
SERVICE BULLETIN

N° 139-666

DATE: July 9, 2021

REV. : /

TITLE

ATA 23 – KIT SATCOM FLIGHTCELL DZMX (4G) INSTALLATION OF

REVISION LOG

First Issue

1. PLANNING INFORMATION

A. EFFECTIVITY

AW139 helicopters S/N 31756 and S/N 31769.

B. COMPLIANCE

At Customer's option.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued in order to provide the necessary instruction on how to perform the installation of the kit SATCOM Flightcell DZMX (4G) P/N 4G4390F00811.

E. DESCRIPTION

Leonardo Helicopters has developed this Service Bulletin in order to install the kit SATCOM Flightcell DZMX (4G) P/N 4G4390F00811.

Part I of this Service Bulletin provides instructions on how to install of the SATCOM Flightcell DZMX complete provision P/N 3G4390A01812, which contains the structural provision P/N 3G5311A12311 and the electrical provision P/N 3G4390A01912.

Part II provides the information on how to install the SATCOM Flightcell DZMX (4G) removable parts P/N 3G4390A02411, which consists of two antennas (SATCOM and cellular) and of a DZMX transceiver.

F. APPROVAL

The technical content of this Service Bulletin is approved under the authority of DOA nr. EASA.21.J.005. For helicopters registered under other Aviation Authorities, before applying the Service Bulletin, applicable Aviation Authority approval must be checked within Leonardo Helicopters customer portal.

EASA states mandatory compliance with inspections, modifications or technical directives and related time of compliance by means of relevant Airworthiness Directives.

If an aircraft listed in the effectivity embodies a modification or repair not LHD certified and affecting the content of this Service Bulletin, it is responsibility of the Owner/Operator to obtain a formal approval by Aviation Authority having jurisdiction on the aircraft, for any adaptation necessary before incorporation of the present Service Bulletin.

G. MANPOWER

To comply with this Service Bulletin the following MMH are deemed necessary:

Part I: approximately one-hundred and twenty-two (122) MMH;

Part II: approximately eight (8) MMH.

MMH are based on hands-on time and can change with personnel and facilities available.

H. WEIGHT AND BALANCE

PART I

WEIGHT (Kg)		7,11
	ARM (mm)	MOMENT (Kgmm)
LONGITUDINAL BALANCE	8530	60.648,3
LATERAL BALANCE	-175	-1.244,25

PART II

WEIGHT (Kg)		1,19
	ARM (mm)	MOMENT (Kgmm)
LONGITUDINAL BALANCE	5865	6.979,35
LATERAL BALANCE	-143	-170,17

I. REFERENCES

1) PUBLICATIONS

Following Data Modules refer to AMP:

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM01 39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance	I, II
DM02 39-A-06-41-00-00A-010A-A	Access doors and panels general data	I, II
DM03 39-A-11-00-01-00A-720A-A	Decal install procedure	I, II
DM04 39-A-20-10-08-00A-622A-A	Electrical contacts crimp	I
DM05 39-C-23-97-01-00A-720A-K	Telephone transceiver install procedure	II

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM06 39-C-23-97-02-00A-720A-K	Antenna install procedure	II
DM07 39-C-23-97-00-00A-366A-K	Airborne telephone system resistance check	II
DM08 39-C-23-97-00-00A-320A-K	Airborne telephone system operation test	II
DM09 39-A-24-91-04-00A-920A-K	Integrally lighted panel replacement	II
DM10 39-A-20-00-00-00A-711A-A	Threaded fasteners tighten procedure	II

2) ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
CB	Circuit Breaker
DC	Direct Current
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
LHD	Leonardo Helicopter Division
MMH	Maintenance Man Hours
P/N	Part Number
S/N	Serial Number
STA	Station

3) ANNEX

N.A.

J. PUBLICATIONS AFFECTED

N.A.

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

1) PARTS

PART I

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N	
1	4G4390F00811		KIT SATCOM FLIGHTCELL DZMX (4G)	REF	.		-	
2	3G4390A01812		SATCOM FLIGHTCELL DZMX (4G) COMPLETE PROVISION	REF	..		-	
3	3G5311A12311		STRUCTURAL PROVISION	REF	...		-	
4	3G5315A34051		Reinforcement	1	....		139-666L1
5	3G5315A61632		Ground plate assy	1	....		139-666L1
6	3G5315A61732		Cover assy	1	....		139-666L1
7	3G5316A92351	3G5316A92351A	LH support	1	....		139-666L1
8	3G5317A35851		Plate reworked	1	....		139-666L1
9	3G5317A37631		Cover assy	1	....		139-666L1
10	3G5355A06151		Bonding layer	1	....		139-666L1
11	999-7000-07-104		Terminal	2	....		139-666L1
12	A236A03AB		Rubber edging	1,2 m	....		139-666L1
13	A297A05TW02		Rivet	21	....		139-666L1
14	A297A05TW03		Rivet	4	....		139-666L1
15	A298A05TW02		Rivet	1	....		139-666L1
16	A299A05TW02		Rivet	9	....		139-666L1
17	A407A3C2P		Anchor nut	6	....		139-666L1
18	NAS1097AD5-6		Rivet	0,1 kg	....		139-666L1
19	MS27039-1-08		Screw	8	....		139-666L1
20	NAS1149C0316K	NAS1149C0316R NAS1149C0316B	Washer	4	....		139-666L1
21	NAS1149D0332K		Washer	4	....		139-666L1
22	3G4390A01912		ELECTRICAL PROVISION	REF	...			
23	3G9A01A56201	3G4390A01912A5R	SATCOM Flightcell DZMX C/A (A1A562)	1	....		139-666L1
24	3G9A02A49201		SATCOM Flightcell DZMX C/A (A2A492)	1	....		139-666L1
25	3G9A03A24601		SATCOM Flightcell DZMX C/A (A3A246)	1	....		139-666L1
26	3G9A03A24701		SATCOM Flightcell DZMX C/A (A3A247)	1	....		139-666L1
27	3G9A03A24801		SATCOM Flightcell DZMX C/A (A3A248)	1	....		139-666L1
28	3G9B01A95101		SATCOM Flightcell DZMX C/A (B1A951)	1	....		139-666L1
29	3G9D03A21801		SATCOM Flightcell DZMX C/A (D3A218)	1	....		139-666L1
30	3G9D03A21901		SATCOM Flightcell DZMX C/A (D3A219)	1	....		139-666L1
31	667-312NF17R3			Cover	1		139-666L1
32	999-2701-02-296			Decal	2		139-666L1
33	A366A3E12C75		Stud	1	....		139-666L1
34	A388A3E08C75		Stud	2	....		139-666L1
35	A388A3E06C		Standoff	9	....		139-666L1
36	A388A3E08C		Standoff	1	....		139-666L1

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
37	A388A3E10C		Standoff	1	....		139-666L1
38	A631A01A		Support	1	....		139-666L1
39	AW001CB05H		Clamp	2	....		139-666L1
40	AW001CL001-N6		Support	6	....		139-666L1
41	AW001CL005C01-X1		Support	1	....		139-666L1
42	AW001TL3A06		Anchor nut	1	....		139-666L1
43	AW001TL3A08		Anchor nut	1	....		139-666L1
44	AW001TL3A08T		Anchor nut	1	....		139-666L1
45	AW002FT109		Grommet	5	....		139-666L1
46	AW002FT112		Grommet	43	....		139-666L1
47	AW002FT113		Grommet	3	....		139-666L1
48	AW002FT115		Grommet	2	....		139-666L1
49	AW002FT402		Grommet	4	....	(2)	139-666L1
50	ED300A515P1		Decal	1	....		139-666L1
51	ED300A515P2		Decal	1	....		139-666L1
52	ED300A515P3		Decal	1	....		139-666L1
53	ED300A515P4		Decal	1	....		139-666L1
54	ED300A515P5		Decal	1	....		139-666L1
55	ED300E136P1		Decal	1	....		139-666L1
56	ED300E137P1		Decal	1	....		139-666L1
57	ED300E137P2		Decal	1	....		139-666L1
58	ED300J1105		Decal	1	....		139-666L1
59	ED300J1107		Decal	1	....		139-666L1
60	ED300J3123		Decal	1	....		139-666L1
61	ED300J3125		Decal	1	....		139-666L1
62	ED300P3123		Decal	1	....		139-666L1
63	ED300P3125		Decal	1	....		139-666L1
64	M85049/95-16A-A		Retainer	1	....		139-666L1
65	M85049/95-18A-A		Retainer	1	....		139-666L1
66	MS21043-3		Nut	3	....		139-666L1
67	MS24693-C276		Screw	1	....		139-666L1
68	MS25281-R15		Clamp	37	....		139-666L1
69	MS25281-R16		Clamp	3	....		139-666L1
70	MS25281-R20		Clamp	2	....		139-666L1
71	MS25281-R9		Clamp	5	....		139-666L1
72	MS25281-R12		Clamp	1	....	(3)	139-666L1
73	NAS43DD3-50N		Spacer	2	....		139-666L1
74	MS9592-022		Bracket	1	....		139-666L1
75	MS9592-027		Bracket	1	....		139-666L1
76	NAS1149D0332J		Washer	4	....		139-666L1
77	NAS1149DN416J		Washer	8	....		139-666L1
78	NAS1190E3P17AK		Screw	3	....		139-666L1
79	NAS1190E3P18AK		Screw	6	....		139-666L1
80	NAS1190E3P22AK		Screw	1	....		139-666L1
81	NAS1190E3P30AK		Screw	1	....		139-666L1
82	NAS1190E3P36AK		Screw	3	....		139-666L1
83	NAS1190E3P6AK		Screw	3	....		139-666L1
84	NAS1190E3P7AK		Screw	7	....		139-666L1
85	NAS1802-06-7		Screw	6	....	(4)	139-666L1
86	NAS1802-06-9		Screw	2	....	(5)	139-666L1
87	NAS1802-3-10		Screw	1	....		139-666L1
88	NAS1802-3-11		Screw	3	....		139-666L1
89	NAS1802-3-16		Screw	5	....		139-666L1
90	NAS1802-3-23		Screw	2	....		139-666L1
91	NAS1802-3-24		Screw	1	....		139-666L1
92	NAS1802-3-25		Screw	3	....		139-666L1

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
93	NAS1802-3-26		Screw	1	....		139-666L1
94	NAS1802-3-35		Screw	1	....		139-666L1
95	NAS1802-3-9		Screw	5	....		139-666L1
96	NAS43DD3-15N		Spacer	1	....		139-666L1
97	NAS43DD3-30N		Spacer	3	....		139-666L1
98	NAS43DD3-40N		Spacer	7	....		139-666L1
99	NAS43DD3-45N		Spacer	1	....		139-666L1
100	NAS43DD3-47N		Spacer	1	....		139-666L1
101	NAS43DD3-52N		Spacer	3	....		139-666L1
102	NAS43DD3-55N		Spacer	1	....		139-666L1
103	NAS43DD3-60N		Spacer	3	....		139-666L1
104	NAS43DD3-90N		Spacer	1	....		139-666L1
105	MS3320-3		Circuit Breaker	1	...		139-666L1
106	ED300CB516		Decal	1	...		139-666L1
107	A556A-T20		Electrical Wire	2,5 m	...		139-666L1
108	MS25036-149		Contact	1	...		139-666L1
109	M39029/56-351		Contact	1	...		139-666L1
110	3G2490LXXXXX		Integrally lit auxiliary C/B panel	1	...	(6)	-

PART II

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
111	4G4390F00811		KIT SATCOM FLIGHTCELL DZMX (4G)	REF	.		-
112	3G4390A02411		SATCOM FLIGHTCELL DZMX(4G) REMOVABLE PARTS	REF	..		-
113	ANP_00033		Cell antenna	1	...		139-666L2
114	ANP_00043		Antenna SATCOM	1	...		139-666L2
115	AW001GH040A		Conductive gasket	1	...		139-666L2
116	AW001GH041A		Conductive gasket	1	...		139-666L2
117	DZP_04-800		DZMX transceiver	1	...		139-666L2
118	ED300A515		Decal	1	...		139-666L2
119	ED300E136		Decal	1	...		139-666L2
120	ED300E137		Decal	1	...		139-666L2
121	MS24693-C273		Screw,machine	4	...		139-666L2
122	MS27039-1-13		Screw machine	4	...		139-666L2

Refer also to IPD for the spares materials required to comply with the AMP DMs referenced in the accomplishment instructions.

2) CONSUMABLES

The following consumable materials, or equivalent, are necessary to accomplish this Service Bulletin:

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
123	AWMS05-001 TY I,CL B,GR 2	Adhesive MC-780 (C355)	AR	(1)	I
124	199-05-002 TY I,CL 2	Adhesive epoxy EA9309NA (C231)	AR	(1)	I
125	199-05-002 TY II,CL 2	Adhesive epoxy EA934NA (C397)	AR	(1)	I
126	AW001CK03LC	Tie strap	AR	(1)	I
127	A582A25 or EN6049-006-25-5	Nomex	AR	(1)(7)	I
128	A582A32 or EN6049-006-32-5	Nomex	AR	(1)(7)	I
129	MILS8802	Sealant	AR	(1)	I

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
130	MS20995C15	Lockwire	AR	(1)	I, II
131	MIL-DTL-81706, Class 1A & 3, Form II.	Conversion coating (C597)	AR	(1)	I
132	AWMS28-002, Type I, Class 1, Grade A or B	Epoxy primer (C596)	AR	(1)	I
133	MS9226-03	Lock wire	AR	(1)	II
134	-	Lint-free cloth (C011)	AR	(1)	II
135	MIL-PRF-680, Type II	Cleaning solvent (C010)	AR	(1)	II
136	MIL-S-8802 Type II, Class B4	Sealing compound (C252)	AR	(1)	II

Refer also to AMDI for the consumable materials required to comply with the AMP DM referenced in the accomplishment instructions.

3) LOGISTIC MATRIX

In order to apply this Service Bulletin, the following Logistic P/N can be ordered in accordance with the applicable notes:

LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
139-666L1	1		Part I
3G2490LXXXXX	1	(6)	Part I
139-666L2	1		Part II

NOTE

- (1) Item to be procured as local supply.
- (2) P/N AW002FT112 can be used as alternative to this item.
- (3) P/N MS25281-R15 can be used as alternative to this item.
- (4) P/N NAS1802-04-7 can be used as alternative to this item.
- (5) P/N NAS1802-04-9 can be used as alternative to this item.
- (6) The P/N is not properly completed because it is depending on the helicopter configuration. Customers must contact Product Support Engineering (engineering.support.lhd@leonardocompany.com) to request the new auxiliary CB panel at least three months in advance from the scheduled application of this Service Bulletin.
- (7) Indicated P/N refer to a specific size. The last digits can be different based on the actual required installation.

B. SPECIAL TOOLS

N.A.

C. INDUSTRY SUPPORT INFORMATION

Customization.

