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**SERVICE BULLETIN****N° 139-034****DATE:** February 8, 2011**REV. :** D - February 10, 2023

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**TITLE****ATA 23 - INSTALLATION OF HF KIT P/N 3G2310F00211****REVISION LOG**

The Revision D of this Service Bulletin supersedes all previous issues.

Helicopters already compliant with previous issues of this Service Bulletin do not need any additional action.

Revision D is issued to update Figure 2 and update the Service Bulletin to the latest standard.

## **1. PLANNING INFORMATION**

### **A. EFFECTIVITY**

#### **Part I:**

All AB/AW139 helicopters from S/N 31005 to S/N 31157 (except S/N 31007) from S/N 41001 to S/N 41023.

#### **Part II:**

All AW139 helicopters from S/N 31201 to S/N 31398 and from S/N 41201 to S/N 41293.

#### **Part III:**

All AW139 helicopters from S/N 31400 to S/N 31699 and from S/N 41300 to S/N 41499.

### **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 install on AB139/AW139 helicopters an advanced, high-performance HF communication system P/N 3G2310F00211.

### **E. DESCRIPTION**

Honeywell newest HF radio brings the most advanced HF technology to business and regional aviation. HF radio provides long distance communications in a powerful 200-Watt system.

Designed with a unique upgradeable architecture, it ensures compatibility with future data communication standards and with new lighter system components.

Revision A introduces in Part I a new cables routing (see Figure 58) for helicopters without the lightening hole indicated in Figure 16 in the rear fuselage STA 8700.

Revision B introduces Part III of this Service Bulletin which allows the installation of kit HF P/N 3G2310F00211 on AW139 from S/N 31400 to S/N 31699 and from S/N 41300 to 41999. Revision B introduces also some installation improvements in Part I and II.

Other modifications have been introduced to align the Service Bulletin to the latest standard.

**NOTE**

Installation of specific environmental conductive gaskets is allowed in order to improve the antenna sealing and also to assure the proper electrical bonding (ref. SB 139-389).

Revision C has been developed to align the content of part list to the compliance instructions and to the latest standard of the supply chain.

Revision D is issued to update Figure 2 and update the Service Bulletin to the latest standard.

**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 two hundred and fifty (250) MMH;

Part II: approximately two hundred and fifty (250) MMH;

Part III: approximately two hundred and fifty (250) MMH.

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

**H. WEIGHT AND BALANCE**

**PART I**

<b>WEIGHT (Kg)</b>	<b>ARM (mm)</b>	<b>MOMENT (Kgmm)</b>
		22,8
<b>LONGITUDINAL BALANCE</b>	8611	196.330,8
<b>LATERAL BALANCE</b>	-274	-6.247,2

**PART II**

WEIGHT (Kg)	ARM (mm)	MOMENT (Kgmm)
		22,7
LONGITUDINAL BALANCE	8482	192.541,4
LATERAL BALANCE	-278	-6.310,6

**PART III**

WEIGHT (Kg)	ARM (mm)	MOMENT (Kgmm)
		23,3
LONGITUDINAL BALANCE	8520	198.516
LATERAL BALANCE	-280	-6.524

**I. REFERENCES**

**1) PUBLICATIONS**

Following Data Modules refer to AMP:

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM01 39-A-46-20-00-00A-750A-A	Processing and integrating - Options and setting file - Load software procedure	All
DM02 39-A-46-20-00-00B-750A-A	Processing and integrating - Options and setting file - Load software procedure	III
DM03 39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance.	All
DM04 39-A-06-41-00-00A-010A-A	Access doors and panels - General data.	All
DM05 39-A-11-00-01-00A-720A-A	Decal - Install procedure	All
DM06 39-A-20-10-01-00A-259A-A	Ground connections - Other procedures to protect surfaces	I
DM07 39-A-20-10-09-00A-920A-A	Bonded studs - Replacement	All
DM08 39-A-23-14-00-00A-340A-K	HF system - Function test	All
DM09 39-A-24-91-04-00A-920A-K	Integrally lighted panel - Replacement	All

Following Data Modules refer to CSRP:

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM10 CSRP-A-51-42-00-00A-720A-D	Potted inserts – Install procedure	I

**2) ACRONYMS & ABBREVIATIONS**

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication

AR	As Required
CSRP	Common Structural Repair Publication
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
IPD	Illustrated Part Data
HF	High Frequency
ITEP	Illustrated tool and equipment publication
LH	Left Hand
LHD	Leonardo Helicopters Division
MMH	Maintenance Man Hours
N.A.	Not Applicable
P/N	Part Number
SB	Service Bulletin
S/N	Serial Number

### **3) ANNEX**

N.A.

### **J. PUBLICATIONS AFFECTED**

N.A.

### **K. SOFTWARE ACCOMPLISHMENT SUMMARY**

Software to be updated:

Primus Epic Option File

Option File P/N is depending upon helicopter configuration that can be different from the one reported in relevant helicopter "Commissa di Vendita". Customer must contact AW 139 Product Support Engineering ([engineering.support.lhd@leonardocompany.com](mailto:engineering.support.lhd@leonardocompany.com)) to request the correct Option File at least three months in advance from the scheduled embodiment of this Service Bulletin.

## 2. MATERIAL INFORMATION

### A. REQUIRED MATERIALS

#### 1) PARTS

##### PART I

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	3G2310F00211		HF SYSTEM INSTALLATION KIT	REF	.		-
2	3G2310A00611		HF COMPLETE PROVISION	REF	..		-
3	3G5310A04211		HF ANTENNA STRUCTURAL PROVISION	REF	...		-
4	MS21069L3		Nut Plate	3	....		139-034L10
5	MS27039-1-04		Screw	3	....		139-034L10
6	MS27039-1-07		Screw	4	....		139-034L10
7	MS27039-1-10		Screw	8	....		139-034L10
8	MS27039-1-08		Screw	8	....		139-034L10
9	MS27130-S100K	NAS1330S3K166	Rivet-nut	8	....		139-034L10
10	NAS1149D0316K		Washer	6	....		139-034L10
11	NAS1149D0332J		Washer	16	....		139-034L10
12	NAS1832-08-3		Insert	8	....		139-034L10
13	NAS1832-3-5		Insert	8	....		139-034L10
14	NAS1832A3-3		Insert	7	....		139-034L10
15	NAS9301BNS-5-03	NAS9301B-5-03	Rivet	6	....		139-034L10
16	HL20RB-6-7	HL20PB-6-7	Pin-Rivet	1	....		139-034L10
17	HL20RB-6-8	HL20PB-6-8	Pin-Rivet	1	....		139-034L10
18	HL86W-6	HL86PBW6	Pin-Rivet Collar	2	....		139-034L10
19	NAS1721H4L4A	AGS4720-411	Rivet	10	....		139-034L10
20	NAS1721H5L2A	AGS4720-508	Rivet	20	....		139-034L10
21	MS90353S0604		Rivet	7	....		139-034L10
22	MS90353S0605		Rivet	4	....		139-034L10
23	MS90353S0504		Rivet	5	....		139-034L10
24	MS90353S0505		Rivet	8	....		139-034L10
25	3G5315A15732	3G5315A15731	Coupler Support Assy	1	....		139-034L10
26	3G5315A15852	3G5315A15852M01	Angle	1	....		139-034L10
27	3G5315A15951		Shim	1	....		139-034L10
28	3G5315A16052		Shim	1	....	(1)	-
29	3G5315A16051		Shim	1	....	(2)	-
30	3G5315A17051	3G5315A17052	Shim	1	....		139-034L10
31	3G5315A17151		Shim	1	....		139-034L10
32	3G5350A20351		Doubler	1	....	(1)	-
33	3G5315A17251	3G5315A17252	Doubler	1	....	(2)	-
34	3G5315A17351		Doubler	1	....		139-034L10
35	3G5315A18051		Shim	2	....		139-034L10
36	AW007TE-30-108		Insert	4	....		139-034L10
37	3G5316A46451		Fwd Cover	1	....	(3)	139-034L10
38	3G5316A46551		Middle Cover	2	....	(3)	139-034L10
39	3G5316A46651		Rear Cover	1	....	(3)	139-034L10
40	MS20426AD3-4		Rivet	0,1 kg	....		139-034L10
41	3G2310A00411		HF C/A ELECTRICAL PROVISION	REF	...		-

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#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
42	3G9B01A17501		HF C/A (B1A175)	1	....		139-034L11
43	3G9B02A12801		HF C/A (B2A128)	1	....		139-034L11
44	3G9B02B13501	3G2310A00411A2R	HF C/A (B2B135)	1	....		139-034L11
45	3G9C01A00401		HF C/A (C1A4)	1	....		139-034L11
46	3G9C01A13901		HF C/A (C1A139)	1	....		139-034L11
47	3G9C02A12101		HF C/A (C2A121)	1	....		139-034L11
48	3G9C03A00301		HF C/A (C3A3)	1	....		139-034L11
49	3G9C03A00401		HF C/A (C3A4)	1	....		139-034L11
50	MS21919WDG8		Clamp	5	....		139-034L11
51	MS21919WDG6		Clamp	5	....		139-034L11
52	MS21919WDG15		Clamp	2	....		139-034L11
53	MS21919WDG14		Clamp	1	....		139-034L11
54	MS21919WDG13		Clamp	5	....		139-034L11
55	MS3340-1-9	AW001CL509-N6	Bracket	10	....		139-034L11
56	NAS43DD3-47	NAS43DD3-47N	Spacer	3	....		139-034L11
57	MS21042L3		Nut	6	....		139-034L11
58	NAS1149D0332J		Washer	12	....		139-034L11
59	A366A3E22C		Stud	6	....		139-034L11
60	A657A02		Socket	1	....		139-034L11
61	MS35206-260		Screw	4	....		139-034L11
62	A657A01		Relay	1	....		139-034L11
63	ED300K76		Decal	1	....		139-034L11
64	A630A51	AW001CL001-N6	Mounting Base	14	....		139-034L11
65	A366A3E22C75		Stud	5	....		139-034L11
66	A363A01		Terminal	3	....		139-034L11
67	MS21919WDG4		Clamp	10	....		139-034L11
68	A815A04A1		Support Assy	1	....		139-034L11
69	ED300GS35		Decal	1	....		139-034L11
70	A630A3B		Support	2	....		139-034L11
71	A630A31	AW001CL000A-X3	Support	1	....		139-034L11
72	NAS43DD3-26	NAS43DD3-26N	Spacer	2	....		139-034L11
73	NAS43DD3-35	NAS43DD3-35N	Spacer	1	....		139-034L11
74	NAS43DD3-45	NAS43DD3-45N	Spacer	1	....		139-034L11
75	A366A3E30C		Stud, Adhesive Bonded	1	....		139-034L11
76	A366A3E08C75		Stud, Adhesive Bonded	2	....		139-034L11
77	999-1700-03-103	AW002FT103	Grommet, Rubber	5	....		139-034L11
78	MS3339-2-9	AW001CL510B-N6	Plate, Mounting, Plastic	1	....		139-034L11
79	MS21919WDG12		Clamp	3	....		139-034L11
80	NAS43DD3-47	NAS43DD3-47N	Spacer	3	....		139-034L11
81	MS21042L3		Nut	3	....		139-034L11
82	NAS1149D0332J		Washer	3	....		139-034L11
83	AGS4719-405	NAS1720H4L1A or NAS1720H4-1A	Rivet	10	....		139-034L11
84	NAS813-12		Plug	4	....		139-034L11
85	DCC-03		Protective Cap	1	....		139-034L11
86	DCC-04		Protective Cap	1	....		139-034L11
87	DCC-05		Protective Cap	1	....		139-034L11
<b>88</b>	<b>3G2310A01511</b>		<b>HF INSTALLATION</b>	<b>REF</b>	<b>..</b>		<b>-</b>
89	ED300A101		Decal	1	...		139-034L12
90	ED300A102		Decal	1	...		139-034L12
91	ED300E25		Decal	1	...		139-034L12
92	ED300PS15		Decal	1	...		139-034L12
93	ED300GS77		Decal	2	...		139-034L12
94	MS35206-242		Screw	4	...		139-034L12
95	MS35207-262		Screw	8	...		139-034L12

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
96	MS35207-264		Screw	5	...		139-034L12
97	MS35207-265		Screw	11	...		139-034L12
98	NAS1149DN832J		Washer	4	...		139-034L12
99	NAS1149D0332J		Washer	24	...		139-034L12
100	050-03628-0001	071-00184-0000	Receiver Tray Assy	1	...		139-034L12
101	050-03629-0001	071-00185-0000	Power Amplifier Tray Assy	1	...		139-034L12
102	050-03699-0000	050-03699-0001 or 071-00202-0001	Coupler Tray Assy	1	...		139-034L12
103	064-01072-0101		Hf Power Amplifier	1	...		139-034L12
104	064-01073-0101	064-01073-0102	HF Receiver/Exciter	1	...		139-034L12
105	064-01074-0101		HF Antenna Coupler	1	...		139-034L12
106	120-055-1-18		Bonding Strip	1	...		139-034L12
107	120-055-1-6		Bonding Strip	1	...		139-034L12
108	155-02988-0220		High Voltage HF Cable	1	...		139-034L12
109	33700		Tube Assy For HF Antenna	1	...		139-034L12
110	465SC10P4		Mast	1	...		139-034L12
111	485A10HN-1P4		Captive Head Lead In Mast	1	...		139-034L12
112	485C10P4		Mast Support	2	...		139-034L12
113	6930A4/485C10	6930A4/485C	Gasket	2	...		139-034L12
114	A499AHN020E01X00	A499AHN020E04X00	Decal	3	...	(6)	-
115	3G2490LXXXXX		Panel Integrally Lighted Aux Breaker	1	.	(4)	-
116	ED300CB162		Decal	1	.		139-034L11
117	ED300CB163		Decal	1	.		139-034L11
118	MS3320-5		Circuit Breaker	1	.		139-034L11
119	MS25244-30		Circuit Breaker	1	.		139-034L11
120	Primus Epic Option File		S/W (CD media)	1	.	(5)	-
121	A521A-E002	DD104S10GE0/AA- 1023.15	Connector	1	.		139-034L11
122	999-7000-09-126	047-06261-0036	Bonding Strap	1	.		139-034L11
123	A363A01		Stud	1	.		139-034L11

## PART II

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
124	3G2310F00211		HF SYSTEM INSTALLATION KIT	REF	.		-
125	4G2310A01311		HF COMPLETE PROVISION	REF	..		-
126	3G5310A04211		HF ANTENNA STRUCTURAL PROVISION	REF	...		-
127	MS21069L3		Nut Plate	3	....		139-034L10
128	MS27039-1-04		Screw	3	....		139-034L10
129	MS27039-1-07		Screw	4	....		139-034L10
130	MS27039-1-10		Screw	8	....		139-034L10
131	MS27039-1-08		Screw	8	....		139-034L10
132	MS27130-S100K	NAS1330S3K166	Rivet-nut	8	....		139-034L10
133	NAS1149D0316K		Washer	6	....		139-034L10
134	NAS1149D0332J		Washer	16	....		139-034L10
135	NAS1832-08-3		Insert	8	....		139-034L10
136	NAS1832-3-5		Insert	8	....		139-034L10
137	NAS1832A3-3		Insert	7	....		139-034L10
138	NAS9301BNS-5-03	NAS9301B-5-03	Rivet	6	....		139-034L10
139	HL20RB-6-7	HL20PB-6-7	Pin-Rivet	1	....		139-034L10

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#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
140	HL20RB-6-8	HL20PB-6-8	Pin-Rivet	1	....		139-034L10
141	HL86W-6	HL86PBW6	Pin-Rivet Collar	2	....		139-034L10
142	NAS1721H4L4A	AGS4720-411	Rivet	10	....		139-034L10
143	NAS1721H5L2A	AGS4720-508	Rivet	20	....		139-034L10
144	MS90353S0604		Rivet	7	....		139-034L10
145	MS90353S0605		Rivet	4	....		139-034L10
146	MS90353S0504		Rivet	5	....		139-034L10
147	MS90353S0505		Rivet	8	....		139-034L10
148	3G5315A15732	3G5315A15731	Coupler Support Assy	1	....		139-034L10
149	3G5315A15852	3G5315A15852M01	Angle	1	....		139-034L10
150	3G5315A15951		Shim	1	....		139-034L10
151	3G5315A16052		Shim	1	....	(1)	-
152	3G5315A16051		Shim	1	....	(2)	-
153	3G5315A17051	3G5315A17052	Shim	1	....		139-034L10
154	3G5315A17151		Shim	1	....		139-034L10
155	3G5350A20351		Doubler	1	....	(1)	-
156	3G5315A17251	3G5315A17252	Doubler	1	....	(2)	-
157	3G5315A17351		Doubler	1	....		139-034L10
158	3G5315A18051		Shim	2	....		139-034L10
159	AW007TE-30-108		Insert	4	....		139-034L10
160	3G5316A46451		Fwd Cover	1	....	(3)	139-034L10
161	3G5316A46551		Middle Cover	2	....	(3)	139-034L10
162	3G5316A46651		Rear Cover	1	....	(3)	139-034L10
163	MS20426AD3-4		Rivet	0,1 kg	....		139-034L10
<b>164</b>	<b>4G2310A00911</b>		<b>HF ELECTRICAL PROVISION</b>	<b>REF</b>	<b>...</b>		<b>-</b>
165	3G9A02A24301		HF C/A (A2A243)	1	....		139-034L13
166	3G9A02B24701		HF C/A (A2B247)	1	....		139-034L13
167	3G9B01A29201		HF C/A (B1A292)	1	....		139-034L13
168	3G9B02A23001		HF C/A (B2A230)	1	....		139-034L13
169	3G9C01A21901	4G2310A00911A1R	HF C/A (C1A219)	1	....		139-034L13
170	3G9C01A22001		HF C/A (C1A220)	1	....		139-034L13
171	3G9C02A21401		HF C/A (C2A214)	1	....		139-034L13
172	3G9C03A20201	4G2310A00911A2R	HF C/A (C3A202)	1	....		139-034L13
173	3G9C03A20301		HF C/A (C3A203)	1	....		139-034L13
174	A363A01		Ground Terminal	1	....		139-034L13
175	A366A3E08C75		Stud, Adhesive Bonded	1	....		139-034L13
176	A366A3E18C		Stud, Adhesive Bonded	1	....		139-034L13
177	A366A3E22C75		Stud, Adhesive Bonded	5	....		139-034L13
178	A388A3E08C		Standoff, Adhesive Bonded	3	....		139-034L13
179	A366A3E30C		Stud, Adhesive Bonded	1	....		139-034L13
180	AW001TL3A08		Plastic Nut Plate	3	....		139-034L13
181	A630A31	AW001CL000A-X3	Plastic Support	5	....		139-034L13
182	A630A51	AW001CL001-N6	Plastic Support	6	....		139-034L13
183	A657A01		Relay	1	....		139-034L13
184	A815A04A1		Relay Socket	1	....		139-034L13
185	ED300GS313		Decal	1	....		139-034L13
186	ED300K76		Decal	1	....		139-034L13
187	MS21042L3		Nut, Self-Locking	10	....		139-034L13
188	MS21919WDG4		Clamp	24	....		139-034L13
189	MS21919WDG5		Clamp	5	....		139-034L13
190	MS21919WDG6		Clamp	8	....		139-034L13
191	MS21919WDG7		Clamp	1	....		139-034L13
192	MS21919WDG8		Clamp	10	....		139-034L13
193	MS35207-259		Screw	2	....		139-034L13

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
194	M81824/1-1		Splice	5	...		139-034L13
195	NAS1149D0332J		Washer	15	...		139-034L13
196	NAS1801-3-7		Screw	2	...		139-034L13
197	NAS1801-3-10		Screw	1	...		139-034L13
198	NAS1801-3-20		Screw	3	...		139-034L13
199	NAS1801-3-24		Screw	4	...		139-034L13
200	NAS1801-3-32		Screw	1	...		139-034L13
201	NAS43DD3-30N		Spacer	2	...		139-034L13
202	NAS43DD3-35N		Spacer	3	...		139-034L13
203	NAS43DD3-40N		Spacer	1	...		139-034L13
204	NAS43DD3-45N		Spacer	1	...		139-034L13
205	NAS43DD3-47N		Spacer	4	...		139-034L13
206	NAS43DD3-50N		Spacer	8	...		139-034L13
207	NAS43DD3-60N		Spacer	1	...		139-034L13
208	NAS43DD3-70N		Spacer	6	...		139-034L13
209	NAS43DD3-90N		Spacer	1	...		139-034L13
210	NAS1190E3P24AK		Screw	3	...		139-034L13
211	NAS813-12		Plug	4	...		139-034L13
212	DCC-03		Protective Cap	1	...		139-034L13
213	DCC-04		Protective Cap	1	...		139-034L13
214	DCC-05		Protective Cap	1	...		139-034L13
215	999-1700-03-102		Grommet, Rubber	1	...		139-034L13
216	A631A01A		Spacer	3	...		139-034L13
217	A630A3B		Support	3	...		139-034L13
<b>218</b>	<b>4G2310A01411</b>		<b>HF SYSTEM INSTALLATION</b>	<b>REF</b>	<b>..</b>		<b>-</b>
219	050-03628-0001		KRX 1053 Installation Kit (Tray Only)	1	...		139-034L14
220	050-03629-0001		KPA 1052 Installation Kit (Tray Only)	1	...		139-034L14
221	050-03699-0000		Installation Kit KAC1052	1	...		139-034L14
222	064-01072-0101		HF Power Amplifier	1	...		139-034L14
223	064-01073-0101	064-01073-0102	HF Receiver/Exciter	1	...		139-034L14
224	064-01074-0101		HF Antenna Coupler	1	...		139-034L14
225	120-055-1-18		Bonding Strip	2	...		139-034L14
226	120-055-1-7		Bonding Strip	1	...		139-034L14
227	33700		Tube Assy For Antenna	1	...		139-034L14
228	465SC10P4		Mast	1	...		139-034L14
229	485A10HN-1P4		Captive Head Lead In Mast	1	...		139-034L14
230	155-02988-0220		High Voltage HF Cable	1	...		139-034L14
231	485C10P4		Mast Support	2	...		139-034L14
232	6930A4/485C10	6930A4/485C	Gasket	2	...		139-034L14
233	999-7000-09-126	047-06261-0036	Bonding Strap	1	...		139-034L14
234	A363A01		Ground Terminal	2	...		139-034L14
235	A499AHN020E01X00	A499AHN020E04X00	Decal	3	...	(6)	-
236	ED300A101		Decal	1	...		139-034L14
237	ED300A102		Decal	1	...		139-034L14
238	ED300E25		Decal	1	...		139-034L14
239	ED300PS15		Decal	1	...		139-034L14
240	MS24694-S5		Screw	4	...		139-034L14
241	MS35206-242		Screw	8	...		139-034L14
242	MS35206-264		Screw	2	...		139-034L14
243	MS35206-265		Screw	10	...		139-034L14
244	MS35206-266		Screw	4	...		139-034L14
245	NAS1149D0332J		Washer	20	...		139-034L14
246	NAS620A8L		Washer	8	...		139-034L14

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#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
247	3G2490LXXXXX		Panel Aux Breaker	1	.	(4)	-
248	ED300CB162		Decal	1	.		139-034L13
249	ED300CB163		Decal	1	.		139-034L13
250	MS3320-5		Circuit Breaker	1	.		139-034L13
251	MS25244-30		Circuit Breaker	1	.		139-034L13
252	A529A400-2102C15		Backshell	1	.		139-034L13
253	MS21042-3		Nut	1	.		139-034L13
254	NAS1149D0363J		Washer	1	.		139-034L13
255	NAS1149F0363P		Washer	1	.		139-034L13
256	NAS1801-3-20		Screw	1	.		139-034L13
257	Primus Epic Option File		SW (CD media)	1	.	(5)	-

### **PART III**

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
<b>258</b>	<b>3G2310F00211</b>		<b>HF SYSTEM INSTALLATION KIT</b>	<b>REF</b>	.		-
<b>259</b>	<b>4G2310A01312</b>		<b>RADIO HONEYWELL HF COMPLETE PROVISION</b>	<b>REF</b>	..		-
<b>260</b>	<b>3G5310A04211</b>		<b>HF ANTENNA STRUCTURAL PROVISION</b>	<b>REF</b>	...		-
261	MS21069L3		Nut Plate	3	....		139-034L10
262	MS27039-1-04		Screw	3	....		139-034L10
263	MS27039-1-07		Screw	4	....		139-034L10
264	MS27039-1-10		Screw	8	....		139-034L10
265	MS27039-1-08		Screw	8	....		139-034L10
266	MS27130-S100K	NAS1330S3K166	Rivet-nut	8	....		139-034L10
267	NAS1149D0316K		Washer	6	....		139-034L10
268	NAS1149D0332J		Washer	16	....		139-034L10
269	NAS1832-08-3		Insert	8	....		139-034L10
270	NAS1832-3-5		Insert	8	....		139-034L10
271	NAS1832A3-3		Insert	7	....		139-034L10
272	NAS9301BNS-5-03	NAS9301B-5-03	Rivet	6	....		139-034L10
273	HL20RB-6-7	HL20PB-6-7	Pin-Rivet	1	....		139-034L10
274	HL20RB-6-8	HL20PB-6-8	Pin-Rivet	1	....		139-034L10
275	HL86W-6	HL86PBW6	Pin-Rivet Collar	2	....		139-034L10
276	NAS1721H4L4A	AGS4720-411	Rivet	10	....		139-034L10
277	NAS1721H5L2A	AGS4720-508	Rivet	20	....		139-034L10
278	MS90353S0604		Rivet	7	....		139-034L10
279	MS90353S0605		Rivet	4	....		139-034L10
280	MS90353S0504		Rivet	5	....		139-034L10
281	MS90353S0505		Rivet	8	....		139-034L10
282	3G5315A15732	3G5315A15731	Coupler Support Assy	1	....		139-034L10
283	3G5315A15852	3G5315A15852M01	Angle	1	....		139-034L10
284	3G5315A15951		Shim	1	....		139-034L10
285	3G5315A16052		Shim	1	....	(1)	-
286	3G5315A16051		Shim	1	....	(2)	-
287	3G5315A17051	3G5315A17052	Shim	1	....		139-034L10
288	3G5315A17151		Shim	1	....		139-034L10
289	3G5350A20351		Doubler	1	....	(1)	-
290	3G5315A17251	3G5315A17252	Doubler	1	....	(2)	-
291	3G5315A17351		Doubler	1	....		139-034L10
292	3G5315A18051		Shim	2	....		139-034L10
293	AW007TE-30-108		Insert	4	....		139-034L10
294	3G5316A46451		Fwd Cover	1	....	(3)	139-034L10
295	3G5316A46551		Middle Cover	2	....	(3)	139-034L10

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
296	3G5316A46651		Rear Cover	1	....	(3)	139-034L10
297	MS20426AD3-4		Rivet	0,1 kg	....		139-034L10
<b>298</b>	<b>4G2310A00912</b>		<b>HF ELECTRICAL PROVISION</b>	<b>REF</b>	<b>...</b>		<b>-</b>
299	3G9A02A24301		HF C/A (A2A243)	1	....		139-034L15
300	3G9A02B24701		HF C/A (A2B247)	1	....		139-034L15
301	3G9B01A29201		HF C/A (B1A292)	1	....		139-034L15
302	3G9B02A23001		HF C/A (B2A230)	1	....		139-034L15
303	3G9C01A21901	4G2310A00911A1R	HF C/A (C1A219)	1	....		139-034L15
304	3G9C01A22001		HF C/A (C1A220)	1	....		139-034L15
305	3G9C02A21401		HF C/A (C2A214)	1	....		139-034L15
306	3G9C03A20201	4G2310A00911A2R	HF C/A (C3A202)	1	....		139-034L15
307	3G9C03A20301		HF C/A (C3A203)	1	....		139-034L15
308	900004953	AW001CK03LC	Tape Lacing And Tying	0.5 m	....		139-034L15
309	A363A01		Ground Terminal	1	....		139-034L15
310	A366A3E10C		Stud, Adhesive Bonded	1	....		139-034L15
311	A366A3E18C		Stud, Adhesive Bonded	1	....		139-034L15
312	A366A3E22C		Stud, Adhesive Bonded	1	....		139-034L15
313	A366A3E22C75		Stud, Adhesive Bonded	2	....		139-034L15
314	A366A3E32C		Stud, Adhesive Bonded	2	....		139-034L15
315	A388A3E08C		Standoff, Adhesive Bonded	3	....		139-034L15
316	A388A3E10C75		Standoff, Adhesive Bonded	1	....		139-034L15
317	A631A01A		Spacer	3	....		139-034L15
318	A657A01		Relay	1	....		139-034L15
319	A815A04A1		Relay Socket	1	....		139-034L15
320	AW001CB03H		Clamp	4	....		139-034L15
321	AW001CB04H		Clamp	8	....		139-034L15
322	AW001CB06H		Clamp	9	....		139-034L15
323	AW001CB07H		Clamp	7	....		139-034L15
324	AW001CB08H		Clamp	2	....		139-034L15
325	AW001CB10H		Clamp	3	....		139-034L15
326	AW001CL000A-X3		Support	2	....		139-034L15
327	AW001CL001-N6		Support	4	....		139-034L15
328	AW001CL002C-X2		Support	2	....		139-034L15
329	AW001CL003CT-X2		Support	1	....		139-034L15
330	AW001CL009-CM		Support	3	....		139-034L15
331	AW001TL3A08		Plastic Nut Plate	3	....		139-034L15
332	AW002FT102		Grommet	10	....		139-034L15
333	DCC-03		Protective Cap	1	....		139-034L15
334	DCC-04		Protective Cap	1	....		139-034L15
335	DCC-05		Protective Cap	1	....		139-034L15
336	ED300GS313		Decal	1	....		139-034L15
337	ED300K76		Decal	1	....		139-034L15
338	MS21043-3		Self-Locking Nut	6	....		139-034L15
339	MS25281-R6		Clamp	4	....		139-034L15
340	MS35207-259		Screw	2	....		139-034L15
341	NAS1149D0332J		Washer	14	....		139-034L15
342	NAS1190E3P24AK		Screw	3	....		139-034L15
343	NAS1190E3P28AK		Screw	2	....		139-034L15
344	NAS1190E3P7AK		Screw	1	....		139-034L15
345	NAS1802-3-10		Screw	1	....		139-034L15
346	NAS1802-3-12		Screw	1	....		139-034L15
347	NAS1802-3-25		Screw	4	....		139-034L15
348	NAS1802-3-26		Screw	1	....		139-034L15
349	NAS1802-3-33		Screw	2	....		139-034L15
350	NAS43DD3-30N		Spacer	3	....		139-034L15

