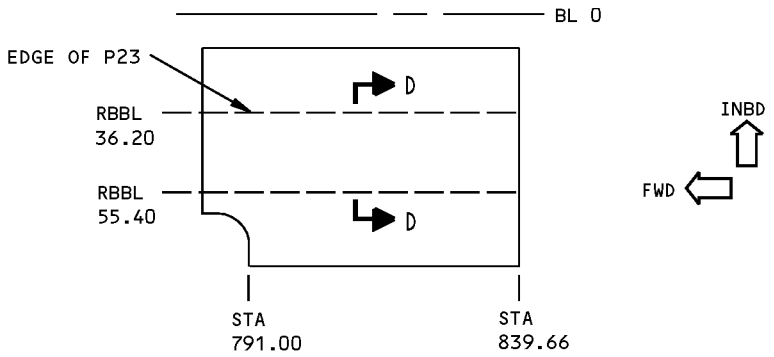
PLY TABLE [G] [H]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
5 DETAIL II	4	[F]	0° OR 90°
	12	[D]	0° OR 90°
	17	[D]	0° OR 90°
	23	[D]	0° OR 90°
	29	[E]	0° OR 90°

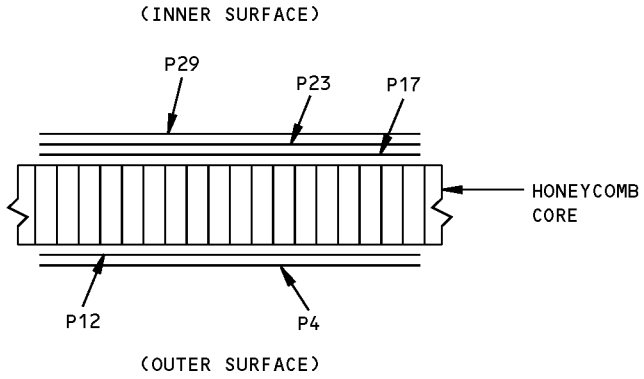
PLY TABLE [G] [I]

DETAIL VIII

Underwing Fairing Skin Identification
Figure 1 (Sheet 11 of 13)



ITEM NO. 6



SECTION D–D

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
6 DETAIL II	4	[B]	0° OR 90°
	12	[D]	0° OR 90°
	17	[D]	0° OR 90°
	23	[D]	0° OR 90°
	29	[E]	0° OR 90°

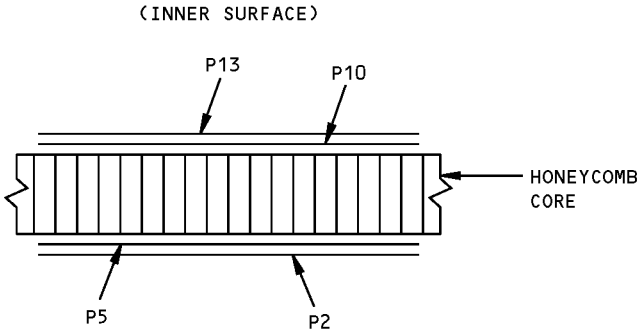
PLY TABLE [G] [H]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
6 DETAIL II	4	[F]	0° OR 90°
	12	[D]	0° OR 90°
	17	[D]	0° OR 90°
	23	[D]	0° OR 90°
	29	[E]	0° OR 90°

PLY TABLE [G] [I]

DETAIL IX

Underwing Fairing Skin Identification
Figure 1 (Sheet 12 of 13)



ITEM NO. 7

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
7 DETAIL II	2	[B]	0° OR 90°
	5	[D]	0° OR 90°
	10	[D]	0° OR 90°
	13	[E]	0° OR 90°

PLY TABLE [G] [H]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
7 DETAIL II	2	[F]	0° OR 90°
	5	[D]	0° OR 90°
	10	[D]	0° OR 90°
	13	[E]	0° OR 90°

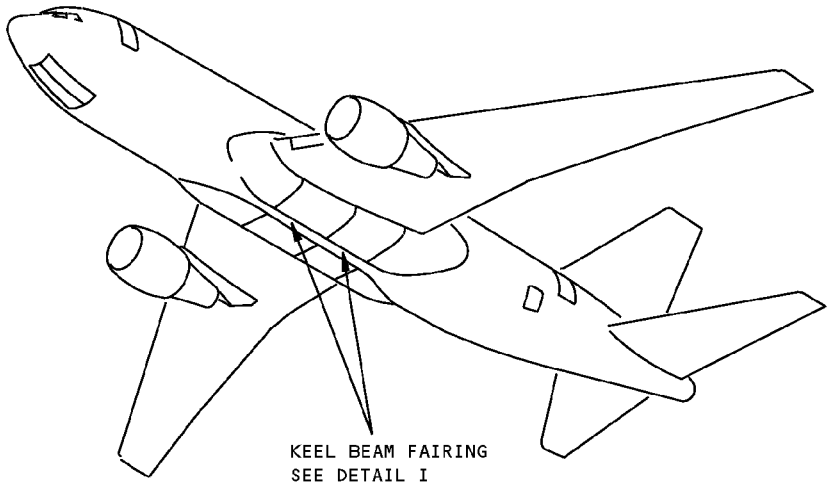
PLY TABLE [G] [I]

DETAIL X

Underwing Fairing Skin Identification
Figure 1 (Sheet 13 of 13)

IDENTIFICATION 3 - KEEL BEAM FAIRING SKIN

REF DWG
145T8627
145T8629



NOTES

[A] PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION

[B] MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS

[C] DIAGRAM OF PLY ORIENTATION, SEE PLY TABLE FOR PLY ORIENTATION AND MATERIAL

[D] ARAMID/EPOXY FABRIC PER BMS 8-219, STYLE 285, 250°F (121°C) CURE

[E] ARAMID/EPOXY FABRIC PER BMS 8-219, STYLE 120, 250°F (121°C) CURE

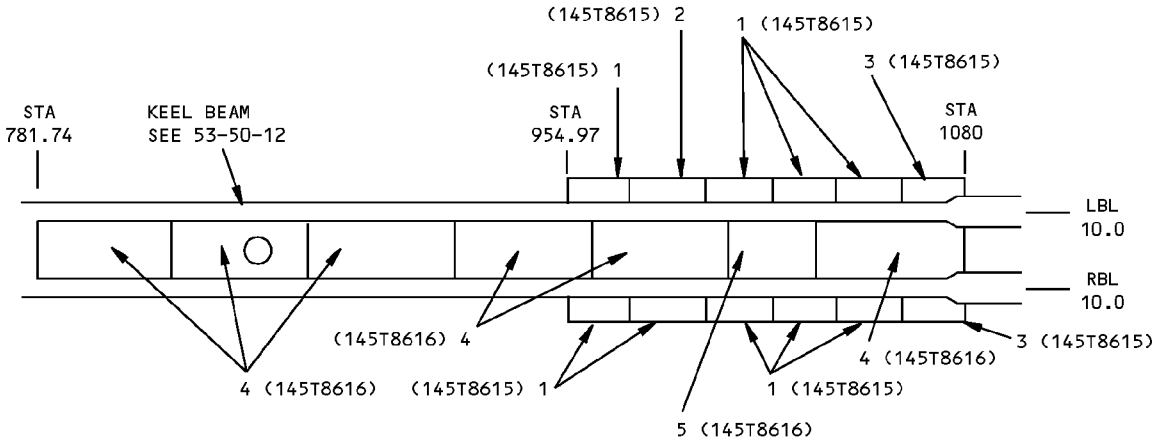
[F] GRAPHITE/EPOXY TAPE PER BMS 8-168, TYPE II, CLASS I, GRADE 145, 250°F (121°C) CURE

[G] FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 1581, CLASS III, GRADE I, 250°F (121°C) CURE

[H] FOR CUM LINE NUMBERS: 1 THRU 250

[I] FOR CUM LINE NUMBERS: 251 AND ON

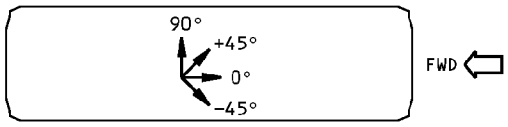
Keel Beam Fairing Skin Identification
Figure 1 (Sheet 1 of 5)



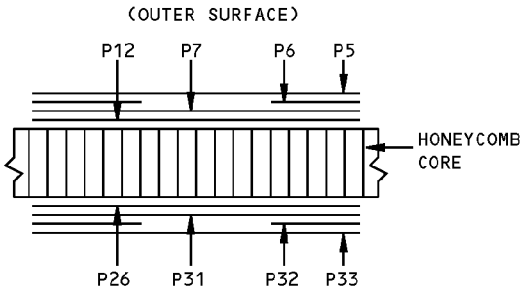
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	PANEL SKIN CORE		ARAMID/EPOXY HONEYCOMB SANDWICH SEE DETAIL II HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
2	PANEL SKIN CORE		ARAMID/EPOXY HONEYCOMB SANDWICH SEE DETAIL III HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
3	PANEL SKIN CORE		ARAMID/EPOXY HONEYCOMB SANDWICH SEE DETAIL IV HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
4	PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH SEE DETAIL V HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
5	PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HYBRID HONEYCOMB SANDWICH SEE DETAIL VI HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	

LIST OF MATERIALS FOR DETAIL I

Keel Beam Fairing Skin Identification
Figure 1 (Sheet 2 of 5)



VIEW ON PANEL [C]



SECTION THRU PANELS

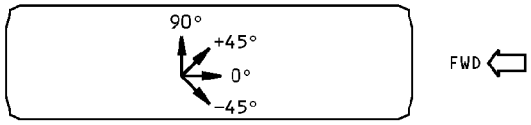
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
1	P5, P6, P7, P12 P26, P31, P32	[D]	0° OR 90°
	P33	[E]	0° OR 90°

PLY TABLE [B] [H]

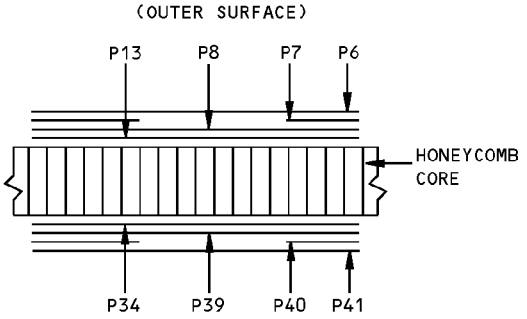
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
1	P5	[G]	0° OR 90°
	P6, P7, P12 P26, P31, P32	[D]	0° OR 90°
	P33	[E]	0° OR 90°

PLY TABLE [B] [I]

DETAIL II



VIEW ON PANEL [C]



SECTION THRU PANELS

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
2	P6, P7, P8 P13, P34 P39, P40	[D]	0° OR 90°
	P41	[E]	0° OR 90°

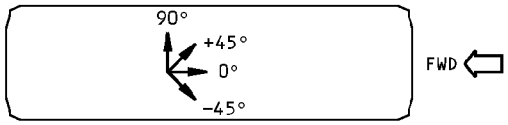
PLY TABLE [B] [H]

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
2	P6	[G]	0° OR 90°
	P7, P8, P13 P34, P39, P40	[D]	0° OR 90°
	P41	[E]	0° OR 90°

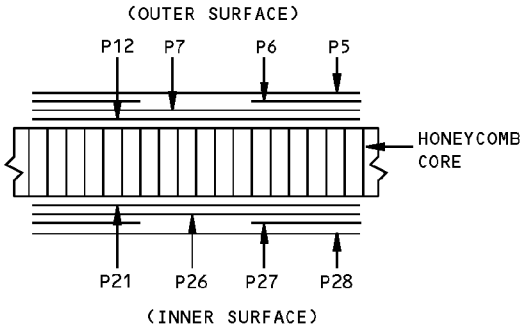
PLY TABLE [B] [I]

DETAIL III

Keel Beam Fairing Skin Identification
Figure 1 (Sheet 3 of 5)



VIEW ON PANEL [C]



SECTION THRU PANELS

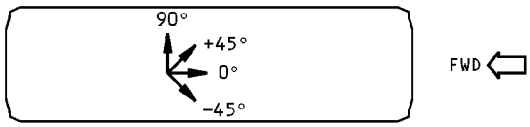
ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
3	P5, P6, P7 P12, P21 P26, P27	[D]	0° OR 90°
	P28	[E]	0° OR 90°

PLY TABLE [B] [H]

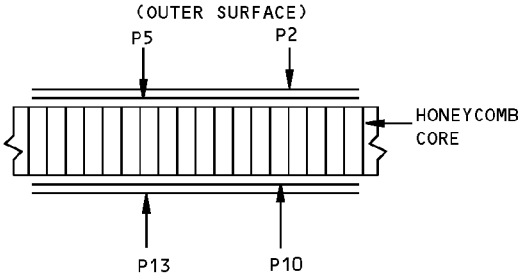
ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
3	P5	[G]	0° OR 90°
	P6, P7, P12 P21, P26, P27	[D]	0° OR 90°
	P28	[E]	0° OR 90°

PLY TABLE [B] [I]

DETAIL IV



VIEW ON PANEL [C]



SECTION THRU PANELS

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
4	P2	[D]	0° OR 90°
	P5, P10	[F]	90°
	P13	[E]	0° OR 90°

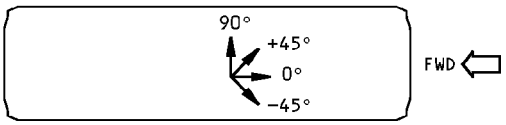
PLY TABLE [B] [H]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
4	P2	[G]	0° OR 90°
	P5, P10	[F]	90°
	P13	[E]	0° OR 90°

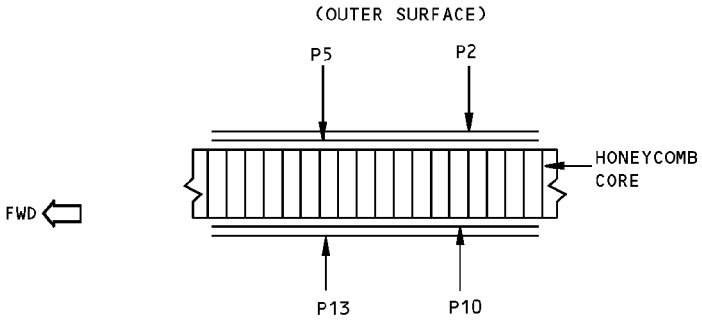
PLY TABLE [B] [I]

DETAIL V

Keel Beam Fairing Skin Identification
Figure 1 (Sheet 4 of 5)



VIEW ON PANEL [C]



SECTION THRU PANELS

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
5	P2	[D]	0° OR 90°
	P5, P10	[F]	90°
	P13	[D]	0° OR 90°

PLY TABLE [B] [H]

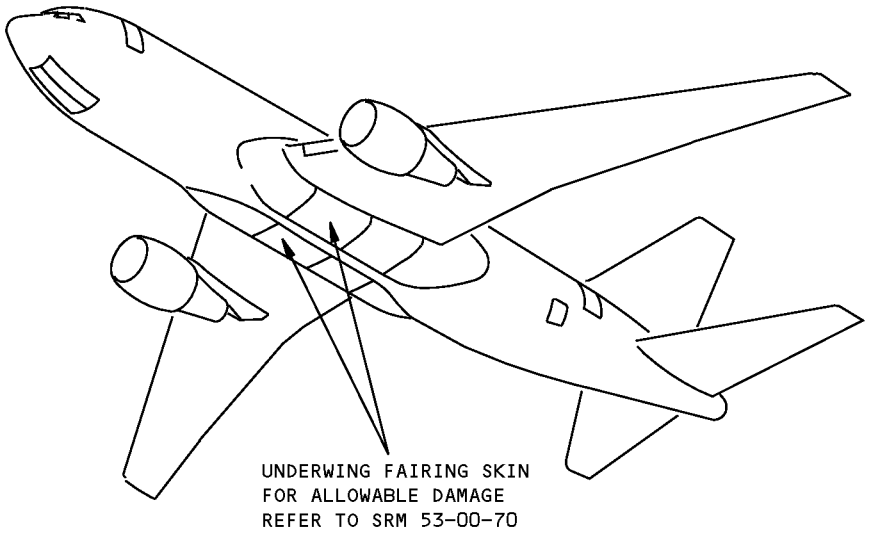
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
5	P2	[G]	0° OR 90°
	P5, P10	[F]	90°
	P13	[D]	0° OR 90°

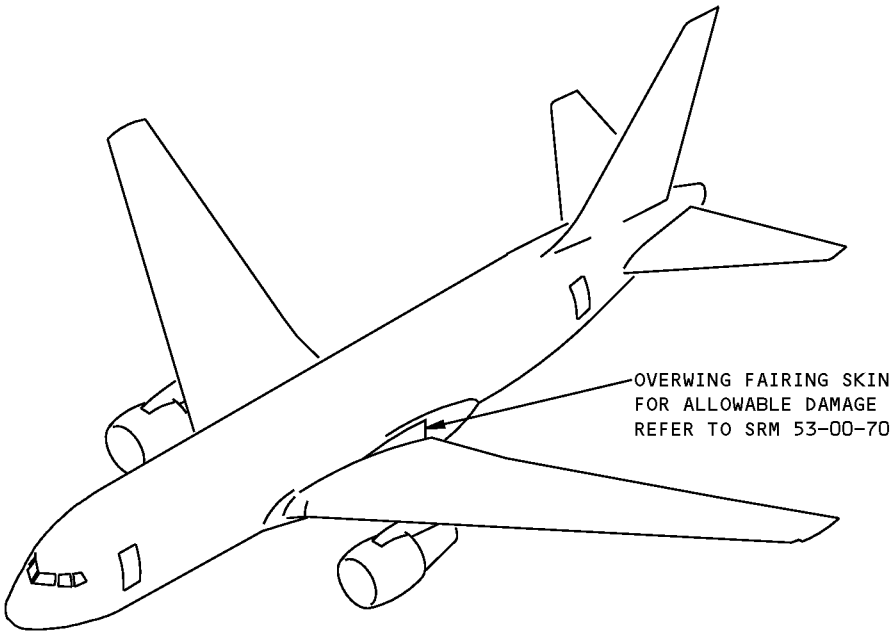
PLY TABLE [B] [I]

DETAIL VI

Keel Beam Fairing Skin Identification
Figure 1 (Sheet 5 of 5)

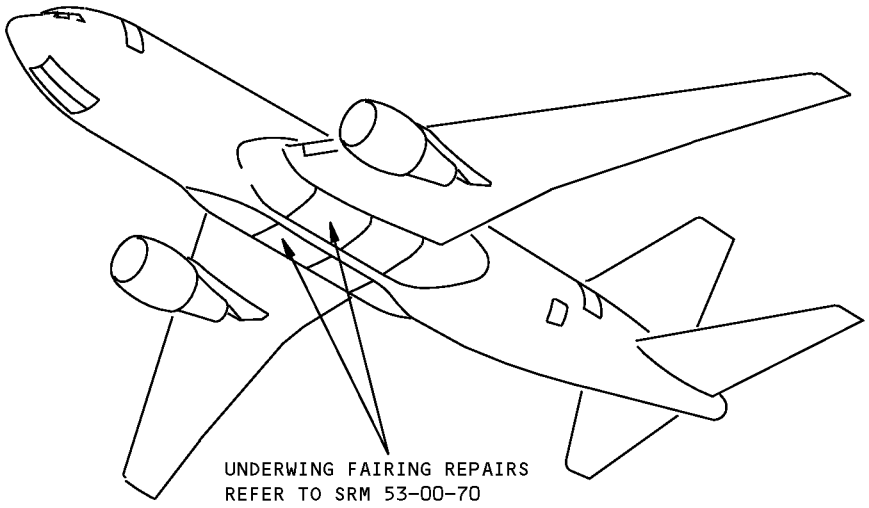
ALLOWABLE DAMAGE 1 - SECTION 45 - WING TO BODY FAIRING SKIN

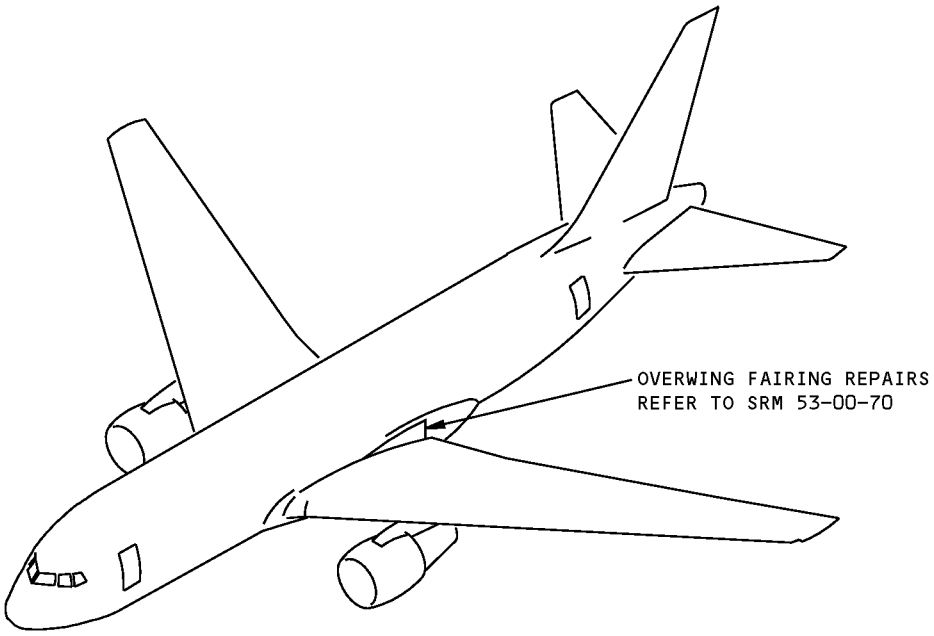




Section 45 - Wing to Body Fairing Skin Allowable Damage
Figure 101

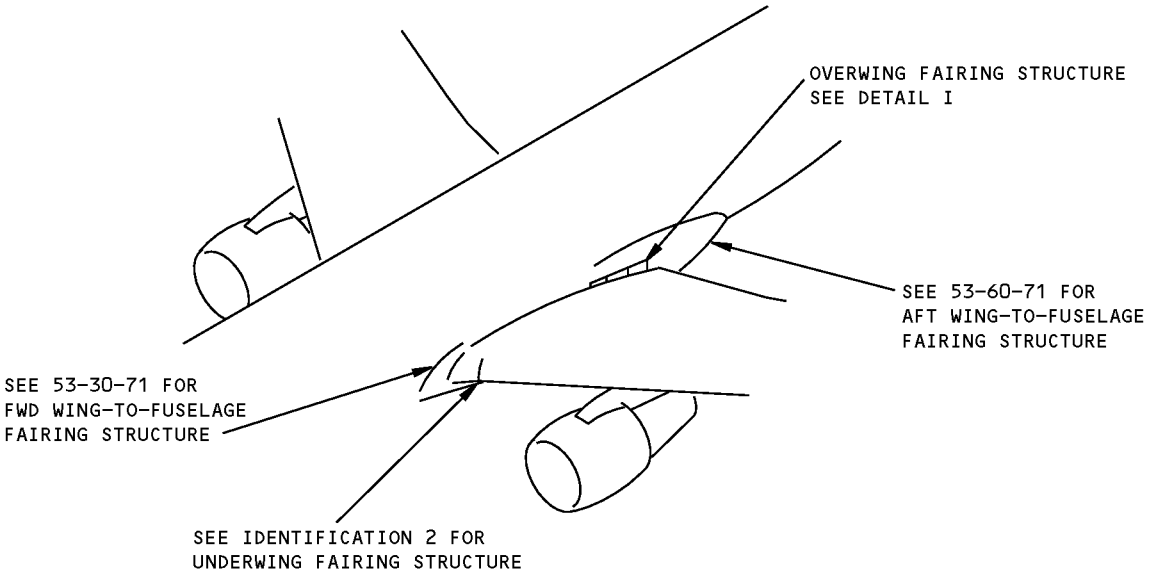
REPAIR GENERAL - SECTION 45 WING TO BODY FAIRING SKIN



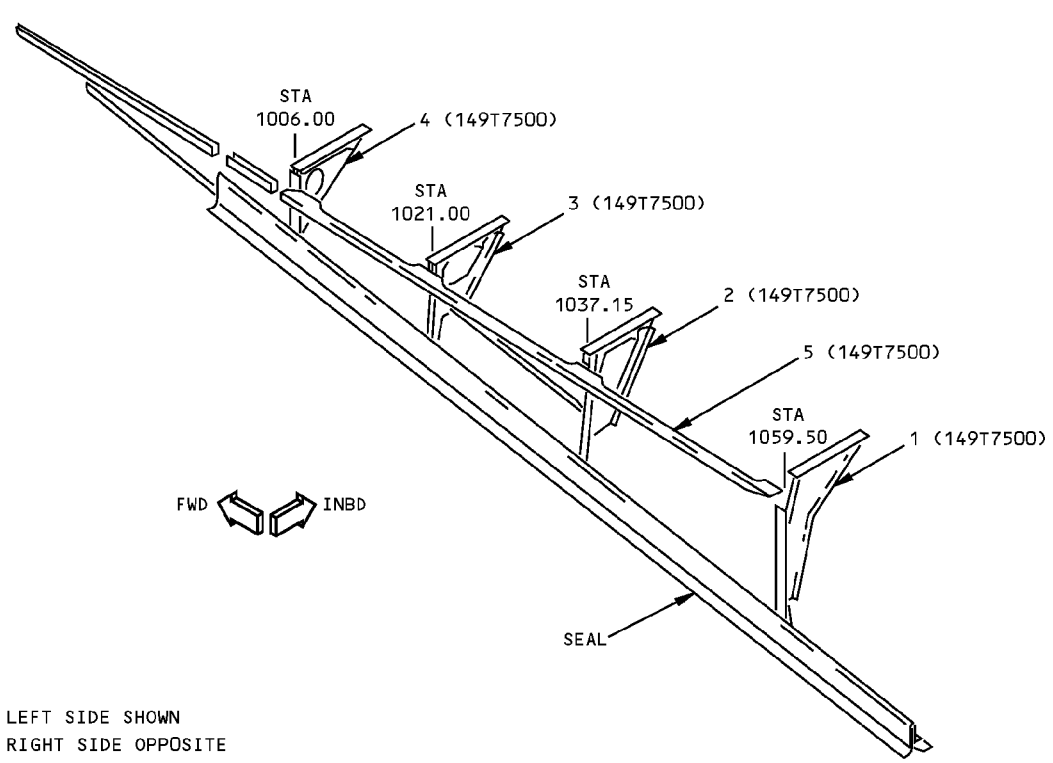


Section 45 - Wing to Body Fairing Skin Repairs
Figure 201

IDENTIFICATION 1 - OVERWING FAIRING STRUCTURE



Overwing Fairing Structure Identification
Figure 1 (Sheet 1 of 2)



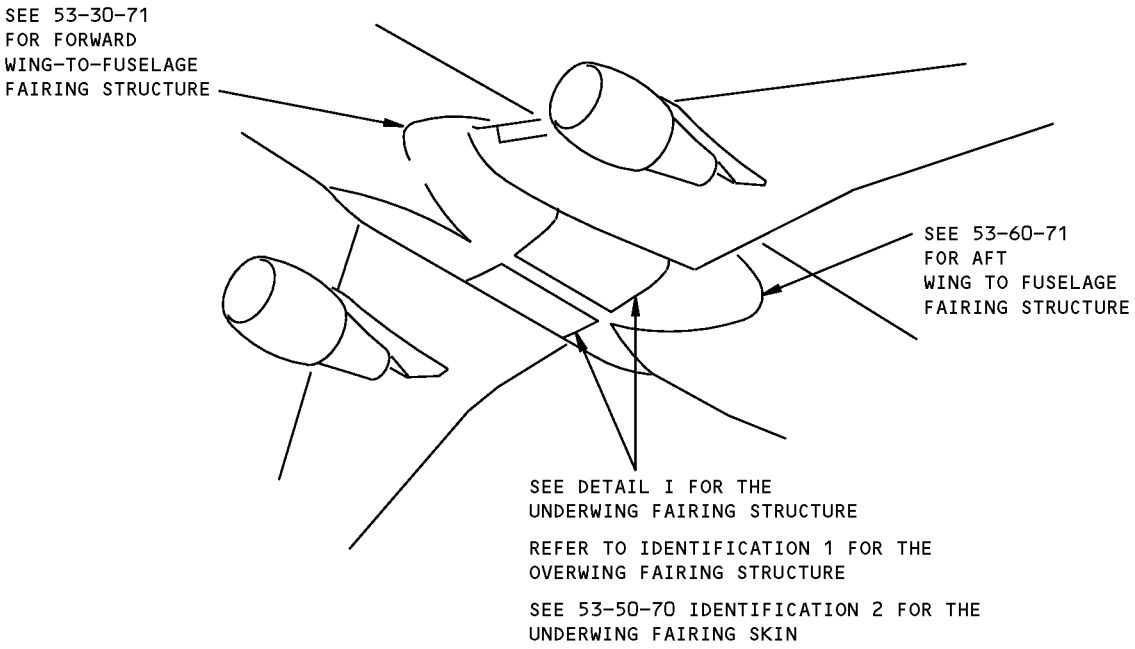
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSEMBLY			
	FRAME	0.063	CLAD 7075-T6	
	TEES		BAC1505-101100 7075-T6	
2	FRAME ASSEMBLY			
	FRAME	0.100	CLAD 7075-T6	
	TEE		BAC1505-101100 7075-T6	
3	FRAME ASSEMBLY			
	FRAME	0.100	CLAD 7075-T6	
	TEE		AND10136-3005 7075-T6	
4	FRAME ASSEMBLY			
	FRAME	0.040	CLAD 7075-T6	
	TEES		BAC1505-101100 7075-T6	
5	ANGLE		BAC1503-100643 7075-T6	

LIST OF MATERIALS FOR DETAIL I

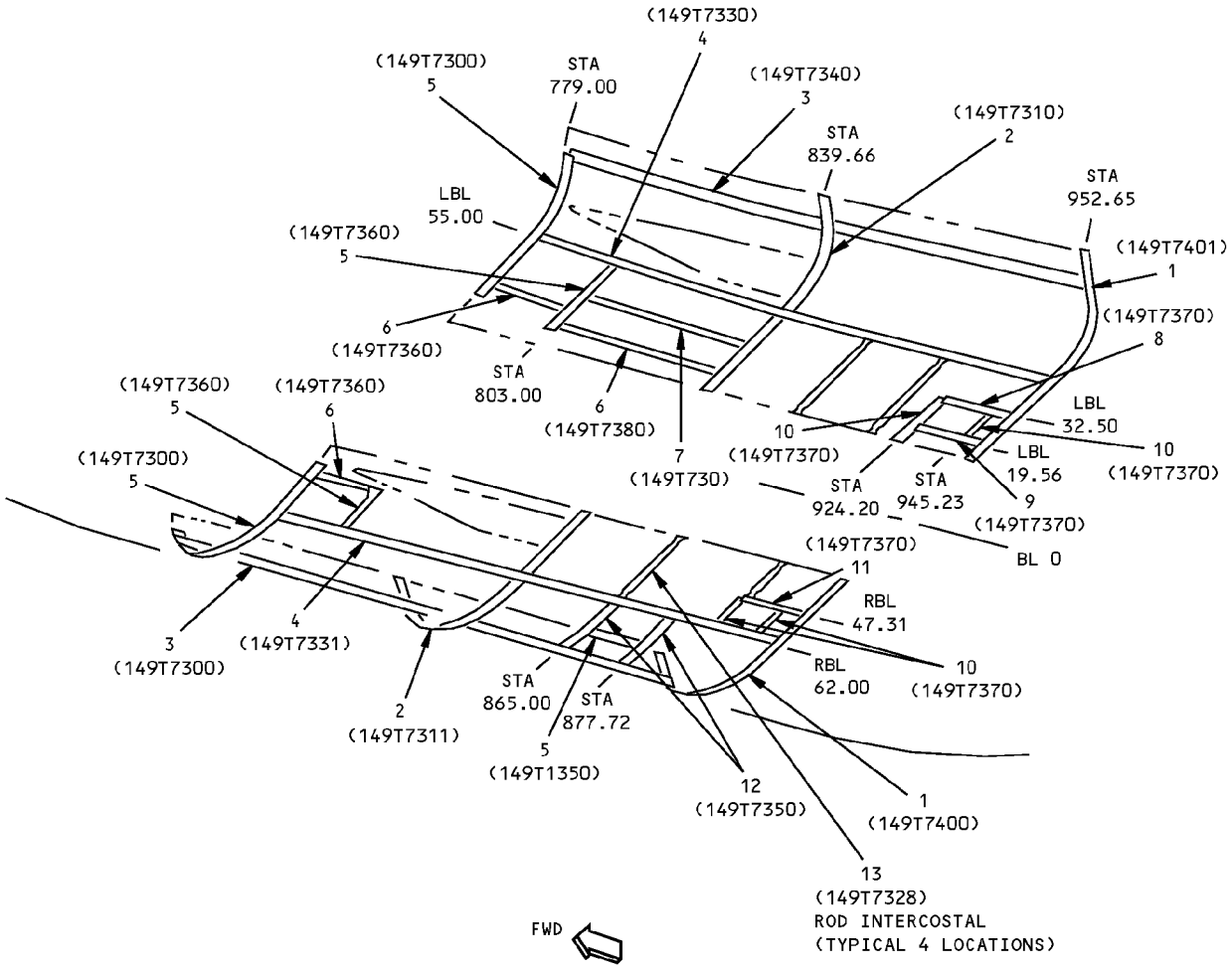
Overwing Fairing Structure Identification
Figure 1 (Sheet 2 of 2)

IDENTIFICATION 2 - UNDERWING FAIRING STRUCTURE



Underwing Fairing Structure Identification
Figure 1 (Sheet 1 of 3)

REFERENCE DRAWING
149T7200



DETAIL I

LIST OF MATL

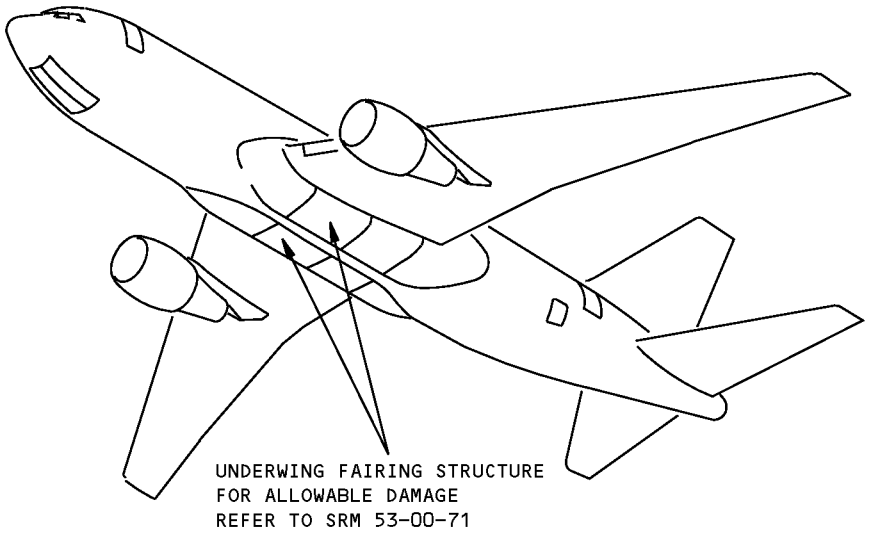
Underwing Fairing Structure Identification
Figure 1 (Sheet 2 of 3)

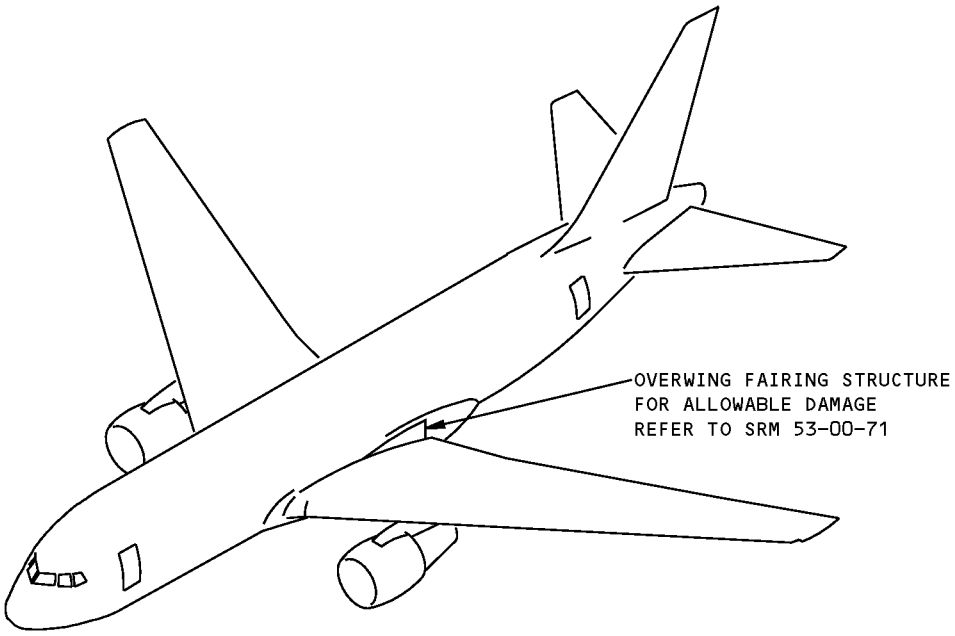
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	CHORD		BAC1505-101162 2024-T42	
2	FRAME			
	INBOARD		BAC1506-3222 2024-T42	
	CENTER		BAC1506-3214 7075-T6	
	OUTBOARD	0.071	CLAD 7075-T6	
3	BEAM	0.050	CLAD 7075-T6	
4	BEAM			
	FORWARD		BAC1506-3224 7075-T6	
	AFT		BAC1506-3225 7075-T6511	
5	FRAME		BAC1506-3226 2024-T42	
6	FRAME		BAC1506-3223 2024-T42	
7	FRAME		BAC1506-3225 7075-T6511	
8	FRAME		BAC1506-3250 2024-T3511	
9	FRAME		BAC1506-3251 2024-T3511	
10	FRAME		BAC1506-3280 2024-T42	
11	FRAME		BAC1506-3252 2024-T3511	
12	ANGLE	0.063	CLAD 7075-T6	
13	TUBE (INTERCOSTAL)		1.25 O/D TUBE X 0.049 WALL THICKNESS 2024-T42	

LIST OF MATERIALS FOR DETAIL I

Underwing Fairing Structure Identification
Figure 1 (Sheet 3 of 3)

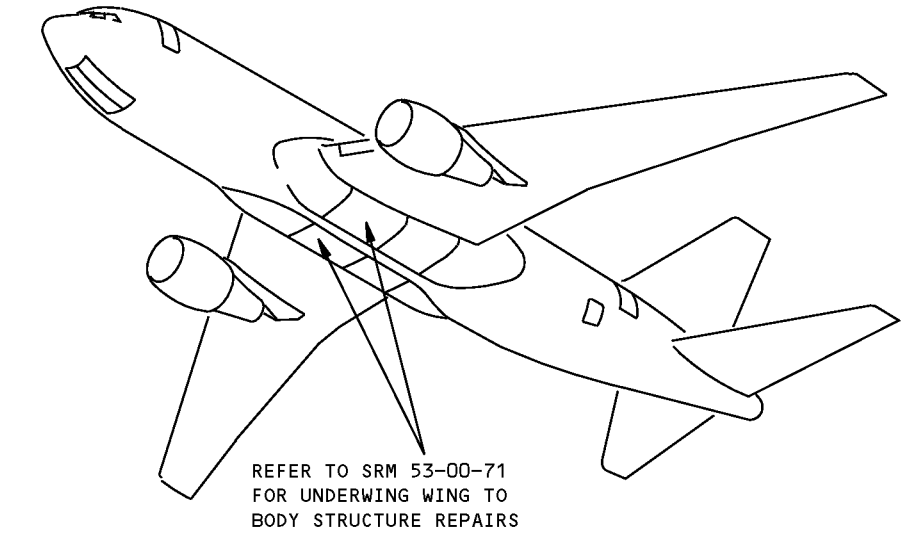
ALLOWABLE DAMAGE 1 - SECTION 45 - WING TO BODY FAIRING STRUCTURE

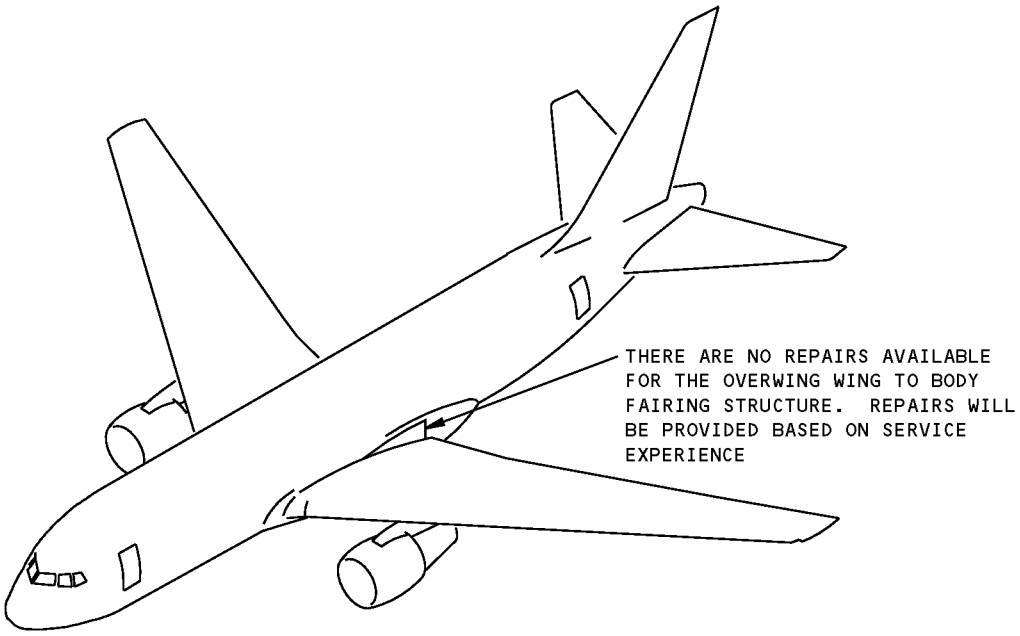




Section 45 - Wing to Body Fairing Structure Allowable Damage
Figure 101

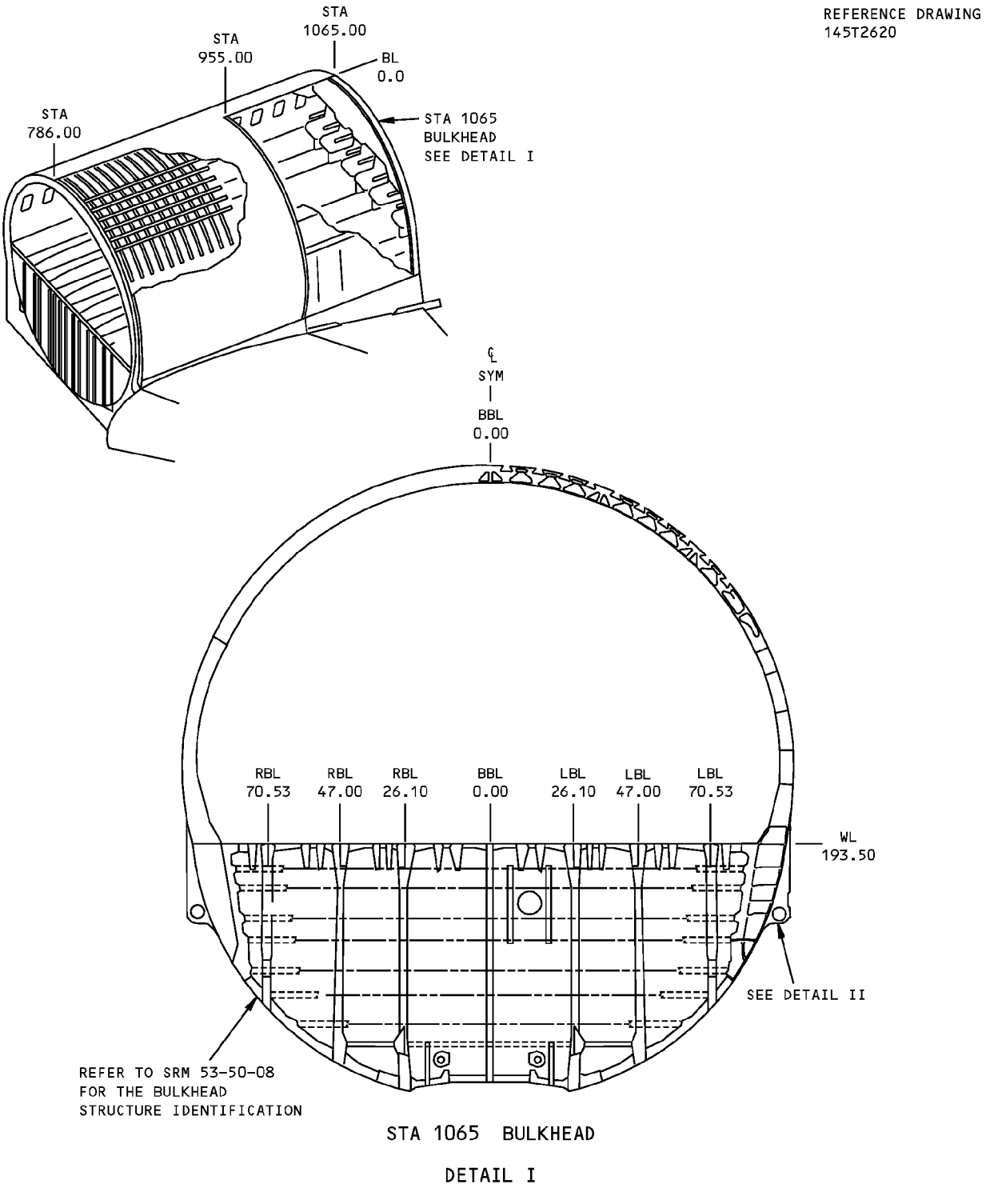
REPAIR GENERAL - SECTION 45 WING TO BODY FAIRING STRUCTURE



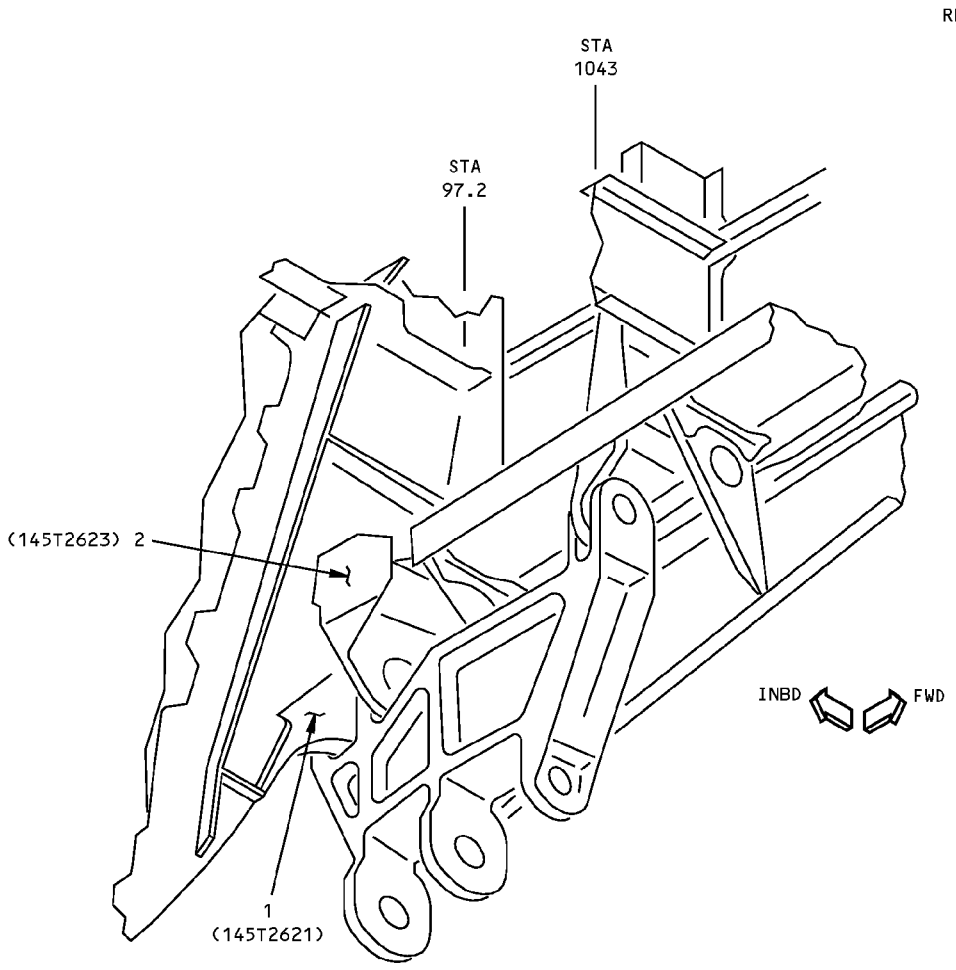


Section 45 Wing to Body Fairing Structure Repairs
Figure 201

IDENTIFICATION 1 - STA 1065 BULKHEAD ATTACHMENT FITTING



Sta 1065 Bulkhead Attachment Fitting Identification
Figure 1 (Sheet 1 of 2)



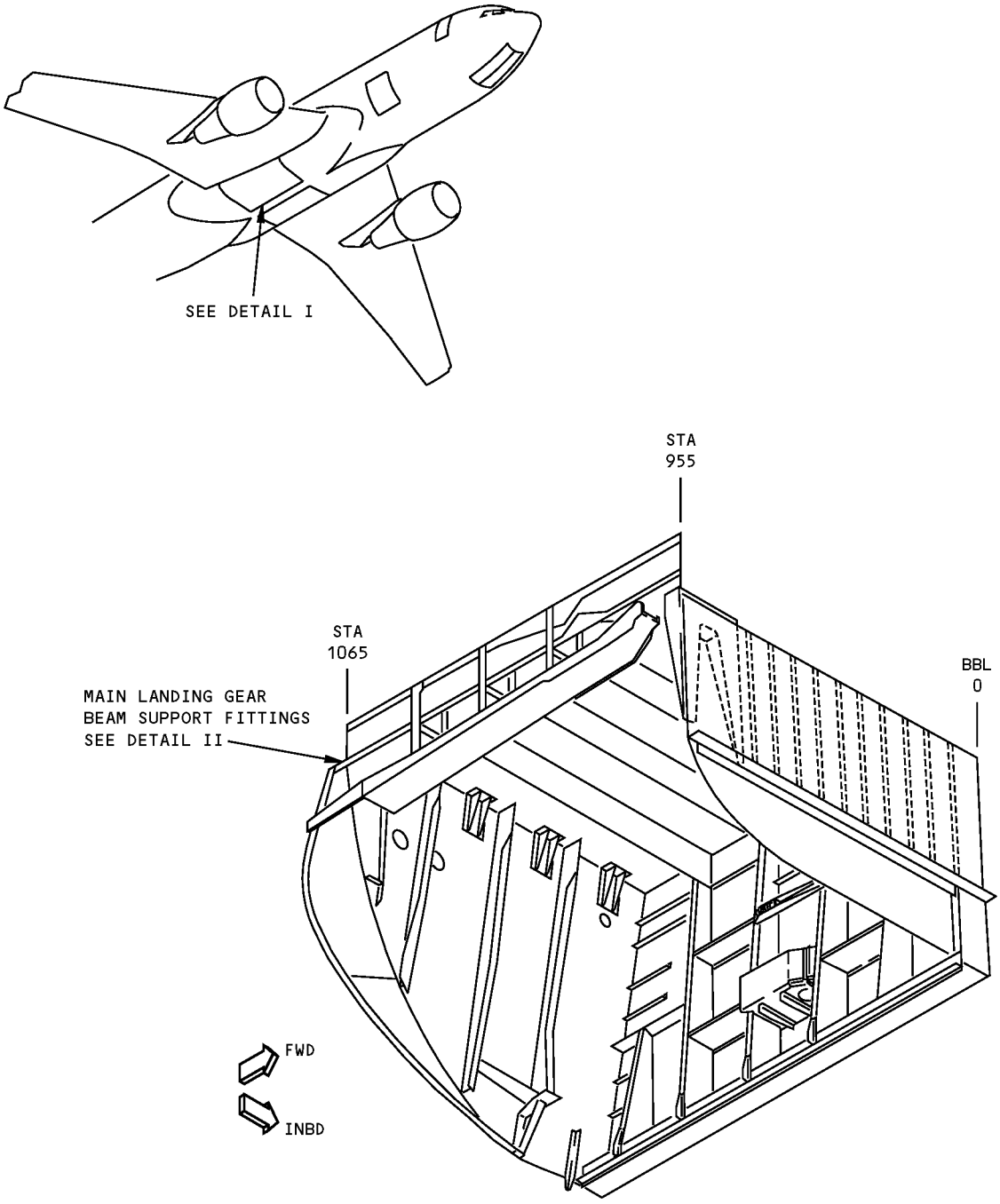
LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SIDE FITTING		7175-T74 DIE FORGING	
2	FAIL SAFE FITTING		7075-T73 DIE FORGING	

LIST OF MATERIALS FOR DETAIL II

Sta 1065 Bulkhead Attachment Fitting Identification
Figure 1 (Sheet 2 of 2)

ALLOWABLE DAMAGE 1 - SECTION 45 - MAIN LANDING GEAR BEAM SUPPORT FITTINGS

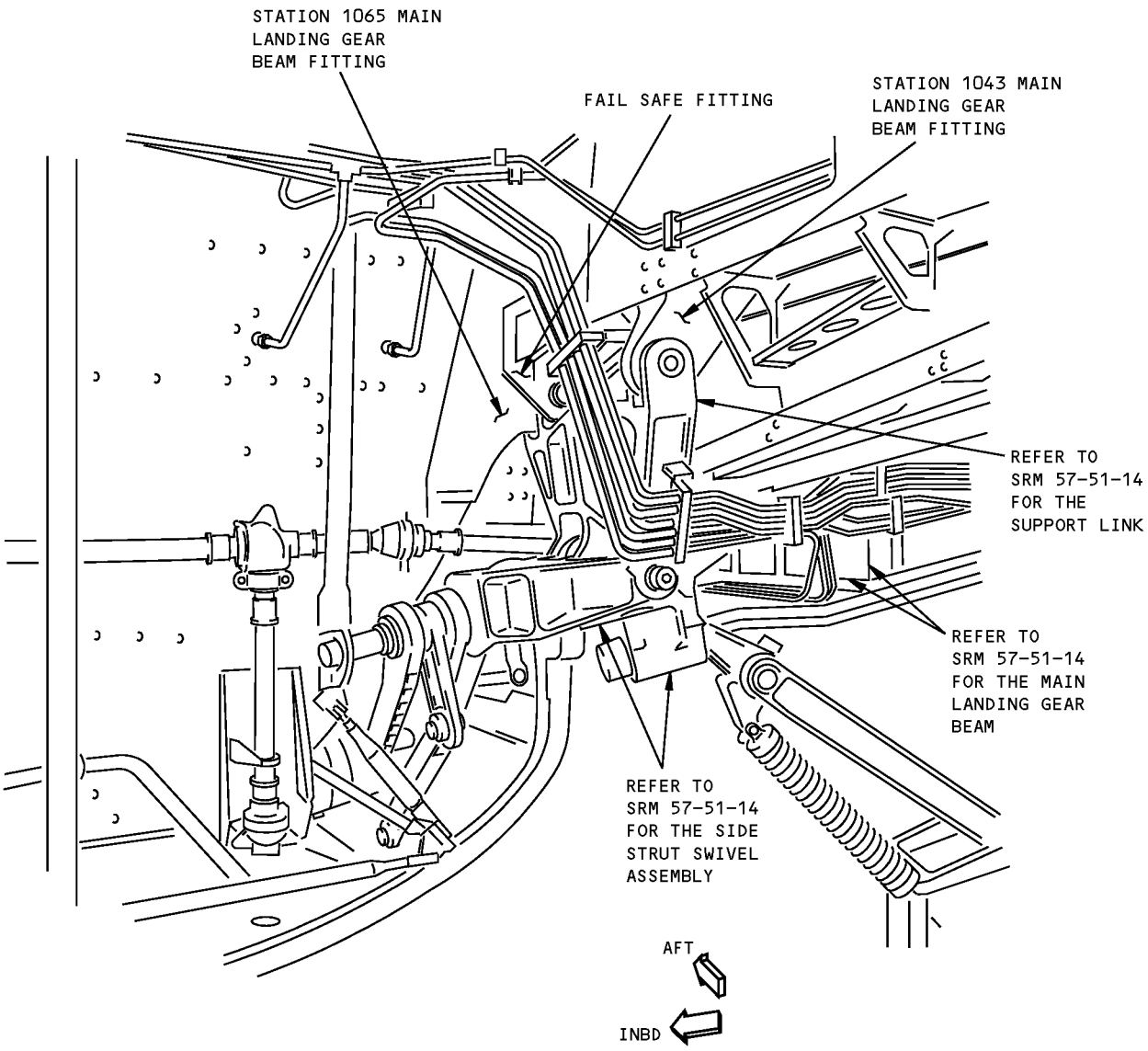


LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE

MAIN LANDING GEAR WHEEL WELL

DETAIL I

Section 45 - Main Landing Gear Beam Support Fittings Allowable Damage
Figure 101 (Sheet 1 of 9)



LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE

MAIN LANDING GEAR WHEEL WELL

DETAIL II

Section 45 - Main Landing Gear Beam Support Fittings Allowable Damage
Figure 101 (Sheet 2 of 9)

DESCRIPTION	DAMAGE ON THE FITTING SURFACES AND EDGES	DAMAGE ON THE LUG FACES, EDGES AND IN THE BORE	DENTS ON THE LUG SURFACES	HOLES AND PUNCTURES ON THE FITTING SURFACES
STATION 1065 MAIN LANDING GEAR BEAM FITTING [K]	[A]	[B] [C]	NOT PERMITTED	NOT PERMITTED
STATION 1043 MAIN LANDING GEAR BEAM FITTING [L]	[A]	[B] [D]	NOT PERMITTED	NOT PERMITTED
FAIL SAFE FITTING [M]	[A]	[B] [E]	NOT PERMITTED	NOT PERMITTED

NOTES

- DAMAGE
  - THAT OCCURS TO A PRINCIPAL STRUCTURAL ELEMENT (PSE) AS DEFINED IN SRM 51-00-04, AND
  - THAT IS WITHIN THE ALLOWABLE DAMAGE LIMITS OF THE BOEING SRM, DOES NOT HAVE AN EFFECT ON THE DAMAGE TOLERANCE PROPERTIES OF THE PSE. THEREFORE, INITIAL INSPECTION PROGRAMS REMAIN EFFECTIVE.
- REFER TO SRM 53-50-90, REPAIR 2 FOR INSTRUCTIONS TO REMOVE AND INSTALL THE COMPONENTS NECESSARY TO GET ACCESS TO THE FITTINGS AND FOR INSTRUCTIONS TO REMOVE AND INSTALL THE BEARINGS.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- USE MAGNETIC PARTICLE OR PENETRANT INSPECTION PROCEDURES TO MAKE SURE ALL OF THE DAMAGE HAS BEEN REMOVED. REFER TO SOPM 20-20-01 FOR MAGNETIC PARTICLE INSPECTION PROCEDURES OR SOPM 20-20-02 FOR PENETRANT INSPECTION PROCEDURES.
- SHOTPEEN THE AREAS OF THE FITTING WHERE THE DAMAGE HAS BEEN REMOVED. USE 230-550 SIZE SHOT, INTENSITY 0.012A, AND COVERAGE 2.0. REFER TO SOPM 20-10-03, D6-51702 FOR PEENING PROCEDURES.
- APPLY A CHEMICAL CONVERSION COATING TO THE BARE SURFACES OF THE FITTING. REFER TO SRM 51-20-01. APPLY ONE LAYER OF BMS 10-11, TYPE I PRIMER. REFER TO SOPM 20-41-02 FOR APPLICATION OF FINISHES.
- ON SURFACES NOT IN THE BORE, APPLY A LAYER OF BMS 10-11, TYPE 2, COLOR 702 WHITE GLOSS. REFER TO SOPM 20-41-02.
- IF THE DAMAGE MAKES IT NECESSARY TO INCREASE THE DIAMETER OF THE BORE, REFER TO REPAIR 2 (BS 1065) AND REPAIR 3 (BS 1043) FOR REPAIR INSTRUCTIONS AND OVERSIZE LIMITS.

[A] REMOVE EDGE DAMAGE THAT IS NOT ON A LUG AS SPECIFIED IN DETAILS III AND IV. REMOVE SURFACE DAMAGE THAT IS NOT ON A LUG AS SPECIFIED IN DETAILS V AND VI.

[B] REMOVE EDGE AND SURFACE DAMAGE ON A LUG AS SPECIFIED IN DETAIL VII.

[C] REMOVE DAMAGE FROM THE BORE AND LUG FACE AS SPECIFIED IN DETAIL VIII.

[D] REMOVE DAMAGE FROM THE BORE AND LUG FACE AS SPECIFIED IN DETAIL IX.

[E] REMOVE DAMAGE FROM THE BORE AS SPECIFIED IN DETAIL X.

[F] CORROSION OR ABRASIONS ON THE FACE OF THE LUG UNDER THE NUT OR THE FLANGE OF THE BEARING MUST BE REMOVED. WHEN YOU REMOVE THE DAMAGE, MAKE SURE THE SPOTFACE IS PERPENDICULAR TO THE BORE. MAKE A 2024-T3 ALUMINUM WASHER TO FILL THE SPOTFACE. MAKE THE WASHER THE SAME THICKNESS AS THE DEPTH OF THE SPOTFACE. KEEP THE CENTER OF THE HOLE IN THE WASHER ALIGNED WITH THE CENTER OF THE BORE WITHIN ±0.005 INCH. THE INSIDE DIAMETER OF THE WASHER MUST BE THE SAME SIZE OR A SMALL AMOUNT LARGER IN DIAMETER THAN THE DIAMETER OF THE BORE. MAKE THE OUTSIDE DIAMETER OF THE WASHER SMALLER THAN THE RADIUS AT THE OUTER EDGE OF THE SPOTFACE. INTERFERENCE BETWEEN THE WASHER AND THE RADIUS IS NOT PERMITTED.

[G] THE MAXIMUM LOSS OF SURFACE AREA ALONG THE EDGE OF THE BORE IS 0.80 SQUARE INCH (5.2 SQUARE cm).

[H] THE MAXIMUM LOSS OF SURFACE AREA IN THE BORE (DOES NOT INCLUDE THE EDGE) IS 1.10 SQUARE INCHES (7.1 SQUARE cm).

[I] THE TOTAL MAXIMUM LOSS OF SURFACE AREA ALONG THE EDGE OF THE BORE AND IN THE BORE IS 1.10 SQUARE INCHES (7.1 SQUARE cm).

[J] FILL THE VOID IN THE BORE SURFACE WITH GREASE WHEN THE BEARING IS INSTALLED.

Section 45 - Main Landing Gear Beam Support Fittings Allowable Damage
Figure 101 (Sheet 3 of 9)

NOTES (CONTINUED)

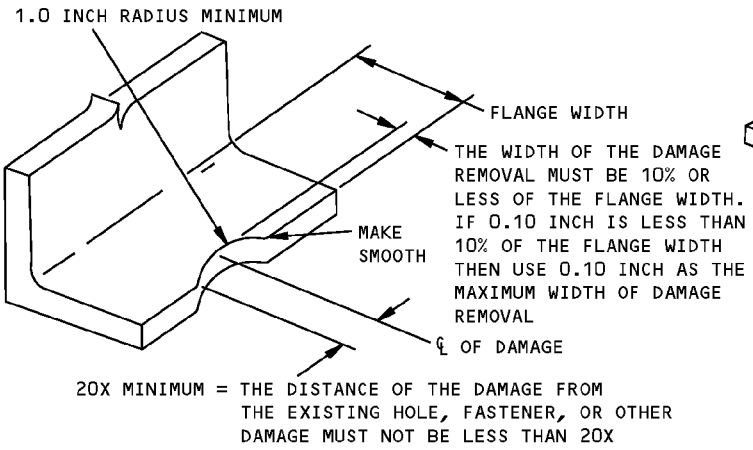
K. FOR THE STATION 1065 MAIN LANDING GEAR BEAM SUPPORT FITTING, THE LUG IS SPECIFIED AS THE AREA WITHIN A 4.0 INCH RADIUS FROM THE CENTER OF THE BORE. ALL OTHER AREAS ARE REFERRED TO AS THE FITTING SURFACES AND EDGES.

L. FOR THE STATION 1043 MAIN LANDING GEAR BEAM SUPPORT FITTING, THE LUG IS SPECIFIED AS THE AREA WITHIN A 2.6 INCH RADIUS FROM THE CENTER OF THE BORE. ALL OTHER AREAS ARE REFERRED TO AS THE FITTING SURFACES AND EDGES.

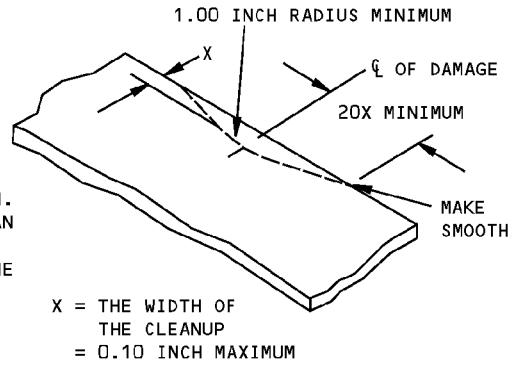
M. FOR THE FAIL SAFE FITTING, THE LUG IS SPECIFIED AS THE AREA WITHIN A 2.7 INCH RADIUS FROM THE CENTER OF THE BORE. ALL OTHER AREAS ARE REFERRED TO AS THE FITTING SURFACES AND EDGES.

N. MAKE SURE ORIGINAL SPOTFACE DIMENSIONS ARE MAINTAINED AS GIVEN IN DRAWING 145T2621, IF THIS SIDE OF THE LUG IS REWORKED AS GIVEN IN F.

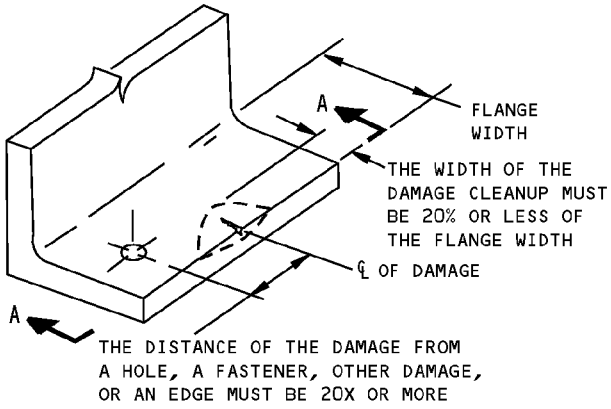
Section 45 - Main Landing Gear Beam Support Fittings Allowable Damage
Figure 101 (Sheet 4 of 9)



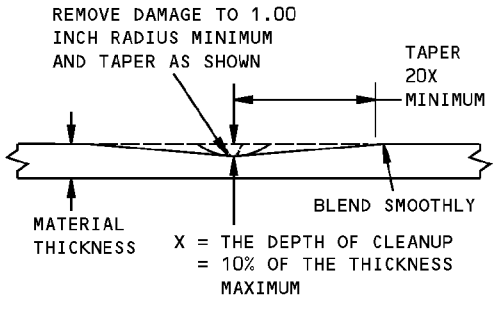
REMOVAL OF DAMAGE ON AN EDGE
DETAIL III



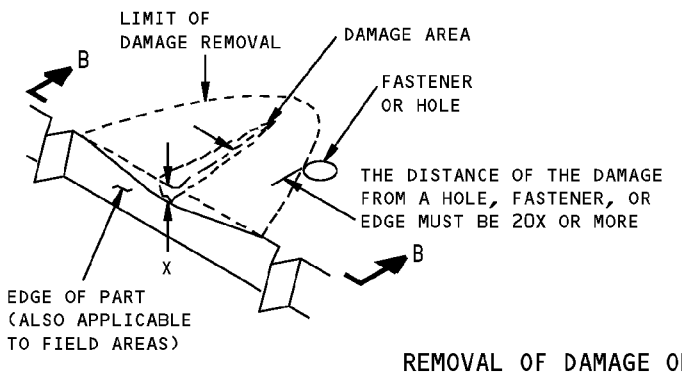
REMOVAL OF DAMAGE ON AN EDGE
DETAIL IV



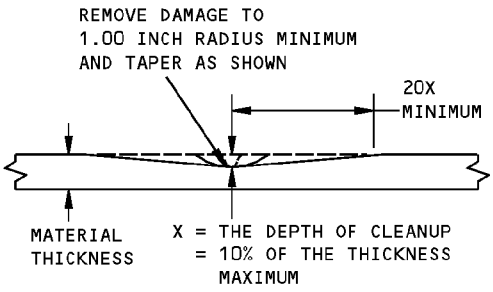
REMOVAL OF DAMAGE ON A SURFACE
DETAIL V



SECTION A–A

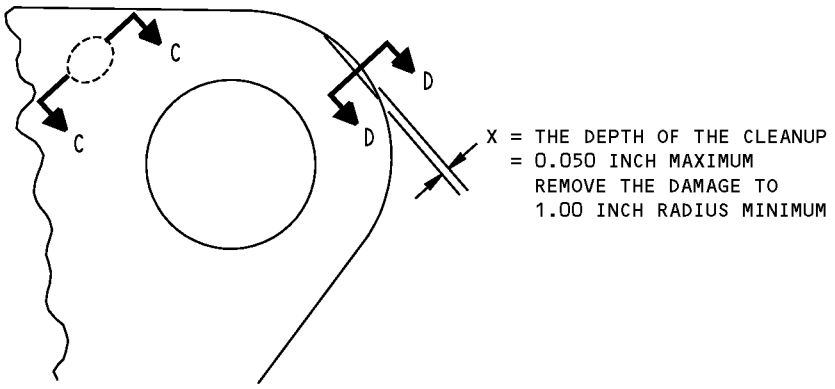


REMOVAL OF DAMAGE ON A SURFACE
DETAIL VI



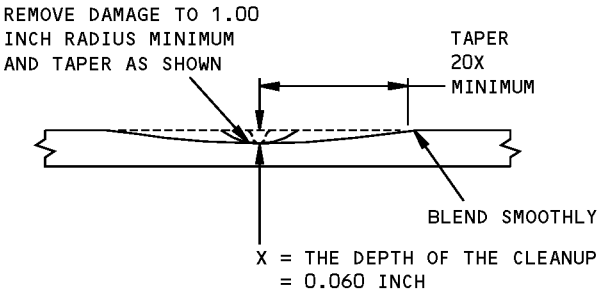
SECTION B–B

Section 45 - Main Landing Gear Beam Support Fittings Allowable Damage
Figure 101 (Sheet 5 of 9)

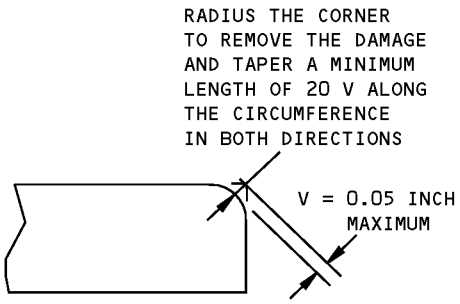


REMOVAL OF DAMAGE ON A LUG EDGE AND SURFACE

DETAIL VII

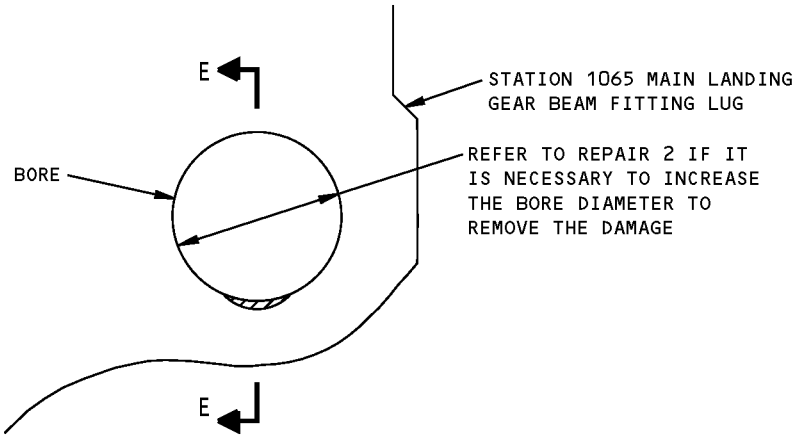


SECTION C–C

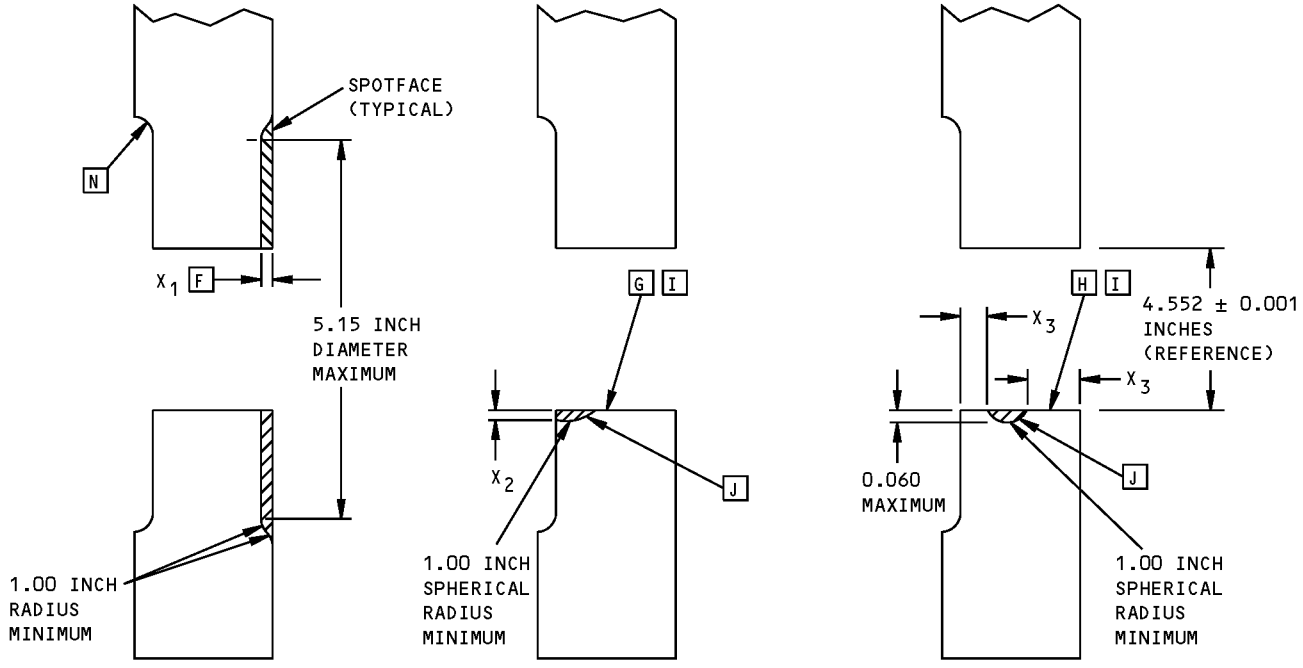


SECTION D–D
(ROTATED)

Section 45 - Main Landing Gear Beam Support Fittings Allowable Damage
Figure 101 (Sheet 6 of 9)



REMOVAL OF DAMAGE FROM STATION 1065 MAIN LANDING GEAR BEAM SUPPORT FITTING LUG
DETAIL VIII



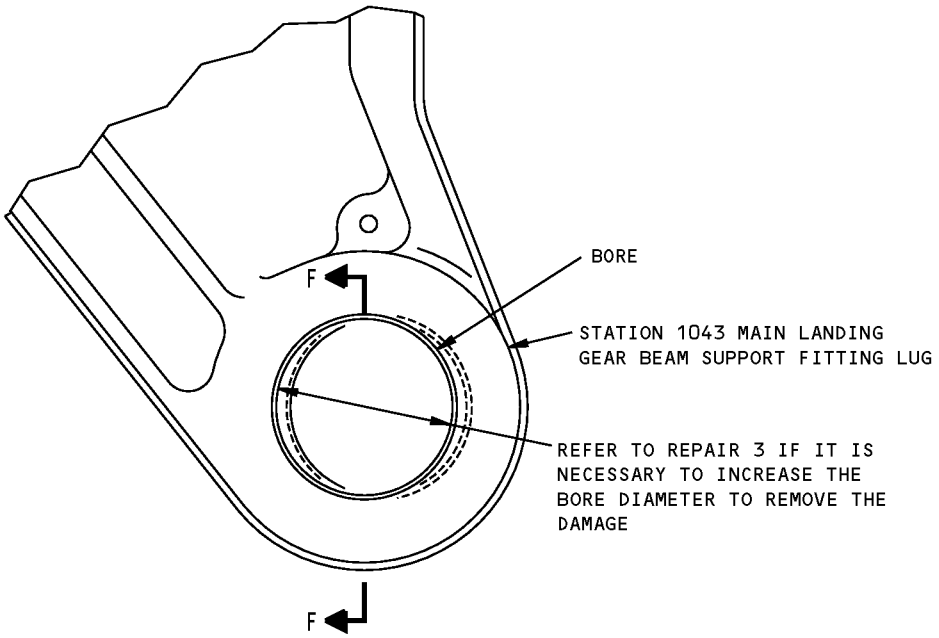
X_1 = 0.060 INCH MAXIMUM
DAMAGE ON LUG FACE
SECTION E-E

X_2 = 0.030 INCH MAXIMUM
DAMAGE ON BORE EDGE
SECTION E-E

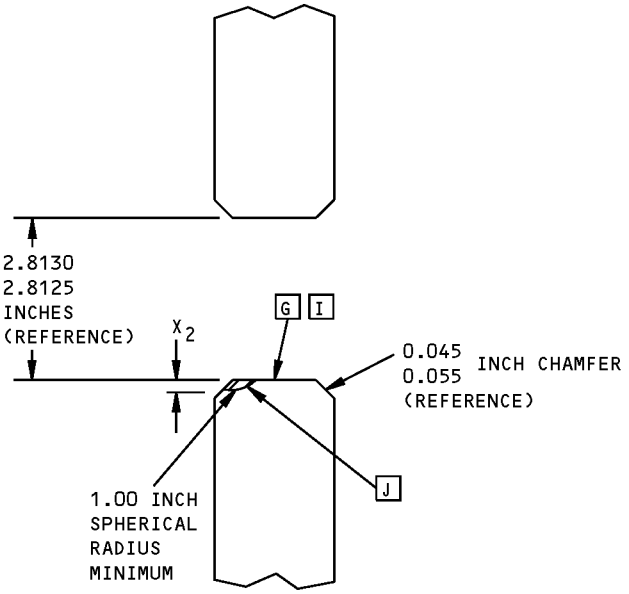
X_3 = 0.30 INCH MINIMUM
DAMAGE ON BORE SURFACE
SECTION E-E

SHADED AREA SHOWS WHERE DAMAGE HAS BEEN REMOVED

Section 45 - Main Landing Gear Beam Support Fittings Allowable Damage
Figure 101 (Sheet 7 of 9)

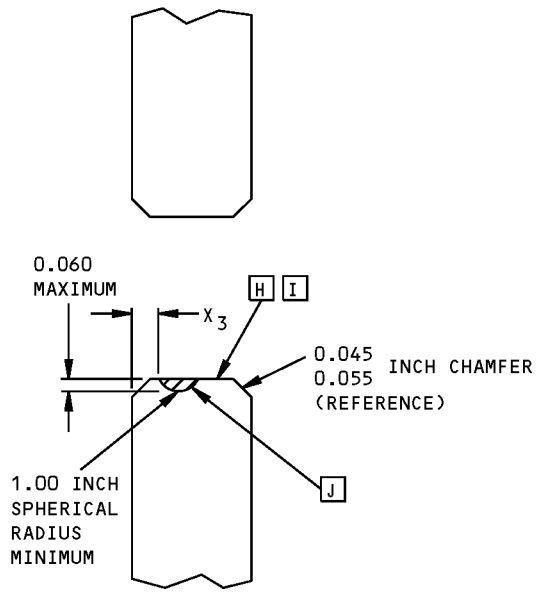


REMOVAL OF DAMAGE FROM STATION 1043 MAIN LANDING GEAR BEAM SUPPORT FITTING LUG
DETAIL IX



X_2 = 0.030 INCH MAXIMIM

DAMAGE ON BORE EDGE
SECTION F-F

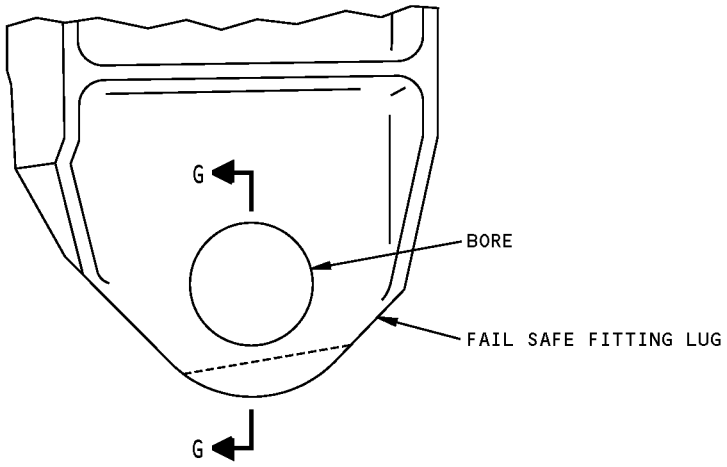


X_3 = 0.30 INCH MINIMUM

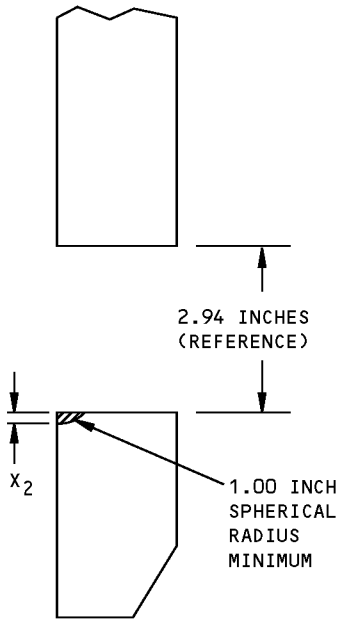
DAMAGE ON BORE SURFACE
SECTION F-F

SHADED AREA SHOWS WHERE DAMAGE HAS BEEN REMOVED

Section 45 - Main Landing Gear Beam Support Fittings Allowable Damage
Figure 101 (Sheet 8 of 9)

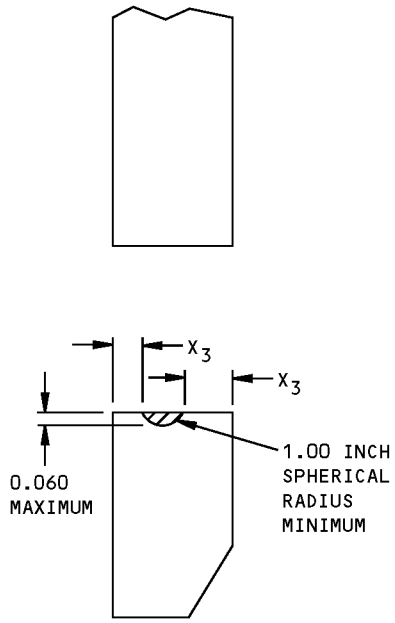


REMOVAL OF DAMAGE FROM THE FAIL SAFE FITTING LUG
DETAIL X



X_2 = 0.030 INCH MAXIMIM

DAMAGE ON BORE EDGE
SECTION G-G



X_3 = 0.30 INCH MINIMUM

DAMAGE ON BORE SURFACE
SECTION G-G

Section 45 - Main Landing Gear Beam Support Fittings Allowable Damage
Figure 101 (Sheet 9 of 9)

REPAIR GENERAL - SERVICE BULLETIN REPAIR CHART

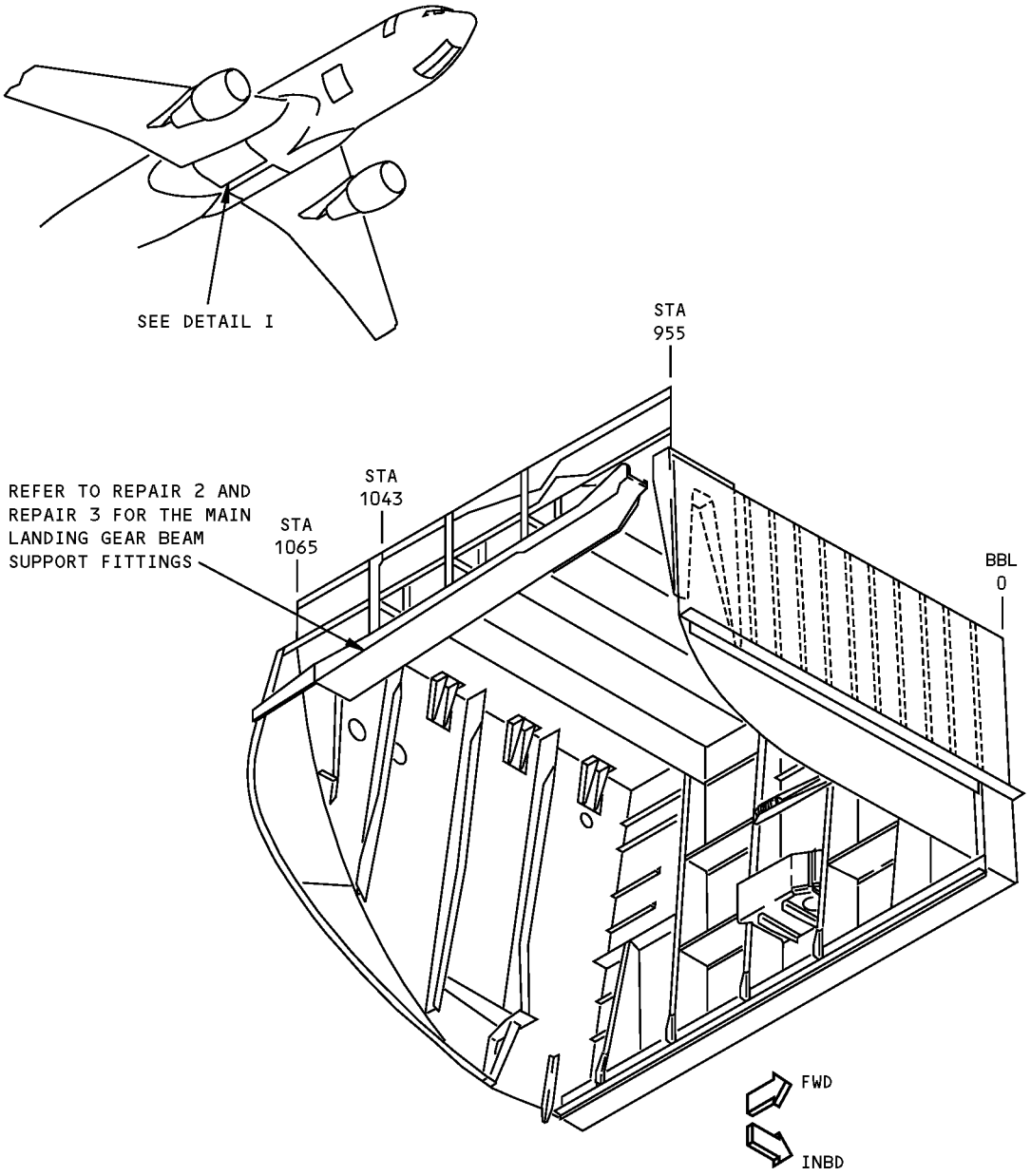
SERVICE BULLETIN REPAIRS

The following Service Bulletins contain repairs which are available for use where specific damage has been encountered. Usually, the Service Bulletin also covers preventive modification data which operators are encouraged to use to eliminate the need for repair.

DAMAGED AREA	CUM LINE NUMBER EFFECTIVITY	SB NUMBER
FUSELAGE - SECTION 45 - AFT WHEEL WELL BULKHEAD - SIDE OF BODY FITTING AT STA 1065 - MAIN LANDING GEAR BEAM SUPPORT LINK - SPHERICAL BEARING INSPECTION - SPHERICAL BEARING AND ANTI-ROTATION PLATE INSTALLATION	ALL 767 AIRPLANES CUM LINE NUMBERS 1 THRU 745	767-53-0083

Service Bulletin Repair Chart
Figure 201

REPAIR 1 - SECTION 45 FITTINGS



DETAIL I

NOTES

- A TYPICAL REPAIR TO FITTINGS IS NOT APPLICABLE. REFER TO THE OTHER FIGURES IN THIS SUBJECT FOR SPECIFIC REPAIRS TO FITTINGS.

Section 45 Fitting Repairs
Figure 201

REPAIR 2 - STATION 1065 BULKHEAD - MAIN LANDING GEAR BEAM SUPPORT FITTING

1. Applicability

A. This procedure gives access and repair instructions for damage to the part number 145T2621-X Sta 1065 Bulkhead Main Landing Gear Beam Support Fitting. This fitting is the housing for the part number 60B00180-42 spherical bearing, which is a pivot for the upper end of the part number 113T1141-X support link. The bearing is located at WL 168 and BL 97 in the aft bulkhead of the main landing gear wheel well. The fitting bore may have damage from corrosion, or may have galling or scoring from a rotated or migrated bearing.

B. Aircraft from cum line 746, incorporate a modification for a bearing retainer plate (part number 145T2650). This is added to the aft side of the Sta 1065 Bulkhead MLG Beam Support Fitting (part number 145T2621). This modification is used to stop rotating or migrating bearings. As a result, this repair is effective for cum line numbers 1 thru 745 only.

2. General

A. To get access to the Sta 1065 Bulkhead Main Landing Gear Beam Support Fitting and bearing, several major components and hydraulic lines must be removed. The access instructions include removal of the part number 113T1141-X support link, the part number 113T1100-X side strut swivel, part of the inboard flap drive mechanism, the main gear upper side strut brace, fairing panels, doors, and some fairing support structure. Detail II shows the major components in the main gear wheel well which must be removed to get access to the Sta 1065 fitting. It is not necessary to remove the main landing gear.

B. This repair is a Category A repair and no supplemental inspections are necessary with this repair installed. Refer to 51-00-06, GENERAL for the repair categories.

3. References

Reference	Title
51-00-06, GENERAL	Structural Repair Definitions
51-20-01, GENERAL	Protective Treatment of Metallic and Nonmetallic Repair Parts
53-50-90, ALLOWABLE DAMAGE 1	Section 45 - Main Landing Gear Beam Support Fittings
53-60-71, REPAIR 2	Aft Wheel Well Fairing Frame - To Remove the Main Landing Gear Beam Inboard Support Structure
AMM 07-11-01/201	Aircraft Maintenance Manual
AMM 12-12-01/301	Aircraft Maintenance Manual
AMM 12-25-01/301	Aircraft Maintenance Manual
AMM 20-10-09/401	Aircraft Maintenance Manual
AMM 27-11-00/501	Aircraft Maintenance Manual
AMM 27-51-03/401	Aircraft Maintenance Manual
AMM 27-51-04/201	Aircraft Maintenance Manual
AMM 27-51-07/401	Aircraft Maintenance Manual
AMM 29-11-00/201	Aircraft Maintenance Manual
AMM 32-00-15/201	Aircraft Maintenance Manual
AMM 32-11-04/401	Aircraft Maintenance Manual
AMM 32-32-00/501	Aircraft Maintenance Manual
AMM 32-41-00/501	Aircraft Maintenance Manual
SOPM 20-20-02	Penetrant Methods of Inspection

(Continued)

Reference	Title
SOPM 20-30-02	Stripping of Protective Finishes
SOPM 20-41-02	Application of Chemical and Solvent Resistant Finishes
SOPM 20-42-05	Bright Cadmium Plating
SOPM 20-42-09	Electrodeposited Nickel Plating

4. Special Tools

A. MIT65B15171 - Torque Adapter Variable Camber Flaps Hinge Nut (attached at the grooved end of the bottle pin to keep the bottle pin from turning when the pin is removed or installed)

B. BOFAOGTOOL767LG6026 - Main Landing Gear Support Boring Fixture

C. Armstrong part number 34-310 or part number ST2580-155-3 Spanner wrenches for the removal of the 145T2625-1 retaining nut. The same spanner wrenches can be used to install the oversize bearing retaining nut.

D. Sturtevant part number TM2000 model S-300 Torque Wrench and a Sweeny part number 107C Torque Multiplier with a 213 in-lb (24 N·m) to 240 in-lb (27 N·m) range, or equivalent.

5. Spares

A. See Table 1 for the oversize bearings that you can get from Boeing Spares.

B. Boeing part number 145T2625-1 nut if the initial nut was damaged, or Boeing part number 145T2625-2 nut (used when a 60B00180-56, -57 or -67 oversize bearing is used).

C. Boeing part number 145T2626-1 lock washer if the initial lock was damaged, or Boeing part number 145T2626-2 lock washer (used when a 60B00180-56, -57, or -67 oversize bearing is used).

D. If lost, damaged or if the order of assembly is lost, the laminated washer pairs, Boeing part number 113T1105-1 and -2 (4 pair), 113T1105-3 and -4 (2 pair), 113T1105-17 and -18 (2 pair), and 113T1105-19 and -20 (1 pair) are available from Boeing.

NOTE: Spares that are necessary as a result of removal and installation of parts called out in the Maintenance Manual are not included here.

6. Access Procedure

A. Jack and shore the airplane. Jack the airplane at jack locations A, B, and C and stabilize at locations D, E and F. Refer to AMM 07-11-01/201.

B. Fully extend the trailing edge flaps into the down position. Refer to AMM 27-51-04/201.

WARNING: DO NOT GET HYDRAULIC FLUID IN YOUR EYES OR MOUTH, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE HYDRAULIC FLUID. PUT ON PROTECTIVE SPLASH GOGGLES AND GLOVES WHEN YOU WORK WITH THIS FLUID. HYDRAULIC FLUID IS POISONOUS AND CAN CAUSE INJURIES AND DAMAGE TO EQUIPMENT.

C. For airplanes in these groups, VA301-VA499, VK031-VK080 and VN251-VN290, remove the pneumatic power. For work on the left side of these airplanes, depressurize the left main hydraulic system and reservoir. Refer to AMM 29-11-00/201.

D. For all other airplanes, depressurize the right and center main hydraulic systems and drain the right and center main hydraulic reservoirs as follows: Refer to AMM 29-11-00/201.

(1) Remove the lockwire from the handle on the drain valve at the bottom of the reservoir.

CAUTION: HYDRAULIC FLUID LEAKAGE MUST BE IMMEDIATELY REMOVED. HYDRAULIC FLUID CAN DAMAGE PAINTED SURFACES AND OTHER AIRPLANE EQUIPMENT.

(2) Open the drain valve and drain the fluid into a container (approximately 10 gal (38 l) for the center system and about 6 gal (23 l) for the right system).

(3) Close the drain valve and install the lockwire in the handle of the drain valve.

(4) Disconnect the hydraulic tubing. Refer to AMM 20-10-09/401.

(5) Put a cap on the open ends of the tubing and remove as an assembly.

NOTE: Tubes are marked with tape tags which indicate their function, flow direction and system (left, right or center). Refer to Figure 201/REPAIR 2, Details II, III and IV. Details III and IV show a schematic of the left and right wheel well hydraulic lines.

(6) Clean all surfaces that have hydraulic fluid contamination from tubing removal. Refer to AMM 12-25-01/301.

E. Remove the inboard trailing edge flap segment, if necessary, to get better access to the Sta 1065 fitting. Refer to AMM 27-51-03/401. If the flap segment is not removed, support the flap while it is in the extended position.

F. Remove the inboard hinge cutout flipper door and the forward flipper door 195HL and 195FL, respectively. Refer to AMM 27-51-07/401.

G. Disassemble and remove the shaft assembly which passes through the two large lugs of the side strut swivel. Remove the drive arms connected to the shaft up to the first pin joint of each arm or link. Refer to AMM 27-51-04/201.

H. Remove the fairing panels.

I. Remove the upper section of the part number 149T7671-X frame to get access for removal of the part number 113T1144 bottle pin and access to the trailing edge flap linkages. Do not cut the frame web. Refer to 53-60-71, REPAIR 2 for disassembly and repair instructions.

NOTE: This step will prevent interference between the aft wheel well fairing frame and the bottle pin when the pin is removed.

J. Deflate the Main Landing Gear (MLG) shock strut. Use the instructions on the gear.

K. Install an axle jack under the MLG truck bogey. Raise the MLG truck bogey to relieve the load on the bolt that goes through the upper side brace and the side strut swivel assembly. The load has been removed from the bolt when the bolt rotates freely. Refer to AMM 32-11-04/401.

L. Remove the side brace lock spring. Refer to AMM 32-11-04/401.

M. Remove the MLG upper side strut brace from the upper side brace spindle. Refer to Detail II and AMM 32-11-04/401.

N. Remove the fairing panel that is below the MLG beam.

O. Remove the bolt that is installed between the upper side brace and the lower lock link. Disassemble the upper side brace from the lower lock link. Refer to AMM 32-11-04/401.

NOTE: This step will move the brace out of the way so you can make space for a jack between the work stand and the MLG truck.

CAUTION: DO NOT PUT THE JACK INTO DIRECT CONTACT WITH THE MLG BEAM WITHOUT A PROTECTIVE PAD. THE JACK WILL DAMAGE THE MLG BEAM IF A PROTECTIVE PAD IS NOT USED.

P. Install a jack under the inboard end of the main landing gear beam.

NOTE: Use a jack that distributes the load over a wide area of the beam. A 727 tool is available (F72711-9) which can be used to help distribute the load. It may also help to use a block of wood between the jack and the beam. Make a groove in the block so it fits the bottom of the main landing gear beam.

Q. Jack the MLG beam slowly until the bottle pin turns freely.

NOTE: This step will (incrementally) raise and unload the MLG beam and the bottle pin (P/N 113T1144-X) which connects the MLG beam, the side strut swivel (P/N 113T1110-X) and the support link (P/N 113T1141-X).

R. Remove the fail-safe-fitting that is mounted on the aft wall of the wheel well bulkhead. Removal of the fitting will permit the removal of the inboard flap drive shaft and the side strut swivel assembly. See Detail II.

S. Disconnect the four flap links connected to the side strut swivel at the first joint aft of the shaft. Leave the first segment of each arm or link connected to the inboard flap mechanism shaft. Tie the links out of the way.

T. Remove the trailing edge flap drive shaft (P/N 256T3700-X) to permit bottle pin removal. Refer to Detail II.

U. Remove the trailing edge support rod from the MLG beam. The bolt from the trailing edge support rod is located adjacent to the outboard bolt that connects the side strut swivel to the MLG beam.

V. Install a jack beneath the side strut swivel assembly to support the fitting when it is removed. After the bottle pin is removed the side strut swivel assembly will be free to fall.

CAUTION: MAKE SURE TO MAKE A RECORD OF THE POSITION AND THICKNESS OF THE WASHERS INSTALLED AT THE BOTTLE PIN JOINT. EACH WASHER MUST BE ASSEMBLED INTO THE INITIAL LOCATION. INCORRECT WASHER THICKNESSES OR WASHERS INSTALLED IN THE WRONG POSITION CAN CAUSE MISALIGNMENT BETWEEN THE SIDE STRUT SWIVEL AND THE SWING LINK.

W. Remove the bottle pin nut and the laminated washers under the nut. Make a record of the number and thickness of the washers that are removed.

X. Support the side strut swivel and the inboard flap drive shaft mechanism assembly.

Y. Remove the part number 113T1144-X bottle pin. Make a record of the number and thickness of the washers that are removed and their positions on the pin. See Figure 201/REPAIR 2, Detail V.

NOTE: The laminated washers are vibroengraved to make sure they are assembled in the correct positions. Each washer (A thru F) is made of a pair of laminated washers. Washer A and B are part number 113T1105-3 and -4. Washers C, D, E and F are part number 113T1105-1 and -2. The total number of washers is twelve (12). These washers may have been cemented into position by the manufacturer. If the washers are lost, or the thickness and position is not recorded, ask Boeing for aid.

Z. Remove the side strut swivel and the inboard flap drive mechanism as an assembly.

AA. Support the 113T1141 main landing gear support link and remove the upper pins. Make a record of the thickness and location of the laminated shim washers installed at the Sta 1065 fitting joint. See Figure 201/REPAIR 2, Detail V.

AB. Remove the 60B00180-42 spherical bearing located in the side frame lug of 145T2621 at Sta 1065.

NOTE: The laminated washers are vibrogengraved to make sure they are assembled in the correct positions. Each of the washers is made of a pair of laminated washers. The larger washers are part number 113T1105-17 and -18. The small washers are part number 113T1105-19 and -20. The total number of washers installed at this fitting is six (6).

7. Repair Instructions

CAUTION: MAKE SURE TO MAKE A RECORD OF THE POSITION AND THICKNESS OF THE WASHERS INSTALLED AT THE STA 1065 JOINT. EACH WASHER MUST BE ASSEMBLED INTO THE INITIAL LOCATION. INCORRECT WASHER THICKNESSES OR WASHERS INSTALLED IN THE WRONG POSITION CAN CAUSE MISALIGNMENT BETWEEN THE SIDE STRUT SWIVEL AND THE TRAILING EDGE FLAP DRIVESHAFT.

NOTE: This procedure is used to repair damage to the bore of the Sta 1065 Main Landing Gear Beam Support Fitting. The fitting bore may have been damaged from corrosion, or may have galling or scoring from a rotated bearing. It is necessary to use special tools to repair the bore. Boeing tool kit BOFAOGTOOL767LG6026 is available from The Boeing Company. The BOFAOGT00L767LG6026 tool may require assistance from Boeing AOG. The kit has tools necessary to repair the bore. This repair will increase the bore diameter until the damage is removed. An oversize bearing will be installed after the bore is repaired. Sleeve bushings are not used in this repair.

A. Remove the bearing. Use the bearing removal tool and instructions included in the BOFAOGTOOL767LG6026 tool kit.

B. Do a penetrant inspection of the bore to find the location and quantity of damage. Refer to SOPM 20-20-02.

C. Remove any nicks, burrs, galling or other damage in the bore of the fail-safe fitting that could cause misalignment of the boring bar.

CAUTION: MAKE SURE THE BORING TOOL IS PROPERLY ALIGNED BEFORE THE HOLE IS MACHINED. IF THE TOOL IS MISALIGNED, THE HOLE WILL NOT BE CUT IN THE CORRECT LOCATION, OR THE HOLE MAY BECOME LARGER THAN THE PERMITTED LIMIT BEFORE THE DAMAGE IS REMOVED.

D. Install the BOFAOGTOOL767LG6026 guide assembly, boring bar and motor assembly. Use the instructions included in the BOFAOGTOOL767LG6026 tool kit. Make sure the tool is aligned to the concentricity and angularity specifications given in the BOFAOGTOOL767LG6026 tool kit instructions.

E. Machine the bore to remove the damage. Do not remove more material than necessary. Use the instructions included in the BOFAOGTOOL767LG6026 tool kit. To get the correct bore diameter you can use the hone to remove the last few thousandths of an inch of material. Final bore diameters for the different oversize bearings are given in Figure 201/REPAIR 2, Table I. Leave enough material to permit the bore to be honed for surface finish after the shot peening is completed.

F. Do a penetrant inspection to make sure all of the damage is removed. Refer to SOPM 20-20-02.

G. Machine the side face to remove the damage if necessary. Do not remove more material than is necessary and also not more than the allowable damage limits given in 53-50-90, ALLOWABLE DAMAGE 1.

H. Remove the boring tool from the fitting.

I. Peen the bore and side face. Use shot number 230-550, intensity 0.012A, and coverage 2.0. Refer to SOPM 20-41-02.

J. Hone the bore to get the necessary final size and surface finish. Do not remove more than 0.002 from the bore. Use the stone sets and the instructions specified in the BOFAOGTOOL767LG6026 tool kit. The surface finish necessary after honing is 63 microinches Ra or better.

K. Apply a chemical conversion coating to the bare aluminum surfaces of the fitting and the inside of the bore. Refer to 51-20-01, GENERAL.

L. Apply one layer of BMS 10-11, Type I primer to the bare surfaces of the fitting. Do not apply the primer to the inside of the bore. Refer to SOPM 20-41-02. Do not get primer on the grease zerk.

(1) Apply one layer of BMS 10-11, Type 2, color 702 white gloss enamel to the bare surfaces of the fitting. Do not apply the enamel to the inside of the bore. Refer to SOPM 20-41-02.

M. Get an oversized bearing. Two options are available to get an oversize bearing. An oversize bearing can be purchased from Boeing Spares, or the outside diameter of the bearing race can be increased in size by application of nickel plating. See Figure 201/REPAIR 2,Table I for the bearings available from Boeing Spares.

(1) If the outside diameter of the bearing race is to be plated, the maximum plating thickness after machining or grinding is 0.050 in. (1.270 mm). The clearance between the outside diameter of the race and the inside diameter of the bore, after the cadmium plating has been applied over the nickel plating, is 0.000 in. (0.000 mm) to 0.002 in. (0.051 mm). See Figure 201/REPAIR 2, Detail VII for areas where plating is permitted.

(2) To apply nickel plating:

(a) Remove any initial cadmium plating that was applied to the outside diameter of the race. Refer to SOPM 20-30-02.

(b) Mask the threaded area of the race, the spherical ball, and the lubrication groove. Allow plating only on the surfaces shown in Detail VII.

(c) Apply nickel plating to the race as specified in SOPM 20-42-09.

(d) Machine or grind the outside diameter to get the necessary dimension before cadmium plating.

(e) Apply a layer of cadmium plating over the nickel plating. Refer to SOPM 20-42-05, par. 6, Type 2, Class 2.

(f) Remove all materials used for masking the bearing surfaces.

N. Lubricate the bearing ball and the outside of the race with MIL-G-23827 grease.

O. Install the bearing into the fitting.

P. Install the 145T2626-1 or -2 bearing retention lock washer. See Figure 201/REPAIR 2, Table I to find out which lock washer to use. See Detail VI.

Q. Install the 145T2625-1 or -2 bearing retaining nut. See Figure 201/REPAIR 2,Table I to find out which retaining nut to use. Tighten the nut 3200 in-lb (362 N·m) to 3600 in-lb (407 N·m). See Figure 201/REPAIR 2,Detail VI.

R. Bend a minimum of two washer tangs into the retaining nut slots.

CAUTION: DO NOT LET SEALANT CONTAMINATE THE INNER SURFACE BETWEEN THE BEARING BALL AND THE RACE. IF SEALANT CONTAMINATES THIS SURFACE, EXCESSIVE WEAR OR SEIZURE OF THE BEARING CAN OCCUR. THIS CAN REDUCE THE LIFE OF THE BEARING AND CAUSE DAMAGE TO THE FITTING BORE.

S. Apply a fillet seal of BMS 5-95 sealant to the periphery of the bearing and retaining nut. Fill the recesses in the retaining nut with sealant. Also, apply a fillet seal to the shoulder of the race on the opposite side. Make sure the sealant does not get between the ball and the race. See Figure 201/REPAIR 2,Detail VI.

T. Pump MIL-G-23827 grease through the fitting to make sure the bearing is lubricated. Periodic applications of grease will prevent the trapped moisture that can cause corrosion and will prevent the bearing from seizing.

8. Return the Airplane to Normal Configuration

CAUTION: EACH WASHER MUST BE ASSEMBLED INTO THE CORRECT INITIAL LOCATION. INCORRECT WASHER THICKNESSES OR WASHERS INSTALLED IN THE WRONG POSITION CAN CAUSE MISALIGNMENT BETWEEN THE SIDE STRUT SWIVEL AND THE SWING LINK. MISALIGHMENT CAN CAUSE PREMATURE WEAR AND BINDING OF THE PARTS.

A. Lubricate the 113T1143-X upper pins and the 113T1105 washers with MIL-G-23827 grease. Refer to Figure 201/REPAIR 2,Detail V, Sections B-B and C-C.

B. Install the pins and washers with the main landing gear support link onto the Sta 1043 and 1065 main landing gear support fittings. Make sure the washers are located in the correct positions. Fill the cavity between the inner and outer pins with MIL-G-23827 grease. Tighten the nuts to the torque specifications shown in Detail V, Sections B-B and C-C.

NOTE: The 113T1105-17 and -18 laminated washers at the Sta 1065 joint are used on each side of the 60B00180 bearing. The 113T1105-19 and -20 laminated washers are used under the lock washer. If any washers are lost or damaged, or if the order of the washers is lost, ask Boeing for more information.

C. Support the side strut swivel assembly and the attached inboard flap drive mechanism. Move the assembly into position. Lubricate the 113T1110 side strut swivel, 113T1144 bottle pin, and the 113T1105 laminated washers with MIL-G-23827 grease.

CAUTION: EACH WASHER MUST BE ASSEMBLED INTO THE CORRECT INITIAL LOCATION. INCORRECT WASHER THICKNESSES OR WASHERS INSTALLED IN THE WRONG POSITION CAN CAUSE MISALIGNMENT BETWEEN THE SIDE STRUT SWIVEL AND THE TRAILING EDGE FLAP DRIVESHAFT. MISALIGNMENT CAN CAUSE PREMATURE WEAR AND BINDING OF THE PARTS.

D. Install the side strut swivel assembly, bottle pin, and laminated washers. Make sure the washers are located in the correct position on the bottle pin. See Detail V. Do not damage the laminated washers when you install the bottle pin. If a washer is damaged, remove the washers and replace it with a new washer, or make a new washer of the same thickness as the initial washer.

NOTE: The laminated washers are labeled A through F and are vibroengraved with the washer thickness. If any of the washers are lost or damaged or the order of the washers was not recorded, contact Boeing for further information or refer to drawing 113T1101 for the procedure to find the correct washer thickness.

E. Install the bolt through the bottle pin. Use the MIT65B15171 Torque Adapter to keep the bottle pin from turning when the nut is installed.

Install the nuts. Tighten the nut on the small end of the bottle pin to3500 in-lb (395 N·m) to 4000 in-lb (452 N·m) and the nut on the large end of the bottle pin to 290 in-lb (33 N·m) to 325 in-lb (37 N·m).

F. Remove the jack from beneath the side strut swivel assembly.

G. Install the trailing edge support rod.

H. Install the 256T3700-X trailing edge flap drive shaft. Refer to Figure 201/REPAIR 2, Detail II.

I. Install the four trailing edge flap drive arms and linkage.

J. Install the fail safe fitting onto the bulkhead.

K. Remove the jack from beneath the main landing gear beam.

L. Install the bolt that connects the upper side brace to the lower lock link. Refer to AMM 32-11-04/401.

M. Install the fairing panel located below the main landing gear beam.

N. Install the main landing gear upper side strut brace to the upper side brace spindle. Refer to AMM 32-11-04/401.

O. Install the side brace lock spring. Refer to AMM 32-11-04/401.

P. Remove the axle jacks from beneath the main landing gear truck bogey.

Q. Inflate the Main Landing Gear (MLG) shock strut.

R. Assemble and install the shaft assembly that passes through the two large lugs of the side strut swivel. Install the drive arms. Refer to AMM 27-51-04/201.

S. Install the trailing edge flap segment if it was removed. Refer to AMM 27-51-03/401.

WARNING: DO NOT GET HYDRAULIC FLUID IN YOUR EYES OR MOUTH, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE HUYDRAULIC FLUID. PUT ON PROTECTIVE SPLASH GOGGLES AND GLOVES WHEN YOU WORK WITH THIS FLUID. HYDRAULIC FLUID IS POISONOUS AND CAN CAUSE INJURIES AND DAMAGE TO EQUIPMENT.

CAUTION: HYDRAULIC FLUID LEAKAGE MUST BE IMMEDIATELY REMOVED. HYDRAULIC FLUID CAN DAMAGE PAINTED SURFACES AND OTHER AIRPLANE EQUIPMENT.

T. Install the hydraulic tubing as shown in Figure 201/REPAIR 2,Details III and IV. Refer to AMM 20-10-09/401.

NOTE: Tubes are marked with tape tags which indicate their function, flow direction and system (left, right or center). Refer to Figure 201/REPAIR 2 Details II, III and IV. Details III and IV show a diagram of the left and right wheel well hydraulic lines.

U. Remove any hydraulic fluid spilled during the tube installation. Refer to AMM 12-25-01/301.

V. Install the inboard hinge cutout flipper door 195HL and 195FL. Refer to AMM 27-51-07/401.

W. Install the inboard trailing edge flap, if removed. Refer to AMM 27-51-03/401.

X. Fill and service the right and center main hydraulic system reservoirs. Refer to AMM 12-12-01/301.

Y. Pressurize the right and center main hydraulic systems and reservoirs. Refer to AMM 29-11-00/201.

NOTE: For airplanes in these groups; VA301-VA499, VK031-VK080, VN251-VN290, pressurize the left system and reservoir as well.

Z. Do a check for the hydraulic tube connections for leaks.

AA. Remove the air source used to pressurize each reservoir. Refer to AMM 29-11-00/201

AB. To verify that the hydraulic tubes are correctly connected, do as follows:

(1) Do a test of the center hydraulic system for the ailerons. Refer to AMM 27-11-00/501 for the operational test of the Aileron and Aileron Trim Control System. Do a single system test only

(2) Do a test of the MLG. Refer to AMM 32-32-00/501, Main Gear Extension and Retraction - Adjustment/Test.

(3) Do a test of the hydraulic brake system. Refer to AMM 32-41-00/501, Hydraulic Brake System - Adjustment/Test.

AC. Remove the hydraulic power

AD. Repair the 149T7671 body fairing frame that was cut to get access to the bottle pin. Refer to 53-60-71, REPAIR 2

AE. Install the fairing panels that were removed for access.

AF. Lower the airplane and remove the jacks. Refer to AMM 07-11-01/201

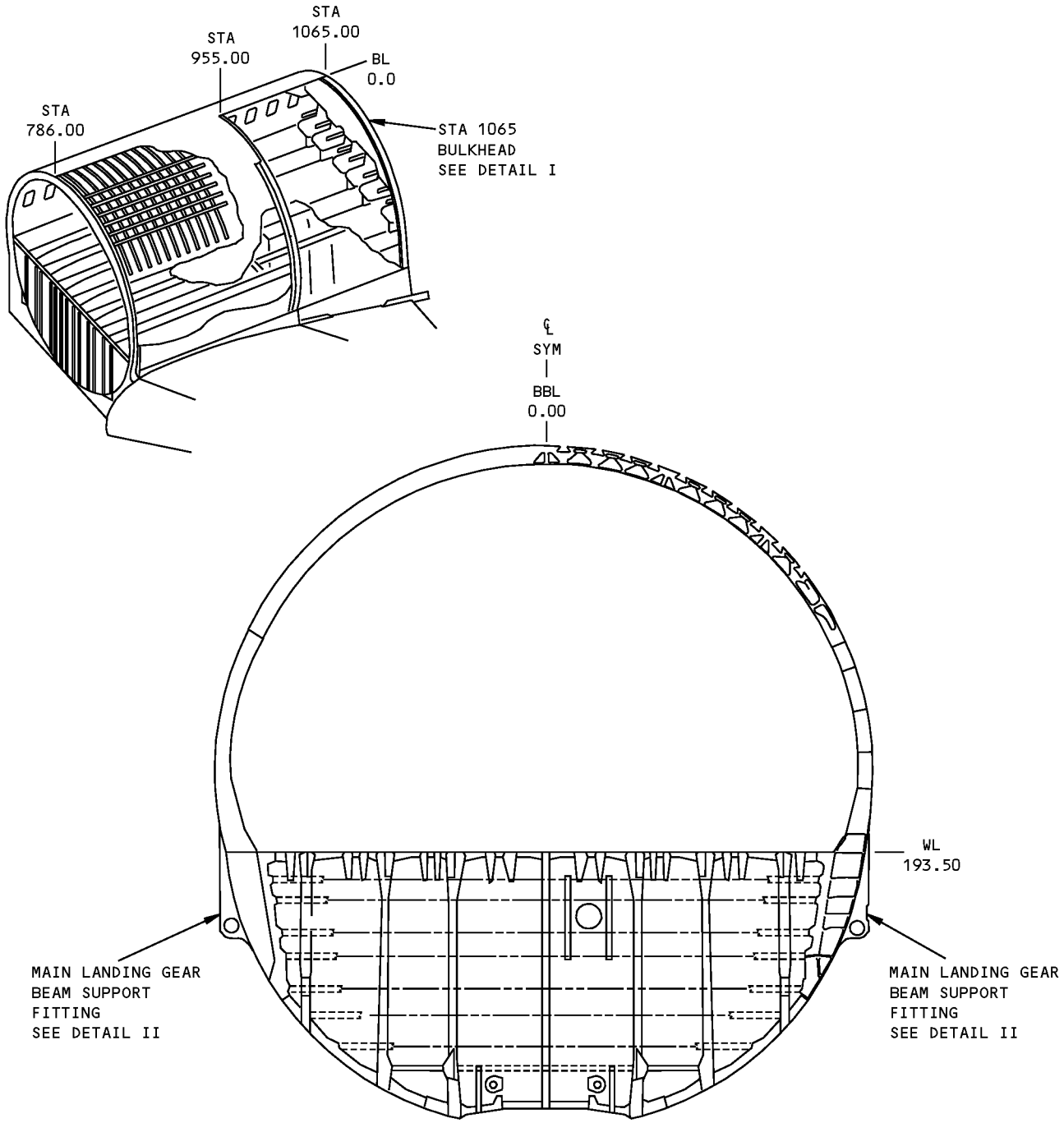
AG. Remove the door lock and close the wheel well door. Refer to AMM 32-00-15/201.

OVERSIZE BEARINGS AVAILABLE FROM BOEING SPARES

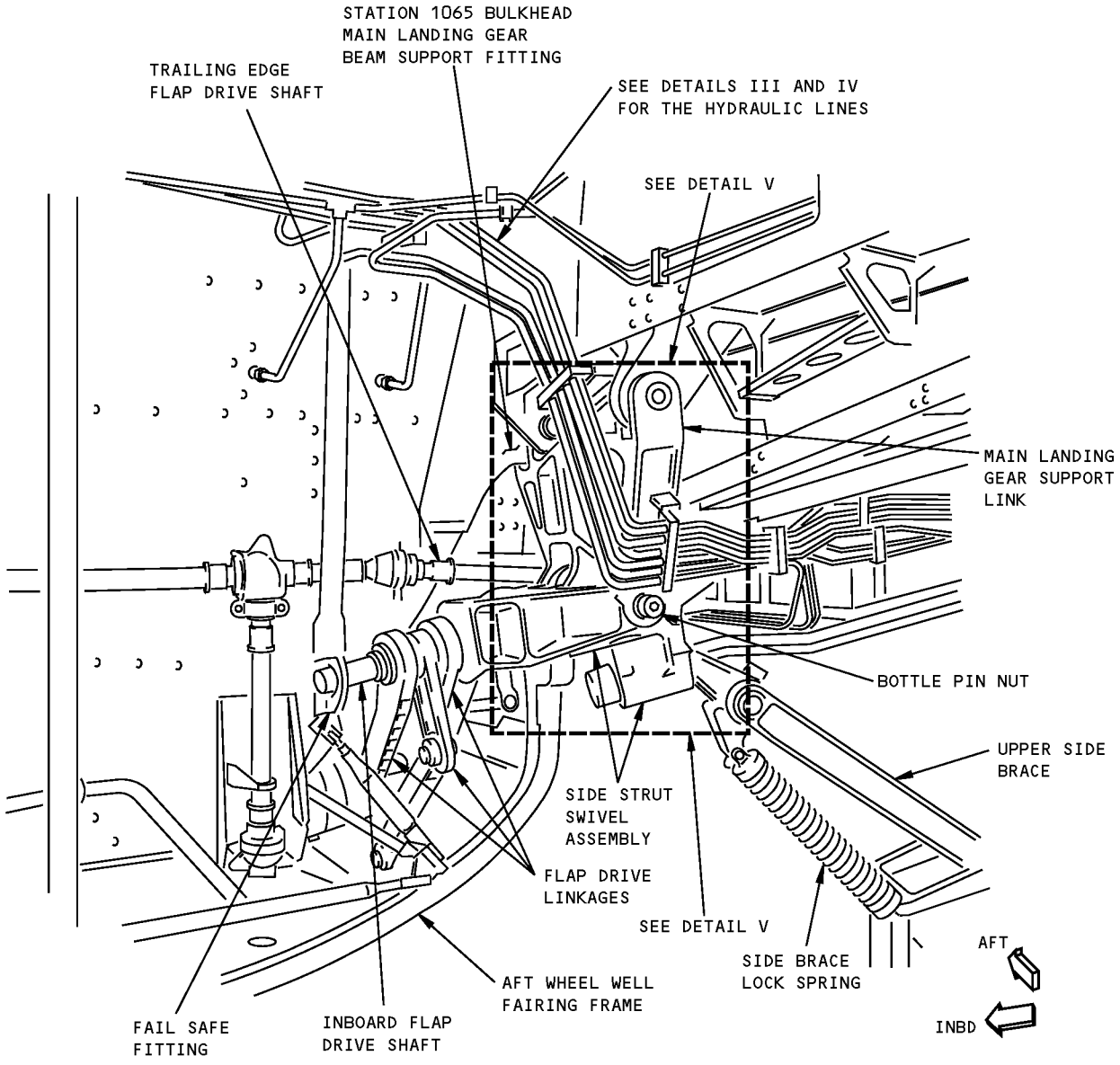
BOEING BEARING PART NUMBER	OUTSIDE DIAMETER OF BEARING		INSIDE DIAMETER OF FITTING		OVERSIZE (INCHES)	NICKEL PLATING (INCHES)	145T2625	145T2626	NOTES
	MAXIMUM (INCHES)	MINIMUM (INCHES)	MAXIMUM (INCHES)	MINIMUM (INCHES)			RETAINING NUT	WASHER	
60B00180-42	4.551	4.550	4.553	4.551	--	NO	-1	-1	ORIGINAL
60B00180-63	4.581	4.580	4.583	4.581	0.030	NO	-1	-1	OVERSIZE
60B00180-64	4.617	4.616	4.619	4.617	0.066	NO	-1	-1	OVERSIZE
60B00180-65	4.581	4.580	4.583	4.581	0.030	0.015	-1	-1	OVERSIZE
60B00180-66	4.617	4.616	4.619	4.617	0.066	0.033	-1	-1	OVERSIZE
60B00180-67	4.651	4.650	4.653	4.651	0.100	NO	-2	-2	OVERSIZE
60B00180-56	4.680	4.679	4.682	4.680	0.129	NO	-2	-2	OVERSIZE
60B00180-57	4.743	4.742	4.745	4.743	0.192	NO	-2	-2	OVERSIZE

TABLE I

Station 1065 Bulkhead - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 1 of 9)



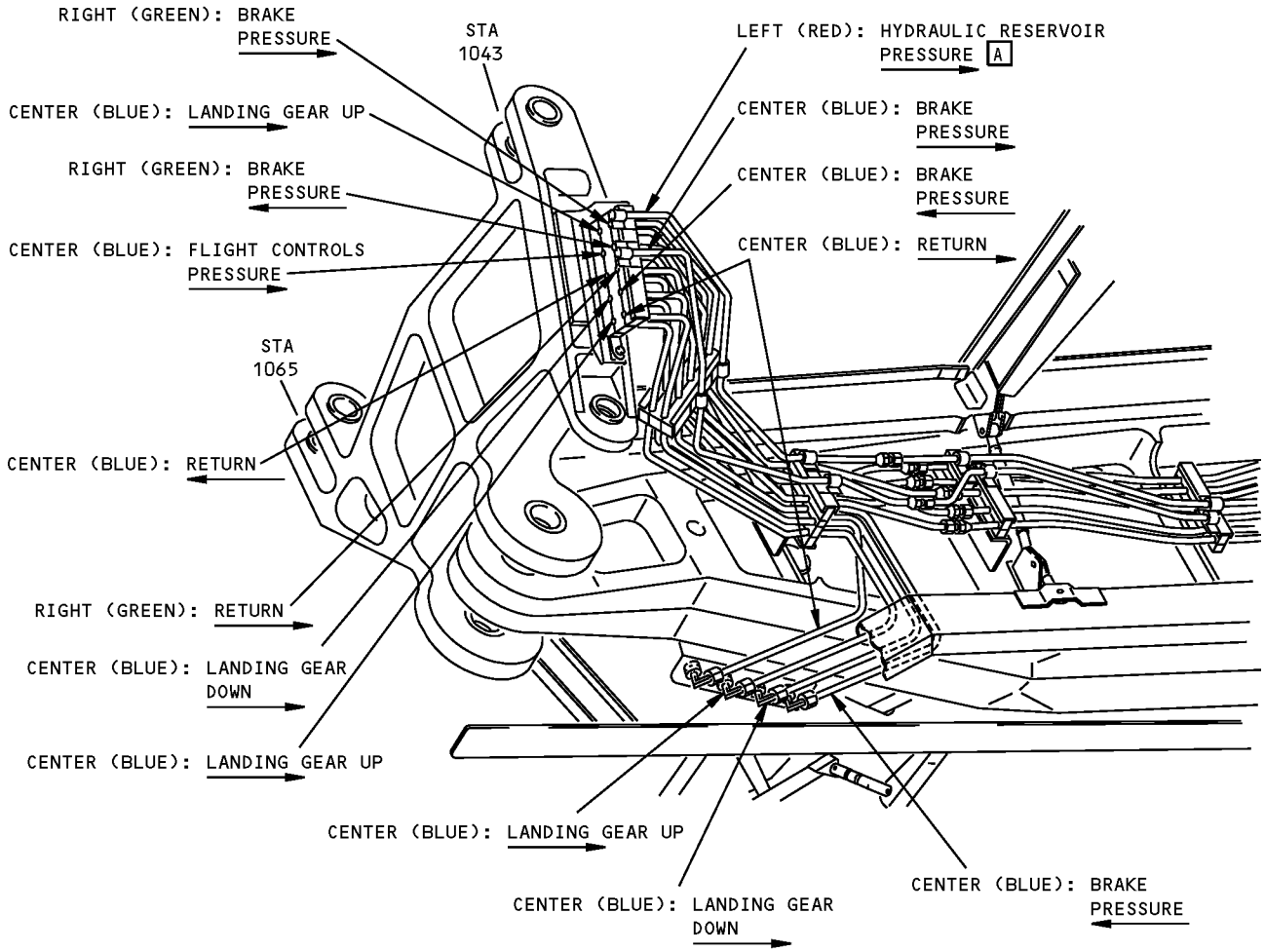
Station 1065 Bulkhead - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 2 of 9)



LEFT MAIN LANDING GEAR WHEEL WELL IS SHOWN,
RIGHT MAIN LANDING GEAR WHEEL WELL IS OPPOSITE

DETAIL II

Station 1065 Bulkhead - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 3 of 9)

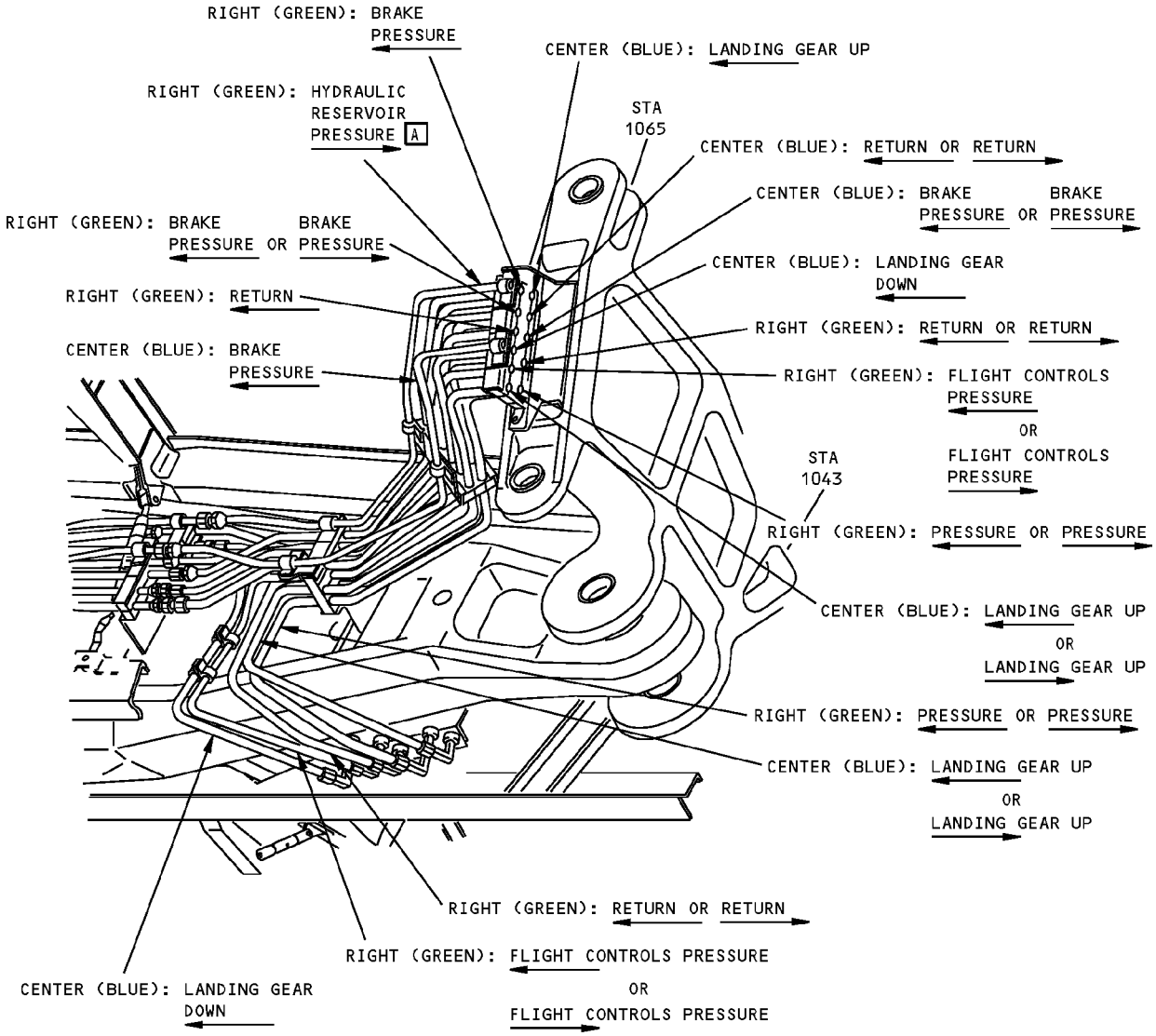


HYDRAULIC LINES
LEFT SIDE IS SHOWN
DETAIL III

NOTES

A FOR AIRPLANES WITH EFFECTIVITIES AS FOLLOWS:
VA301-VA499, VK031-VK080, VN251-VN290.

Station 1065 Bulkhead - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 4 of 9)

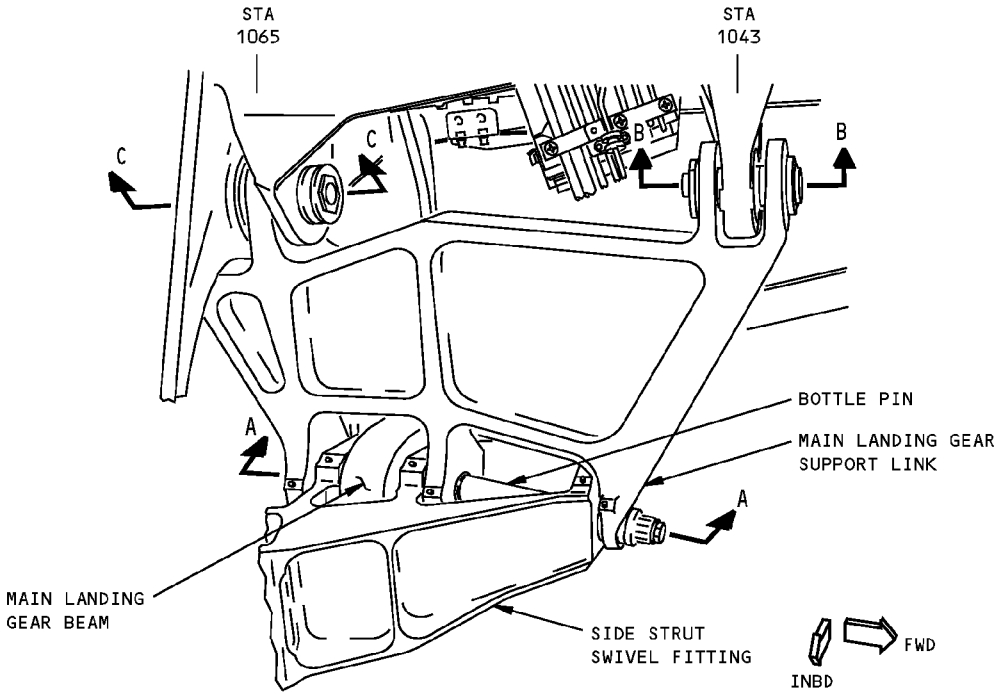


HYDRAULIC LINES
RIGHT SIDE IS SHOWN
DETAIL IV

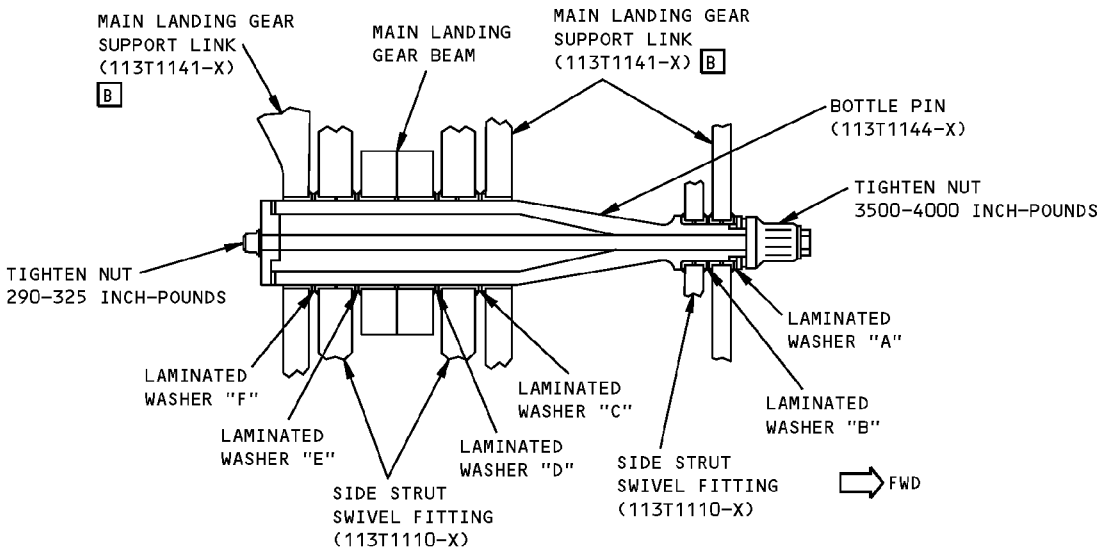
NOTES

A FOR AIRPLANES WITH EFFECTIVITIES AS FOLLOWS:
VA301-VA499, VK031-VK080, VN251-VN290.

Station 1065 Bulkhead - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 5 of 9)



LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE
(HYDRAULIC LINES NOT SHOWN FOR CLARITY)
DETAIL V

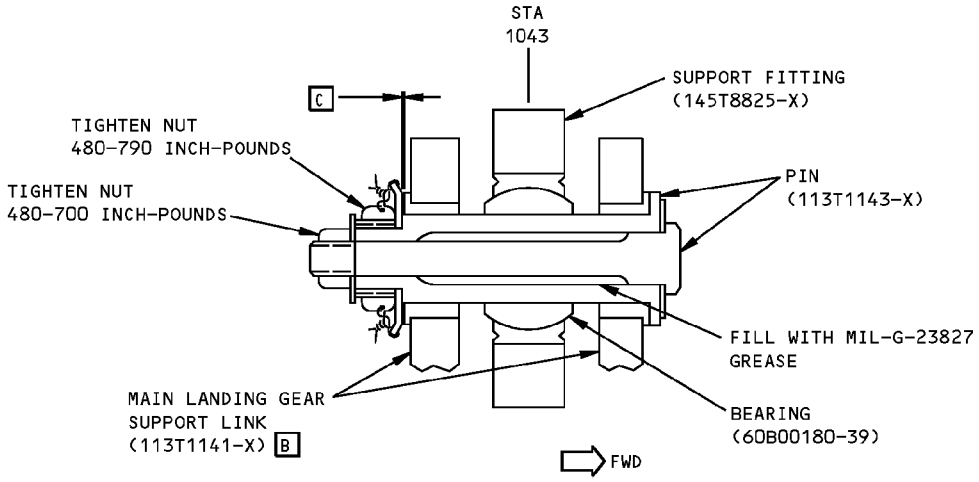


SECTION A-A

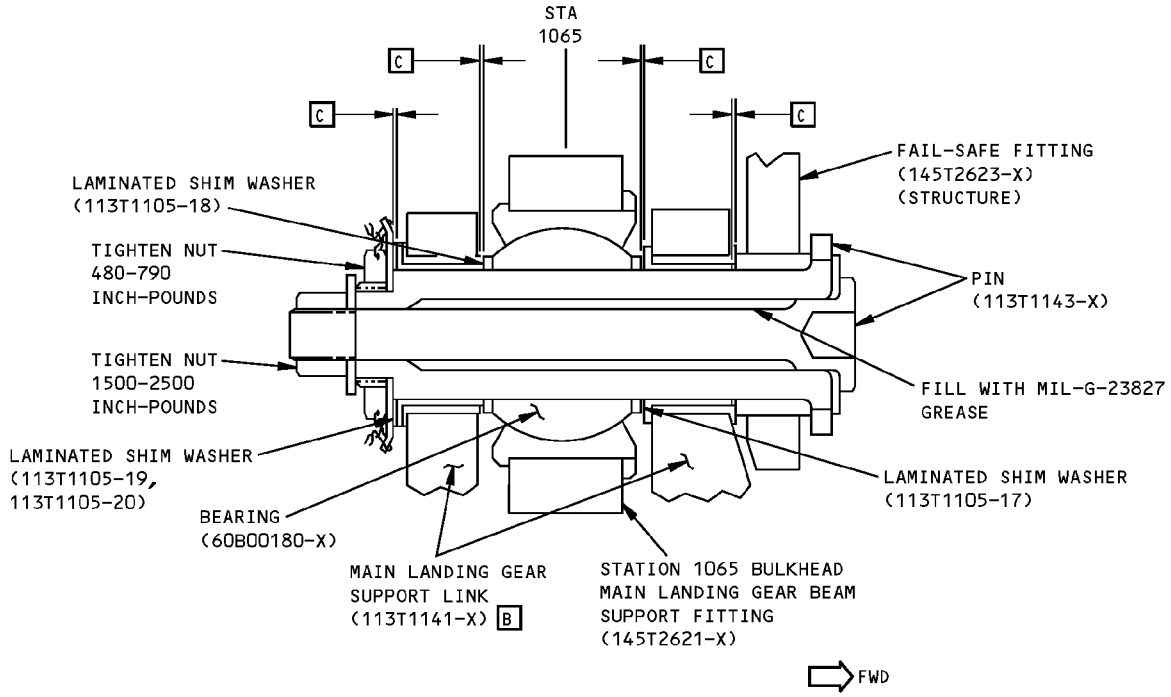
NOTES

B REFER TO CMM 57-54-13, REPAIR 14-1 FOR THE BUSHING MAXIMUM REPAIR DIAMETERS.

Station 1065 Bulkhead - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 6 of 9)



SECTION B-B



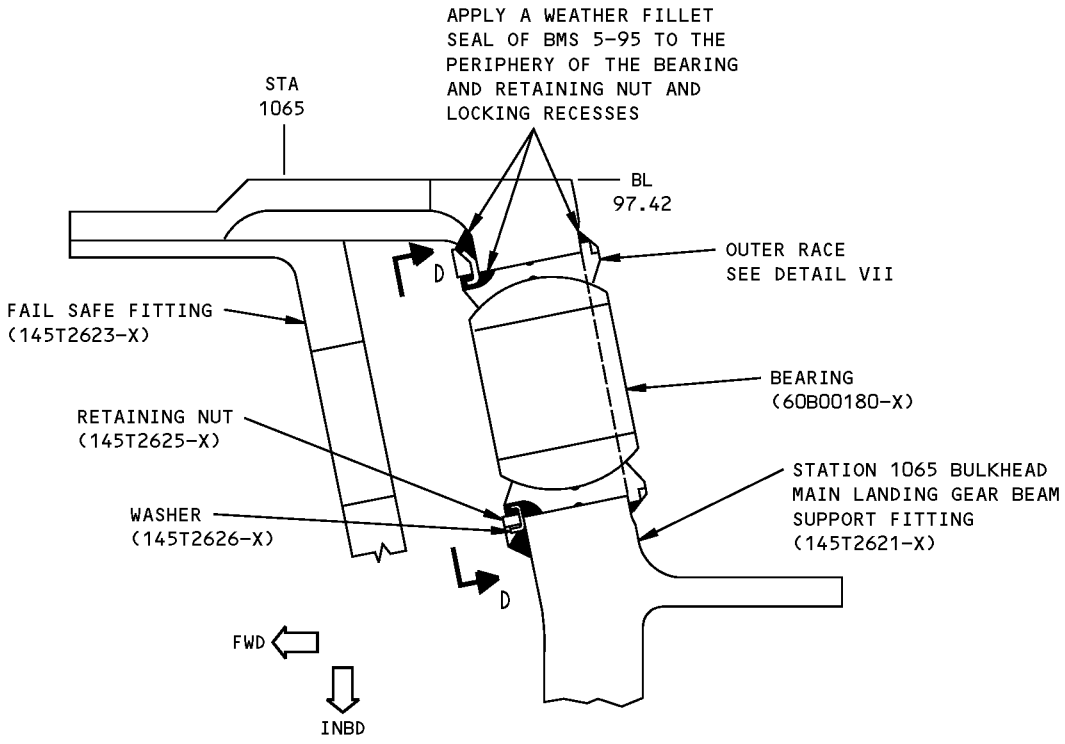
SECTION C-C

NOTES

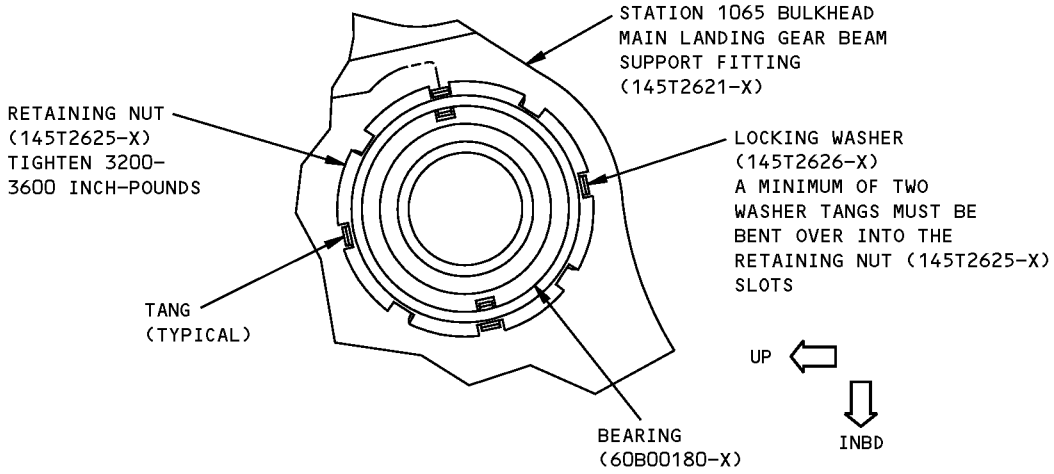
B REFER TO CMM 57-54-13, REPAIR 14-1 FOR THE BUSHING MAXIMUM REPAIR DIAMETERS.

C REFER TO DRAWING 113T1100 FOR GAP DIMENSIONS.

Station 1065 Bulkhead - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 7 of 9)

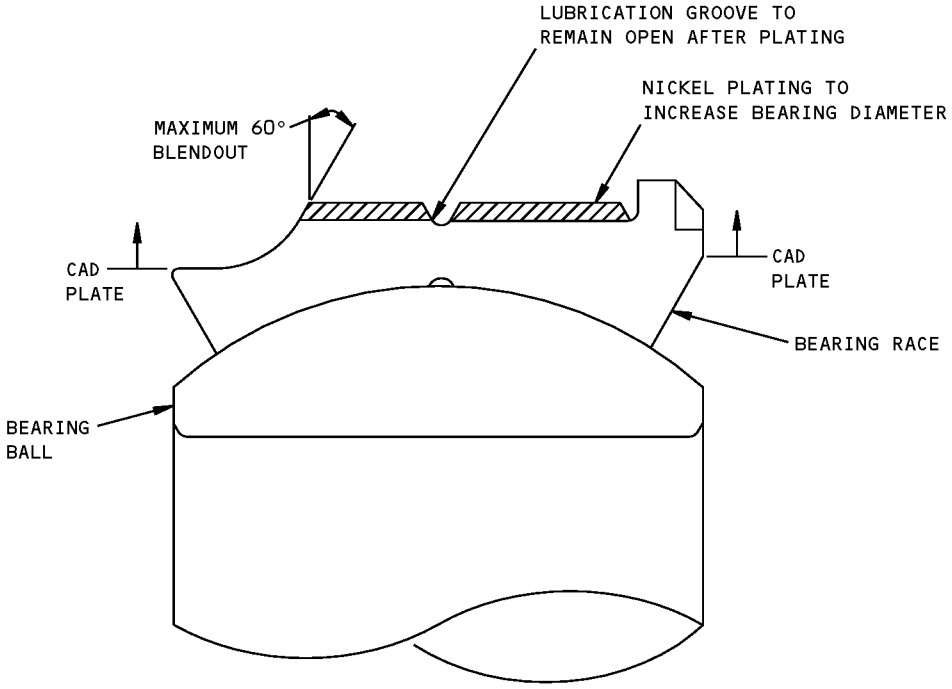


DETAIL VI



FORWARD SIDE OF BEARING
VIEW D-D

Station 1065 Bulkhead - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 8 of 9)



BEARING OUTER RACE PLATING
DETAIL VII

Station 1065 Bulkhead - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 9 of 9)

REPAIR 3 - STATION 1043 - MAIN LANDING GEAR BEAM SUPPORT FITTING

REPAIR INSTRUCTIONS

NOTE: This procedure is used to repair damage to the bore of the Station 1043 Main Landing Gear Beam Support Fitting. The fitting bore may have damage from corrosion, or may have galling or scoring from a migrated or rotated bearing. It is necessary to use special tools to repair the bore.

Boeing tool kit BOF113T1100 is available from the Boeing Company. The kit has the tools necessary to repair the bore.

This repair will install sleeve bushings into the bore to bring it back to the correct size. Oversize repair bearings are not used in this repair.

1. Refer to Fig. 202 for Station 1065 Main Landing Gear Beam Support Fitting access instructions. Use the same instructions to get access to the Station 1043 fitting.
2. Remove the bearing. Use the bearing removal tool and instructions included in the BOF113T1100 tool kit.
3. Do a dye-penetrant inspection of the bore to find the quantity of damage. Refer to SOPM 20-20-02.
4. Remove any nicks, galling or other damage in the bore that could cause misalignment of the BOF113T1100-505 alignment assembly. Use a light pass with the hone to clean up the bore if necessary.

CAUTION: MAKE SURE THE BORING TOOL IS PROPERLY ALIGNED BEFORE THE HOLE IS MACHINED. IF THE TOOL IS MISALIGNED, THE HOLE WILL NOT BE CUT IN THE CORRECT LOCATION OR THE HOLE MAY BECOME LARGER THAN THE PERMITTED LIMIT BEFORE ALL OF THE DAMAGE CAN BE REMOVED.

5. Install the BOF113T1100 boring fixture, boring bar, and motor assembly. Use the instructions included with the BOF113T1100 tool kit. Make sure that the tool is correctly aligned in the fitting bore. The new bore axis must be concentric within 0.003 inch of the initial bore axis.
6. Machine the bore to remove the damage. Do not remove any more material from the fitting than is necessary. Use the instructions included in the BOF113T1100 tool kit. To get the correct bore diameter you can use the hone to remove the last two thousandths of an inch. Leave enough material in the bore to allow for peening and honing. See Steps 10 and 11. See Table II for the completed bore diameter. The fitting is made from 7175-T736 aluminum.
7. With the boring fixture in position, remove the boring bar and do a dye-penetrant inspection of the bore to make sure all of the damage has been removed. Refer to SOPM 20-20-02. If damage is found, do steps 6 and 7 again.
8. Machine the chamfer. Cut one side of the lug 0.075 /0.065 X 45° then cut the other side of the lug 0.085/0.055 X 45° to keep the 1.055 to 1.045 inch bore length. See Section A-A. Measure the chamfer with the gage and instructions included in the BOF113T1100 tool kit.
9. Remove the boring tool from the fitting.
10. Peen the bore and chamfer. Use shot No. 230-550, intensity 0.012A, and coverage 2.0. Refer to SOPM 20-10-03 for peening instructions.
11. Hone the bore. Do not remove more than 0.002 inch from the bore. Use the stone sets and instructions specified in the BOF113T1100 tool kit. The surface finish necessary after honing is 63 microinches R_a or better. See Table II for the completed bore diameter.
12. Apply a chemical conversion coating to the bare aluminum surfaces of the fitting. Refer to SRM 51-20-01.
13. Apply one layer of BMS 10-11, Type I primer to the bare surfaces of the fitting bore and chamfer. Refer to SOPM 20-41-02.
14. Make or buy a pair of sleeve bushings for the fitting. See Tables I,II and Details IV,V and VI. A Keep a 63 microinch R_a or better finish on the outside diameter of the sleeve bushings. The dimensions given in Details IV,V and VI are after the plating has been applied.
15. Apply a layer of cadmium plating to the sleeve bushings. Cadmium plating is not necessary on the inside diameter. Refer to SOPM 20-42-05.

WARNING: LIQUID NITROGEN IS APPROXIMATELY -320°F (-196°C). WEAR PROTECTIVE CLOTHING AND USE IN A VENTILATED AREA. LIQUID NITROGEN CAN INJURE THE SKIN OR CAUSE BREATHING PROBLEMS WHEN USED IN AN ENCLOSED AREA.

16. Prepare the sleeve bushings for installation. Use the shrink-fit method. Soak the sleeves in liquid nitrogen at -320°F (-196°C) until the boiling stops. Refer to SOPM 20-50-03.

Station 1043 - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 1 of 7)

REPAIR INSTRUCTIONS (CONT)

17. Apply a thin layer of BMS 5-95 sealant to the bore. Remove all sealant from the chamfer before you install the sleeves. This will make sure there is no interference between the chamfer of the sleeve bushings and the chamfer on the edge of the bore.

CAUTION: MAKE SURE THAT THE SEALANT DOES NOT CAUSE A BLOCKAGE IN THE LUBRICATION PATH. A BLOCKED LUBRICATION PATH WILL PREVENT LUBRICATION FROM REACHING THE BEARING AND CAN CAUSE CORROSION OR SEIZING OF THE BEARING.

18. Install the sleeve bushings. To install a sleeve bushing:
    - Remove a sleeve bushing from the liquid nitrogen
    - Install it in the bore as quickly as possible
    - Hold the flange of the sleeve bushing tightly against the fitting chamfer until it is at room temperature
    - Check the sleeve lip to fitting chamfer clearance. The tolerance between the lip and chamfer is 0.0015 to 0.003 inch.
    - If a sleeve bushing is not in the tolerance, push the bushing in until it is
    - Repeat the process for the other sleeve bushing.
19. Hone the sleeve bushings to the diameter specified in Detail IV. Use the stone set and instructions specified in the BOF113T110 tool kit. The surface finish necessary after honing is 63 microinches Ra or better.
20. Pump MIL-G-23827 grease through the fitting to make sure the lubrication passage is open.
21. Make sure all sealant is removed from the sleeve bushing chamfers before the bearing is installed. Unwanted sealant on the chamfer may cause incorrect bearing installation.
22. Install a new 60B00180-39 bearing. Use the bearing installation tool and instructions included in the BOF113T1100 tool kit.
23. Swage the bearing. Use the anvil swaging tools and the instructions included in the BOF113T1100 tool kit.

WARNING: DO NOT STAND IN-LINE WITH THE DRAWBOLT WHILE THE PROOF LOAD TEST IS IN WORK. IF THE PROOF LOAD TEST FAILS, THE TOOLING CAN STRIKE THE OPERATOR AND CAUSE INJURY.

24. Do the push-out proof load test to make sure that there is sufficient push-out resistance. Do the push-out test from both directions. Use the tool and the instructions included in the BOF113T1100 tool kit. Refer to the BOF113T1100 tool drawing for the push-out proof-load value. Do not stand in-line with the drawbolt while the proofload test is in work.

CAUTION: DO NOT LET SEALANT CONTAMINATE THE INNER SURFACE BETWEEN THE BEARING BALL AND THE RACE. IF SEALANT CONTAMINATES THIS SURFACE, EXCESSIVE WEAR OR SEIZURE OF THE BEARING CAN OCCUR. THIS CAN REDUCE THE LIFE OF THE BEARING AND CAUSE DAMAGE TO THE FITTING BORE.

25. Apply a fillet seal of BMS 5-95 sealant to the swaged edge of the bearing to keep moisture out. Make sure that the sealant does not get between the bearing ball and the race.
26. Pump MIL-G-23827 grease through the fitting to make sure the bearing is lubricated. Periodic applications of grease will prevent the trapped moisture that can cause corrosion and will prevent the bearing from seizing.
27. Install the components that were removed to get access to the bearing. Refer to Repair 2.

NOTES

- THIS REPAIR IS A CATEGORY A REPAIR AND NO SUPPLEMENTAL INSPECTIONS ARE NECESSARY WITH THIS REPAIR INSTALLED. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES.
- ALL DIMENSIONS ARE GIVEN IN INCHES
- WHEN YOU USE THIS REPAIR REFER TO:
  - BOEING TOOL DRAWING BOF113T1100
  - SOPM 20-20-02 FOR PENETRANT INSPECTION PROCEDURES
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SOPM 20-42-05 FOR BRIGHT CADMIUM PLATE
  - SOPM 20-50-03 FOR BEARING REMOVAL/ INSTALLATION AND RETENTION
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS.

Station 1043 - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 2 of 7)

NOTES (CONT)

[A] THE SLEEVE BUSHINGS ARE AVAILABLE FROM THE BOEING SPARES DEPARTMENT WITH THE PART NUMBERS THAT FOLLOW:

SLEEVE	PART NUMBER
1ST OVERSIZE	691T0023-1
2ND OVERSIZE	691T0023-2
3RD OVERSIZE	691T0023-3

[B] THESE DIMENSIONS APPLY AFTER THE BUSHING HAS BEEN CADMIUM PLATED. ALSO, THE NECESSARY SURFACE SMOOTHNESS AFTER PLATING IS 63 MICROINCHES R_a.

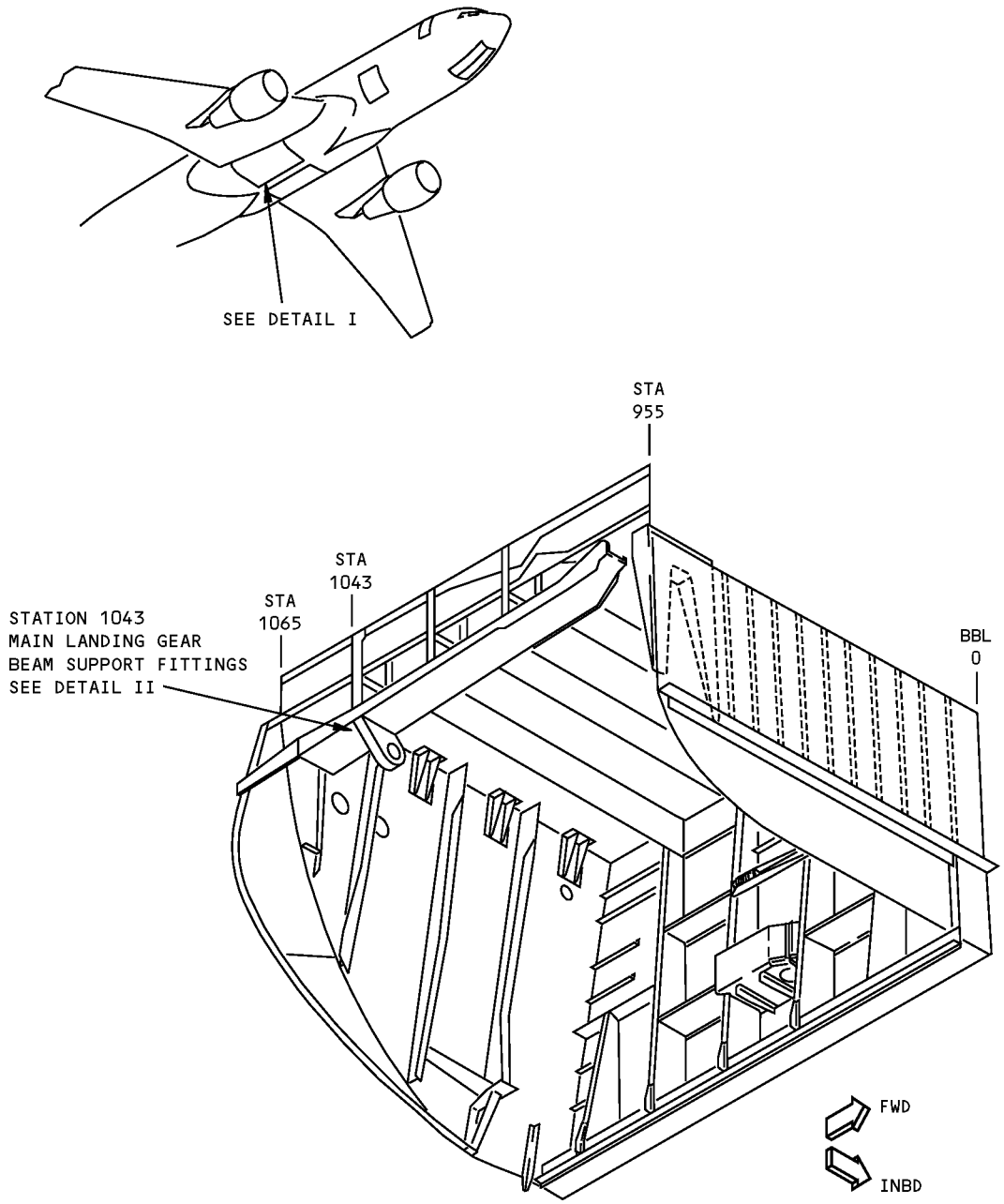
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	SLEEVE BUSHING	2	15-5 PH CRES STEEL 140-160 KSI, HT TO 32-38 ROCKWELL HARDNESS "C" [A] AS AN ALTERNATIVE, MAKE THE BUSHING TO THE DIMENSIONS SHOWN IN DETAILS IV,V AND VI.