3. ACCOMPLISHMENT INSTRUCTIONS

GENERAL NOTES

- a) Shape the cables in order to prevent interference with the structure and the other existing installations, using where necessary suitable lacing cords and plastic cable tiedown.
- b) Exercise extreme care during drilling operations to prevent instruments, cables and hoses damage.
- c) After drilling, remove all swarf and sharp edges. Apply on bare metal a light film of primer unless the hole is used for ground connection.
- d) During the installation of bonding braids or components requiring grounding, clean the surface structure in order to obtain a good ground contact.
- e) Let adhesive cure at room temperature for at least 24 hours unless otherwise specified.
- f) Exposed thread surface and nut must be protected using a layer of tectyl according to MIL-C-16173 grade I.
- g) All lengths are in mm.

PART I

1. In accordance with DM 39-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with DM 39-A-06-41-00-00A-010A-A and with reference to Figures 1 thru 15, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform the complete provision P/N 3G4390A01812 as described in the following procedure:
 - 2.1 With reference to Figure 1 thru 4, perform the structural provision P/N 3G5311A12311 as described in the following procedure:
 - 2.1.1 With reference to Figure 1 View A, install the plate reworked P/N 3G5317A35851 on the interseat console P/N 3G5326A00134 by means of n°4 quick-release fasteners.
 - 2.1.2 With reference to Figure 1 View B-B, drill n°2 holes Ø6.20÷6.35 thru the Lower frame STA 8150 P/N 3P5340A10852 in accordance with the

- dimensions shown. Prepare the surfaces to assure a good ground contact.
- 2.1.3 With reference to Figure 1 View B-B, install n°2 anchor nuts P/N A407A3C2P on the Lower frame STA 8150 P/N 3P5340A10852 by means of adhesive epoxy EA9309NA (C231).
 - 2.1.4 With reference to Figure 1 Detail M, drill n°9 rivet holes thru the LH support P/N 3G5316A92351 and the structure assy tail P/N 3G5350A00236 in accordance with the dimensions shown. Prepare the surface to assure a good ground contact.
 - 2.1.5 With reference to Figure 1 Detail M, install the LH support P/N 3G5316A92351 on the structure assy tail P/N 3G5350A00236 by means of n°9 rivets P/N A299A05TW02.
 - 2.1.6 With reference to Figure 2 Section N-N, perform the cut-out on the LH support P/N 3G5316A92351 in accordance with the dimensions shown. Prepare the surface for corrosion protection of electrical bonding areas by means of chemical conversion coating (C597).
 - 2.1.7 With reference to Figure 4 View E and Figure 3 View H, perform the indicated cut-out on the bonding layer P/N 3G5355A06151 and on the RW tail gearbox fairing in accordance with the dimensions shown.
 - 2.1.8 With reference to Figure 4 View E, apply the bonding layer P/N 3G5355A06151 on the inner RW tail gearbox fairing.
 - 2.1.9 With reference to Figure 4 View E, temporary locate the ground plate assy P/N 3G5315A61632 on the RW tail gearbox fairing and countermark n°25 rivet holes positions.
 - 2.1.10 With reference to Figure 4 View E, drill n°25 rivet holes in the previously marked positions thru the RW tail gearbox fairing and the bonding layer P/N 3G5355A06151 in accordance with the dimensions shown. Prepare the surface to assure a good ground contact.
 - 2.1.11 With reference to Figure 4 View E, install the ground plate assy P/N 3G5315A61632 on the bonding layer P/N 3G5355A06151 and RW tail gearbox fairing by means of n°4 rivets P/N A297A05TW03 and n°21 rivets P/N A297A05TW02.
 - 2.1.12 With reference to Figure 4 View J, install the terminal P/N 999-7000-07-104 on the cover assy P/N 3G5315A61732 by means of n°1 rivet P/N A298A05TW02 and adhesive MC-780 (C355).

NOTE

Perform the following step only if Part II is not intended to be embodied immediately after Part I.

- 2.1.13 With reference to Figure 4 Section F-F, install the cover assy P/N 3G5315A61732 on the ground plate assy P/N 3G5315A61632 by means of n°4 washers P/N NAS1149D0332K and n°4 screws P/N MS27039-1-08.
- 2.1.14 With reference to Figure 2 Section K-K, remove the existing grommet P/N MS35489-20 from the left profile P/N 3G5340A07351, and increase the diameter of the hole in accordance with the dimensions shown. Protect the indicated surface, apply epoxy primer (C596).
- 2.1.15 With reference to Figure 2 Section K-K, install the rubber edging P/N A236A03AB on the left profile P/N 3G5340A07351.
- 2.1.16 With reference to Figure 2 View C-C and Section D-D, perform the indicated cut-out on the rear lower panel, in accordance with dimensions shown. Seal all around the performed cut-out by means of adhesive epoxy EA934NA (C397).
- 2.1.17 With reference to Figure 2 View C-C and Section D-D, install the reinforcement P/N 3G5315A34051 on the rear lower panel, by means of adhesive EA9309NA (C231).
- 2.1.18 With reference to Figure 2 View C-C and Section D-D, drill n°4 holes $\text{Ø}6.35 \times 6.48$ thru the reinforcement P/N 3G5315A34051 in accordance with the dimensions shown. Prepare the surfaces to assure a good ground contact.
- 2.1.19 With reference to Figure 2 View C-C and Section D-D, install n°4 anchor nut P/N A407A3C2P on the reinforcement P/N 3G5315A34051 by means of adhesive epoxy EA9309NA (C231).
- 2.1.20 With reference to Figure 2 View C-C, drill n°1 rivet hole thru the reinforcement P/N 3G5315A34051 in accordance with the dimensions shown.
- 2.1.21 With reference to Figure 2 View C-C, install the terminal P/N 999-7000-07-104 on the reinforcement P/N 3G5315A34051 by means of n°1 rivet P/N NAS1097AD5-6 and adhesive MC-780 (C355).

NOTE

Perform the following step only if Part II is not intended to be embodied immediately after Part I.

- 2.1.22 With reference to Figure 2 View C-C and Section D-D, install the cover assy P/N 3G5317A37631 on the reinforcement P/N 3G5315A34051 by means of n°4 washers P/N NAS1149C0316K and n°4 screws P/N MS27039-1-08.
- 2.2 With reference to Figures 5 thru 15, perform electrical provision P/N 3G4390A01912 as described in the following procedure:
 - 2.2.1 With reference to Figure 8 Detail A, install the support P/N A631A01A.
 - 2.2.2 With reference to Figure 8 Detail A, install in locations n°1 and n°2, n°2 supports P/N AW001CL001-N6

NOTE

If required, add extra supports at STA 8300, WL 1250, BL -600 and at STA 7200.

- 2.2.3 With reference to Figure 5 and Figure 10 View looking up interseat console, install in locations n°1, n°2 and n°3, n°3 supports P/N AW001CL001-N6.
- 2.2.4 With reference to Figure 5 and Figure 11 View looking rear from STA 6700 to STA 8700 LH side, install in location n°1 the standoff P/N A388A3E08C.
- 2.2.5 With reference to Figure 5 and Figure 11 View looking rear from STA 6700 to STA 8700 LH side, install in location n°2 the bracket P/N MS9592-027 and the stud P/N A366A3E12C75 by means of the washer P/N NAS1149D0332J and the nut P/N MS21043-3.
- 2.2.6 With reference to Figure 5 and Figure 11 View looking rear from STA 6700 to STA 8700 LH side, install in location n°3 the anchor nut P/N AW001TL3A08T.
- 2.2.7 With reference to Figure 11 View looking rear from STA 6700 to STA 8700 LH side, install the bracket P/N MS9592-022 by means of the existing hardware.
- 2.2.8 With reference to Figure 5 and Figure 13 View looking tail LH side and Figure 14 View D-D, install in the locations n°1, n°2, n°4, n°5, n°6, n°8, n°9, n°10 and n°11, n°9 standoff P/N A388A3E06C.

NOTE

The anchor nut P/N AW001TL3A06 can be slightly repositioned if necessary.

- 2.2.9 With reference to Figure 5 and Figure 13 View looking tail LH side, install in the location n°3 the anchor nut P/N AW001TL3A06.
- 2.2.10 With reference to Figure 5 and Figure 13 View looking tail LH side, install in the location n°7 the support P/N AW001CL005C01-X1.
- 2.2.11 With reference to Figure 14 View D-D, install in the location n°12 the support P/N AW001CL001-N6.
- 2.2.12 With reference to Figure 15 View looking tail rotor, install in the location n°1 the standoff P/N A388A3E10C.
- 2.2.13 With reference to Figure 15 View looking vertical tail fin, install in the location n°2 the standoff P/N A388A3E08C75.
- 2.2.14 With reference to Figure 15 View looking vertical tail fin, install in the locations n°2 and n°3, n°2 the standoffs P/N A388A3E08C75.
- 2.2.15 With reference to Figure 15 View looking vertical tail fin, install in the location n°4 the anchor nut P/N AW001TL3A08.

NOTE

Use the edging P/N A236A on edges which are liable to cause damage to cable assemblies or where abrasion may occur.

NOTE

Install the tubing braided P/N A582A where protection against chafing and prevention of contact with structure may occur, but the tubing protection is not substitute for good routing practice.

- 2.2.16 Route the following C/A:
 - 3G9A01A56201 SATCOM FLIGHTCELL DZMX C/A (A1A562)
 - 3G9A02A49201 SATCOM FLIGHTCELL DZMX C/A (A2A492)
 - 3G9A03A24601 SATCOM FLIGHTCELL DZMX C/A (A3A246)
 - 3G9A03A24701 SATCOM FLIGHTCELL DZMX C/A (A3A247)
 - 3G9A03A24801 SATCOM FLIGHTCELL DZMX C/A (A3A248)
 - 3G9B01A95101 SATCOM FLIGHTCELL DZMX C/A (B1A951)
 - 3G9D03A21801 SATCOM FLIGHTCELL DZMX C/A (D3A218)
 - 3G9D03A21901 SATCOM FLIGHTCELL DZMX C/A (D3A219)

- 2.2.17 With reference to Figure 8 Detail A, install the grommet P/N AW002FT402 on the C/A A3A246, C/A A3A247 and C/A A3A248.

NOTE

If required, rework the plate P/N 3G5317A35851 to accommodate the installation of the connectors.

- 2.2.18 With reference to Figure 7 View looking left cockpit and pedestal, fix the connector J1107 to the plate reworked P/N 3G5317A35851 by means of the retainer P/N M85049/95-18A-A, n°4 washers P/N NAS1149DN416J and n°4 screws P/N NAS1802-06-7.
- 2.2.19 In accordance with AMP DM 39-A-11-00-01-00A-720A-A, and with reference to Figure 7 View looking left cockpit and pedestal, install the decal P/N ED300J1107 in adjacent area.

NOTE

If required, rework the plate P/N 3G5317A35851 to accommodate the installation of the connectors.

- 2.2.20 With reference to Figure 7 View looking left cockpit and pedestal, fix the connector J1105 and the cover P/N 667-312NF17R3 to the plate reworked P/N 3G5317A35851 by means of the retainer P/N M85049/95-16A-A, n°4 washers P/N NAS1149DN416J, n°2 screws P/N NAS1802-06-7 and n°2 screws P/N NAS1802-06-9.
- 2.2.21 In accordance with AMP 39-A-11-00-01-00A-720A-A, and with reference to Figure 7 View looking left cockpit and pedestal, install the decal P/N ED300J1105 in adjacent area.
- 2.2.22 With reference to Figure 10 View looking up interseat console, install the clamp P/N MS25281-R15, the clamp P/N MS25281-R12, the grommet P/N AW002FT112 and n°3 grommets P/N AW002FT402 by means of n°2 screws P/N NAS1802-3-9.
- 2.2.23 With reference to Figure 9 View looking down cabin floor, install n°6 clamps P/N MS25281-R15, n°2 clamp P/N MS25281-R20, n°6 grommets P/N AW002FT112 and n°2 grommets P/N AW002FT115 by means of n°2 screws P/N NAS1802-3-11, n°5 screws P/N NAS1802-3-16, n°1 screw P/N NAS1802-3-9 and n°1 spacer P/N NAS43DD3-30N.
- 2.2.24 With reference to Figure 11 View looking rear from STA 6700 to STA 8700 LH side, install n°2 clamps P/N MS25281-R15, n°2 clamps P/N MS25281-R16, n°2 grommets P/N AW002FT112 and n°2

- grommets P/N AW002FT113 by means of n°2 screws P/N NAS1802-3-9, n°1 screw P/N NAS1190E3P17AK, n°1 screw P/N NAS1802-3-26, n°2 washers P/N NAS1149D0332J n°2 nuts P/N MS21043-3, n°1 spacer P/N NAS43DD3-15N, n°1 spacer P/N NAS43DD3-60N and n°1 spacer P/N NAS43DD3-40N.
- 2.2.25 With reference to Figure 11 View looking rear from STA 6700 to STA 8700 LH side, remove the existing hardware and install n°3 clamps P/N MS25281-R15, n°1 clamp P/N MS25281-R16, n°3 grommets P/N AW002FT112 and n°1 grommets P/N AW002FT113 by means of n°3 screws P/N NAS1190E3P36AK, n°1 screw P/N NAS1802-3-25, n°1 spacer P/N NAS43DD3-55N and n°3 spacer P/N NAS43DD3-52N.
- 2.2.26 With reference to Figure 13 View looking tail LH side, install n°7 clamps P/N MS25281-R15 and n°8 grommets P/N AW002FT112 by means of n°6 screws P/N NAS1190E3P7AK and n°1 screw P/N NAS1802-3-11.
- 2.2.27 With reference to Figure 13 View looking tail LH side, install n°3 clamps P/N MS25281-R15 and n°3 grommets P/N AW002FT112 by means of the existing hardware.
- 2.2.28 With reference to Figure 13 View looking tail LH side, remove the existing hardware and install n°3 clamps P/N MS25281-R15 and n°3 grommets P/N AW002FT112 by means of n°2 screws P/N NAS1190E3P17AK, n°1 screw P/N NAS1802-3-25, n°2 spacers P/N NAS43DD3-30N and n°1 spacer P/N NAS43DD3-47N.
- 2.2.29 With reference to Figure 14 View D-D, install n°5 clamps P/N MS25281-R9, n°5 grommets P/N AW002FT109 by means of n°3 screws P/N NAS1190E3P6AK, n°2 screws P/N NAS1802-3-23 and n°1 spacer P/N NAS43DD3-50N.
- 2.2.30 With reference to Figure 15 View looking vertical tail fin, install n°3 clamps P/N MS25281-R15, n°3 grommets P/N AW002FT112 by means of n°1 screw P/N NAS1802-3-10, n°1 screws P/N NAS1190E3P22AK n°1 screws P/N NAS1190E3P30AK, n°1 washer P/N NAS1149D0332J, n°1 spacer P/N NAS43DD3-60N and n°1 spacer P/N NAS43DD3-90N.
- 2.2.31 With reference to Figure 15 View looking vertical tail fin, remove the existing hardware and install n°7 clamps P/N MS25281-R15, n°7 grommets P/N AW002FT112 by means of n°6 screw

- P/N NAS1190E3P18AK, n°1 screws P/N NAS1802-3-35, n°6 spacer P/N NAS43DD3-40N and n°1 spacer P/N NAS43DD3-60N.
- 2.2.32 With reference to Figure 15 View looking tail rotor, install n°2 clamps P/N AW001CB05H by means of washer P/N NAS1149D0332J and screw P/N NAS1190E3P7AK.
- 2.2.33 With reference to Figure 15 View looking tail rotor, remove the existing hardware and install n°2 clamps P/N MS25281-R15, n°2 grommets P/N AW002FT112 by means of screw P/N NAS1802-3-24, screw P/N NAS1802-3-25, and spacer P/N NAS43DD3-45N.
- 2.2.34 In accordance with AMP DM 39-A-11-00-01-00A-720A-A, and with reference to Figure 8 Detail A, install the decals P/N ED300A515P1, P/N ED300A515P2, P/N ED300A515P3, P/N ED300A515P4, P/N ED300A515P5.
- 2.2.35 In accordance with AMP DM 39-A-11-00-01-00A-720A-A, and with reference to Figure 12 Detail E, install the decals P/N ED300J3123, P/N ED300J3125, P/N ED300P3123, P/N ED300P3125 and n°2 decals P/N 999-2701-02-296.
- 2.2.36 In accordance with AMP DM 39-A-11-00-01-00A-720A-A, and with reference to Figure 14 View D-D, install the decal P/N ED300E136P1.
- 2.2.37 In accordance with AMP DM 39-A-11-00-01-00A-720A-A, and with reference to Figure 15 View looking tail rotor, install the decals P/N ED300E137P1 and P/N ED300E137P1.
- 2.2.38 Modify the Auxiliary C/B panel on the overhead panel, as described in the following procedure:

NOTE

Customer must contact AW139 PSE at least 3 months in advance of embodiment date of this Service Bulletin in order to collect the exact W/D applicable to helicopter configuration.