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#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
351	NAS43DD3-47N		Spacer	1	....		139-034L15
352	NAS43DD3-50N		Spacer	4	....		139-034L15
353	NAS43DD3-52N		Spacer	1	....		139-034L15
354	NAS43DD3-55N		Spacer	1	....		139-034L15
355	NAS43DD3-60N		Spacer	2	....		139-034L15
356	NAS43DD3-70N		Spacer	4	....		139-034L15
357	NAS43DD3-80N		Spacer	3	....		139-034L15
358	NAS43DD3-90N		Spacer	1	....		139-034L15
359	NAS813-12		Plug	14	....		139-034L15
<b>360</b>	<b>4G2310A01411</b>		<b>HF SYSTEM INSTALLATION</b>	<b>REF</b>	<b>..</b>		<b>-</b>
361	050-03628-0001		KRX 1053 Installation Kit (Tray Only)	1	...		139-034L14
362	050-03629-0001		KPA 1052 Installation Kit (Tray Only)	1	...		139-034L14
363	050-03699-0000		Installation Kit KAC1052	1	...		139-034L14
364	064-01072-0101		HF Power Amplifier	1	...		139-034L14
365	064-01073-0101	064-01073-0102	HF Receiver/Exciter	1	...		139-034L14
366	064-01074-0101		HF Antenna Coupler	1	...		139-034L14
367	120-055-1-18		Bonding Strip	2	...		139-034L14
368	120-055-1-7		Bonding Strip	1	...		139-034L14
369	33700		Tube Assy For Antenna	1	...		139-034L14
370	465SC10P4		Mast	1	...		139-034L14
371	485A10HN-1P4		Captive Head Lead In Mast	1	...		139-034L14
372	155-02988-0220		High Voltage HF Cable	1	...		139-034L14
373	485C10P4		Mast Support	2	...		139-034L14
374	6930A4/485C10	6930A4/485C	Gasket	2	...		139-034L14
375	999-7000-09-126	047-06261-0036	Bonding Strap	1	...		139-034L14
376	A363A01		Ground Terminal	2	...		139-034L14
377	A499AHN020E01X00	A499AHN020E04X00	Decal	3	...	(6)	-
378	ED300A101		Decal	1	...		139-034L14
379	ED300A102		Decal	1	...		139-034L14
380	ED300E25		Decal	1	...		139-034L14
381	ED300PS15		Decal	1	...		139-034L14
382	MS24694-S5		Screw	4	...		139-034L14
383	MS35206-242		Screw	8	...		139-034L14
384	MS35206-264		Screw	2	...		139-034L14
385	MS35206-265		Screw	10	...		139-034L14
386	MS35206-266		Screw	4	...		139-034L14
387	NAS1149D0332J		Washer	20	...		139-034L14
388	NAS620A8L		Washer	8	...		139-034L14
389	3G2490LXXXXX		Panel Integrally Lighted Aux Breaker	1	.	(4)	-
390	ED300CB162		Decal	1	.		139-034L15
391	ED300CB163		Decal	1	.		139-034L15
392	MS3320-5		Circuit Breaker	1	.		139-034L15
393	MS25244-30		Circuit Breaker	1	.		139-034L15
394	A529A400-2102C15		Backshell	1	.		139-034L15
395	MS21042-3		Nut	1	.		139-034L15
396	NAS1149D0363J		Washer	1	.		139-034L15
397	NAS1149F0363P		Washer	1	.		139-034L15
398	NAS1801-3-20		Screw	1	.		139-034L15
399	Primus Epic Option File		S/W (CD media)	1	.	(5)	-

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

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## 2) CONSUMABLES

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

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
400	MMM-A-132, Type II, Class 2 199-05-002 Type I, Class 2	Adhesive EA9309.3NA (C021)	AR	(7)	All
401	MMM-A-132 Type I, Class 3 199-05-002 Type II, Class 2	Adhesive EA934NA (C057)	AR	(7)	All
402	MIL-R-25134	Paint remover Chemetall ARDROX 204 (C043), or equivalent	AR	(7)	All
403	MIL-PRF-680, Type II	Cleaning solvent ARDROX 5503A (C010), or equivalent	AR	(7)	All
404	MIL-PRF-23377, Type 1, Class 1	Corrosion preventive compound PX32	AR	(7)	All
405	199-05-004 Type II, Class B1/2	PR-1440 Naftoseal Sealant, or equivalent	AR	(7)	All
406	199-05-003, Ty 1, Cl 1, Shape IIB	Teflon (C405) GO-AS-0105	AR		All
407	EN6049-006-25-5	Sleeve	AR	(7)	All
408	EN6049-006-32-5	Sleeve	AR	(7)	All
409	A236A01AB	Edging	AR		All
410	A556A-T8	Cable type	2 m		All
411	A556A-T14	Cable type	2 m		All
412	A556A-T22	Cable type	2 m		All
413	EE267-02-075B	Sealing tape	1		All
414	MS25036-149	Electrical contact	1		All
415	M39029/56-351	Electrical contact	2		All
416	A556A-T16	Wire bundle	2 m		All
417	A556A-T20	Wire bundle	2 m		All
418	MS20995C32	Lockwire (C014)	AR		All
419	A582A32	Meta-aramid fibre (NOMEX)	AR		All
420	A582A25	Meta-aramid fibre (NOMEX)	AR		All

Refer also to AMDI for the consumable materials required to comply with the AMP DMs 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
139-034L10	1		
3G5315A16052	1	(1)	
3G5315A16051	1	(2)	
3G5350A20351	1	(1)	
3G5315A17251 or 3G5315A17252	1	(2)	
139-034L11	1		Part I
139-034L12	1		
A499AHN020E01X00 or A499AHN020E04X00	3	(6)	
3G2490LXXXXX	1	(4)	
Primus Epic Option File S/W (CD media)	1	(5)	

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LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
139-034L10	1		
3G5315A16052	1	(1)	
3G5315A16051	1	(2)	
3G5350A20351	1	(1)	
3G5315A17251 or 3G5315A17252	1	(2)	Part II
139-034L13	1		
139-034L14	1		
A499AHN020E01X00 or A499AHN020E04X00	3	(6)	
3G2490LXXXXX	1	(4)	
Primus Epic Option File S/W (CD media)	1	(5)	
139-034L10	1		
3G5315A16052	1	(1)	
3G5315A16051	1	(2)	
3G5350A20351	1	(1)	
3G5315A17251 or 3G5315A17252	1	(2)	Part III
139-034L15	1		
139-034L14	1		
A499AHN020E01X00 or A499AHN020E04X00	3	(6)	
3G2490LXXXXX	1	(4)	
Primus Epic Option File S/W (CD media)	1	(5)	

## NOTES

- (1) Items required only for helicopter already compliant with retromod P/N 3G5309P01812 as per SB 139-200.
- (2) Item required only for helicopter **NOT** already compliant with retromod P/N 3G5309P01812 as per SB 139-200.
- (3) These covers should be stored and used only in case of removal of HF antenna from the helicopter.
- (4) 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](mailto: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.
- (5) Refer to software accomplishment summary paragraph.
- (6) P/N A499AHN020E01X00 is the white decal to use with the dark background. P/N A499AHN020E04X00 is the black decal that may be used as a valid alternative for white background.
- (7) Item to be procured as local supply.

## B. SPECIAL TOOLS

The following special tools, or equivalent, are necessary to accomplish this Service Bulletin:

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
421	3G5310H04211A005A	HF Antenna Supports Drilling Jig	1		All
422	3G5315H15731A005A	HF Coupler Support Drilling Jig	1		All

Refer also to ITEP for the special tools required to comply with the AMP DM referenced in the accomplishment instructions.

## C. INDUSTRY SUPPORT INFORMATION

Customization



### **3. ACCOMPLISHMENT INSTRUCTIONS**

#### **GENERAL NOTES**

- a) Place an identification tag on all components that are re-usable, including the attaching hardware that has been removed to gain access to the modification area and adequately protect them until their later re-use.
- b) 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.
- c) Exercise extreme care during drilling operations to prevent instruments, cables and hoses damage.
- d) 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.
- e) During the installation of bonding braids or components requiring grounding, clean the surface structure in order to obtain a good ground contact.
- f) Let adhesive cure at room temperature for at least 24 hours unless otherwise specified.
- g) Exposed thread surface and nut must be protected using a layer of tectyl according to MIL-C-16173 grade I.
- h) All lengths are in mm.

#### **PART I**

1. In accordance with AMP 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 AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figure 1, 9 and 21, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installations.
3. With reference to Figures 1 thru 8, install the HF antenna structural provision P/N 3G5310A04211 in accordance with the following procedure:
  - 3.1 With reference to Figure 2, proceed as follows:

- 3.1.1 With reference to Figure 2 Detail A, remove from indicated locations n°11 existing rivets.
- 3.1.2 Temporarily put in place the doubler P/N 3G5315A17251 (or doubler P/N 3G5350A20351 for helicopter modified as per SB 139-200) in its position and countermark the position of n°12 rivet holes on the tail boom assy and n°11 rivet holes on the doubler.
- 3.1.3 Install doubler P/N 3G5315A17251 (or P/N 3G5350A20351) by means of n°7 rivets P/N MS90353S0604 and n°4 rivets P/N MS90353S0605 in the old position and n°12 rivets P/N AGC4720-508 in the new position.

**CAUTION**

Use extreme care and attention in positioning HF Antenna support drilling jig P/N 3G5310H04211A005A.

**CAUTION**

Panel lower coating shall be free from nicks. Do not overheat outer skin during the drilling to avoid debondings between the skin and the honeycomb.

- 3.1.4 With reference to Figures 2 Detail A and Section E-E, Figures 3, 4 and 5 Detail D and Section H-H, install the HF Antenna support drilling jig P/N 3G5310H04211A005A and countermark on the tail boom the position the four shims in evidence.
- 3.1.5 With reference to Figures 2 Detail A and Section E-E, Figures 3, 4 and Figure 5 Detail D and Section H-H, remove with extreme care the previously installed HF Antenna support drilling jig P/N 3G5310H04211A005A.
- 3.1.6 With reference to Figure 2 Section E-E, Figure 3 Section F-F and Section S-S, Figure 4 Section G-G and Figure 5 Section H-H and in accordance with AMP DM 39-A-20-10-01-00A-259A-A, prepare the mating surfaces of tail boom and shims for good electrical bonding.
- 3.1.7 With reference to Figure 2 Detail A, temporarily put in place the shim P/N 3G5315A15951 in the countermarked position and countermark the position of n°4 rivet-nut holes.
- 3.1.8 With reference to Figure 2 Detail A, counter drill doubler P/N 3G5315A17251 (or P/N 3G5350A20351) and tail boom in accordance with shim P/N 3G5315A15951.

- 3.1.9 Drill four 10.0 mm diameter holes through doubler P/N 3G5315A17251 (or P/N 3G5350A20351) and panel to match with shim P/N 3G5315A15951 and install n°4 rivet-nuts P/N MS20130-S100K.
- 3.1.10 With reference to Figure 2 Section E-E, perform a cut out in the doubler P/N 3G5315A17251 (or P/N 3G5350A20351) and panel to relate to shim P/N 3G5315A15951 with dimension and shape shown.
- 3.1.11 Install shim P/N 3G5315A15951 by means of n°2 rivets P/N MS90353S0504 and n°4 rivets P/N MS90353S0505.
- 3.1.12 Apply sealant PR1440 Naftoseal, or equivalent, around shim edge.
- 3.1.13 Apply teflon (C405) above shim P/N 3G5315A15951, prior to install the FWD cover LH P/N 3G5316A46451.
- 3.1.14 With reference to Figure 2 Detail A and Section E-E, install n°1 FWD cover LH P/N 3G5316A46451 by means of n°4 screws P/N MS27039-1-10 and n°4 washers P/N NAS1149D0332J.
- 3.1.15 With reference to Figure 2 Section E-E gain access to lower left longeron assy and make cut out of 40.0 mm diameter to match with shim P/N 3G5315A15951.
- 3.2 With reference to Figure 3, proceed as follows:
  - 3.2.1 With reference to Figure 3 Detail B, temporarily put in place the shim P/N 3G5315A16051 (or P/N 3G5315A16052 for helicopter modified as per SB 139-200) in the countermarked position and countermark the position of n°4 insert holes.
  - 3.2.2 With reference to Figure 3 Section F-F and Section S-S, drill n°4 Ø 14.25 to 14.38 insert holes through skin and honeycomb up to a depth of 16.0. Install n°4 inserts P/N NAS1832-3-5 by means of adhesive EA934NA (C057).
  - 3.2.3 Apply a film of adhesive EA9309.3NA (C021) between shim P/N 3G5315A16051 and tail and install shim by means of n°2 rivets P/N NAS1721H4L4A.
  - 3.2.4 Apply a thin bead of sealant PR1440 Naftoseal around shim edge.
  - 3.2.5 Apply teflon (C405) above shim P/N 3G5315A16051, prior to install the middle cover LH P/N 3G5316A46551.
  - 3.2.6 With reference to Figure 3 Detail B and Section F-F, install middle cover LH P/N 3G5316A46551 by means of n°4 screws P/N MS27039-1-08 and n°4 washers P/N NAS1149D0332J.
- 3.3 With reference to Figure 4, proceed as follows:

- 3.3.1 With reference to Figure 4 Detail C, temporarily put in place the shim P/N 3G5315A17051 in the countermarked position and countermark the position of n°4 insert holes.
  - 3.3.2 With reference to Figure 4 Section G-G, drill n°4 Ø 14.25 to 14.38 insert holes through skin and honeycomb up to a depth of 16.0. Install n°4 inserts P/N NAS1832-3-5 by means of adhesive EA934NA (C057).
  - 3.3.3 Apply a film of adhesive EA9309.3NA (C021) between shim P/N 3G5315A17051 and tail and install shim with n°2 rivets P/N NAS1721H4L4A.
  - 3.3.4 Apply sealant PR1440 Naftoseal around shim edge.
  - 3.3.5 Apply teflon (C405) above shim P/N 3G5315A17051, prior to install the middle cover LH P/N 3G5316A46551.
  - 3.3.6 With reference to Figure 4 Detail C and Section G-G, install middle cover LH P/N 3G5316A46551 by means of n°4 screws P/N MS27039-1-08 and n°4 washers P/N NAS1149D0332J.
- 3.4 With reference to Figure 5, proceed as follows:
- 3.4.1 Position doubler P/N 3G5315A17351 on internal side of tail boom, as indicated, and bond with adhesive EA9309.3NA (C021).
  - 3.4.2 With reference to Figure 5 Detail D, temporarily put in place the shim P/N 3G5315A17151 in the countermarked position and countermark the position of n°4 insert holes and n°4 rivet-nut holes.
  - 3.4.3 With reference to Figure 5 Section H-H, drill n°4 Ø 9.50 to 9.60 insert holes through panel and core. Install n°4 inserts P/N AW007TE-30-108 by means of adhesive EA934NA (C057).
  - 3.4.4 With reference to Figure 5 Section H-H, drill n°4 Ø 10 rivet-nut through external skin and honeycomb. Install n°4 rivet-nut P/N MS27130-S100K by means of adhesive EA934NA (C057).
  - 3.4.5 With reference to Figure 5 Detail D, install shim P/N 3G5315A17151 by means of n°4 screws P/N MS27039-1-07.

**NOTE**

Before installing the shim, spot face the forward hole as required if its depth is less than 4.5 mm.

- 3.4.6 Apply a thin bead of sealant PR1440 Naftoseal, or equivalent, around shim edge.
- 3.4.7 Apply teflon (C405) above shim P/N 3G5315A17151, prior to install the rear cover LH P/N 3G5316A46651.

- 3.4.8 With reference to Figure 5 Detail D and Section H-H, install rear cover LH P/N 3G5316A46651 by means of n°4 screws P/N MS27039-1-10 and n°4 washers P/N NAS1149D0332J.
- 3.5 With reference to Figures 6 View J-J and Section K-K and Figure 7, proceed as follows:
  - 3.5.1 With reference to Figure 6 View J and Section K-K, temporarily locate the HF coupler support drilling jig P/N 3G5315H15731A005A on the tail boom and countermark position of n°3 insert holes in the tail boom. Drill n°3 Ø 2.5 pilot holes in the tail boom.
  - 3.5.2 With reference to Figure 6 View J and Section K-K, oversize three pilot holes to Ø 14.25÷14.38 in the tail boom through top skin and honeycomb up to a depth of 9.9. Install n°3 inserts P/N NAS1832A3-3 by means of adhesive EA934.NA (C057).
  - 3.5.3 Position as indicated the coupler support assy P/N 3G5315A15732 and countermark four rivet holes in the Lower LH longeron.
  - 3.5.4 With reference to Figure 6, remove from indicated locations n°2 existing steel pin-rivets from LH longeron.
  - 3.5.5 Temporary install two shims P/N 3G5315A18051, angle P/N 3G5315A15852 and coupler support assy P/N 3G5315A15732 in the tail boom and countermark position of three nut plates P/N MS21069L3 to be installed on angle.
  - 3.5.6 Remove all items and install nut plates MS21069L3 by means of n°6 rivets P/N MS20426AD3-4.
  - 3.5.7 With reference to Figure 6, install n°2 shims P/N 3G5315A18051 and angle P/N 3G5315A15852 on LH longeron by means of n°4 rivets P/N NAS9301BNS-5-03, steel rivet P/N HL20RB-6-7 and steel rivet P/N HL20RB-6-8.
  - 3.5.8 With reference to Figures 6 Section K-K and Figure 7 Section L-L, complete installation of coupler support assy P/N 3G5315A15732 by means of n°3 screws P/N MS27039-1-04, n°3 screws P/N MS27039-1-07 and n°6 washers P/N NAS1149D0316K.
- 3.6 With reference to Figure 8 View M-M, proceed as follows:
  - 3.6.1 In accordance with reported quotes drill ten 2.5 mm diameter pilot holes through internal skin and honeycomb.
  - 3.6.2 Widen ten holes to 14.25÷14.38 mm diameter for a depth of 9.9 mm.

- 3.6.3 With reference to Figure 8 Section U-U, Section N-N and Section P-P install n°2 inserts P/N NAS1832A3-3 and n°8 inserts P/N NAS1832-08-3 in accordance with CSRP DM CSRP-A-51-42-00-00A-720A-D by means of adhesive EA934.NA (C057).

**NOTE**

Install Kit HF Electrical Provision according to following step 4 and to wiring diagrams shown in Figures 58 thru 60.

4. With reference to Figures 9 thru 22 and Figure 58 thru 60 wiring diagrams, perform the HF electrical provision P/N 3G2310A00411 as described in the following procedure:

**NOTE**

As alternative different clamps of proper shape and size can be used if the clamps required to be installed in the following procedure cannot be installed.

**NOTE**

Figure 17 is applicable only to helicopters without the lightening hole indicated in the Figure 16 in the rear fuselage STA 8700.

- 4.1 With reference to Figure 14 View E, at location n°8, install stud P/N A366A3E22C by means of adhesive EA9309.3NA (C021). Install clamp P/N MS21919WDG6, spacer P/N NAS43DD3-47, nut P/N MS21042L3 and washer P/N NAS1149D0332J.
- 4.2 With reference to Figure 9 and Figure 15 Detail G, at locations n°11-12, install n°2 brackets P/N MS3340-1-9 by means of n°2 rivets P/N AGS4719-405.
- 4.3 With reference to Figure 9 and Figure 15 view F, at locations n°9-10, install n°2 brackets P/N MS3340-1-9 by means of n°2 rivets P/N AGS4719-405.
- 4.4 With reference to Figures 9, 16, and 17 proceed as follows:
- 4.4.1 Install support P/N A815A04A1 by means of n°4 screws P/N MS35206-260 and n°4 washer NAS1149D0332J on points with the following coordinates:
- (STA 8263, BL -273, WL 1422),
  - (STA 8221, BL -279, WL 1407).
- 4.4.2 With reference to Figure 16 View H1, at location n°13, install support P/N MS3339-2-9 by means of adhesive EA9309.3NA (C021).

- 4.4.3 With reference to Figure 16 View H1, at locations n°19-20-21, install n°3 supports P/N A630A51 by means of adhesive EA9309.3NA (C021).
- 4.4.4 With reference to Figure 16 View H1, at location n°18, install stud P/N A366A3E22C75 by means of adhesive EA9309.3NA (C021). Install clamp P/N MS21919WDG6, clamp P/N MS21919WDG8, spacer P/N NAS43DD3-47, nut P/N MS21042L3 and washer P/N NAS1149D0332J.
- 4.4.5 With reference to Figure 16 View H1, at location n°17, install support P/N A366A3E22C by means of adhesive EA9309.3NA (C021). Install clamp P/N MS21919WDG6, clamp P/N MS21919WDG8, spacer P/N NAS43DD3-47, nut P/N MS21042L3 and washer P/N NAS1149D0332J.
- 4.4.6 With reference to Figure 16 View H1, at locations n°14-22-23, install n°3 brackets P/N MS3340-1-9 by means of n°3 rivets P/N AGS4719-405. Location and orientation of support is respectively within  $\pm 5$  mm or  $\pm 5^\circ$  of given value.
- 4.4.7 With reference to Figure 16 View H1, at locations n°15-16-24, install n°3 supports P/N A630A51 by means of adhesive EA9309.3NA (C021).
- 4.4.8 With reference to Figure 16 View H1, at locations n°14-15-16-17, install n°4 grommets P/N 999-1700-03-103 to protect indicated cable assemblies.

**NOTE**

Perform following steps 4.4.9 and 4.4.10 only if lightening hole indicated in the Figure 16 View H1 in the rear fuselage STA 8700 is not present.

- 4.4.9 With reference to Figure 17 View AE, at locations n°45-46, install n°2 studs P/N A366A3E22C75 by means of adhesive EA9309.3NA (C021), n°2 clamps P/N MS21919WDG12, n°2 spacers P/N NAS43DD3-47, n°2 washers P/N NAS1149D0332J and n°2 nuts P/N MS21042L3.
  - 4.4.10 With reference to Figure 17 Detail AH, at location n°47, install stud P/N A366A3E22C75 by means of adhesive EA9309.3NA (C021), clamp P/N MS21919WDG12, spacer P/N NAS43DD3-47, washer P/N NAS1149D0332J and nut P/N MS21042L3.
- 4.5 With reference to Figures 9 and 19 View J, proceed as follows:

**NOTE**

If the lightening hole indicated in the Figure 16 View H1 in the rear fuselage STA 8700 is not present, skip to step 4.5.5. Otherwise proceed with following step 4.5.1.

- 4.5.1 With reference to Figure 19 View J, at location n°35, install stud P/N A366A3E30C by means of adhesive EA9309.3NA (C021). Install clamp P/N MS21919WDG8, n°2 clamps P/N MS21919WDG4, spacer P/N NAS43DD3-45N, spacer P/N NAS43DD3-35, nut P/N MS21042L3 and washer P/N NAS1149D0332J.
- 4.5.2 With reference to Figure 19 View J, at locations n°32-33-34, install n°3 supports P/N A630A51 by means of adhesive EA9309.3NA (C021).
- 4.5.3 With reference to Figure 19 View J, at location n°31, install stud P/N A366A3E08C75 by means of adhesive EA9309.3NA (C021). Install clamp P/N MS21919WDG8, clamp P/N MS21919WDG4, nut P/N MS21042L3 and washer P/N NAS1149D0332J.
- 4.5.4 With reference to Figure 19 View J, at location n°29, install n°1 stud P/N A366A3E08C75 by means of adhesive EA9309.3NA (C021). Install clamp P/N MS21919WDG4, nut P/N MS21042L3 and washer P/N NAS1149D0332J.
- 4.5.5 With reference to Figure 19 View J, at locations n°28-30, install n°2 ground studs P/N A363A01.
- 4.5.6 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 19 View J, decal P/N ED300GS35 in an area adjacent to previously installed ground stud.

**NOTE**

If the lightening hole indicated in the Figure 16 in the rear fuselage STA 8700 is not present, skip to step 4.7. Otherwise proceed with following step 4.6.

- 4.6 With reference to Figure 9 and Figure 20 View AF, do as follows:
  - 4.6.1 With reference to Figure 20 View AF, at locations n°38-39-40, install n°3 supports P/N A630A51 by means of adhesive adhesive EA9309.3NA (C021).



- 4.6.2 With reference to Figure 20 View AF, at location n°41, install support P/N A630A31 by means of adhesive EA9309.3NA (C021). With reference to Figure 20 View AF, at locations n°42-43, install n°2 supports P/N A630A3B by means of adhesive EA9309.3NA (C021). Install clamp P/N MS21919WDG8 and clamp P/N MS21919WDG4.
- 4.6.3 With reference to Figure 20 View AF, at locations n°36-37-44, Install n°3 brackets P/N MS3340-1-9 by means of n°3 rivets P/N AGS4719-405. Location and orientation of bracket is respectively within  $\pm 5$  mm or  $\pm 5^\circ$  of given value.
- 4.7 With reference to Figure 18 View AG, at locations n°25-26, install n°2 supports P/N A630A51 by means of adhesive EA9309.3NA (C021).
- 4.8 With reference to Figures 9 thru 22, lay down the following cable assemblies following the existing route unless otherwise indicated on the figures:
- HF C/A P/N 3G9B01A17501 (B1A175),
  - HF C/A P/N 3G9B02A12801 (B2A128),
  - HF C/A P/N 3G9B02B13501 (B2B135),
  - HF C/A P/N 3G9C01A00401 (C1A4),
  - HF C/A P/N 3G9C01A13901 (C1A139),
  - HF C/A P/N 3G9C02A12101 (C2A121),
  - HF C/A P/N 3G9C03A00301 (C3A3),
  - HF C/A P/N 3G9C03A00401 (C3A4).

**NOTE**

Use edging P/N A236A01AB on metallic edges which can damage cable assemblies and where abrasion may occur.

**NOTE**

Use tubing braided P/N EN6049-006-32-5 and P/N EN6049-006-25-5 where protection against chafing is required and where contact with structure may occur.

- 4.9 With reference to Figure 9 and Figure 10 view A, proceed as follows:
- 4.9.1 Replace existing clamp and install clamp P/N MS21919WDG8.
- 4.9.2 Install the route C1A4 HF C/A and follow the route B1A1 C/A up to the circuit breaker panel, then follow the Class G route inside the panel.
- 4.9.3 Install the route B1A175 HF C/A and follow the route B1A2 C/A. Connect the harness to the connector PL1P3.

- 4.10 With reference to Figure 9 and Figure 10 detail K, install the route B2A128 HF C/A and follow the route B2A2 C/A. Connect the harness to the connector A7-6P3 and to the connector TB17P1.
- 4.11 With reference to Figure 9 and Figure 12 view B, install the route B2B135 HF C/A and follow the route B2A2 C/A. Connect the harness to the connector P20.
- 4.12 With reference to Figure 9 and Figure 11 view C, install the route B2B135 HF C/A and follow the route B2B2 C/A. Connect the harness to the connector A8-1P1.
- 4.13 With reference to Figure 9 and Figure 13 view D, proceed as follows:
  - 4.13.1 Install the route B1B175 HF C/A and follow the route B1A2 C/A. Connect the harness to the connector PL1P3.
  - 4.13.2 Install the route C1A4 HF C/A and follow the route B1A2 C/A and F1A6 C/A.
  - 4.13.3 At locations n°6-7 replace existing clamps, install n°2 clamps P/N MS21919WDG13 and install route B1A175 HF C/A following the route B1A2 C/A.
  - 4.13.4 At locations n°3-4-5 replace existing clamps, install n°3 clamps P/N MS21919WDG13 and install route B2A128 HF C/A following the route B2A2 C/A.
  - 4.13.5 At location n°2 replace existing clamp, install clamp P/N MS21919WDG14 and install route B2A128 HF C/A following the route B2A2 C/A.
  - 4.13.6 At location n°1 replace existing clamp, install clamp P/N MS21919WDG15 and install route B2A128 HF C/A following the route B1A2 C/A.
  - 4.13.7 Install the route B2B128 HF C/A and follow the route B1A2 C/A. Connect the harness to the connector TB35P1.
  - 4.13.8 Install the route B2B128 HF C/A and follow the route B2A2 C/A. Connect the harness to the connector J20.
- 4.14 With reference to Figure 9 and Figure 13 detail L, proceed as follows:
  - 4.14.1 Replace existing clamps and install clamp P/N MS21919WDG15.
  - 4.14.2 Install route B2A128 HF C/A following the route B2A2 C/A.
  - 4.14.3 Install the route B2B135HF C/A following the route B2B2 C/A.
- 4.15 With reference to Figure 9 and Figure 14 view E, proceed as follows:
  - 4.15.1 Install the route C2A121 HF C/A and follow the route C1A1 C/A. Connect the harness to the connector A1-3P2.

- 4.15.2 At location n°8, install stud P/N A366A3E22C by means of adhesive EA9309.3NA (C021). Install clamp P/N MS21919WDG6 and spacer P/N NAS43DD3-47. Install the route C2A121 HF C/A.
- 4.15.3 Install the route C1A139 HF C/A and follow the route C1A1 C/A. Connect the harness to the connector J107.
- 4.15.4 Install the route C2A121 HF C/A and follow the route C2A1 C/A. Connect the harness to the connector J105.
- 4.15.5 Install the route B1A175 HF C/A and follow the route B1A2 C/A. Connect the harness to the connector P107.
- 4.15.6 Install the route B2A128 HF C/A and follow the route B2A2 C/A. Connect the harness to the connector P105.
- 4.16 With reference to Figure 9 and Figure 15 Detail G, clamp on bracket P/N MS3340-1-9 at coordinates (STA 7200, BL -412, WL 1158) on route C2A121 HF C/A and at coordinates (STA 7200, BL -435, WL 1133) route C1A139 HF C/A and C1A4 HF C/A.
- 4.17 With reference to Figure 9 and Figure 15 view F, proceed as follows:
  - 4.17.1 Install the route C1A139 HF C/A and follow the route C1A1 C/A. Connect the harness to the connector TB79P1.
  - 4.17.2 Install the route C2A121 HF C/A and follow the route C1A1 C/A. Connect the harness to the connector TB149P1.
- 4.18 With reference to Figures 9, 16 and 17, proceed as follows:

**NOTE**

Perform following steps 4.18.1 and 4.18.2 only if the lightening hole indicated in the Figure 16 in STA 8700 is not present.

- 4.18.1 With reference to Figure 17 View AE, clamp at coordinates (STA 8380, BL -505, WL 1760) and (STA 8560, BL -460, WL 1760) on stud P/N A366A3E22C75 route C3A3 HF C/A, route C1A139 HF C/A and route C2A121 HF C/A.
- 4.18.2 With reference to Figure 17 Detail AH, clamp at coordinates (STA 8700, BL -320, WL 1620) on stud P/N A366A3E22C75 route C3A3 HF C/A, C1A4 HF C/A, route C1A139 HF C/A and route C2A121 HF C/A.
- 4.18.3 With reference to Figure 16 View H1, install relay P/N A657A01 on support P/N A815A04A1.

- 4.18.4 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 16 View H1, install decal P/N ED300K76 in an area adjacent to previously installed relay.
- 4.18.5 Connect socket P/N A657A02 of connector K76P1 of routes C2A121 and C1A139 to the relay P/N A657A01.
- 4.18.6 Clamp at coordinates (STA 8528, BL -132, WL 1520) on support P/N A630A51 route C3A4 HF C/A, route C2A121 HF C/A and route C1A139 HF C/A.
- 4.18.7 Clamp at coordinates (STA 8633, BL -160, WL 1559) on support P/N A630A51 route C1A4 HF C/A, route C3A4 HF C/A and route C2A121 HF C/A.
- 4.18.8 Clamp at coordinates (STA 8639, BL -308, WL 1561) on support P/N A630A51 route C1A4 HF C/A, route C3A4 HF C/A route C2A121 HF C/A, route C3A3 HF C/A and route C1A139 HF C/A.
- 4.18.9 Clamp at coordinates (STA 8559, BL -411, WL 1537) on clip bond P/N A366A3E22C75 route C2A121 HF C/A, route C1A4 HF C/A and route C1A139 HF C/A.
- 4.18.10 Clamp at coordinates (STA 8369, BL -398, WL 1462) on clip bond P/N A366A3E22C route C2A121 HF C/A, route C1A4 HF C/A and route C1A139 HF C/A.
- 4.18.11 Clamp at coordinates (STA 8152, BL -259, WL 1501) on bracket P/N MS3340-1-9 route C1A4 HF C/A and route C1A139 HF C/A.
- 4.18.12 Clamp at coordinates (STA 8152, BL -311, WL 1452) on bracket P/N MS3340-1-9 route C2A121 HF C/A.
- 4.18.13 With reference to Figure 16 View H1, at locations n°49-50, using existing hardware to clamp in two (2) points route C1A4HF C/A and route C1A139 HF C/A and route C2A121HF C/A with n°2 clamps P/N MS21919WDG6 and n°2 clamps P/N MS21919WDG4, following route C1A4.