TABLE I

SLEEVE BUSHING PART NUMBER	OUTSIDE DIAMETER OF SLEEVE BUSHING [B]		INSIDE DIAMETER OF LUG BORE	
	MAXIMUM DIAMETER	MINIMUM DIAMETER	MAXIMUM DIAMETER	MINIMUM DIAMETER
691T0023-1	2.8920	2.8910	2.8895	2.8890
691T0023-2	2.9120	2.9110	2.9095	2.9090
691T0023-3	2.9320	2.9310	2.9295	2.9290

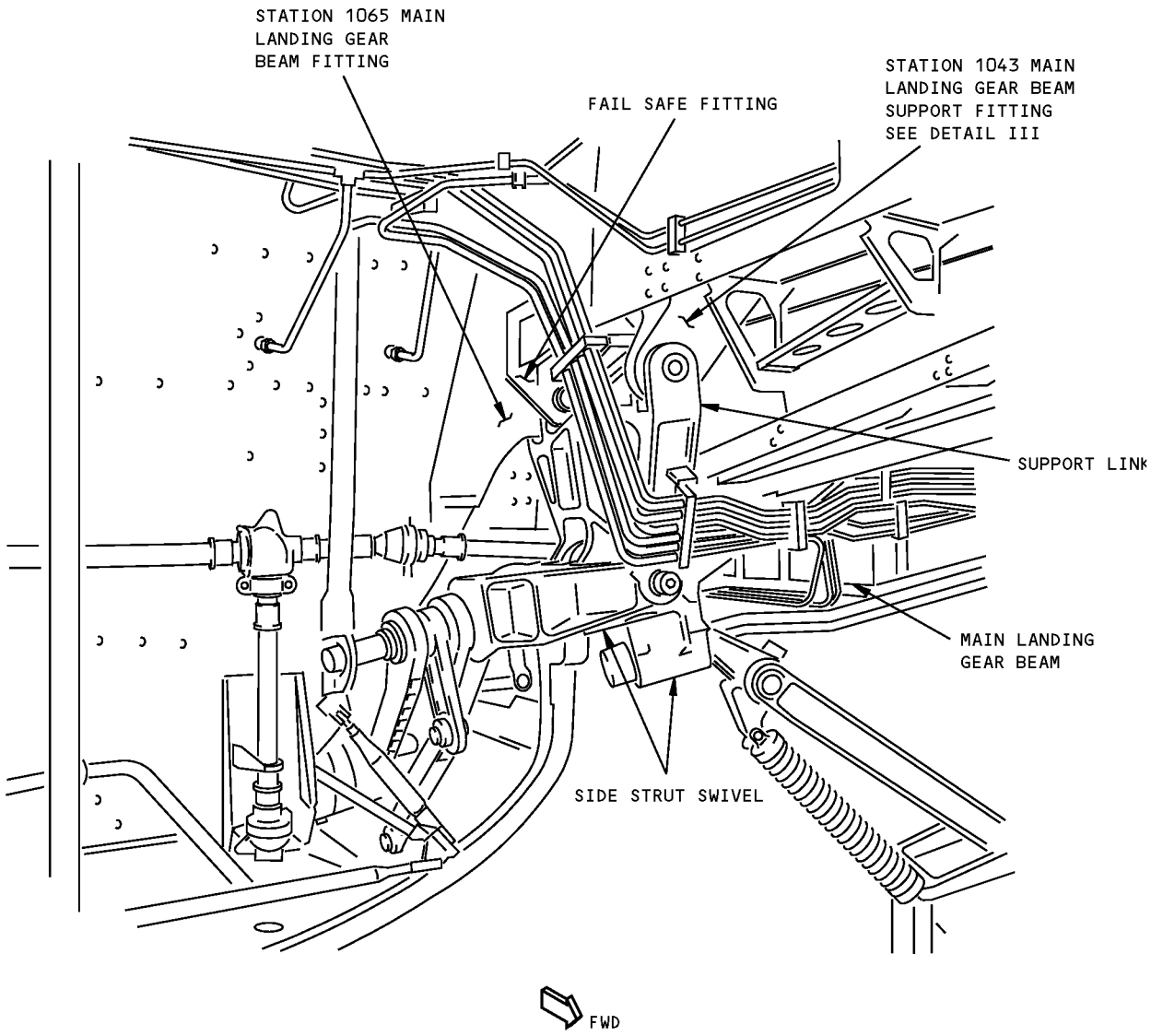
TABLE II

Station 1043 - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 3 of 7)



RIGHT SIDE SHOWN
LEFT SIDE OPPOSITE
MAIN LANDING GEAR WHEEL WELL
DETAIL I

Station 1043 - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 4 of 7)

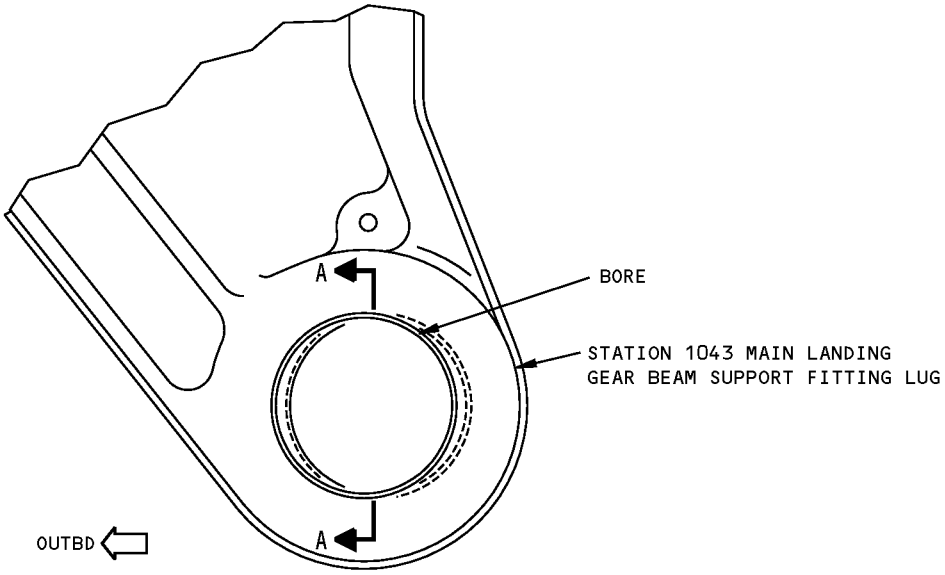


LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE

MAIN LANDING GEAR WHEEL WELL

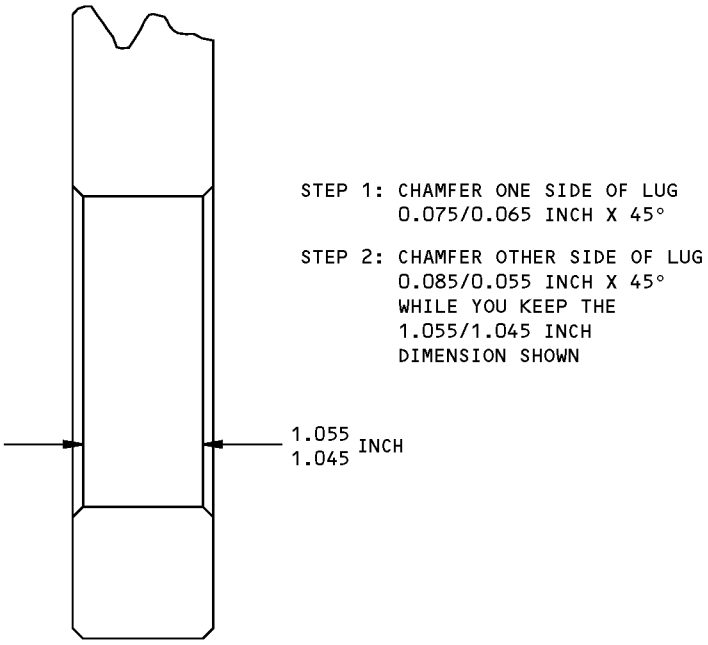
DETAIL II

Station 1043 - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 5 of 7)



FITTING SHOWN WITH THE BEARING REMOVED

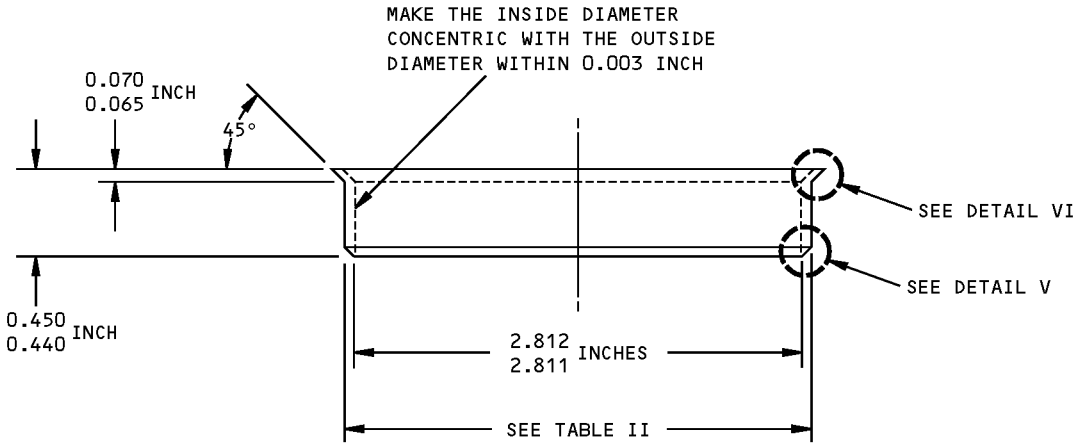
DETAIL III



SECTION A–A

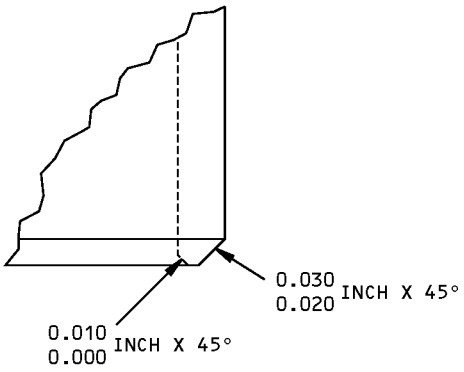
CHAMFER DIMENSIONS

Station 1043 - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 6 of 7)

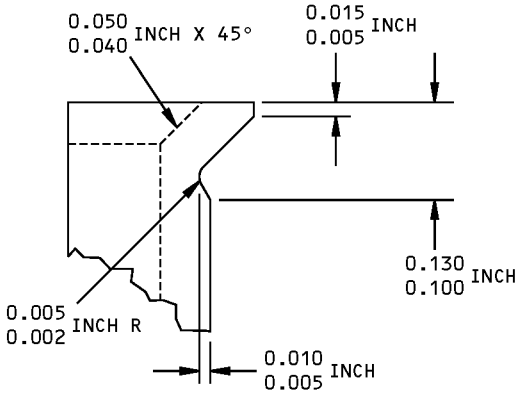


DETAIL IV

(PART I SLEEVE BUSHING)



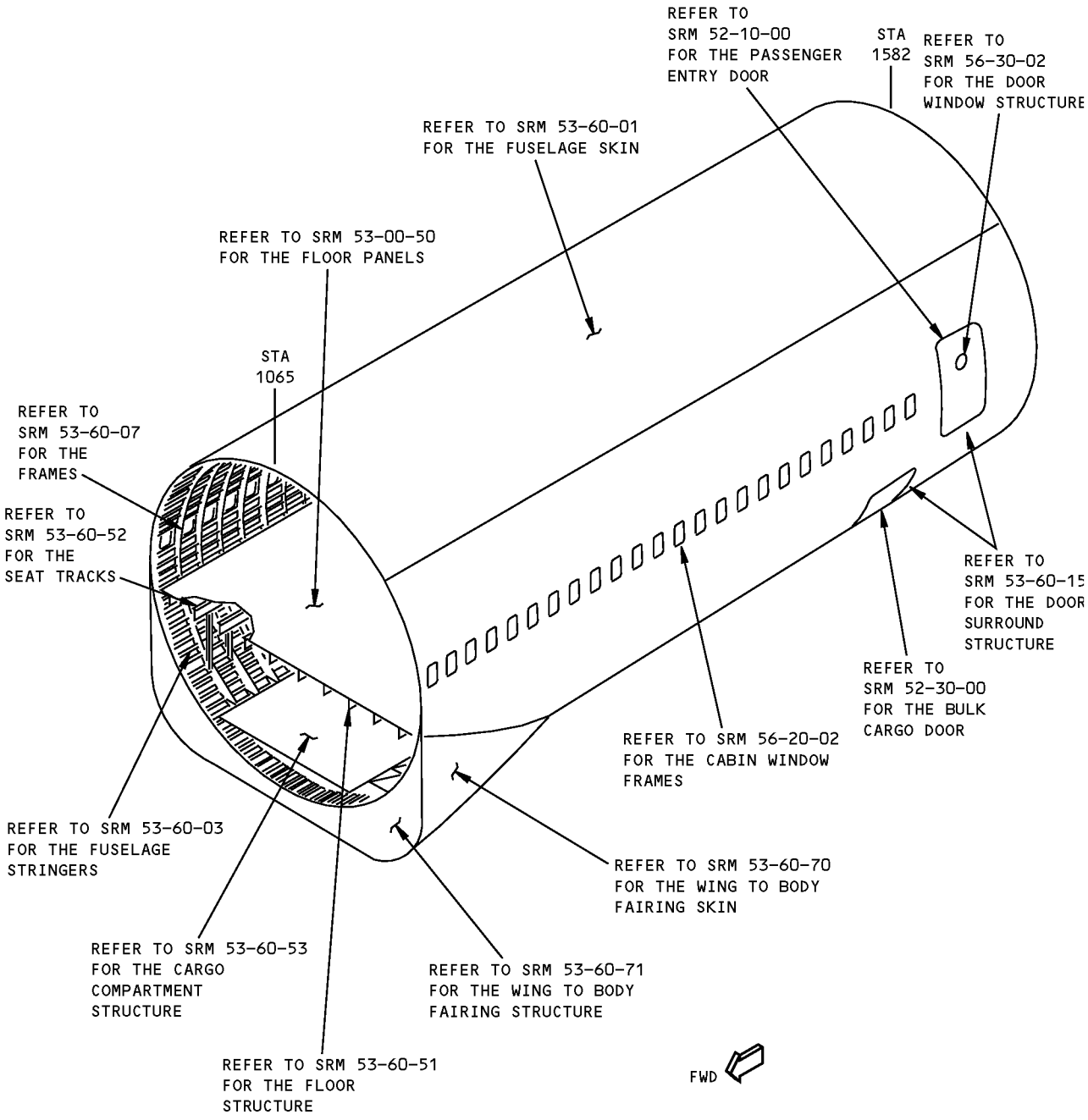
DETAIL V



DETAIL VI

Station 1043 - Main Landing Gear Beam Support Fitting Repair
Figure 201 (Sheet 7 of 7)

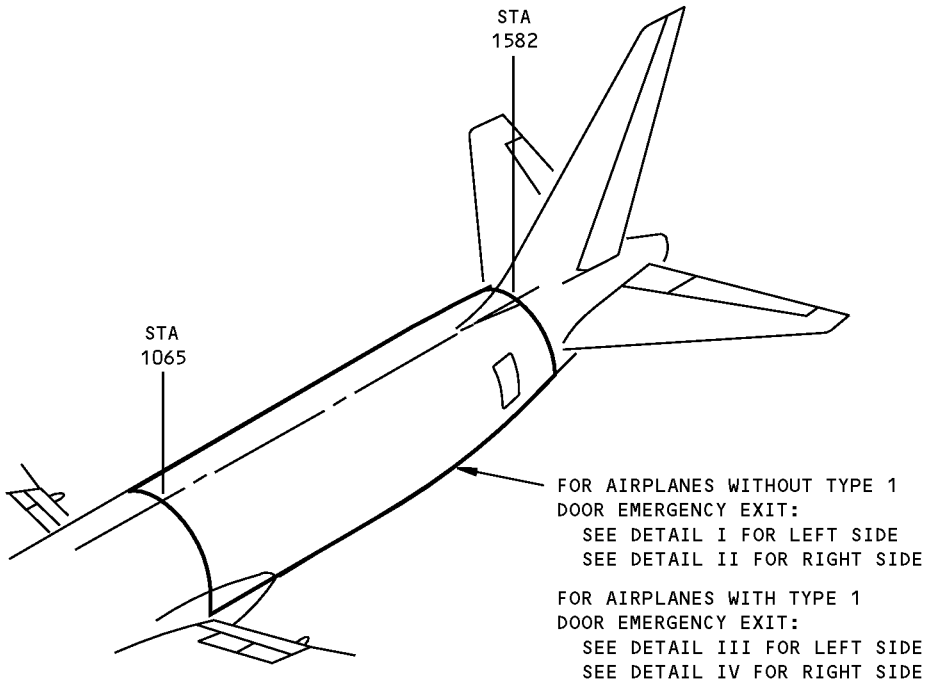
GENERAL - SECTION 46 STRUCTURE DIAGRAM



Section 46 Structure Diagram
Figure 1

IDENTIFICATION 1 - SECTION 46 - SKIN

REF DWG
140T1521

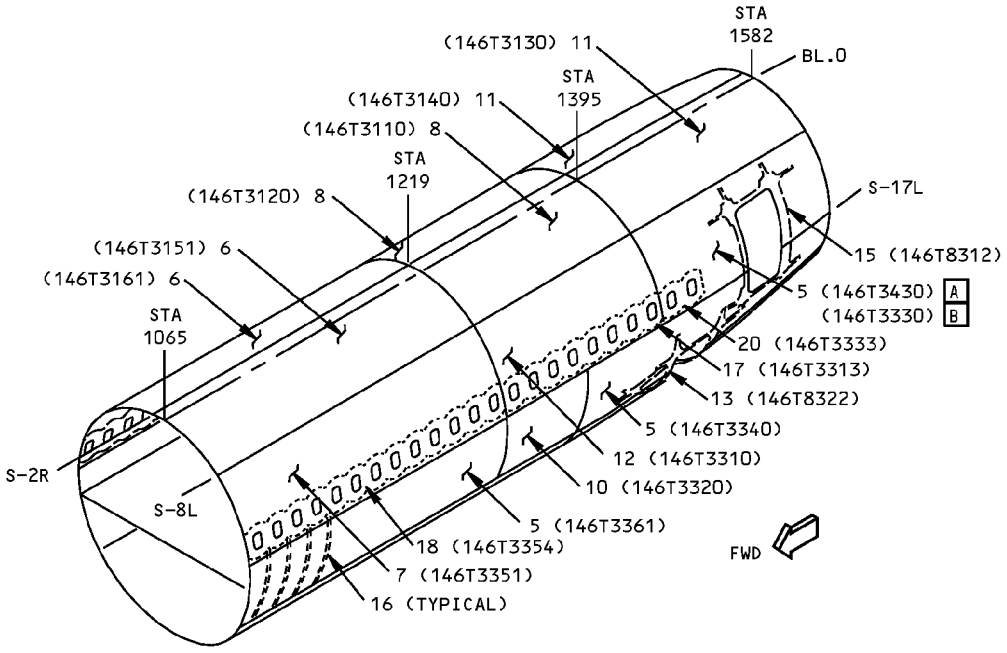


NOTES

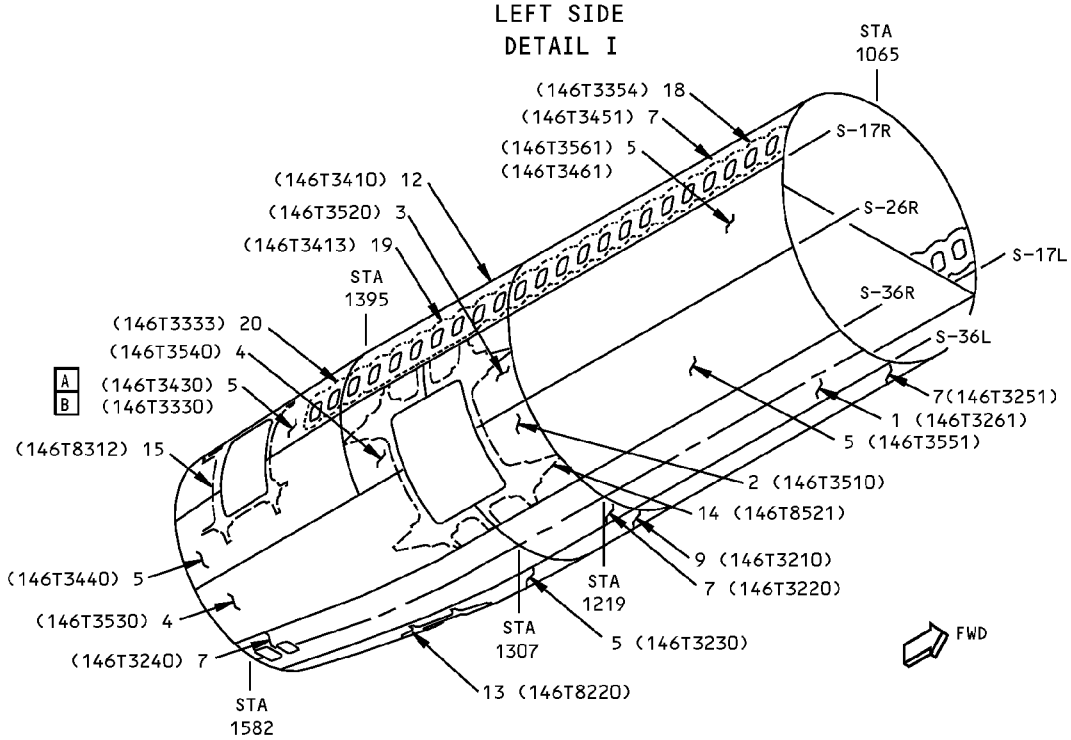
[A] FOR AIRPLANES WITH ADDITIONAL WINDOW AT STA 1449.4

[B] FOR AIRPLANES NOT IN [A]

Section 46 - Skin Identification
Figure 1 (Sheet 1 of 5)



FUSELAGE SKINS OF AIRPLANES WITHOUT TYPE I DOOR EMERGENCY EXIT
LEFT SIDE
DETAIL I



YGSR-53-60-3002-A

FUSELAGE SKINS OF AIRPLANES WITHOUT TYPE I DOOR EMERGENCY EXIT
RIGHT SIDE
DETAIL II

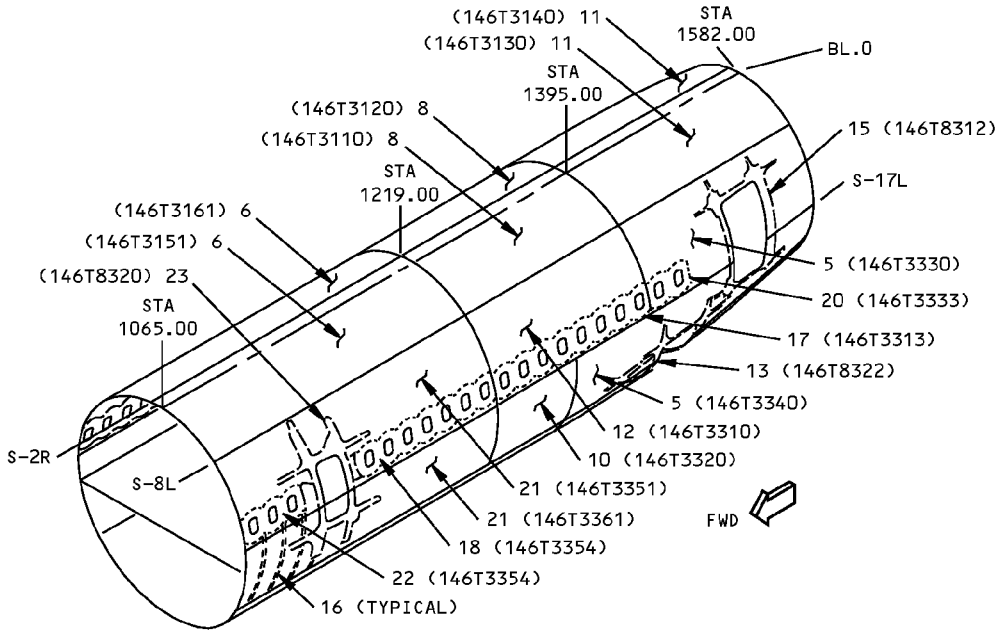
LIST OF MATL

Section 46 - Skin Identification
Figure 1 (Sheet 2 of 5)

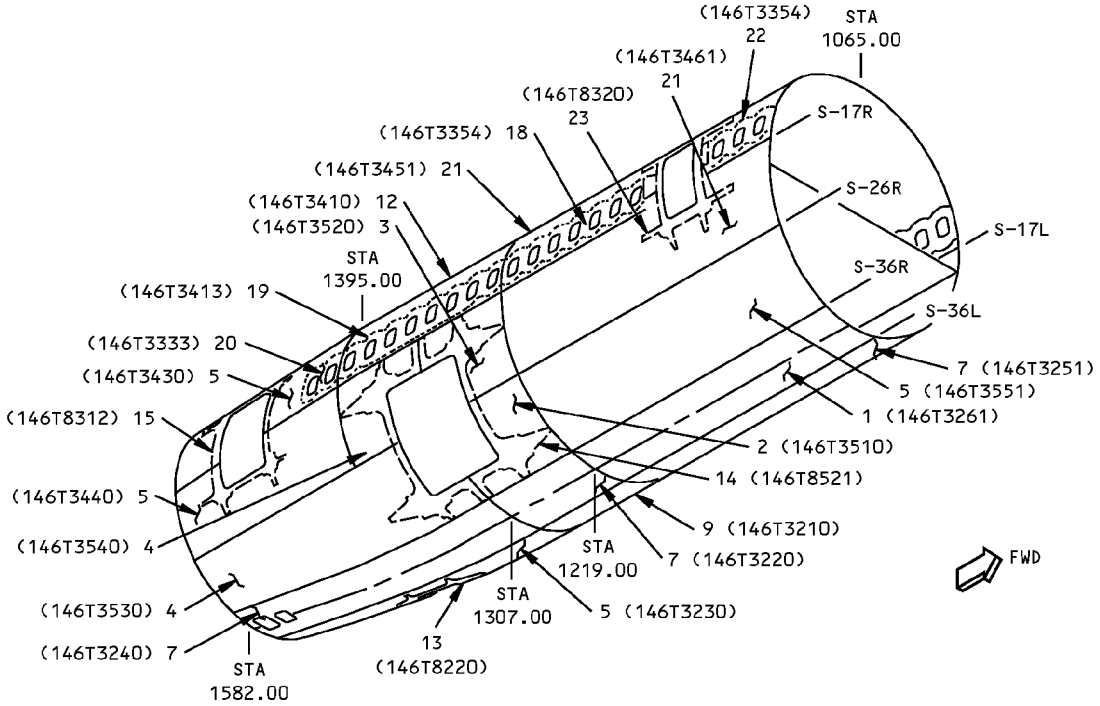
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.425	2024-T3 (MACHINED TO 0.063 MIN)	
2	SKIN	0.210	CLAD 2024-T3 (MACHINED TO 0.125 MIN)	
3	SKIN	0.210	CLAD 2024-T3 (MACHINED TO 0.070 MIN)	
4	SKIN	0.210	CLAD 2024-T3 (CHEM-MILLED TO 0.056 MIN)	
5	SKIN	0.200	CLAD 2024-T3 (CHEM-MILLED OR MACHINED TO 0.056)	
6	SKIN	0.170	CLAD 2024-T3 (CHEM-MILLED TO 0.068 MIN)	
7	SKIN	0.160	CLAD 2024-T3 (CHEM-MILLED OR MACHINED TO 0.056)	
8	SKIN	0.120	CLAD 2024-T3 (MACHINED TO 0.058 MIN)	
9	SKIN	0.115	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
10	SKIN	0.110	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
11	SKIN	0.106	CLAD 2024-T3 (CHEM-MILLED TO 0.056 MIN)	
12	SKIN	0.105	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
13	DOUBLER - BEARSTRAP	0.160	2024-T3	
14	DOUBLER - BEARSTRAP	0.212	2024-T3	
15	DOUBLER - BEARSTRAP	0.170	2024-T3	
16	TEARSTRAP	0.071	2024-T3	
17	DOUBLER	0.125	2024-T3 (MACHINED TO 0.048 MIN)	
18	DOUBLER	0.112	2024-T3 (MACHINED TO 0.052 MIN)	
19	DOUBLER	0.125	2024-T3 (MACHINED TO 0.052 MIN)	
20	DOUBLER	0.125	2024-T3 (CHEM-MILLED TO 0.057 MIN)	

LIST OF MATERIALS

Section 46 - Skin Identification
Figure 1 (Sheet 3 of 5)



FUSELAGE SKINS OF AIRPLANES WITH TYPE I DOOR EMERGENCY EXIT
LEFT SIDE
DETAIL III



FUSELAGE SKINS OF AIRPLANES WITH TYPE I DOOR EMERGENCY EXIT
RIGHT SIDE
DETAIL IV

LIST OF MATL

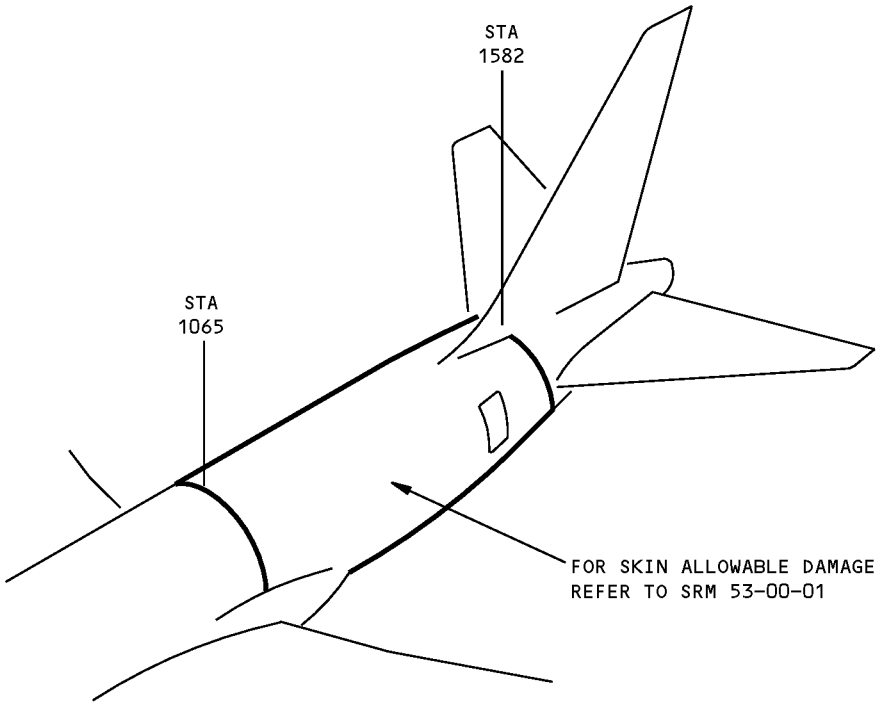
Section 46 - Skin Identification
Figure 1 (Sheet 4 of 5)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.425	2024-T3 (MACHINED TO 0.063 MIN)	
2	SKIN	0.210	CLAD 2024-T3 (MACHINED TO 0.125 MIN)	
3	SKIN	0.210	CLAD 2024-T3 (MACHINED TO 0.070 MIN)	
4	SKIN	0.210	CLAD 2024-T3 (CHEM-MILLED TO 0.056 MIN)	
5	SKIN	0.200	CLAD 2024-T3 (CHEM-MILLED OR MACHINED TO 0.056)	
6	SKIN	0.170	CLAD 2024-T3 (CHEM-MILLED TO 0.068 MIN)	
7	SKIN	0.160	CLAD 2024-T3 (CHEM-MILLED OR MACHINED TO 0.056)	
8	SKIN	0.120	CLAD 2024-T3 (MACHINED TO 0.058 MIN)	
9	SKIN	0.115	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
10	SKIN	0.110	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
11	SKIN	0.106	CLAD 2024-T3 (CHEM-MILLED TO 0.056 MIN)	
12	SKIN	0.105	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
13	DOUBLER - BEARSTRAP	0.160	2024-T3	
14	DOUBLER - BEARSTRAP	0.212	2024-T3	
15	DOUBLER - BEARSTRAP	0.170	2024-T3	
16	TEARSTRAP	0.071	2024-T3	
17	DOUBLER - WINDOW	0.125	2024-T3 (MACHINED TO 0.048 MIN)	
18	DOUBLER - WINDOW	0.140	2024-T3 (MACHINED TO 0.052 MIN)	
19	DOUBLER - WINDOW	0.125	2024-T3 (MACHINED TO 0.052 MIN)	
20	DOUBLER - WINDOW	0.125	2024-T3 (CHEM-MILLED TO 0.057 MIN)	
21	SKIN	0.212	CLAD 2024-T3 (MACHINED TO 0.056 MIN)	
22	DOUBLER - WINDOW	0.170	2024-T3 (MACHINED TO 0.070 MIN)	
23	DOUBLER - BEARSTRAP	0.250	2024-T351	

LIST OF MATERIALS FOR DETAILS III AND IV

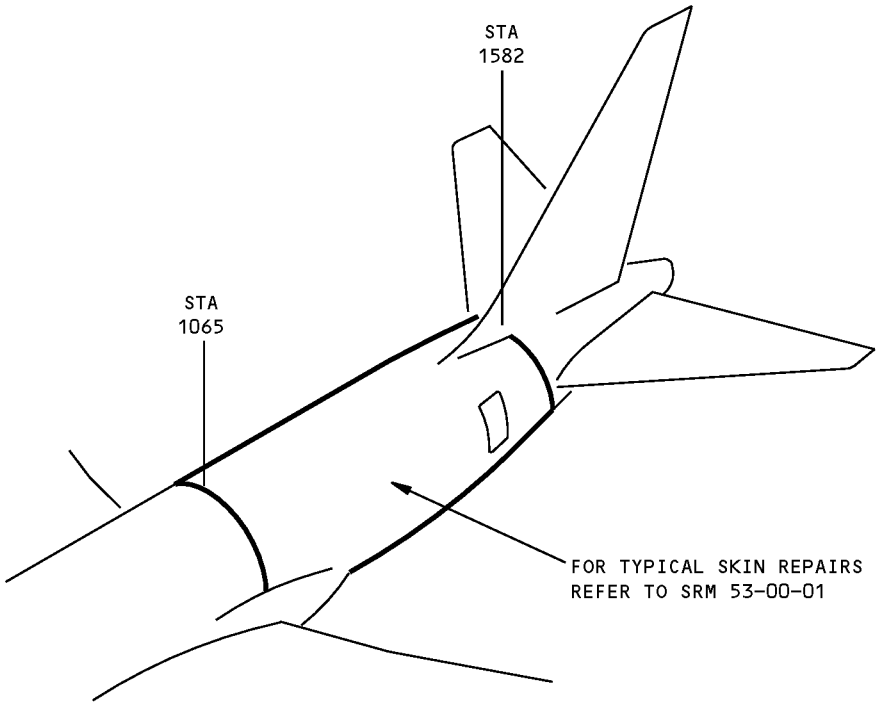
Section 46 - Skin Identification
Figure 1 (Sheet 5 of 5)

ALLOWABLE DAMAGE 1 - SECTION 46 SKIN



Section 46 Skin Allowable Damage
Figure 101

REPAIR GENERAL - SECTION 46 TYPICAL SKIN REPAIRS



Section 46 - Typical Skin Repairs
Figure 201

REPAIR 1 - LAP SPLICE BELOW BULK CARGO DOOR

APPLICABILITY
THIS REPAIR APPLIES ONLY TO FUSELAGE SKIN DAMAGE THAT CAN BE CUT OUT BETWEEN: - STATIONS 1425 AND 1432 OR STATIONS 1444 AND 1450 - STRINGERS 34L AND 38L. NOTE: THIS IS A GENERAL REPAIR. IT CAN BE ADJUSTED FOR THE REQUIREMENTS OF A SPECIFIC LOCATION OR THE SIZE OF DAMAGE.

REPAIR INSTRUCTIONS

1. Remove the necessary fasteners in the area of the damaged skin.
2. Cut and remove the damaged part of the fuselage skin.
   a. Make the cut a rectangular shape with the sides either parallel or perpendicular to the stringers.
   b. Use caution so you do not cut or cause damage to the stringers. Refer to SRM 53-00-03 for stringer repairs if a stringer is damaged more than the limits given in the allowable damage.
   c. Make the corner radii of the cut a minimum of 0.5 inch (13 mm).
   d. Make the edges of the cut smooth with a surface finish of 63 microinches Ra.
3. If the upper or lower skin around the cut is not smooth, put it back to the initial contour.
4. Do a High Frequency Eddy Current (HFEC) inspection of the repair area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-00-13 for high frequency eddy current inspection procedures. Do steps 2 and 4 again if all of the damge was not removed.
5. Make the repair parts.
   a. Make the doublers and fillers as shown in Detail I and from the material given in Table I.
   b. Make the countersink repair washers for the locations shown in Detail I. Refer to SRM 51-40-08 and SRM 53-00-01, Repair 7.

   NOTE: Make sure the repair will not block any drainage holes. Also make sure that other drainage holes in the area are not blocked with unwanted material.
6. Put the repair parts in the repair position shown in Detail I and drill the fastener holes. Try not to drill the fastener holes into the chem-milled radius. If you must drill holes in the chem-milled radius, blend the chem-milled step to a 20 to 1 ratio. The driven head of the rivet must be correctly installed on the structure. Use a drill microstop to prevent damage to the parts on the other side of the skin such as stringer, frame etc. Set the drill microstop to come out a maximum of 0.060 inch (1.5 mm) on the other side.
7. Disassemble the repair parts.
8. Remove all nicks, scratches, burrs, and sharp edges from the repair parts and the cut edges of the initial structure.
9. Apply a chemical conversion coating to the repair parts and the cut edges of the initial structure. Refer to SRM 51-20-01.
10. Install the countersink repair washers with BMS 5-14 adhesive at the locations shown in Detail I. Refer to SRM 51-40-08, and SRM 53-00-01, Repair 7.
11. Apply one layer of BMS 10-79, Type II primer to the repair parts and the cut edges of the initial structure. Refer to AMM 51-21.
12. Apply one layer of BMS 10-11, Type II enamel to the interior and mating surfaces of the repair area. Refer to AMM 51-21.
13. Install the repair parts. Refer to SRM 51-20-05.
    a. Apply BMS 5-95 sealant to the mating surfaces.
    b. Install the fasteners wet with BMS 5-95 sealant.
    c. Apply a filler seal to the repair parts on the internal and external sides of the repair area with BMS 5-95 sealant.
    d. Fill the gap between the upper skin and the repair parts 1, 4, and 5 with BMS 5-95 sealant.
14. Apply the same type of finish as the initial finish to the repair area. Refer to AMM 51-21.
15. Apply BMS 3-23 corrosion inhibiting compound to all of the internal structure in the repair area.

Lap Splice Repair Below Bulk Cargo Door
Figure 201 (Sheet 1 of 5)

NOTES

- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR FINISH PROCEDURES
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-05 FOR SEALING PROCEDURES AND ALTERNATIVE SEALANTS
  - SRM 51-30-01 FOR RULES FOR SHIMMING
  - SRM 51-40-02 FOR FASTENER INSTALLATION AND REMOVAL
  - SRM 51-40-05 FOR FASTENER HOLE SIZES
  - SRM 51-40-06 FOR FASTENER EDGE MARGINS
  - SRM 51-40-08 FOR COUNTERSINK REPAIR WASHERS
  - SRM 51-70-09 FOR METAL-TO-METAL STRUCTURAL REPAIR BONDING
  - NDT 51-00-13, PART 6, D634T301, FOR HFEC INSPECTION PROCEDURES.

[A] A MINIMUM OF 3 ROWS OF FASTENERS ARE REQUIRED AROUND THE REMOVED DAMAGE AREA. IF THE THIRD ROW OF FASTENERS IS AT A STRINGER LOCATION, INCREASE THE DOUBLER SIZE TO ADD ONE ROW OF FASTENERS BEYOND THE STRINGER.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION

REPAIR FASTENER LOCATION. INSTALL A BACB30NW6K() HEX DRIVE BOLT WITH A BACC30M COLLAR.

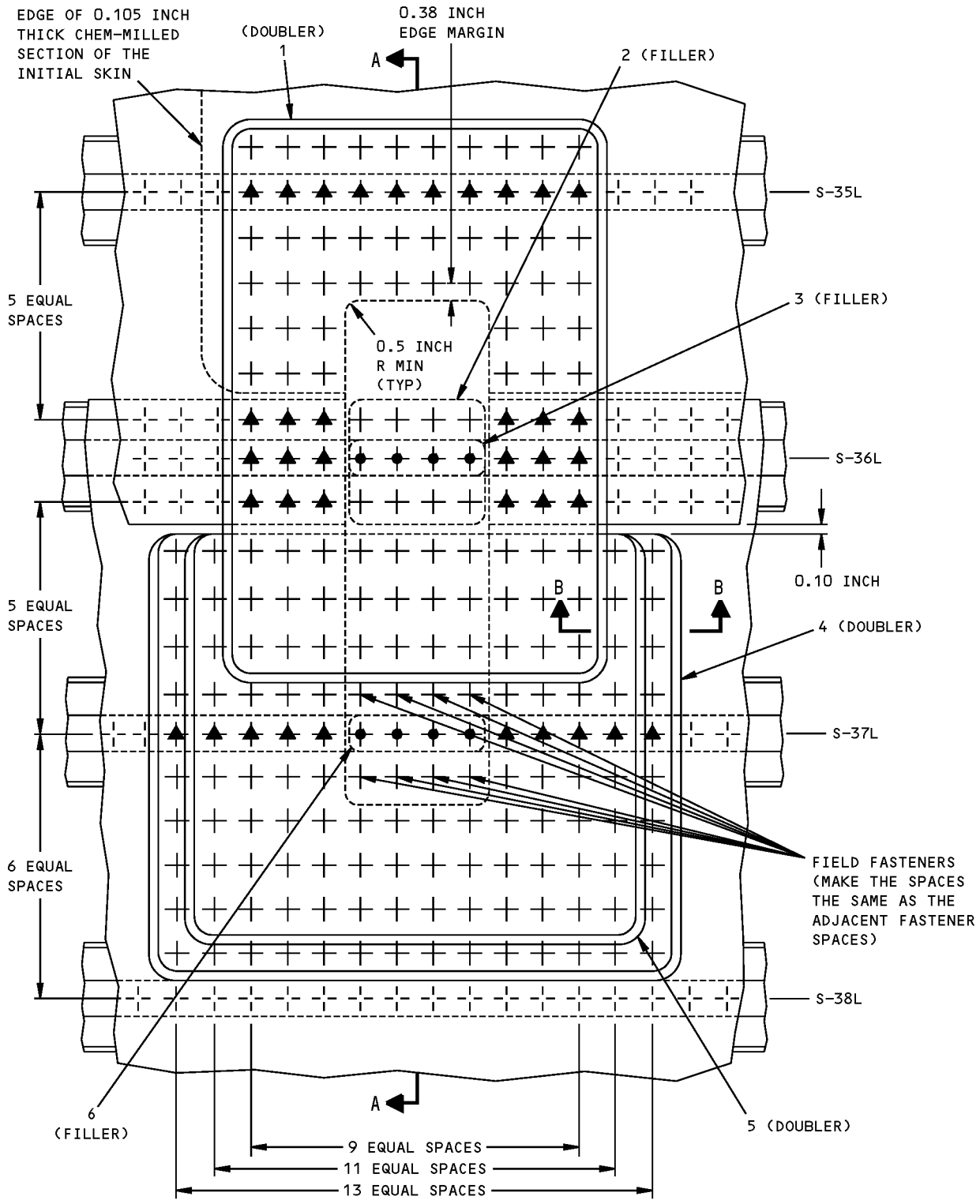
INITIAL FASTENER LOCATION. INSTALL A COUNTERSINK REPAIR WASHER IN THE INITIAL SKIN AS GIVEN IN SRM 51-40-08. INSTALL A BACB30NW()K()X 1/64-INCH DIAMETER OVERSIZE HEX DRIVE BOLT WITH A BACC30M COLLAR.

INITIAL FASTENER LOCATION. INSTALL A BACB30NW()K()X 1/64-INCH DIAMETER OVERSIZE HEX DRIVE BOLT WITH A BACC30M COLLAR.

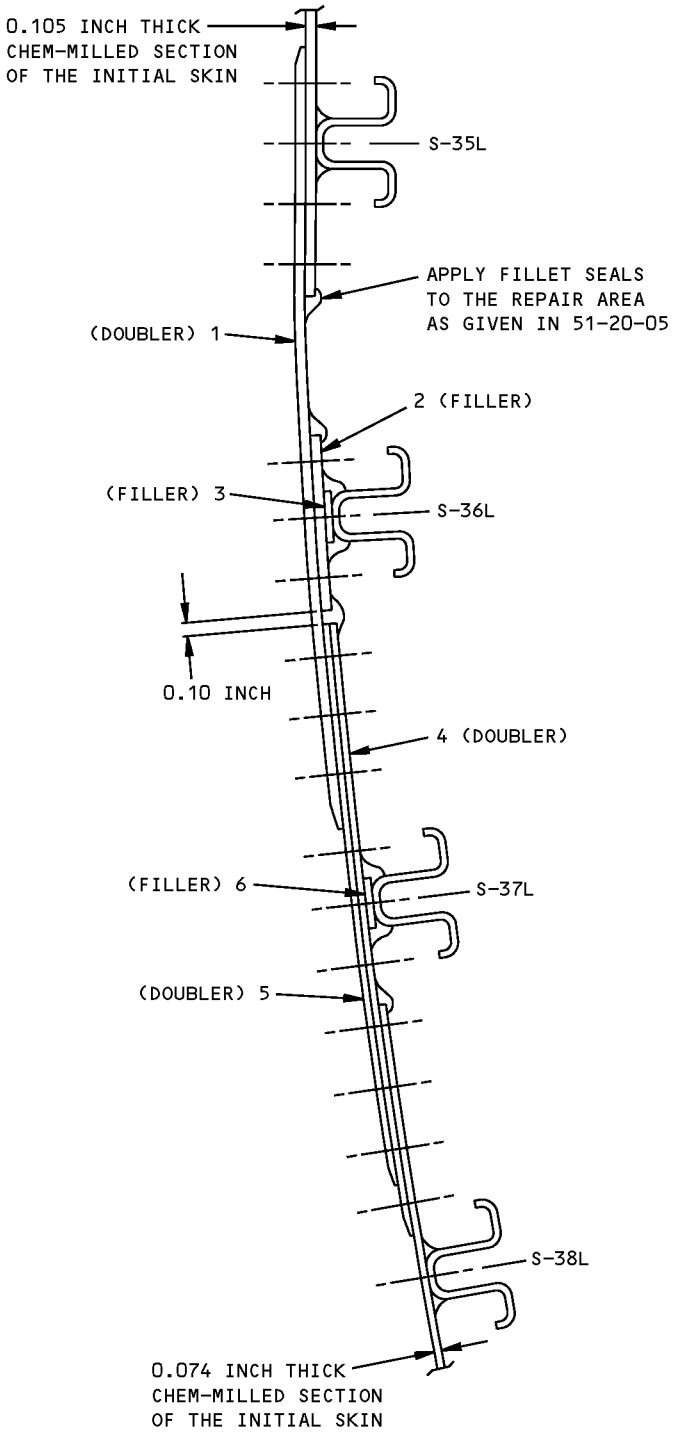
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER [A]	1	0.112 CLAD 2024-T3
2	FILLER	1	0.112 CLAD 2024-T3
3	FILLER	1	0.100 CLAD 2024-T3
4	DOUBLER [A]	1	0.063 CLAD 2024-T3
5	DOUBLER [A]	1	0.071 CLAD 2024-T3
6	FILLER	1	0.071 CLAD 2024-T3

TABLE I

Lap Splice Repair Below Bulk Cargo Door
Figure 201 (Sheet 2 of 5)

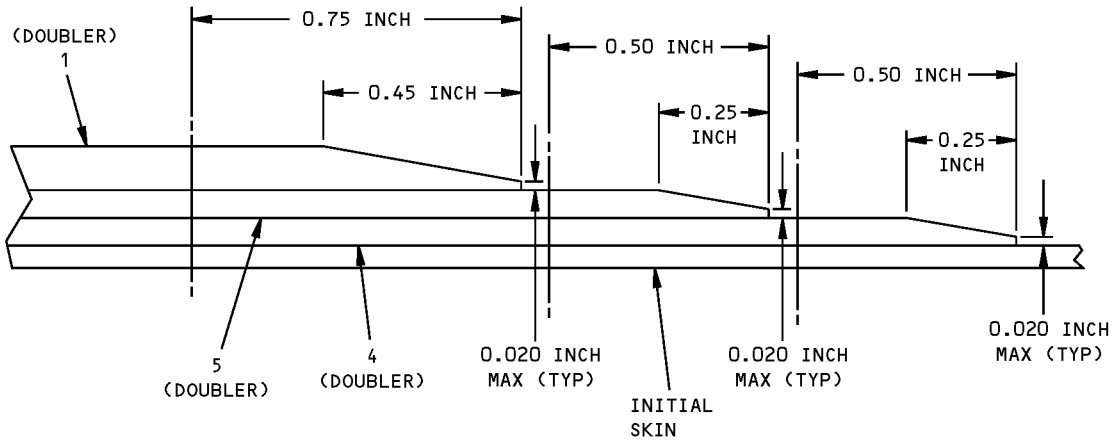


Lap Splice Repair Below Bulk Cargo Door
Figure 201 (Sheet 3 of 5)



SECTION A-A

Lap Splice Repair Below Bulk Cargo Door
Figure 201 (Sheet 4 of 5)



SECTION B–B

Lap Splice Repair Below Bulk Cargo Door
Figure 201 (Sheet 5 of 5)

REPAIR 2 - SKIN REPAIR AT VHF ANTENNA LOCATION

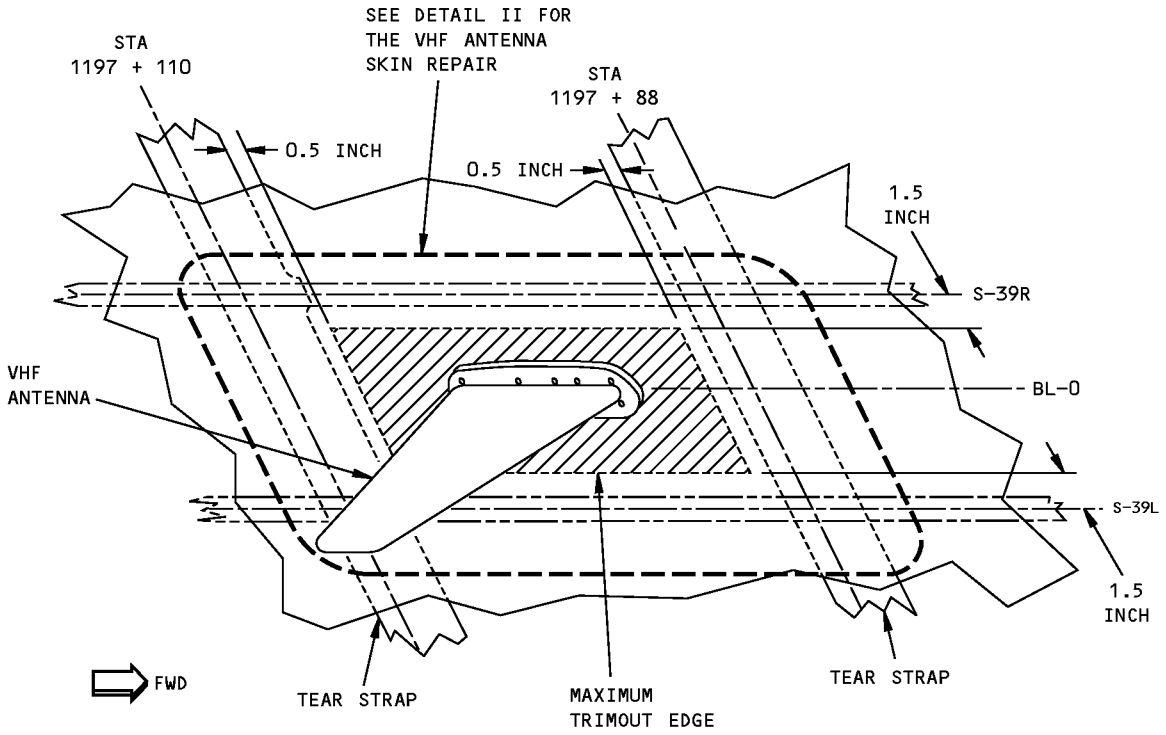
1. Applicability

A. This repair is applicable to the 767-300 model with the VHF Antenna configuration at STA 1197 + 99, between S-39L and S-39R, for L/N 132 thru L/N 350.

2. General

A. This repair applies only to skin cracks within the cross-hatched area shown in Figure 201/REPAIR 2.

B. This is a Category B Repair and requires after-modification inspections as given by Paragraph 5./REPAIR 2.



VIEW LOOKING UP
DETAIL I

1504272 S0000274502_V1

VHF Antenna Skin
Figure 201

3. References

Reference	Title
51-40-02, GENERAL	Fastener Installation and Removal
51-40-08, GENERAL	Countersinking

4. Repair Instructions

A. Remove the antenna support structure to get access to the damaged area. Refer to AMM 23-12-03.

B. Clean off the sealant. Do not damage the fuselage skin.

C. Trim out the damage in the skin as shown in Figure 202/REPAIR 2 Detail II. The trimout edge shown in Figure 202/REPAIR 2 Detail II is the minimum trimout line. The trimout area must be extended if the damage extends beyond the area shown. The maximum trimout area is shown in Figure 201/REPAIR 2 Detail I. Keep a minimum of 0.5 inch corner radii and 2D fastener edge margin.

D. Make edges of the cut smooth with a surface finish of 125 microinches Ra.

E. Do a detailed visual inspection to the internal backup structure to make sure there are no more cracks.

F. Do a high frequency eddy current (HFEC) inspection to the edge of the trimout. Refer to NDT, Part 6. Make sure there are no more cracks.

G. Add an insurance cut of 0.030 inch to the trimmed edge.

H. Do an open hole HFEC inspection to all of the initial fastener holes to make sure there are no more cracks.

I. Make the repair parts as given by Figure 202/REPAIR 2 and Table 201/REPAIR 2. Keep a minimum 1.5D fastener edge margin on the repair filler.

J. Make the repair parts with four (or more) fastener rows through the doubler and tripler, forward and aft of the trimmed section.

K. Make the repair parts with three (or more) fastener rows through the doubler and tripler, to the left and right of the trimmed section.

L. Taper the edges of the doubler and tripler as shown in Figure 202/REPAIR 2 Detail III.

M. Pick up existing fastener locations of internal backup structure.

N. Make sure that no repair fasteners are located in the chem milled radii of the skin or through the edge of any initial internal structure. Keep a minimum 2D edge margin on all internal backup structure such as the tear strap and the shear tie.

O. Install fasteners through the tear straps in a staggered pattern as shown in Figure 202/REPAIR 2 Detail II.

P. Keep a minimum of 0.5 inch corner radii on the doubler and tripler. A 1.0 inch corner radius is preferred.

Q. Keep a minimum 2D edge margin for all repair fasteners.

R. Do not end the repair doubler and tripler on the tear strap in the longitudinal direction. Refer to Figure 202/REPAIR 2.

S. Do not end the repair doubler and tripler on the stringer in the circumferential direction. Refer to Figure 202/REPAIR 2.

T. Do not end the repair doubler and tripler on the end fasteners of the frame shear tie. Refer to Figure 202/REPAIR 2.

U. Assemble the repair parts.

V. Drill the fastener holes. Keep a 4D-6D spacing.

W. Disassemble the repair parts.

X. Remove all nicks, scratches, burrs, and sharp edges from the repair parts and the cut edges of the initial structure.

Y. Apply two layers of BMS10-11, Type I primer to the internal surfaces of the repair parts and to the bare surfaces of the initial parts.

Z. Install countersink repair washers in the initial countersink hole locations on the skin under the doubler. Refer to 51-40-08, GENERAL.

AA. Apply a layer of BMS10-79, Type II or III finish to the external surfaces of the repair parts and to the bare external surfaces of the initial parts.

AB. Shim all the gaps to 0.005 inch before fastener installation.

AC. Install the repair parts wet with BMS 5-95 sealant between the mating surfaces.

AD. Apply a fillet seal around the repair parts using BMS 5-95 sealant.

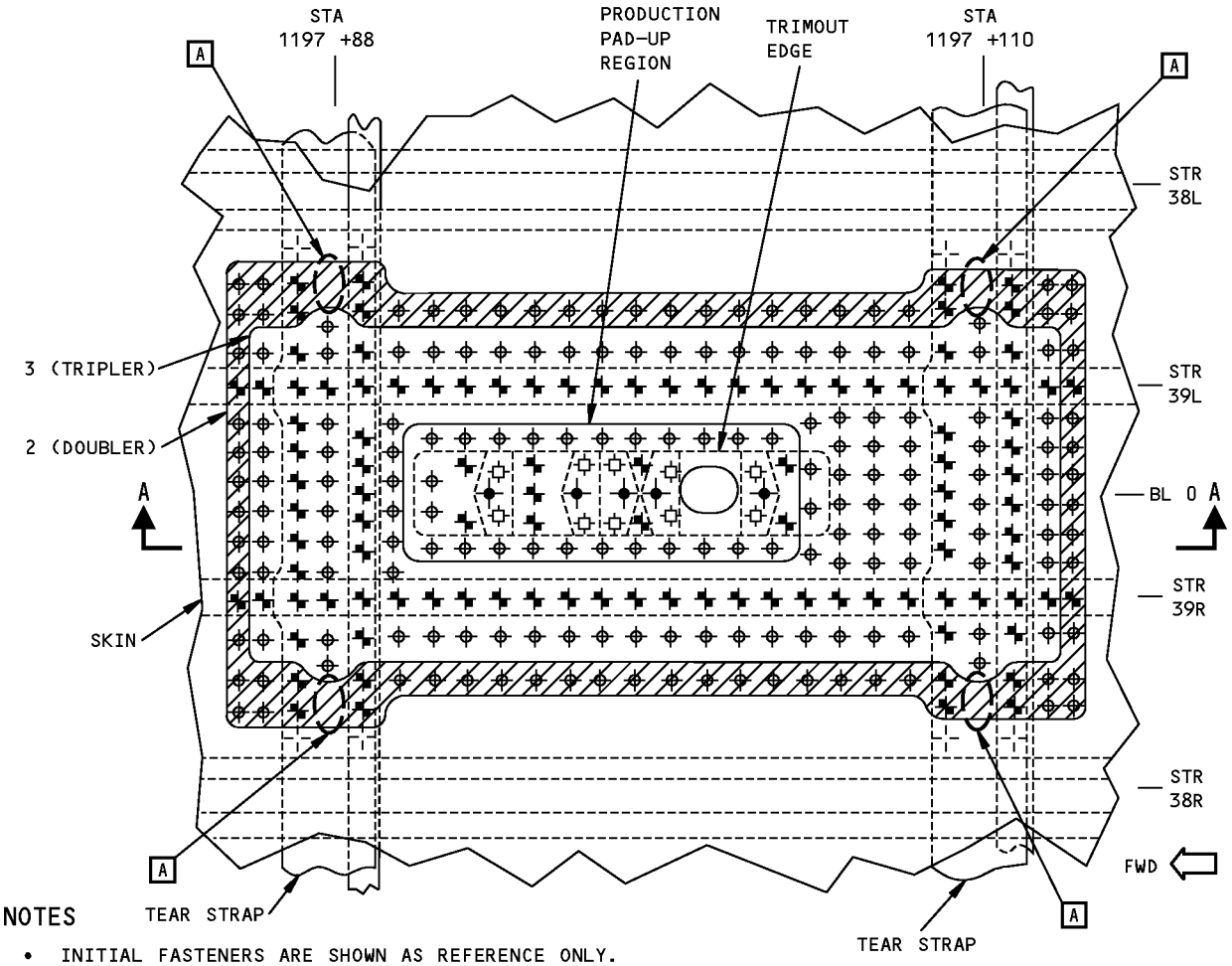
AE. Install the repair fasteners except VHF Antenna installation fasteners (10 places).

AF. Reinstall the VHF Antenna and Mount Assembly. Refer to AMM 23-12-03. Mounting bolts will require longer grip length to accommodate additional doubler and tripler thickness.

AG. Apply a layer of BMS 3-23 corrosion inhibiting compound to the internal surfaces of the repair area.

Table 201: Repair Materials

ITEM NUMBER	PART	QTY	MATERIAL	THICKNESS
1	FILLER	1	2024-T3 CLAD	SAME AS TRIMMED SKIN (0.090 INCH MAX.)
2	DOUBLER	1	2024-T3 CLAD	0.063 INCH
3	TRIPLER	1	2024-T3 CLAD	0.071 INCH
4	COUNTERSINK REPAIR WASHERS	AS NECESSARY	51-40-02, GENERAL	-



NOTES

- INITIAL FASTENERS ARE SHOWN AS REFERENCE ONLY.

[A] DO NOT INSTALL REPAIR FASTENERS AT THIS LOCATION ON EACH TAB OUT OF THE DOUBLER (4 LOCATIONS). ONLY PICK UP INITIAL FASTENERS COMMON TO TEAR STRAP.

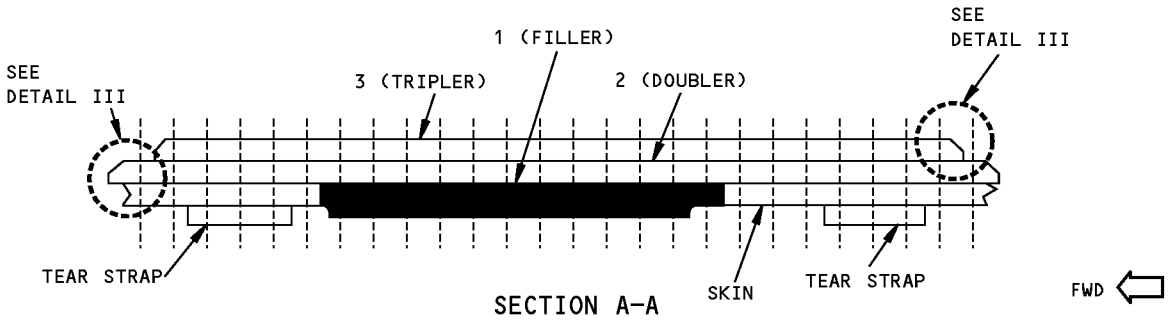
DETAIL II

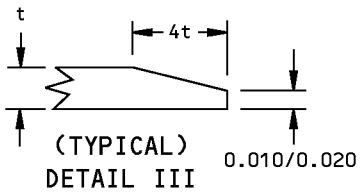
FASTENER SYMBOLS

- REFERENCE FASTENER LOCATION
- REPAIR FASTENER LOCATION. INSTALL A BACR15FV6KE() RIVET.
- INITIAL FASTENER LOCATION. USE BACB30LH4 BOLTS FOR ANTENNA INSTALLATION . (10 LOCATIONS) HOLE THRU REPAIR PARTS COMMON TO CHANNEL HOLE 0.279/0.291 DIA.
- INITIAL FASTENER LOCATION. INSTALL BACR15FV6KE() RIVET.
- INITIAL FASTENER LOCATION. INSTALL BACR15FV6KE() RIVET FOR NUT PLATE ASSEMBLY INSTALLATION.

1504265 S0000274493_V1

VHF Antenna Skin Repair
Figure 202 (Sheet 1 of 2)





1552588 S0000285689_V1

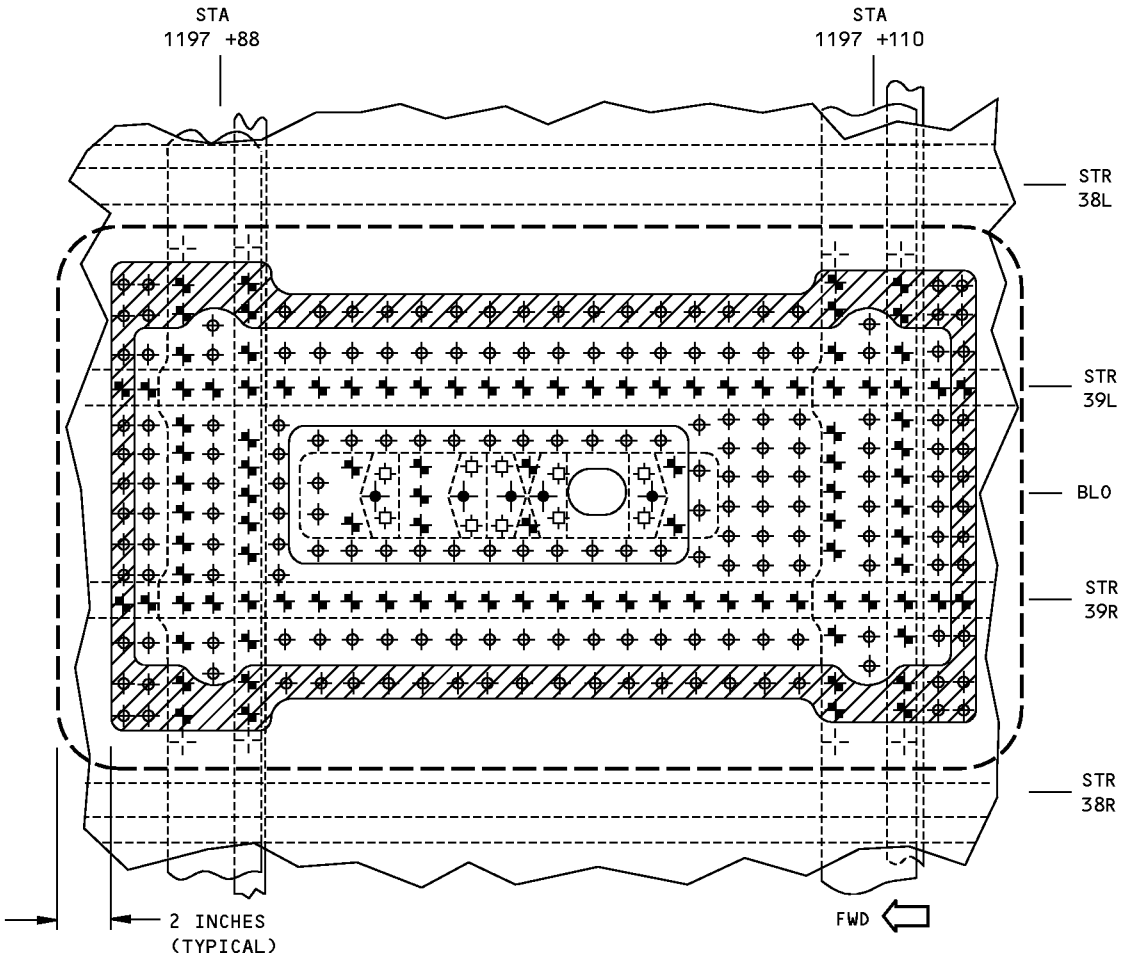
VHF Antenna Skin Repair
Figure 202 (Sheet 2 of 2)

5. Inspection

A. This is a category B repair as defined in the 767 SRM and requires the following after modification inspections.

Table 202: Inspection Requirements

INSPECTION THRESHOLD	REPEAT INSPECTIONS	
	METHOD	INTERVAL
37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY OR WITHIN 3,000 FLIGHT CYCLES FROM THE REPAIR INSTALLATION, WHICHEVER COMES LAST	DETAILED VISUAL (EXTERNAL)	3,000 FLIGHT CYCLES
	LOW FREQUENCY EDDY CURRENT (EXTERNAL)	3,000 FLIGHT CYCLES



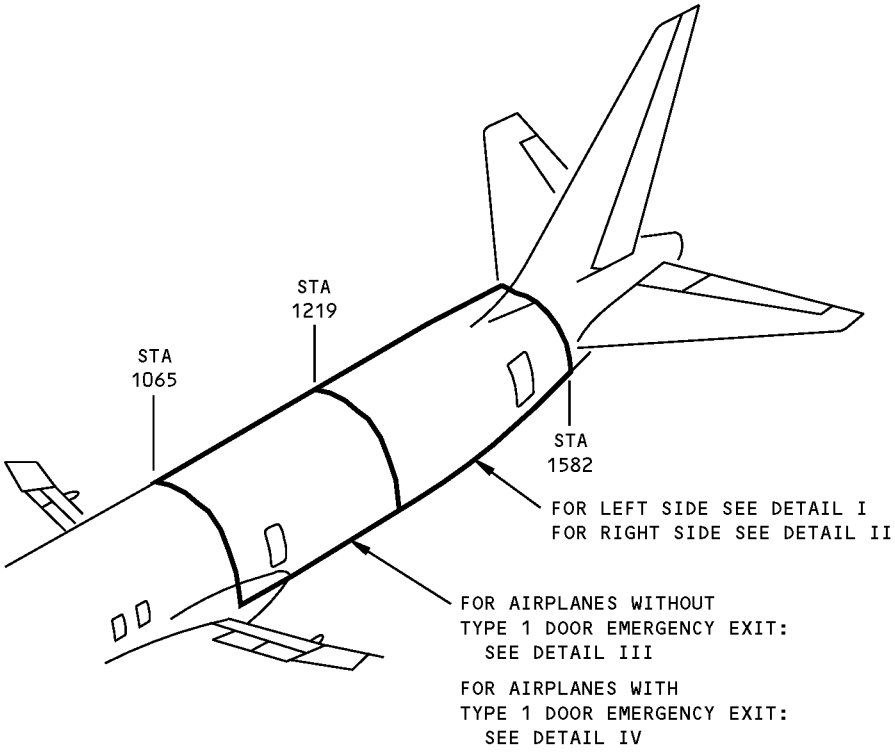
DETAILED VISUAL EXTERNAL INSPECTION

LFEC EXTERNAL

1504268 S0000274303_V1

Repair Inspection Requirements
Figure 203

IDENTIFICATION 1 - SECTION 46 - STRINGERS



NOTES

- SKIN PANELS AND STRINGERS ARE ON SAME REFERENCE DRAWINGS. REFER TO 53-60-01

[A] FOR CUM LINE NUMBERS: 132 THRU 154

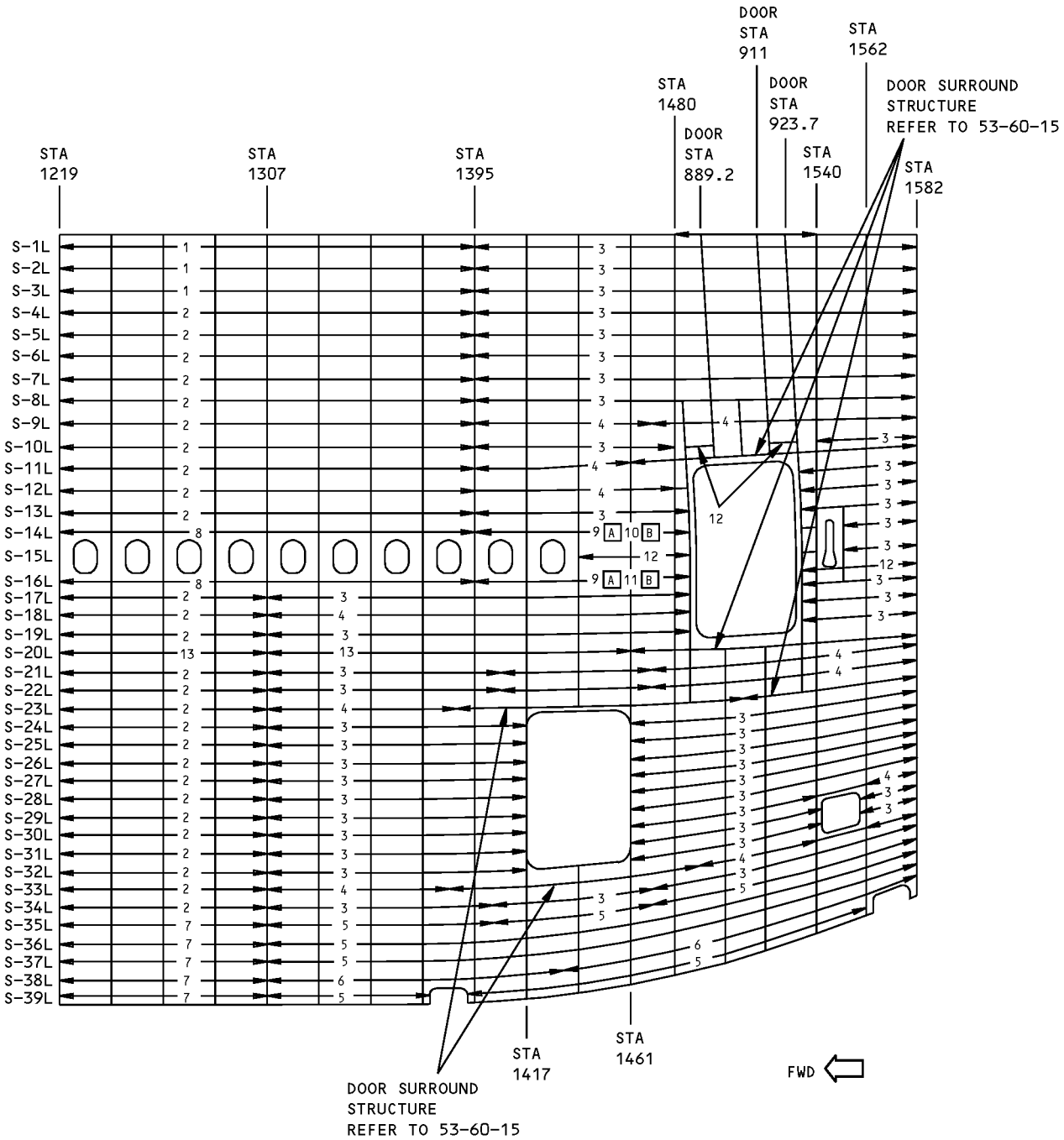
[B] FOR ALL AIRPLANES NOT LISTED IN [A]

[C] LEFT SIDE ONLY

[D] RIGHT SIDE ONLY

[E] SOME OF THE STRINGERS ARE TAPERED AND MACHINED, THEREFORE THE THICKNESS IS NOT CONSTANT. REFER TO THE ENGINEERING DRAWING TO FIND THE LOCAL THICKNESS.

Stringer Identification - Section 46
Figure 1 (Sheet 1 of 9)



LEFT SIDE
DETAIL I

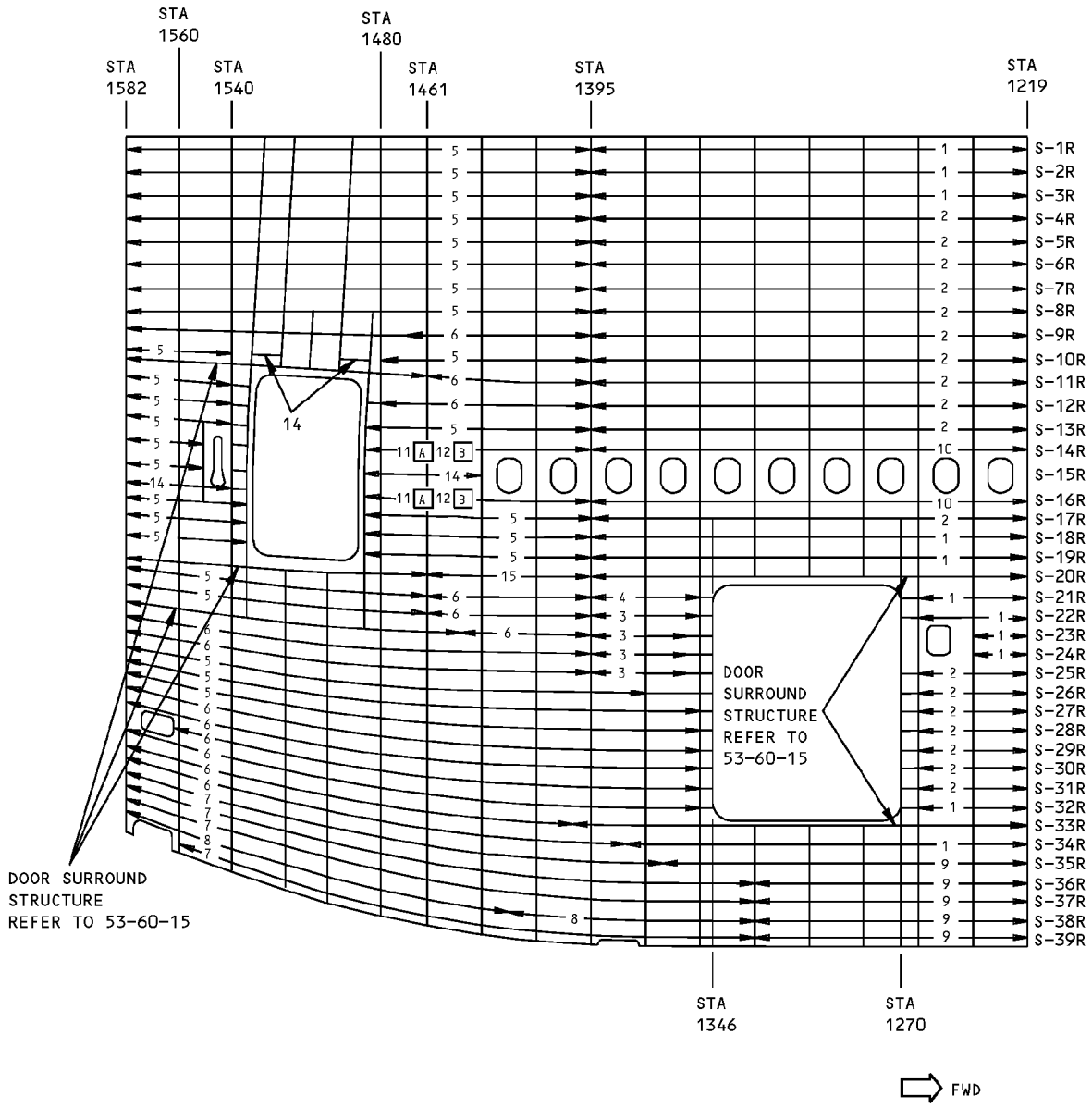
LIST OF MATL

Stringer Identification - Section 46
Figure 1 (Sheet 2 of 9)

ITEM	THICKNESS [E]	MATERIAL	SECTION NUMBER	STRINGER TYPE	REF DWG	EFFECTIVITY
1	0.160	7075-T62			146T3001	
2	0.120	7075-T62			146T3001	
3	0.120	7075-T6			146T3002	
4	0.140	7075-T6			146T3002	
5	0.120	7075-T6			146T3003	
6	0.140	7075-T6			146T3003	
7	0.160	7075-T62			146T3003	
8		7075-T6511			146T3314	
9		7075-T6511	BAC1517-2111		146T3334	
10		7075-T6	BAC1517-2111		146T3334	
11		7075-T73	BAC1517-2259		146T3334	
12		7075-T6	BAC1517-2111		146T3335	
13		7075-T6	BAC1506-3487 OPTIONAL: BAC1506-3122		146T3443	

LIST OF MATERIALS FOR DETAIL I

Stringer Identification - Section 46
Figure 1 (Sheet 3 of 9)



RIGHT SIDE
DETAIL II

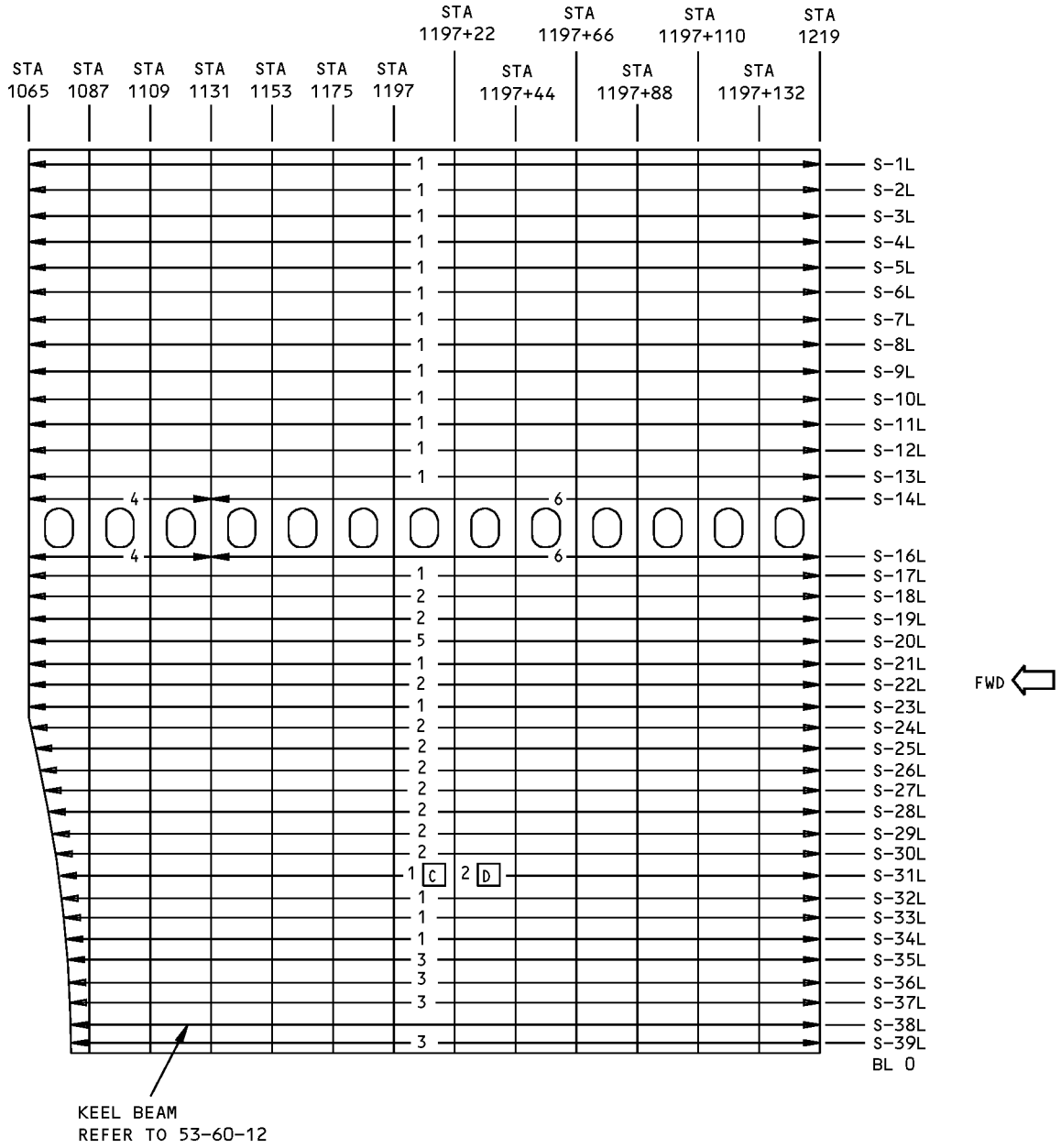
LIST OF MATL

Stringer Identification - Section 46
Figure 1 (Sheet 4 of 9)

ITEM	THICKNESS [E]	MATERIAL	SECTION NUMBER	STRINGER TYPE	REF DWG	EFFECTIVITY
1		7075-T62			146T3001	
2		7075-T62			146T3001	
3		7075-T6			146T3001	
4		7075-T6			146T3001	
5		7075-T6			146T3002	
6		7075-T6			146T3002	
7		7075-T6			146T3003	
8		7075-T6			146T3003	
9		7075-T62			146T3003	
10		7075-T6511	BAC1517-2111		146T3314	
11		7075-T6511	BAC1517-2111		146T3334	
12		7075-T6	BAC1517-2111		146T3334	
13		7075-T73	BAC1517-2259		146T3334	
14		7075-T6	BAC1517-2111		146T3335	
15		7075-T6	BAC1506-3487 OPTIONAL: BAC1506-3122		146T3443	

LIST OF MATERIALS FOR DETAIL II

Stringer Identification - Section 46
Figure 1 (Sheet 5 of 9)



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
STRINGER CONFIGURATION FOR AIRPLANES
WITHOUT TYPE I DOOR EMERGENCY EXIT

DETAIL III

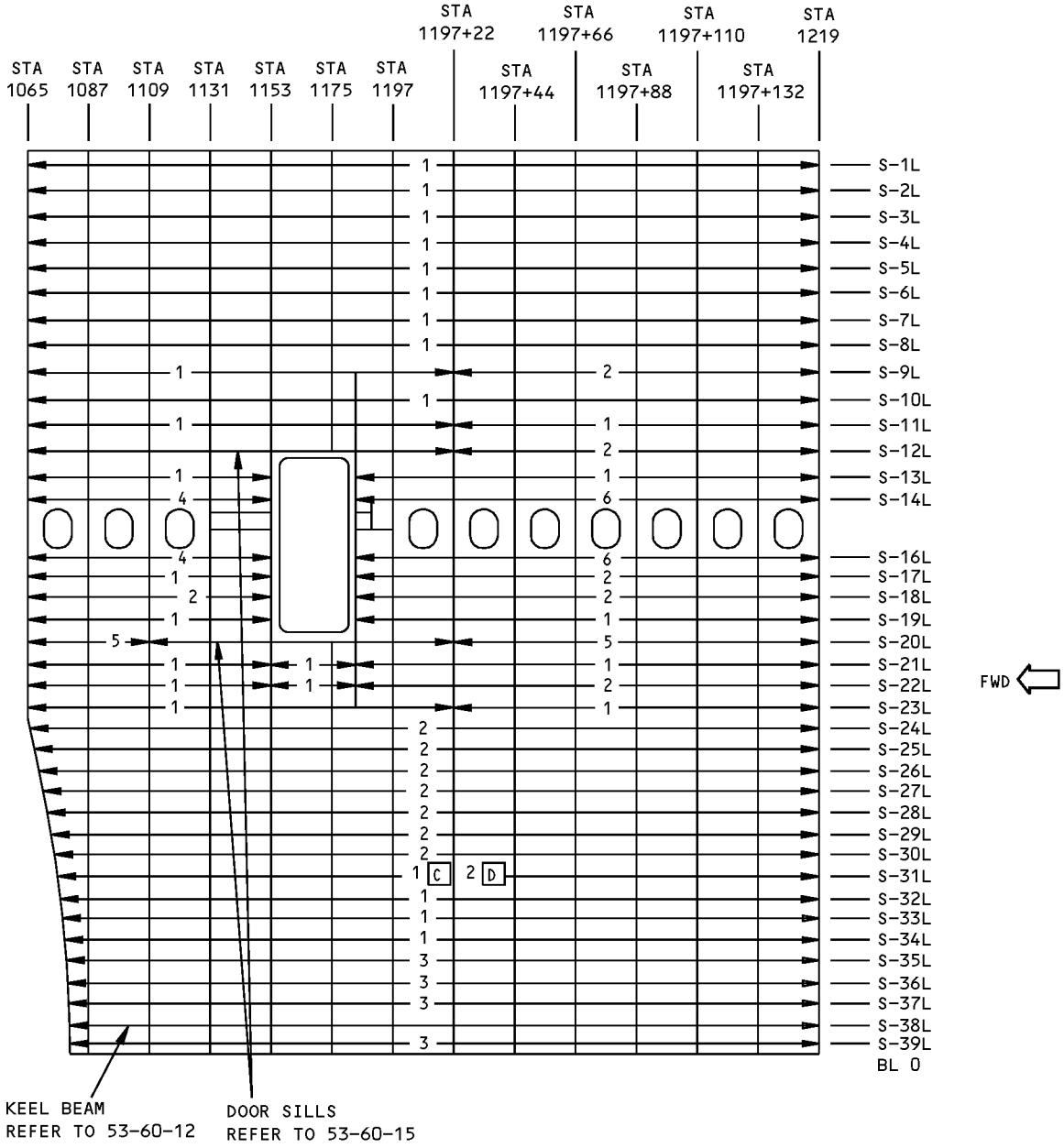
LIST OF MATL

Stringer Identification - Section 46
Figure 1 (Sheet 6 of 9)

ITEM	THICKNESS [E]	MATERIAL	SECTION NUMBER	STRINGER TYPE	REF DWG	EFFECTIVITY
1		7075-T62			146T3001	
2		7075-T62			146T3001	
3		7075-T62			146T3003	
4		7075-T6511	BAC1517-2325 OPTION: BAC1517-2144		146T3356	
5		7075-T6511	BAC1506-3122		146T3364	
6		7075-T6511	BAC1517-2111		146T3357	

LIST OF MATERIALS FOR DETAIL III

Stringer Identification - Section 46
Figure 1 (Sheet 7 of 9)



LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE
(VIEW FROM THE INSIDE)
STRINGER CONFIGURATION FOR AIRPLANES
WITH TYPE I DOOR EMERGENCY EXIT

DETAIL IV

LIST OF MATL

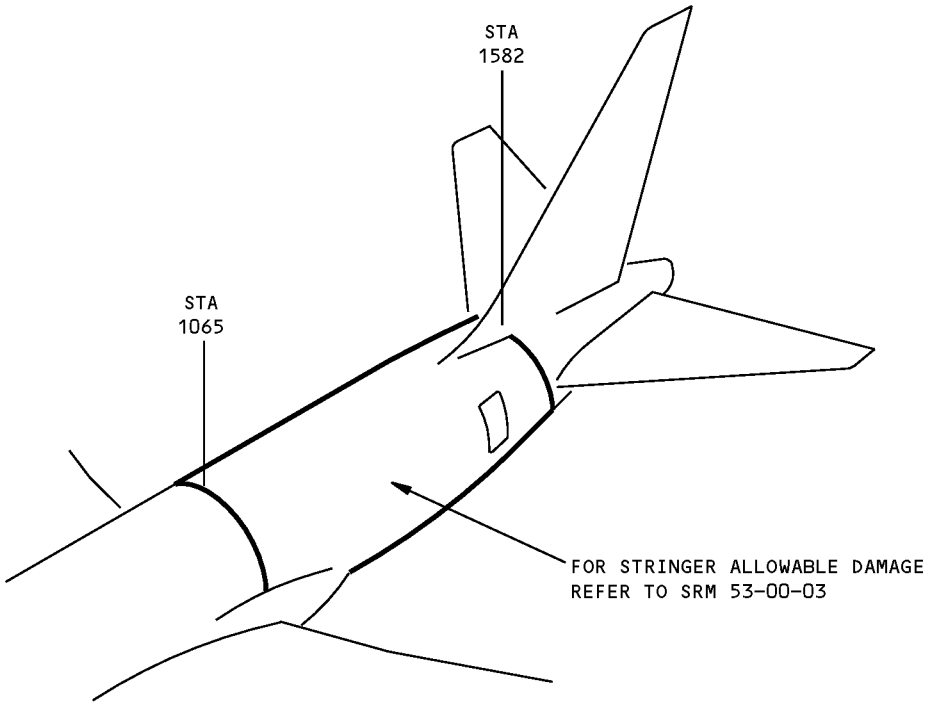
Stringer Identification - Section 46
Figure 1 (Sheet 8 of 9)

ITEM	THICKNESS [E]	MATERIAL	SECTION NUMBER	STRINGER TYPE	REF DWG	EFFECTIVITY
1		7075-T62			146T3001	
2		7075-T62			146T3001	
3		7075-T62			146T3003	
4		7075-T6	BAC1517-2325		146T3356	
5		7075-T6511	BAC1506-3122		146T3364	
6		7075-T6	BAC1517-211		146T3357	

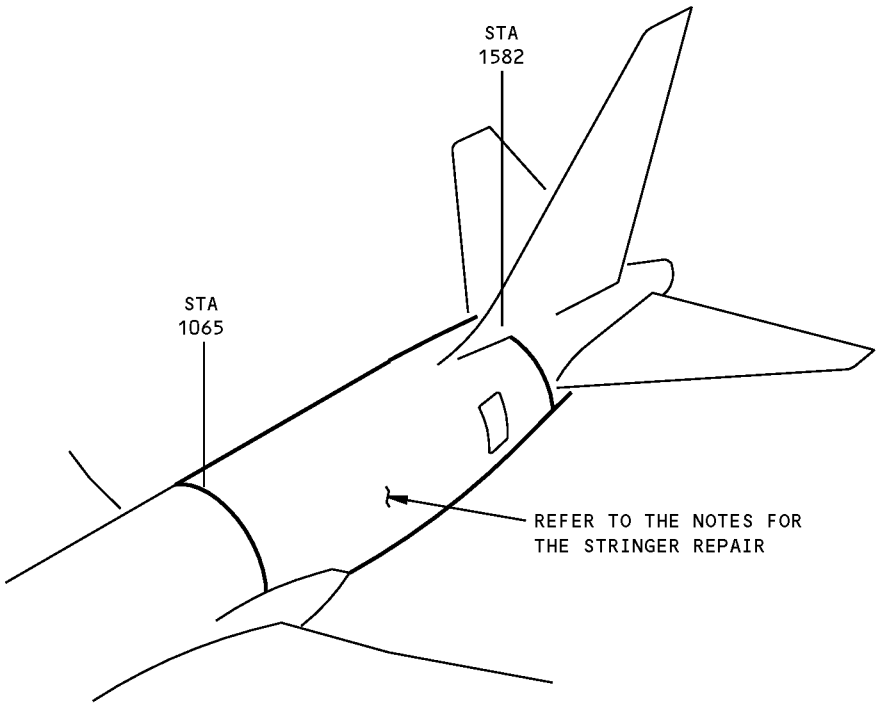
LIST OF MATERIALS FOR DETAIL IV

Stringer Identification - Section 46
Figure 1 (Sheet 9 of 9)

ALLOWABLE DAMAGE GENERAL - SECTION 46 - FUSELAGE STRINGERS



Allowable Damage - Section 46 Fuselage Stringers
Figure 101

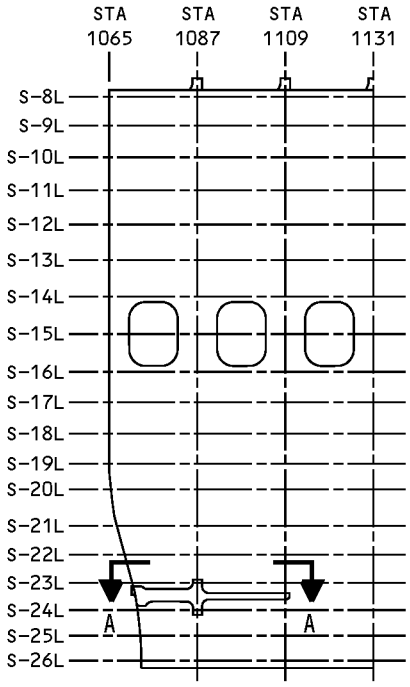


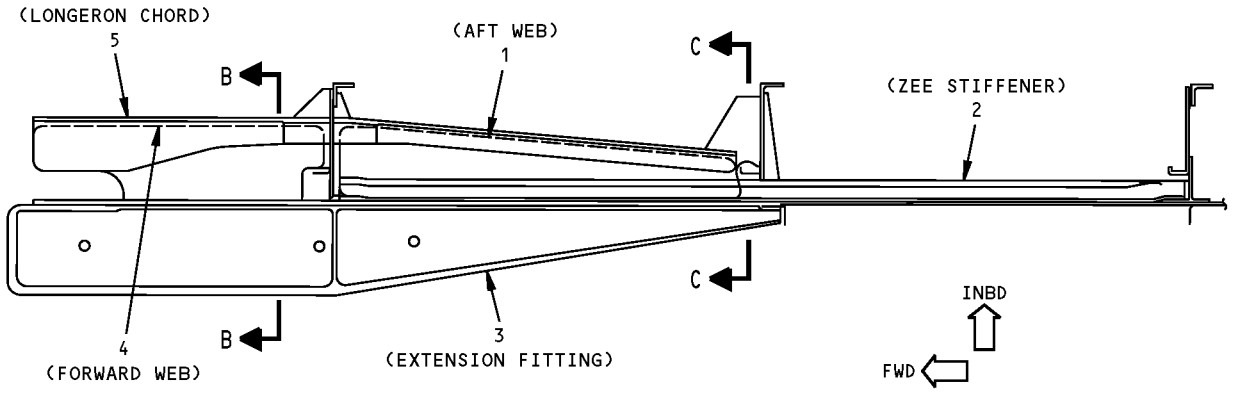
NOTES

- REFER TO SRM 53-00-03, REPAIR 1 FOR STRINGERS S-1 THROUGH S-19.
- REFER TO SRM 53-00-03, REPAIR 2 FOR STRINGERS S-21 THROUGH S-39.
- CONTACT THE BOEING COMPANY FOR STRINGER S-20.

Section 46 Stringer Repair
Figure 201

IDENTIFICATION 1 - SECTION 46 - LONGERONS

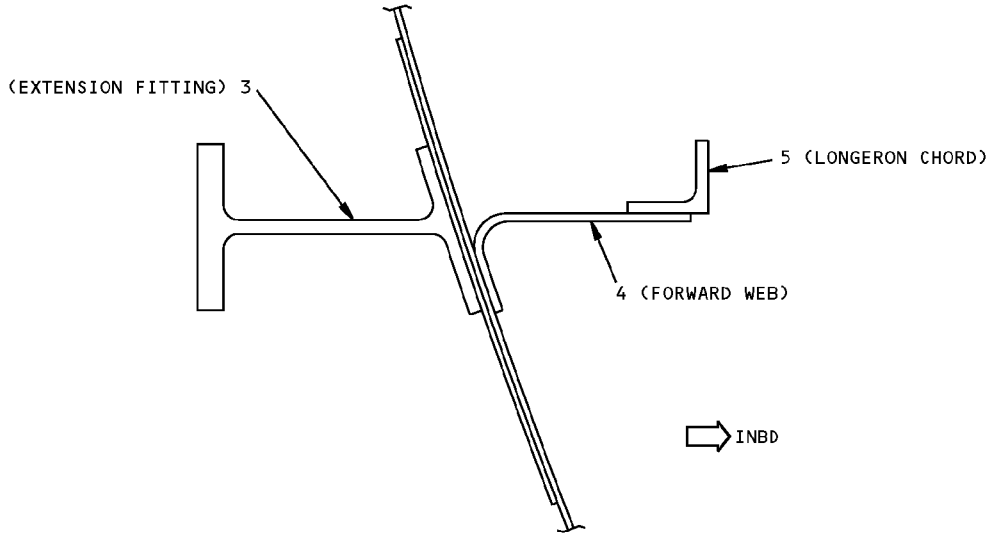




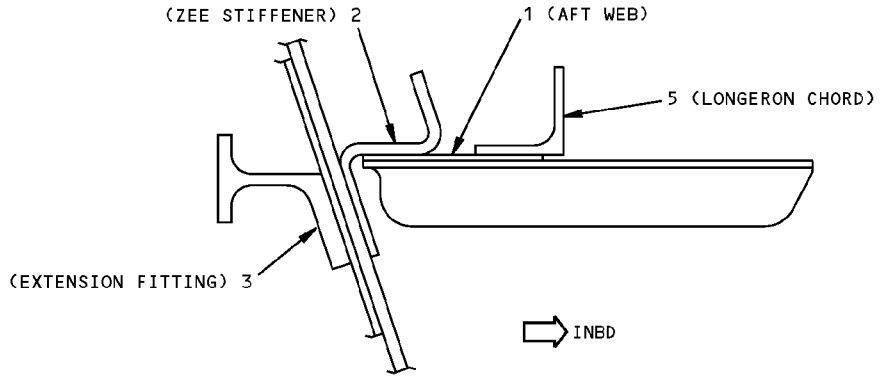
VIEW A-A

LIST OF MATL

Section 46 - Longeron Identification
Figure 1 (Sheet 1 of 2)



ROTATED 90° CLOCKWISE
SECTION B–B



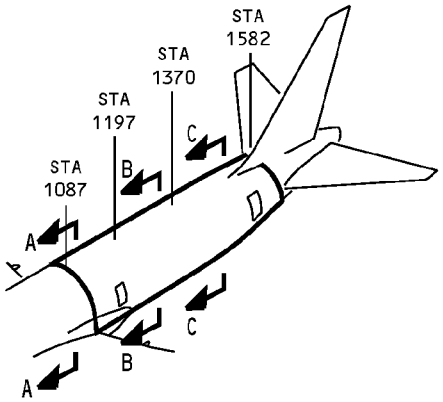
ROTATED 90° CLOCKWISE
SECTION C–C

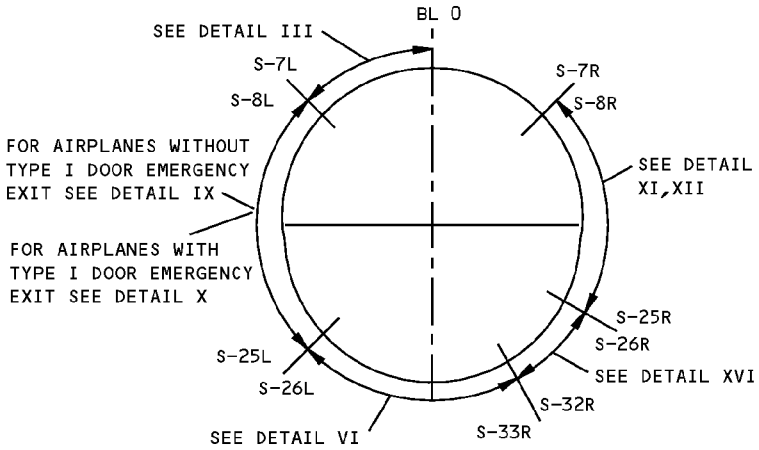
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	AFT WEB	0.080	CLAD 7075-T6	
2	ZEE STIFFENER		BAC1517-2185 7075-T6	
3	EXTENSION FITTING		7075-T7736 FORGING	
4	FORWARD WEB	0.014	7075-T62 OPTION 7075-T6	
5	LONGERON CHORD		BAC1503-11258 7075-T6511	

LIST OF MATERIALS FOR VIEW A–A, SECTION B–B,AND SECTION C–C

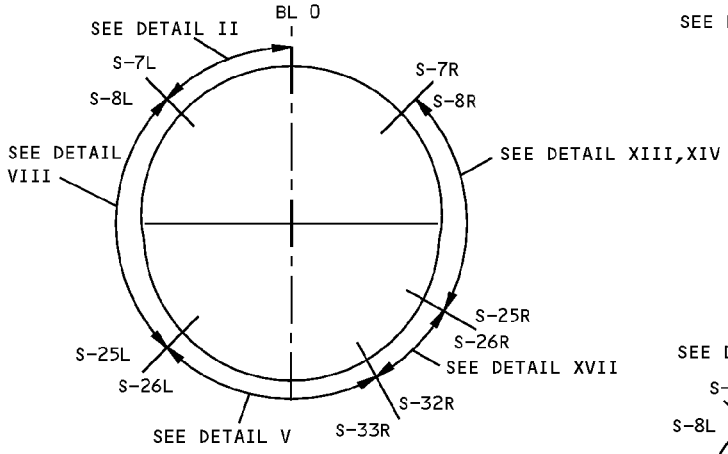
Section 46 - Longeron Identification
Figure 1 (Sheet 2 of 2)

IDENTIFICATION 1 - SECTION 46 - FRAMES

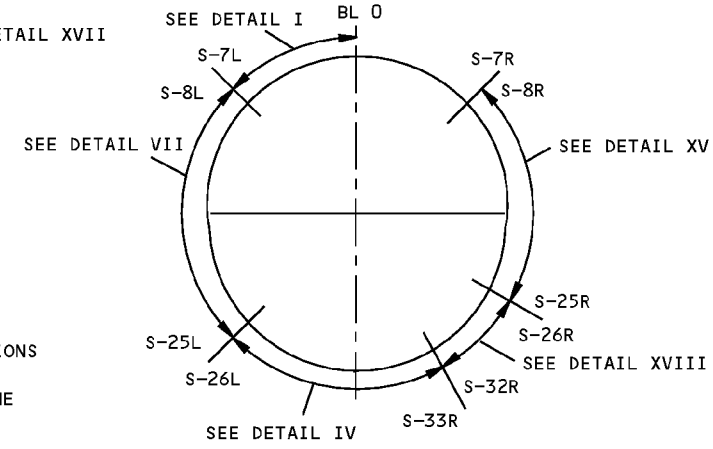




STA 1087 TO STA 1197
SECTION A-A



STA 1197 TO STA 1370
SECTION B-B



STA 1370 TO STA 1582
SECTION C-C

NOTES

[A] ALL AIRPLANES WITHOUT EXTENDED RANGE PROVISIONS

[B] ALL AIRPLANES WITH EXTENDED RANGE PROVISIONS

[C] FOR AIRPLANES WITHOUT TYPE I DOOR CUM LINE NUMBERS 247,258,259,260,264,267,268,269, 270,273, AND ON

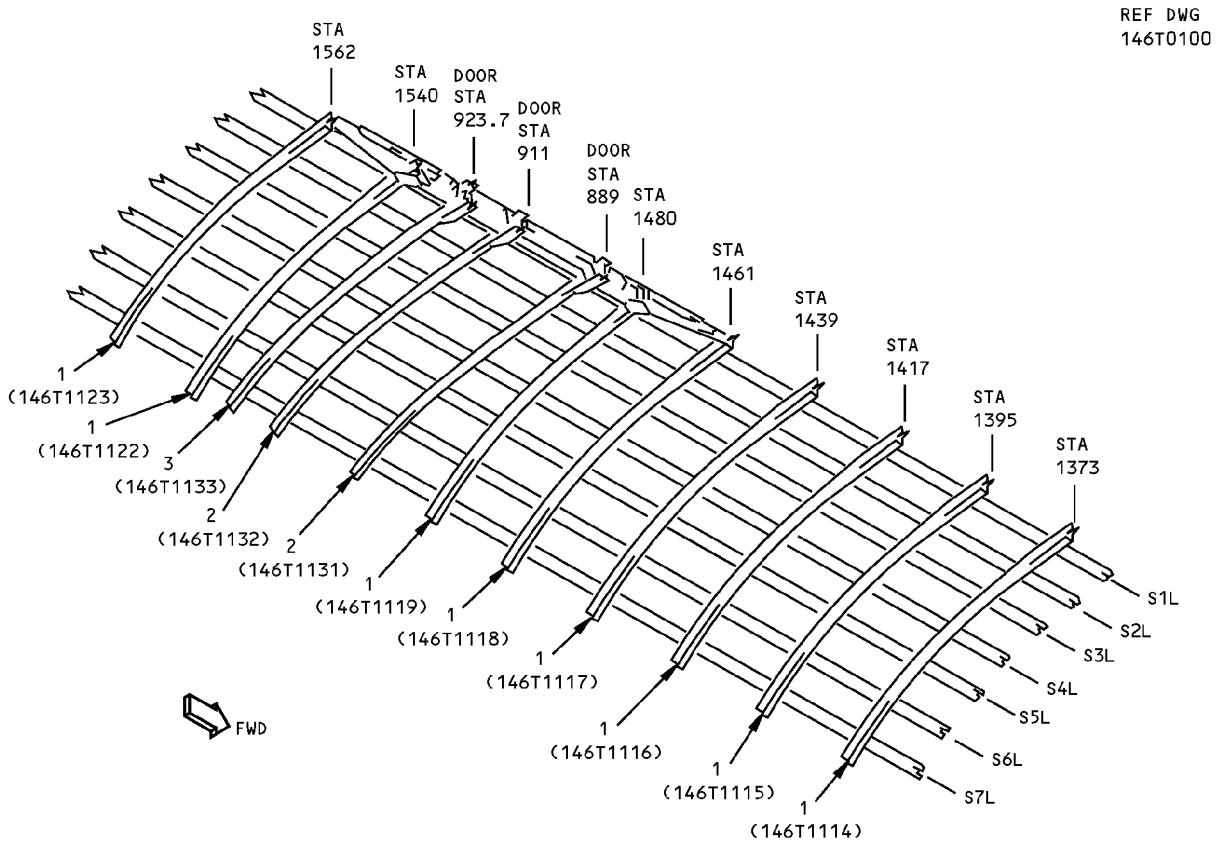
[D] FOR AIRPLANES UP TO AND INCLUDING CUM LINE NUMBER 246

[E] FOR AIRLINES WITHOUT TYPE I DOOR CUM LINE NUMBERS 242,245,246,247,251, AND ON

[F] FOR AIRLINES UP TO AND INCLUDING CUM LINE NUMBER 241

[G] FOR AIRPLANES WITH TYPE I DOOR

Section 46 - Frame Identification
Figure 1 (Sheet 1 of 28)

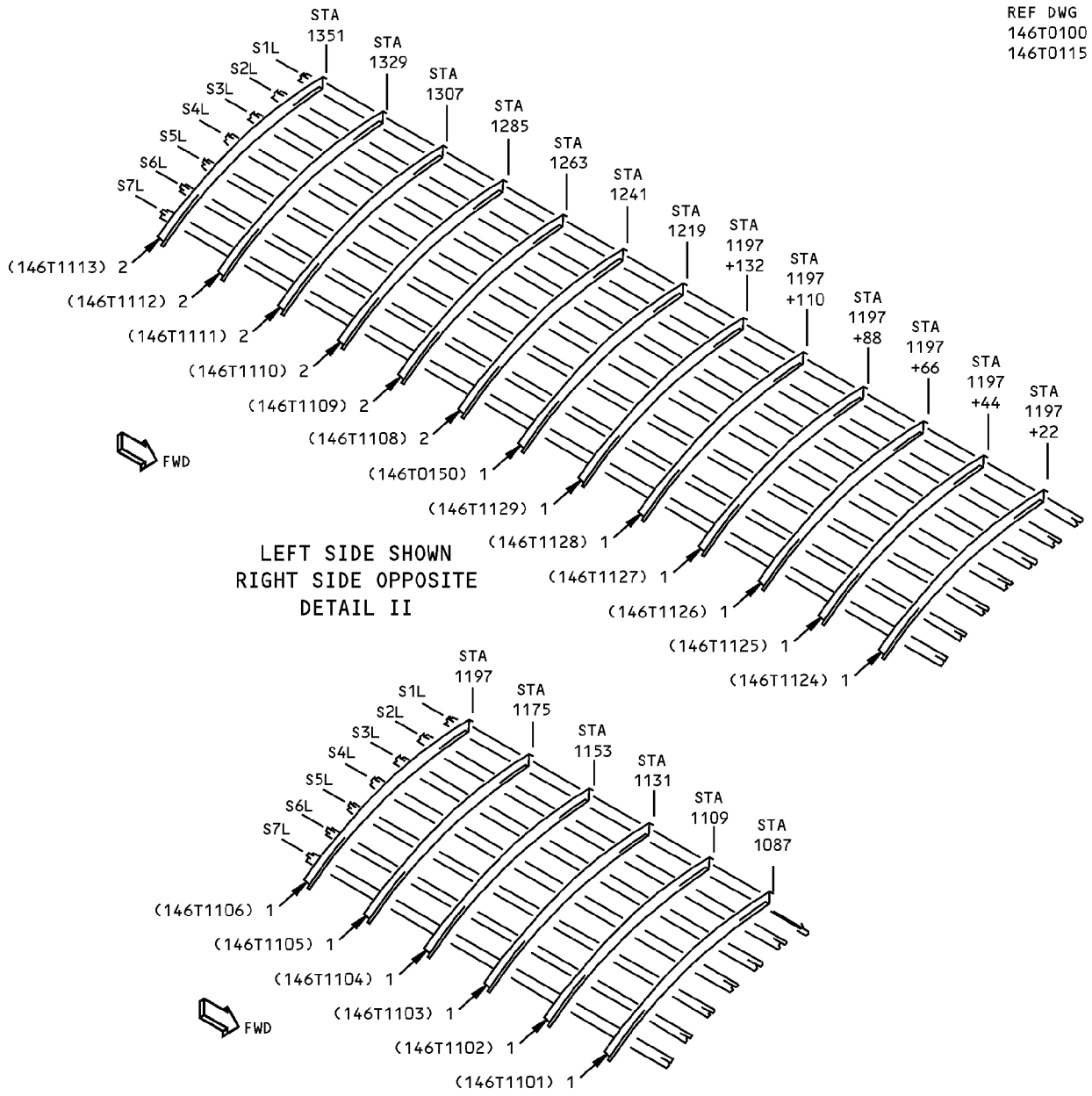


LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.027 MIN)	
2	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-2743 7075-T6	
	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.027 MIN)	
3	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100608 7075-T6	
	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.027 MIN)	

LIST OF MATERIALS FOR DETAIL I

Section 46 - Frame Identification
Figure 1 (Sheet 2 of 28)

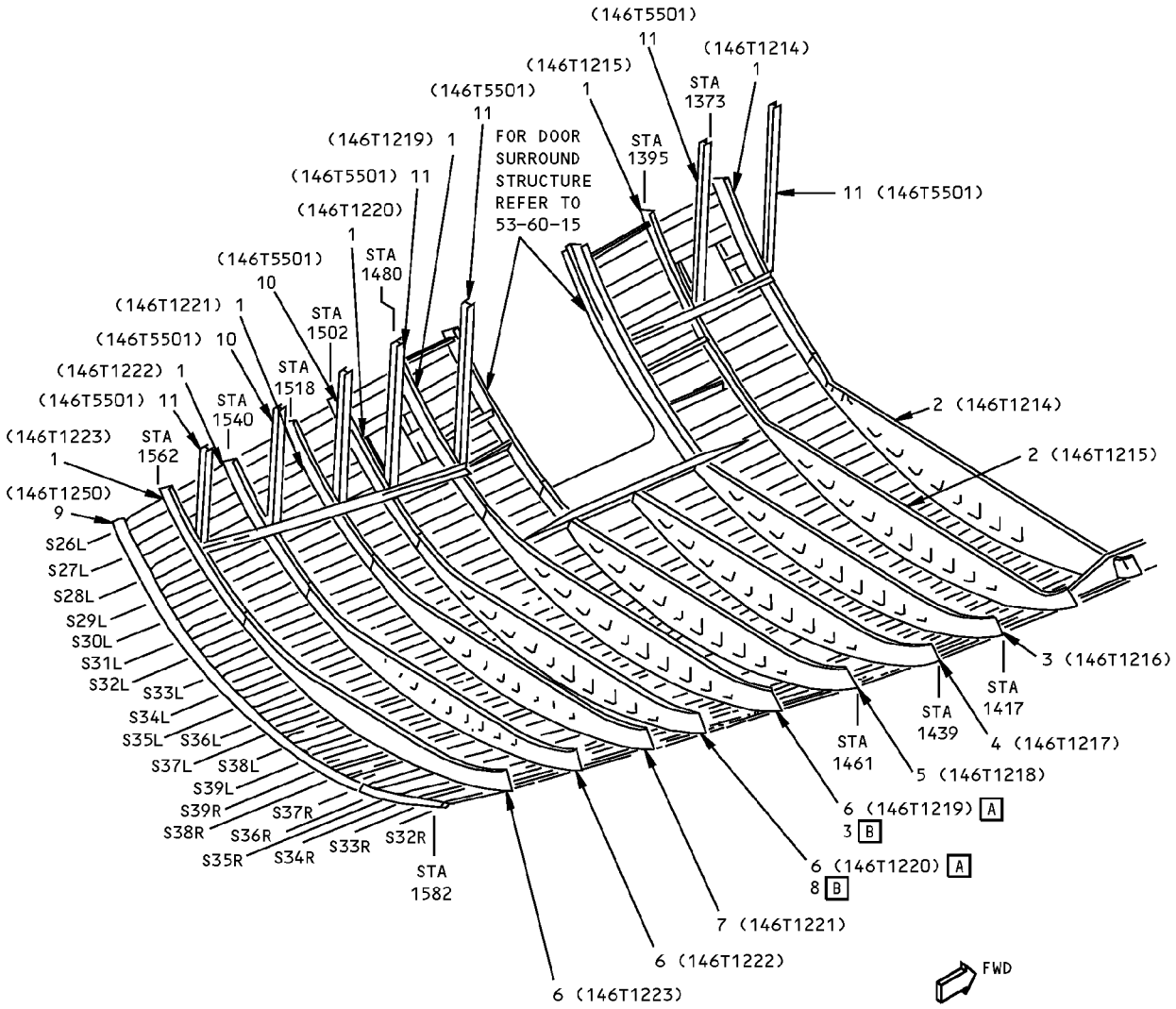


ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.027 MIN)	
2	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.027 MIN)	

LIST OF MATERIALS FOR DETAILS II AND III

Section 46 - Frame Identification
Figure 1 (Sheet 3 of 28)

REFERENCE DRAWING
146T0200



DETAIL IV

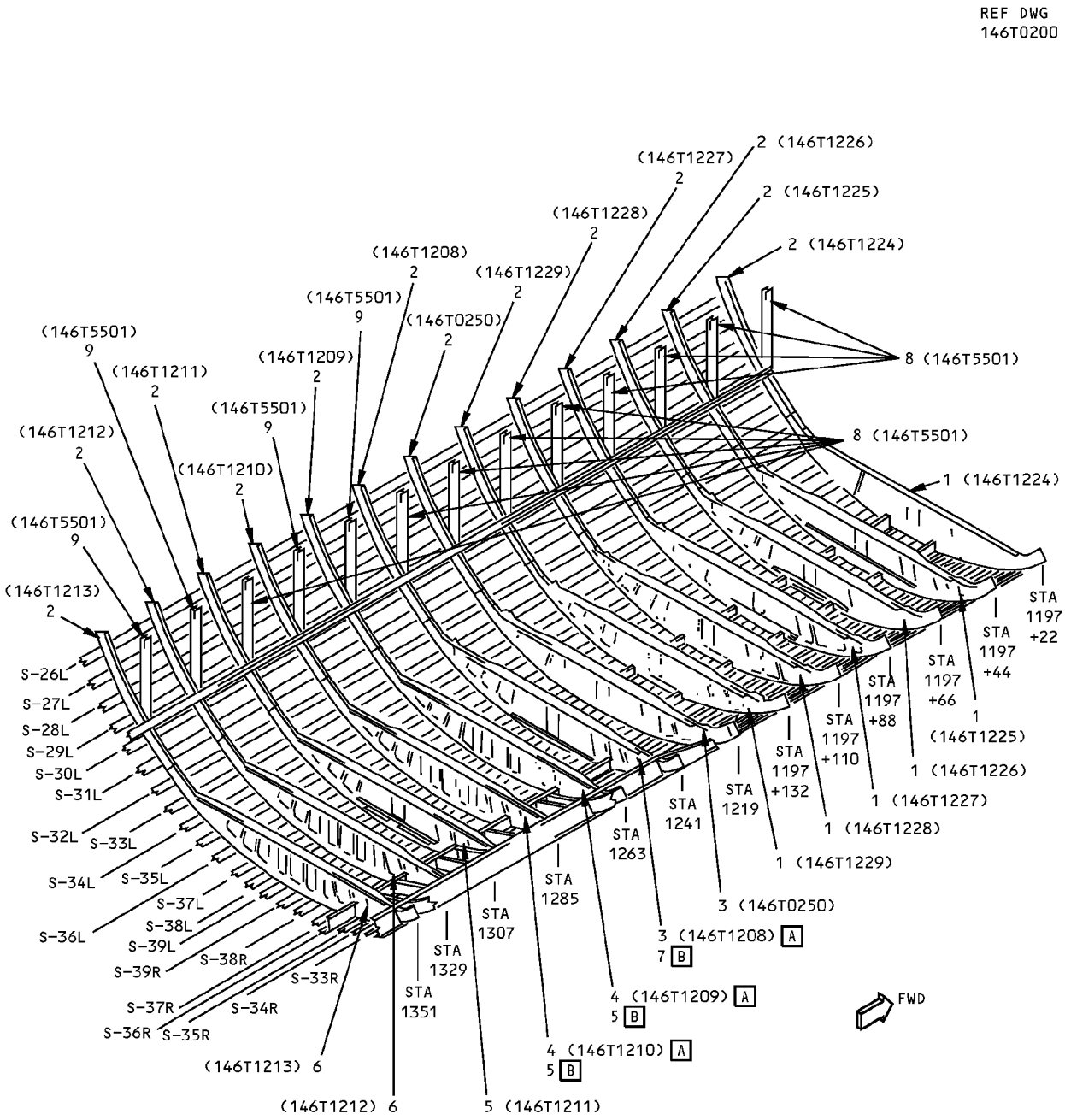
LIST OF MATL

Section 46 - Frame Identification
Figure 1 (Sheet 4 of 28)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.063	CLAD 7075-T6	
2	FRAME ASSEMBLY			
	INNER CHORD		BAC1506-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	FAIL SAFE CHORD		BAC1505-101333 7075-T62	A
			BAC1505-101338 7075-T62	B
3	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	FAIL SAFE CHORD		BAC1505-101333 7075-T62	
4	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	FAIL SAFE CHORD		BAC1505-101332 7075-T62	
5	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100733 7075-T6, OPTIONAL	
			BAC1503-100613 7075-T6	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	FAIL SAFE CHORD		BAC1505-101319 7075-T6, OPTIONAL	
			BAC1505-100598 7075-T6	
			BAC1505-101332 7075-T62, OPTIONAL	A
			BAC1505-101333 7075-T62	B
6	FRAME ASSEMBLY			
	INNER CHORD		BAC1505-100613 7075-T6	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	FAIL SAFE CHORD		BAC1505-101154 7075-T6	
7	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100733 7075-T6, OPTIONAL	
			BAC1503-100613 7075-T6	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	FAIL SAFE CHORD		BAC1505-101154 7075-T6	
8	FRAME ASSEMBLY			
	INNER CHORD		BAC1505-100613 7075-T6	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	FAIL SAFE CHORD		BAC1505-101319 7075-T62	
9	FRAME		BAC1514-2458 2024-T42	
10	STANCHION		BAC1518-762 7075-T6511	
11	STANCHION		BAC1518-729 7075-T6511	

LIST OF MATERIALS FOR DETAIL IV

Section 46 - Frame Identification
Figure 1 (Sheet 5 of 28)



DETAIL V

LIST OF MATL

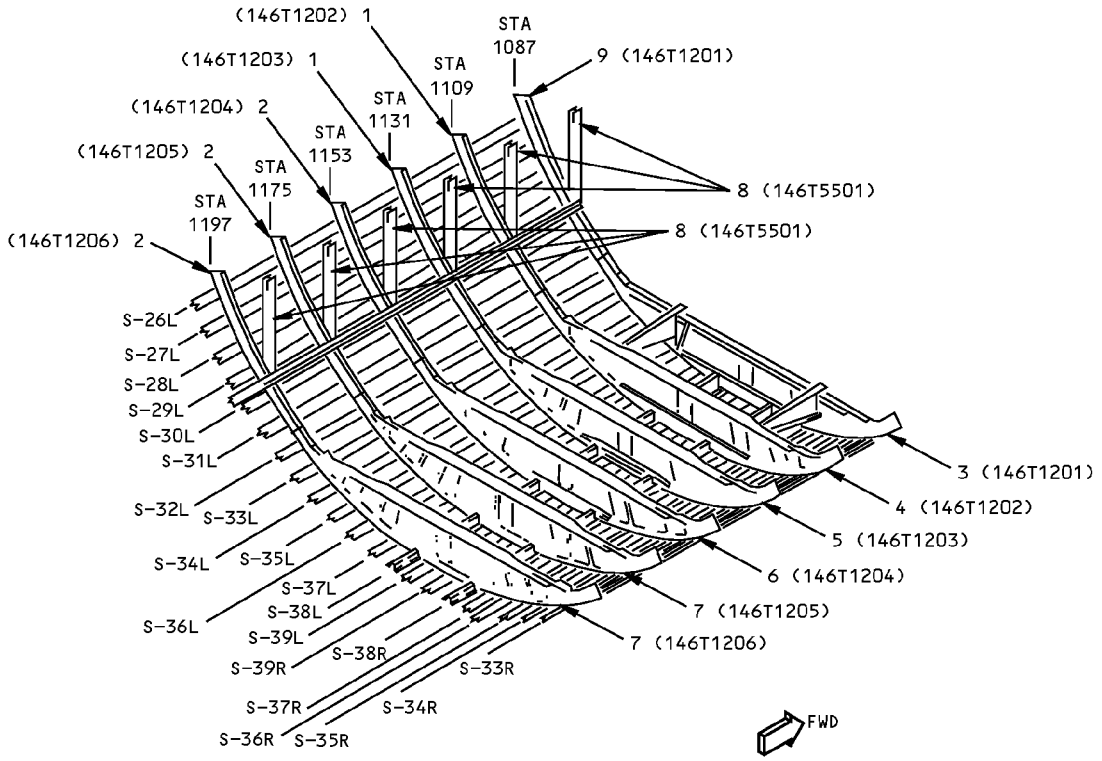
Section 46 - Frame Identification
Figure 1 (Sheet 6 of 28)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSEMBLY			
	INNER CHORD		BAC1505-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	CHORD	0.063	CLAD 7075-T6	
	FAIL SAFE CHORD		BAC1505-101154 7075-T6	
2	FRAME ASSEMBLY			
	INNER CHORD		BAC1505-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6	
3	FRAME ASSEMBLY			
	INNER CHORD		BAC1505-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	FAIL SAFE CHORD		BAC1505-101154 7075-T6	
4	FRAME ASSEMBLY			
	INNER CHORD		BAC1505-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
	FAIL SAFE CHORD		BAC1505-101154 7075-T6	
5	FRAME ASSEMBLY			
	INNER CHORD		BAC1505-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
	FAIL SAFE CHORD		BAC1505-101319 7075-T62	
6	FRAME ASSEMBLY			
	INNER CHORD		BAC1505-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
	FAIL SAFE CHORD		BAC1505-101319 7075-T6, OPTIONAL	
			BAC1505-100598 7075-T6	A
			BAC1505-101333 7075-T62	B
7	FRAME ASSEMBLY			
	INNER CHORD		BAC1505-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	FAIL SAFE CHORD		BAC1505-101319 7075-T62	
8	STANCHION		BAC1518-762 7075-T6511	
9	STANCHION		BAC1518-729 7075-T6511	

LIST OF MATERIALS FOR DETAIL V

Section 46 - Frame Identification
Figure 1 (Sheet 7 of 28)

REF DWG
146T0215



DETAIL VI

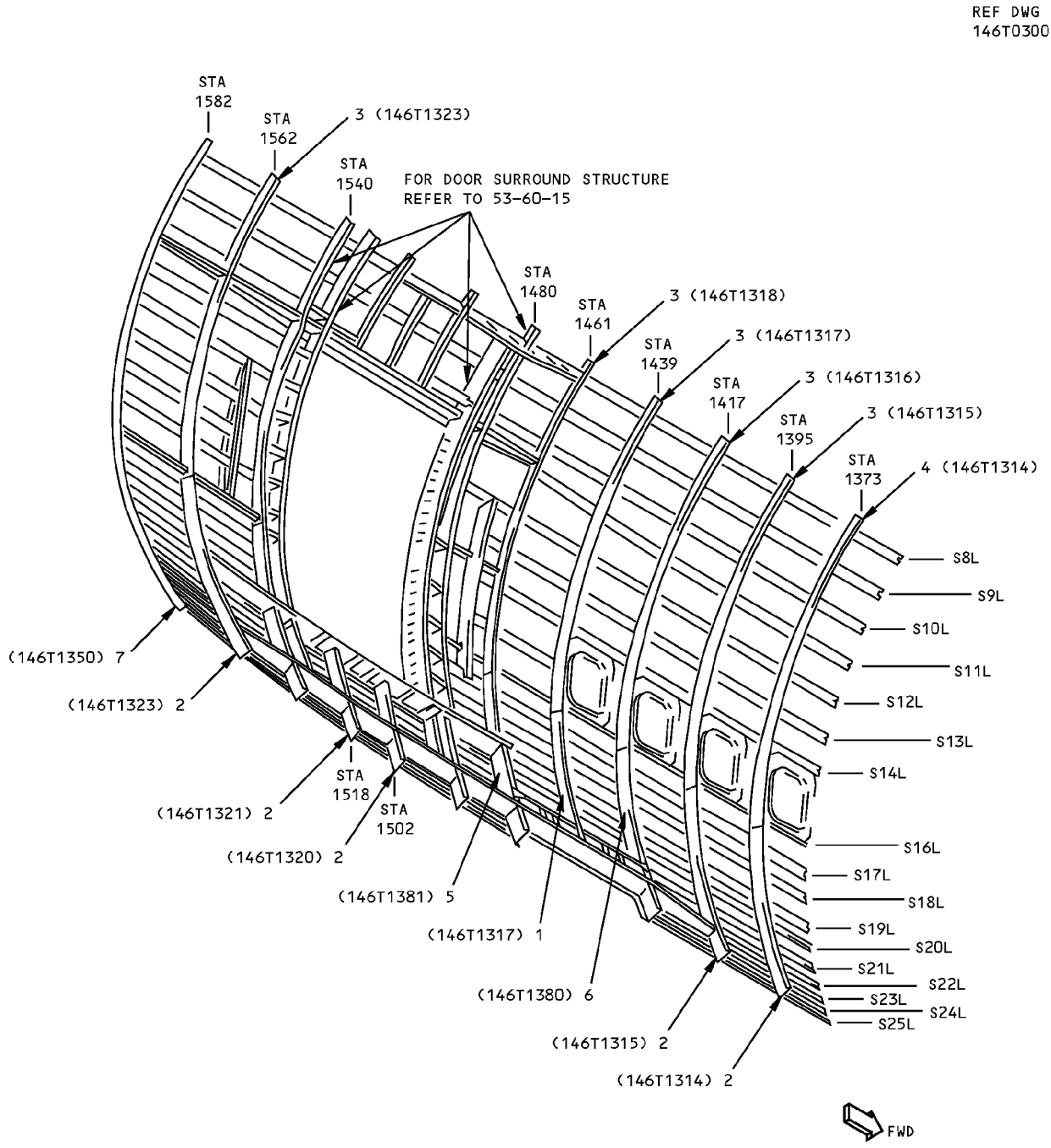
LIST OF MATL

Section 46 - Frame Identification
Figure 1 (Sheet 8 of 28)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSEMBLY			
	FRAME	0.071	7075-T6	
	INNER CHORD		BAC1503-100659 7075-T73	
2	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6	
3	FRAME ASSEMBLY			
	INNER CHORD		BAC1506-3123 7075-T6511	
	WEB	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.032 MIN)	
	CHORD	0.071	7075-T62	
	FAIL SAFE CHORD		BAC1505-100361 7075-T62	
4	FRAME ASSEMBLY			
	INNER CHORD		BAC1506-3123 7075-T6511	
	WEB	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
	CHORD	0.071	7075-T62	
	FAIL SAFE CHORD		BAC1505-100361 7075-T6	
5	FRAME ASSEMBLY			
	INNER CHORD		BAC1506-3123 7075-T6511	
	WEB	0.050	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
	CHORD	0.063	CLAD 7075-T6	
	FAIL SAFE CHORD		BAC1505-101154 7075-T6	
6	FRAME ASSEMBLY			
	INNER CHORD		BAC1506-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	CHORD		BAC1505-101154 7075-T6	
	FAIL SAFE CHORD		BAC1505-101154 7075-T6	
7	FRAME ASSEMBLY			
	INNER CHORD		BAC1506-3123 7075-T6511	
	WEB	0.032	CLAD 7075-T6 (CHEM-MILLED TO 0.020 MIN)	
	CHORD	0.063	CLAD 7075-T6	
	FAIL SAFE CHORD		BAC1505-101154 7075-T6	
8	STANCHION		BAC1518-762 7075-T6511	
9	FRAME ASSEMBLY			
	FRAME	0.071	7075-T6	
	INNER CHORD		BAC1503-100660 7075-T73	

LIST OF MATERIALS FOR DETAIL VI

Section 46 - Frame Identification
Figure 1 (Sheet 9 of 28)



DETAIL VII

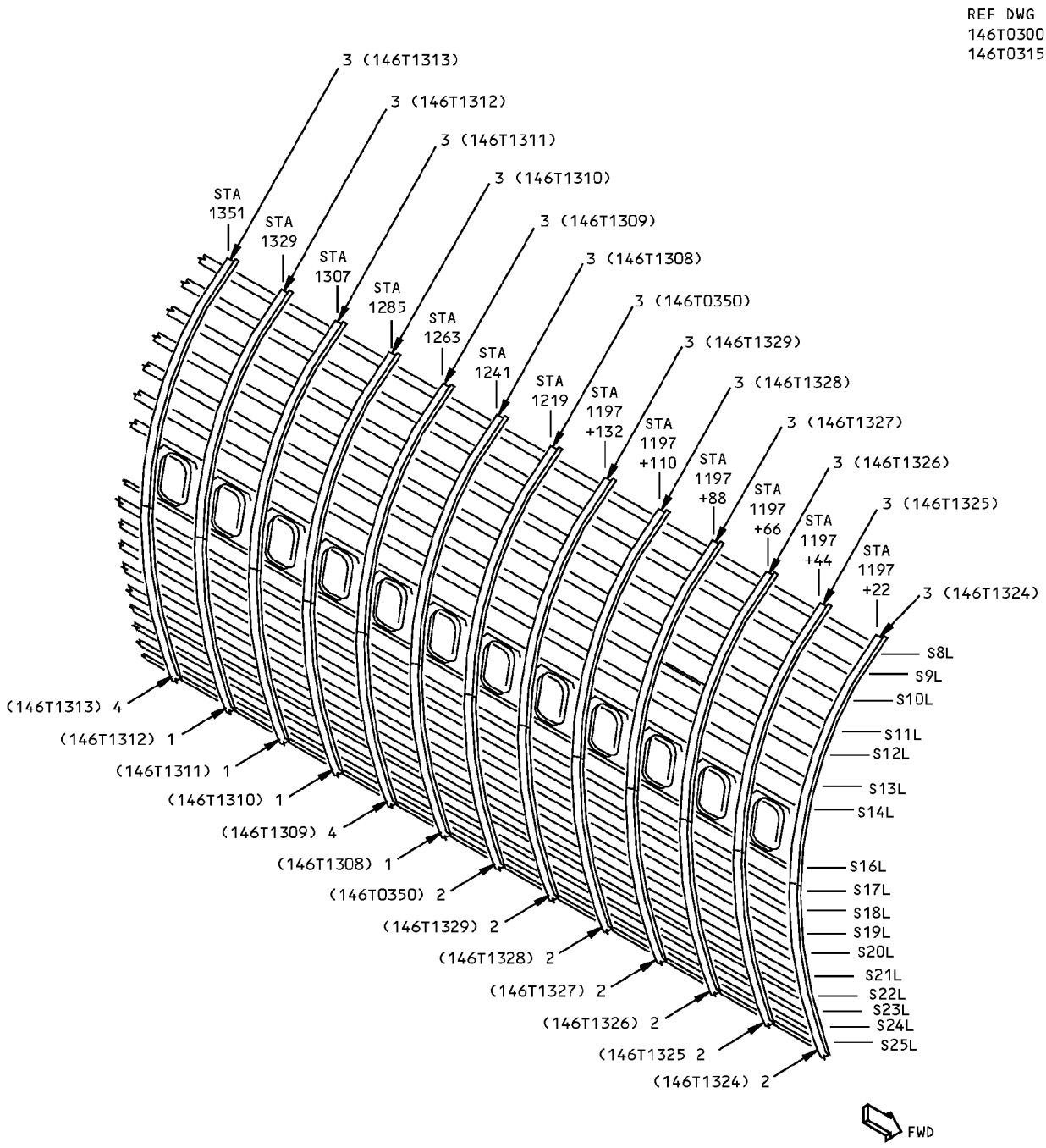
LIST OF MATL

Section 46 - Frame Identification
Figure 1 (Sheet 10 of 28)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
2	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6	
3	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.027 MIN)	
4	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.027 MIN)	
5	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100727 7075-T6, OPTIONAL BAC1503-100604 7075-T6	
	WEB	0.063	7075-T6 (CHEM-MILLED TO 0.040 MIN)	
	OUTER CHORD		BAC1503-100714 2024-T42, OPTIONAL BAC1503-100513 2024-T42	
	INNER STRAP		BAC1512-3410 7075-T6511	
6	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100726 7075-T6, OPTIONAL BAC1503-100213 7075-T6	
	WEB	0.063	7075-T6 (CHEM-MILLED TO 0.040 MIN)	
	OUTER CHORD		BAC1503-100714 2024-T42, OPTIONAL BAC1503-100308 2024-T42	
	INNER STRAP		BAC1512-3336 7075-T6511	
7	FRAME		BAC1514-2458 2024-T42	

LIST OF MATERIALS FOR DETAIL VII

Section 46 - Frame Identification
Figure 1 (Sheet 11 of 28)



DETAIL VIII

LIST OF MATL

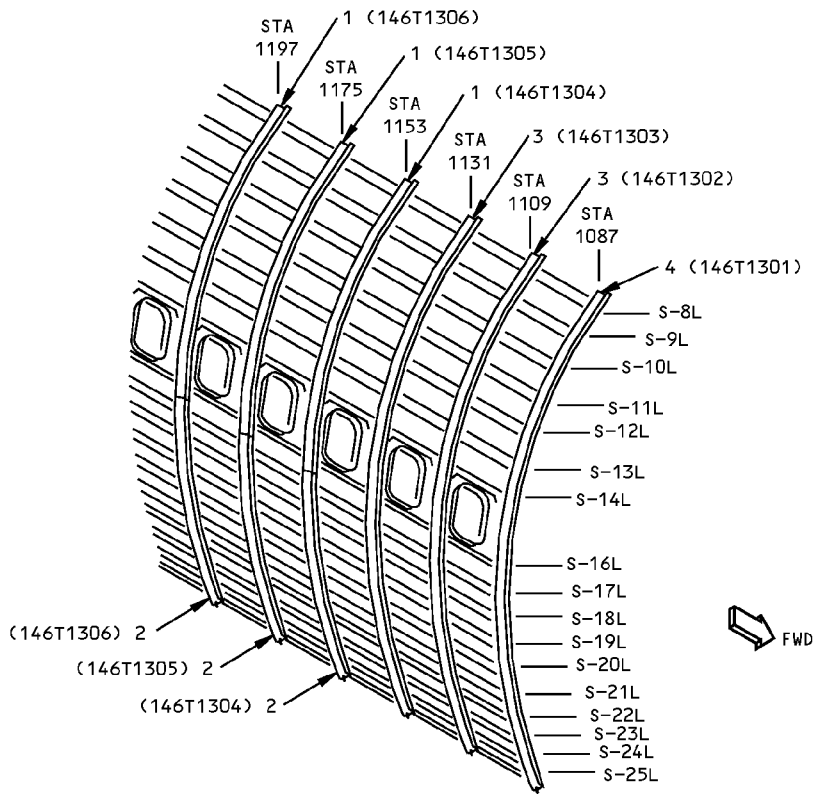
Section 46 - Frame Identification
Figure 1 (Sheet 12 of 28)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
2	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.025 MIN)	
3	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.027 MIN)	
4	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL VIII

Section 46 - Frame Identification
Figure 1 (Sheet 13 of 28)

REF DWG
146T0315

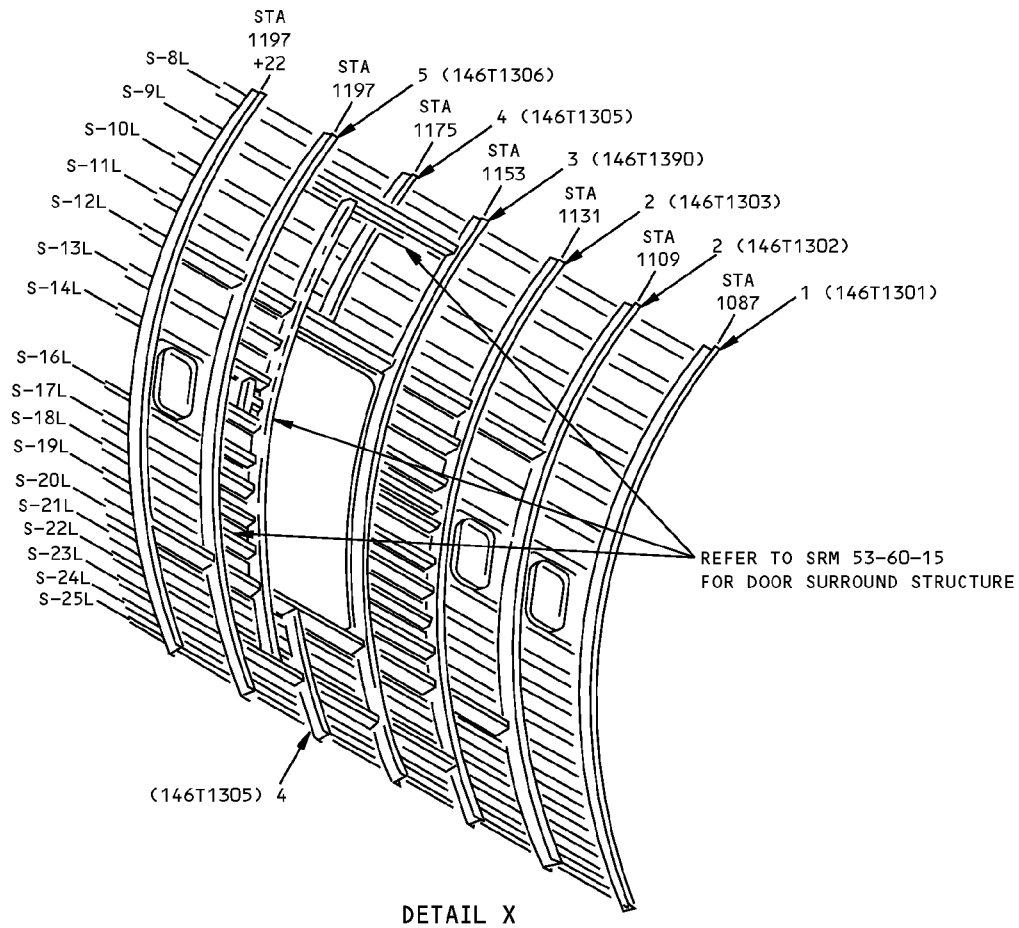


DETAIL IX

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.027 MIN)	
2	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
3	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100659 7075-T73	
	FRAME	0.071	7075-T62 (CHEM-MILLED TO 0.035 MIN)	
4	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100660 7075-T73	
	FRAME	0.071	7075-T62 (CHEM-MILLED TO 0.035 MIN)	

LIST OF MATERIALS FOR DETAIL IX

Section 46 - Frame Identification
Figure 1 (Sheet 14 of 28)



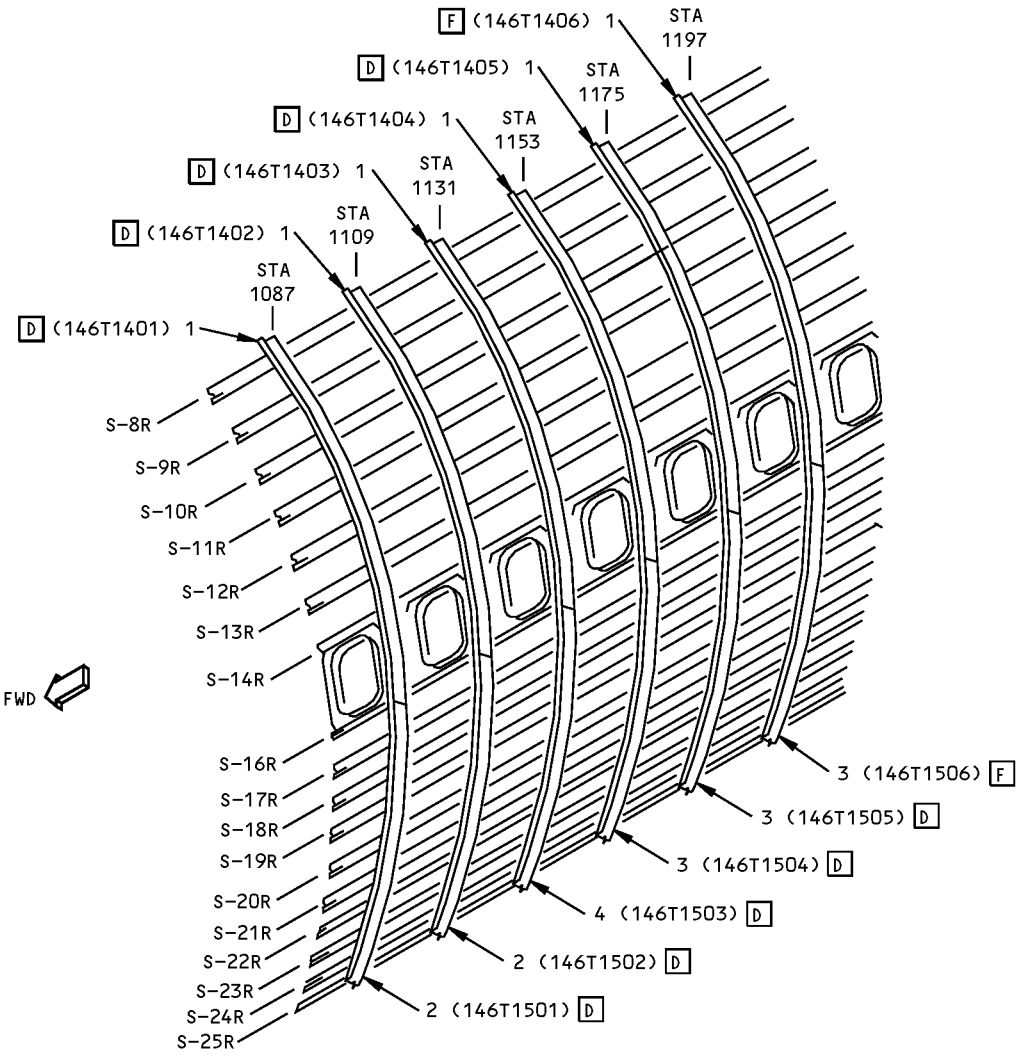
DETAIL X

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100660	
	FRAME	0.071	7075-T62 (CHEM-MILLED TO 0.040)	
2	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100659 7075-T73	
	FRAME	0.071	7075-T62 (CHEM-MILLED TO 0.040)	
3	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	7075-T6 (CHEM-MILLED TO 0.025)	
4	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME (S-8 TO S-12)	0.063	7075-T6 (CHEM-MILLED TO 0.040)	
	FRAME (S-20 TO S-25)	0.063	7075-T6 (CHEM MILLED TO 0.040)	
5	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100659 7075-T73	
	FRAME	0.071	7075-T62 (CHEM MILLED TO 0.040)	

LIST OF MATERIALS FOR DETAIL X

Section 46 - Frame Identification
Figure 1 (Sheet 15 of 28)

REF DWG
146T0415
146T0515



DETAIL XI

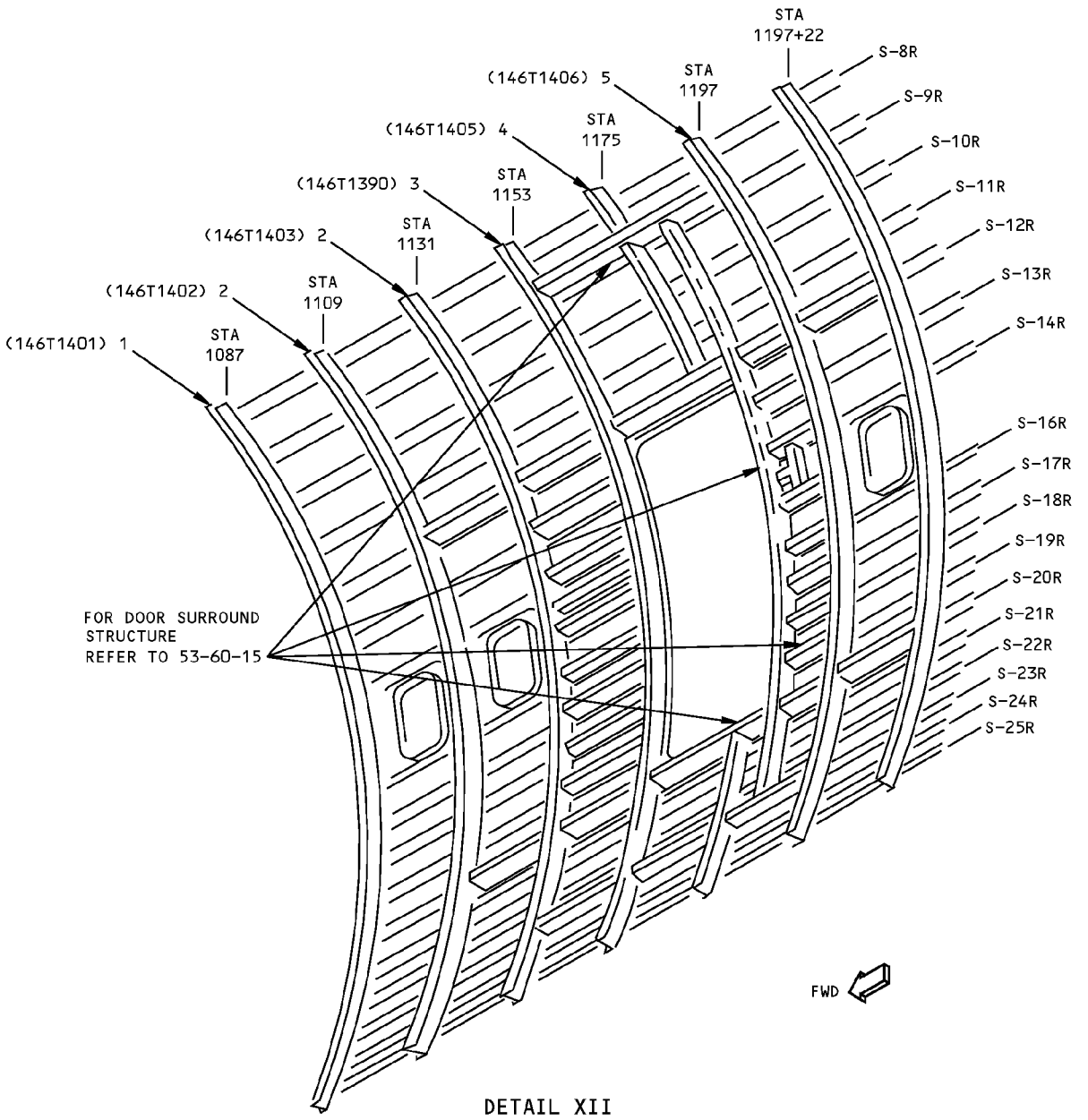
LIST OF MATL

Section 46 - Frame Identification
Figure 1 (Sheet 16 of 28)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.027 MIN)	
2	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100604 7075-T73	
	FRAME	0.071	7075-T62	
3	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
4	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100604 7075-T73	
	FRAME	0.071	7075-T62 (CHEM-MILLED TO 0.045 MIN)	

LIST OF MATERIALS FOR DETAIL XI

Section 46 - Frame Identification
Figure 1 (Sheet 17 of 28)



LIST OF
MATL

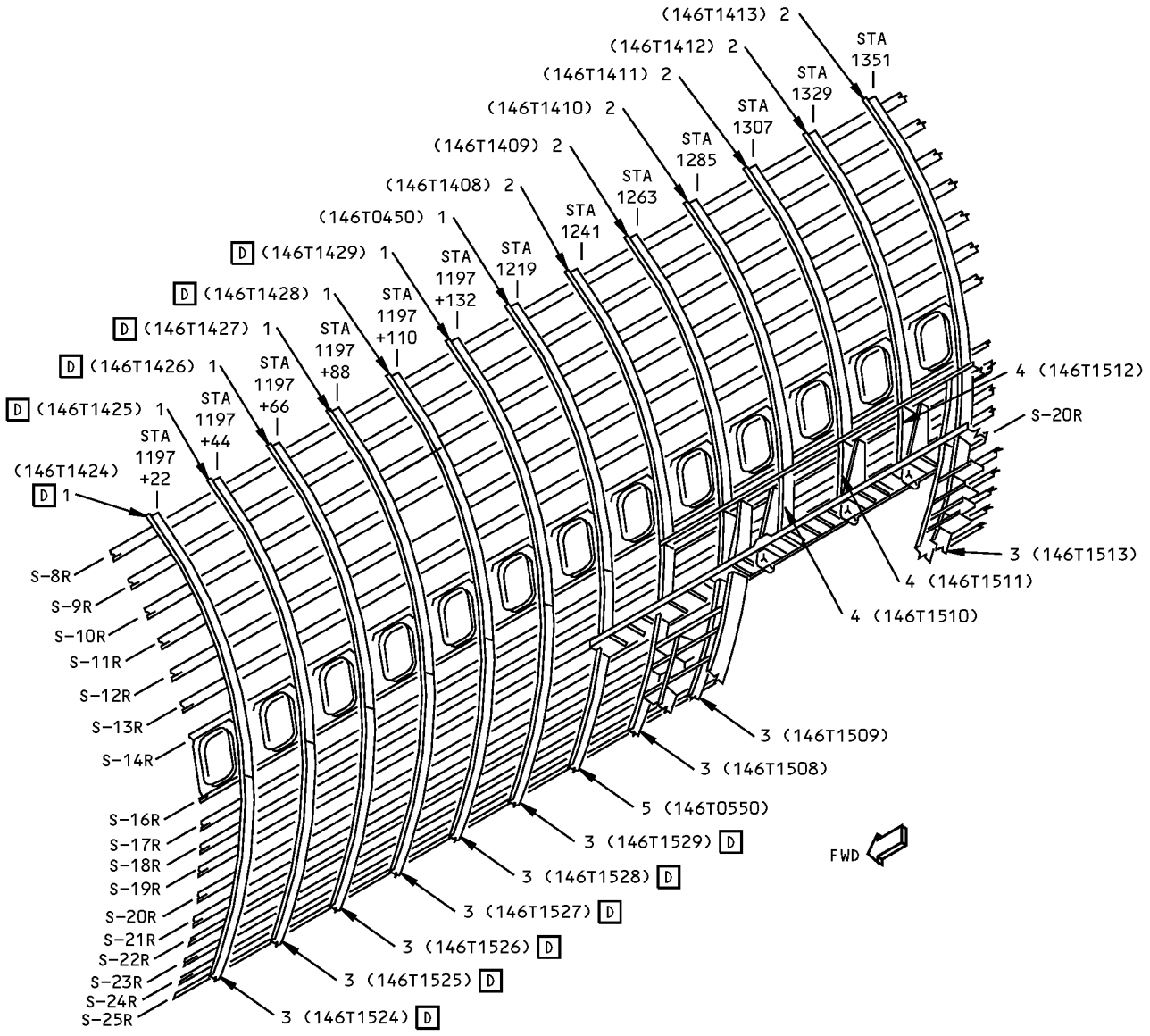
Section 46 - Frame Identification
Figure 1 (Sheet 18 of 28)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100660 7075-T73	
	FRAME	0.071	7075-T62 (CHEM MILLED TO 0.035)	G
	FRAME	0.071	7075-T62 (CHEM MILLED TO 0.040)	E
2	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100659 7075-T3	
	FRAME	0.071	7075-T62 (CHEM MILLED TO 0.035)	G
	FRAME	0.071	7075-T62 (CHEM MILLED TO 0.040)	E
3	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	7075-T6 (CHEM MILLED TO 0.025)	E
4	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	7075-T6 (CHEM MILLED TO 0.025)	G
	FRAME	0.063	7075-T6 (CHEM MILLED TO 0.040)	E
5	FRAME ASSEMBLY			C
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME (S-8 TO S-16)	0.063	7075-T6 (CHEM MILLED TO 0.025)	
	FRAME (S-16 TO S-25)	0.063	7075-T62 (CHEM MILLED TO 0.027)	
5	FRAME ASSEMBLY			G
	INNER CHORD		BAC1503-100659 7075-T73	
	FRAME	0.071	7075-T62 (CHEM MILLED TO 0.040)	

LIST OF MATERIALS FOR DETAIL XII

Section 46 - Frame Identification
Figure 1 (Sheet 19 of 28)

REF DWG
146T0400
146T0415
146T0500
146T0515



DETAIL XIII

LIST OF MATL

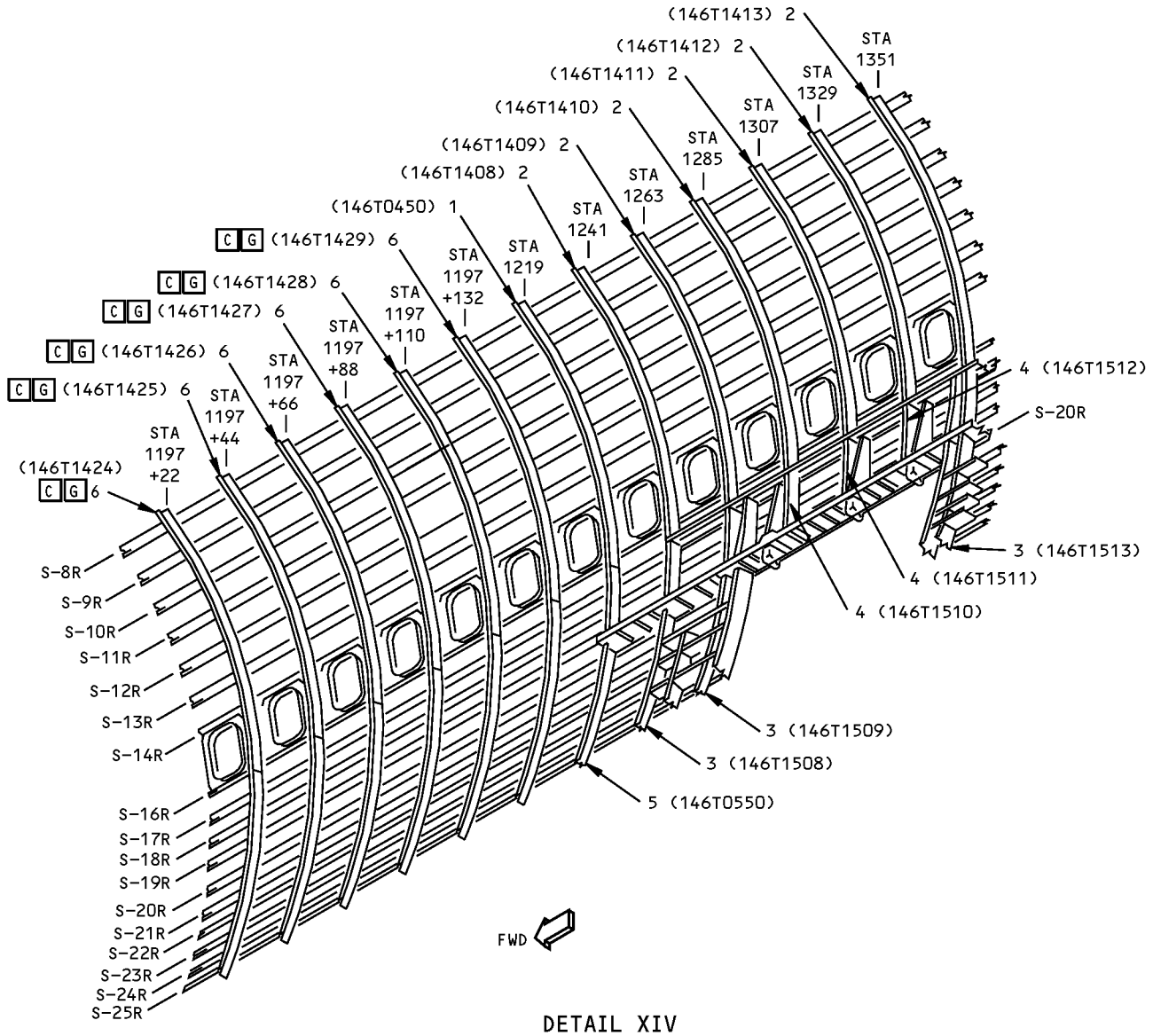
Section 46 - Frame Identification
Figure 1 (Sheet 20 of 28)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.027 MIN)	
2	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.027 MIN)	
3	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
4	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100382 7075-T6	
	FRAME	0.063	CLAD 7075-T62	
	CHORD	0.063	CLAD 7075-T62	
5	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.027 MIN)	

LIST OF MATERIALS FOR DETAIL XIII

Section 46 - Frame Identification
Figure 1 (Sheet 21 of 28)

REF DWG
146T0400
146T0415
146T0500



DETAIL XIV

LIST OF MATL

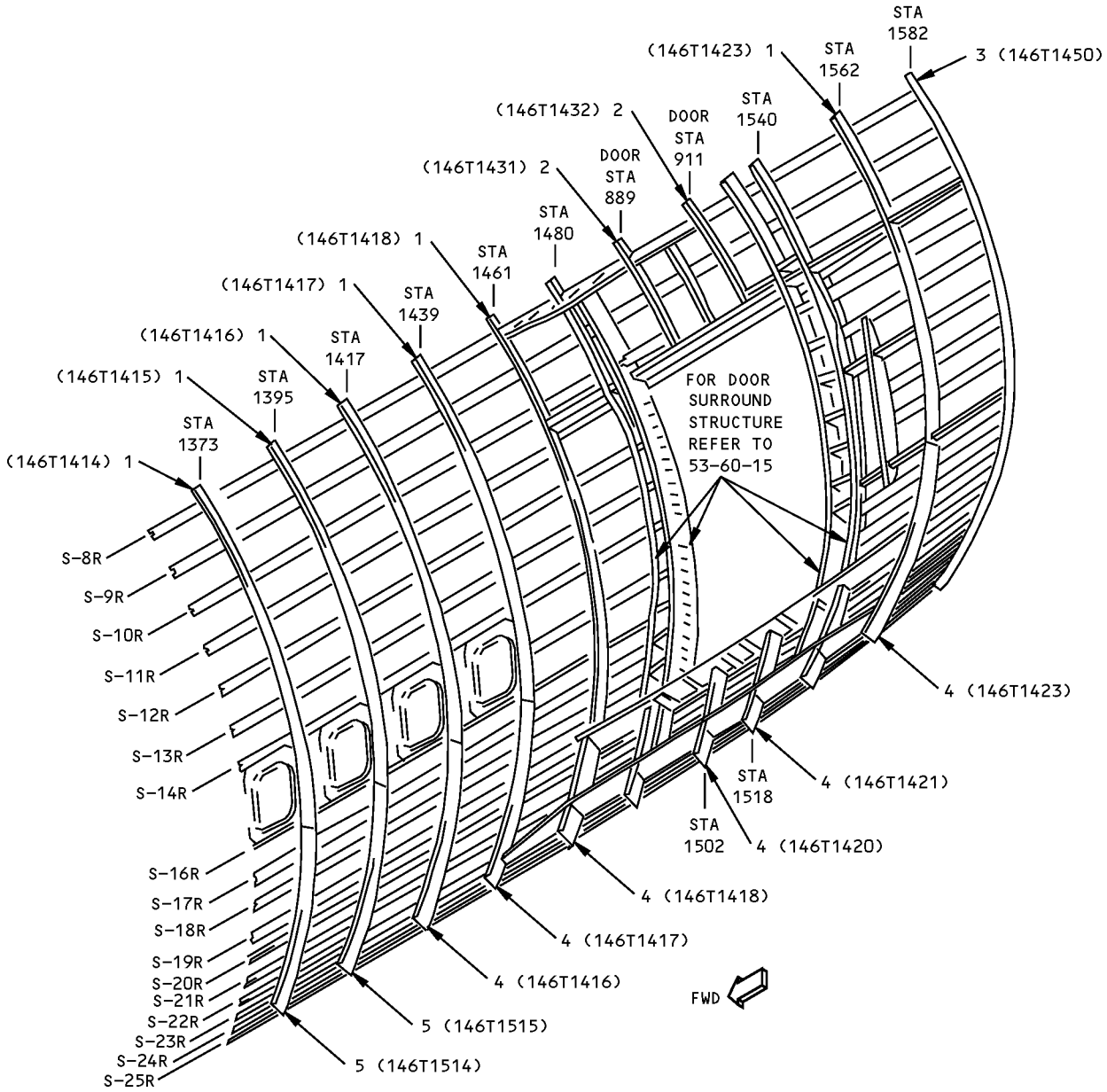
Section 46 - Frame Identification
Figure 1 (Sheet 22 of 28)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.027 MIN)	
2	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.027 MIN)	
3	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
4	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100382 7075-T6	
	FRAME	0.063	CLAD 7075-T62	
	CHORD	0.063	CLAD 7075-T62	
5	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.027 MIN)	
6	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME (S-8 TO S-16)	0.063	7075-T6 (CHEM MILLED TO 0.025)	
	FRAME (S-16 TO S-25)	0.063	7075-T62 (CHEM MILLED TO 0.027)	

LIST OF MATERIALS FOR DETAIL XIV

Section 46 - Frame Identification
Figure 1 (Sheet 23 of 28)

REF DWG
146T0400
146T0500



DETAIL XV

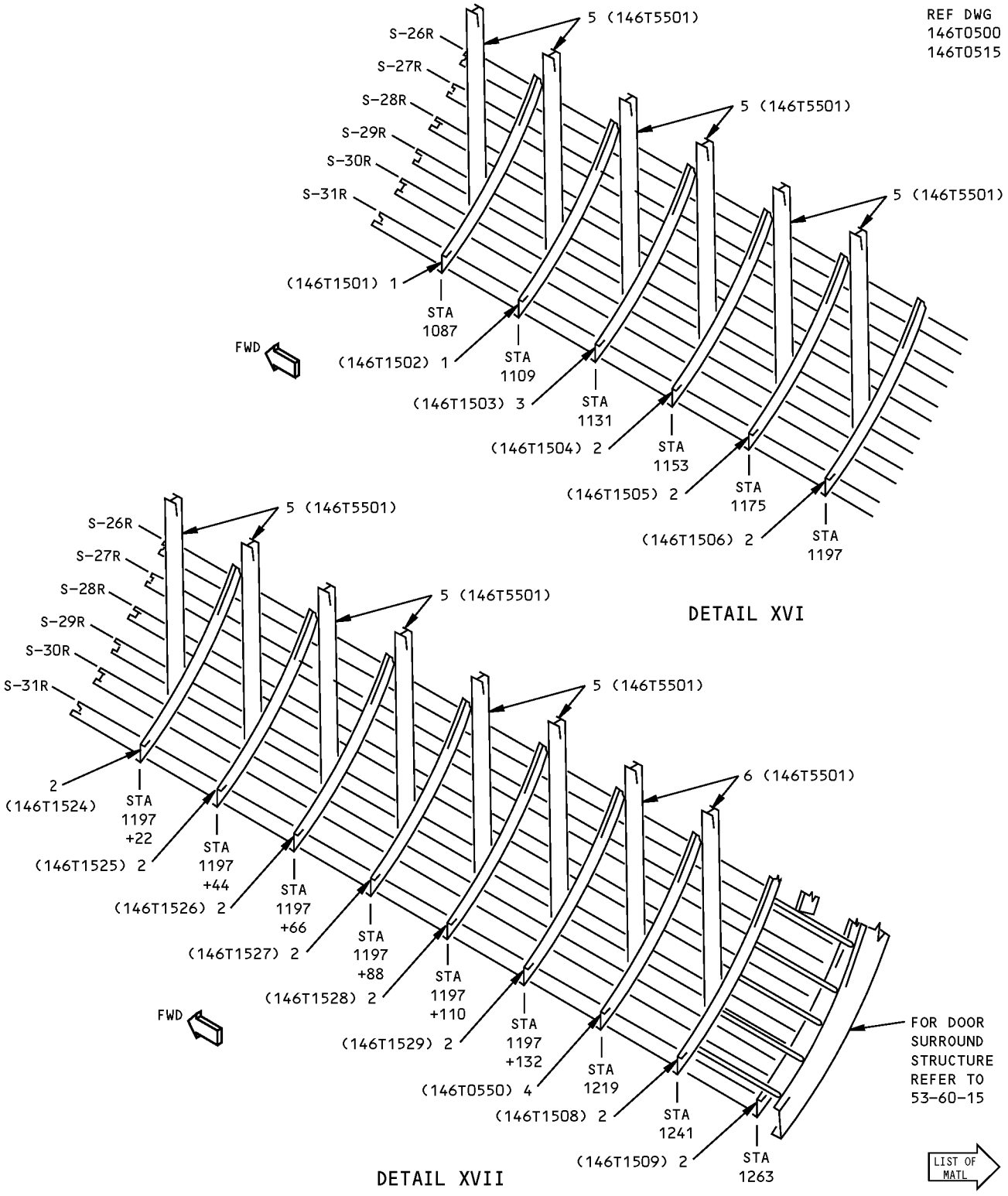
LIST OF MATL

Section 46 - Frame Identification
Figure 1 (Sheet 24 of 28)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.063	CLAD 7075-T6	
2	FRAME	0.071	7075-T6	
3	FRAME		BAC1514-2458 2024-T42	
4	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6	
5	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	

LIST OF MATERIALS FOR DETAIL XV

Section 46 - Frame Identification
Figure 1 (Sheet 25 of 28)

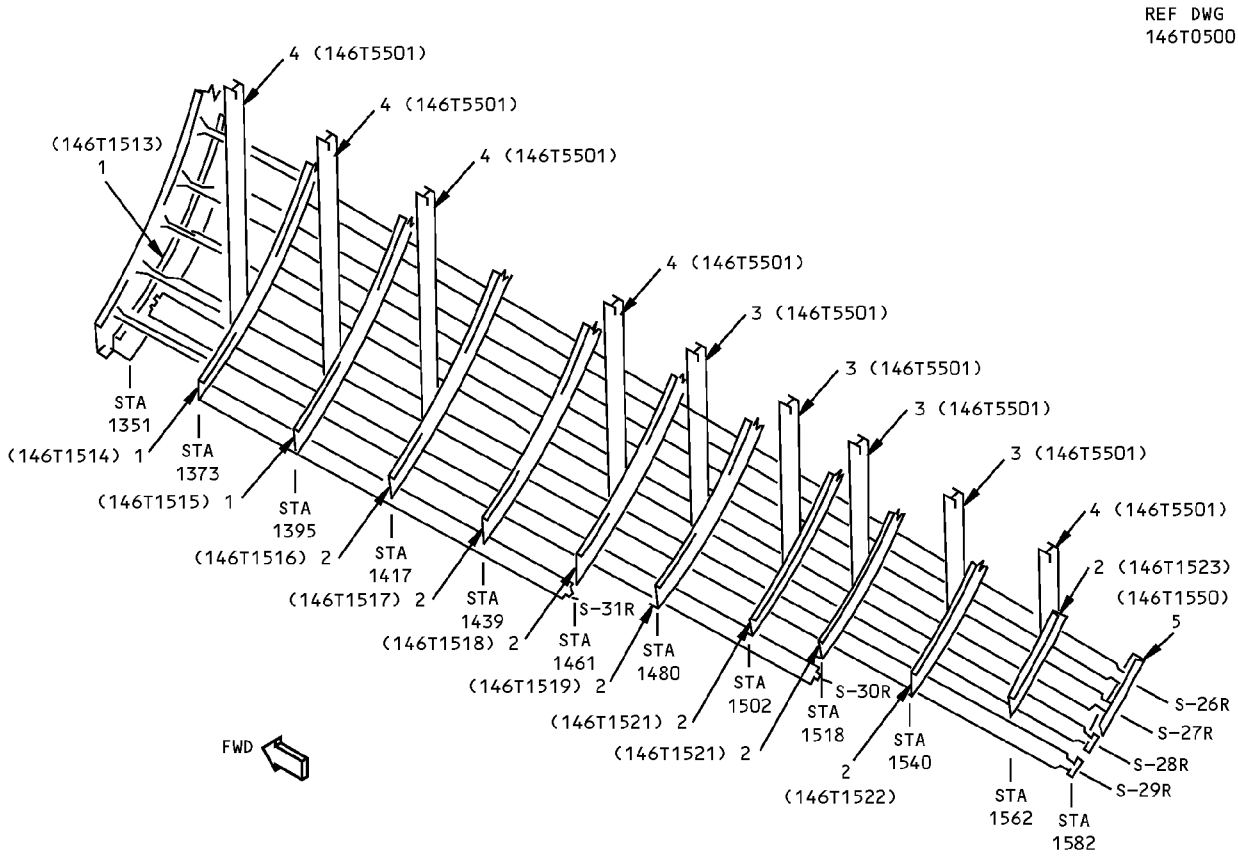


Section 46 - Frame Identification
Figure 1 (Sheet 26 of 28)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100604 7075-T73	
	FRAME	0.071	7075-T62	
2	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
3	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100604 7075-T73	
	FRAME	0.071	7075-T62 (CHEM-MILLED TO 0.045 MIN)	
4	FRAME ASSEMBLY			
	INNER CHORD		BAC1503-100613 7075-T6	
	FRAME	0.063	CLAD 7075-T62 (CHEM-MILLED TO 0.027 MIN)	
5	STANCHION		BAC1518-762 7075-T6511	
6	STANCHION		BAC1518-729 7075-T6511	

LIST OF MATERIALS FOR DETAILS XVI AND XVII

Section 46 - Frame Identification
Figure 1 (Sheet 27 of 28)



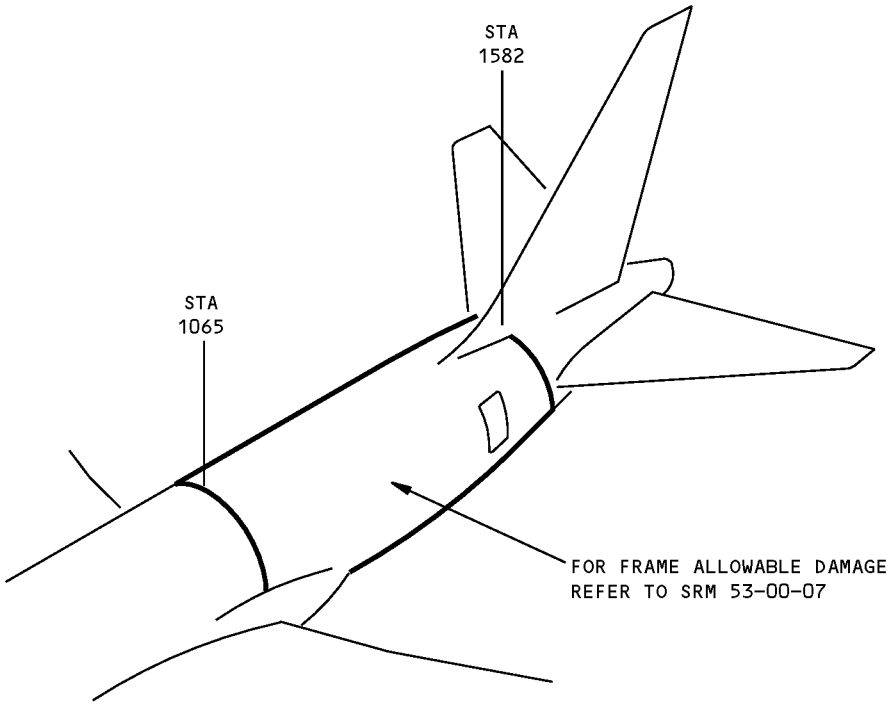
DETAIL XVIII

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME ASSEMBLY INNER CHORD FRAME	 0.063	 BAC1503-100613 7075-T6 CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
2	FRAME ASSEMBLY INNER CHORD FRAME	 0.063	 BAC1503-100613 7075-T6 CLAD 7075-T6	
3	STANCHION		BAC1518-762 7075-T6511	
4	STANCHION		BAC1518-729 7075-T6511	
5	FRAME		BAC1514-2458 2024-T42	

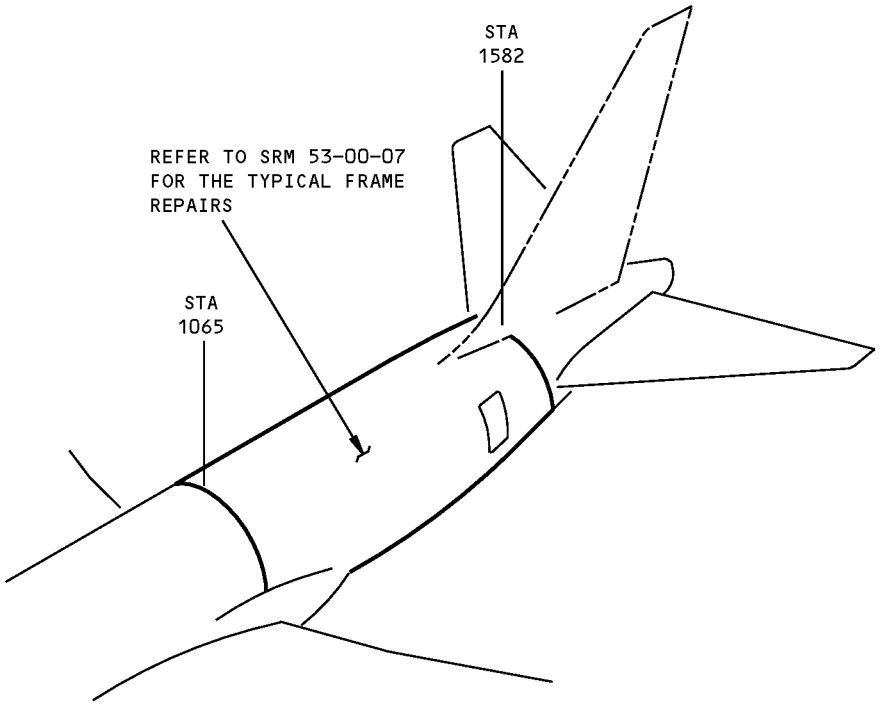
LIST OF MATERIALS FOR DETAIL XVIII

Section 46 - Frame Identification
Figure 1 (Sheet 28 of 28)

ALLOWABLE DAMAGE GENERAL - SECTION 46 FUSELAGE FRAMES

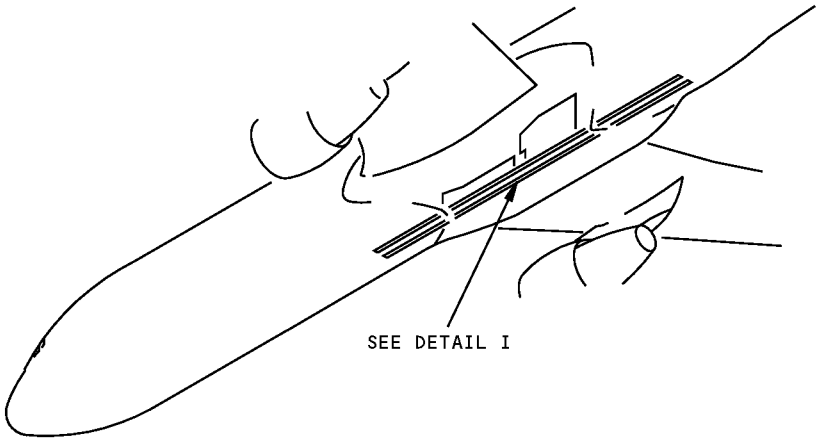


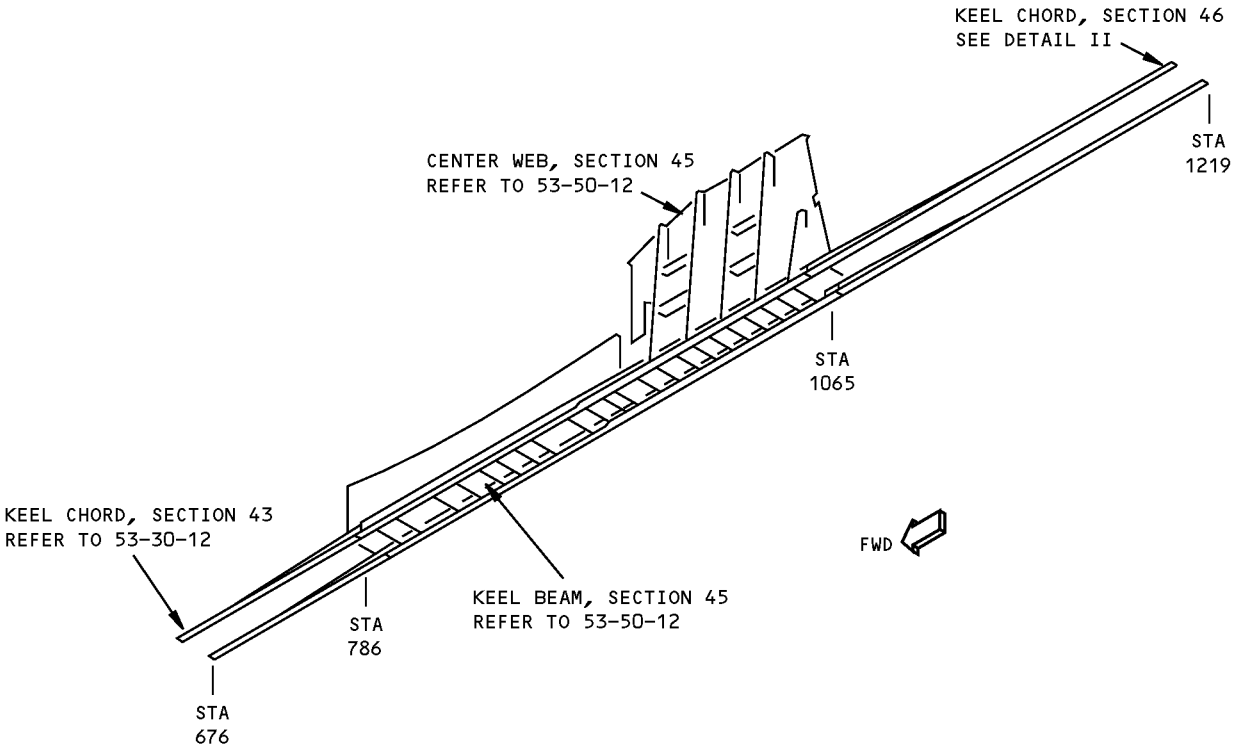
Section 46 Frame Allowable Damage
Figure 101



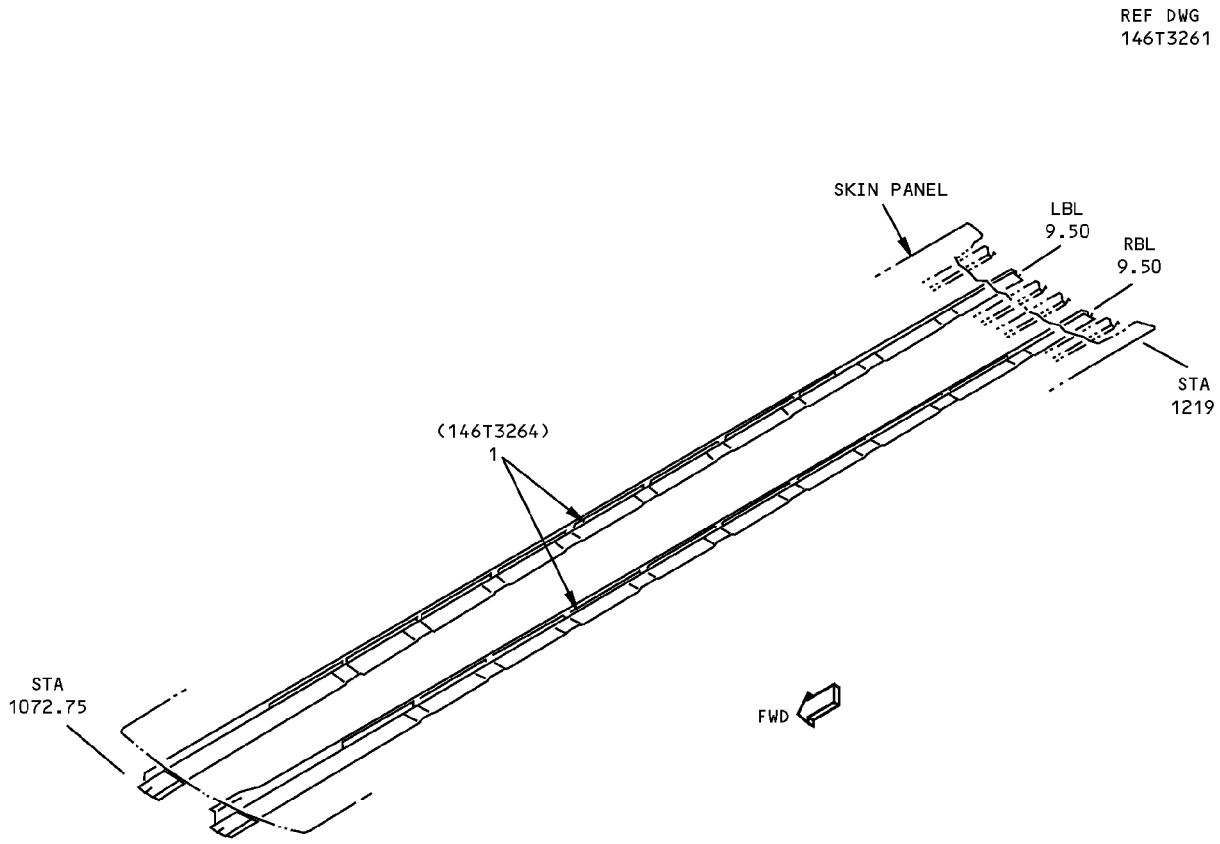
Section 46 - Typical Frame Repairs
Figure 201

IDENTIFICATION 1 - KEEL BEAM STRUCTURE





Keel Beam Structure Identification
Figure 1 (Sheet 1 of 2)



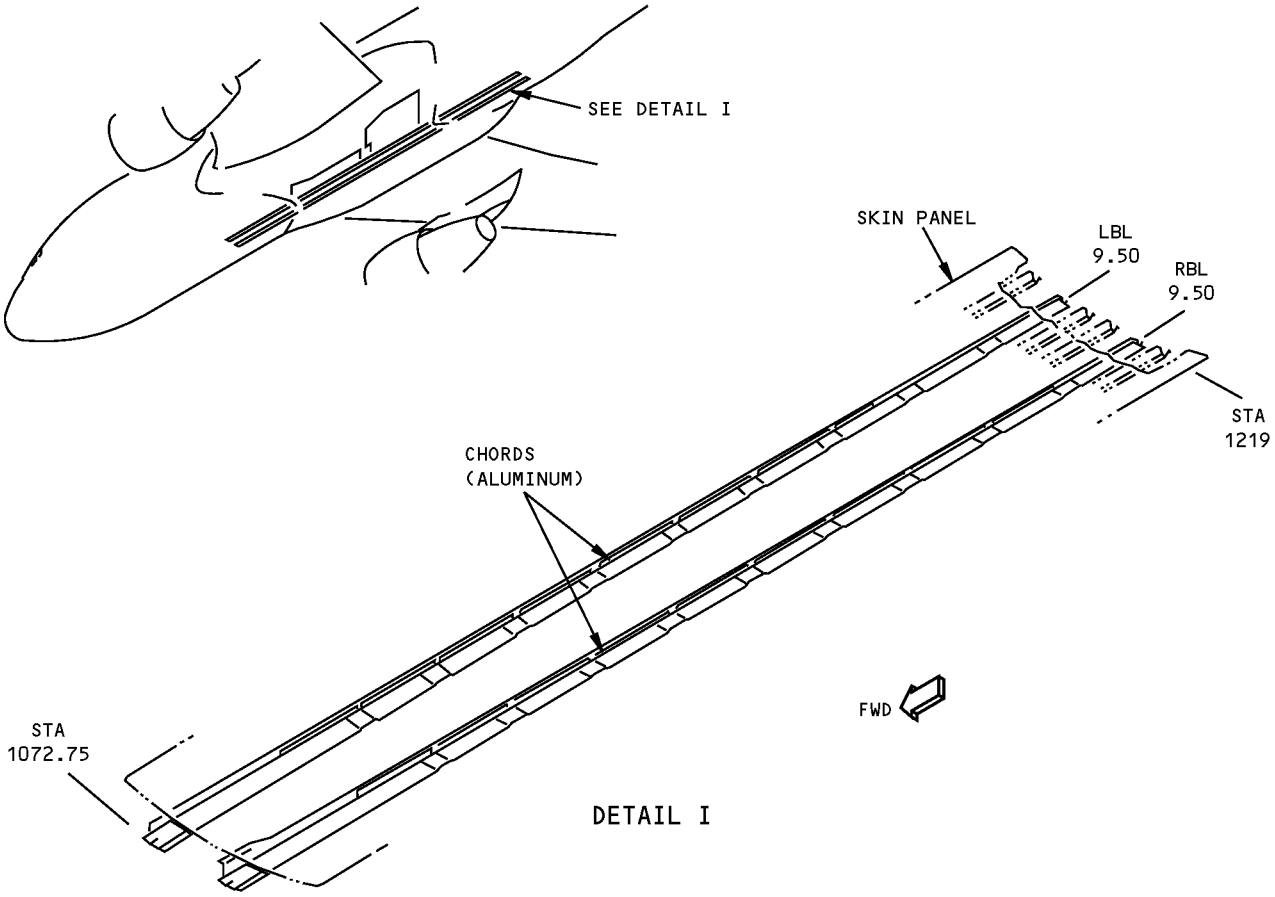
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	KEEL BEAM CHORD		BAC1506-3577 7075-T73511	

LIST OF MATERIALS FOR DETAIL II

Keel Beam Structure Identification
Figure 1 (Sheet 2 of 2)

ALLOWABLE DAMAGE 1 - KEEL CHORDS



DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
CHORDS	[A]	[B]	NOT PERMITTED	NOT PERMITTED

NOTES

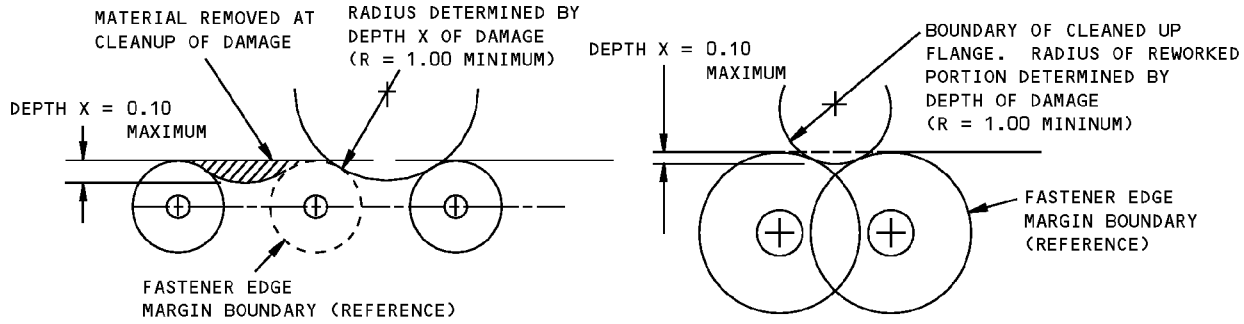
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS II AND IV. AT OTHER LOCATIONS THE DAMAGED PART MUST BE REPLACED OR REPAIRED.