- 2.2.38.1 With reference to AMP DM 39-A-24-91-04-00A-920A-K, remove from the Overhead C/B panel the existing integrally lit panel and install the new integrally lit panel P/N 3G2490LXXXXX.
- 2.2.38.2 Install circuit breaker P/N MS3320-3 in the indicated position on the new integrally lit panel P/N 3G2490LXXXXX; apply decal P/N ED300CB516 in an adjacent area.

- 2.2.38.3 Perform the electrical connection between pin 2 of CB516 and pin C of connector PL1J3 by means of A556A-T20 wire. Use electrical contact P/N MS25036-149 for pin 2 of CB516 and electrical contact P/N M39029/56-351 for pin C of PL1J3.
- 2.2.39 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 8 View looking left nose and Detail A, and Figure 19 Wiring Diagram, perform the electrical connections of the C/A A1A562 to the connectors A7-6P1 and to the DC ground TB149.
- 2.2.40 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 7 View looking left cockpit and pedestal, Figure 8 Detail A, and Figure 18 Wiring Diagram, perform the electrical connections of the C/A A1A562 to the connectors P127, TB123P1, TB129-3 and TB150-1.
- 2.2.41 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 8 View looking left nose and Detail A, and Figure 18 Wiring Diagram, perform the electrical connections between the connector A515P1 and the connector TB147P1.
- 2.2.42 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 7 View looking left cockpit and pedestal, and Figure 18 Wiring Diagram, perform the electrical connections between the connector J127 and the connector PL1P3.
- 2.2.43 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 7 View looking left cockpit and pedestal, Figure 8 Detail A, and Figure 19 Wiring Diagram, perform the electrical connections of the C/A A2A492 to the connector A515P2.
- 2.2.44 With reference to Figure 7 View looking left cockpit and pedestal, and Figure 18 Wiring Diagram, perform the electrical connection of the connector TB123P1 to the DC ground TB123.
- 2.2.45 With reference to Figure 7 View looking left cockpit and pedestal, and Figure 18 Wiring Diagram, perform the electrical connection of the connector P127 to the connector J127, and the connector PL1P3 to the CB panel PL1.
- 2.2.46 With reference to Figure 12 Detail E, and Figure 19 Wiring Diagram, perform the electrical connection of the connector J3123 to the connector P3123, and the connector J3125 to the connector P3125. Connect the connectors P3123 and P3125 to the terminal P/N 999-7000-07-105 by means of lockwire P/N MS20995C15.

NOTE

Perform the following steps 2.2.47 and 2.2.48 only if Part II is not intended to be embodied immediately after Part I.

- 2.2.47 With reference to Figure 8 Detail A and Figure 10 Detail B, protect and stow the connector A515P3, A515P4, A515P5 and E136P1 by means of the tie strap P/N AW001CK03LC, the nomex P/N EN6049-006-25-2 and n°4 plug-protective (if available).
 - 2.2.48 With reference to Figure 8 Detail A and Figure 10 Detail C, protect and stow the connector A515P1 and A515P2 by means of the tie strap P/N AW001CK03LC, the nomex P/N EN6049-006-32-5 and n°2 plug-protective (if available).
 - 2.2.49 Perform a pin-to-pin continuity check of all the electrical connections made.
- 3. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
 - 4. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.
 - 5. Send the attached compliance form to the following mail box:
engineering.support.lhd@leonardocompany.com
- As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the "Service Bulletin Application Communication".

PART II

1. In accordance with DM 39-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with DM 39-A-06-41-00-00A-010A-A and with reference to Figures 16 and 17, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform the SATCOM Flightcell DZMX(4G) removable parts P/N 3G4390A02411 as described in the following procedure:
 - 2.1 With reference to Figure 16 View A-A, remove the lockring P/N AW001YC01RED.

NOTE

Perform following step, only if Part I of this SB has
NOT been performed immediately before to Part II.

- 2.2 With reference to Figure 16 Detail B and Detail C, and Figure 17 View looking interseat console LH side, remove the tie strap P/N AW001CK03LC, the nomex P/N EN6049-006-25-5 and the nomex P/N EN6049-006-32-5.
- 2.3 In accordance with AMP DM 39-C-23-97-01-00A-720A-K, and with reference to Figure 16 Iso view and Figure 17 View looking interseat console LH side, install the DZMX transceiver P/N DZP_04-800.
- 2.4 In accordance with AMP DM 39-A-11-00-01-00A-720A-A, and with reference to Figure 16 View looking interseat console LH side, install the decal P/N ED300A515 on the DZMX transceiver P/N DZP_04-800.

NOTE

Perform following step, only if Part I of this SB has
NOT been performed immediately before to Part II.

- 2.5 With reference to Figure 16 Detail B and Figure 17 View looking down rear floor right side, remove n°4 screws P/N MS27039-1-08, n°4 washers P/N NAS1149C0316K, the cover assy P/N 3G5317A37631, the tie strap P/N AW001CK03LC and the nomex P/N EN6049-006-25-5.
- 2.6 In accordance with AMP DM 39-C-23-97-02-00A-720A-K, and with reference to Figure 16 Detail B and Figure 17 View looking down rear floor right side, install the cell antenna P/N ANP_00033 and the conductive gasket P/N AW001GH040A. Connect to the terminal P/N 999-7000-07-104 by means of lockwire P/N MS20995C15.
- 2.7 In accordance with AMP DM 39-A-11-00-01-00A-720A-A, and with reference to

Figure 17 View looking down rear floor right side, install the decal P/N ED300E136 on the cell antenna P/N ANP_00033.

NOTE

Perform following step, only if Part I of this SB has NOT been performed immediately before to Part II.

- 2.8 With reference to Figure 16 Detail C and Figure 17 View looking tail rotor, remove n°4 screws P/N MS27039-1-08, n°4 washers P/N NAS1149D0332K, the cover assy P/N 3G5315A61732, the tie strap P/N AW001CK03LC and the nomex P/N EN6049-006-32-5.
- 2.9 With reference to Figure 16 Iso view and Figure 17 View looking tail rotor, perform the installation of SATCOM antenna P/N ANP_00043 as described in the following procedure:

NOTE

During this procedure, remove the caps from the electrical connectors. Do this immediately before connect each electrical connector.

- 2.9.1 Clean the mating area between the SATCOM antenna P/N ANP_00043 and the fairing with the lint-free cloth (C011) and the cleaning solvent (C010).

WARNING

Be careful when you use the compressed air. Dust and particles can cause injury to your eyes. Always use applicable protective goggles.

- 2.9.2 Dry the cleaned area with the lint-free cloth (C011) and the air.
- 2.9.3 Hold the SATCOM antenna P/N ANP_00043 near its position on the fairing.
- 2.9.4 Connect these coaxial connectors to the connectors of the SATCOM antenna P/N ANP_00043:
- The connector E137P1.
 - The connector E137P2.
- 2.9.5 Connect to the terminal P/N 999-7000-07-104 by means of lockwire P/N MS20995C15. Safety the connector E137P1 by means of lockwire P/N MS9226-03.
- 2.9.6 Install the SATCOM antenna P/N ANP_00043 and the gasket P/N AW001GH041A on the fairing by means of n°4 screws P/N°MS27039-1-13.

- 2.9.7 Tighten the four screws P/N°MS27039-1-13 to the standard torque value. Refer to 39-A-20-00-00-00A-711A-A.
- 2.9.8 Apply the sealing compound (C252) on the mating edge of the SATCOM antenna P/N ANP_00043 and the fairing.
- 2.10 In accordance with AMP DM 39-A-11-00-01-00A-720A-A, and with reference to Figure 17 View looking tail rotor, install the decal P/N ED300E137 on the SATCOM antenna P/N ANP_00043.
- 2.11 In accordance with AMP DM 39-C-23-97-00-00A-366A-K, perform the resistance check of the cell antenna P/N ANP_00033 and the SATCOM antenna P/N ANP_00043.
- 2.12 In accordance with AMP DM 39-C-23-97-00-00A-320A-K, perform the operation test of the airborne telephone system.
3. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
4. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.
5. Send the attached compliance form to the following mail box:

engineering.support.lhd@leonardocompany.com

As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the "Service Bulletin Application Communication".