**NOTE**

If the lightening hole indicated in the Figure 16 in the rear fuselage STA 8700 is not present, skip to step 4.21.

Otherwise proceed with following step 4.19.

- 4.19 With reference to Figure 9 and Figure 19 View J, proceed as follows:

- 4.19.1 Clamp at coordinates (STA 9139, BL -120, WL 1639) on stud P/N A366A3E30C route C3A3 C/A, route C2A121 HF C/A and route C1A139 HF C/A.
- 4.19.2 Clamp at coordinates (STA 8943, BL -146, WL 1624) on support P/N A630A51 route C1A139 HF C/A.
- 4.19.3 Clamp at coordinates (STA 8943, BL -146, WL 1644) on support P/N A630A51 route C2A121 HF C/A.
- 4.19.4 Clamp at coordinates (STA 8943, BL -146, WL 1664) on support P/N A630A51 route C3A3 HF C/A.
- 4.19.5 Clamp at coordinates (STA 8670, BL -145, WL 1670) on stud P/N A366A3E08C75 route C2A121 HF C/A and route C1A139 HF C/A.
- 4.19.6 Clamp at coordinates (STA 8670, BL -145, WL 1705) on stud P/N A366A3E08C75 route C3A3 HF C/A.
- 4.20 With reference to Figure 9 and Figure 20 View AF, proceed as follows:
  - 4.20.1 Clamp at coordinates (STA 8702, BL -260, WL 1603) on support P/N A630A3B and at coordinate (STA 8899, BL -256, WL 1608) on support P/N A630A031 the route C2A121 HF C/A.
  - 4.20.2 Clamp at coordinates (STA 8702, BL -253, WL 1655) on support P/N A630A3B and at coordinates (STA 9092, BL -234, WL 1676) on support P/N A630A051 the route C3A3 HF C/A.
  - 4.20.3 At location n°48, install n°2 clamps P/N MS21919WDG4 and spacer P/N NAS43DD3-26 on existing hardware on route C3A3 and C1A139 C/A.
  - 4.20.4 Clamp at coordinates (STA 8702, BL -253, WL 1655) on bracket P/N MS3340-1-9 and at coordinates (STA 9092, BL -213, WL 1676) on support P/N A630A051 the route C1A1391 HF C/A.
  - 4.20.5 Clamp at coordinates (STA 8752, BL -147, WL 1634) and (STA 8795, BL -147, WL 1602) on bracket P/N MS3340-1-9 the existing ELT Tail C/A.
- 4.21 With reference to Figure 9 and Figure 18 View AG, at location n°27, install clamp P/N MS21919WDG4.
- 4.22 Perform a pin-to-pin continuity check of all the electrical connections made.

**NOTE**

Perform the following step 4.23 thru 4.25 only if HF equipment will not be installed immediately.

- 4.23 With reference to Figures 16, 18 detail M and 19, protect and stow the cable connectors PS15P2, PS15P3, A101P2 and A102P3 as described in the following procedure:
- 4.23.1 Apply the protective cap P/N NAS813-12 on the connectors.
  - 4.23.2 Cover with Meta-Aramid Nomex fiber sleeve and use cable straps to firmly tie down sleeve on the connector cabling.
  - 4.23.3 Fasten the connector assemblies with cable straps.
- 4.24 With reference to Figures 16, 18 detail P and 19, protect and stow the cable connectors PS15P1, A101P1 and A102P1 as described in the following procedure:
- 4.24.1 Apply the applicable protective cap on the connectors.
  - 4.24.2 Cover with Meta-Aramid Nomex fiber sleeve and use cable straps to firmly tie down sleeve on the connector cabling.
  - 4.24.3 Fasten the connector assemblies with cable straps.
- 4.25 With reference to Figures 16 and Figure 18 detail N, protect and stow the C1A4 HF C/A terminal plug.

**NOTE**

If Kit LSS P/N 3G9810F00111 is already installed on helicopter verify that C/A C1A149 is installed in accordance to Figures 61 and 62.

**NOTE**

If Kit DF P/N 3G3450F00911 is installed on the helicopter, refer to wiring diagram of Figure 63.

- 4.26 Modify the overhead Auxiliary C/B panel as follow:

**NOTE**

Customer must contact Product Support Engineering (engineering.support.lhd@leonardocompany.com) at least 3 months in advance of embodiment date of this Service Bulletin in order to receive information on the exact W/D applicable to the helicopter.

- 4.26.1 With reference to AMP DM 39-A-24-91-04-00A-920A-K, remove from the overhead Auxiliary C/B panel the existing Integrally-lighted panel.

- 4.26.2 Install where indicated on the new Integrally-lighted panel P/N 3G2490LXXXXX one circuit breaker P/N MS25244-30 and one circuit breaker P/N MS3320-5.
  - 4.26.3 With reference to AMP DM 39-A-11-00-01-00A-720A-A, install decals P/N ED300CB163 and ED300CB162 adjacent to the above mentioned components.
  - 4.26.4 With reference to Figures 58 thru 60, connect CB162 to 28V DC NON ESS BUS 2 W12A by means of cable type A556A-T14 and A556A-T22.
  - 4.26.5 With reference to Figures 58 thru 60, connect CB163 to 28V DC NON ESS BUS 2 W12A by means of cable type A556A-T8.
  - 4.26.6 With reference to AMP DM 39-A-24-91-04-00A-920A-K install the new Auxiliary C/B Integrally-lighted panel P/N 3G2490LXXXXX.
5. With reference to Figures 23 thru 27, perform the HF equipment installation P/N 3G2310A01511 as described in the following procedure:

**NOTE**

With reference to Figure 25 detail G and Figure 26 details H and L, if necessary free the connector PS15P1, PS15P2, PS15P3, A101P1, A101P2 and A102P1, A102P3 and C1A4 HF C/A terminal lug from its stowage.

- 5.1 With reference to Figure 23 and Figure 24 view A proceed as follows:
  - 5.1.1 Install Power Amplifier Tray Assy P/N 050-03629-0001 (or as alternative 071-00185-0000) by means of n°4 washers P/N NAS1149D0332J and n°4 screws P/N MS35207-262.
  - 5.1.2 Install on Power Amplifier Tray Assy P/N 050-03629-0001 (or as alternative 071-00185-0000) the Power Amplifier P/N 064-01072-0101.
  - 5.1.3 Install near the Power Amplifier the decal P/N ED300PS15. Refer to AMP DM 39-A-11-00-01-00A-720A-A.
  - 5.1.4 Install Receiver Tray Assy P/N 050-03628-0001 (or as alternative 071-00184-0000) by means of n°4 washers P/N NAS1149D0332J and n°4 screws P/N MS35207-262.
  - 5.1.5 Install on Tray Assy P/N 050-03628-0001 (071-00184-0000) the Receiver Exciter P/N 064-01073-0101.
  - 5.1.6 Install near the Receiver Exciter the decal P/N ED300A101. Refer to AMP DM 39-A-11-00-01-00A-720A-A.

- 5.1.7 Install Coupler Tray Assy P/N 050-03699-0000 (071-00202-0000) by means of n°4 washers P/N NAS1149D0332J and n°4 screws P/N MS35206-242.
- 5.1.8 Install on Tray Assy P/N 050-03699-0000 (071-00202-0000) the Antenna Coupler 064-01074-0101.
- 5.1.9 Install ear the Receiver Exciter the decal P/N ED300A102. Refer to AMP DM 39-A-11-00-01-00A-720A-A.
- 5.1.10 With reference to Figure 24 connect the terminal plug of route C1A4 HF C/A to the ground stud GS35 P/N A363A01.
- 5.1.11 With reference to Figure 24, install on point (STA 9270, BL -330, WL 1700) the ground stud P/N A363A01. With reference to AMP DM 39-A-11-00-01-00A-720A-A, install decal P/N AD300GS77 on an adjacent area.
- 5.1.12 With reference to Figure 24, install bonding strap P/N 999-7000-09-126 on ground stud and antenna coupler.
- 5.2 With reference to Figure 23 and Figure 27 view B, install HF Element Tube Assy P/N 33700 as follows:
  - 5.2.1 Install at STA 9139.4 decal P/N A499AHN020E04X00, mast lead-in P/N 485A10HN-1P4, n°4 washers P/N NAS1149D0332J and n°4 screws P/N MS35207-264.

**NOTE**

Installation of specific environmental conductive gaskets is allowed in order to improve the antenna sealing and also to assure the proper electrical bonding (ref. SB 139-389).

- 5.2.2 Install at STA 10249.1 decal P/N A499AHN020E04X00, gasket P/N 6930A4/485C10, mast Support P/N 485C10P4, n°4 washers P/N NAS1149D0332J and n°4 screws P/N MS35207-265.
- 5.2.3 Install at STA 11358.7 decal P/N A499AHN020E04X00, gasket P/N 6930A4/485C10, mast support P/N 485C10P4, n°4 washers P/N NAS1149D0332J and n°4 screws P/N MS35207-265.
- 5.2.4 Install at STA 12301.3 mast support P/N 465SC10P4, n°4 washers P/N NAS1149D0332J, n°3 screws P/N MS35207-265 and screw P/N MS35207-264.
- 5.2.5 Apply at STA 9139.4 decal P/N ED300E25 on internal side of antenna. Refer to AMP 39-A-11-00-01-00A-720A-A.



5.3 With reference to Figures 24, 25 and 26, proceed as follows:

**NOTE**

If it is not already installed, use P/N A521A-E002 for connector A101P1.

- 5.3.1 Connect A101P1 connector of route C2A121 HF C/A and route C1A139 HF C/A to receiver exciter P/N 064-01073-0101.
  - 5.3.2 Connect A101P2 connector of route C3A4 HF C/A to receiver exciter P/N 064-01073-0101.
  - 5.3.3 Connect PS15P1 connector of route C2A121 HF C/A and route C1A4 HF C/A to the Power Amplifier P/N 064-01072-0101.
  - 5.3.4 Connect PS15P2 connector of route C3A4 HF C/A and PS15P3 connector of route C3A3 to receiver exciter P/N 064-01073-0101.
  - 5.3.5 Connect A102P1 connector of route C2A121 HF C/A and route C1A139 HF C/A to antenna coupler P/N 064-01074-0101.
  - 5.3.6 Connect A102P3 connector of route C3A3 HF to antenna coupler P/N 064-01074-0101.
- 5.4 With reference to Figure 25 view F, install cable assy P/N 120-055-1-18 and cable assy P/N 120-055-1-6.
- 5.5 With reference to Figure 24 view A, connect with cable P/N 155-02988-0220 Antenna Coupler P/N 064-01074-0101 to HF antenna.
- 5.6 With reference to Figure 27 view C, gain access to the overhead circuit breaker panel and remove the ring of lock P/N Y30700501 from HF CONTR breaker and HF PWR breaker.
6. In accordance with AMP DM 39-A-06-41-00-00A-010A-A, re-install all external panels, internal panels and internal liners previously removed as required.

**NOTE**

Customer must contact AW139 Product Support Engineering ([engineering.support.lhd@leonardocompany.com](mailto:engineering.support.lhd@leonardocompany.com)) to request the correct Option File at least three months in advance from the scheduled application of this Service Bulletin.

- 7. Ensure that the applicable version of Option file has been installed for the HF radio System.
- 8. With reference to AMP DM 39-A-46-20-00-00A-750A-A, access to APM setting data entry and enable XCVRA1 option if Audio Panel Block 2 (P/N 7511900-9860X; -98801) or Audio Panel Block 3 (P/N 7511900-99001; 99201) is installed on the helicopter.

9. With reference to AMP DM 39-A-23-14-00-00A-340A-K, perform HF system functional check.
10. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
11. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.
12. Send the attached compliance form to the following mail box:

[engineering.support.lhd@leonardocompany.com](mailto: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 AMP 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 AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figure 1, 28 and 41, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installations.
3. Install the HF antenna structural provision P/N 3G5310A04211 in accordance with Part I step 3.
4. With reference to Figures 28 thru 40, install the HF electrical provision P/N 4G2310A00911 as described in the following procedure:

### **NOTE**

As alternative different clamps of proper shape and size can be used if the clamps required to be installed in the following procedure cannot be installed.

- 4.1 With reference to Figure 32, at location n°1, install clamp P/N MS21919WDG4 on existing hardware.
- 4.2 With reference to Figure 33 and in accordance with AMP DM 39-A-20-10-09-00A-920A-A, at location n°2, install stud P/N A366A3E32C by means of adhesive EA9309.3NA (C021) and the Pressure Application Fixture (PAF). Let the adhesive cure. Install clamp P/N MS21919WDG6, clamp P/N MS21919WDG8, spacer P/N NAS43DD3-90N by means of washer P/N NAS1149D0332J and nut P/N MS21042L3.
- 4.3 With reference to Figure 34, at location n°3, bond support P/N A630A3B using adhesive EA9309.3NA (C021). Let the adhesive cure. Install clamp P/N MS21919WDG6, clamp P/N MS21919WDG8, spacer P/N NAS43DD3-60N by means of washer P/N NAS1149D0332J and screw P/N NAS1801-3-24.
- 4.4 With reference to Figure 34 and in accordance with AMP DM 39-A-20-10-09-00A-920A-A, at locations n°4-5-6, bond n°3 standoffs P/N A388A3E08C using adhesive EA9309.3NA (C021) and the Pressure Application Fixture (PAF). Let the adhesive cure. Install n°3 clamp P/N MS21919WDG6, n°3 clamp P/N MS21919WDG8, n°3 spacer P/N NAS43DD3-70N by means of n°3 washer P/N NAS1149D0332J and n°3 screw P/N NAS1190E3P24AK.

- 4.5 With reference to Figure 35 view A-A, at location n°7, bond support P/N A630A3B using adhesive EA9309.3NA (C021). Let the adhesive cure. Install clamp P/N MS21919WDG6, clamp P/N MS21919WDG8 by means of washer P/N NAS1149D0332J and screw P/N NAS1801-3-10.
- 4.6 With reference to Figure 35 view B-B and in accordance with AMP DM 39-A-20-10-09-00A-920A-A, at location n°8, bond stud P/N A366A3E22C using adhesive EA9309.3NA (C021) and the Pressure Application Fixture (PAF). Let the adhesive cure. Install clamp P/N MS21919WDG6, clamp P/N MS21919WDG8, spacer P/N NAS43DD3-47N by means of washer P/N NAS1149D0332J and nut P/N MS21042L3.
- 4.7 With reference to Figure 35 View B-B install one A363A01 Ground Stud as follows:
  - 4.7.1 At location n°9, drill one 5.00 to 5.15 mm diameter hole.
  - 4.7.2 Insert the ground stud plate into the hole and countermark position of n°2 rivet holes.
  - 4.7.3 Drill two 2.50 to 2.65 mm diameter holes at countermarked positions.
  - 4.7.4 Thoroughly clean and degrease the area with Ardrox 5503 Cleaning Solvent (C010) or equivalent.
  - 4.7.5 Once dried, assembly the A363A01 ground stud the structure with n°2 MS20426AD3-4 rivets.
  - 4.7.6 Apply one coat of MIL-PRF-23377 Corrosion Preventative Compound PX32, or equivalent, on the ground stud.
  - 4.7.7 Apply a fillet of PR1440 Naftoseal sealant, or equivalent.
  - 4.7.8 Install decal P/N ED300GS313 adjacent to the Ground Stud. Refer to AMP DM 39-A-11-00-01-00A-720A-A.
- 4.8 With reference to Figures 36 and 37 and in accordance with AMP DM 39-A-20-10-09-00A-920A-A, at location n°10, bond stud P/N A366A3E22C75 using adhesive EA9309.3NA (C021). Let the adhesive cure. Install clamp P/N MS21919WDG6, clamp P/N MS21919WDG8, spacer P/N NAS43DD3-50N, nut P/N MS21042L3 and washer P/N NAS1149D0332J.
- 4.9 With reference to Figures 36 and 37, at locations n°11-12-13, install n°3 supports P/N A630A31 by means of adhesive EA9309.3NA (C021). Let the adhesive cure.

## NOTE

If necessary install screw P/N NAS1801-3-20 at location  
14 (Ref. step 4.10).

- 4.10 With reference to Figures 36 and 37, at location n°14, bond support P/N A630A3B using adhesive EA9309.3NA (C021). Let the adhesive cure. Install n°2 clamps P/N MS21919WDG5, clamp P/N MS21919WDG7, spacer P/N NAS43DD3-40N by means of washer P/N NAS1149D0332J and nut P/N MS21042L3.
- 4.11 With reference to Figures 36 and 37, at locations n°15-16-17, install n°3 supports P/N A630A51 by means of adhesive EA9309.3NA (C021). Let the adhesive cure.
- 4.12 With reference to Figures 36 and 37, at location n°18, bond stud P/N A366A3E08C75 using adhesive EA9309.3NA (C021). Let the adhesive cure. Install clamp P/N MS21919WDG4 by means of nut P/N MS21042L3 and washer P/N NAS1149D0332J.
- 4.13 With reference to Figures 36 and 37, at location n°19, bond stud P/N A366A3E08C75 using adhesive EA9309.3NA (C021). Let the adhesive cure. Install clamp P/N MS21919WDG4, clamp P/N MS21919WDG8 by means of nut P/N MS21042L3 and washer P/N NAS1149D0332J.
- 4.14 With reference to Figures 37 and 38, at location n°20, bond stud P/N A366A3E30C using adhesive EA9309.3NA (C021). Let the adhesive cure. Install clamp P/N MS21919WDG4, spacer P/N NAS43DD3-45N, clamp P/N MS21919WDG8, spacer P/N NAS43DD3-35N, clamp P/N MS21919WDG4 by means of nut P/N MS21042L3 and washer P/N NAS1149D0332J.
- 4.15 With reference to Figures 37 and 38, at locations n°21-22-23, install n°3 supports P/N A630A51 by means of adhesive EA9309.3NA (C021). Let the adhesive cure.
- 4.16 With reference to Figures 37 and 38, at location n°24, bond stud P/N A366A3E18C using adhesive EA9309.3NA (C021). Let the adhesive cure. Install n°2 clamps P/N MS21919WDG4, spacer P/N NAS43DD3-26N by means of nut P/N MS21042L3 and washer P/N NAS1149D0332J.
- 4.17 With reference to Figures 37 and 38, at location n°25, install support P/N A630A31 by means of adhesive EA9309.3NA (C021). Let the adhesive cure.
- 4.18 With reference to Figures 37 and 38, at location n°26, install clamp P/N MS21919WDG8 by means of screw P/N NAS1801-3-7 and washer P/N NAS1149D0332J.
- 4.19 With reference to Figures 37 and 38, at location n°27, install clamp P/N MS21919WDG4 by means of screw P/N NAS1801-3-7 and washer P/N NAS1149D0332J.

- 4.20 With reference to Figures 39, at locations n°28-30-31-32, on existing hardware install n°4 clamps P/N MS21919WDG4.
- 4.21 With reference to Figures 40 view F-F, at location n°29, install grommet P/N 999-1700-03-102 and spacer P/N A631A01.
- 4.22 With reference to Figures 39, at location n°33, on existing hardware install clamp P/N MS21919WDG4, spacer P/N NAS43DD3-50N, replace existing screw with screw P/N NAS1801-3-20.
- 4.23 With reference to Figures 39, at locations n°34-35-36-37, on existing hardware install n°4 clamps P/N MS21919WDG4.
- 4.24 With reference to Figures 39, at locations n°38-39, replace n°2 existing spacers P/N NAS43DD3-35N with n°2 spacers P/N NAS43DD3-26N and install n°2 clamps P/N MS21919WDG4.
- 4.25 With reference to Figures 39, at location n°40, on existing hardware install clamp P/N MS21919WDG7.
- 4.26 With reference to Figures 39, at location n°41, on existing hardware install clamp P/N MS21919WDG4, spacer P/N NAS43DD3-47N, replace existing screw with screw P/N NAS1801-3-20.
- 4.27 With reference to Figures 40 view E-E, at location n°42, install spacer P/N A631A01.
- 4.28 With reference to Figures 40 view E-E, at locations n°43-44, on existing hardware install n°2 clamps P/N MS21919WDG4, n°2 spacers P/N NAS43DD3-70N, replace existing screws with n°2 screws P/N NAS1190E3P24AK.
- 4.29 With reference to Figures 39, at location n°45, on existing hardware install clamp P/N MS21919WDG4, spacer P/N NAS43DD3-70N, replace existing screw with screw P/N NAS1801-3-32.

**NOTE**

Use edging P/N A236A01AB on edges which are liable to cause damage to cables.

**NOTE**

Use tubing braided P/N EN6049-006-32-5 and P/N EN6049-006-25-5 where protection against chafing is required and where contact with structure may occur.

**NOTE**

Tie cable to plastic support P/N A630A using tie strap P/N A627A.

- 4.30 With reference to Figures 28 thru 40 and Figures 64 thru 67 wiring diagrams, lay down the following cable assemblies following the existing route unless otherwise indicated in the figures:
- HF C/A (A2A243) P/N 3G9A02A24301;
  - HF C/A (A2B247) P/N 3G9A02B24701;
  - HF C/A (B1A292) P/N 3G9B01A29201;
  - HF C/A (B2A230) P/N 3G9B02A23001;
  - HF C/A (C1A219) P/N 3G9C01A21901;
  - HF C/A (C1A220) P/N 3G9C01A22001;
  - HF C/A (C2A214) P/N 3G9C02A21401;
  - HF C/A (C3A202) P/N 3G9C03A20201;
  - HF C/A (C3A203) P/N 3G9C03A20301.
- 4.31 With reference to Figures 29, 30 and Figure 64 wiring diagram, perform the electrical connections between A7-6P3 connector of the MRC1 and P125 sectioning connector, and TB149 and TB147P1 connectors, in the nose avionics bay. For the connection at TB149 use one splice P/N M81824/1-1 (SP1119) within 200 mm from the connector.
- 4.32 With reference to Figures 29, 30 and Figure 64 wiring diagram, perform the electrical connections between A8-1P1 connector of the MRC2 and P113 sectioning connector, and between J113 sectioning connector and TB147P1 connector, in the nose avionics bay.
- 4.33 With reference to Figures 29, 30 and Figure 66 wiring diagram, perform the electrical connections between A1-3P2 connector of the MAU1 and P123 sectioning connector, in the cockpit area.

- 4.34 With reference to Figure 33 and Figure 66 wiring diagram, perform the electrical connections between J123 sectioning connector, in the cockpit area, and J209 sectioning connector in the rear fuselage.
- 4.35 With reference to Figures 30, 33 and Figure 64 wiring diagram, perform the electrical connections between J125 sectioning connector, in the cockpit area, and J209 sectioning connector in the rear fuselage.
- 4.36 With reference to Figures 33, 36 and Figures 65, 66 wiring diagrams, perform the electrical connections between P209 sectioning connector, in the rear fuselage, and A101P1 connector of the Receiver/Exciter in the rear avionics bay.

**NOTE**

If new backshells are required for connectors P209 and J209, P/N A529A400-2102C15 can be installed.

- 4.37 With reference to Figure 35 View B-B install relay bracket P/N A815A04A1 into inserts previously installed during HF structural provision, by means of n°2 screws P/N MS35207-259 and n°2 washers P/N NAS1149D0332J.
- 4.38 Install relay P/N A657A01 into relay bracket. Install Decal P/N ED300K76 near the relay. Refer to AMP DM 39-A-11-00-01-00A-720A-A.
- 4.39 With reference to Figures 33, 35, 36 and Figure 65 wiring diagram, perform the electrical connections between P207 and P209 sectioning connectors (in the rear fuselage) and K76 relay connector and A101P1 connector of the Receiver/Exciter in the rear avionics bay.

**NOTE**

For the connection at K76 relay and A101P1 connectors use two splices P/N M81824/1-1 (SP313 and SP307) within 200 mm from the relay and from the connector, respectively.

- 4.40 With reference to Figures 33, 36 and Figure 65 wiring diagram, perform the electrical connections between P207 sectioning connector (in the rear fuselage) and A101P1 connector of the Receiver/Exciter in the rear avionics bay.

**NOTE**

For the connection at A101P1 connectors use two splices P/N M81824/1-1 (SP309 and SP311) within 200 mm from the connector.

- 4.41 With reference to Figure 36 and Figure 65 wiring diagram, perform the electrical connections between A102P1 connector of the Antenna Coupler and A101P1 connector of the Receiver/Exciter in the rear avionics bay.



- 4.42 With reference to Figure 36 and Figure 67 wiring diagram, perform the electrical connections between A102P3 connector of the Antenna Coupler and PS15P3 connectors of the Power Amplifier in the rear avionics bay.
- 4.43 With reference to Figures 32, 35, 36 and Figures 65, 67 wiring diagrams, connect A102P1 connector of the Antenna Coupler, GS313 Ground Stud, and TB303 Terminal board with PS15P1 connectors of the Power Amplifier in the rear avionics bay.
- 4.44 Perform electrical connection between A101P2 connector of the Receiver/Exciter (in the rear avionics bay) and PS15P2 connector of the Power Amplifier.
- 4.45 With reference to Figures 30, 33 and Figure 64 wiring diagram, perform the electrical connections between J207 sectioning connector and PL1P9 connector of the Overhead circuit breaker panel.
- 4.46 Perform the electrical connections between CB162 and CB163 Circuit Breakers inside the Circuit Breaker panel.
- 4.47 Perform a pin-to-pin continuity check of all the electrical connections made.

**NOTE**

Perform the following step 4.48 and 4.49 only if HF equipment will not be installed immediately.

- 4.48 With reference to Figure 36 and Figure 37 detail D, protect and stow the cable connectors PS15P2, PS15P3, A101P2 and A102P3 as described in the following procedure:
  - 4.48.1 Apply the protective cap P/N NAS813-12 on the connectors.
  - 4.48.2 Cover with Meta-Aramid Nomex fiber sleeve and use cable straps to firmly tie down sleeve on the connector cabling.
  - 4.48.3 Fasten the connector assemblies with cable straps.
- 4.49 With reference to Figure 36 and Figure 37 detail C, protect and stow the cable connectors PS15P1, A101P1 and A102P1 as described in the following procedure:
  - 4.49.1 Apply the applicable protective cap on the connectors.
  - 4.49.2 Cover with Meta-Aramid Nomex fiber sleeve and use cable straps to firmly tie down sleeve on the connector cabling.
  - 4.49.3 Fasten the connector assemblies with cable straps.

**NOTE**

If Kit LSS P/N 4G9810F00112 is already installed on helicopter verify that C/A C1A249 is installed in accordance to Figures 68 and 69.

**NOTE**

If Kit DF P/N 4G3450F00311 is installed on the helicopter, refer to wiring diagram of Figure 70.

4.50 Modify the overhead Auxiliary C/B panel as follow:

**NOTE**

Customer must contact Product Support Engineering (engineering.support.lhd@leonardocompany.com) at least 3 months in advance of embodiment date of this Service Bulletin in order to receive information on the exact W/D applicable to the helicopter.

- 4.50.1 With reference to AMP DM 39-A-24-91-04-00A-920A-K, remove from the overhead Auxiliary C/B panel the existing Integrally-lighted panel.
  - 4.50.2 Install where indicated on Integrally-lighted panel P/N 3G2490LXXXXX one circuit breaker P/N MS25244-30 and one circuit breaker P/N MS3320-5.
  - 4.50.3 With reference to AMP DM 39-A-11-00-01-00A-720A-A, install decals P/N ED300CB163 and ED300CB162 adjacent to the above mentioned components.
  - 4.50.4 With reference to Figures 64 thru 66, connect CB162 to 28V DC NON ESS BUS 2 W12A by means of cable type A556A-T14 and A556A-T22.
  - 4.50.5 With reference to Figures 64 thru 66, connect CB163 to 28V DC NON ESS BUS 2 W12A by means of cable type A556A-T8.
  - 4.50.6 With reference to AMP DM 39-A-24-91-04-00A-920A-K install the new Auxiliary C/B Integrally-lighted panel P/N 3G2490LXXXXX.
5. With reference to Figures 41 thru 45, install the HF equipment installation P/N 4G2310A01411 as described in the following procedure:

### NOTE

With reference to Figure 37 details C and D (Part II) or Figure 54 details C and D (Part III), if necessary free the connector PS15P1, PS15P2, PS15P3, A101P1, A101P2 and A102P1, A102P3 from its stowage.

### NOTE

To assure adequate electrical bonding of avionics equipment, remove locally the protection finish around the area of contact with mounting tray. Apply Corrosion Preventative Compound PX-32 around the total perimeter of the mounting area.

- 5.1 With reference to Figure 42 View A-A, install the Antenna Coupler mounting tray and the Antenna Coupler P/N 064-01074-0101 in the rear avionic bay by means of P/N 050-03699-0000 installation kit, by means of n°4 screws P/N MS24694-S5.
- 5.2 Install Decal P/N ED300A102 near the antenna coupler. Refer to AMP DM 39-A-11-00-01-00A-720A-A.
- 5.3 With reference to Figure 43 View F-F, connect bonding strips P/N 120-055-1-18 and P/N 120-055-1-7 to mounting tray attachments and to ground stud P/N A363A01 previously installed by means of washer P/N NAS1149F0363P, washer P/N NAS1149D0363J and nut P/N MS21042-3.
- 5.4 With reference to Figure 42 View A-A, connect bonding strap P/N 999-7000-09-126 to antenna coupler mounting tray attachment and to ground stud P/N A363A01 previously installed by means of washer P/N NAS1149F0363P, washer P/N NAS1149D0363J and nut P/N MS21042-3.
- 5.5 With reference to Figure 42 view A-A, connect the cable P/N 155-02988-0220.
- 5.6 With reference to Figure 42 View A-A, install the Power Amplifier mounting tray P/N 050-03629-0001 and the Power Amplifier P/N 064-01072-0101 in the rear avionic bay, by means of n°4 screws P/N MS35206-242 and n°4 washers P/N NAS620A8.
- 5.7 Install Decal P/N ED300PS15 near the Power Amplifier. Refer to AMP DM 39-A-11-00-01-00A-720A-A.
- 5.8 With reference to Figure 42 View A-A, install the Receiver/Exciter mounting tray P/N 050-03628-0001 and the Receiver/Exciter P/N 064-01073-0101 or P/N 064-01073-0102 in the rear avionic bay, by means of n°4 screws P/N MS35206-242 and n°4 washers P/N NAS620A8.

- 5.9 Install Decal P/N ED300A101 near the Receiver/Exciter. Refer to AMP DM 39-A-11-00-01-00A-720A-A.
- 5.10 Plug-in all relevant connectors.
- 5.11 With reference to Figure 45, install the HF Antenna on the LH side of tail boom as follows:
  - 5.11.1 Remove FWD cover LH P/N 3G5316A46451, n°2 middle cover LH P/N 3G5316A46551 and rear cover LH P/N 3G5316A46651 by removing n°8 screws P/N MS27039-1-10, n°8 screws P/N MS27039-1-8 and n°16 washers P/N NAS1149D0332J.
  - 5.11.2 Install mast lead-in P/N 485A10HN-1P4 on FWD antenna support, at STA 9139.4, by means of n°4 screws P/N MS35207-266 and n°4 washers P/N NAS1149D0332J.
  - 5.11.3 In accordance with AMP DM 39-A-11-00-01-00A-720A-A, install decal P/N ED300E25 inside of tail boom, near the antenna connector.

**NOTE**

Installation of specific environmental conductive gaskets is allowed in order to improve the antenna sealing and also to assure the proper electrical bonding (ref. SB 139-389).