[B] REMOVE DAMAGE AS GIVEN IN DETAILS II,III,IV AND V. THE TOTAL CROSS-SECTIONAL AREA THAT IS REMOVED MUST NOT BE MORE THAN 10% OF THE INITIAL CROSS-SECTIONAL AREA OF THE FLANGE.

[C] FOR MATING SURFACES, INSTALL LAMINATED SHIMS WITH BMS 5-95 SEALANT. THE GAP MUST BE LESS THAN OR EQUAL TO 0.003 INCH (0.076 mm) AFTER SHIMMING.

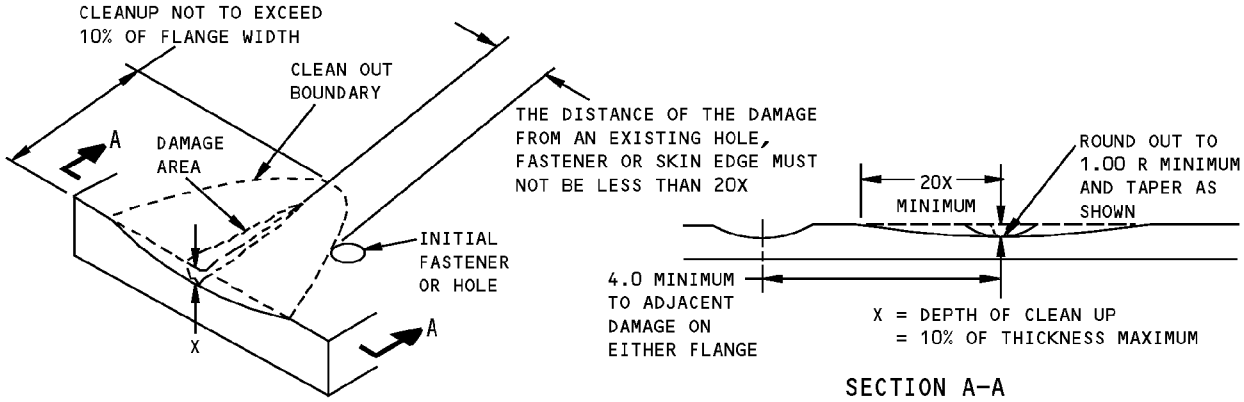
Allowable Damage - Keel Chords
Figure 101 (Sheet 1 of 2)



DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

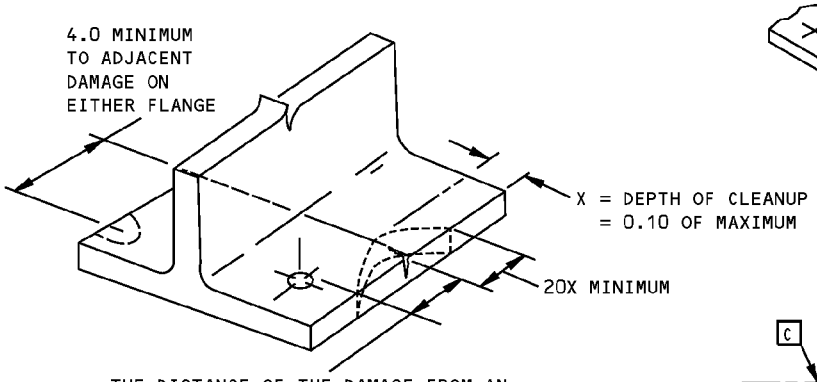
DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL II



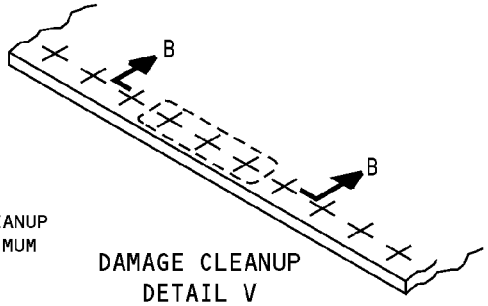
SECTION A-A

REMOVAL OF DAMAGE ON A SURFACE
DETAIL III

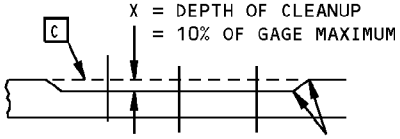


REMOVAL OF DAMAGE ON AN EDGE

DETAIL IV



DAMAGE CLEANUP
DETAIL V

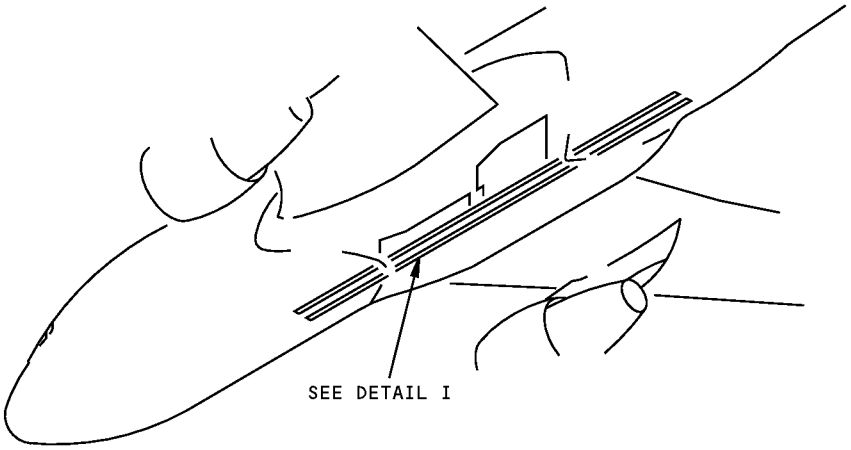


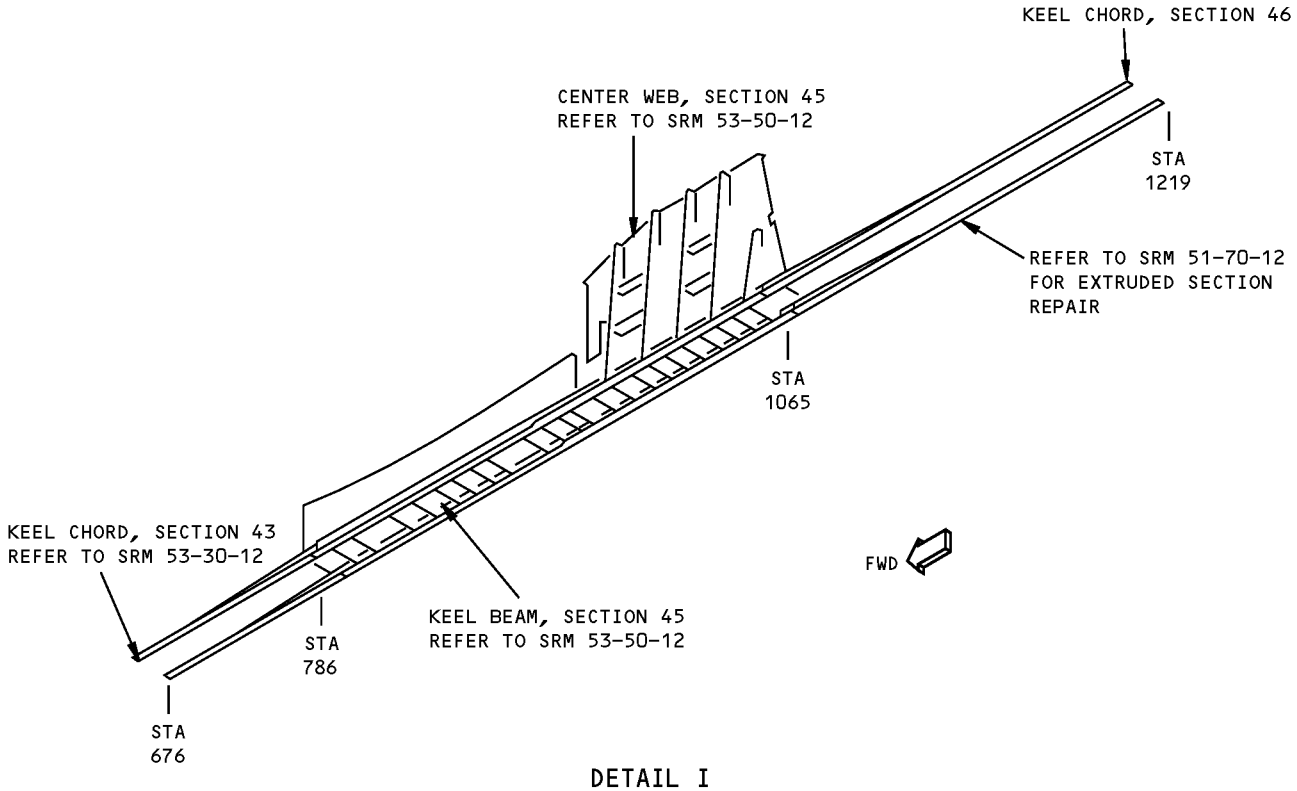
SMOOTH BLEND-OUT RADIUS 0.50 INCH MINIMUM. CORROSION CLEANUP AROUND ANY THREE FASTENERS IN TEN IS PERMITTED TO MAXIMUM DEPTH

SECTION B-B

Allowable Damage - Keel Chords
Figure 101 (Sheet 2 of 2)

REPAIR 1 - KEEL CHORD

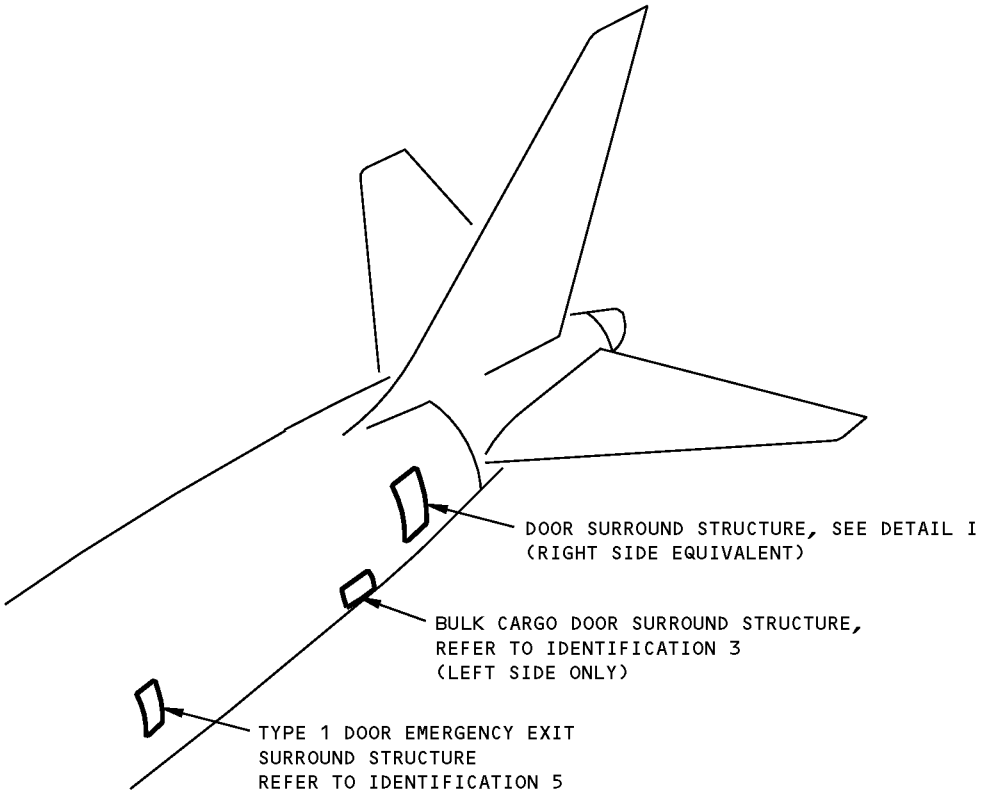




DETAIL I

Keel Chord Repair
Figure 201

IDENTIFICATION 1 - SECTION 46 - PASSENGER/CREW ENTRY DOOR SURROUND STRUCTURE

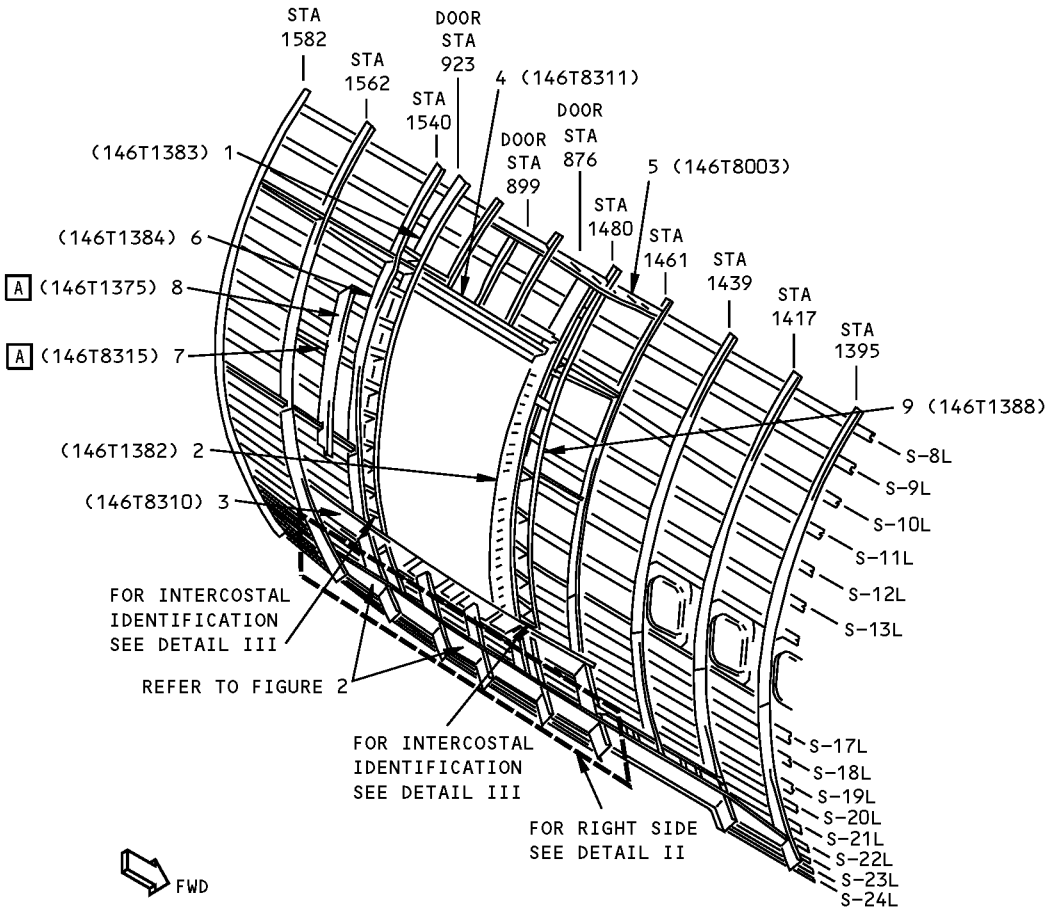


NOTES

[A] LOCATED ONLY ON SAME SIDE AS DOOR HANDLE. DOOR HANDLE LOCATION IS PROVIDED AS AN OPERATOR OPTION.

Section 46 - Passenger/Crew Entry Door Surround Structure Identification
Figure 1 (Sheet 1 of 5)

REF DWG
146T0300
146T0400



LEFT SIDE SHOWN
RIGHT SIDE EQUIVALENT,
EXCEPT AS NOTED
DETAIL I

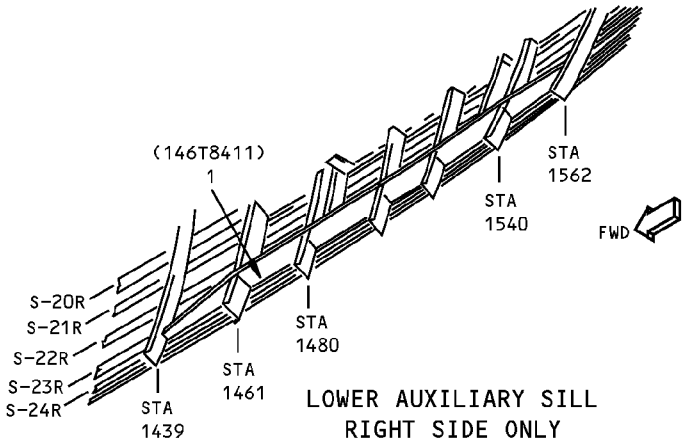
LIST OF MATL

Section 46 - Passenger/Crew Entry Door Surround Structure Identification
Figure 1 (Sheet 2 of 5)

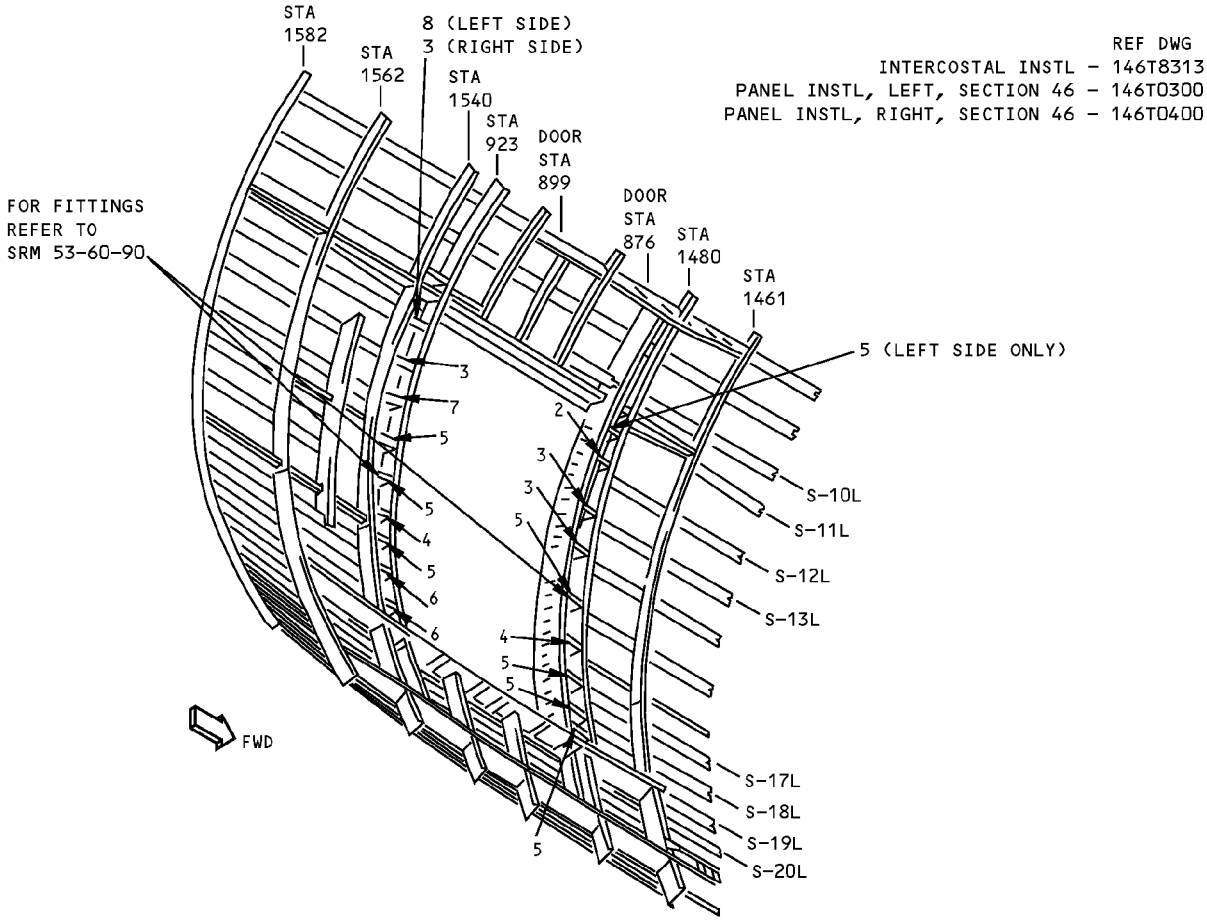
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME SEGMENT			
	WEB	0.063	7075-T6 (CHEM-MILLED TO 0.030 MIN)	
	OUTER CHORD		BAC1503-100321 2024-T42	
	INNER CHORD		BAC1503-100050 7075-T6	
	FAIL SAFE CHORD		BAC1512-685 7075-T6	
	DOOR STOP		BAC1503-100602 7075-T73 (OPT: PLATE OR BAR)	
2	FRAME SEGMENT			
	WEB	0.071	7075-T6 (CHEM-MILLED TO 0.040 MIN)	
	OUTER CHORD		BAC1503-100321 2024-T42	
	INNER CHORD		BAC1503-100050 7075-T6	
	FAIL SAFE CHORD		BAC1512-685 7075-T6511	
	DOOR STOP		BAC1505-100602 7075-T73 (OPT: PLATE OR BAR)	
3	LOWER SILL			
	FWD WEB	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.040 MIN)	
	CTR WEB	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.050 MIN)	
	AFT WEB	0.125	7075-T6 (CHEM-MILLED TO 0.090 MIN)	
	OUTER CHORD		BAC1514-2433 2024-T42	
	INNER CHORD		BAC1503-100309 7075-T6	
	FAIL SAFE CHORD		BAC1512-685 7075-T6	
4	UPPER SILL			
	FWD WEB	0.056	CLAD 7075-T6	
	CTR WEB	0.063	7075-T6	
	AFT WEB	0.056	CLAD 7075-T6	
	OUTER CHORD		BAC1514-2431 2024-T42	
	INNER CHORD		BAC1514-2432 7075-T6511	
	FAIL SAFE CHORD		BAC1512-3410 7075-T6511	
5	AUX SILL			
	CHORD		AND10134-1206 7075-T6	
			OPTIONAL: BAC1503-100451 7075-T6	
	FWD WEB	0.025	CLAD 7075-T6	
	CTR WEB	0.032	CLAD 7075-T6	
	AFT WEB	0.025	CLAD 7075-T6	
6	FRAME SEGMENT			
	FRAME	0.063	7075-T6 (CHEM-MILLED TO 0.045 MIN)	
	FAIL SAFE CHORD		BAC1505-101154 7075-T6	
	WEB	0.063	7075-T6 (CHEM-MILLED TO 0.030 MIN)	
	OUTER CHORD		BAC1505-100737 2024-T42	
	INNER CHORD		BAC1505-101268 7075-T6	
			OPTIONAL: AND10136-2005 7075-T6	
7	ZEE SILL		BAC1517-2166 7075-T6	
			OPTIONAL: BAC1517-1495 7075-T6	
8	FRAME	0.063	7075-T6 (CHEM-MILLED TO 0.045 MIN)	
9	FRAME SEGMENT			
	FRAME	0.063	7075-T6 (CHEM-MILLED TO 0.030 MIN)	
	FAIL SAFE CHORD		BAC1505-101154 7075-T6	
	WEB	0.063	7075-T6 (CHEM-MILLED TO 0.030 MIN)	
	OUTER CHORD		BAC1505-101186 2024-T42	
			OPTIONAL: BAC1505-100737 2024-T42	
	INNER CHORD		AND10133-1203 7075-T6	

LIST OF MATERIALS FOR DETAIL I

Section 46 - Passenger/Crew Entry Door Surround Structure Identification
Figure 1 (Sheet 3 of 5)



LOWER AUXILIARY SILL
RIGHT SIDE ONLY
DETAIL II



FORWARD AND AFT INTERCOSTALS
LEFT SIDE SHOWN
RIGHT SIDE EQUIVALENT, EXCEPT AS NOTED
DETAIL III

LIST OF MATL

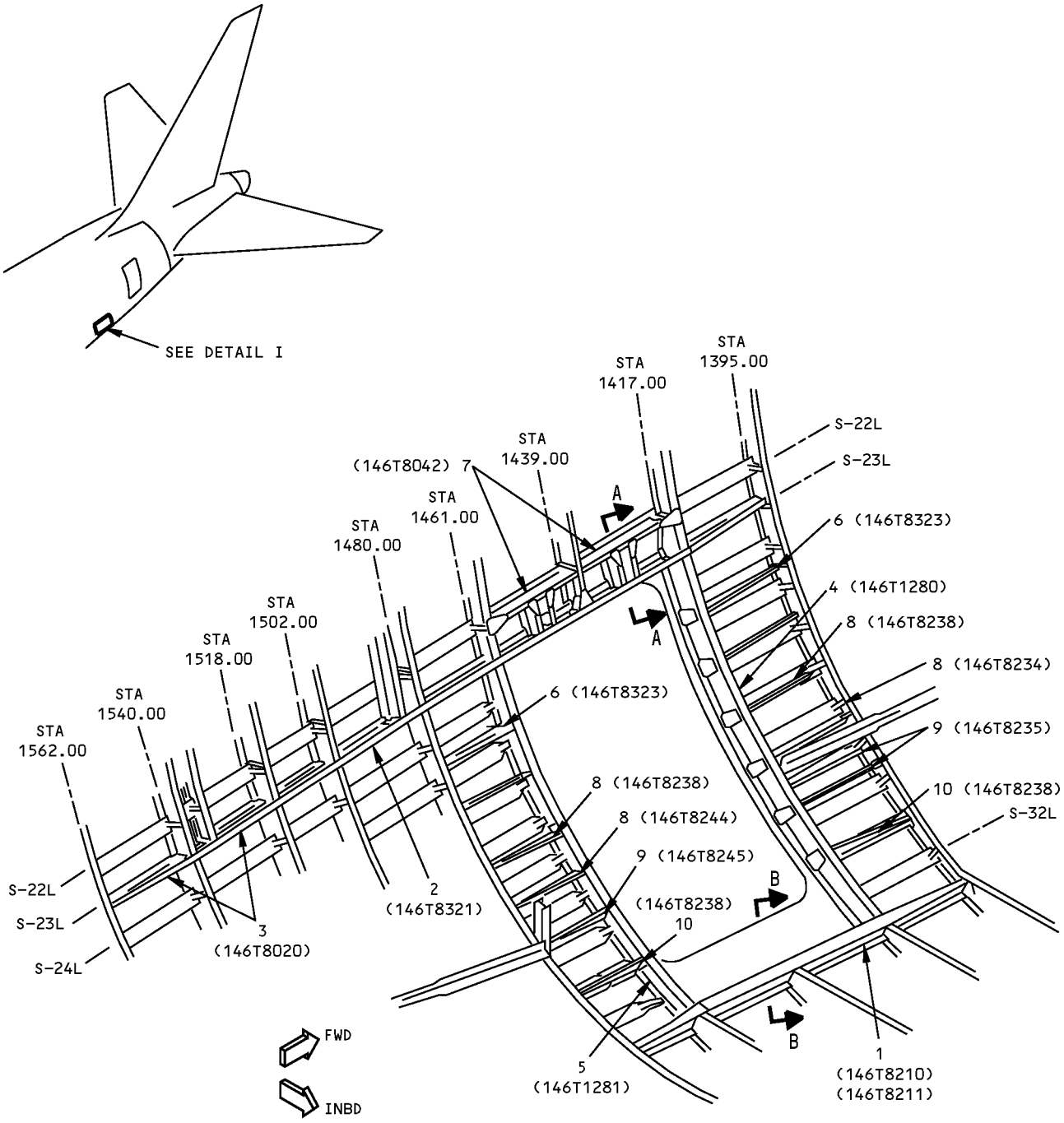
Section 46 - Passenger/Crew Entry Door Surround Structure Identification
Figure 1 (Sheet 4 of 5)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	AUX SILL			
	INNER CHORD		BAC1503-100704 7075-T6	
			OPTIONAL: AND10133-1203 7075-T6	
	OUTER CHORD		BAC1505-101177 2024-T42	
			OPTIONAL: AND10136-2005 2024-T42	
	WEB	0.040	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
2	INTERCOSTAL			
	CHORD		BAC1503-100715 7075-T73511	
			OPTIONAL: 7075-T7351 BAR	
	WEB	0.040	CLAD 7075-T6	
3	INTERCOSTAL			
	CHORD		BAC1503-100646 7075-T73511	
			OPTIONAL: 7075-T7351 BAR	
	WEB	0.040	CLAD 7075-T6	
4	INTERCOSTAL			
	CHORD		BAC1503-100705 7075-T73511	
			OPTIONAL: 7075-T7351 BAR	
	WEB	0.040	CLAD 7075-T6	
5	INTERCOSTAL			
	CHORD		BAC1503-100701 7075-T73511	
			OPTIONAL: 7075-T7351 BAR	
	WEB	0.040	CLAD 7075-T6	
6	INTERCOSTAL			
	CHORD		BAC1503-100700 7075-T73511	
			OPTIONAL: 7075-T7351 BAR	
	WEB	0.040	CLAD 7075-T6	
7	INTERCOSTAL			
	CHORD		BAC1503-100716 7075-T73511	
			OPTIONAL: 7075-T7351 BAR	
	WEB	0.040	CLAD 7075-T6	
8	INTERCOSTAL			
	CHORD		AND10134-1205 2024-T3511	
	WEB	0.040	CLAD 7075-T6	

LIST OF MATERIALS FOR DETAILS II AND III

Section 46 - Passenger/Crew Entry Door Surround Structure Identification
Figure 1 (Sheet 5 of 5)

IDENTIFICATION 3 - SECTION 46 - BULK CARGO DOOR SURROUND STRUCTURE



DETAIL I

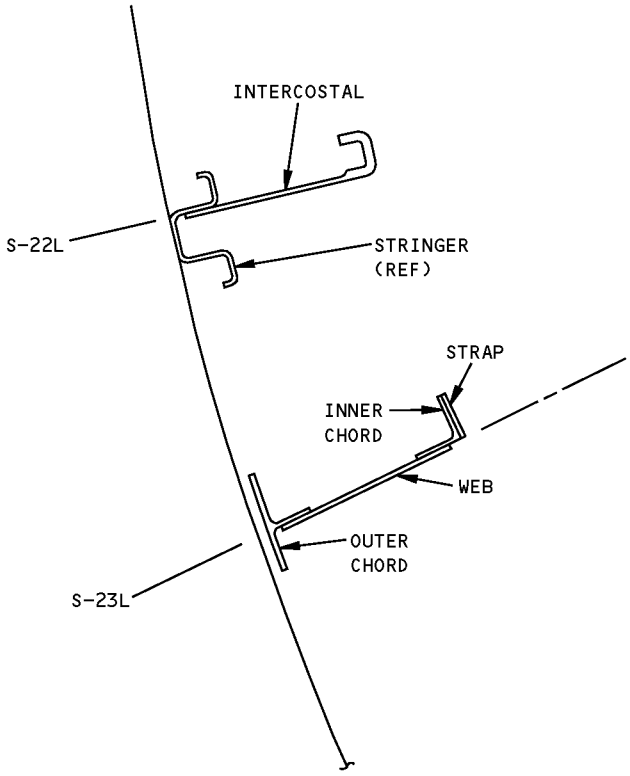
LIST OF MATL

Section 46 - Bulk Cargo Door Surround Structure Identification
Figure 1 (Sheet 1 of 3)

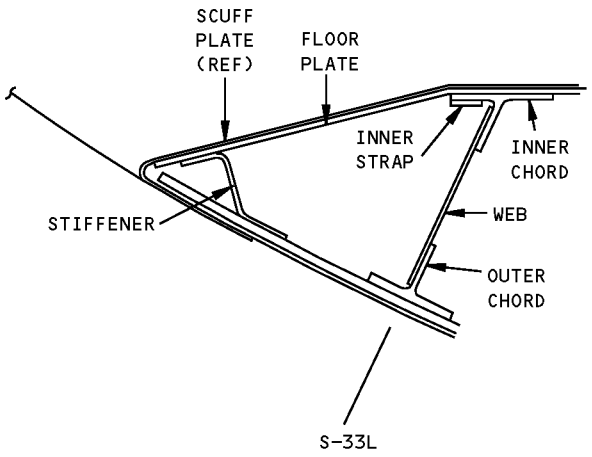
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	LOWER SILL			
	FWD WEB	0.032	CLAD 7075-T6	
	CTR WEB	0.056	CLAD 7075-T6 (CHEM-MILLED TO 0.040 MIN)	
	AFT WEB	0.040	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
	OUTER CHORD		BAC1505-101267 2024-T42	
			OPTIONAL: BAC1505-100905 2024-T42	
	INNER CHORD		BAC1506-3245 7075-T6	
			OPTIONAL: BAC1506-3114 7075-T6	
	INNER STRAP		BAC1512-1640 7075-T6511	
	STIFFENER	0.100	7075-T6	
	FLOOR PLATE	0.100	7075-T6 (CHEM-MILLED TO 0.063 MIN)	
2	UPPER SILL			
	FWD WEB	0.032	CLAD 7075-T6	
	FWD CTR WEB	0.050	CLAD 7075-T6 (CHEM-MILLED TO 0.032 MIN)	
	MID CTR WEB	0.032	CLAD 7075-T6	
	AFT CTR WEB	0.040	CLAD 7075-T6	
	AFT WEB	0.032	CLAD 7075-T6	
	OUTER CHORD		BAC1505-101266 2024-T42	
			OPTIONAL: BAC1505-100905 2024-T42	
	INNER CHORD		BAC1503-100724 7075-T6	
			OPTIONAL: BAC1505-100370 7075-T6	
	STRAP		BAC1512-1640 7075-T6511	
3	AUX SILL			
	FWD WEB	0.040	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
	AFT WEB	0.050	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
	OUTER CHORD		AND10136-2005 2024-T42	
	INNER CHORD		BAC1503-100704 7075-T6	
			OPTIONAL: AND10133-1203 7075-T6	
4	FRAME ASSY			
	OUTER CHORD		BAC1503-100714 2024-T42	
			OPTIONAL: BAC1503-100308 2024-T42	
	INNER CHORD		BAC1503-100726 7075-T6	
			OPTIONAL: BAC1503-100213 7075-T6	
	INNER STRAP		BAC1512-3336 7075-T6511	
	WEB	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.040 MIN)	
5	FRAME ASSY			
	OUTER CHORD		BAC1503-100513 2024-T42	
	INNER CHORD		BAC1503-100604 7075-T6	
	INNER STRAP		BAC1512-3410 7075-T6511	
	WEB	0.063	CLAD 7075-T6 (CHEM-MILLED TO 0.040 MIN)	
6	INTERCOSTAL	0.050	CLAD 7075-T6	
7	INTERCOSTAL	0.056	CLAD 7075-T6 (CHEM-MILLED TO 0.025 MIN)	
8	INTERCOSTAL	0.050	CLAD 2024-T42	
9	INTERCOSTAL	0.056	CLAD 2024-T42	
10	INTERCOSTAL	0.090	2024-T42	

LIST OF MATERIALS FOR DETAIL I

Section 46 - Bulk Cargo Door Surround Structure Identification
Figure 1 (Sheet 2 of 3)



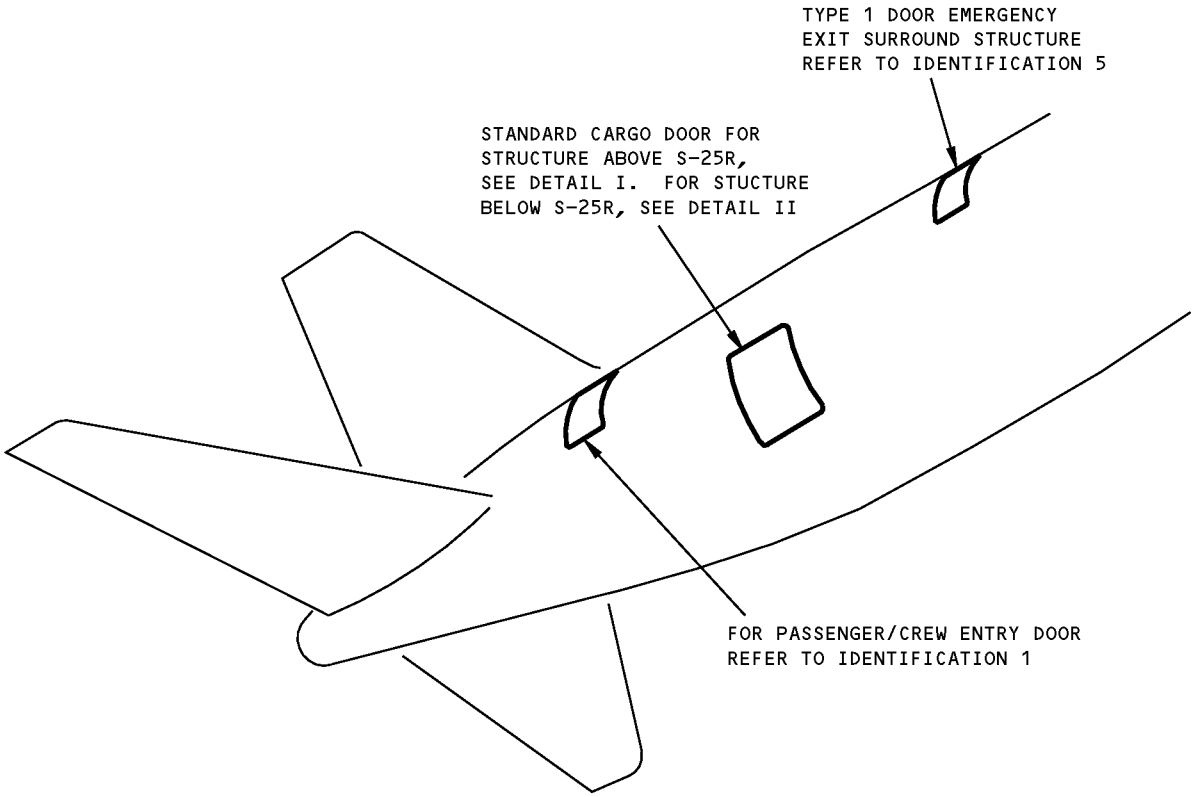
SECTION A-A THRU UPPER SILL



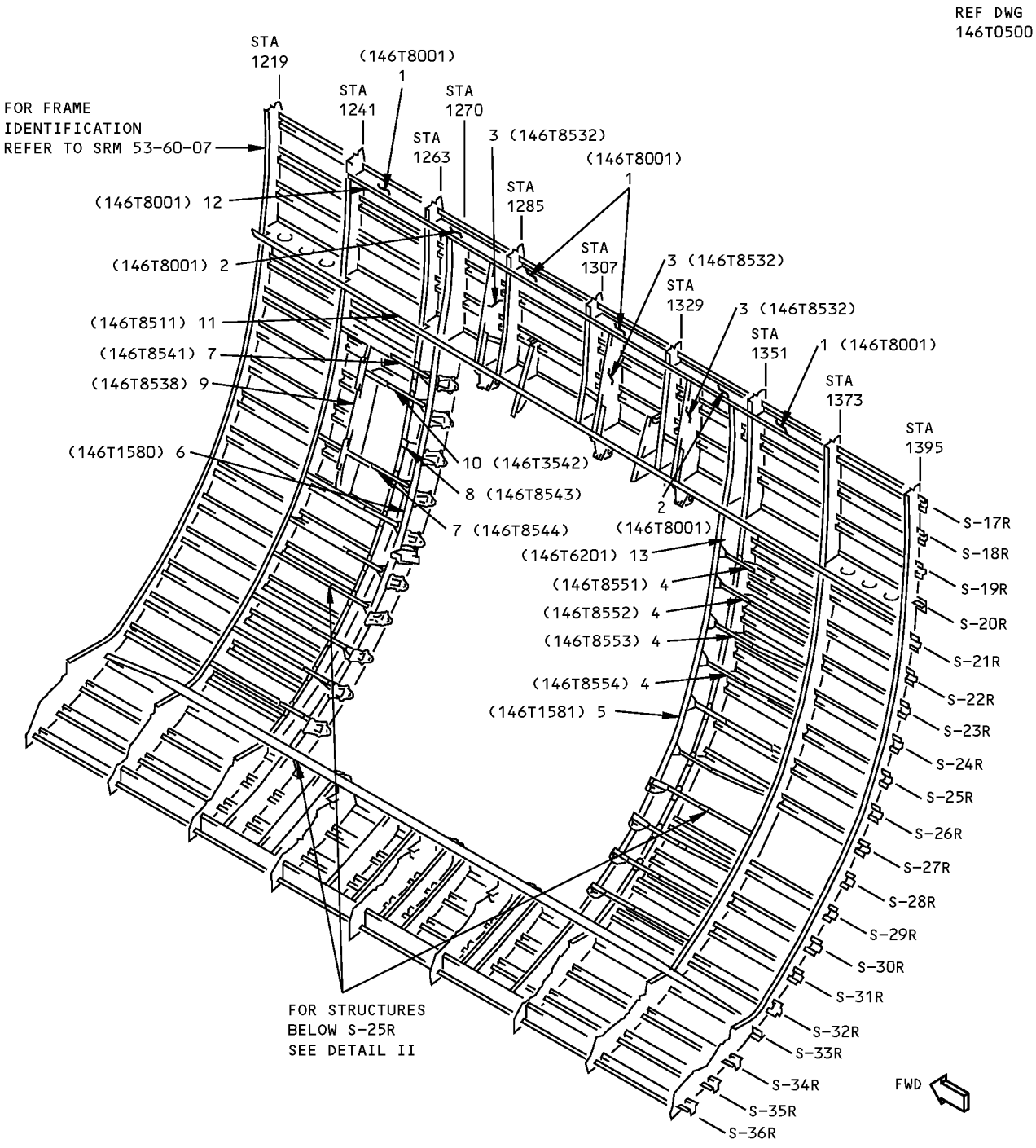
SECTION B-B THRU LOWER SILL

Section 46 - Bulk Cargo Door Surround Structure Identification
Figure 1 (Sheet 3 of 3)

IDENTIFICATION 4 - SECTION 46 - STANDARD CARGO DOOR SURROUND STRUCTURE



Section 46 - Standard Cargo Door Surround Structure Identification
Figure 1 (Sheet 1 of 5)



DETAIL I

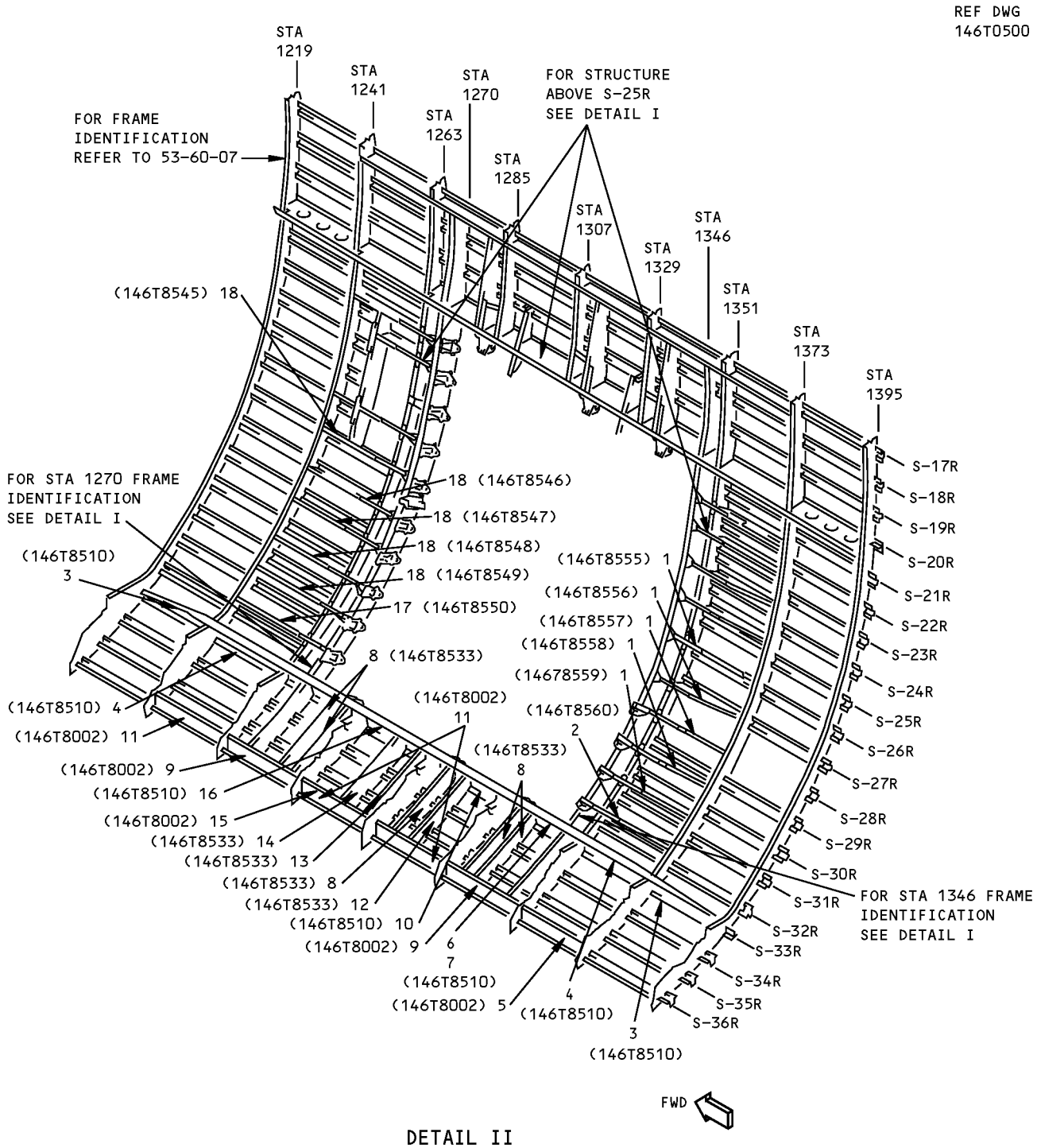
LIST OF MATL

Section 46 - Standard Cargo Door Surround Structure Identification
Figure 1 (Sheet 2 of 5)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	WEB	0.032	CLAD 7075-T6	
2	WEB	0.063	CLAD 7075-T6	
3	FRAME	0.063	CLAD 2024-T42	
4	INTERCOSTAL			
	FORWARD WEB	0.050	CLAD 2024-T3	
	AFT WEB	0.063	2024-T42	
5	FRAME			
	WEB	0.100	7075-T6 (CHEM-MILLED TO 0.060 MIN)	
	OUTER CHORD		BAC1503-100728 2024-T42	
			OPTIONAL: BAC1503-100603 2024-T42	
	INNER CHORD		BAC1503-100645 7075-T6	
			OPTIONAL: BAC1514-690 7075-T6	
	FAIL SAFE STRAP		7075-T651 PLATE	
6	FRAME			
	WEB	0.100	7075-T6 (CHEM-MILLED TO 0.060 MIN)	
	OUTER CHORD		BAC1503-100728 2024-T42	
			OPTIONAL: BAC1503-100603 2024-T42	
	INNER CHORD		BAC1514-690 7075-T6	
	INNER CHORD		BAC1503-100661 7075-T73	
			OPTIONAL: BAC1514-690 7075-T73	
7	INTERCOSTAL			
	FORWARD WEB	0.063	2024-T42	
	AFT WEB	0.050	CLAD 2024-T3	
	CHORD	0.063	2024-T42	
8	INTERCOSTAL	0.071	2024-T3	
9	FRAME	0.090	7075-T6	
10	INTERCOSTAL			
	FORWARD WEB	0.063	2024-T42	
	AFT WEB	0.063	2024-T3	
	CHORD	0.063	2024-T42	
11	UPPER MAIN SILL			
	WEB	0.080	7075-T6 (CHEM-MILLED TO 0.040 MIN)	
	OUTER CHORD		BAC1506-3243 2024-T3511	
			OPTIONAL: BAC1506-2483 2024-T3511	
	INNER CHORD		BAC1514-2669 7075-T6511	
			OPTIONAL: BAC1514-2435 7075-T6511	
	FAIL SAFE STRAP		7075-T651 PLATE	
12	INNER CHORD		BAC1503-100064 7075-T6511	
13	SEAL DEPRESSOR	0.056	CLAD 2024-T42	

LIST OF MATERIALS FOR DETAIL I

Section 46 - Standard Cargo Door Surround Structure Identification
Figure 1 (Sheet 3 of 5)



DETAIL II

LIST OF MATL

Section 46 - Standard Cargo Door Surround Structure Identification
Figure 1 (Sheet 4 of 5)

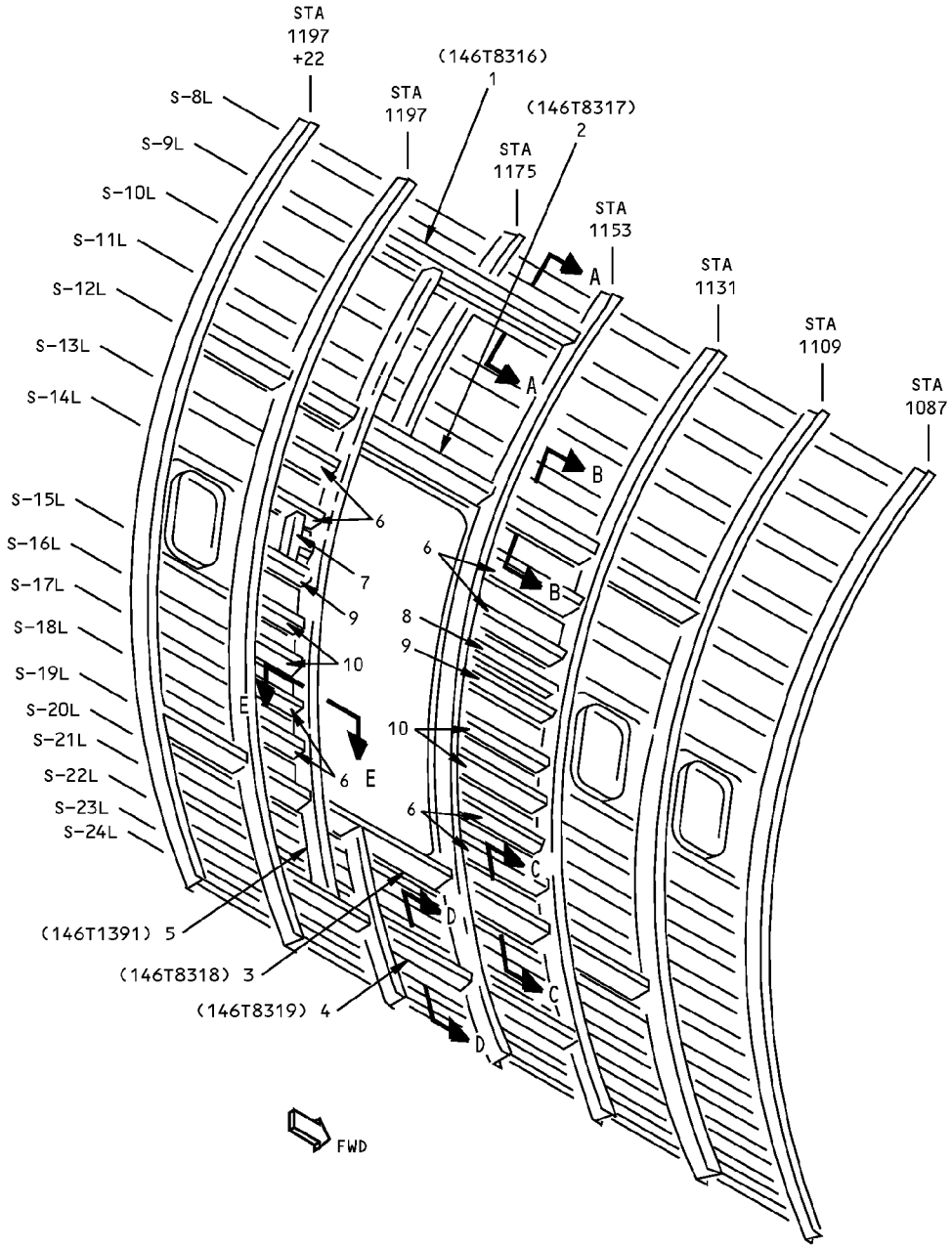
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	INTERCOSTAL			
	FWD WEB	0.050	CLAD 2024-T3	
	AFT WEB	0.063	2024-T42	
2	INTERCOSTAL			
	FWD WEB	0.063	2024-T3	
	AFT WEB	0.063	2024-T42	
3	WEB, LWR SILL	0.040	CLAD 7075-T6	
4	WEB, LWR SILL	0.080	7075-T6	
5	WEB	0.040	CLAD 7075-T6	
6	INNER CHORD		BAC1514-2585 7075-T6 OPTIONAL: BAC1514-2434 7075-T6	
7	FAIL SAFE STRAP	0.300	PLATE 7075-T651	
8	FRAME ASSY			
	WEB	0.063	7075-T6	
	STIFFENER	0.040	CLAD 7075-T6	
9	WEB	0.063	CLAD 7075-T6	
10	OUTER CHORD		BAC1506-3244 2024-T42 OPTIONAL: BAC1506-1811 2024-T42	
11	WEB	0.032	CLAD 7075-T6	
12	FRAME ASSY			
	WEB	0.040	CLAD 7075-T6	
	STIFFENER	0.063	7075-T6	
13	FRAME ASSY			
	WEB	0.063	7075-T6	
	STIFFENER	0.032	CLAD 7075-T6	
14	FRAME ASSY			
	WEB	0.040	CLAD 7075-T6	
	STIFFENER	0.032	CLAD 7075-T6	
15	INNER CHORD		BAC1503-100239 7075-T6511	
16	WEB, LWR SILL	0.125	7075-T6 (CHEM-MILLED TO 0.075 MIN)	
17	INTERCOSTAL			
	FWD WEB	0.063	2024-T42	
	AFT WEB	0.063	2024-T3	
18	INTERCOSTAL			
	FWD WEB	0.063	2024-T42	
	AFT WEB	0.050	CLAD 2024-T3	

LIST OF MATERIALS FOR DETAIL II

Section 46 - Standard Cargo Door Surround Structure Identification
Figure 1 (Sheet 5 of 5)

IDENTIFICATION 5 - SECTION 46 - TYPE 1 DOOR (EMERGENCY EXIT) SURROUND STRUCTURE

REF DWG
146T0315
INTERCOSTALS 146T8356
INTERCOSTALS 146T8357



LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE

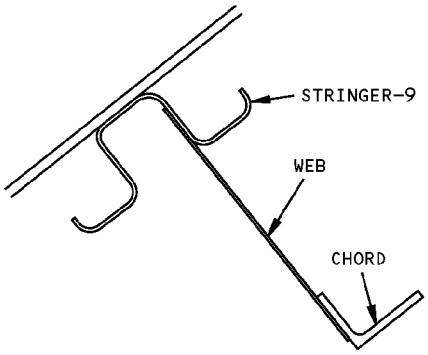
LIST OF MATL

Section 46 - Type 1 Door (Emergency Exit) Surround Structure Identification
Figure 1 (Sheet 1 of 3)

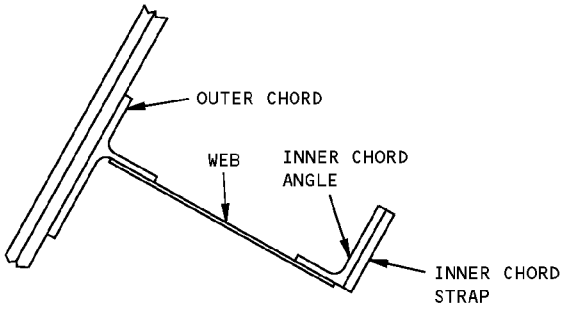
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	UPPER AUXILIARY SILL			
	WEB	0.040	CLAD 7075-T6	
	CHORD		BAC 1503-100438 7075-T6511	
2	UPPER MAIN SILL			
	WEB	0.050	CLAD 7075-T6	
	OUTER CHORD		BAC1510-1124 7075-T73	
	INNER CHORD ANGLE		AND10134-2402 7075-T62	
	INNER CHORD STRAP	0.25	7075-T62	
3	LOWER MAIN SILL			
	WEB	0.040	CLAD 7075-T6	
	WEB	0.080	BARE 7075-T6	
	OUTER CHORD		BAC1514-2821 7075-T7351	
	INNER CHORD		AND10133-1403 7075-T6511	
	FAIL SAFE CHORD		BAC1512-3399 7075-T6511	
4	LOWER AUXILIARY SILL			
	WEB	0.040	7075-T6 CLAD	
	CHORD		BAC1503-100438 7075-T6511	
5	FRAME SEGMENT			
	OUTER CHORD		BAC1503-100754 2024-T42	
	INNER CHORD		BAC1503-100754 7075-T62	
	STRAP	0.2	7075-T6	
	WEB	0.071	7075-T6	
6	INTERCOSTAL			
	INNER CHORD		AND10134-1206 7075-T6511	
	WEB	0.05	BARE 7075-T6	
7	INTERCOSTAL			
	CHANNEL	0.063	BARE 2024-T3	
	SUPPORT FITTING	2.5	BARE 7075-T7351	
8	INTERCOSTAL			
	OUTER CHORD		BAC1503-100553 7075-T73511	
	WEB	0.063	CLAD 7075-T62	
9	INTERCOSTAL			
	INNER CHORD		BAC1503-100230 7075-T65	
	OUTER CHORD	1.25 X 1.5	7075-T6 BAR	
	WEB	0.04	BARE 7075-T6	
10	INTERCOSTAL			
	INNER CHORD		BAC1503-100230 7075-T6	
	WEB	0.04	BARE 7075-T6	

DOOR SURROUND (LEFT)

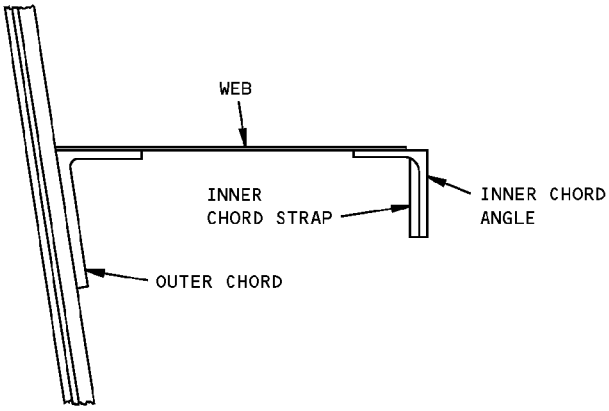
Section 46 - Type 1 Door (Emergency Exit) Surround Structure Identification
Figure 1 (Sheet 2 of 3)



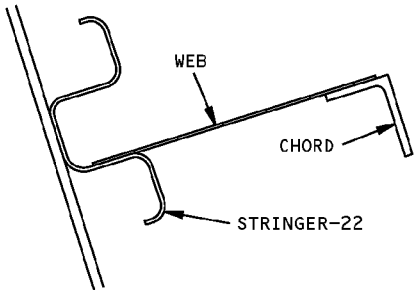
SECTION THRU UPPER AUXILIARY SILL
SECTION A-A



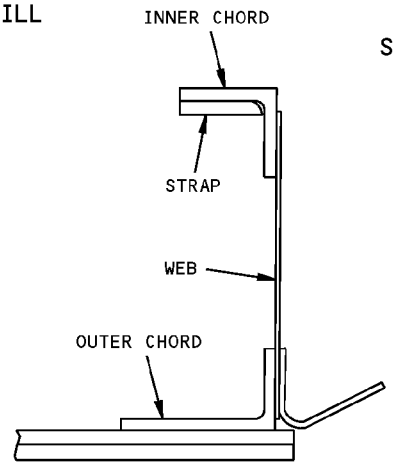
SECTION THRU UPPER MAIN SILL
SECTION B-B



SECTION THRU LOWER MAIN SILL
SECTION C-C



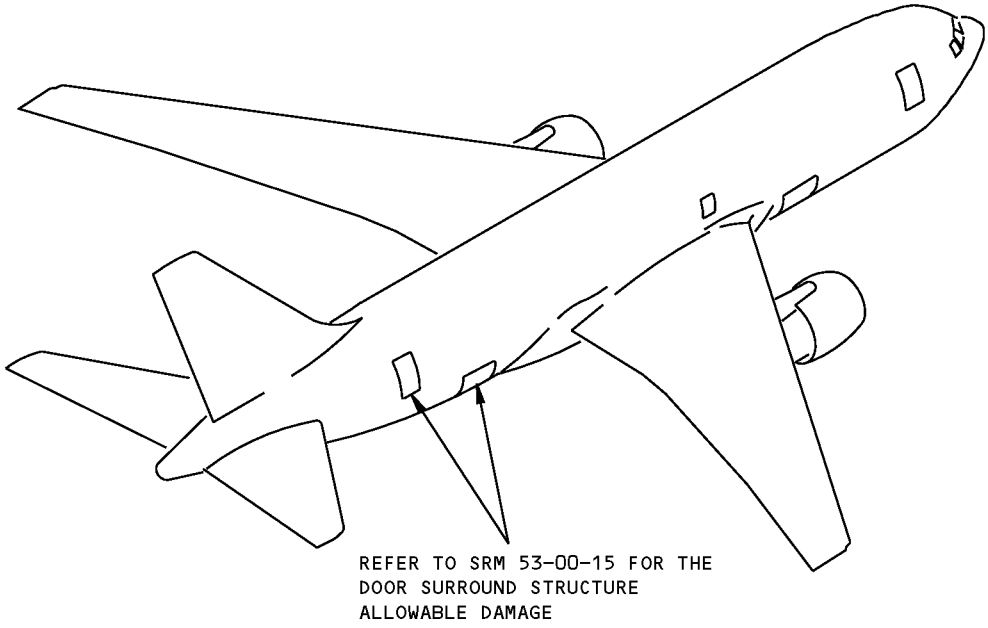
SECTION THRU LOWER AUXILIARY SILL
SECTION D-D



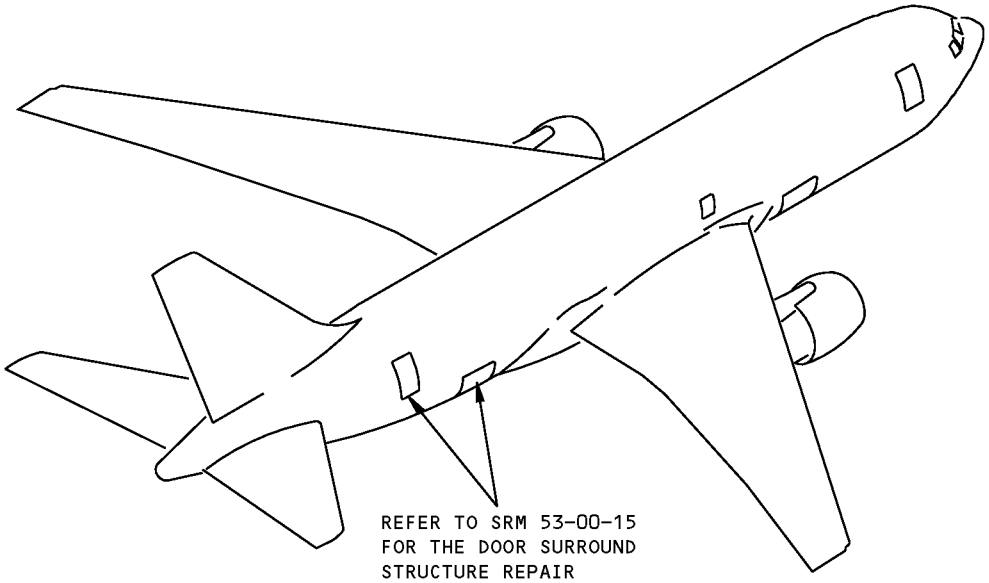
SECTION THRU DOOR FRAME
SECTION E-E

Section 46 - Type 1 Door (Emergency Exit) Surround Structure Identification
Figure 1 (Sheet 3 of 3)

ALLOWABLE DAMAGE 1 - SECTION 46 PASSENGER/CREW AND CARGO DOOR SURROUND STRUCTURE

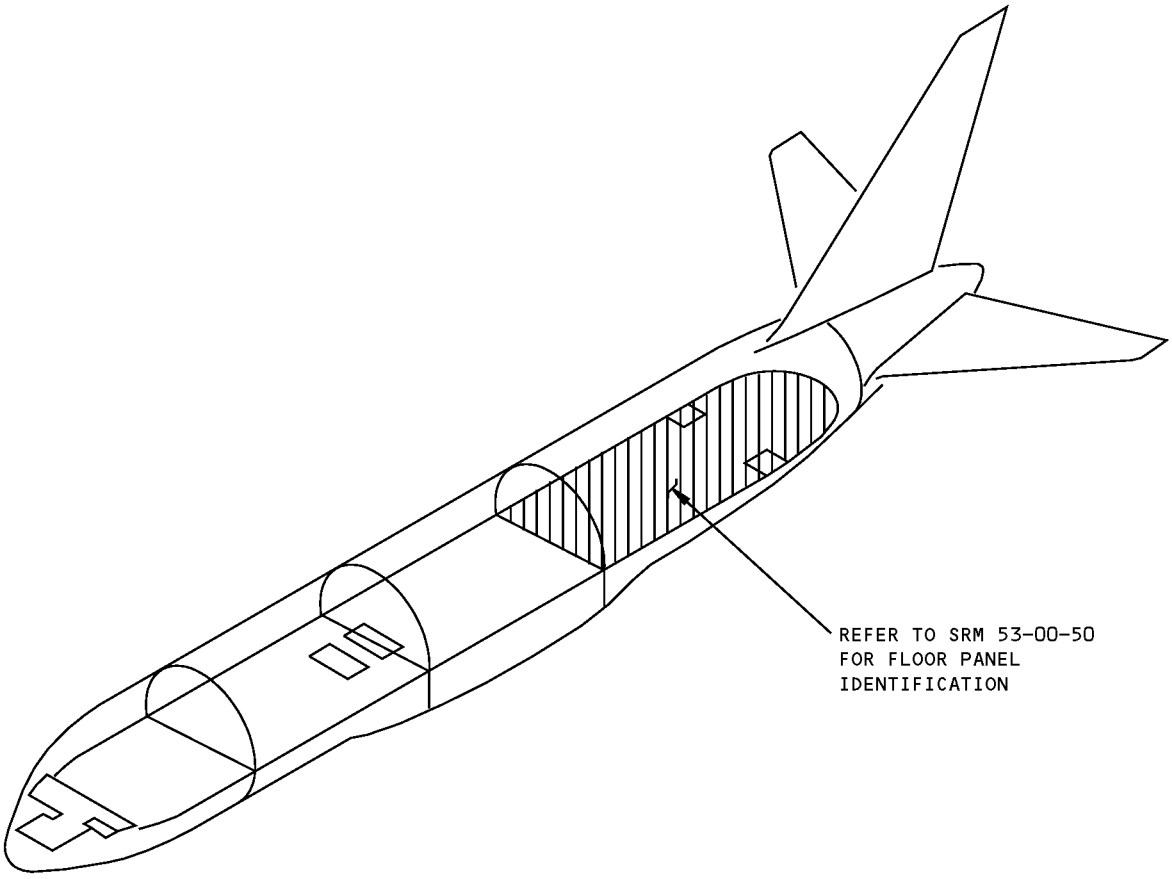


Section 46 Passenger/Crew and Cargo Door Surround Structure Allowable Damage
Figure 101



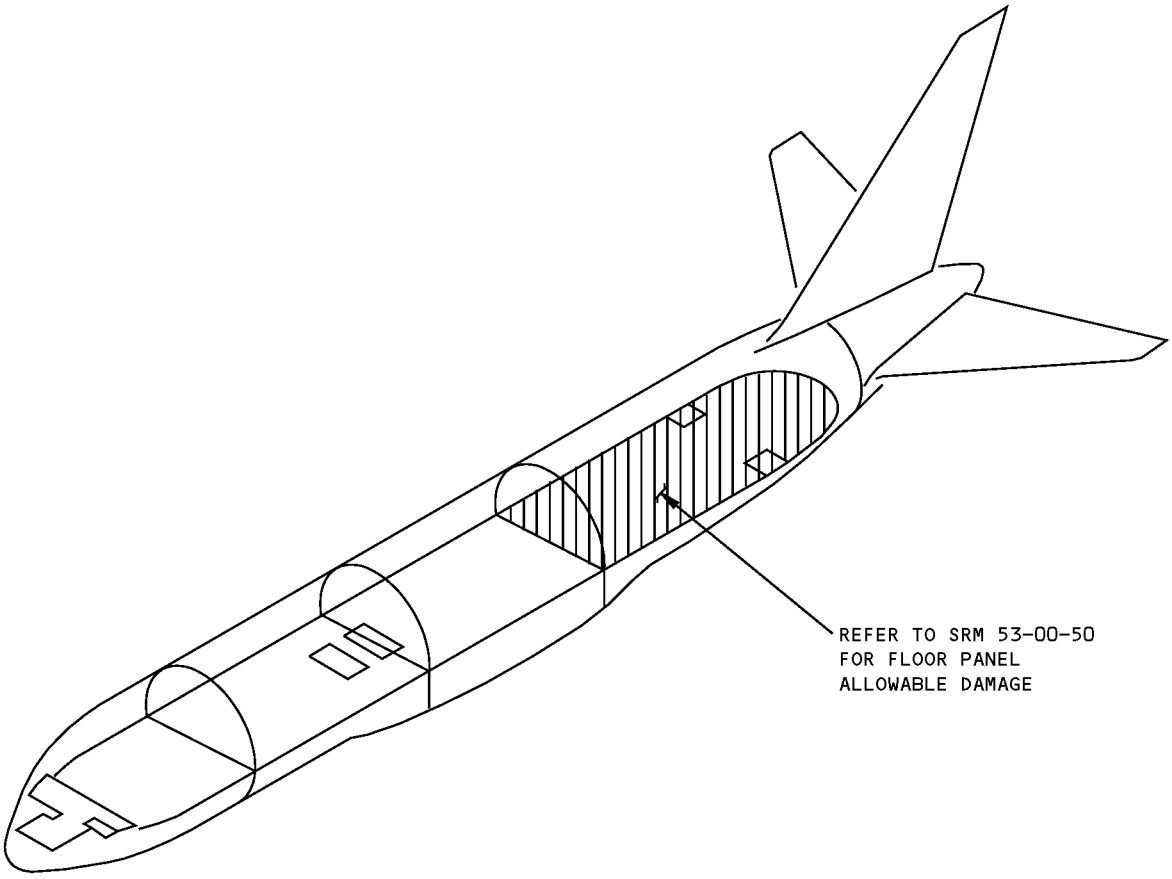
Section 46 Passenger/Crew and Cargo Door Surround Structure Repair
Figure 201

IDENTIFICATION GENERAL - SECTION 46 MAIN DECK FLOOR PANELS



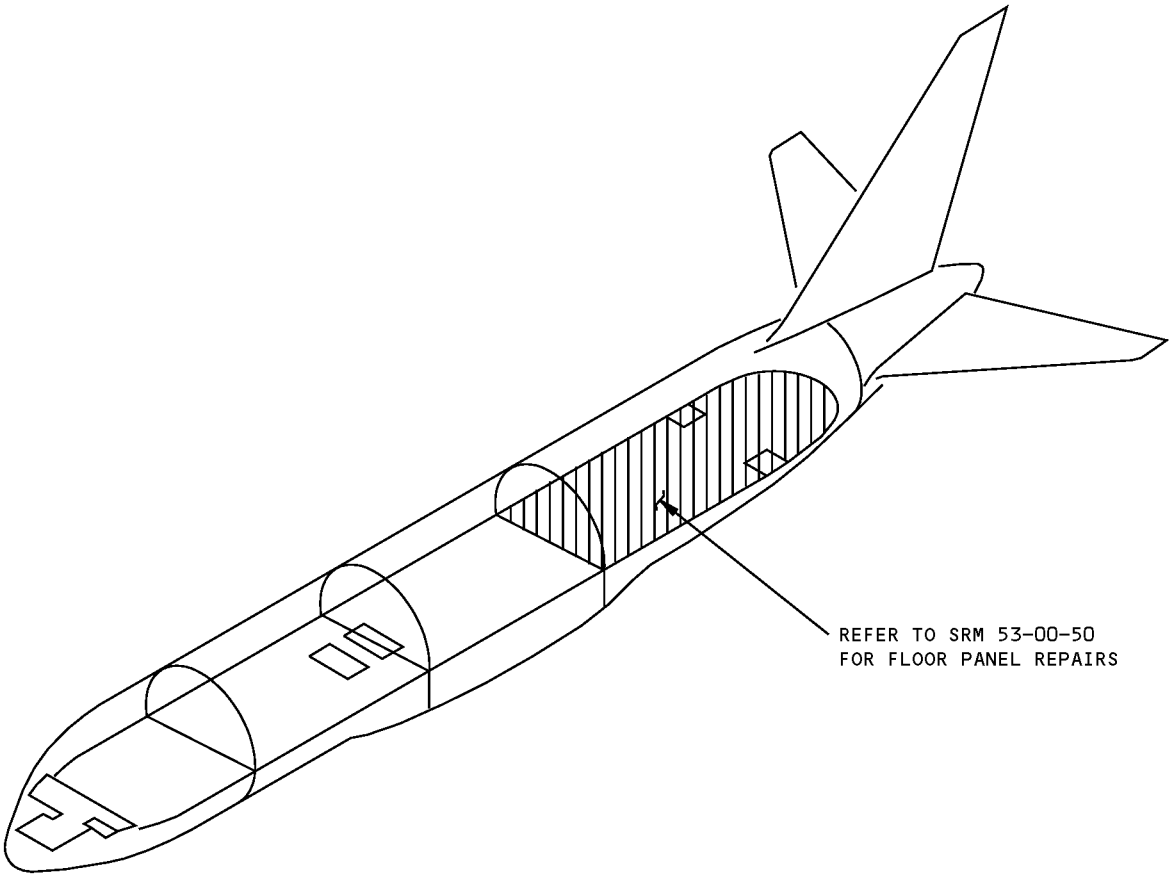
Section 46 Main Deck Floor Panel Identification
Figure 1

ALLOWABLE DAMAGE GENERAL - SECTION 46 MAIN DECK FLOOR PANELS



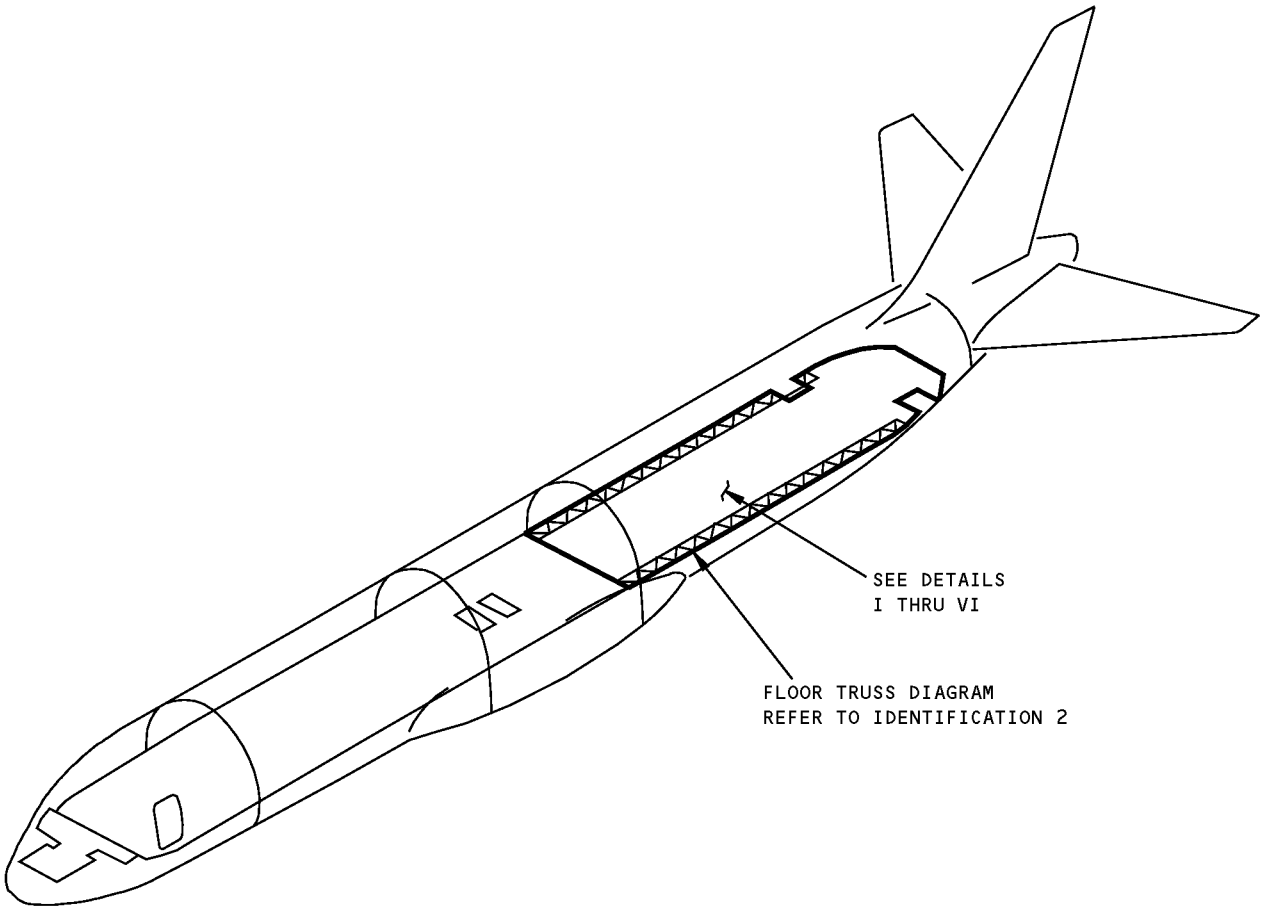
Allowable Damage - Section 46 Main Deck Floor Panels
Figure 101

REPAIR GENERAL - SECTION 46 MAIN DECK FLOOR PANELS

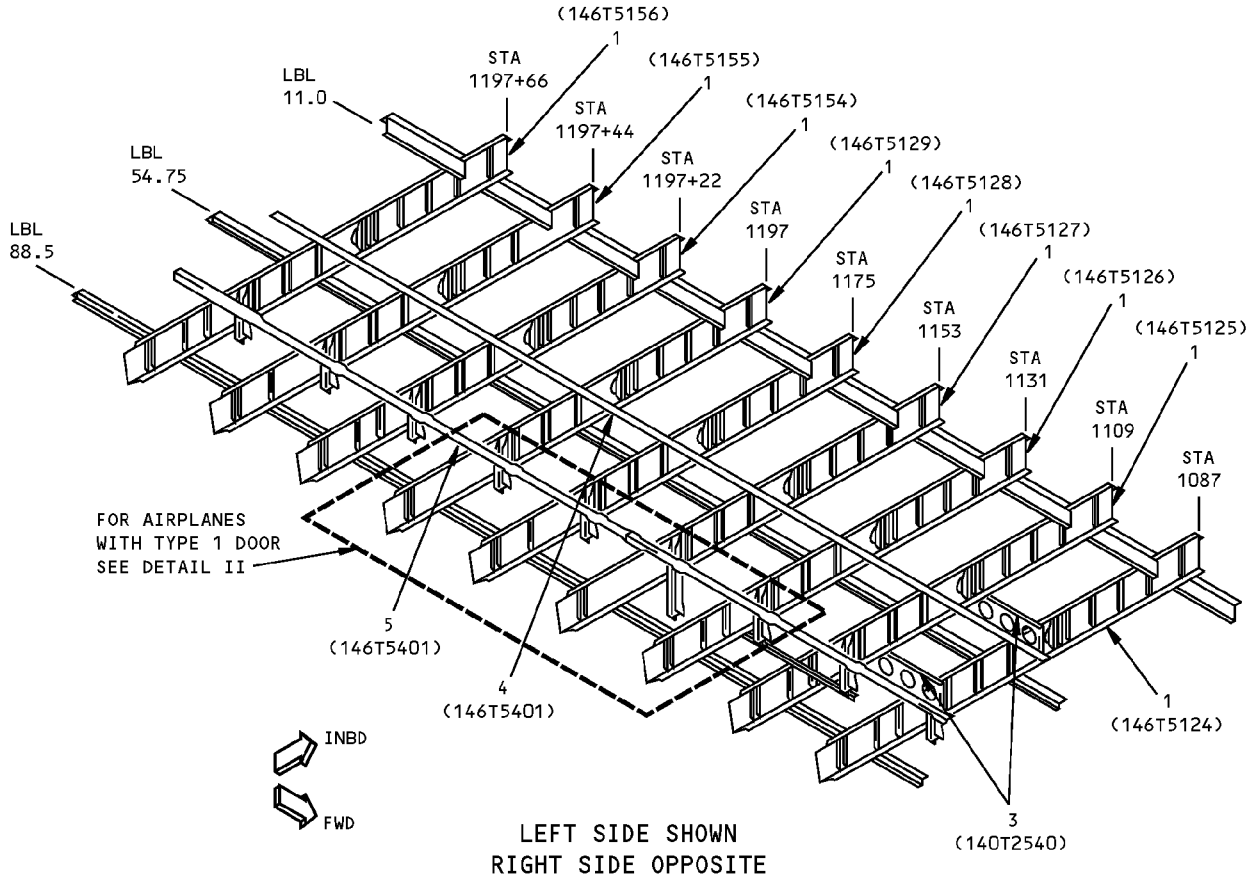


Section 46 Main Deck Floor Panel Repair
Figure 201

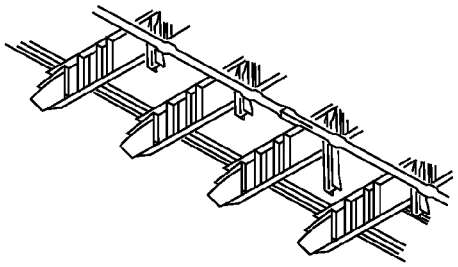
IDENTIFICATION 1 - SECTION 46 - FLOOR STRUCTURE



Section 46 - Floor Structure Identification
Figure 1 (Sheet 1 of 6)



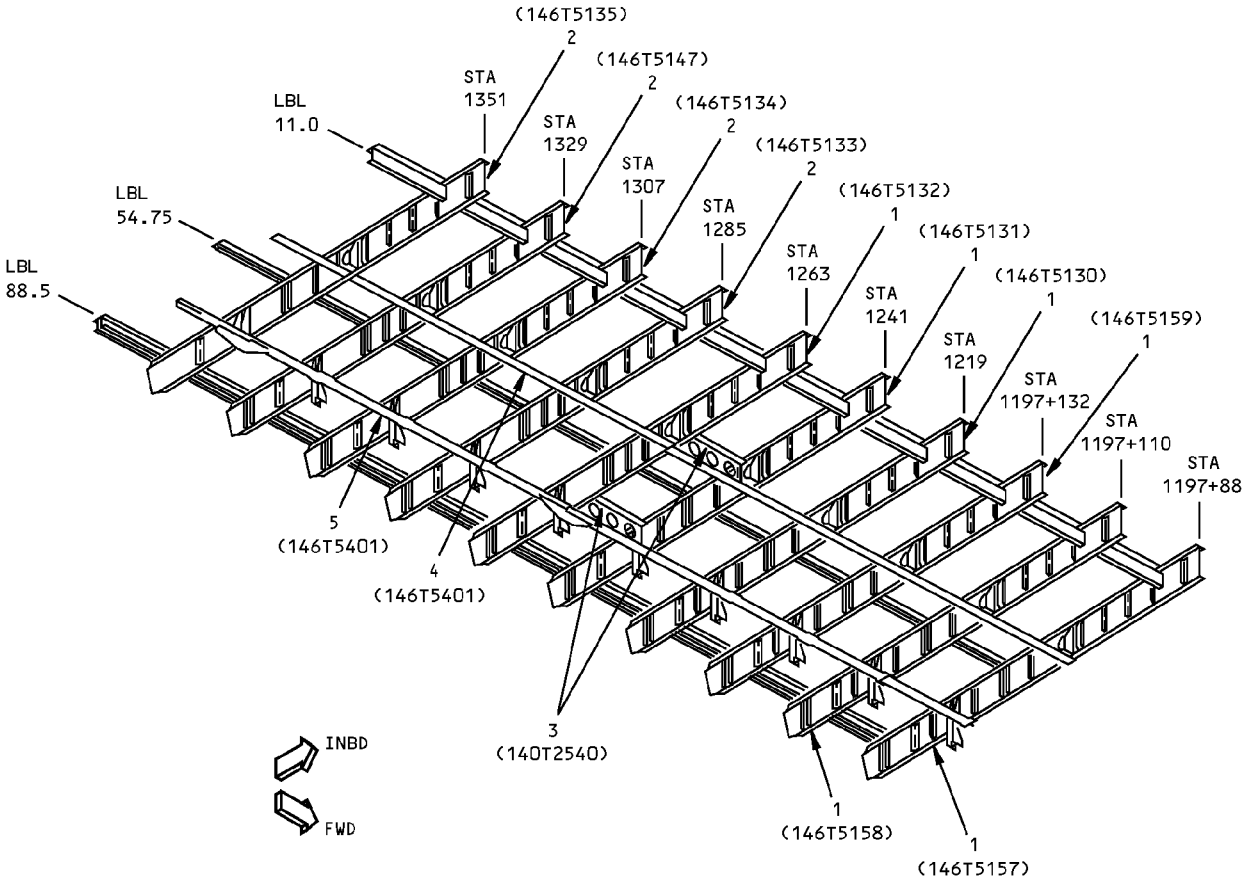
LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
FLOOR STRUCTURE OF AIRPLANES WITHOUT
TYPE 1 DOOR EMERGENCY EXIT
DETAIL I



FLOOR STRUCTURE OF AIRPLANES WITH
TYPE 1 DOOR EMERGENCY EXIT
DETAIL II

LIST OF MATL

Section 46 - Floor Structure Identification
Figure 1 (Sheet 2 of 6)



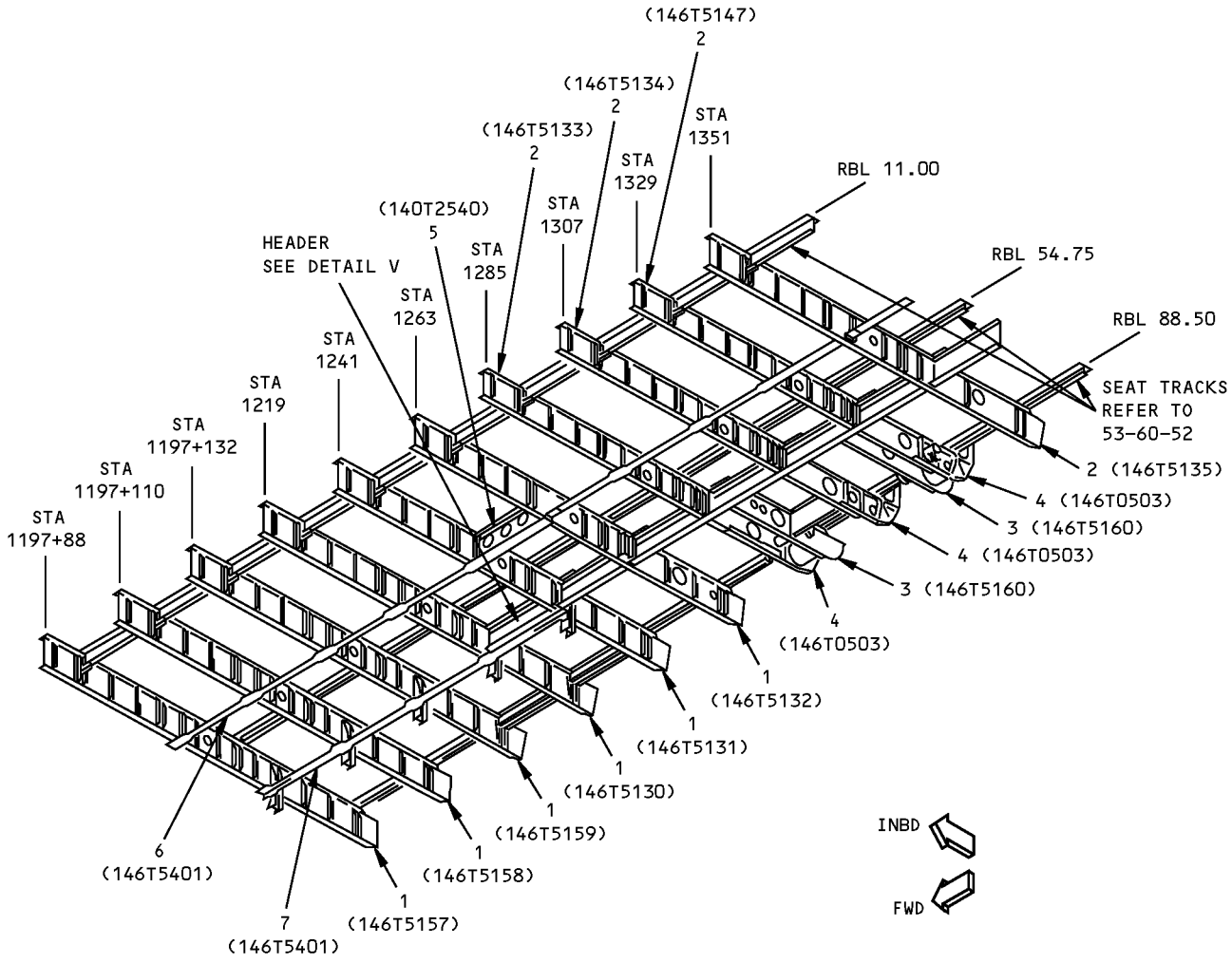
LEFT SIDE
DETAIL III

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FLOOR BEAM		BAC1506-3116 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
2	FLOOR BEAM		BAC1506-3117 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
3	INTERCOSTAL	0.025	CLAD 7075-T6	
4	STRAP		BAC1493-692 7075-T6	
5	ANGLE		BAC1490-2863 7075-T6	

LIST OF MATERIALS FOR DETAILS I, II AND III

Section 46 - Floor Structure Identification
Figure 1 (Sheet 3 of 6)

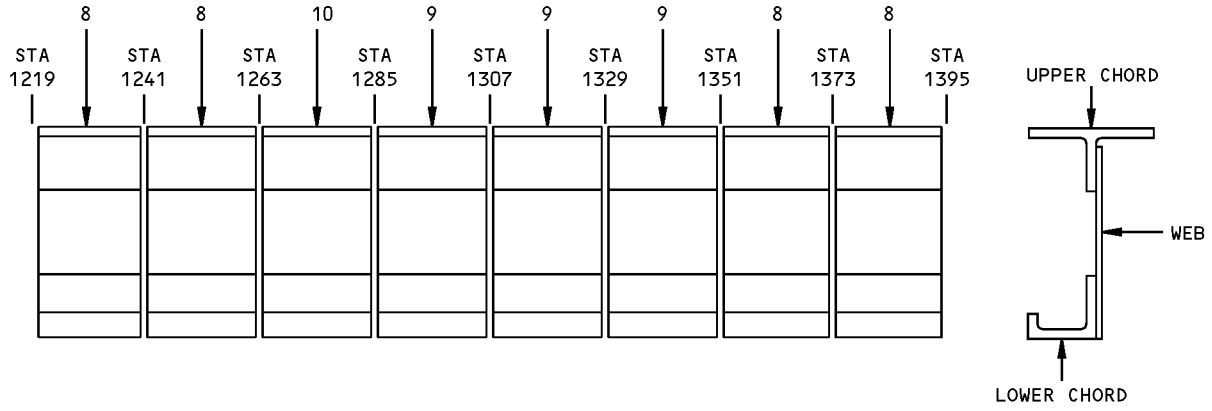
REF DWG
146T5200
146T5225



RIGHT SIDE
DETAIL IV

LIST OF MATL

Section 46 - Floor Structure Identification
Figure 1 (Sheet 4 of 6)



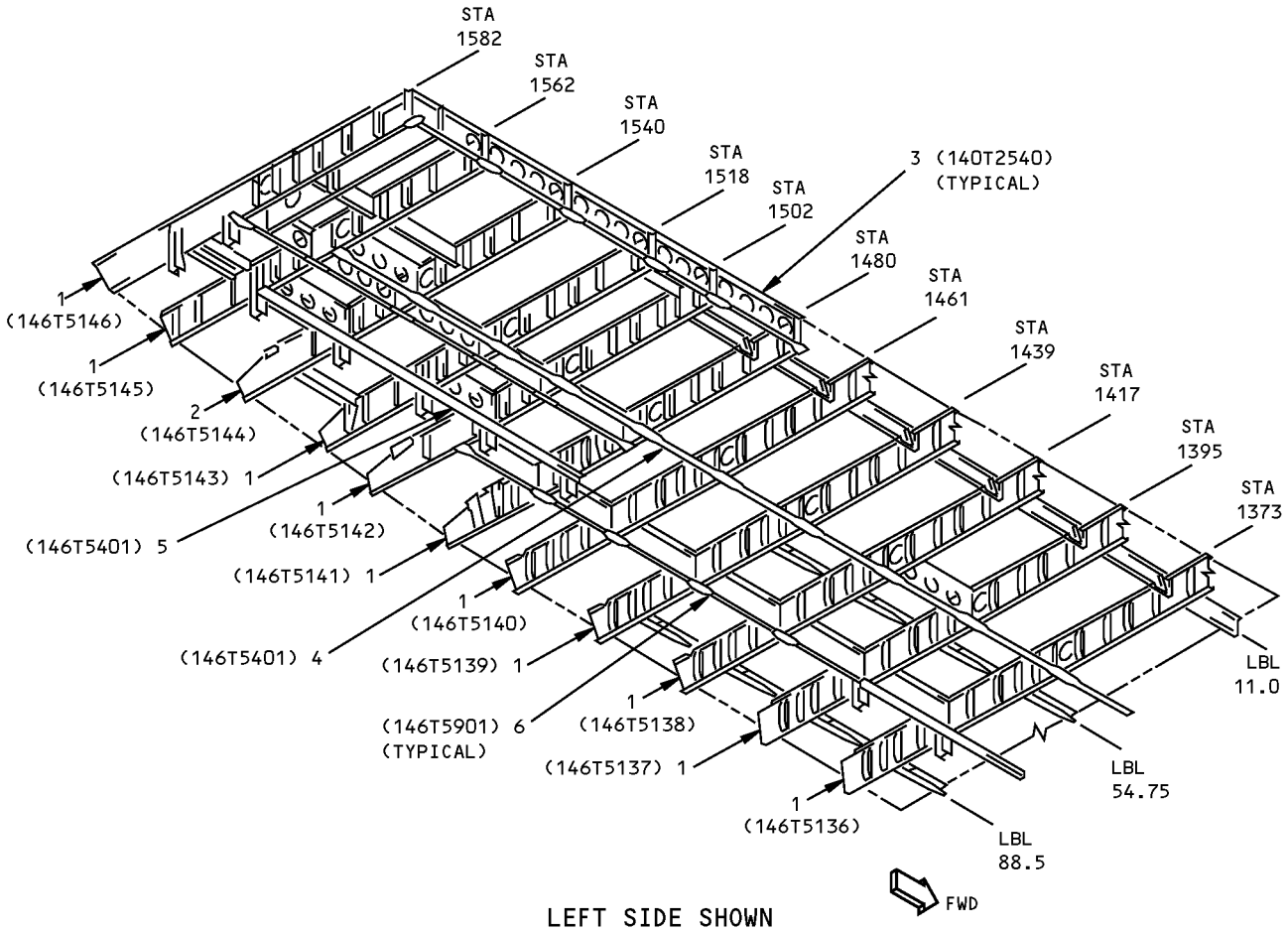
DETAIL V

(TYPICAL)
SECTION THRU BEAM

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FLOOR BEAM		BAC1506-3116 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
2	FLOOR BEAM		BAC1506-3117 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
3	ACTUATOR SUPPORT BEAM		BAC1506-3117 7075-T6511 (CHEM-MILLED TO 0.085 MIN)	
4	FITTING	1.500	PLATE 7075-T7351	
5	INTERCOSTAL	0.025	CLAD 7075-T6	
6	STRAP		BAC1493-692 7075-T6	
7	ANGLE		BAC1490-2863 7075-T6	
8	BEAM ASSY LWR CHORD WEB UPR CHORD	 0.032 	 AND10137-1114 7075-T6511 CLAD 7075-T6 BAC1505-100883 7075-T6511	
9	BEAM ASSY LWR CHORD WEB UPR CHORD	 0.025 	 AND10137-1205 7075-T6511 CLAD 7075-T6 BAC1505-28902 7075-T6511	
10	BEAM ASSY LWR CHORD WEB UPR CHORD	 0.025 	 AND10137-1112 7075-T6511 CLAD 7075-T6 BAC1505-28902 7075-T6511	

LIST OF MATERIALS FOR DETAILS IV AND V

Section 46 - Floor Structure Identification
Figure 1 (Sheet 5 of 6)



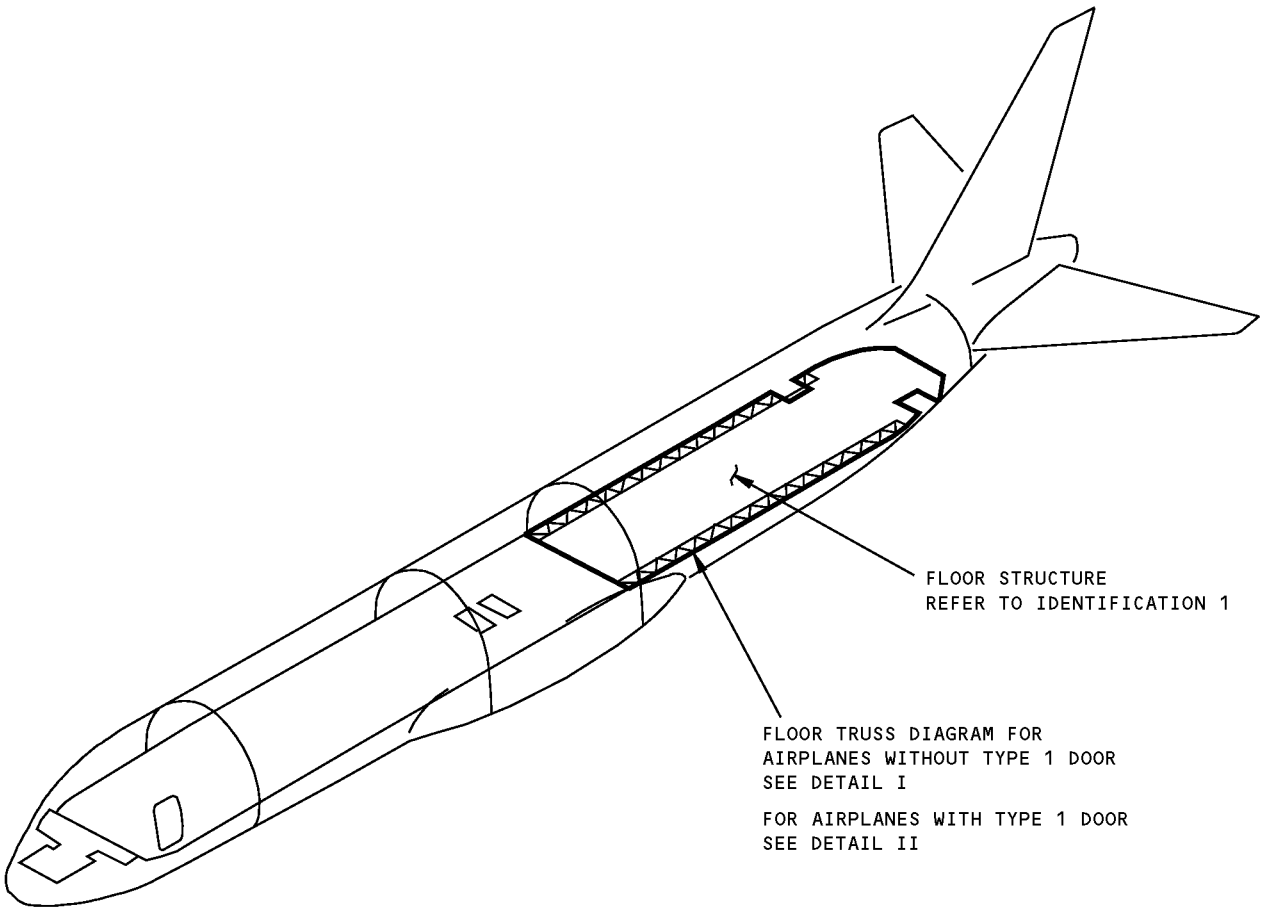
LEFT SIDE SHOWN
RIGHT SIDE OPPOSITE
DETAIL VI

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FLOOR BEAM		BAC1506-3116 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
2	FLOOR BEAM		BAC1506-3117 7075-T6511 (CHEM-MILLED TO 0.025 MIN)	
3	INTERCOSTAL	0.025	CLAD 7075-T6	
4	STRAP		BAC1493-692 7075-T6	
5	ANGLE		BAC1490-2863 7075-T6	
6	HEADER ASSY			
	LWR CHORD		AND10137-1111 7075-T6511	
	WEB	0.025	CLAD 7075-T6	
	UPR CHORD		AND10133-1002 7075-T6511	

LIST OF MATERIALS FOR DETAIL VI

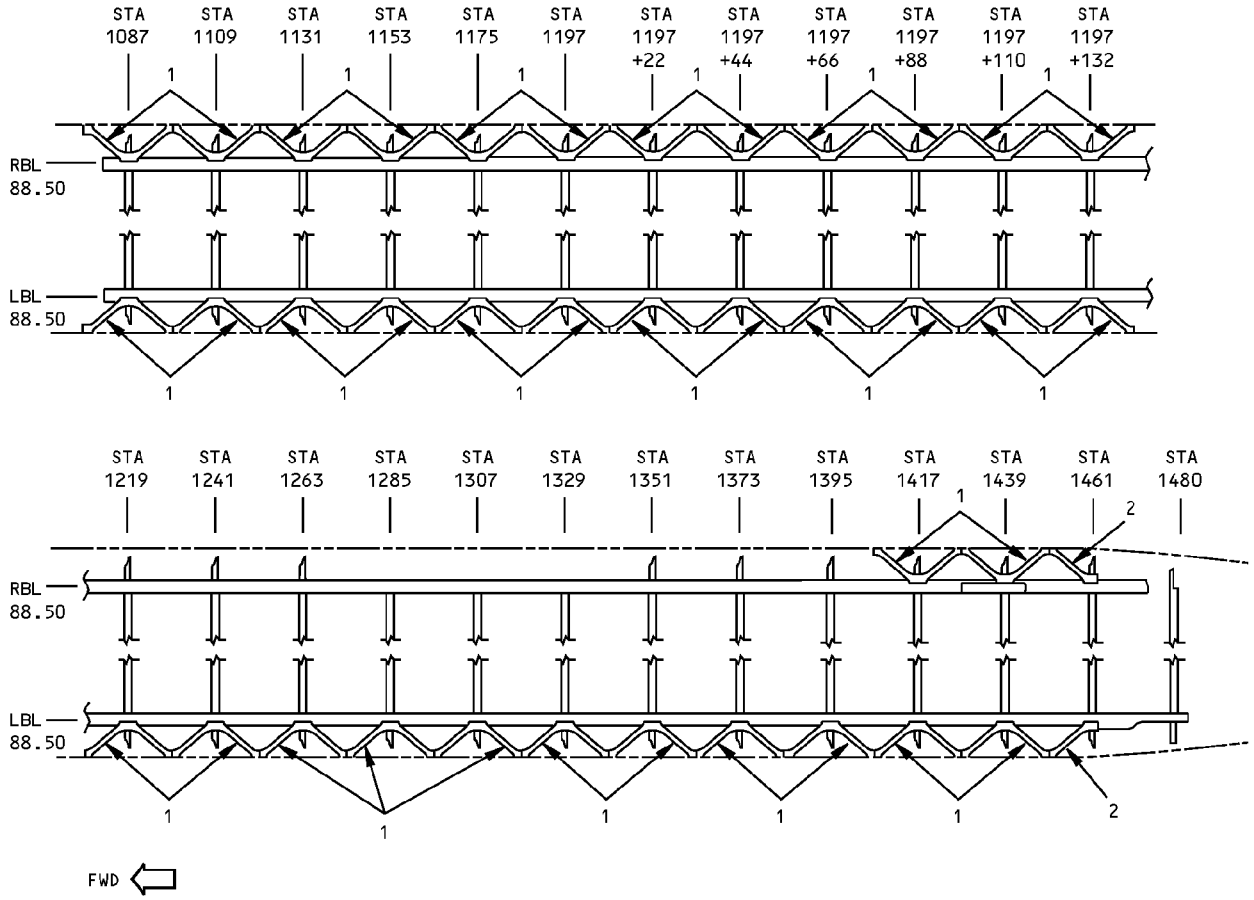
Section 46 - Floor Structure Identification
Figure 1 (Sheet 6 of 6)

IDENTIFICATION 2 - SECTION 46 - FLOOR STRUCTURE - TRUSSES



Section 46 - Floor Structure - Truss Identification
Figure 1 (Sheet 1 of 3)

REF DWG
146T5200

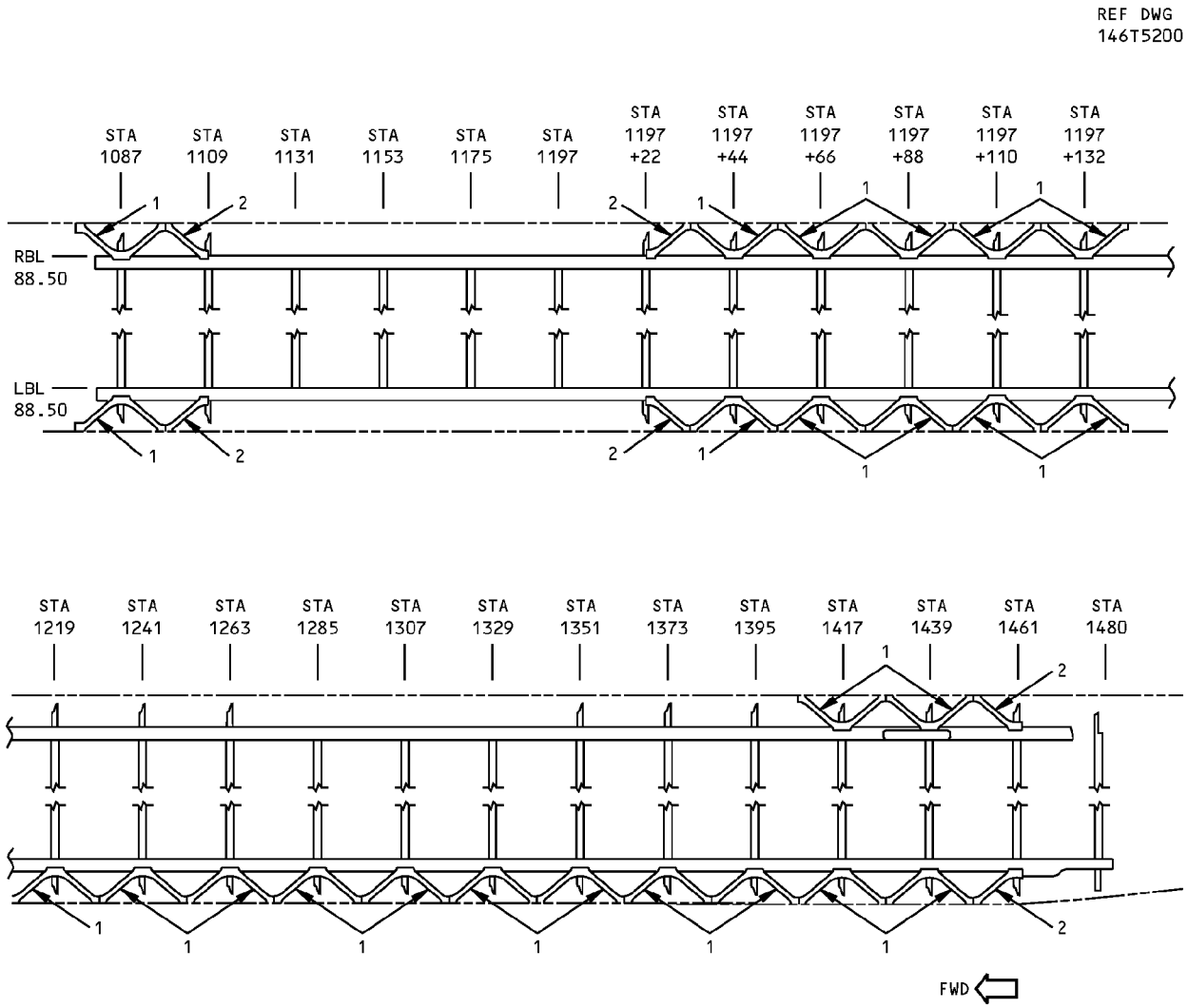


TRUSS CONFIGURATION OF AIRPLANES WITHOUT
TYPE 1 DOOR EMERGENCY EXIT
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	TRUSS	0.090	7075-T62	
2	TRUSS	0.100	7075-T62	

LIST OF MATERIALS FOR DETAIL I

Section 46 - Floor Structure - Truss Identification
Figure 1 (Sheet 2 of 3)



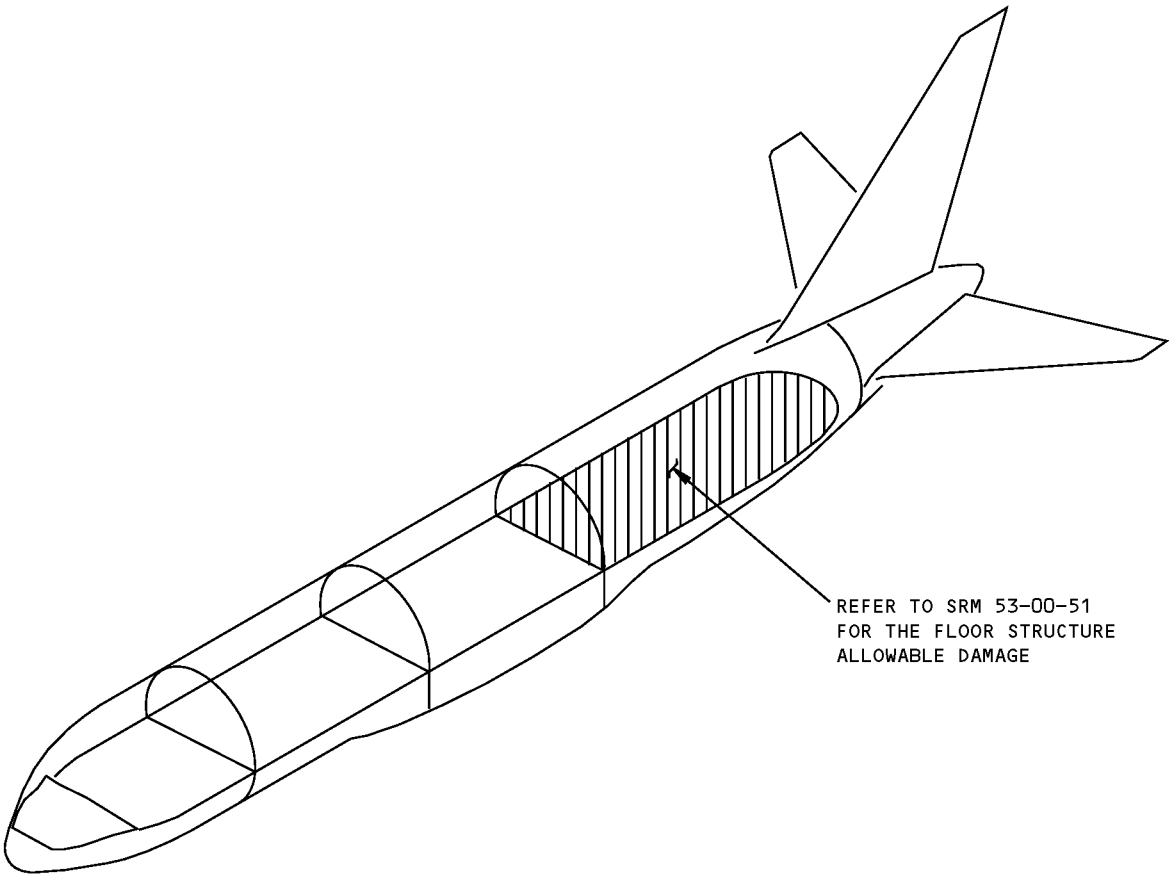
TRUSS CONFIGURATION OF AIRPLANES WITH TYPE 1
DOOR EMERGENCY EXIT
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	TRUSS	0.090	7075-T62	
2	TRUSS	0.100	7075-T62	

LIST OF MATERIALS FOR DETAIL II

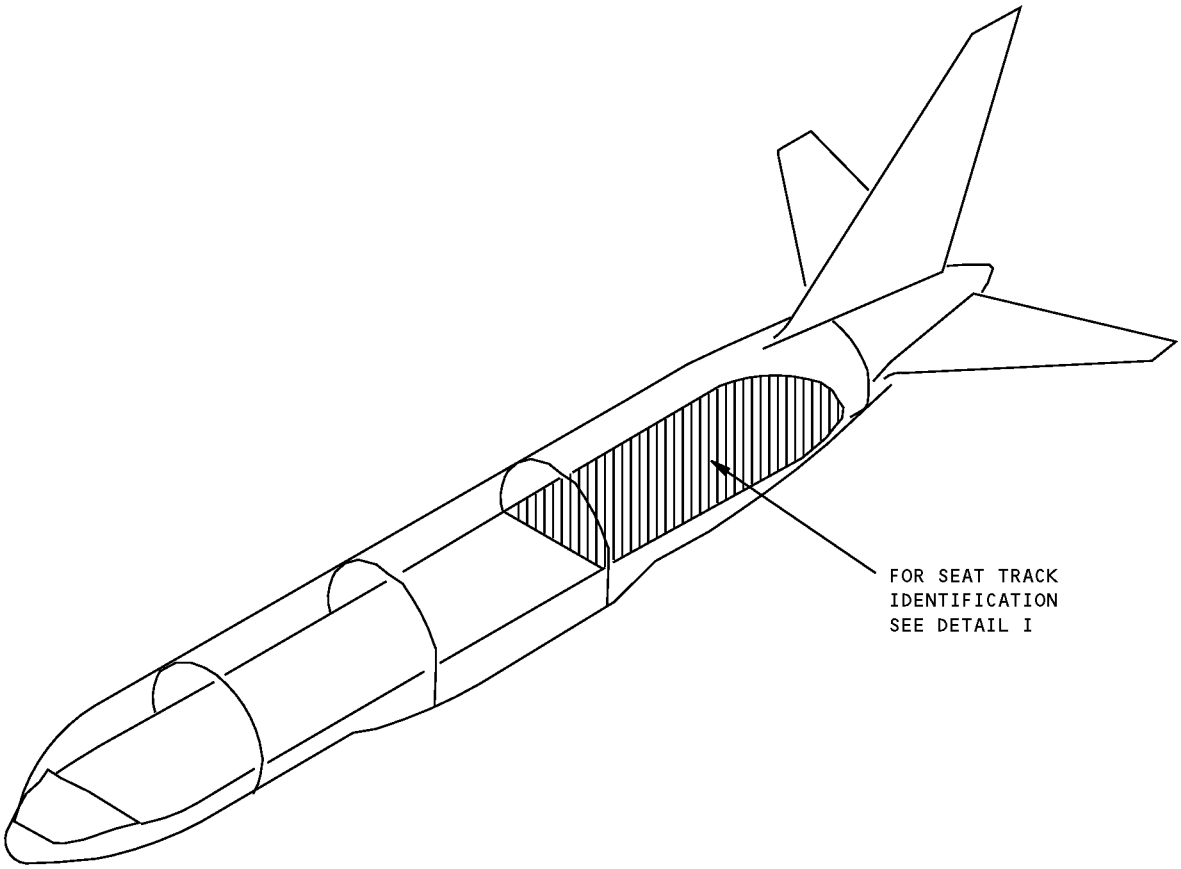
Section 46 - Floor Structure - Truss Identification
Figure 1 (Sheet 3 of 3)

ALLOWABLE DAMAGE GENERAL - SECTION 46 FLOOR STRUCTURE



Section 46 Floor Structure Allowable Damage
Figure 101

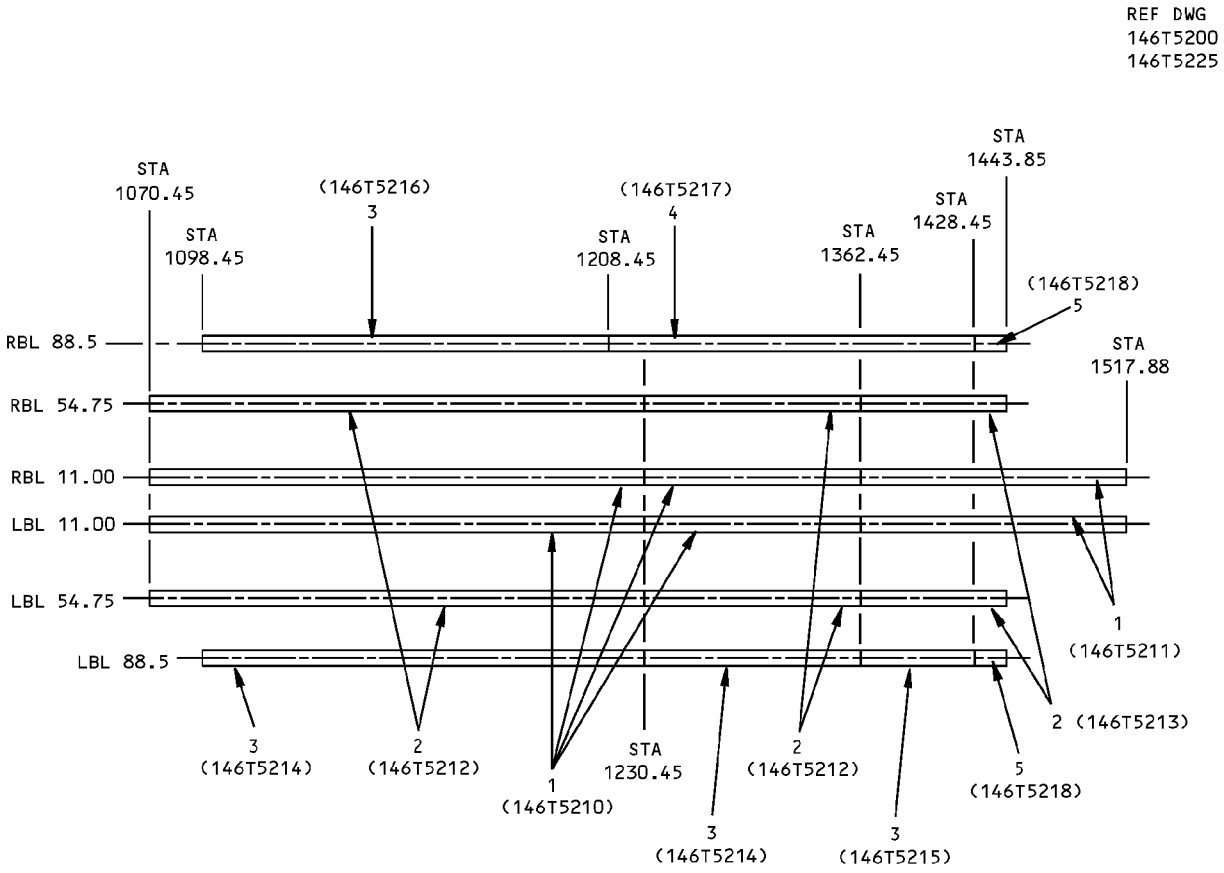
IDENTIFICATION 1 - SECTION 46 - SEAT TRACKS



NOTES

- SEAT TRACKS AT BL 88.5, 54.75, 11.00 ARE THE BASIC CONFIGURATIONS. VARIATIONS TO THIS CONFIGURATION ARE PROVIDED AS OPERATOR OPTIONS

Section 46 - Seat Track Identification
Figure 1 (Sheet 1 of 2)



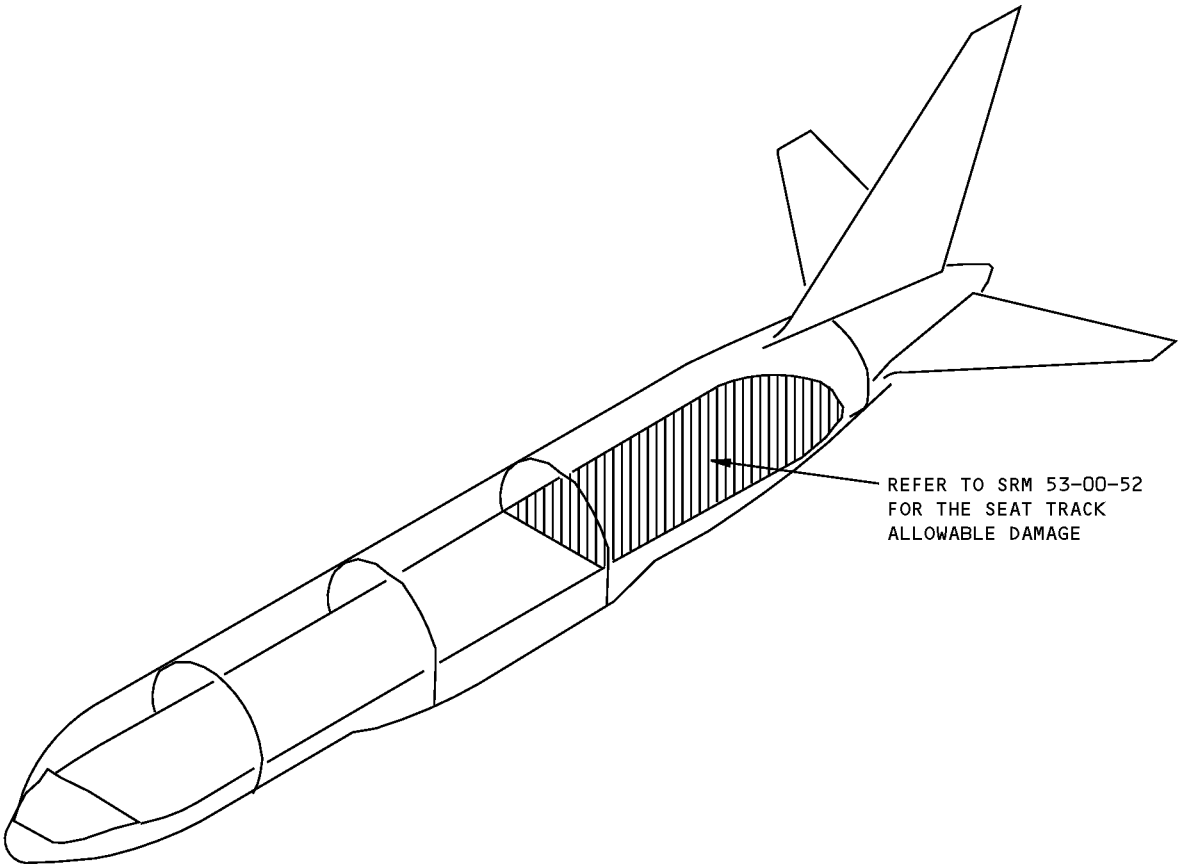
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SEAT TRACK		BAC1520-1545 7178-T6511	
2	SEAT TRACK		BAC1520-2192 7178-T6511	
3	SEAT TRACK		BAC1520-2193 7075-T6511	
4	SEAT TRACK		BAC1520-2196 7075-T6511	
5	SEAT TRACK		BAC1520-2195 7178-T6511	

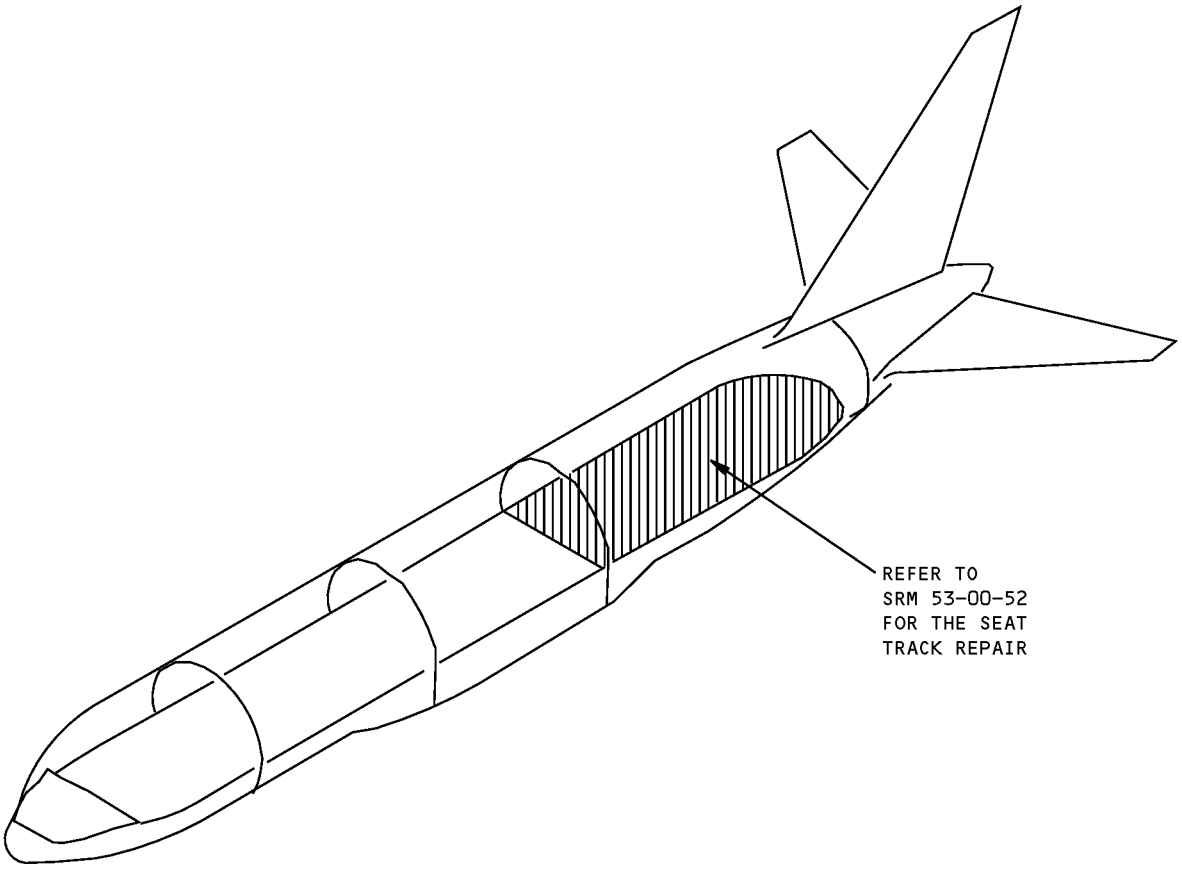
LIST OF MATERIALS FOR DETAIL I

Section 46 - Seat Track Identification
Figure 1 (Sheet 2 of 2)

ALLOWABLE DAMAGE GENERAL - SECTION 46 SEAT TRACKS

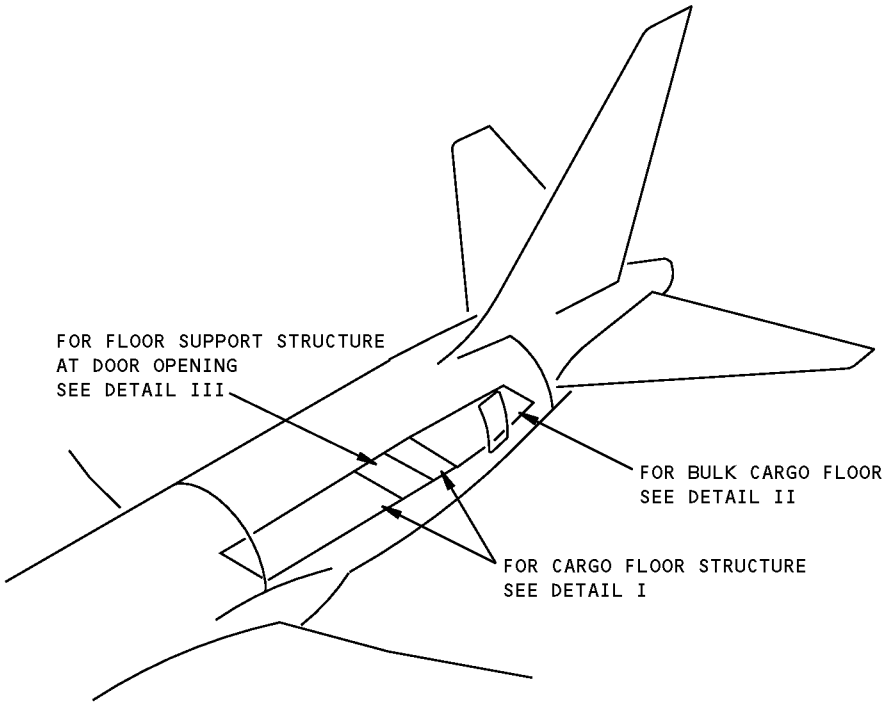


Section 46 - Seat Tracks Allowable Damage
Figure 101



Section 46 - Seat Track Repair
Figure 201

IDENTIFICATION 1 - SECTION 46 - CARGO COMPARTMENT STRUCTURE



NOTES

[A] FOR AIRPLANES WITH FIBERGLASS FLOOR PANELS (BASIC CONFIGURATION).

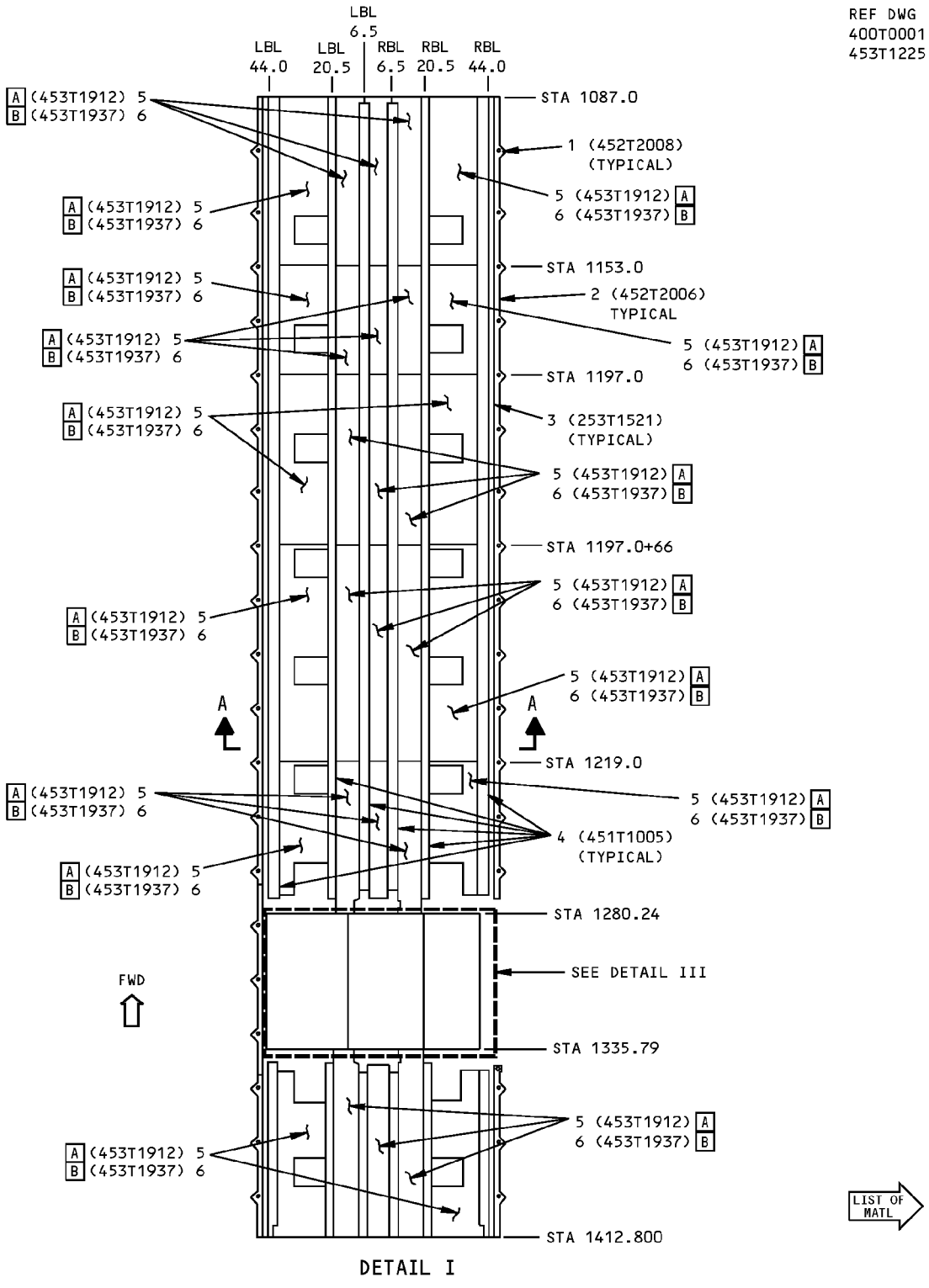
[B] FOR AIRPLANES WITH ALUMINUM/BALSA FLOOR PANELS (CUSTOMER OPTION).

[C] GAGE IS DEPENDENT UPON CUSTOMER OPTION. 0.050 OR 0.063 OR 0.071 INCH.

[D] FOR AIRPLANES WITH VARIABLE NUMBERS: VN471 - VN472, VN537, VN651 -VN656, VN681 - VN 691, VN811 - VN813, VN921, VN922, VN951, AND VN952

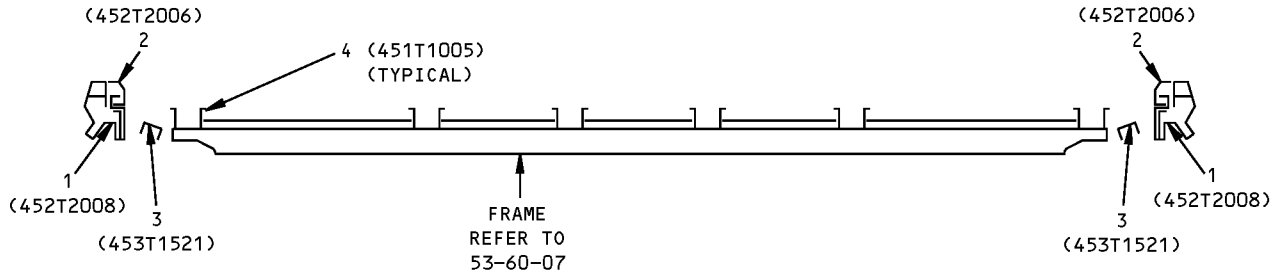
[E] FOR AIRPLANES NOT IN [D].