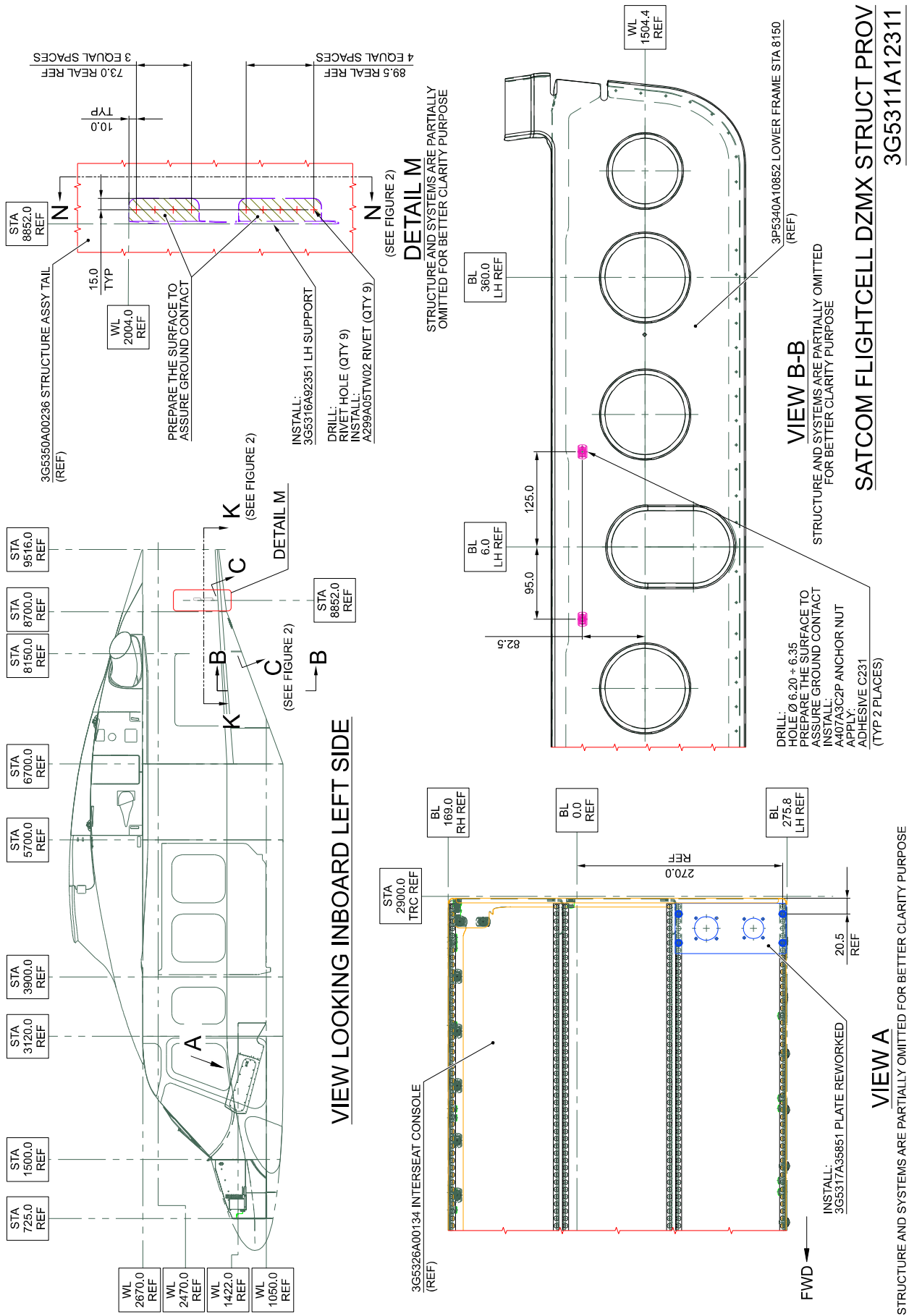


Figure 1

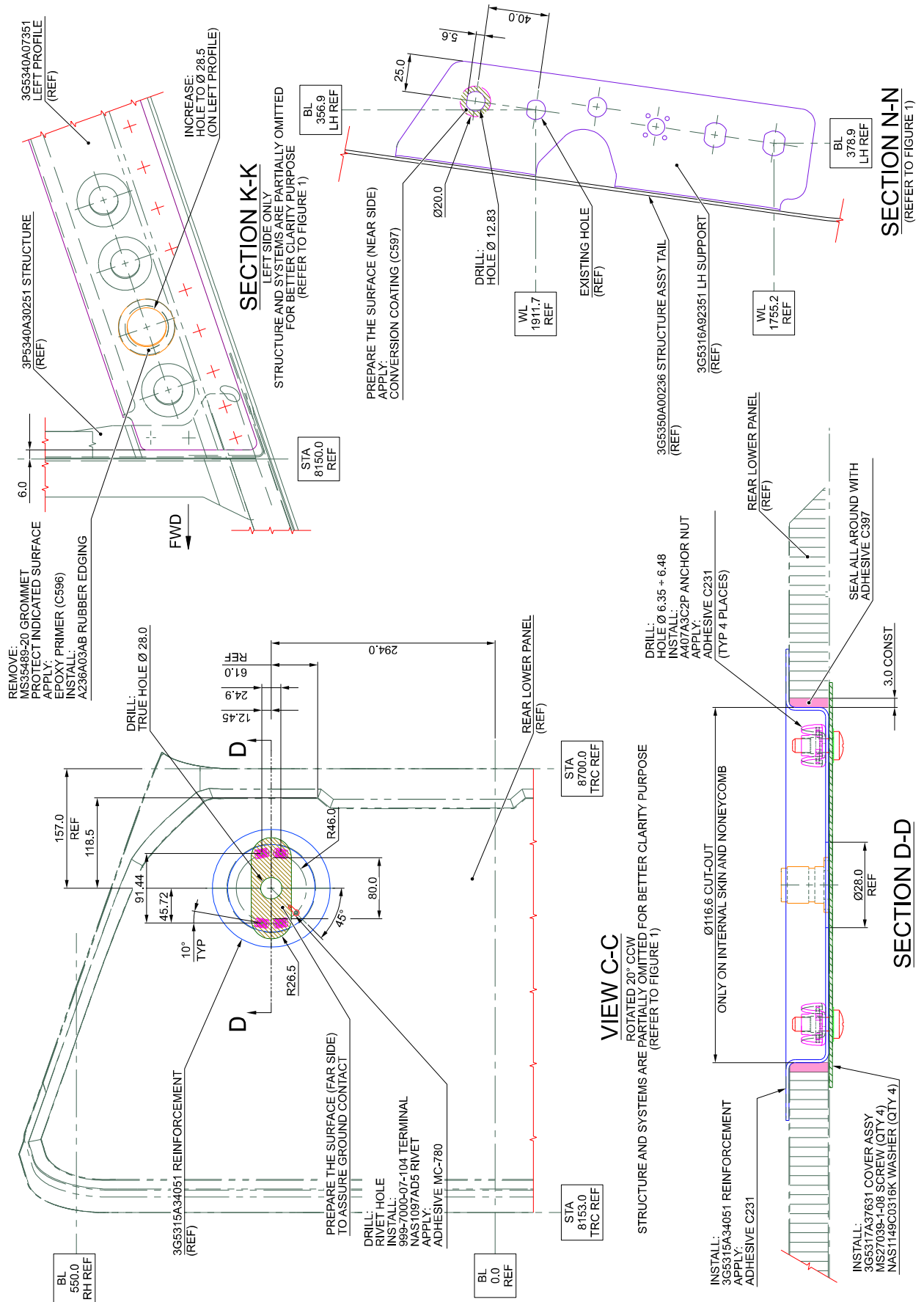
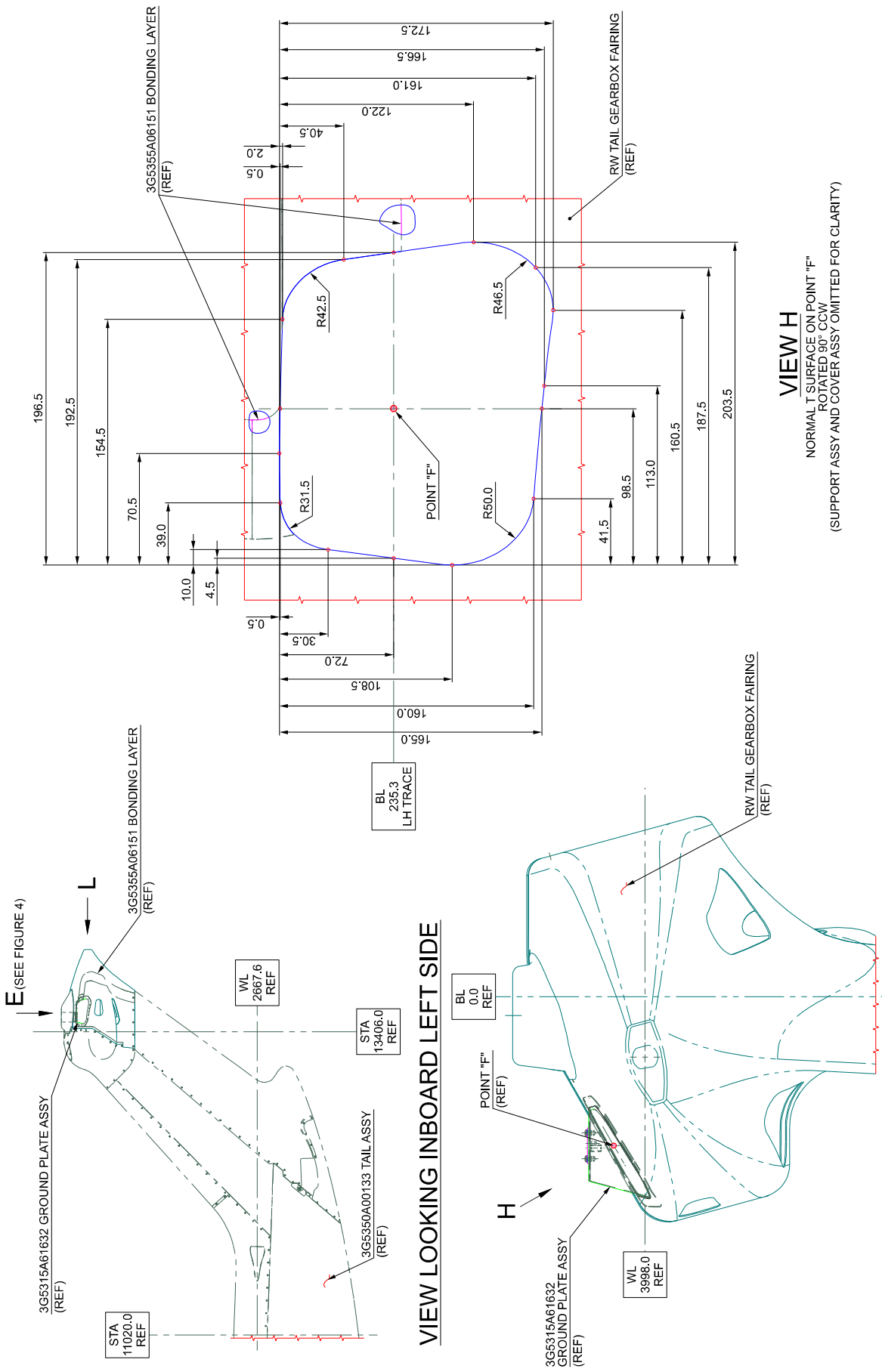


Figure 2



VIEW H
NORMAL T SURFACE ON POINT "F"
ROTATED 90° CCW
(SUPPORT ASSY AND COVER ASSY OMITTED FOR CLARITY)

VIEW L
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 3

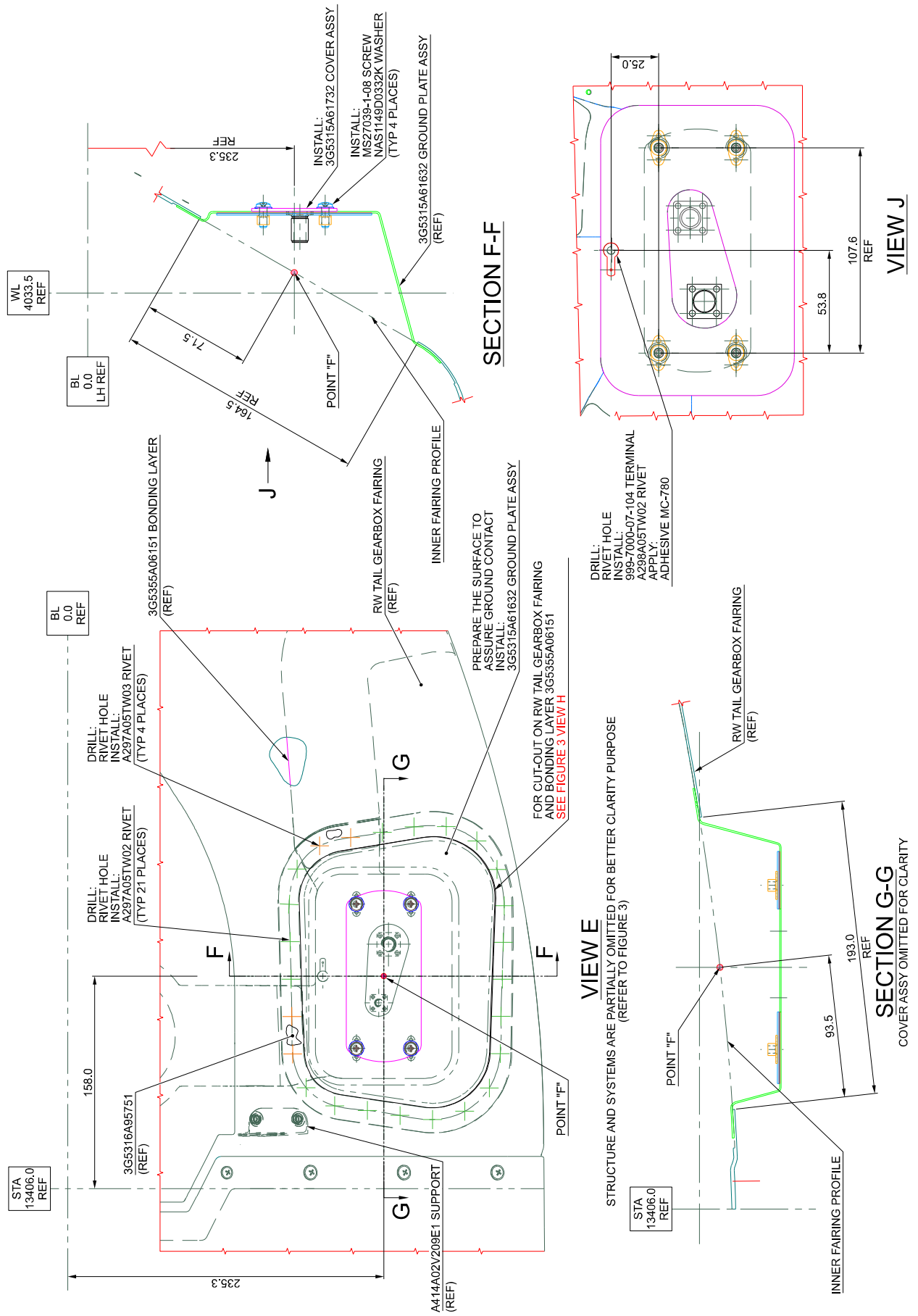
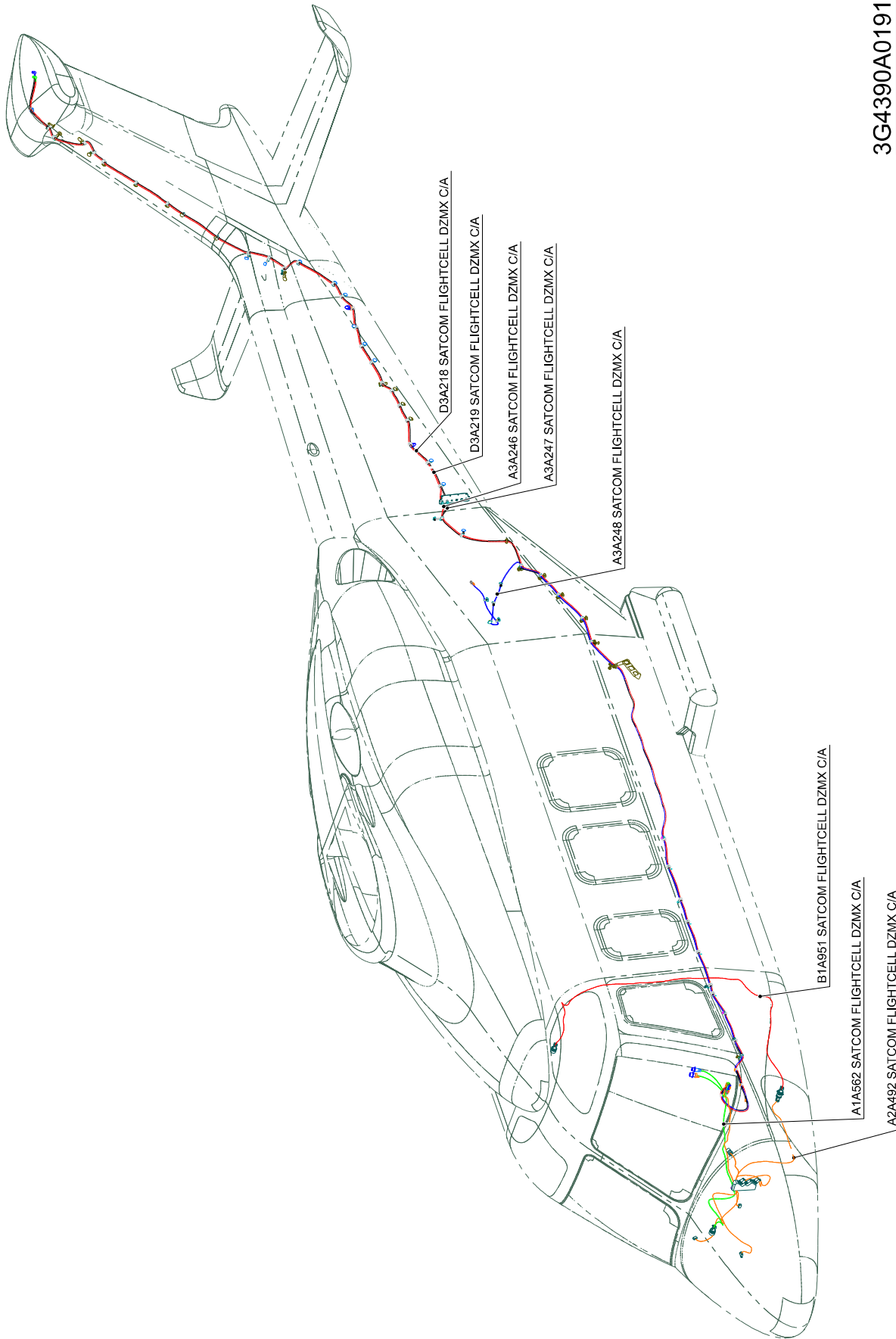