- 5.11.4 Install gasket P/N 6930A4/485C10 and mast support P/N 485C10P4 on middle antenna support, at STA 10249.1, by means of n°4 screws P/N MS35207-265 and n°4 washers P/N NAS1149D0332J.
  - 5.11.5 Install gasket P/N 6930A4/485C10 and mast support P/N 485C10P4 on rear antenna support, at STA 11358.7 by means of n°4 screws P/N MS35207-265 and n°4 washers P/N NAS1149D0332J.
  - 5.11.6 Install mast Support P/N 465SC10P4 on top antenna support, at STA 12301.3, by means of n°2 screws P/N MS35207-265, n°2 screws P/N MS35207-264 and n°4 washers P/N NAS1149D0332J.
  - 5.11.7 Install the Element tube Assy P/N 33700 into mast supports.
  - 5.11.8 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 45 View B-B, install three decals P/N A499AHN020E01X00 beside the antenna supports.
6. In accordance with AMP DM 39-A-06-41-00-00A-010A-A, re-install all external panels, internal panels and internal liners previously removed as required.

### NOTE

Customer must contact AW139 Product Support Engineering ([engineering.support.lhd@leonardocompany.com](mailto:engineering.support.lhd@leonardocompany.com)) to request the correct Option File at least three months in advance from the scheduled application of this Service Bulletin.

7. Ensure that the applicable version of Option file has been installed for the HF radio System.
8. With reference to AMP DM 39-A-46-20-00-00A-750A-A, access to APM setting data entry and enable XCVRA1 option if Audio Panel Block 2 (P/N 7511900-9860X; -98801) or Audio Panel Block 3 (P/N 7511900-99001; 99201) is installed on the helicopter.
9. With reference to AMP DM 39-A-23-14-00-00A-340A-K, perform HF system functional check.
10. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
11. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.
12. Send the attached compliance form to the following mail box:

[engineering.support.lhd@leonardocompany.com](mailto: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 III**

1. In accordance with AMP 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 AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figure 1, 41 and 46, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installations.
3. Install the HF antenna structural provision P/N 3G5310A04211 in accordance with Part I step 3.
4. With reference to Figures 46 thru 57, perform the HF electrical provision P/N 4G2310A00912 in accordance with the following procedure:
  - 4.1 With reference to Figure 50 and in accordance with AMP DM 39-A-20-10-09-00A-920A-A, at location n°1, install one stud P/N A366A3E32C by means of adhesive EA9309.3NA (C021) and the Pressure Application Fixture (PAF).
  - 4.2 With reference to Figure 50, at location n°1, install spacer P/N NAS43DD3-90N, clamp P/N AW001CB07H, clamp P/N AW001CB06H and washer P/N NAS1149D0332J by means of nut P/N MS21043-3.
  - 4.3 With reference to Figure 51, at location n°2, remove existing screw and install clamp P/N AW001CB04H by means of n°1 screw P/N NAS1802-3-25.
  - 4.4 With reference to Figure 52, at location n°3, bond support P/N AW001TL3A08 by means of adhesive EA934NA (C057).
  - 4.5 With reference to Figure 52, at location n°3, install clamp P/N AW001CB07H, clamp P/N AW001CB06H and spacer P/N NAS43DD3-60N by means of screw P/N NAS1802-3-26 and washers P/N NAS1149D0332J.
  - 4.6 With reference to Figure 52, at locations n°4-5-6, install n°3 standoff P/N A388A3E08C using adhesive EA9309.3NA (C021) and Pressure Application Fixture (PAF).
  - 4.7 With reference to Figure 52, at locations n°4-5-6, install n°3 clamps P/N AW001CB07H, n°3 clamps P/N AW001CB06H and n°3 spacers P/N NAS43DD3-70N by means of n°3 screws P/N NAS1190E3P24AK and n°3 washers P/N NAS1149D0332J.
  - 4.8 With reference to Figure 53 View A-A, at location n°7, bond support P/N AW001TL3A08 by means of adhesive EA934NA (C057).
  - 4.9 With reference to Figure 53 View A-A, at location n°7, install clamp P/N AW001CB07H and clamp P/N AW001CB06H by means of screw P/N NAS1802-3-12 and washer P/N NAS1149D0332J.

- 4.10 With reference to Figure 53 View B-B, at location n°8, install stud P/N A366A3E22C using adhesive EA9309.3NA (C021) and Pressure Application Fixture (PAF).
- 4.11 With reference to Figure 53 View B-B, at location n°8, install clamp P/N AW001CB10H, clamp P/N AW001CB06H and spacer P/N NAS43DD3-47N by means of nut P/N MS21043-3 and washer P/N NAS1149D0332J.
- 4.12 With reference to Figure 53 View B-B, at location n°10, bond support P/N AW001CL001-N6 by means of adhesive EA9309.3NA (C021).
- 4.13 With reference to Figure 54, at locations n°11-12, install n°2 studs P/N A366A3E22C75 using adhesive EA9309.3NA (C021) and Pressure Application Fixture (PAF).
- 4.14 With reference to Figure 54, at locations n°11-12, install n°2 clamps P/N AW001CB10H, n°2 clamps P/N AW001CB06H and n°2 spacers P/N NAS43DD3-50N by means of n°2 nuts P/N MS21043-3 and n°2 washers P/N NAS1149D0332J.
- 4.15 With reference to Figure 54, at location n°20, install standoff P/N A388A3E10C75 using adhesive EA9309.3NA (C021) and Pressure Application Fixture (PAF).
- 4.16 With reference to Figure 54, at location n°20, install clamp P/N AW001CB07H, clamp P/N AW001CB03H and clamp P/N MS25281-R6 by means of screw P/N NAS1802-3-10 and washer P/N NAS1149D0332J. Install grommet P/N AW002FT102 to protect indicated cable assemblies.
- 4.17 With reference to Figure 54, at locations n°17-18-19, bond n°3 supports P/N AW001CL001-N6 by means of adhesive EA9309.3NA (C021).
- 4.18 With reference to Figure 54, at location n°16, bond support P/N AW001TL3A08 by means of adhesive EA934NA (C057).
- 4.19 With reference to Figure 54, at location n°16, install clamp P/N AW001CB03H, clamp P/N MS25281-R6, clamp P/N AW001CB07H, spacer P/N NAS43DD3-30N and spacer P/N NAS43DD3-50N by means of n°1 screw P/N NAS1802-3-33 and washer P/N NAS1149D0332J. Install grommet P/N AW002FT102 to protect indicated cable assemblies.
- 4.20 With reference to Figure 54, at locations n°13-14-15 bond n°2 supports P/N AW001CL002C and support P/N AW001CL000A-X3 using adhesive EA9309.3NA (C021).
- 4.21 With reference to Figure 56, at location n°36, remove existing screw and install clamp P/N AW001CB04H and spacer P/N NAS43DD3-55N by means of screw P/N NAS1802-3-25.

- 4.22 With reference to Figure 56, at location n°40, remove existing screw and install clamp P/N AW001CB04H and spacer P/N NAS43DD3-80N by means of screw P/N NAS1802-3-33.
- 4.23 With reference to Figure 56, at location n°28, remove existing screw and install clamp P/N AW001CB04H and spacer P/N NAS43DD3-60N by means of screw P/N NAS1802-3-25.
- 4.24 With reference to Figure 56, at location n°29, remove existing screw and install clamp P/N AW001CB04H by means of screw P/N NAS1190E3P7AK.
- 4.25 With reference to Figure 56, at location n°35, remove existing screw and install clamp P/N AW001CB04H and spacer P/N NAS43DD3-52N by means of screw P/N NAS1802-3-25.
- 4.26 With reference to Figure 56, at locations n°30-31-32-33-34, install n°5 spacers P/N A631A01A with n°5 grommets P/N AW002FT102 on cable assy F1A6.
- 4.27 With reference to Figure 55, at location n°25, install stud P/N A366A3E18C using adhesive EA9309.3NA (C021) and Pressure Application Fixture (PAF).
- 4.28 With reference to Figure 55, at location n°25, install clamp P/N MS25281-R6, clamp P/N AW001CB03H, spacer P/N NAS43DD3-30N by means of nut P/N MS21043-3 and washer P/N NAS1149D0332J. Install grommet P/N AW002FT102 to protect indicated cable assemblies.
- 4.29 With reference to Figure 55, at location n°21, install stud P/N A366A3E32C using adhesive EA9309.3NA (C021) and Pressure Application Fixture (PAF).
- 4.30 With reference to Figure 55, at location n°21, install clamp P/N MS25281-R6, clamp P/N AW001CB07H, clamp P/N AW001CB03H, spacer P/N NAS43DD3-50N and spacer P/N NAS43DD3-30N by means of nut P/N MS21043-3 and washer P/N NAS1149D0332J. Install grommet P/N AW002FT102 to protect indicated cable assemblies.
- 4.31 With reference to Figure 55, at locations n°22-23-24-26-27, bond n°3 supports P/N AW001CL009-CM, support P/N AW001CL003CT and support AW001CL000A-X3 by means of adhesive EA9309.3NA (C021).
- 4.32 With reference to Figure 57, at locations n°38-39 remove existing screws and install n°2 clamps P/N AW001CB04H and n°2 spacers P/N NAS43DD3-80N by means of n°2 screws P/N NAS1190E3P28AK.
- 4.33 With reference to Figure 57, at location n°37 spacer P/N A631A01A on cable assy B1A1.

**NOTE**

Use edging P/N A236A01AB on edges which are liable



to cause damage to cables.

**NOTE**

Use tubing braided P/N EN6049-006-32-5 and P/N EN6049-006-25-5 where protection against chafing is required and where contact with structure may occur.

**NOTE**

Tie cable to plastic support P/N A630A using tie strap P/N A627A.

- 4.34 With reference to Figures 46 thru 57 and Figures 64 thru 67 wiring diagrams, lay down the following cable assemblies following the existing route unless otherwise indicated on the figures:
- HF C/A P/N 3G9A02A24301 (A2A243);
  - HF C/A P/N 3G9A02B24701 (A2B247);
  - HF C/A P/N 3G9B01A29201 (B1A292);
  - HF C/A P/N 3G9B02A23001 (B2A230);
  - HF C/A P/N 3G9C01A21901 (C1A219);
  - HF C/A P/N 3G9C01A22001 (C1A220);
  - HF C/A P/N 3G9C02A21401 (C2A214);
  - HF C/A P/N 3G9C03A20201 (C3A202);
  - HF C/A P/N 3G9C03A20301 (C3A203).
- 4.35 With reference to Figure 47 and Figure 64 wiring diagram, perform the electrical connection between A8-1P1 connector P113 and sectioning connector.
- 4.36 With reference to Figures 47, 48 and Figure 64 wiring diagram, perform the electrical connection between:
- TB147P1 terminal board connector and A7-6P3 connector;
  - TB147P1 terminal board connector and J113 sectioning connector;
  - TB147P1 terminal board connector and P125 sectioning connector;
  - TB149 terminal board and P125 sectioning connector;
  - A7-6P3 connector and P125 sectioning connector.
- 4.37 With reference to Figures 47, 50 and Figure 64 wiring diagram, perform the electrical connection between J125 sectioning connector and J209 sectioning connector.
- 4.38 With reference to Figures 47, 50 and Figure 64 wiring diagram, perform the electrical connection between J207 sectioning connector and PL1P9 connector.
- 4.39 With reference to Figure 53 View B-B, install relay bracket P/N A815A04A1 by means of n°2 screws P/N MS35207-259 and n°2 washers P/N NAS1149D0332J.

- 4.40 With reference to Figure 53 View B-B, install n°1 relay P/N A657A01 on the relay bracket P/N A815A04A1.
- 4.41 With reference to Figure 53 View B-B and in accordance with AMP DM 39-A-11-00-01-00A-720A-A, install n°1 decal P/N ED300K76 near the relay.
- 4.42 With reference to Figures 50, 51, 53, 54 and Figure 65, 66 wiring diagrams, perform the electrical connection between:
- K76P1 relay socket and P209 sectioning connector;
  - K76P1 relay socket and P207 sectioning connector;
  - K76P1 relay socket and P209 sectioning connector;
  - K76P1 relay socket and A101P1 connector;
  - P209 sectioning connector and A101P1 connector;
  - P207 sectioning connector and A101P1 connector.
  - A101P1 connector and TB303 terminal board;
  - A102P1 connector and TB303 terminal board;
- 4.43 With reference to Figures 47, 48 and Figure 66 wiring diagram, perform the electrical connection between A1-3P2 connector and P123 sectioning connector.
- 4.44 With reference to Figures 48, 50 and Figure 66 wiring diagram, perform the electrical connection between J123 sectioning connector and J209 sectioning connector.
- 4.45 With reference to Figure 47 and Figure 67 wiring diagram, perform the electrical connection of C1A219 HF C/A to CB163 circuit breaker.
- 4.46 With reference to Figure 51 and Figure 67 wiring diagram, perform the electrical connection of C1A220 HF C/A to the TB303 terminal board.
- 4.47 With reference to Figure 53 and Figure 67 wiring diagram, perform the electrical connection of C1A220 HF C/A to the GS313 ground stud.
- 4.48 Perform a pin-to-pin continuity check of all the electrical connections made.

**NOTE**

Perform the following step 4.49 and 4.50 only if HF equipment will not be installed immediately.

- 4.49 With reference to Figure 54 detail D, protect and stow the cable connectors PS15P2, PS15P3, A101P2 and A102P3 as described in the following procedure:
- 4.49.1 Apply the protective cap P/N NAS813-12 on the connectors.
- 4.49.2 Cover with Meta-Aramid Nomex fiber sleeve and use cable straps to firmly tie down sleeve on the connector cablings.
- 4.49.3 Fasten the connector assemblies with cable straps.

- 4.50 With reference to Figure 54 detail C, protect and stow the cable connectors PS15P1, A101P1 and A102P1 as described in the following procedure:
- 4.50.1 Apply the applicable protective cap on the connectors.
  - 4.50.2 Cover with Meta-Aramid Nomex fiber sleeve and use cable straps to firmly tie down sleeve on the connector cabling.
  - 4.50.3 Fasten the connector assemblies with cable straps.
- 4.51 Modify the overhead Auxiliary C/B panel as follow:

**NOTE**

Customer must contact Product Support Engineering ([engineering.support.lhd@leonardocompany.com](mailto:engineering.support.lhd@leonardocompany.com)) at least 3 months in advance of embodiment date of this Service Bulletin in order to receive information on the exact W/D applicable to the helicopter.

- 4.51.1 In accordance with AMP DM 39-A-24-91-04-00A-920A-K, remove from the overhead Auxiliary C/B panel the existing Integrally-lighted panel.
- 4.51.2 Install where indicated on the new Integrally-lighted panel P/N 3G2490LXXXXX one circuit breaker P/N MS25244-30 and one circuit breaker P/N MS3320-5.
- 4.51.3 In accordance with AMP DM 39-A-11-00-01-00A-720A-A, install decals P/N ED300CB163 and ED300CB162 adjacent to the above mentioned components.
- 4.51.4 Perform electrical connection between circuit breaker CB162 pin 2 and splice SP544 using A556A-T20. Use electrical contact P/N MS25036-149 for pin 2 of CB162.
- 4.51.5 Perform electrical connection between splice SP544 and connector of overhead circuit breaker panel PL1J9 pin J and pin K using A556A-T20 wire. Use n°2 electrical contact P/N M39029/56-351 for pin J and pin K of PL1J9.
- 4.51.6 Connect CB162 to 28V DC NON ESS BUS 2 W12A by means of cable type A556A-T8 and A556A-T16.
- 4.51.7 Connect CB163 to 28V DC NON ESS BUS 2 W12A by means of cable type A556A-T8.
- 4.51.8 In accordance with AMP DM 39-A-24-91-04-00A-920A-K, install the new Auxiliary C/B Integrally-lighted panel P/N 3G2490LXXXXX.

5. Perform the HF equipment installation P/N 4G2310A01411 in accordance with Part II step 5.
6. In accordance with AMP DM 39-A-06-41-00-00A-010A-A, re-install all external panels, internal panels and internal liners previously removed as required.

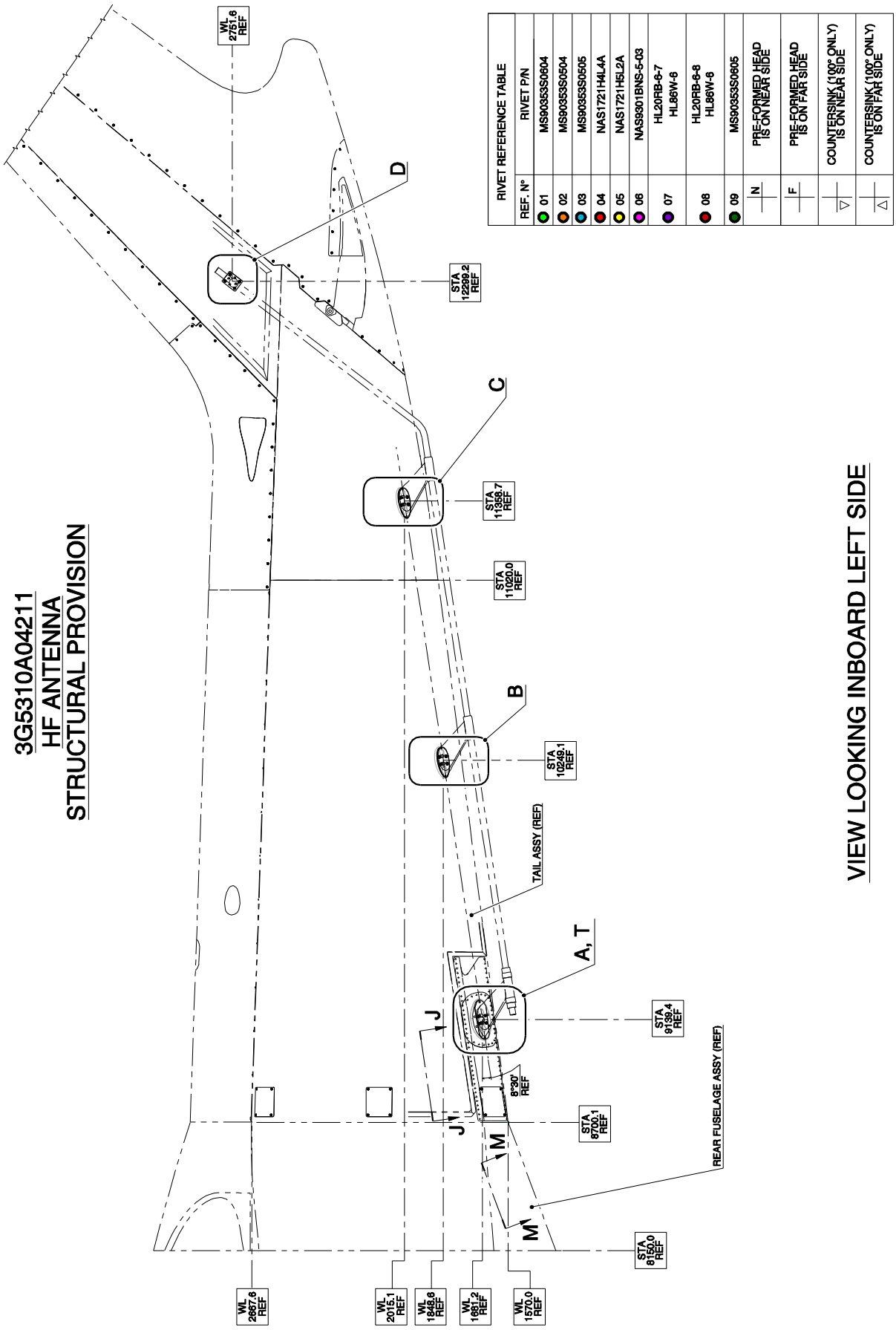
**NOTE**

Customer must contact AW139 Product Support Engineering ([engineering.support.lhd@leonardocompany.com](mailto:engineering.support.lhd@leonardocompany.com)) to request the correct Option File at least three months in advance from the scheduled application of this Service Bulletin.

7. Ensure that the applicable version of Option file has been installed for the HF radio System.
8. With reference to AMP DM 39-A-46-20-00-00A-750A-A or 39-A-46-20-00-00B-750A-A, access to APM setting data entry and enable XCVRA1option if Audio Panel Block 2 (P/N 7511900-9860X; -98801) or Audio Panel Block 3 (P/N 7511900-99001; 99201) is installed on the helicopter.
9. With reference to AMP DM 39-A-23-14-00-00A-340A-K, perform HF system functional check.
10. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
11. Return the helicopter to flight configuration and record for compliance with Part III of this Service Bulletin on the helicopter logbook.
12. Send the attached compliance form to the following mail box:

[engineering.support.lhd@leonardocompany.com](mailto: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**

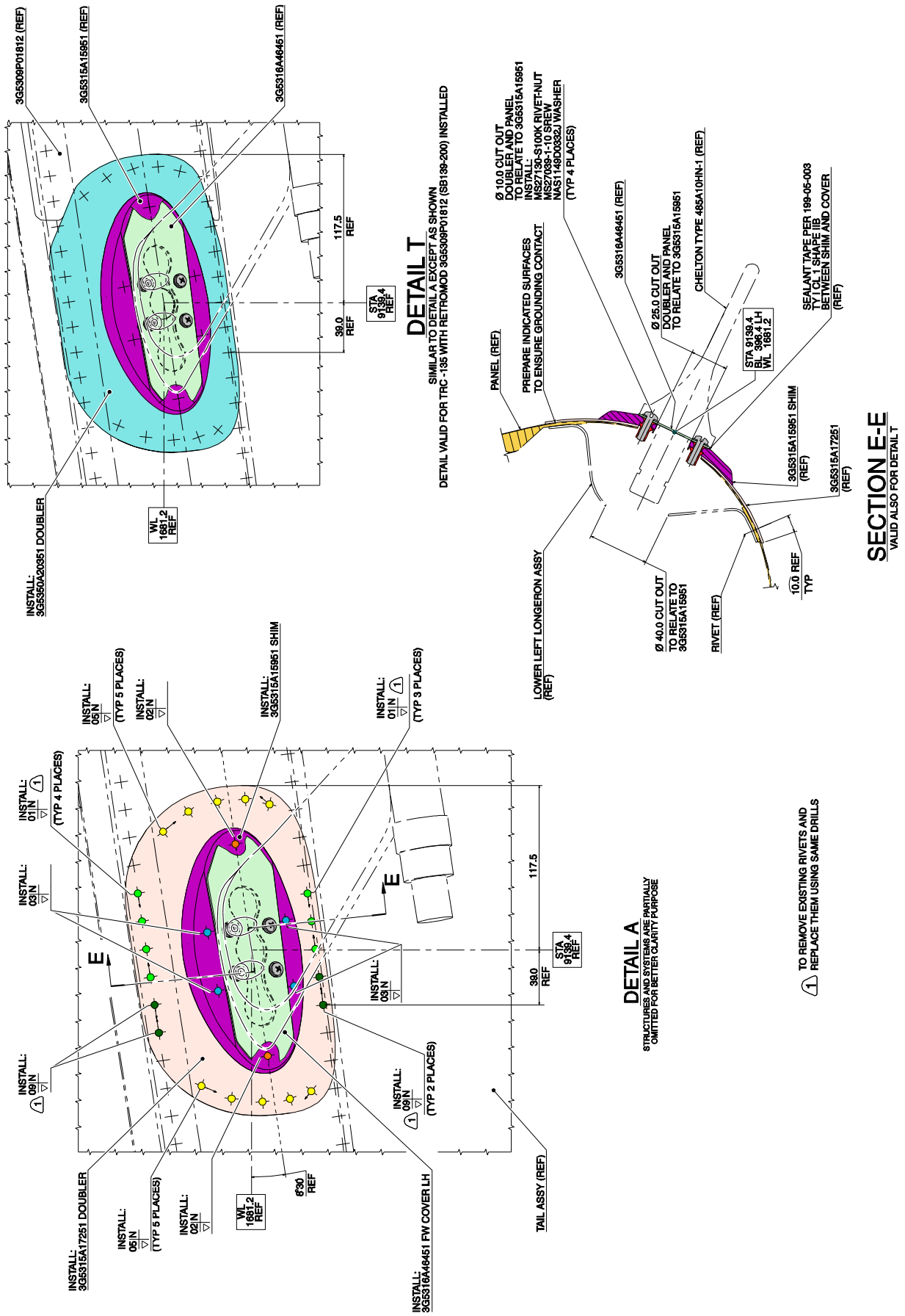
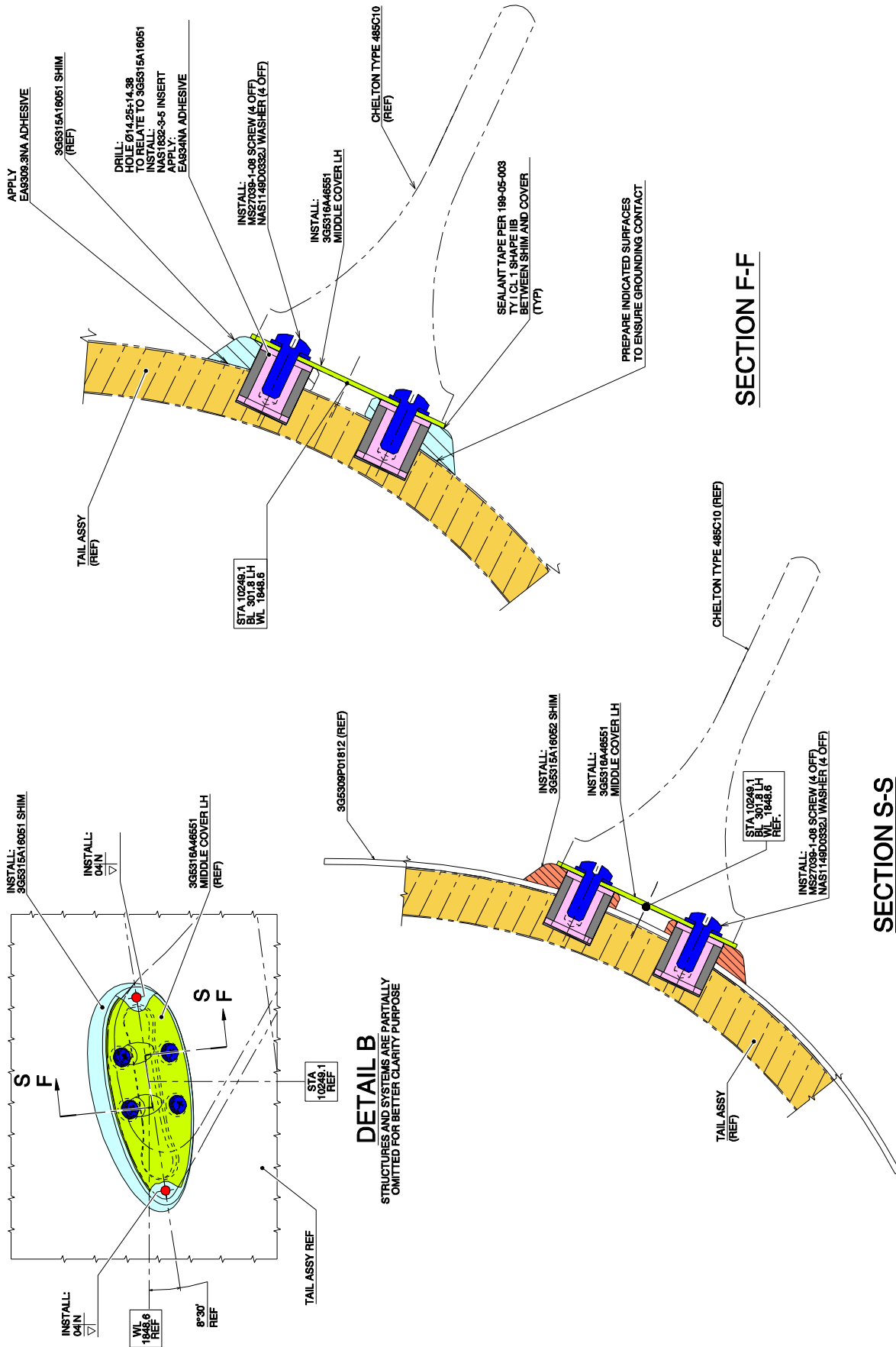
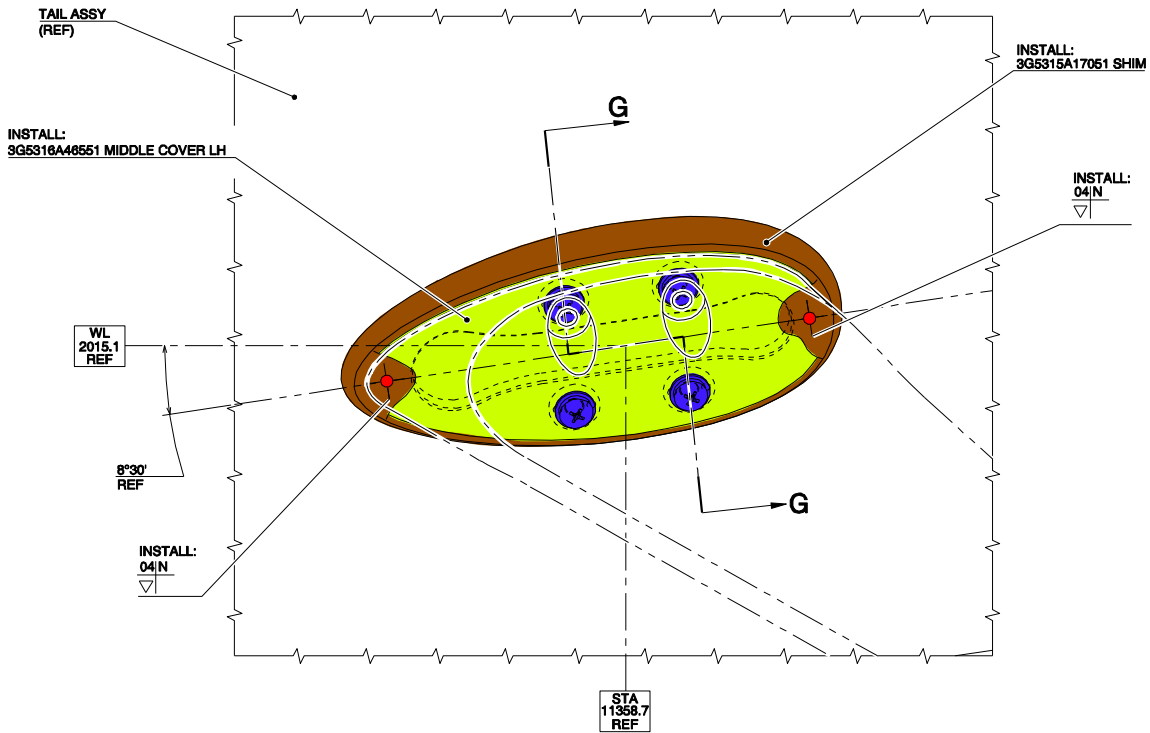