Section 46 - Cargo Compartment Structure Identification
Figure 1 (Sheet 1 of 6)



DETAIL I

Section 46 - Cargo Compartment Structure Identification
Figure 1 (Sheet 2 of 6)

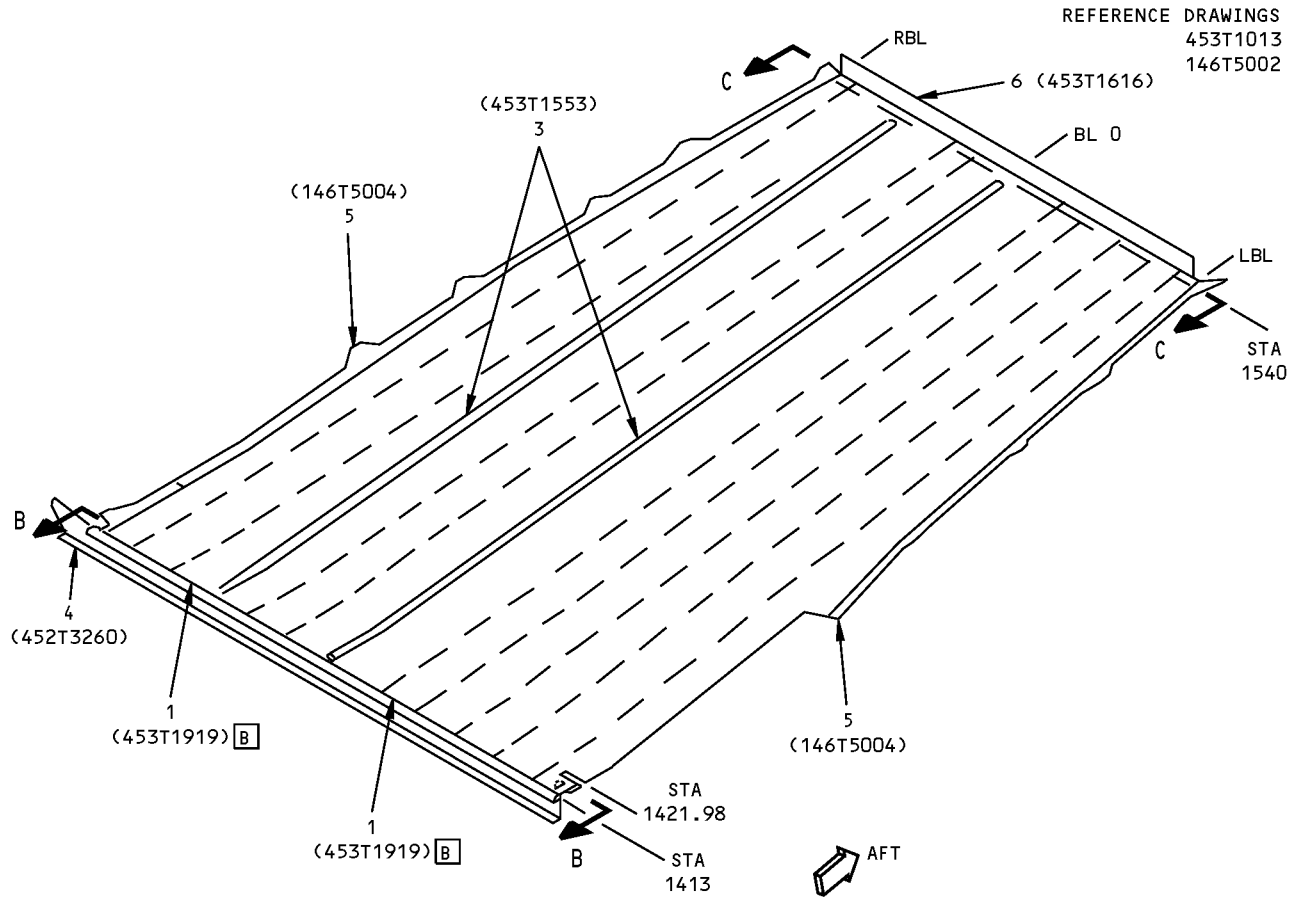


SECTION A-A

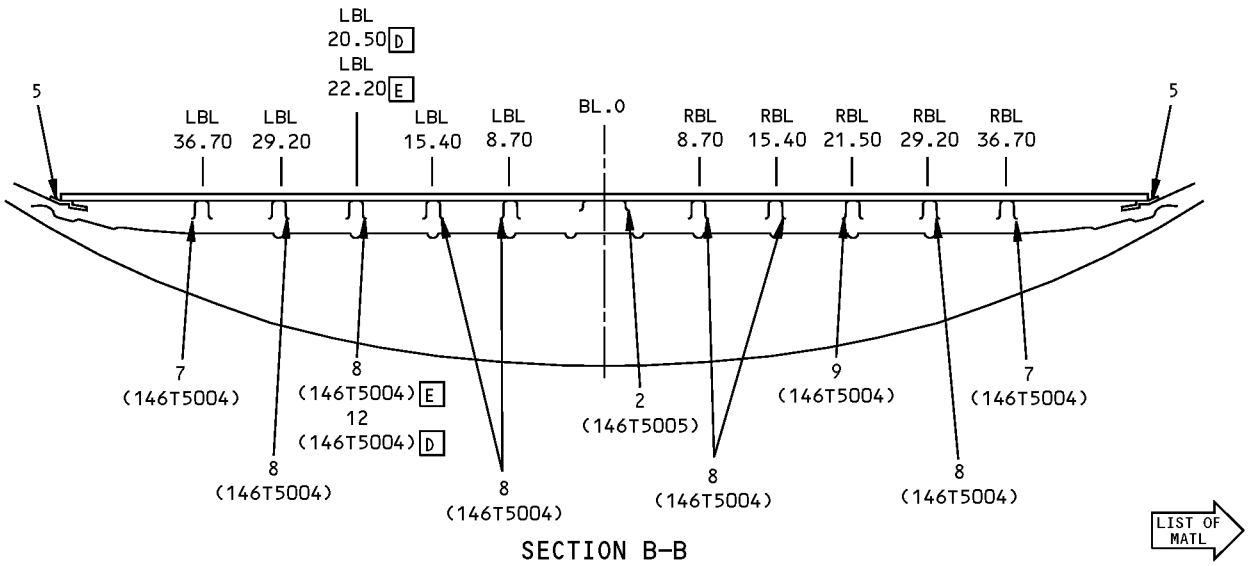
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SUPPORT FITTING		FORGING 7075-T73	
2	RAIL		BAC1520-2199 7075-T73511	
3	BEAM		BAC1493-451 2024-T3	
4	ROLLER TRAY		BAC1510-822 7075-T6511 OPTIONAL: BAC1510-1711 7075-T6511	
5	PANEL		FIBERGLASS FACED HONEYCOMB CORE SANDWICH PER BMS 4-17, CLASS I, TYPE IV, GRADES A AND B	A
6	PANEL		ALUMINUM FACED BALSA CORE SANDWICH PER BMS 4-10, TYPE I, GRADE H OPTIONAL: BMS 4-10-2E	B

LIST OF MATERIALS FOR DETAIL I

Section 46 - Cargo Compartment Structure Identification
Figure 1 (Sheet 3 of 6)

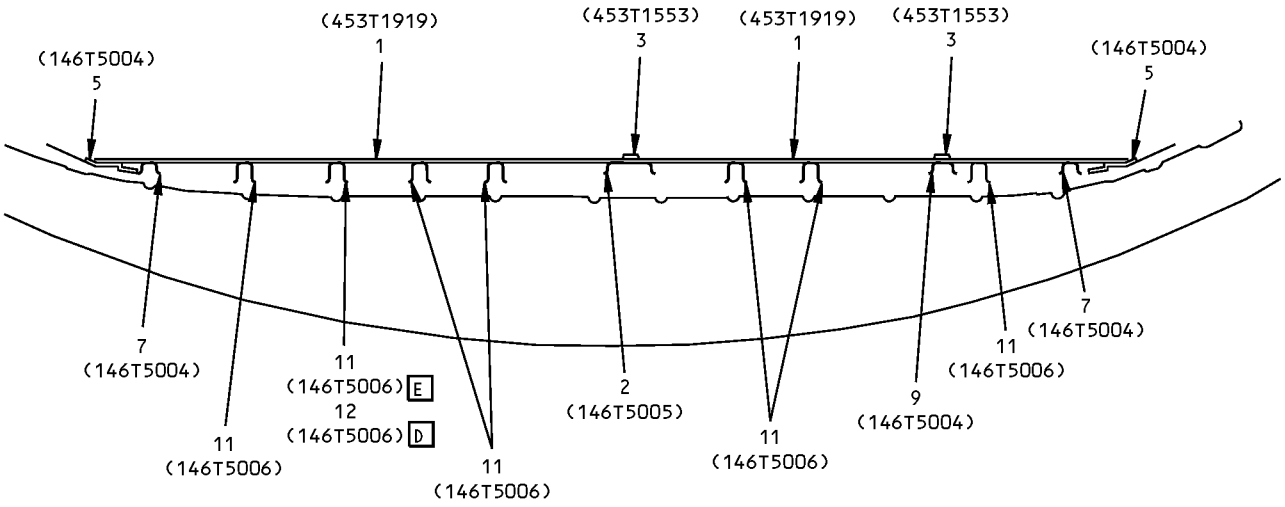


DETAIL II



SECTION B-B

Section 46 - Cargo Compartment Structure Identification
Figure 1 (Sheet 4 of 6)

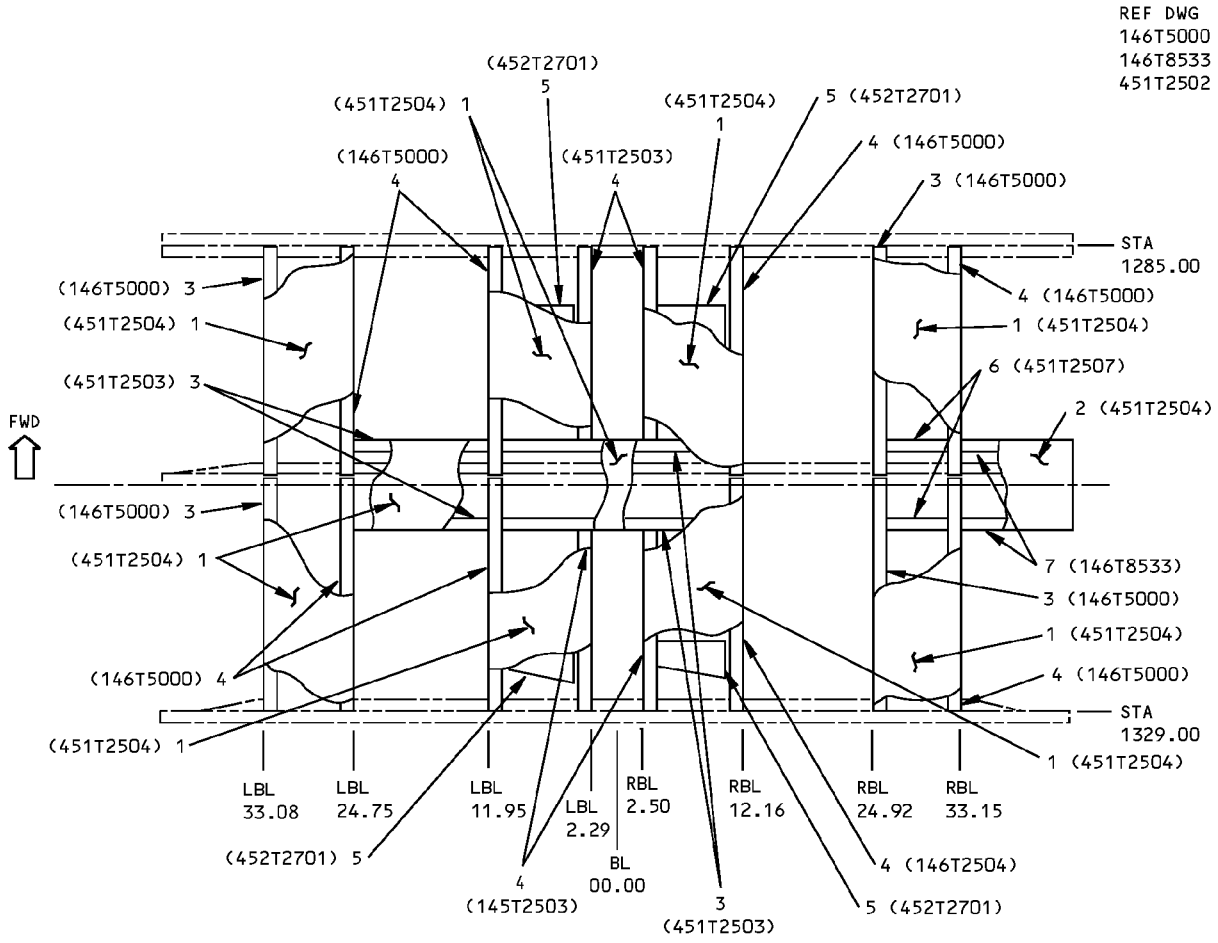


SECTION C-C

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FLOOR PANEL	C	CLAD 2024-T3 CLAD 2024-T3	
2	BEAM		BAC1510-1057 7075-T6511	
3	SKID STRIP		BAC1511-1286 2024-T3511	
4	RAIL		BAC1517-2221 7075-T6511	
5	SIDE ANGLE	0.050	CLAD 7075-T62	
6	ANGLE	0.050	CLAD 7075-T62	
7	STRINGER		BAC1500-6224 7075-T62	
8	TRANSITION SUPPORT	0.040	CLAD 7075-T62	
9	BEAM		BAC1500-6225 7075-T62	
10	STRINGER	0.063	7075-T62	
11	STRINGER	0.120	7075-T62 OPTIONAL: 0.080 7075-T62	
12	BEAM	0.071	CLAD 7075-T62 D	

LIST OF MATERIALS FOR DETAIL II, SECTIONS B-B AND C-C

Section 46 - Cargo Compartment Structure Identification
Figure 1 (Sheet 5 of 6)



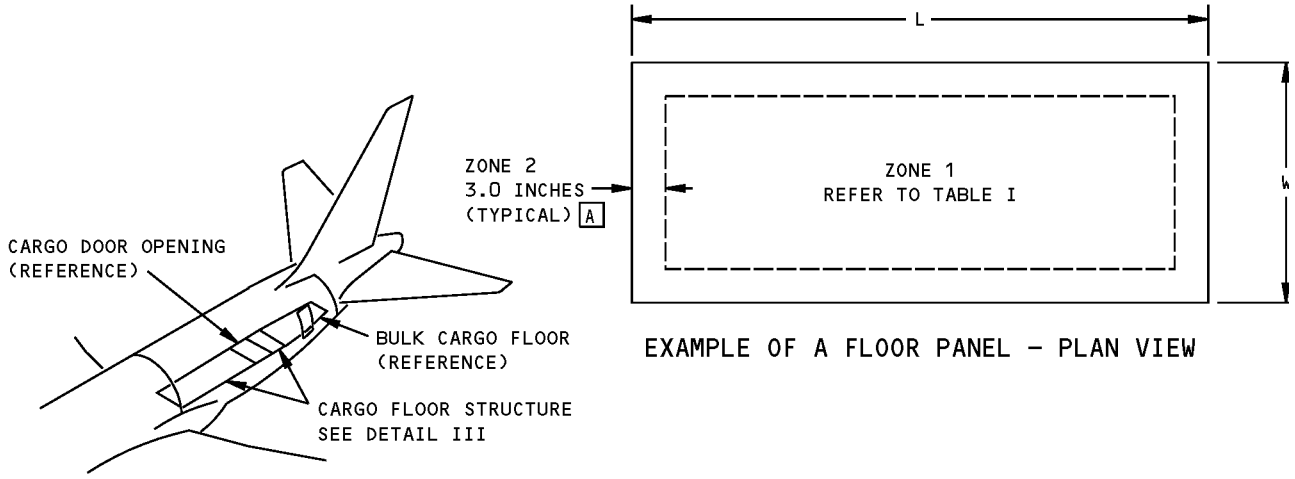
DETAIL III

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	PANEL	0.032	CLAD 7075-T6	
2	PANEL	0.056	CLAD 7075-T6	
3	SUPPORT		BAC1510-1067 7075-T6511	
4	SUPPORT		BAC1510-1070 7075-T6511	
5	SUPPORT	0.080	7075-T62	
6	BRACKET	0.063	CLAD 7075-T6	
7	WEB	0.063	7075-T6	

LIST OF MATERIALS FOR DETAIL III

Section 46 - Cargo Compartment Structure Identification
Figure 1 (Sheet 6 of 6)

ALLOWABLE DAMAGE 1 - SECTION 46 - CARGO FLOOR PANELS



EXAMPLE OF A FLOOR PANEL - PLAN VIEW

ALLOWABLE DAMAGE FOR ONE PANEL - ZONE 1			
CRACKS	DENTS	HOLES	DELAMINATION
10.0 INCHES IN LENGTH MAXIMUM	UP TO 50.0 SQUARE INCHES B	UP TO 50.0 SQUARE INCHES B	UP TO 50.0 SQUARE INCHES B

TABLE I

NOTES

- THIS ALLOWABLE DAMAGE DATA APPLIES TO FIBERGLASS PANELS ONLY AND APPLIES TO THE STRUCTURAL INTEGRITY ONLY. THIS DATA WILL NOT APPLY WHERE THE FUNCTION OF THE FLOOR PANEL WOULD BE LIMITED.

A THE ALLOWABLE DAMAGE LIMITS IN ZONE 2 ARE AS FOLLOWS:

(1) CRACKS, NICKS, SCRATCHES, OR GOUGES TO THE PANEL SKIN LESS THAN 1.0 INCH IN LENGTH AND MORE THAN 1.0 INCH FROM THE CENTER OF A PANEL INSERT ARE PERMITTED. SEE DETAIL I.

(2) A MAXIMUM OF ONE DAMAGED PANEL FASTENER OR ONE DAMAGED PANEL INSERT FOR EACH PANEL IS PERMITTED. DAMAGE TO A PANEL FASTENER OR INSERT INCLUDES:

(a) PANEL INSERT DISBONDING
(b) PANEL INSERT CRACKS
(c) PANEL FASTENER STRIPPED THREADS
(d) MISSING FASTENER
(e) A SINGLE CRACK, NICK, SCRATCH OR GOUGE TO THE PANEL SKIN LESS THAN 1.0 INCH IN LENGTH BUT LESS THAN 1.0 INCH FROM THE CENTER OF A PANEL INSERT. THIS TYPE OF DAMAGE IS EQUIVALENT TO A MISSING FASTENER. SEE DETAIL II.

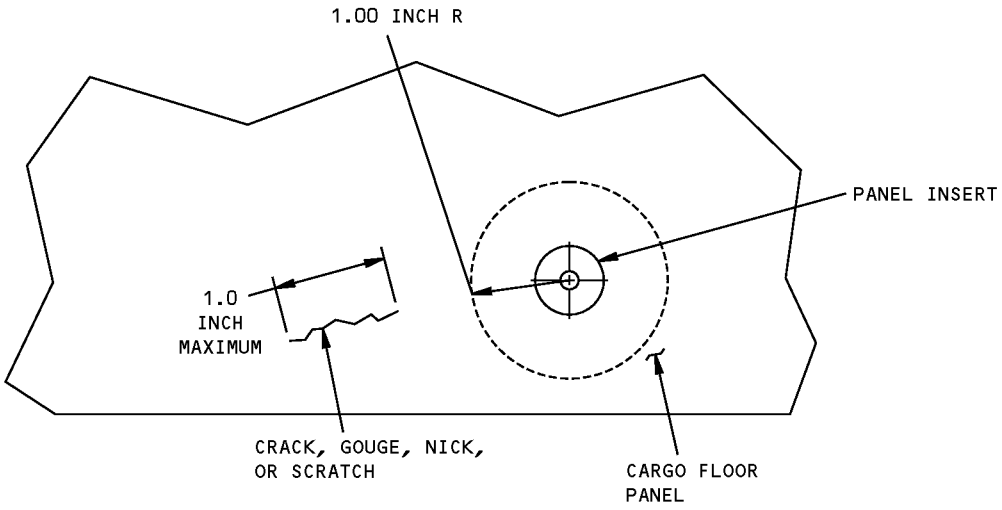
B THE TOTAL DAMAGE MUST NOT BE MORE THAN 30 PERCENT OF THE PANEL LENGTH IN THE -L- DIRECTION OR 30 PERCENT OF THE PANEL WIDTH IN THE -W- DIRECTION.

C REMOVE ANY CONTAMINATION AND MOISTURE FROM THE DAMAGED AREA. USE A VACUUM AND APPLY HEAT (A MAXIMUM OF 125°F (52°C) TO REMOVE MOISTURE FROM THE DAMAGED AREA. DO ONE OF THE STEPS THAT FOLLOW:

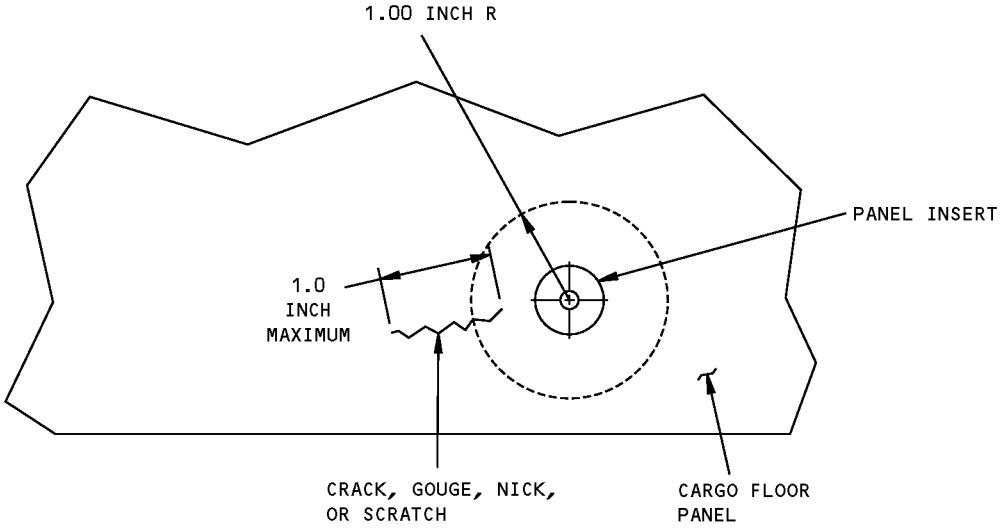
- SEAL THE DAMAGED AREA WITH ALUMINUM FOIL TAPE (SPEED TAPE). KEEP A RECORD OF THE LOCATION AND MAKE AN INSPECTION EVERY "A" CHECK. REPLACE THE TAPE IF ANY DAMAGE IS FOUND. REPAIR THE DAMAGE AT THE NEXT "C" CHECK, OR
- APPLY A SEALING RESIN AS SPECIFIED IN SRM 51-70-06.

- IN ZONE 1 OF FIBERGLASS-FACED PANELS, NICKS, SCRATCHES, AND GOUGES THAT DO NOT DAMAGE ANY PLIES ARE PERMITTED. C
- IN ZONE 2 OF FIBERGLASS-FACED PANELS, NICKS, SCRATCHES, AND GOUGES THAT DO NOT DAMAGE MORE THAN 1 PLY ARE PERMITTED. C

Section 46 - Cargo Floor Panels Allowable Damage
Figure 101 (Sheet 1 of 3)

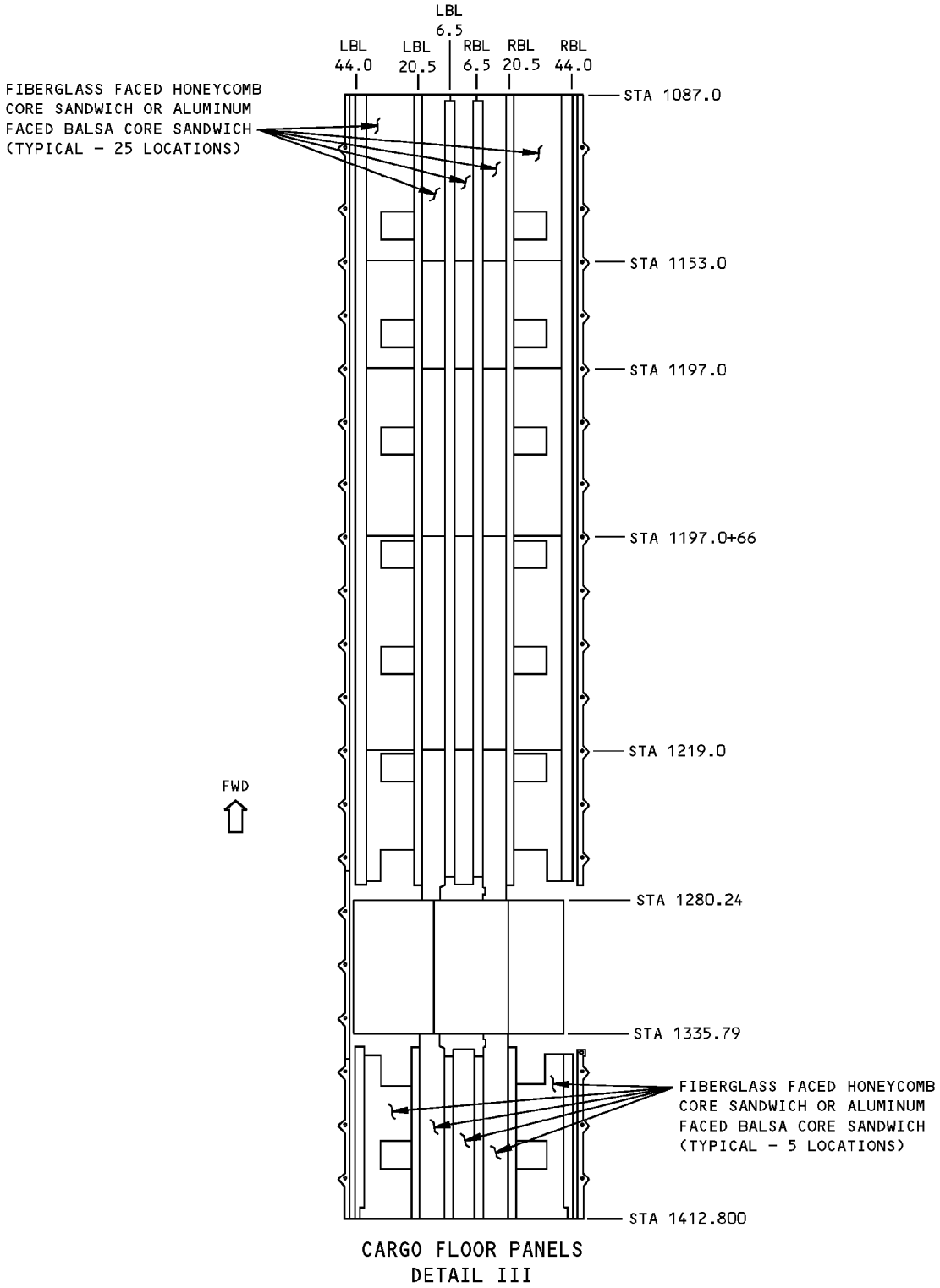


DETAIL I



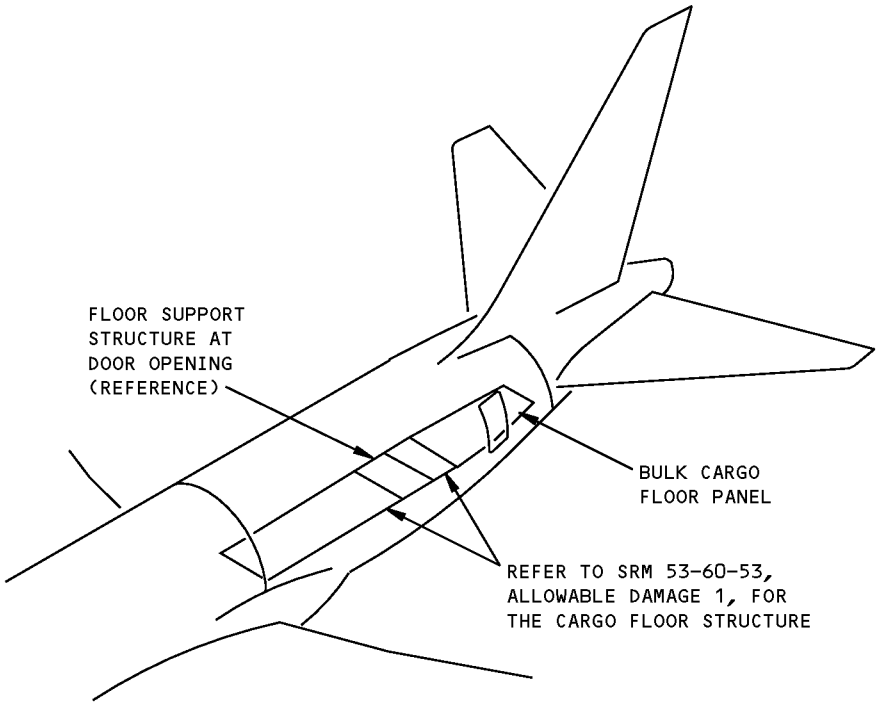
DETAIL II

Section 46 - Cargo Floor Panels Allowable Damage
Figure 101 (Sheet 2 of 3)



Section 46 - Cargo Floor Panels Allowable Damage
Figure 101 (Sheet 3 of 3)

ALLOWABLE DAMAGE 2 - SECTION 46 - BULK CARGO FLOOR PANELS



ITEM	DESCRIPTION	CRACKS	NICKS, GOUGES, AND CORROSION	DENTS	HOLES AND PUNCTURES
1	PANEL, BULK CARGO FLOOR	[A]	[B]	SEE DETAIL IV	[C]

Section 46 - Bulk Cargo Floor Panels Allowable Damage
Figure 101 (Sheet 1 of 3)

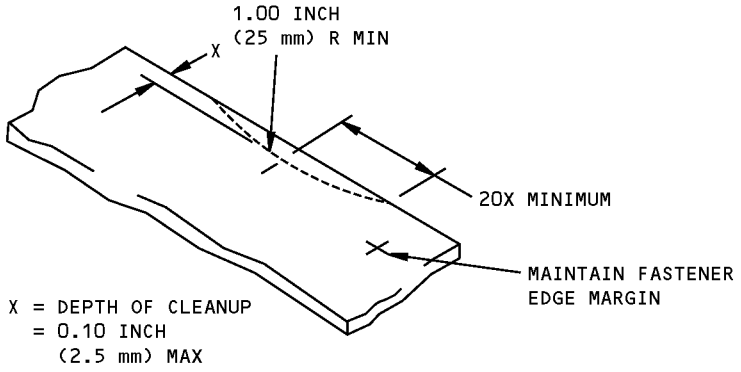
NOTES

- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.

[A] 2.0 INCHES (50 mm) MAX LENGTH CRACK ALLOWED NOT CLOSER THAN 1.0 INCH (25 mm) TO FASTENER HOLE OR OTHER DAMAGE. STOP DRILL ENDS OF CRACK THAT DO NOT END IN A FASTENER HOLE WITH 0.25 INCH (6 mm) DIAMETER HOLES. FILL THE HOLE WITH A 2117-T3 OR T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. CRACKS BETWEEN THREE ADJACENT FASTENER HOLES AT ATTACHMENT EDGE OF PANEL ARE ALLOWED. REMOVE EDGE DAMAGE PER DETAILS I AND II.

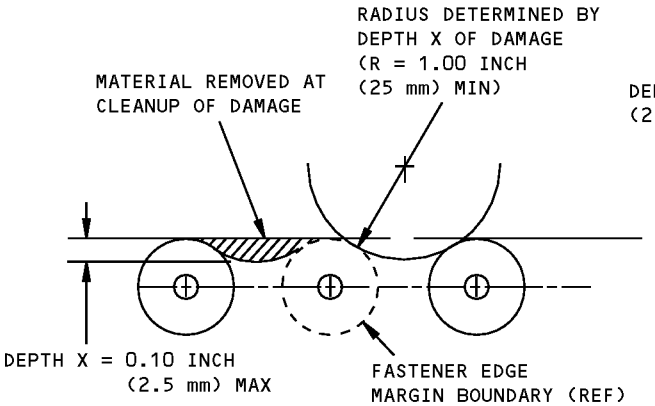
[B] REMOVE DAMAGE PER DETAILS I,II AND III

[C] CLEAN OUT DAMAGE UP TO 0.25 INCH (6 mm) MAX DIA AND NOT CLOSER THAN 1.0 INCH (25 mm) TO FASTENER HOLE OR OTHER DAMAGE. FILL HOLE WITH A 2117-T3 OR T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES TO BE REPAIRED

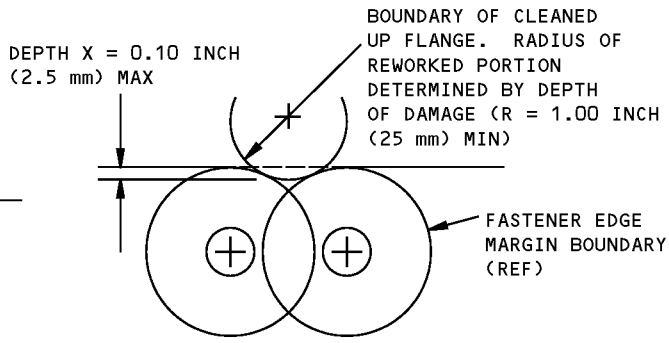


REMOVAL OF NICK OR CRACK DAMAGE ON AN EDGE

DETAIL I



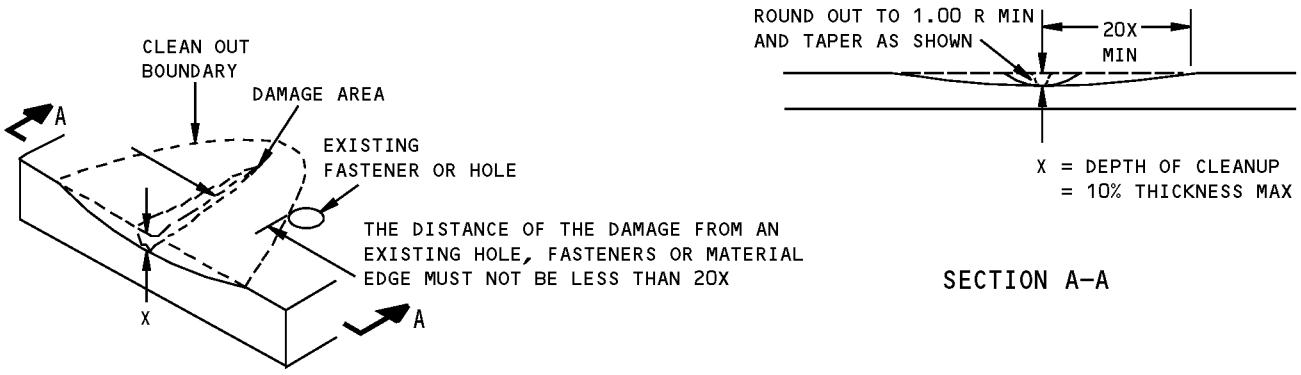
DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



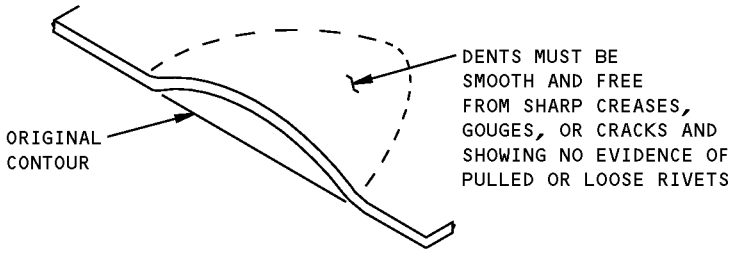
DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL II

Section 46 - Bulk Cargo Floor Panels Allowable Damage
Figure 101 (Sheet 2 of 3)



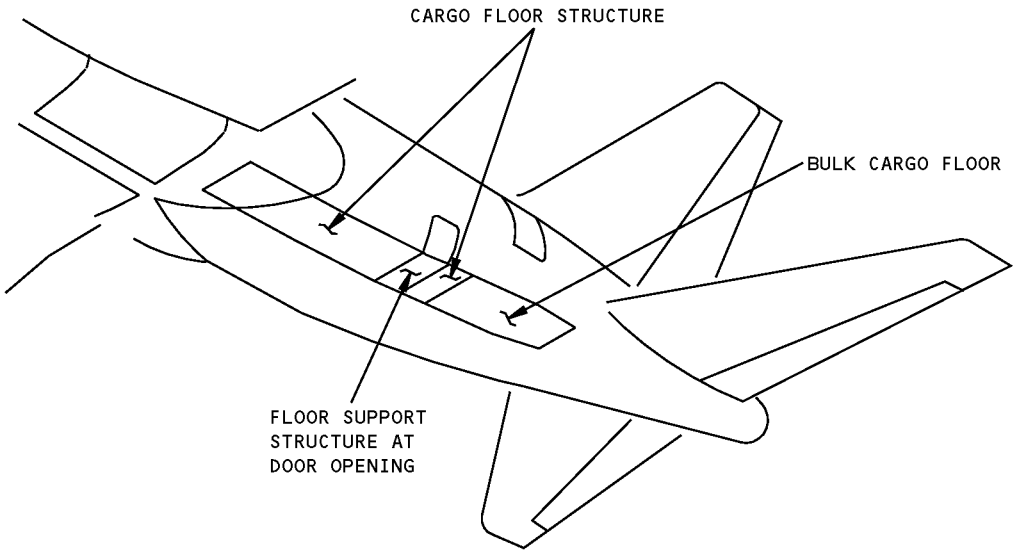
REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL III



ALLOWABLE DAMAGE FOR DENT
DETAIL IV

Section 46 - Bulk Cargo Floor Panels Allowable Damage
Figure 101 (Sheet 3 of 3)

REPAIR GENERAL - SECTION 46 CARGO COMPARTMENT FLOOR STRUCTURE

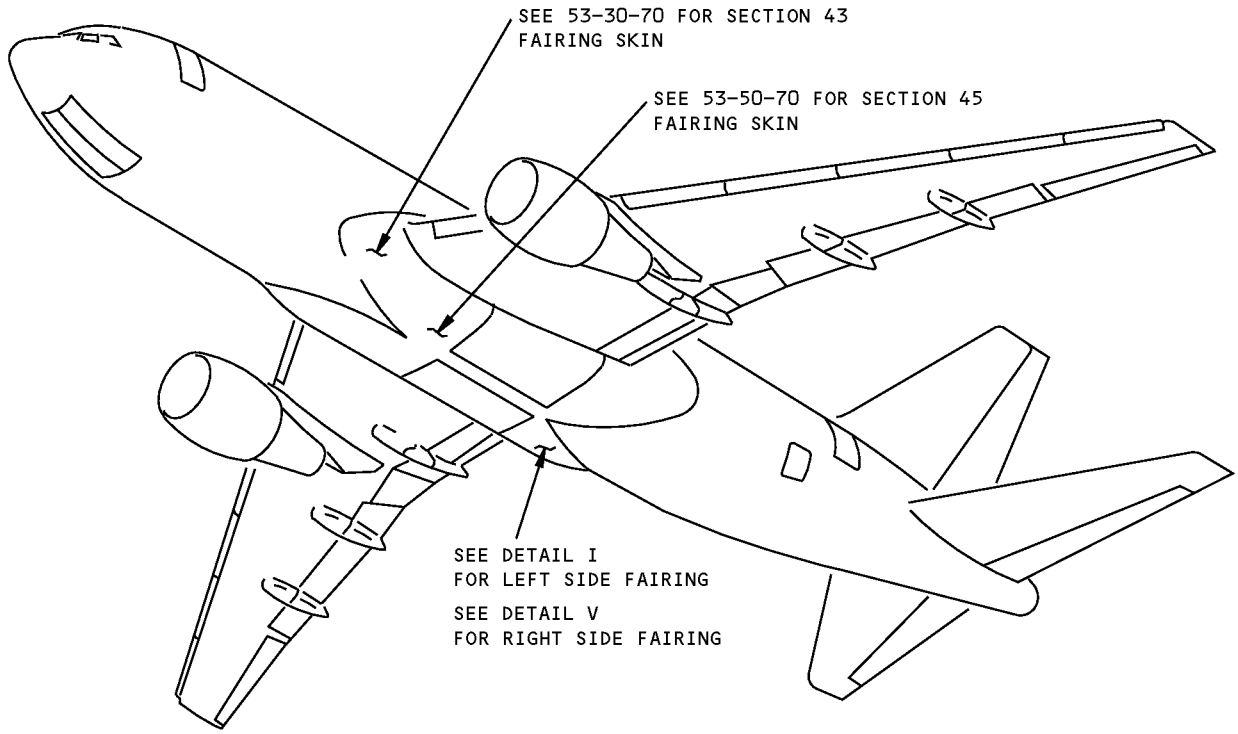


NOTES

- REFER TO SRM 51-70-11 FOR TYPICAL FORMED SECTION REPAIRS.
- REFER TO SRM 51-70-12 FOR TYPICAL EXTRUDED SECTION REPAIRS.
- REFER TO SRM 51-70-13 FOR TYPICAL WEB REPAIRS.
- REFER TO SRM 53-00-50 FOR COMPOSITE AND ALUMINUM FACED BALSA CORE FLOOR PANEL REPAIRS.
- REFER TO SRM 53-00-53 FOR ROLLER TRAY REPAIRS.
- REFER TO SRM 53-00-53 FOR BALL TRANSFER PANEL REPAIRS.
- THERE ARE NO TYPICAL REPAIRS FOR PARTS THAT ARE MADE FROM FORGINGS OR MACHINED PLATE. SPECIFIC REPAIRS TO THESE PARTS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE.

Section 46 Cargo Compartment Structure Repair
Figure 201

IDENTIFICATION 1 - SECTION 46 - FAIRING SKIN



NOTES

[A] PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION

[B] MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWINGS FOR EDGE BAND AND AREAS WITH DOUBLERS

[C] DIAGRAM OF PLY ORIENTATION, SEE PLY TABLE FOR PLY ORIENTATION AND MATERIAL

[D] ARAMID/EPOXY FABRIC PER BMS 8-219, STYLE 285, 250°F (121°C) CURE

[E] GRAPHITE/EPOXY FABRIC PER BMS 8-168, TYPE II, CLASS 2, STYLE 3K-70-PW, 250°F (121°C) CURE

[F] FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 120, 250°F (121°C) CURE

[G] ARAMID/EPOXY FABRIC PER BMS 8-219, STYLE 120, 250°F (121°C) CURE

[H] FOR AIRPLANES WITH AFT FIXED PANEL

[I] FOR AIRPLANES WITH AFT LOWER ACCESS PANEL (RIGHT SIDE ONLY)

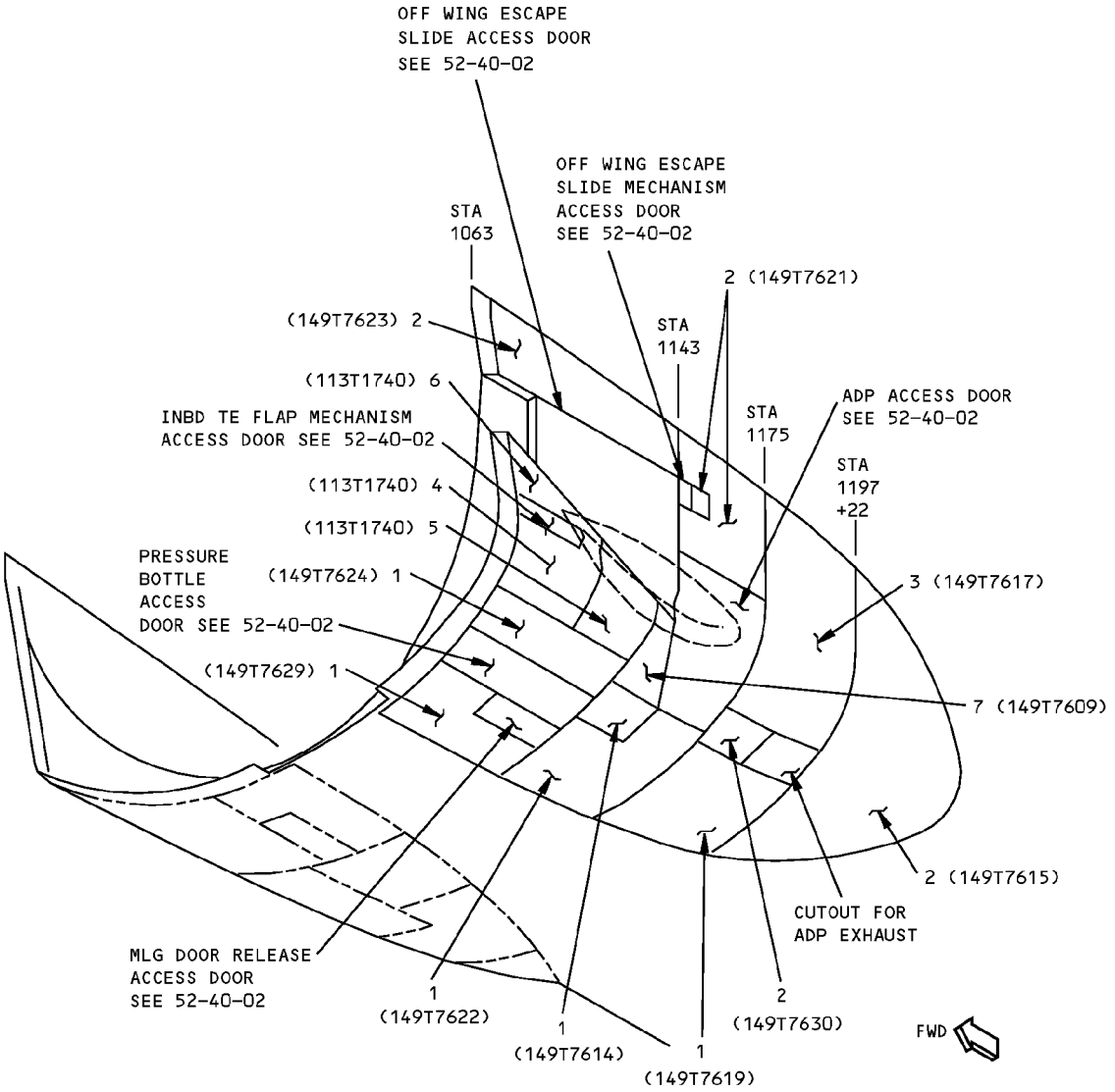
[J] FIBERGLASS/EPOXY FABRIC PER BMS 8-79, TYPE 1581, CLASS III, GRADE 1

[K] FOR CUM LINE NUMBERS: 1 THRU 211

[L] FOR CUM LINE NUMBERS: 212 AND ON

Section 46 - Fairing Skin Identification
Figure 1 (Sheet 1 of 9)

REF DWG
149T0001
149T7601



LEFT SIDE VIEW
DETAIL I

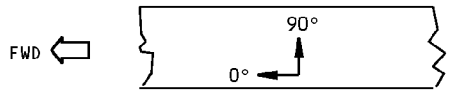
LIST OF MATL

Section 46 - Fairing Skin Identification
Figure 1 (Sheet 2 of 9)

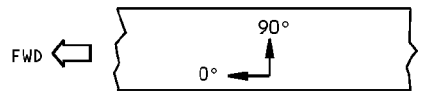
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL II NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
2	SKIN PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL II NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
3	SKIN PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL II NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
4	SKIN PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL III NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
5	SKIN PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL III NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
6	SKIN PANEL SKIN CORE		ARAMID/FIBERGLASS/EPOXY HONEYCOMB SANDWICH SEE DETAIL IV NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
7	SKIN PANEL SKIN CORE		ARAMID/EPOXY HONEYCOMB SANDWICH SEE DETAIL II NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	

LIST OF MATERIALS FOR DETAIL I

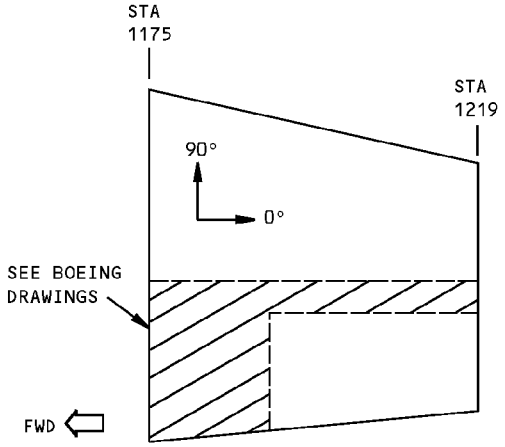
Section 46 - Fairing Skin Identification
Figure 1 (Sheet 3 of 9)



ITEM 1

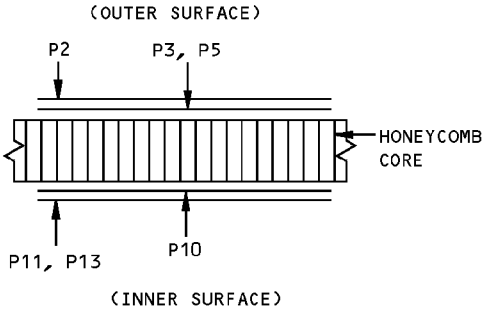


ITEMS 2 AND 7



ITEM 3

VIEW ON PANELS [C]



SECTION THRU PANELS

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
1,2,3	P2	[D]	0° OR 90°
	P5,P10	[E]	0° OR 90°
	P13	[G]	0° OR 90°
7	P2,P3,P10	[D]	0° OR 90°
	P13	[G]	0° OR 90°

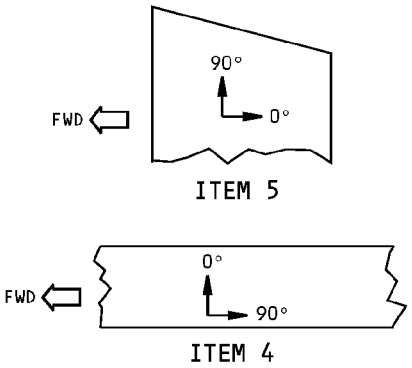
PLY TABLE [B] [K]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
1,2,3	P2	[J]	0° OR 90°
	P5,P10	[E]	0° OR 90°
	P13	[G]	0° OR 90°
7	P2,P3,P10	[J]	0° OR 90°
	P13	[G]	0° OR 90°

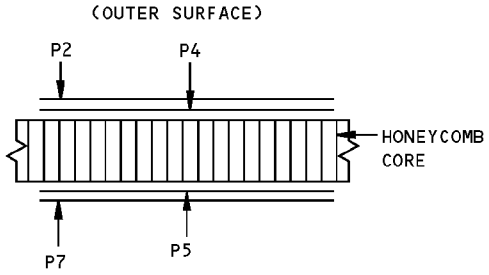
PLY TABLE [B] [L]

DETAIL II

Section 46 - Fairing Skin Identification
Figure 1 (Sheet 4 of 9)



VIEW ON PANELS [C]



SECTION THRU PANELS

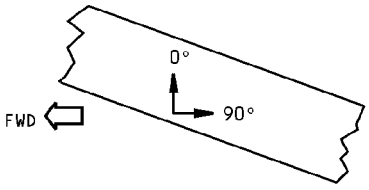
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
4,5	P2,P7	[D]	0° OR 90°
	P4,P5	[E]	0° OR 90°

PLY TABLE [B] [K]

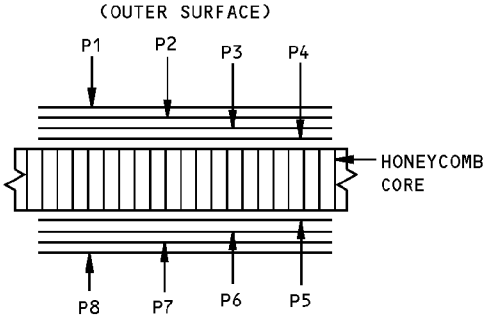
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
4,5	P2,P7	[J]	0° OR 90°
	P4,P5	[E]	0° OR 90°

PLY TABLE [B] [L]

DETAIL III



VIEW ON PANEL [C]



SECTION THRU PANELS

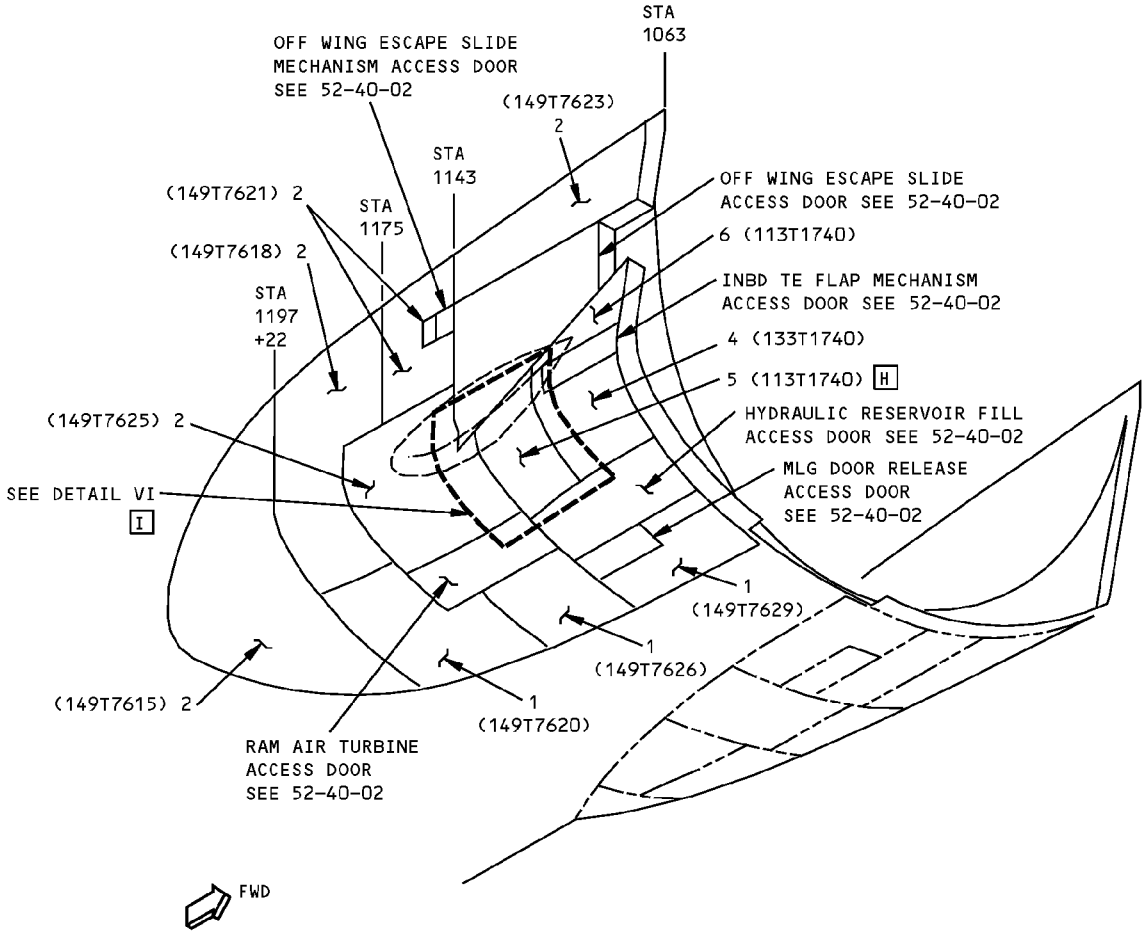
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
6	P1,P8	[F]	0° OR 90°
	P2,P3,P4 P5,P6,P7	[D]	0° OR 90°

PLY TABLE [B]

DETAIL IV

Section 46 - Fairing Skin Identification
Figure 1 (Sheet 5 of 9)

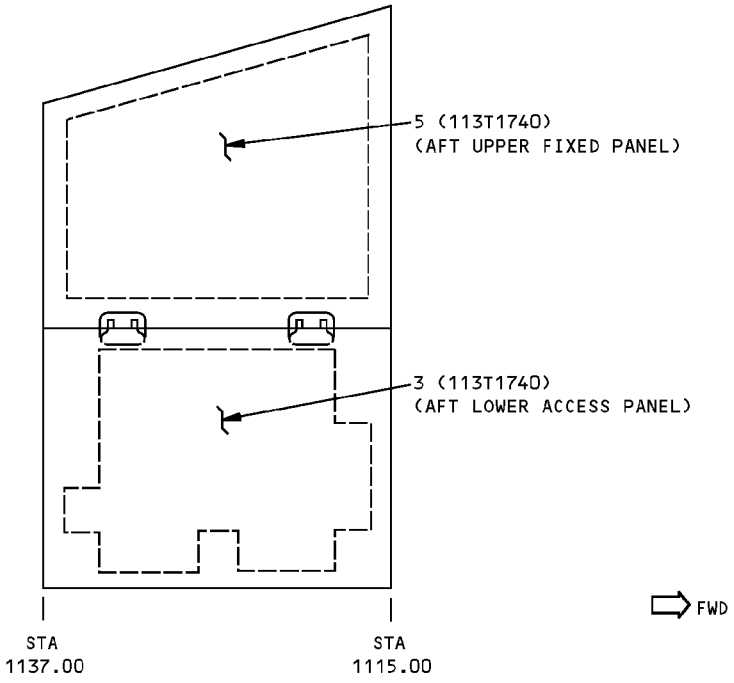
REF DWGS
149T0000
149T7601



RIGHT SIDE VIEW
DETAIL V

LIST OF MATL

Section 46 - Fairing Skin Identification
Figure 1 (Sheet 6 of 9)



DETAIL VI [I]

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL VII HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
2	SKIN PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL VII HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
3	DOOR PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL VII FIBERGLASS HONEYCOMB PER BMS 8-124, CLASS I, TYPE I, GRADE 4.0	[I]
4	SKIN PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL VIII NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
5	SKIN PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH VIII DETAIL VIII NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
6	SKIN PANEL SKIN CORE		ARAMID/FIBERGLASS/EPOXY HONEYCOMB SANDWICH SEE DETAIL IX NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	

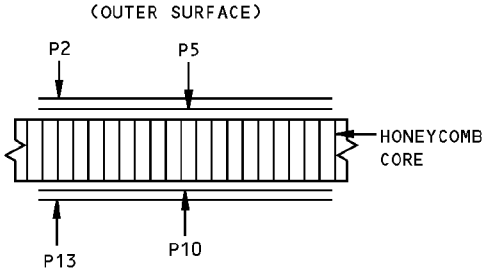
LIST OF MATERIALS OF DETAILS V AND VI

Section 46 - Fairing Skin Identification
Figure 1 (Sheet 7 of 9)

ITEM 1

ITEMS 2 AND 3

VIEW ON PANELS [C]



SECTION THRU PANELS

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
1,2	P2	[D]	0° OR 90°
	P5,P10	[E]	0° OR 90°
	P13	[G]	0° OR 90°
3	P2,P13	[D]	0° OR 90°
	P5,P10	[E]	0° OR 90°

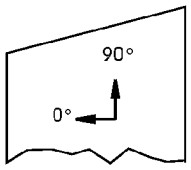
PLY TABLE [B] [K]

ITEM NO.	PLY NO.	MATERIAL	PLY [A] ORIENTATION
1,2	P2	[J]	0° OR 90°
	P5,P10	[E]	0° OR 90°
	P13	[G]	0° OR 90°
3	P2,P13	[J]	0° OR 90°
	P5,P10	[E]	0° OR 90°

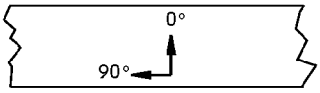
PLY TABLE [B] [L]

DETAIL VII

Section 46 - Fairing Skin Identification
Figure 1 (Sheet 8 of 9)

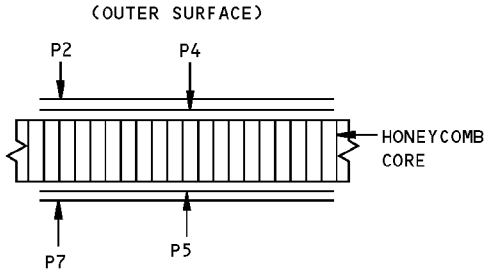


ITEM 5



ITEM 4

VIEW ON PANELS [C]



SECTION THRU PANELS

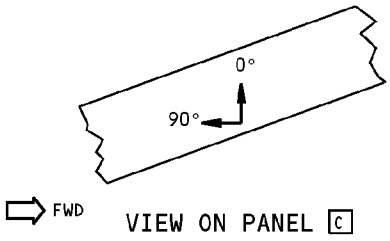
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
4,5	P2,P7	[D]	0° OR 90°
	P4, P5	[E]	0° OR 90°

PLY TABLE [B] [K]

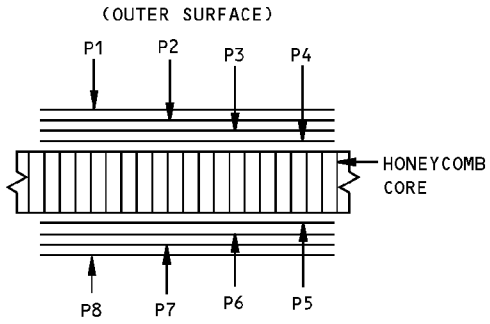
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
4,5	P2,P7	[J]	0° OR 90°
	P4, P5	[E]	0° OR 90°

PLY TABLE [B] [L]

DETAIL VIII



VIEW ON PANEL [C]



SECTION THRU PANELS

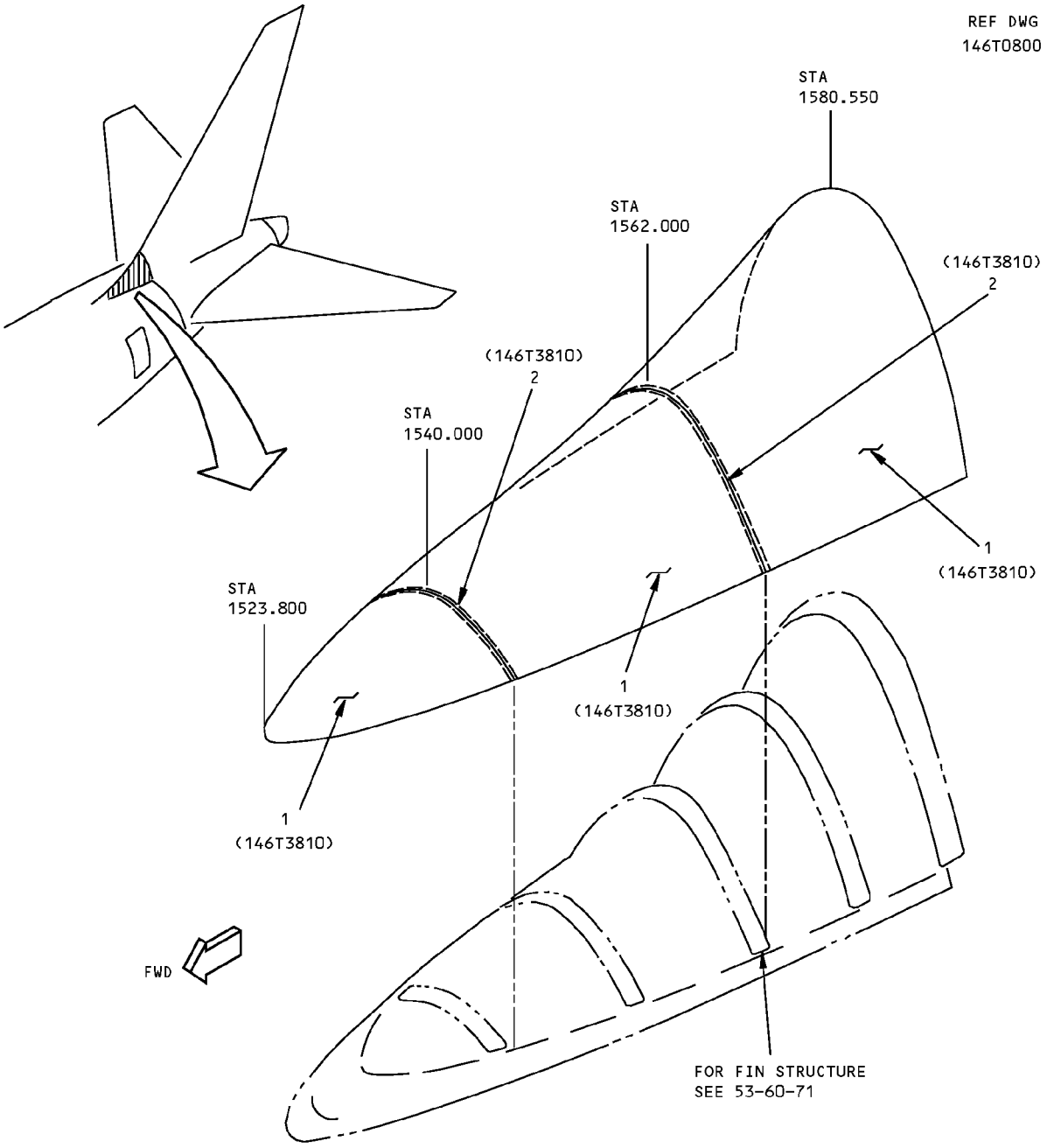
ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
6	P1,P8	[F]	0° OR 90°
	P2,P3,P4 P5,P6,P7	[D]	0° OR 90°

PLY TABLE [B]

DETAIL IX

Section 46 - Fairing Skin Identification
Figure 1 (Sheet 9 of 9)

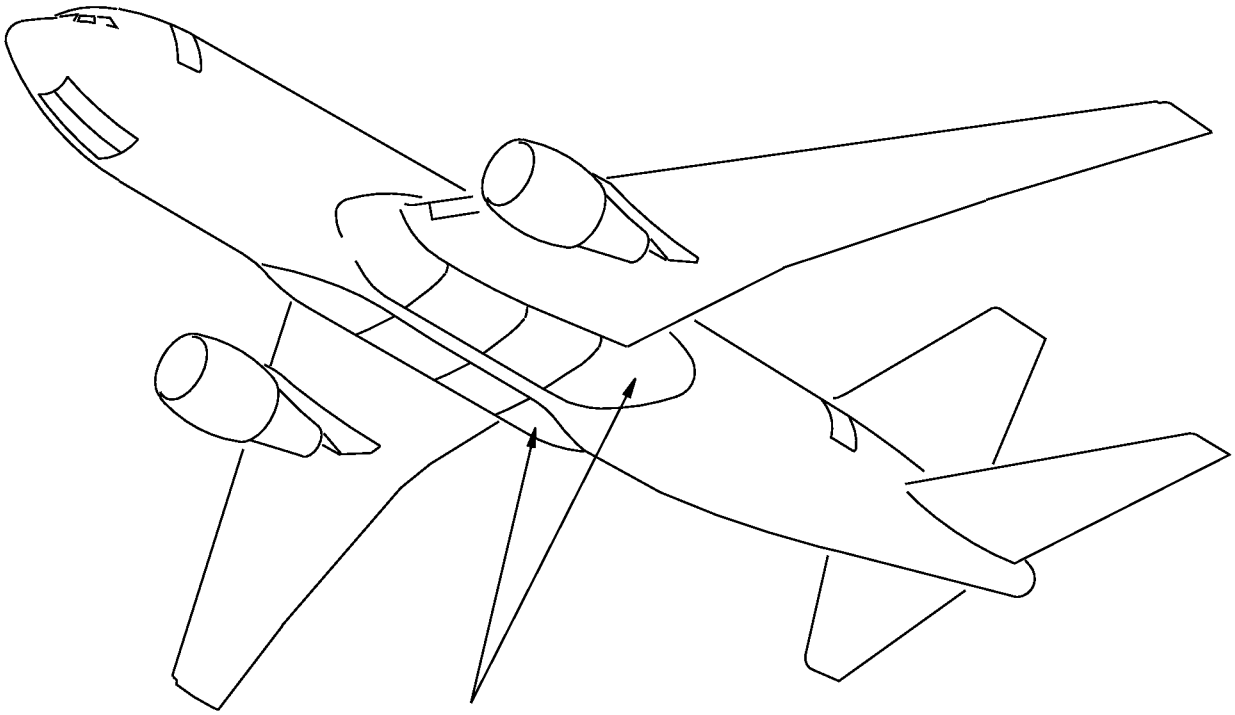
IDENTIFICATION 2 - SECTION 46 - DORSAL FIN SKIN



ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.050	CLAD 2024-T3	
2	STRAP	0.063	CLAD 2024-T3	

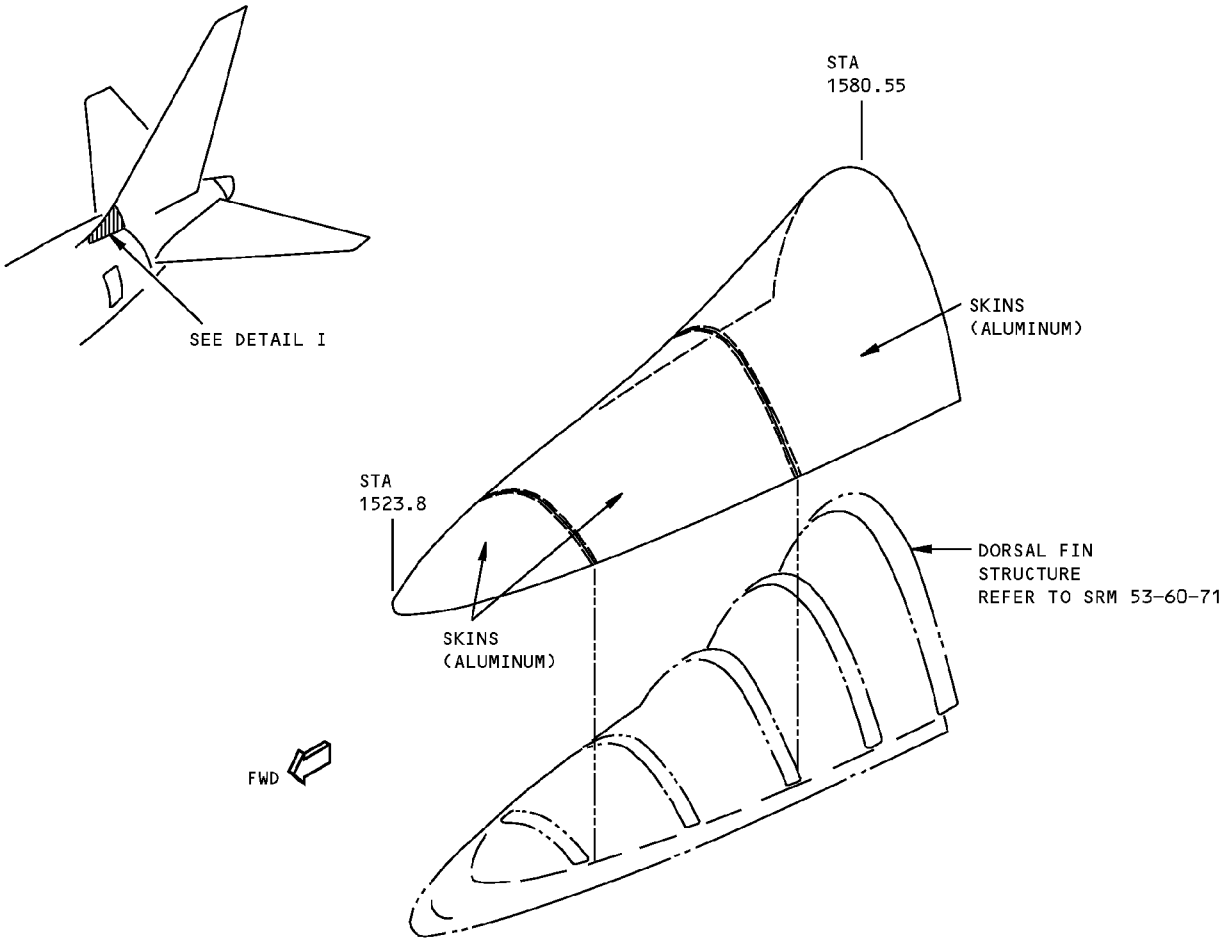
Section 46 - Dorsal Fin Skin Identification
Figure 1

ALLOWABLE DAMAGE 1 - SECTION 46 - WING TO BODY FAIRING SKIN



Section 46 Wing to Body Fairing Skin Allowable Damage
Figure 101

ALLOWABLE DAMAGE 2 - SECTION 46 DORSAL FIN SKIN



DETAIL I

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
SKIN	[A]	[B]	SEE DETAIL IV	[C]

NOTES

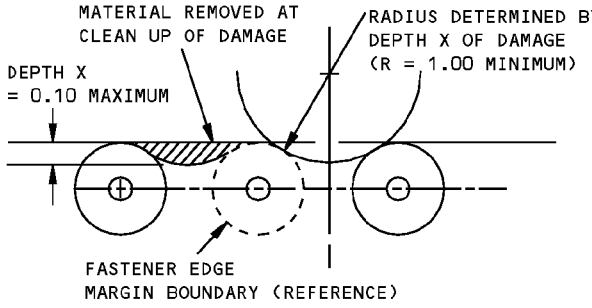
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS II AND VI.

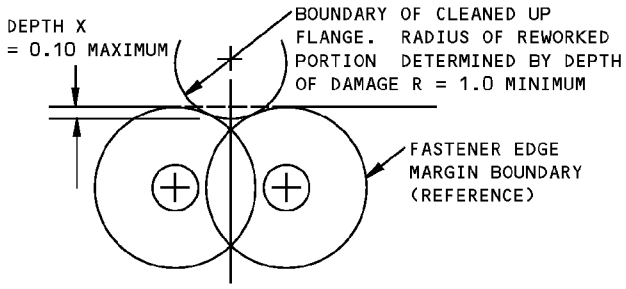
[B] REMOVE DAMAGE AS GIVEN IN DETAILS II, III, V, AND VI.

[C] CLEAN OUT DAMAGE UP TO 0.25 INCH MAXIMUM DIAMETER AND NOT CLOSER THAN 1.0 INCH TO A FASTENER HOLE OR OTHER DAMAGE. FILL THE HOLE WITH A 2117-T3 OR T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES MUST BE REPAIRED.

Section 46 Dorsal Fin Skin Allowable Damage
Figure 101 (Sheet 1 of 2)

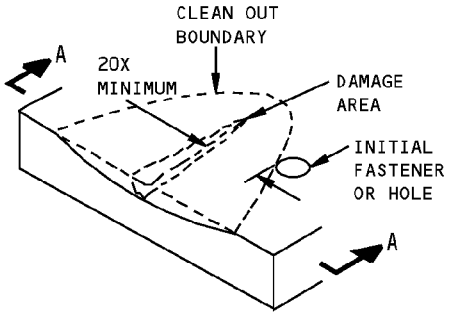


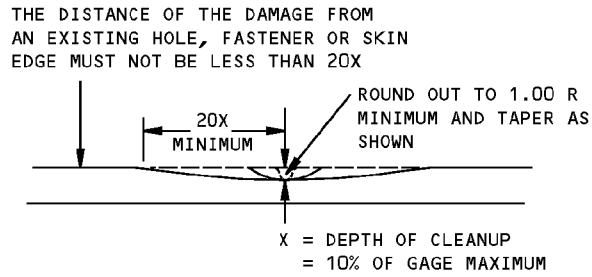
DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

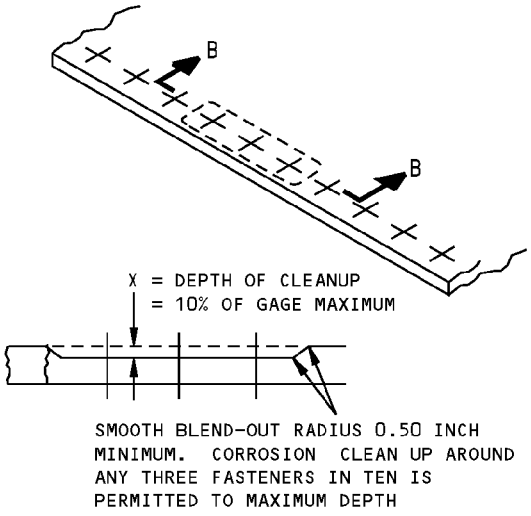
DETAIL II





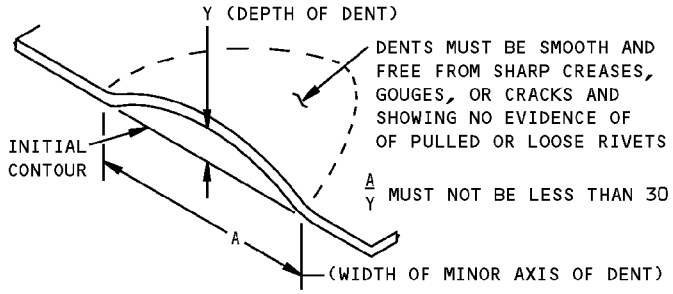
SECTION A-A

DETAIL III



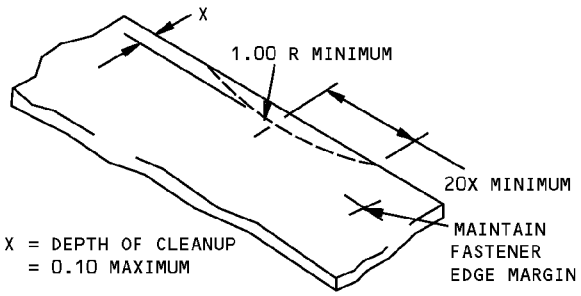
SECTION B-B

DETAIL V



ALLOWABLE DAMAGE FOR DENT

DETAIL IV

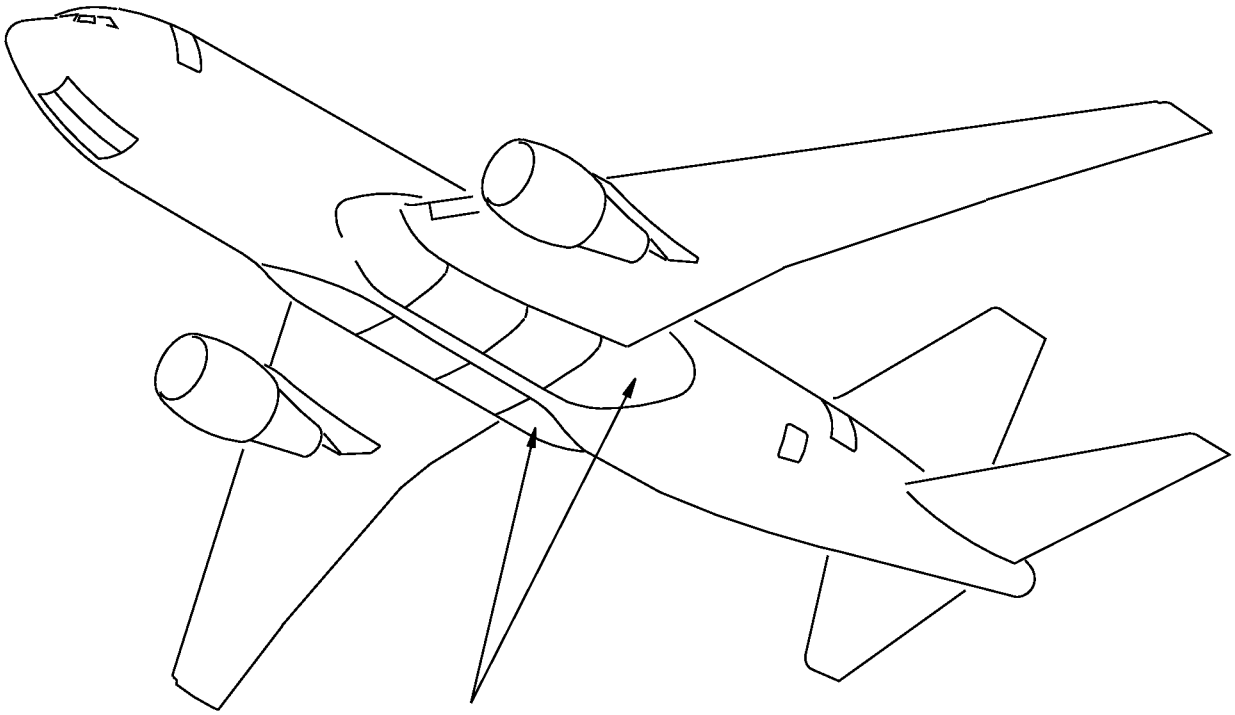


REMOVAL OF NICK OR CRACK DAMDGE ON AN EDGE

DETAIL VI

Section 46 Dorsal Fin Skin Allowable Damage
Figure 101 (Sheet 2 of 2)

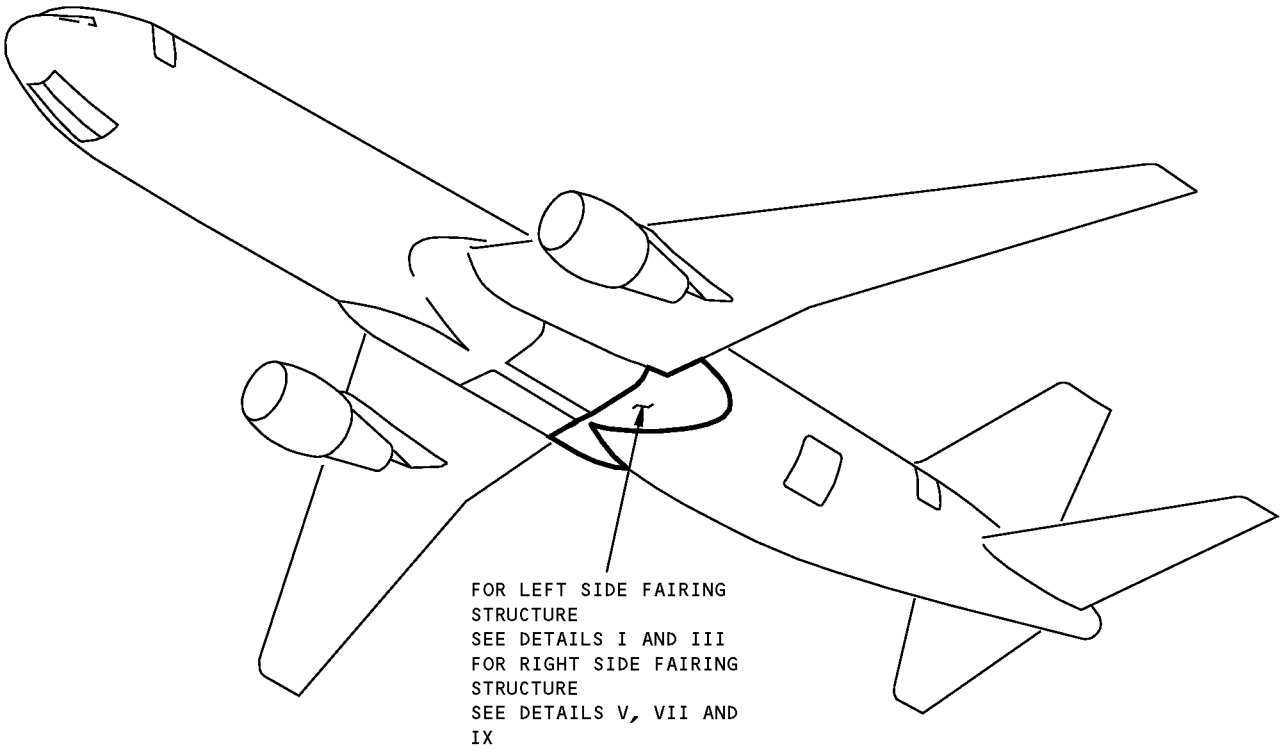
REPAIR GENERAL - SECTION 46 WING TO BODY FAIRING SKIN



Section 46 - Wing to Body Fairing Skin Repairs
Figure 201

IDENTIFICATION 1 - SECTION 46 - FAIRING STRUCTURE

REF DWG
149T7601



NOTES

[A] PLY ORIENTATION CONVENTION, DEGREES INDICATED IS PARALLEL TO THE FABRIC WARP DIRECTION

[B] ARAMID/EPOXY FABRIC PER BMS 8-219, STYLE 120, 250°F (121°C) CURE

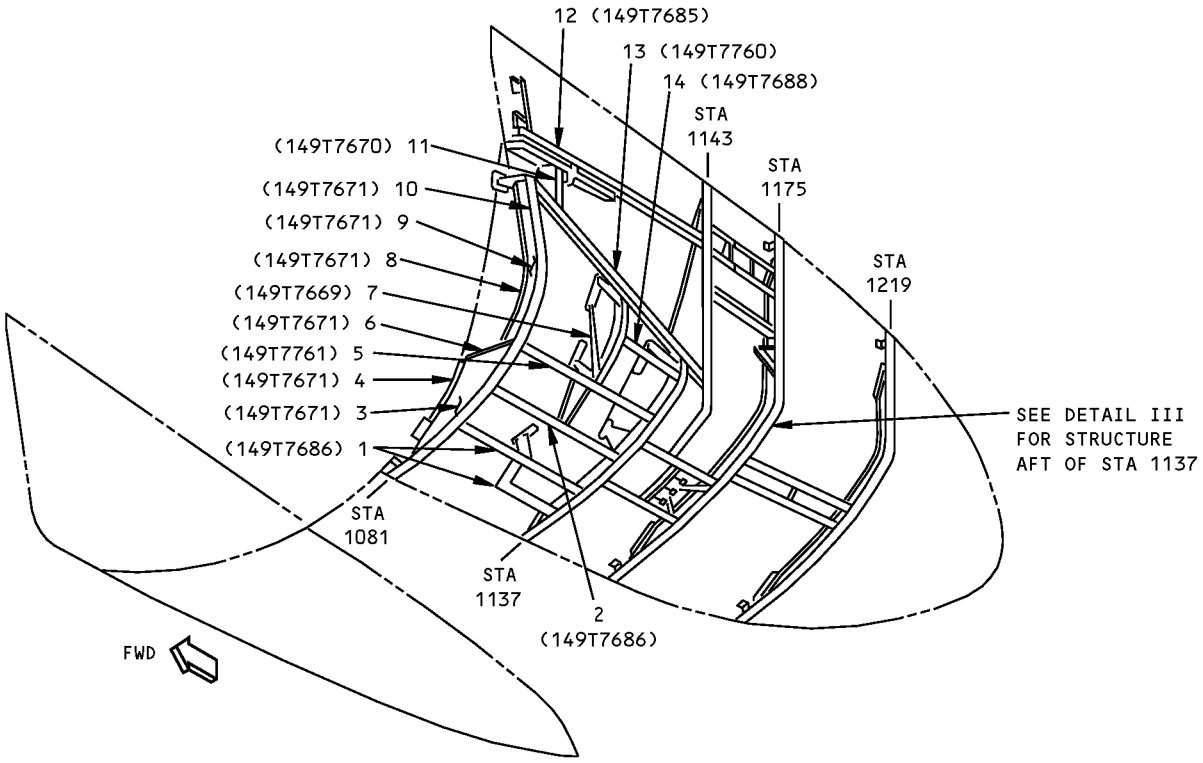
[C] GRAPHITE/EPOXY FABRIC PER BMS 8-168, TYPE II, CLASS 2, STYLE 3K-70-PW, 250°F (121°C) CURE

[D] MATERIAL AND PLY ORIENTATION SHOWN FOR FIELD AREAS ONLY. SEE BOEING DRAWINGS FOR EDGE BANDS AND AREAS WITH DOUBLERS

[E] FOR 767-300 AIRPLANES WITH CUM LINE NUMBERS 132 THRU 230,232 THRU 241,244 AND 245

[F] FOR 767-300 AIRPLANES WITH CUM LINE NUMBERS 231,242,246 THRU 249,251,255,257 AND ON

Section 46 - Fairing Structure Identification
Figure 1 (Sheet 1 of 11)



DETAIL I

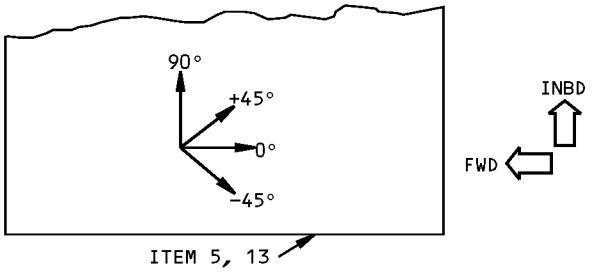
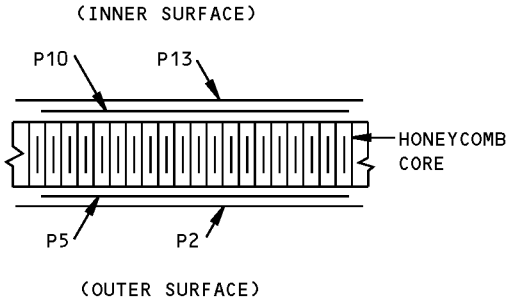


DIAGRAM OF PLY ORIENTATION
SEE PLY TABLE FOR ORIENTATION
AND MATERIAL [A]



SECTION THRU PANEL

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
5,13	P2,P13	[B]	0° OR 90°
	P5,P10	[C]	0° OR 90°

PLY TABLE [D]

DETAIL II

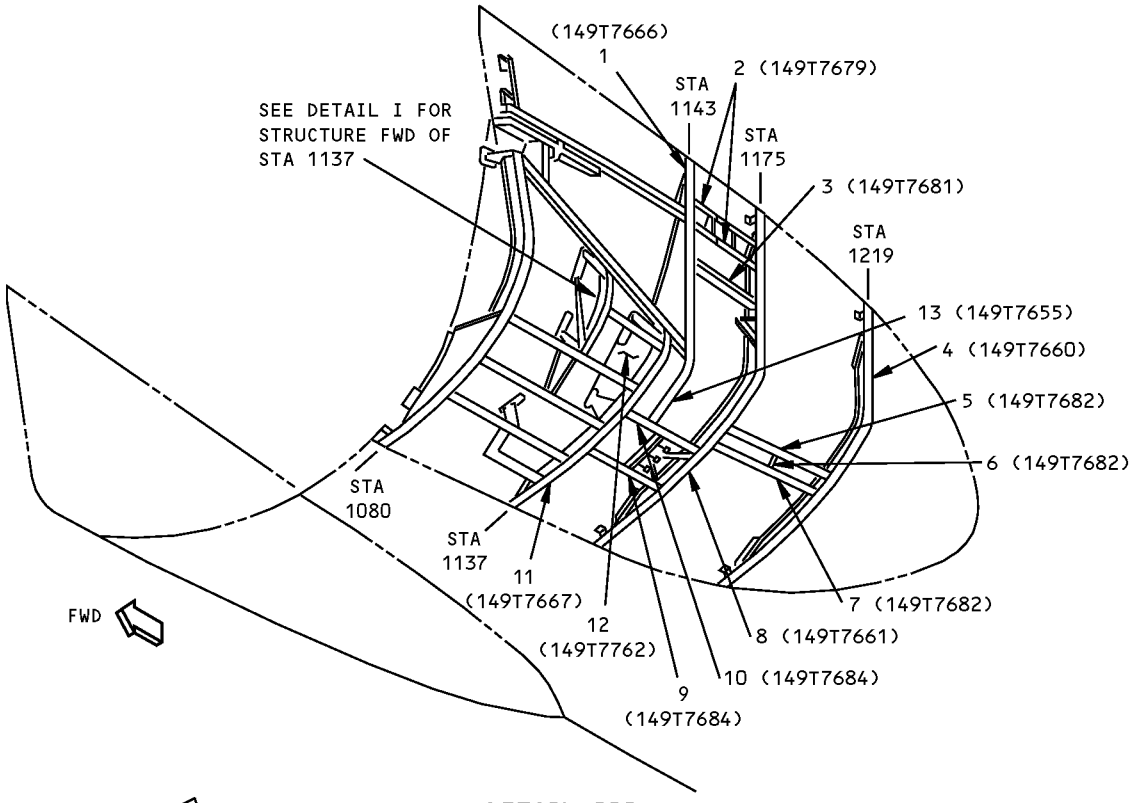
LIST OF MATL

Section 46 - Fairing Structure Identification
Figure 1 (Sheet 2 of 11)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	INTERCOSTAL		BAC1517-2149 7075-T6	
2	INTERCOSTAL		BAC1517-2146 7075-T6	
3	WEB	0.032	CLAD 2024-T3	
4	ANGLE	0.063	CLAD 7075-T6	
5	PANEL		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH	
	CHORD		BAC1506-3287 7075-T6	
	ANGLE	0.050	CLAD 7075-T6	
	SKIN		SEE DETAIL II	
	CORE		NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
6	ANGLE	0.080	CLAD 7075-T6	
7	FRAME			
	UPR OUTER CHORD		BAC1506-3288 7075-T6	
	INNER CHORD		BAC1503-100636 7075-T6	
	LWR OUTER CHORD		BAC1503-100096 7075-T6511	
	WEB	0.032	CLAD 2024-T3	
8	INNER CHORD		BAC1503-100636 2024-T42	
9	WEB	0.032	CLAD 2024-T3	
10	OUTER CHORD		BAC1506-3201 7075-T6	
11	FRAME			
	OUTER CHORD		BAC1503-100133, OPTIONAL AND 10136-3005 7075-T6	
	INNER CHORD		BAC1514-2533 7075-T6	
	WEB	0.040	CLAD 7075-T6	
12	INTERCOSTAL			
	AFT CHORD		AND10134-1603 7075-T6	
	FWD CHORD		AND10136-3005 7075-T6	
13	PANEL ASSY		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH	
	CHORD		BAC1506-3215 7075-T6	
	ANGLE	0.050	CLAD 7075-T6	
	SKIN		SEE DETAIL II	
	CORE		NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
14	CHANNEL	0.050	CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL I

Section 46 - Fairing Structure Identification
Figure 1 (Sheet 3 of 11)



DETAIL III

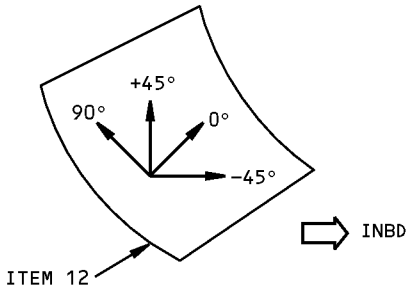
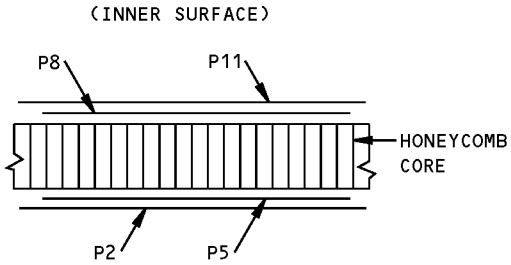


DIAGRAM OF PLY ORIENTATION
SEE TABLE FOR PLY ORIENTATION
AND MATERIAL [A]



SECTION THRU PANEL

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
12	P2,P11	[B]	0° OR 90°
	P5,P8	[C]	0° OR 90°

PLY TABLE [D]
DETAIL IV

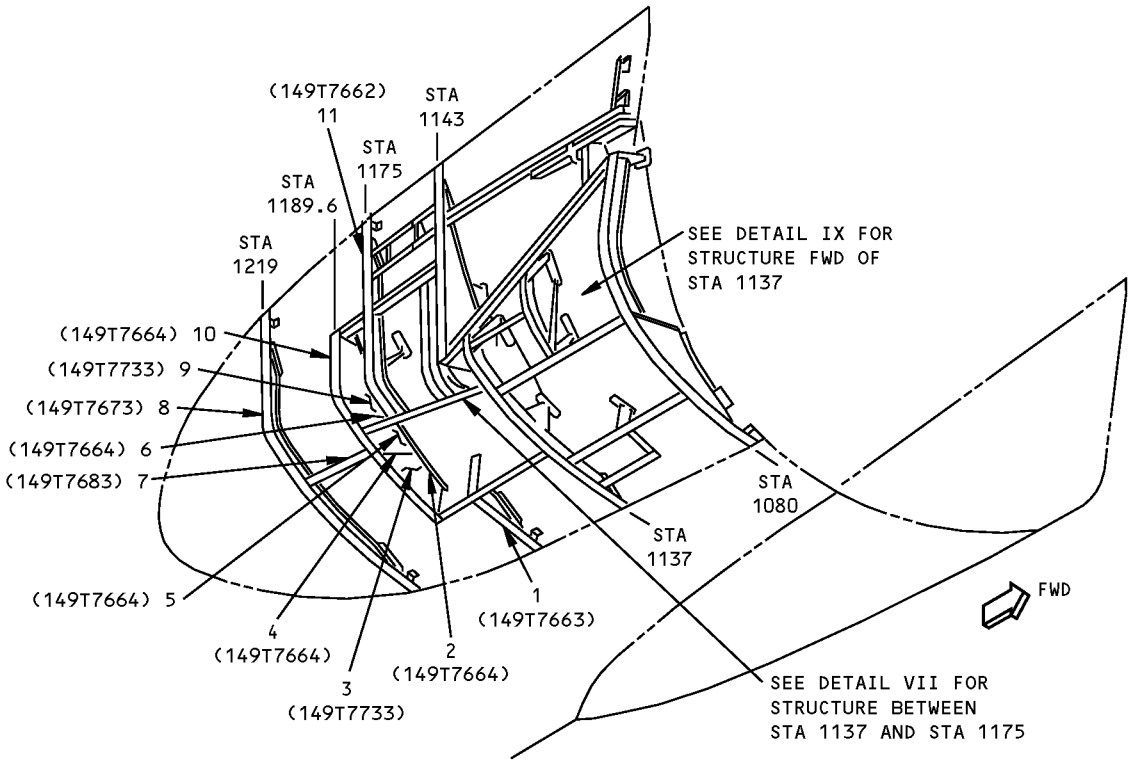
LIST OF MATL

Section 46 - Fairing Structure Identification
Figure 1 (Sheet 4 of 11)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME			
	OUTER CHORD		BAC1506-3214 7075-T6	
	LOWER CHORD		BAC1514-2533 7075-T6	
	WEB	0.032	CLAD 2024-T3	
2	INTERCOSTAL		BAC1506-3214 7075-T6	
3	INTERCOSTAL		BAC1509-100484 7075-T6	
4	FRAME			
	OUTER CHORD		BAC1506-3285 7075-T6	
	INNER CHORD		BAC1503-100746 7075-T6	
	WEB	0.032	CLAD 7075-T6	
5	INTERCOSTAL		BAC1517-2145 7075-T6	
6	INTERCOSTAL		BAC1506-3219 7075-T6	
7	INTERCOSTAL		BAC1506-3226 7075-T6	
8	FRAME			
	OUTER CHORD		BAC1506-3286 7075-T6	
	INNER CHORD		BAC1505-101197 7075-T6	
	WEB	0.032	CLAD 7075-T6	
9	INTERCOSTAL		BAC1506-3224 2024-T42	
10	INTERCOSTAL		BAC1517-2146 7075-T6	
11	FRAME			
	OUTER CHORD		BAC1506-3286 7075-T6	
	INNER CHORD		BAC1503-100746 7075-T6	
	WEB	0.032	CLAD 7075-T6	
12	PANEL		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH	
	SKIN		SEE DETAIL IV	
	CORE		NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
13	FRAME ASSY			
	OUTER CHORD		BAC1506-3286 7075-T6	
			OPTIONAL 1506-3201	
	INNER ANGLE	0.080	CLAD 7075-T6	
	WEB	0.032	CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL III

Section 46 - Fairing Structure Identification
Figure 1 (Sheet 5 of 11)



DETAIL V

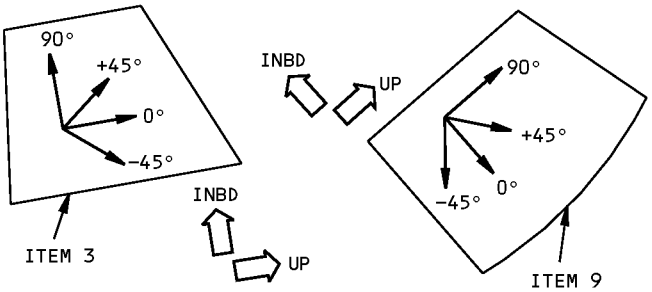
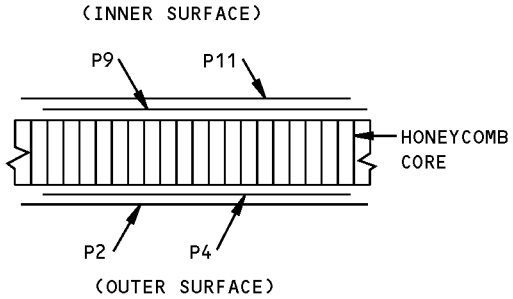


DIAGRAM OF PLY ORIENTATION
SEE TABLE FOR PLY ORIENTATION AND MATERIAL [A]



SECTION THRU PANEL

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
3,9	P2,P11	[B]	0° OR 90°
	P4,P9	[C]	0° OR 90°

PLY TABLE [D]
DETAIL VI

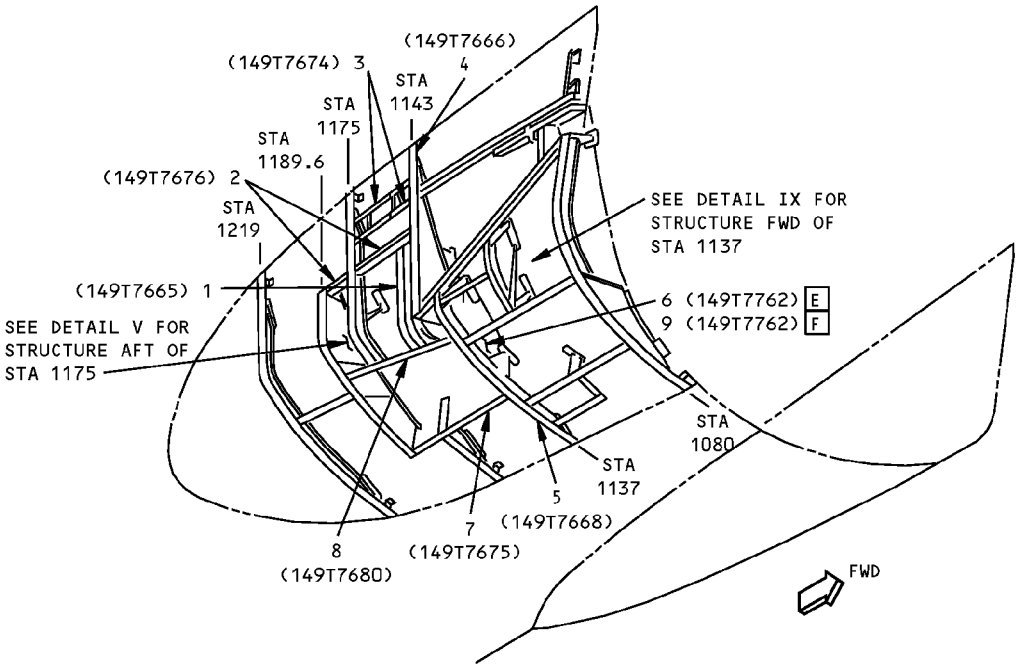
LIST OF MATL

Section 46 - Fairing Structure Identification
Figure 1 (Sheet 6 of 11)

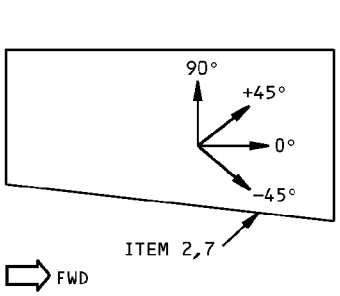
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	CHORD		BAC1506-3201 7075-T6	
2	ANGLE	0.050	CLAD 7075-T6	
3	PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL VI NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
4	BEAM OUTER ANGLE INNER ANGLE WEB	 0.050 0.040	 BAC1503-100643 7075-T6511 CLAD 7075-T6 CLAD 7075-T6	
5	WEB	0.032	CLAD 7075-T6	
6	BEAM OUTER ANGLE INNER ANGLE WEB	 0.080 0.050 0.040	 CLAD 7075-T6 CLAD 7075-T6 CLAD 7075-T6	
7	INTERCOSTAL		BAC1517-2145 7075-T6	
8	FRAME OUTER CHORD INNER CHORD WEB	 0.032	 BAC1506-3285 7075-T6 BAC1503-100746 7075-T6 CLAD 7075-T6	
9	PANEL SKIN CORE		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH SEE DETAIL VI NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
10	CHORD		BAC1506-3200 7075-T6	
11	FRAME OUTER CHORD INNER CHORD WEB (CHEM MILL)	 0.063	 BAC1506-3286 7075-T6 BAC1505-101196 7075-T6 CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL V

Section 46 - Fairing Structure Identification
Figure 1 (Sheet 7 of 11)



DETAIL VII



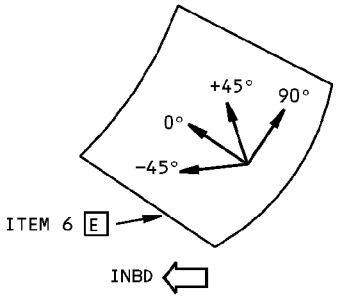
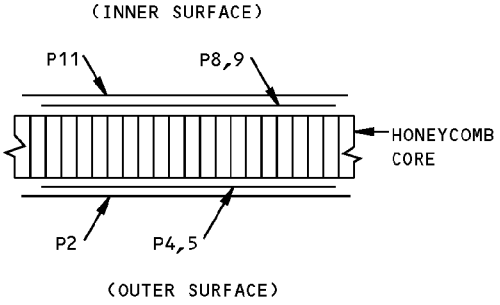


DIAGRAM OF PLY ORIENTATION
SEE PLY TABLE FOR ORIENTATION AND MATERIAL A



SECTION THRU PANEL
FOR ITEMS 2, 6 AND 7

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION A
2,7	P2,P11	B	0° OR 90°
	P4,P9	C	0° OR 90°
6	P2,P11	B	0° OR 90°
	P5,P8	C	0° OR 90°

PLY TABLE D

DETAIL VIII

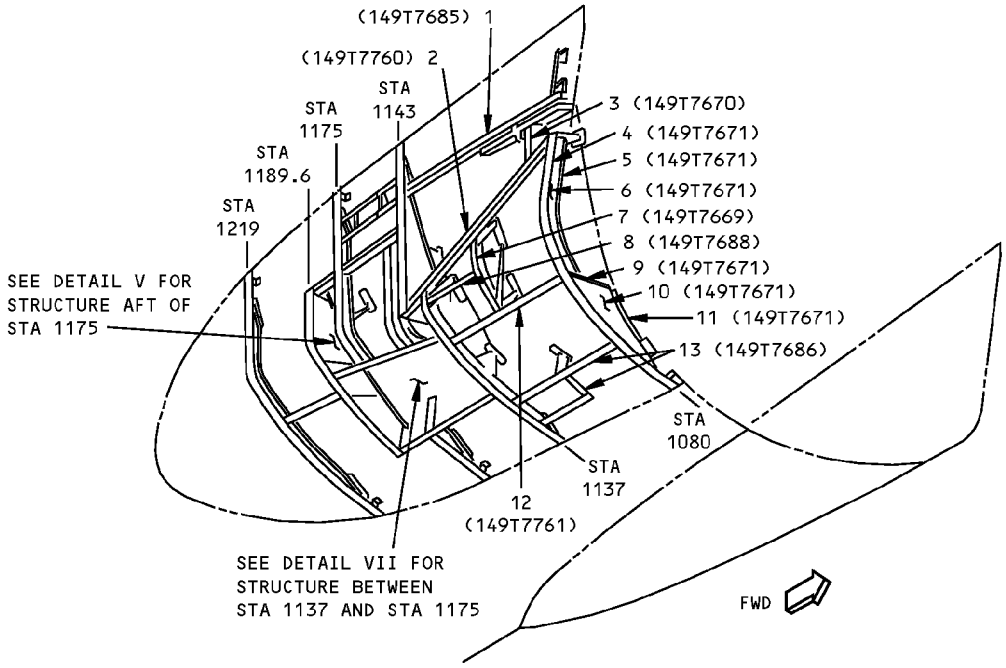
LIST OF MATL

Section 46 - Fairing Structure Identification
Figure 1 (Sheet 8 of 11)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME			
	OUTER CHORD		BAC1506-3286 7075-T6	
	INNER CHORD		BAC1503-100746 7075-T6	
	WEB	0.032	CLAD 7075-T6	
2	PANEL		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH	
	CHORD		BAC1506-3214 7075-T6	
	ANGLE	0.050	CLAD 7075-T6	
	SKIN		SEE DETAIL VIII	
	CORE		NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
3	INTERCOSTAL		BAC1506-3214 7075-T6	
4	FRAME ASSY			
	OUTER CHORD		BAC1506-3214 7075-T6	
	LOWER CHORD		BAC1514-2533 7075-T6	
	WEB	0.032	CLAD 2024-T3	
5	FRAME			
	OUTER CHORD		BAC1506-3285 7075-T6	
	INNER CHORD		BAC1503-100746 7075-T6	
	WEB	0.032	CLAD 7075-T6	
6	PANEL		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH	[E]
	SKIN		SEE DETAIL VIII	
	CORE		NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
7	PANEL		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH	
	CHORD		BAC1506-3219 7075-T6	
	ANGLE	0.050	CLAD 7075-T6	
	SKIN		SEE DETAIL VIII	
	CORE		NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
8	HINGE BEAM		BAC1506-3248 7075-T6	
9	PANEL			
	WEB	0.030	BMS 8-223D LAMINATE CLASS 2, GRADE B, TYPE 30	[F]
	FRAME	0.032	2024-T4	

LIST OF MATERIALS FOR DETAIL VII

Section 46 - Fairing Structure Identification
Figure 1 (Sheet 9 of 11)



DETAIL IX

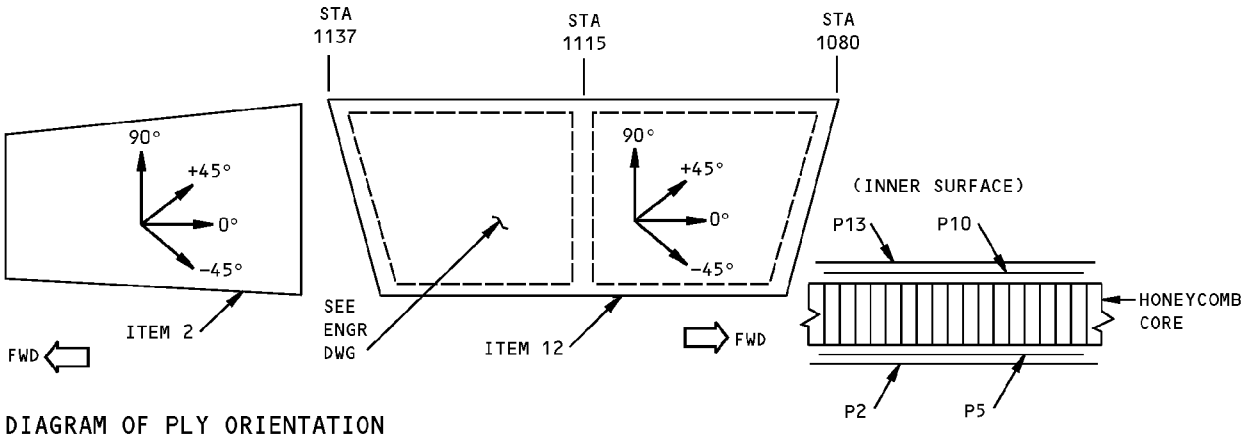


DIAGRAM OF PLY ORIENTATION
SEE PLY TABLE FOR ORIENTATION AND MATERIAL [A]

SECTION THRU PANEL

ITEM NO.	PLY NO.	MATERIAL	PLY ORIENTATION [A]
2,12	P2,P13	[B]	0° OR 90°
	P5,P10	[C]	0° OR 90°

PLY TABLE [D]
DETAIL X

LIST OF MATL

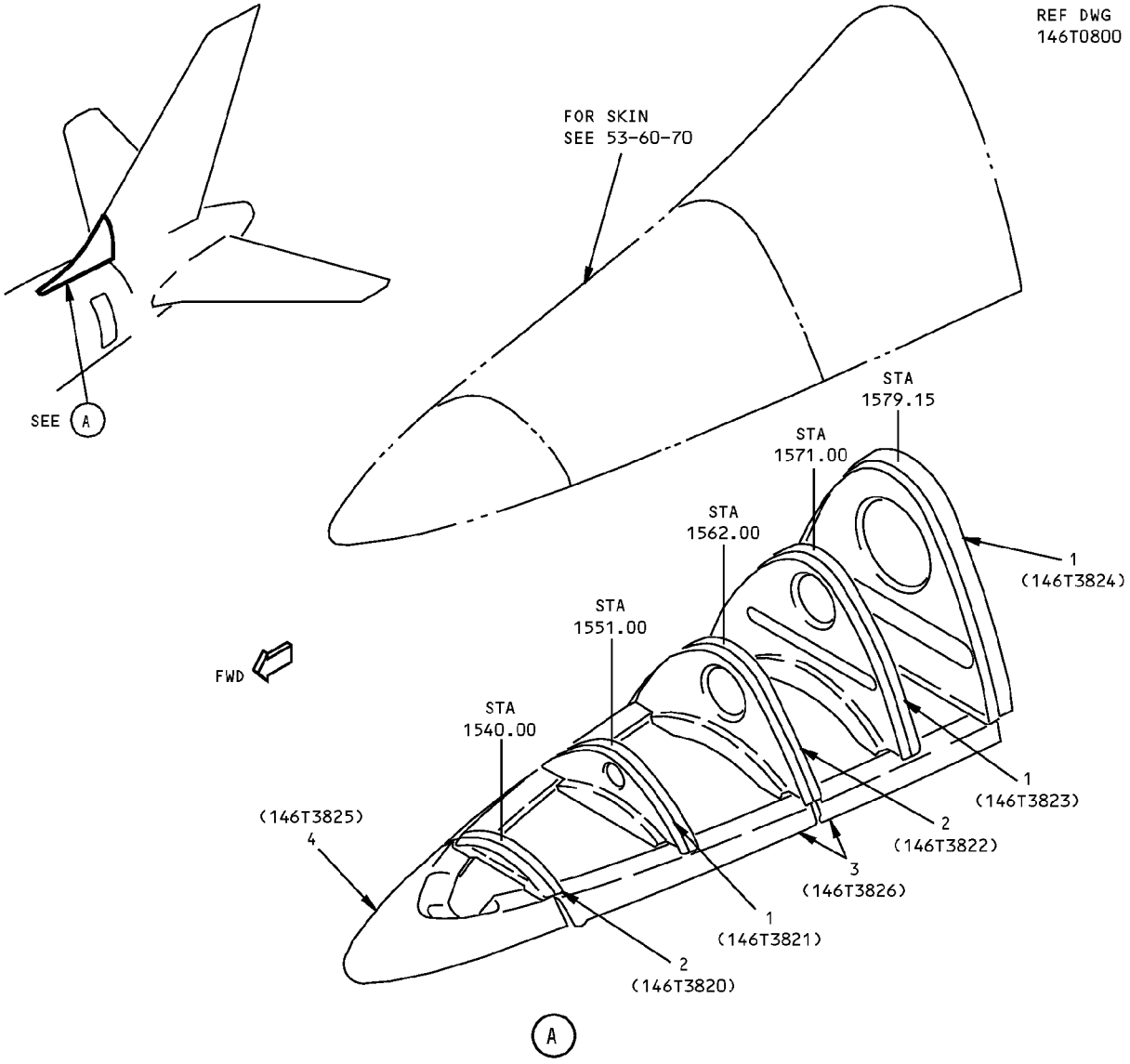
Section 46 - Fairing Structure Identification
Figure 1 (Sheet 10 of 11)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	INTERCOSTAL			
	AFT CHORD		AND10134-1603 7075-T6	
	FWD CHORD		AND10136-3005 7075-T6	
2	PANEL		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH	
	CHORD		BAC1506-3215 7075-T6	
	ANGLE	0.050	CLAD 7075-T6	
	SKIN		SEE DETAIL X	
	CORE		NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
3	FRAME			
	OUTER CHORD		BAC1503-100133, OPTIONAL AND10136-3005 7075-T6	
	LOWER CHORD		BAC1514-2533 7075-T6	
	WEB	0.040	CLAD 7075-T6	
4	OUTER CHORD		BAC1506-3201 7075-T6	
5	INNER CHORD		BAC1503-100636 2024-T42	
6	WEB	0.032	CLAD 7075-T6	
7	FRAME			
	UPR OUTER CHORD		BAC1506-3288 7075-T6	
	INNER CHORD		BAC1503-100636 7075-T6	
	LWR OUTER CHORD		BAC1503-100096 7075-T6511	
	WEB	0.032	CLAD 2024-T3	
8	CHANNEL	0.050	CLAD 7075-T6	
9	ANGLE	0.080	CLAD 7075-T6	
10	WEB	0.032	CLAD 2024-T3	
11	ANGLE	0.063	CLAD 7075-T6	
12	PANEL		ARAMID/GRAPHITE/EPOXY HONEYCOMB SANDWICH	
	CHORD		BAC1506-3287 7075-T6	
	ANGLE	0.050	CLAD 7075-T6	
	SKIN		SEE DETAIL X	
	CORE		NOMEX HONEYCOMB PER BMS 8-124, CLASS IV, TYPE V, GRADE 3.0	
13	INTERCOSTAL		BAC1517-2149 7075-T6	

LIST OF MATERIALS FOR DETAIL IX

Section 46 - Fairing Structure Identification
Figure 1 (Sheet 11 of 11)

IDENTIFICATION 2 - DORSAL FIN STRUCTURE

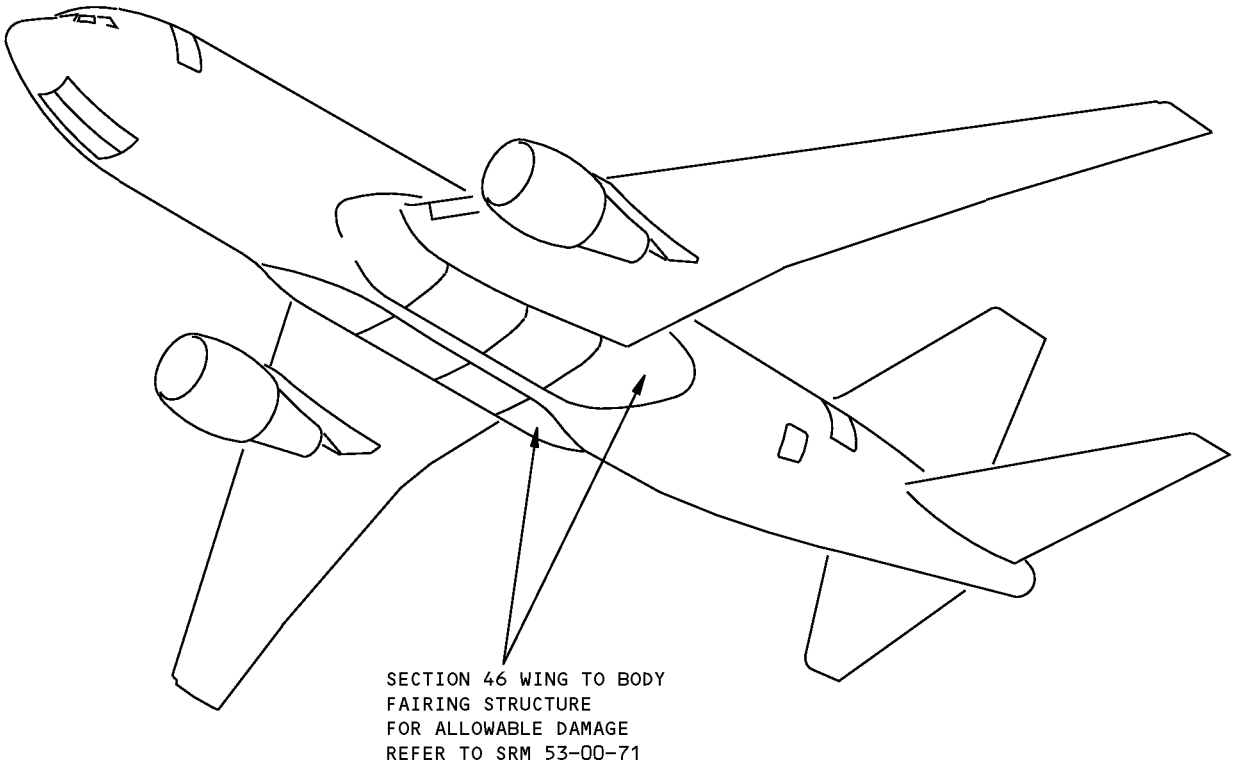


ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	RIB	0.050	CLAD 2024-T42	
2	RIB	0.040	CLAD 2024-T42	
3	STIFFENER	0.040	CLAD 2024-T42	
4	PAN	0.040	CLAD 2024-T42	

LIST OF MATERIALS

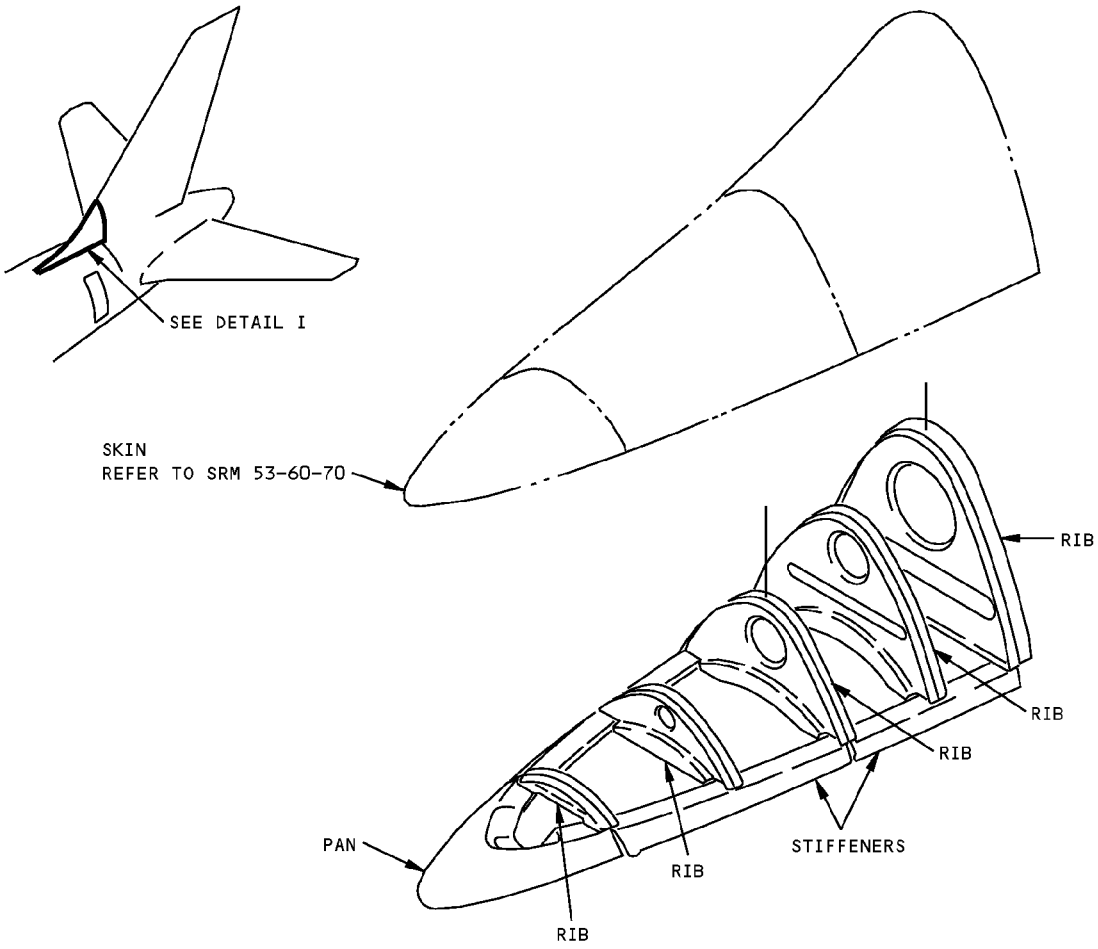
Dorsal Fin Structure Identification
Figure 1

ALLOWABLE DAMAGE 1 - SECTION 46 -WING TO BODY FAIRING STRUCTURE



Section 46 - Wing to Body Fairing Structure - Allowable Damage
Figure 101

ALLOWABLE DAMAGE 2 - SECTION 46 - DORSAL FIN STRUCTURE



DETAIL I

ITEM	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
RIBS	[A]	[B]	SEE DETAIL IV	[C]
STIFFENERS	[A]	[B]	SEE DETAIL IV	[C]
PAN	[A]	[B]	SEE DETAIL IV	[C]

NOTES

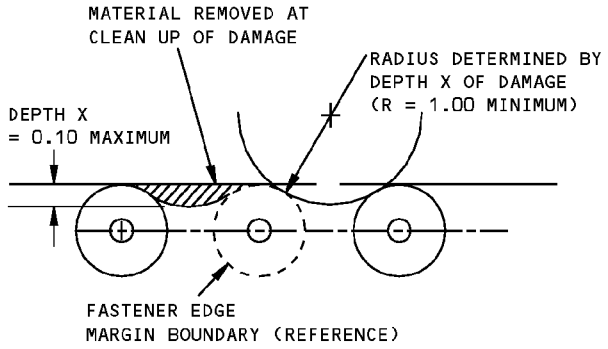
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS II AND V.

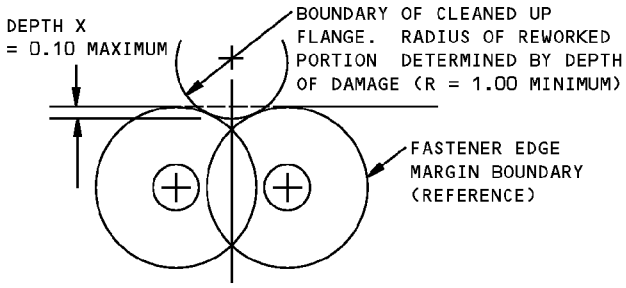
[B] REMOVE DAMAGE AS GIVEN IN DETAILS II, III, V, AND VI.

[C] CLEAN OUT DAMAGE UP TO 0.25 INCH MAXIMUM DIAMETER AND NOT CLOSER THAN 1.0 INCH TO A FASTENER HOLE OR OTHER DAMAGE. FILL THE HOLE WITH A 2117-T3 OR T4 ALUMINUM RIVET INSTALLED WET WITH BMS 5-95 SEALANT. ALL OTHER HOLES MUST BE REPAIRED.

Section 46 - Dorsal Fin Structure - Allowable Damage
Figure 101 (Sheet 1 of 3)

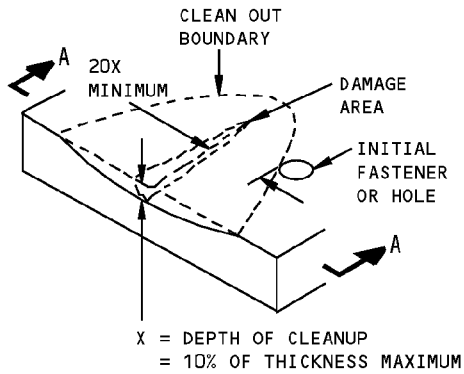


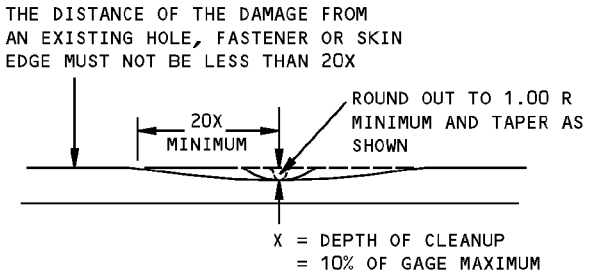
DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEAN UP OF EDGES WHERE
FASTENER EDGE MARGINS OVERLAP

DETAIL II

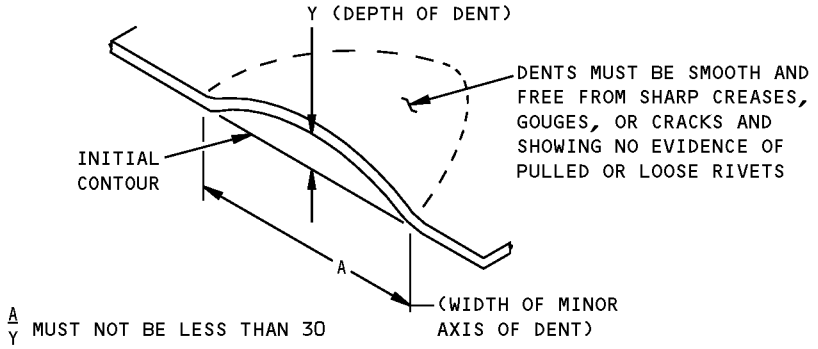




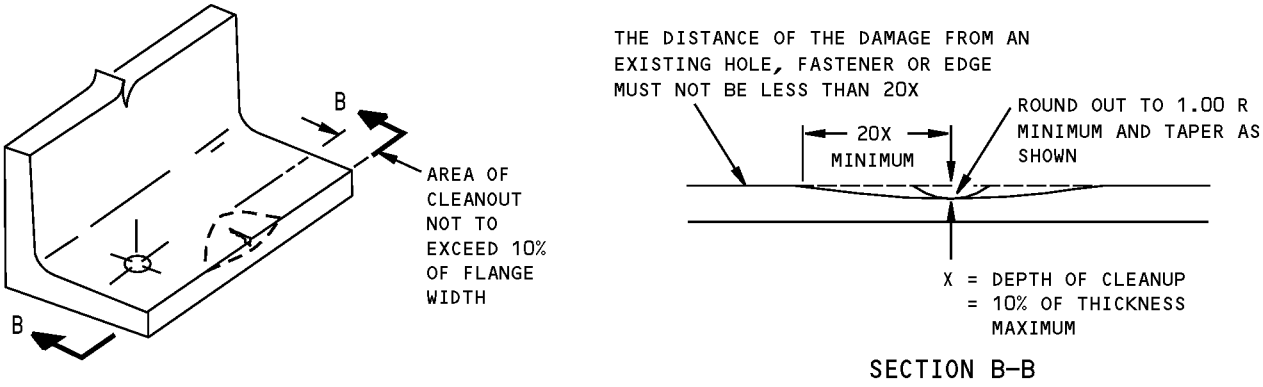
SECTION A–A

REMOVAL OF NICK, GOUGE AND SCRACH ON A SURFACE
DETAIL III

Section 46 - Dorsal Fin Structure - Allowable Damage
Figure 101 (Sheet 2 of 3)

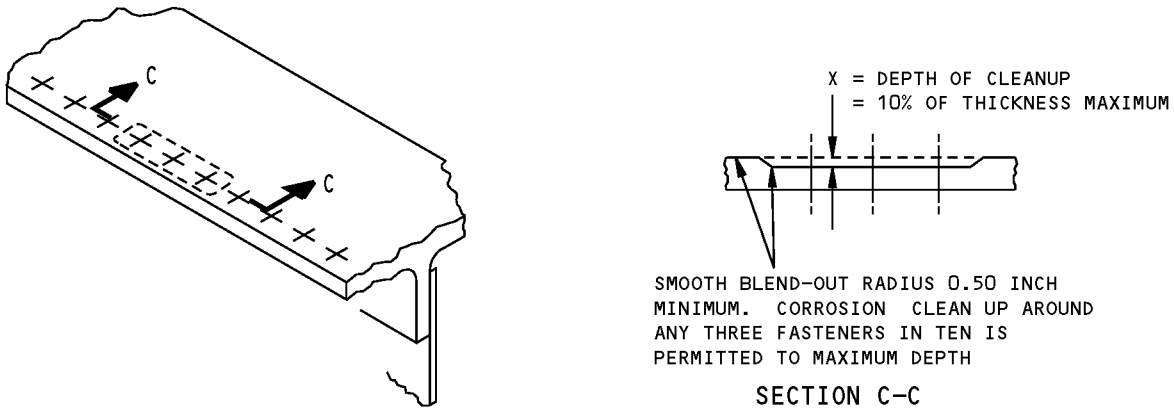


ALLOWABLE DAMAGE FOR DENT
DETAIL IV



SECTION B–B

DETAIL V



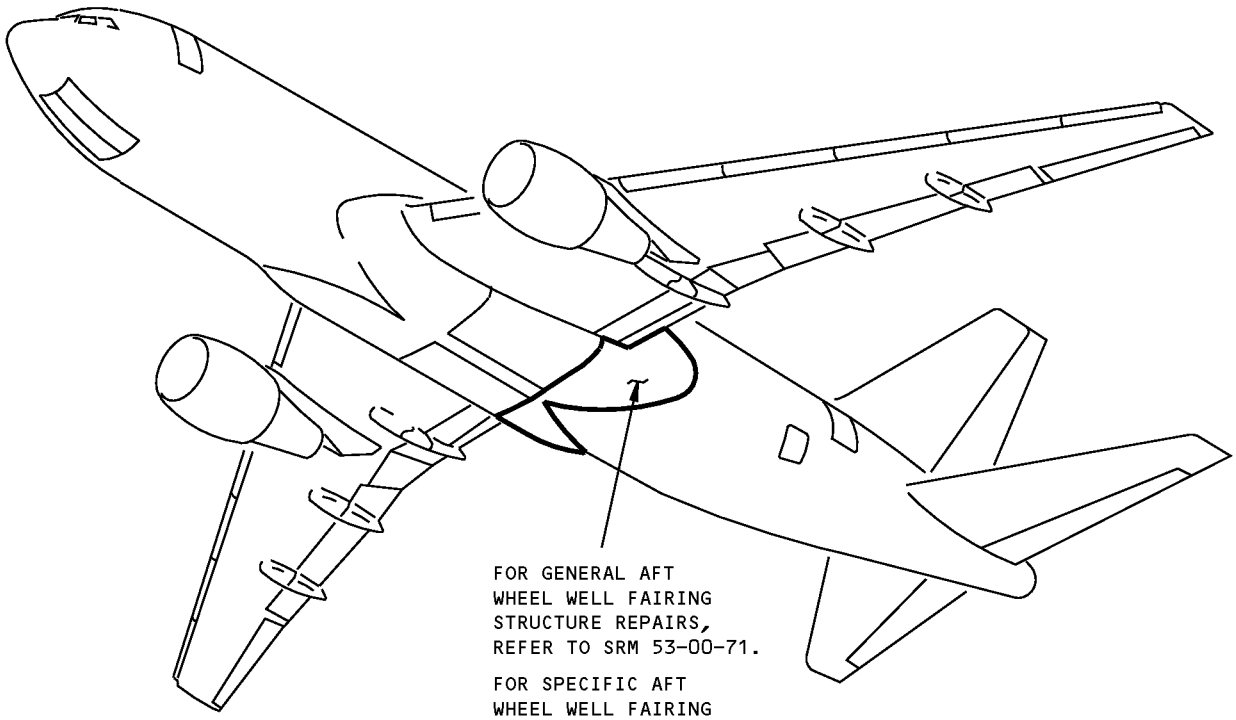
SECTION C–C

CORROSION CLEANUP
DETAIL VI

Section 46 - Dorsal Fin Structure - Allowable Damage
Figure 101 (Sheet 3 of 3)

REPAIR 1 - AFT WHEEL WELL FAIRING STRUCTURE

REF DWG
149T7601



Aft Wheel Well Fairing Structure Repairs
Figure 201

REPAIR 2 - AFT WHEEL WELL FAIRING FRAME - TO REMOVE THE MAIN LANDING GEAR BEAM INBOARD SUPPORT STRUCTURE

APPLICABILITY

THIS PROCEDURE PROVIDES ACCESSIBILITY FOR THE REMOVAL OF THE PIN WHICH CONNECTS THE MAIN LANDING GEAR BEAM, THE SIDE STRUT SWIVEL AND THE SUPPORT LINK. REFER TO SRM 53-50-90 FOR STA 1065 BULKHEAD FITTING REPAIR.

REPAIR INSTRUCTIONS

1. Remove the fairing bullnose. The bullnose is the composite lip that connects to the forward flange of the lower chord of the frame.
2. Remove the fairing panels and structure that connect to the frame that will be cut and removed.
3. Remove the fasteners which join the web to the inner and outer chords and the stiffeners. Remove only those fasteners that are necessary to do the repair.
4. Make the repair parts. See Table I.
5. Assemble the repair parts and drill the fastener holes before the upper and lower chords are cut.
6. Remove the repair parts.
7. Before you cut the frame, put a stainless steel sheet between the frame web and the chords so you do not cut the web.
8. Cut the upper and lower chords at the location shown in Detail III. Do not cut the frame web.
9. At the upper end of the frame, remove the bolt, nut and washers. Remove the upper piece of the frame. Keep the upper frame for installation after the Sta 1065 bulkhead fitting repair (SRM 53-50-90) is complete. Refer to Detail IV.
10. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the frame.
11. Apply a chemical conversion coating to the repair parts and the bare surfaces of the frame. Refer to SRM 51-20-01.
12. Apply two coats of BMS 10-11, Type I primer to the repair parts and the bare surfaces of the frame. Refer to SOPM 20-41-02.
13. Apply BMS 3-24 grease to the bolt and the bushing before installation.
14. Install the upper piece of the frame, and the fastener removed in Step 9. [B] See Detail IV.
15. Torque the fastener to 85-110 in. lbs.
16. Install the repair parts with BMS 5-95 sealant between the mating surfaces. Install the fasteners wet with BMS 5-95 sealant.
17. Fill the gap where the chords were cut with BMS 5-95 sealant. Make a fillet seal with BMS 5-95 sealant as specified in 51-20-05.
18. Apply one layer of BMS 10-11, Type II finish to the repair area. Refer to SOPM 20-41-02.
19. Install the fairing panels and the fairing bullnose.

NOTES

- THIS REPAIR IS CATEGORY "A". REFER TO SRM 51-00-06 TO FIND THE DEFINITIONS OF THE DIFFERENT CATEGORIES OF REPAIRS.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - SOPM 20-41-02 FOR THE APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40-00 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS.

[A] APPLY BMS 5-95 SEALANT TO THE GAP AFTER INSTALLATION.

[B] INSTALL THE WASHER WITH THE CHAMFERED EDGE AWAY FROM THE FITTING.

Aft Wheel Well Fairing Frame Repair to Remove the Main Landing Gear Beam Inboard Support Structure
Figure 201 (Sheet 1 of 4)

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION.

INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K() HEX DRIVE BOLT WITH A BACC30M6 COLLAR. IF THE HOLE IS NOT SATISFACTORY FOR THIS HEX DRIVE BOLT, INSTALL A 1/64-INCH DIAMETER OVERSIZE BACB30MY6K()X HEX DRIVE BOLT WITH A BACC30R6 COLLAR.

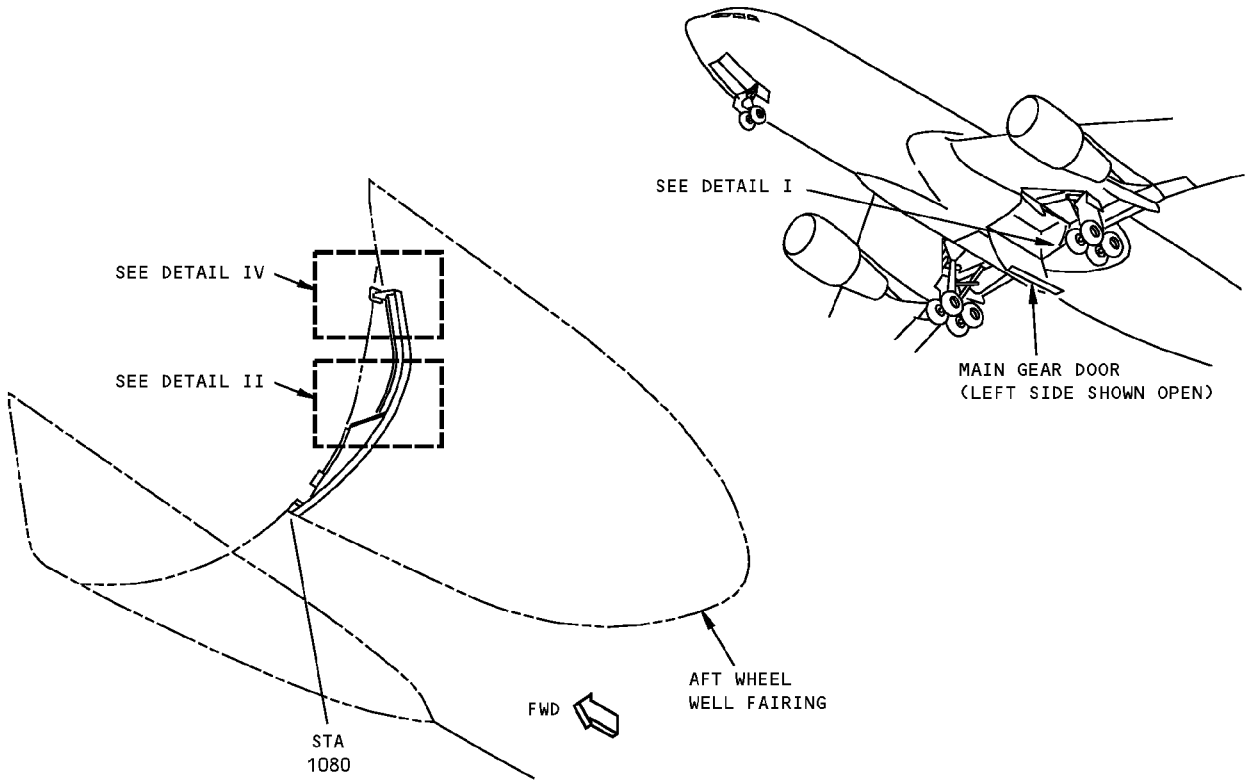
INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX DRIVE BOLT WITH A BACC30M6 COLLAR. IF THE HOLE IS NOT SATISFACTORY FOR A 1/64-INCH DIAMETER OVERSIZE HEX DRIVE BOLT, INSTALL A BACB30MY6K()Y HEX DRIVE BOLT WITH A BACC30R6 COLLAR.

REPAIR FASTENER LOCATION. INSTALL A BACB30MY5K() HEX DRIVE BOLT WITH A BACC30M5 COLLAR.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	1	0.125 7075-T6
2	UPPER STRAP	1	0.125 7075-T6
3	LOWER STRAP	1	0.125 7075-T6

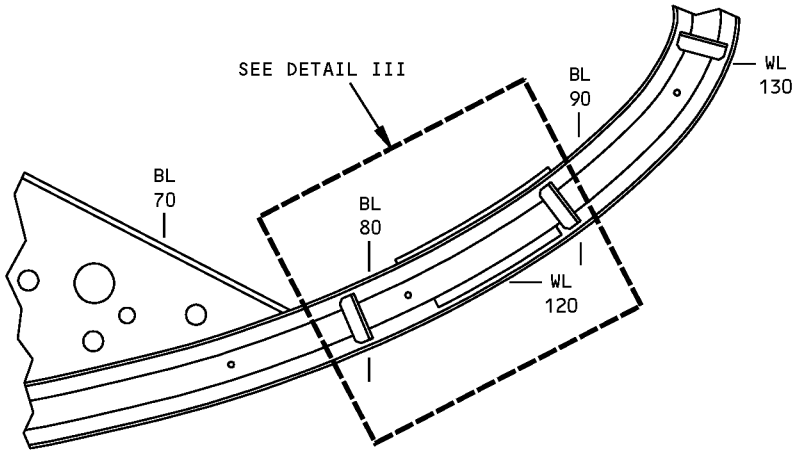
TABLE I

REF DWG
149T7601
149T7671

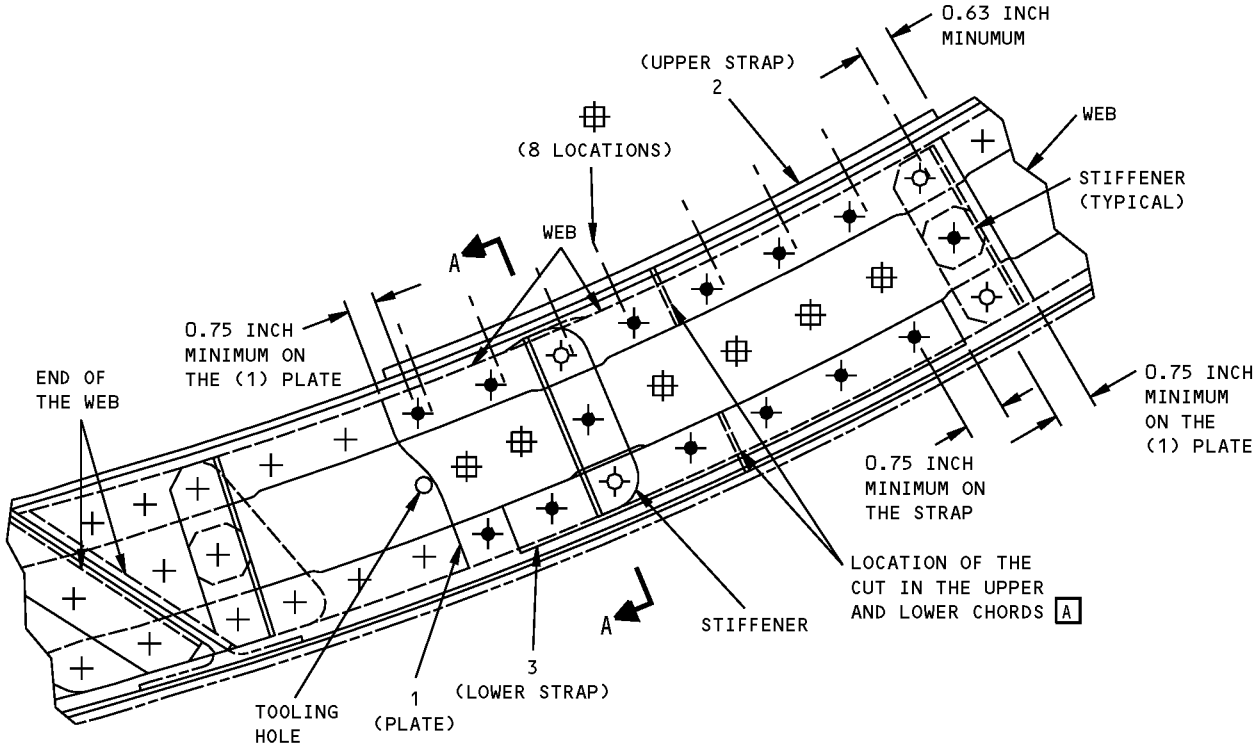


DETAIL I

Aft Wheel Well Fairing Frame Repair to Remove the Main Landing Gear Beam Inboard Support Structure
Figure 201 (Sheet 2 of 4)

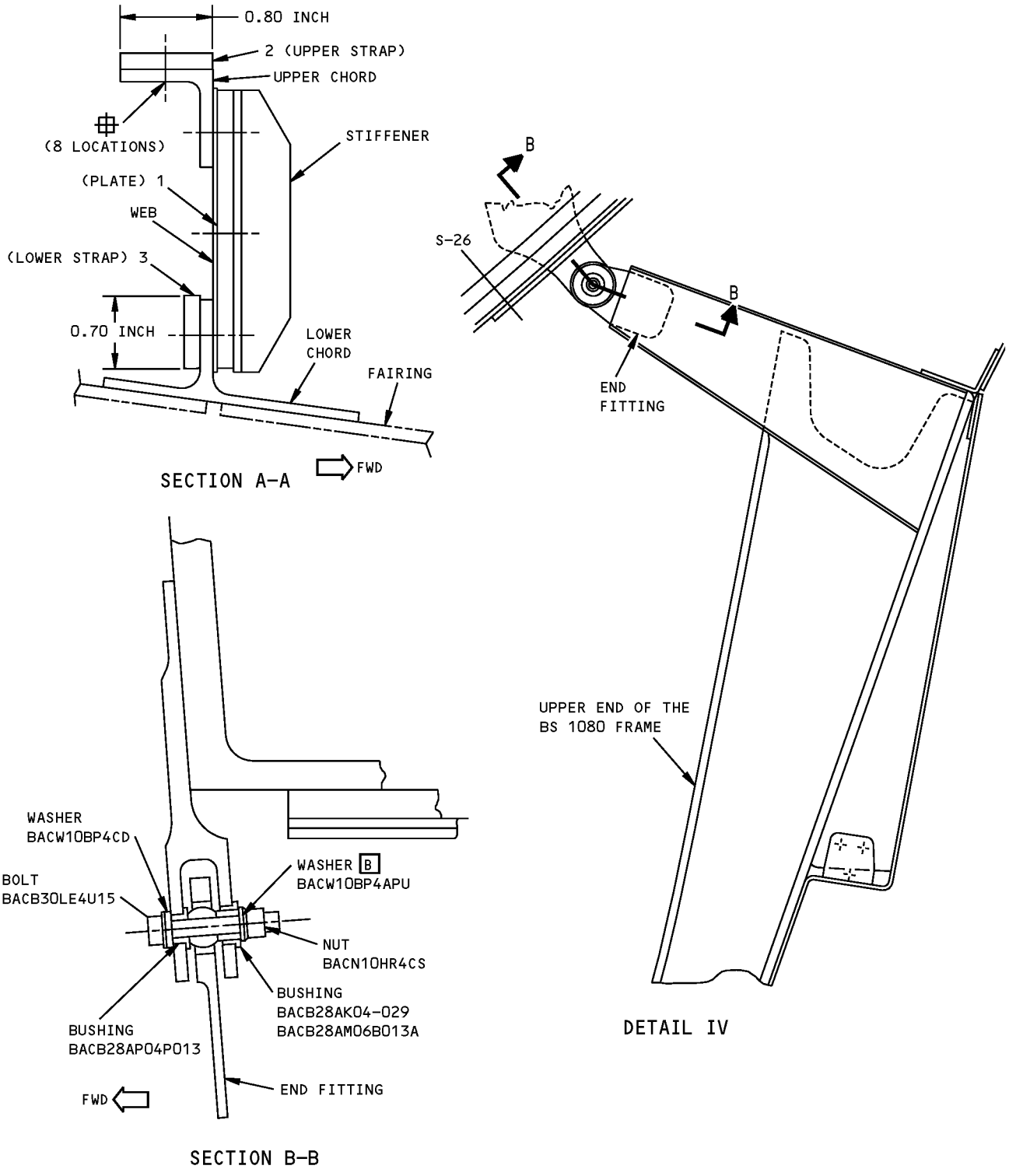


FAIRING FRAME – BS 1080
DETAIL II



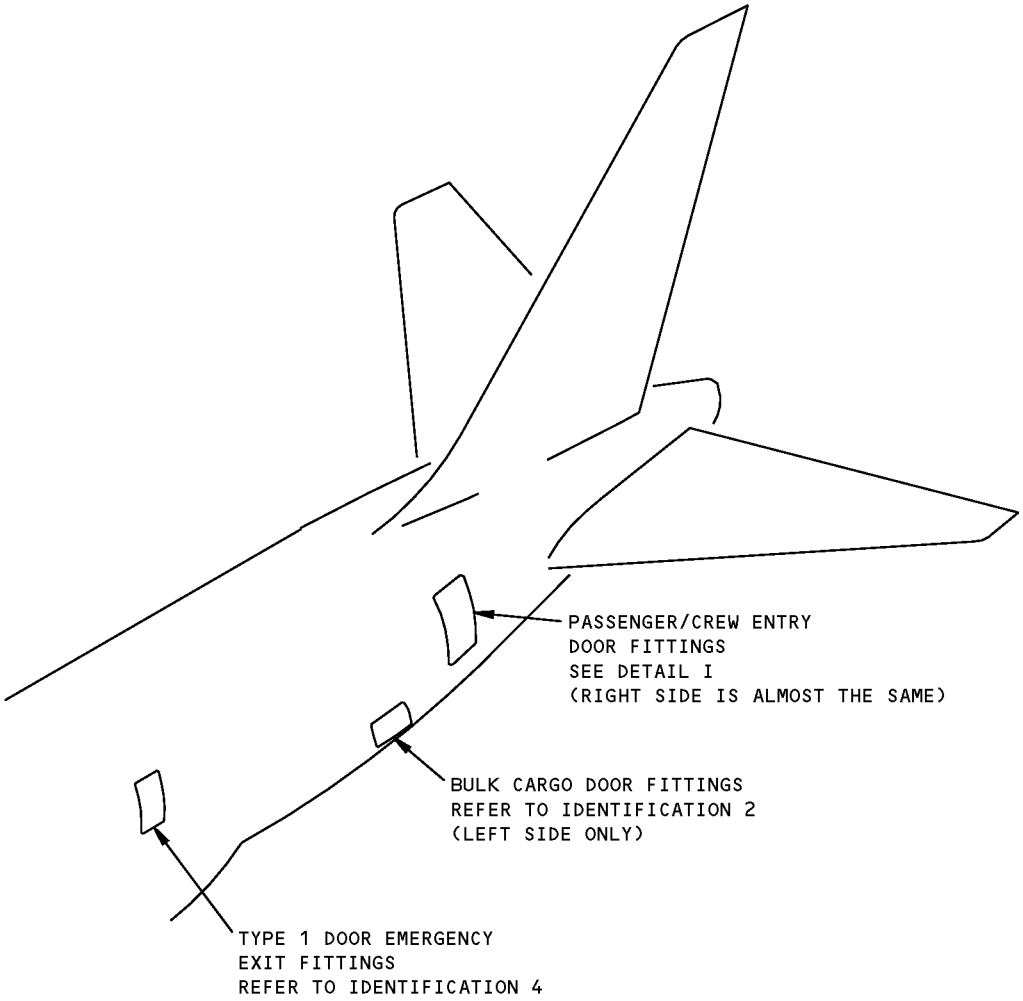
DETAIL III

Aft Wheel Well Fairing Frame Repair to Remove the Main Landing Gear Beam Inboard Support Structure
Figure 201 (Sheet 3 of 4)

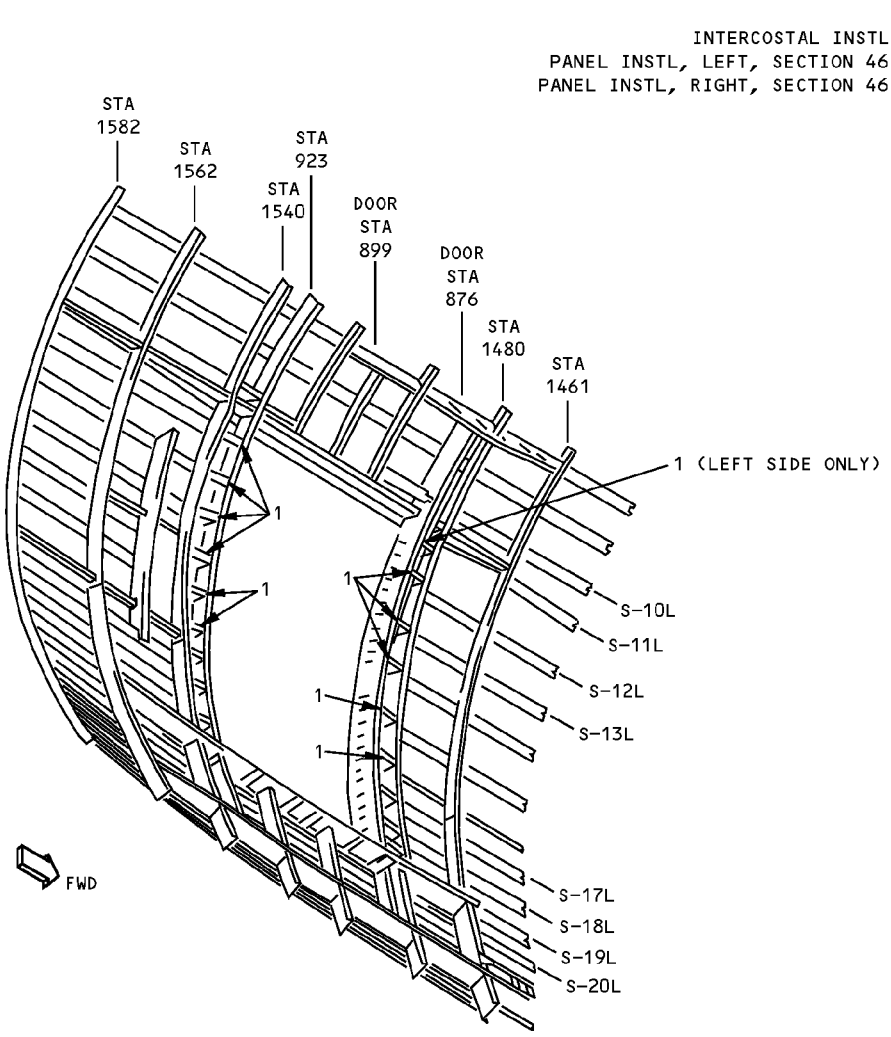


Aft Wheel Well Fairing Frame Repair to Remove the Main Landing Gear Beam Inboard Support Structure
Figure 201 (Sheet 4 of 4)

IDENTIFICATION 1 - SECTION 46 - PASSENGER/CREW ENTRY DOOR FITTINGS



Section 46 - Passenger/Crew Entry Door Fittings Identification
Figure 1 (Sheet 1 of 2)



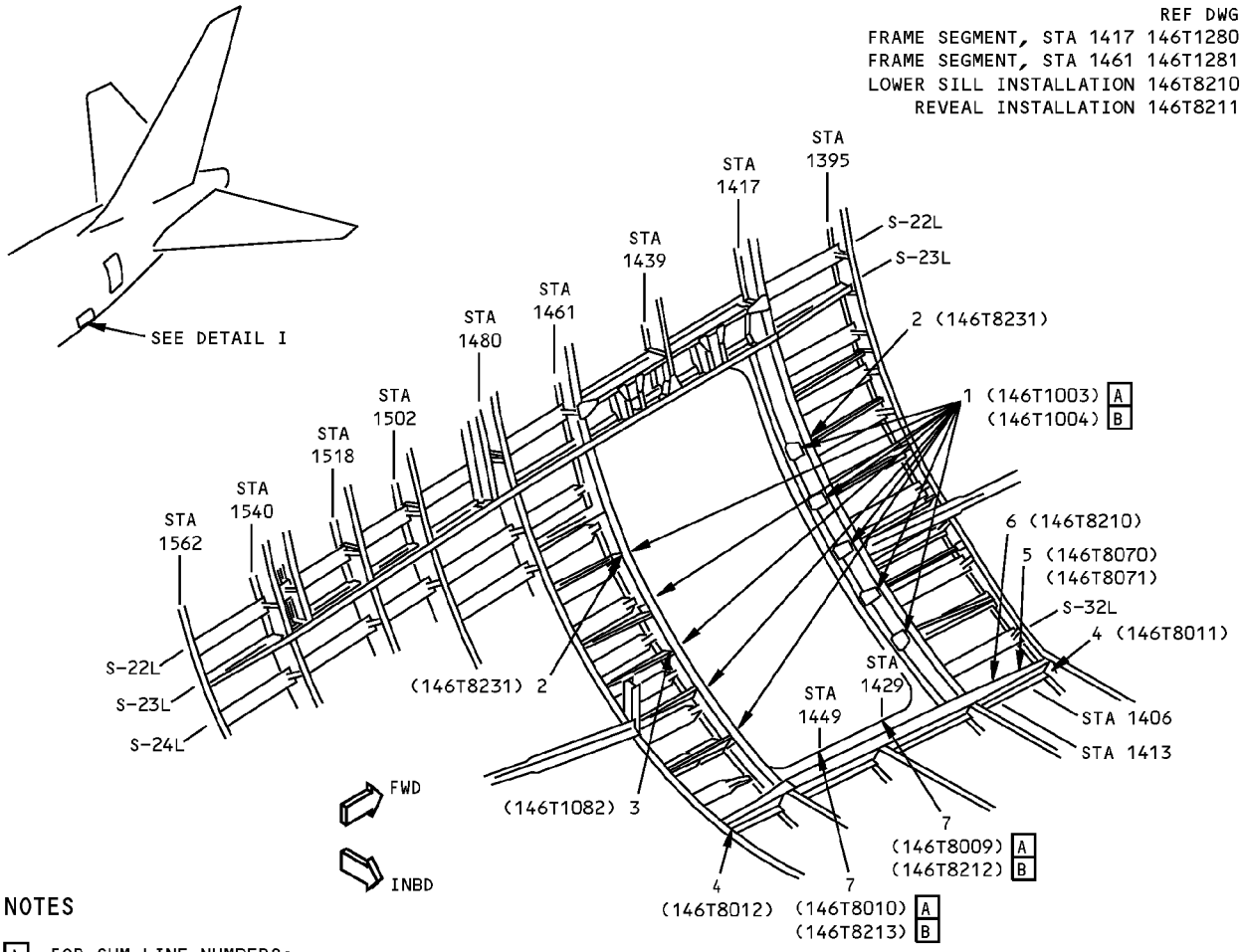
FORWARD AND AFT INTERCOSTALS
LEFT SIDE IS SHOWN, RIGHT SIDE IS ALMOST THE SAME EXCEPT AS NOTED
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FITTING		DIE FORGING 7075-T73	

LIST OF MATERIALS FOR DETAIL I

Section 46 - Passenger/Crew Entry Door Fittings Identification
Figure 1 (Sheet 2 of 2)

IDENTIFICATION 2 - SECTION 46 - BULK CARGO DOOR FITTINGS



NOTES

A FOR CUM LINE NUMBERS: 1 THRU 82

B FOR CUM LINE NUMBERS: 83 AND ON

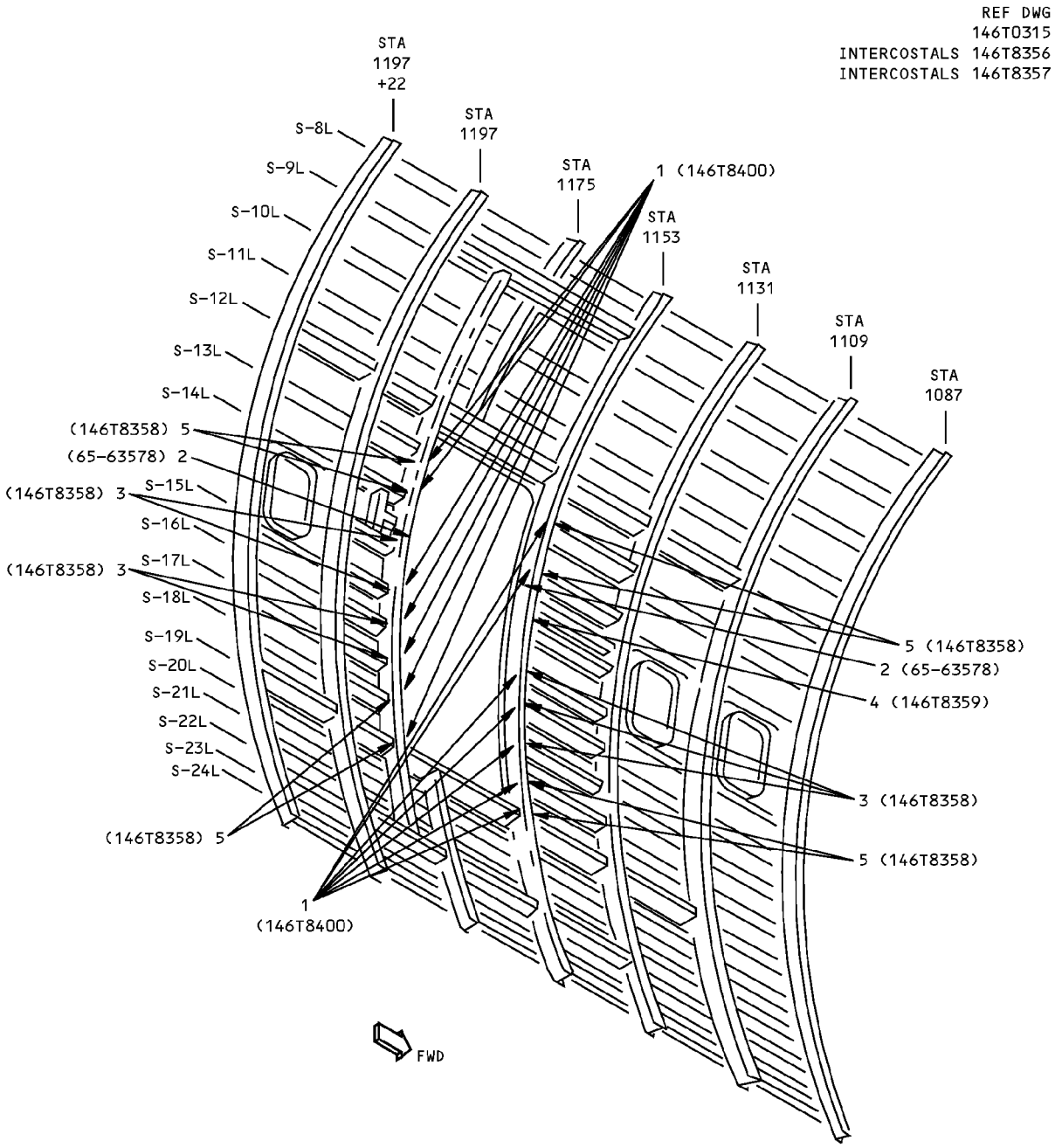
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	STOP FITTING		FORGING 7075-T73	
2	FITTING		BAC1505-101145 7075-T73511	
3	BACKUP FITTING		BAC1509-100497 7075-T73511 (OPTIONAL: 7075-T73)	
4	FITTING		7075-T7351 BAR	
5	FITTING		7075-T7351 PLATE	
6	FITTING		BAC1503-3122 7075-T6511	
7	FITTING		FORGING 7075-T73	

LIST OF MATERIALS FOR DETAIL I

Section 46 - Bulk Cargo Door Fittings Identification
Figure 1

IDENTIFICATION 4 - SECTION 46 - TYPE 1 DOOR (EMERGENCY EXIT) FITTINGS



LEFT SIDE IS SHOWN
RIGHT SIDE IS OPPOSITE

LIST OF MATL

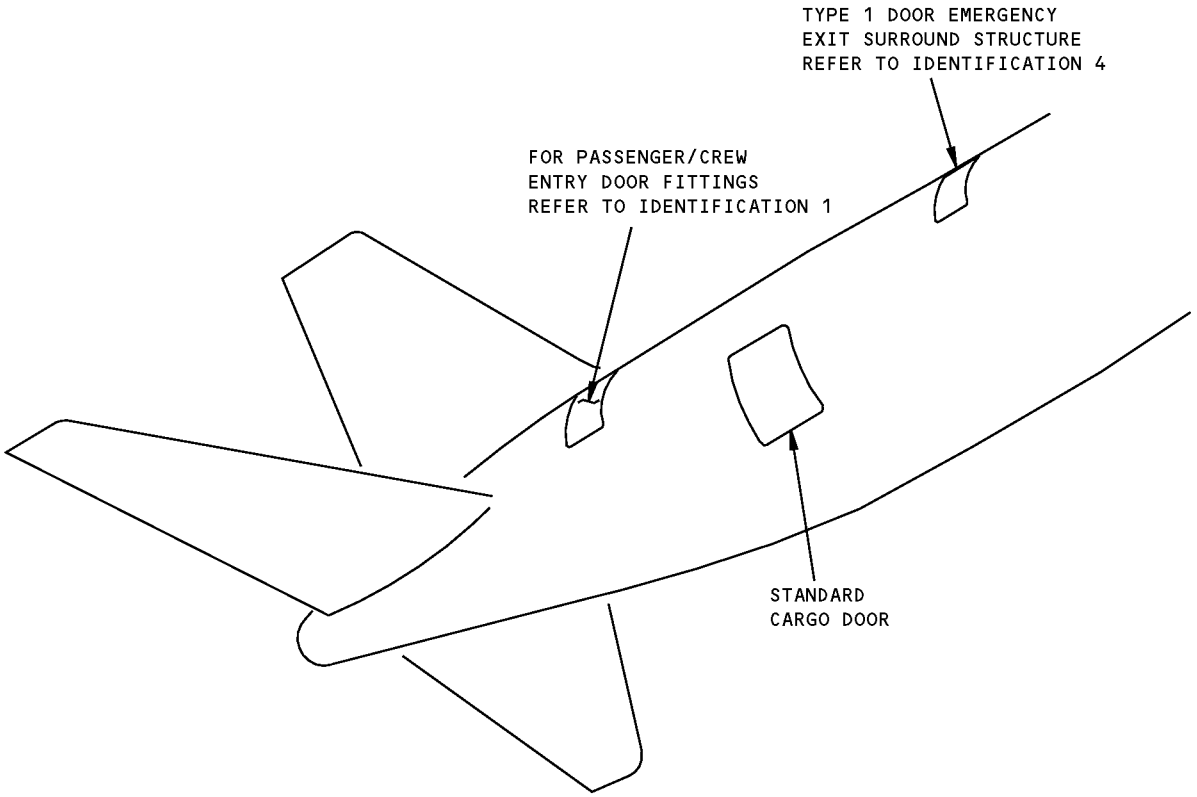
Section 46 - Type 1 Door (Emergency Exit) Fittings Identification
Figure 1 (Sheet 1 of 2)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	STOP FITTING		7075-T73 FORGING	
2	ROLLER GUIDE FITTING		7075-T7351 BAR (OPTIONAL: 7075-T73 ROLLED BAR OR 7075-T73 EXTRUDED BAR OR 7075-T73 FORGING)	
3	BACKUP FITTING		BAC1505-101248 7075-T7351	
4	BACKUP FITTING		7075-T7351	
5	BACKUP FITTING		7075-T73	

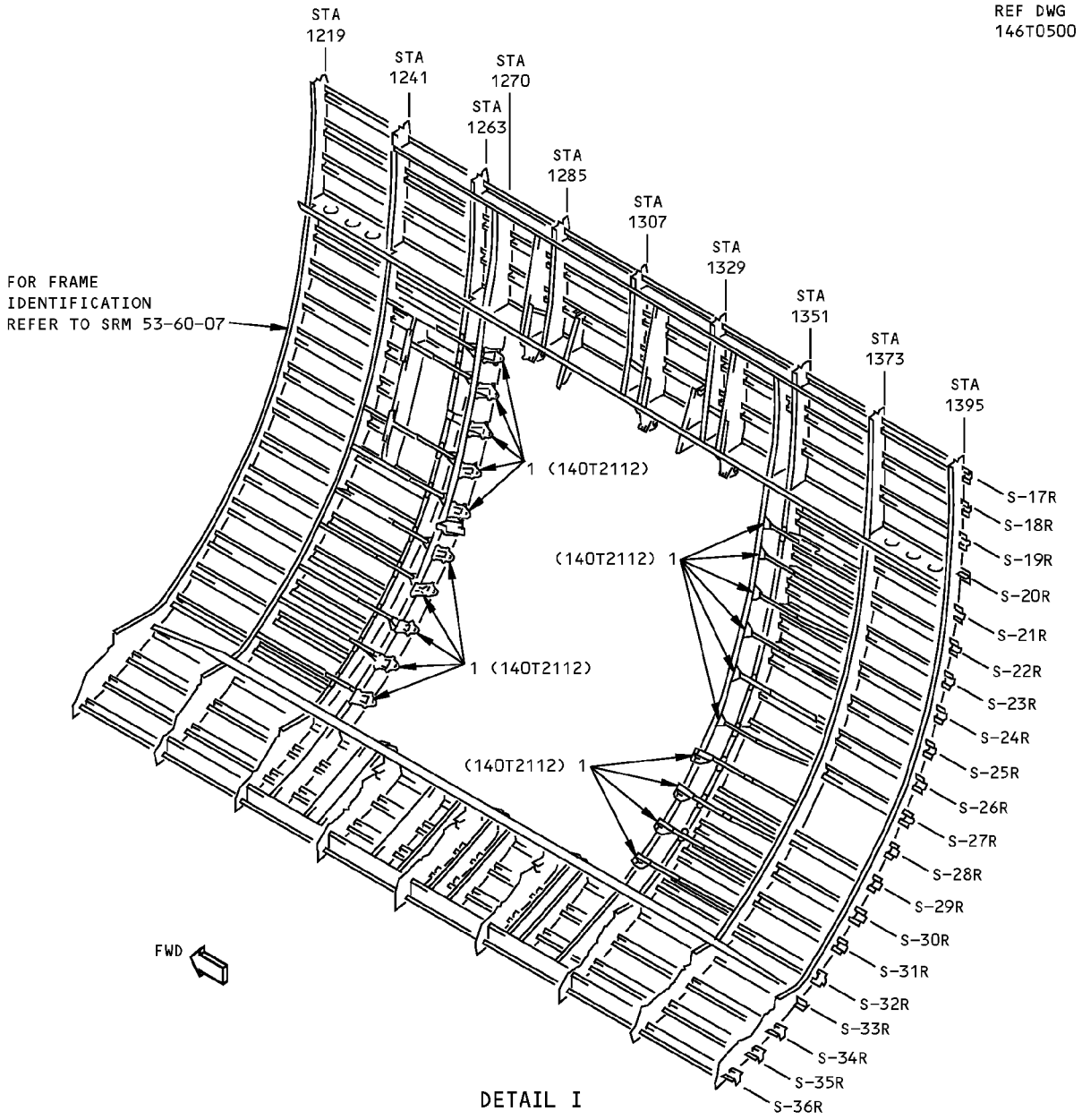
LIST OF MATERIALS

Section 46 - Type 1 Door (Emergency Exit) Fittings Identification
Figure 1 (Sheet 2 of 2)

IDENTIFICATION 6 - SECTION 46 - STANDARD CARGO DOOR FITTINGS



Section 46 - Standard Cargo Door Fittings Identification
Figure 1 (Sheet 1 of 2)

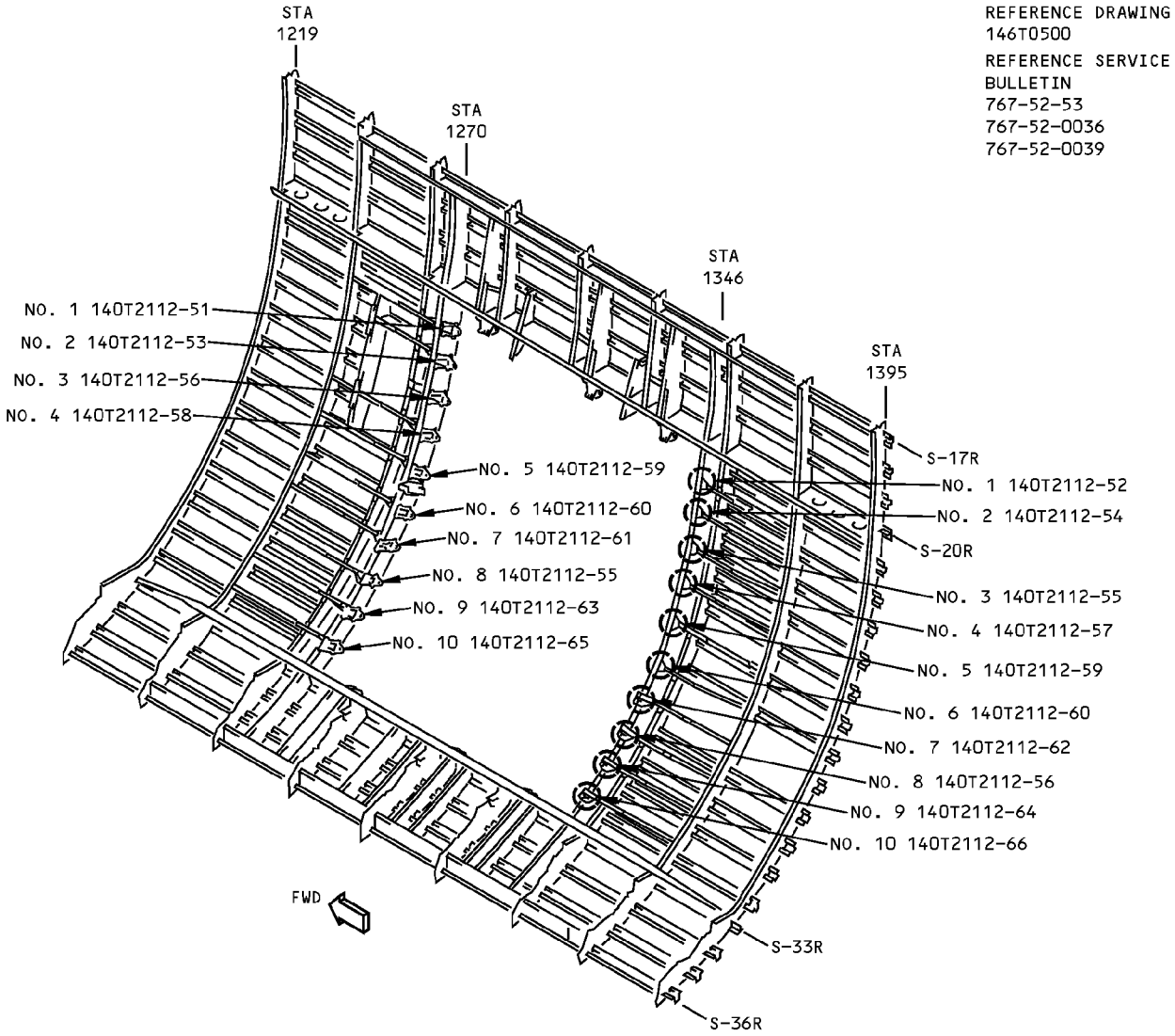


ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FITTING		7075-T73	

LIST OF MATERIALS FOR DETAIL I

Section 46 - Standard Cargo Door Fittings Identification
Figure 1 (Sheet 2 of 2)

ALLOWABLE DAMAGE 1 - SECTION 46 - CARGO DOOR FITTINGS



LOCATION AND PART NUMBERS OF DOOR STOP FITTINGS

DESCRIPTION	CRACKS	NICKS, GOUGES, SCRATCHES AND CORROSION	DENTS	HOLES AND PUNCTURES
DOOR STOP FITTING	NOT PERMITTED	A B	NOT PERMITTED	NOT PERMITTED

ALLOWABLE DAMAGE FOR CARGO DOOR STOP FITTINGS

DETAIL I

Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 1 of 14)

NOTES

- ALL DIMENSIONS SHOWN ARE IN INCHES.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- AFTER THE CLEANUP, APPLY A CHEMICAL CONVERSION COATING TO THE BARE SURFACES. REFER TO SRM 51-20-01. THEN APPLY TWO COATS OF BMS 10-11, TYPE I PRIMER AND ONE COAT OF BMS 10-11, TYPE II FINISH.
- REFER TO SRM 51-20-06 FOR SHOT PEEN INTENSITIES REQUIRED WHEN YOU REMOVE THE DAMAGE

[A] SEE DETAIL II FOR ALLOWABLE DAMAGE LIMITS COMMON TO ALL DOOR STOP FITTINGS.