Figure 4



3G4390A01912
SATCOM FLIGHTCELL DZMX ELECTRICAL PROVISION

Figure 5

S.B. N°139-666
DATE: July 9, 2021
REVISION: /

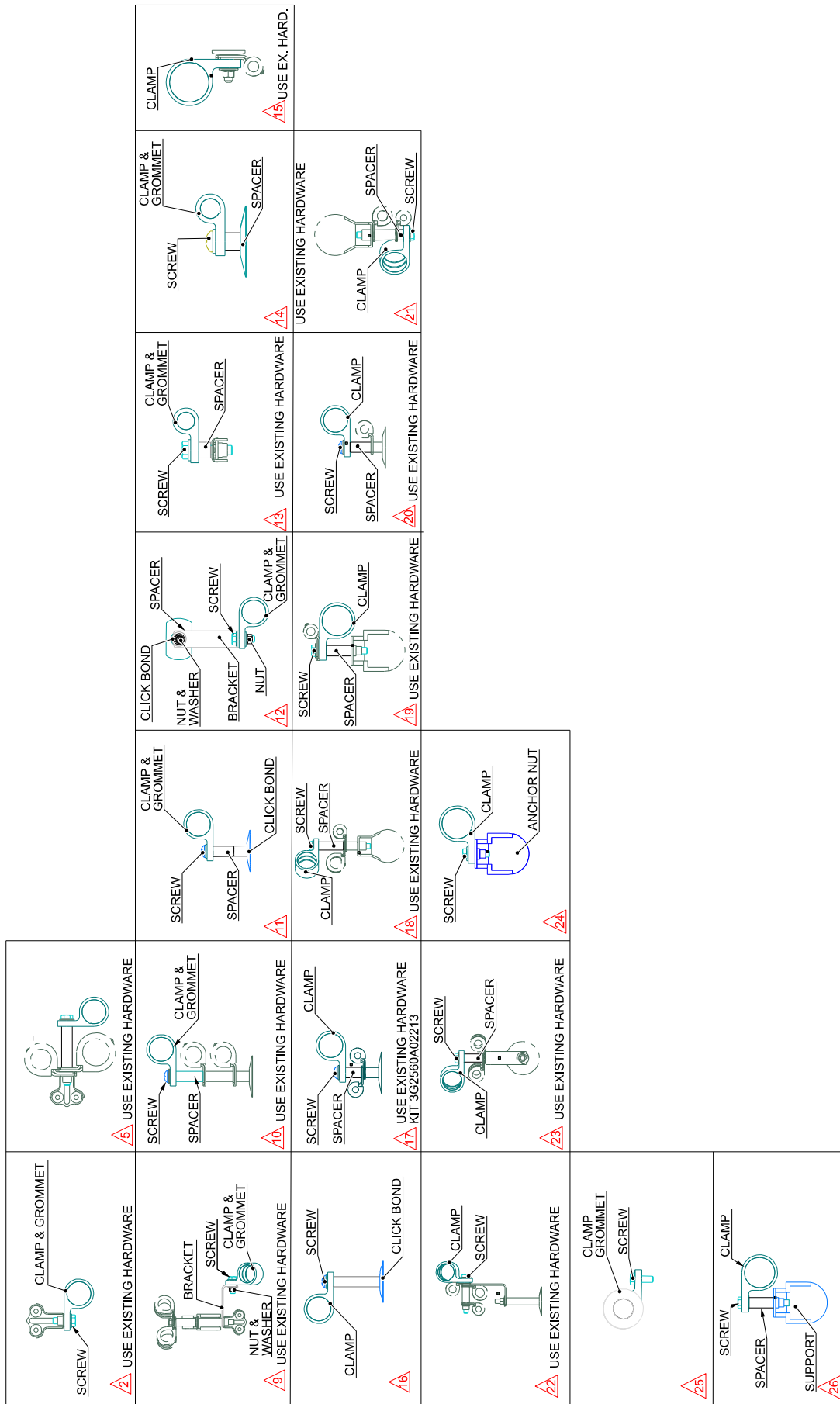


Figure 6

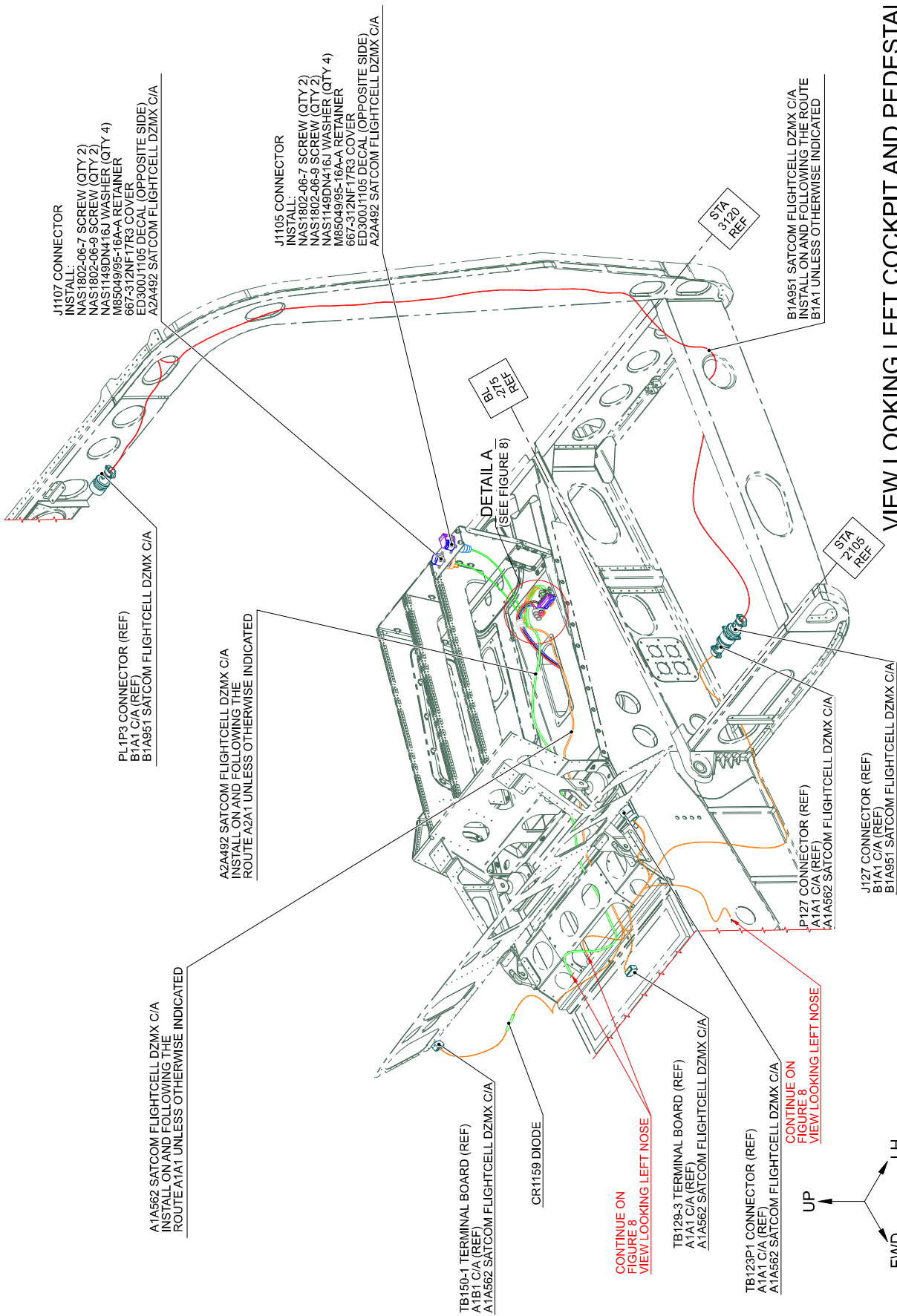
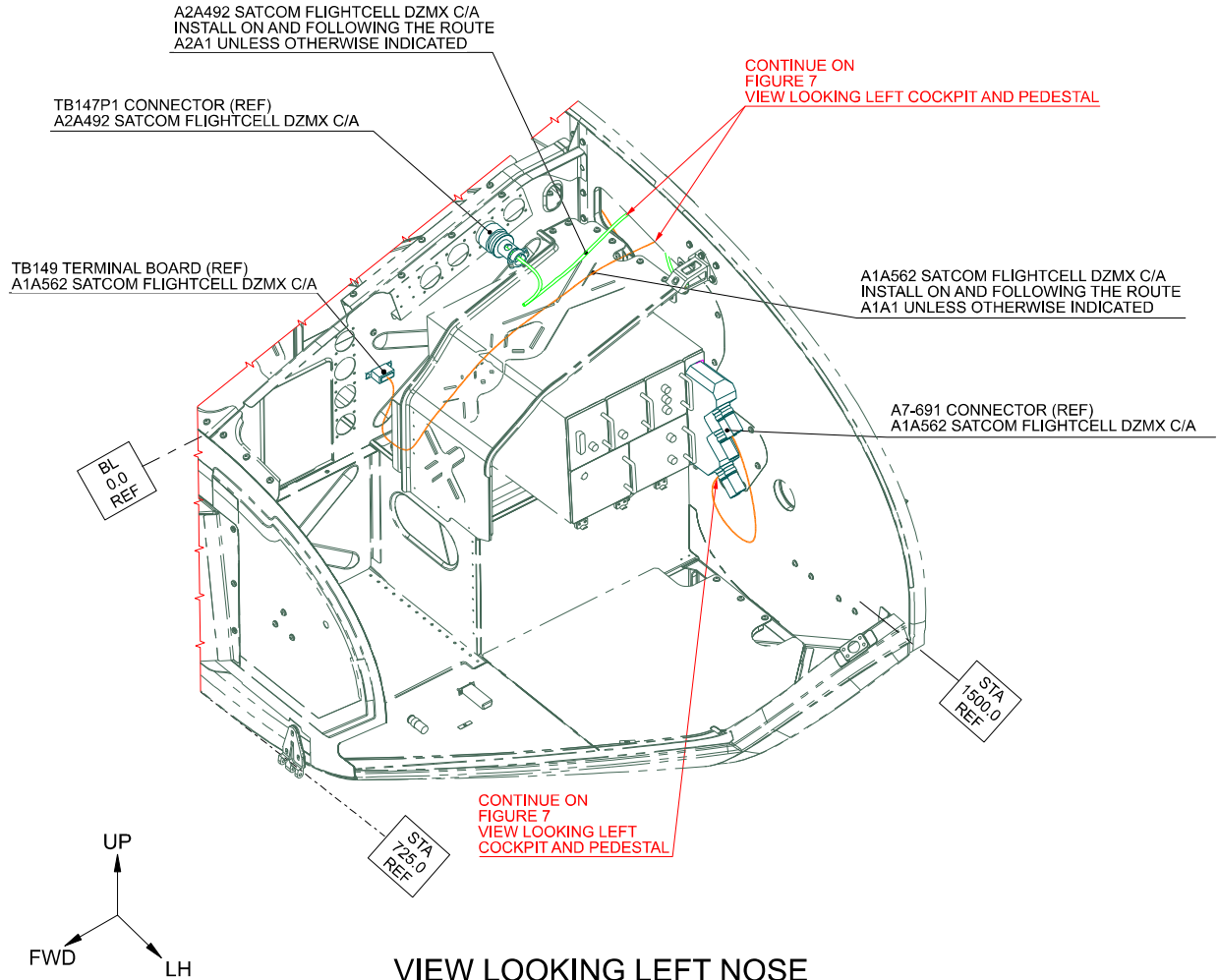
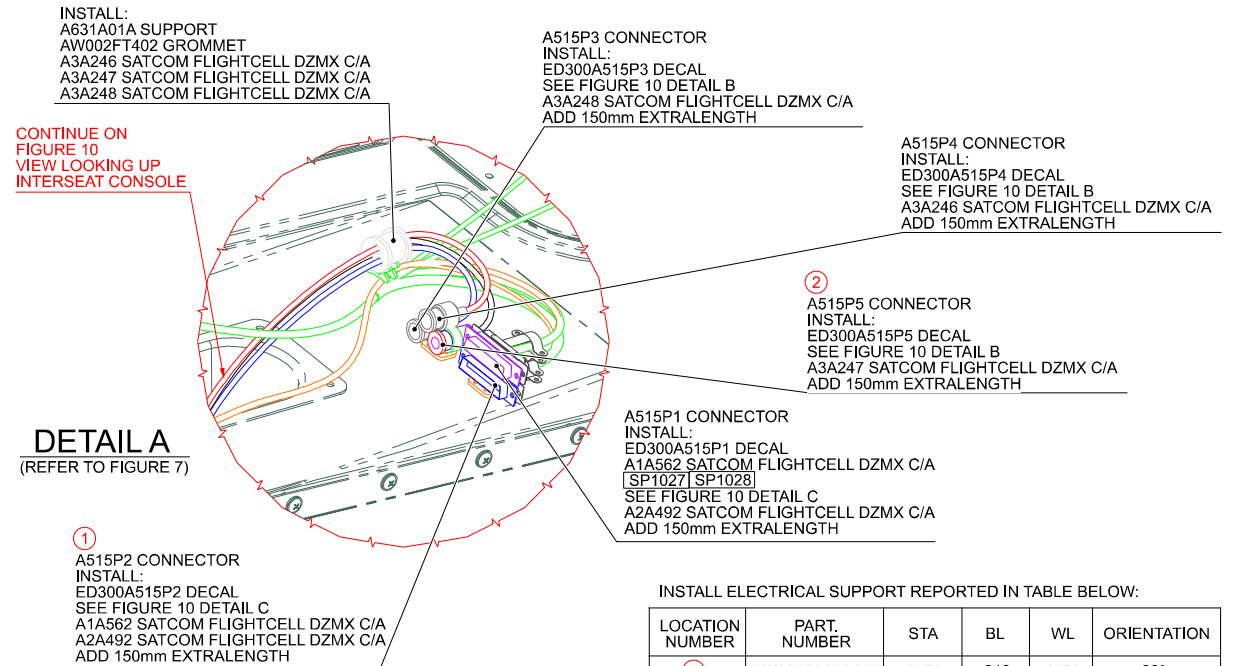