Figure 2



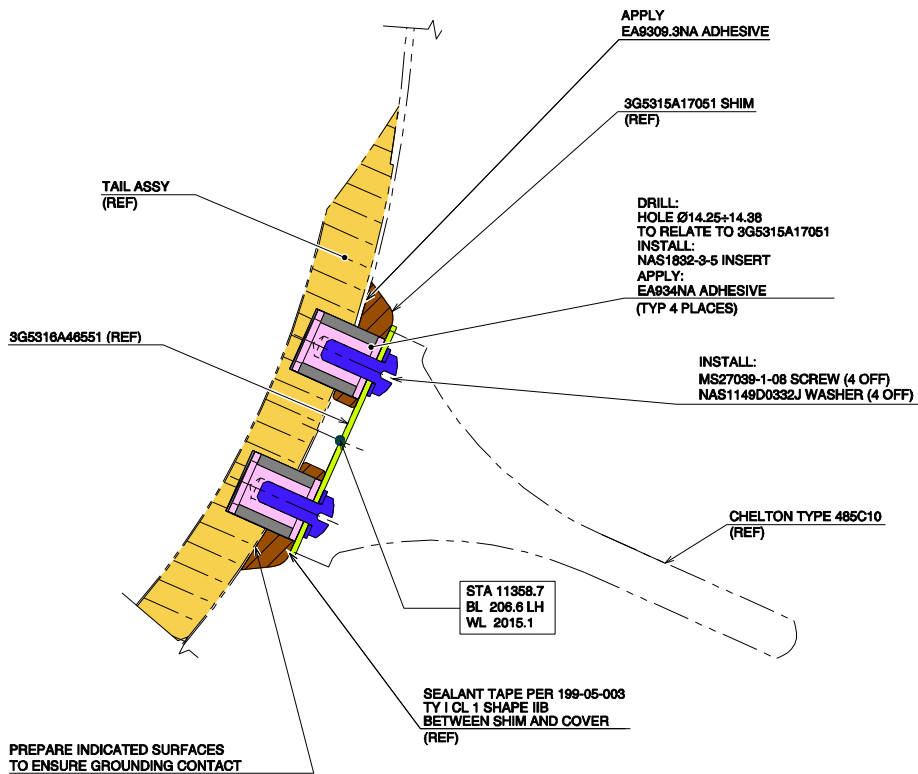
**SECTION S-S**  
SIMILAR TO SECTION F-F EXCEPT AS SHOWN  
DETAIL VALID FOR TRC-156 WITH RETROMOD 3G6S08P01812 INSTALLED

Figure 3



**DETAIL C**

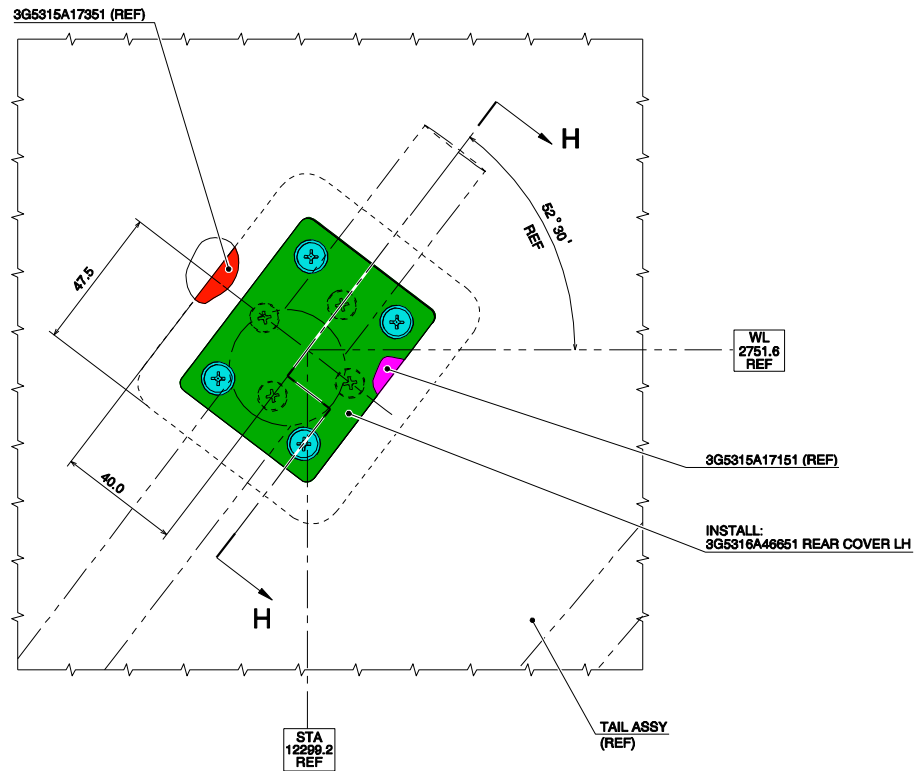
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



**SECTION G-G**

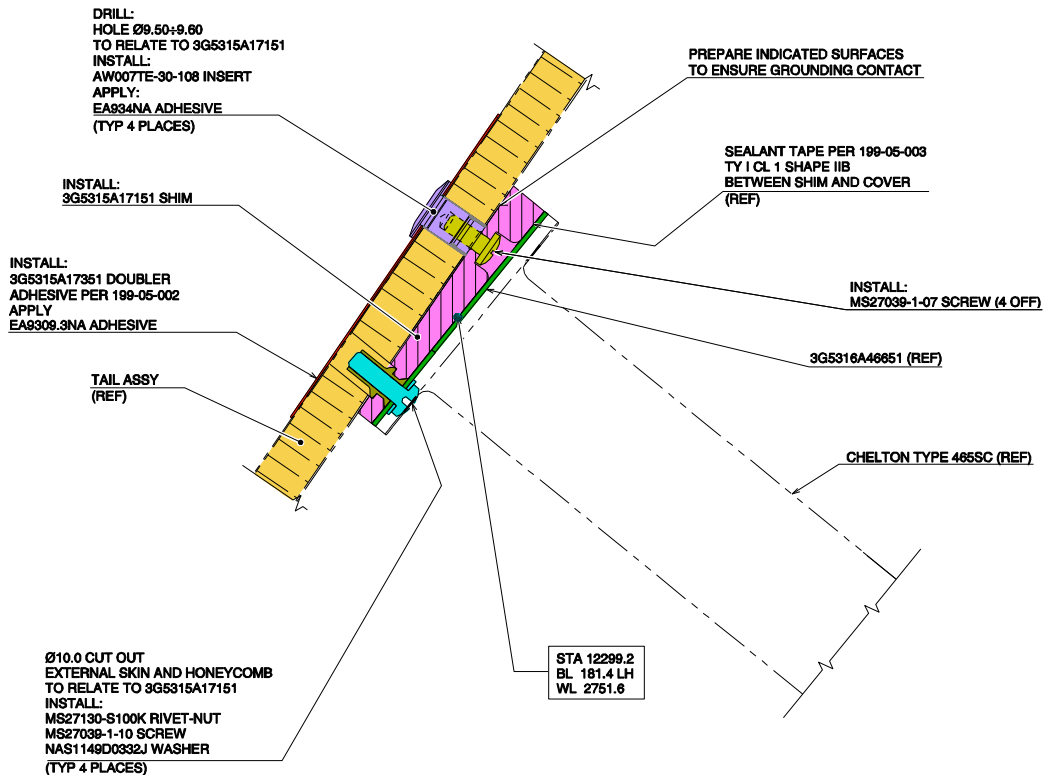
**Figure 4**





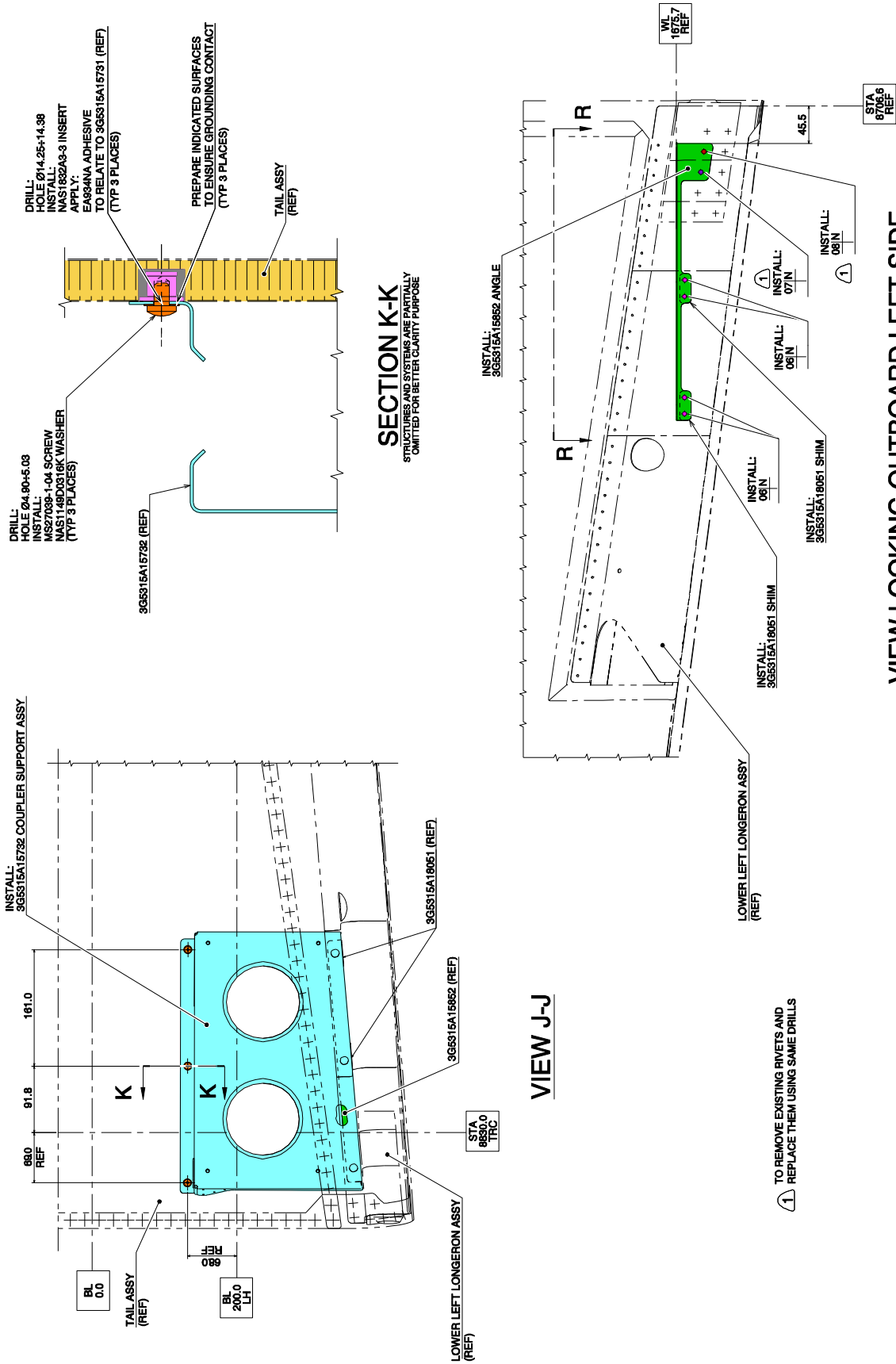
**DETAIL D**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

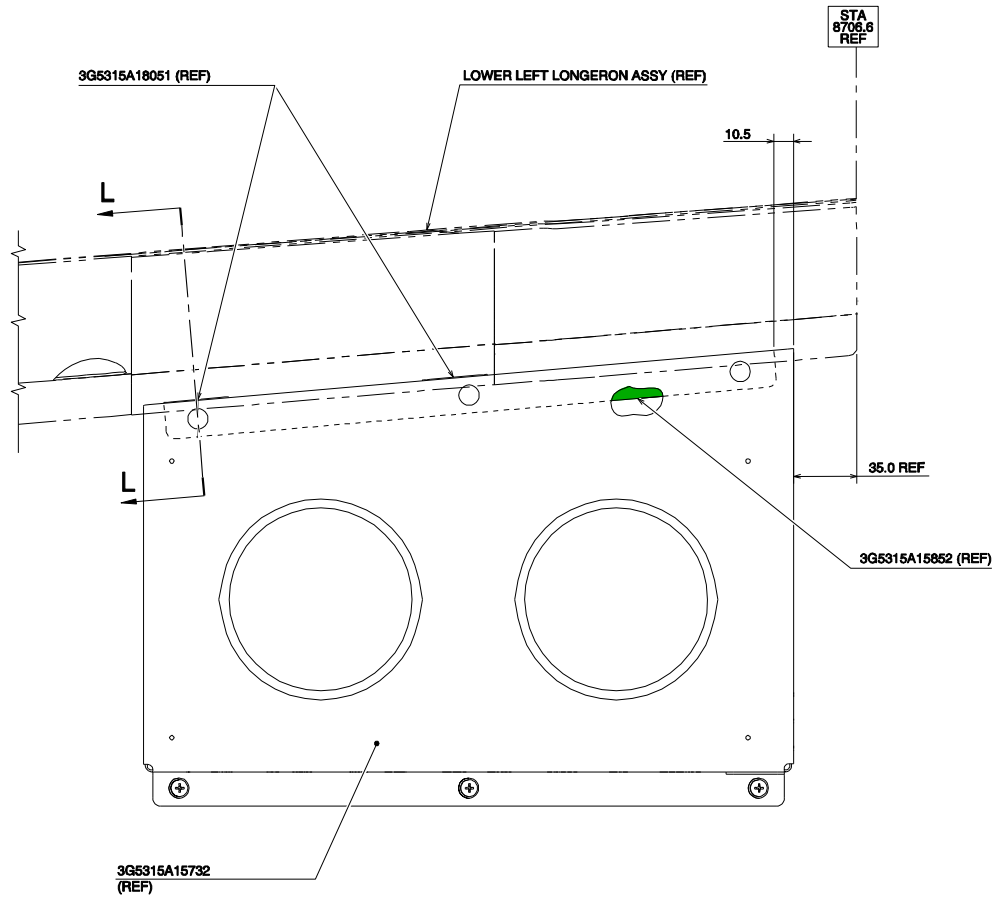


**SECTION H-H**

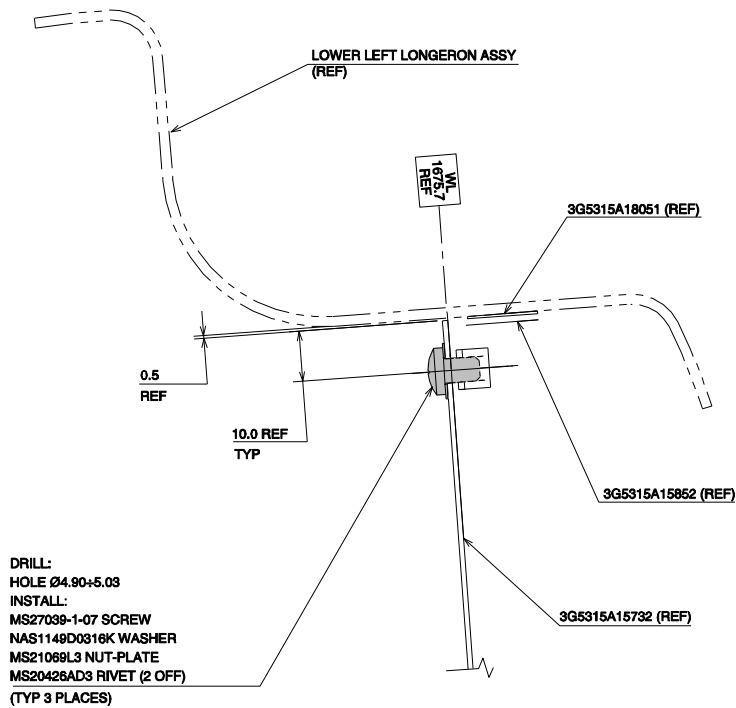
**Figure 5**



**Figure 6**

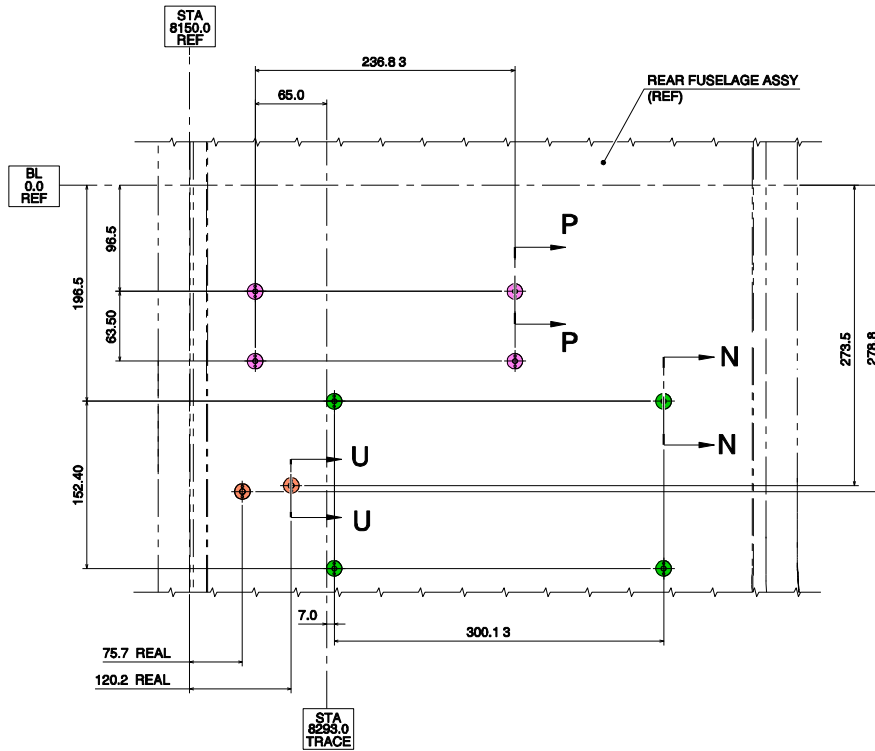


**VIEW R-R**  
STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE



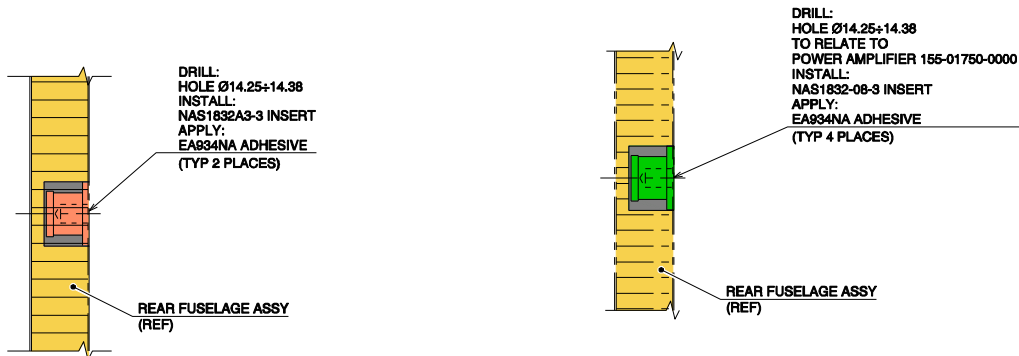
**SECTION L-L**

**Figure 7**



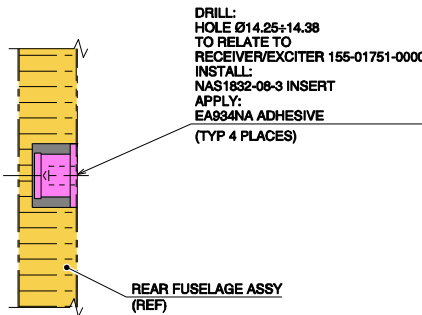
**VIEW M-M**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



**SECTION U-U**

**SECTION N-N**



**SECTION P-P**

**Figure 8**

S.B. N°139-034

DATE: February 8, 2011

REVISION: D - February 10, 2023

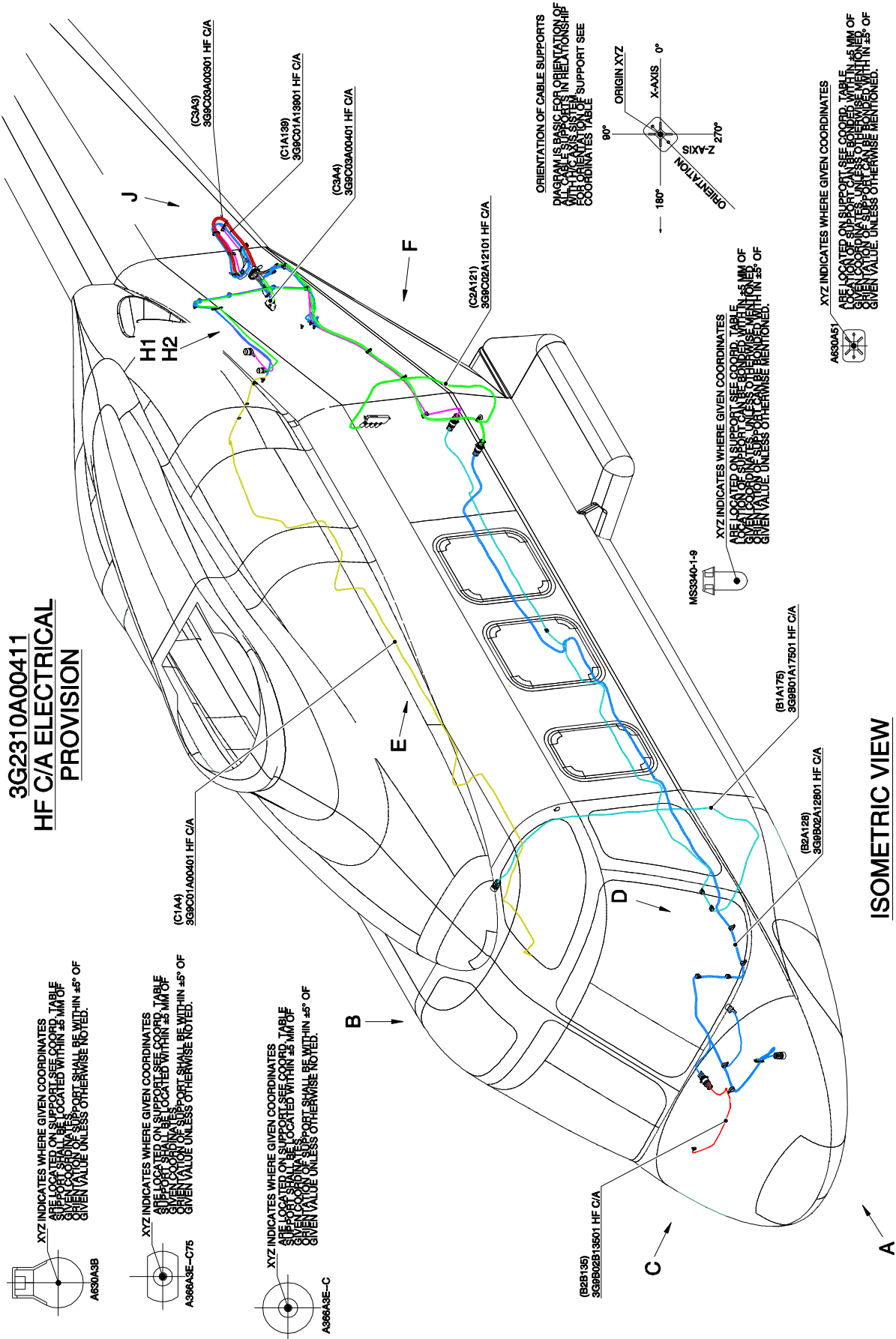
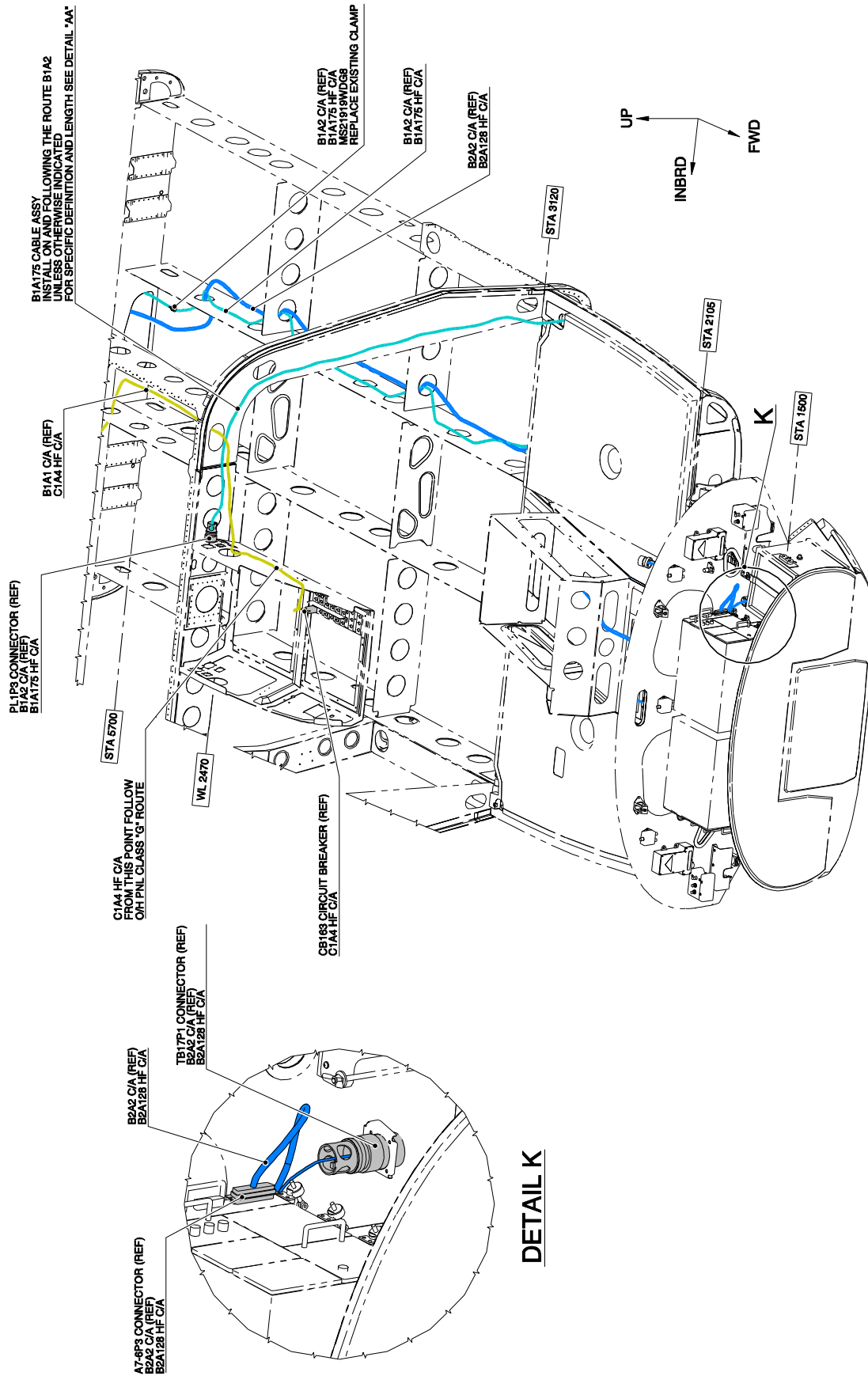