[B] REWORK LIMITS ARE RESTRICTED TO TWO ADJACENT DOOR STOP FITTINGS FOR EACH DOOR EDGE FRAME.

[C] SEE DETAILS VI TO XV FOR ALLOWABLE DAMAGE LIMITS APPLICABLE TO SPECIFIC DOOR STOP FITTINGS AT THIS LOCATION.

[D] DO THE FOLLOWING STEPS TO REMOVE DAMAGE:

CAUTION: MAKE SURE THE BEARING PLATE IS NOT DAMAGED AND IS FULLY SEATED AGAINST THE FITTING.

- REMOVE DAMAGE UP TO THE DEPTH SHOWN IN DETAILS VI TO XV WITH A 1.0 INCH (25 mm) RADIUS MINIMUM. TAPER OUT AT 20 X DEPTH. MAKE THE SURFACE FINISH 63 MICROINCHES Ra. MAKE SURE THE TRANSITION WITH THE ADJOINING SURFACES IS SMOOTH.
- DO A HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTION OF THE REPAIR AREA TO MAKE SURE ALL OF THE DAMAGE HAS BEEN REMOVED. REFER TO NDT PART 6, 51-00-01.
- SHOT PEEN AS SPECIFIED IN SRM 51-20-06
- APPLY A CHEMICAL CONVERSION COATING TO ALL BARE ALUMINUM SURFACES. REFER TO SRM 51-20-01
- APPLY TWO COATS OF BMS 10-11 TYPE I PRIMER TO THE REPAIR AREA.
- APPLY ONE COAT OF BMS 10-11 TYPE II FINISH TO THE REPAIR AREA

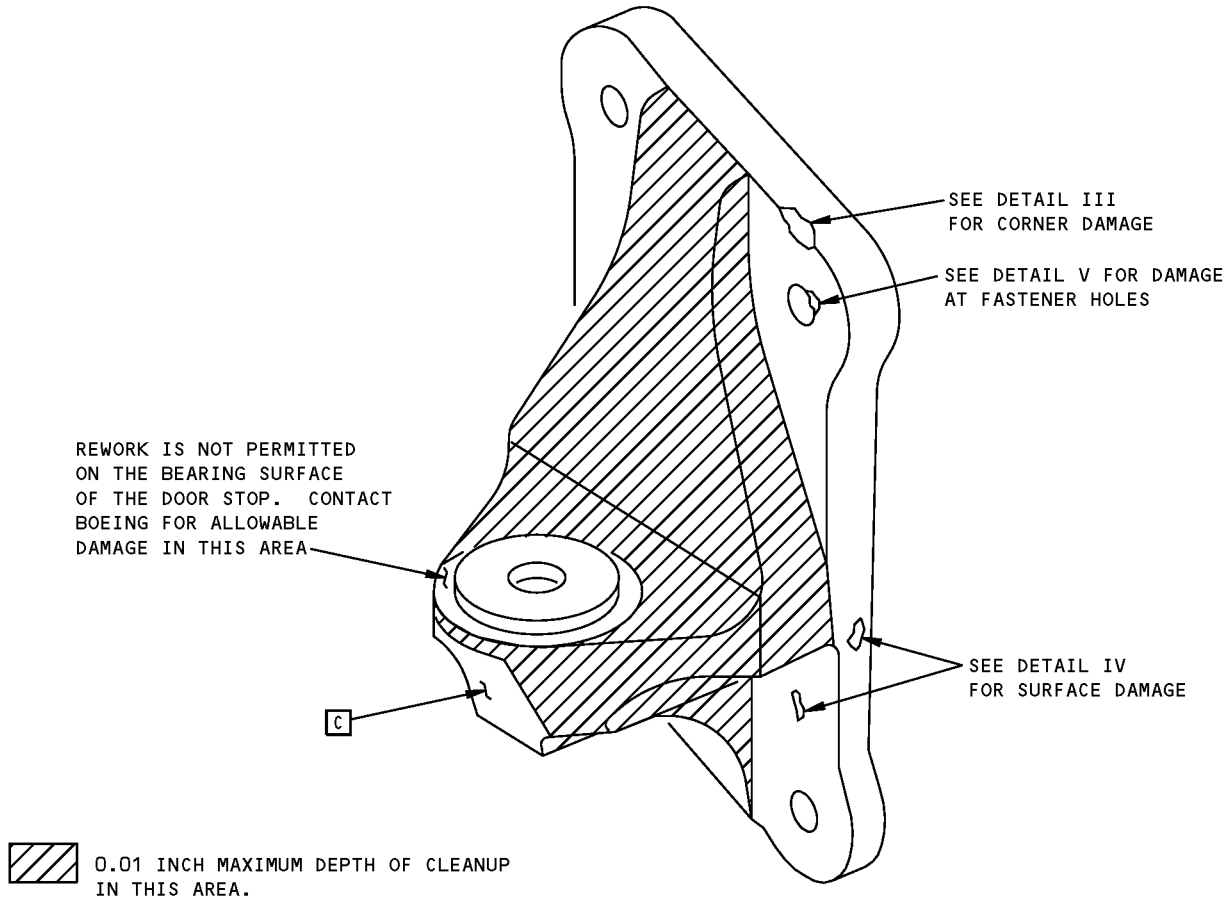
[E] CONTACT BOEING FOR LOCAL CHAMFERS AT THE EDGES OF THIS SURFACE WHICH ARE GREATER THAN THE DEPTH LIMIT SHOWN

[F] IF YOU REWORK THIS SURFACE, DO A LATERAL STOP GAP CHECK. THE AIRCRAFT MUST BE UNLOADED, AND ON IT'S LANDING GEAR, TO DO THIS CHECK. ADJUST ALL FOUR LATERAL STOPS. REFER TO AMM 52-35-00 FOR LATERAL CARGO DOOR AJUSTMENT.

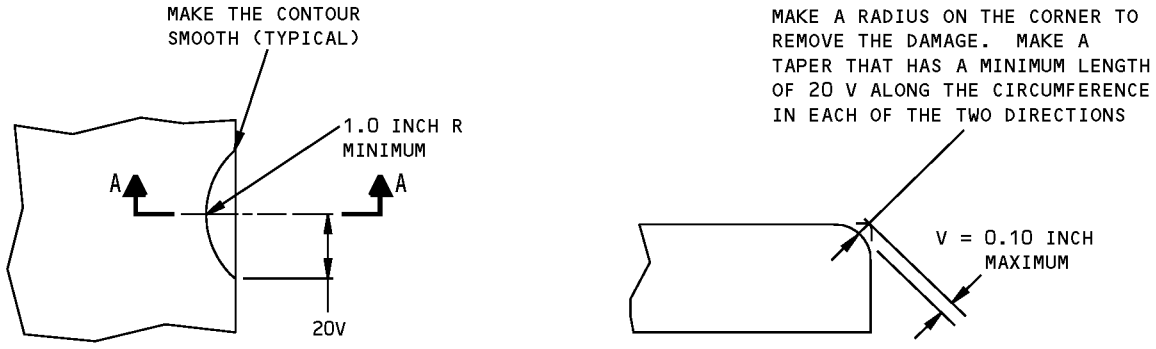
[G] KEEP A MINIMUM DISTANCE OF 0.040 INCH (1.02 mm) FROM THE EDGE OF THE BLENDOUT TO THE INBOARD FACE OF THE DOOR STOP FITTING. SEE SECTION D-D.

[H] DO NOT BLEND INTO THE SHADED SECTION OF THE FITTING. MAKE SURE THE BLENDED AREA IS LIMITED TO THE FLAT SURFACE NEAR THE FASTENER HOLE.

Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 2 of 14)



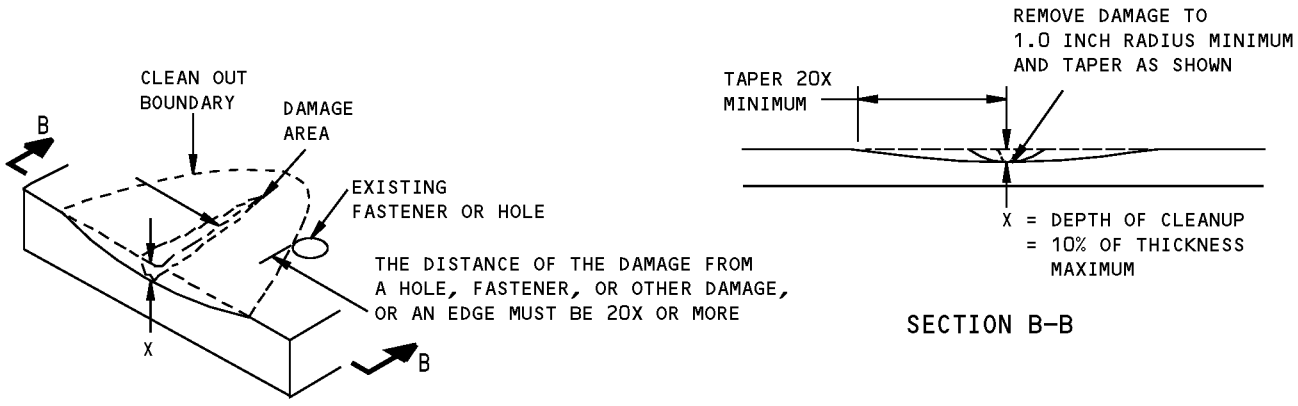
TYPICAL DOOR STOP
DETAIL II



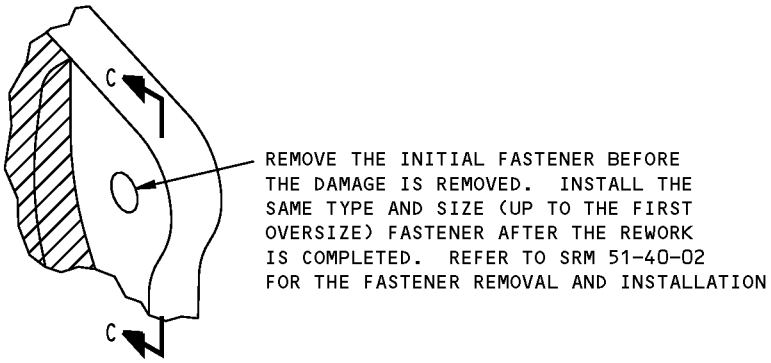
SECTION A-A

DETAIL III

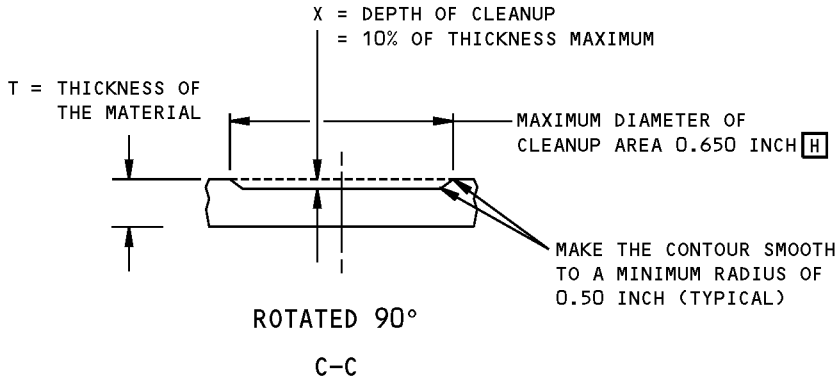
Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 3 of 14)



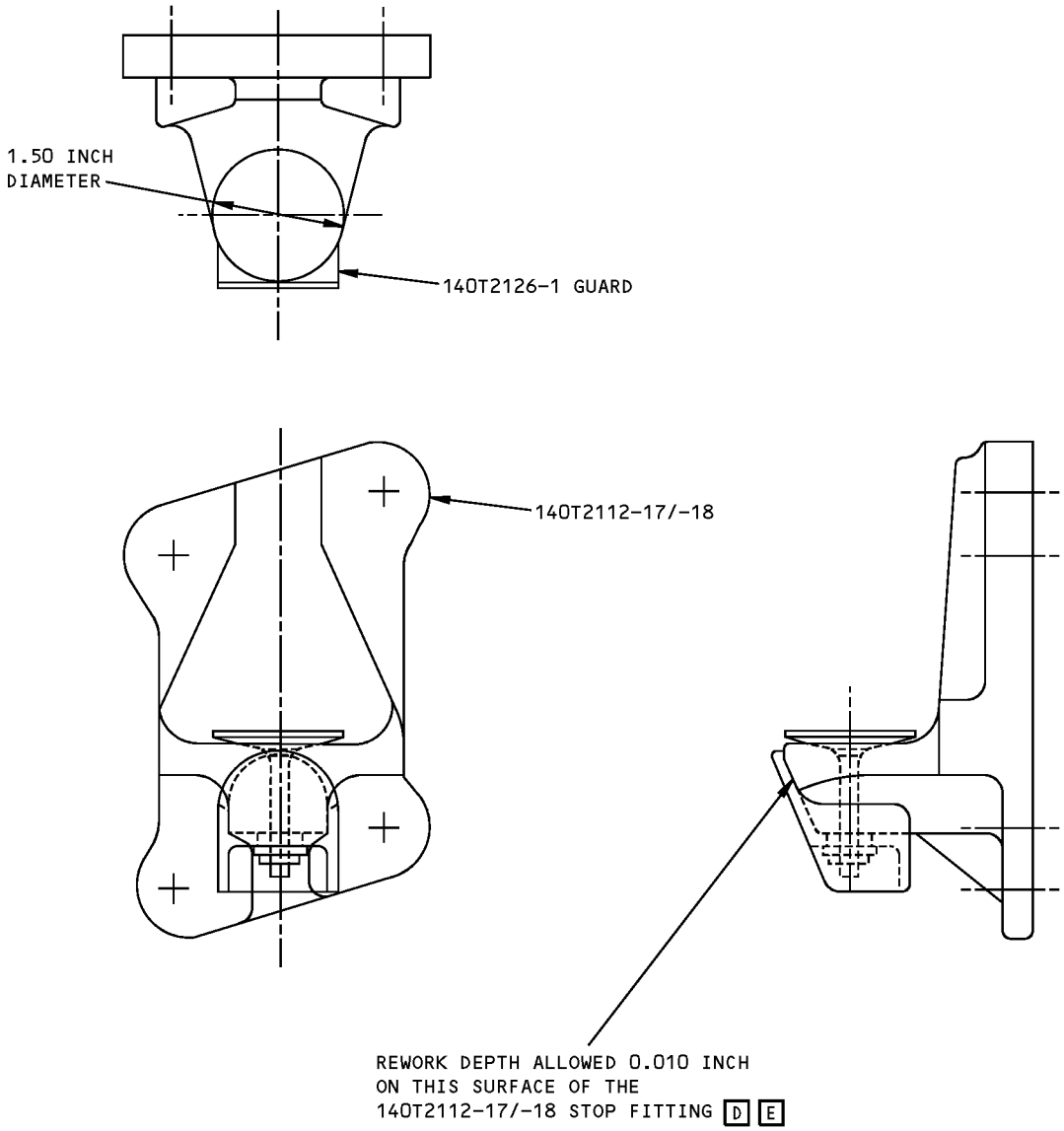
REMOVAL OF DAMAGED MATERIAL ON A SURFACE
DETAIL IV



REMOVAL OF DAMAGE AT A FASTENER HOLE
DETAIL V



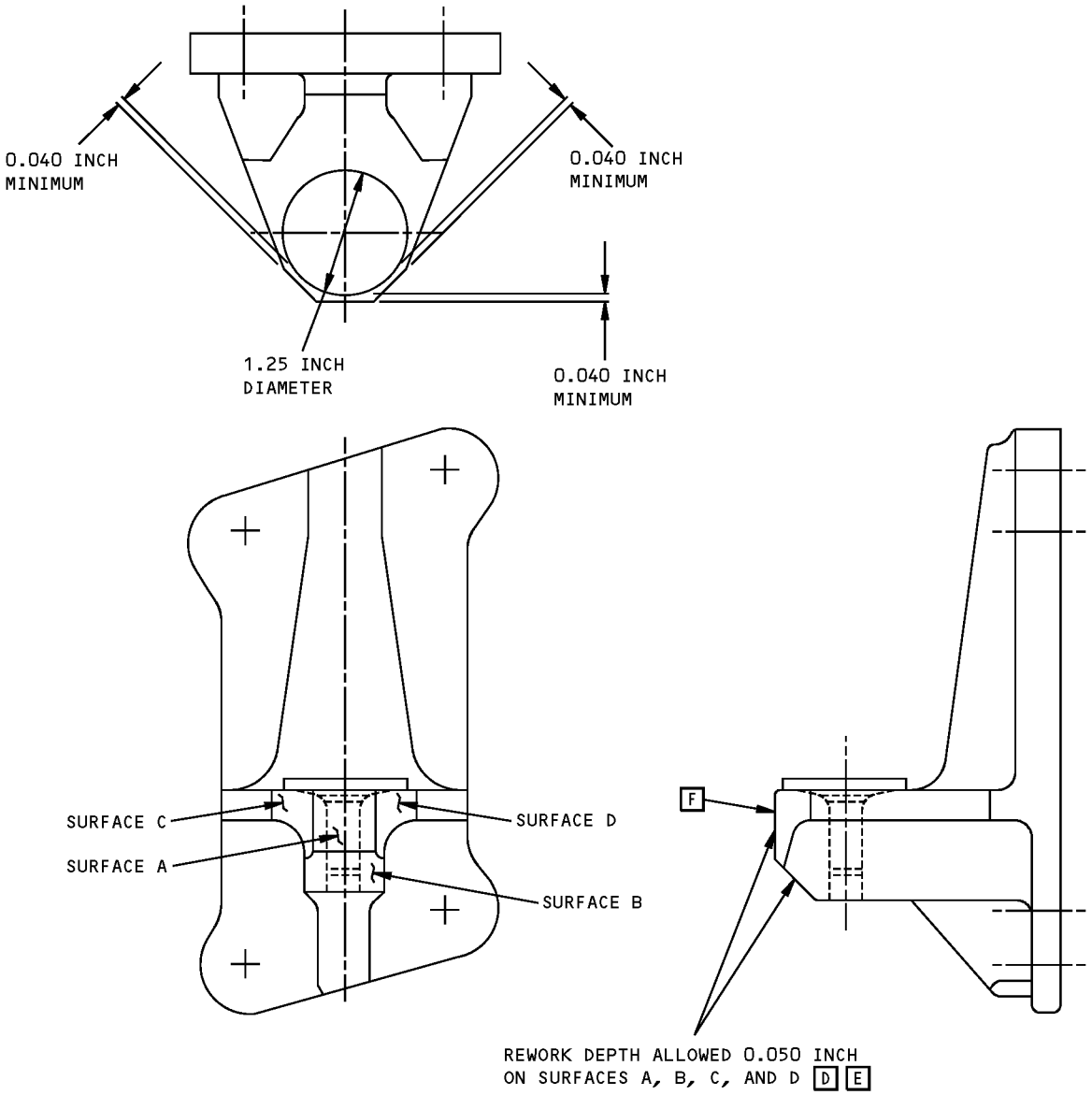
Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 4 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 1
PART NUMBER 140T2112-51/-52

DETAIL VI

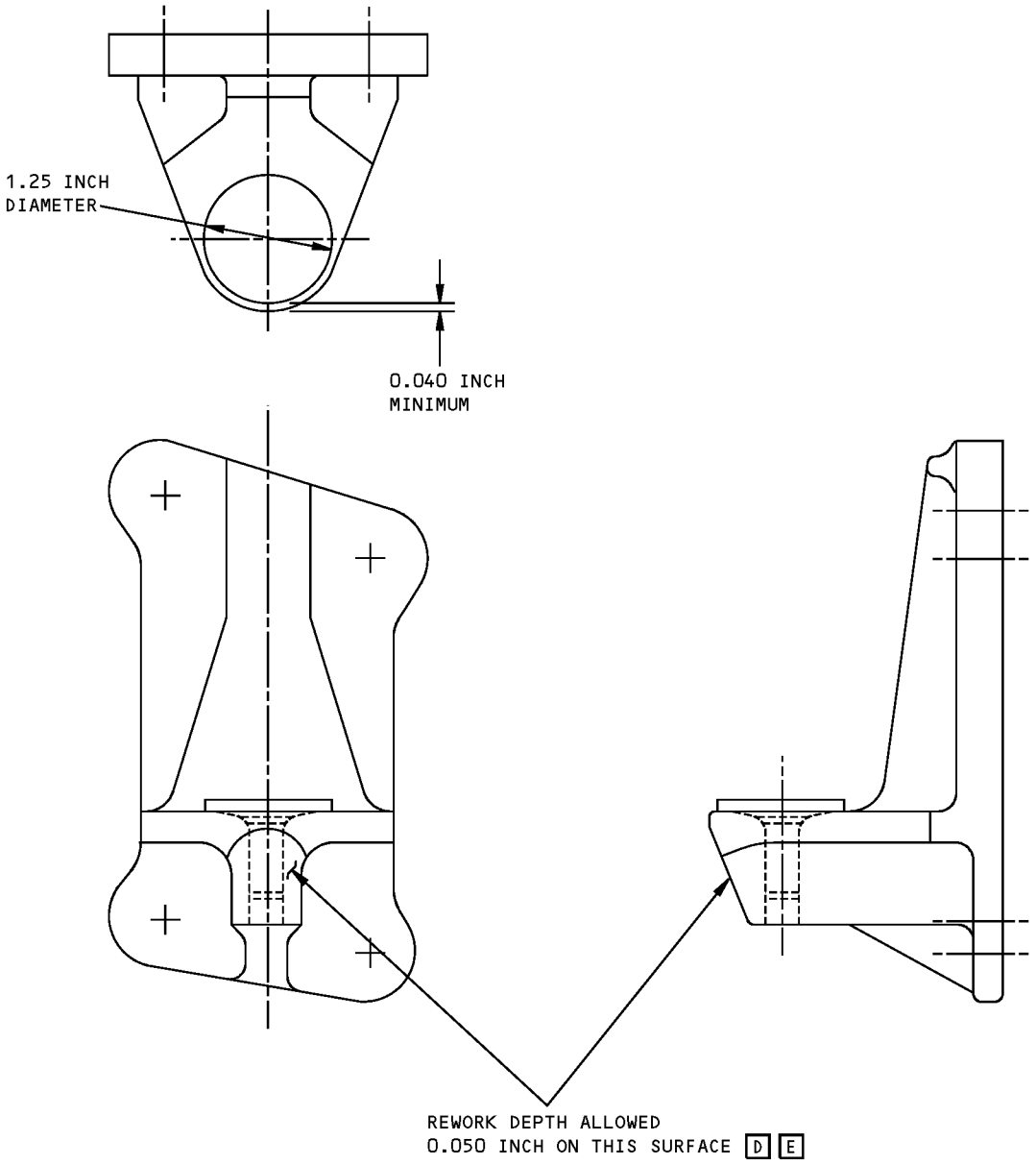
Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 5 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 2
PART NUMBER 140T2112-53/-54

DETAIL VII

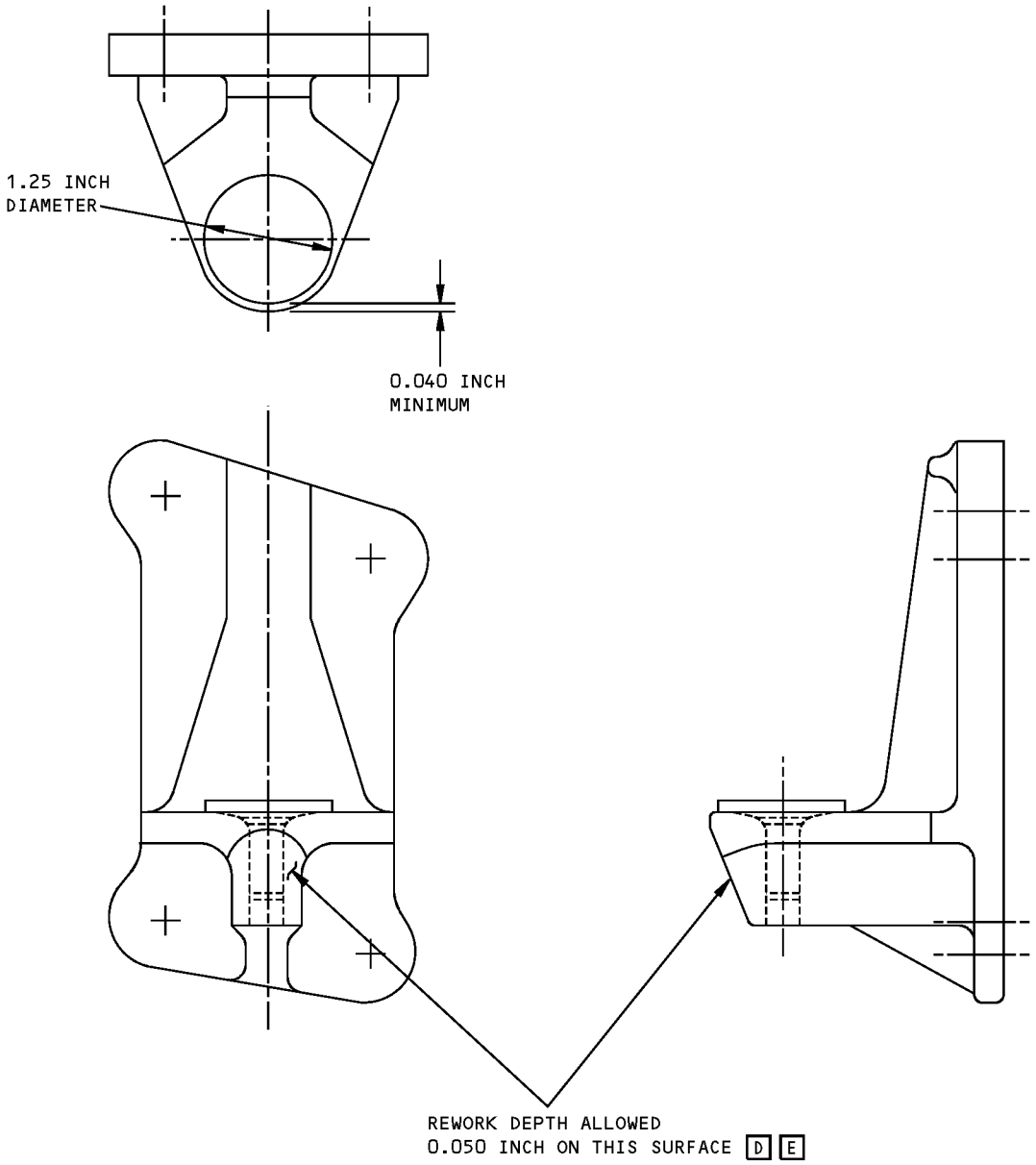
Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 6 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 3
PART NUMBER 140T2112-55/-56

DETAIL VIII

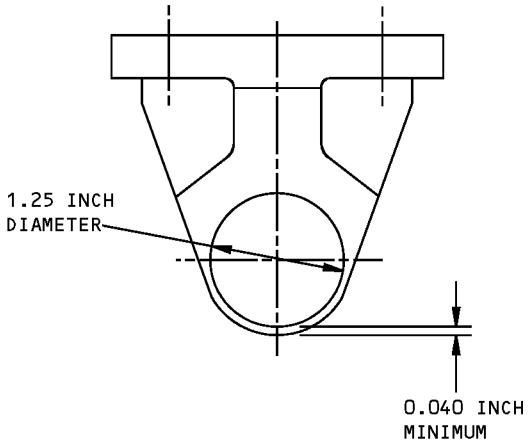
Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 7 of 14)

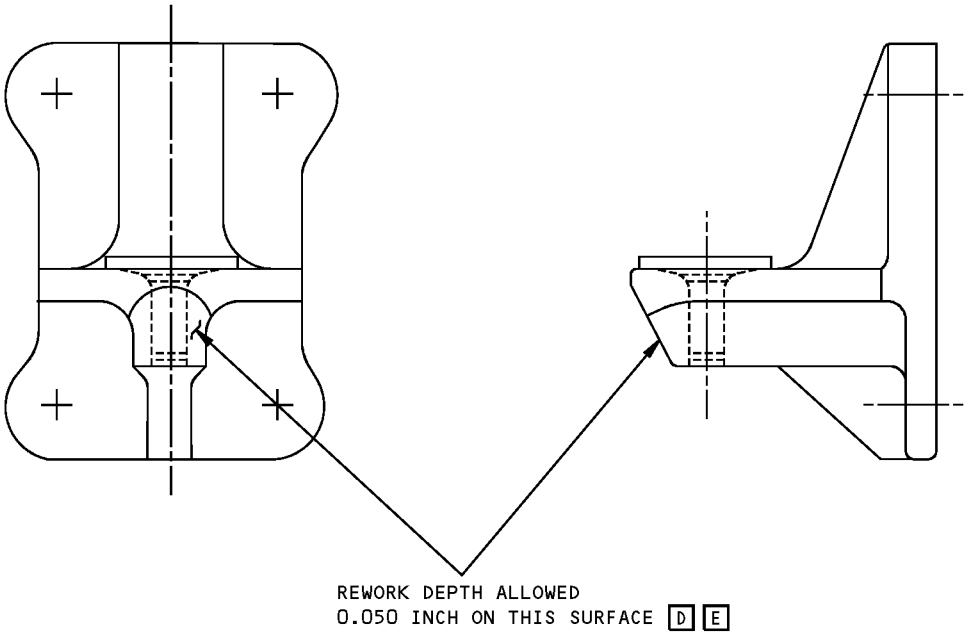


MAXIMUM REWORK LIMITS FOR STOP NUMBER 4
PART NUMBER 140T2112-57/-58

DETAIL IX

Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 8 of 14)

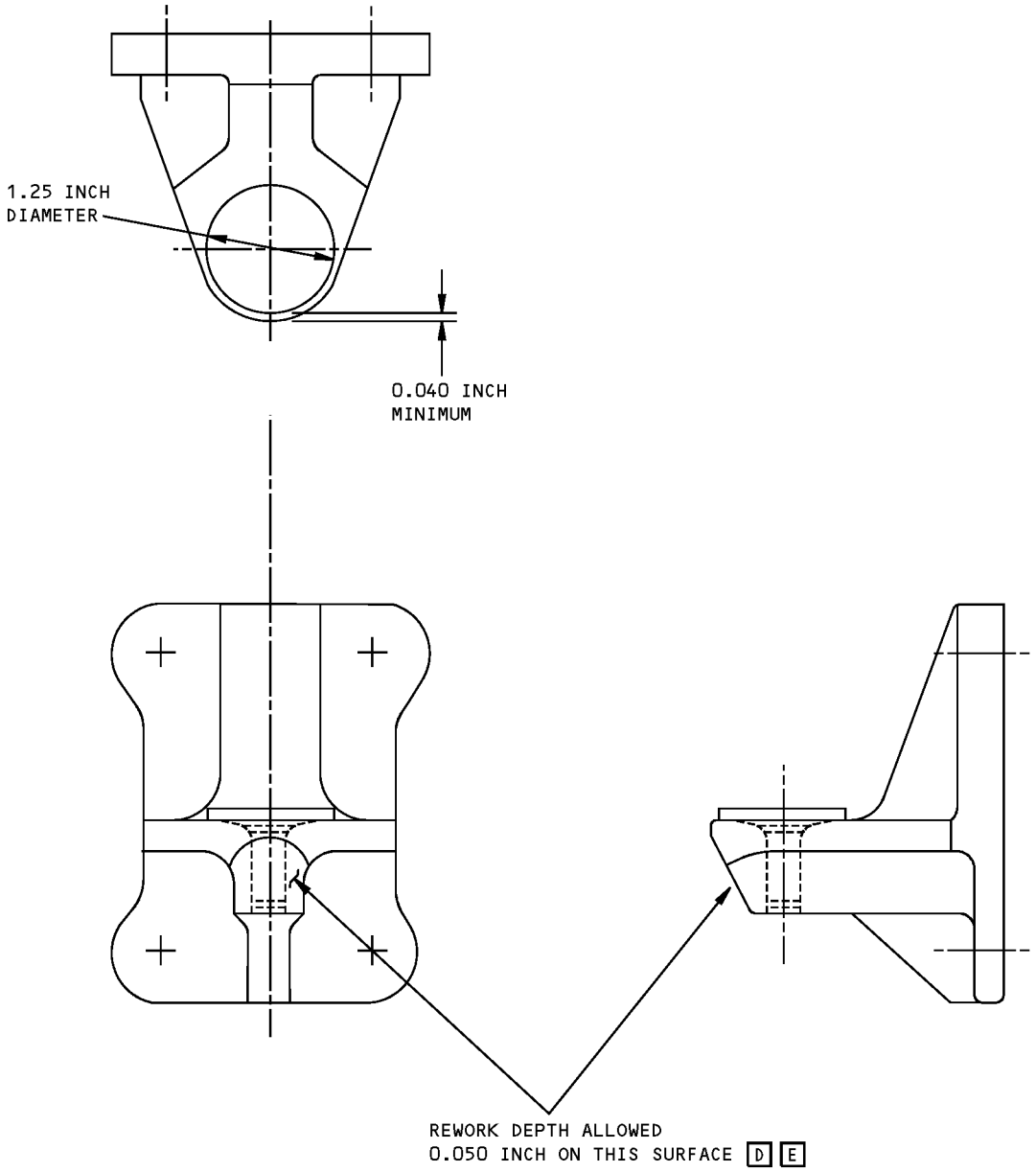




MAXIMUM REWORK LIMITS FOR STOP NUMBER 5
PART NUMBER 140T2112-59

DETAIL X

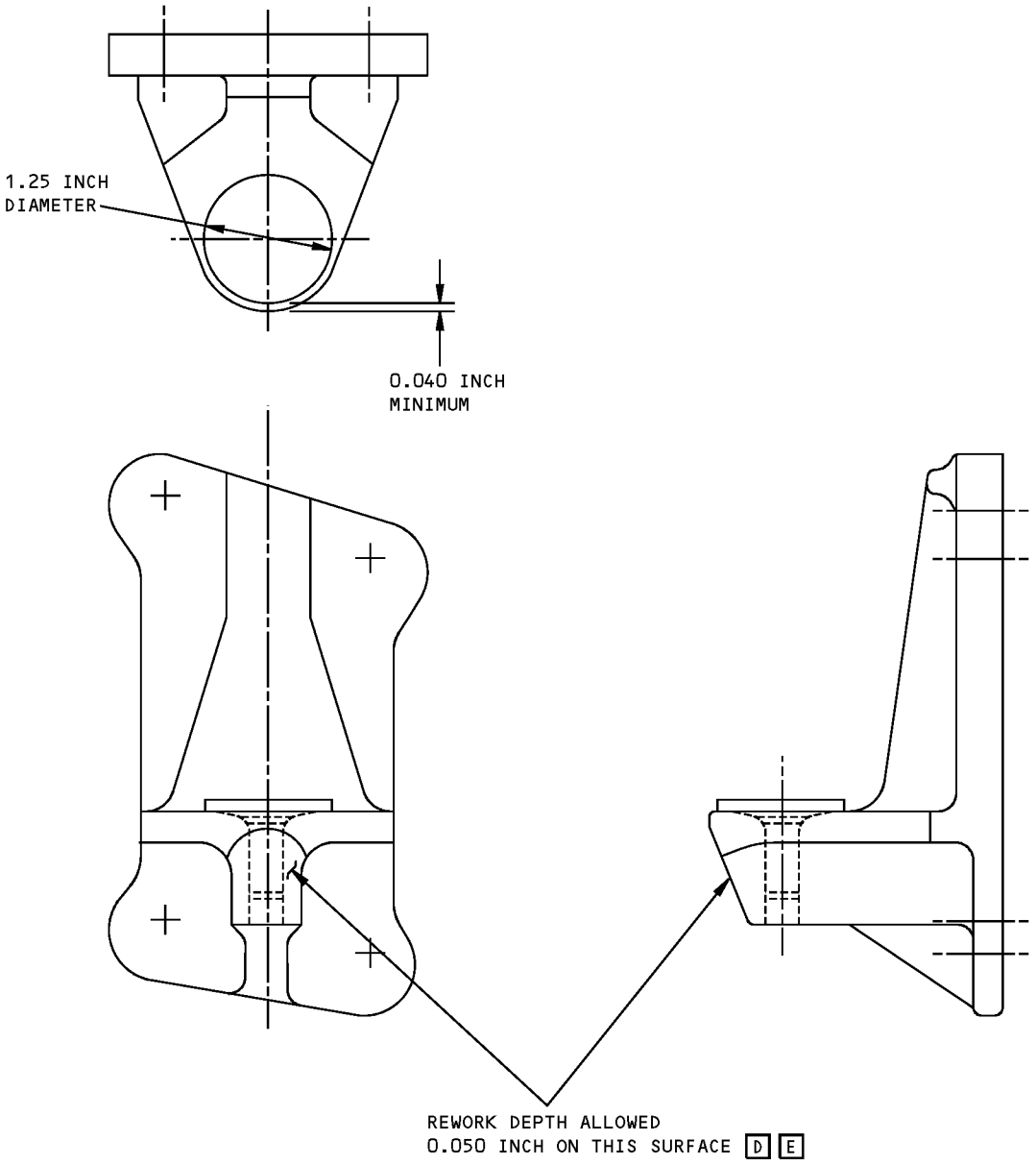
Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 9 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 6
PART NUMBER 140T2112-60

DETAIL XI

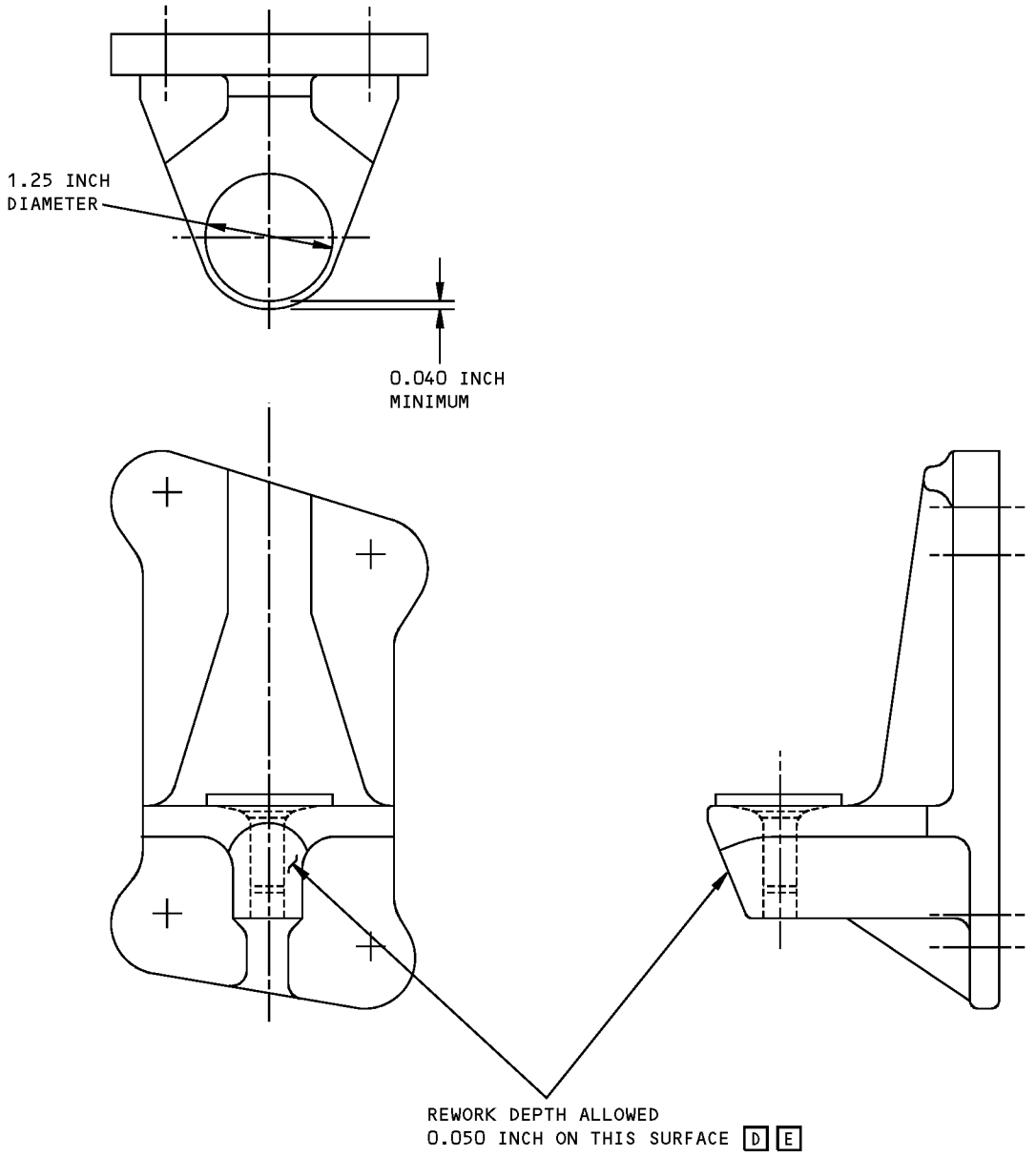
Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 10 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 7
PART NUMBER 140T2112-61/-62

DETAIL XII

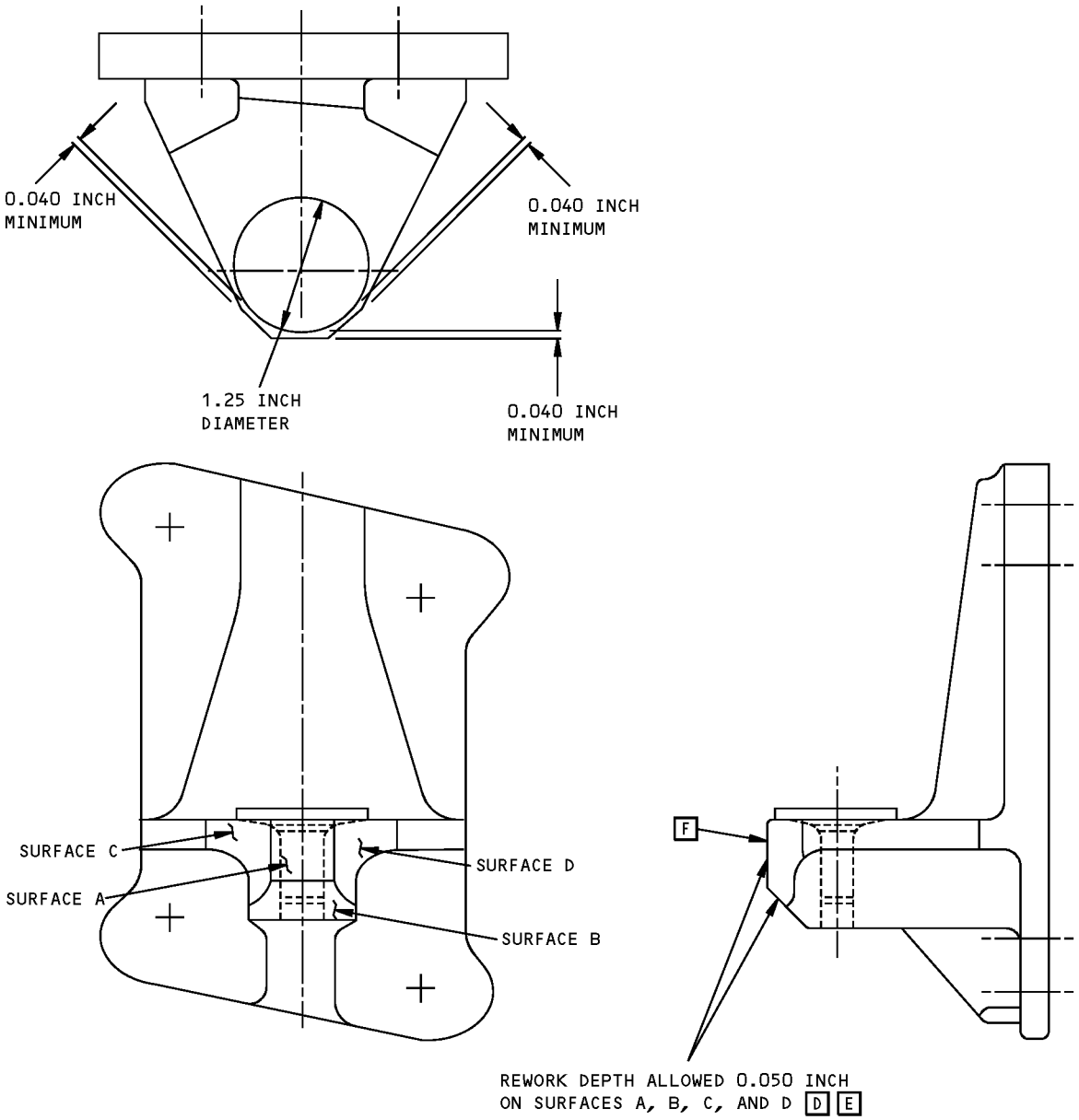
Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 11 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 8
PART NUMBER 140T2112-55/-56

DETAIL XIII

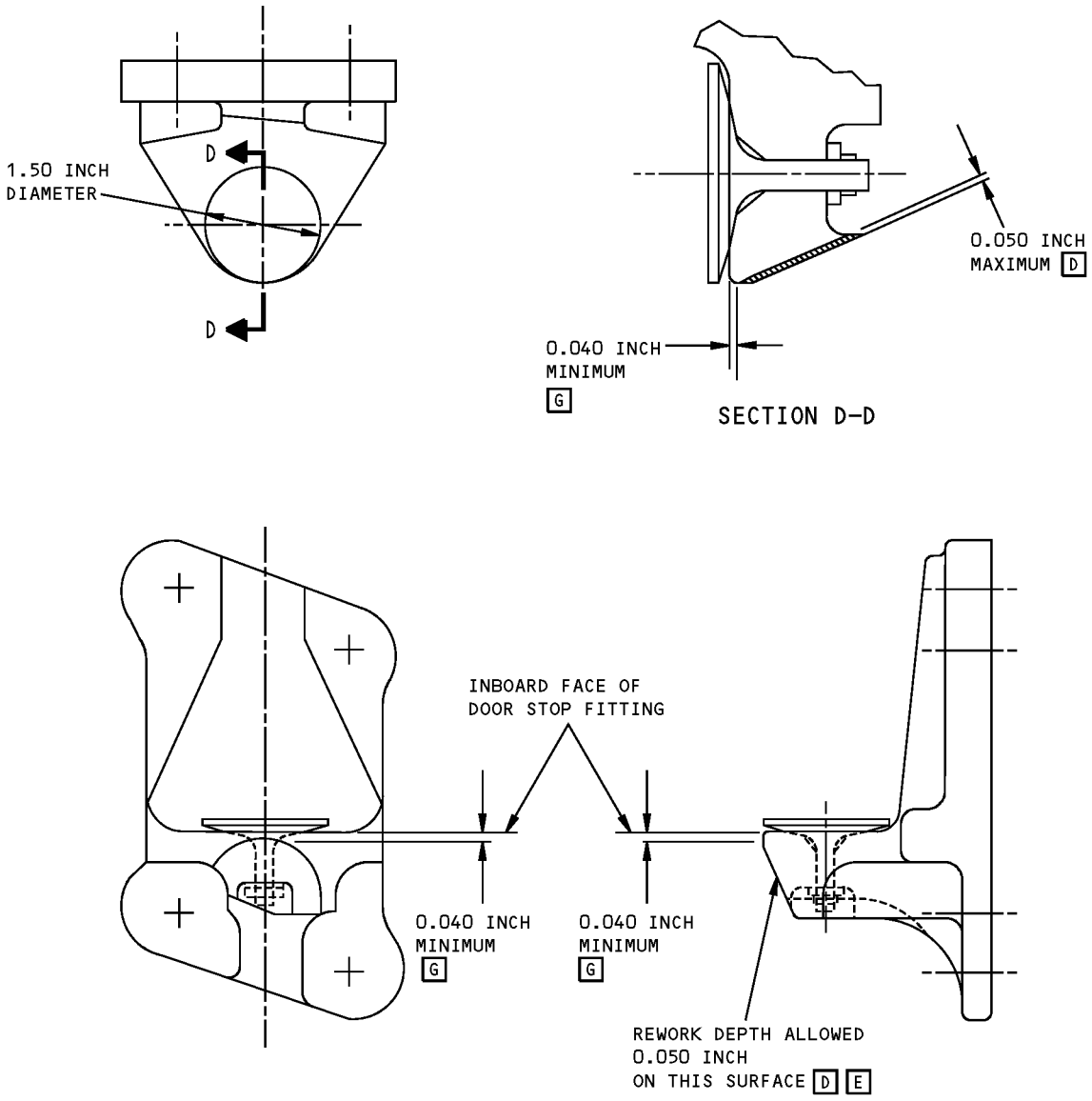
Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 12 of 14)



MAXIMUM REWORK LIMITS FOR STOP NUMBER 9
PART NUMBER 140T2112-63/-64

DETAIL XIV

Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 13 of 14)

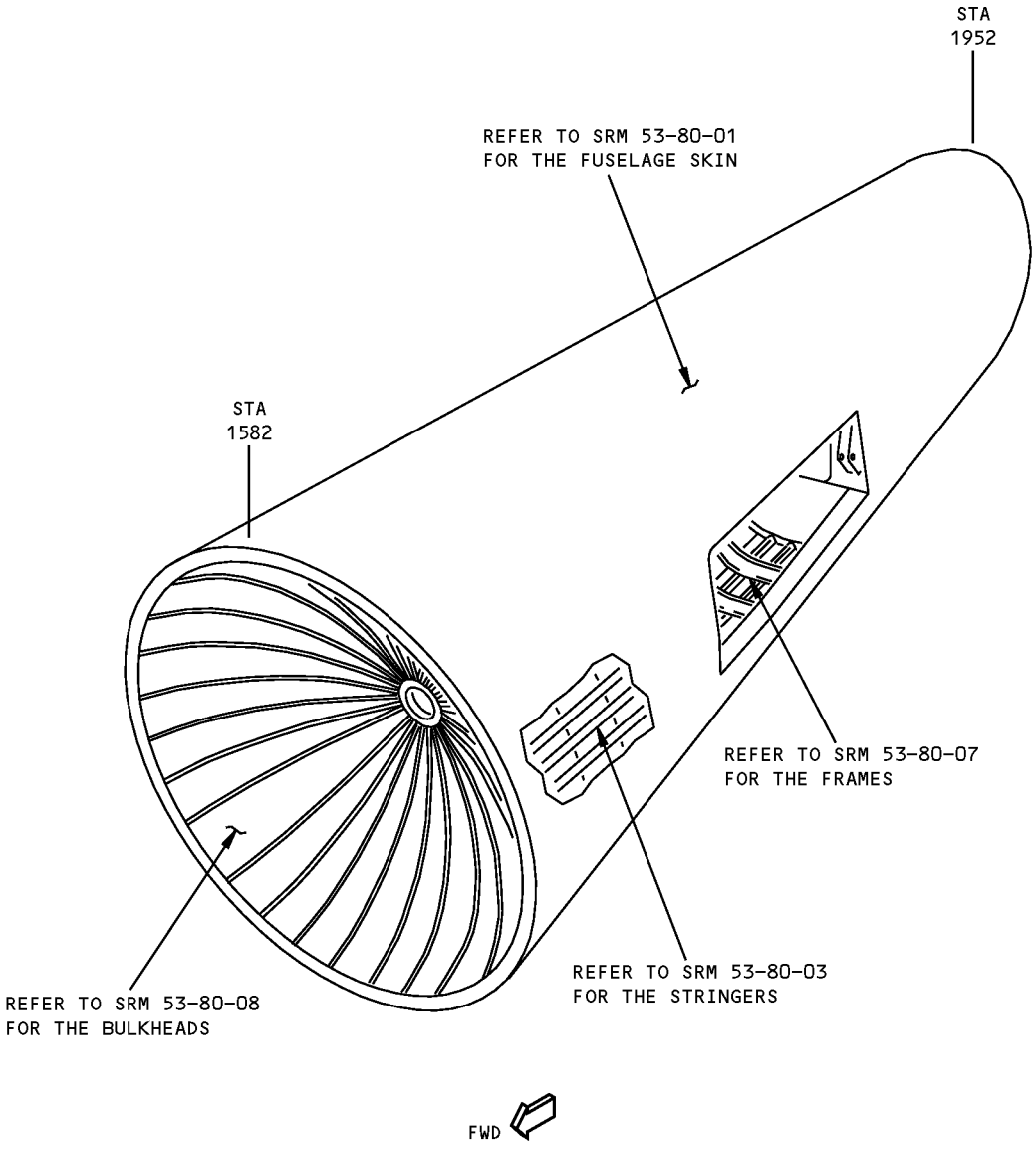


MAXIMUM REWORK LIMITS FOR STOP NUMBER 10
PART NUMBER 140T2112-65/-66

DETAIL XV

Section 46 - Cargo Door Fittings Allowable Damage
Figure 101 (Sheet 14 of 14)

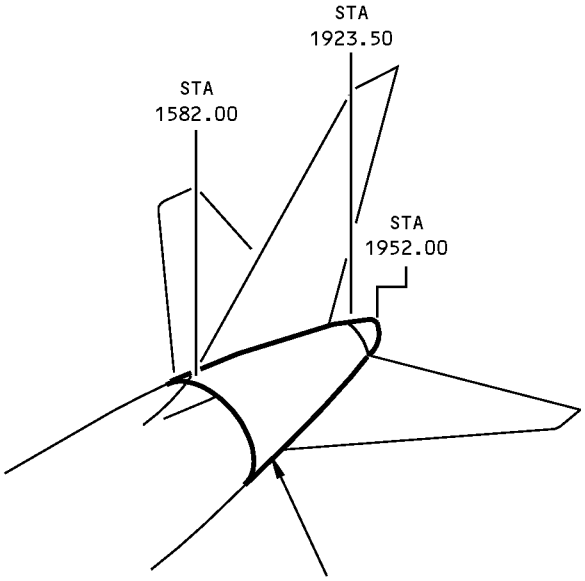
GENERAL - SECTION 48 STRUCTURE DIAGRAM



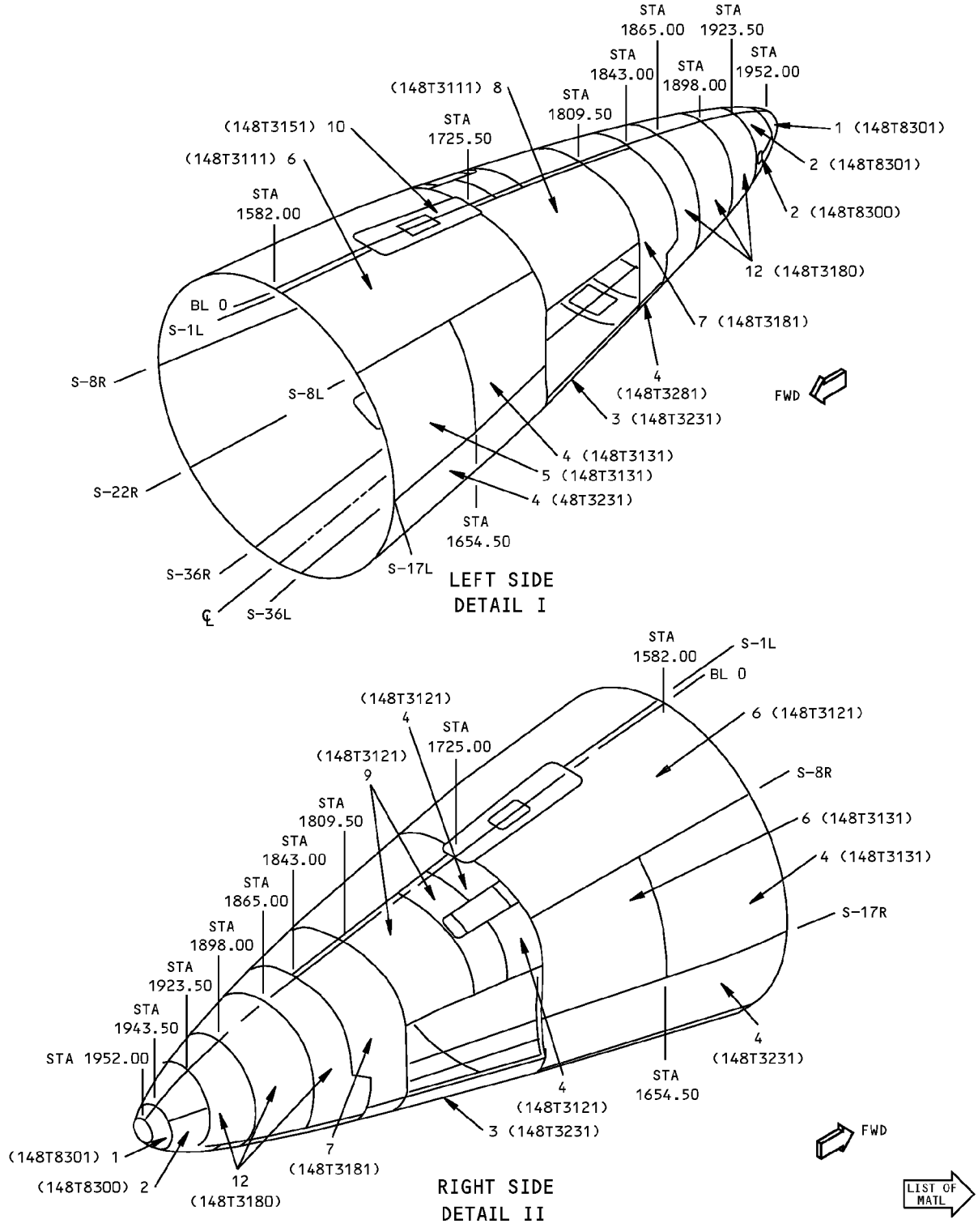
Section 48 Structure Diagram
Figure 1

IDENTIFICATION 1 - SECTION 48 - SKIN

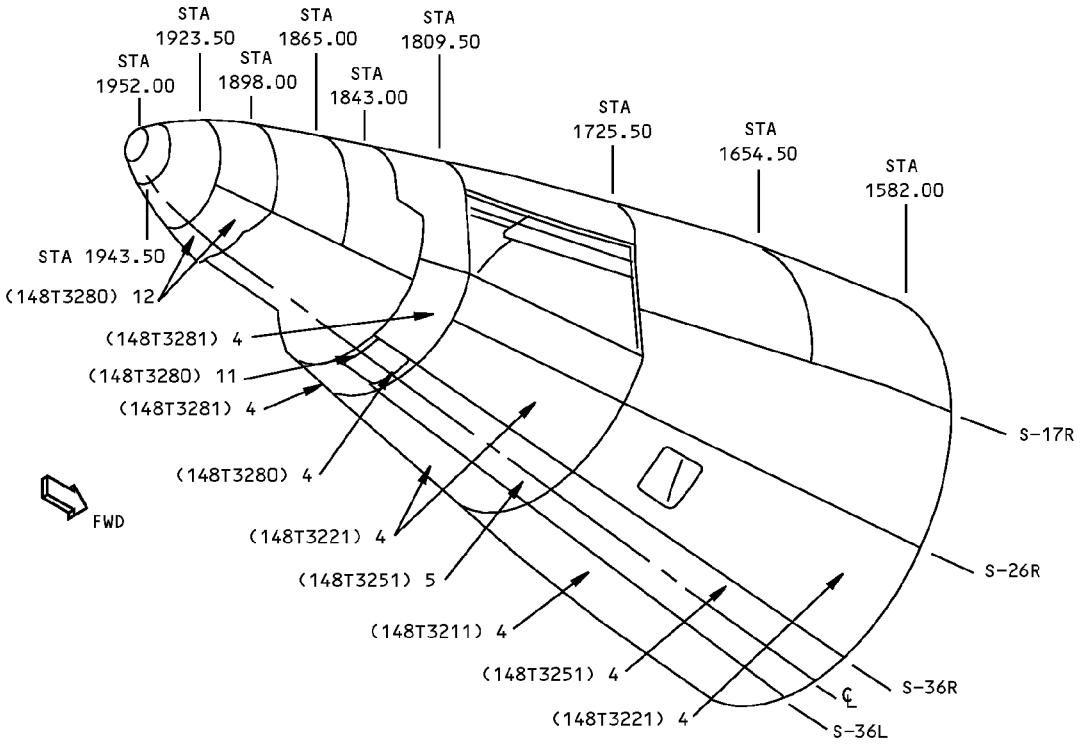
REFERENCE DRAWINGS
148T8300
148T3180
140T1521



Section 48 - Skin Identification
Figure 1 (Sheet 1 of 3)



Section 48 - Skin Identification
Figure 1 (Sheet 2 of 3)



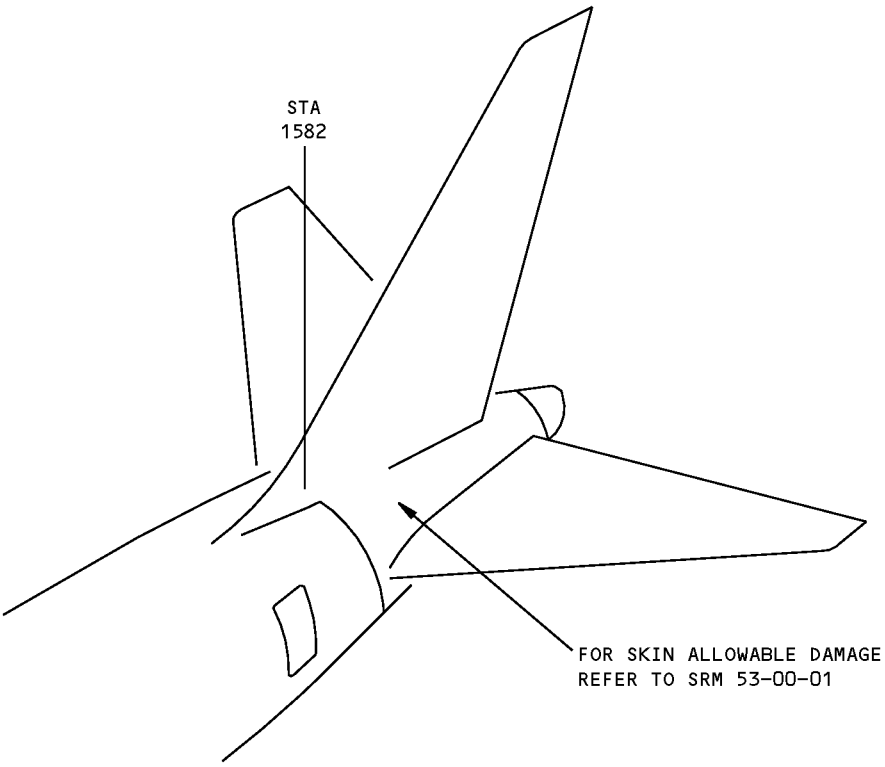
BOTTOM RIGHT VIEW
DETAIL III

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.025	CRES 321 ANNEALED	
2	SKIN	0.050	CLAD 2024-T3	
3	SKIN	0.080	CLAD 7075-T6	
4	SKIN	0.080	CLAD 7075-T6 (CHEM-MILLED TO 0.040 MIN)	
5	SKIN	0.080	CLAD 7075-T6 (CHEM-MILLED TO 0.056 MIN)	
6	SKIN	0.100	CLAD 7075-T6 (CHEM-MILLED TO 0.040 MIN)	
7	SKIN	0.100	CLAD 7075-T6 (CHEM-MILLED TO 0.050 MIN)	
8	SKIN	0.100	CLAD 7075-T6 (CHEM-MILLED TO 0.056 MIN)	
9	SKIN	0.140	CLAD 7075-T6 (CHEM-MILLED TO 0.056 MIN)	
10	SKIN	0.250	7075-T7351 (MACHINED TO 0.060 MIN)	
11	SKIN	0.056	CLAD 7075-T6	
12	SKIN (BONDED ASSEMBLY) 2 PLIES	0.016	CLAD 2024-T3	

LIST OF MATERIALS FOR DETAILS I, II AND III

Section 48 - Skin Identification
Figure 1 (Sheet 3 of 3)

ALLOWABLE DAMAGE 1 - SECTION 48 SKIN



Section 48 Skin Allowable Damage
Figure 101

REPAIR GENERAL - SERVICE BULLETIN REPAIR CHART

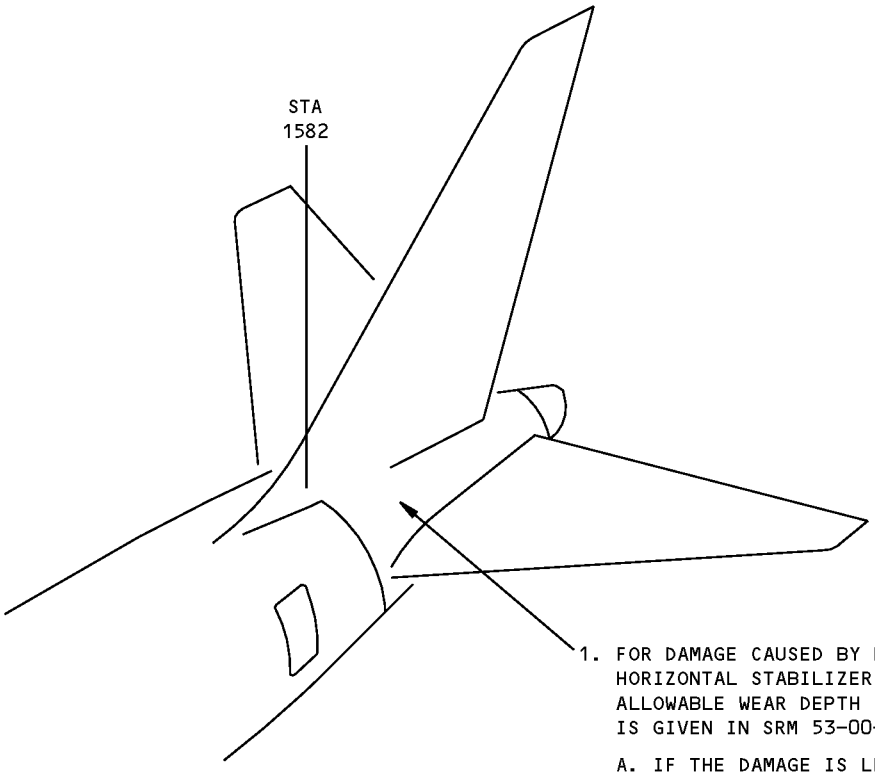
SERVICE BULLETIN REPAIRS - SECTION 48 FUSELAGE SKIN

These Service Bulletins contain fuselage skin repairs that you can use when there are specified types of damage. Usually, the Service Bulletins also contain preventive modification data that we recommend you use so that structural damage does not occur.

DAMAGED AREA	CUM LINE NUMBER EFFECTIVITY	SB NUMBER
FUSELAGE SKIN - STA 1582 TO 1629 - SKIN CRACKS AT STRINGERS 31 AND 32 LEFT	ALL 767 AIRPLANES 1 THROUGH 411	767-53-0052

Service Bulletin Repair Chart
Figure 201

REPAIR 1 - SECTION 48 - TYPICAL SKIN



1. FOR DAMAGE CAUSED BY RUBBING OF THE HORIZONTAL STABILIZER SEAL, FIND THE ALLOWABLE WEAR DEPTH (AFTER CLEANUP) THAT IS GIVEN IN SRM 53-00-01.
   A. IF THE DAMAGE IS LESS THAN THE ALLOWABLE WEAR DEPTH, YOU CAN INSTALL A RUB STRIP AS GIVEN IN REPAIR 2.
   B. IF THE DAMAGE IS MORE THAN THE ALLOWABLE WEAR DEPTH, DO THE REPAIR THAT IS GIVEN IN REPAIR 3.
2. FOR OTHER DAMAGE, REFER TO SRM 53-00-01.

Section 48 - Typical Skin Repairs
Figure 201

REPAIR 2 - RUB STRIP FOR FUSELAGE SKIN WEAR CAUSED BY THE HORIZONTAL STABILIZER SEAL

APPLICABILITY
THE HORIZONTAL STABILIZER SEAL MAY CAUSE WEAR OF THE SKIN WHERE IT CONTACTS THE FUSELAGE. THIS REPAIR IS ONLY APPLICABLE TO WEAR THAT DOES NOT EXCEED THE ALLOWABLE DAMAGE LIMITS OF SRM 53-00-01. REFER TO REPAIR 3 FOR A REPAIR APPLICABLE TO WEAR THAT EXCEEDS THE ALLOWABLE DAMAGE LIMITS.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. Blend out the damage caused by rubbing of the horizontal stabilizer seal.
3. Make the rub strips. See Table I, and Detail I.
4. Put the rub strips in place and drill the fastener holes.
5. Remove the burrs and sharp edges from the rub strips.
6. Apply a chemical conversion coating to the bare areas of the fuselage skin. Refer to SRM 51-20-01.
7. Cadmium plate the rub strips. Refer to SOPM 20-42-05.
8. Apply one layer of BMS 10-79, Type III primer to the rub strips and the bare areas of the fuselage skin. Refer to AMM 51-21.
9. Install the rub strips with BMS 5-95 sealant between the faying surfaces. Install the nonaluminum fasteners wet with BMS 5-95 sealant. Make a fillet with the sealant approximately 0.06 inch (1.5 mm) wide around the edge of the rub strips. Fill countersinks with countersink repair washers. Refer to SRM 51-40-08.
10. Apply finish to the repair area. Refer to AMM 51-21.

NOTES

- THIS REPAIR IS A CATEGORY A REPAIR. THE INSPECTIONS GIVEN IN THE MAINENANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLLERANCE OF THE INITIAL STRUCTURE WITH THIS CATEGORY A REPAIR INSTALLED.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR THE INTERIOR AND EXTERIOR FINISHES
  - SOPM 20-42-05 FOR THE CADIMIUM PLATING OF METALS
  - SRM 51-10-01 FOR THE AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR THE PROTECTIVE TREATMENT OF METALLIC AND NONMETALLIC MATERIALS.
  - SRM 51-20-05 FOR THE REPAIR SEALING
  - SRM 51-40 FOR THE FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, EDGE MARGINS AND COUNTERSINK REPAIR WASHERS.

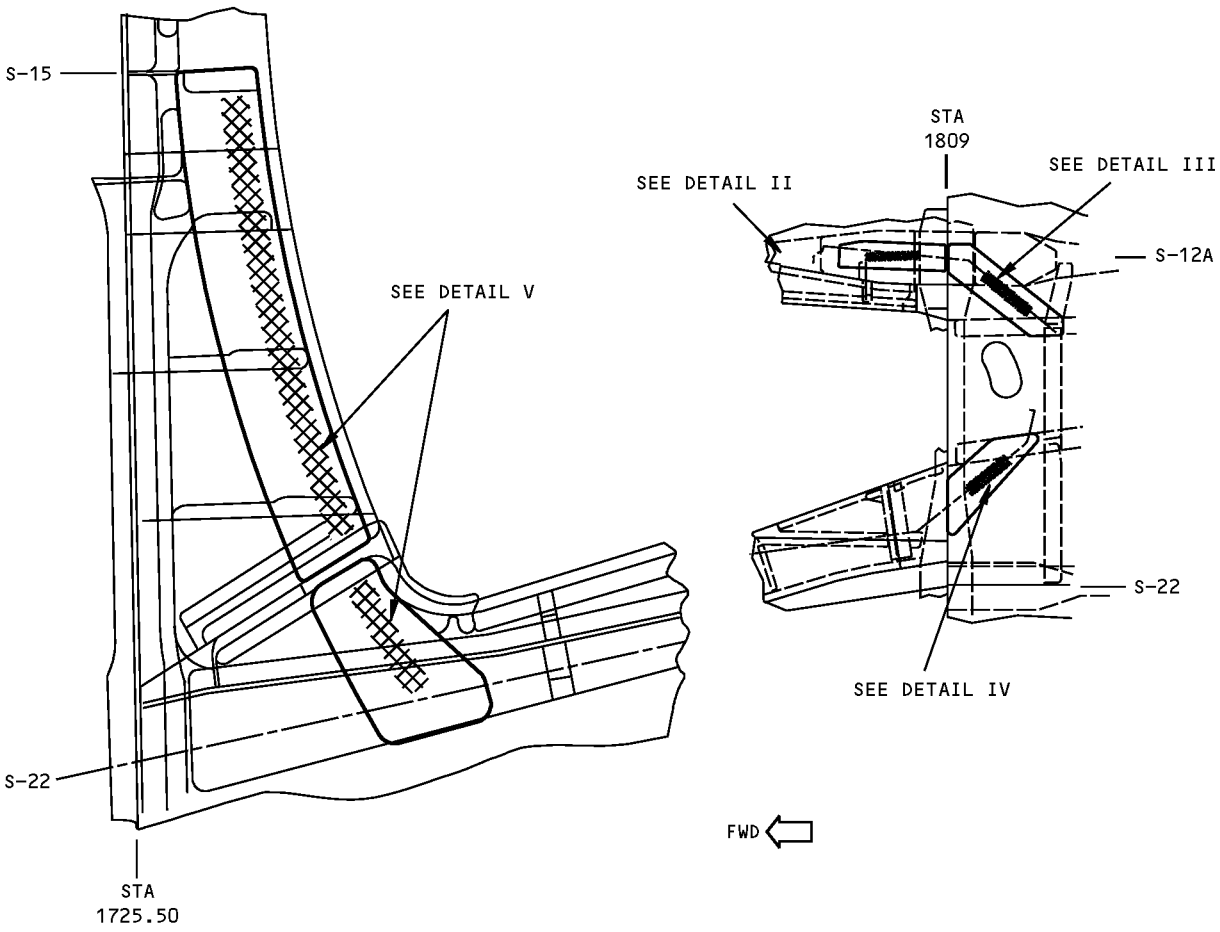
FASTENER SYMBOLS

- REFERENCE FASTENER LOCATION
- HIDDEN REFERENCE FASTENER LOCATION
- INITIAL FASTENER LOCATION. INSTALL A BACB30NW6K()X HEX DRIVE BOLT WITH A BACC30M6 COLLAR.
- INITIAL FASTENER LOCATION. INSTALL A BACB30MY8K()X HEX DRIVE BOLT WITH A BACC30M8 COLLAR.
- INITIAL FASTENER LOCATION. INSTALL A BACB30NW8K()Y HEX DRIVE BOLT AND A BACC30R8 COLLAR.
- INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX DRIVE BOLT AND A BACC30M6 COLLAR.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	RUB STRIP	AS REQ'D	0.02 INCH THICK CRES, 301,302,304, 1/4 HARD OR ABOVE, OR 17-7PH

TABLE I

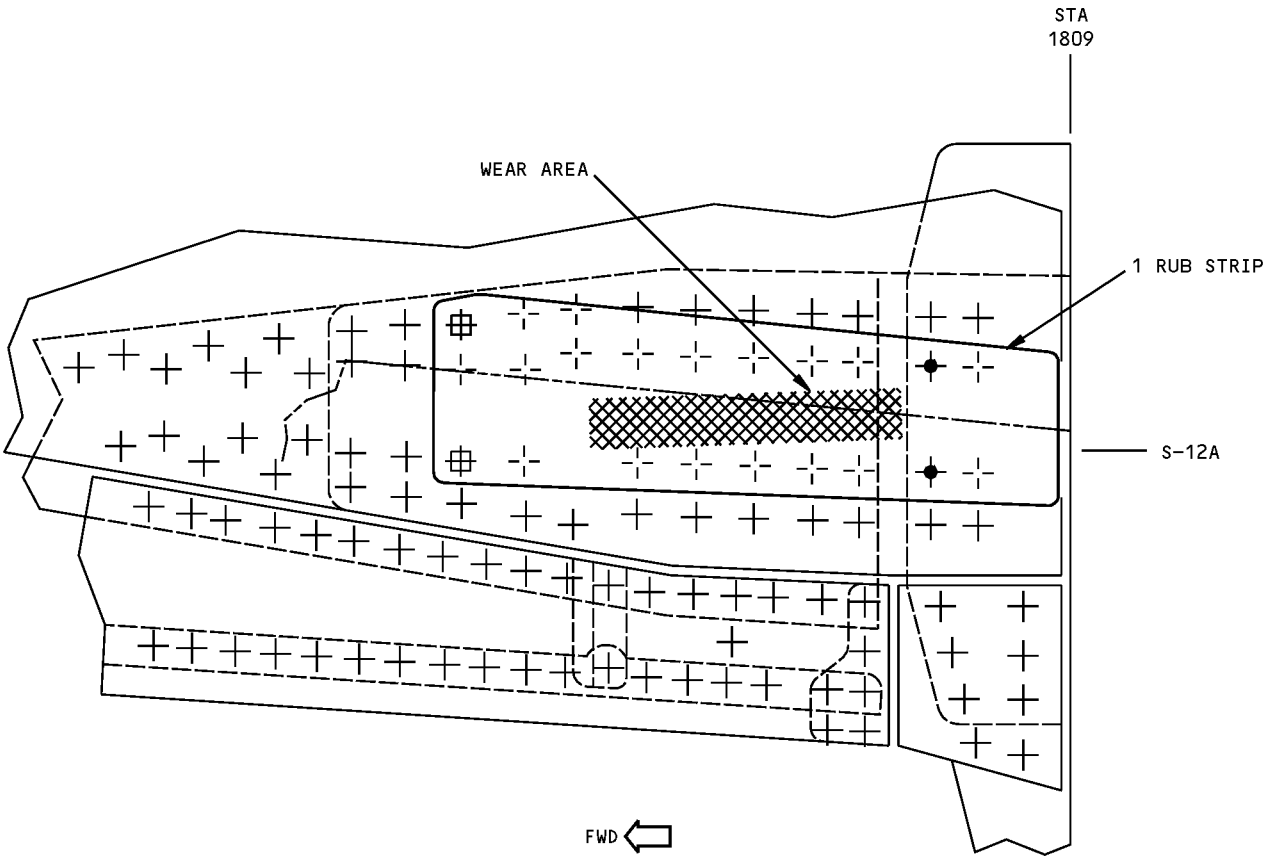
Rub Strip for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 1 of 6)



TYPICAL LOCATIONS OF WEAR CAUSED BY THE HORIZONTAL STABILIZER SEAL

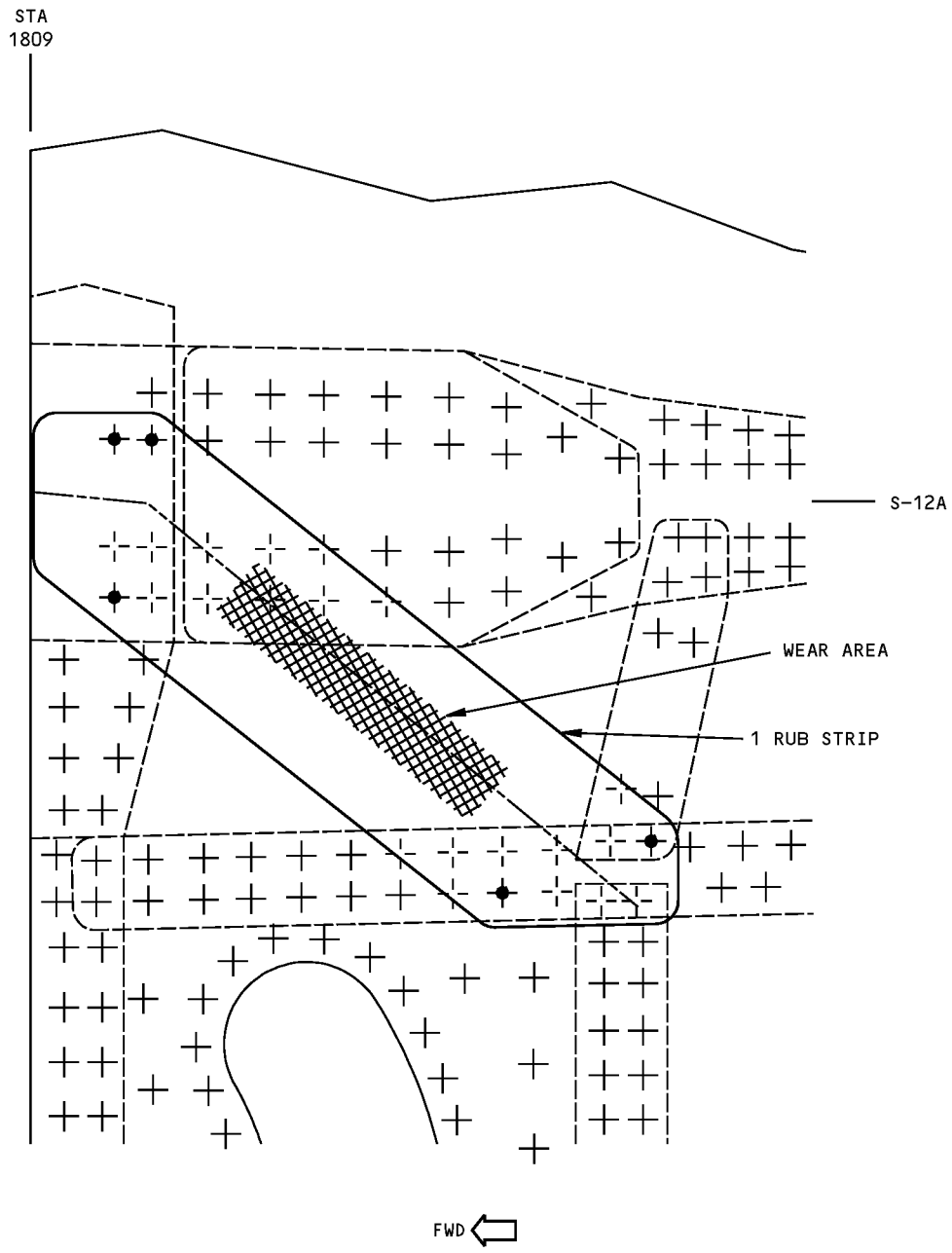
DETAIL I

Rub Strip for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 2 of 6)



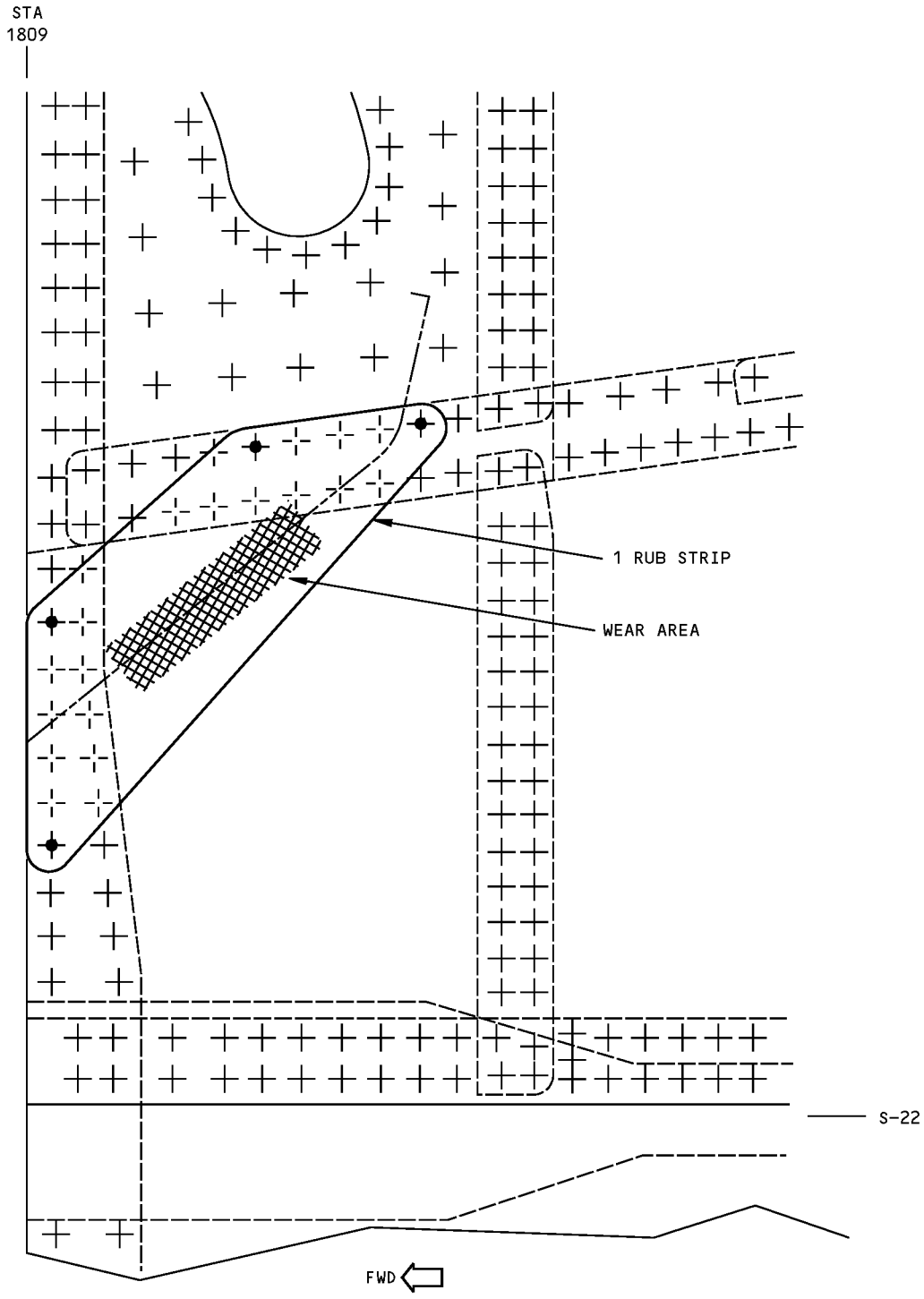
WEAR AT STRINGER 12A FORWARD OF STATION 1809.5
DETAIL II

Rub Strip for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 3 of 6)



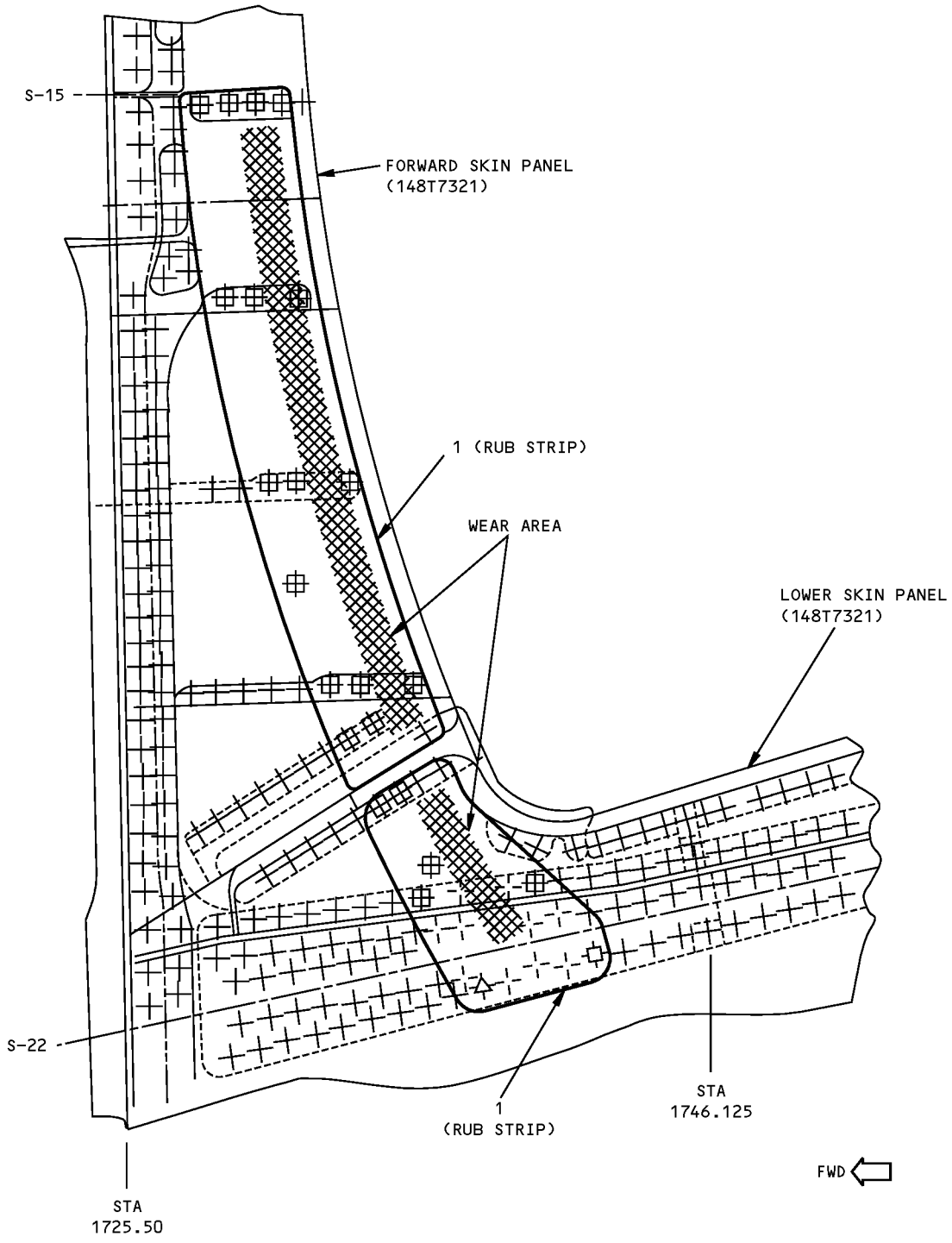
WEAR AT STRINGER 12A AFT OF STATION 1809.5
DETAIL III

Rub Strip for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 4 of 6)



WEAR AT STRINGER 17 AFT OF STATION 1809.5
DETAIL IV

Rub Strip for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 5 of 6)



RUB STRIPS FOR WEAR BETWEEN STRINGERS 15 AND 22 FORWARD OF STATION 1746
DETAIL V

Rub Strip for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 6 of 6)

REPAIR 3 - FUSELAGE SKIN WEAR CAUSED BY THE HORIZONTAL STABILIZER SEAL

APPLICABILITY
THIS REPAIR IS APPLICABLE TO WEAR CAUSED BY THE HORIZONTAL STABILIZER SEAL ON THE SKIN WHERE IT CONTACTS THE FUSELAGE.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. For Details III, IV, and V, cut out the damage as shown in Detail I. The minimum radius for corners is 0.5 inch (13 mm).

   Cut out the skin on the right side and the skin and doubler on the left side. The right side does not have a doubler. It is optional to remove the 0.10 inch thick skin on the left side leaving the 0.04 inch thick doubler if the doubler is not damaged.
3. For Detail VI only, if the forward skin panel is damaged, remove the damaged skin panel. Make a new skin panel. See Table I. If the lower skin panel is damaged, remove the damaged part of the skin panel by cutting the skin at Station 1762. Make a new skin panel. Follow repair instructions 5 through 12.
4. Make the doubler(s) and filler(s). See Table I. The minimum radius for corners is 0.5 inch (13 mm). Chamfer the doubler(s) as shown in Detail II.
5. Put the repair parts in place and drill the fastener holes.
6. Remove the burrs, nicks, scratches, gouges and sharp edges from the repair parts and cut edges of the fuselage.
7. Apply a chemical conversion coating to the repair parts and cut edges of the fuselage skin. Refer to SRM 51-20-01.
8. Apply one layer of BMS 10-79, Type III primer to the bare areas of the repair parts and cut edges of the fuselage. Refer to AMM 51-21.
9. Install the repair parts with BMS 5-95 sealant between the faying surfaces. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant. Fill countersinks with countersink repair washers. Refer to SRM 51-40-08.
10. As an optional step, install wear strips over the doubler(s). Refer to Repair 2.
11. Apply Teflon filled paint, BMS 10-86 to the repair area. Refer to AMM 51-21.
12. Shim the stabilizer seal to adjust for the external doubler.

NOTES

- THIS REPAIR IS A CATEGORY A REPAIR. THE INSPECTIONS GIVEN IN THE MAINTENANCE PLANNING DATA (MPD) ARE SUFFICIENT TO MAINTAIN THE DAMAGE TOLERENCE OF THE INITIAL STRUCTURE WITH THIS CATEGORY A REPAIR INSTALLED.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR THE INTERIOR AND EXTERIOR FINISHES
  - SRM 51-10-01 FOR THE AERODYNAMIC SMOOTHNESS REQUIREMENTS
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR THE PROTECTIVE TREATMENT OF METALLIC AND NONMETALLIC MATERIALS
  - SRM 51-20-05 FOR THE REPAIR SEALING
  - SRM 51-40 FOR THE FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, EDGE MARGINS AND COUNTERSINK REPAIR WASHERS.

[A] ON THE LEFT SIDE, FORWARD OF STATION 1809, THERE IS A SKIN AND A DOUBLER. IF ONLY THE SKIN IS REMOVED USE A 0.10 INCH THICK REPAIR DOUBLER. IF BOTH ARE REMOVED, USE A 0.14 INCH THICK REPAIR DOUBLER.

[B] USE CAUTION DURING FASTENER REMOVAL AND INSTALLATION.REPAIR PANELS MUST BE INSTALLED BY USING THE INITIAL FASTENER SIZES.

[C] FOR FASTENERS, KEEP 2D EDGE MARGINS AND 4D SPACINGS.

Repair for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 1 of 7)

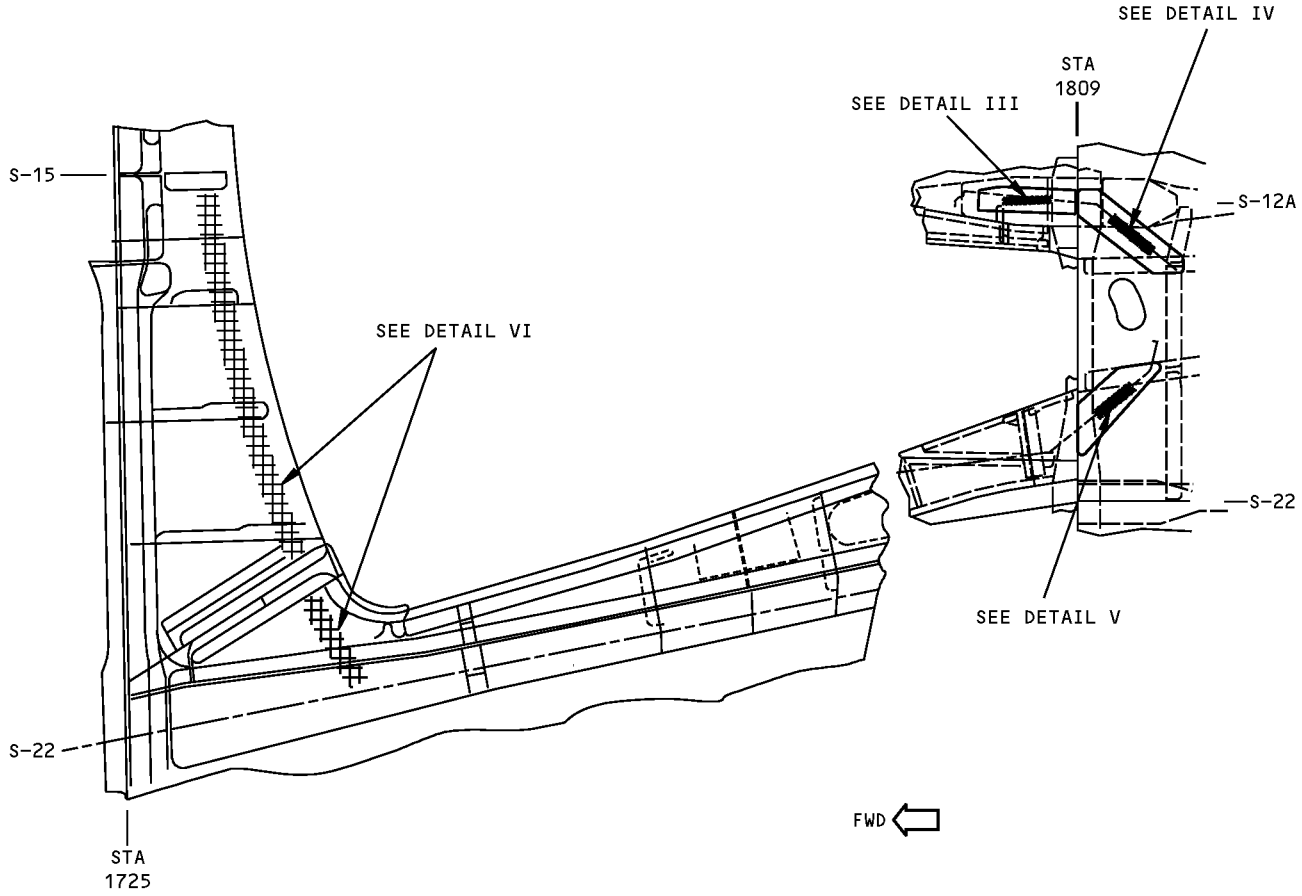
FASTENER SYMBOLS

- INITIAL FASTENER LOCATION.
- INITIAL FASTENER LOCATION. INSTALL A BACR15CE8KE RIVET.
- REPAIR FASTENER LOCATION. INSTALL A BACR15CE8KE RIVET.
- INITIAL FASTENER LOCATION. INSTALL A BACB30NW6K()X HEX DRIVE BOLT WITH A BACN10JC3 NUT.
- INITIAL FASTENER LOCATION. INSTALL A BACB30NW6K()X HEX DRIVE BOLT WITH A BACC30M6 COLLAR.
- INITIAL FASTENER LOCATION. INSTALL A BACB30NW8K()X HEX DRIVE BOLT WITH A BACC30AG COLLAR.
- INITIAL FASTENER LOCATION. INSTALL A BACB30NW8K()X HEX DRIVE BOLT WITH A BACC30M8 COLLAR.
- INITIAL FASTENER LOCATION. INSTALL A BACB30NW8K()X HEX DRIVE BOLT WITH A BACN10JC4 NUT.
- INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX DRIVE BOLT WITH A BACC30M6 COLLAR.
- INITIAL FASTENER LOCATION. INSTALL A BACB30MY8K()X HEX DRIVE BOLT WITH A BACC30M8 COLLAR.
- INITIAL FASTENER LOCATION. INSTALL A BACB30MY8K()X HEX DRIVE BOLT WITH A BACN10JC4 NUT.
- REPAIR FASTENER LOCATION. INSTALL A BACB30NW6K() HEX BOLT WITH A BACC30M6 COLLAR. AS AN ALTERNATIVE, INSTALL BACR15CE6KE() RIVET.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	AS REQ'D	CLAD 7075-T6 0.10 INCH THICK AFT OF STA 1809 AND 0.14 INCH THICK FORWARD OF STA 1809. [A]
2	FILLER	AS REQ'D	CLAD 7075-T6 SAME THICKNESS AS THE MATERIAL REMOVED.
3	FORWARD REPAIR SKIN	1	0.080 CLAD 7075-T6 MACHINE TO THE INITIAL SHAPE. REFER TO BOEING DRAWING 148T7321.
4	LOWER REPAIR SKIN	1	0.080 CLAD 7075-T6 MACHINE TO THE SHAPE AND THICKNESS OF THE CUTOUT PORTION OF THE LOWER SKIN.
5	DOUBLER	AS REQ'D	0.080 CLAD 7075-T6

TABLE I

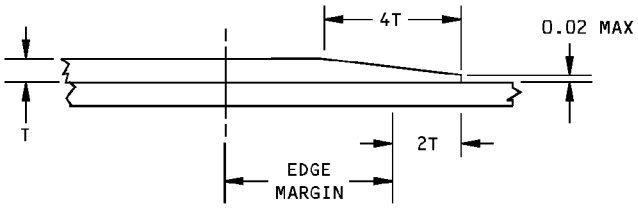
Repair for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 2 of 7)



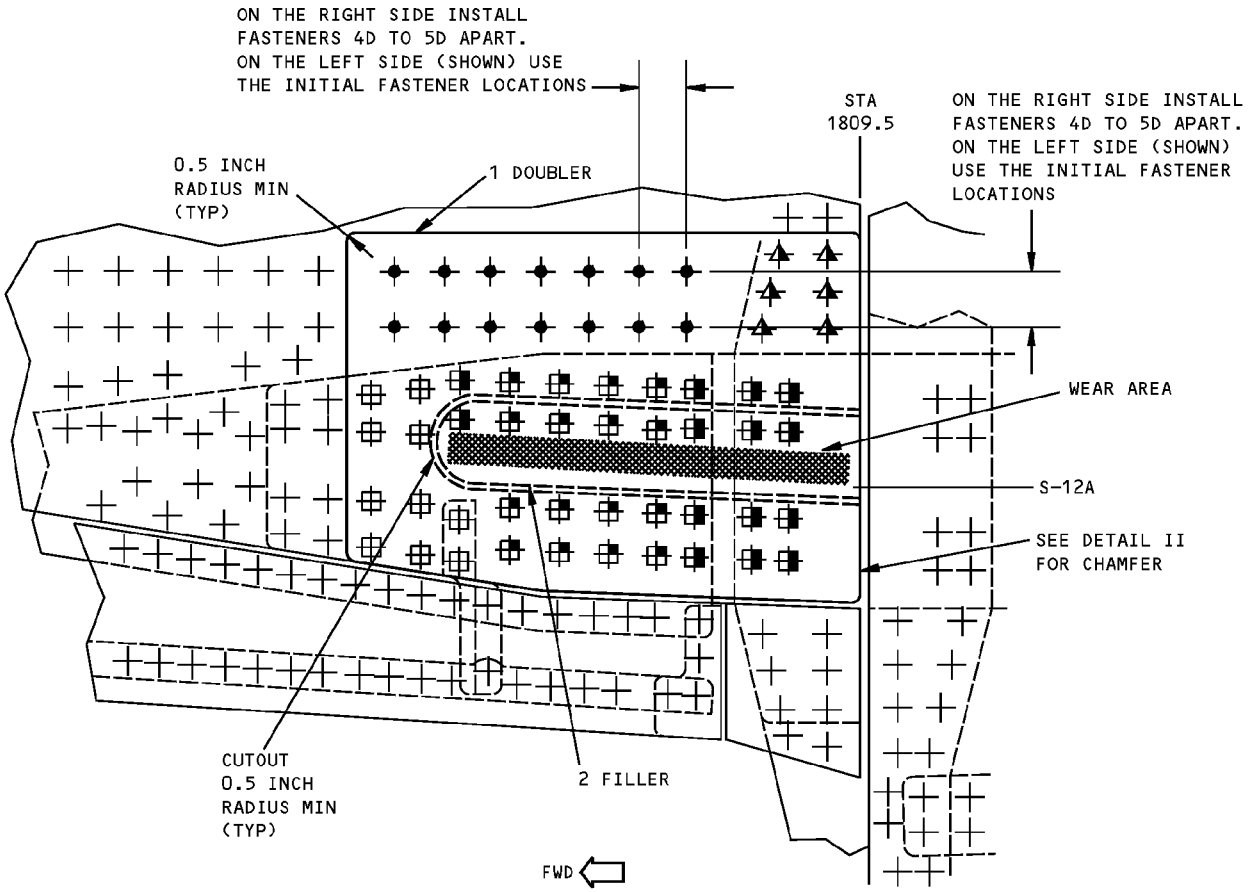
TYPICAL LOCATIONS OF WEAR CAUSED BY THE HORIZONTAL STABILIZER SEAL

DETAIL I

Repair for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 3 of 7)

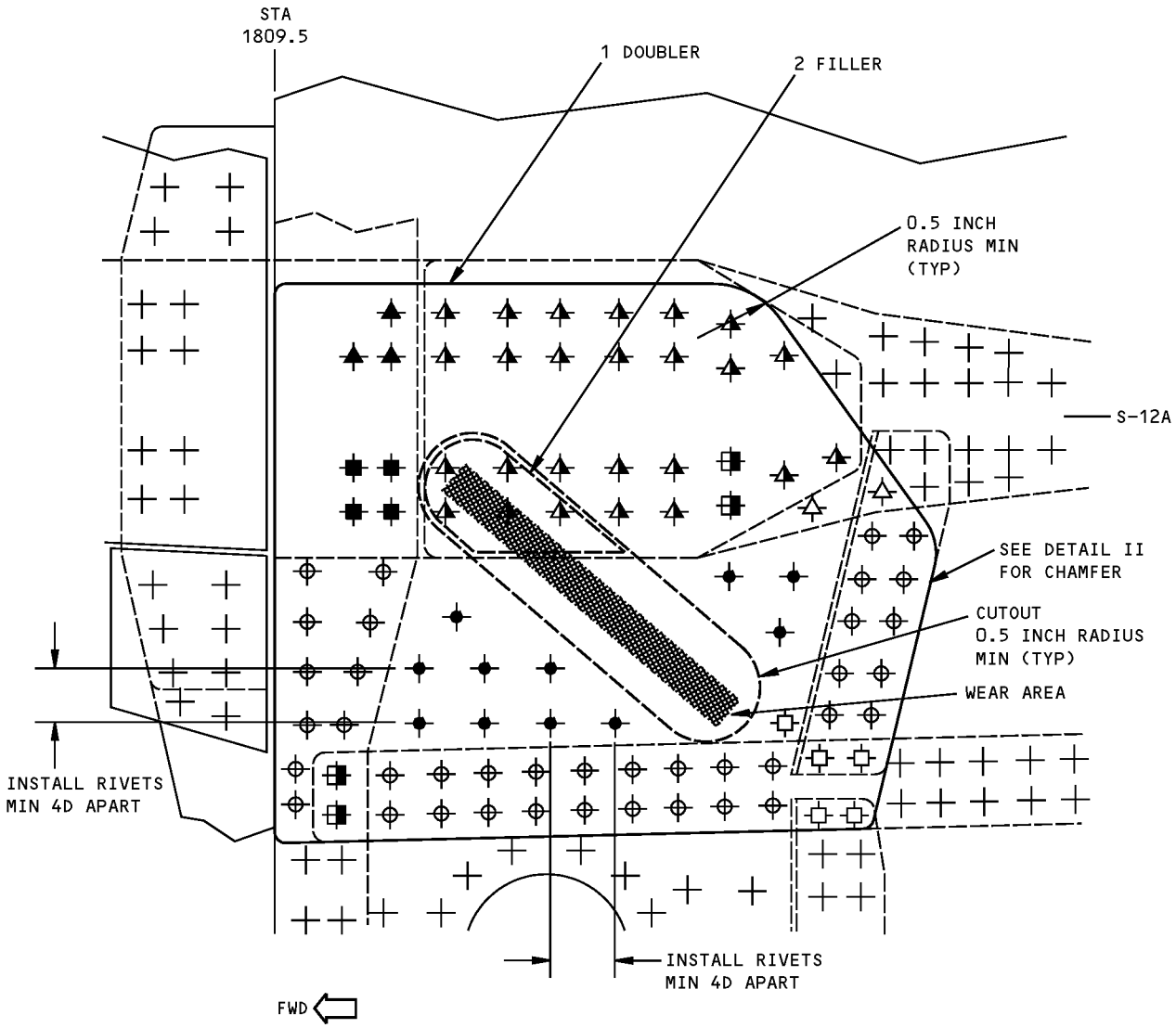


DETAIL II



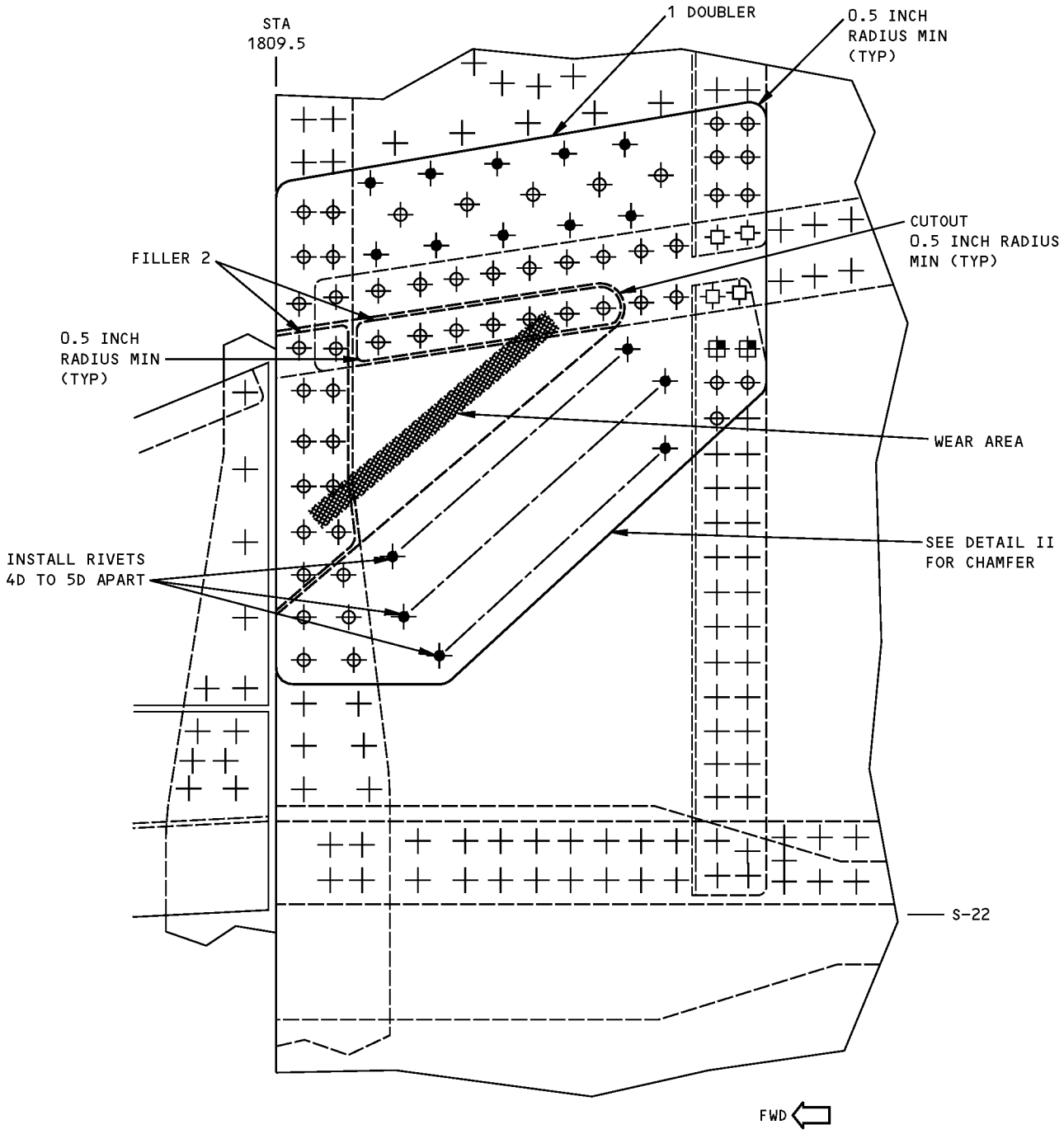
WEAR AT STRINGER 12A FORWARD OF STATION 1809.5
DETAIL III

Repair for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 4 of 7)



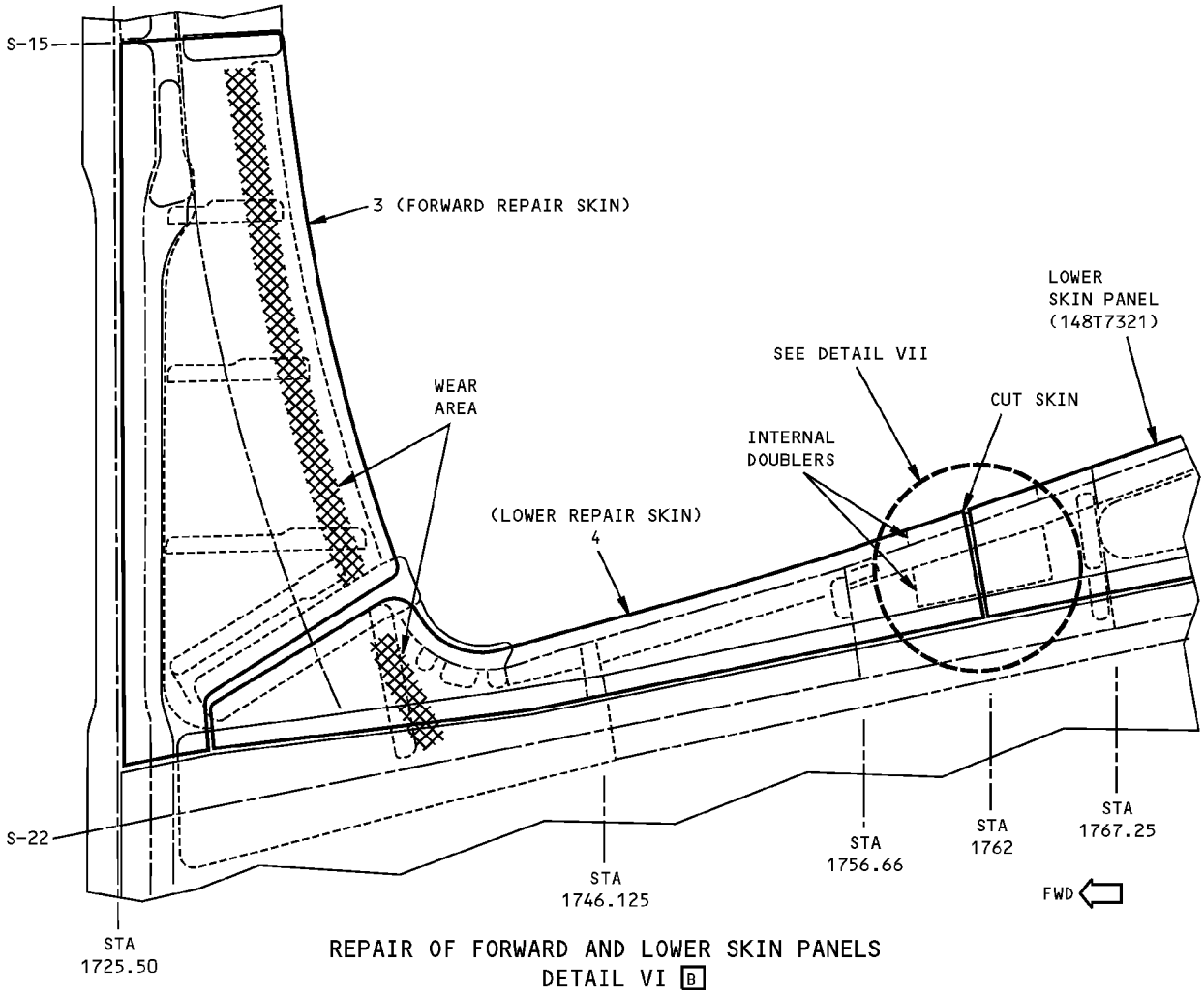
WEAR AT STRINGER 12A AFT OF STATION 1809.5
DETAIL IV

Repair for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 5 of 7)



WEAR AT STRINGER 17 AFT OF STATION 1809.5
DETAIL V

Repair for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 6 of 7)



Repair for Fuselage Skin Wear Caused by the Horizontal Stabilizer Seal
Figure 201 (Sheet 7 of 7)

REPAIR 4 - SECTION 48 - SKIN CRACKING AT STA 1654.5, STA 1678, OR STA 1702 FROM S-3 TO S-8

APPLICABILITY
THIS REPAIR IS APPLICABLE TO SKIN CRACKING AT STATIONS 1654.5, 1678 AND 1702 FROM STRINGER 3 TO STRINGER 8.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. For repair of cracks at STA 1654.5 use Detail I. For repair of cracks at STA 1678 and 1702, you can use one of the two repairs, Detail I or Detail II.
3. Remove the necessary fasteners in the area of the damaged skin.

   CAUTION: DO NOT GOUGE, SCRATCH OR BUCKLE THE STRUCTURE ADJACENT TO THE REPAIR.
4. Carefully cut and remove the damaged part of the fuselage skin. Use a sheet metal guard between the skins and internal structure to prevent damage. Refer to SRM 51-70-09.
   a. Use caution so you do not cut or cause damage to the stringer. If the stringer is damaged, repair as shown in SRM 53-00-03.
   b. Make the corner radii of the cutout a minimum of 0.5 inch (13 mm).
   c. Maintain a 2D edge margin on all holes.
   d. Make the edges of the cut smooth with a minimum surface finish of 125 microinches Ra.
5. Do a detailed visual inspection of the shear ties to make sure there are no cracks.
6. Do a high frequency eddy current (HFEC) inspection of the skin cutout area to make sure all of the damage has been removed. Refer to NDT Part 6, 51-10-01. Repeat Steps 3 thru 5 if all of the damage was not removed.
7. Make the repair parts. See Table I.
8. Assemble the repair parts and drill the fastener holes. Shim any gaps between shear ties and skin as necessary. Maximum pull up permitted prior to fastener installation is 0.005 inch (0.13 mm).
9. Disassemble the repair parts.
10. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the skin.
11. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the skin. Refer to SRM 51-20-01.
12. Apply one layer of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the skin. Refer to SOPM 20-41-02.
13. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
14. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant. Use a countersink repair washer to fill any initial countersink in the skin. Refer to SRM 51-40-08.
15. Apply one layer of BMS 10-11, Type I finish to the repair area. Refer to SOPM 20-41-02.

NOTES:

- THIS REPAIR IS A CATEGORY 'A' REPAIR. REFER TO SRM 51-00-06 FOR DEFINITION OF REPAIR TYPES.
- D = FASTENER DIAMETER.
- USE A FASTENER SPACING OF 4D TO 6D FOR ALL REPAIR FASTENERS.
- WHEN YOU USE THIS REPAIR REFER TO:
  - AMM 51-21 FOR DECORATIVE EXTERIOR FINISHES, CLEANING AND PAINTING
  - SOPM 20-41-02 FOR APPLICATION OF CHEMICAL AND SOLVENT RESISTANT FINISHES
  - SRM 51-00-06 FOR DEFINITION OF REPAIR TYPES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS
  - SRM 51-20-05 FOR SEALING PROCEDURES AND ALTERNATIVE SEALANTS
  - SRM 51-20-08 FOR INSTALLATION OF SHIMS
  - SRM 51-40-08 FOR COUNTERSINK REPAIR WASHERS.

Section 48 - Skin Cracking Repair at STA 1654.5, STA 1678, or STA 1702 from S-3 to S-8
Figure 201 (Sheet 1 of 6)

NOTES (CONT)

[A] OVERDRIVE RIVETS TO MAKE THE DRIVEN HEAD DIAMETER 1.5D.

[B] FILL ALL GAPS WITH BMS 5-95 SEALANT.

[C] AS AN ALTERNATIVE, YOU CAN USE ONE 0.070 INCH 7075-T6 CLAD SHEET MACHINED DOWN TO 0.040 INCH, INSTEAD OF FILLERS FOR PARTS 3 AND 4.

[D] FORM DOUBLER TO MATCH FUSELAGE CONTOUR.

[E] DO NOT END THE REPAIR DOUBLER OR FILLERS ON A STRINGER OR OTHER BACK UP INTERNAL STRUCTURE.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION

REPAIR FASTENER LOCATION. INSTALL BACR15BB6D() RIVET. [A]

INITIAL FASTENER LOCATION. INSTALL A BACR15DS7D() RIVET. [A]

INITIAL FASTENER LOCATION. INSTALL A BACR15BB6() RIVET. [A]

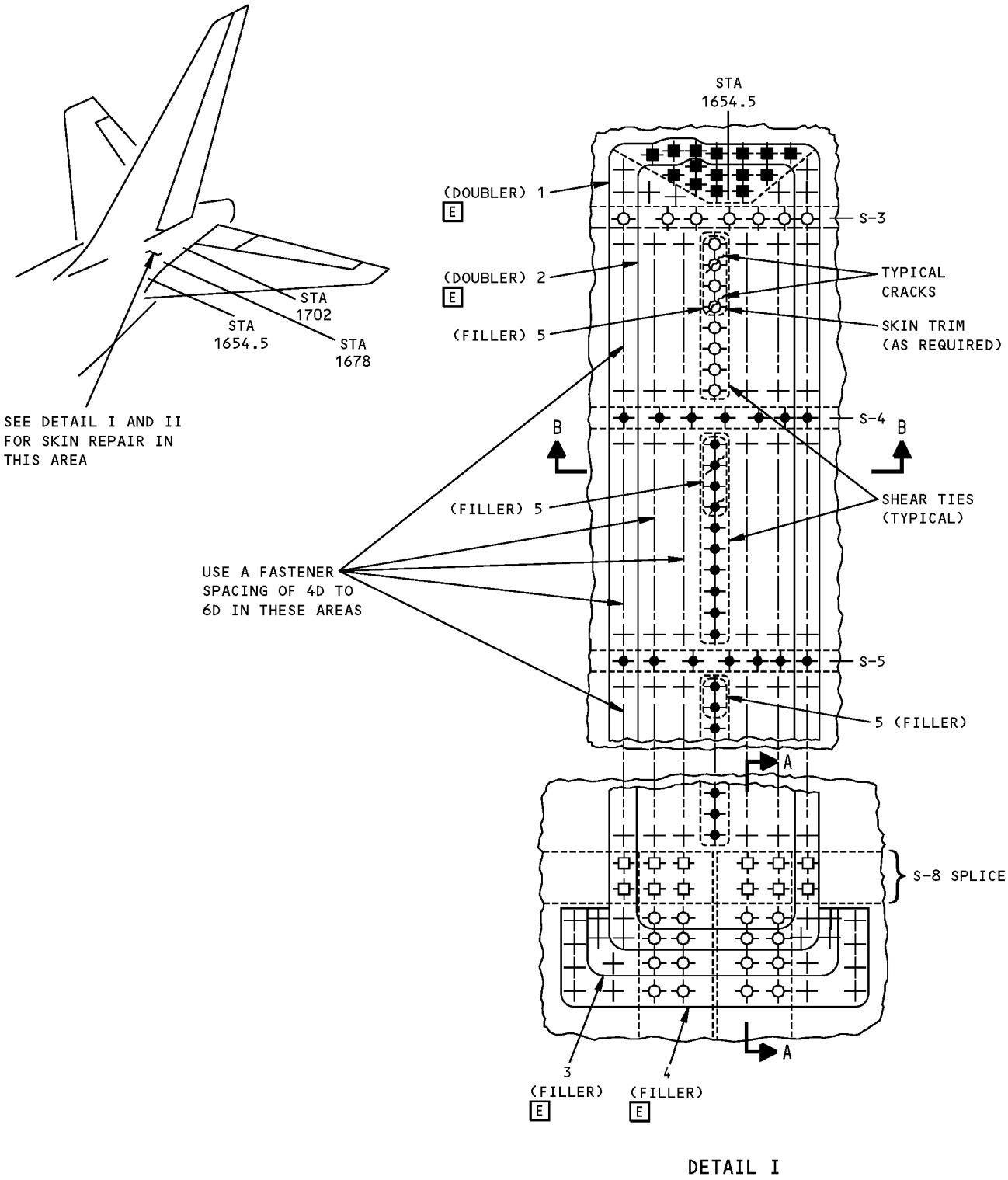
INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX DRIVE BOLT WITH A BACC30M6 COLLAR.

INITIAL FASTENER LOCATION. INSTALL A BACB30MY8K()X HEX DRIVE BOLT WITH A BACC30M8 COLLAR.

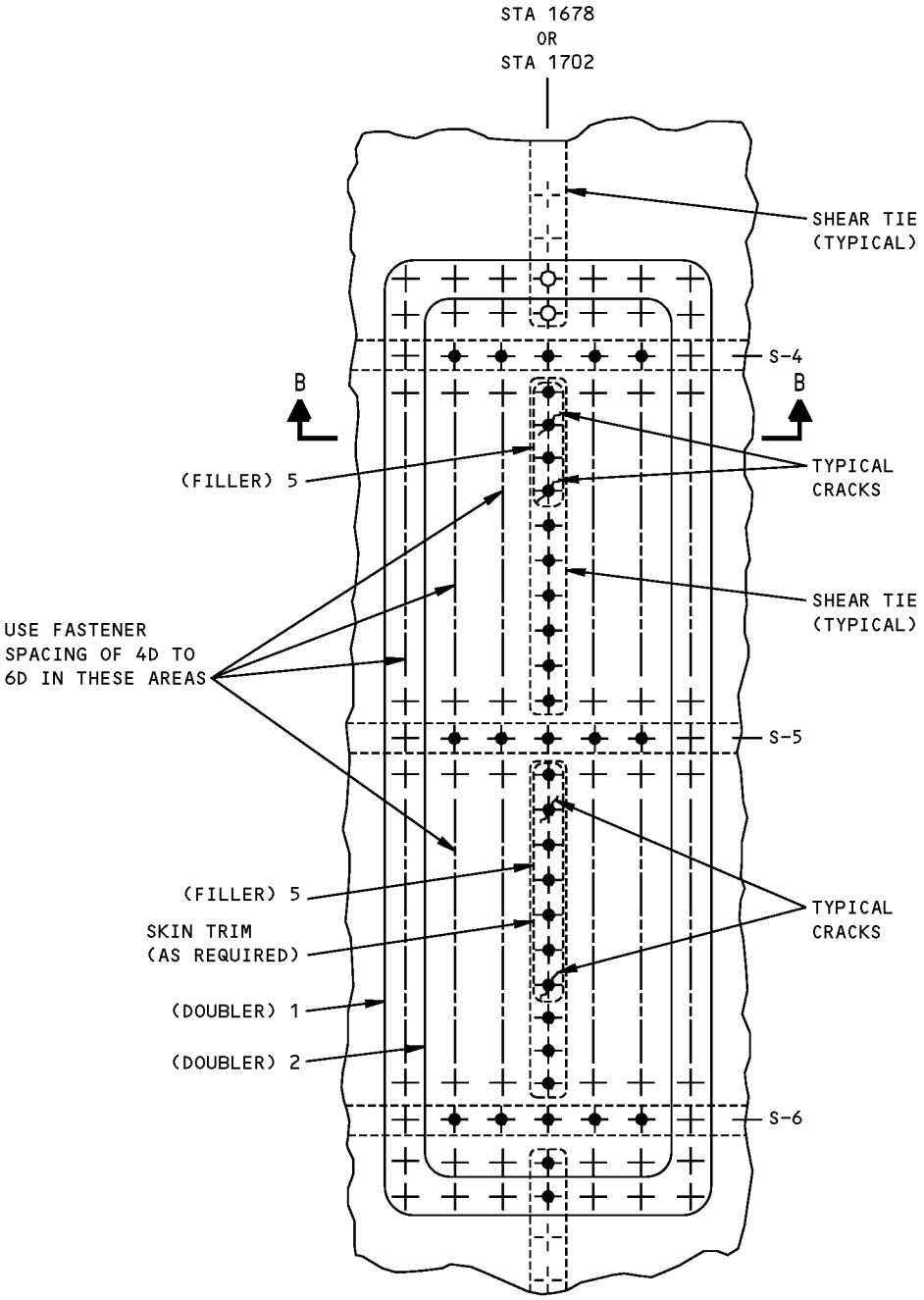
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	0.040 7075-T6 CLAD [D]
2	DOUBLER	1	0.040 7075-T6 CLAD [D]
3	FILLER [C]	1	0.032 7075-T6 CLAD
4	FILLER [C]	1	0.040 7075-T6 CLAD
5	FILLER	AS REQ'D	7075-T6 THICKNESS AS NECESSARY

TABLE I

Section 48 - Skin Cracking Repair at STA 1654.5, STA 1678, or STA 1702 from S-3 to S-8
Figure 201 (Sheet 2 of 6)

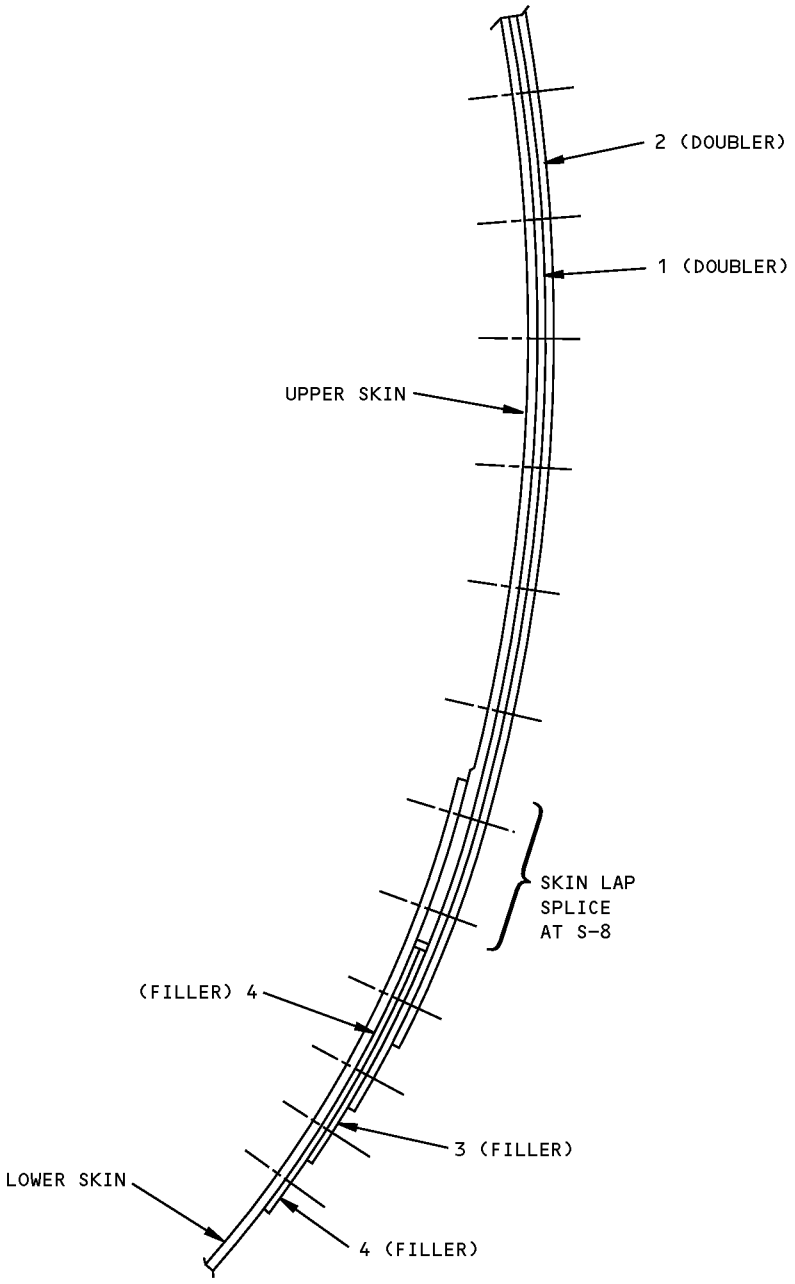


Section 48 - Skin Cracking Repair at STA 1654.5, STA 1678, or STA 1702 from S-3 to S-8
Figure 201 (Sheet 3 of 6)



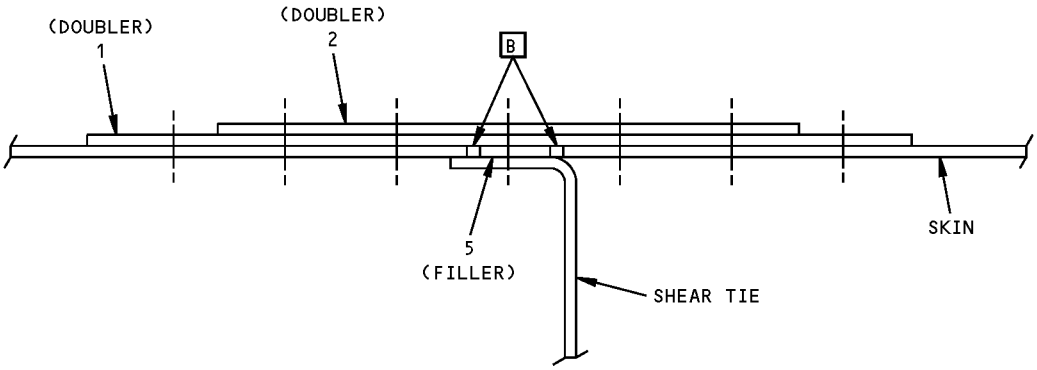
TYPICAL CRACK REPAIR AT STA 1678 AND STA 1702
DETAIL II

Section 48 - Skin Cracking Repair at STA 1654.5, STA 1678, or STA 1702 from S-3 to S-8
Figure 201 (Sheet 4 of 6)



SECTION A-A
AT BS 1654.5 AND STRINGER 8 SKIN LAP SPLICE

Section 48 - Skin Cracking Repair at STA 1654.5, STA 1678, or STA 1702 from S-3 to S-8
Figure 201 (Sheet 5 of 6)



SECTION B–B

Section 48 - Skin Cracking Repair at STA 1654.5, STA 1678, or STA 1702 from S-3 to S-8
Figure 201 (Sheet 6 of 6)

REPAIR 5 - SECTION 48 - SKIN AND CHORD STRAP CRACK REPAIR - STA 1725.5

APPLICABILITY
THIS REPAIR IS APPLICABLE TO FUSELAGE SKIN CRACK DAMAGE AND CHORD STRAP CRACK DAMAGE AFT OF STA 1725.5 BUTT SPLICE AT STRINGER 7R. REFER TO DETAIL II FOR CRACK IN THE SKIN. REFER TO DETAIL III FOR CRACKS IN THE CHORD STRAP AND THE FUSELAGE SKIN.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. Remove the stringer 7R tie-fitting aft of STA 1725.5 bulkhead.
3. Do a high frequency eddy current (HFEC) inspection of the stringer fitting attach holes. Refer to NDT 51-00-16, Part 6.
4. Do a high frequency eddy current (HFEC) inspection of the stringer 7R tie-fitting "neck" area. Refer to NDT 51-00-19, Part 6. Refer to Detail II Section A-A and Detail III Section E-E for the "neck" area.
5. Replace the fitting if you find cracks.

   CAUTION: DO NOT CUT OR DAMAGE THE STRINGER AND OTHER STRUCTURE BELOW THE SKIN WHEN YOU CUT THE DAMAGED SKIN.

6. Carefully cut and remove the damaged part of the fuselage skin. See Detail II. [A]
   a. Make the corner radii of the cutout a minimum of 0.5 inch (13 mm).
   b. Make the edges of the cut smooth with a surface finish of 125 microinches Ra or better. Refer to SRM 51-20-13.
   c. Keep a minimum of 2D edge margin on the remaining skin.

   CAUTION: DO NOT CUT OR DAMAGE THE STRINGER AND OTHER STRUCTURE BELOW THE SKIN WHEN YOU CUT THE DAMAGED CHORD STRAP AND SKIN.

7. Carefully cut and remove the damaged part of the chord strap and fuselage skin (only if there is a crack in the skin). See Detail III. [B]
   a. Make the corner radii for the cutout in the chord strap a minimum of 0.5 inch (13 mm).
   b. Make the corner radii for the cutout in the skin (if required) a minimum of 0.5 inch (13 mm).
   c. Make the edges of the cut smooth with a surface finish of 125 microinches Ra or better. Refer to SRM 51-20-13.
   d. Keep a minimum of 2D edge margin on the chord strap and remaining skin (if required).
   e. Keep a 4D to 6D spacing on the chord strap cut and skin (if required).
8. Do a high frequency eddy current (HFEC) inspection to the edge of the trim to make sure that all of the damage has been removed. Refer to NDT 51-00-01, Part 6.
9. When all the damage is removed, cut an additional 0.030 inch (0.8 mm) along the trimmed out area.
10. Before drilling holes to final dimension, do an open hole high frequency eddy current (HFEC) inspection. Examine holes common to the part 1 Doubler or the part 4 Doubler. See Detail II and Detail III. Refer to NDT 51-00-16, Part 6.
11. Make the repair parts. Form them to the necessary shape and contour. Refer to Table I or II, as applicable. [A] [B]
12. Install the stringer 7R tie-fitting with initial type fasteners that are the same as the fasteners that were removed. Torque the bolts that go through the bulkhead to 1900 - 2300 pound-inch dry.
13. Assemble the repair parts and drill the fastener holes. Keep a minimum of 2D edge margin on all the repair parts. Keep a 4D to 6D fastener spacing.
14. Disassemble the repair parts.
15. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts, skin and/or chord strap.
16. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the skin and/or chord strap. Refer to SRM 51-20-01.
17. Apply one layer of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the skin and/or chord strap. Refer to SOPM 20-41-02.
18. Use a countersink washer to fill any initial countersink in the skin. Refer to SRM 51-40-08.
19. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
20. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
21. Install shims to limit clamp-up to 0.005 inch (0.13 mm) maximum before fastener installation. The maximum size of shim thickness allowed is 0.040 inch (1 mm).
22. Apply the exterior finish. Refer to AMM 51-20-00.

Section 48 - Skin and Chord Strap Crack Repair - STA 1725.5
Figure 201 (Sheet 1 of 9)

NOTES

- THESE REPAIRS GIVEN IN DETAIL II AND DETAIL III ARE CATEGORY B REPAIRS. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE III. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR THE REPAIR CATEGORIES AND DEFINITIONS.
- D = FASTENER DIAMETER
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-20-00 INTERIOR AND EXTERIOR FINISHINGS
  - NDT 51-00-01, PART 6, EDDY CURRENT, ALUMINUM PART SURFACE INSPECTION
  - NDT 51-00-16, PART 6, EDDY CURRENT, ALUMINUM PART FASTENER HOLE INSPECTION (ROTARY SCANNER)
  - NDT 51-00-19, PART 6, EDDY CURRENT, ALUMINUM PART SURFACE INSPECTION (IMPEDANCE PLANE DISPLAY)
  - NDT 53-00-06, PART 6, LOW FREQUENCY EDDY CURRENT (LFEC)-EXTERNAL
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-00-06 FOR DEFINITION OF REPAIR CATEGORIES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-20-13 FOR SURFACE ROUGHNESS REQUIREMENTS
  - SRM 51-40-02 FOR FASTENER INSTALLATION AND REMOVAL
  - SRM 51-40-03 FOR FASTENER SUBSTITUTIONS
  - SRM 51-40-05 FOR FASTENER HOLE SIZES
  - SRM 51-40-06 FOR FASTENER EDGE MARGINS
  - SRM 51-40-08 FOR COUNTERSINK REPAIR WASHERS

[A] THIS REPAIR IS APPLICABLE IF ONLY THE FUSELAGE SKIN HAS A CRACK.

[B] THIS REPAIR IS APPLICABLE IF ONLY THE CHORD STRAP HAS A CRACK OR THE FUSELAGE SKIN AND CHORD STRAP HAVE A CRACK.

[C] TRIM OUT OF DAMAGE IN THE CHORD STRAP CAN BE AS SMALL AS ONE FASTENER HOLE BUT CAN EXTEND TO THREE FASTENER HOLES. THE PART 4 DOUBLER MUST HAVE A MINIMUM OF THREE FASTENERS INSTALLED ON EACH SIDE OF THE TRIM OUT ON THE CHORD STRAP.

[D] SERVICE BULLETIN REQUIREMENTS SUPERSEDE THE SRM IF THEY ARE MORE CONSERVATIVE IN INTERVAL OR THRESHOLD FOR THE AREAS INSPECTED IN THE SRM.

[E] THE RECOMMENDED MATERIAL FOR THE PART 4 DOUBLER AND THE PART 5 TRIPLER IN TABLE II IS 0.112 INCH THICK, 2024-T3 CLAD ALUMINUM. IF THIS MATERIAL IS NOT AVAILABLE, IT IS PERMITTED TO USE 0.100 INCH THICK, 2024-T3 CLAD ALUMINUM FOR THE PART 4 DOUBLER AND 0.125 INCH THICK, 2024-T3 CLAD ALUMINUM FOR THE PART 5 TRIPLER. [F]

[F] DO NOT SUBSTITUTE 7075 ALLOY MATERIAL. 2024-T3 CLAD SHEET IS REQUIRED FOR BETTER DURABILITY PROPERTIES.

[G] THIS INSPECTION APPLIES ONLY TO DETAIL III REPAIR, CHORD STRAP AND/OR SKIN CRACK REPAIR.

[H] DO A HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTION EXTERNALLY AND INTERNALLY TO THE VISIBLE AREA OF THE DOUBLER AND TRIPLER INCLUDING CORNER EDGES.

[I] 0.0156 INCH OVERSIZE HEX DRIVE BOLTS ARE PERMITTED IF DETAIL II REPAIR IS REMOVED TO INSTALL DETAIL III REPAIR BECAUSE OF CRACK DETECTION ON THE CHORD STRAP.

FASTENER SYMBOLS


REFERENCE FASTENER LOCATION


REPAIR FASTENER LOCATION. INSTALL A BACR15CE6KE() RIVET.


REPAIR FASTENER LOCATION. INSTALL A BACB30NW6K() HEX DRIVE BOLT WITH A BACC30M6 COLLAR. [I]


INITIAL FASTENER LOCATION. INSTALL A BACR15CE6KE() RIVET.


INITIAL FASTENER LOCATION. INSTALL A BACR15CE8KE() RIVET.


INITIAL FASTENER LOCATION. INSTALL A BACR15FT8KE() RIVET.


INITIAL FASTENER LOCATION. INSTALL A BACB30NW6K()X HEX DRIVE BOLT WITH A BACC30M6 COLLAR. [I]


INITIAL FASTENER LOCATION. INSTALL A BACB30NW8K()X HEX DRIVE BOLT WITH A BACC30M8 COLLAR. [I]

Section 48 - Skin and Chord Strap Crack Repair - STA 1725.5
Figure 201 (Sheet 2 of 9)

REPAIR MATERIAL FOR DETAIL II [A]			
PART NO.	PART	QTY	MATERIAL
1	DOUBLER	1	0.071 INCH THICK CLAD 7075-T6
2	TRIPLER	1	0.090 INCH THICK CLAD 7075-T6
3	FILLER	1	0.140 INCH THICK CLAD 7075-T6

TABLE I

REPAIR MATERIAL FOR DETAIL III [B]			
PART NO.	PART	QTY	MATERIAL
4	DOUBLER	1	0.112 INCH THICK CLAD 2024-T3 [E]
5	TRIPLER	1	0.112 INCH THICK CLAD 2024-T3 [E]
6	FILLER	1	0.140 INCH THICK CLAD 7075-T6 OR 2024-T3 (IF REQUIRED)
7	FILLER	1	0.100 INCH THICK CLAD 7075-T6 OR 2024-T3
8	FILLER	1	0.040 INCH THICK CLAD 7075-T6 OR 2024-T3
9	FILLER	1	0.040 INCH THICK CLAD 7075-T6 OR 2024-T3

TABLE II

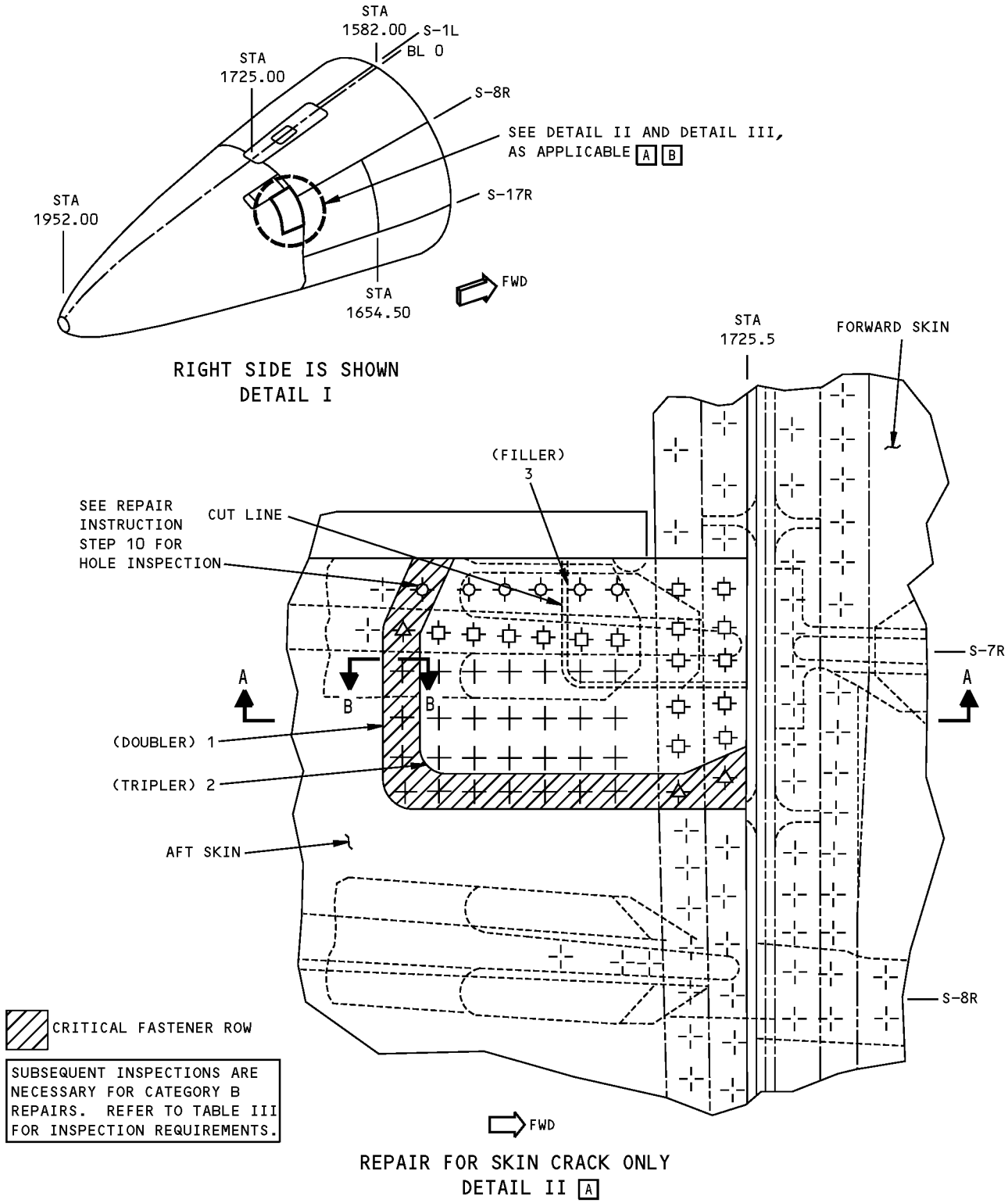
CATEGORY B REPAIR INSPECTION REQUIREMENTS [D]			
INSPECTION THRESHOLD	REPEAT INSPECTIONS		
	METHOD	INTERVAL	REFERENCE
- 37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY	DETAILED VISUAL INSPECTION	6,000 FLIGHT CYCLES	
	LOW FREQUENCY EDDY CURRENT INSPECTION (LFEC)	6,000 FLIGHT CYCLES	NDT 53-00-06 PART 6
	HIGH FREQUENCY EDDY CURRENT INSPECTION (HFEC) [G]	6,000 FLIGHT CYCLES	NDT 51-00-01 PART 6

NOTE:

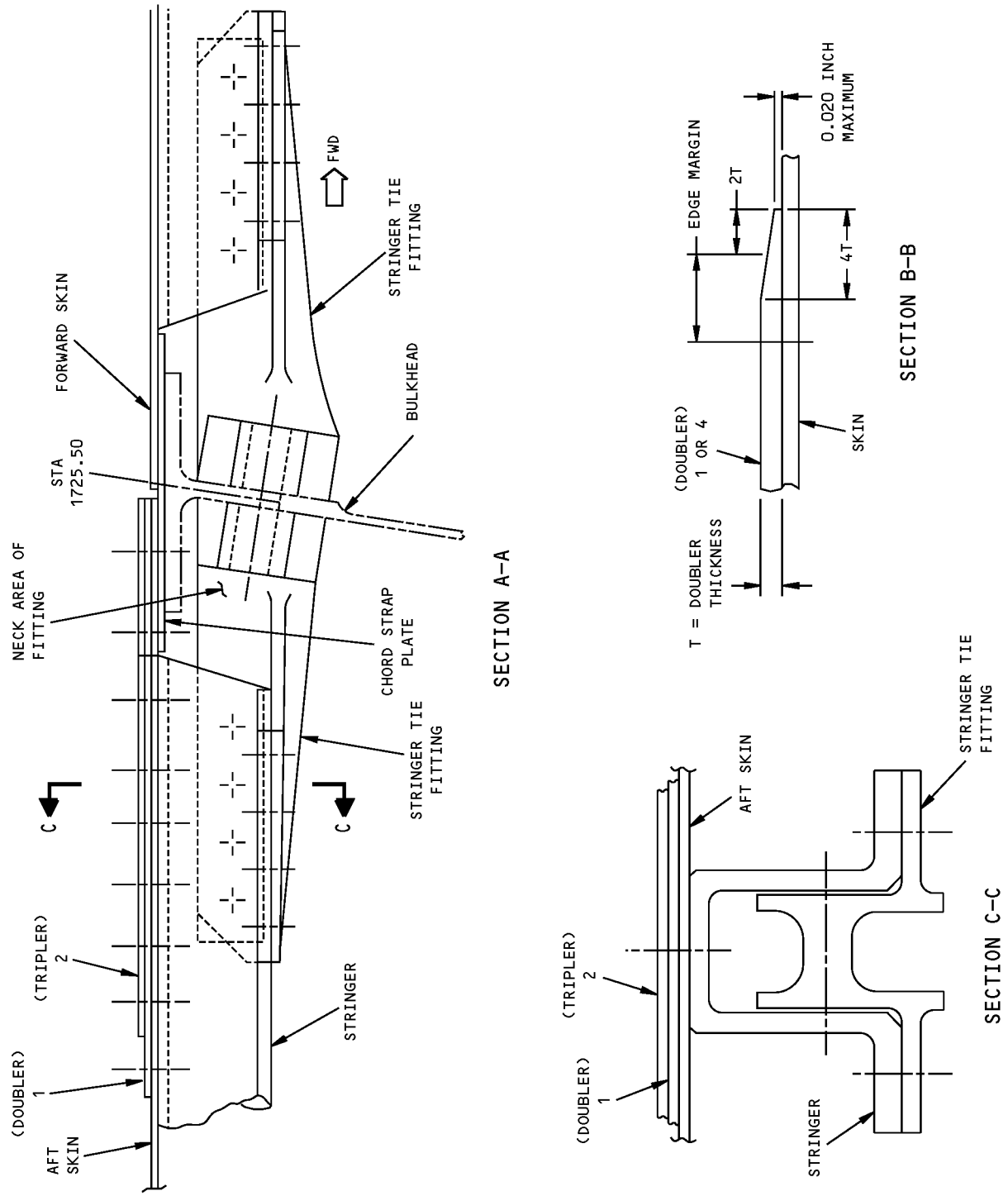
- DO A DETAILED VISUAL INSPECTION OF THE REPAIR DOUBLER, TRIPLER AND VISIBLE PARTS OF THE CHORD STRAP, CHORD AND A 2.0 INCH (50 mm) WIDE ZONE AROUND THE REPAIR INTERNALLY AND EXTERNALLY AS SHOWN IN DETAIL IV OR DETAIL V, AS APPLICABLE.
- DO A LOW FREQUENCY EDDY CURRENT (LFEC) INSPECTION OF THE SKIN EXTERNALLY THROUGH THE PART 1 OR PART 4 DOUBLER AS SHOWN IN DETAIL IV OR DETAIL V, AS APPLICABLE.
- DO A HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTION OF THE CORNER EDGES AND SURFACE AREA OF THE PART 4 DOUBLER AND PART 5 TRIPLER INTERNALLY AND EXTERNALLY AS SHOWN IN DETAIL V. SEE NOTE [H] IN DETAIL V.