Figure 7



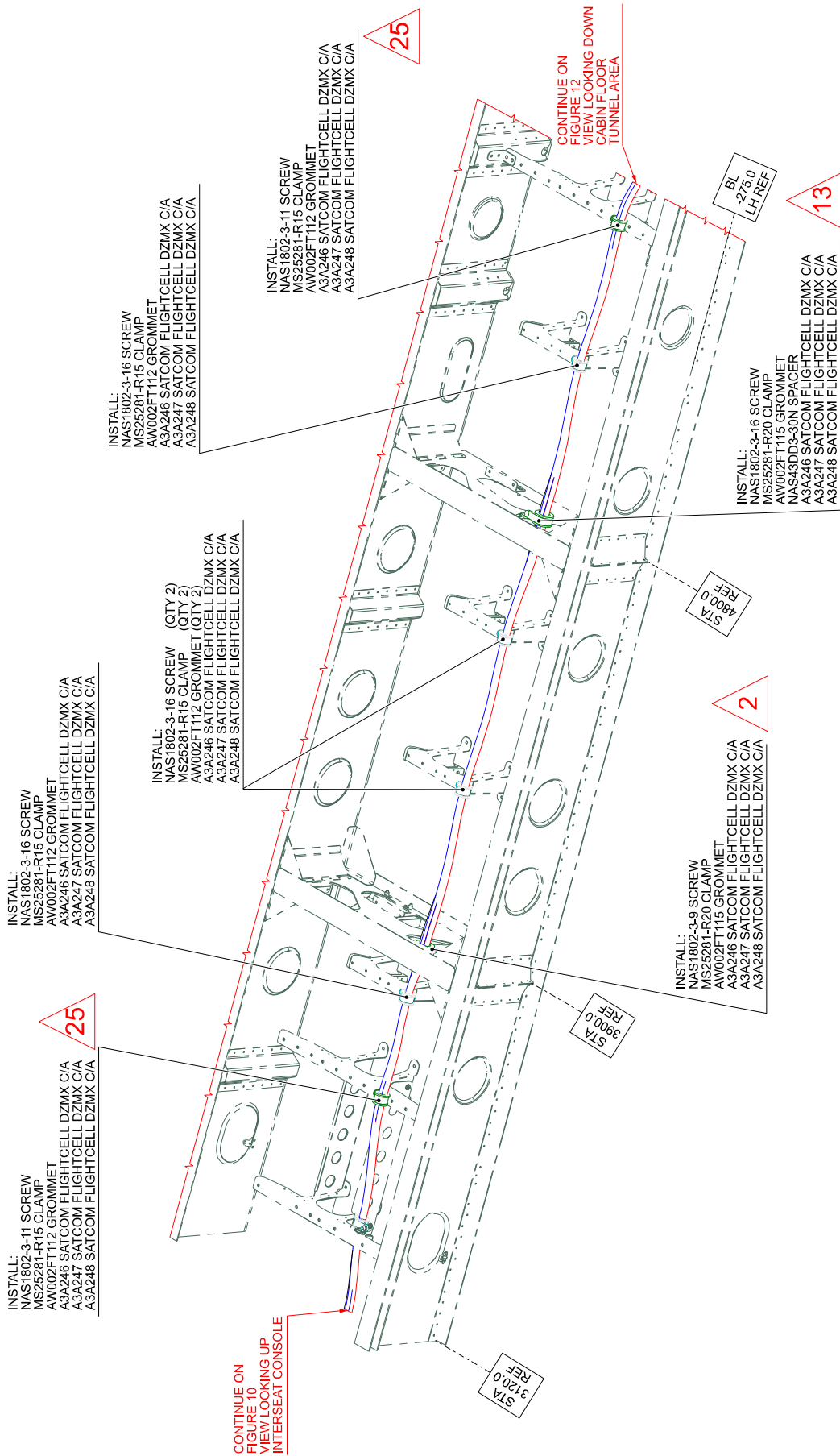
VIEW LOOKING LEFT NOSE

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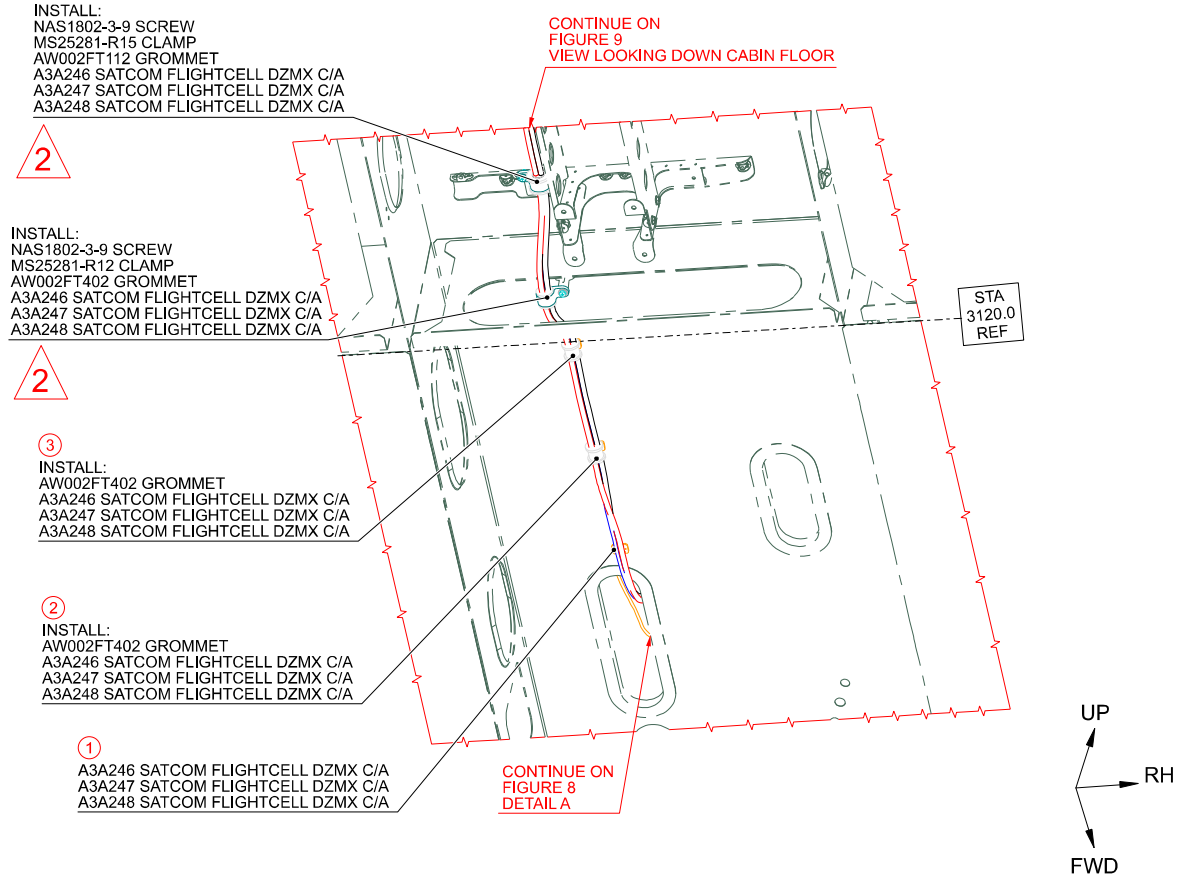
LOCATION NUMBER	PART. NUMBER	STA	BL	WL	ORIENTATION
①	AW001CL001-N6	2679	-213	1174	90°
②	AW001CL001-N6	2679	-168	1174	90°

Figure 8

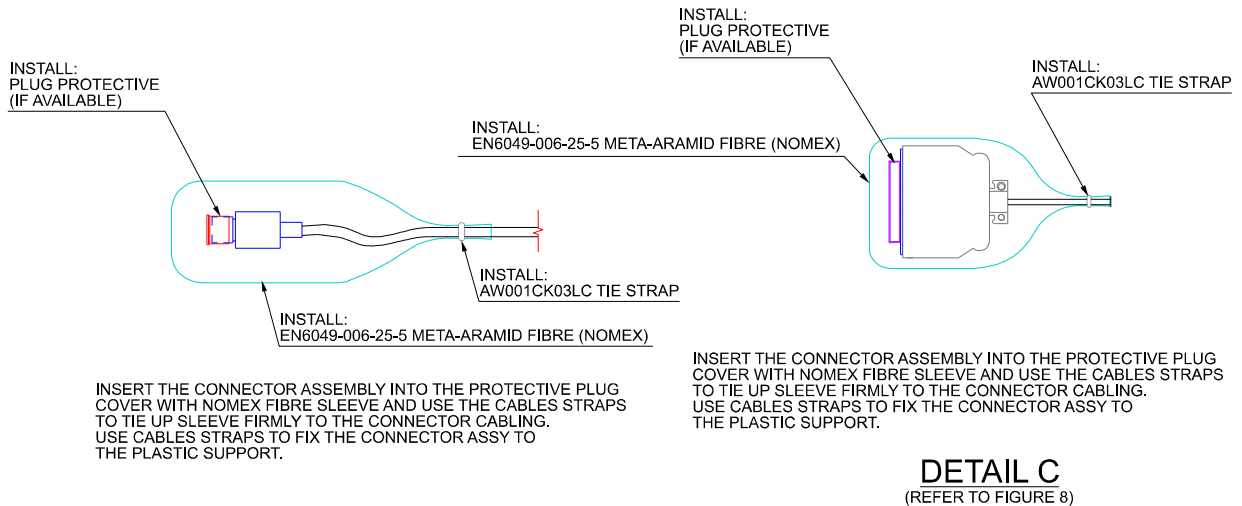


VIEW LOOKING DOWN CABIN FLOOR
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 9



VIEW LOOKING UP INTERSEAT CONSOLE
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DETAIL B
(REFER TO FIGURE 8 AND FIGURE 14)

DETAIL C
(REFER TO FIGURE 8)

INSTALL ELECTRICAL SUPPORT REPORTED IN TABLE BELOW:

LOCATION NUMBER	PART. NUMBER	STA	BL	WL	ORIENTATION
①	AW001CL001-N6	2625	-124	1037	0°
②	AW001CL001-N6	2789	-124	1037	-
③	AW001CL001-N6	2953	-124	1037	0°

Figure 10

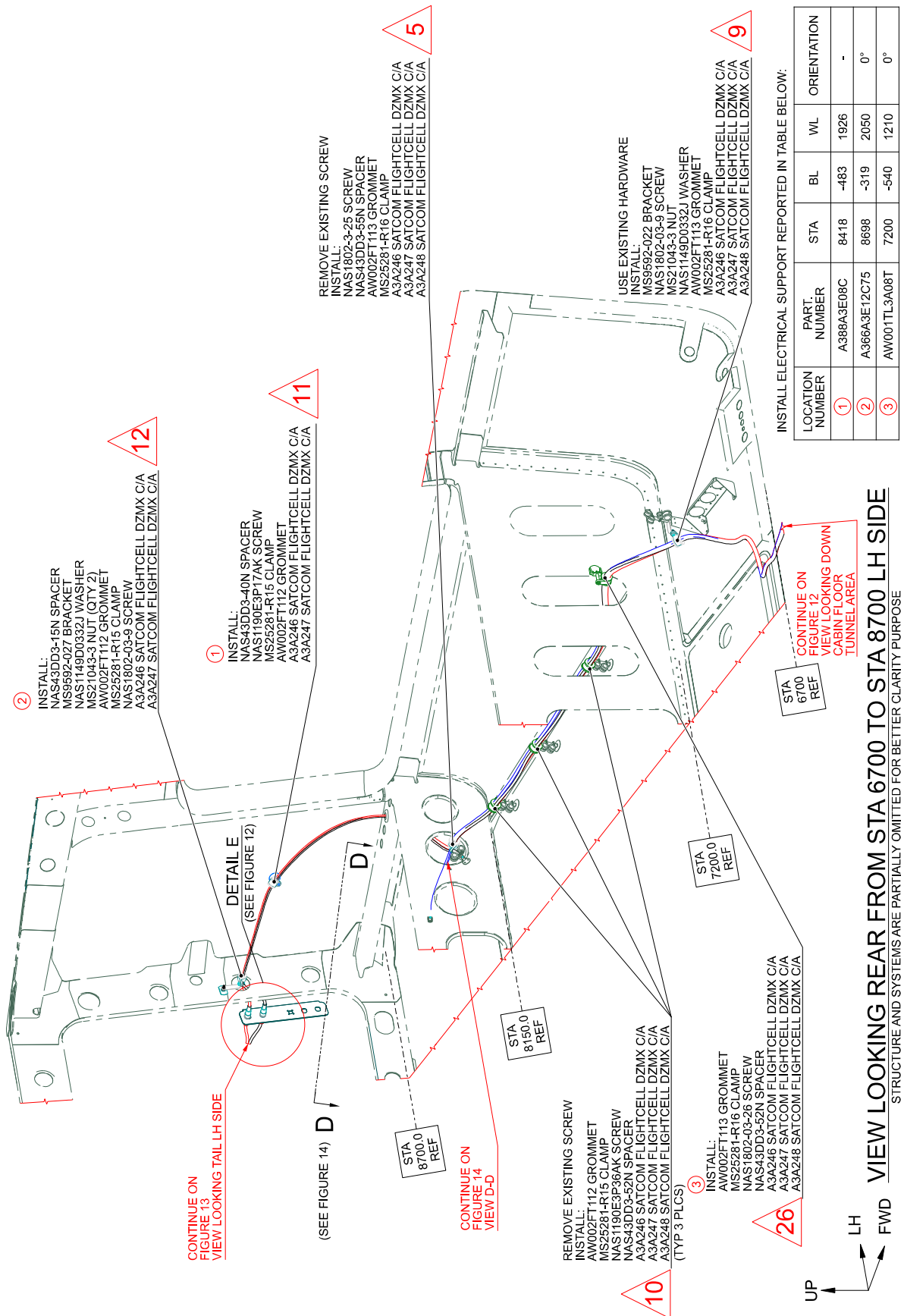
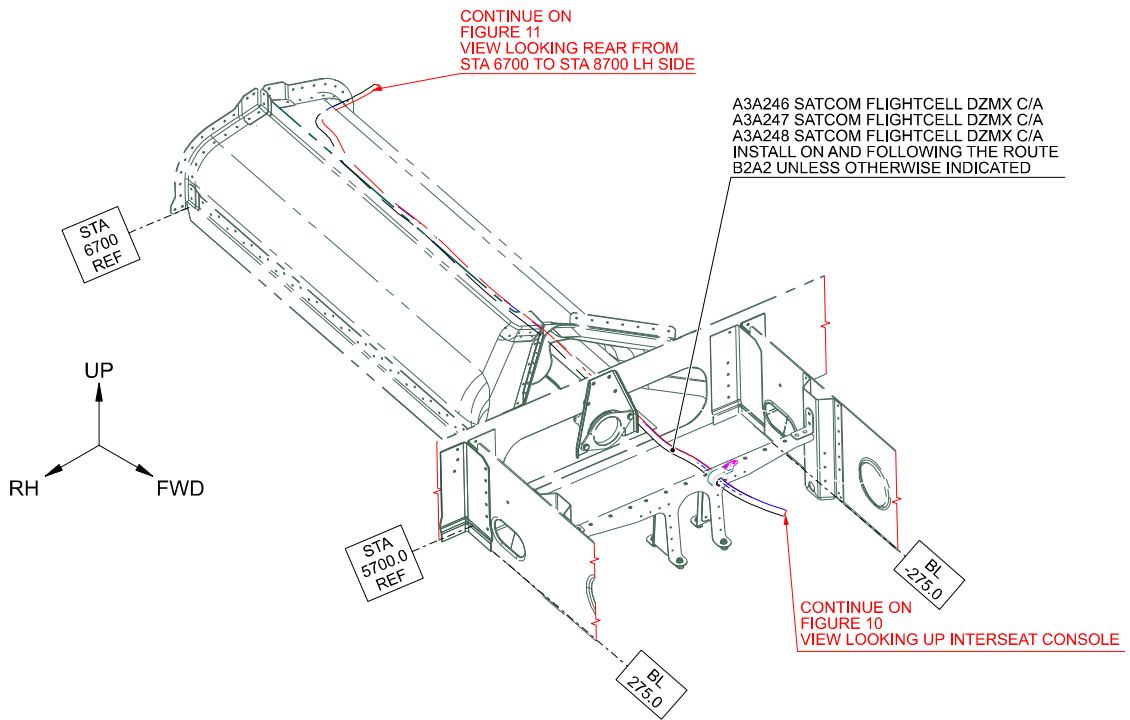
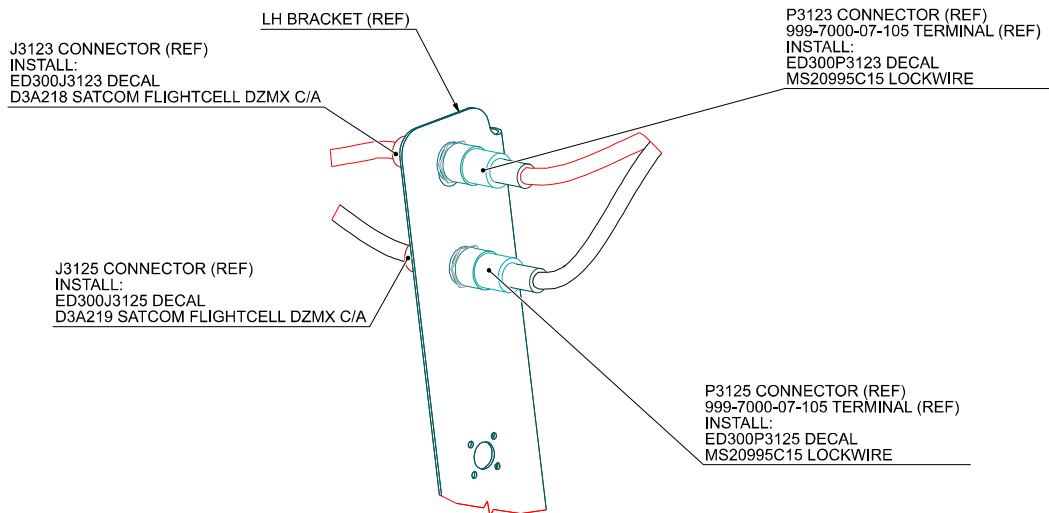