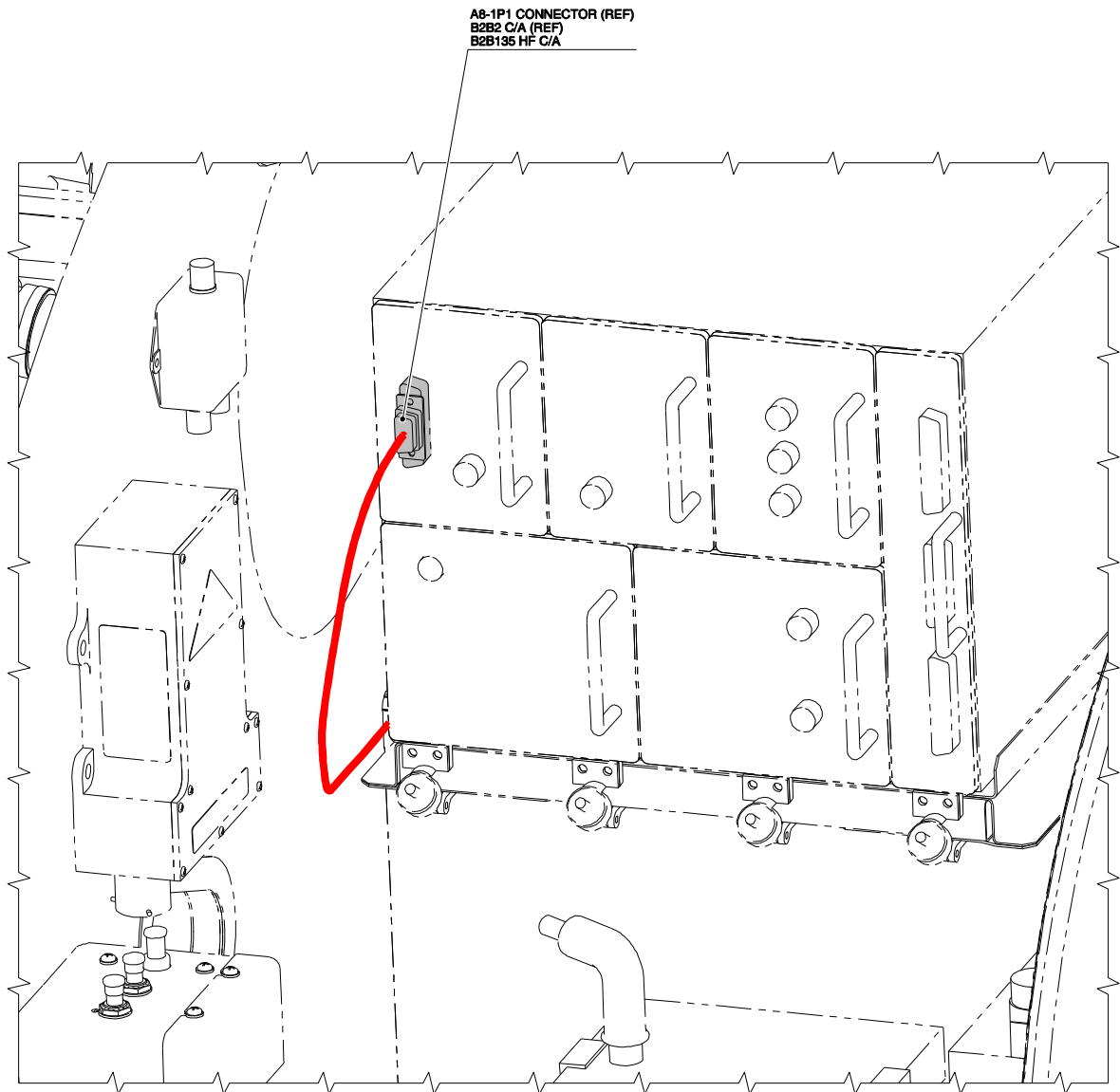
Figure 9



**VIEW A**  
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

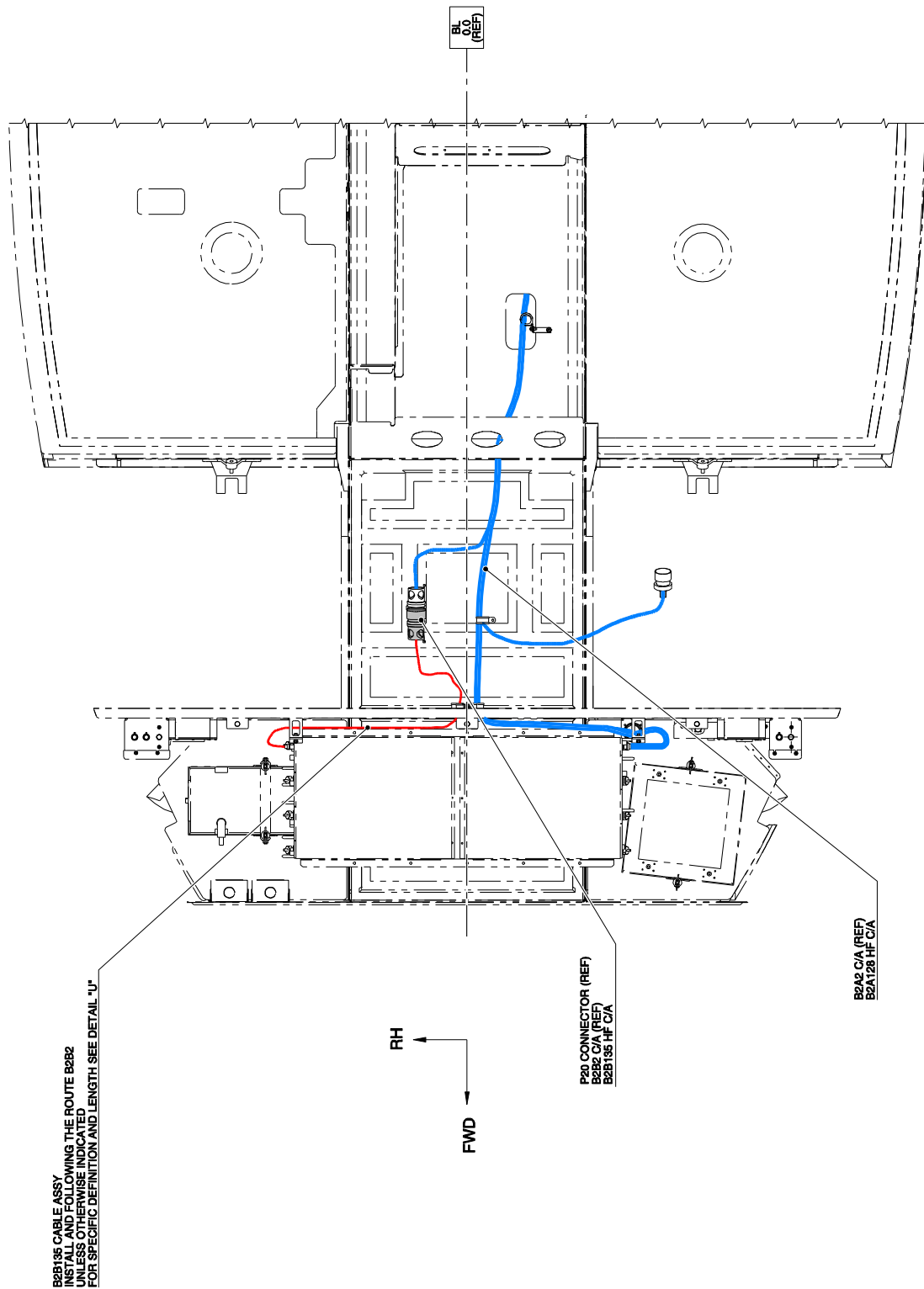
**DETAIL K**

**Figure 10**



**VIEW C**  
STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 11**



**VIEW B**  
STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 12**





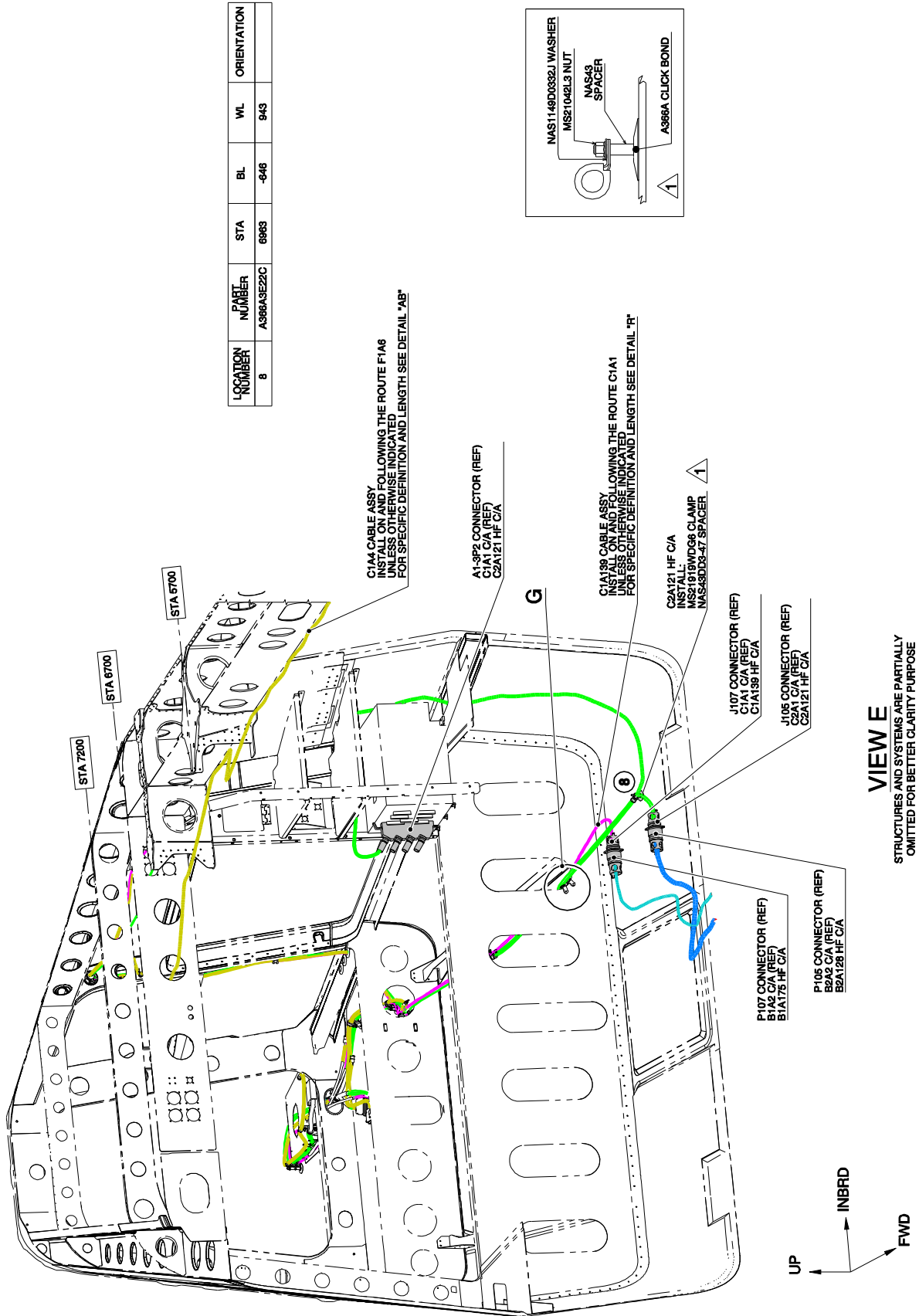


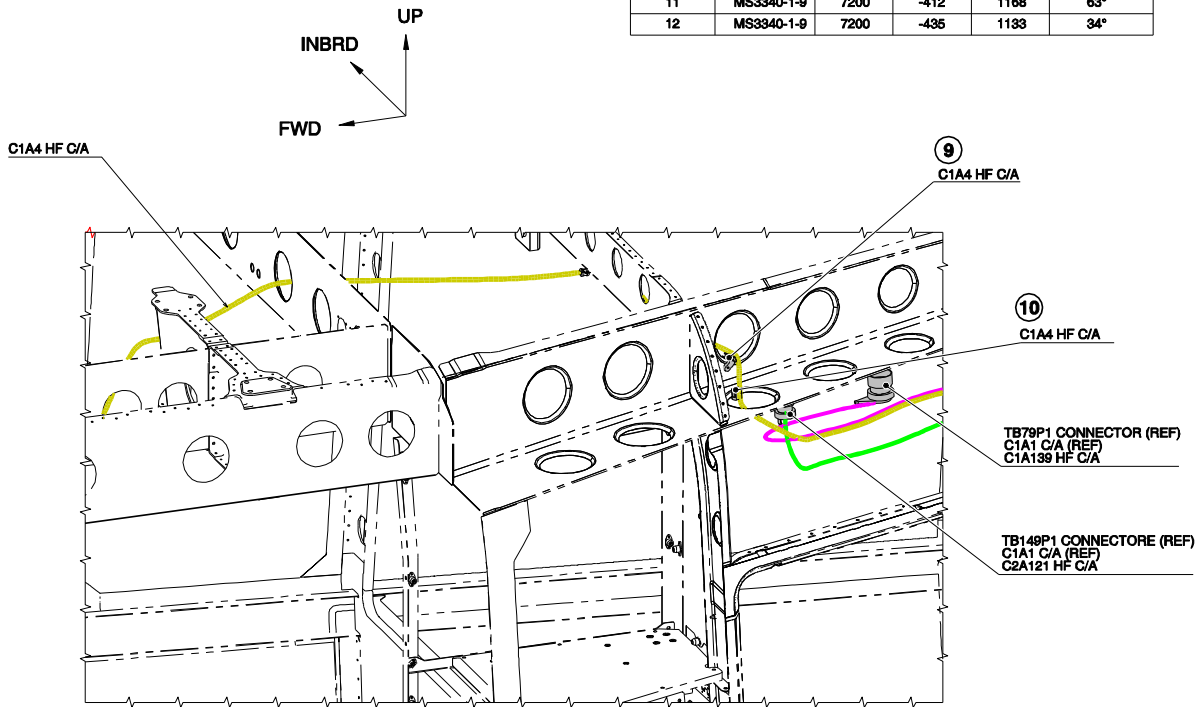
Figure 14

S.B. N°139-034

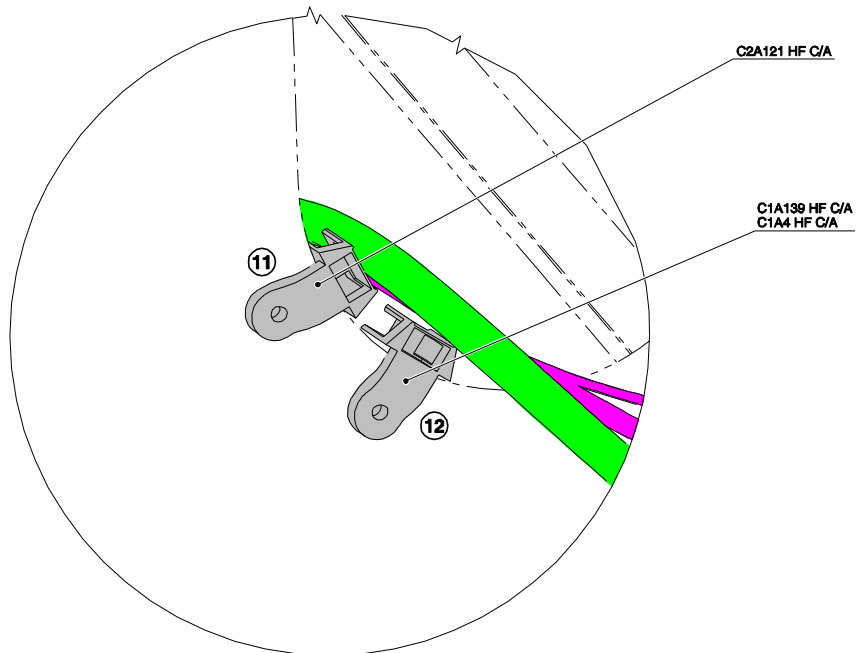
DATE: February 8, 2011

REVISION: D - February 10, 2023

LOCATION NUMBER	PART NUMBER	STA	BL	WL	ORIENTATION
9	MS3340-1-9	7275	-634	2533	210°
10	MS3340-1-9	7275	-657	2499	90°
11	MS3340-1-9	7200	-412	1168	63°
12	MS3340-1-9	7200	-435	1133	34°



**VIEW F**  
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



**DETAIL G**

**Figure 15**

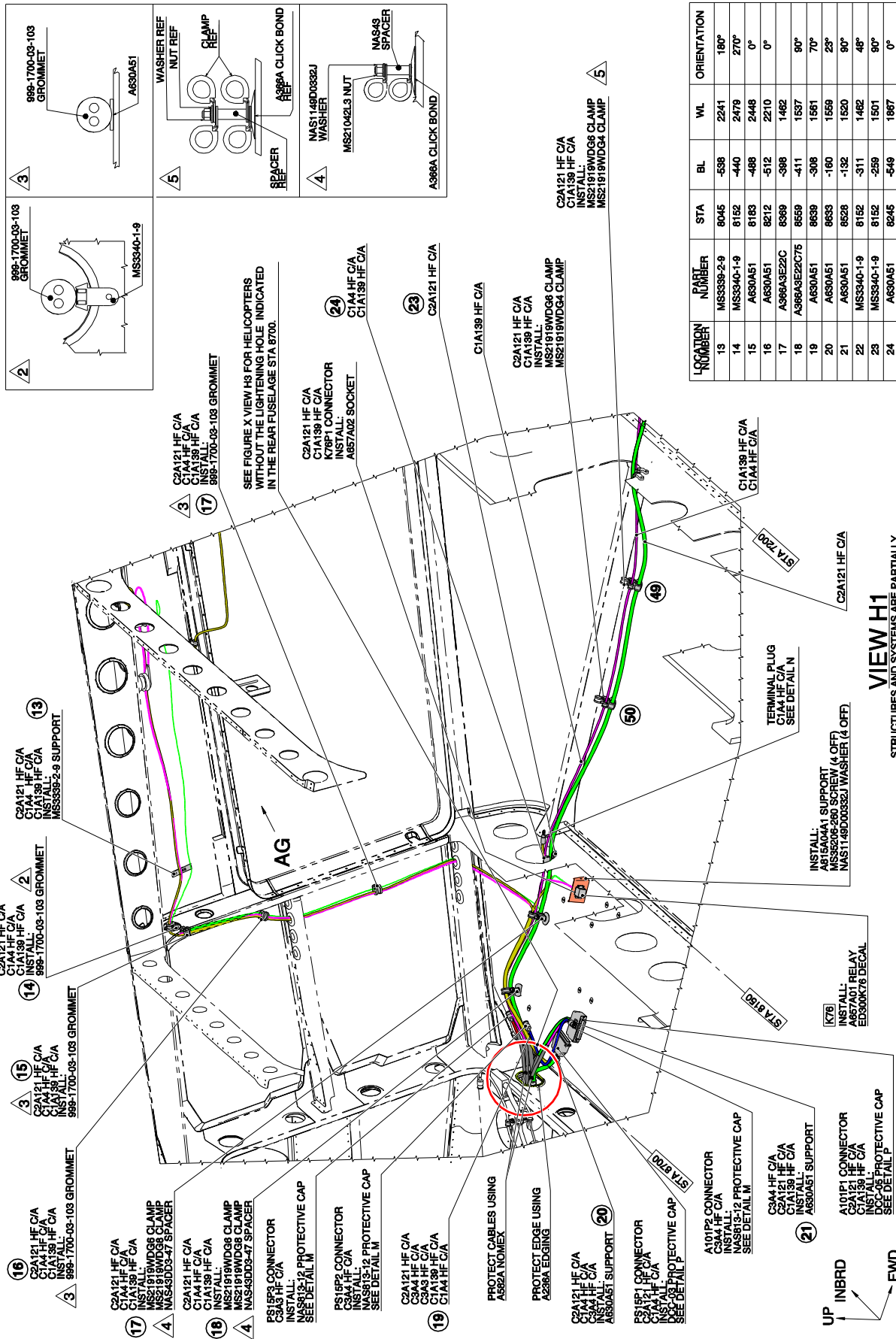


Figure 16

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DATE: February 8, 2011

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APPLICABLE ONLY TO HELICOPTERS WITHOUT THE LIGHTNING HOLE  
(STA 8700) INDICATED IN THE FIGURE X VIEW H1 AND FIGURE X VIEW H2.

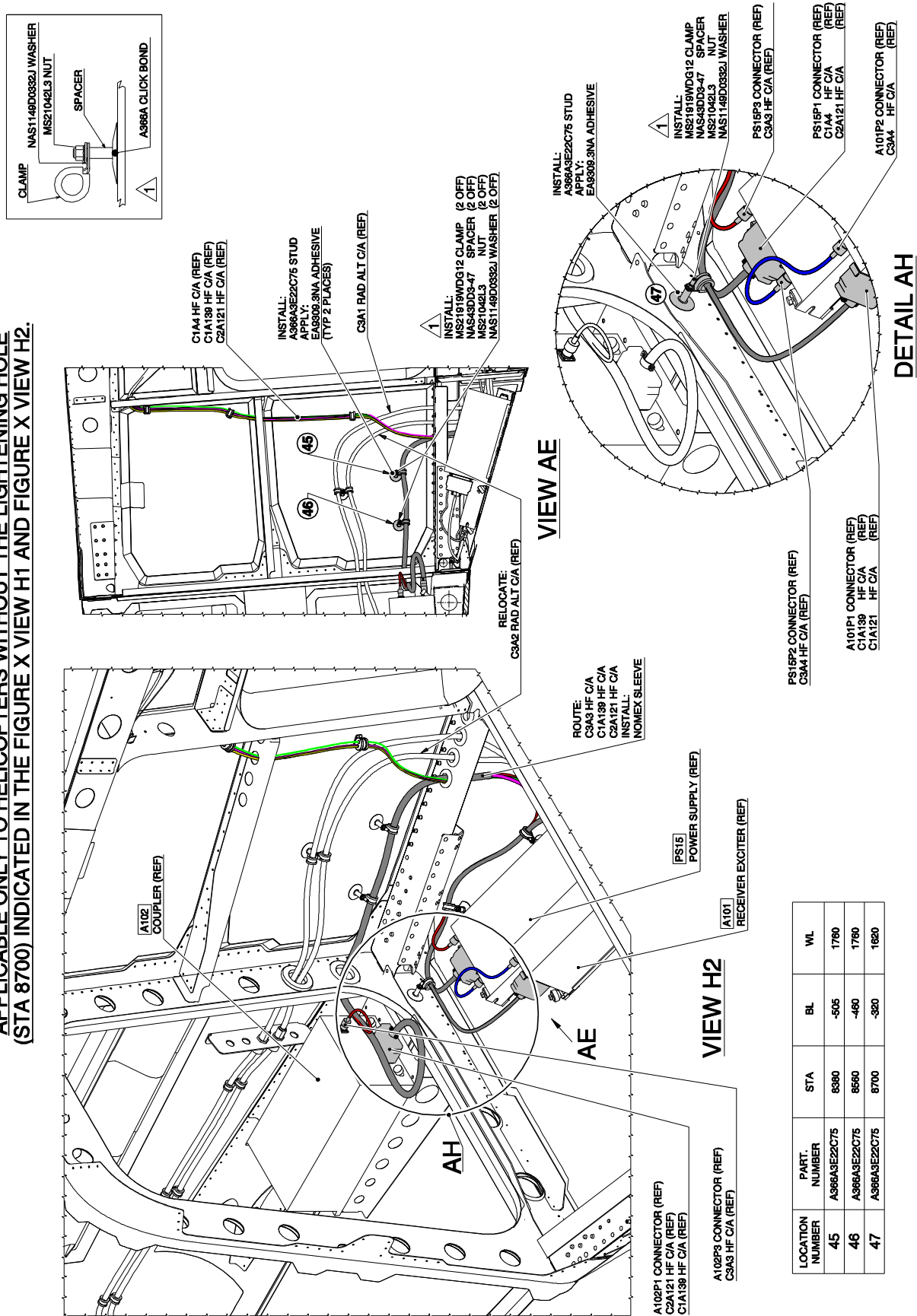
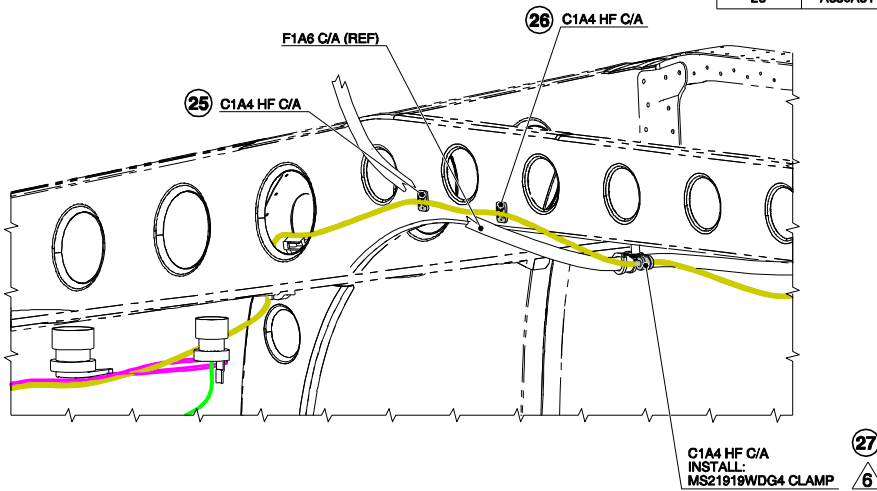


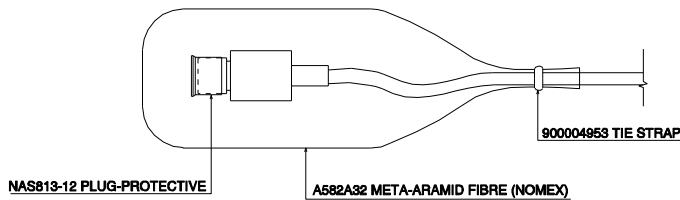
Figure 17

LOCATION NUMBER	PART NUMBER	STA	BL	WL	ORIENTATION
25	A630A51	7200	-527	2588	90°
26	A630A51	7200	-397	2586	90°



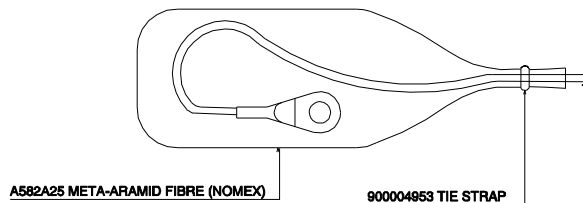
### VIEW AG

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



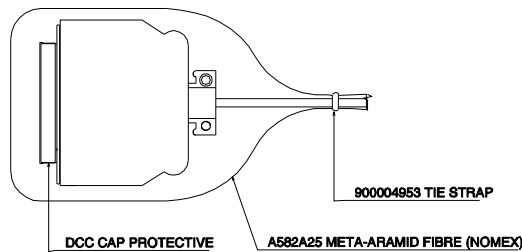
INSERT THE CONNECTOR ASSEMBLY INTO THE PROTECTIVE PLUG.  
COVER WITH THE NOMEX FIBRE SLEEVE AND USE THE CABLE STRAPS  
TO TIE UP SLEEVE FIRMLY TO THE CONNECTOR CABLING.  
USE CABLE STRAPS TO FIX THE CONNECTOR ASSY TO THE PLUG.

### DETAIL M



COVER WITH THE NOMEX FIBRE SLEEVE AND USE THE CABLE STRAPS  
TO TIE UP SLEEVE FIRMLY TO THE TERMINAL PLUG.  
USE CABLE STRAPS TO FIX THE PROTECTION TO THE CABLE LOOM.

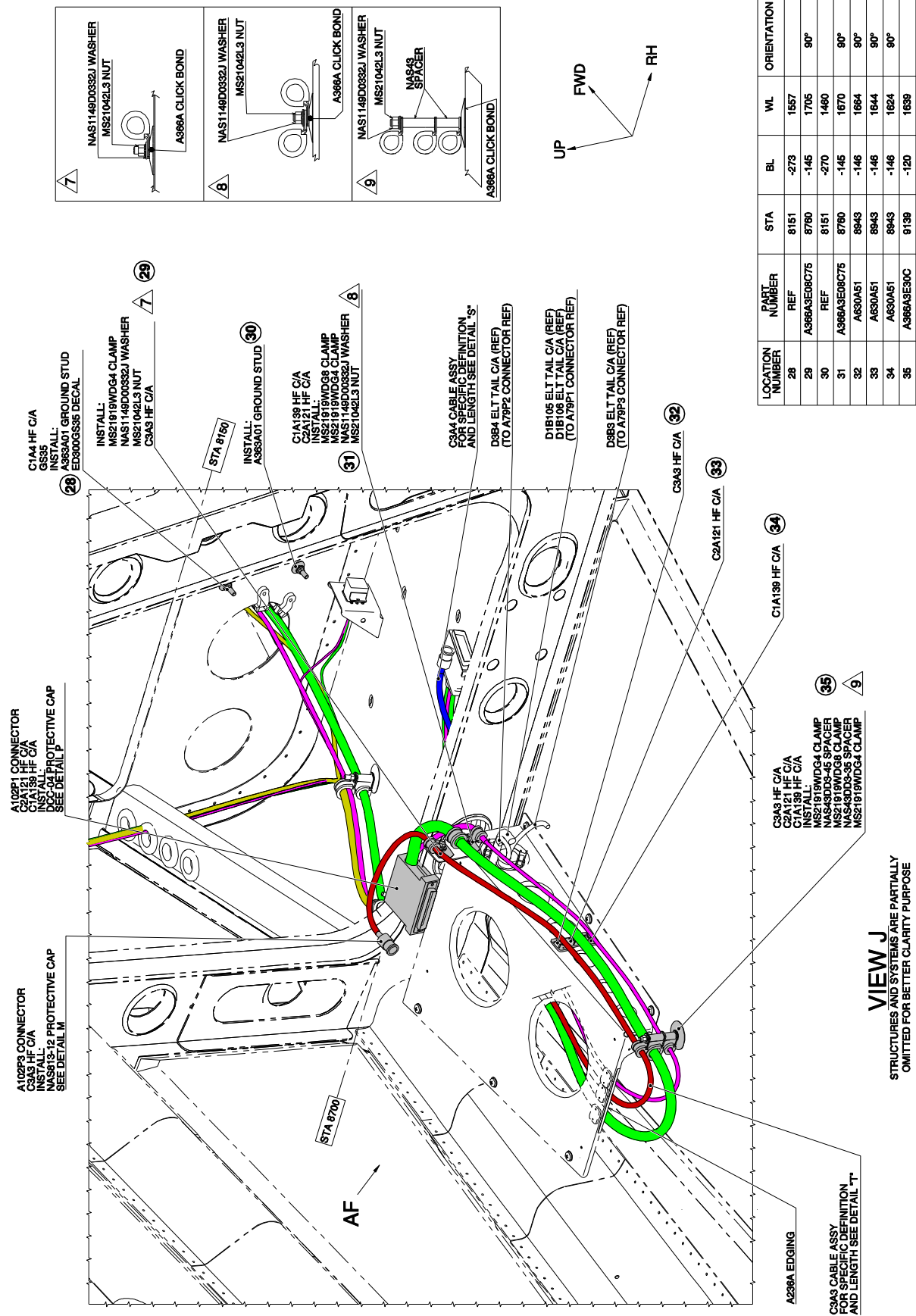
### DETAIL N



INSERT THE CONNECTOR ASSEMBLY INTO THE DCC-03 CAP PROTECTIVE  
COVER WITH THE NOMEX FIBRE SLEEVE AND USE THE CABLE STRAPS  
TO TIE UP SLEEVE FIRMLY TO THE CONNECTOR CABLING.  
USE CABLE STRAPS TO FIX THE CONNECTOR ASSY TO THE CABLE LOOM.

### DETAIL P

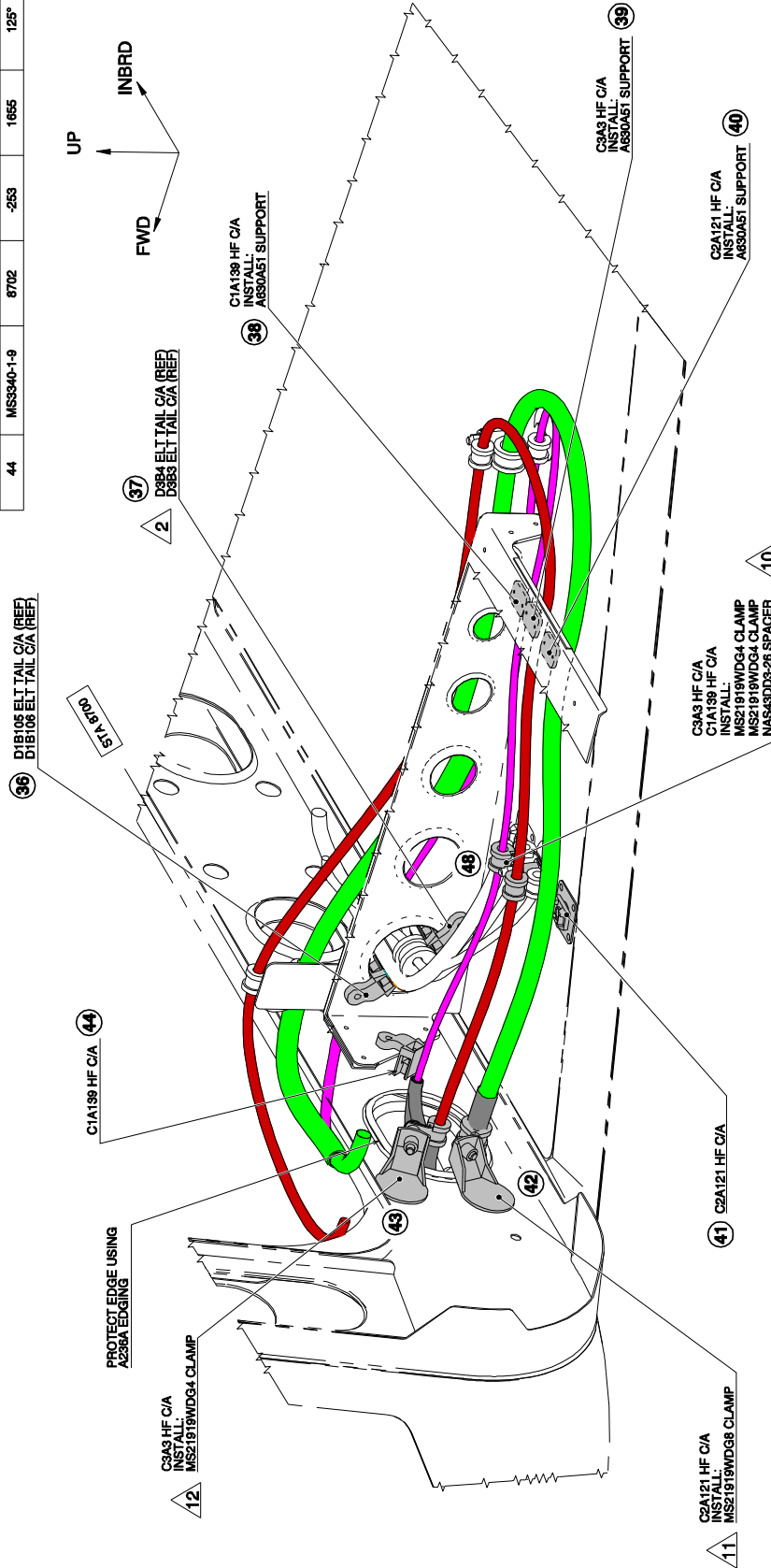
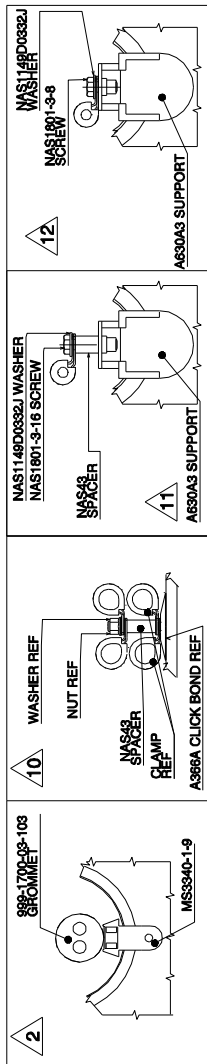
Figure 18



**Figure 19**

LOCATION NUMBER	PART NUMBER	STA	BL	WL	ORIENTATION
28	REF	8151	-273	1557	
29	A386A3E08C75	8780	-145	1705	90°
30	REF	8151	-270	1480	90°
31	A386A3E08C75	8780	-145	1670	90°
32	A630A51	8943	-146	1664	90°
33	A630A51	8943	-146	1644	90°
34	A630A51	8943	-146	1624	90°
35	A386A3E30C	9139	-120	1639	90°

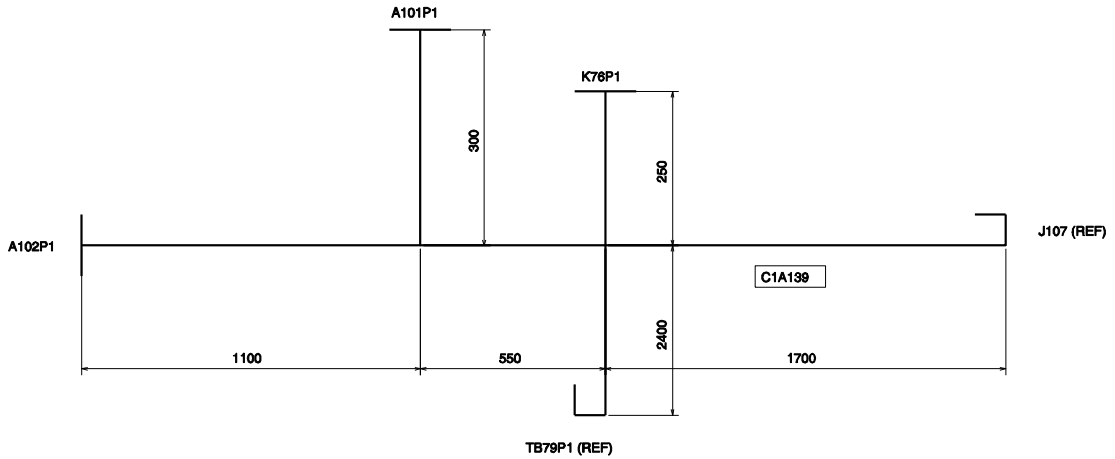
LOCATION NUMBER	PART NUMBER	STA	BL	WL	ORIENTATION
36	MS3340-1-9	8752	-147	1634	67°
37	MS3340-1-9	8795	-147	1602	292°
38	A630A51	9092	-213	1676	0°
39	A630A51	9092	-234	1676	0°
40	A630A51	9092	-256	1676	0°
41	A630A31	8899	-256	1608	0°
42	A630A3B	8702	-280	1603	290°
43	A630A3B	8702	-253	1655	245°
44	MS3340-1-9	8702	-253	1655	125°



**VIEW AF**  
STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE

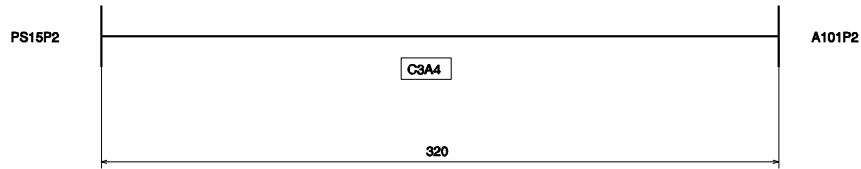
Figure 20



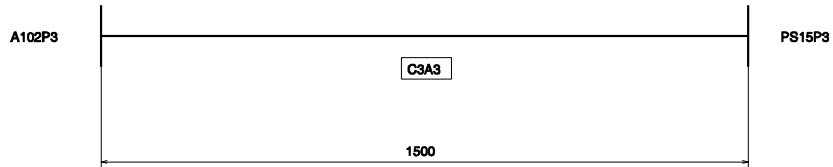


**DETAIL R**

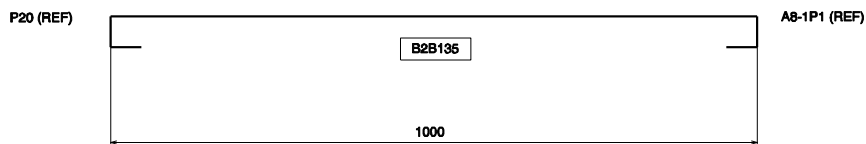
UNLESS OTHERWISE INDICATED FOR BRANCHES  
AND LENGTHS APPLY THE C/A C1A1 DEFINITION.