TABLE III

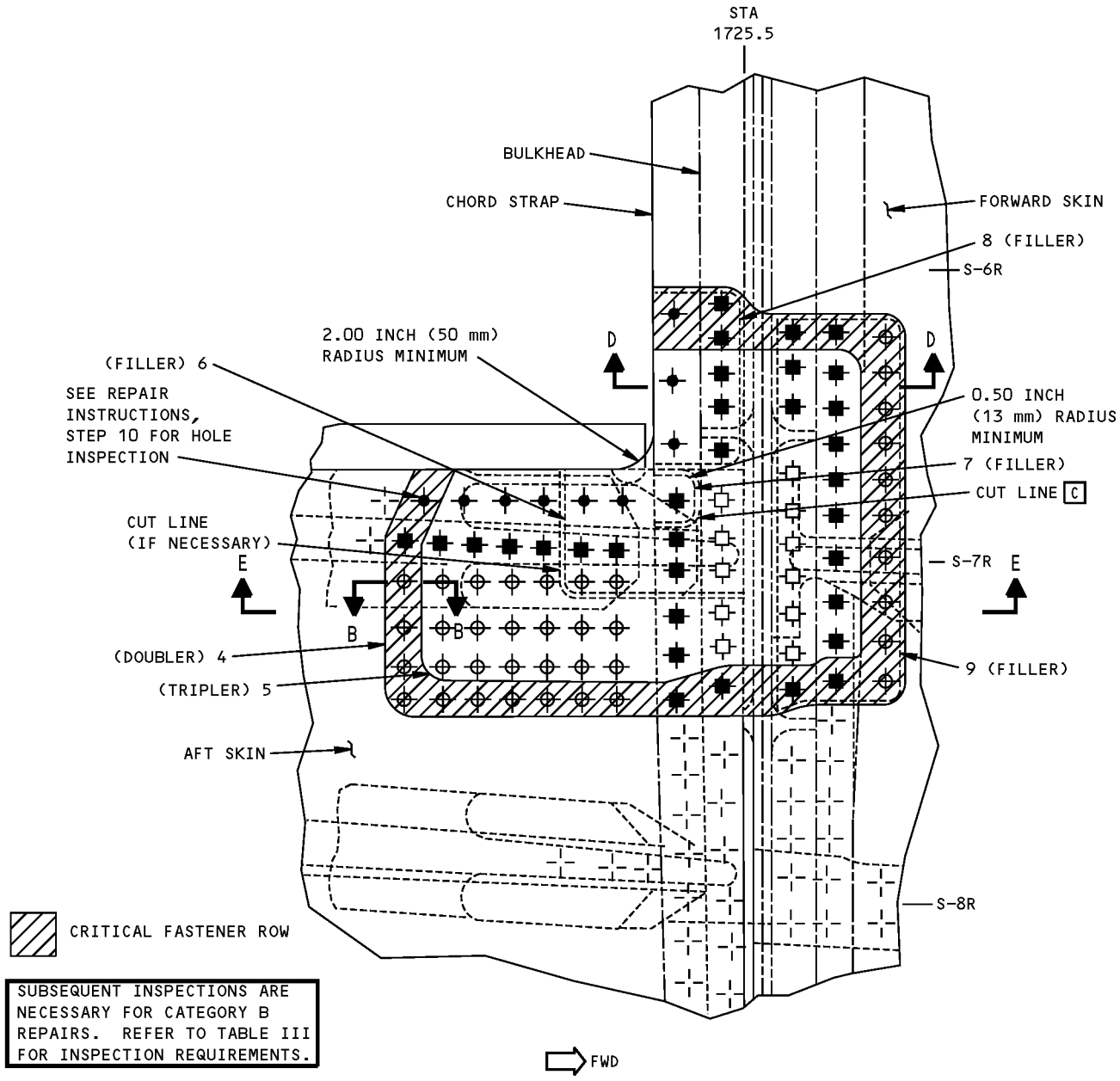
Section 48 - Skin and Chord Strap Crack Repair - STA 1725.5
Figure 201 (Sheet 3 of 9)



Section 48 - Skin and Chord Strap Crack Repair - STA 1725.5
Figure 201 (Sheet 4 of 9)

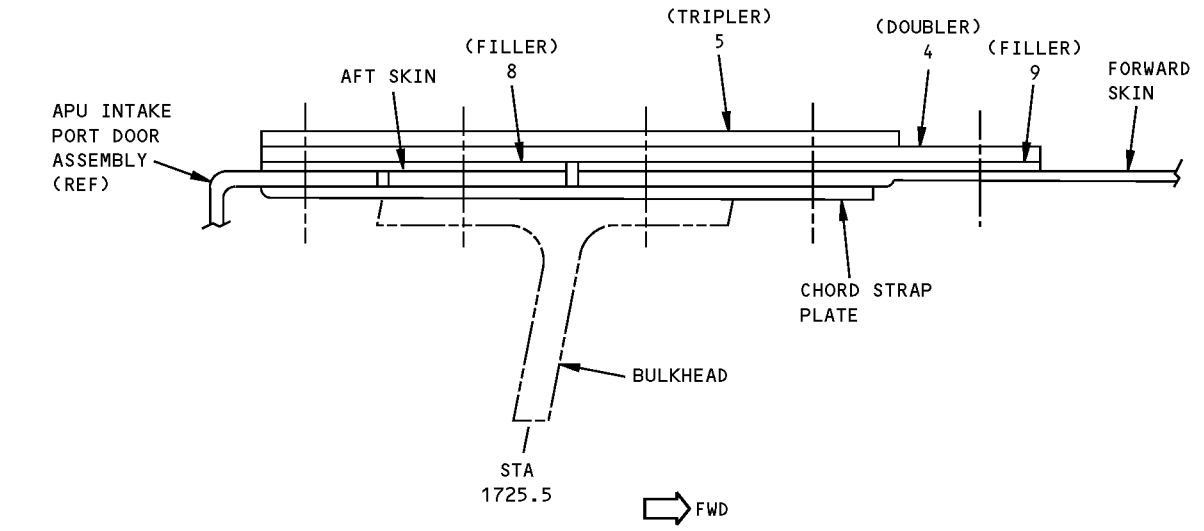


Section 48 - Skin and Chord Strap Crack Repair - STA 1725.5
Figure 201 (Sheet 5 of 9)

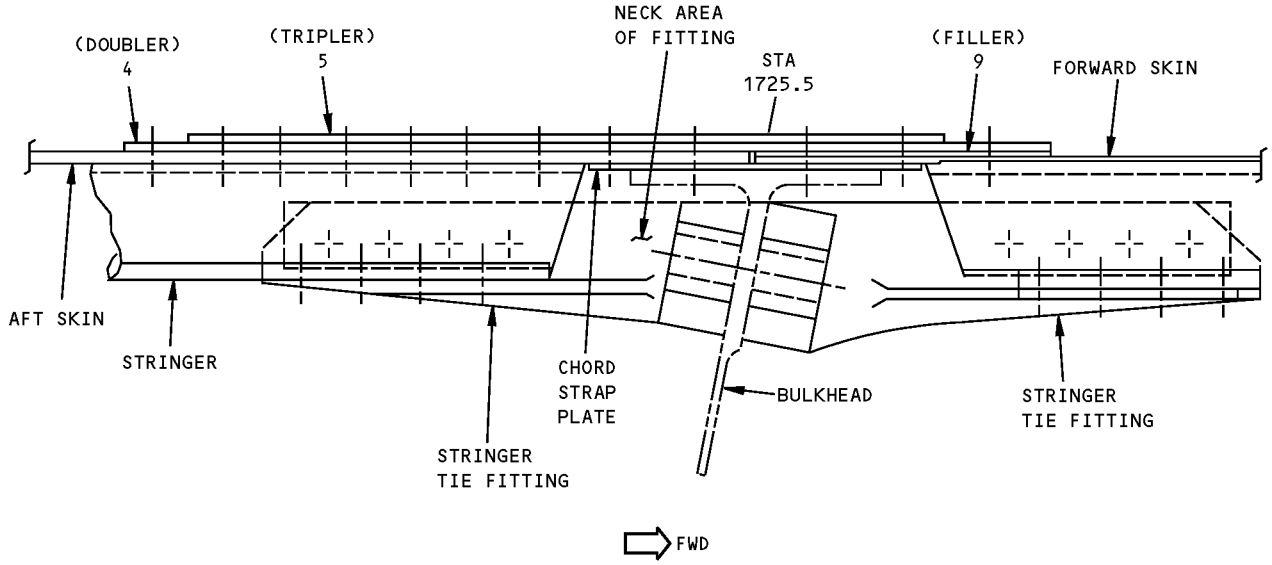


REPAIR FOR CHORD STRAP AND/OR SKIN CRACK
DETAIL III B

Section 48 - Skin and Chord Strap Crack Repair - STA 1725.5
Figure 201 (Sheet 6 of 9)

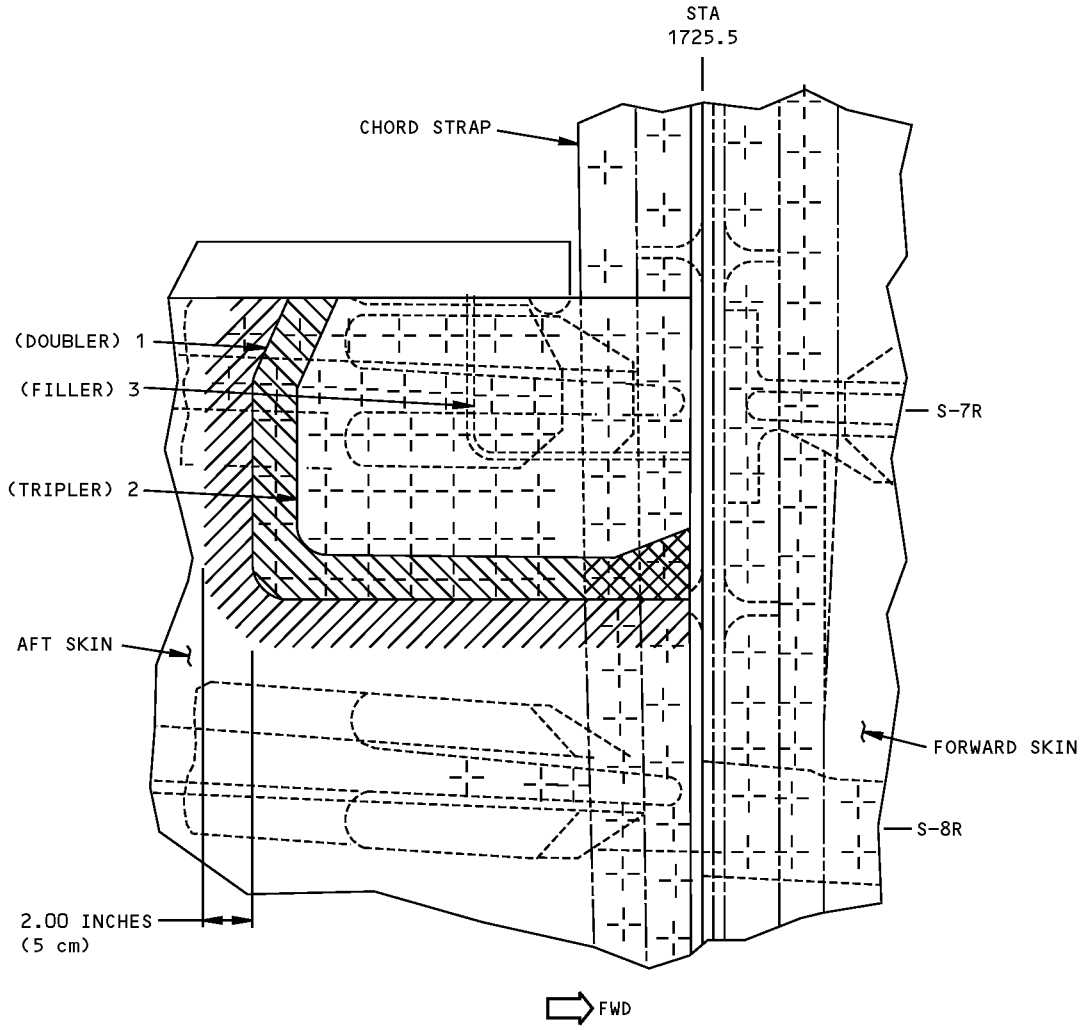


SECTION D–D



SECTION E–E

Section 48 - Skin and Chord Strap Crack Repair - STA 1725.5
Figure 201 (Sheet 7 of 9)



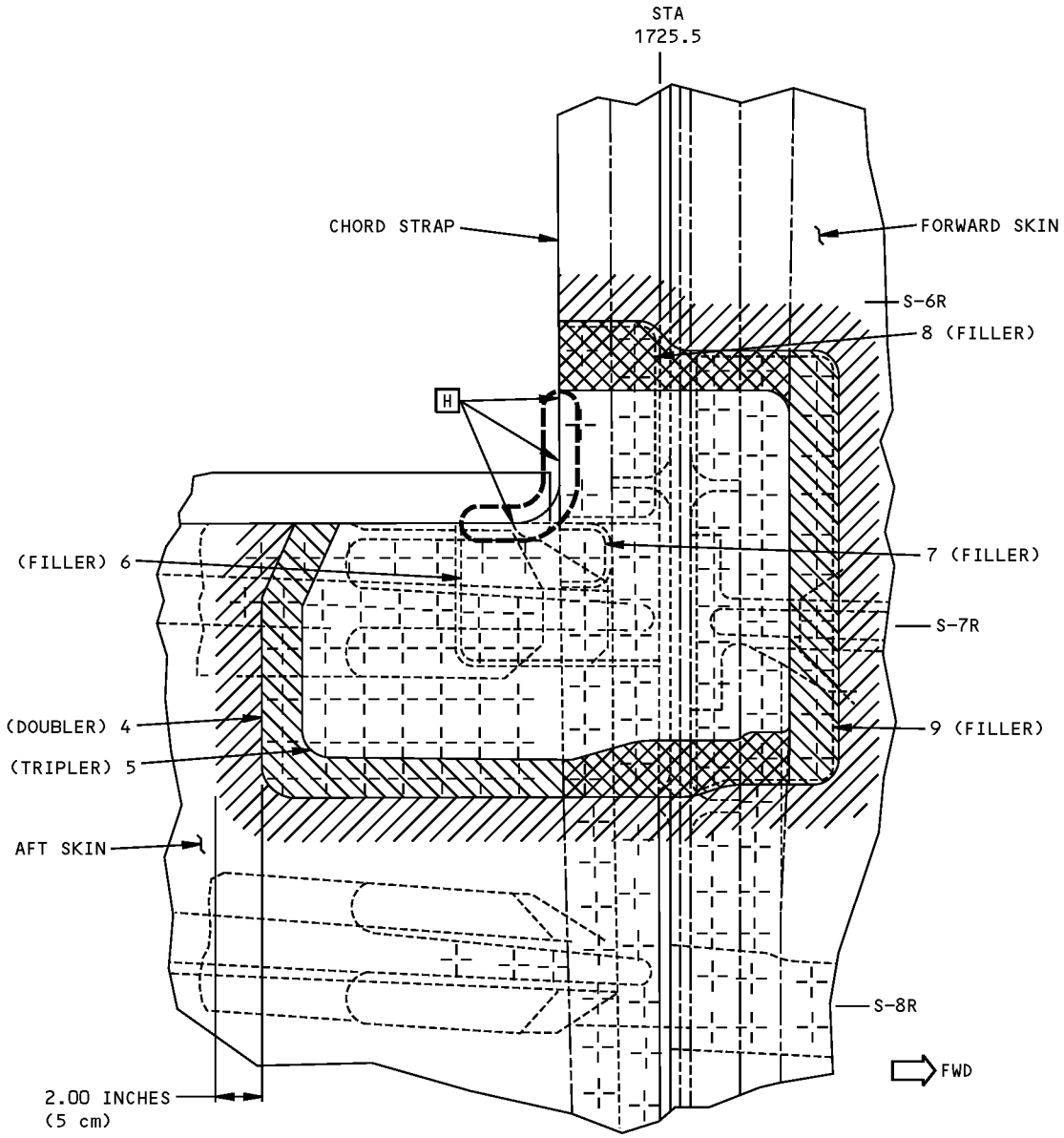
SKIN INSPECTION AREA AT THE CRITICAL FASTENER ROW. DO A LOW FREQUENCY EDDY CURRENT (LFEC) INSPECTION EXTERNALLY THROUGH THE PART 1 DOUBLER.

SKIN AND CHORD STRAP INSPECTION AREA AT THE CRITICAL FASTENER ROW. DO A LOW FREQUENCY EDDY CURRENT (LFEC) INSPECTION EXTERNALLY THROUGH THE PART 1 DOUBLER.

SKIN INSPECTION AREA AROUND THE REPAIR. DO A DETAILED VISUAL INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL II [D]
DETAIL IV

Section 48 - Skin and Chord Strap Crack Repair - STA 1725.5
Figure 201 (Sheet 8 of 9)



SKIN INSPECTION AREA AT THE CRITICAL FASTENER ROW. DO A LOW FREQUENCY EDDY CURRENT (LFEC) INSPECTION EXTERNALLY THROUGH THE PART 4 DOUBLER.

SKIN AND CHORD STRAP INSPECTION AREA AT THE CRITICAL FASTENER ROW. DO A LOW FREQUENCY EDDY CURRENT (LFEC) EXTERNALLY THROUGH THE PART 4 DOUBLER.

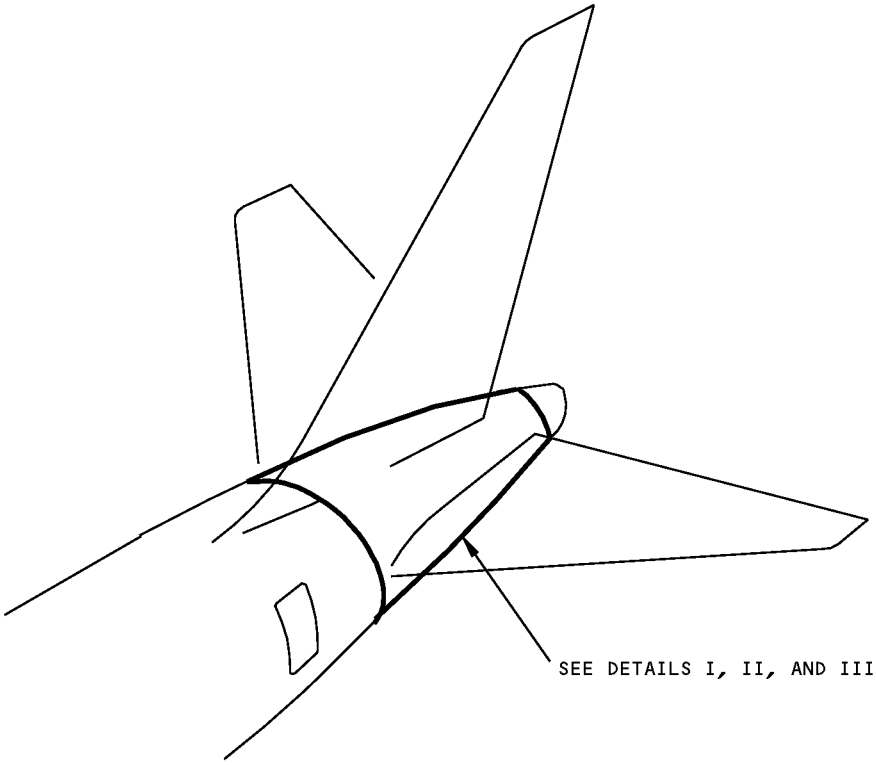
REPAIR DOUBLER AND TRIPLER INSPECTION AREA AROUND THE REPAIR. DO A HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTION EXTERNALLY AND INTERNALLY TO VISIBLE AREA OF DOUBLER AND TRIPLER, INCLUDING CORNER EDGES. H

SKIN INSPECTION AREA AROUND THE REPAIR. DO A DETAILED VISUAL INSPECTION EXTERNALLY.

INSPECTION AREAS FOR DETAIL III D
DETAIL V

Section 48 - Skin and Chord Strap Crack Repair - STA 1725.5
Figure 201 (Sheet 9 of 9)

IDENTIFICATION 1 - SECTION 48 - STRINGERS



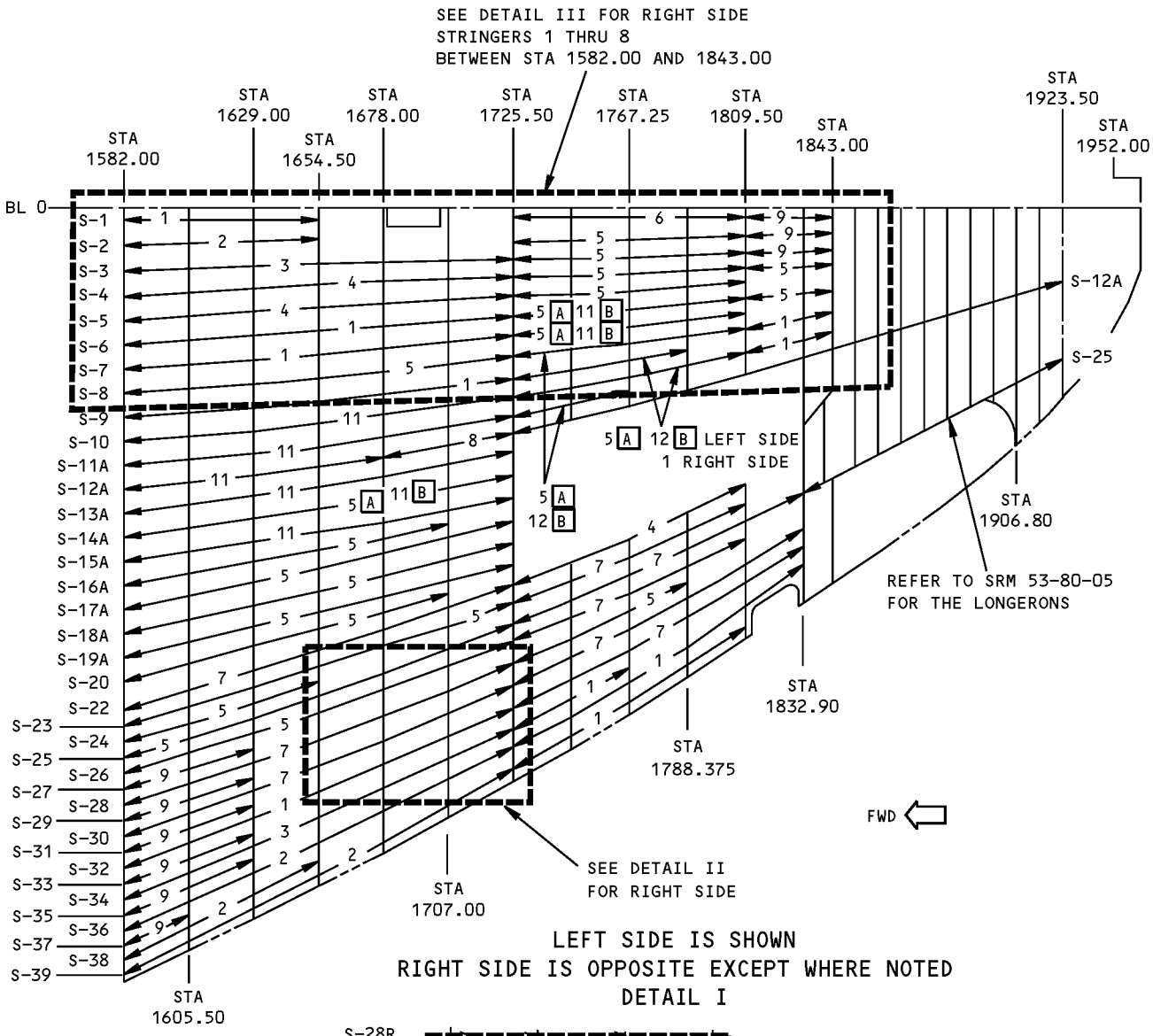
NOTES

- SKIN PANELS AND STRINGERS ARE ON SAME REFERENCE DRAWINGS. REFER TO 53-80-01

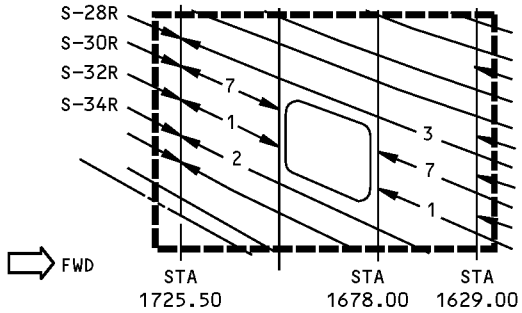
[A] FOR AIRPLANES WITHOUT EXTENDED RANGE PROVISIONS

[B] FOR AIRPLANES WITH EXTENDED RANGE PROVISIONS

Section 48 - Stringer Identification
Figure 1 (Sheet 1 of 3)

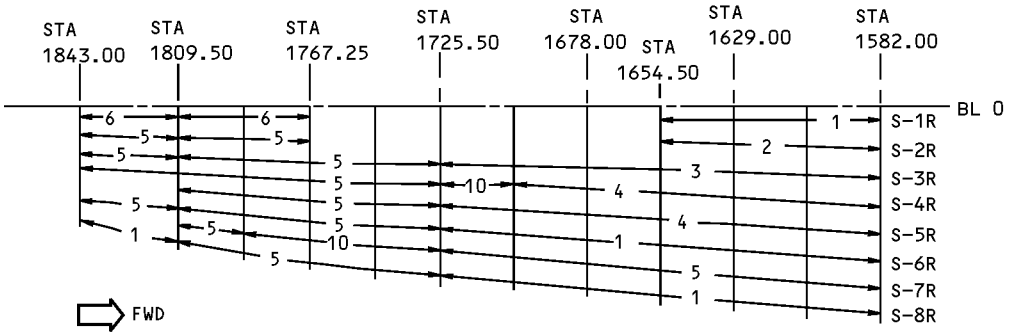


LEFT SIDE IS SHOWN
RIGHT SIDE IS OPPOSITE EXCEPT WHERE NOTED
DETAIL I



RIGHT SIDE
DETAIL II

Section 48 - Stringer Identification
Figure 1 (Sheet 2 of 3)



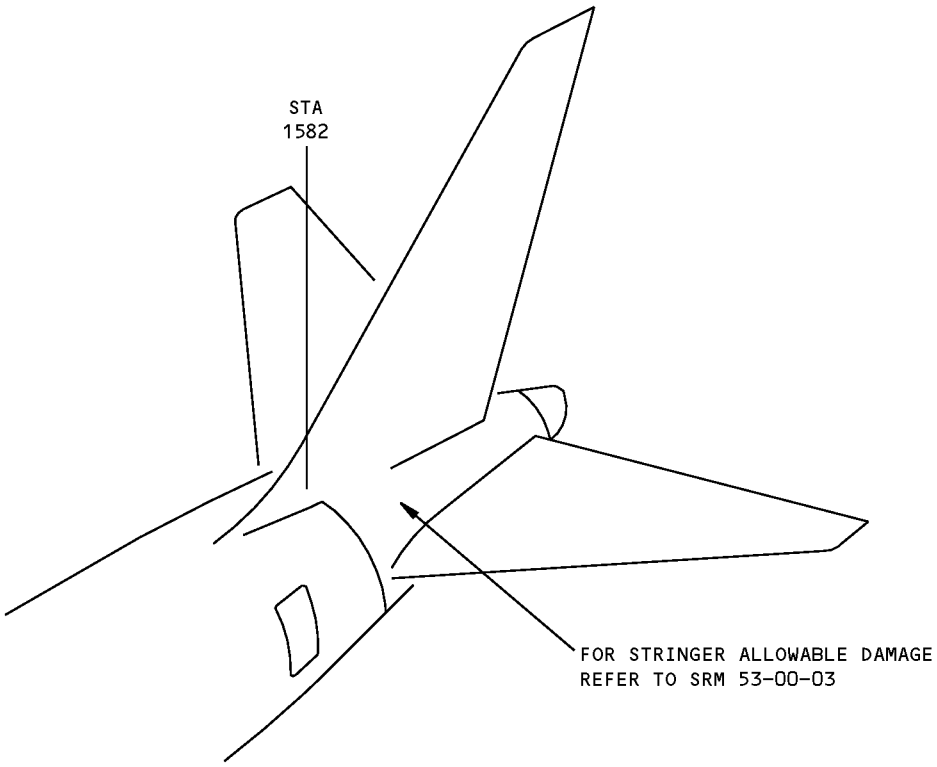
RIGHT SIDE
DETAIL III

ITEM	DESCRIPTION	GAGE	MATERIAL	STRINGER TYPE	EFFECTIVITY
1	STRINGER		BAC1498-144 CLAD 7075-T6		
2	STRINGER		BAC1498-147 7075-T6		
3	STRINGER		BAC1498-146 7075-T6		
4	STRINGER		BAC1498-145 7075-T6		
5	STRINGER		BAC1498-142 CLAD 7075-T6		
6	STRINGER		BAC1498-141 CLAD 7075-T6		
7	STRINGER		BAC1498-143 CLAD 7075-T6		
8	STRINGER		BAC1510-880 7075-T6511		
9	STRINGER		BAC1498-140 CLAD 7075-T6		
10	STRINGER		BAC1509-100317 7075-T6		
11	STRINGER		BAC1498-143 CLAD 7075-T62		
12	STRINGER		BAC1498-144 CLAD 7075-T62		

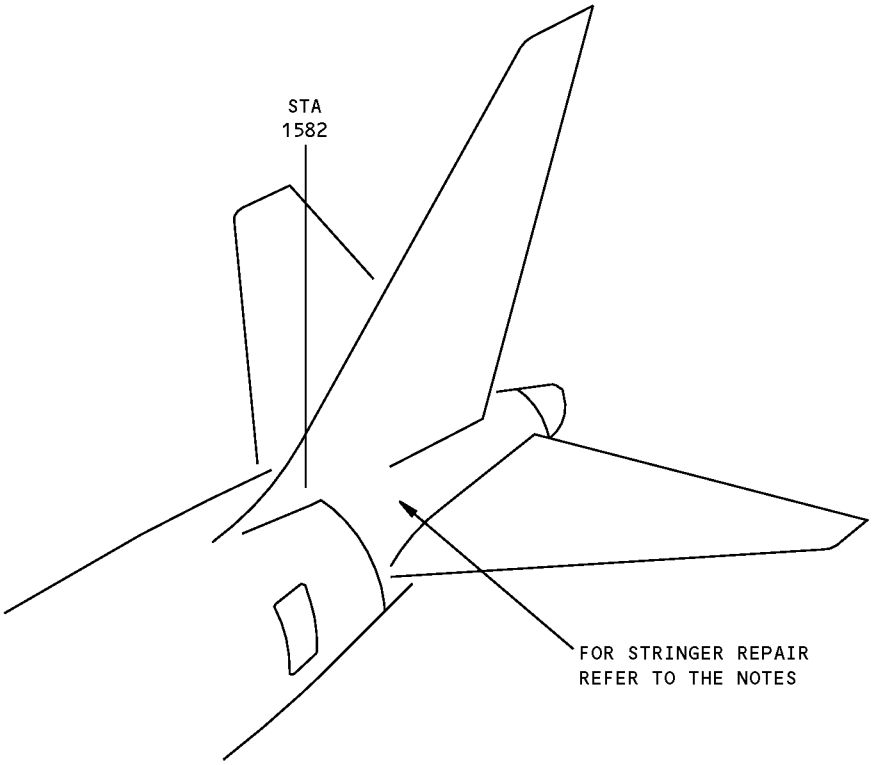
LIST OF MATERIALS FOR DETAILS I, II, AND III

Section 48 - Stringer Identification
Figure 1 (Sheet 3 of 3)

ALLOWABLE DAMAGE GENERAL - SECTION 48 FUSELAGE STRINGERS



Section 48 Stringers Allowable Damage
Figure 101

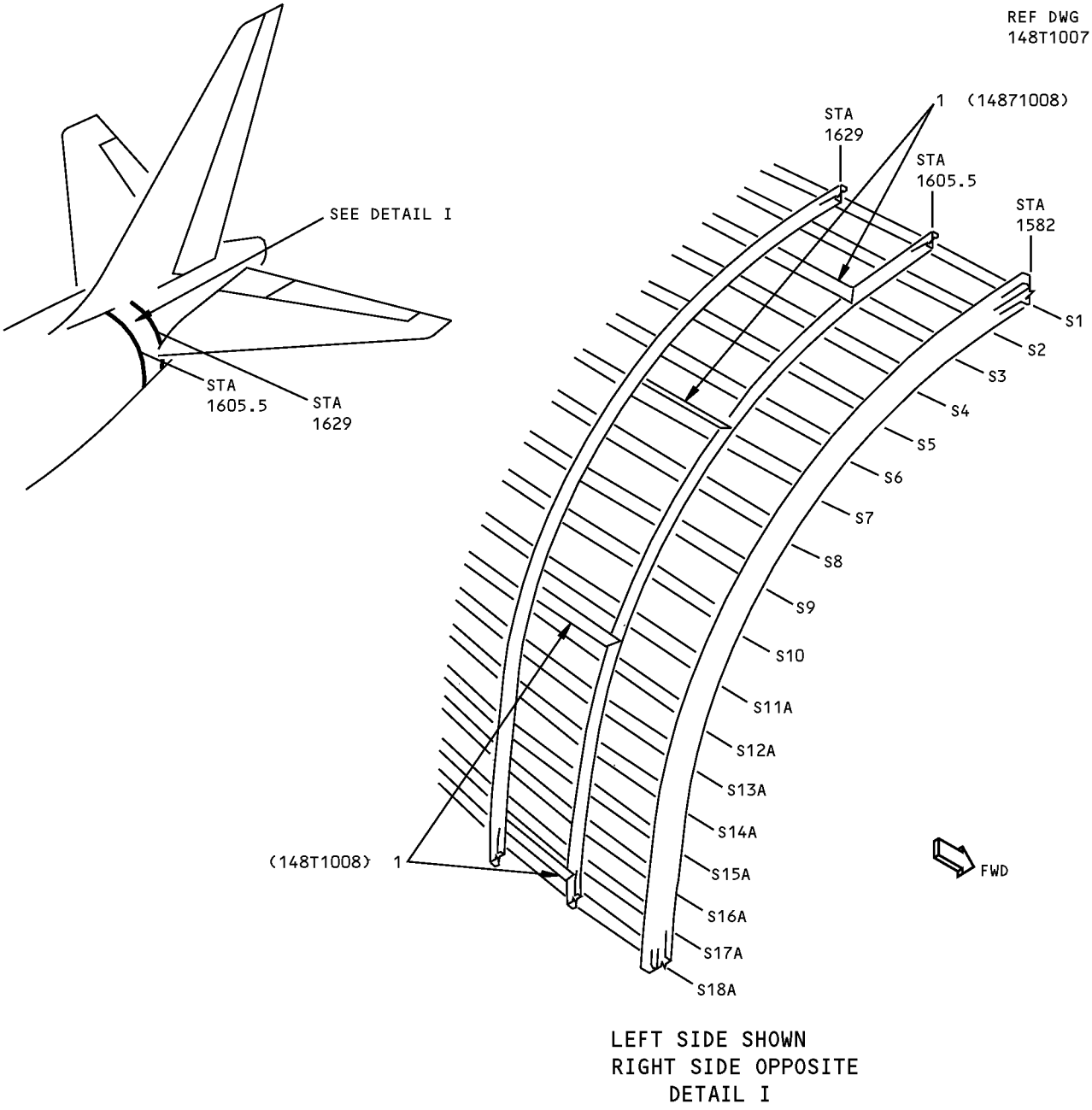


NOTES

- FOR STRINGERS S-1 THROUGH S-19, REFER TO SRM 53-00-03, REPAIR 1.
- FOR STRINGERS S-20 THROUGH S-39, REFER TO SRM 53-00-03, REPAIR 2.

Section 48 Stringer Repair
Figure 201

IDENTIFICATION 1 - SECTION 48 - INTERCOSTALS

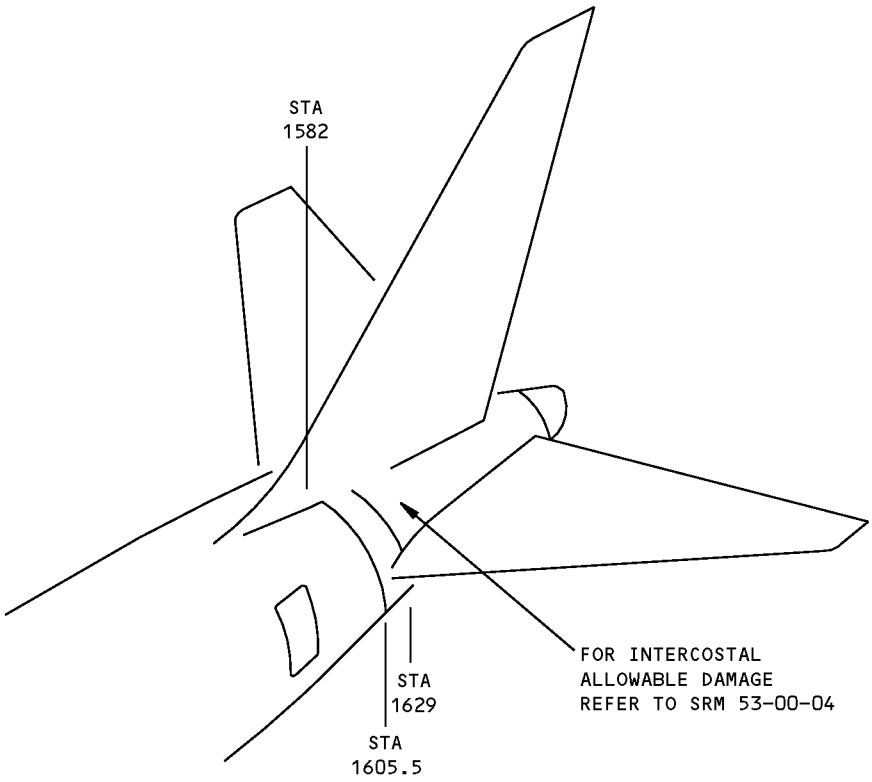


ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	INTERCOSTAL	0.040	CLAD 2024-T42	

LIST OF MATERIALS

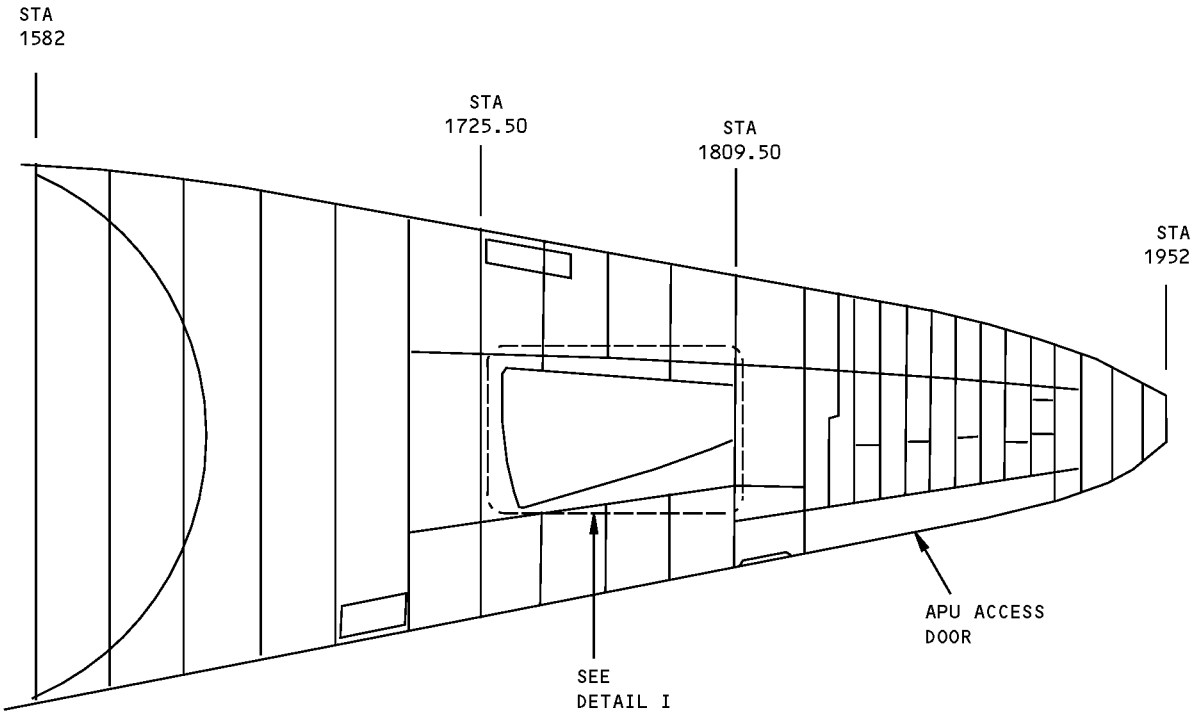
Section 48 - Intercostal Identification
Figure 1

ALLOWABLE DAMAGE GENERAL - SECTION 48 FUSELAGE INTERCOSTALS

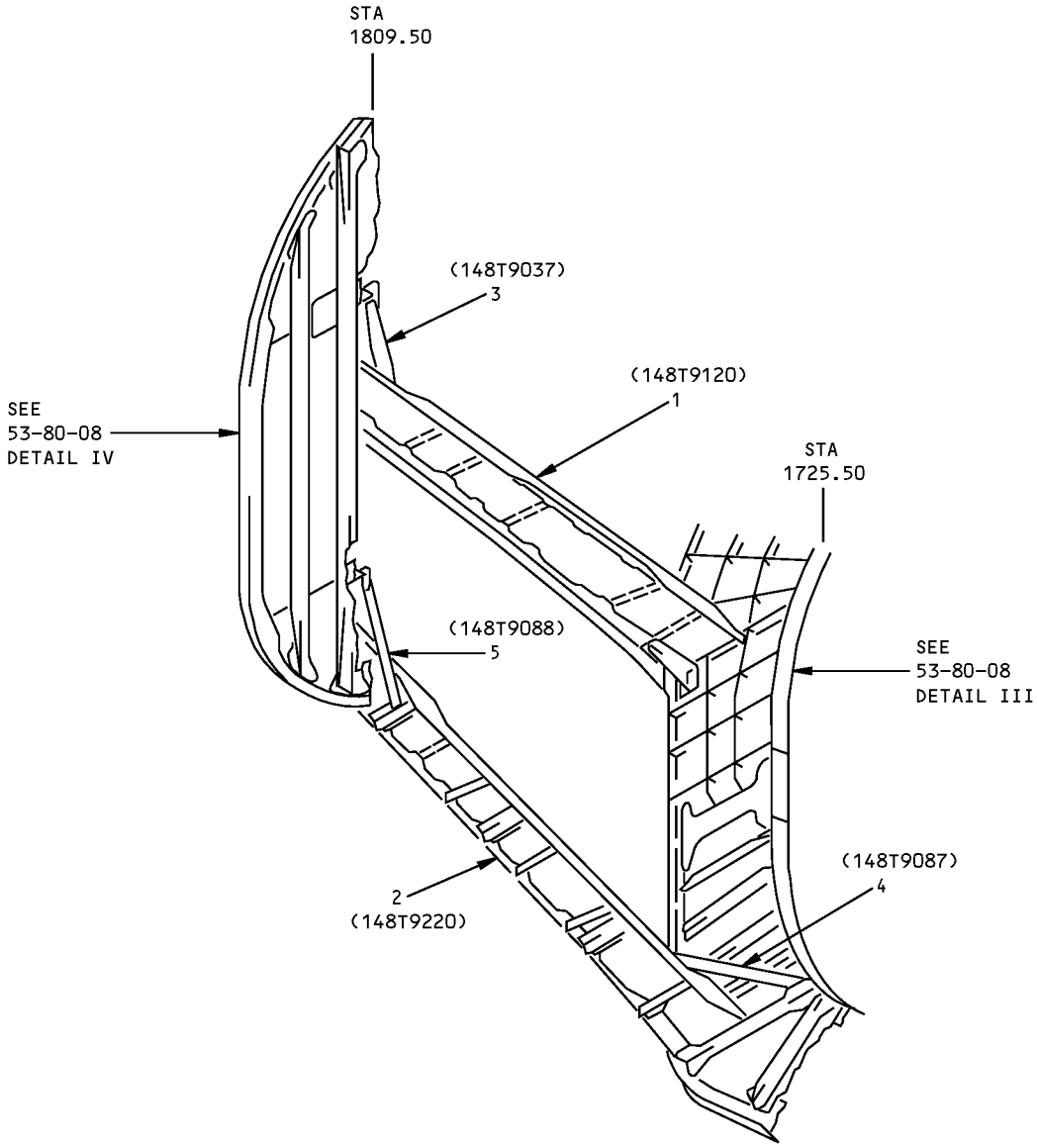


Section 48 Intercostals - Allowable Damage
Figure 101

IDENTIFICATION 1 - LONGERON - STA 1725.50 TO STA 1809.5



Longeron Identification - Sta 1725.50 to Sta 1809.5
Figure 1 (Sheet 1 of 3)



DETAIL I

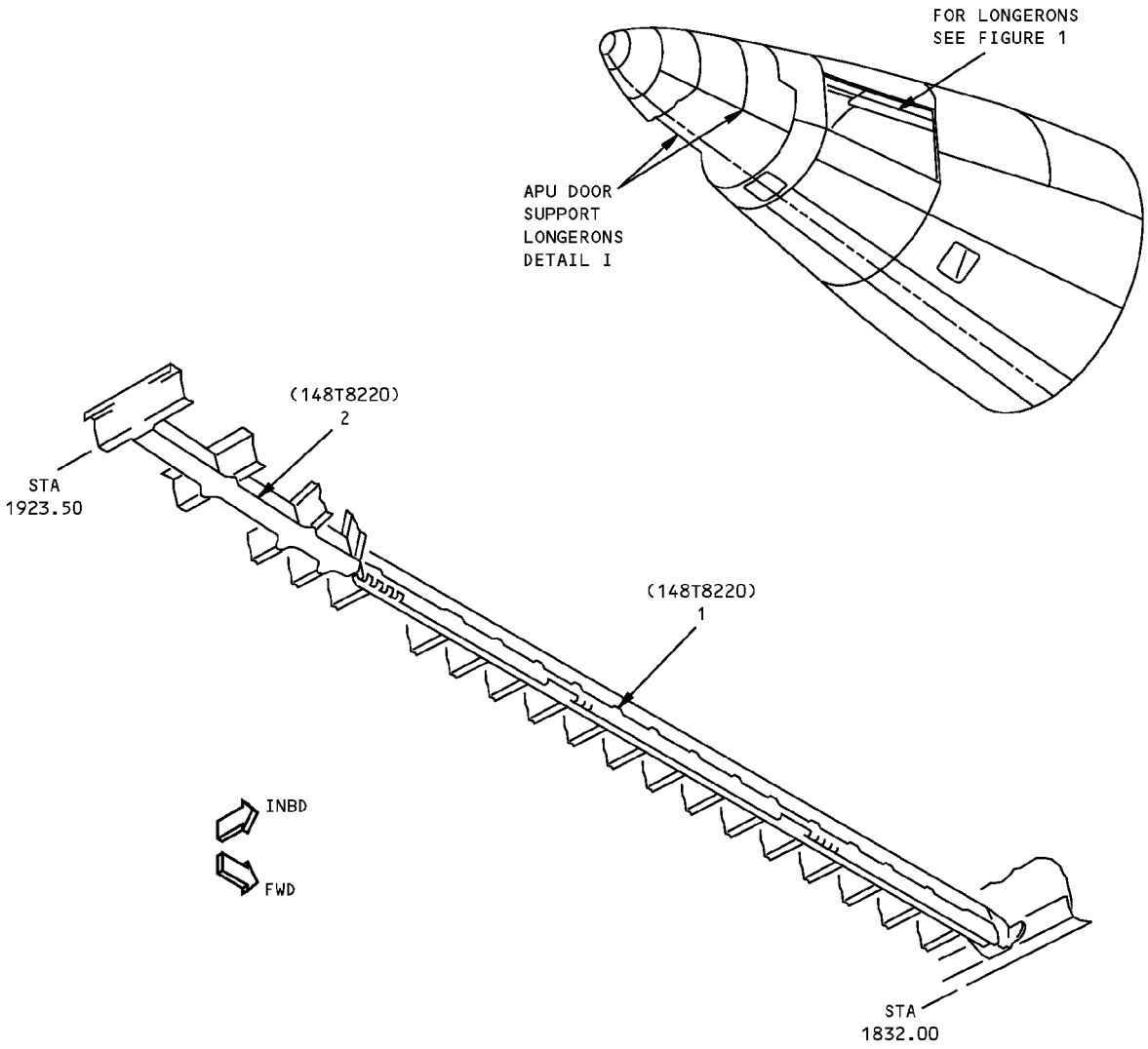
Longeron Identification - Sta 1725.50 to Sta 1809.5
Figure 1 (Sheet 2 of 3)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	UPPER LONGERON ASSY			
	UPPER OUTER CHORD		BAC1503-100434 7075-T62	
	LOWER OUTER CHORD		BAC1503-100434 7075-T62	
	WEB	0.032	CLAD 7075-T6	
	INNER CHORD		AND10136-1607 7075-T62	
2	LOWER LONGERON ASSY			
	UPPER OUTER CHORD	0.125	CLAD 7075-T62	
	LOWER OUTER CHORD	0.125	CLAD 7075-T62	
	WEB	0.032	CLAD 7075-T6	
	INNER CHORD		AND10136-2404 7075-T6511	
3	STRUT		AND10136-2403 7075-T73511	
4	STRUT		BAC1505-100398 7075-T6511	
5	STRUT		BAC1505-100907 7075-T73511	

LIST OF MATERIALS FOR DETAIL I

Longeron Identification - Sta 1725.50 to Sta 1809.5
Figure 1 (Sheet 3 of 3)

IDENTIFICATION 2 - LONGERON - APU DOOR SUPPORT



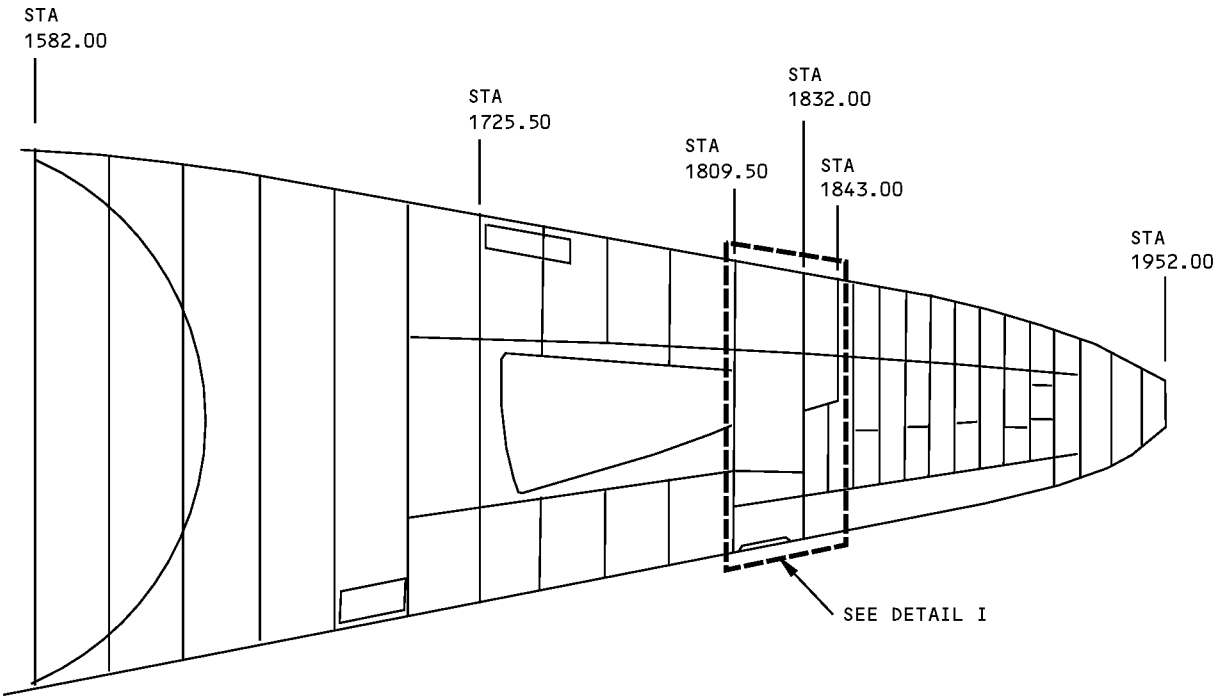
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	CHANNEL	0.050	CLAD 2024-T42	
2	ANGLE	0.063	CLAD 2024-T42	

LIST OF MATERIALS FOR DETAIL I

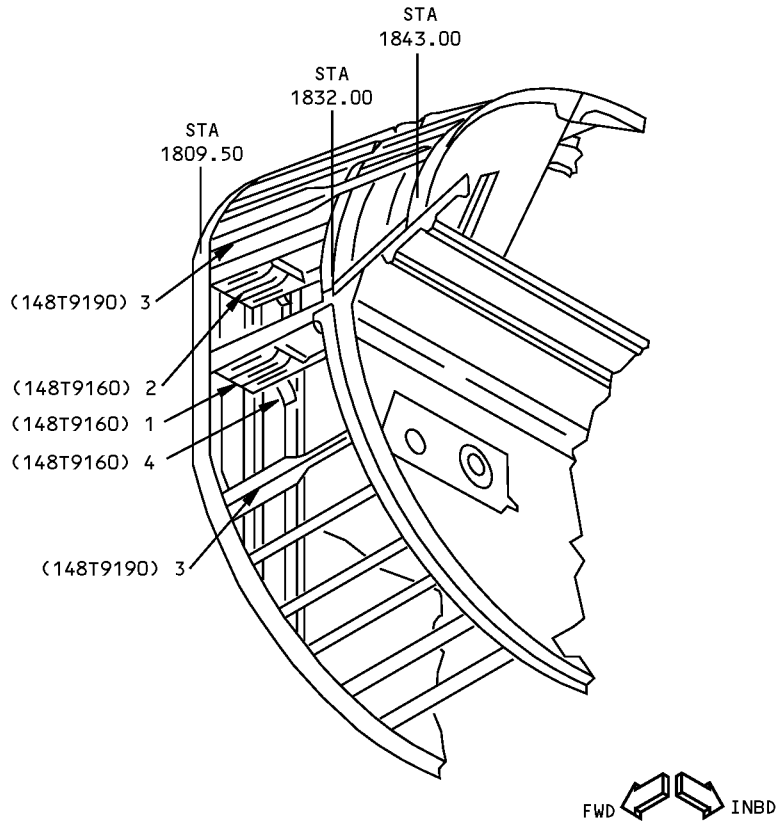
Longeron Identification - APU Door Support
Figure 1

IDENTIFICATION 3 - LONGERON - STA. 1809.50 TO STA. 1843.00



LEFT SIDE VIEW
SECTION 48

Longeron Identification - Sta. 1809.50 to Sta. 1843.00
Figure 1 (Sheet 1 of 2)



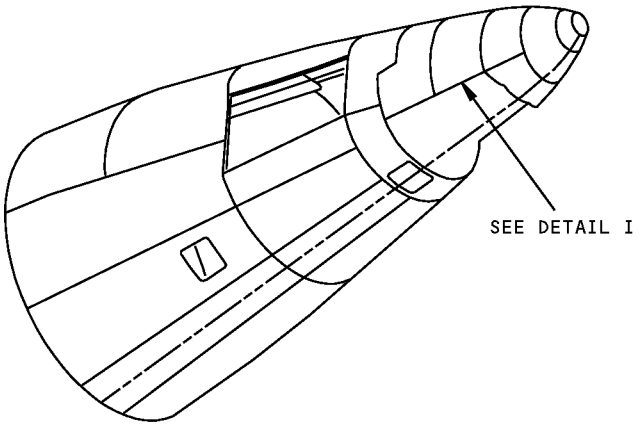
DETAIL I

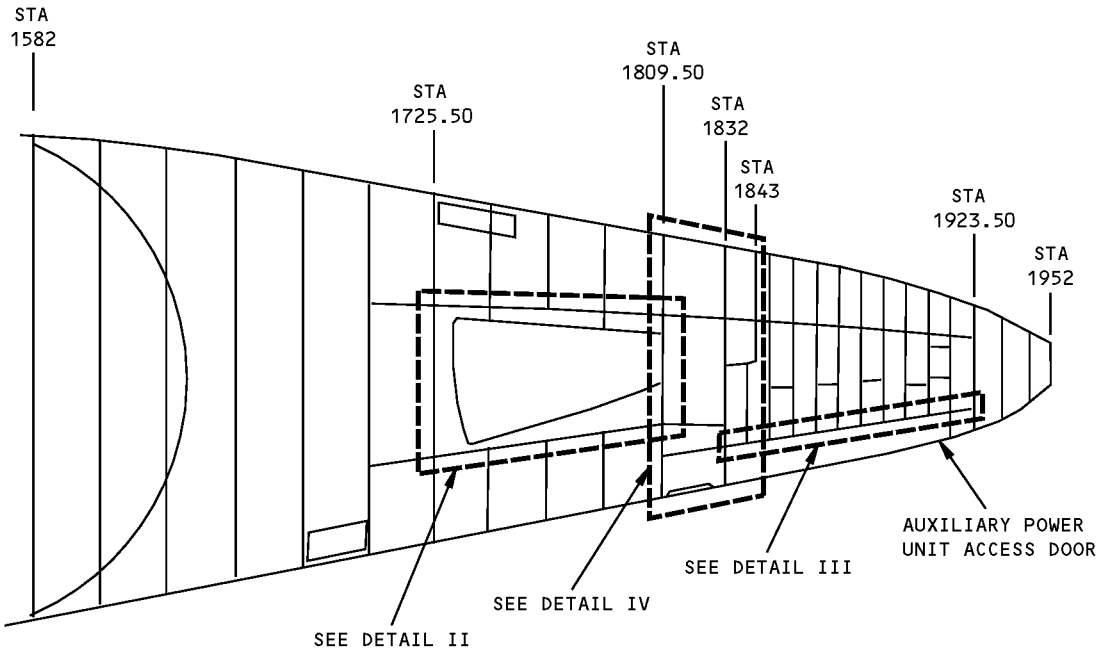
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	INTERCOSTAL ASSY			
	OUTER CHORD		BAC1505-100613 7075-T6511	
	FITTING		FORGING 7175-T736	
2	INTERCOSTAL ASSY			
	OUTER CHORD		AND10136-3005 7075-T6511	
	FITTING		FORGING 7175-T736	
3	LONGERON ASSY			
	UPPER CHORD	0.100	CLAD 7075-T62	
	LOWER CHORD	0.100	CLAD 7075-T62	
4	STRUT		AND10136-3002 7075-T6511	

LIST OF MATERIALS FOR DETAIL I

Longeron Identification - Sta. 1809.50 to Sta. 1843.00
Figure 1 (Sheet 2 of 2)

ALLOWABLE DAMAGE 1 - SECTION 48 LONGERONS

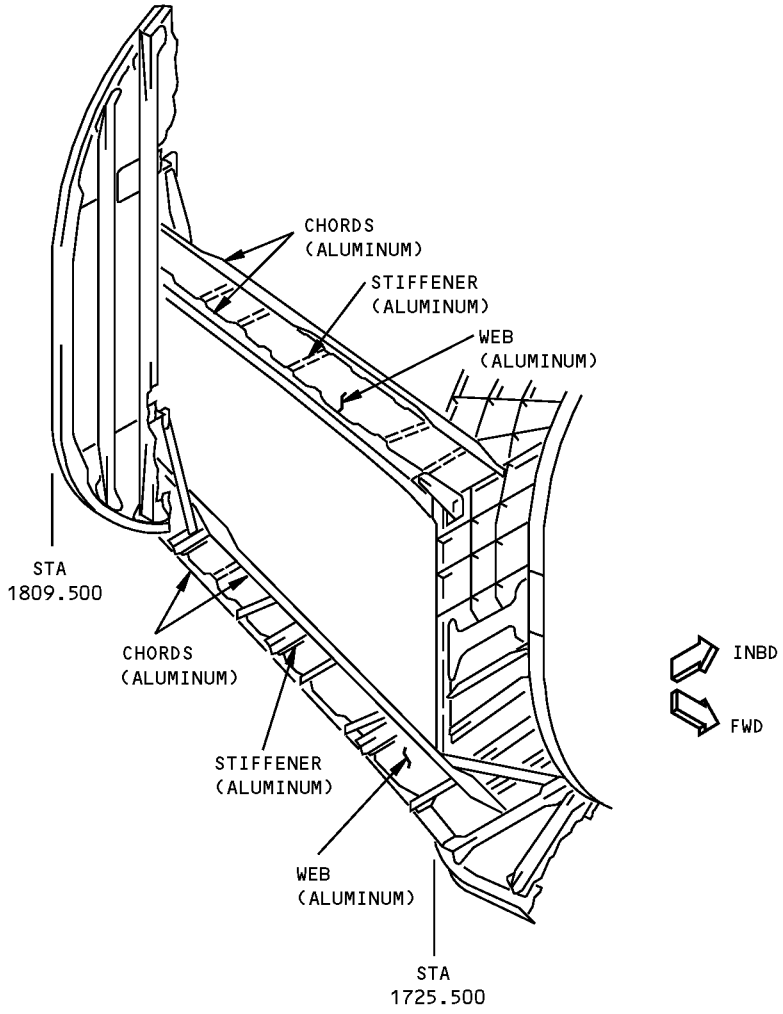




LEFT SIDE VIEW

DETAIL I

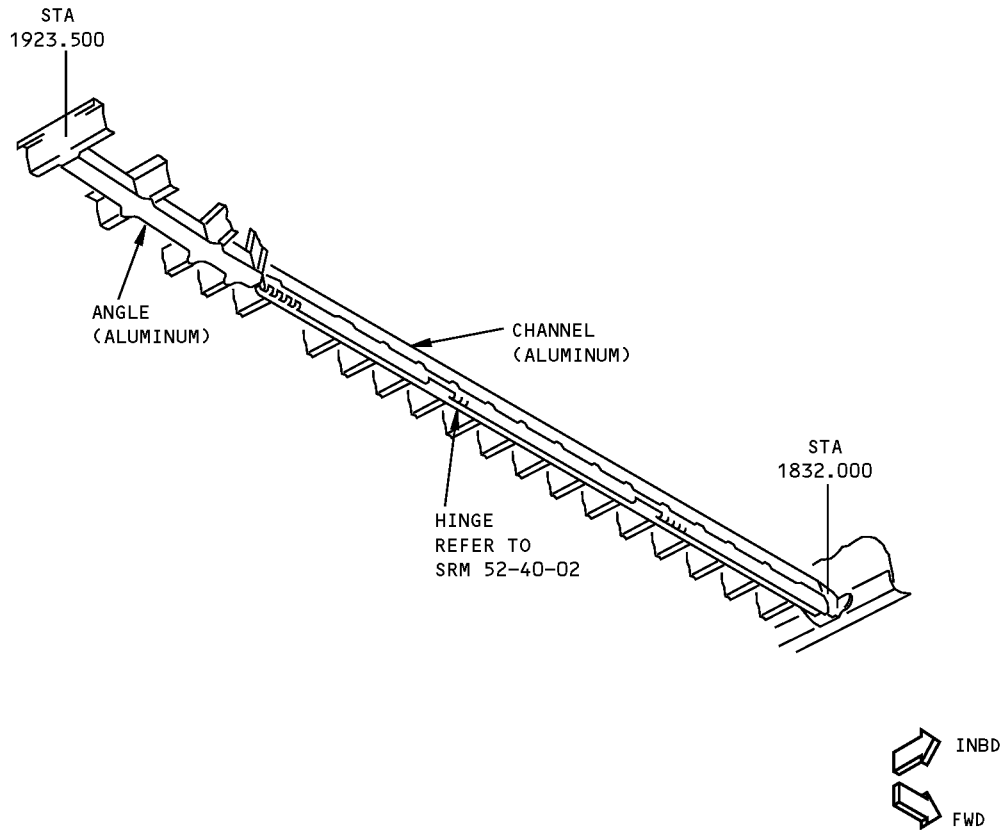
Section 48 - Longerons Allowable Damage
Figure 101 (Sheet 1 of 6)



DETAIL II

ITEM	CRACKS	NICKS, GOUGES AND SCRATCHES	DENTS	HOLES
CHORDS	A	B	NOT PERMITTED	NOT PERMITTED
WEB	A	B	C	NOT PERMITTED
STIFFENERS	A	B	NOT PERMITTED	SEE DETAIL IX

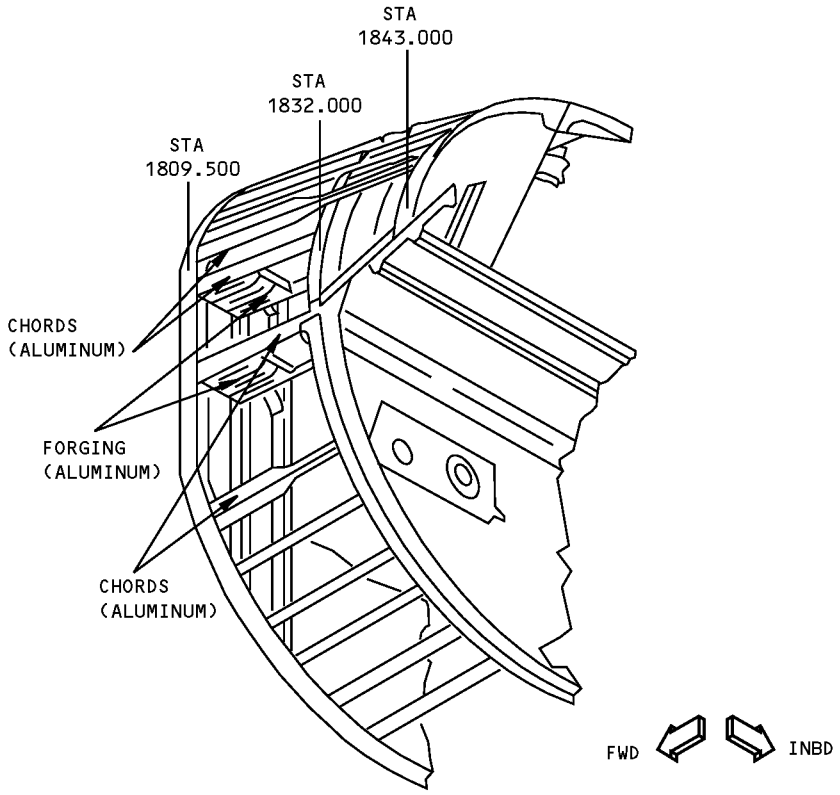
Section 48 - Longerons Allowable Damage
Figure 101 (Sheet 2 of 6)



DETAIL III

ITEM	CRACKS	NICKS, GOUGES AND SCRATCHES	DENTS	HOLES
CHANNEL	A	B	NOT PERMITTED	NOT PERMITTED
ANGLE	A	B	NOT PERMITTED	NOT PERMITTED

Section 48 - Longerons Allowable Damage
Figure 101 (Sheet 3 of 6)



DETAIL IV

ITEM	CRACKS	NICKS, GOUGES AND SCRATCHES	DENTS	HOLES
CHORDS	[A]	[B]	NOT PERMITTED	NOT PERMITTED
FORGING [D]	[A]	[B]	[C]	NOT PERMITTED

Section 48 - Longerons Allowable Damage
Figure 101 (Sheet 4 of 6)

NOTES

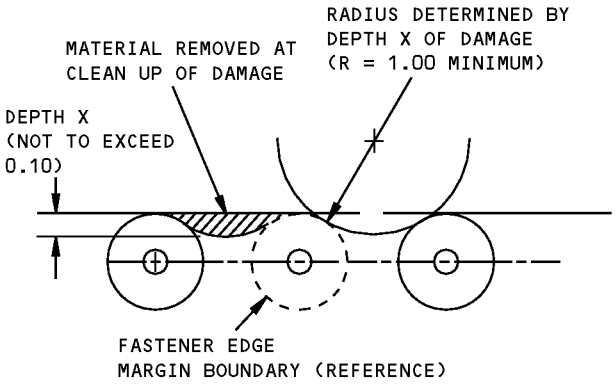
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

[A] ALL CRACKED PARTS MUST BE REPAIRED. CRACKS ON EDGES MUST BE SMOOTHED OUT AS SHOWN IN DETAILS V AND VIII.

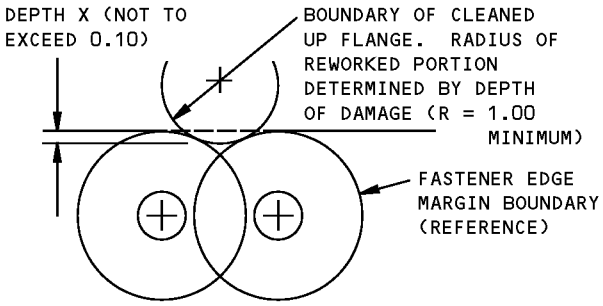
[B] REMOVE DAMAGE AS GIVEN IN DETAIL VI.

[C] SEE DETAIL VII.

[D] SHOT PEEN OR FLAP PEEN ALL REWORKED SURFACES AS GIVEN IN SOPM 20-10-03. USE SHOT NO. 230-550. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK. REFER TO SRM 51-20-06.

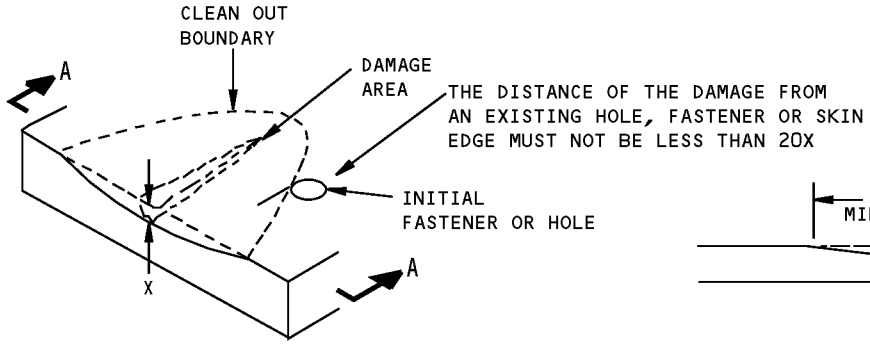


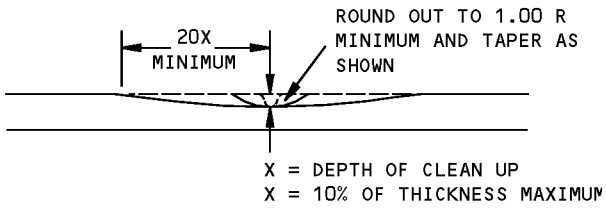
DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEAN UP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL V

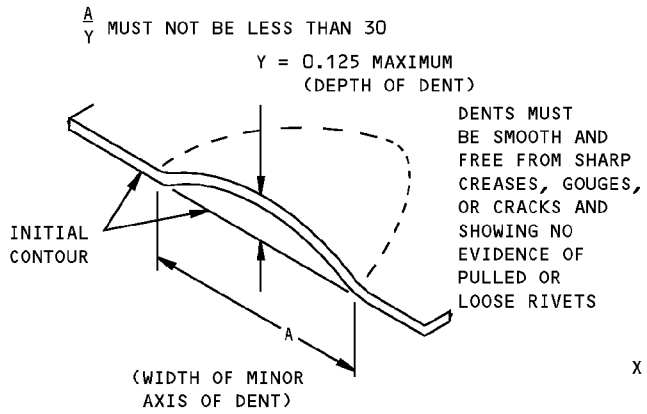




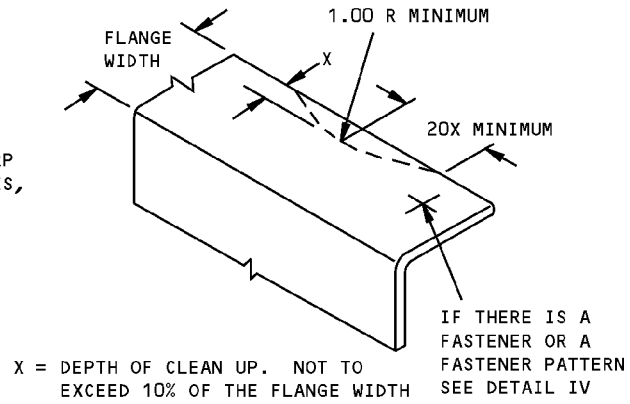
SECTION A-A

REMOVAL OF NICK OR GOUGE DAMAGE ON A SURFACE
DETAIL VI

Section 48 - Longerons Allowable Damage
Figure 101 (Sheet 5 of 6)

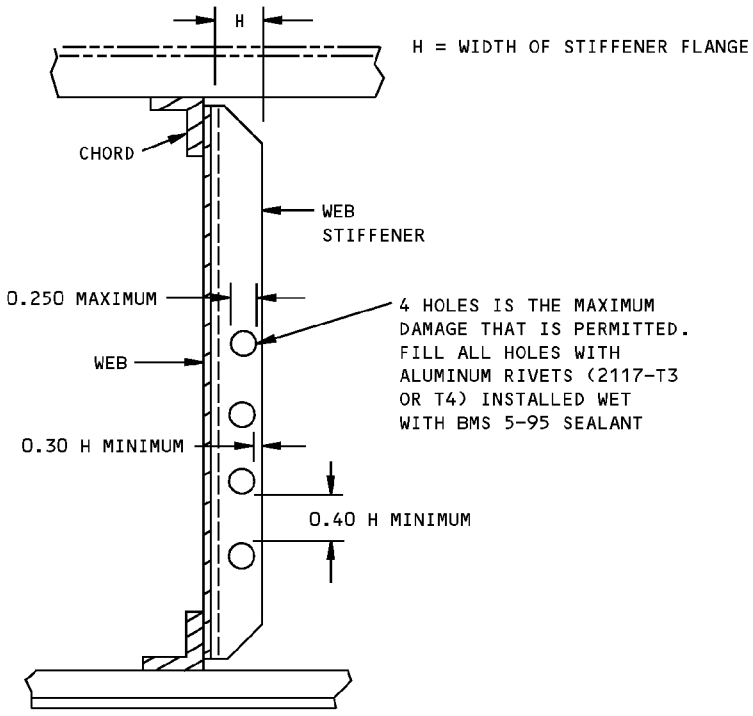


DENT DAMAGE
DETAIL VII



REMOVAL OF NICK OR CRACK
DAMAGE ON AN EDGE
DETAIL VIII

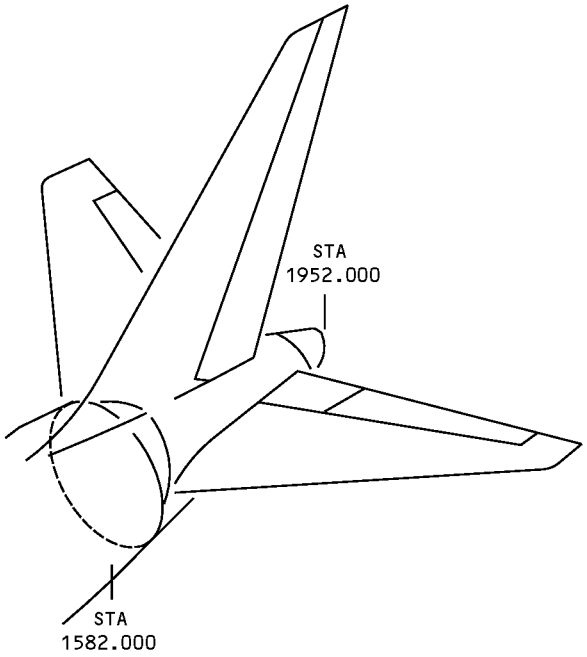
NOTE: HOLE DAMAGE IS NOT PERMITTED IN THE STIFFENER FLANGE THAT IS FASTENED TO THE WEB

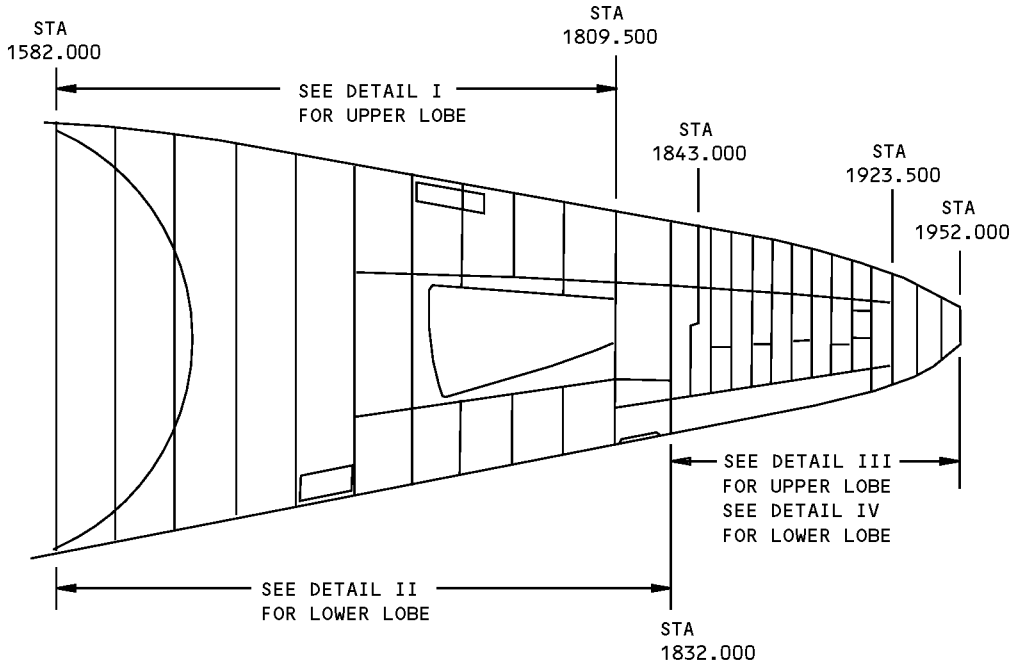


ALLOWABLE DAMAGE LIMITS FOR
HOLES IN WEB STIFFENERS
DETAIL IX

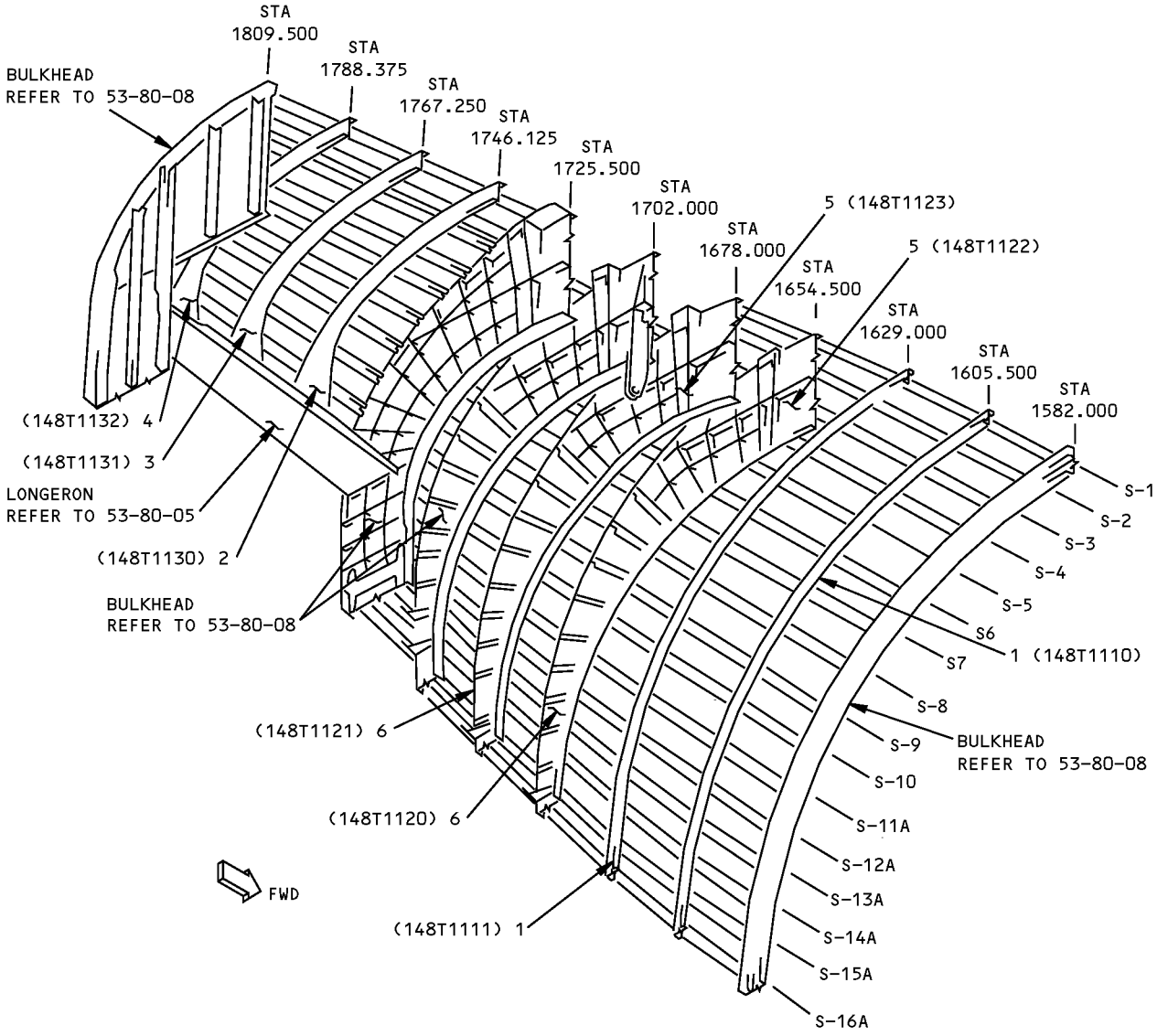
Section 48 - Longerons Allowable Damage
Figure 101 (Sheet 6 of 6)

IDENTIFICATION 1 - SECTION 48 - FRAMES





Section 48 - Frame Identification
Figure 1 (Sheet 1 of 7)



DETAIL I

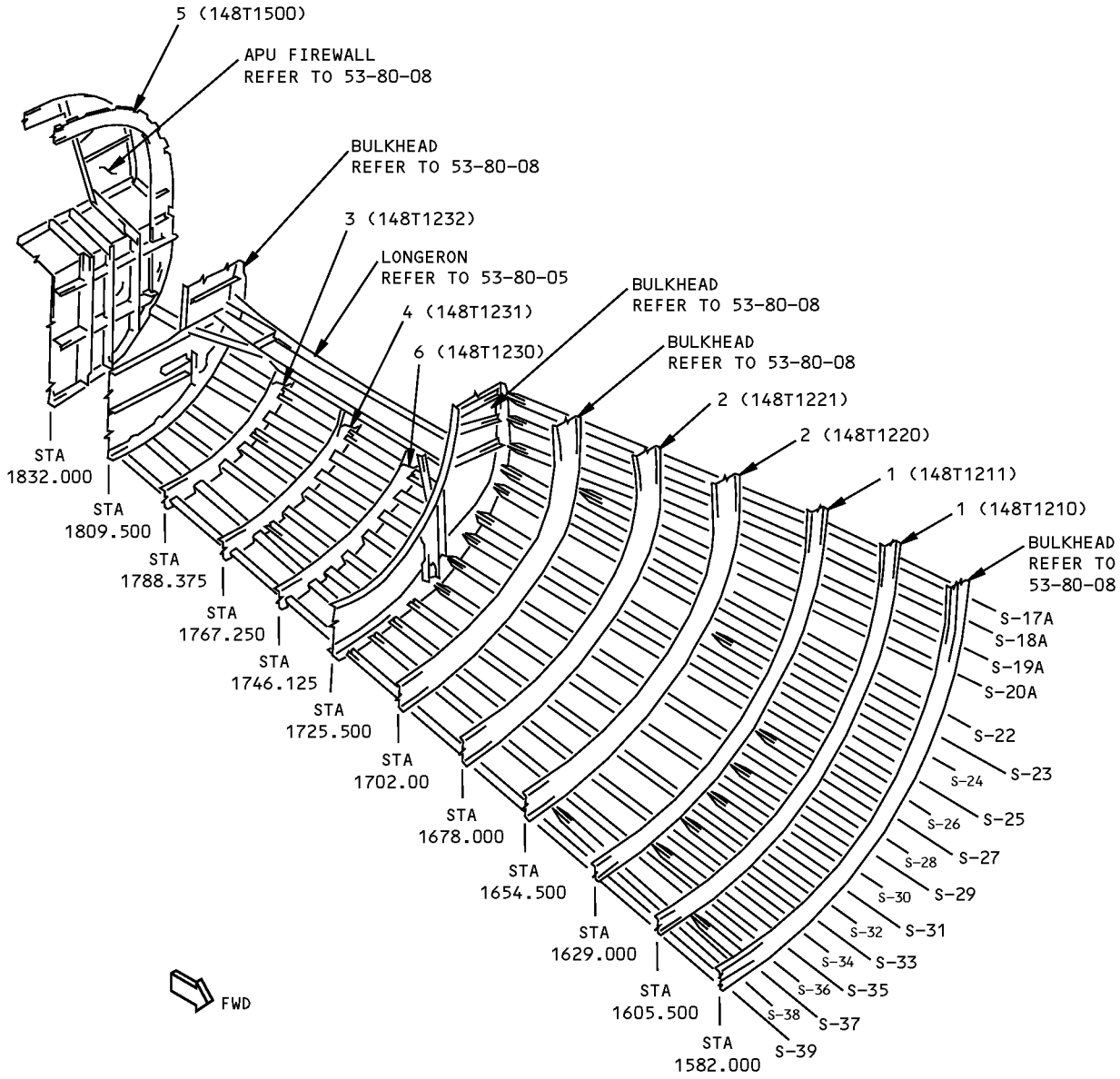
LIST OF MATL

Section 48 - Frame Identification
Figure 1 (Sheet 2 of 7)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	UPPER FRAME		BAC1517-2295 7075-T62	
2	FRAME ASSEMBLY			
	FAILSAFE CHORD	0.071	CLAD 7075-T62	
	WEB	0.063	CLAD 7075-T62	
3	FRAME ASSEMBLY			
	FAILSAFE CHORD	0.071	CLAD 7075-T62	
	WEB	0.071	CLAD 7075-T62	
	FAILSAFE CHORD		BAC1514-581 7075-T6511	
4	FRAME ASSEMBLY			
	FAILSAFE CHORD	0.063	CLAD 7075-T62	
	WEB	0.063	CLAD 7075-T62	
5	FIN SUPPORT FRAME		FORGING 7075-T411	
6	FRAME ASSEMBLY			
	OUTER CHORD		AND10134-3006 7075-T6	
	WEB	0.063	CLAD 7075-T6	
	INNER CHORD		BAC1505-100945 7075-T6	

LIST OF MATERIALS FOR DETAIL I

Section 48 - Frame Identification
Figure 1 (Sheet 3 of 7)



DETAIL II

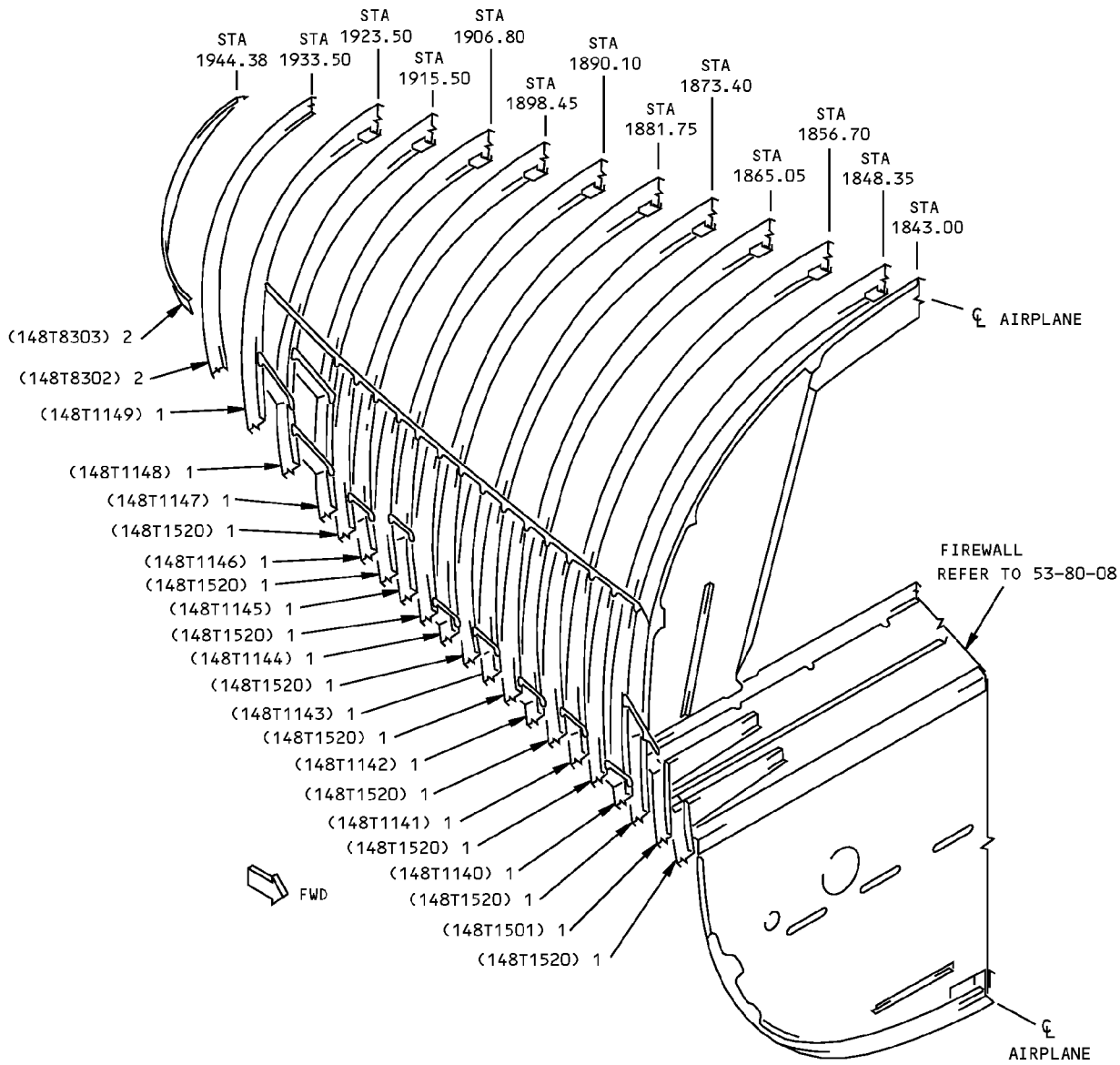
LIST OF MATL

Section 48 - Frame Identification
Figure 1 (Sheet 4 of 7)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	LOWER FRAME ASSEMBLY		BAC1517-2295 7075-T62	
2	FRAME ASSEMBLY			
	OUTER CHORD		BAC1490-2843 CLAD 7075-T62	
	WEB	0.025	CLAD 7075-T6	
	INNER CHORD		BAC1503-100147 7075-T62	
3	FRAME ASSEMBLY			
	FAILSAFE CHORD	0.063	CLAD 7075-T62	
	WEB	0.050	CLAD 7075-T62	
4	FRAME ASSEMBLY			
	FAILSAFE CHORD	0.050	CLAD 7075-T62	
	WEB	0.050	CLAD 7075-T62	
5	FRAME ASSEMBLY			
	FAILSAFE CHORD	0.063	CLAD 7075-T62	
	FRAME	0.063	CLAD 7075-T62	
	FAILSAFE CHORD		AND10134-1407 7075-T6511	
6	FRAME ASSEMBLY			
	FAILSAFE CHORD	0.063	CLAD 7075-T6	
	WEB	0.050	CLAD 7075-T62	

LIST OF MATERIALS FOR DETAIL II

Section 48 - Frame Identification
Figure 1 (Sheet 5 of 7)

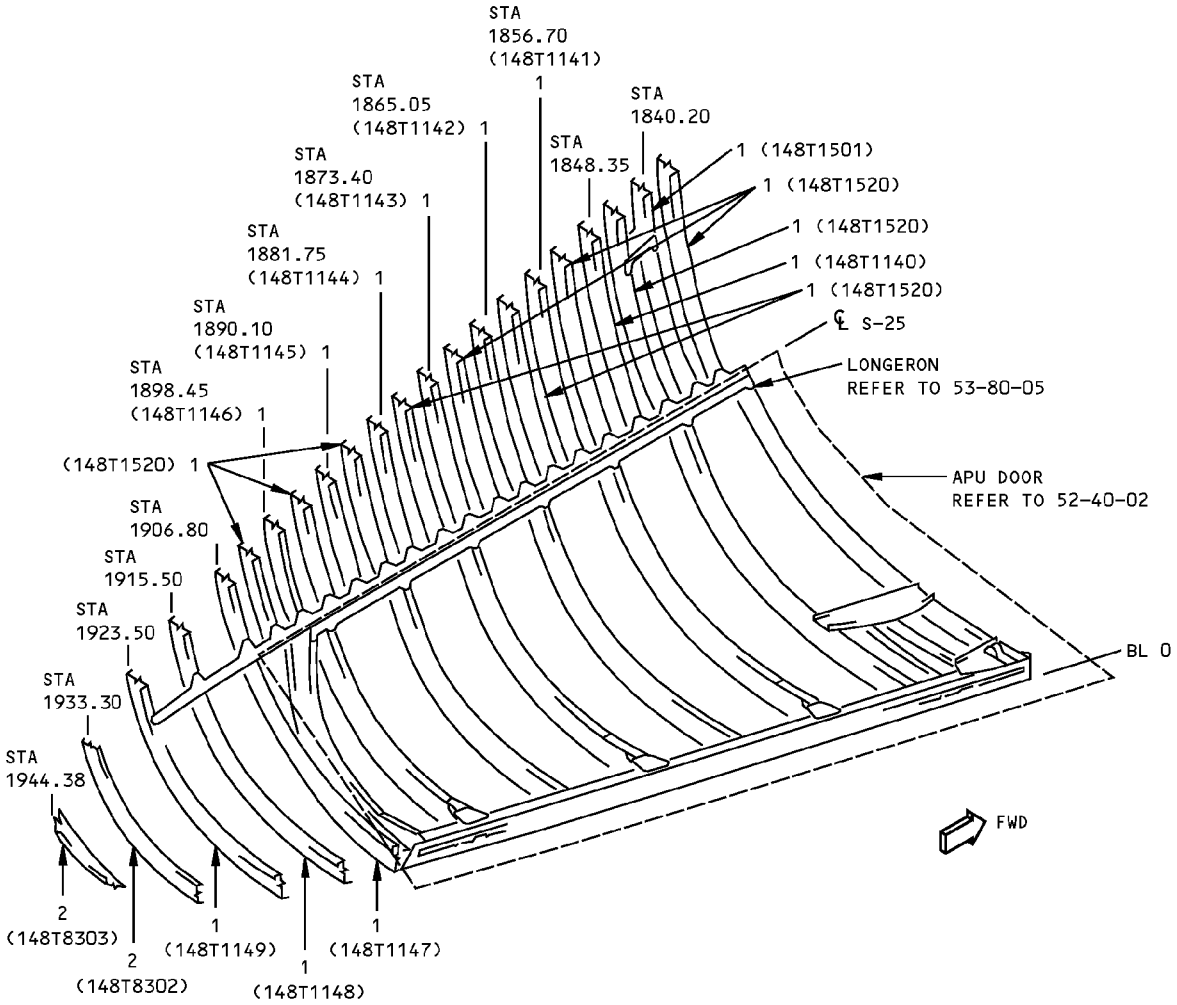


DETAIL III

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.040	CLAD 2024-T42	
2	FRAME	0.050	CLAD 2024-T42	

LIST OF MATERIALS FOR DETAIL III

Section 48 - Frame Identification
Figure 1 (Sheet 6 of 7)



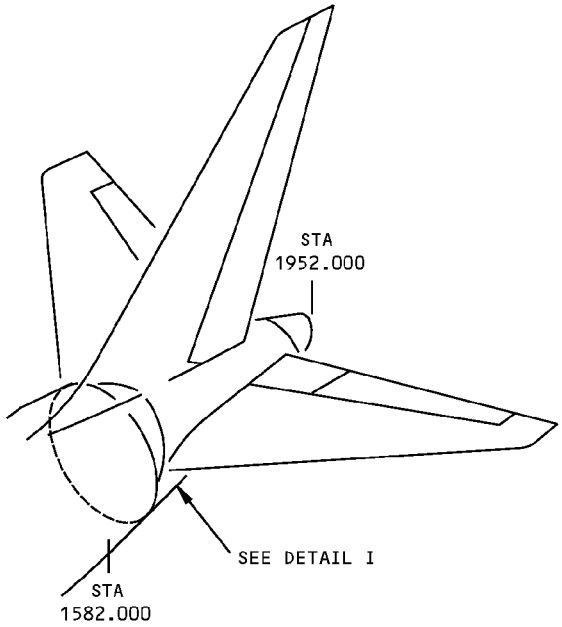
DETAIL IV

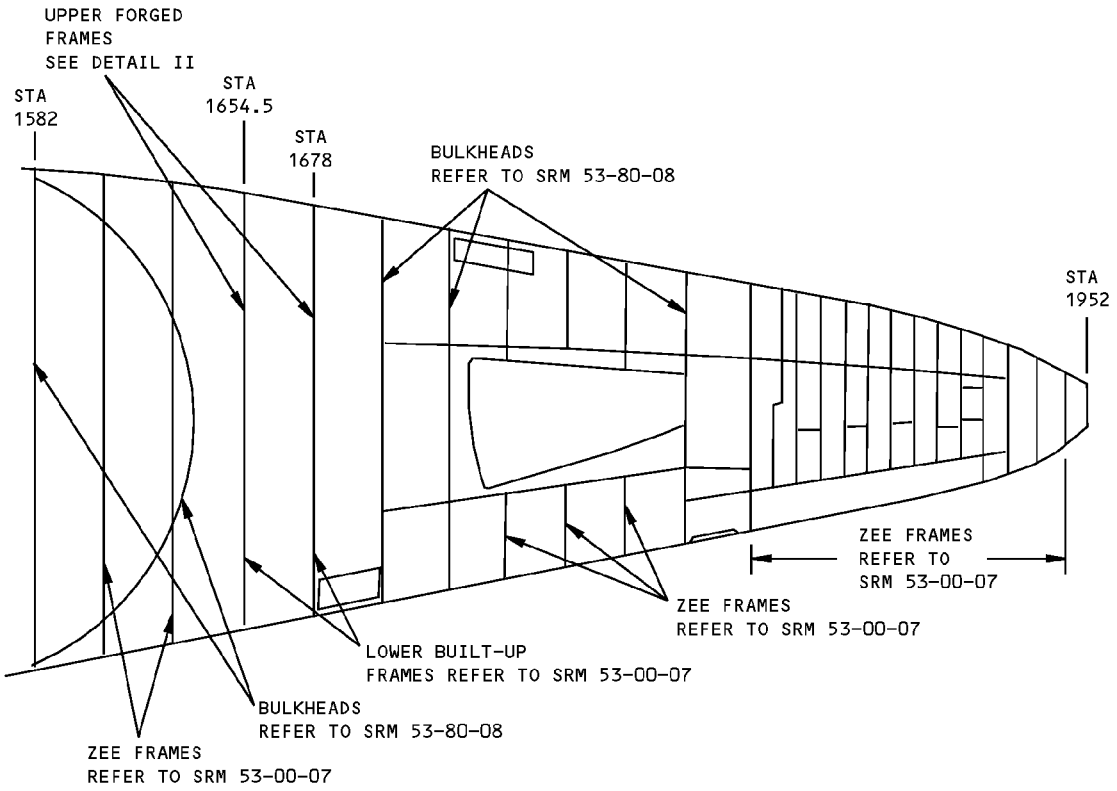
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FRAME	0.040	CLAD 2024-T42	
2	FRAME	0.050	CLAD 2024-T42	

LIST OF MATERIALS FOR DETAIL IV

Section 48 - Frame Identification
Figure 1 (Sheet 7 of 7)

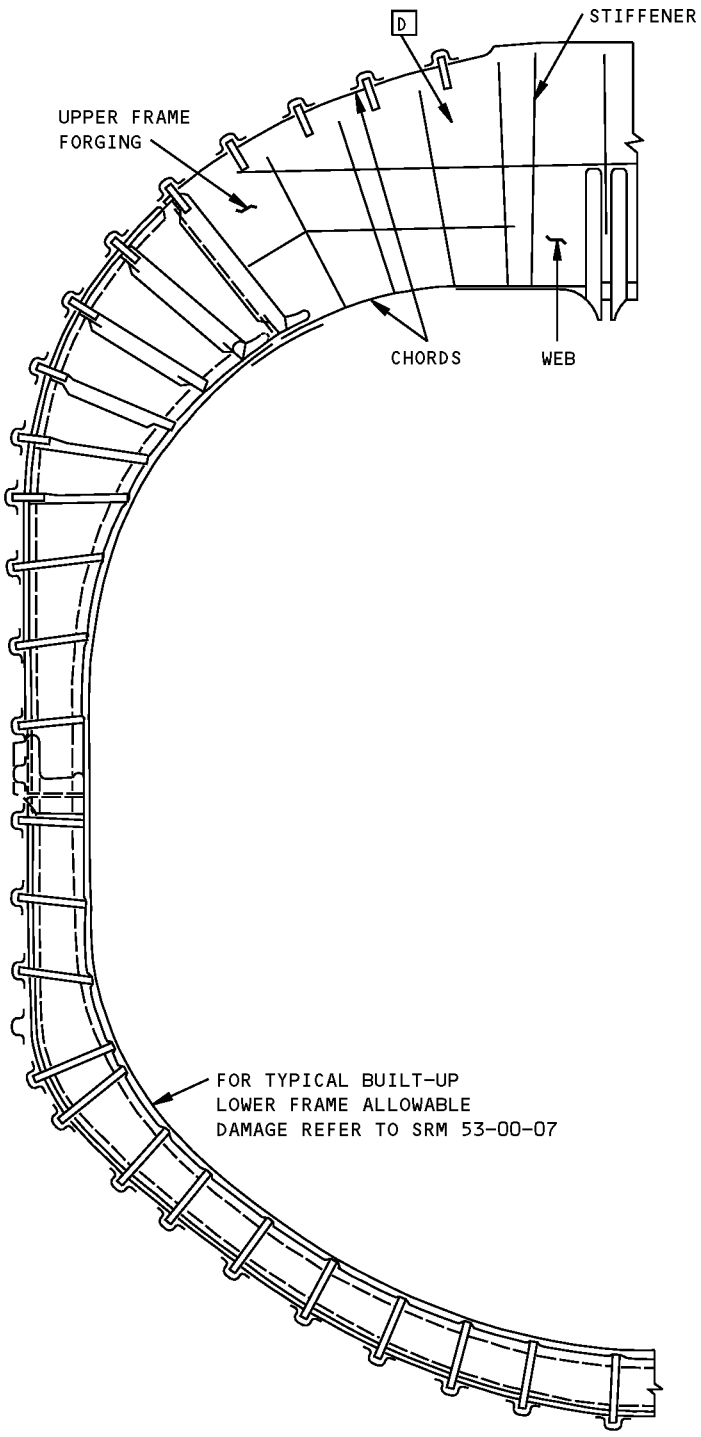
ALLOWABLE DAMAGE 1 - FORGED FRAMES, STA. 1654.5 AND STA. 1678





DETAIL I

Allowable Damage - Forged Frames, Sta. 1654.5 and Sta. 1678
Figure 101 (Sheet 1 of 4)



TYPICAL FRAME
DETAIL II

Allowable Damage - Forged Frames, Sta. 1654.5 and Sta. 1678
Figure 101 (Sheet 2 of 4)

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
CHORDS	[A]	[B]	NOT PERMITTED	NOT PERMITTED
WEB	[A]	[B]	[C]	NOT PERMITTED
STIFFENERS	[A]	[B]	NOT PERMITTED	NOT PERMITTED

NOTES

- DAMAGE
  - THAT OCCURS TO A PRINCIPAL STRUCTURAL ELEMENT (PSE) AS DEFINED IN SRM 51-00-04, AND
  - THAT IS WITHIN THE ALLOWABLE DAMAGE LIMITS OF THE BOEING SRM, DOES NOT HAVE AN EFFECT ON THE DAMAGE TOLERANCE PROPERTIES OF THE PSE. THEREFORE, INITIAL INSPECTION PROGRAMS REMAIN EFFECTIVE.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.

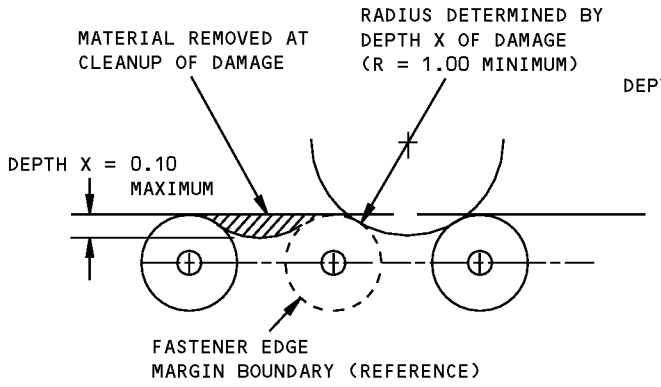
[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS, WHICH MUST BE REMOVED AS SHOWN IN IN DETAIL III.

[B] EDGE DAMAGE MUST BE REMOVED AS SHOWN IN DETAIL III. OTHER DAMAGE MUST BE REMOVED AS SHOWN IN DETAIL IV.

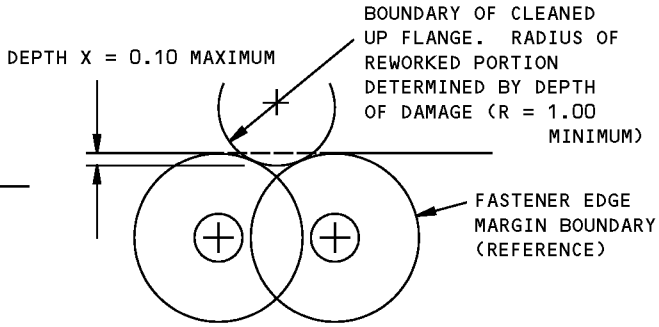
[C] SEE DETAIL V.

[D] SHOT PEEN REWORKED AREAS AS GIVEN IN SRM 51-20-06. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK.

Allowable Damage - Forged Frames, Sta. 1654.5 and Sta. 1678
Figure 101 (Sheet 3 of 4)

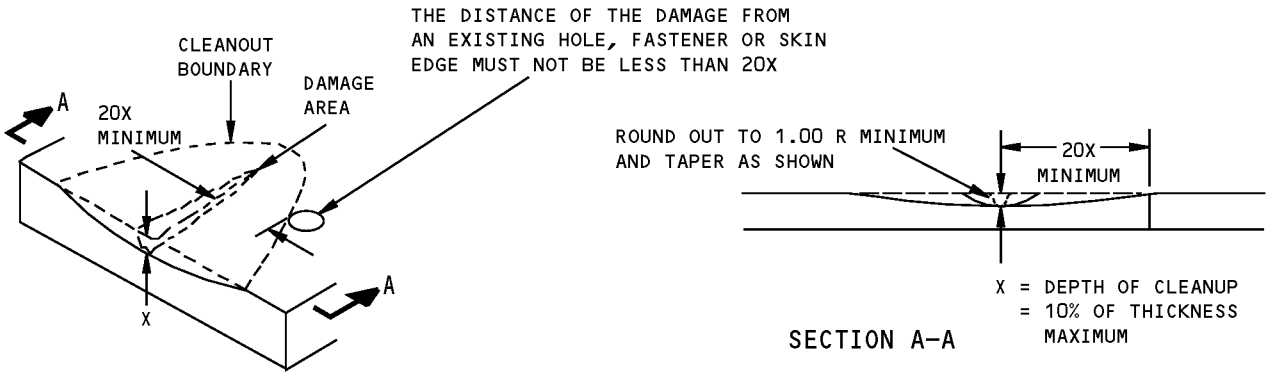


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

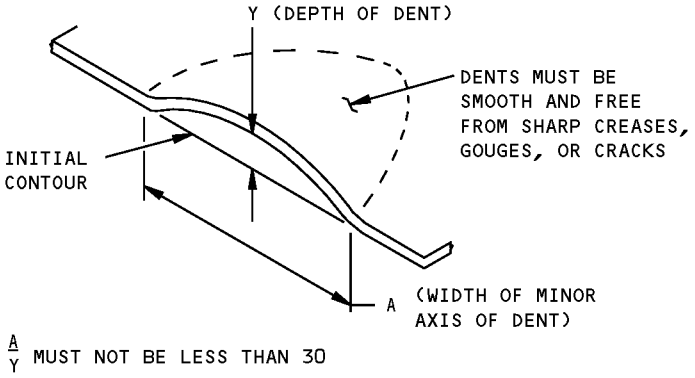


DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL III



REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE
DETAIL IV



ALLOWABLE DAMAGE FOR DENT
DETAIL V

Allowable Damage - Forged Frames, Sta. 1654.5 and Sta. 1678
Figure 101 (Sheet 4 of 4)

REPAIR GENERAL - SECTION 48 - SERVICE BULLETIN REPAIRS

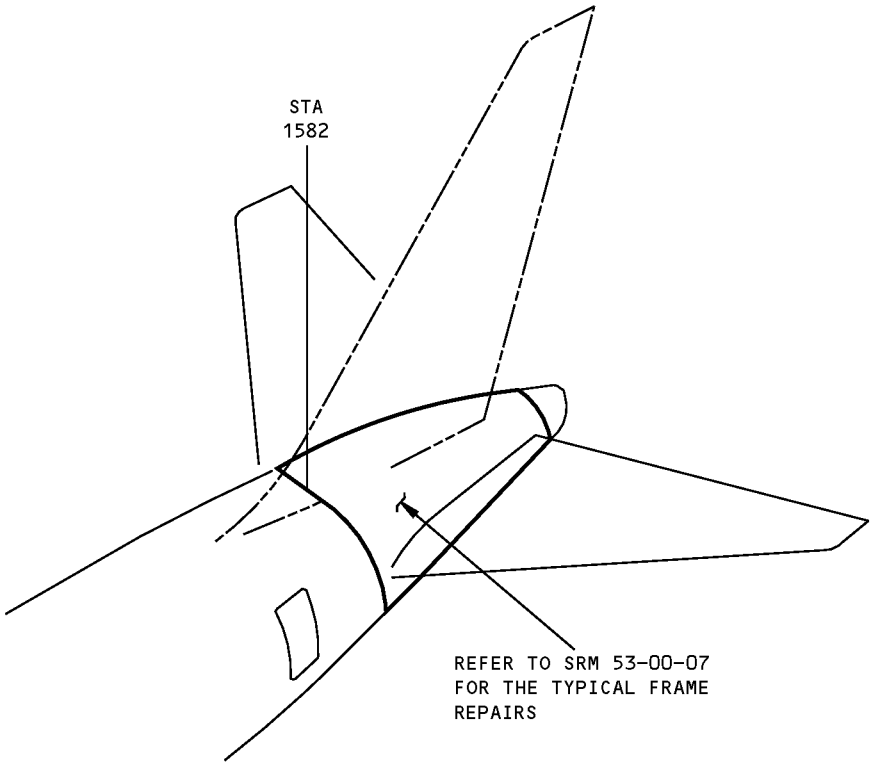
SERVICE BULLETIN REPAIRS

The following Service Bulletins contain repairs which are available for use where specific damage has been encountered. Usually, the Service Bulletin also covers preventive modification data which operators are encouraged to use to eliminate the need for repair.

DAMAGED AREA	CUM LINE NUMBER EFFECTIVITY	SB NUMBER
TBD		

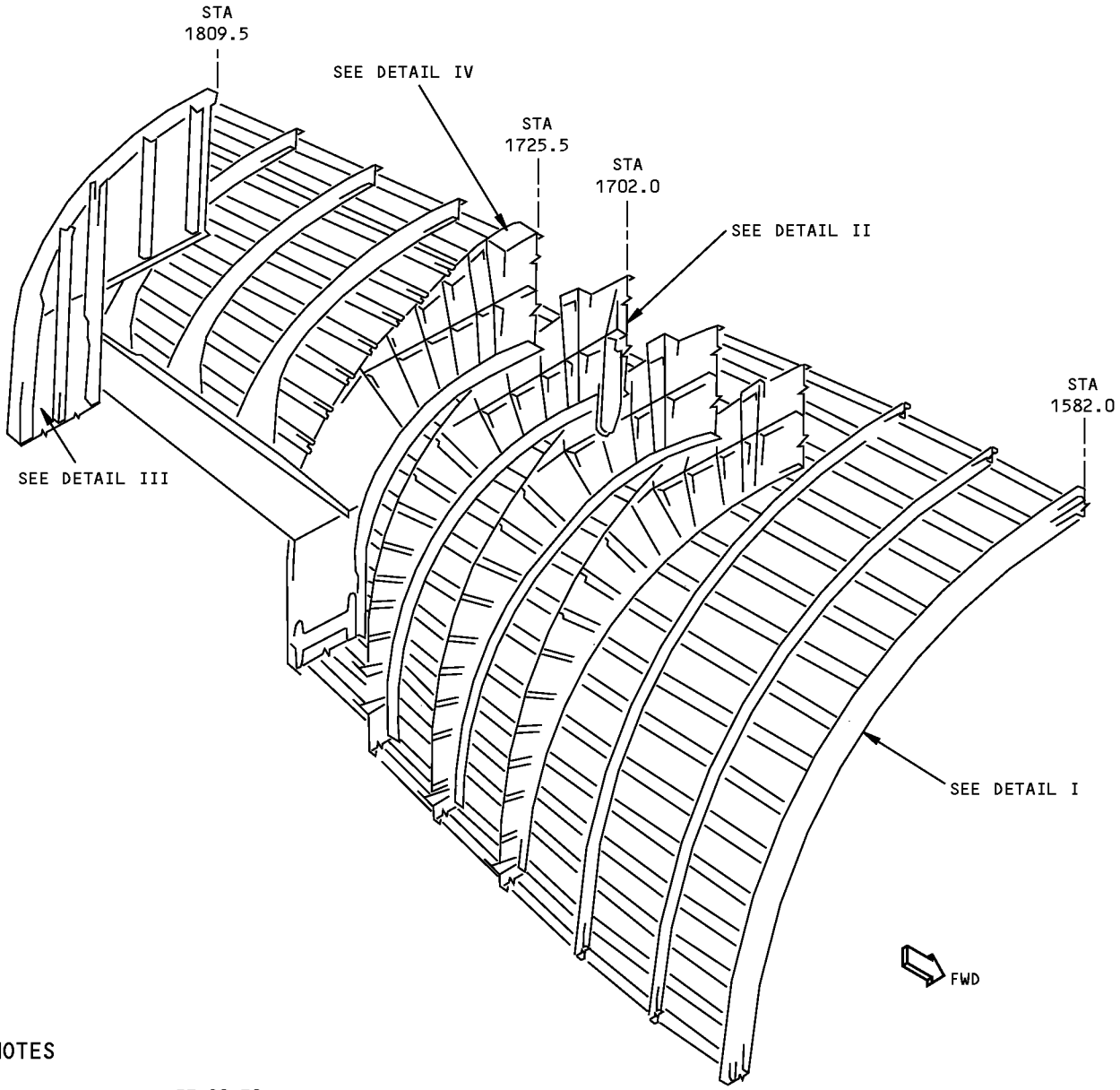
Section 48 - Service Bulletin Repair Chart
Figure 201

REPAIR 1 - SECTION 48 - TYPICAL FRAME



Section 48 - Typical Frame Repairs
Figure 201

IDENTIFICATION 1 - SECTION 48 BULKHEADS



NOTES

- REFER TO SRM 53-80-30 FOR APU PLENUM AND TAIL SKID INSTALLATION.
- REFER TO SRM 53-80-70 FOR TAIL SKID FAIRING.

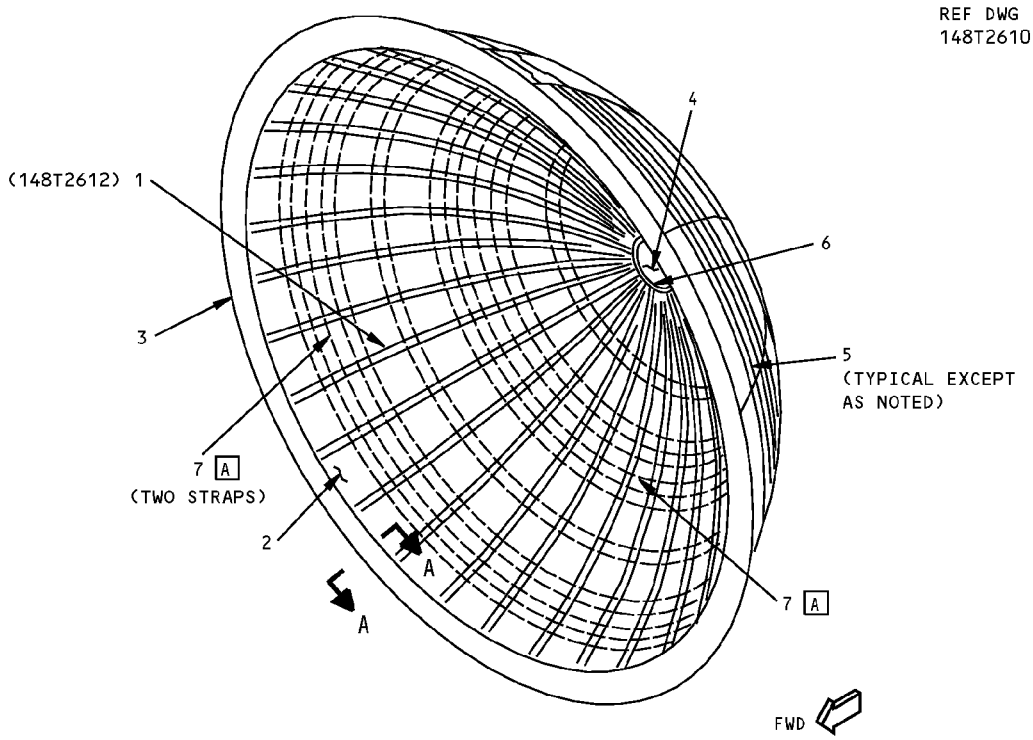
[A] FOR CUM LINE NUMBERS: 176 AND ON

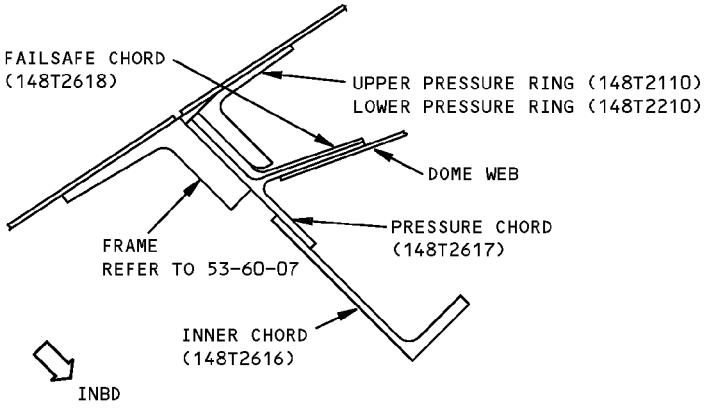
[B] FOR CUM LINE NUMBERS: 424 AND ON

[C] FOR AIRPLANES NOT LISTED IN [B]

207985 S0006826029_V2

Section 48 - Bulkhead Identification
Figure 1 (Sheet 1 of 8)





SECTION A-A

STA 1582.0 PRESSURE BULKHEAD
DETAIL I

LIST OF MATL

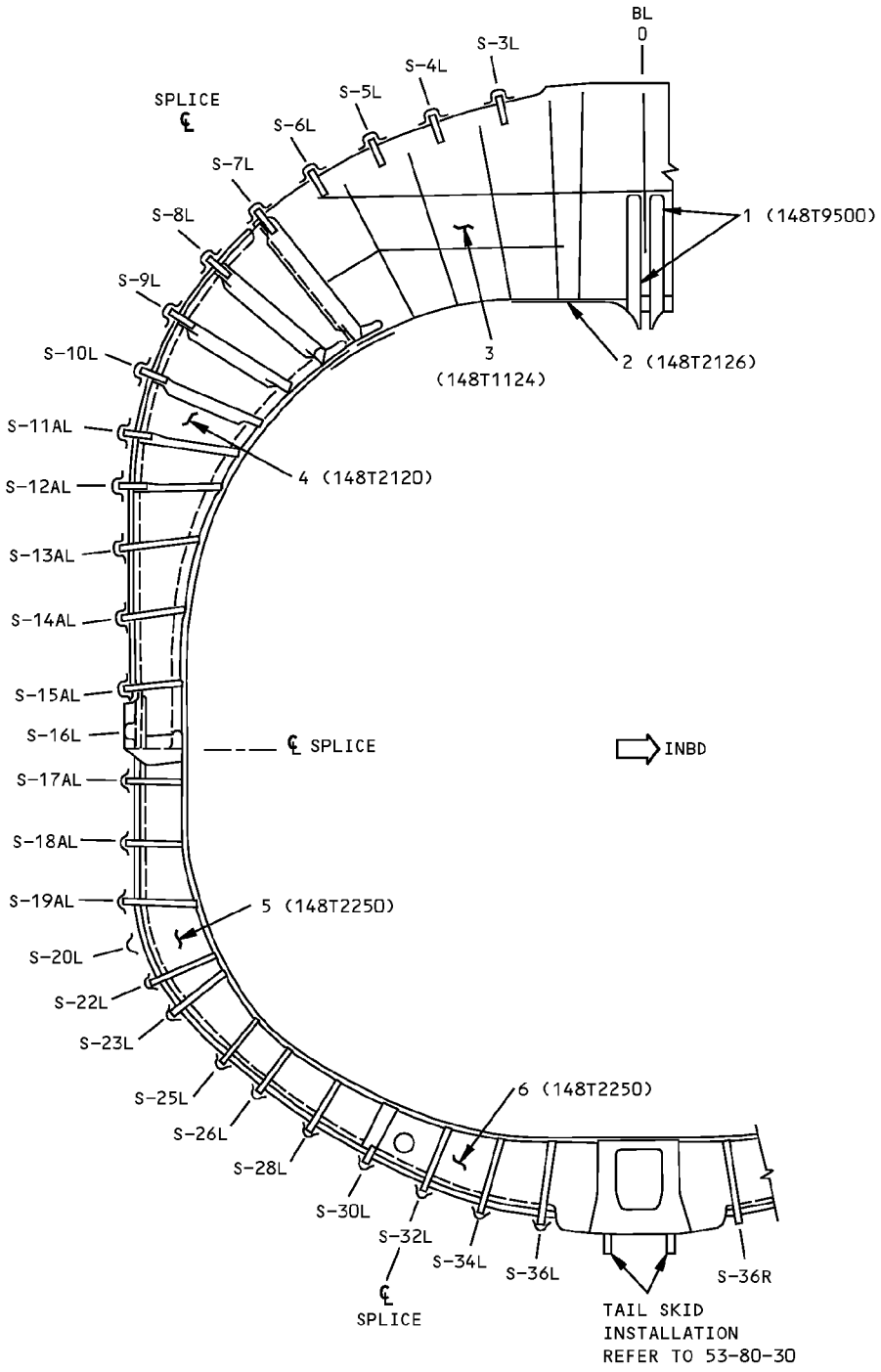
Section 48 - Bulkhead Identification
Figure 1 (Sheet 2 of 8)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	STIFFENER		AND10138-1603 2024-T42	
2	DOME WEB ASSEMBLY			C
	WEBS	0.032	CLAD 2024-T42	
	DOUBLERS	0.036	CLAD 2024-T3	
	TRIPLER	0.036	CLAD 2024-T3	
	DOME WEB ASSEMBLY			B
	WEBS	0.036	CLAD 2024-T42	
	DOUBLERS	0.036	CLAD 2024-T3	
	TRIPLER	0.036	CLAD 2024-T3	
3	FRAME ASSEMBLY			
	PRESSURE CHORD		BAC1506-3118 2024-T42	
	INNER CHORD		BAC1503-100656 7075-T62	
	FAILSAFE CHORD		BAC1514-2436 2024-T42	
	PRESSURE RING		BAC1514-1935 7075-T62	
	PRESSURE RING 5L TO 5R ONLY		BAC1514-2459 7075-T62	
4	COVER PAN (2 PIECES)	0.050	CLAD 2024-T42	
5	TEAR STRAPS	0.036	CLAD 2024-T3	
6	COLLECTOR RING	0.050	CLAD 2024-T42	
7	TEAR STRAPS	0.050	CLAD 2024-T3	A

LIST OF MATERIALS FOR DETAIL I

207987 S0006826037_V2

Section 48 - Bulkhead Identification
Figure 1 (Sheet 3 of 8)



REAR VIEW
STA 1702.0 BULKHEAD

DETAIL II

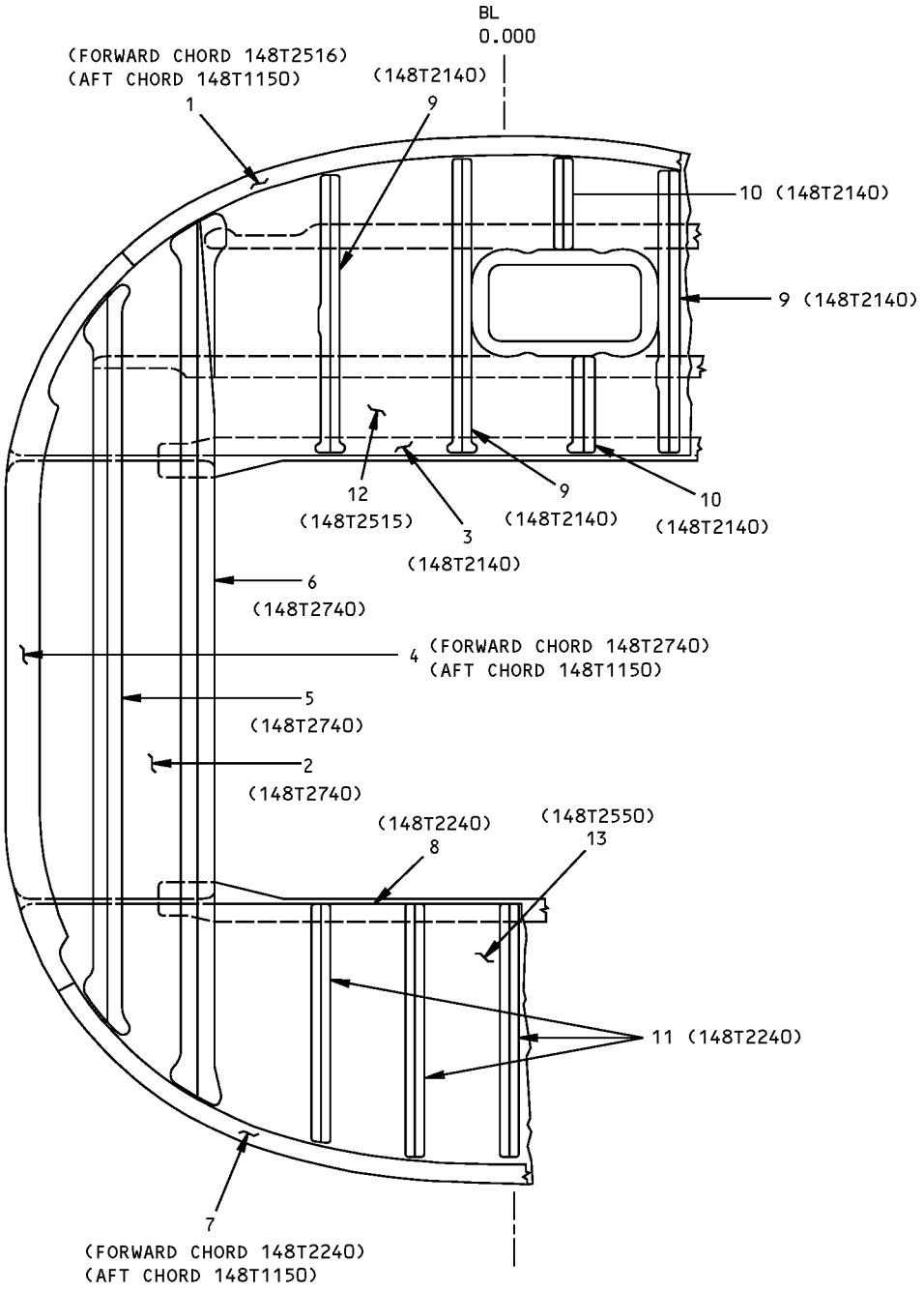
LIST OF MATL

Section 48 - Bulkhead Identification
Figure 1 (Sheet 4 of 8)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SUPPORT FITTING		BAC1510-1068 7075-T73511	
2	FAILSAFE CHORD		BAC1505-100119 7075-T73511	
3	UPPER BULKHEAD FITTING		FORGING 7075-T411	
4	UPPER BULKHEAD			
	OUTBD CHORD		AND10134-3006 7075-T6	
	WEB	0.063	CLAD 7075-T6	
	INBD CHORD		BAC1505-100945 7075-T6	
5	LOWER BULKHEAD			
	OUTBD CHORD		BAC1503-100777 7075-T62	
	WEB	0.025	CLAD 7075-T6	
	INBD CHORD		AND10133-1402 7075-T62	
6	LOWER BULKHEAD			
	OUTBD CHORD		BAC1503-100777 7075-T62	
	WEB	0.090	7075-T6 (CHEM-MILLED TO 0.035 MIN)	
	INBD CHORD		AND10133-1402 7075-T62	

LIST OF MATERIALS FOR DETAIL II

Section 48 - Bulkhead Identification
Figure 1 (Sheet 5 of 8)



REAR VIEW
STA 1809.5 BULKHEAD
DETAIL III

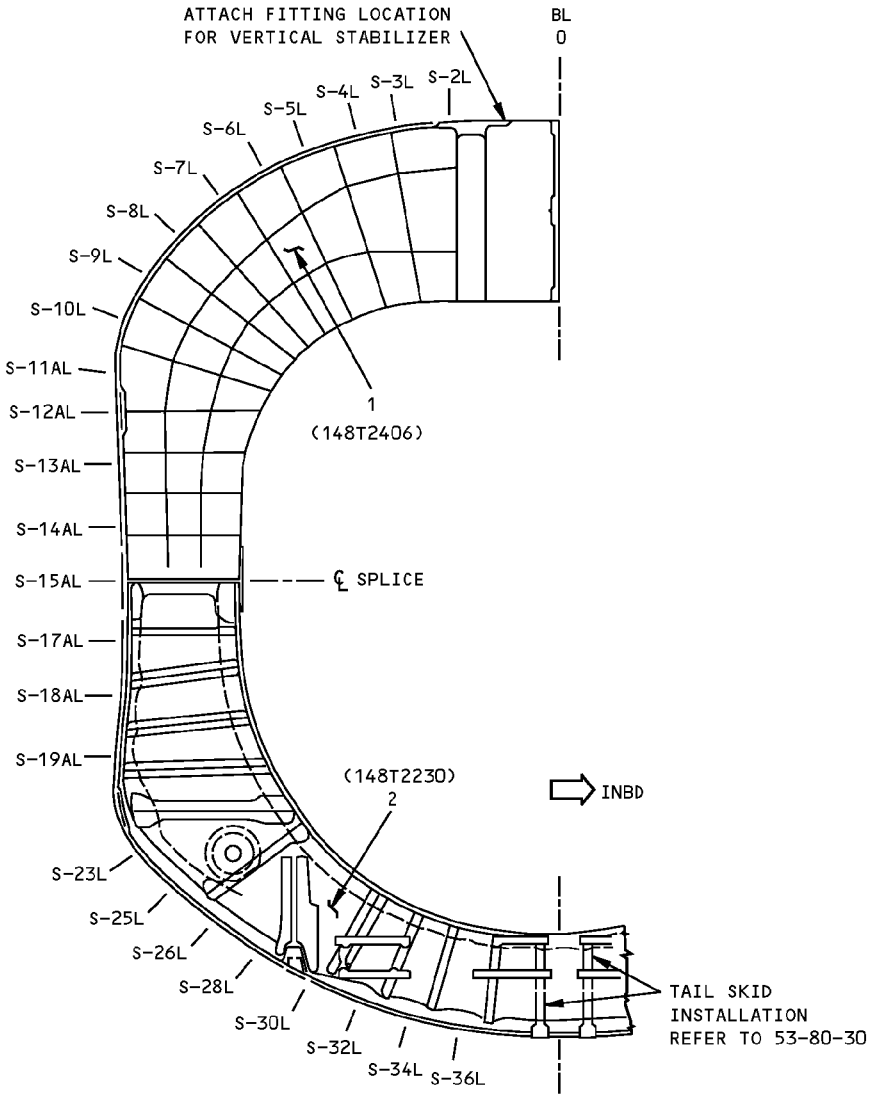
LIST OF MATL

Section 48 - Bulkhead Identification
Figure 1 (Sheet 6 of 8)

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	UPPER CHORD ASSY			
	FORWARD CHORD		BAC1514-2535 7075-T62	
	AFT CHORD		BAC1514-2160 7075-T62	
2	WEB	0.125	2024-T3	
3	INBOARD CHORD		BAC1506-2466 7075-T73511	
4	CENTER CHORD ASSY			
	FORWARD CHORD		BAC1514-2535 7075-T62	
	AFT CHORD		BAC1514-2556 7075-T62	
5	MIDDLE CHORD		BAC1505-100859 7075-T6511	
6	INNER CHORD		BAC1506-3257 7075-T6511	
7	LOWER CHORD ASSY			
	FORWARD CHORD		BAC1514-2535 7075-T62	
	AFT CHORD		BAC1514-2160 7075-T62	
8	INBOARD CHORD		BAC1506-3253 7075-T6511	
9	STIFFENER		AND10136-2406 7075-T6511	
10	STIFFENER		AND10136-2405 7075-T6511	
11	STIFFENER		AND10136-2007 7075-T6511	
12	WEB	0.125	2024-T3 (CHEM-MILLED TO 0.065 MIN)	
13	WEB	0.125	2024-T3 (CHEM-MILLED TO 0.070 MIN)	

LIST OF MATERIALS FOR DETAIL III

Section 48 - Bulkhead Identification
Figure 1 (Sheet 7 of 8)



REAR VIEW
STA 1725.50 BULKHEAD
DETAIL IV

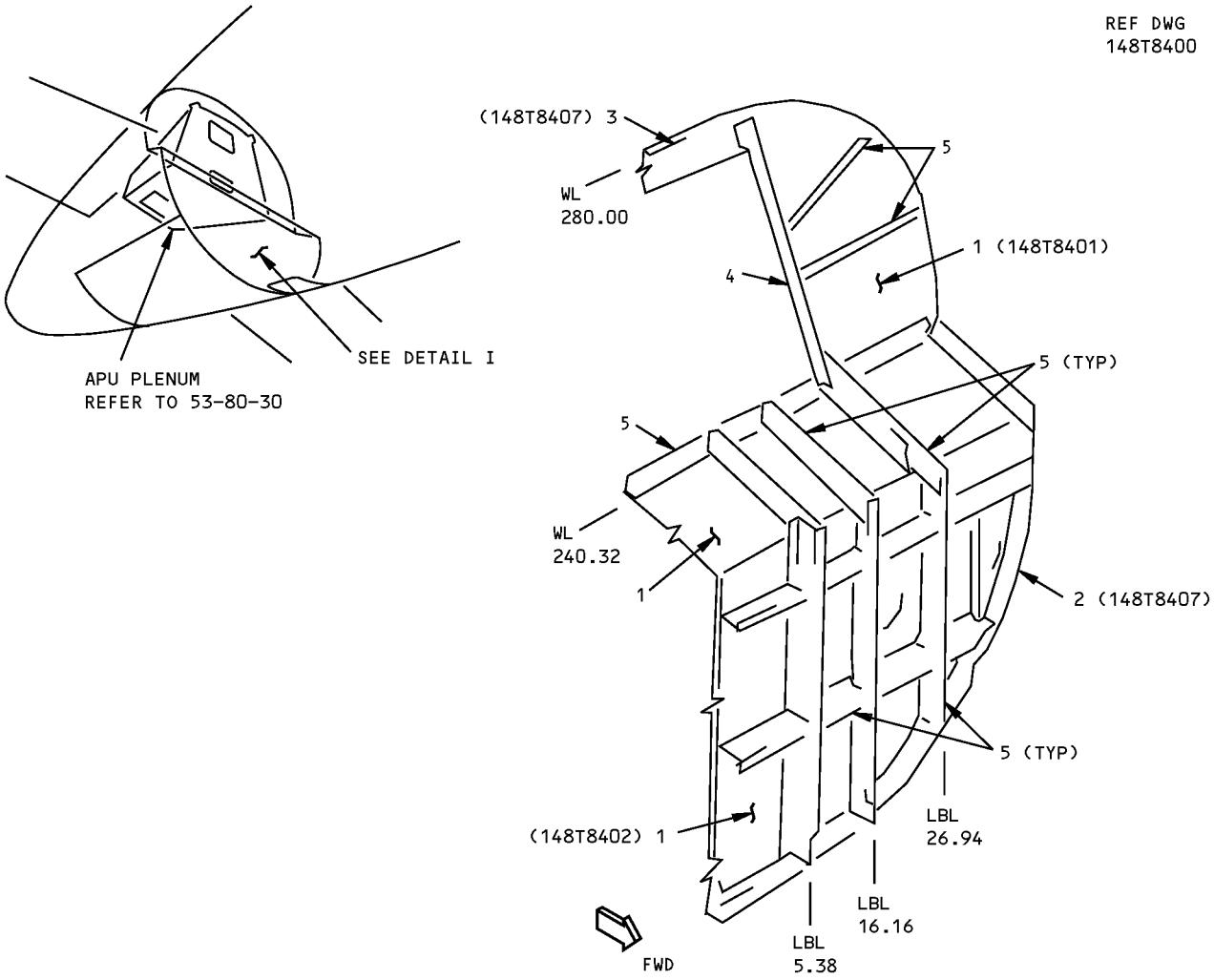
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	UPPER BULKHEAD		FORGING 7075-T411	
2	LOWER BULKHEAD			
	OUTBD CHORD		FORGING 7075-T73	
	WEB	0.160	7075-T76 (CHEM-MILLED TO 0.070 MIN)	
	INBD CHORD		BAC1505-101192 7075-T6	

LIST OF MATERIALS FOR DETAIL IV

LIST OF MATL

Section 48 - Bulkhead Identification
Figure 1 (Sheet 8 of 8)

IDENTIFICATION 2 - APU FIREWALL



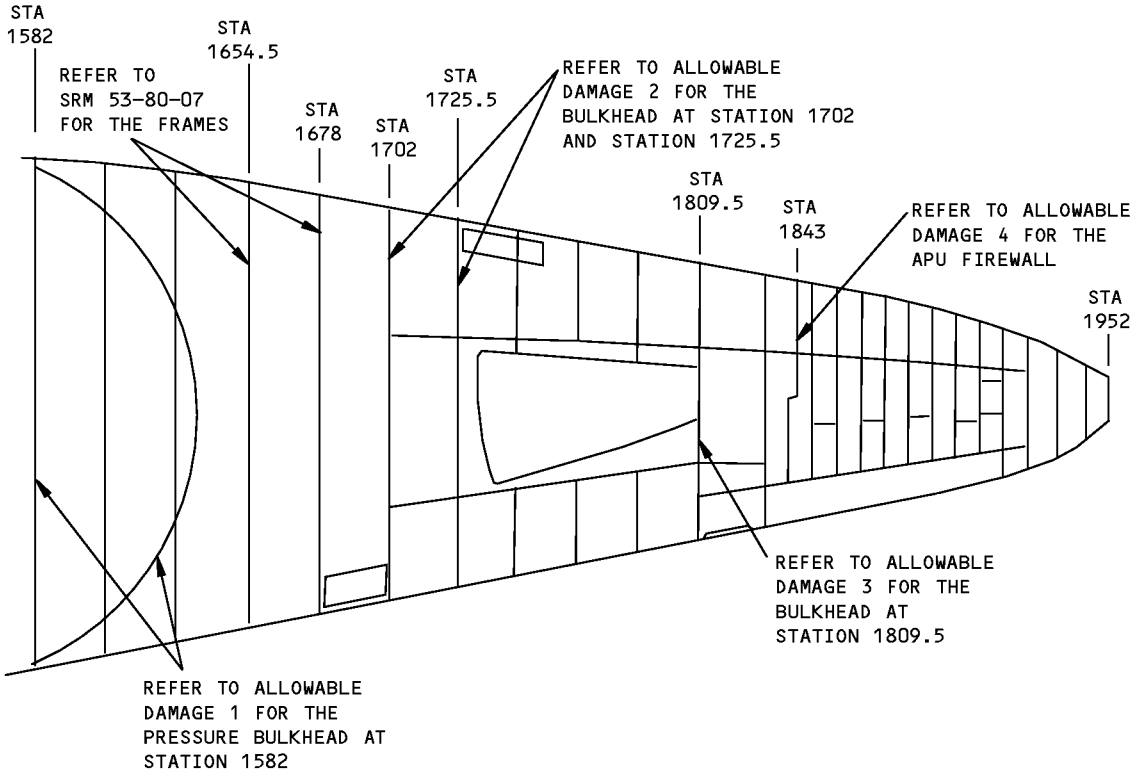
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	WEB	0.016	TI-6AL-4V, TYPE III, COMP C	
2	CHORD	0.040	TI-6AL-4V, TYPE III, COMP C	
3	ANGLE	0.040	TI-6AL-4V, TYPE III, COMP C	
4	STIFFENER	0.080	TI-6AL-4V, TYPE III, COMP C	
5	STIFFENER	0.040	TI-6AL-4V, TYPE III, COMP C	

LIST OF MATERIALS FOR DETAIL I

APU Firewall Identification
Figure 1

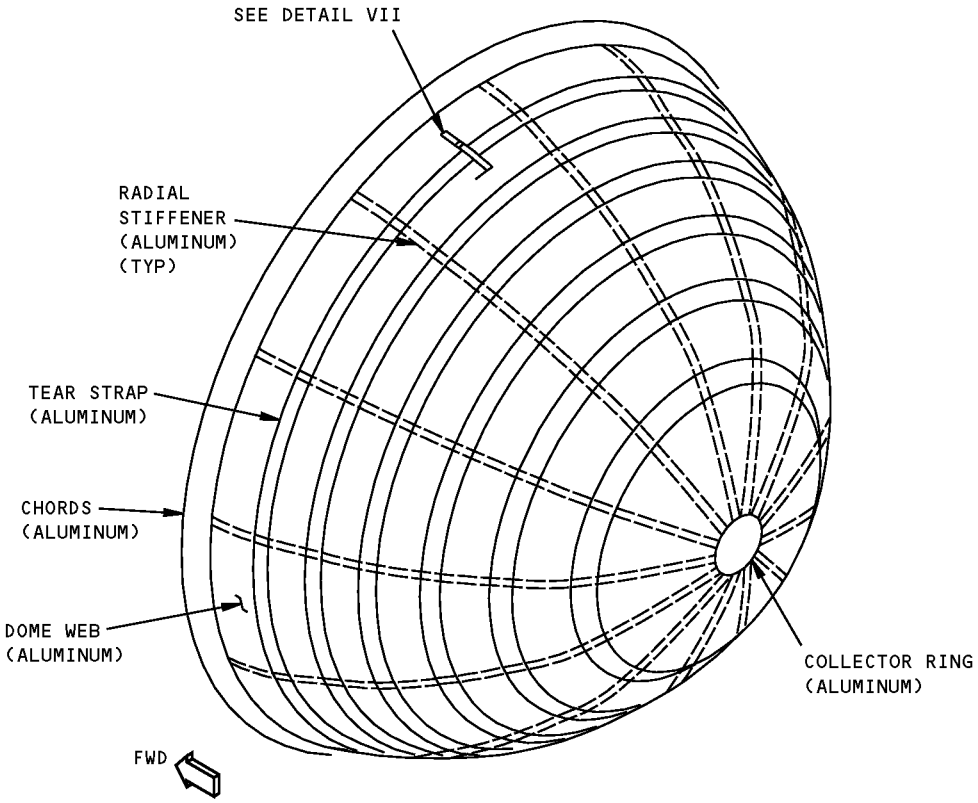
ALLOWABLE DAMAGE GENERAL - SECTION 48 BULKHEADS



53717 S0006826066_V3

Allowable Damage - Section 48 Bulkheads
Figure 101

ALLOWABLE DAMAGE 1 - PRESSURE BULKHEAD, STATION 1582



ITEM	CRACKS	NICKS, GOUGES, SCRATCHES AND CORROSION	DENTS AND "OIL CANS"	HOLES AND PUNCTURES
CHORDS	A	B	NOT ALLOWED	NOT ALLOWED
WEB	A	B	D	E
RADIAL STIFFENERS TEAR STRAPS COLLECTOR RING	A	B	NOT ALLOWED	C

Allowable Damage - Pressure Bulkhead, Station 1582
Figure 101 (Sheet 1 of 5)

NOTES

- REFINISH REWORKED AREAS PER AMM 51-21.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAIL I. FASTENER EDGE MARGINS MUST BE MAINTAINED.

[B] EDGE DAMAGE MUST BE REMOVED AS SHOWN IN DETAILS I AND IV. ELSEWHERE, DAMAGE MUST BE REMOVED AS SHOWN IN DETAILS II AND IV. FASTENER EDGE MARGINS MUST BE MAINTAINED.

[C] HOLES ARE PERMITTED UP TO 0.25 INCH (6 mm) DIAMETERAFTER CLEANUP, PROVIDED THAT THEY ARE NOT CLOSER THAN 1.0 INCH (25 mm) TO ANY EXISTING HOLE OR OTHER DAMAGE WITH A MAXIMUM OF 4 HOLES IN 6 INCHES (150 mm). SEE DETAIL V. FILL HOLE DAMAGE WITH 2117-T3 RIVET OR 2117-T4 RIVET INSTALLED WET WITH BMS 5-95 SEALANT.

[D] SEE DETAIL III FOR DENTS.

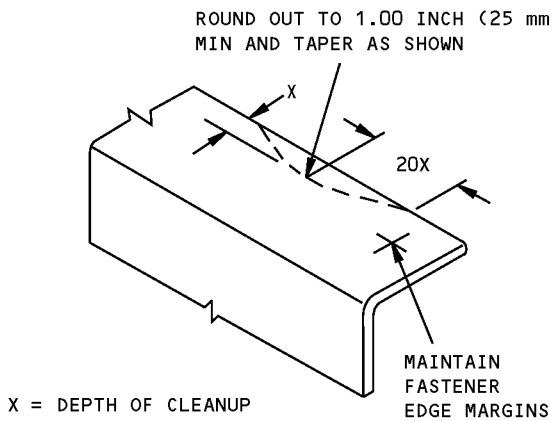
AN "OIL CAN" IS AN AREA ON A PRESSURE DOME WEB THAT MOVES WHEN PUSHED FROM THE FORWARD SIDE. ANY MOVEMENT CAUSED BY PRESSURE FROM THE AFT SIDE IS PERMITTED.

WHEN YOU INSPECT FOR "OIL CANS" MAKE SURE THE AIRCRAFT IS NOT JACKED, CRADLED, OR SUPPORTED AT OR AFT OF THE PRESSURE BULKHEAD. "OIL CANS" ARE PERMITTED IF THEY AGREE WITH THE CONDITIONS THAT FOLLOW:

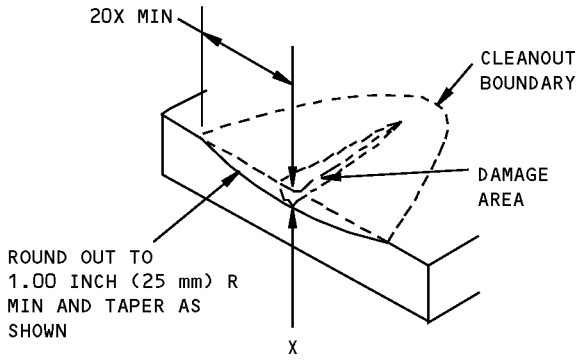
1. "OIL CAN" IS SMOOTH, FREE FROM SHARP CREASES, GOUGES OR CRACKS
2. "OIL CAN" DOES NOT ROLL, OR DEFORM A RADIAL STIFFENER, DOUBLER OR TEAR STRAP
3. NO ISOLATED FASTENERS ARE WITHIN THE PERIMETER OF AN "OIL CAN"
4. THERE IS NO EVIDENCE OF PRESSURE LEAKAGE, ELONGATED HOLES, AND LOOSE OR MISSING FASTENERS
5. WEB RETURNS TO ORIGINAL CONTOUR WITH 20 LBS., OR LESS, HAND PRESSURE
6. MAXIMUM PERMITTED DEPTH IS 0.40 IF Y IS NOT GREATER THAN A/20. TO FIND THE DEPTH OF THE "OIL CAN" SEE DETAIL VI OR VII. SEE DETAIL VI FOR THE USE OF A FABRICATED TOOL. SEE DETAIL VII FOR THE USE OF AN "OIL CAN" GAGE, BOEING TOOL NUMBER A51005
7. MORE THAN ONE "OIL CAN" IS PERMITTED, IF EACH ONE AGREES WITH THE CONDITIONS GIVEN ABOVE.

[E] HOLES ARE PERMITTED UP TO 0.25 INCH (6 mm) DIAMETER AFTER CLEANUP, PROVIDED THAT THEY ARE NOT CLOSER THAN 1.0 INCH (25 mm) TO ANY EXISTING HOLE OR OTHER DAMAGE. FILL HOLE DAMAGE WITH 2117-T3 RIVET OR 2117-T4 RIVET INSTALLED WET WITH BMS 5-95 SEALANT.

[F] BOEING HAS SUPPLIED YOU WITH THE DRAWING NECESSARY TO MAKE THE TOOL (DWG NO. A51005). MAKE THE TOOL OR HAVE IT MADE BY AN APPROVED VENDOR. A DESCRIPTION OF THE TOOL AND APPROVED VENDORS ARE LISTED IN THE ITEM 51-00.

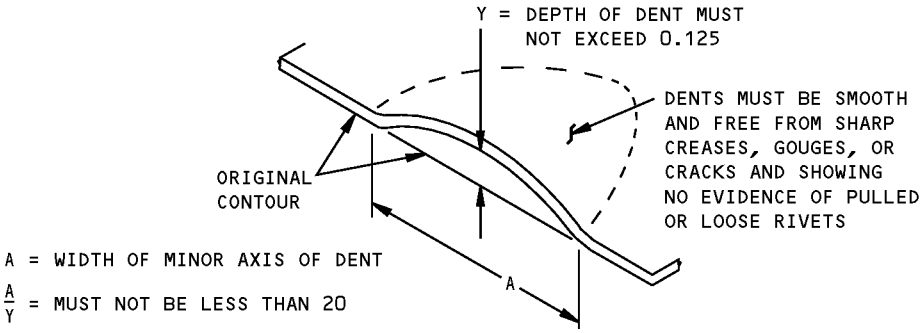


REMOVAL OF DAMAGE ON AN EDGE
DETAIL I

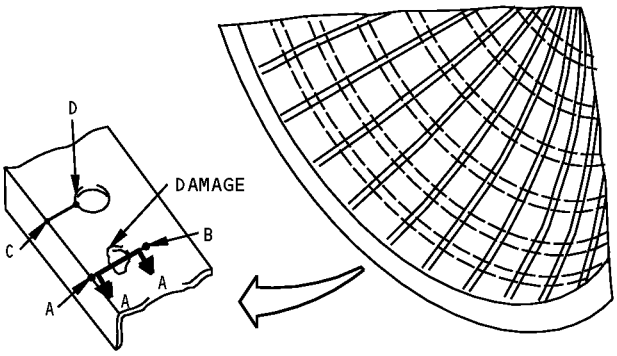


REMOVAL OF DAMAGE ON A SURFACE
DETAIL II

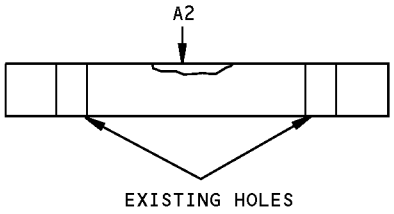
Allowable Damage - Pressure Bulkhead, Station 1582
Figure 101 (Sheet 2 of 5)



DENT DAMAGE PERMITTED
DETAIL III



LOSS IN CROSS-SECTIONAL AREA ALONG ANY LINE A-B OR C-D DUE TO REMOVAL OF NICKS, GOUGES, OR CORROSION PER DETAIL I OR DETAIL II MUST NOT EXCEED 10 PECENT OF ORIGINAL NET CROSS-SECTIONAL AREA (SEE A-A)



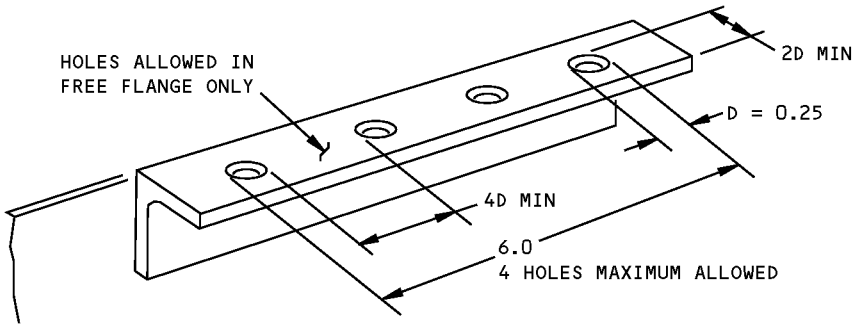
SECTION A-A (ROTATED)

A_1 = NET AREA = TOTAL AREA MINUS THE ORIGINAL EXISTING HOLES

A_2 = AREA REMOVED FOR NICKS, GOUGES, OR CORROSION

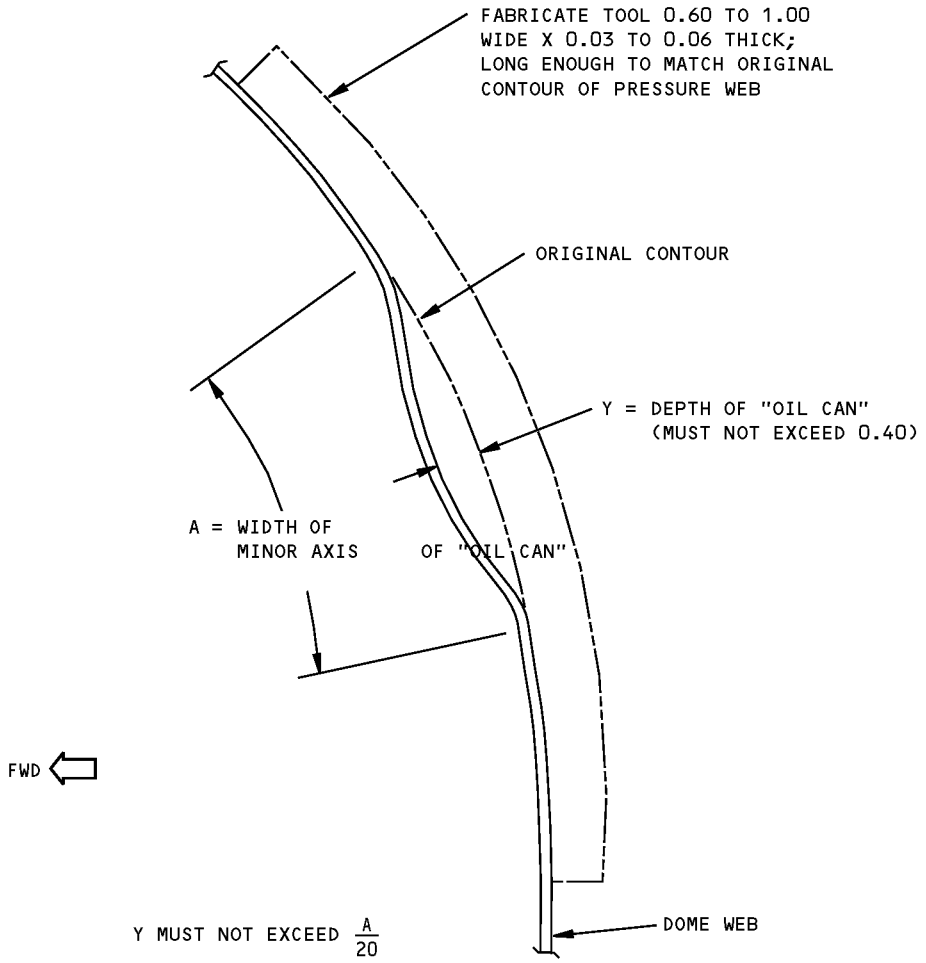
$\left(\frac{A_2}{A_1}\right)$ = 10% MAX

CROSS-SECTIONAL AREA REMOVAL IN WEB OR FORMED PARTS ONLY
DETAIL IV



HOLES PERMITTED FOR DAMAGE REMOVAL
DETAIL V

Allowable Damage - Pressure Bulkhead, Station 1582
Figure 101 (Sheet 3 of 5)



THE USE OF A FABRICATED TOOL TO MEASURE THE DEPTH OF "OIL CANS"
DETAIL VI

Allowable Damage - Pressure Bulkhead, Station 1582
Figure 101 (Sheet 4 of 5)

STEPS TO USE THE "OIL CAN" GAGE TO MEASURE THE DEPTH OF "OIL CANS"

STEP 1: PUT THE "OIL CAN" GAGE RADIALLY ON THE OUTSIDE OF THE DOME WEB SO IT GOES ACROSS THE TEAR STRAPS. ALIGN THE "CONTOUR FOLLOWER" NEAR A RADIAL STIFFENER SO THAT ALL THE FEET ON THE "OIL CAN" GAGE ARE ON THE SAME DOME WEB.

STEP 2: MOVE THE CARRIAGE ON THE "OIL CAN" GAGE THE LENGTH OF THE BEAM AND ZERO THE DIAL INDICATOR.

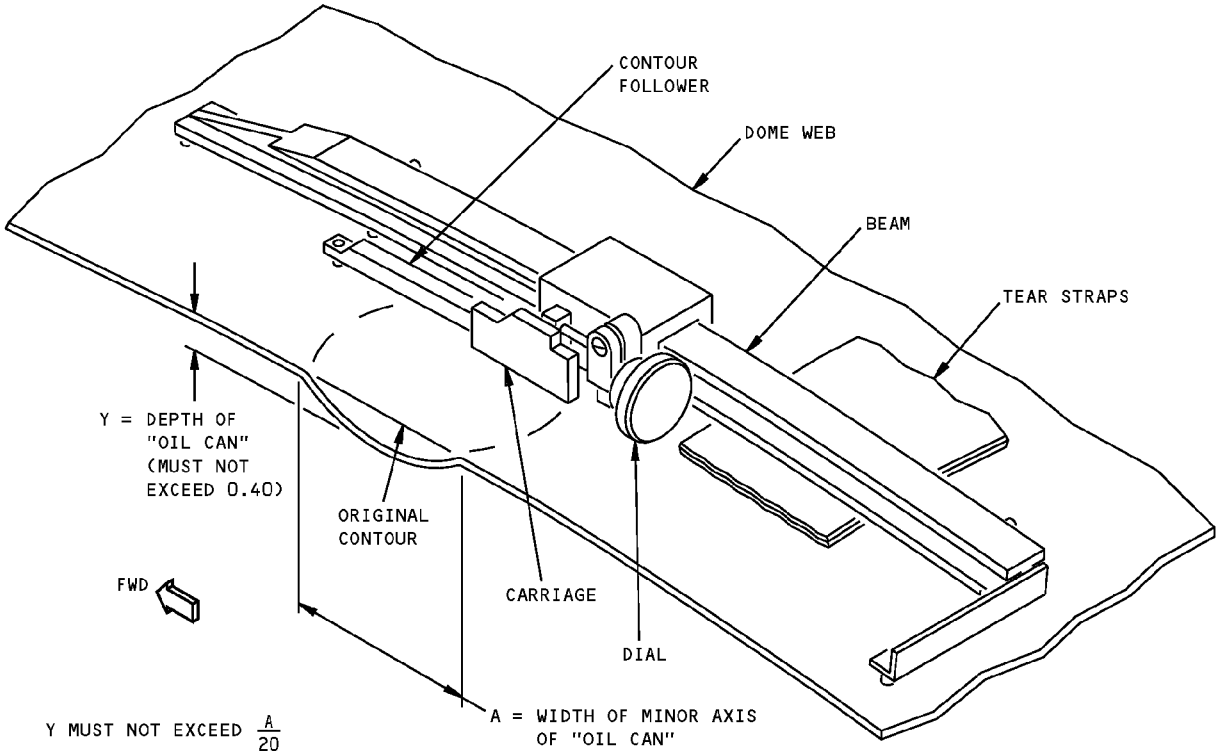
STEP 3: PUT THE "OIL CAN" GAGE RADIALLY ON THE OUTSIDE OF THE DOME WEB SO THAT IT GOES ACROSS AN "OIL CAN". MOVE THE CARRIAGE ALONG THE BEAM UNTIL IT GOES ACROSS THE "OIL CAN". LOOK FOR THE LARGEST DEFLECTION READING ON THE DIAL. MAKE SURE THE FEET OF THE "OIL CAN" GAGE ARE ON THE SAME DOME WEB.

STEP 4: REPEAT STEP 3 IN BOTH CIRCUMFERENTIAL DIRECTIONS UNTIL THE LARGEST READING IS FOUND.

STEP 5: COMPARE THE RADIAL AND CIRCUMFERENTIAL READINGS TO FIND THE LARGEST DEPTH OF THE "OIL CAN".

STEP 6: REPEAT STEP 3 AND 4 BUT MOVE THE CARRIAGE ALONG THE BEAM UNTIL THE EDGES OF THE "OIL CAN" ARE FOUND. MEASURE FROM ONE EDGE TO ANOTHER EDGE UNTIL THE LARGEST AND THE SMALLEST WIDTHS OF THE "OIL CAN" ARE FOUND.

STEP 7: MAKE SURE THE LARGEST DEPTH OF THE "OIL CAN" DOES NOT EXCEED 0.40 INCH OR THE LARGEST WIDTH DIVIDED BY 20.