Figure 11



VIEW LOOKING DOWN CABIN FLOOR TUNNEL AREA

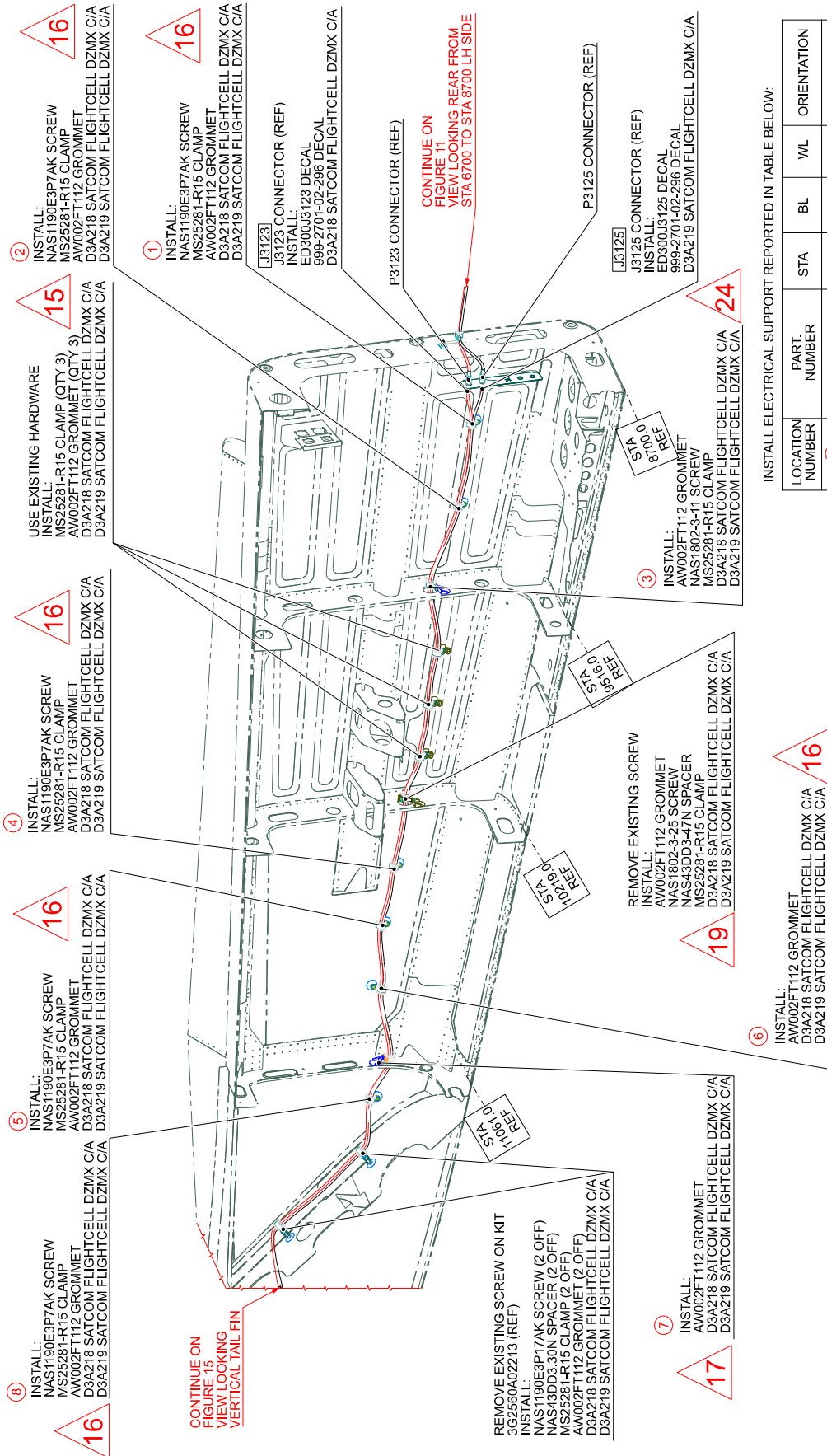
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



DETAIL E

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 11)

Figure 12



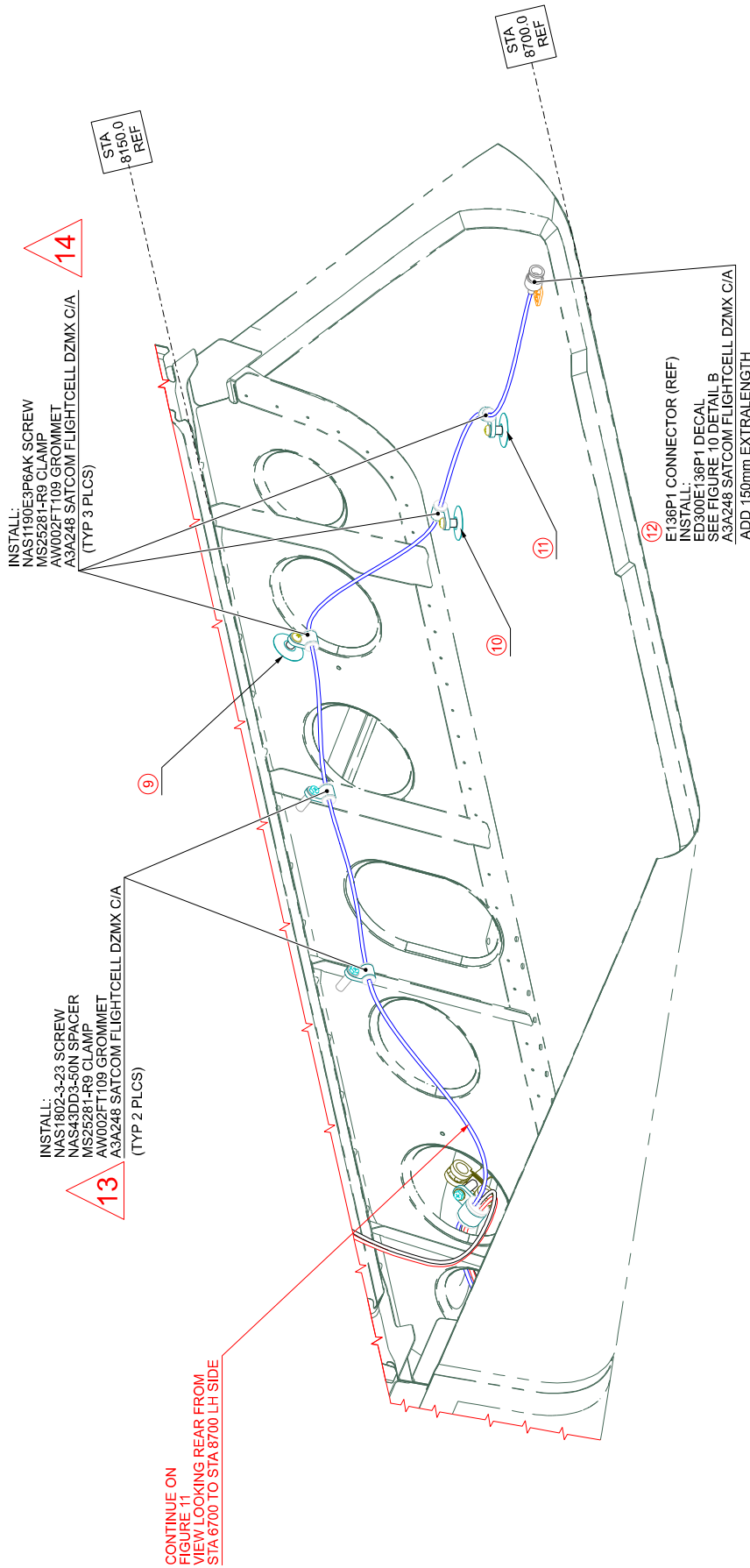
INSTALL ELECTRICAL SUPPORT REPORTED IN TABLE BELOW:

LOCATION NUMBER	PART. NUMBER	STA	BL	WL	ORIENTATION
1	A388A3E06C	8998	-395	1911	-
2	A388A3E06C	9266	-378	1973	-
3	AW001TL3A06	9515	-294	1993	0°
4	A388A3E06C	10426	-289	2069	-
5	A388A3E06C	10615	-275	2098	-
6	A388A3E06C	10819	-261	2129	-
7	AW001CL005C01-X1	11060	-220	2112	180°
8	A388A3E06C	11182	-234	2094	-

VIEW LOOKING TAIL LH SIDE

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Figure 13



VIEW D-D

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 11)

INSTALL ELECTRICAL SUPPORT REPORTED IN TABLE BELOW:

LOCATION NUMBER	PART NUMBER	STA	BL	WL	ORIENTATION
⑨	A388A3E06C	8151	294	1558	-
⑩	A388A3E06C	8268	390	1424	-
⑪	A388A3E06C	8440	344	1488	-
⑫	AW001CL001-N6	8612	350	1552	-

Figure 14

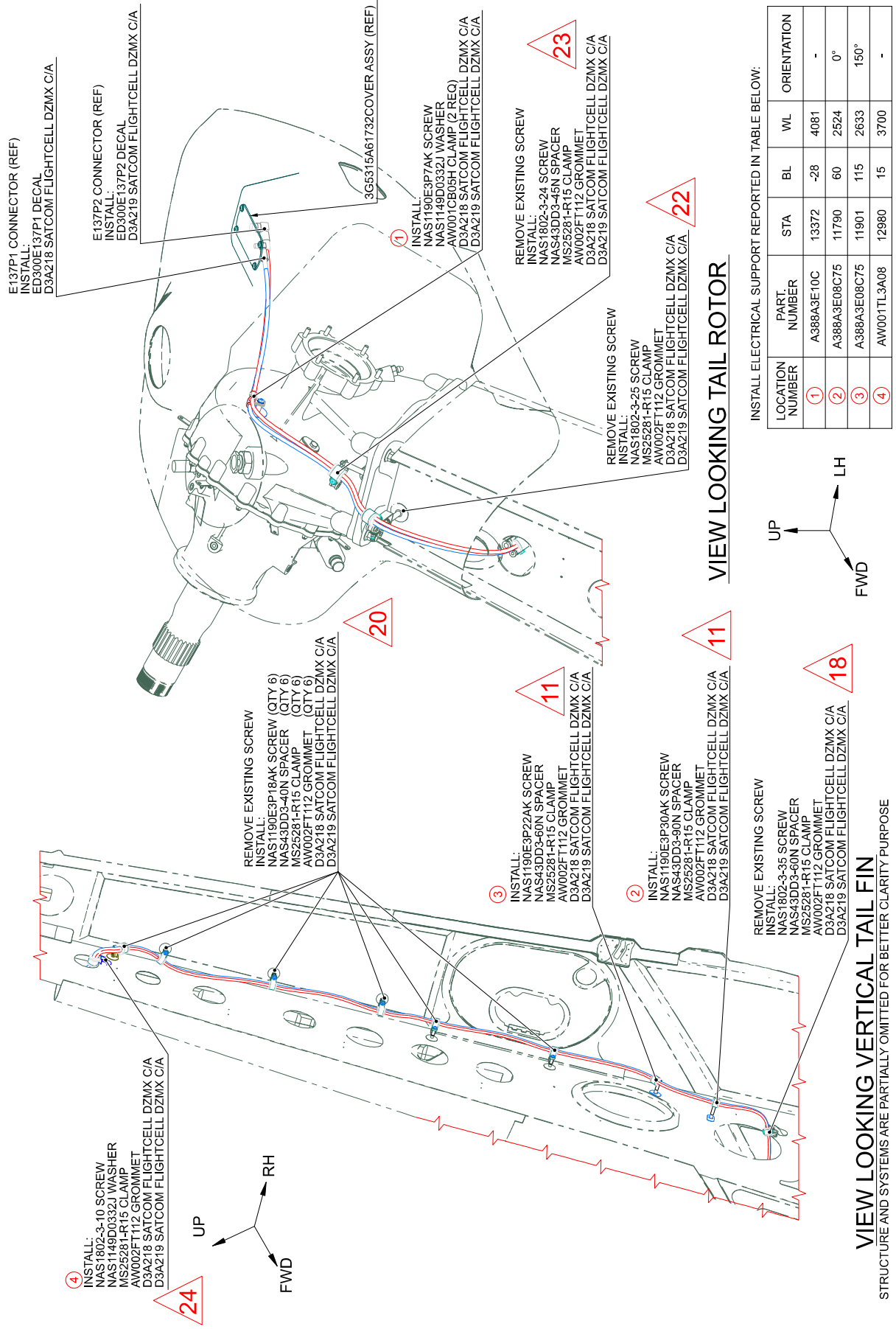
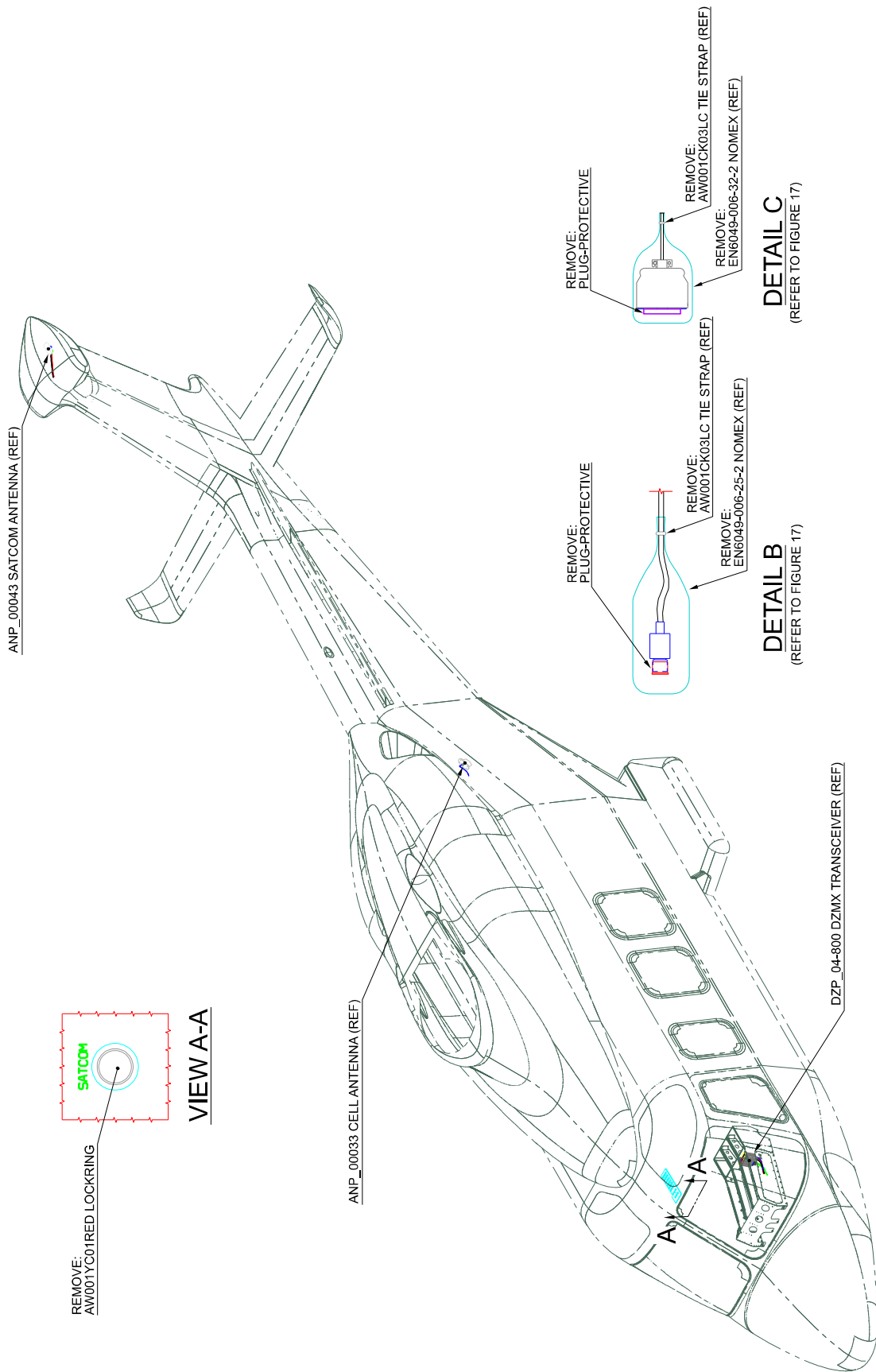