**DETAIL S**



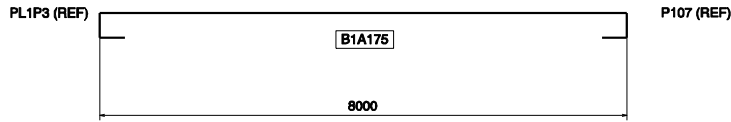
**DETAIL T**



**DETAIL U**

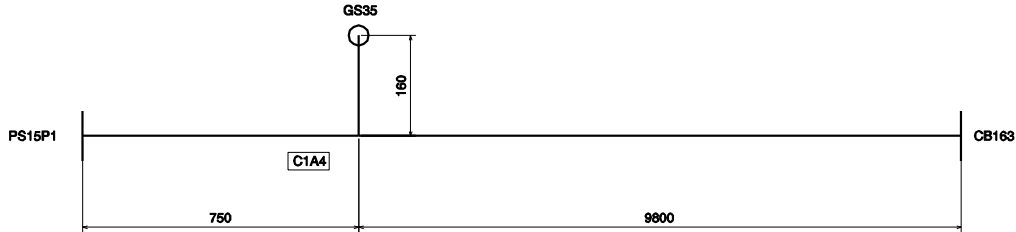
UNLESS OTHERWISE INDICATED FOR BRANCHES  
AND LENGTHS APPLY THE C/A B2B2 DEFINITION.

**Figure 21**



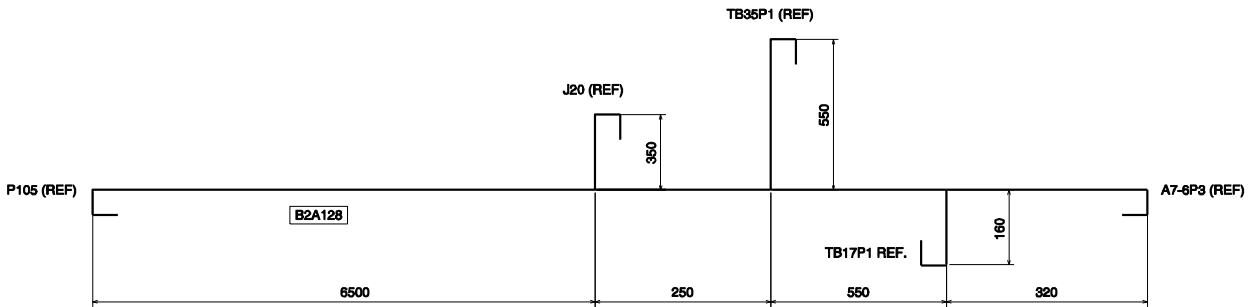
**DETAIL AA**

UNLESS OTHERWISE INDICATED FOR BRANCHES AND LENGTHS APPLY THE C/A B1A2 DEFINITION.



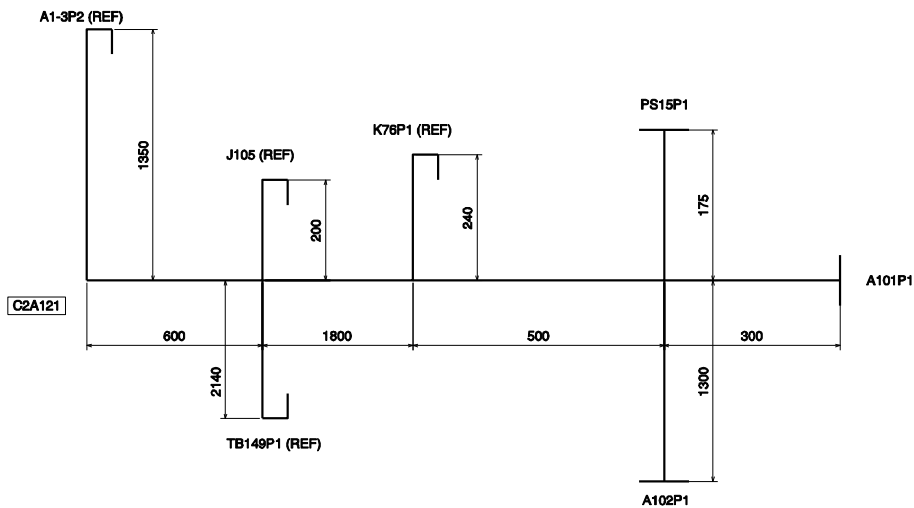
**DETAIL AB**

UNLESS OTHERWISE INDICATED FOR BRANCHES AND LENGTHS APPLY THE C/A F1A6 DEFINITION.



**DETAIL AC**

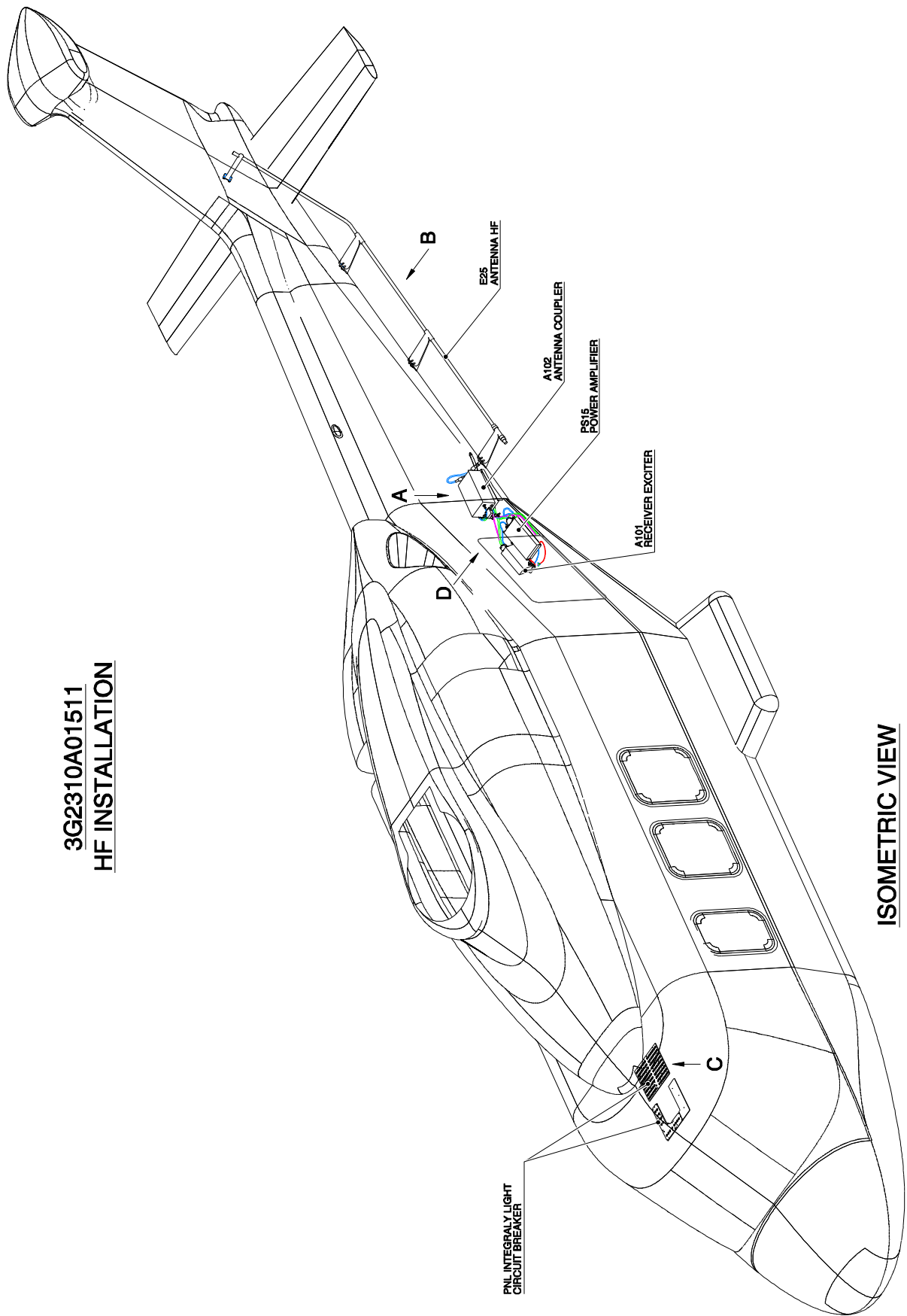
UNLESS OTHERWISE INDICATED FOR BRANCHES AND LENGTHS APPLY THE C/A B2A2 DEFINITION.



**DETAIL AD**

UNLESS OTHERWISE INDICATED FOR BRANCHES AND LENGTHS APPLY THE C/A C2A1 DEFINITION.

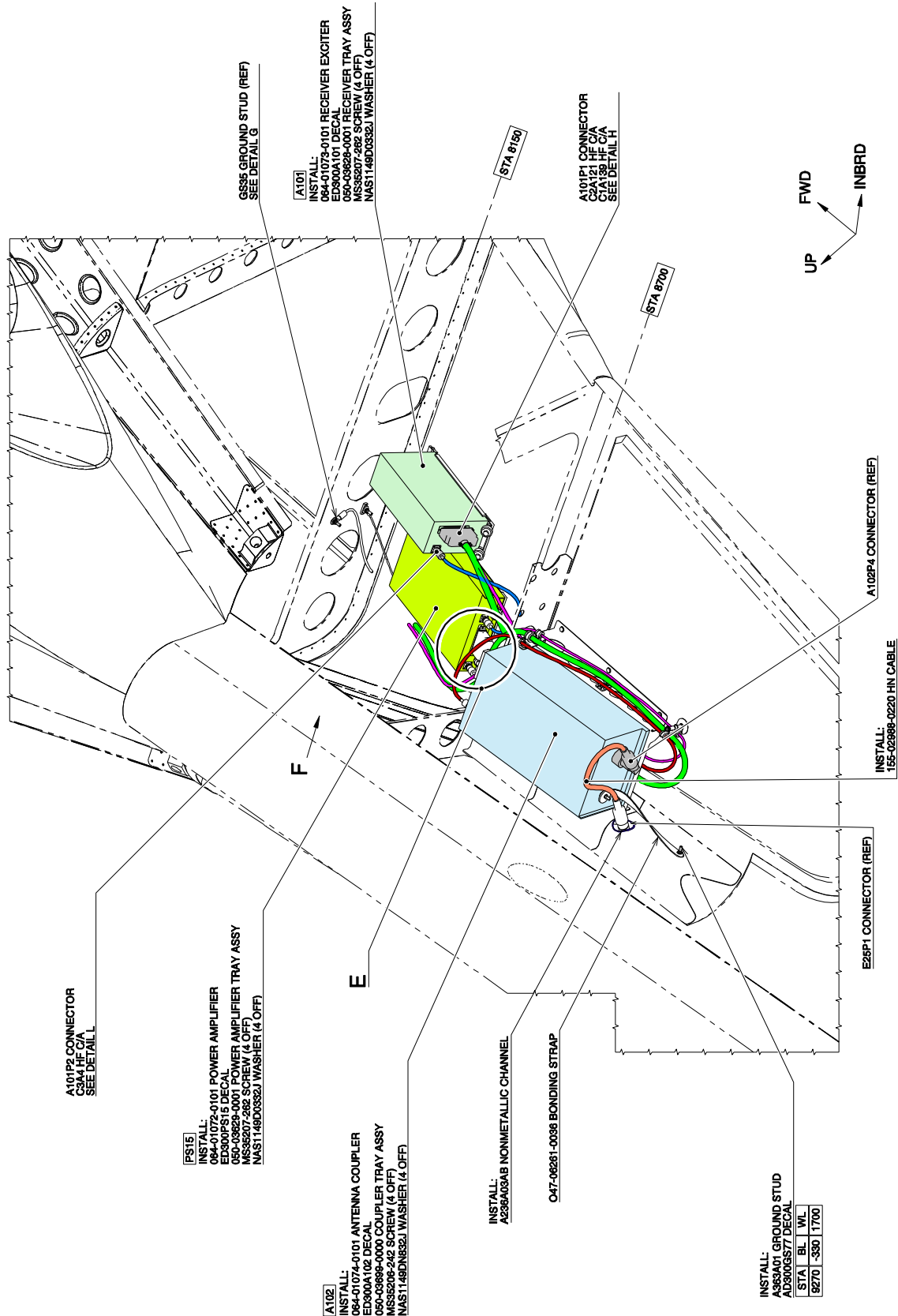
**Figure 22**



**3G2310A01511  
HF INSTALLATION**

**ISOMETRIC VIEW**

**Figure 23**



**VIEW A**

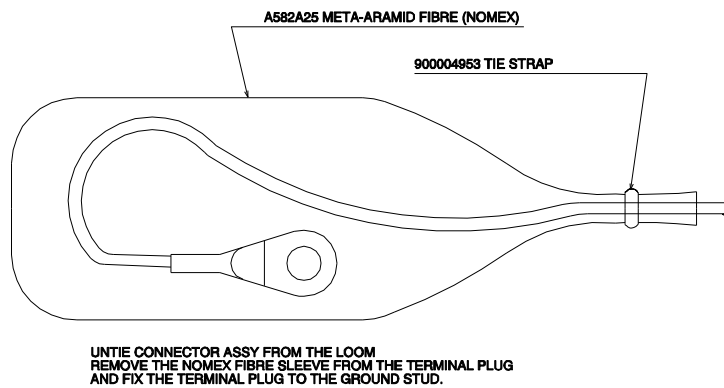
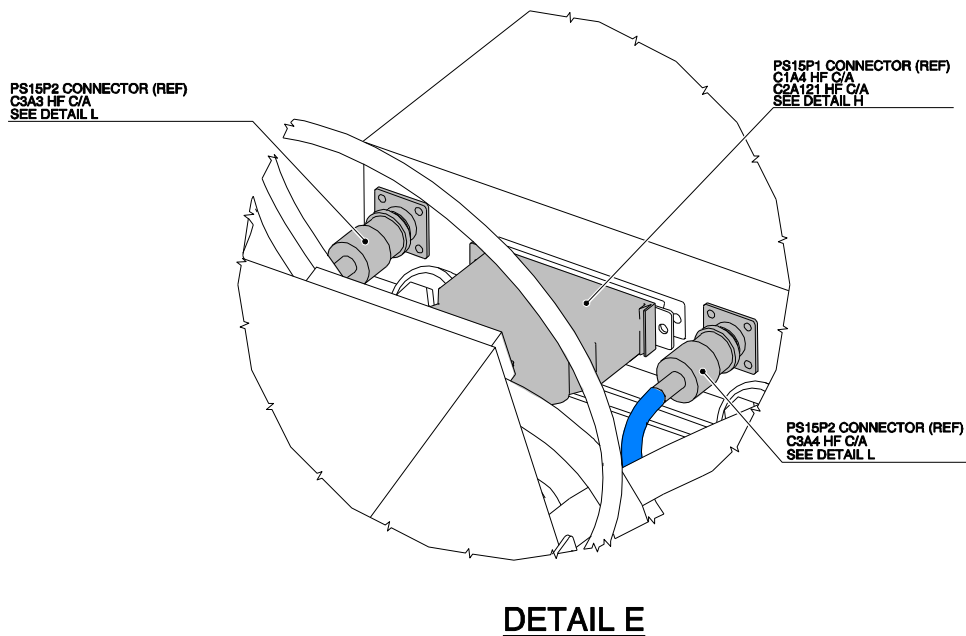
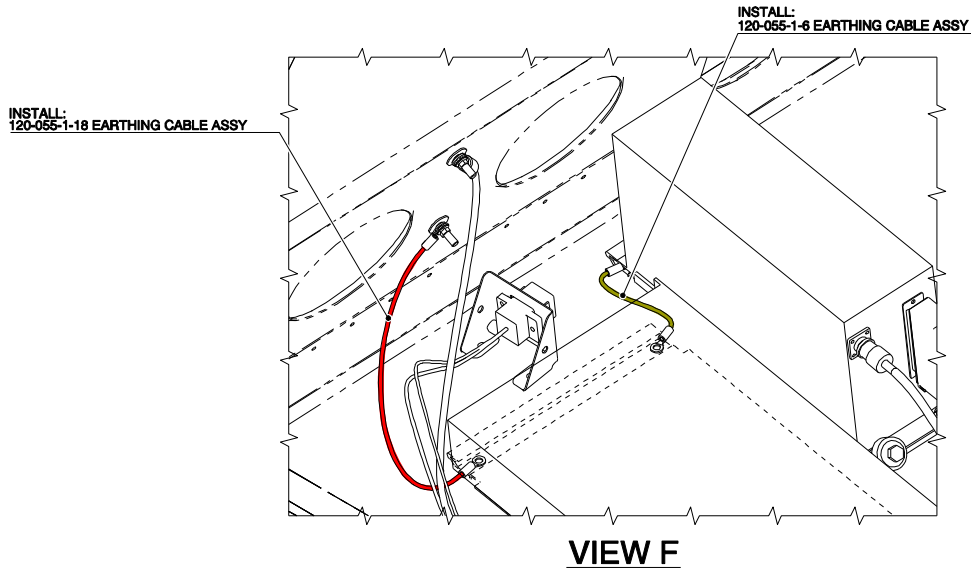
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

**Figure 24**

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**Figure 25**

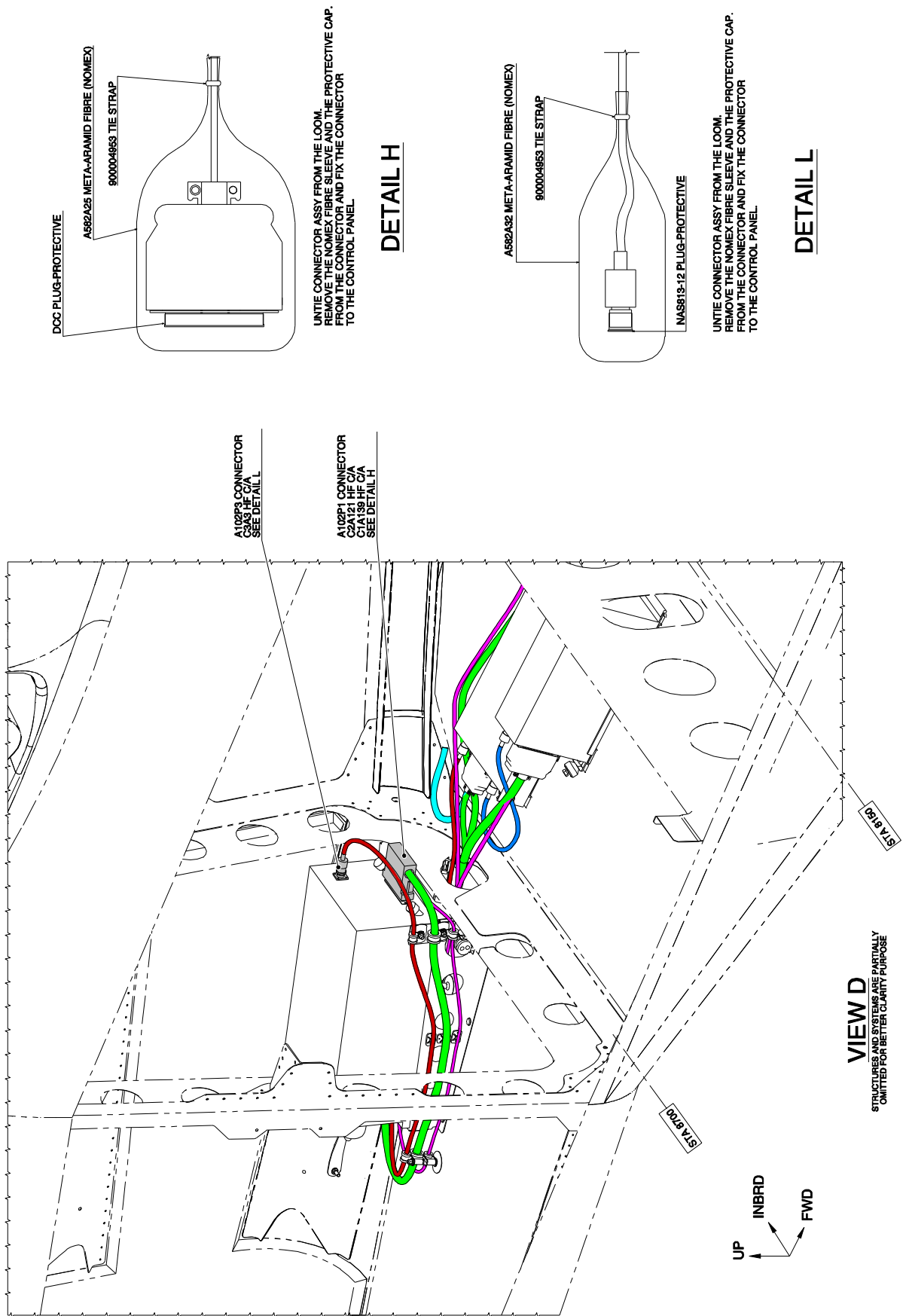
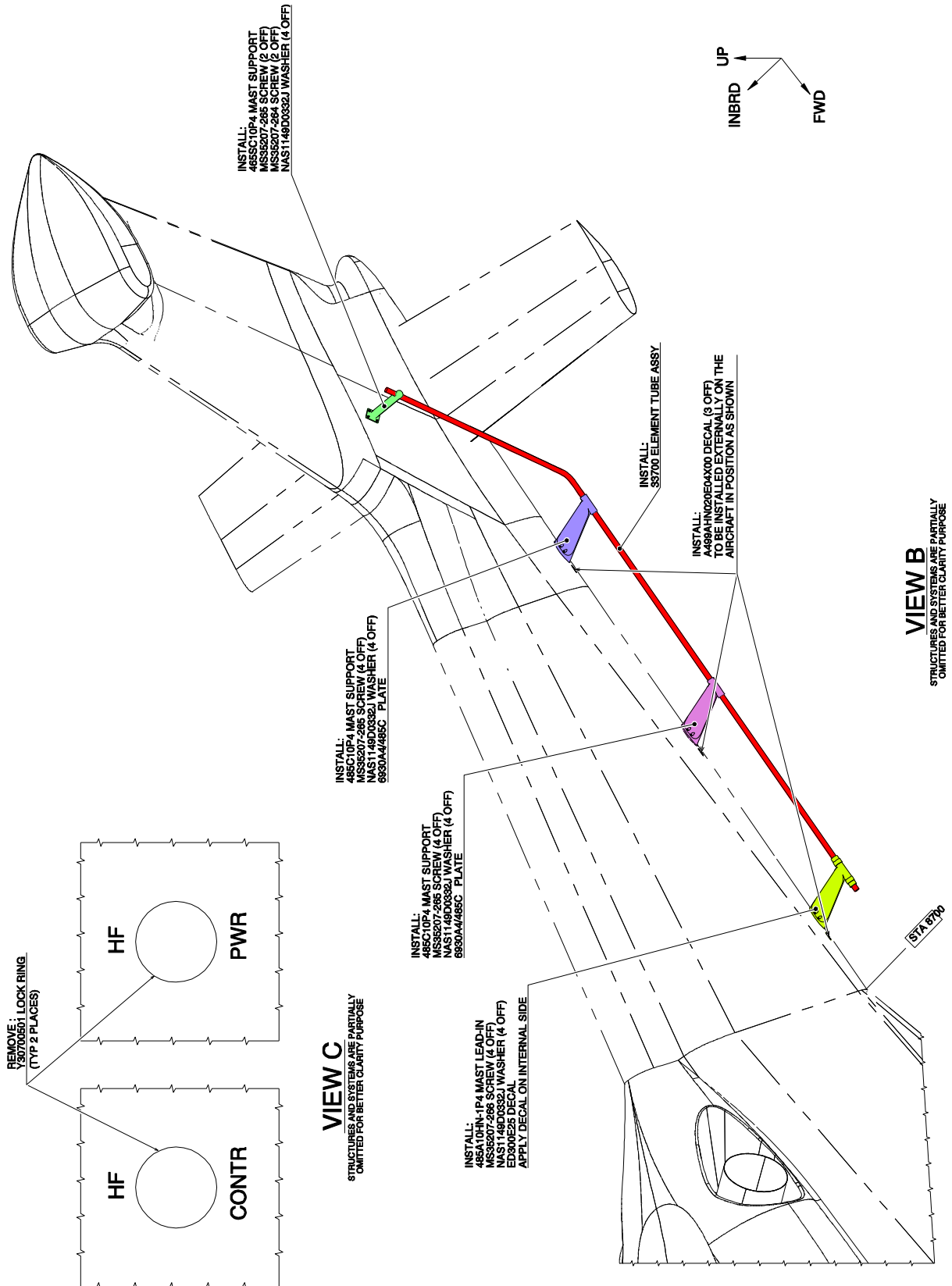