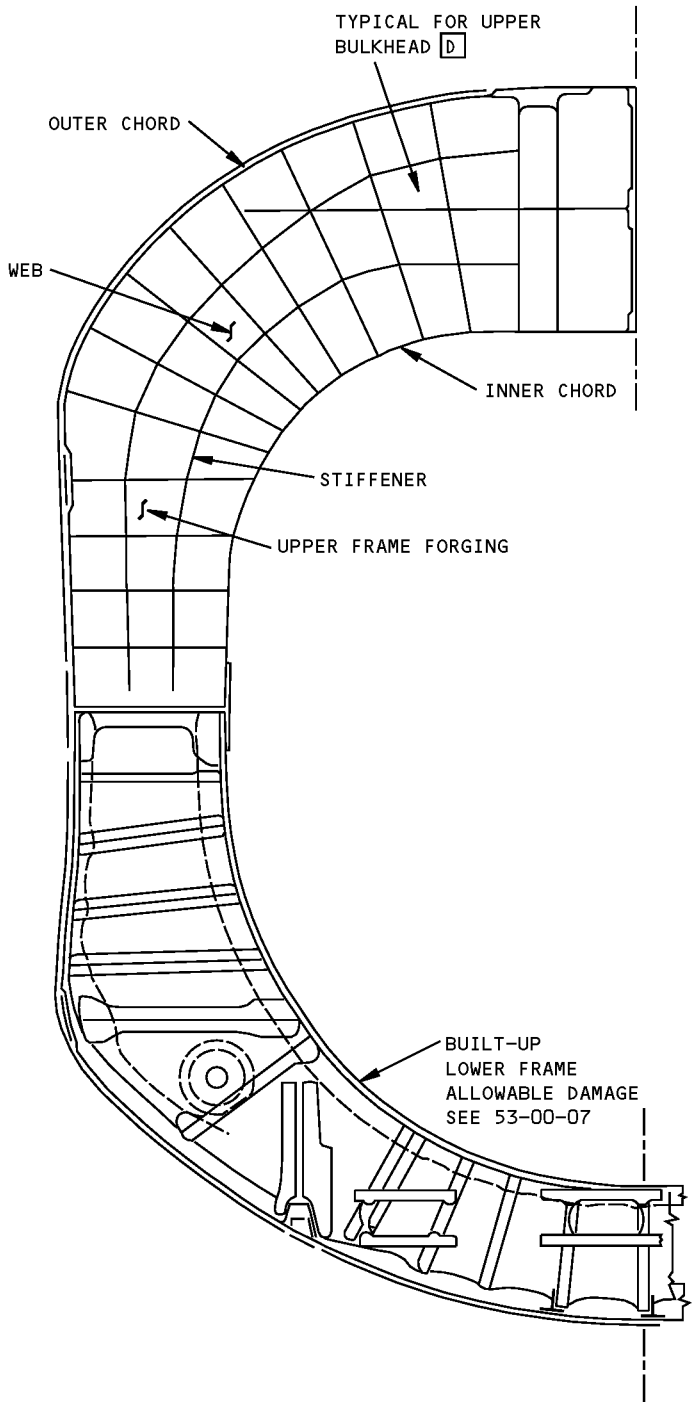


THE USE OF AN "OIL CAN" GAGE, BOEING TOOL NUMBER A51005 [F], TO MEASURE THE DEPTH OF "OIL CANS"

DETAIL VII

Allowable Damage - Pressure Bulkhead, Station 1582
Figure 101 (Sheet 5 of 5)

ALLOWABLE DAMAGE 2 - UPPER BULKHEAD, STA 1702 AND STA 1725.5



Allowable Damage - Upper Bulkhead, STA 1702 and STA 1725.5
Figure 101 (Sheet 1 of 3)

ITEM	CRACKS	NICKS, GOUGES AND SCRATCHES	DENTS	HOLES AND PUNCTURES
CHORDS	[A]	[B]	NOT ALLOWED	NOT ALLOWED
WEB	[A]	[B]	[C]	NOT ALLOWED
STIFFENERS	[A]	[B]	NOT ALLOWED	NOT ALLOWED

NOTES

- REFER TO 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
- REFINISH REWORKED AREAS AS SHOWN IN AMM 51-21.

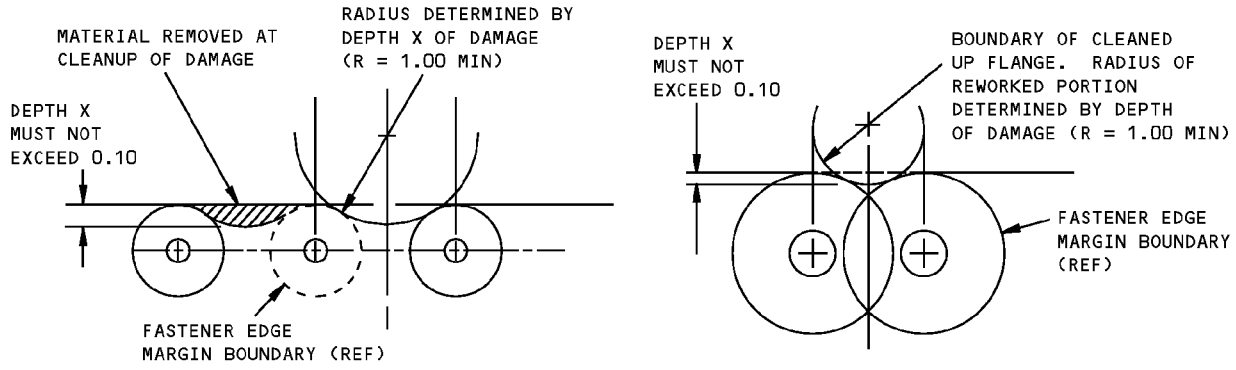
[A] CRACKS NOT ALLOWED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAIL I

[B] EDGE DAMAGE MUST BE REMOVED AS SHOWN IN DETAIL I. ELSEWHERE DAMAGE MUST BE REMOVED AS SHOWN IN DETAIL II

[C] SEE DETAIL III

[D] SHOT PEEN REWORKED AREAS PER 51-20-06. SHOT PEEN INTENSITIES WILL VARY WITH THE THICKNESS LEFT AFTER REWORK

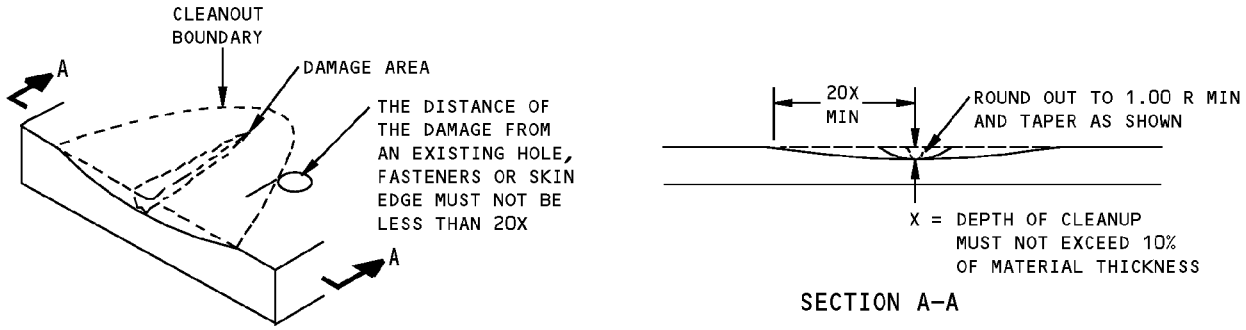
Allowable Damage - Upper Bulkhead, STA 1702 and STA 1725.5
Figure 101 (Sheet 2 of 3)



DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP

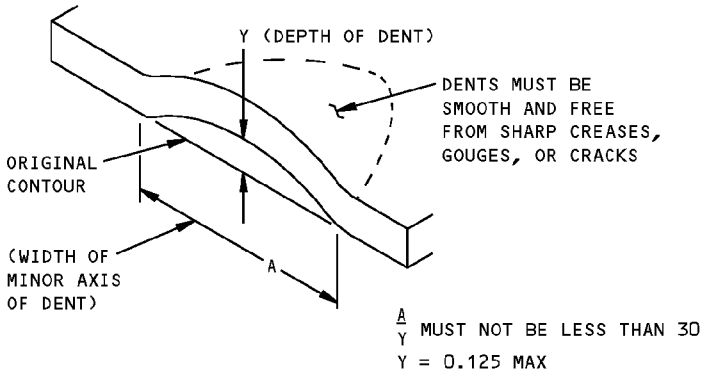
DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL I



SECTION A–A

DETAIL II

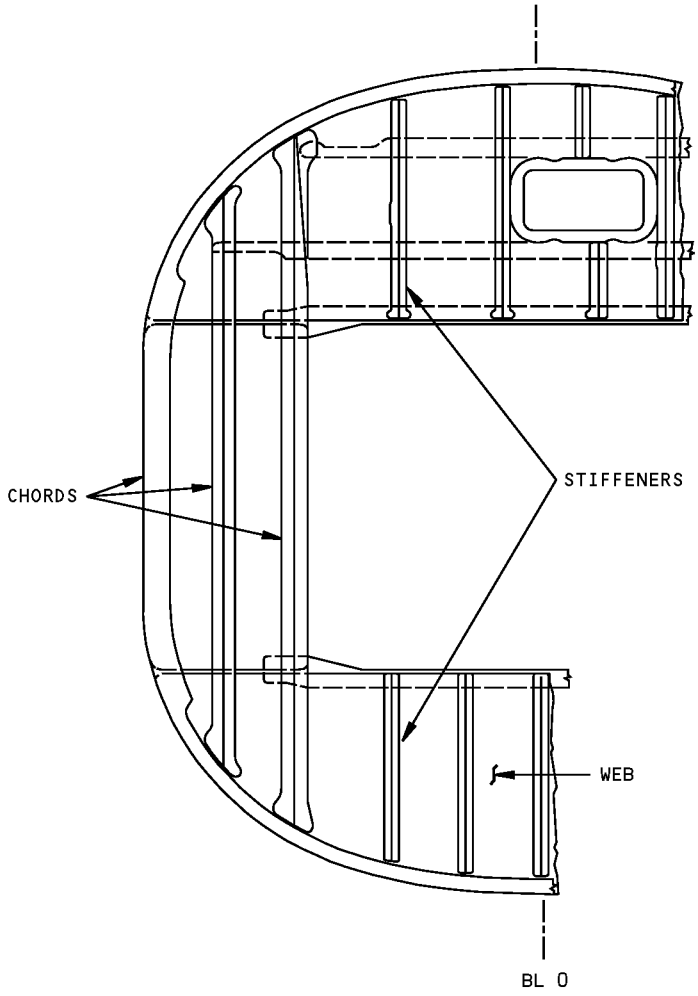


DETAIL III

Allowable Damage - Upper Bulkhead, STA 1702 and STA 1725.5
Figure 101 (Sheet 3 of 3)

ALLOWABLE DAMAGE 3 - BULKHEAD, STA 1809.5

REF DWG
148T2140
148T2740
148T2240



ITEM	CRACKS	NICKS, GOUGES AND SCRATCHES	DENTS	HOLES AND PUNCTURES
WEB	A	B	C	E
CHORD	A	B	NOT ALLOWED	NOT ALLOWED
STIFFENER	A	B	NOT ALLOWED	D

Allowable Damage - Bulkhead, STA 1809.5
Figure 101 (Sheet 1 of 3)

NOTES

- REFINISH REWORKED AREAS PER 51-21 OF THE 767 MAINTENANCE MANUAL

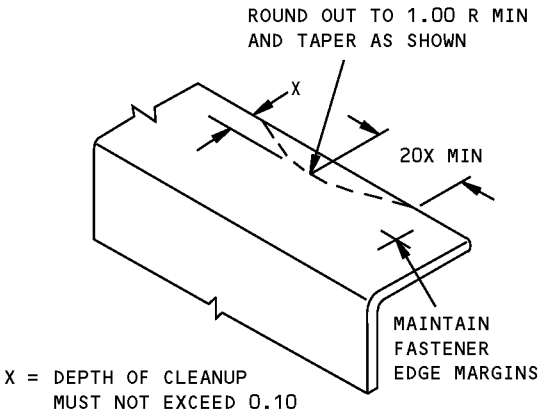
[A] CRACKS ARE NOT ALLOWED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAIL I. FASTENER EDGE MARGINS MUST BE MAINTAINED

[B] EDGE DAMAGE MUST BE REMOVED AS SHOWN IN DETAILS I AND IV. ELSEWHERE, DAMAGE MUST BE REMOVED AS SHOWN IN DETAILS II AND IV. FASTENER EDGE MARGINS MUST BE MAINTAINED

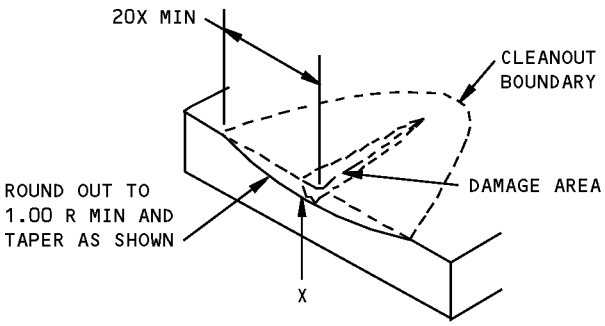
[C] SEE DETAIL III

[D] HOLES ARE ALLOWED UP TO 0.25 INCH DIAMETER AFTER CLEANUP, PROVIDED THAT THEY ARE NOT CLOSER THAN 1.0 INCH TO ANY EXISTING HOLE OR OTHER DAMAGE WITH A MAXIMUM OF 4 HOLES IN 6 INCHES. SEE DETAIL V. FILL HOLE DAMAGE WITH 2117-T3 RIVET OR 2117-T4 RIVET INSTALLED WET WITH BMS 5-95 SEALANT

[E] HOLES ARE ALLOWED UP TO 0.25 INCH DIAMETER AFTER CLEANUP, PROVIDED THAT THEY ARE NOT CLOSER THAN 1.0 INCH TO ANY EXISTING HOLE OR OTHER DAMAGE. FILL HOLE DAMAGE WITH 2117-T3 RIVET OR 2117-T4 RIVET INSTALLED WET WITH BMS 5-95 SEALANT

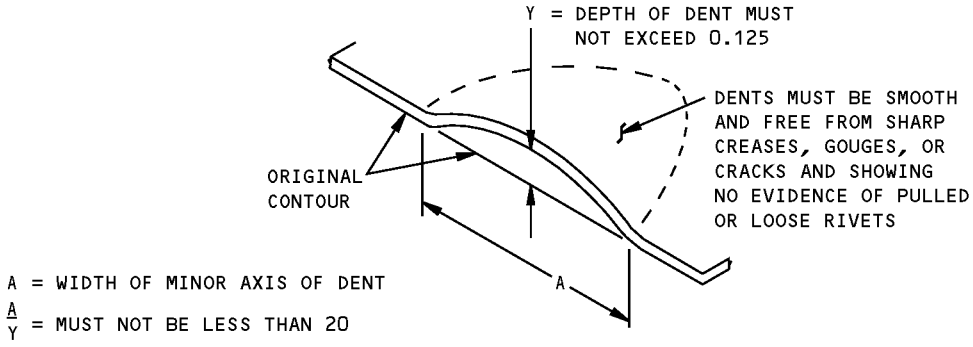


DETAIL I

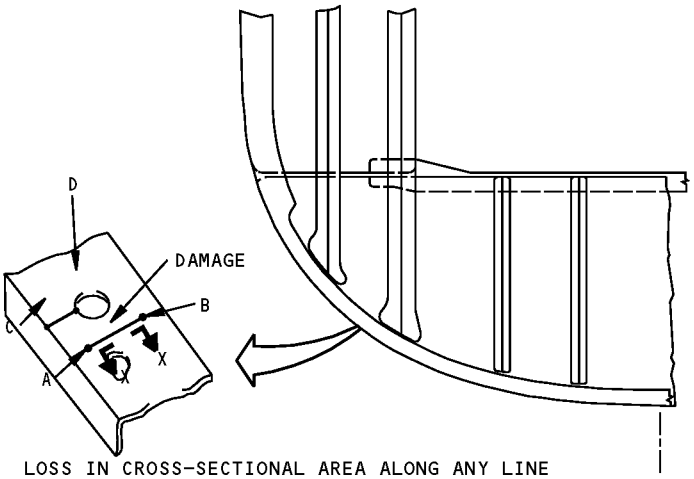


DETAIL II

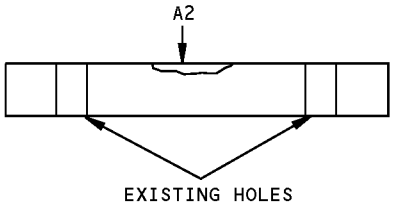
Allowable Damage - Bulkhead, STA 1809.5
Figure 101 (Sheet 2 of 3)



DETAIL III



LOSS IN CROSS-SECTIONAL AREA ALONG ANY LINE A-B OR C-D DUE TO REMOVAL OF NICKS, GOUGES, OR CORROSION PER DETAIL I OR DETAIL II MUST NOT EXCEED 10 PECENT OF ORIGINAL NET CROSS-SECTIONAL AREA (SEE X-X)



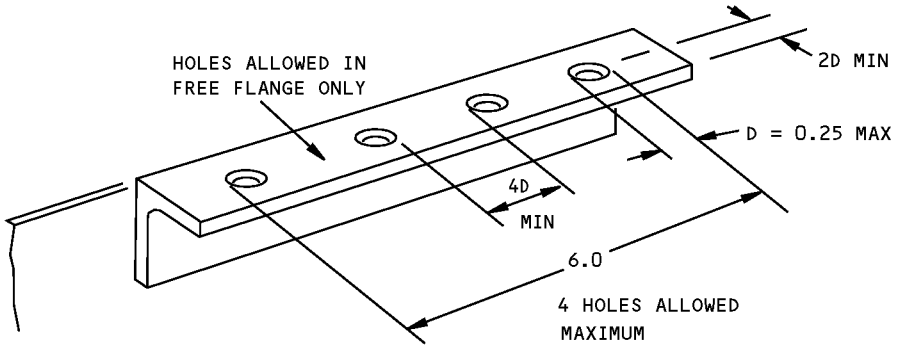
SECTION X-X (ROTATED)

A_1 = NET AREA = TOTAL AREA - ORIGINAL EXISTING HOLES

A_2 = AREA REMOVED FOR NICKS, GOUGES, OR CORROSION

$\left(\frac{A_2}{A_1}\right)$ = 10% MAX

DETAIL IV

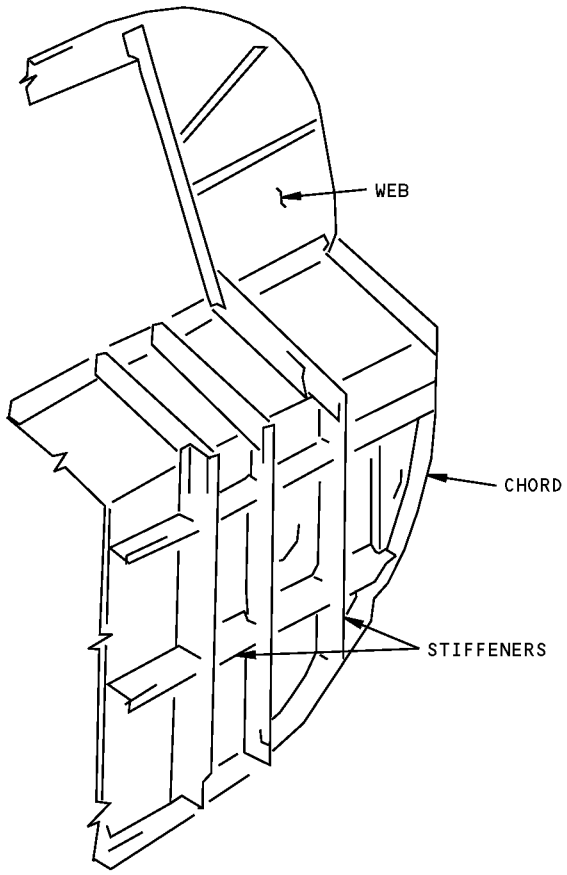


DETAIL V

Allowable Damage - Bulkhead, STA 1809.5
Figure 101 (Sheet 3 of 3)

ALLOWABLE DAMAGE 4 - APU FIREWALL - STA 1843

REFERENCE DRAWING
148T8400



ITEM	CRACKS	NICKS, GOUGES AND SCRATCHES	DENTS AND "OIL CANS"	HOLES AND PUNCTURES
CHORD	A	B	NOT PERMITTED	NOT PERMITTED
WEB	A	B	C	D
STIFFENER	A	B	NOT PERMITTED	E

Allowable Damage - APU Firewall - STA 1843
Figure 101 (Sheet 1 of 4)

NOTES

- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-21.

[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAIL I. FASTENER EDGE MARGINS MUST BE MAINTAINED.

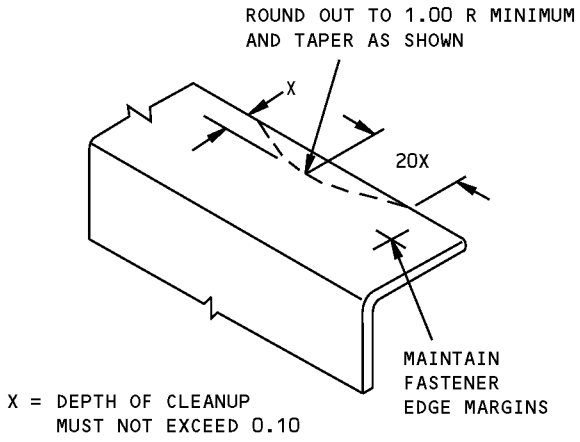
[B] EDGE DAMAGE MUST BE REMOVED AS SHOWN IN DETAILS I AND IV. ELSEWHERE, DAMAGE MUST BE REMOVED AS SHOWN IN DETAILS II AND IV. FASTENER EDGE MARGINS MUST BE MAINTAINED

[C] SEE DETAIL III FOR DENTS. SEE DETAIL VI FOR "OIL CANS". AN "OIL CAN" IS A SMALL DEPRESSION ON THE SURFACE OF THE WEB THAT MOVES WHEN YOU PUSH IT. "OIL CANS" ARE PERMITTED IF:

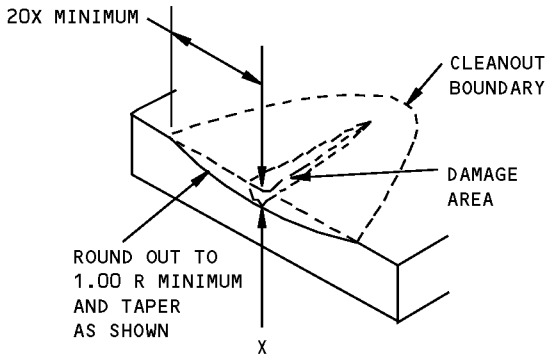
1. THE "OIL CAN" IS SMOOTH, FREE FROM SHARP CREASES, GOUGES AND CRACKS.
2. THERE ARE NO FASTENERS WITHIN THE PERIMETER OF THE "OIL CAN".
3. THERE ARE NO ELONGATED HOLES AND/OR LOOSE OR MISSING FASTENERS.
4. THE DEPTH Y IS LESS THAN 0.20 INCH AND Y IS NOT MORE THAN S/62.5. S IS THE SPACING OF THE STIFFENER IN THE BAY WHERE THE "OIL CAN" IS. USE A STRAIGHT EDGE AND A FEELER GAUGE TO MEASURE Y.

[D] HOLES ARE PERMITTED UP TO 0.25 INCH DIAMETER AFTER CLEANUP, IF THEY ARE NOT CLOSER THAN 1.0 INCH TO ANY EXISTING HOLE OR OTHER DAMAGE WITH A MAXIMUM OF 4 HOLES IN 6 INCHES. SEE DETAIL V. FILL HOLE DAMAGE WITH A MONEL RIVET INSTALLED DRY

[E] HOLES ARE PERMITTED UP TO 0.25 INCH DIAMETER AFTER CLEANUP, IF THEY ARE NOT CLOSER THAN 1.0 INCH TO ANY EXISTING HOLE OR OTHER DAMAGE. FILL HOLE DAMAGE WITH A MONEL RIVET INSTALLED DRY. REMOVE THE DAMAGE AS SHOWN IN DETAILS IV AND V.



DETAIL I



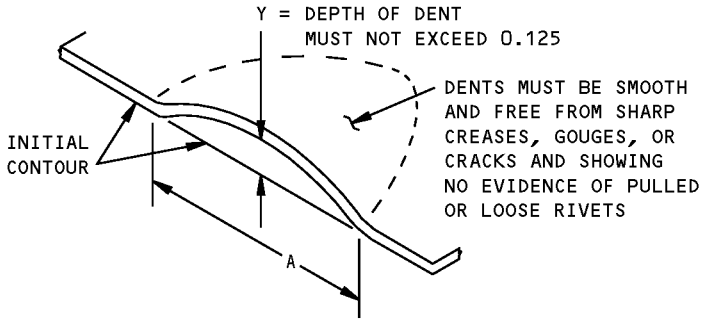
X = DEPTH OF CLEANUP
MUST NOT EXCEED
10% OF GAGE

DETAIL II

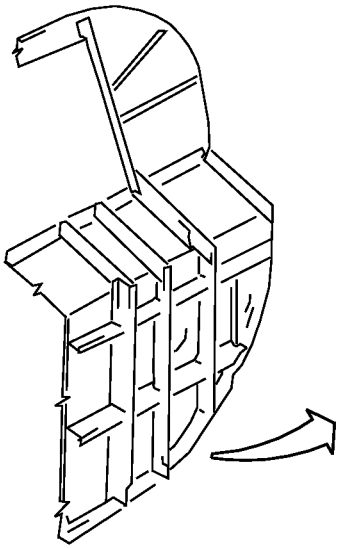
Allowable Damage - APU Firewall - STA 1843
Figure 101 (Sheet 2 of 4)

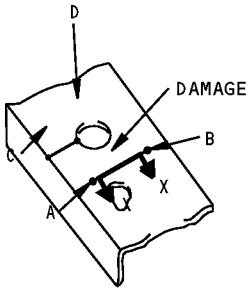
A = WIDTH OF MINOR AXIS OF DENT

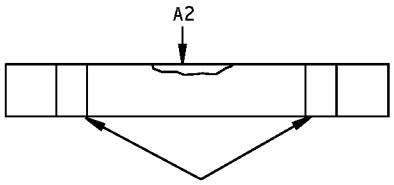
$\frac{A}{Y}$ = MUST NOT BE LESS THAN 20



DETAIL III







EXISTING HOLES

SECTION X–X (ROTATED)

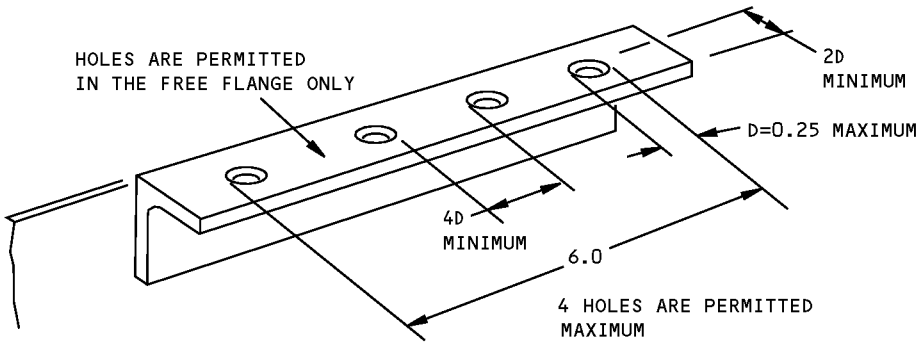
LOSS IN CROSS-SECTIONAL AREA ALONG ANY LINE A–B OR C–D DUE TO REMOVAL OF NICKS, GOUGES, OR CORROSION PER DETAIL I OR DETAIL II MUST NOT EXCEED 10 PECENT OF THE INITIAL NET CROSS-SECTIONAL AREA (SEE X–X)

A_1 = NET AREA = TOTAL AREA – AREA OF INITIAL (EXISTING) HOLES

A_2 = AREA REMOVED FOR NICKS, GOUGES, OR CORROSION

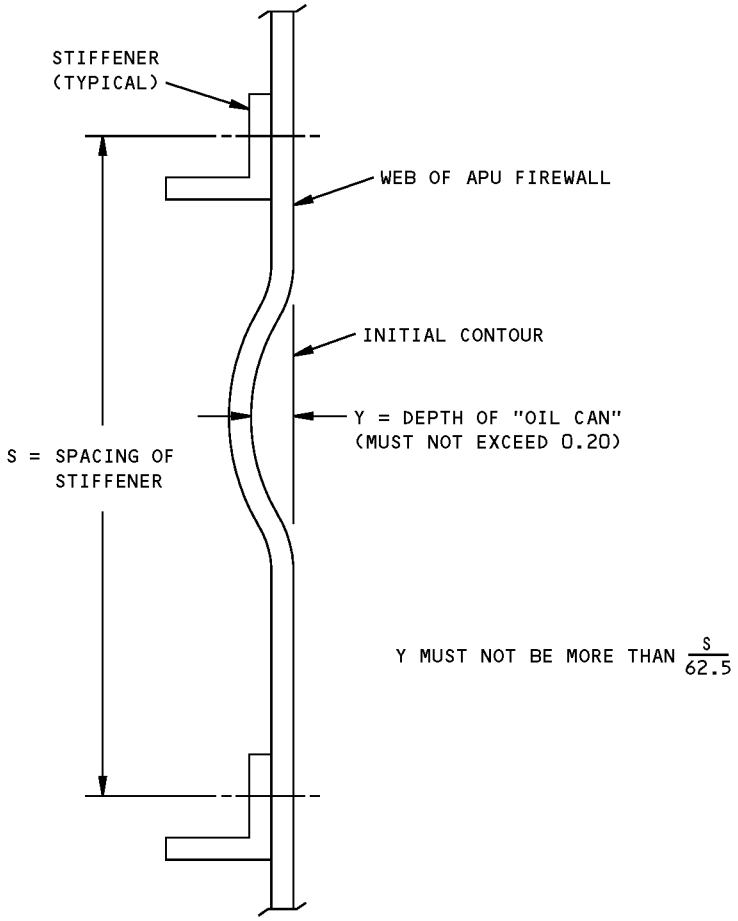
$\frac{A_2}{A_1}$ = 10% MAXIMUM

DETAIL IV



DETAIL V

Allowable Damage - APU Firewall - STA 1843
Figure 101 (Sheet 3 of 4)



DETAIL VI

Allowable Damage - APU Firewall - STA 1843
Figure 101 (Sheet 4 of 4)

REPAIR GENERAL - SERVICE BULLETIN REPAIRS

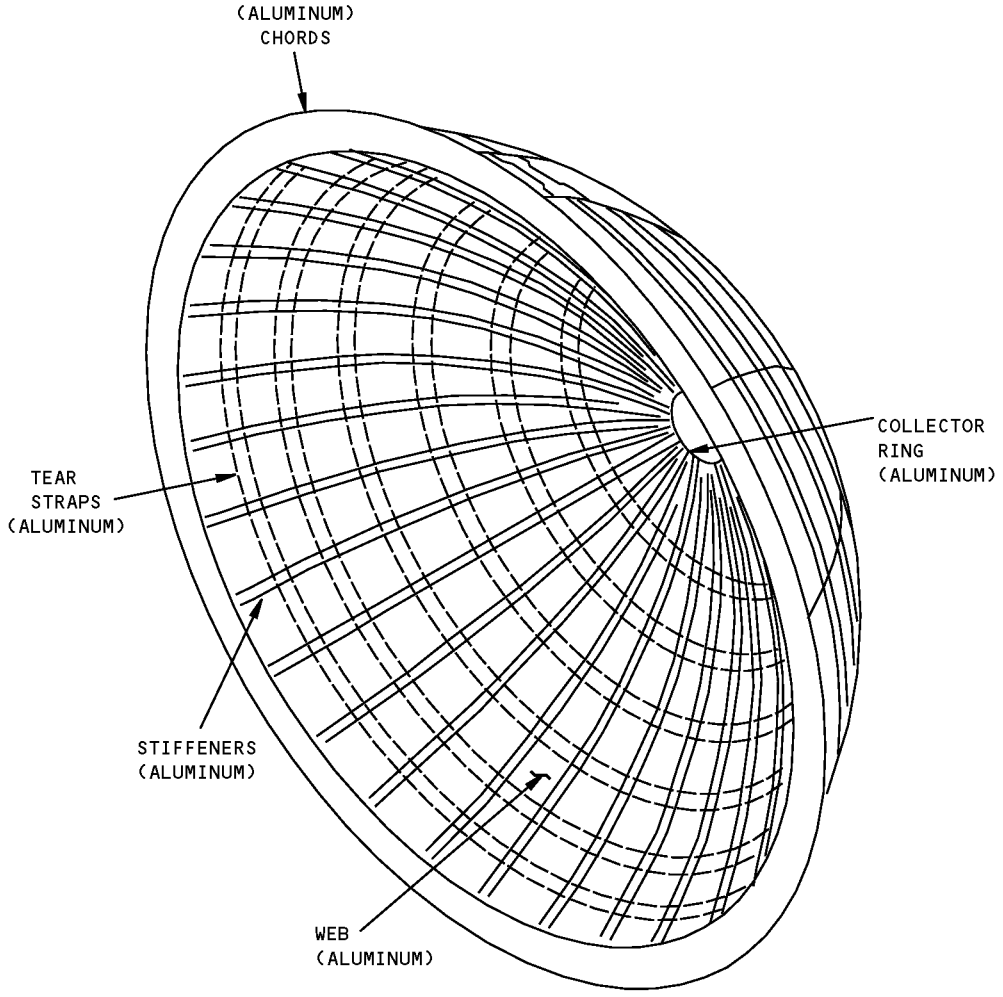
SERVICE BULLETIN REPAIRS

The following Service Bulletins contain repairs which are available for use where specific damage has been encountered. Usually, the Service Bulletin also covers preventive modification data which operators are encouraged to use to eliminate the need for repair.

DAMAGED AREA	CUM LINE NUMBER EFFECTIVITY	SB NUMBER
FUSELAGE - SECTION 48 - BODY STATION 1809.5 BULKHEAD OUTER CHORD INSPECTION, REPAIR, AND MODIFICATION.	1 THRU 709	767-53A0078

Service Bulletin Repair Chart
Figure 201

REPAIR 1 - AFT PRESSURE BULKHEAD - STATION 1582



NOTES

- SEE REPAIR 2 FOR WEB REPAIRS
- SEE REPAIR 3 AND FIGURE 208 FOR "OIL CAN" REPAIRS BETWEEN TEAR STRAPS
- SEE REPAIR 4 AND FIGURE 208 FOR "OIL CAN" REPAIRS ACROSS TEAR STRAP

Aft Pressure Bulkhead Repairs - Station 1582
Figure 201

REPAIR 2 - AFT PRESSURE BULKHEAD WEB

REPAIR INSTRUCTIONS

1. Cut and remove damaged portion of pressure bulkhead web.
2. Make the repair plate.
3. Assemble the repair plate on aft side of the bulkhead web and drill the fastener holes.
4. Remove the repair plate and alodine the raw edges of the original web and repair plate.
5. Apply one coat of BMS 10-11 Type 1 primer to surfaces and edges of repair parts and edges and faying surfaces of existing parts in repair area.
6. Install the repair parts with BMS 5-95 fay surface sealant and install fasteners.
7. Restore the finish.

NOTES

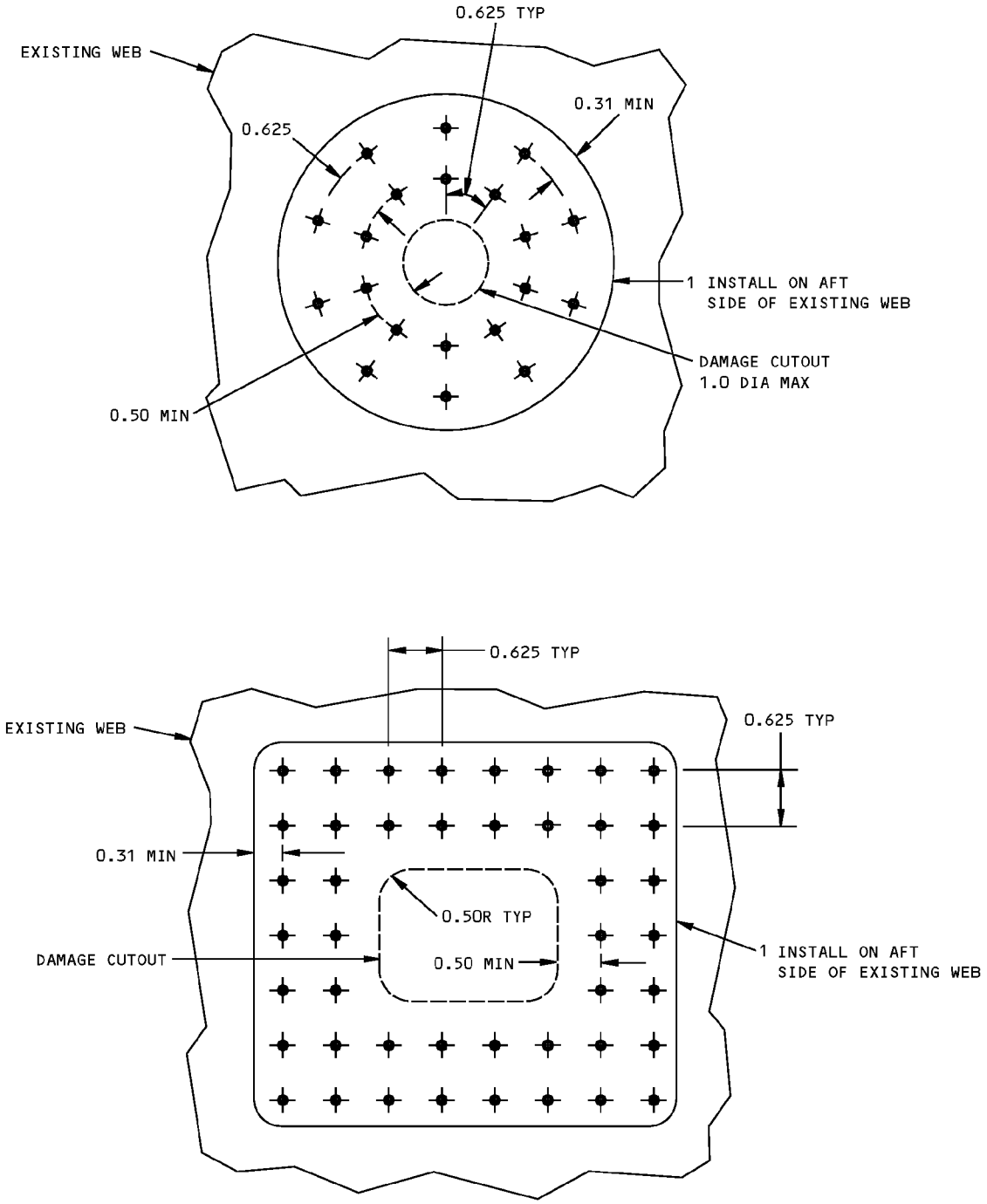
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - AMM 51-31 FOR SEALS AND SEALING
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-05 FOR SEALING OF FUSELAGE SKIN REPAIRS
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS
- BREAK SHARP EDGES OF ORIGINAL AND REPAIR PARTS 0.01 TO 0.02 R
- REMOVE ALL NICKS, SCRATCHES, BURRS, SHARP EDGES AND CORNERS FROM ORIGINAL AND REPAIR PARTS

FASTENER SYMBOLS

REPAIR FASTENER LOCATION. INSTALL BACR15BB5D RIVET BACR15BB5DD RIVET OPTIONAL

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	PLATE	1	0.040 CLAD 2024-0 HT TR T42 OPTIONAL: CLAD 2024-T3 CONTOUR TO MATCH PRESSURE WEB

Aft Pressure Bulkhead Web Repairs
Figure 201 (Sheet 1 of 2)



TYPICAL REPAIR FOR DAMAGE TO WEB ONLY

Aft Pressure Bulkhead Web Repairs
Figure 201 (Sheet 2 of 2)

REPAIR 3 - AFT PRESSURE BULKHEAD "OIL CAN" BETWEEN TEAR STRAPS

APPLICABILITY
THIS REPAIR APPLIES TO "OIL CANS" IN WHICH THE DEPTH "Y" IS MORE THAN THE "A/20" LIMIT BUT AGREES WITH ALL OTHER ALLOWABLE DAMAGE LIMITS IN 53-80-08, ALLOWABLE DAMAGE 2.

REPAIR INSTRUCTIONS

1. Set the location of the repair at the center of the "oil can" perpendicular to the radial zee stiffeners. [C]
2. Make the repair parts. Refer to Table I.
3. Assemble the repair parts and drill the fastener holes.
4. Disassemble the repair parts.
5. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the web and zee stiffeners.
6. Apply alodine to the repair parts and to the bare surfaces of the web and zee stiffeners. Refer to 51-20-01.
7. Apply two layers of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the web and zee stiffeners. Refer to 51-21 of the Maintenance Manual.
8. Install the repair parts with BMS 5-95 sealant between the faying surfaces. Install the non-aluminum fasteners wet with BMS 5-95 sealant.
9. Apply the finish to the repair area. Refer to 51-21 of the Maintenance Manual.

NOTES

- REFER TO ALLOWABLE DAMAGE 2 FOR THE AFT PRESSURE BULKHEAD ALLOWABLE DAMAGE.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - AMM 51-21 FOR INTERIOR AND EXTERIOR FINISHES
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METAL
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS.

[A] PUT THE FLANGE IN THE MIDDLE POSITION BETWEEN ADJACENT FASTENER LOCATIONS. IT MUST BE A MINIMUM OF 0.40 INCHES FROM THE FASTENER LOCATION SHOWN.

[B] FORM THE PART TO THE CONTOUR OF THE BULKHEAD.

[C] EACH END OF THE REPAIR CHANNEL MUST END ON THE FASTENER ROW ATTACHING THE RADIAL STIFFENER.

[D] KEEP A MINIMUM RADIUS OF 0.38 INCH AT THE CORNERS OF THE FILLER.

FASTENER SYMBOLS

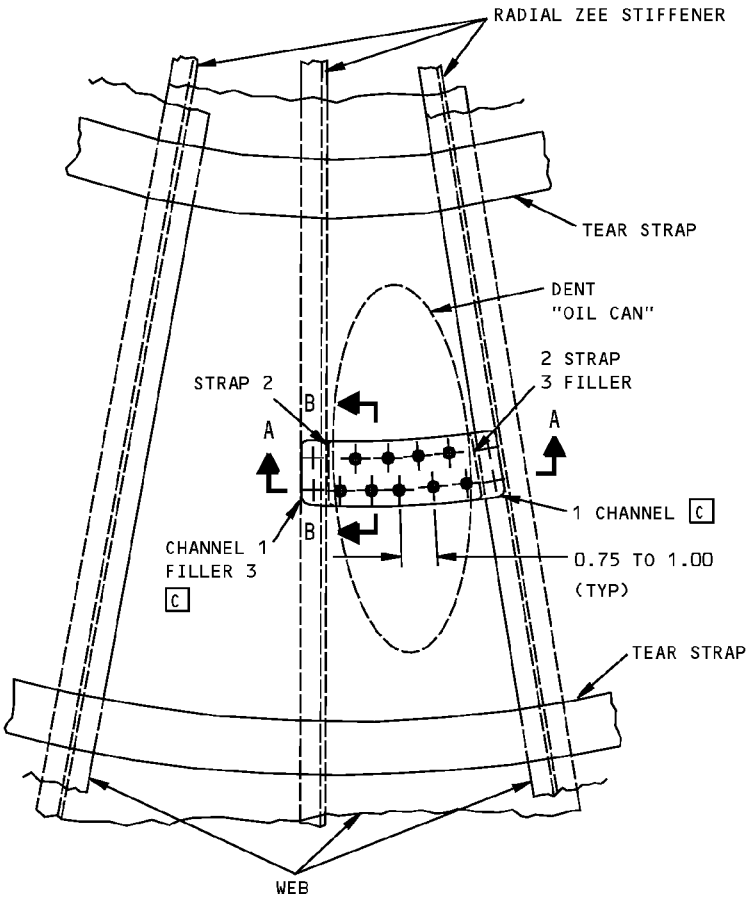
INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K() HEX-DRIVE BOLT WITH A BACC30M6 COLLAR (PREFERRED) OR A BACR15BB6D() RIVET (ALTERNATIVE).

REPAIR THE FASTENER LOCATION. INSTALL A BACB30MY5K() HEX-DRIVE BOLT WITH A BACC30M5 COLLAR (PREFERRED) OR A BACR15BB5D() RIVET (ALTERNATIVE).

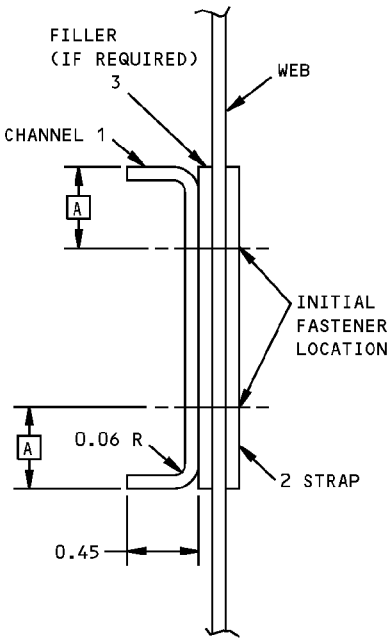
REPAIR MATERIAL			
PART		QTY	MATERIAL
1	CHANNEL	1	0.040 CLAD 2024-0 HT TR-T42 [B]
2	STRAP	1	0.032 CLAD 2024-T3 [B]
3	FILLER	1 IF REQD	SAME GAGE AS THE WEB, CLAD 2024-T3 [B] [D]

TABLE I

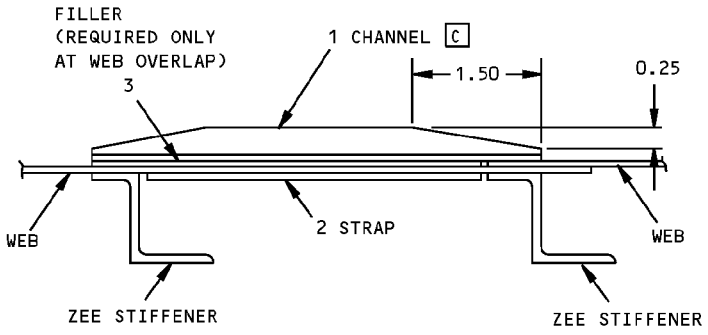
Aft Pressure Bulkhead "Oil Can" Repair Between Tear Straps
Figure 201 (Sheet 1 of 2)



AFT PRESSURE BULKHEAD
REAR VIEW



SECTION B–B



SECTION A–A

Aft Pressure Bulkhead "Oil Can" Repair Between Tear Straps
Figure 201 (Sheet 2 of 2)

REPAIR 4 - INACTIVE - AFT PRESSURE BULKHEAD "OIL CAN" ACROSS TEAR STRAP

1. Applicability

A. Repair 4 is inactive after August 15, 2009.

(1) To see Repair 4 before it was made inactive, refer to the SRM archives on MyBoeingFleet.

B. For oil can repairs across the outermost tear strap, refer to SRM 53-80-08, Repair 8.

2. General

A. If you used Repair 4 to install a repair on the aft pressure bulkhead, then that repair is a Category B repair and has FAA approval if you do the supplemental inspections given in Paragraph 5./REPAIR 4. Incorporation of these inspection requirements into the airplane's maintenance program satisfies the damage tolerance assessment of the repair. Refer to SRM 51-00-06 for repair categories and definitions.

B. If your records for Repair 4 have a DTA category, and all necessary AMOC inspection plans are in place, then no further action is necessary.

3. References

A. When you do the supplemental inspections given in Paragraph 5./REPAIR 4, refer to:

MPD, Section 9, SSI 53-80-I01D

MPD, Section 9, SSI 53-80-I01E

SB 767-53A0026 (line number 1 thru 175)

SB 767-53A0147 (line number 176 thru 423)

SB 767-53A0105

SRM 51-00-06 for Structural Repair Definitions

4. Repair Instructions

A. The repair instructions have been removed.

5. Inspection Requirements

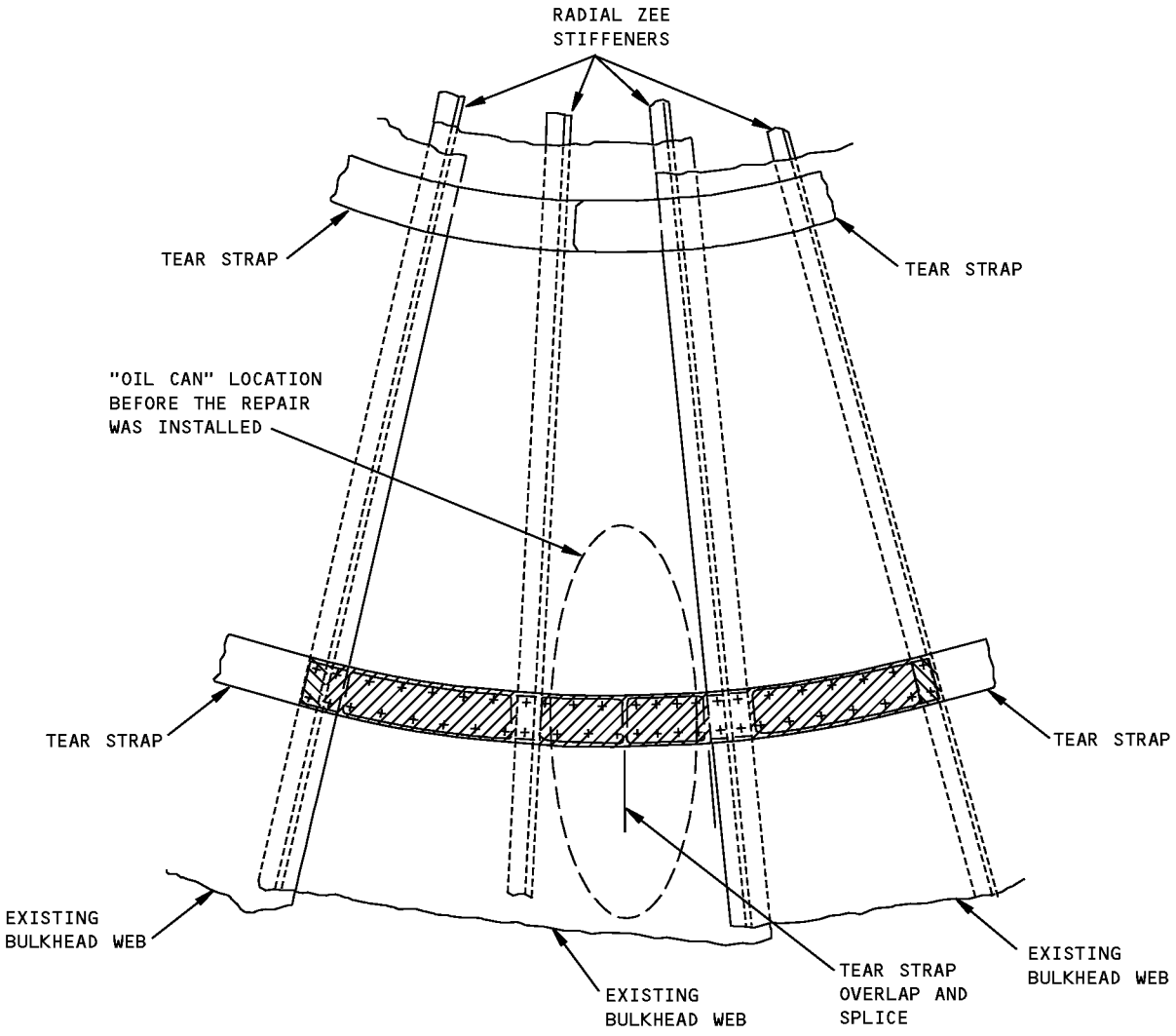
A. Do the inspections as given in Table 201/REPAIR 4.

Table 201: CATEGORY B INSPECTION REQUIREMENTS

LINE NUMBER	INSPECTION THRESHOLD	METHOD	REPEAT INTERVAL
1 thru 175	25,000 cumulative total flight cycles or 1,800 flight cycles from the time of repair installation, whichever comes later.	Use Detail I	1,800 flight cycles
176 thru 423	35,000 cumulative total flight cycles or 1,800 flight cycles from the time of repair installation, whichever comes later.	Use Detail I	1,800 flight cycles
424 and on	37,500 cumulative total flight cycles or 3,000 flight cycles from the time of repair installation, whichever comes later.	Use Detail I	3,000 flight cycles

FASTENER SYMBOLS

REPAIR FASTENER LOCATION



DETAIL I
REAR VIEW

LOW FREQUENCY EDDY CURRENT (LFEC) INSPECT THE AFT PRESSURE BULKHEAD WEB FROM THE FORWARD SIDE THROUGH THE 0.032 INCH STRAPS COMMON TO BOTH ROWS OF FASTENER AS SHOWN, AND AS GIVEN IN 767 NDT MANUAL, PART 6 53-80-02. INSPECTION LOCATIONS COVERED BY ZEE STIFFENERS IS NOT REQUIRED.

LOW FREQUENCY EDDY CURRENT (LFEC) INSPECT THE TEAR STRAP FROM THE AFT SIDE THROUGH THE REPAIR CHANNEL, OR THROUGH THE REPAIR CHANNEL AND THE FILLER, COMMON TO 2 LOCATIONS AT BOTH ENDS OF THE CHANNEL AS SHOWN, AND AS GIVEN IN 767 NDT MANUAL, PART 6, 53-00-06. DEPENDING ON PROBE DIAMETER, A 360° SCAN AROUND THE FASTENER HEAD MAY NOT BE POSSIBLE. SCAN THE MAXIMUM ANGLE POSSIBLE AROUND THE INDICATED FASTENER HEADS UNTIL INTERFERENCE THE THE CHANNEL OCCURS

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Aft Pressure Bulkhead "Oil Can" Repair Across Tear Strap
Figure 201

REPAIR 5 - APU FIREWALL - WEB REPAIR BETWEEN STIFFENERS

REPAIR INSTRUCTIONS

1. Cut and remove the damaged part of the web. Make the corners of the cutout at least 0.25 R. Make the surface 125 microinches R_a or smoother.
2. Do a penetrant inspection of the web to make sure that all damage is removed. Refer to SOPM 20-20-02.
3. Make the doubler. Refer to Table I and SRM 51-30-01. Refer to Detail I for fastener spacing and edge margins.
4. Assemble the doubler and drill the fastener holes. Refer to SRM 51-40-05.
5. Disassemble the doubler from the web.
6. Remove all of the nicks, scratches, burrs and sharp edges from the web and the doubler.
7. Install the doubler. Apply a fillet seal all the way around the doubler and the exposed edges of the web cutout with BMS 5-63, Type I sealant. Refer to SRM 51-20-05.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	0.025 6AL-4V TITANIUM ANNEALED

TABLE I

NOTES

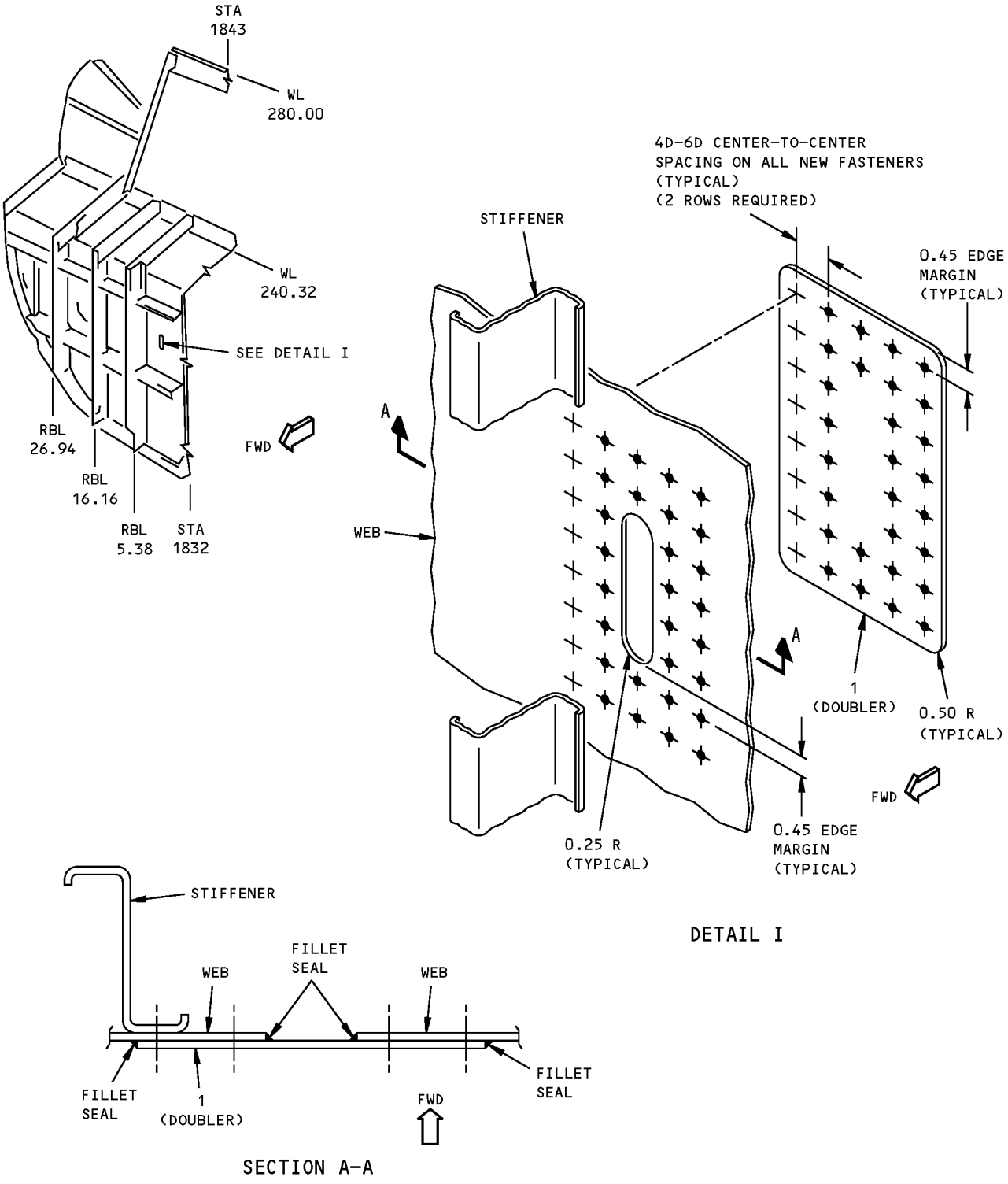
- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-20-02 FOR PENETRANT INSPECTION PROCEDURES
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-30-01 FOR PRECAUTIONS WHEN WORKING WITH TITANIUM
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS.

FASTENER SYMBOLS

⊕ REPAIR FASTENER LOCATION. INSTALL A MS20615-6M RIVET.

⊕ INITIAL FASTENER LOCATION. INSTALL A MS20615-6M RIVET.

APU Firewall - Web Repair Between Stiffeners
Figure 201 (Sheet 1 of 2)



APU Firewall - Web Repair Between Stiffeners
Figure 201 (Sheet 2 of 2)

REPAIR 6 - APU FIREWALL - WEB REPAIR AT A STIFFENER

REPAIR INSTRUCTIONS

1. Remove the necessary fasteners in the repair area.
2. Place a stainless steel sheet between the stiffener and the web to protect the stiffener.
3. Cut and remove the damaged part of the web. Make the corners of the cutout at least 0.25 R. Make the surface 125 microinches R_a or smoother.
4. Do a penetrant inspection of the web to make sure that all damage is removed. Refer to SOPM 20-20-02.
5. Make the doubler and the filler. Refer to Table I and SRM 51-30-01. Refer to Detail I for fastener spacing and edge margins.
6. Assemble the doubler and filler in place on the web and drill the fastener holes. Refer to SRM 51-40-05.
7. Disassemble the doubler and the filler from the web.
8. Remove all of the nicks, scratches, burrs and sharp corners from the web, the doubler and the filler.
9. Install the doubler and filler. Apply a fillet seal all the way around the doubler and the exposed edges of the filler with BMS 5-63, Type I sealant. Refer to SRM 51-20-05.

NOTES

- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-20-02 FOR PENETRANT INSPECTION PROCEDURES
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-30-01 FOR PRECAUTIONS WHEN WORKING WITH TITANIUM
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS.

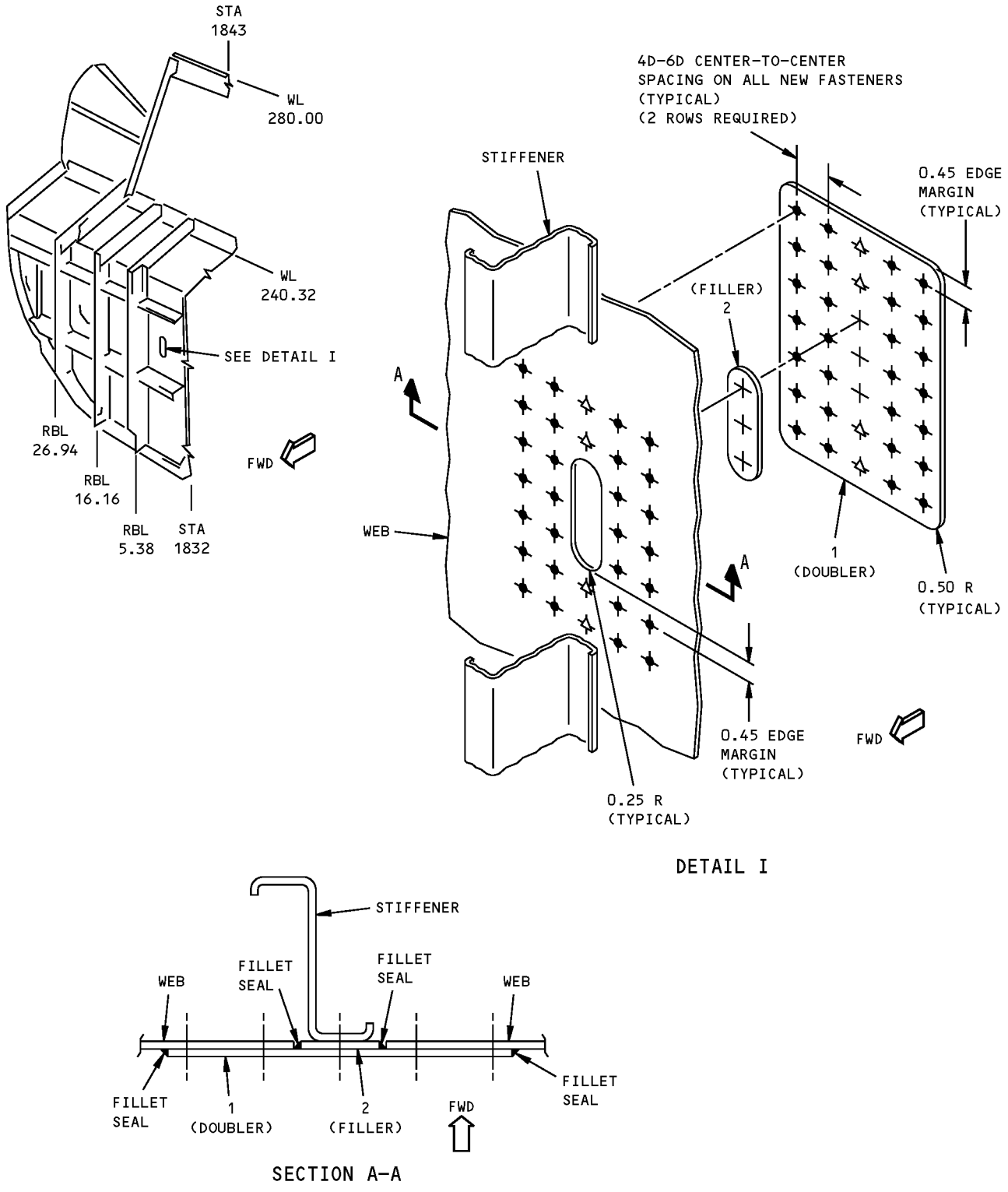
FASTENER SYMBOLS

- REPAIR FASTENER LOCATION. INSTALL A MS20615-6M RIVET.
- INITIAL FASTENER LOCATION. INSTALL THE SAME TYPE AND DIAMETER AS THE INITIAL FASTENER.
- INITIAL FASTENER LOCATION. INSTALL A MS20615-6M RIVET.

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	0.025 6AL-4V TITANIUM ANNEALED
2	FILLER	1	USE THE SAME MATERIAL AND GAGE AS THE INITIAL WEB

TABLE I

APU Firewall - Web Repair at a Stiffener
Figure 201 (Sheet 1 of 2)



APU Firewall - Web Repair at a Stiffener
Figure 201 (Sheet 2 of 2)

REPAIR 7 - AFT PRESSURE BULKHEAD LAP SPLICE - FORWARD WEB

APPLICABILITY

THIS REPAIR IS APPLICABLE TO THE STA 1582 AFT PRESSURE BULKHEAD WEB LAP SPLICES BETWEEN TEAR STRAPS.

THIS REPAIR IS NOT APPLICABLE TO:

- DAMAGE TO THE WEB TO Y-CHORD SPLICE.
- DAMAGE BETWEEN THE CENTER COVER PAN AND THE FIRST TEAR STRAP OUTWARD, DUE TO THE RADIAL STIFFENER SPACING.
- DAMAGE SIZE THAT WILL RESULT IN THE BOUNDRY ROW OF THE REPAIR PARTS ENDING ON THE TEAR STRAP OR SUPER TEAR STRAP.

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. Remove fasteners in the area of the repair as necessary.

WARNING: WEAR PROTECTIVE CLOTHING AND EYE PROTECTION WHEN YOU USE SOLID CARBON DIOXIDE (DRY ICE). MAKE SURE YOU HAVE SUFFICIENT VENTILATION AND DO NOT USE DRY ICE IN AN ENCLOSED SPACE. DRY ICE CAN INJURE YOUR SKIN OR CAUSE BREATHING PROBLEMS.

3. Carefully drive nylon or hardwood wedges between the two webs and between the radial stiffener and the damaged web. Use sufficient wedges to gradually separate the parts and prevent buckling.

NOTE: To help separate the bonded webs, cold soak the joint with solid carbon dioxide (dry ice) for approximately 30 minutes.

CAUTION: USE SPECIAL CARE TO CUT AND REMOVE THE DAMAGED AREA OF THE WEB. DO NOT GOUGE, SCRATCH, OR BUCKLE THE WEB ADJACENT TO THE REPAIR. IF YOU DAMAGE THE STRUCTURE ADJACENT TO THE REPAIR, MORE REPAIR WORK CAN BE NECESSARY.

4. Cut and remove the damaged part of the web. Be careful not to damage any adjacent structure. See Detail I.

NOTE: You can install a thin steel sheet between the damaged web and the adjacent parts in the area where the web will be repaired.

5. Do a surface eddy current inspection of the trimmed edges of the forward web to make sure there is no more damage. Refer to NDT, part 6, 51-00-01 or 51-00-19.
6. Do an open hole eddy current inspection of all existing fastener holes where fasteners were removed to perform the repair. Inspect to make sure there are no more cracks or damage.
7. Make the repair parts. See Table I and Detail I. If the material for the part 1 doubler is not available, you can make the repair parts as shown in Table II and Detail II. The contour of the repair parts must fit the 96 inch spherical radius of the pressure bulkhead.
8. Assemble the repair parts and drill the fastener holes.
9. Disassemble the repair parts.
10. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the web.
11. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the web. Refer to SRM 51-20-01.
12. Apply one layer of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the web. Refer to SOPM 20-41-02.
13. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
14. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
15. Apply one layer of BMS 10-11, Type I primer to the repair area. Refer to SOPM 20-41-02.

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Aft Pressure Bulkhead Lap Splice - Forward Web Repair
Figure 201 (Sheet 1 of 9)

NOTES

- THIS REPAIR IS A CATEGORY B REPAIR. THIS REPAIR HAS FAA APPROVAL IF YOU DO THE SUPPLEMENTAL INSPECTIONS GIVEN IN TABLE III. INCORPORATION OF THESE INSPECTION REQUIREMENTS INTO THE AIRPLANE'S MAINTENANCE PROGRAM SATISFIES THE DAMAGE TOLERANCE ASSESSMENT OF THE REPAIR. REFER TO SRM 51-00-06 FOR REPAIR CATEGORIES AND DEFINITIONS.
- WHEN YOU USE THIS REPAIR REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SB 767-53A0026 (LINE NUMBER 1-175)
  - SB 767-53A0147 (LINE NUMBER 176-423)
  - SRM 51-00-06 FOR STRUCTURAL REPAIR DEFINITIONS
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC AND NON-METALLIC MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES, AND EDGE MARGINS.
- BREAK SHARP EDGES OF INITIAL AND REPAIR PARTS TO A MAXIMUM RADIUS OR CHAMFER OF 0.004 INCHES.
- REMOVE ALL NICKS, SCRATCHES, BURRS, SHARP EDGES AND CORNERS FROM INITIAL AND REPAIR PARTS.

[A] AFTER YOU FORM THE PART, DO A SURFACE EDDY CURRENT INSPECTION TO MAKE SURE THERE IS NO DAMAGE. REFER TO NDT, PART 6, 51-00-01 OR 51-00-19.

[B] THE RADIAL STIFFENER IS SHOWN ATTACHED TO THE FASTENER ROW ALONG THE EDGE OF THE FORWARD WEB. IN OTHER LOCATIONS, THE RADIAL STIFFENER IS ATTACHED TO THE FASTENER ROW ALONG THE EDGE OF THE AFT WEB. THIS REPAIR MAY BE USED FOR BOTH CONFIGURATIONS. THE PART 3 TAPERED FILLER SHOWN IN DETAIL I, THE PART 4 TAPERED FILLER AND PART 5 FILLER SHOWN IN DETAIL II ARE ALWAYS LOCATED BELOW THE RADIAL STIFFENER.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION. IF THIS FASTENER WAS REMOVED AS PART OF THE REPAIR, INSTALL A BACR15FT6AD(), OR BACR15FT6D() RIVET. IF ALTERNATIVE FASTENERS BACR15BB* OR BACB30MY*K() HAVE BEEN INSTALLED, OR WILL BE INSTALLED, CONTACT BOEING WITH THE CONFIGURATION DATA FOR ADJUSTMENT TO THE INSPECTION PROGRAM OF EITHER SB 767-53A0026 OR SB 767-53A0147.

INITIAL FASTENER LOCATION. INSTALL A BACR15FT6AD() OR BACR15FT6D() RIVET. IF ALTERNATIVE FASTENERS BACR15BB* OR BACB30MY*K() HAVE BEEN INSTALLED, OR WILL BE INSTALLED, CONTACT BOEING WITH THE CONFIGURATION DATA FOR ADJUSTMENT TO THE INSPECTION PROGRAM OF EITHER SB 767-53A0026 OR SB 767-53A0147.

- MAINTAIN A CONSISTENT FASTENER TYPE FOR ALL INITIAL AND REPAIR FASTENERS COMMON TO THE REPAIR DOUBLER/TRIPLER AND THE STRUCTURAL FILLER.

INITIAL FASTENER LOCATION. INSTALL A BACR15FT6AD() OR BACR15FT6D() OR BACR15BB6AD() OR BACR15BB6D() RIVET.

REPAIR FASTENER LOCATION. INSTALL A BACR15FT5AD() OR BACR15FT5D() OR BACR15BB5AD() OR BACR15BB5D() RIVET. AS AN ALTERNATIVE INSTALL A BACB30MY5K() HEX DRIVE BOLT WITH A BACC30M5 COLLAR.

1851298 S0000329412_V1

Aft Pressure Bulkhead Lap Splice - Forward Web Repair
Figure 201 (Sheet 2 of 9)

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	0.040 CLAD 2024-T42 OR T3. FORM TO A 96 INCH SPHERICAL RADIUS. IF THE INITIAL WEB IS 0.032 THICK, A 0.036 THICK DOUBLER MAY BE USED. [A]
2	STRUCTURAL FILLER	1	CLAD 2024-T42 OR T3. FORM TO A 96 INCH SPHERICAL RADIUS. USE THE SAME GAGE AS THE INITIAL WEB. [A]
3	TAPERED FILLER	2	2024-T42 OR T3 USE A 200 TO 1 MINIMUM TAPER RATIO.

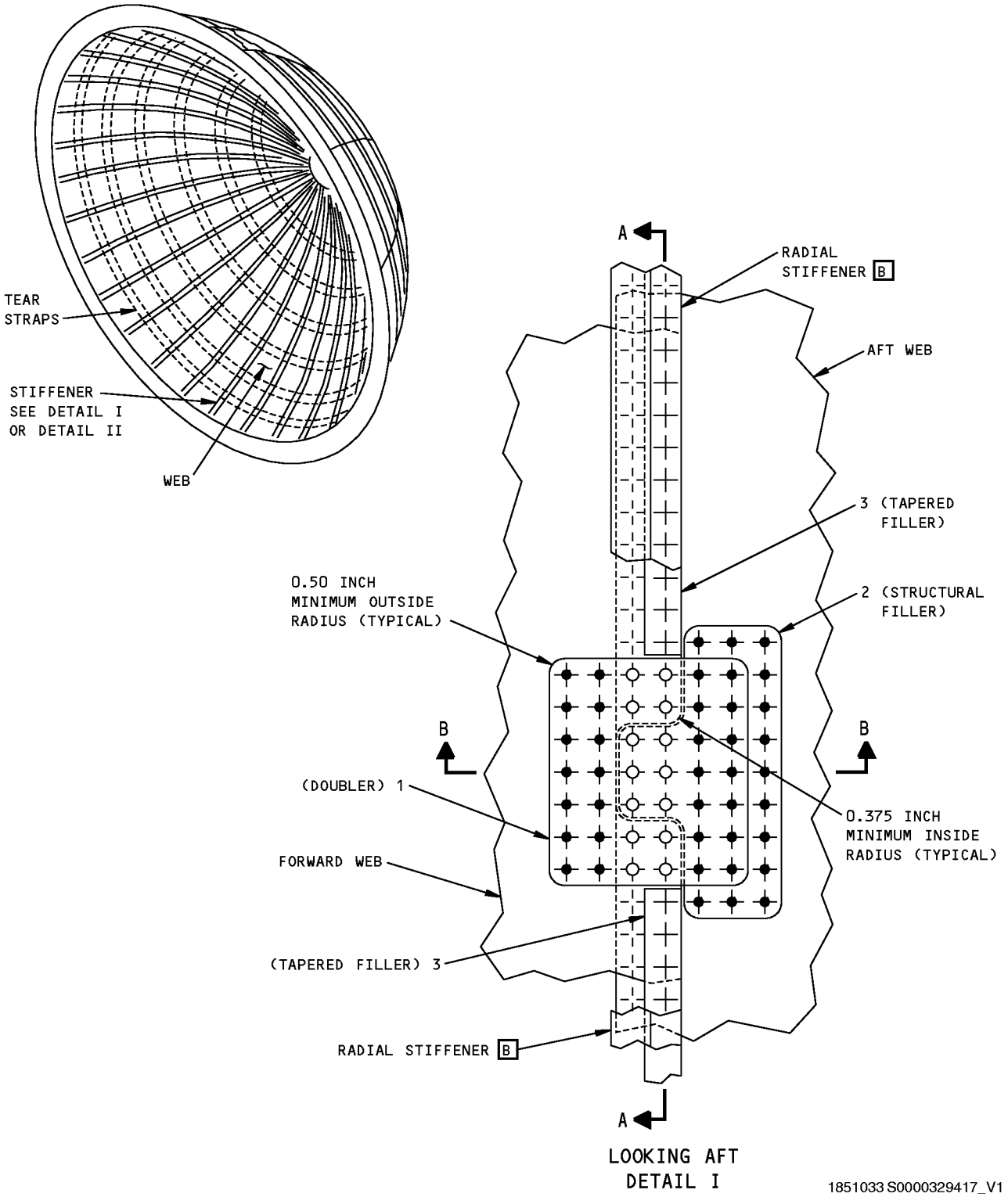
TABLE I

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	0.032 CLAD 2024-T42 OR T3. FORM TO A 96 INCH SPHERICAL RADIUS. [A]
2	TRIPLER	1	0.032 CLAD 2024-T42 OR T3. FORM TO A 96 INCH SPHERICAL RADIUS. [A]
3	STRUCTURAL FILLER	1	CLAD 2024-T42 OR T3. FORM TO A 96 INCH SPHERICAL RADIUS. USE THE SAME GAGE AS THE INITIAL WEB. [A]
4	TAPERED FILLER	2	2024-T42 OR T3 USE A 200 TO 1 MINIMUM TAPER RATIO.
5	FILLER	2	0.032 2024-T42 OR T3

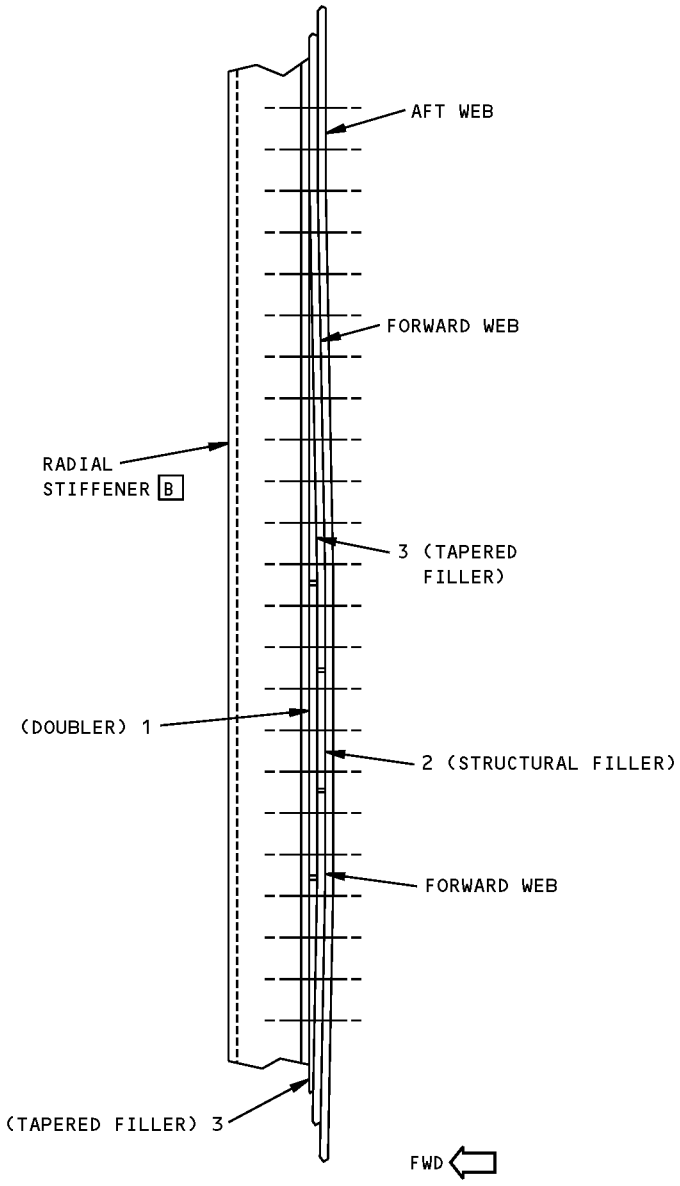
TABLE II

1851318 S0000329443_V1

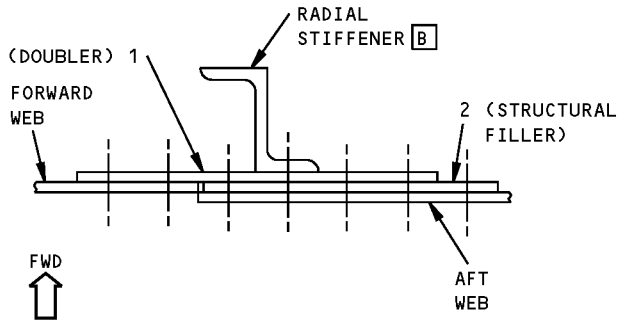
Aft Pressure Bulkhead Lap Splice - Forward Web Repair
Figure 201 (Sheet 3 of 9)



Aft Pressure Bulkhead Lap Splice - Forward Web Repair
Figure 201 (Sheet 4 of 9)

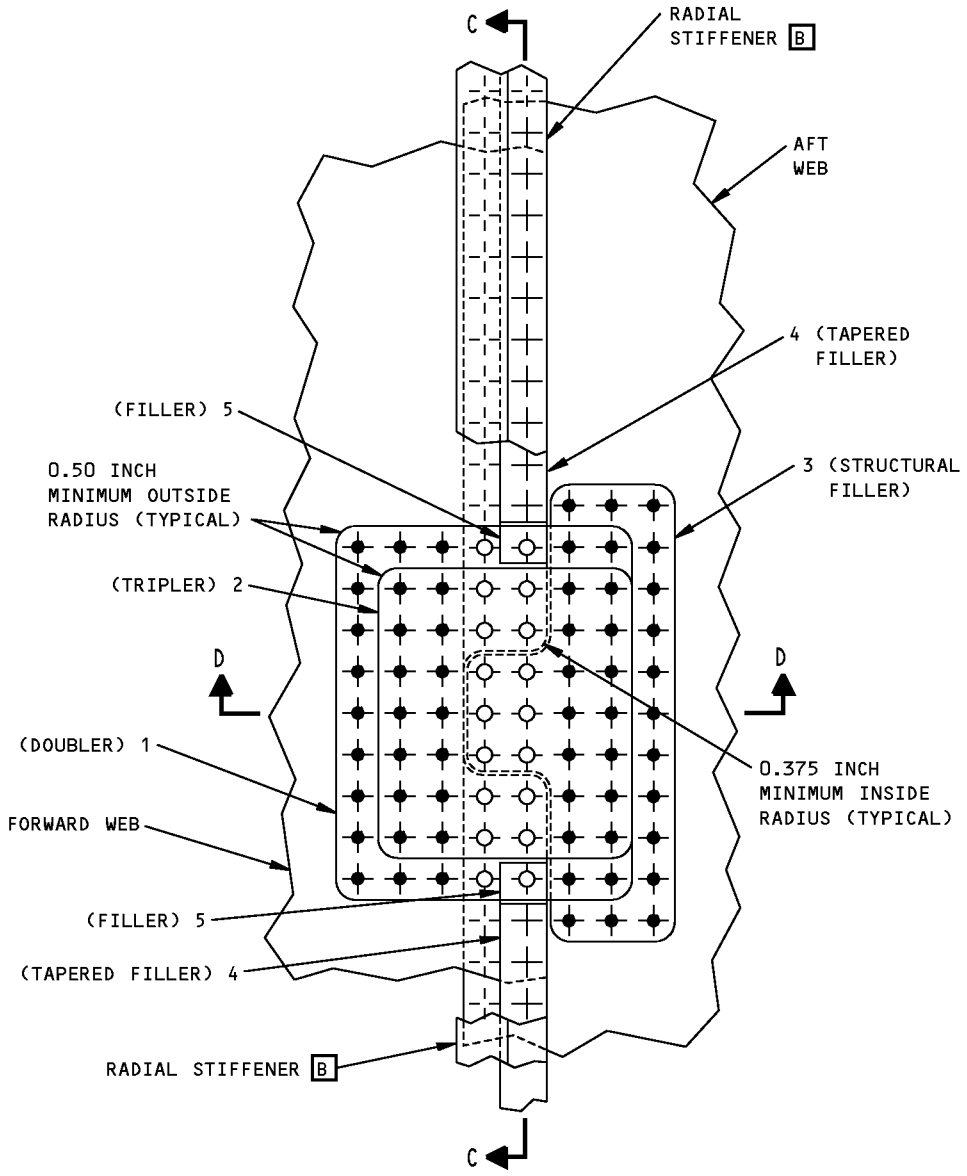


SECTION A-A



SECTION B-B

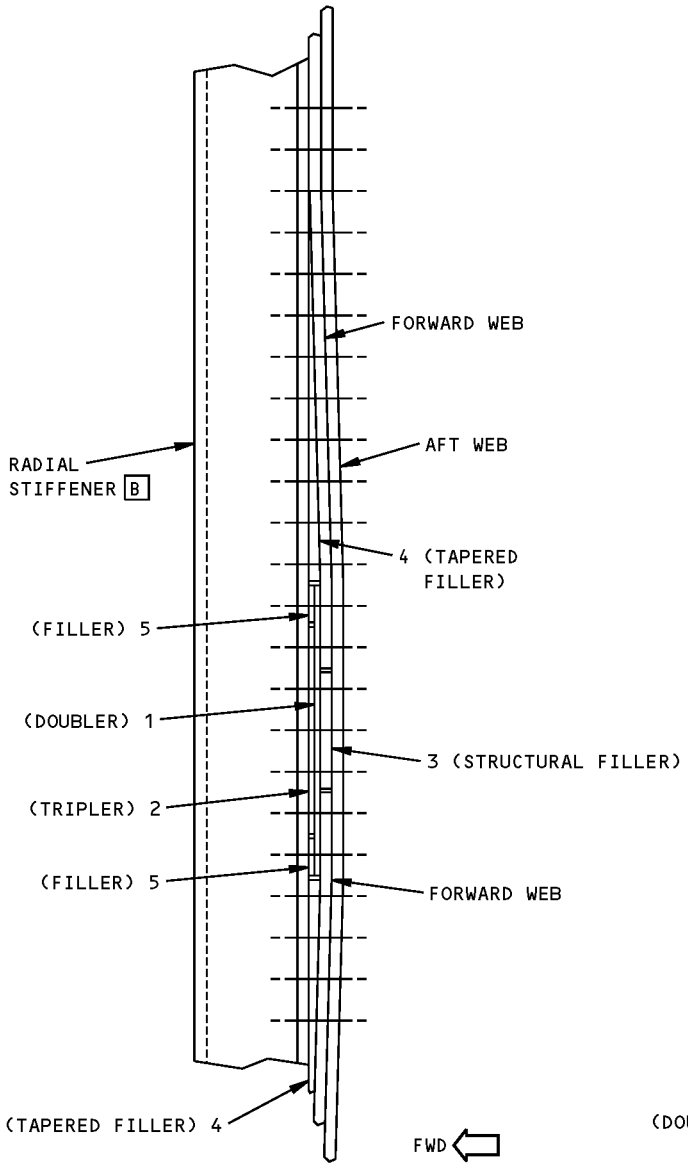
Aft Pressure Bulkhead Lap Splice - Forward Web Repair
Figure 201 (Sheet 5 of 9)



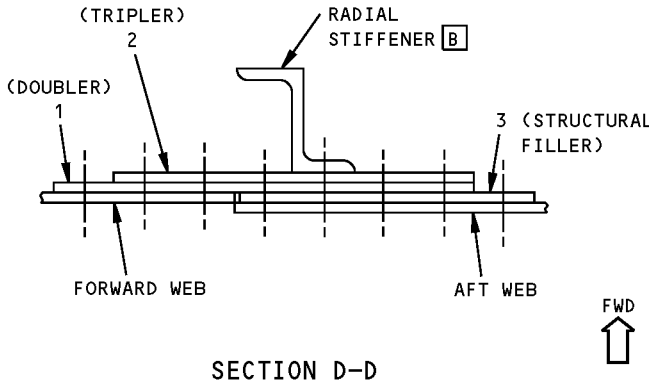
LOOKING AFT
DETAIL II

1851036 S0000329422_V1

Aft Pressure Bulkhead Lap Splice - Forward Web Repair
Figure 201 (Sheet 6 of 9)



SECTION C–C



SECTION D–D

Aft Pressure Bulkhead Lap Splice - Forward Web Repair
Figure 201 (Sheet 7 of 9)

CATEGORY B REPAIR INSPECTION REQUIREMENTS			
LINE NUMBER	INSPECTION THRESHOLD	METHOD	INTERVAL
1 THRU 175 (1)	25,000 FLIGHT CYCLES AFTER AIRPLANE DELIVERY OR 1,800 FLIGHT CYCLES FROM THE TIME OF THE REPAIR INSTALLATION, WHICHEVER COMES LATER	EXTERNAL - MFEC (2)	1,800 FLIGHT CYCLES
176 THRU 423	35,000 FLIGHT CYCLES AFTER AIRPLANE DELIVERY OR 3,000 FLIGHT CYCLES FROM THE TIME OF THE REPAIR INSTALLATION, WHICHEVER COMES LATER	EXTERNAL - MFEC (2)	3,000 FLIGHT CYCLES
424 AND ON	37,500 FLIGHT CYCLES AFTER AIRPLANE DELIVERY OR 4,500 FLIGHT CYCLES FROM THE TIME OF THE REPAIR INSTALLATION, WHICHEVER COMES LATER	EXTERNAL - MFEC (2)	4,500 FLIGHT CYCLES

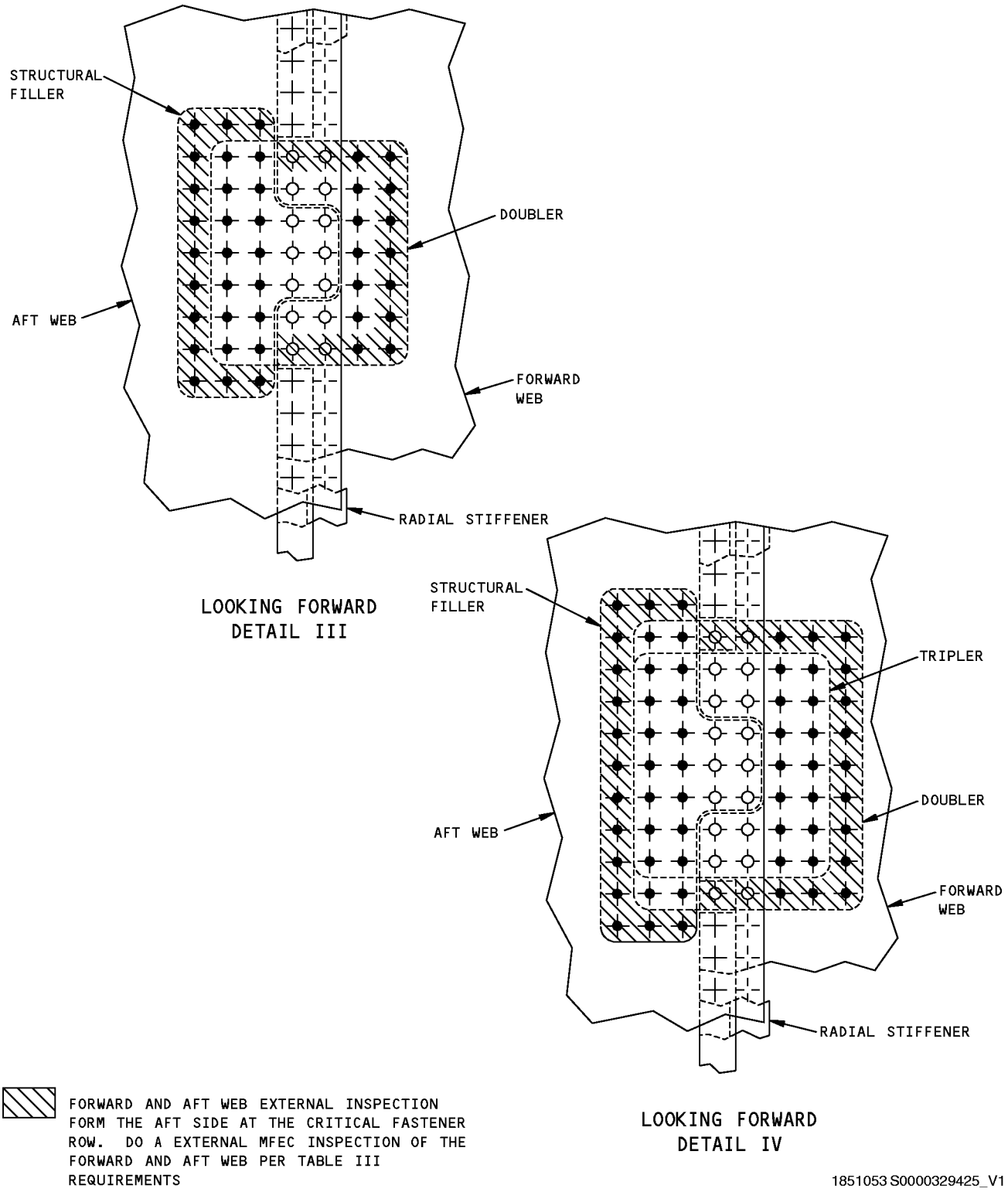
NOTES: (1) IF THE MODIFICATION AS GIVEN IN SB 767-53A0139 HAS BEEN INSTALLED (AFT PRESSURE BULKHEAD REPLACEMENT) ON AN AIRPLANE BETWEEN LINE NUMBER 1 THRU 175, AND YOU INSTALL THIS REPAIR (EITHER CONFIGURATION), THEN YOU MUST DO THE CATEGORY B REPAIR INSPECTION REQUIREMENTS FOR LINE NUMBER 424 AND ON. THE INSPECTION THRESHOLD IS FLIGHT CYCLES FROM THE TIME OF SB 767-53A0139 MODIFICATION.

(2) DO AN EXTERNAL MID FREQUENCY EDY CURRENT (MFEC) INSPECTION AS SHOWN IN DETAILS III AND IV. REFER TO 767 NDT MANUAL, PART 6, 53-80-06

TABLE III

1851336 S0000329423_V1

Aft Pressure Bulkhead Lap Splice - Forward Web Repair
Figure 201 (Sheet 8 of 9)



Aft Pressure Bulkhead Lap Splice - Forward Web Repair
Figure 201 (Sheet 9 of 9)

REPAIR 8 - AFT PRESSURE BULKHEAD "OIL CAN" REPAIRS - RADIAL STIFFENERS

APPLICABILITY
THIS REPAIR IS APPLICABLE TO "OIL CANNING" OF THE AFT BULKHEAD AT STA 1582. THE REPAIR CAN BE USED BETWEEN THE PRESSURE CHORD AND THE FIRST TEAR STRAP OR SECOND TEAR STRAP. THIS REPAIR IS APPLICABLE FOR ALL LINE NUMBERS. FOR AIRCRAFT WITH LINE NUMBERS 885 AND ON, CERTAIN BAYS HAVE PRODUCTION RADIAL STIFFENERS INSTALLED.

NOTE: This repair uses radial stiffeners. This is the preferred repair method for "oil canning" of the bulkhead web in the first 2 bays.

REPAIR INSTRUCTIONS

1. Get access to the 'oil can' area.
2. See Details I, II, IV and V if the 'oil can' is across tear straps. See Details III, VI, VII AND VIII if the 'oil can' is only in one bay.
3. Make the repair parts. Refer to Table I.
4. Do a high frequency eddy current (HFEC) inspection of the web surface at the "oil can" location to make sure that there are no surface cracks. Refer to NDT part 6, 51-00-01. Refer to service bulletin 767-53A0026 Figure 4 for the inspection instructions.

CAUTION: SECTION 48 STRINGER END FITTINGS CAN PREVENT THE INSTALLATION OF THE TWO SPECIFIED HEX DRIVE BOLTS COMMON TO THE PRESSURE AND FAILSAFE CHORDS. EXAMINE SECTION 48 STRINGER END FITTING LOCATION BEFORE REMOVING THE INITIAL FASTENERS TO MAKE SURE THE REPAIR CAN BE ACCOMPLISHED WITHOUT REMOVAL OF THE STRINGER END FITTING

NOTE: It is acceptable to locate the repair stiffener within 2 inches of mid-bay to prevent removing the Section 48 stringer end fitting.

5. Assemble the repair parts and drill the fastener holes. Install shims as necessary.
6. Disassemble the repair parts.
7. Do an open hole high frequency eddy current inspection (HFEC) of the web common to any initial fastener location. For the two fasteners common to the pressure chord and failsafe chord a reduced length probe (similar to NDT Engineering hole probe BPU-16/SE) and reduced size rotary scanner (similar to Hocking mini-rotor) will be necessary due to access reasons. Minimum perpendicular distance between web and STA 1582 inner chord at center line of holes is apporximately 2.5 inches. Refer to 767 NDT manual Part 6, 51-00-16. Repair all cracks before the next flight.

NOTE: At the location where the pressure chord is spliced, do a visual inspection of the web around the periphery of the splice plate.

8. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the bulkhead.
9. Apply a chemical conversion coating to the repair parts and to the bare surfaces of the bulkhead. Refer to SRM 51-20-01.
10. Apply two layers of BMS 10-11, Type I primer to the repair parts and to the bare surfaces of the bulkhead. Refer to SOPM 20-41-02.
11. Install the repair parts with BMS 5-95 sealant between the mating surfaces.
12. Install the fasteners. Fasteners that are not made of aluminum must be installed wet with BMS 5-95 sealant.
13. Apply a layer of BMS 3-23 corrosion inhibiting compound to the repair area. Refer to SRM 51-20-01. Apply BMS 3-26, Type II corrosion inhibiting compound over BMS 3-23 on the forward side of the bulkhead below the passenger floor.

NOTES

- SERVICE BULLETIN 767-53A0026 AND 767-53A0105 ARE RELATED TO THIS REPAIR.
- D = FASTENER DIAMETER.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INVESTIGATION AND CLEANUP OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALLIC MATERIALS
  - SRM 51-20-05 FOR REPAIR SEALING
  - 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES (EXCEPT AS NOTED), AND EDGE MARGINS
- THIS REPAIR IS CATEGORY A AND NO SUPPLEMENTAL INSPECTIONS ARE NECESSARY IF THERE ARE NO OIL CANS AFTER STIFFENER INSTALLATION. IF YOU FIND SMALLER, SUB-DIVIDED OR SHIFTED OIL CANS AFTER DOING THIS REPAIR AND THEY ARE LESS THAN THE SRM 53-80-08 FIGURE 102 LIMITS, REFER TO SB 767-53A0026 AND SB 767-53A0105 FOR INSPECTIONS.

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Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 1 of 14)

NOTES (CONT.)

[A] APPLICABLE TO CUMULATIVE LINE NUMBERS 1 TO 175.

[B] APPLICABLE TO CUMULATIVE LINE NUMBERS 176 AND ON.

[C] USE A RADIUS FILLER IF A FASTENER HEAD RESTS ON THE RADIUS OF THE STIFFENER.

[D] FORM THE PART TO THE CONTOUR OF THE BULKHEAD.

[E] TAPERED FILLERS ARE REQUIRED FOR JOGGLED STIFFENER INSTALLATION DETAILS. JOGGLE STIFFENERS TO 1 IN 6.

[F] AN EDGE MARGIN OF 1.6D IS PERMITTED COMMON TO THE PRESSURE CHORD AND THE FAILSAFE CHORD.

[G] SEE SECTION A-A FOR STIFFENER DIMENSIONS.

[H] SEE SECTION C-C FOR STIFFENER DIMENSIONS.

[I] SEE SECTION D-D FOR STIFFENER DIMENSIONS.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION.

REPAIR FASTENER LOCATION. INSTALL A BACR15FT5D() RIVET. AS AN ALTERNATIVE, INSTALL A BACB30MY5K() HEX DRIVE BOLT WITH A BACC30M5 COLLAR IN A 0.1605/0.1625 INCH DIAMETER HOLE.

INITIAL FASTENER LOCATION. INSTALL A BACR15FT6D() RIVET. AS AN ALTERNATIVE, INSTALL A BACB30MY6K()X HEX DRIVE BOLT WITH A BACC30M6 COLLAR IN A 0.1996/0.2016 INCH DIAMETER HOLE. [C]

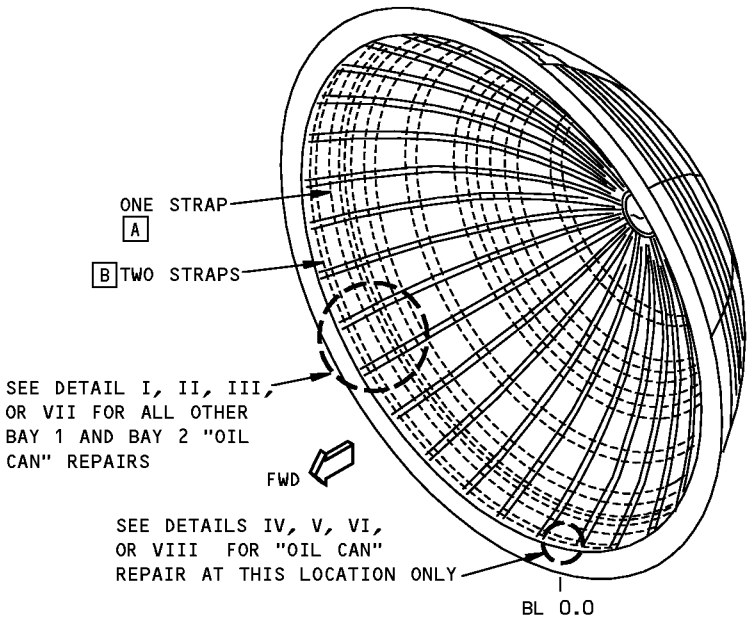
INITIAL FASTENER LOCATION. INSTALL A BACB30MY6K() HEX DRIVE BOLT WITH A BACC30M6 COLLAR IN A 0.1865/0.1885 INCH DIAMETER HOLE. [F]

INITIAL FASTENER LOCATION. INSTALL A BACR15FT6D() RIVET. AS AN ALTERNATIVE, INSTALL A BACB30MY6K() HEX DRIVE BOLT WITH A BACC30M6 COLLAR IN A 0.1865/0.1885 INCH DIAMETER HOLE. [C]

INITAL FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX DRIVE BOLT WITH A BACB30M6 COLLAR IN A 0.1996/0.2016 INCH DIAMETER HOLE. [F]

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	STIFFENER	1	0.040 2024-0 CLAD SHEET HEAT TREAT TO T42 AFTER FORMING [D]
2	STIFFENER	1	0.040 2024-0 CLAD SHEET HEAT TREAT TO T42 AFTER FORMING [D]
3	STIFFENER	1	0.040 2024-0 CLAD SHEET HEAT TREAT TO T42 AFTER FORMING [D]
4	STIFFENER (JOGGLED)	1	0.040 2024-0 CLAD SHEET HEAT TREAT TO T42 AFTER FORMING [D] [E]
5	STIFFENER (JOGGLED)	1	0.040 2024-0 CLAD SHEET HEAT TREAT TO T42 AFTER FORMING [D] [E]
6	STIFFENER (JOGGLED)	1	0.040 2024-0 CLAD SHEET HEAT TREAT TO T42 AFTER FORMING [D] [E]
7	STIFFENER	1	P/N 65B00300-208 TRIM AS SHOWN IN DETAIL IX PART 7 IS OPTIONAL TO PART 3
8	STIFFENER (JOGGLED)	1	P/N 65B00300-209 TRIM AS SHOWN IN DETAIL IX PART 8 IS OPTIONAL TO PART 6 [E]

TABLE I



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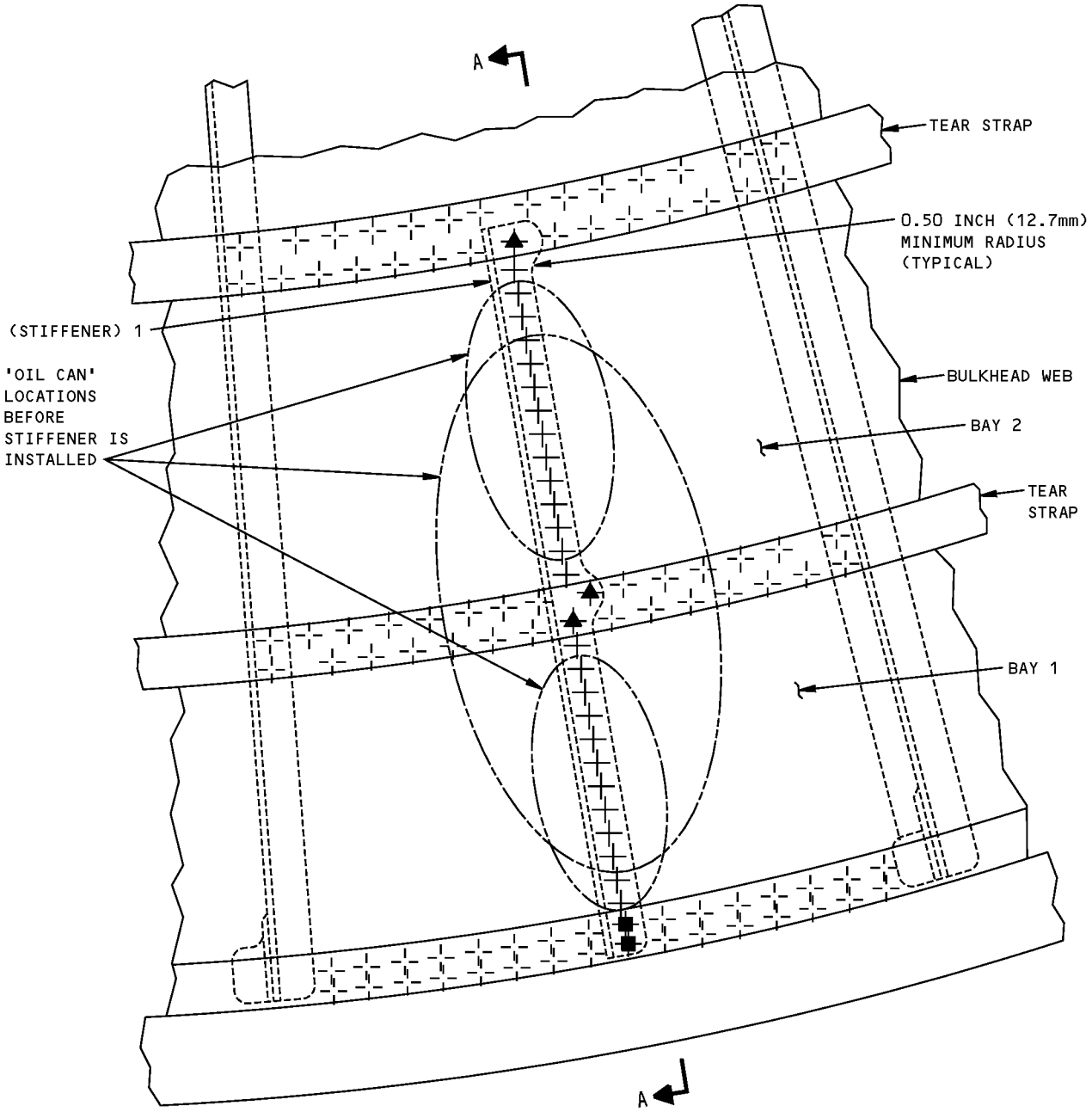
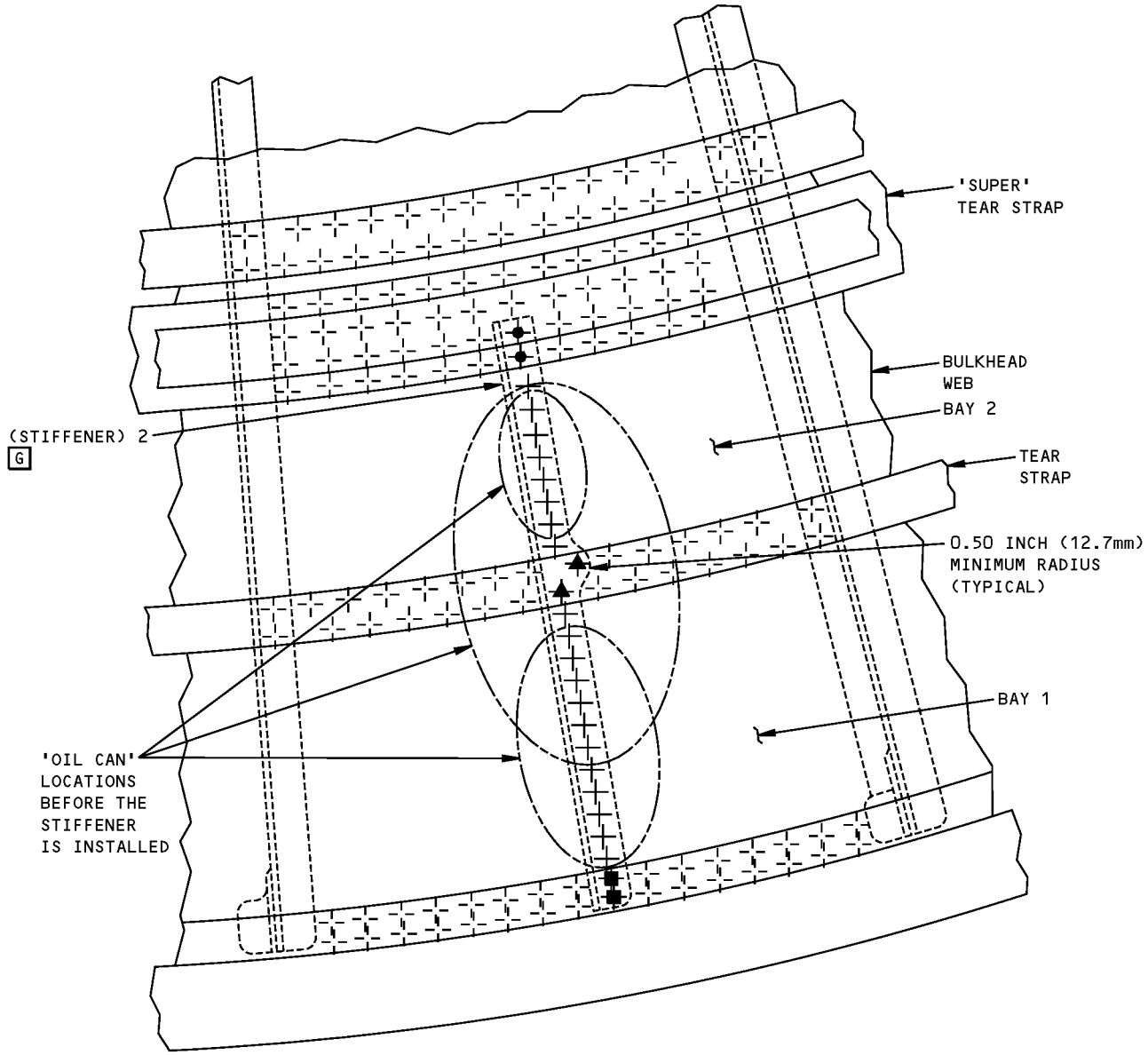
Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 2 of 14)



VIEW LOOKING FORWARD

DETAIL I [A]

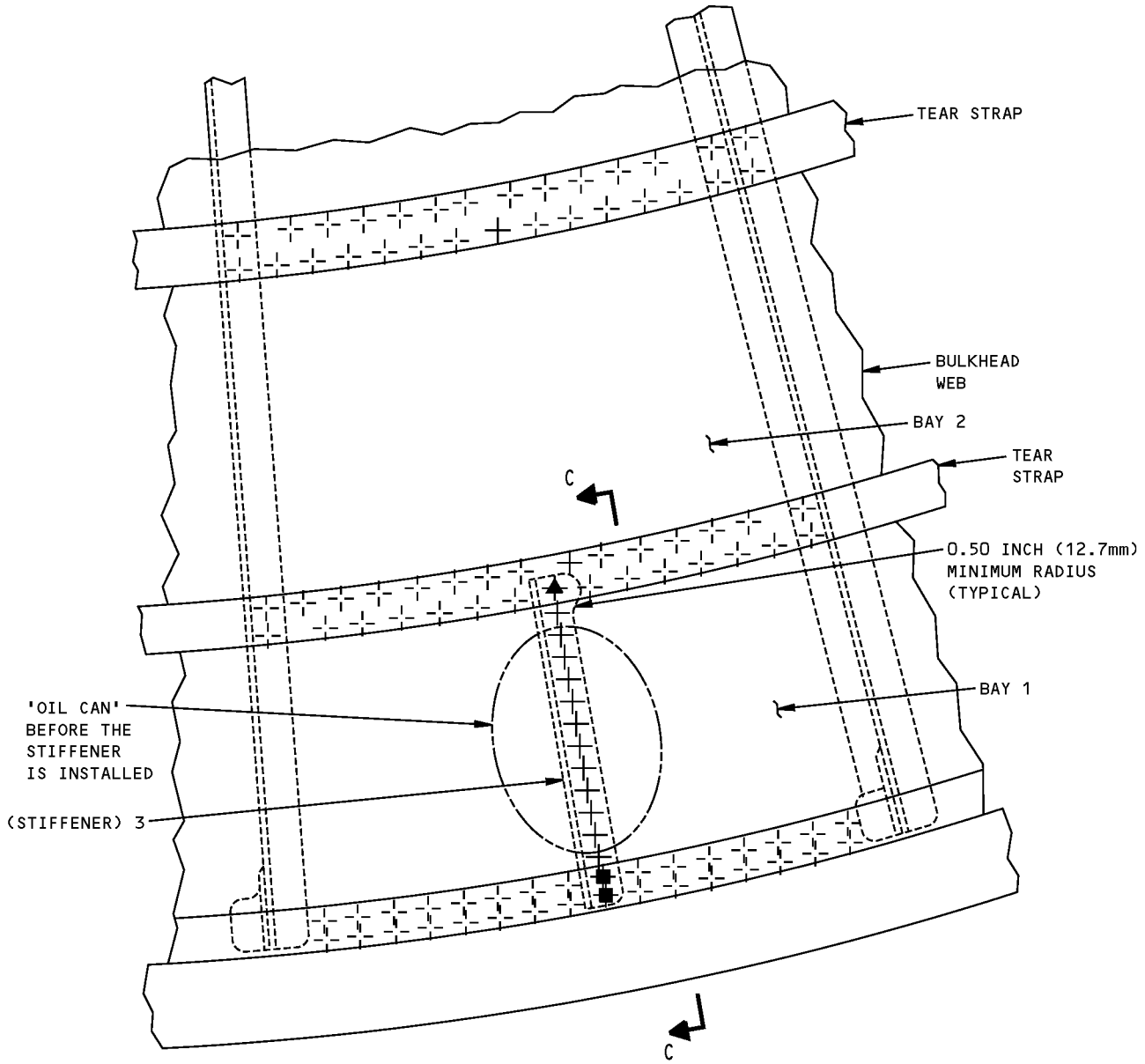
Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 3 of 14)



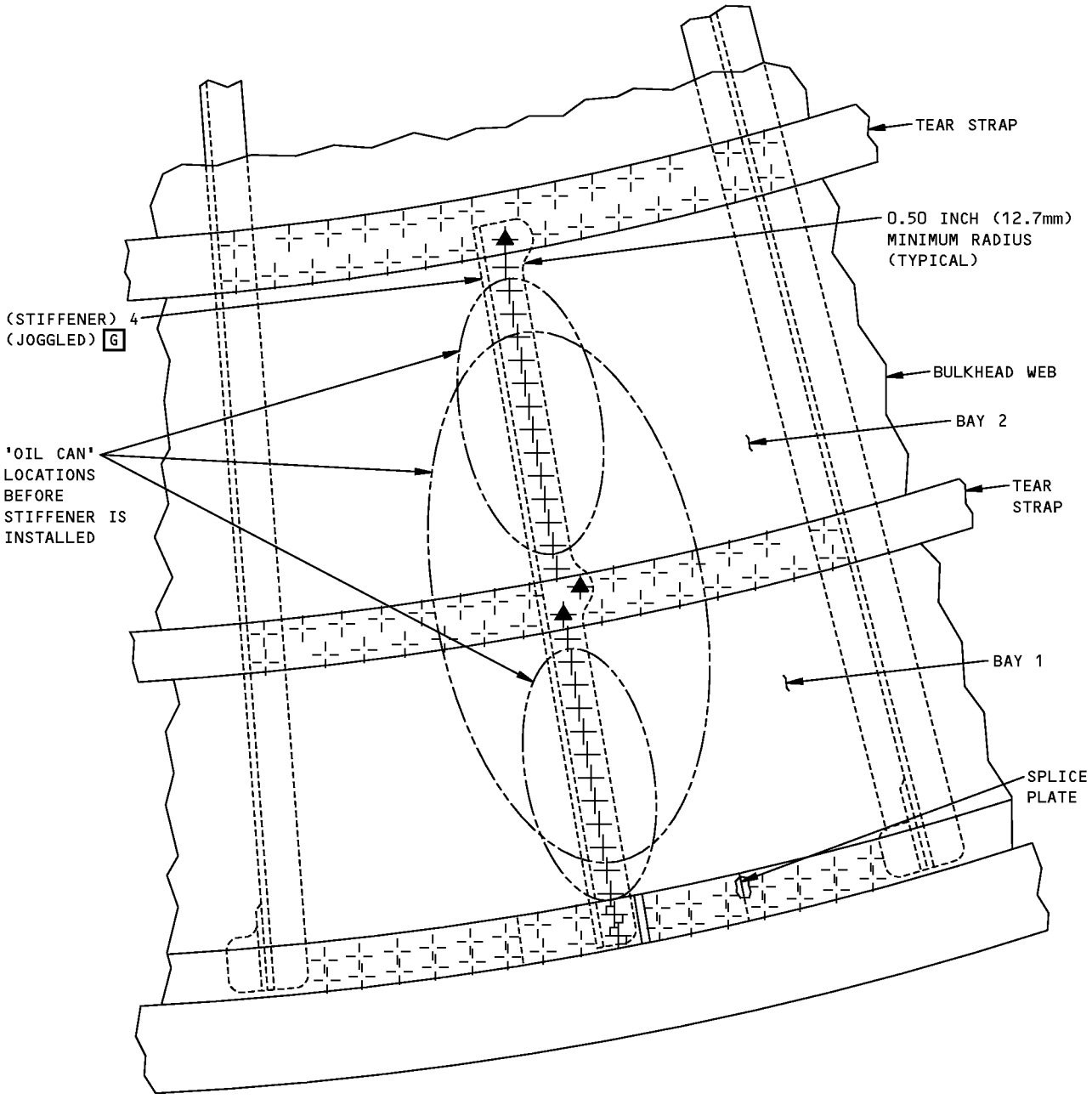
VIEW LOOKING FORWARD

DETAIL II B

Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 4 of 14)



Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 5 of 14)



VIEW LOOKING FORWARD
DETAIL IV A

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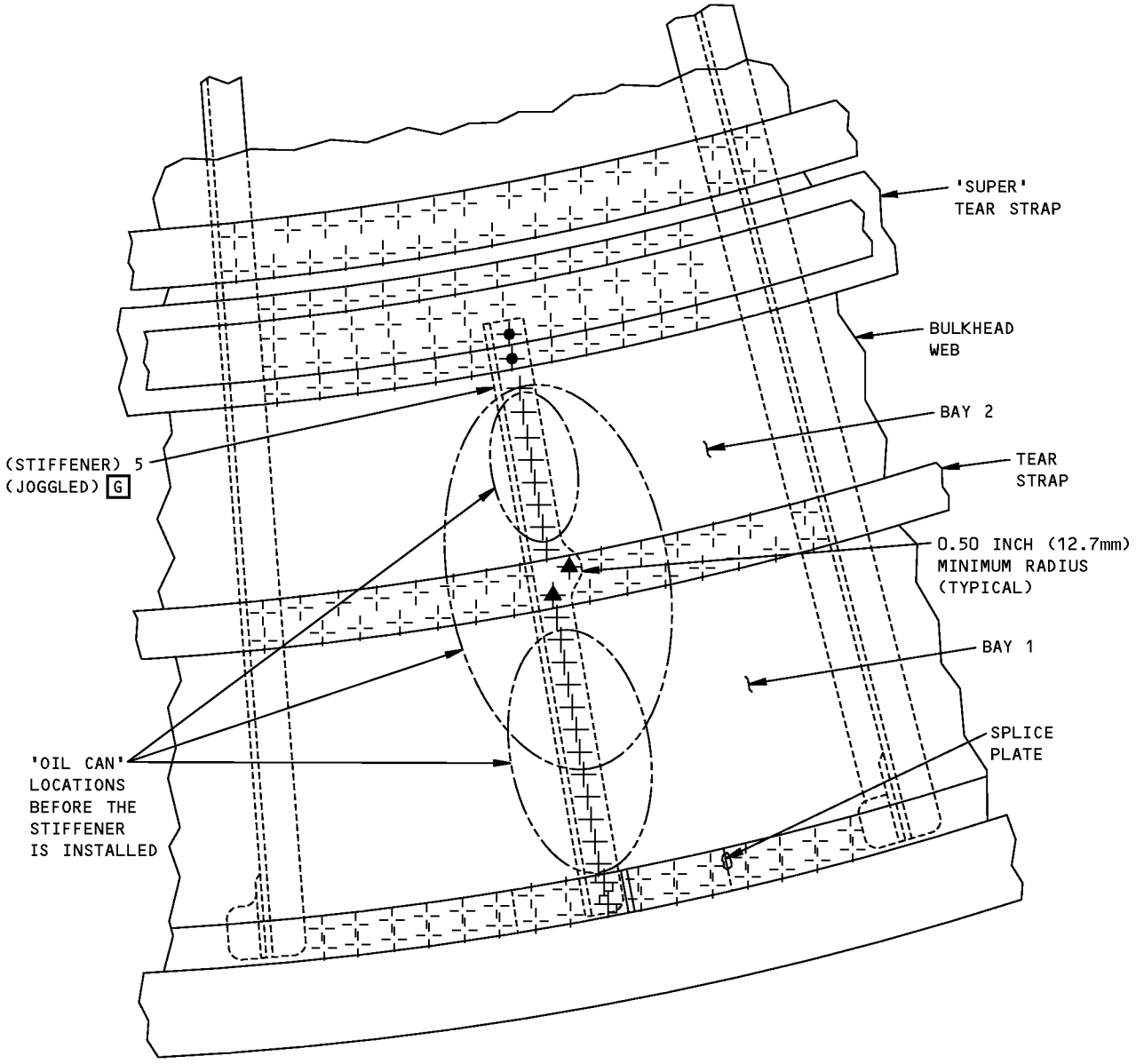
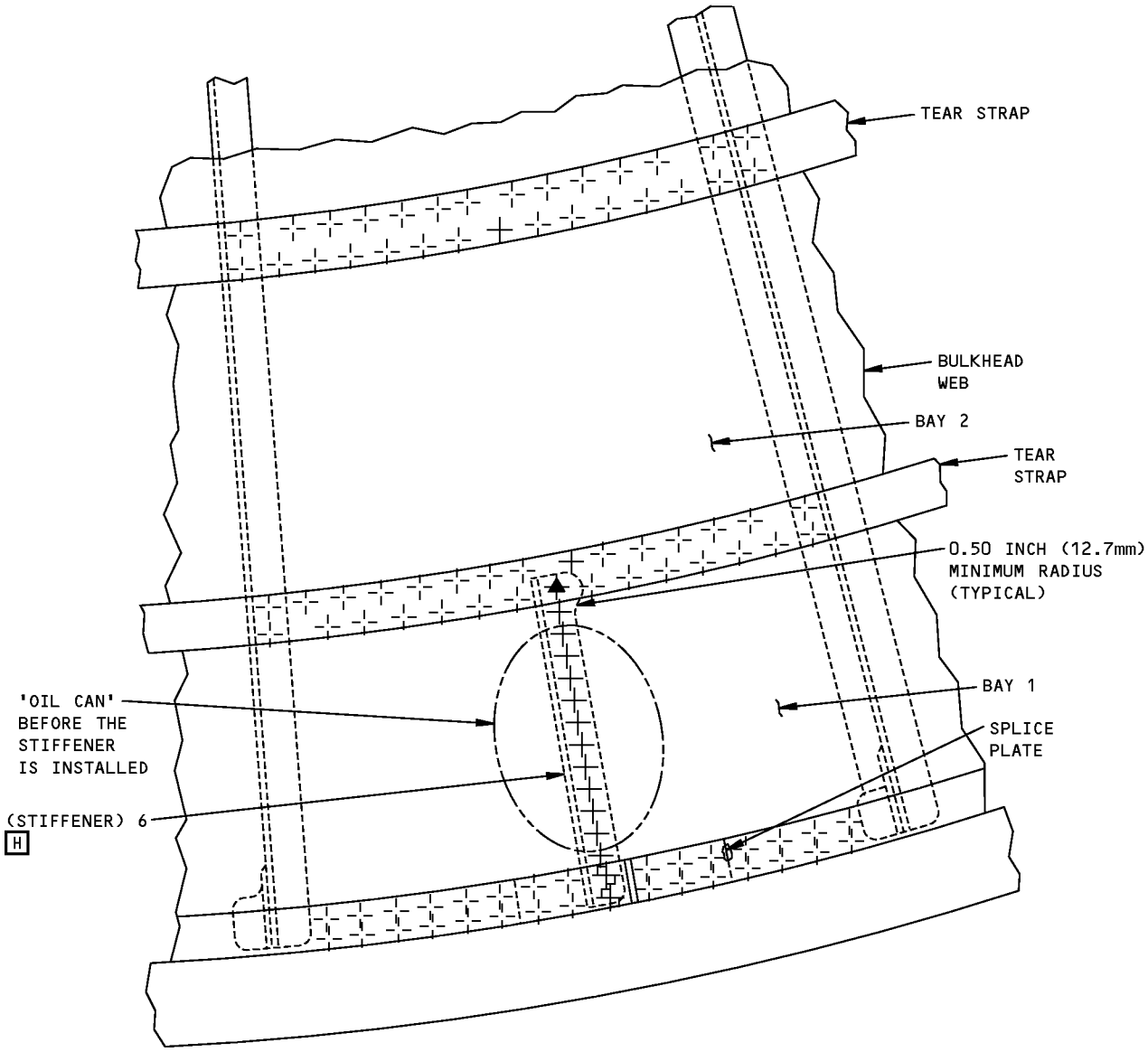
Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 6 of 14)



VIEW LOOKING FORWARD
DETAIL V B

435302 S0000341090_V1

Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 7 of 14)



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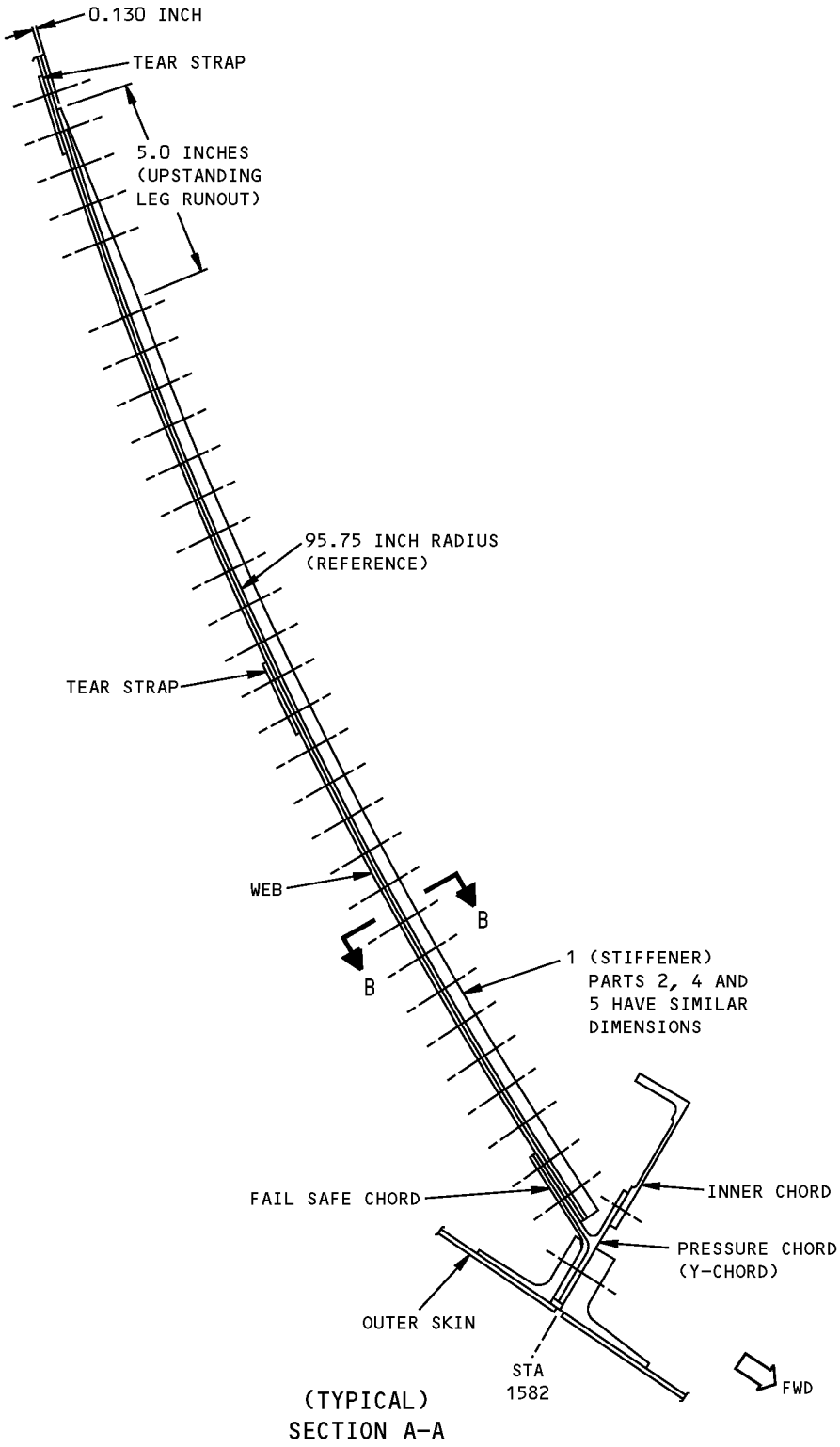
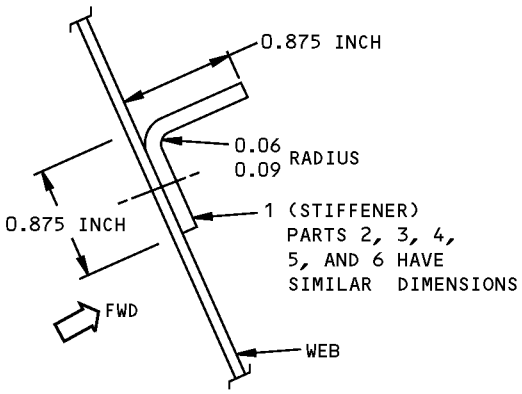
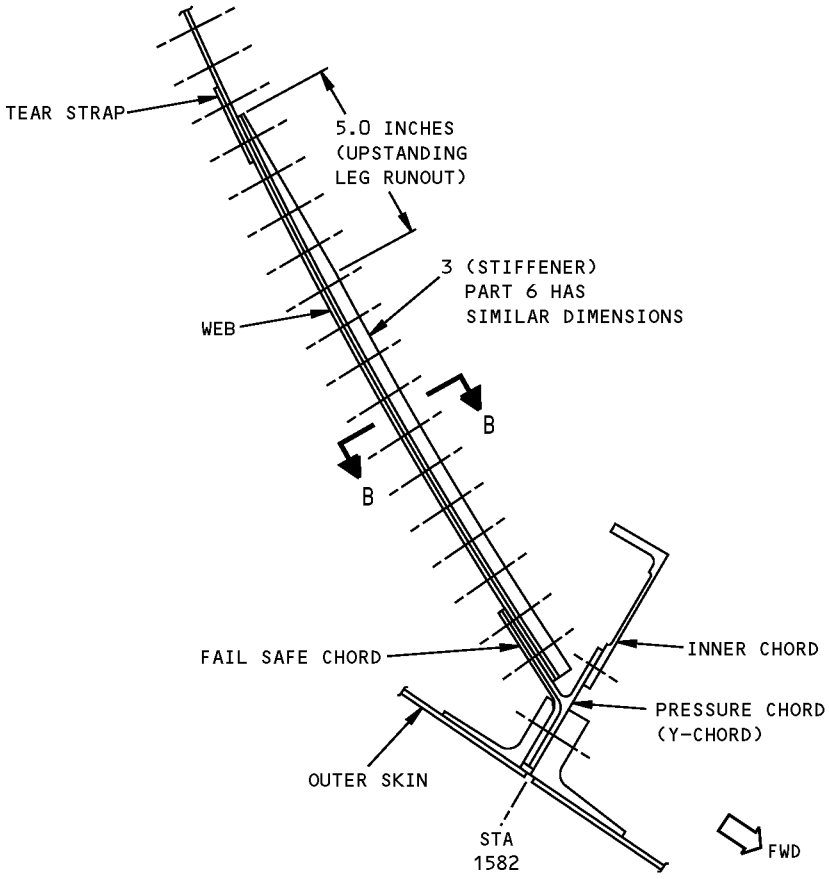
Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 8 of 14)



Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 9 of 14)

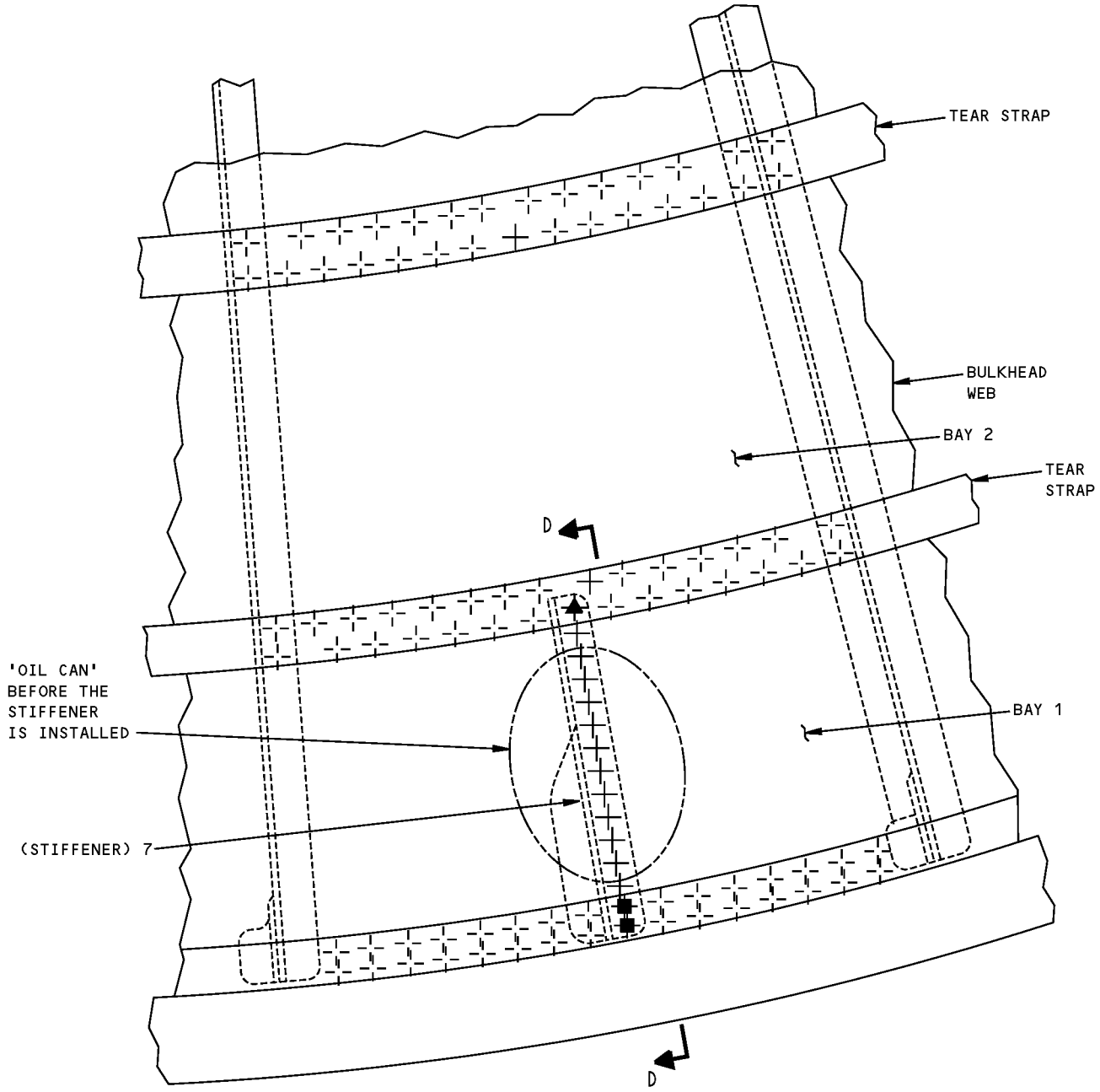


SECTION B–B
(TYPICAL)



SECTION C–C
(TYPICAL)

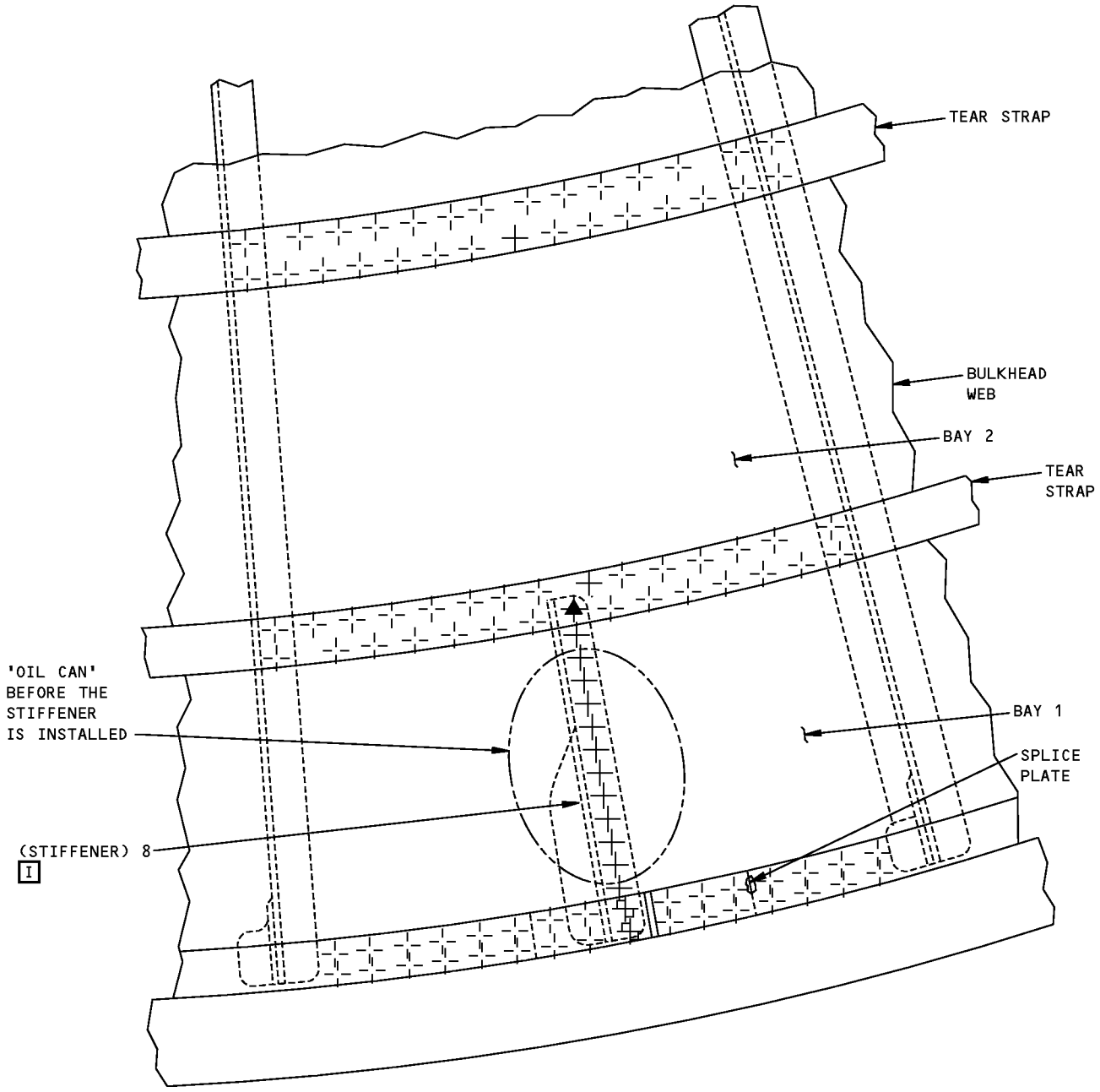
Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 10 of 14)



VIEW LOOKING FORWARD

DETAIL VII [A] [B]

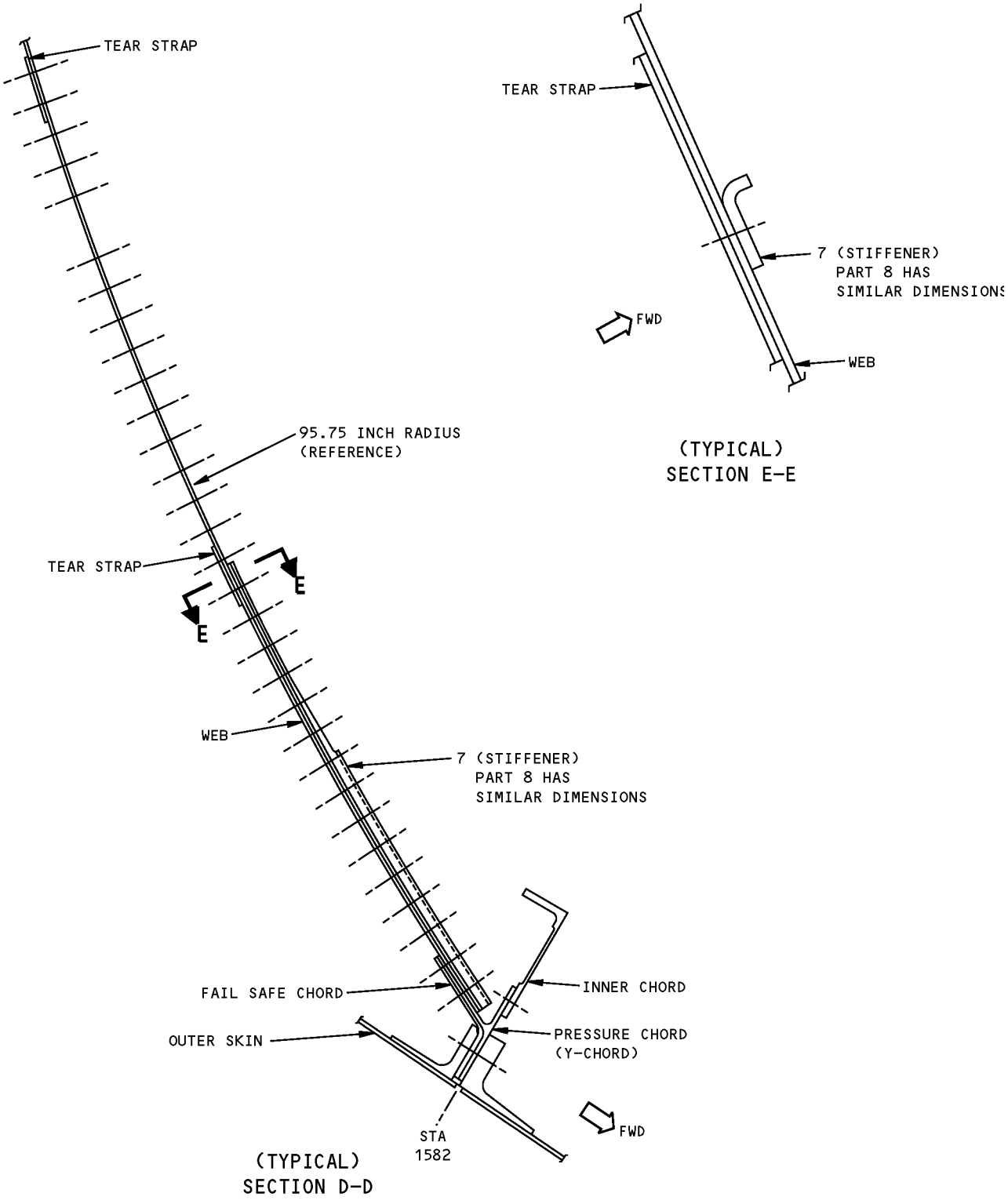
Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 11 of 14)



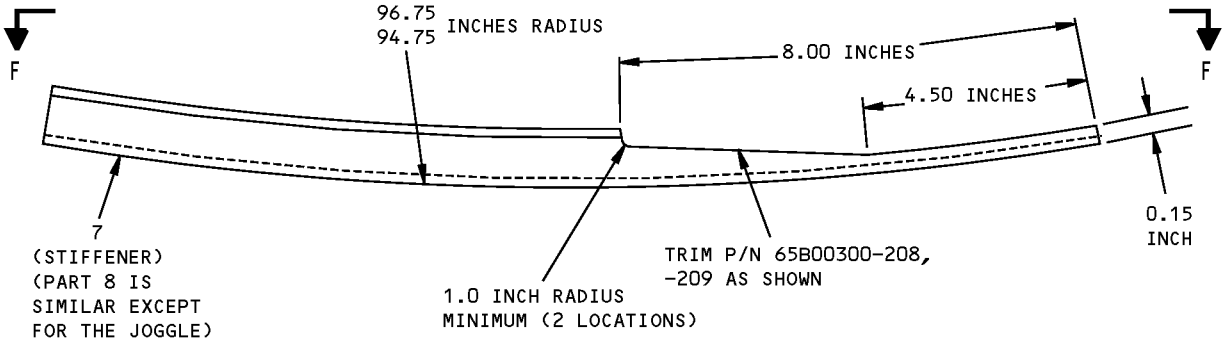
VIEW LOOKING FORWARD
DETAIL VIII A B

437545 S0000341096_V1

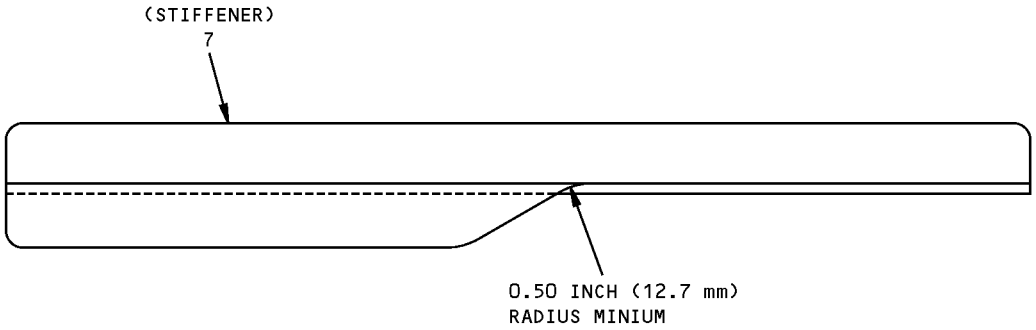
Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 12 of 14)



Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 13 of 14)



DETAIL IX



SECTION F-F

Aft Pressure Bulkhead "Oil Can" Repairs - Radial Stiffeners
Figure 201 (Sheet 14 of 14)

REPAIR 9 - STATION 1809.5 BULKHEAD - FORWARD OUTER CHORD REPAIR BETWEEN S–4 TO S–8

1. Applicability

A. This repair is applicable to a crack that:

(1) Is not more than 5 inches (12.7 cm) in length.

(2) Is in an area between S-4 to S-8, left and right hand side.

B. Repair 9 must be a minimum of 10 inches (25 cm) away from other repairs.

C. Contact Boeing if the repair 9 is more than the limit above.

2. General:

A. Repair 9 is a category B repair and requires the supplemental inspections as given in Paragraph 5./REPAIR 9. Incorporation of these inspection requirements into the airplane' s maintenance program satisfies the Damage Tolerance Assessment of the repair. Refer to SRM 51-00-06, GENERAL for the repair categories and definitions.

B. D = Fastener diameter.

C. Repair 9 is shown for a crack that is 5 inches (12.7 cm) in length . This repair can be adjusted for smaller cracks.

3. References

Reference	Title
51-00-06, GENERAL	Structural Repair Definitions
51-20-01, GENERAL	Protective Treatment of Metallic and Nonmetallic Repair Parts
51-40	FASTENERS
NDT Part 6, 51-00-16	Aluminum Part Fastener Hole Inspection (Rotary Scanner)
NDT Part 6, 51-00-19	Aluminum Part Surface Inspection (Impedance Plane Display)

4. Repair Instructions

A. Get access to the damage area.

B. Do a high frequency eddy current (HFEC) inspection of the damaged area to find the size of the crack. Refer to 767 NDT Part 6, 51-00-19.

C. Remove the necessary fasteners in the area of the damage.

D. Cut out the crack area of the damaged forward outer chord at BS 1809.5. Refer to Figure 201 (Sheet 2). Keep 2D minimum edge margin and 125 microinches Ra roughness or smoother on the edges of the cutout.

NOTE: Be careful not to damage any adjacent structure. To prevent damage to the skin or other surrounding and underlying structure, you can temporarily install a thin steel shim between the damaged outer chord and the adjacent parts in the area where the outer chord is repaired.

E. Do a surface eddy current inspection of the locations as follows:

(1) The cut edges of the forward outer chord.

(2) Examine the area of bulkhead web where the forward chord section was removed. Make sure there is no damage remaining. Refer to NDT Part 6, 51-00-19

F. Make an insurance cut of an additional 0.030 inch (0.76mm) beyond the cut edge of the forward chord.

G. Do an open hole eddy current inspection of the locations as follow:

(1) The initial fastener holes of the parts in the area where the damaged section of the forward outer chord is removed.

(2) The fastener holes in the area where the fasteners were removed to do the forward chord repair. Make sure there is no more damage on the forward chord and adjacent structure NDT Part 6, 51-00-16.

H. Do a detailed inspection of the aft chord in the area where the forward chord section was removed and 5 inches (12.7 cm) wide area from each side of the cut edge of the forward chord. Refer to Figure 201 (Sheet 5).

NOTE: This inspection needs to be done from the aft side of STA 1809.5.

I. Make the repair parts. Refer to Table 201/REPAIR 9.

NOTE: Make sure part 1 (angle) and part 2 (angle) each pick up a minimum of four row fasteners (minimum of 16 fasteners) common to part 2 (angle) on each side of cut out area. Shim all gaps greater than 0.005 inch (.13mm) thick.

J. Assemble the repair parts and drill the fastener holes. Keep a 2D minimum edge margin.

K. Disassemble the repair parts.

L. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the inner chord.

M. Apply a chemical conversion coating to repair parts and to the bare surfaces of the outer chord. Refer to SRM 51-20-01, GENERAL for protective treatment of metallic and nonmetallic materials.

N. Apply two layers of BMS 10-11, Type I primer to the repair parts and to the bare aluminum surface of all initial parts. Refer to SOPM 20-41-02.

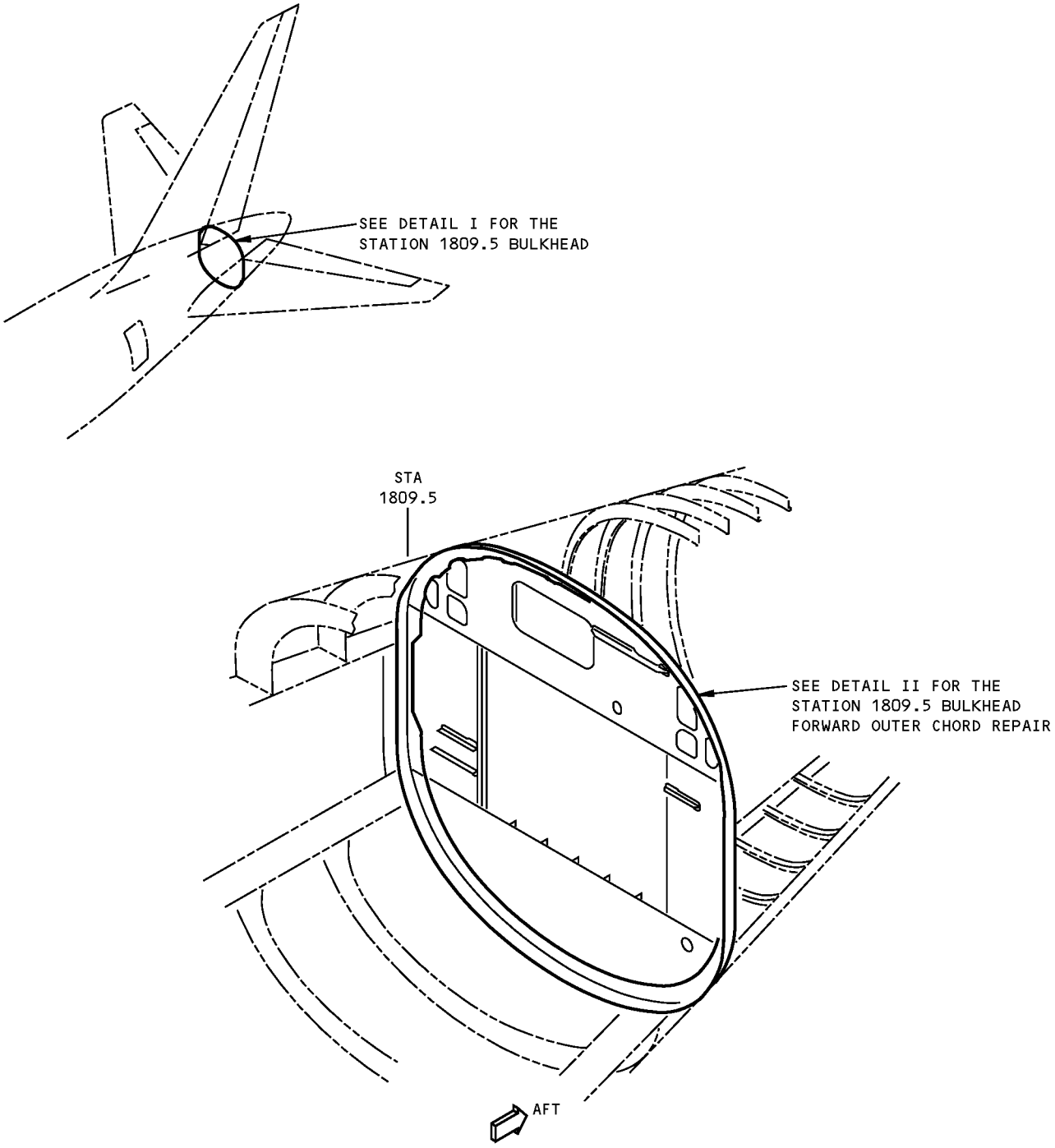
O. Install the repair parts with BMS 5-95 sealant between the mating surfaces.

P. Install the fasteners wet with BMS 5-95 sealant. All repair fasterners should be installed as given in FASTENERS, SECTION/51-40.

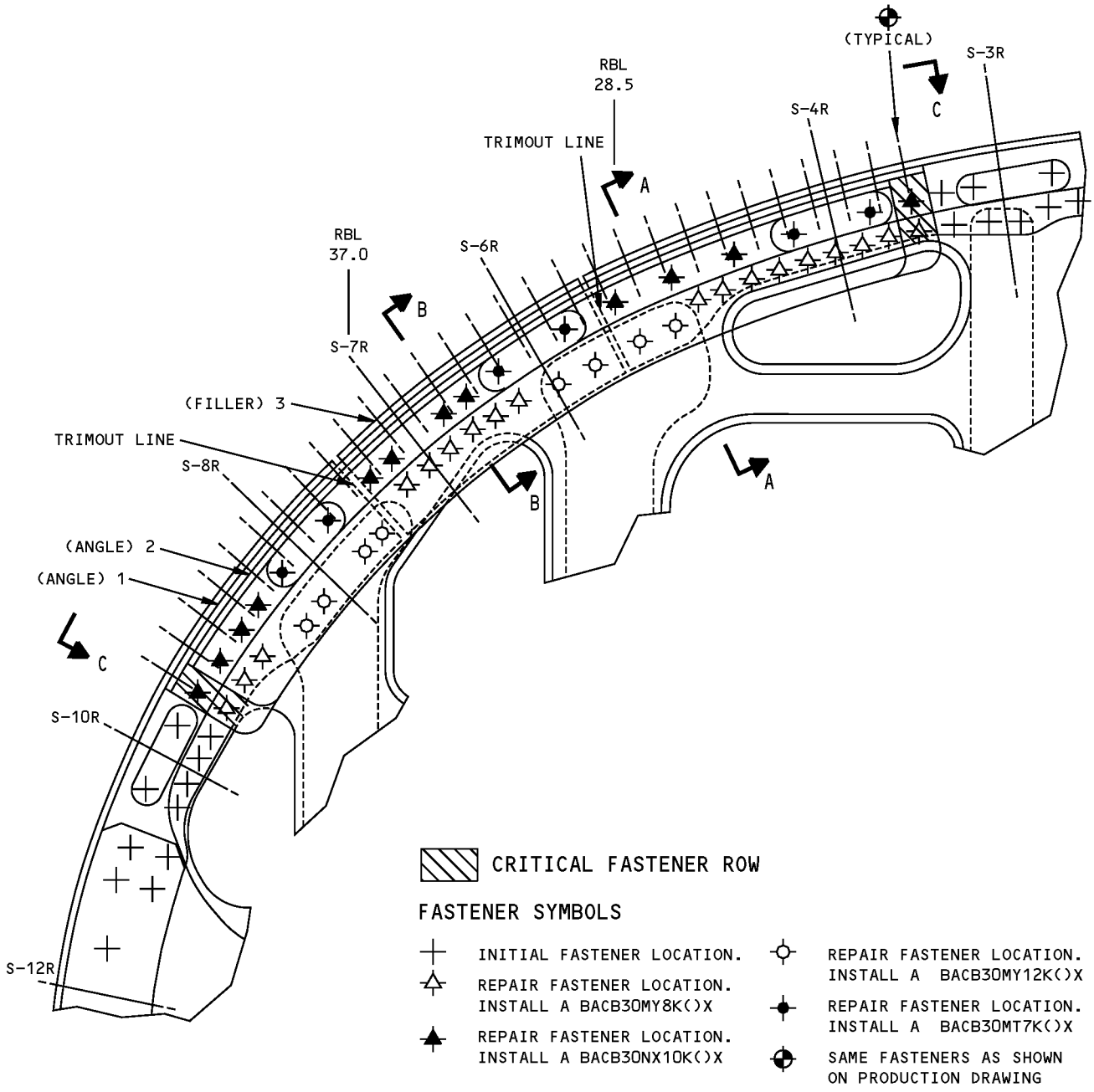
Table 201: Repair Material

ITEM	PART	QTY	MATERIAL
1	ANGLE	1	7075–T6, 0.080 INCH THICK
2	ANGLE	1	7075-T6, 0.090 INCH THICK
3	FILLER	1	7075–T6, MAKE FROM BAC1514–2535 OR BAC1514–2756 (OPTIONAL: 7075–T6, [4] x 0.080 INCH THICK or [2] x 0.160 INCH THICK)
4	FITTING	3	7175–T736 FORGING (OPTIONAL: 7050–T7451 PLATE) *[1]
5	CLIP	2	7075–T6 CLAD, 0.071 INCH THICK *[1]
6	SHIM	AS REQ'D	7075-T6 CLAD, 0.005 INCH THICK OR MORE

*[1] 1. The quantity of these parts are shown for a 5.0 inch (12.7 cm) crack. Less parts are necessary for smaller crack.