Figure 15

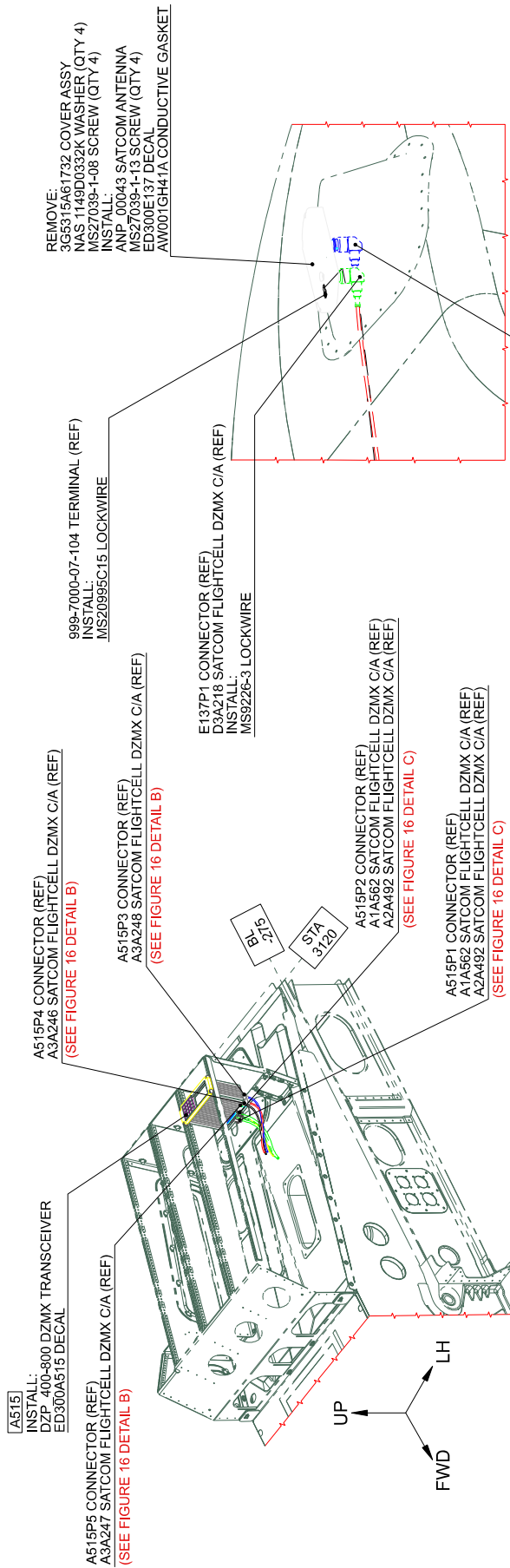


ISO VIEW

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

3G4390A02411
SATCOM FLIGHTCELL DZMX REMOVABLE PARTS

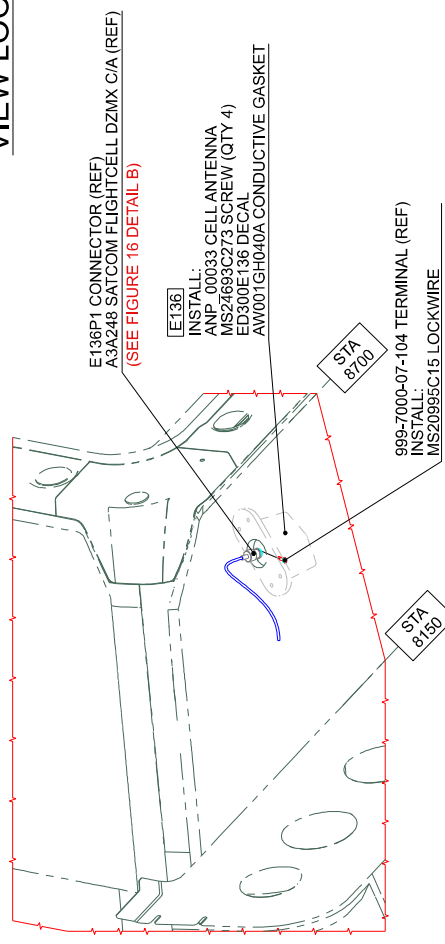
Figure 16



VIEW LOOKING INTERSEAT CONSOLE LH SIDE

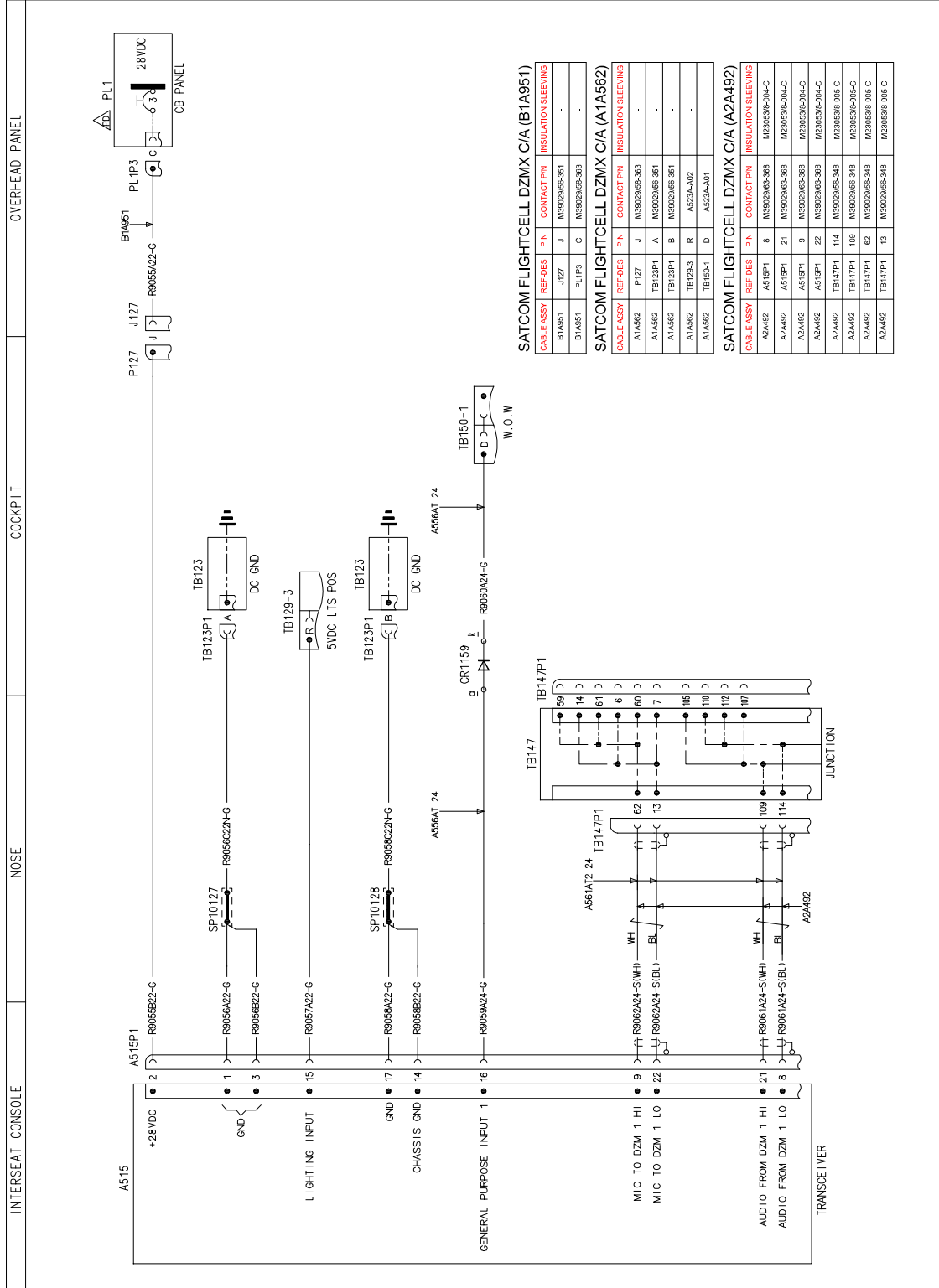
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

VIEW LOOKING TAIL ROTOR



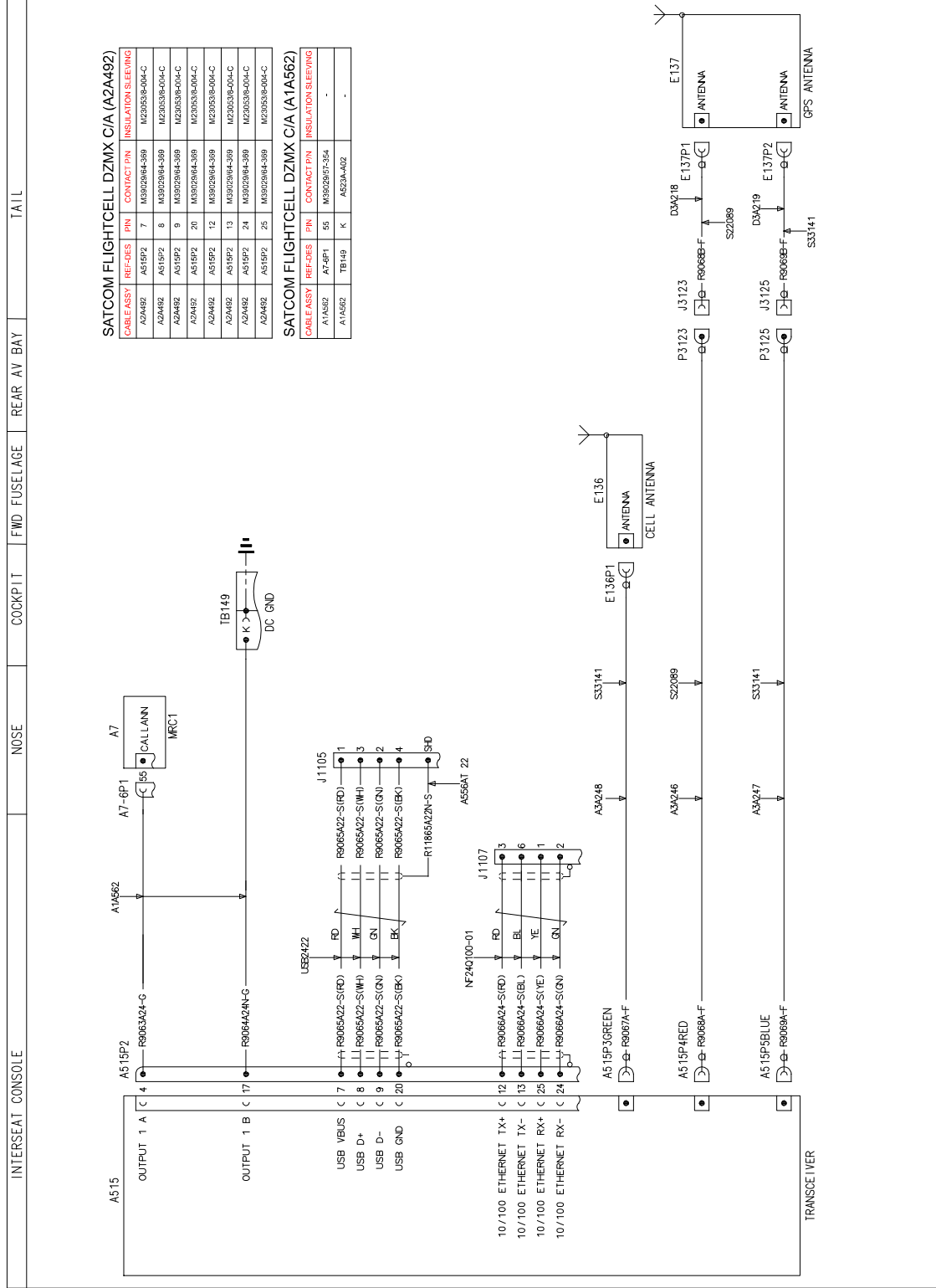
VIEW LOOKING DOWN REAR FLOOR RIGHT SIDE

Figure 17



FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM A1A562 UNLESS SPECIFIED.
ALL CABLES ARE OF TYPE A56A1 22 UNLESS SPECIFIED

Figure 18



FUNCTIONAL NOTES
ALL CABLES ARE IN LOW AS492 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE AS68A 24 UNLESS SPECIFIED

Figure 19