Station 1809.5 Bulkhead - Forward Outer Chord Repair Between S-4 to S-8
Figure 201 (Sheet 1 of 5)

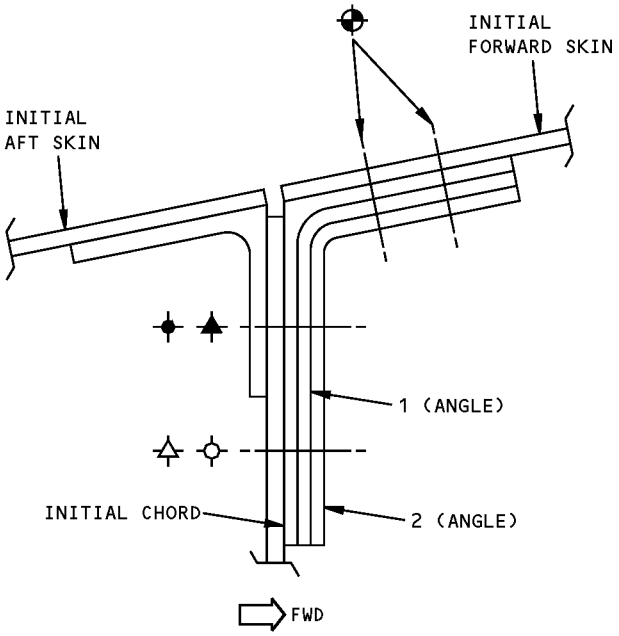


VIEW LOOKING AFT

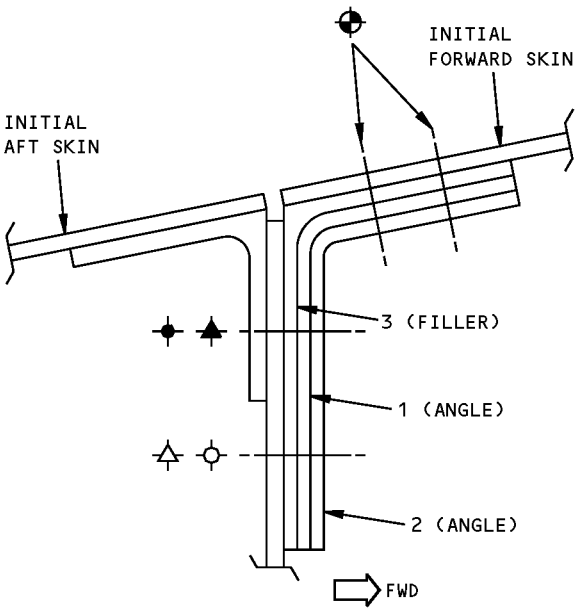
RIGHT SIDE IS SHOWN, LEFT SIDE IS OPPOSITE

STATION 1809.5 BULKHEAD FORWARD OUTER CHORD REPAIR
DETAIL II

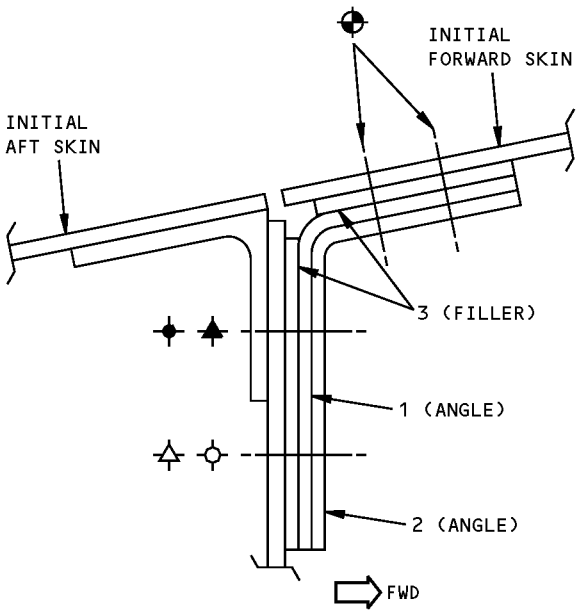
Station 1809.5 Bulkhead - Forward Outer Chord Repair Between S-4 to S-8
Figure 201 (Sheet 2 of 5)



SECTION A-A



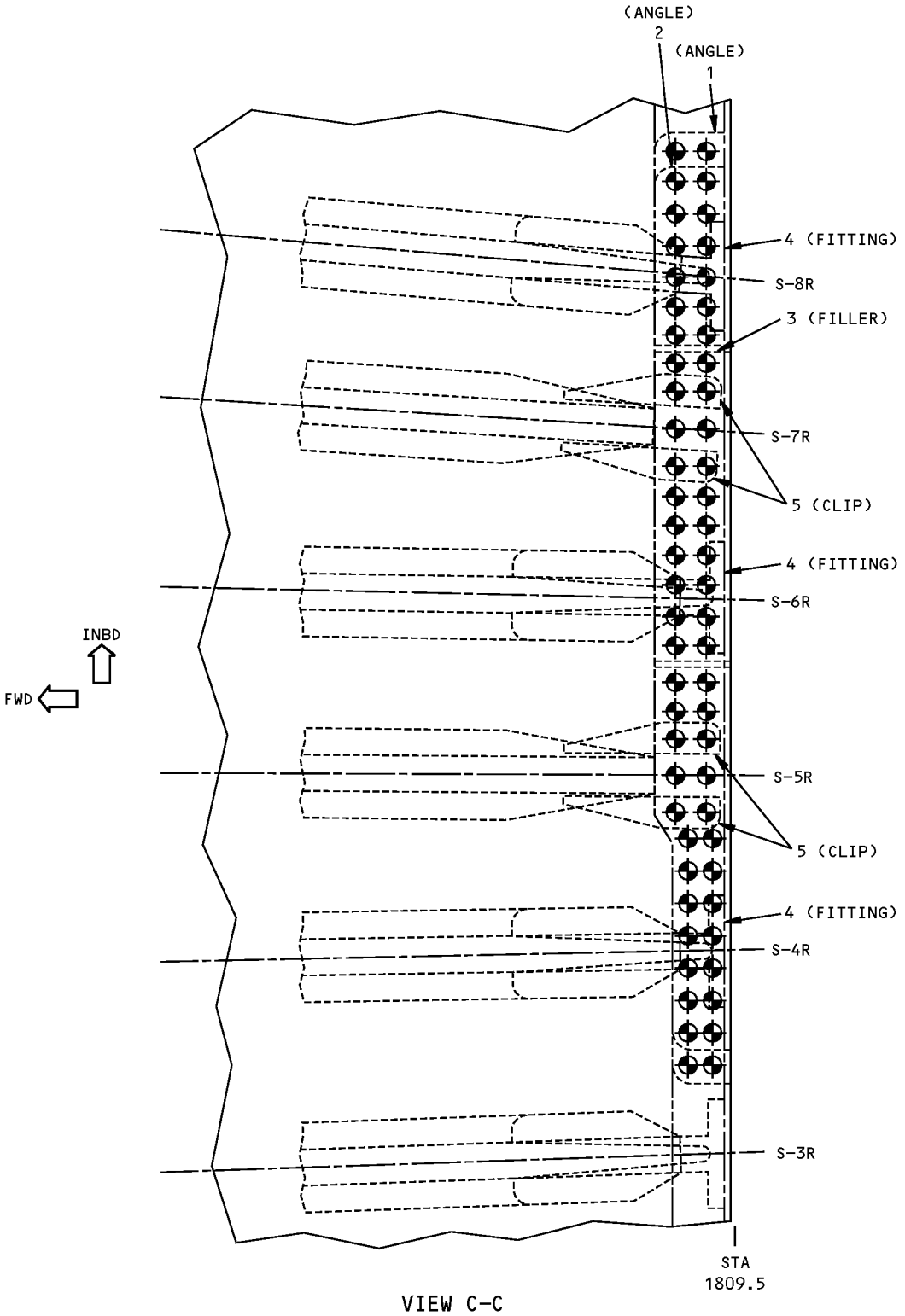
(ONE PIECE FILLER)



(OPTIONAL TWO PIECE FILLER)

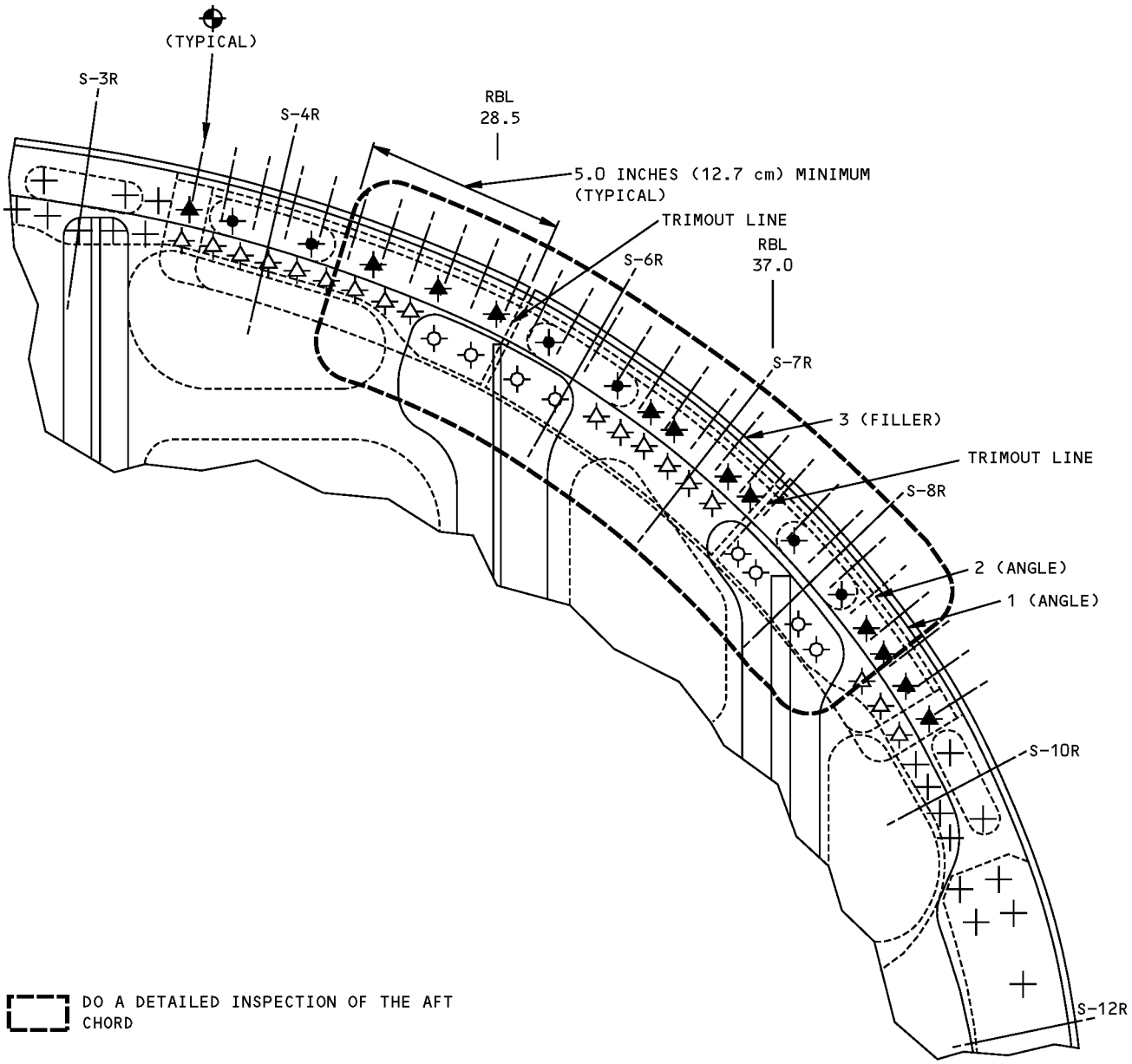
SECTION B-B

Station 1809.5 Bulkhead - Forward Outer Chord Repair Between S-4 to S-8
Figure 201 (Sheet 3 of 5)



VIEW C-C

Station 1809.5 Bulkhead - Forward Outer Chord Repair Between S-4 to S-8
Figure 201 (Sheet 4 of 5)



VIEW WHEN YOU LOOK FORWARD

RIGHT SIDE IS SHOWN, LEFT SIDE IS OPPOSITE

DETAIL III

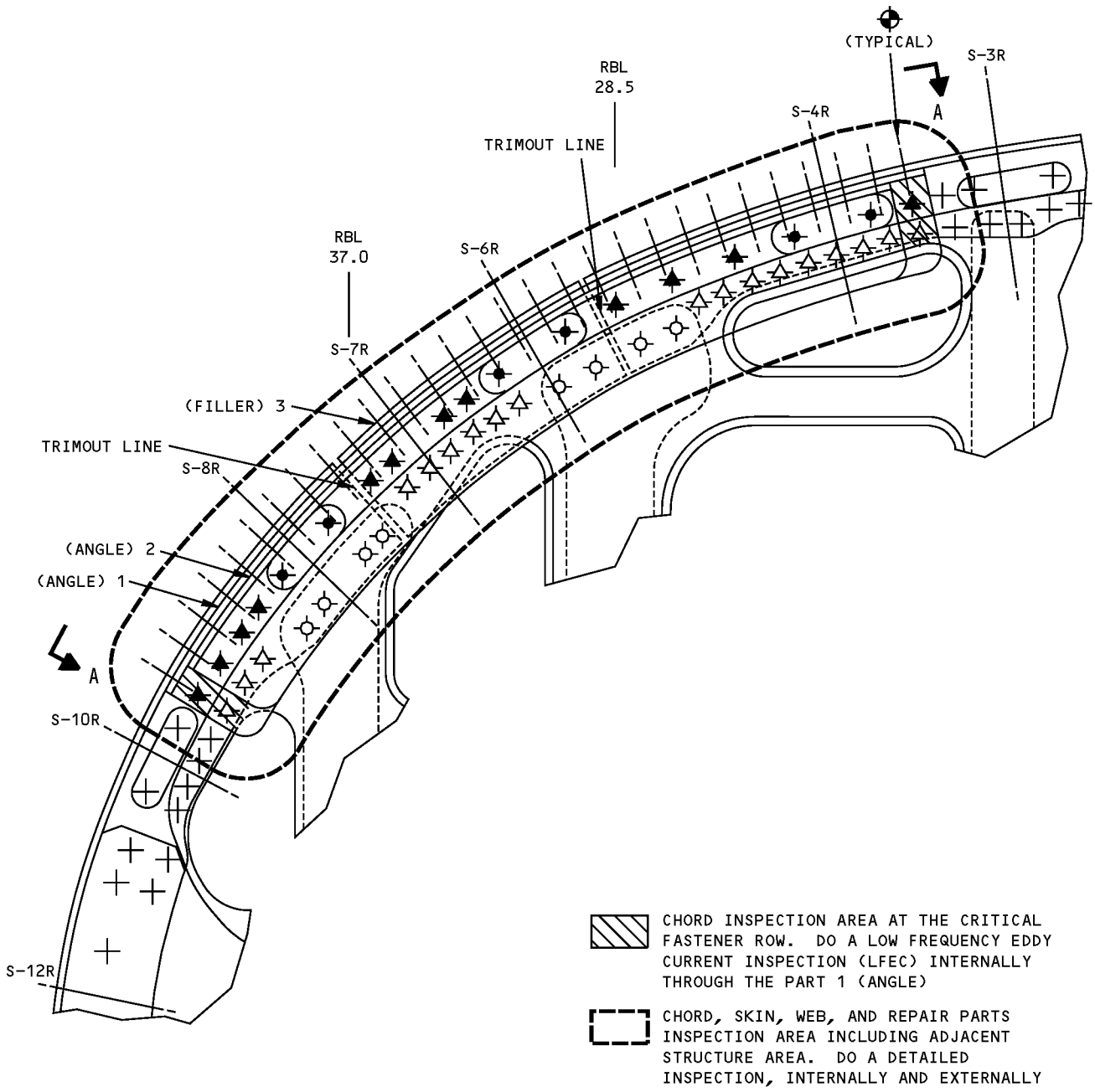
Station 1809.5 Bulkhead - Forward Outer Chord Repair Between S-4 to S-8
Figure 201 (Sheet 5 of 5)

5. Inspection Requirements

A. Do a supplemental inspections as given in Table 202/REPAIR 9

Table 202: Catergory B Repair Inspection Requirements

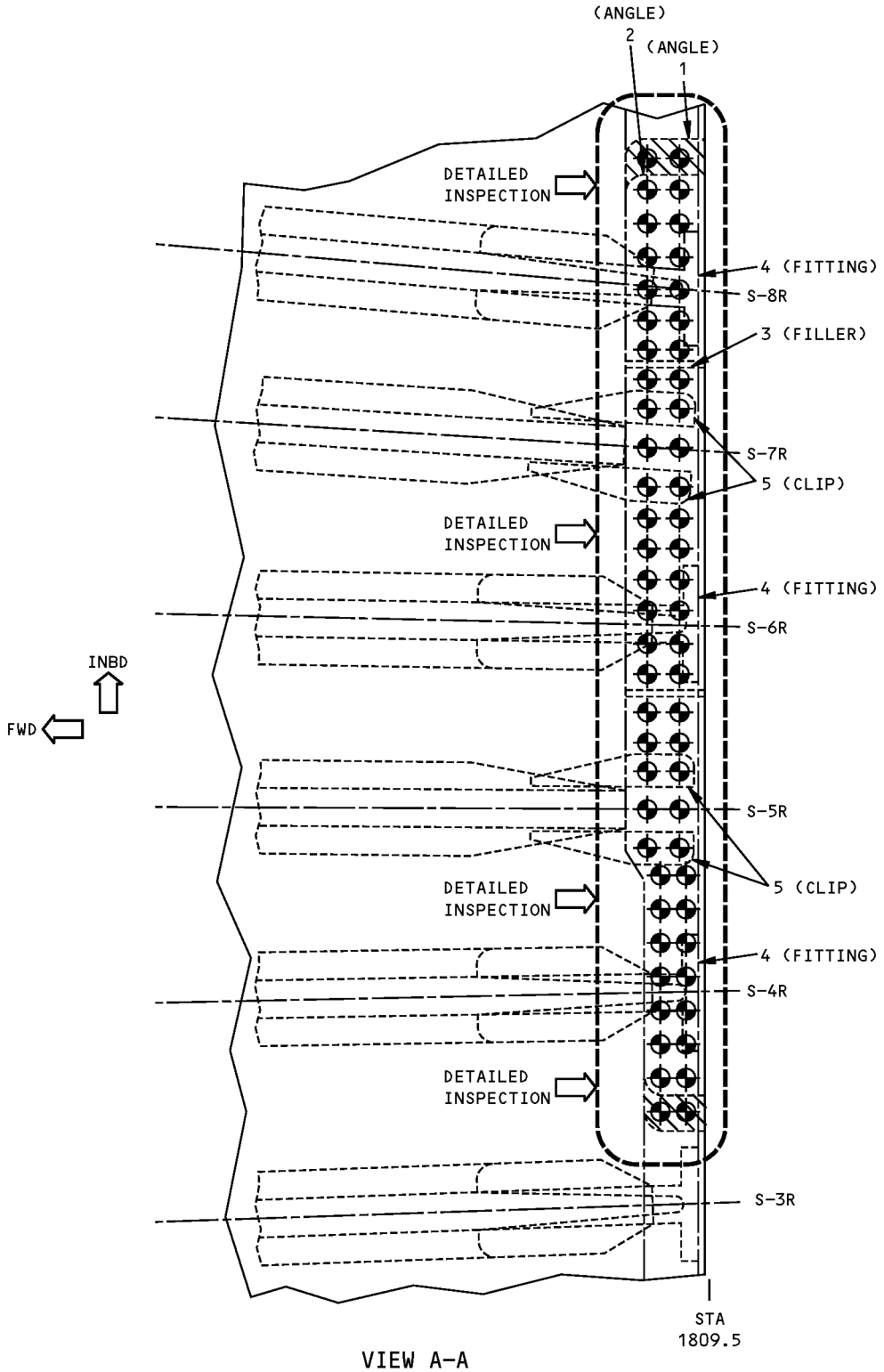
INSPECTION THRESHOLD	REPEAT INSPECTIONS		
	METHOD	INTERVAL	REFERENCE
37,500 flight cycles after airplane delivery or within 6,000 flight cycles from the repair installation, whichever comes last.	Detailed Inspection	6,000 Flight Cycles	
	Low Frequency Eddy Current Inspection (LFEC)	6,000 Flight Cycles	NDT Part 6, 53–00–06
Do a Detailed Inspection of the repair angles, fillers, skin bulkhead web and visible parts of the bulkhead outer chord, and 2.0 inches (50 mm) wide zone around the repair internally and externally as shown in Figure 202 (Sheet 1). Do a low frequency eddy current (LFEC) inspection of the forward outer chord internally through the part 1 repair angle as shown in Figure 202 (Sheet 1).			



RIGHT SIDE IS SHOWN, LEFT SIDE IS OPPOSITE

DETAIL I

Category B Repair Inspection Requirements
Figure 202 (Sheet 1 of 2)



Category B Repair Inspection Requirements
Figure 202 (Sheet 2 of 2)

REPAIR 10 - STATION 1809.5 BULKHEAD - HORIZONTAL INNER CHORD REPAIR AT APPROXIMATELY WL 257 AND BL 28

1. Applicability

A. This repair is applicable to cracks in the BS 1809.5 bulkhead horizontal inner chord at approximately WL 257 and BL 28, left and right side.

2. General

A. This repair is a category B repair and requires the supplemental inspections as given in Paragraph 5./REPAIR 10. Incorporation of these inspection requirements into the airplane' s maintenance program satisfies the Damage Tolerance Assessment of the repair. Refer to SRM 51-00-06, GENERAL for the repair categories and definitions.

B. D = Fastener diameter.

3. References

Reference	Title
51-00-06, GENERAL	Structural Repair Definitions
51-20-01, GENERAL	Protective Treatment of Metallic and Nonmetallic Repair Parts
51-20-11, GENERAL	Installation of New Shims
51-40	FASTENERS
NDT Part 6, 51-00-16	Aluminum Part Fastener Hole Inspection (Rotary Scanner)
NDT Part 6, 51-00-19	Aluminum Part Surface Inspection (Impedance Plane Display)
SOPM 20-41-02	Application of Chemical and Solvent Resistant Finishes

4. Repair Instructions

A. Get access to the damage area. Disassemble the clip attached to the damaged horizontal inner chord. Make sure there is no pull up between the clip and the inner chord. Remove the splice strap and the radius filler from the lower side flange common to the repair area. Remove the system support angles attached to the damaged inner chord at the repair area. Use this angle and clip again when you assemble the repair parts.

NOTE: If pull-up in forward and aft direction is found between the inner chord and clip, fabricate a part 4 (clip) as given in the production drawing.

B. Do a high frequency eddy current (HFEC) inspection of the damaged area to find the size of the crack. Refer to NDT Part 6, 51-00-19.

C. Cut out the crack area of the damaged horizontal inner chord. Refer to Figure 201/REPAIR 10. Keep a 2D minimum edge margin, a 0.5 inch (13 mm) minimum corner radius and 125 microinches Ra roughness or smoother on the edges of the cutout.

D. Do a surface eddy current inspection of the cut edges of the horizontal inner chord to make sure there is no remaining damage. Refer to NDT Part 6, 51-00-19.

E. Make another cut of 0.030 inch (0.8 mm) more than the cut edges of the horizontal chord to make sure that all damage is removed.

F. Do an open hole eddy current inspection of the initial fastener holes of the parts in the area where the damaged horizontal inner chord is removed and all the fastener holes in the area where the fasteners were removed to do the horizontal chord repair. Make sure there is no more damage. Refer to NDT Part 6, 51-00-16.

G. Make the repair parts. Refer to Table 201/REPAIR 10 and Figure 201/REPAIR 10.

NOTE: Bend part 1 (angle) in the annealed condition to fit in the radius of the intial angle and then heat treat to T6. Approximate bend radii is 0.5 inch (13 mm).

Bend part 2 (angle) in the annealed condition to fit in the radius of part 1 and then heat treat to T6.

H. Assemble the repair parts and drill the fastener holes. Refer to SRM FASTENERS, SECTION/51-40

(1) Make transition fit holes for BACB30NX and BACB30MY repair fasteners.

(2) Initial holes from production fasteners can be increased to 1/32 inch oversize if required.

I. Disassemble the repair parts.

J. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the inner chord.

K. Apply a chemical conversion coating to the repair parts and the bare surfaces of the inner chord. Refer to SRM 51-20-01, GENERAL.

L. Apply two layers of BMS 10-11, Type I primer to the repair parts and to the bare aluminum surface of all initial parts. Refer to SOPM 20-41-02.

M. Install the repair parts with BMS 5-95 sealant between the mating surfaces. Keep the pull-up limit to a maximum of 0.005 inch (0.13 mm). If shims are necessary, refer to SRM 51-20-11, GENERAL.

N. Install the fasteners. Install BACB30NX and BACB30MY fasteners, wet with BMS 5–95 sealant.

O. Apply the finish to the repair area, refer to SRM 51-20-01, GENERAL

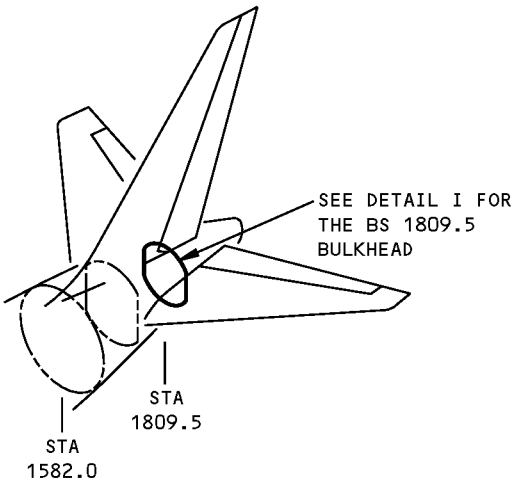
P. Reinstall system support angles that were removed for access.

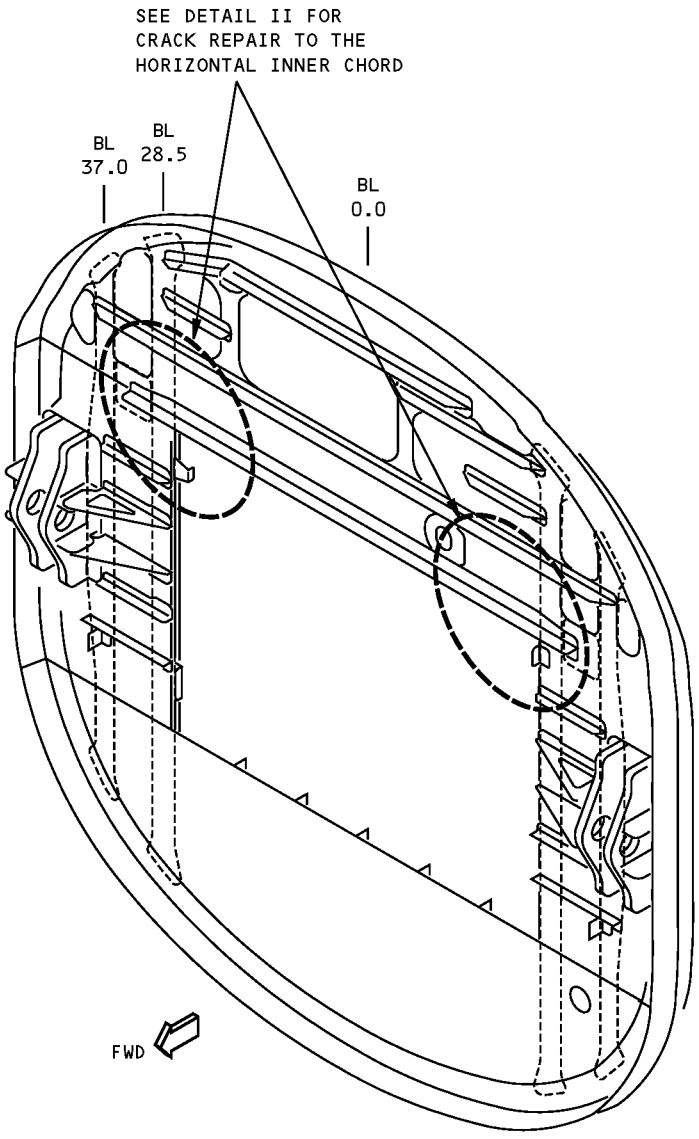
Table 201: Repair Material

	PART	QTY	MATERIAL
1	ANGLE	1	7075–0 SHEET, 0.090 INCH THICK. HEAT TREAT TO T6*[1]*[2]
2	ANGLE	1	7075–0 SHEET, 0.100 INCH THICK. HEAT TREAT TO T6*[1]*[2]
3	FILLER	1	7075–T6 SHEET, SAME THICKNESS AS TRIMMED PARTS Optional: 2024-T3 SHEET
4	CLIP	AS REQ'D	7075–T62 EXTRUSION
5	SHIM	AS REQ'D	7075-T6 CLAD, 0.005 INCH THICK OR MORE Optional : 2024–T3

*[1] Use 0.125 inch thick material if damaged part has no machined step at BL 28, WL 257.

*[2] The part 1 (angle) and part 2 (angle) can be replaced with one extruded repair part that is one gage thicker than the initial damaged flange. Make sure the inboard edge of the repairt part is step-machined to part 1 (angle) gage and uses a minimum edge step radius of 0.25 inch (6.4 mm).





VIEW WHEN YOU LOOK AFT

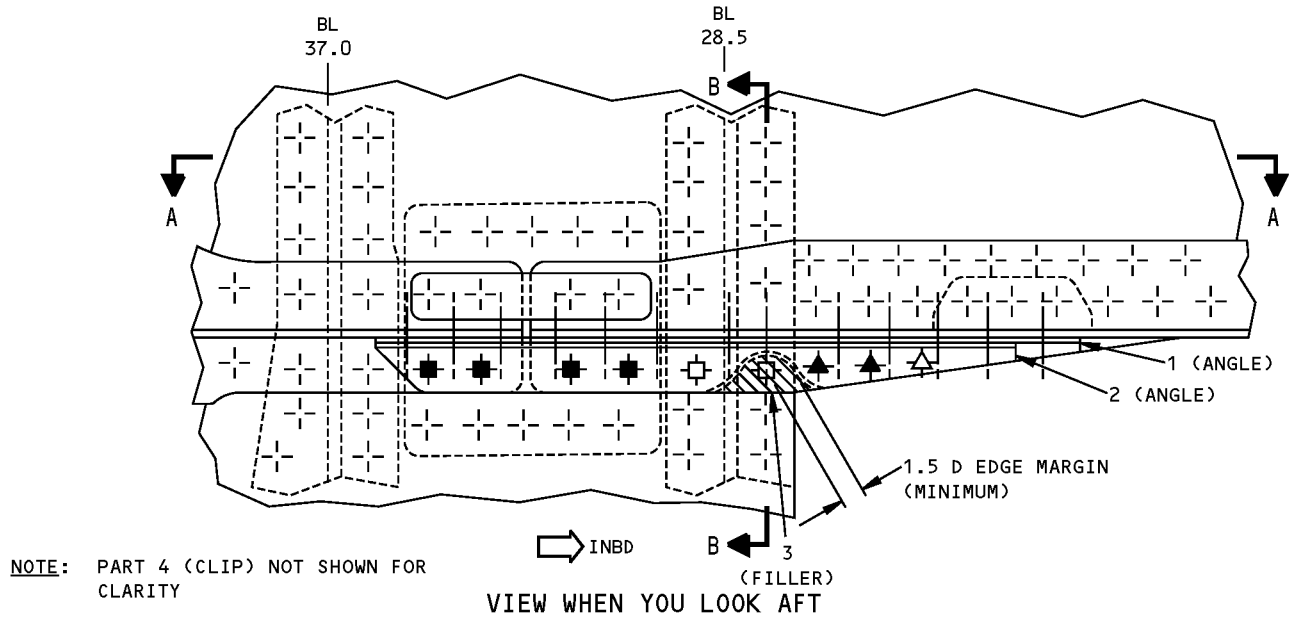
STATION 1809.5 BULKHEAD
DETAIL I

FASTENER SYMBOLS

- REFERENCE FASTENER LOCATION
- REPAIR FASTENER LOCATION. INSTALL A BACB30NX6K() HEX DRIVE BOLT WITH A BACB30X6 COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30NX8K() HEX DRIVE BOLT WITH A BACB30X8 COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30NX10K()X HEX DRIVE BOLT WITH A BACB30X10 COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30NX12K()X HEX DRIVE BOLT WITH A BACB30X12 COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30MY6K()X HEX DRIVE BOLT WITH A BACB30M6 COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30MY8K()X HEX DRIVE BOLT WITH A BACB30M8 COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30MY10K() HEX DRIVE BOLT WITH A BACB30M10 COLLAR.
- REPAIR FASTENER LOCATION. INSTALL A BACB30MY10K()X HEX DRIVE BOLT WITH A BACB30M10 COLLAR.

LIST OF MATL

Station 1809.5 Bulkhead - Horizontal Inner Chord Repair At Approximately WL 257 and BL 28
Figure 201 (Sheet 1 of 2)

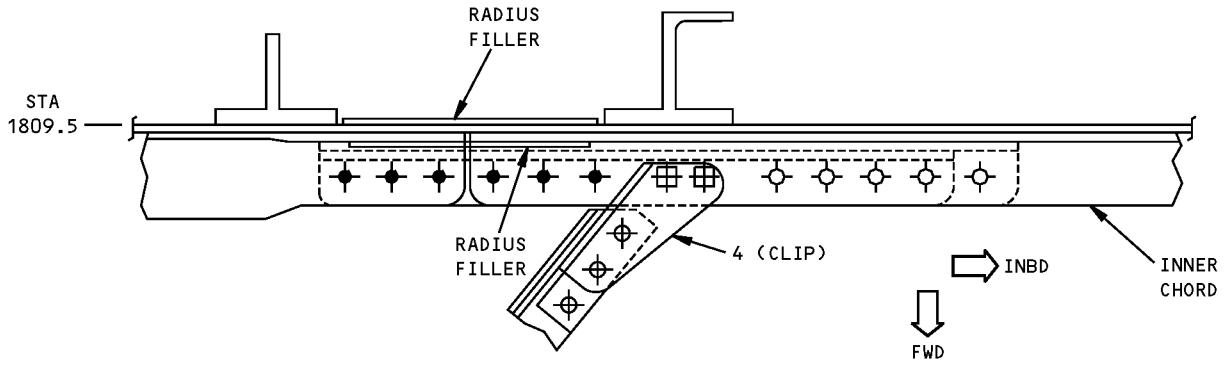


NOTE: PART 4 (CLIP) NOT SHOWN FOR CLARITY

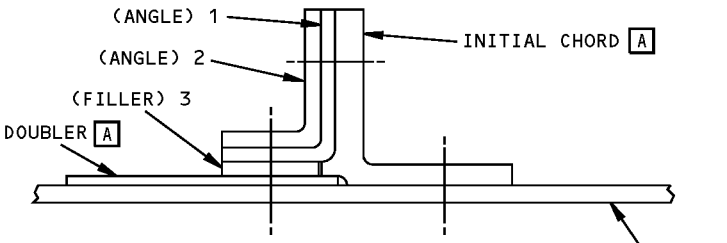
VIEW WHEN YOU LOOK AFT

RIGHT SIDE IS SHOWN, LEFT SIDE IS OPPOSITE

HORIZONTAL INNER CHORD REPAIR
DETAIL II



SECTION A–A



VIEW ROTATED 90° CW
SECTION B–B

NOTES

A THE INITIAL CHORD CONFIGURATION IS SHOWN WITH MACHINED STEP ON THE LOWER FLANGE FOR THE DOUBLER (148T2740-29). IF THERE IS NO PRODUCTION DOUBLER, THE CHORD DOES NOT HAVE A MACHINED STEP.

Station 1809.5 Bulkhead - Horizontal Inner Chord Repair At Approximately WL 257 and BL 28
Figure 201 (Sheet 2 of 2)

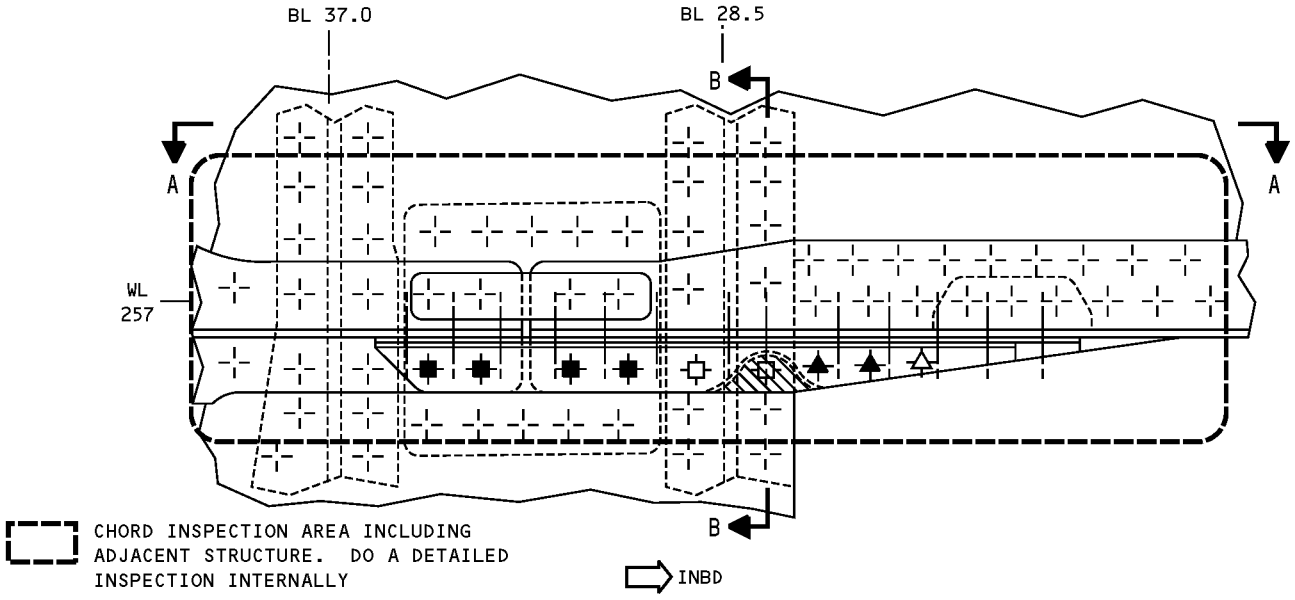
5. Inspection Requirements

A. Do a supplemental inspection as given in Table 202/REPAIR 10

Table 202: Catergory B Repair Inspection Requirements

INSPECTION THRESHOLD*[1]	REPEAT INSPECTIONS		
	METHOD	INTERVAL	
37,500 flight cycles after airplane delivery or within 6,000 flight cycles from the repair installation, whichever comes last.	Detailed Inspection	6,000 Flight Cycles	
NOTES: Do a Detailed Inspection of the repair angles, fillers, visible parts of the bulkhead inner chord, adjacent structure, and 2.0 inches (50 mm) wide zone around the repair internally as shown in Figure 202/REPAIR 10.			

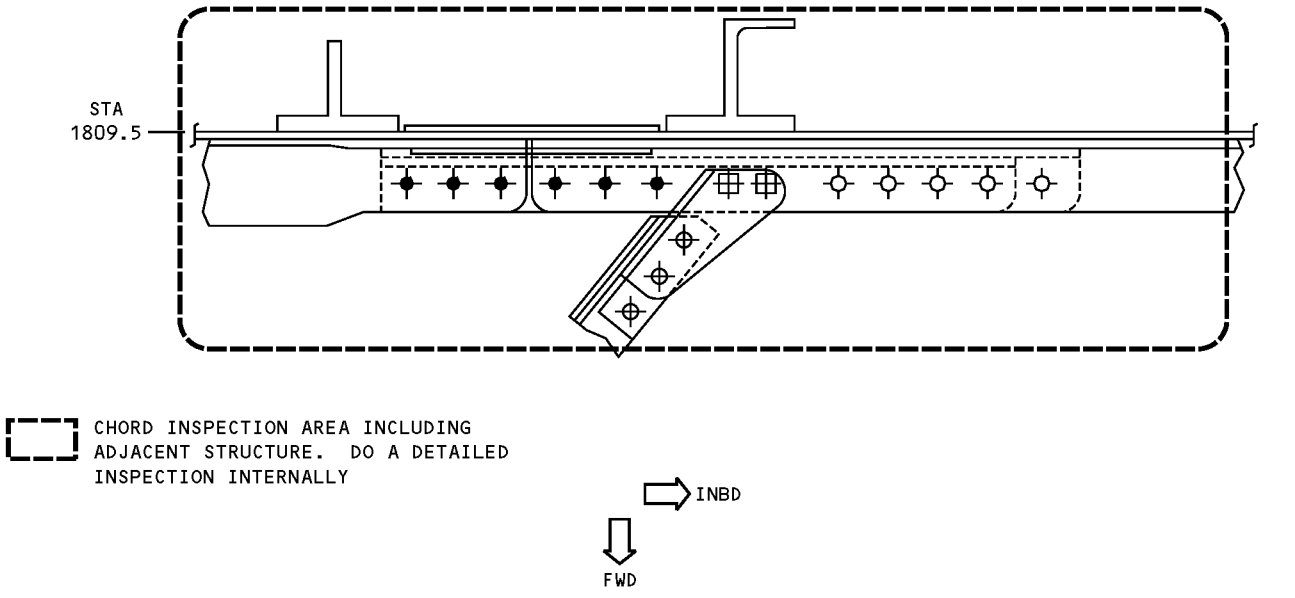
*[1] Service Bulletin requirements supersede the SRM if these are more conservative in interval or threshold for the repair areas inspected in SRM.



VIEW WHEN YOU LOOK AFT

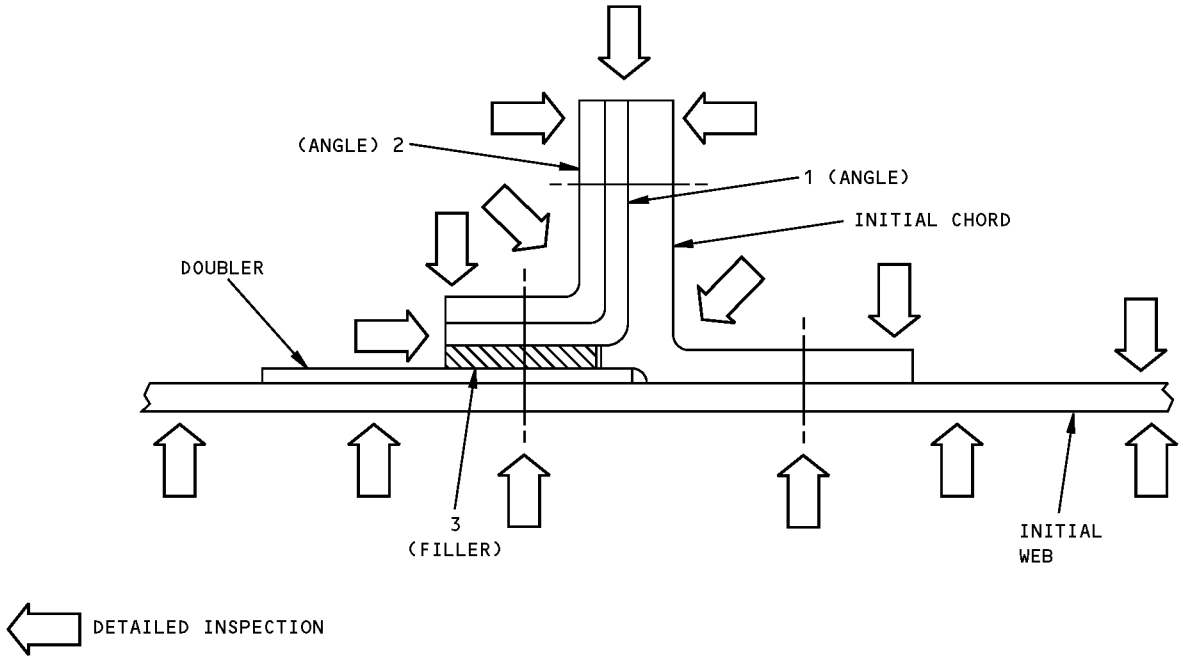
RIGHT SIDE IS SHOWN, LEFT SIDE IS OPPOSITE

DETAIL I



SECTION A-A

Category B Repair Inspection Requirements
Figure 202 (Sheet 1 of 2)



VIEW ROTATED 90° CW

SECTION B-B

Category B Repair Inspection Requirements
Figure 202 (Sheet 2 of 2)

REPAIR 11 - STATION 1809.5 BULKHEAD - VERTICAL INNER CHORD REPAIR AT APPROXIMATELY WL 256 AND BL 30

1. Applicability

A. This repair is applicable to cracks in the forward, inboard flange of the BS 1809.5 bulkhead vertical inner chord at approximately WL 256 and BL 30 on the left and the right hand side, as shown in Figure 201/REPAIR 11.

2. General

A. This repair is a Category B repair and the supplemental inspections as given in Paragraph 5./REPAIR 11 are necessary. The use of these inspection requirements in the airplane's maintenance program satisfies the Damage Tolerance Assessment of the repair. Refer to 51-00-06, GENERAL for the repair categories and definitions.

B. D = Fastener diameter.

3. References

Reference	Title
51-00-06, GENERAL	Structural Repair Definitions
51-20-01	PROTECTIVE TREATMENT OF METALLIC AND NONMETALLIC MATERIALS
NDT Part 6, 51-00-01	Aluminum Part Surface Inspection (Meter Display)
SOPM 20-41-02	Application of Chemical and Solvent Resistant Finishes

4. Repair Instructions

A. Get access to the damage area.

B. Do a High-Frequency Eddy Current (HFEC) inspection of the damaged area to find the length and direction of the crack. Refer to NDT Part 6, 51-00-01 for eddy current inspection procedures.

C. Do an open hole HFEC inspection of all fastener holes common to this repair. Make sure that there is no more damage.

(1) Do an open hole HFEC inspection to two adjacent fastener holes common to the intersection of the vertical chord outboard flange and horizontal chord. See Flag Note A of Detail II on Figure 201 (Sheet 2) for the location of the adjacent fastener holes. If there are no cracks, oversize the holes 1/32 in. (1 mm). If there are cracks, contact The Boeing Company for repair instructions.

D. Remove the cracked flange of the damaged vertical inner chord. The maximum cut distance from the edge of the flange must not be more than 1.1 in. (27.9 mm) (see Section B-B on Figure 201 (Sheet 2)). Make the trim the minimum dimensions possible. Keep a 2D minimum fastener edge margin and a 0.5 in. (12.7 mm) minimum corner radius. Make sure the edges of the cutout have a minimum surface smoothness of 125 microinches Ra or smoother.

E. Do a surface HFEC inspection of the cut edges of the vertical inner chord. Make sure that there is no more damage.

F. Make an insurance cut of 0.03 in. (0.76 mm) to make sure that you remove all the damage.

G. Make the repair parts. See Table 201/REPAIR 11 and Figure 201/REPAIR 11.

H. Assemble the repair parts. Drill the fastener holes.

I. Disassemble the repair parts.

J. Remove all nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the inner chord.

K. Apply a chemical conversion coating to the repair parts and the bare surfaces of the inner chord. Refer to PROTECTIVE TREATMENT OF METALLIC AND NONMETALLIC MATERIALS, 51-20-01.

L. Apply two layers of BMS 10-11, Type I primer to the repair parts and to the bare aluminum surface of all initial parts. Refer to SOPM 20-41-02.

M. Install the repair parts with BMS 5-95 sealant between the mating surfaces.

N. Shim all gaps that are more than 0.005 in. (0.127 mm) before you install the fasteners.

O. Install the fasteners wet with BMS 5-95 sealant.

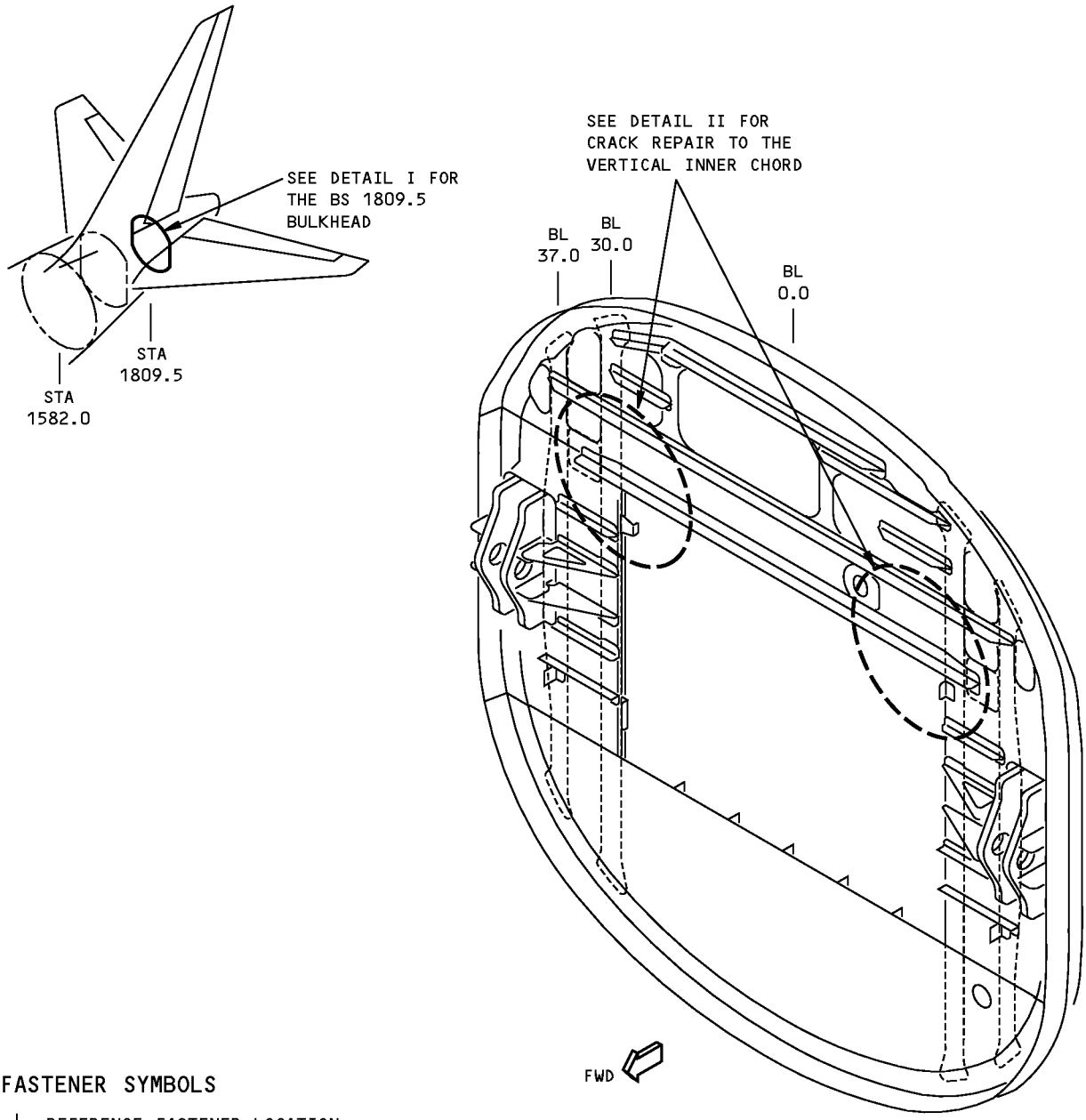
P. Apply finish to the repair area. Refer to PROTECTIVE TREATMENT OF METALLIC AND NONMETALLIC MATERIALS, 51-20-01.

Q. Replace the items removed for access.

Table 201: Repair Material

PART		QTY	MATERIAL
1	ANGLE	1	7075–T6511 EXTRUSION*[1]
2	FILLER	1	7075–T6 PLATE (CLAD OR BARE), 0.30 in. (7.62 mm) THICK

*[1] BAC 1503–100168 (7075–T6511 Extrusion) or equivalent section. Machine the part as shown in Detail II, View A-A.



STATION 1809.5 BULKHEAD
DETAIL I

FASTENER SYMBOLS

- REFERENCE FASTENER LOCATION
- REPAIR OR INITIAL FASTENER LOCATION. INSTALL A BACB30MY10K() HEX DRIVE BOLT WITH A BACC30X10 COLLAR.
- INITIAL FASTENER LOCATION. INSTALL A BACB30MY8K() HEX DRIVE BOLT WITH A BACC30X8 COLLAR.
- INITIAL FASTENER LOCATION. INSTALL A BACB30MY8K() HEX DRIVE BOLT WITH A BACC30X8 COLLAR.

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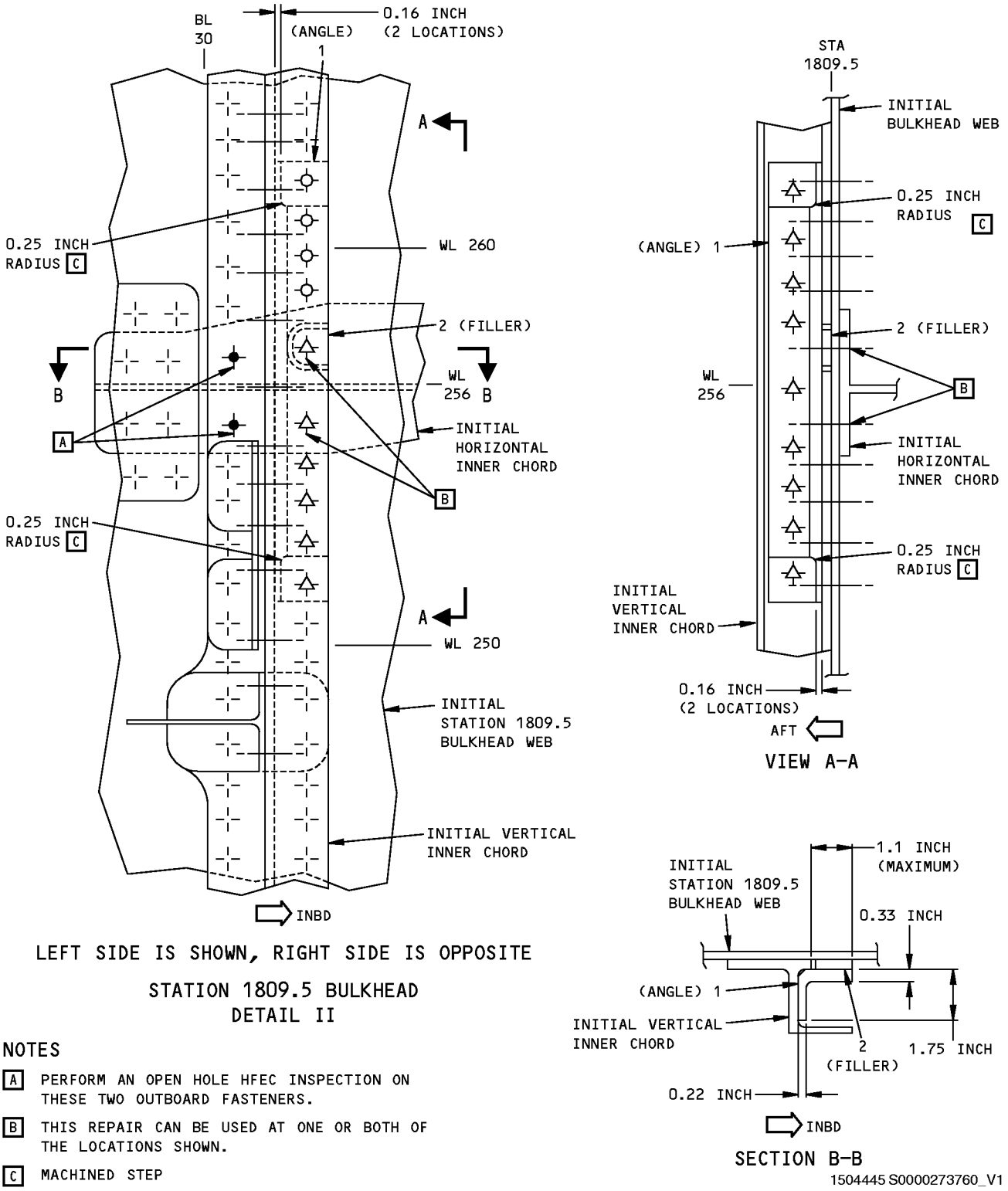
Station 1809.5 Bulkhead - Vertical Inner Chord Repair at Approximately WL 256 and BL 30
Figure 201 (Sheet 1 of 2)



NOTES

A PERFORM AN OPEN HOLE HFEC INSPECTION ON THESE TWO OUTBOARD FASTENERS.

B THIS REPAIR CAN BE USED AT ONE OR BOTH OF THE LOCATIONS SHOWN.

C MACHINED STEP

1504445 S0000273760_V1

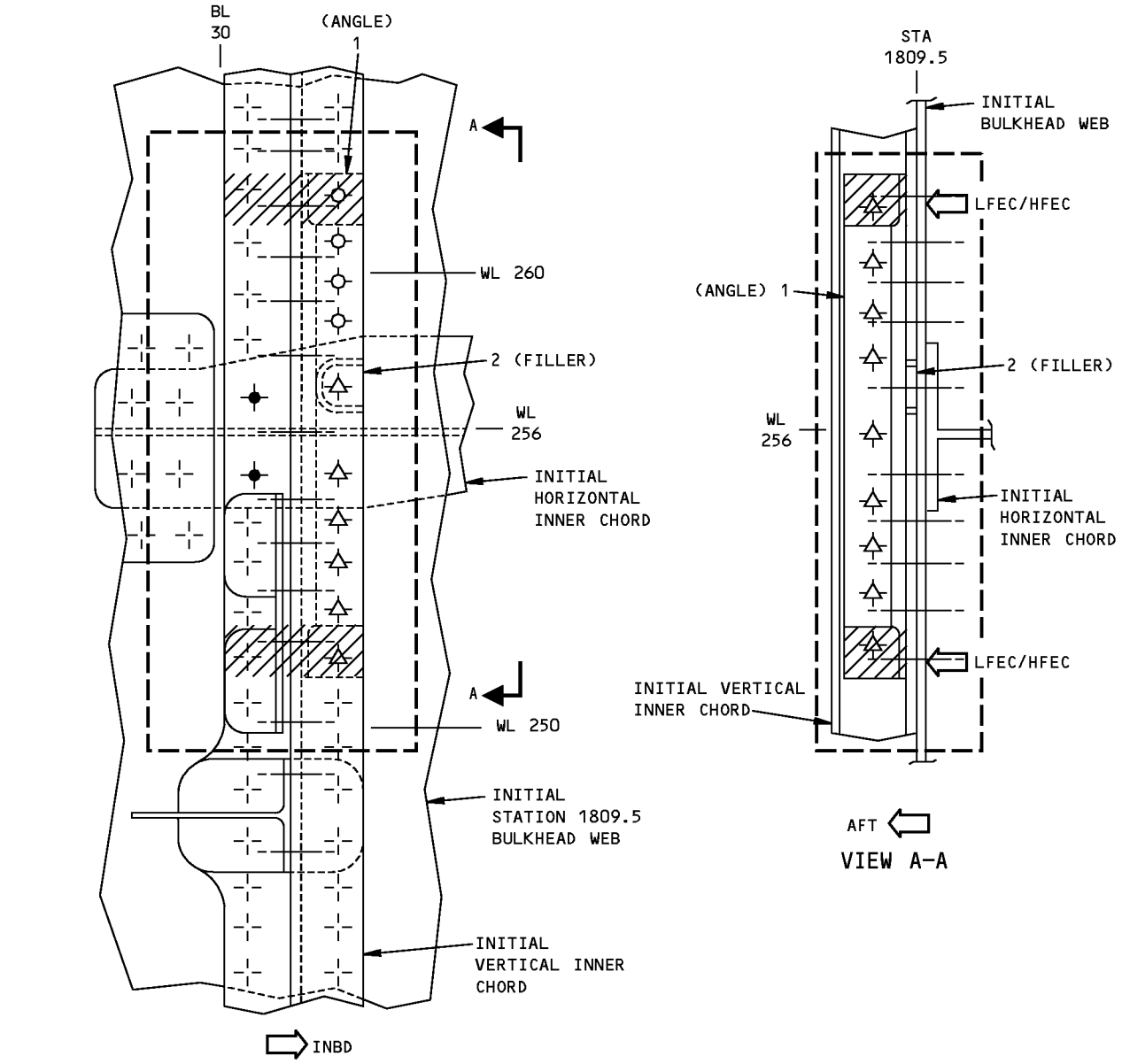
Station 1809.5 Bulkhead - Vertical Inner Chord Repair at Approximately WL 256 and BL 30
Figure 201 (Sheet 2 of 2)

5. Inspection Requirements

A. Do the supplemental inspections as given in Table 202/REPAIR 11.

Table 202: Category B Repair Inspection Requirements

INSPECTION THRESHOLD	REPEAT INSPECTIONS	
	METHOD	INTERVAL
37,500 flight cycles after airplane delivery or within 6,000 flight cycles from the repair installation, whichever comes last.	Detailed Visual Inspection, Low Frequency Eddy Current, and High Frequency Eddy Current	6,000 Flight Cycles
NOTES: Do a Detailed Internal Visual Inspection of the repair angle, the filler, the visible parts of the bulkhead vertical inner chord, and the adjacent structure. Also examine the edges of the vertical inner chord, and a 2.0 in. (50.8 mm) wide zone around the repair. Refer to Figure 202/REPAIR 11 . Do a Low Frequency Eddy Current (LFEC) inspection of the bulkhead vertical inner chord. Do the inspection through the bulkhead web and through the repair angle. Examine the vertical inner chord within 1.0 in. (25.4 mm) above and below the critical fastener rows of the chord. Refer to Figure 202/REPAIR 11. Do a High Frequency Eddy Current (HFEC) inspection of the bulkhead web, and of the visible areas of the vertical inner chord. Do the inspection within 1.0 in. (25.4 mm) above and below the critical fastener rows. Refer to Figure 202/REPAIR 11. Removal of adjacent parts is not required for LFEC and HFEC inspections.		



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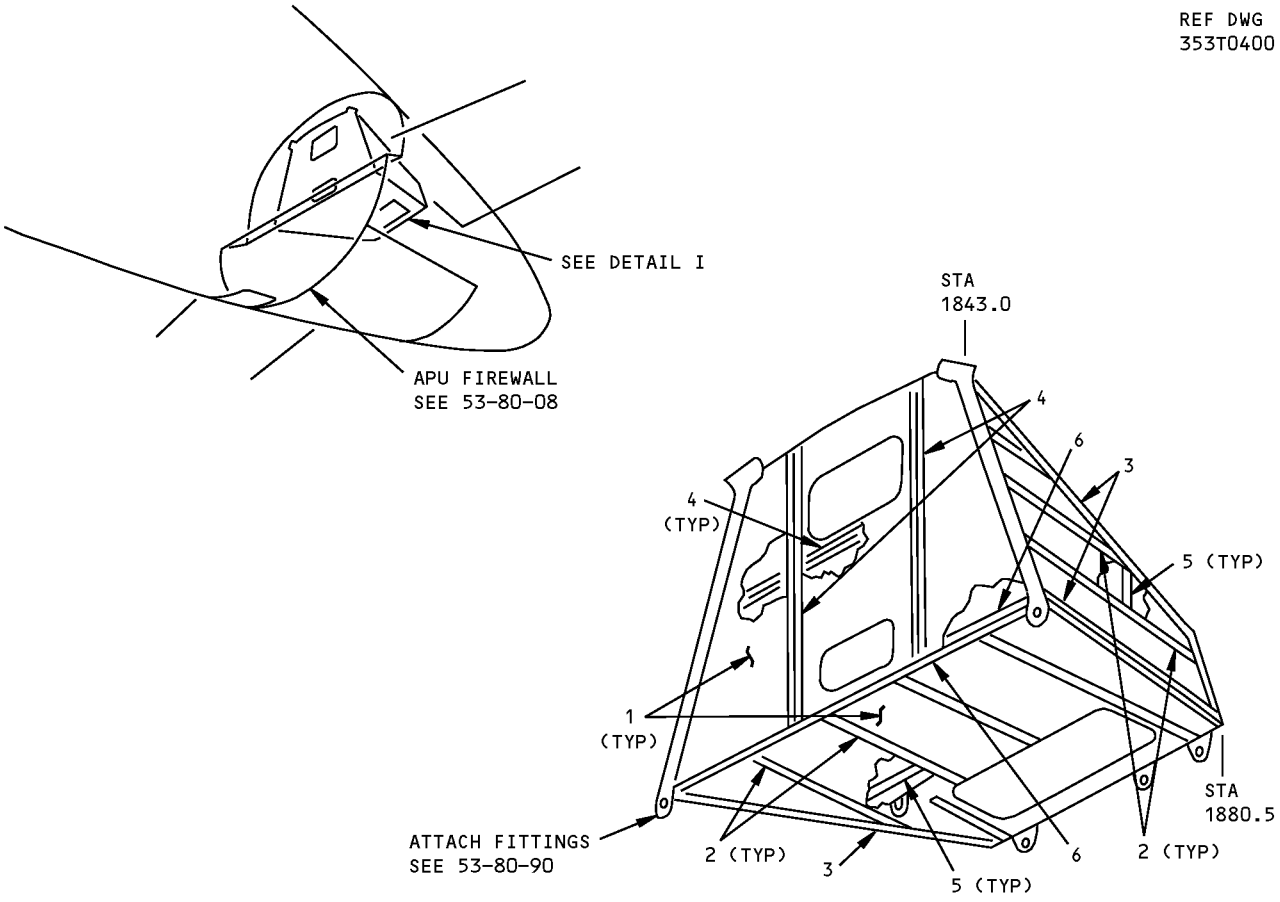
Category B Repair Inspection Requirements
Figure 202

IDENTIFICATION 1 - APU PLENUM



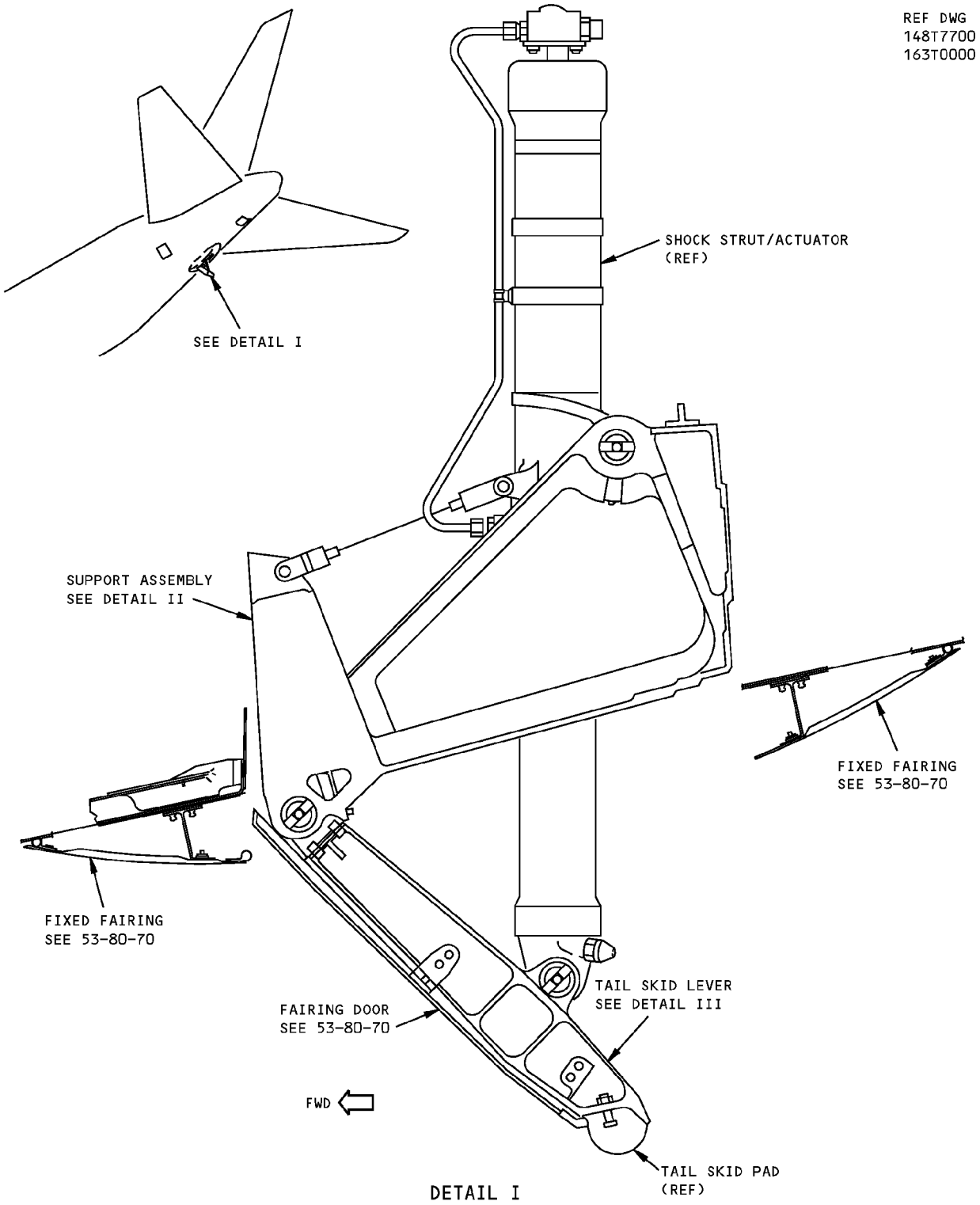
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN	0.032	TI-6AL-4V TYPE III, COMP C	
2	STRINGER	0.032	TI-6AL-4V	
3	LONGERON	0.040	17-7PH CRES HT-TR 180-200 KSI	
4	STIFFENER	0.063	TI-6AL-4V	
5	FRAME	0.032	17-7PH CRES HT-TR 180-200 KSI	
6	ANGLE	0.032	TI-6AL-4V	

LIST OF MATERIALS FOR DETAIL I

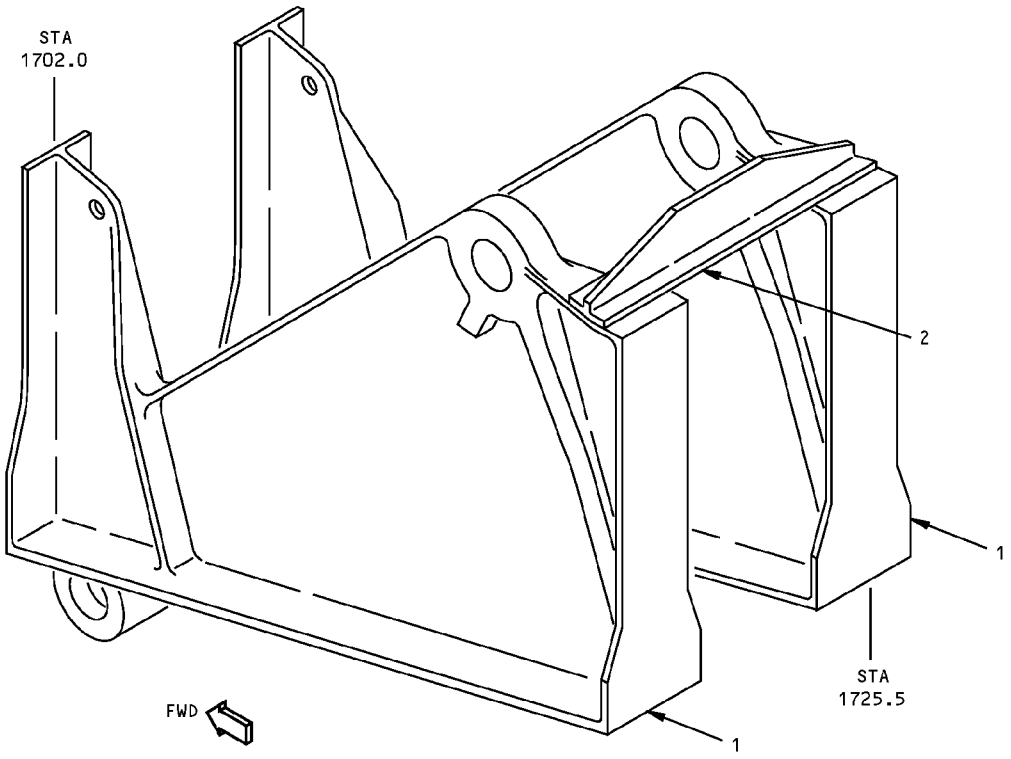
APU Plenum Identification
Figure 1

IDENTIFICATION 2 - TAIL SKID INSTALLATION



Tail Skid Installation Identification
Figure 1 (Sheet 1 of 3)

REF DWG
148T9320

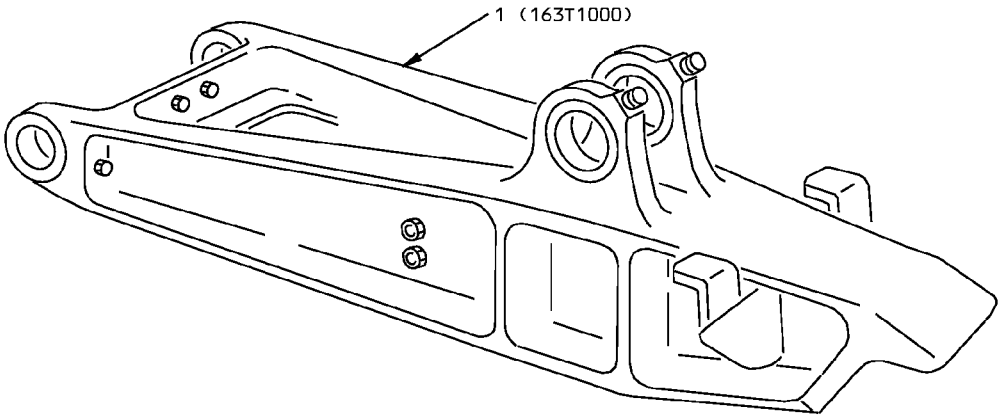


TAIL SKID SUPPORT ASSEMBLY
DETAIL II

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SUPPORT FITTING		FORGING 7050-T736	
2	TEE		AND10136-1706 7075-T6511	

LIST OF MATERIALS FOR DETAIL II

Tail Skid Installation Identification
Figure 1 (Sheet 2 of 3)



TAIL SKID LEVER
DETAIL III

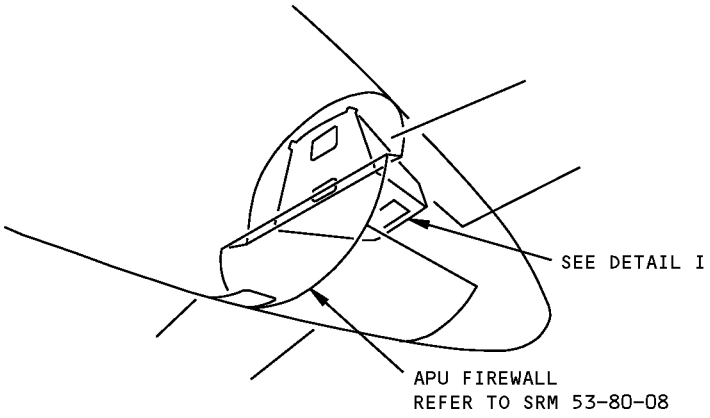
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	LEVER		FORGING 4340M HT-TR 275-300 KSI	

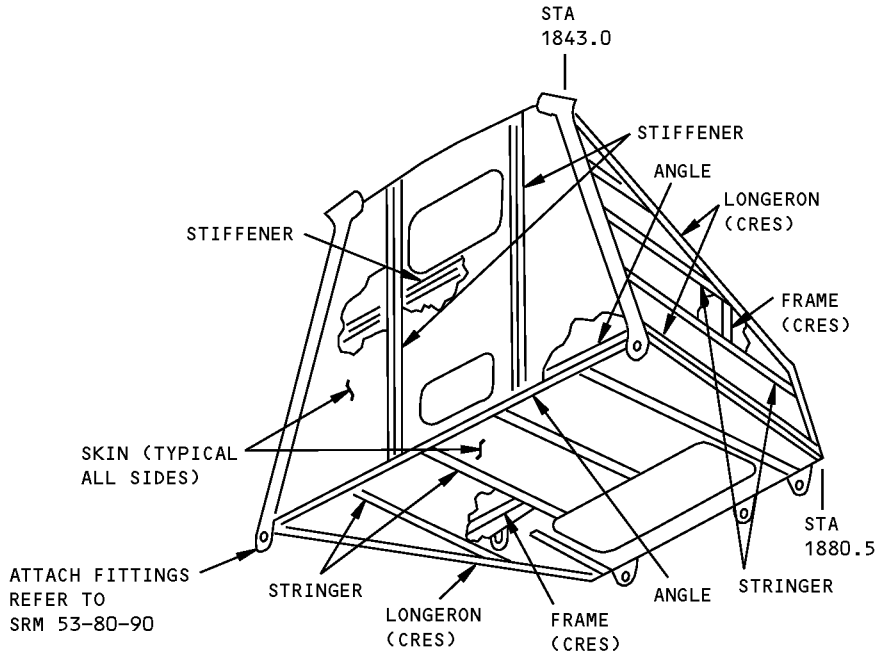
LIST OF MATERIALS FOR DETAIL III

Tail Skid Installation Identification
Figure 1 (Sheet 3 of 3)

ALLOWABLE DAMAGE 1 - APU PLENUM

REFERENCE DRAWING
353T0400





DETAIL I

MATERIAL: TITANIUM (EXCEPT AS NOTED)

Allowable Damage - APU Plenum
Figure 101 (Sheet 1 of 3)

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
SKIN	[C]	[B]	SEE DETAIL III	[E]
LONGERON	[A]	[B]	NOT PERMITTED	NOT PERMITTED
STRINGER	[A]	[B]	NOT PERMITTED	[D]
FRAME	[A]	[B]	NOT PERMITTED	NOT PERMITTED
ANGLE	[A]	[B]	NOT PERMITTED	NOT PERMITTED
STIFFENER	[A]	[B]	NOT PERMITTED	[D]

NOTES

- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.

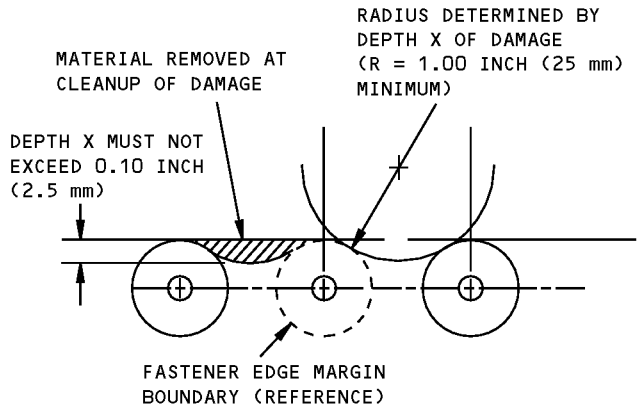
[A] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS GIVEN IN DETAILS II AND IV.

[B] REMOVE DAMAGE AS GIVEN IN DETAILS VI AND VII.

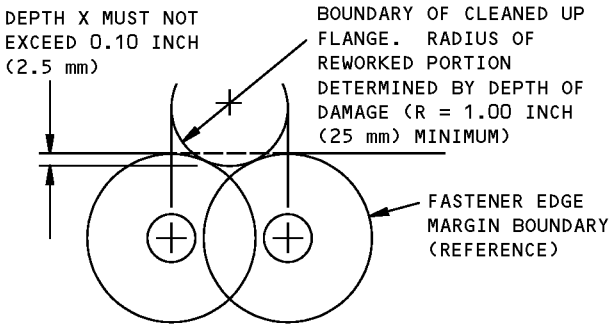
[C] CRACKS ARE NOT PERMITTED EXCEPT FOR EDGE CRACKS WHICH MUST BE REMOVED AS SHOWN IN DETAIL II. FASTENER EDGE MARGINS MUST BE KEPT.

[D] HOLES ARE PERMITTED UP TO 0.25 INCH (6 mm) DIAMETER AFTER CLEANUP, IF THEY ARE NOT CLOSER THAN 1.0 INCH (25 mm) TO ANY EXISTING HOLE OR OTHER DAMAGE, WITH A MAXIMUM OF 4 HOLES IN 6 INCHES (150 mm). SEE DETAIL V. FILL HOLE DAMAGE WITH A MONEL RIVET INSTALLED DRY.

[E] HOLES ARE PERMITTED UP TO 0.25 INCH (6 mm) DIAMETER AFTER CLEANUP, IF THEY ARE NOT CLOSER THAN 1.0 INCH (150 mm) TO ANY EXISTING HOLE OR OTHER DAMAGE. FILL HOLE DAMAGE WITH A MONEL RIVET INSTALLED DRY.



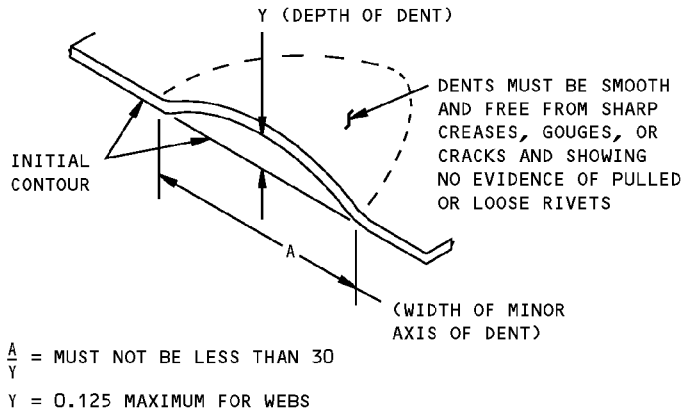
DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



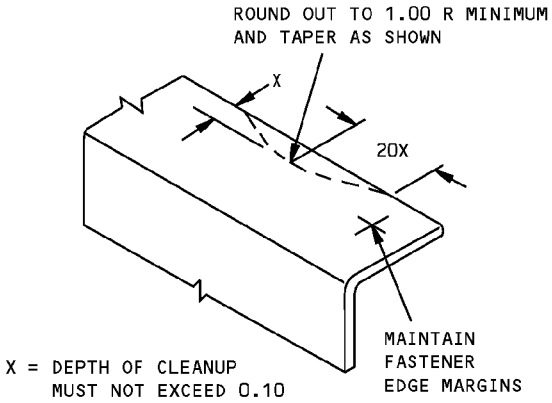
DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL II

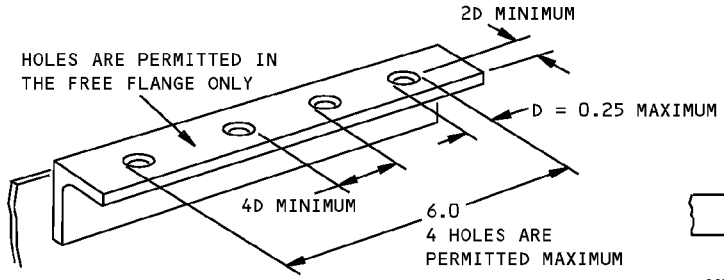
Allowable Damage - APU Plenum
Figure 101 (Sheet 2 of 3)



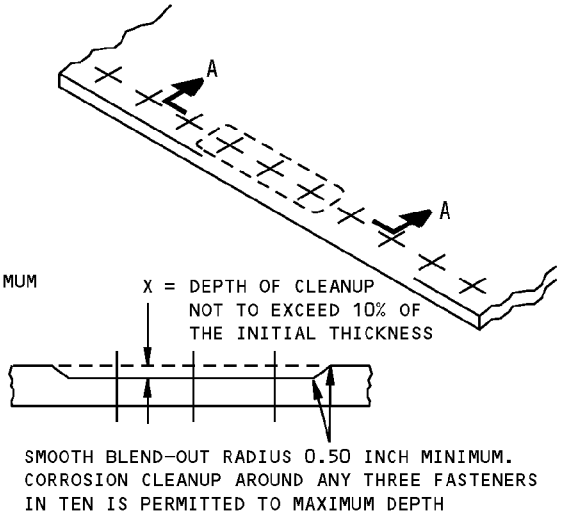
ALLOWABLE DAMAGE FOR DENT
DETAIL III



DETAIL IV

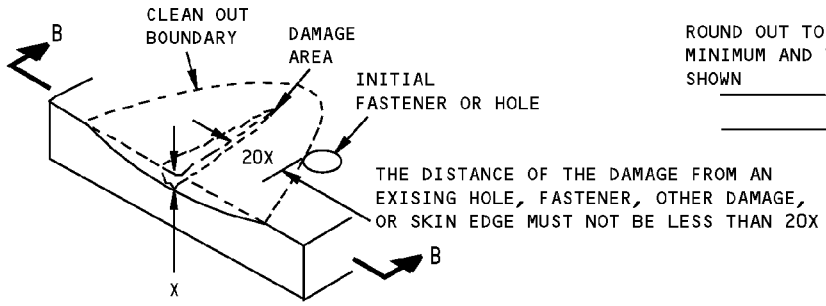


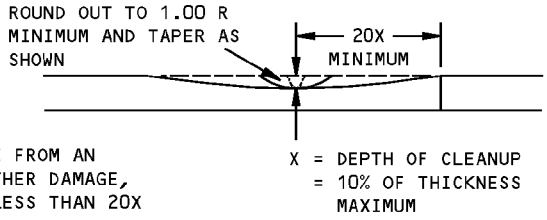
DETAIL V



SECTION A-A

CORROSION CLEANUP
DETAIL VI



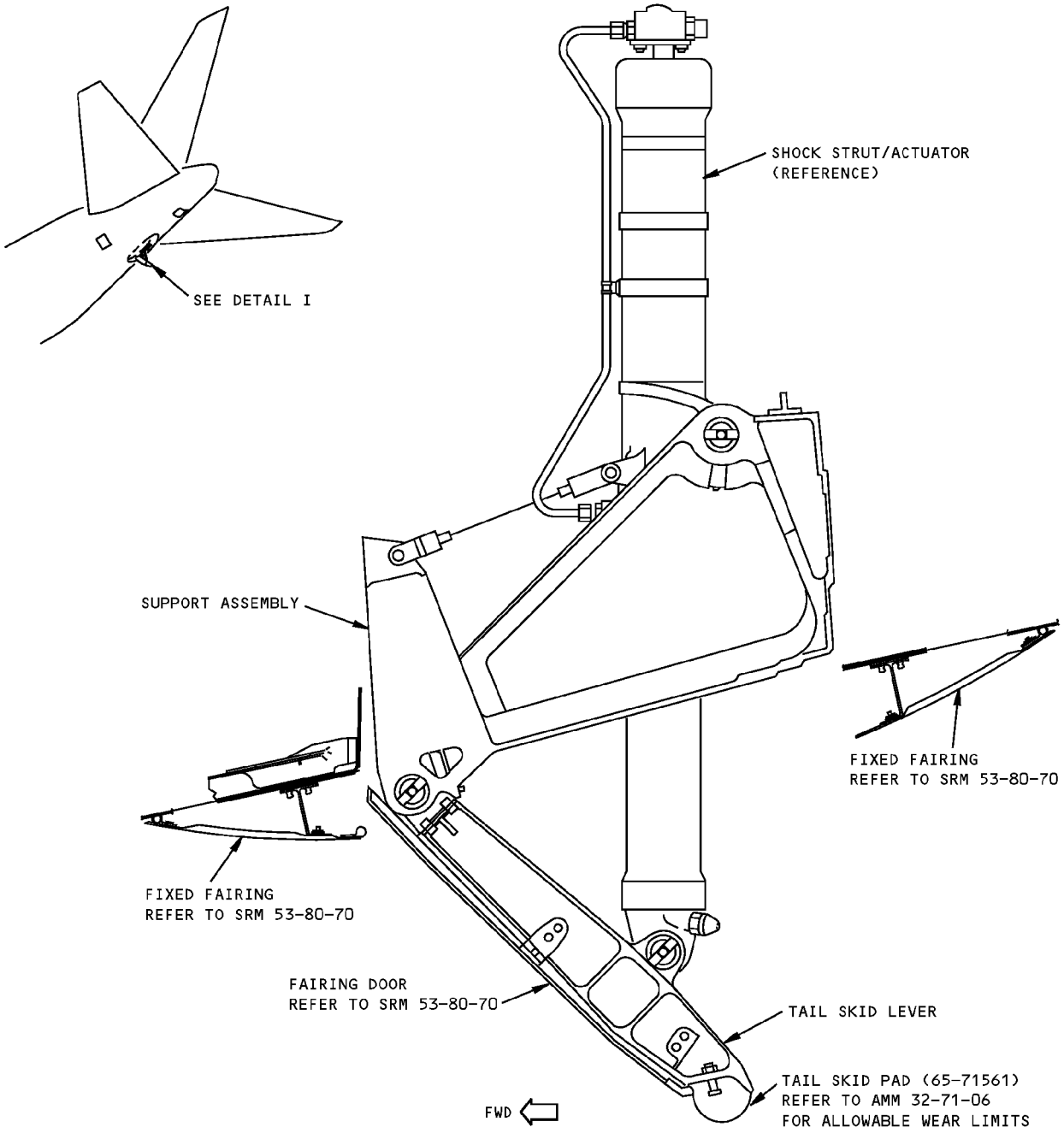


SECTION B-B

REMOVAL OF NICK, GOUGE OR SCRATCH DAMAGE ON A SURFACE
DETAIL VII

Allowable Damage - APU Plenum
Figure 101 (Sheet 3 of 3)

ALLOWABLE DAMAGE 2 - TAIL SKID INSTALLATION



NOTES

- ALLOWABLE DAMAGE LIMITS FOR TAIL SKID LEVER AND SUPPORT ASSEMBLY ARE NOT AVAILABLE. ALLOWABLE DAMAGE LIMITS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE

Allowable Damage - Tail Skid Installation
Figure 101

REPAIR 1 - APU PLENUM - WEB CRACK

APPLICABILITY
THIS REPAIR APPLIES TO CRACKS UP TO A MAXIMUM OF 2.0 INCHES IN THE APU PLENUM WEB. THE REPAIR DOUBLER MUST FIT BETWEEN THE STIFFENERS ON BOTH SIDES OF THE WEB

REPAIR INSTRUCTIONS

1. Cut and remove the damaged part of the web. Make the corners of the cutout at least 0.25 R. Make the surface 125 microinches or smoother.
2. Make a penetrant inspection of the web to make sure that all damage is removed.
3. Maker doubler 1. The doubler must fit between the stiffeners on the aft side of the web. Refer to Detail I for fastener spacing and edge margins.
4. Put the doubler in place on the web and drill the fastener holes.
5. Remove all of the nicks, scratches, burrs and sharp edges from the web and the doubler.
6. Remove all sharp edges of the web and doubler 0.015 R to 0.030 R.
7. Install doubler 1. Apply a fillet seal all the way around the doubler with BMS 5-63, Type I sealant.

NOTES

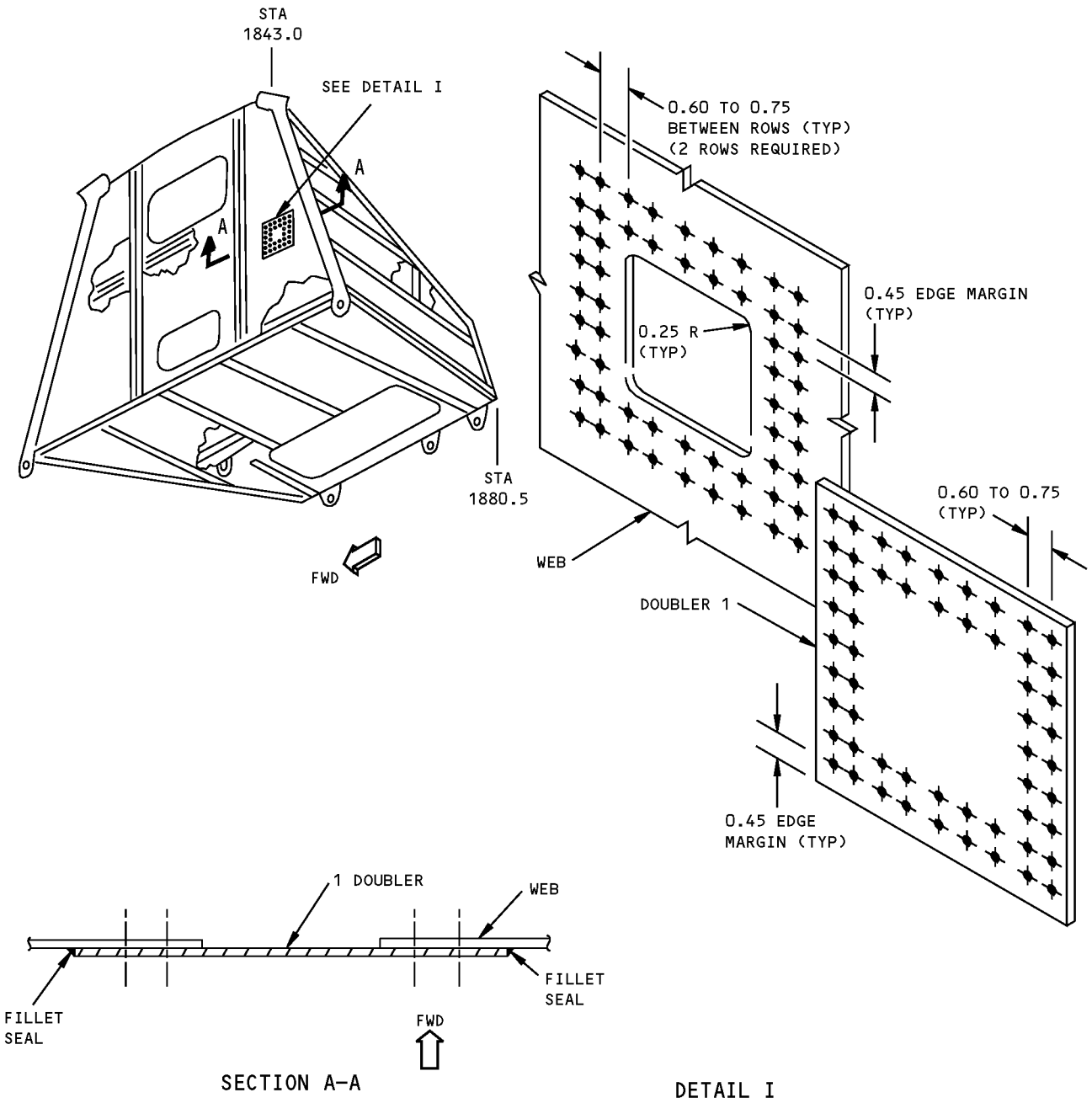
- WHEN YOU USE THIS REPAIR, REFER TO:
  - SOPM 20-20-02 FOR PENETRANT INSPECTION PROCEDURES
  - SRM 51-20-05 FOR SEALING OF REPAIRS
  - SRM 51-30-01 PARAGRAPH 4 FOR PRECAUTIONS WHEN WORKING WITH TITANIUM
  - SRM 51-40 FOR FASTENER CODE, REMOVAL, INSTALLATION, HOLE SIZES AND EDGE MARGINS

FASTENER SYMBOLS

REPAIR FASTENER LOCATION. INSTALL MS20615-6M RIVET

REPAIR MATERIAL			
PART		QTY	MATERIAL
1	DOUBLER	1	0.040 6 AL-4V TITANIUM TYPE III COMP-C ANNEALED

APU Plenum - Web Crack Repair
Figure 201 (Sheet 1 of 2)



APU Plenum - Web Crack Repair
Figure 201 (Sheet 2 of 2)

REPAIR 2 - APU PLENUM FRAME

APPLICABLILITY
THIS REPAIR IS APPLICABLE TO APU PLENUM LONGERON AND FRAME CRACKS

REPAIR INSTRUCTIONS

1. Get access to the damaged area.
2. For Detail II repair, cut and remove the damaged part of the frame. Install the part 2 angle and do the repair as given in Detail II. [A]
3. For Detail III repair, stop drill crack if the crack length is less than 3 inches (76 mm). Then do the repair as given in Detail III. Refer to SRM 51-10-01. If the crack is greater than 3 inches, cut and remove the damaged part and replace with part 5, filler frame. Then do the repair as given in Detail III.
4. Do a penetrant inspection of the frame to make sure all damage is removed.
5. Make the repair parts. See Table I.
6. Assemble the repair parts and drill the fastener holes.
7. Disassemble the repair parts.
8. Remove the nicks, scratches, gouges, burrs, and sharp edges from the repair parts and the frames.
9. Install the repair parts with BMS 5-63 sealant between the mating surfaces.
10. Install the fasteners.

NOTES

- D = FASTENER DIAMETER
- MAKE SURE FASTENER SPACING IS BETWEEN 4D AND 6D.
- WHEN YOU USE THIS REPAIR, REFER TO:
  - SOPM 20-41-02 FOR APPLICATION OF FINISHES
  - SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE
  - SRM 51-20-01 FOR PROTECTIVE TREATMENT OF METALIC AND GRAPHITE MATERIALS.
  - SRM 51-20-05 FOR REPAIR SEALING
  - SRM 51-40 FOR FASTENER CODE, INSTALLATION AND REMOVAL, HOLE SIZES AND EDGE MARGINS.

[A] MAKE PART 2 ANGLE SUCH THAT IT IS THE SAME SIZE AND SHAPE AS THE DAMAGED PART OF THE LONGERON WHICH IS CUT OUT.

FASTENER SYMBOLS

REFERENCE FASTENER LOCATION

INITIAL FASTENER LOCATION. INSTALL BACB30FM6A() HEX DRIVE BOLT WITH A BACC30AB6 COLLAR.

INITIAL FASTENER LOCATION. INSTALL BACB30FP6A() HEX DRIVE BOLT WITH A BACC30AB6 COLLAR.

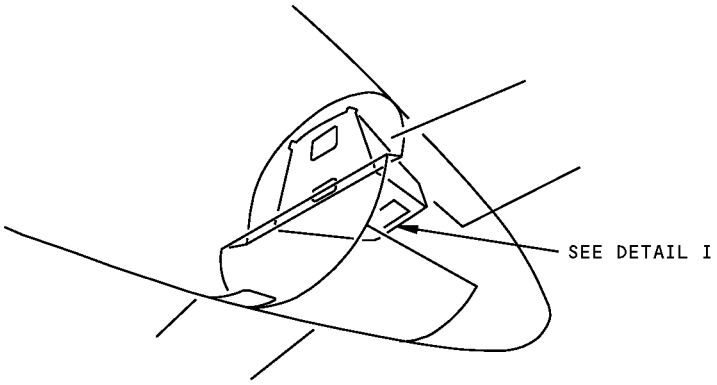
REPAIR FASTENER LOCATION. INSTALL BACB30FM6A() HEX DRIVE BOLT WITH A BACC30AB6.

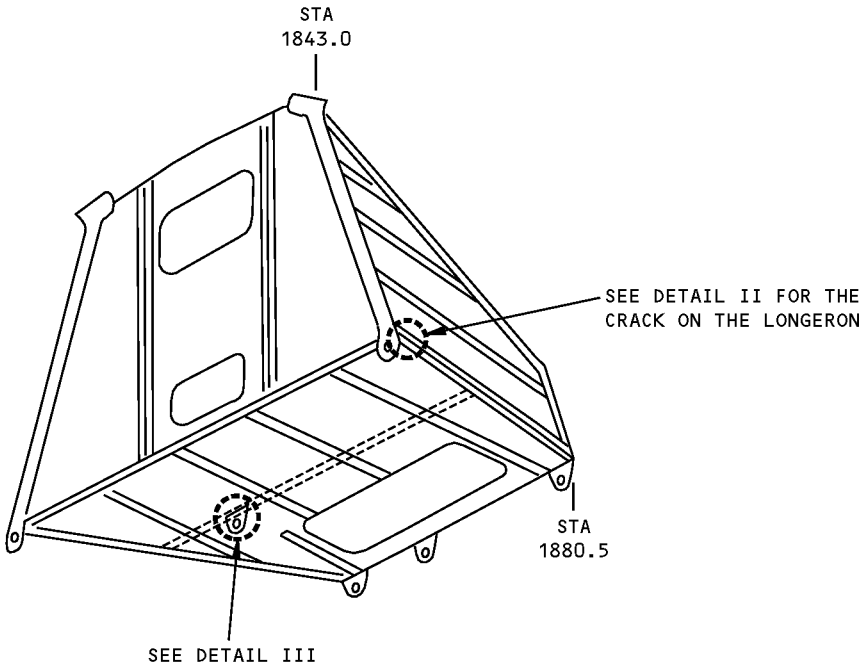
REPAIR MATERIAL			
PART NO.	PART	QUANTITY	MATERIAL
1	ANGLE	1	0.050 17-7PH FORM AND HEAT TREAT TO 180-200KSI.
2	ANGLE	1	0.040 17-7PH FORM AND HEAT TREAT TO 180-200KSI. [A]
3	ANGLE	1	0.032 17-7PH FORM AND HEAT TREAT TO 180-200KSI.
4	ANGLE	1	0.032 17-7PH FORM AND HEAT TREAT TO 180-200KSI.
5	FILLER FRAME	AS REQUIRED	SAME MATERIAL AND SHAPE AS THE INITIAL FRAME

TABLE I

APU Plenum Frame Repair
Figure 201 (Sheet 1 of 4)

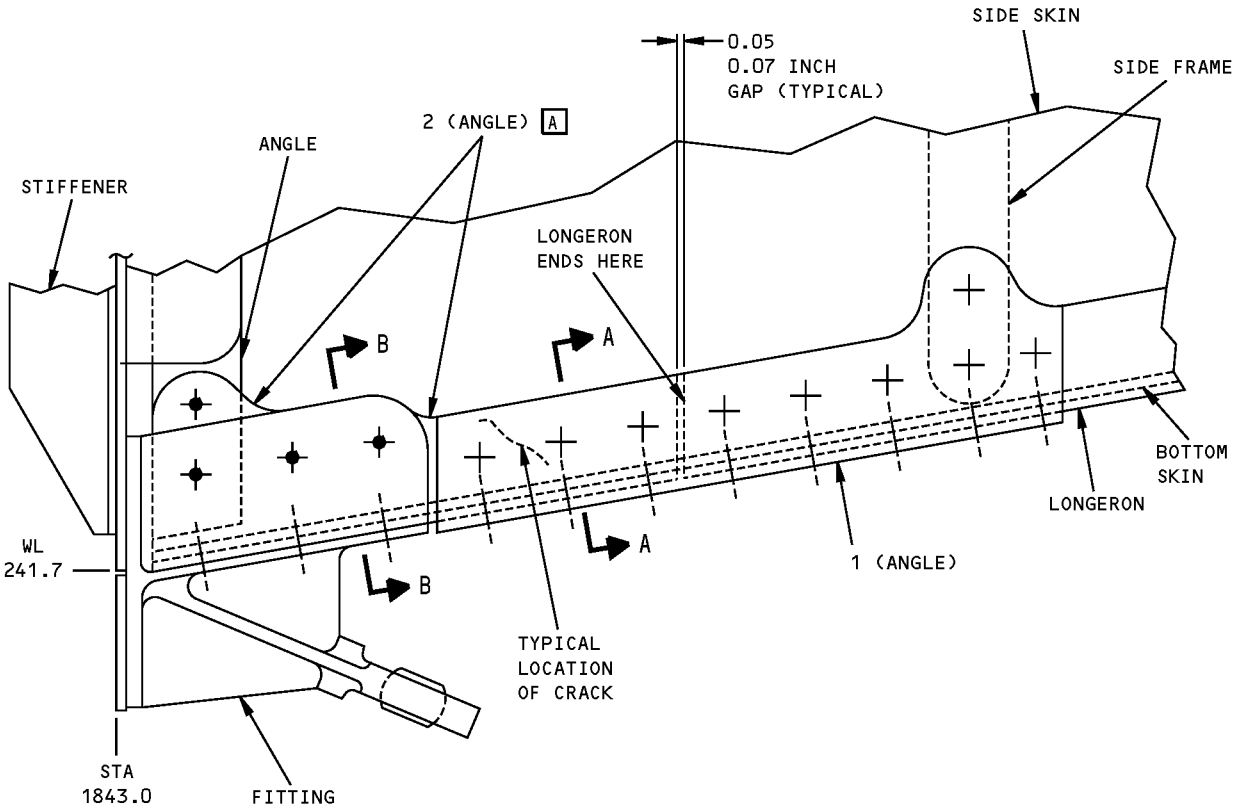
REFERENCE DRAWING
353T0400



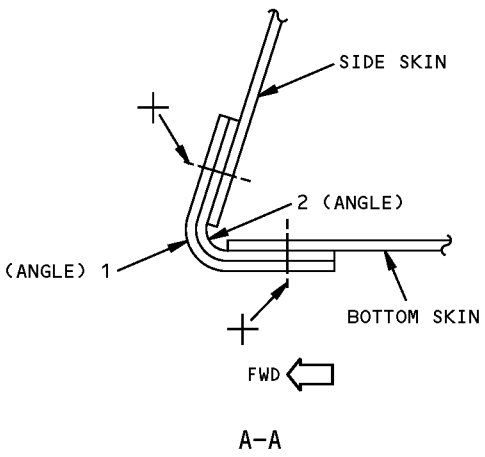


DETAIL I

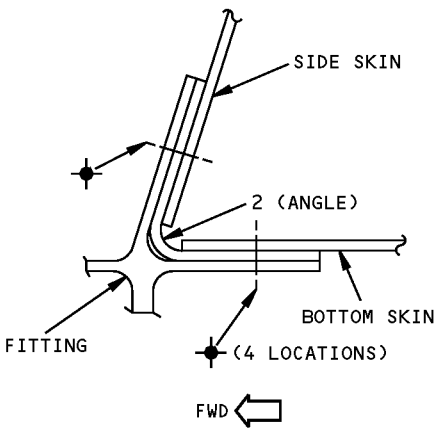
APU Plenum Frame Repair
Figure 201 (Sheet 2 of 4)



DETAIL II

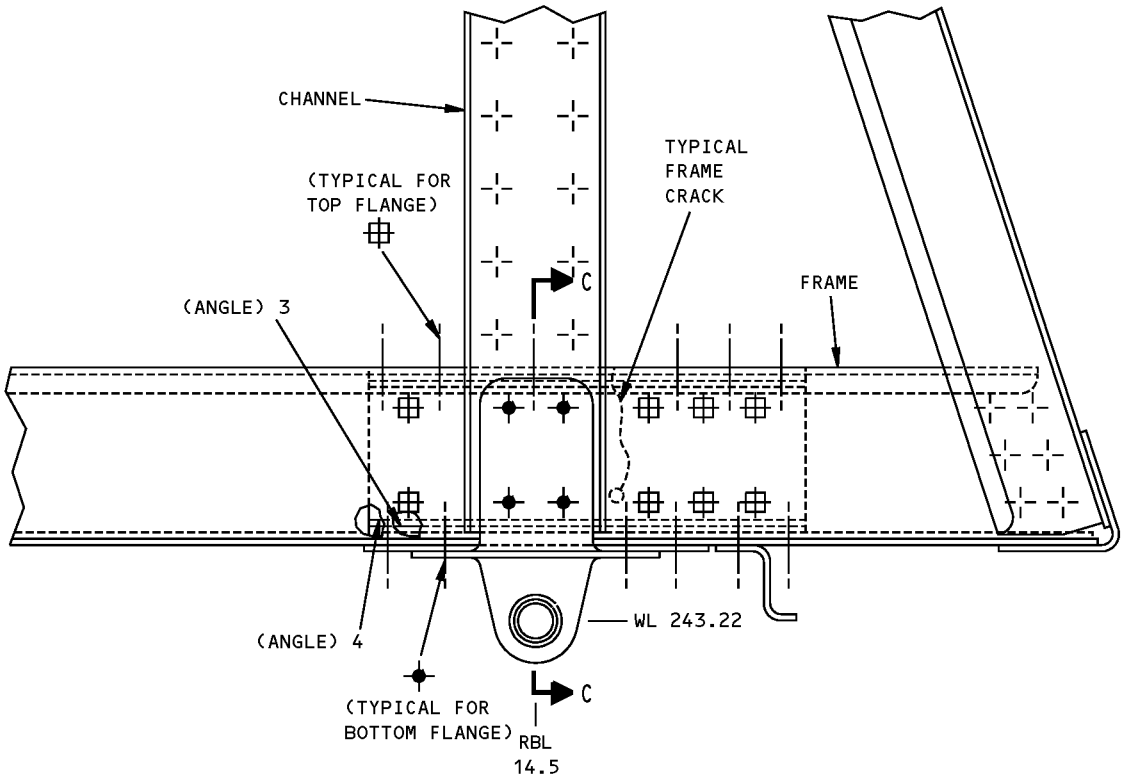


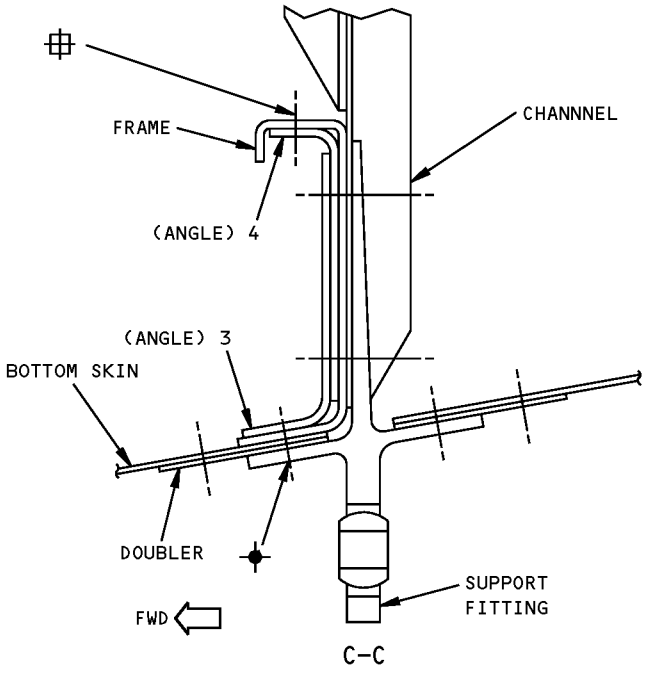
A–A



B–B

APU Plenum Frame Repair
Figure 201 (Sheet 3 of 4)

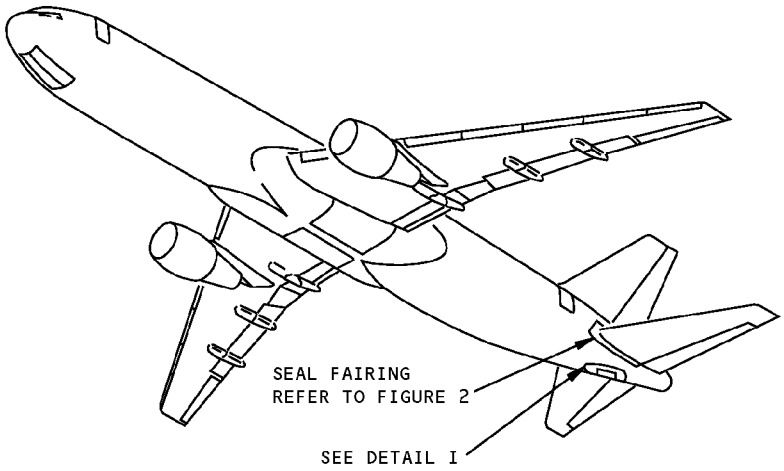


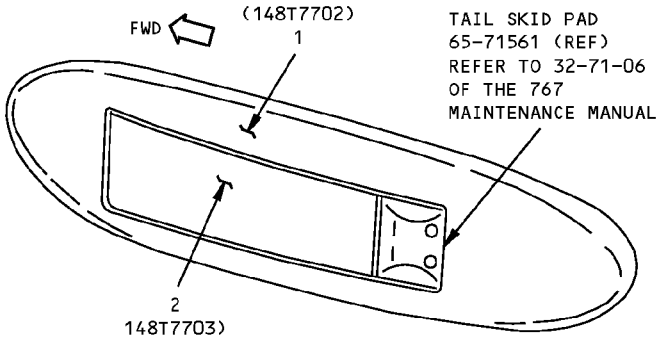


APU Plenum Frame Repair
Figure 201 (Sheet 4 of 4)

IDENTIFICATION 1 - SECTION 48 - FAIRING SKIN

REF DWG
148T7700





DETAIL I

NOTES

- REFER TO 53-80-30 FOR TAIL SKID SUPPORT ASSEMBLY
- SEE REFERENCE DRAWING FOR EDGE BANDS AND DOUBLERS

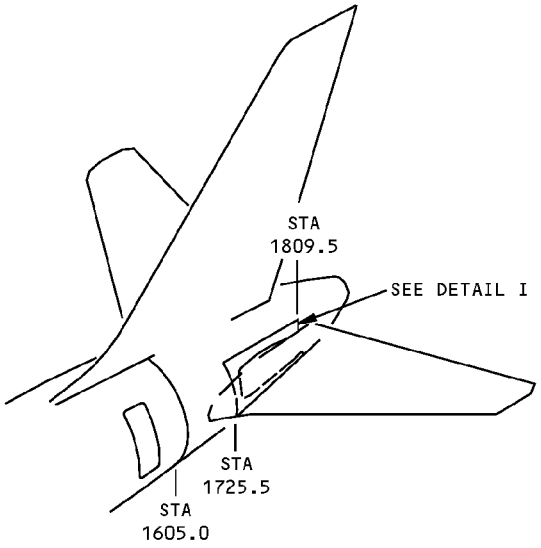
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FIXED FAIRING		FIBERGLASS/EPOXY HONEYCOMB SANDWICH	
	SKIN		FIBERGLASS/EPOXY PER BMS 8-79, CLASS III, TYPE 1581 OR 7781, 250° F (121° C) CURE. 3 PLIES EACH SIDE	
	CORE		NOMEX HONEYCOMB TYPE HRP/F50-4.5	
2	FAIRING DOOR		FIBERGLASS/EPOXY LAMINATE PER BMS 8-79, CLASS III, TYPE 1582 OR 7781, 250°F (121°C) CURE	

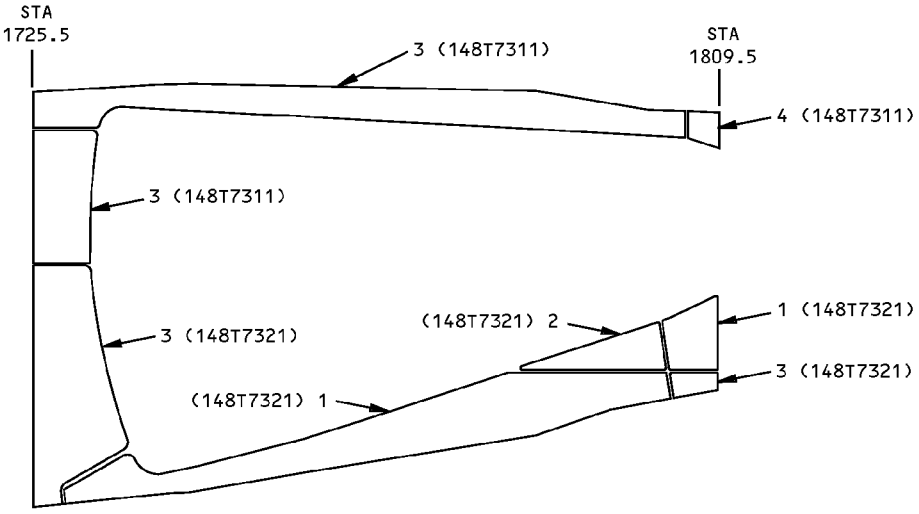
LIST OF MATERIALS FOR DETAIL I

Section 48 - Fairing Skin Identification
Figure 1

IDENTIFICATION 2 - SECTION 48 - SEAL FAIRING SKIN

REF DWG
148T7310
148T7320





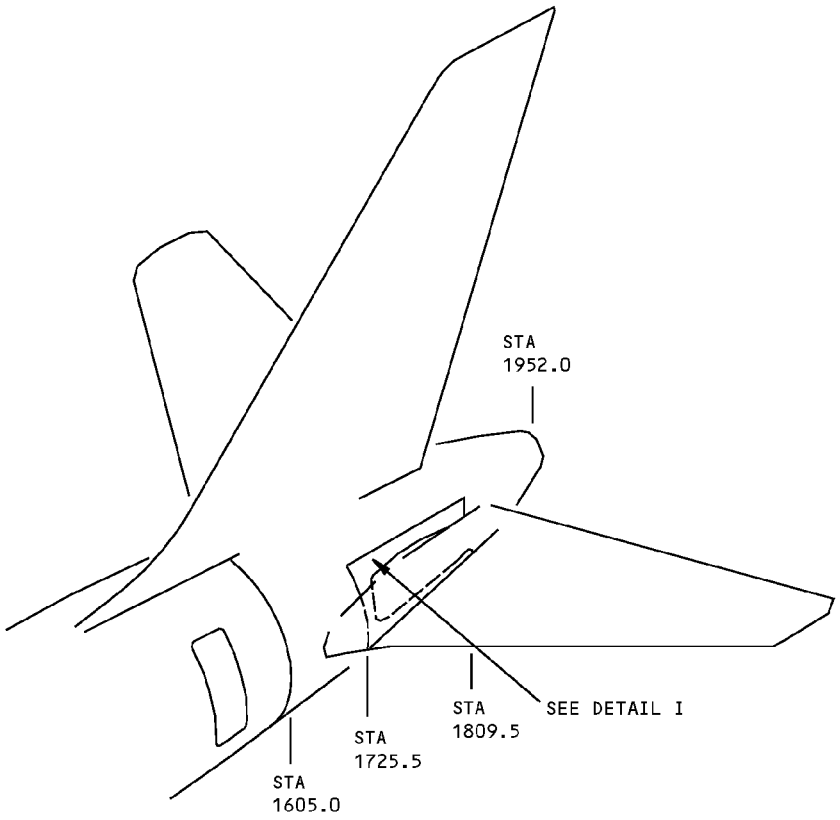
SEAL FAIRING SKIN
DETAIL I

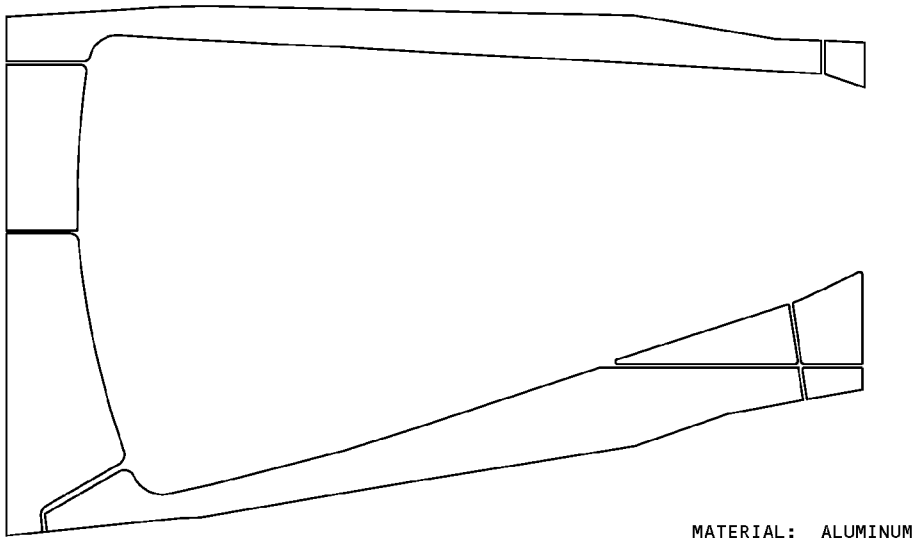
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	SKIN PANEL	0.080	CLAD 7075-T6 (CHEM-MILLED TO 0.040 MIN)	
2	SKIN PANEL	0.056	CLAD 7075-T6 (CHEM-MILLED TO 0.040 MIN)	
3	SKIN PANEL	0.080	CLAD 7075-T6 (CHEM-MILLED TO 0.056 MIN)	
4	SKIN PANEL	0.080	CLAD 7075-T6	

LIST OF MATERIALS FOR DETAIL I

Section 48 - Seal Fairing Skin Identification
Figure 1

ALLOWABLE DAMAGE 1 - SEAL FAIRING SKIN





DETAIL I

Allowable Damage - Seal Fairing Skin
Figure 101 (Sheet 1 of 3)

DESCRIPTION	CRACKS	NICKS, GOUGES AND CORROSION	DENTS	HOLES AND PUNCTURES
SKIN - ALUMINUM	[A]	[B]	SEE DETAIL IV	[C]

ALLOWABLE DAMAGE FOR DETAIL I

NOTES

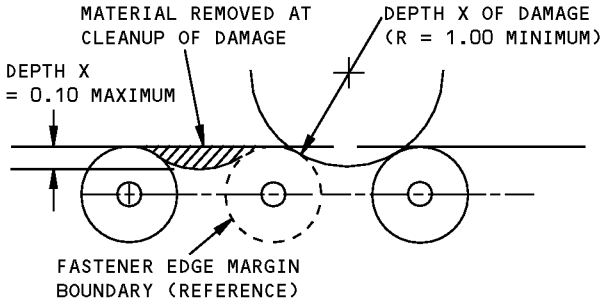
- APPLY THE FINISH TO REWORKED AREAS AS GIVEN IN AMM 51-20.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.

[A] 0.50 INCH (12.7 mm) IS THE MAXIMUM LENGTH CRACK THAT IS PERMITTED, IF THE CRACK IS A MINIMUM OF 1.00 INCH (25 mm) FROM THE PANEL EDGE OR ADJACENT DAMAGE. A 0.50 INCH (12.7 mm) CRACK THAT ENDS AT A FASTENER LOCATION IS PERMITTED. DRILL 0.375 INCH DIAMETER STOP HOLES AT THE ENDS OF THE CRACK. REMOVE EDGE CRACKS AS GIVEN IN DETAIL II.

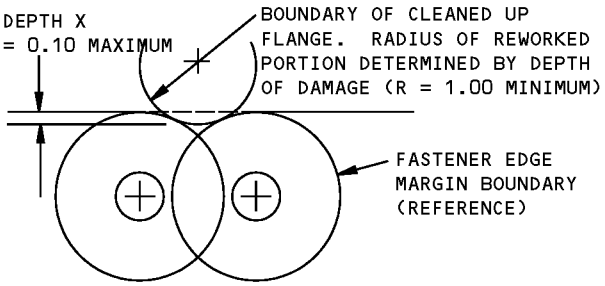
[B] REMOVE DAMAGE AS GIVEN IN DETAILS II, III, AND V.

[C] CLEAN OUT DAMAGE TO A 0.50 INCH (12.7 mm) DIAMETER MAXIMUM AND NOT CLOSER THAN 0.75 INCH (19 mm) TO A FASTENER HOLE, MATERIAL EDGE, OR OTHER DAMAGE. ALL OTHER HOLES MUST BE REPAIRED.

Allowable Damage - Seal Fairing Skin
Figure 101 (Sheet 2 of 3)

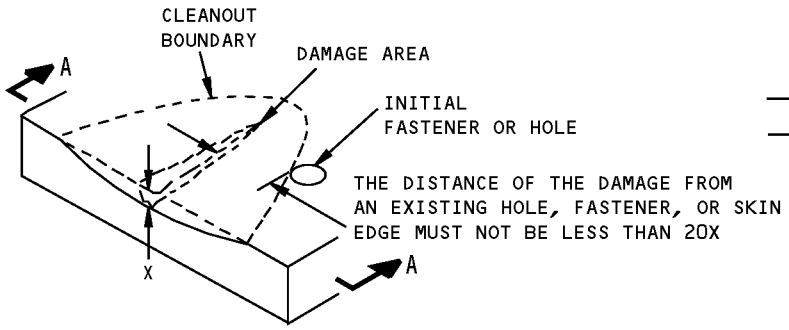


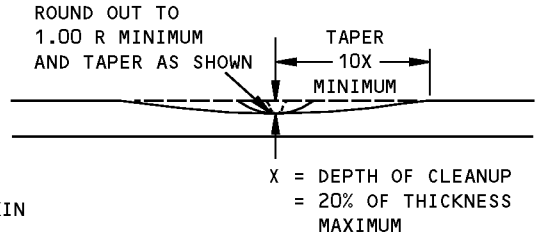
DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS DO NOT OVERLAP



DAMAGE CLEANUP OF EDGES WHERE FASTENER EDGE MARGINS OVERLAP

DETAIL II

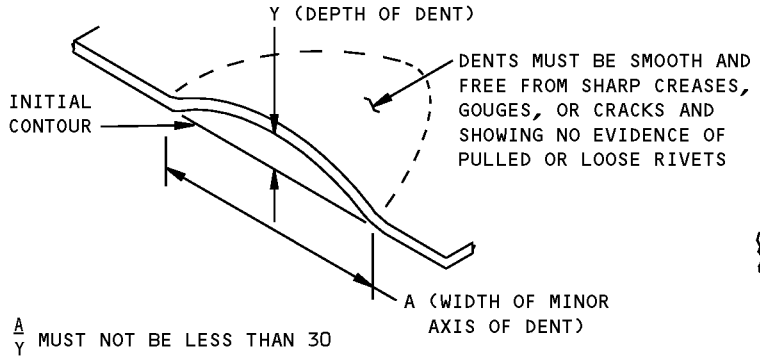




SECTION A–A

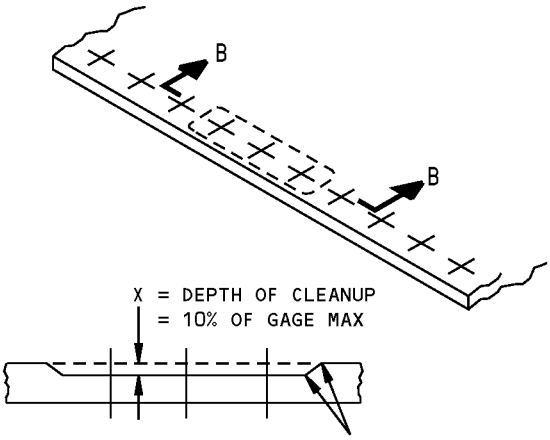
REMOVAL OF NICK, GOUGE AND SCRATCH DAMAGE ON A SURFACE

DETAIL III



ALLOWABLE DAMAGE FOR DENT

DETAIL IV



SECTION B–B

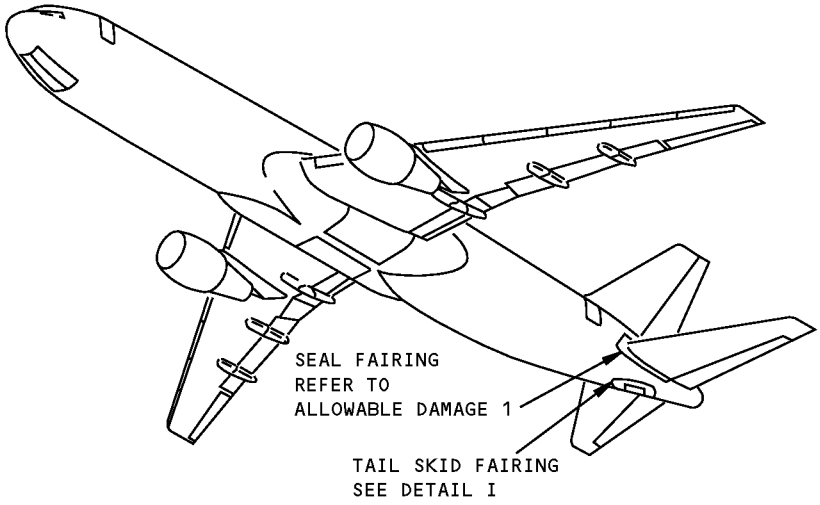
CORROSION CLEANUP

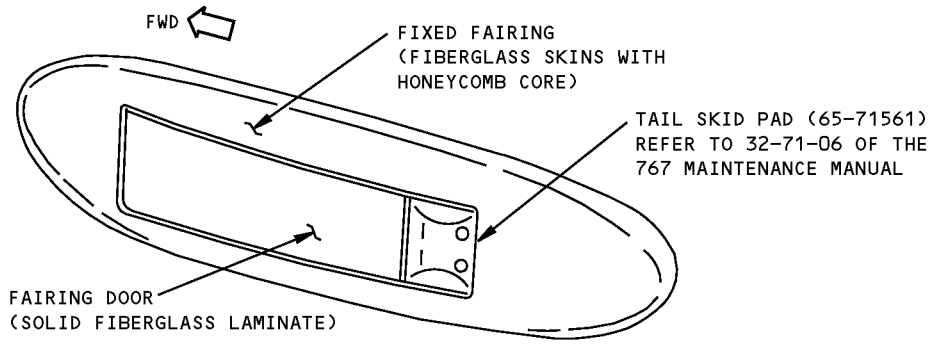
DETAIL V

Allowable Damage - Seal Fairing Skin
Figure 101 (Sheet 3 of 3)

ALLOWABLE DAMAGE 2 - TAIL SKID FAIRING

REFERENCE DRAWING
148T7700

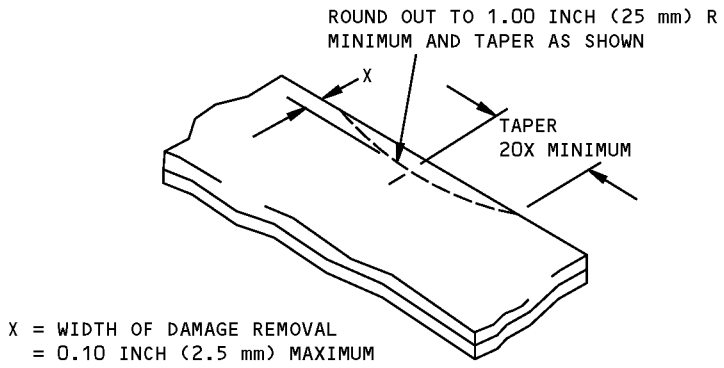




DETAIL I

DESCRIPTION	CRACKS	NICKS AND GOUGES	DENTS	HOLES AND PUNCTURES	DELAMINATION
FIXED FAIRING	B	C	D	E	F
FAIRING DOOR	A	C	D	E	F

Allowable Damage - Tail Skid Fairing
Figure 101 (Sheet 1 of 2)



REMOVAL OF DAMAGE ON AN EDGE
DETAIL II

NOTES

- THESE ALLOWABLE DAMAGE LIMITS ARE FAA APPROVED CONTINGENT ON THE ACCOMPLISHMENT OF THE INSPECTIONS AT THE INTERVALS CONTAINED HEREIN.
- REFER TO AMM 51-21 TO APPLY FINISH TO THE REWORKED AREA.
- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE

[A] REMOVE EDGE CRACKS AS SHOWN IN DETAIL II. OTHER CRACKS ARE NOT PERMITTED.

[B] CRACKS IN THE HONEYCOMB AREA ARE PERMITTED TO A MAXIMUM LENGTH OF 2.0 INCHES (50mm). THE CRACKS MUST BE MORE THAN 6.0 INCHES (150 mm) FROM ANY OTHER CRACK. [G] REMOVE EDGE CRACKS AS SHOWN IN DETAIL II.

[C] DAMAGE TO THE SURFACE RESIN IS PERMITTED. IF THERE IS FIBER DAMAGE, USE THE LIMITS APPLICABLE TO HOLES AND PUNCTURES.

[D] DENTS CAUSE FIBER DAMAGE AND DELAMINATION. USE THE LIMITS APPLICABLE TO HOLES AND PUNCTURES. [G]

[E] DAMAGE IS PERMITTED TO A MAXIMUM DIAMETER OF 1.0 INCH (25 mm) . THE DAMAGE MUST BE 2.5 INCHES (64 mm) OR MORE FROM OTHER DAMAGE, THE NEAREST HOLE, OR THE EDGE OF THE PART. REMOVE BURRS THAT EXTEND ABOVE THE SURFACE CONTOUR. DO NOT CLEAN UP THE DAMAGE OTHER THAN THE REMOVAL OF BURRS. [G]

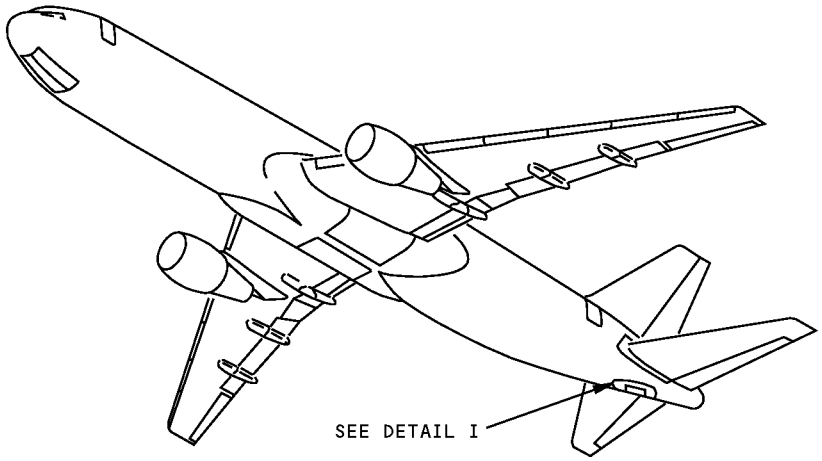
[F] DELAMINATION IS PERMITTED TO A MAXIMUM DIAMETER OF 1.0 INCH (25 mm). THE DAMAGE MUST BE 2.5 INCHES (64 mm) OR MORE FROM OTHER DAMAGE, THE NEAREST HOLE, OR THE EDGE OF THE PART. REPAIR THE DELAMINATION IN THE HONEYCOMB AREA AT THE NEXT 'C' CHECK. DELAMINATION FROM THE EDGE IS PERMITTED TO A MAXIMUM OF 1.0 INCH (25 mm). [G]

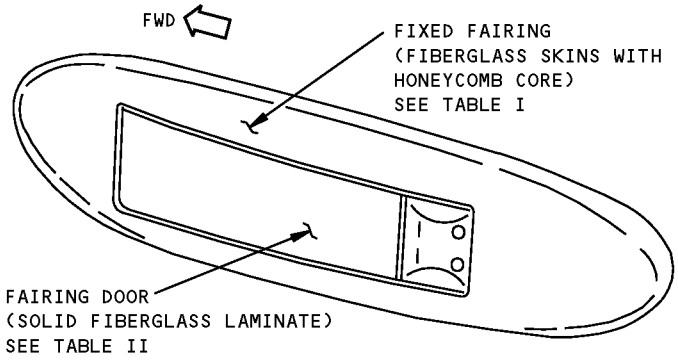
[G] REMOVE MOISTURE FROM THE DAMAGED AREA. USE A VACUUM AND HEAT (125°F (52°C) MAXIMUM) TO REMOVE MOISTURE FROM HONEYCOMB CELLS. SEAL THE DAMAGED AREA WITH ALUMINUM FOIL TAPE (SPEED TAPE). KEEP A RECORD OF THE LOCATION AND MAKE AN INSPECTION EVERY 50 FLIGHTS. REPLACE THE TAPE IF ANY DETERIORATION IS FOUND. REPAIR THE DAMAGE IN LESS THAN 300 FLIGHTS.

Allowable Damage - Tail Skid Fairing
Figure 101 (Sheet 2 of 2)

REPAIR 1 - TAIL SKID FAIRING

REFERENCE DRAWING
148T7700





DETAIL I

NOTES

- REFER TO SRM 51-10-02 FOR INSPECTION AND REMOVAL OF DAMAGE.
- REFER TO SRM 51-10-01 FOR AERODYNAMIC SMOOTHNESS LIMITS. WHERE THE DAMAGE IS MORE THAN THE LIMITS SHOWN IN SRM 51-10-01, PERFORMANCE WILL DECREASE.
- APPLY THE FINISH TO REWORKED AREAS AS SPECIFIED IN AMM 51-21-00.

[A] THESE LIMITS ARE ALSO APPLICABLE:

- REPAIRS MUST BE 3.0 INCHES (76 mm) OR MORE (EDGE TO EDGE) FROM ANY OTHER DAMAGE
- REPAIRS MUST BE 2.0 INCHES (51 mm) OR MORE FROM THE PART EDGE.

[B] DAMAGE IS PERMITTED TO ONE FACE SKIN AND HONEYCOMB CORE ONLY.

[C] MAKE AN INSPECTION OF INTERIM REPAIRS WITH INSTRUMENTED NONDESTRUCTIVE INSPECTION (NDI) PROCEDURES AT EVERY AIRPLANE'S 'A' CHECK.

IF INSTRUMENTATION IS NOT AVAILABLE, USE THE TAP TEST. WITH A SMALL SOLID METAL OBJECT, HIT THE SURFACE LIGHTLY. THE SOUND WILL BE HIGH IN GOOD AREAS AND LOW IN DISBONDED AREAS. THE TAP TEST IS NOT AN ACCURATE PROCEDURE TO FIND DAMAGE. WHEN POSSIBLE, USE THE NDI PROCEDURES. REFER TO SRM 51-70-06, PAR. 3.J. AND THE NONDESTRUCTIVE TEST MANUAL, D634T301.

THIS REPAIR HAS FAA APPROVAL CONTINGENT ON ACCOMPLISHMENT OF THE INSPECTIONS AT THE REQUIRED INTERVALS. IF THERE IS ANY DETERIORATION, REPLACE THE REPAIR WITH A PERMANENT REPAIR.

Tail Skid Fairing Repair
Figure 201 (Sheet 1 of 3)

DAMAGE	INTERIM REPAIR LIMITS [C]	PERMANENT REPAIR LIMITS		
	WET LAYUP ROOM TEMP CURE (SRM 51-70-06)	WET LAYUP 150°F (66°C) CURE (SRM 51-70-06)	WET LAYUP 200°F-230°F CURE (93°C - 110°C) (SRM 51-70-17)	PREPREG 250°F (121°C) CURE (SRM 51-70-07)
CRACKS	REPAIR OF CRACKS 3.0 INCHES (7.5 mm) OR LESS IN LENGTH IS PERMITTED IN THE HONEYCOMB AREA. APPLY A PATCH AS SPECIFIED IN SRM 51-70-06 [A] [B]	REMOVE THE DAMAGE AND USE THE REPAIR LIMITS APPLICABLE TO A HOLE		
HOLES	REPAIR OF HOLES 3.0 INCHES (7.5 mm) OR LESS IN DIAMETER IS PERMITTED IN THE HONEYCOMB AREA. THE HOLES MUST BE 30% OR LESS OF THE SMALLEST DIMENSION OF THE HONEYCOMB AREA AT THE DAMAGE LOCATION. FILL THE HOLES WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND APPLY A PATCH AS SPECIFIED IN SRM 51-70-06 [A] [B]	REPAIR OF HOLES 4.0 INCHES (100 mm) OR LESS IN DIAMETER IS PERMITTED IN THE HONEYCOMB AREA. THE HOLES MUST BE 50% OR LESS OF THE SMALLEST DIMENSION OF THE HONEYCOMB AREA PANEL AT THE DAMAGE LOCATION. THE TOTAL NUMBER OF REPAIR PLIES NECESSARY TO REPAIR ONE FACE SKIN IS EQUAL TO THE NUMBER OF PLIES THE FACE SKIN IS MADE OF PLUS TWO. [A]	NO SIZE LIMIT [A]	NO SIZE LIMIT
DELAMI-NATION	REMOVE THE DELAMINATION AND USE THE REPAIR LIMITS APPLICABLE TO A HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL THE NICKS AND GOUGES AS SPECIFIED IN SRM 51-70-06 IF THERE IS FIBER DAMAGE OR DELAMINATION, USE THE REPAIR LIMITS APPLICABLE TO A HOLE			
DENTS	DENTS USUALLY INCLUDE FIBER DAMAGE OR DELAMINATION. USE THE REPAIR LIMITS APPLICABLE TO A HOLE.			

REPAIR DATA FOR 250°F (121°C) CURE FIBERGLASS HONEYCOMB PANEL
TABLE I

Tail Skid Fairing Repair
Figure 201 (Sheet 2 of 3)

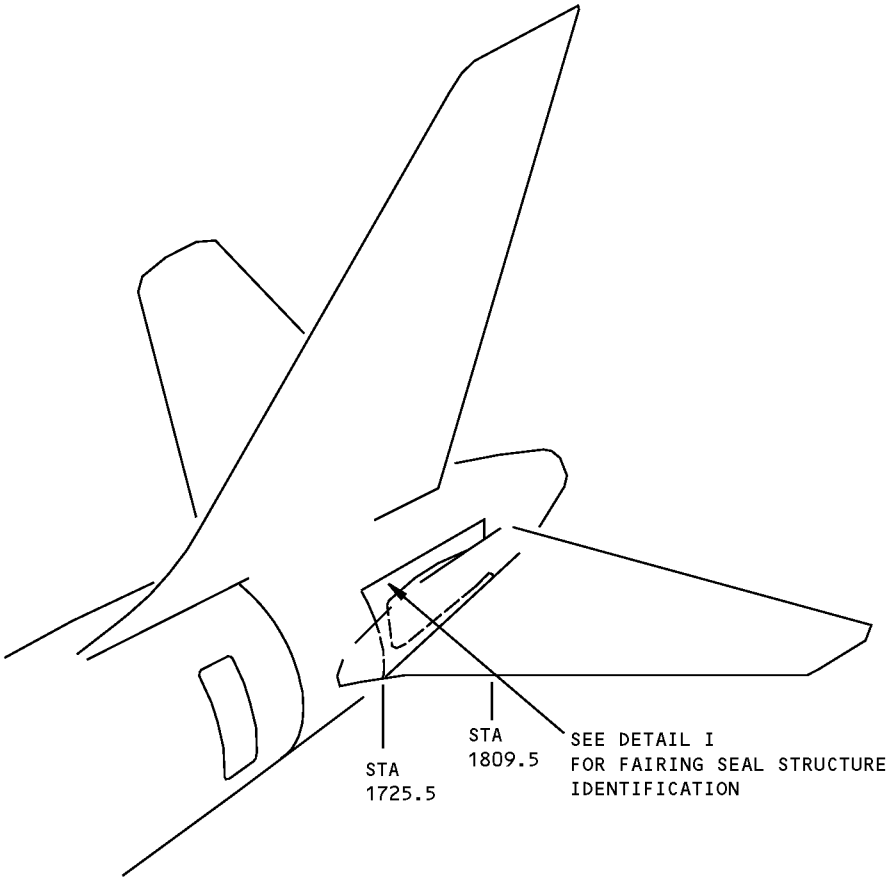
DAMAGE	INTERIM REPAIR LIMITS	PERMANENT REPAIR LIMITS		
	WET LAYUP ROOM TEMP CURE (SRM 51-70-06) [C]	WET LAYUP 150°F (66°C) CURE (SRM 51-70-06)	WET LAYUP 200°F-230°F CURE (93°C-110°C) (SRM 51-70-17)	PREPREG 250°F (121° C) CURE (SRM 51-70-07)
CRACKS	REPAIR OF CRACKS 2.0 INCHES (50 mm) OR LESS IN LENGTH IS PERMITTED. APPLY A PATCH AS SPECIFIED IN SRM 51-70-06 [A]	REMOVE THE DAMAGE AND USE THE REPAIR LIMITS APPLICABLE TO A HOLE		
HOLES	REPAIR OF HOLES 3.0 INCHES (75 mm) OR LESS IN DIAMETER IS PERMITTED. FILL THE HOLES WITH BMS 5-28, TYPE 7 POTTING COMPOUND AND APPLY A PATCH AS SPECIFIED IN SRM 51-70-06 [A]	REPAIR OF HOLES 3.0 INCHES (75 mm) OR LESS IN DIAMETER IS PERMITTED. REPAIR DAMAGE TO [A] FASTENER HOLES AS SPECIFIED IN SRM 51-70-06, PAR. 5.L. REPAIR PUNCTURES AS SPECIFIED IN SRM 51-70-06, PAR. 5.J.	NO SIZE LIMIT REPAIR DAMAGE TO FASTENER HOLES AS SPECIFIED IN SRM 51-70-17, PAR. 4.L. REPAIR PUNCTURES AS SPECIFIED IN SRM 51-70-17, PAR. 4.N. [A]	NO SIZE LIMIT
DELAMI-NATION	REMOVE THE DELAMINATION AND USE THE REPAIR LIMITS APPLICABLE TO A HOLE			
NICKS AND GOUGES	IF THERE IS NO FIBER DAMAGE OR DELAMINATION, FILL THE NICKS AND GOUGES AS SPECIFIED IN SRM 51-70-06 IF THERE IS FIBER DAMAGE OR DELAMINATION, USE THE REPAIR LIMITS APPLICABLE TO A HOLE			
DENTS	DENTS USUALLY INCLUDE FIBER DAMAGE OR DELAMINATION. USE THE REPAIR LIMITS APPLICABLE TO A HOLE.			

REPAIR DATA FOR 250°F (121°C) CURE FIBERGLASS LAMINATE PANEL
TABLE II

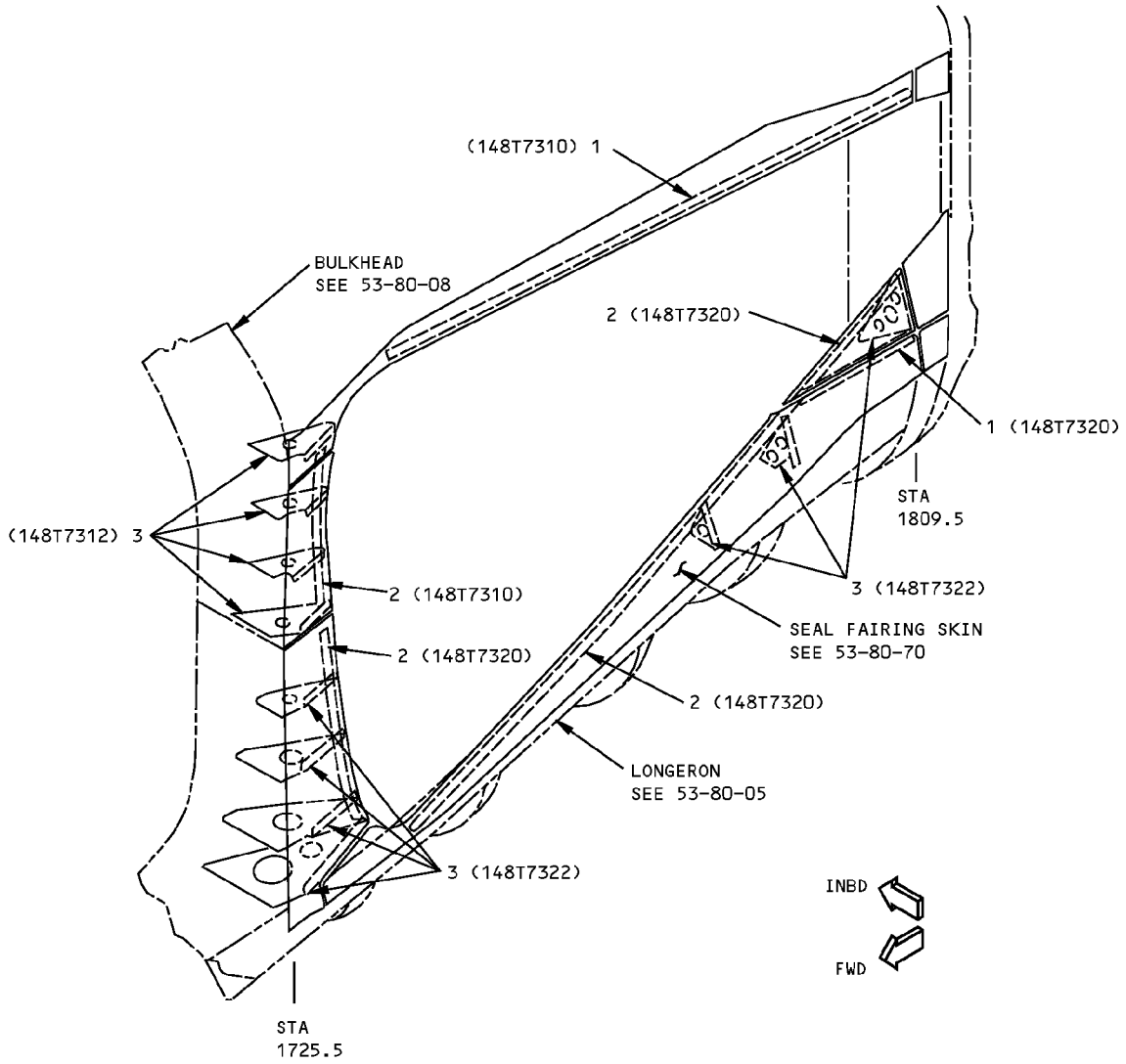
Tail Skid Fairing Repair
Figure 201 (Sheet 3 of 3)

IDENTIFICATION 1 - SECTION 48 - SEAL FAIRING STRUCTURE

REF DWG
148T7310
148T7320



Section 48 - Seal Fairing Structure Identification
Figure 1 (Sheet 1 of 2)



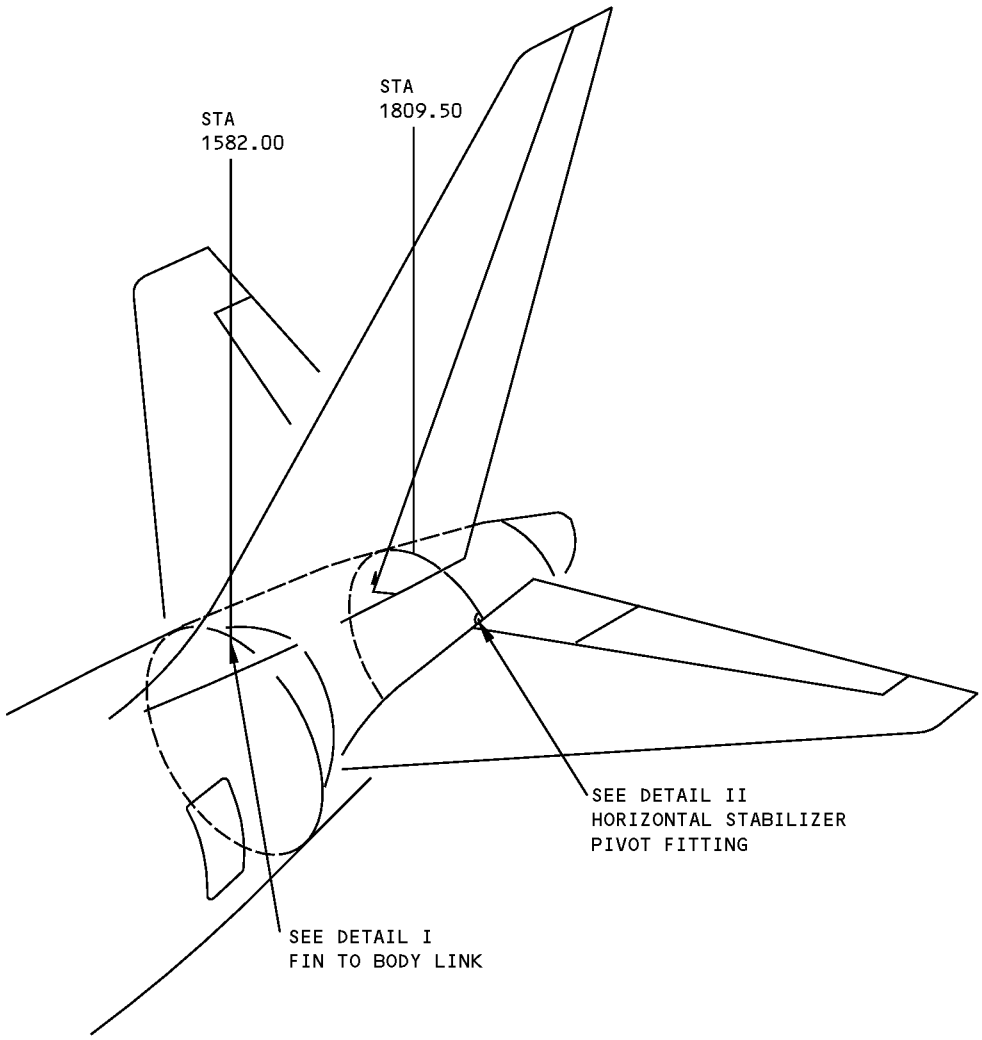
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	ANGLE	0.050	7075-T62	
2	ANGLE	0.060	7075-T62	
3	BRACKET	0.050	7075-T6	

LIST OF MATERIALS FOR DETAIL I

Section 48 - Seal Fairing Structure Identification
Figure 1 (Sheet 2 of 2)

IDENTIFICATION 1 - SECTION 48 - ATTACHMENT FITTINGS

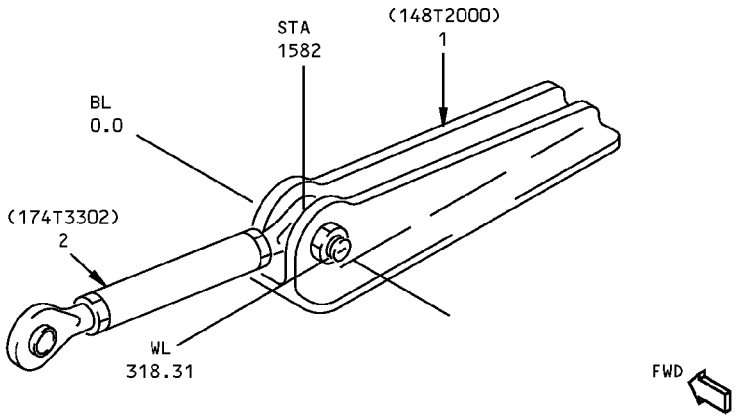


NOTES

- SEE 53-80-08 FOR OTHER ATTACHMENTS WHICH ARE INTEGRAL PART OF BULKHEADS

Section 48 - Attachment Fittings Identification
Figure 1 (Sheet 1 of 3)

REF DWG
100T3480

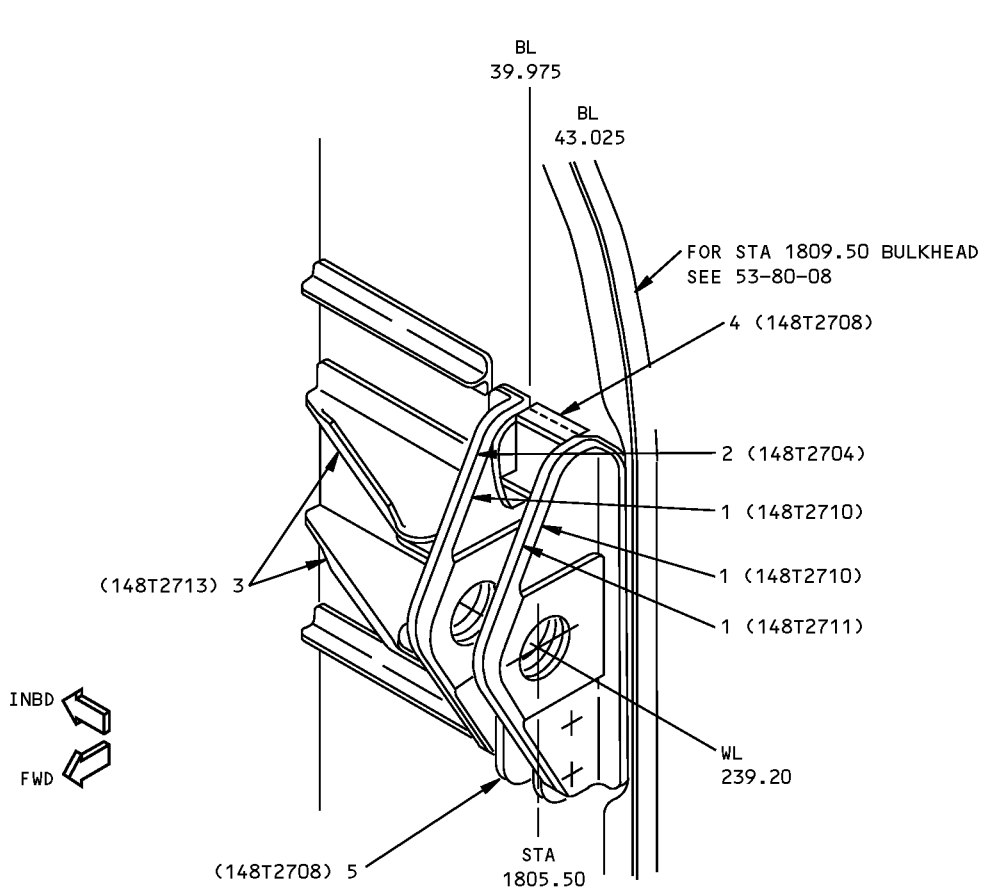


FIN TO BODY LINK ASSEMBLY
DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	FITTING		BAC1507-48747 7075-T62	
2	LINK		15-5PH CRES BAR HT TR 180-200 KSI	

LIST OF MATERIALS FOR DETAIL I

Section 48 - Attachment Fittings Identification
Figure 1 (Sheet 2 of 3)



HORIZONTAL STABILIZER PIVOT FITTING, STA. 1809.50
DETAIL II

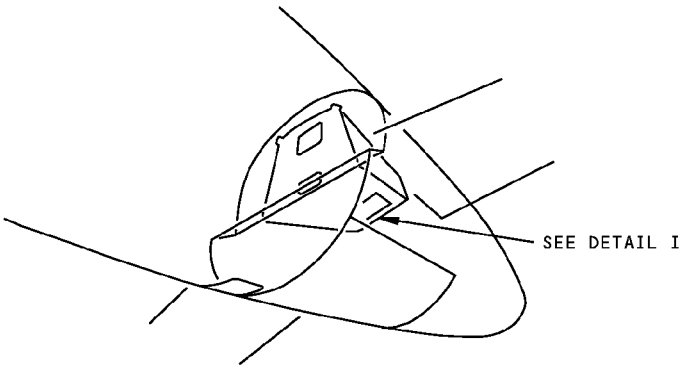
ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	HINGE SUPPORT		BAC1503-100337 7075-T73511	
2	HINGE SUPPORT		FORGING 7075-T73	
3	SUPPORT FITTING		BAC1503-100198 7075-T73511	
4	SUPPORT FITTING		FORGING 7075-T73	
5	SUPPORT FITTING		FORGING 7075-T73	

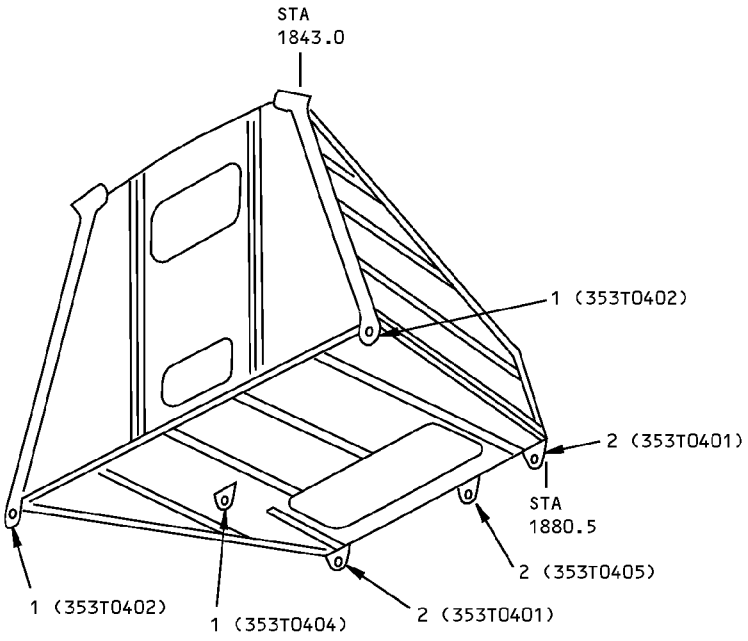
LIST OF MATERIALS FOR DETAIL II

Section 48 - Attachment Fittings Identification
Figure 1 (Sheet 3 of 3)

IDENTIFICATION 2 - APU PLENUM ATTACH FITTINGS

REF DWG
353T0400





DETAIL I

ITEM	DESCRIPTION	GAGE	MATERIAL	EFFECTIVITY
1	BRACKET		CASTING 17-4PH CRES HT-TR 180 KSI MIN	
2	BRACKET	0.312	15-5PH CRES HT-TR 180-200 KSI	

LIST OF MATERIALS FOR DETAIL I

APU Plenum Attach Fittings Identifiction
Figure 1

REPAIR GENERAL - SERVICE BULLETIN REPAIR CHART

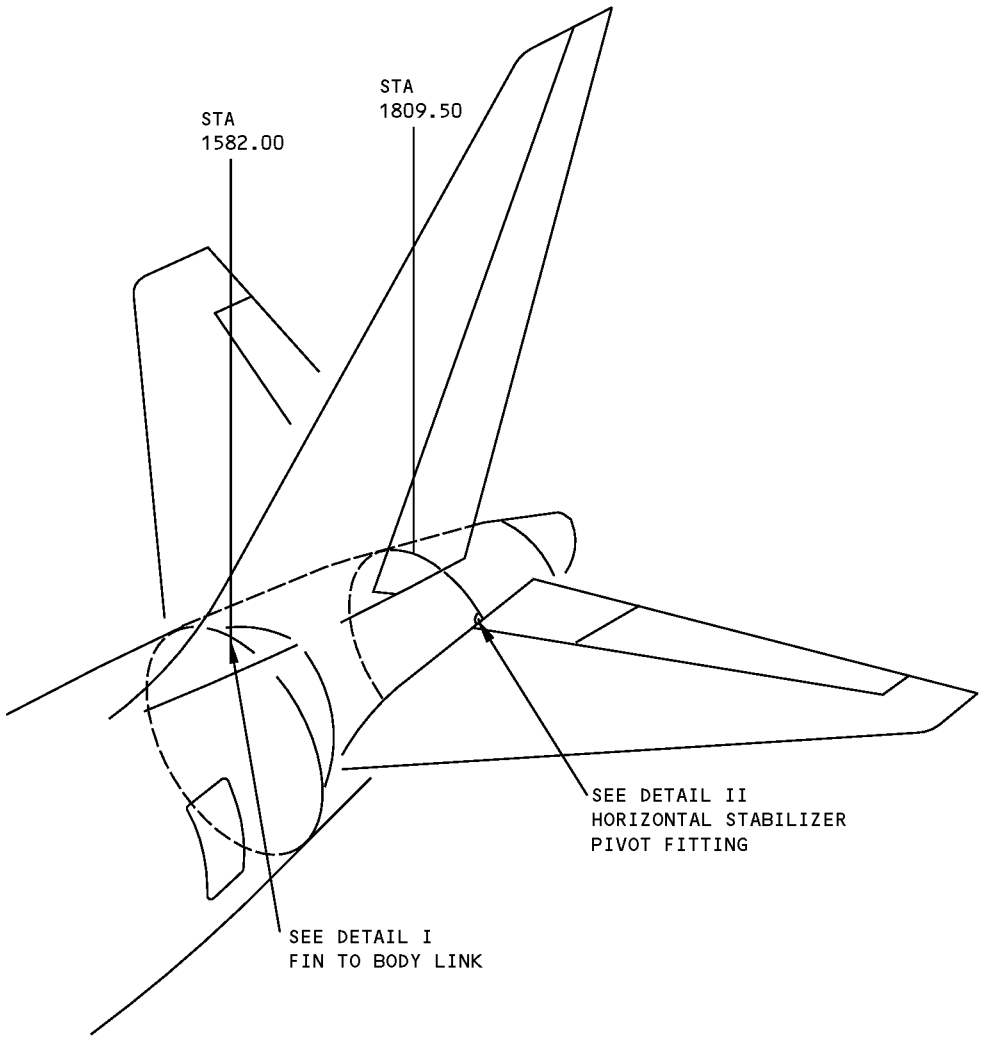
SERVICE BULLETIN REPAIRS

The following Service Bulletins contain repairs which are available for use where specific damage has been encountered. Usually, the Service Bulletin also covers preventive modification data which operators are encouraged to use to eliminate the need for repair.

DAMAGED AREA	CUM LINE NUMBER EFFECTIVITY	SB NUMBER
FUSELAGE - FUSELAGE ATTACH FITTINGS - HORIZONTAL STABILIZER HINGE SUPPORT FITTING CORROSION INSPECTION AND BUSHING REPLACEMENT	1 THRU 694	767-53-0079

Service Bulletin Repair Chart
Figure 201

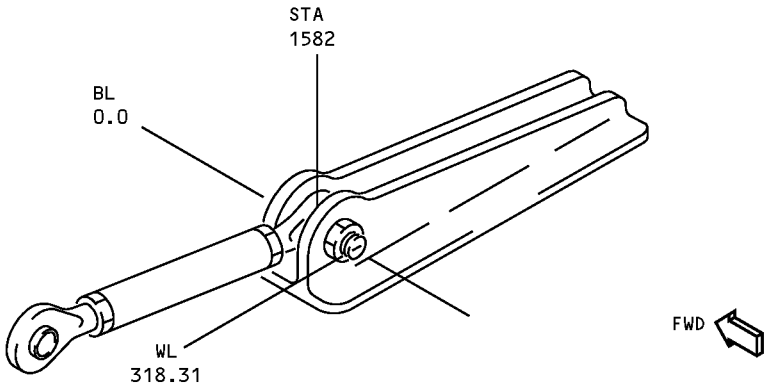
REPAIR 1 - SECTION 48 - ATTACHMENT FITTINGS



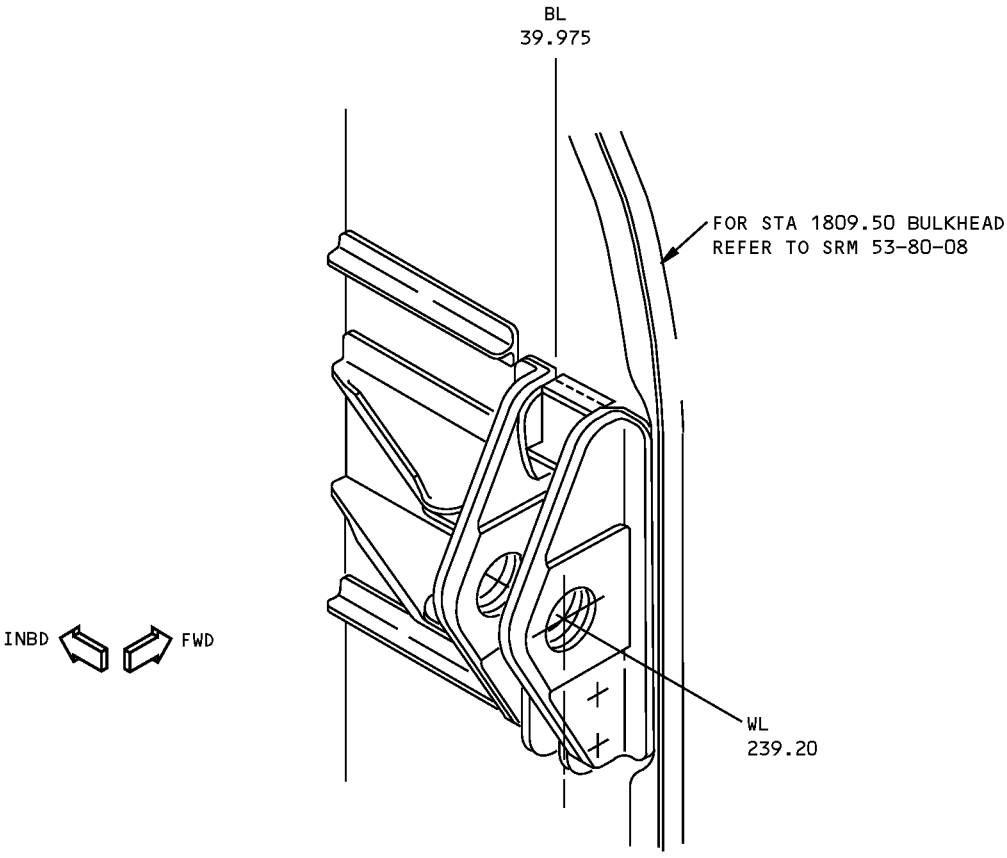
NOTES

- THERE ARE NO TYPICAL REPAIRS TO FITTINGS AVAILABLE. SPECIFIC REPAIRS TO FITTINGS WILL BE PROVIDED BASED ON SERVICE EXPERIENCE.
- REFER TO SRM 53-80-07 FOR FRAME IDENTIFICATION.

Section 48 - Attachment Fitting Repair
Figure 201 (Sheet 1 of 2)



FIN TO BODY LINK ASSEMBLY
DETAIL I



HORIZONTAL STABILIZER PIVOT FITTING, STA. 1809.50
DETAIL II

Section 48 - Attachment Fitting Repair
Figure 201 (Sheet 2 of 2)