Figure 26



**Figure 27**

# 4G2310A00911 HF ELECTRICAL PROVISION

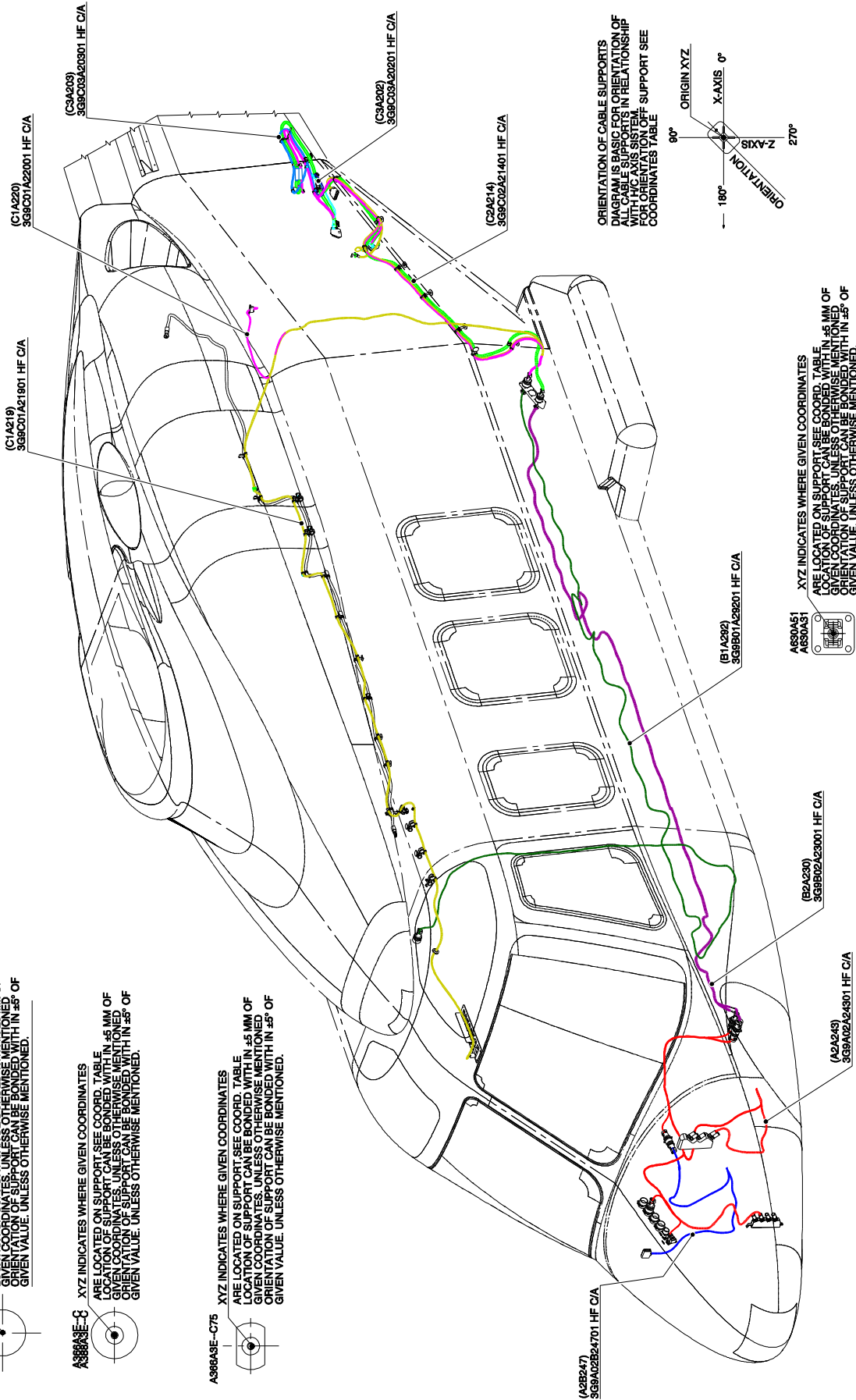
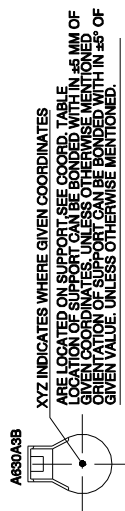
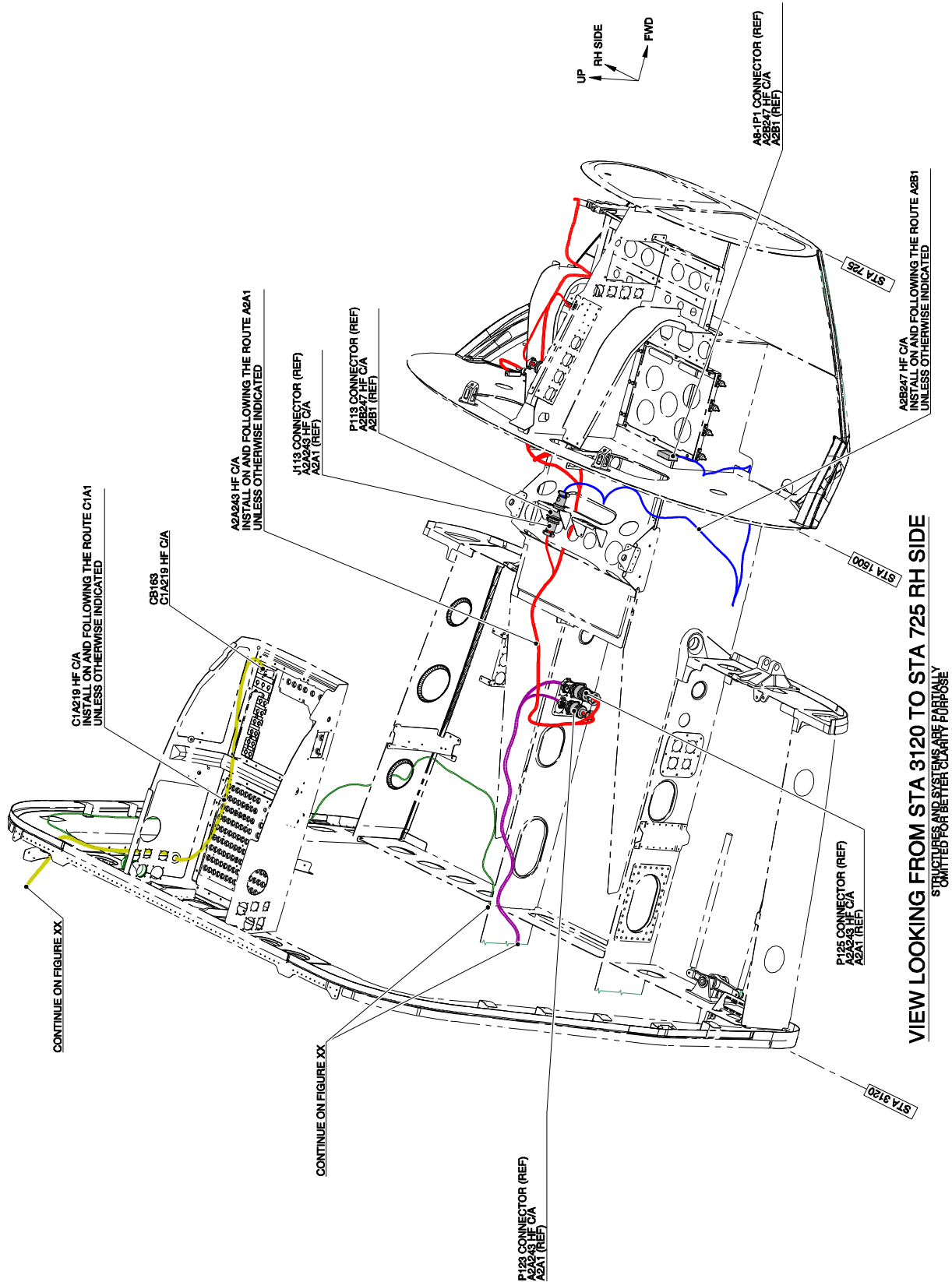


Figure 28





**Figure 29**

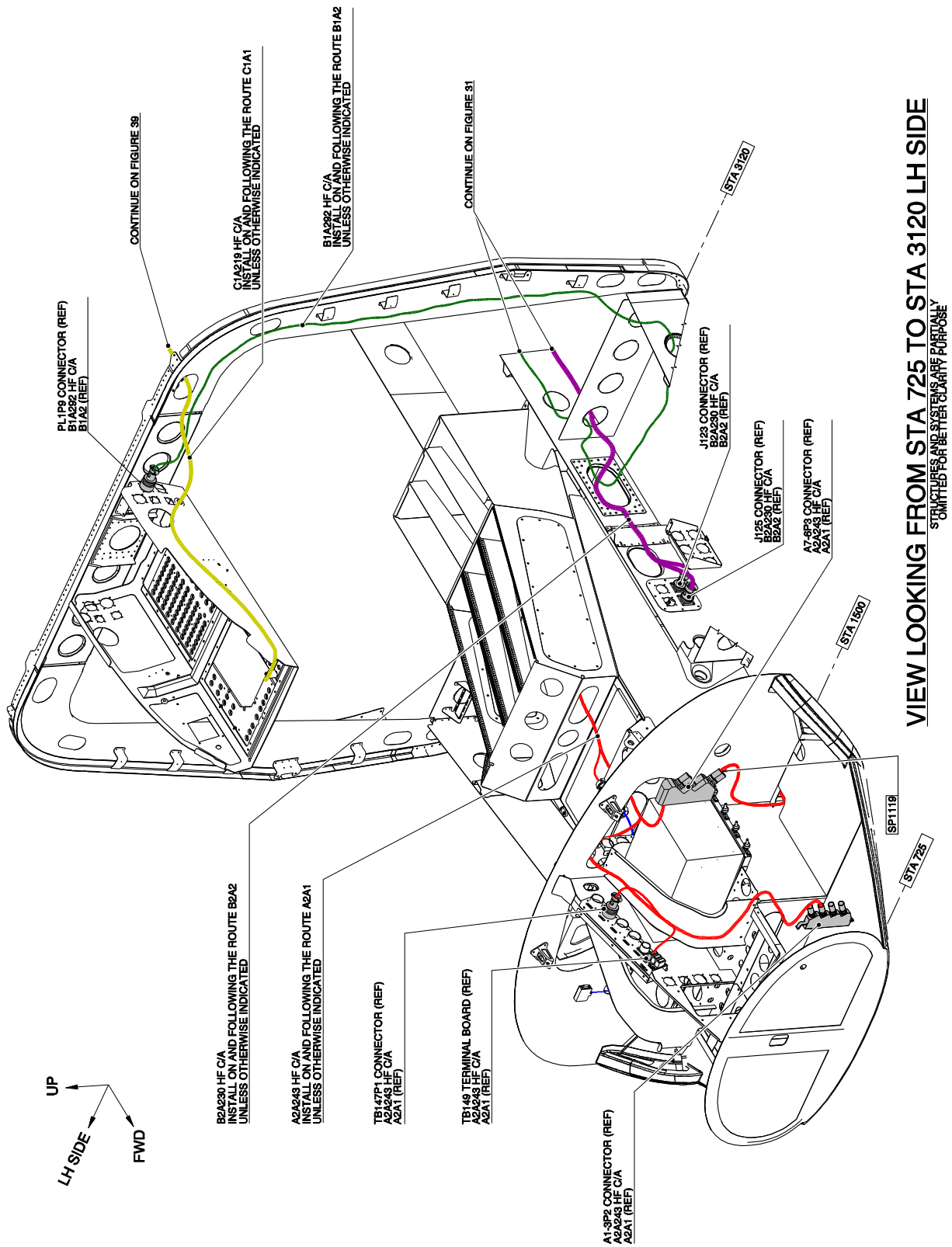
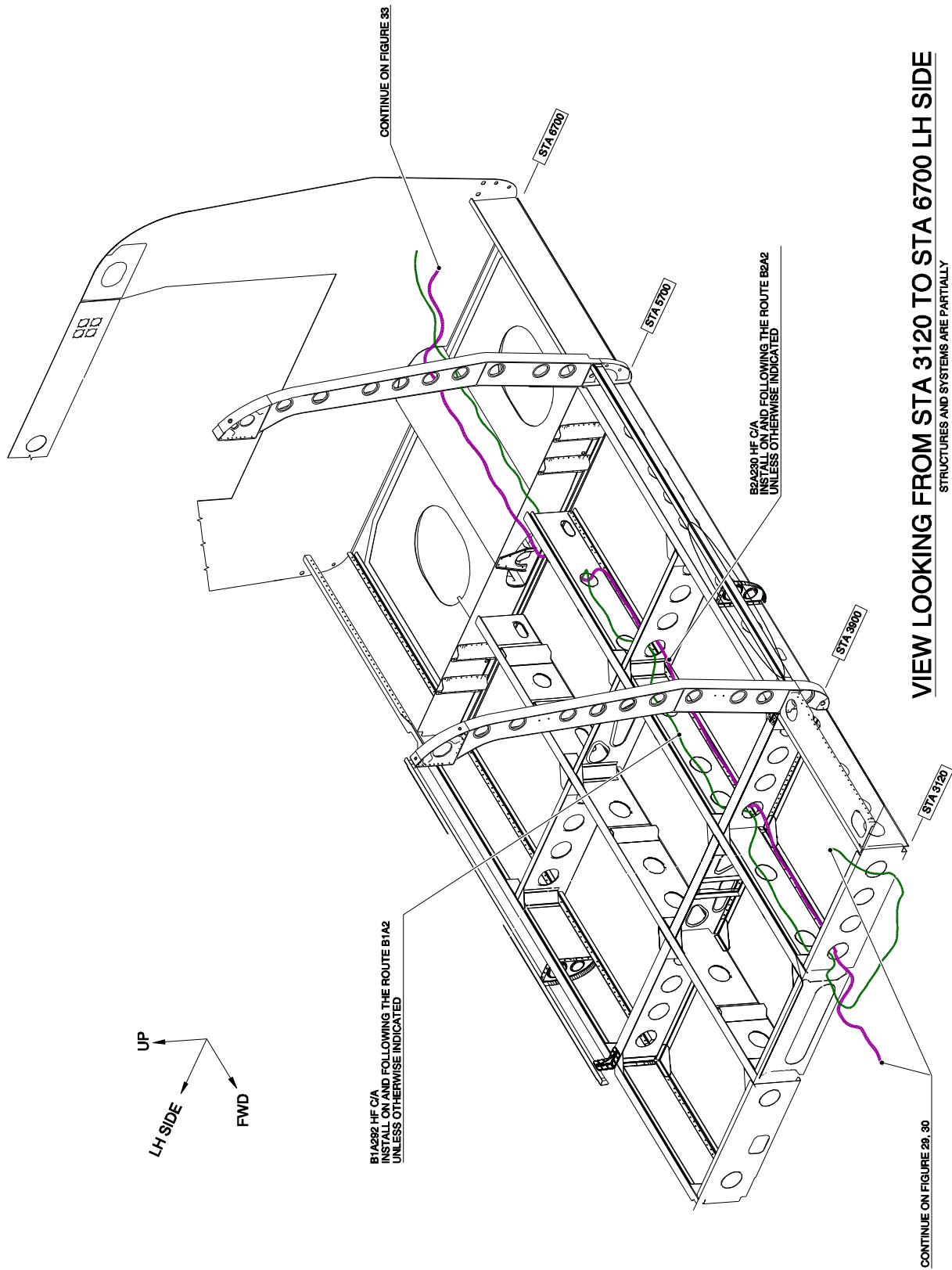


Figure 30

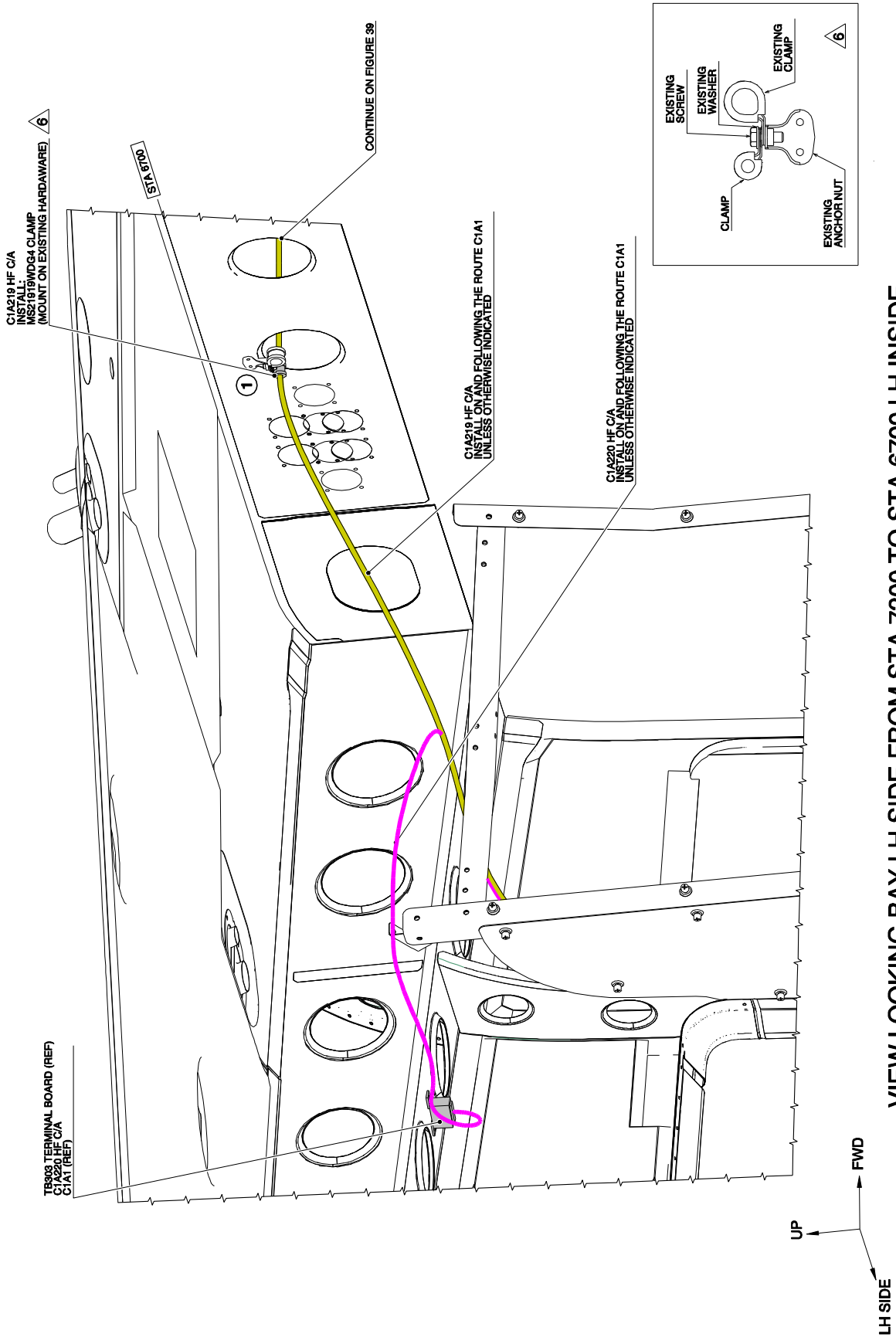
S.B. N°139-034

DATE: February 8, 2011

REVISION: D - February 10, 2023



**Figure 31**



**VIEW LOOKING BAY LH SIDE FROM STA 7200 TO STA 6700 LH INSIDE**

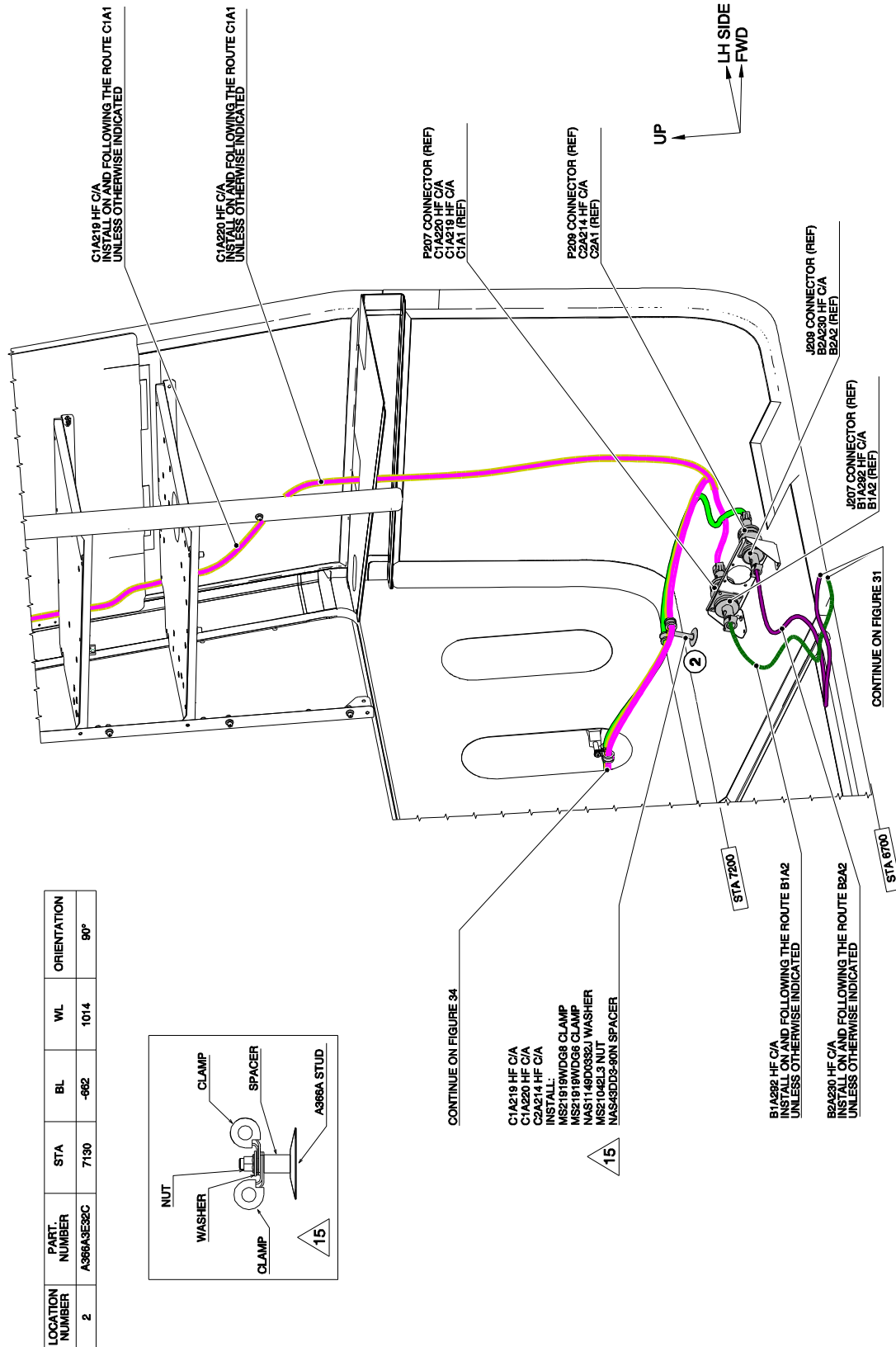
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

**Figure 32**

S.B. N°139-034

DATE: February 8, 2011

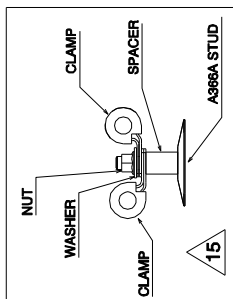
REVISION: D - February 10, 2023



**VIEW LOOKING BAY LH SIDE  
FROM STA 7200 TO STA 6700 LH INSIDE**

STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE

LOCATION NUMBER	PART. NUMBER	STA	BL	WL	ORIENTATION
2	A366A3E39C	7130	-662	1014	90°



CONTINUE ON FIGURE 34

C1A219 HF C/A  
C1A220 HF C/A  
C2A214 HF C/A  
INSTALL:  
MS21919WDG8 CLAMP  
NAS1149D0392J WASHER  
MS21042L3 NUT  
NAS43DD3-90N SPACER

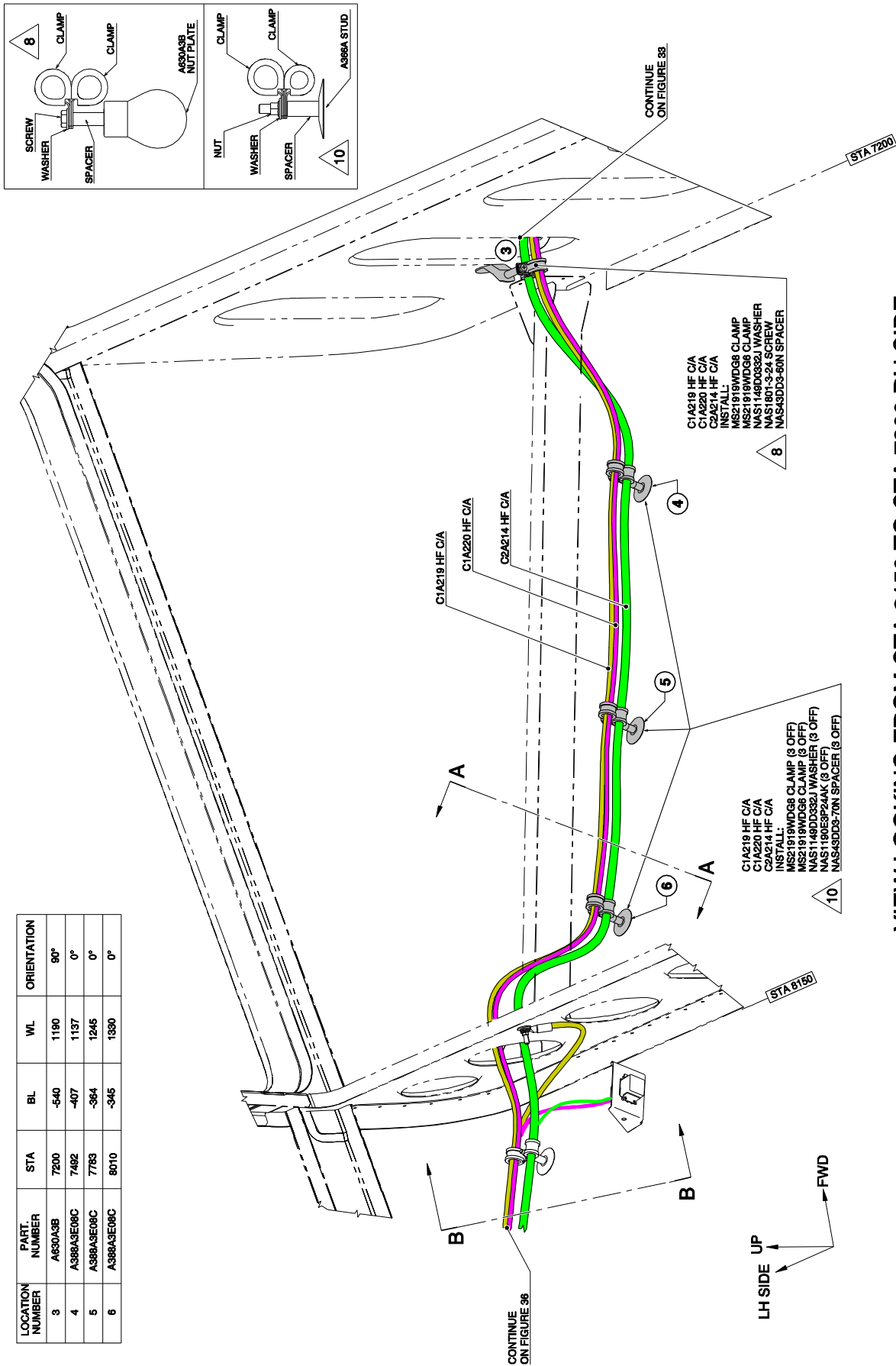
15

B1A282 HF C/A  
INSTALL ON AND FOLLOWING THE ROUTE B1A2  
UNLESS OTHERWISE INDICATED

B2A230 HF C/A  
INSTALL ON AND FOLLOWING THE ROUTE B2A2  
UNLESS OTHERWISE INDICATED

CONTINUE ON FIGURE 31

**Figure 33**



**VIEW LOOKING FROM STA 8150 TO STA 7200 RH SIDE**

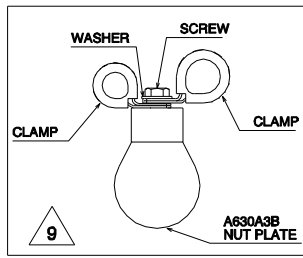
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 34

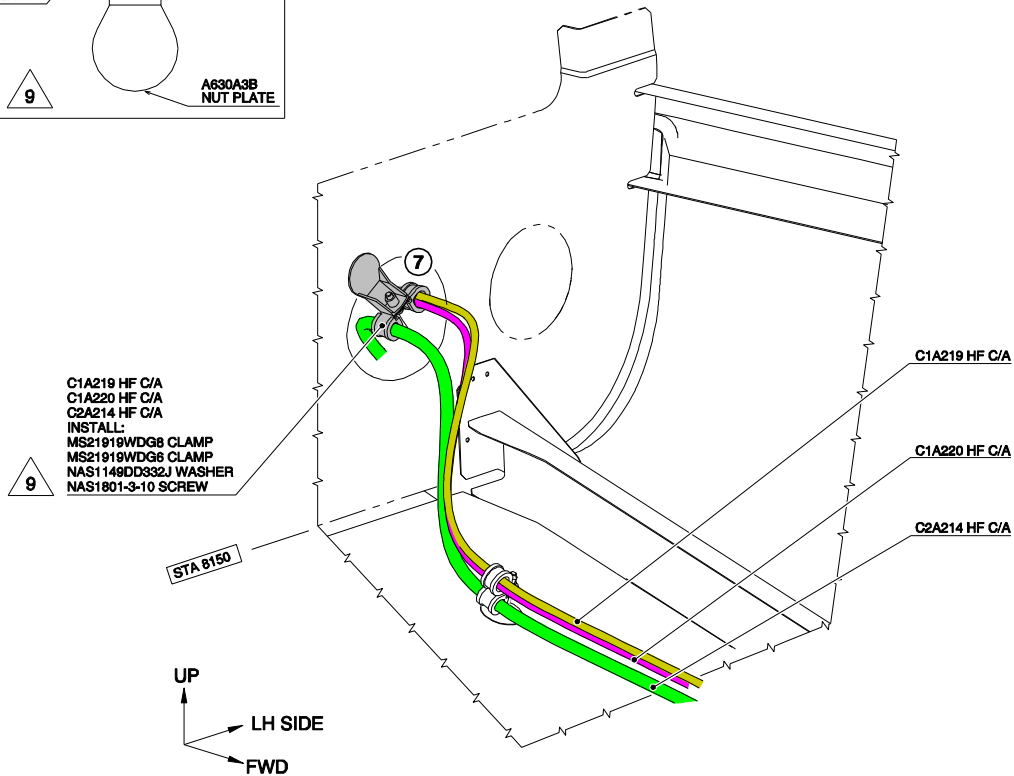
S.B. N°139-034

DATE: February 8, 2011

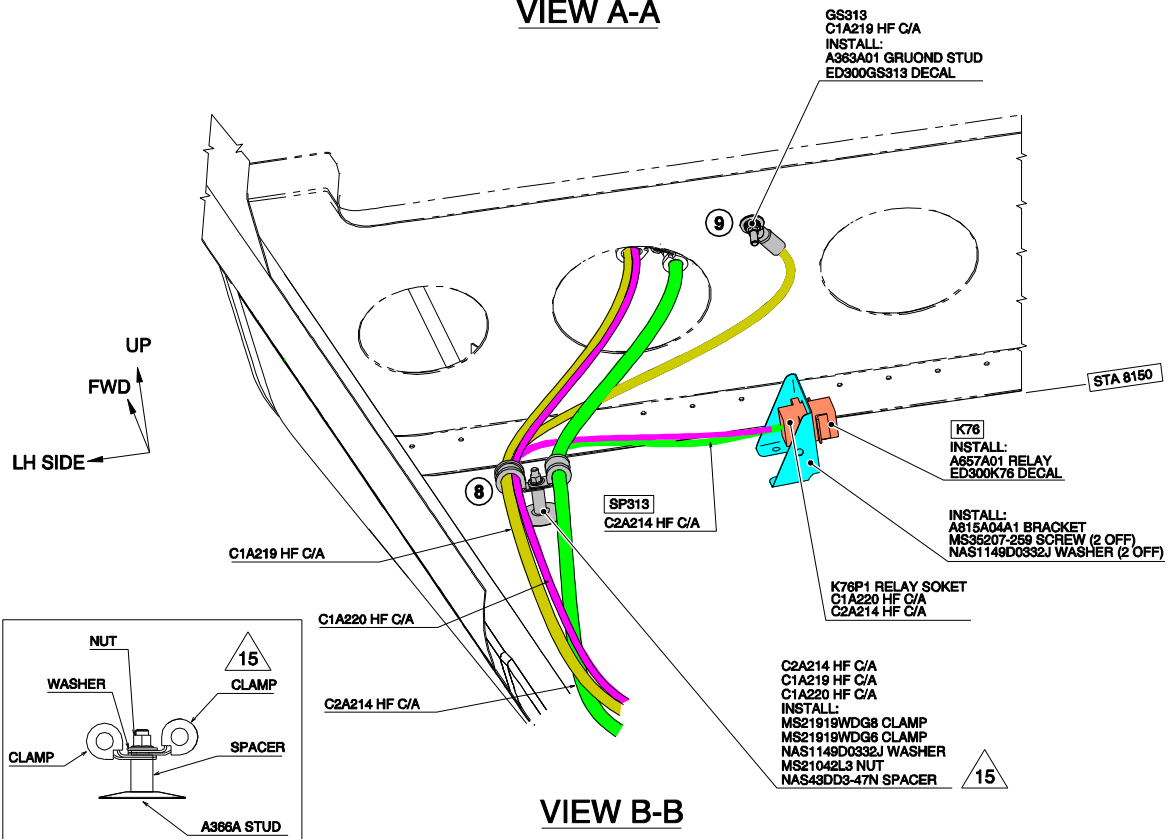
REVISION: D - February 10, 2023



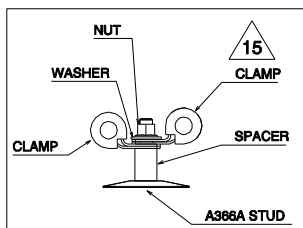
LOCATION NUMBER	PART. NUMBER	STA	BL	WL	ORIENTATION
7	A630A3B	8150	-320	1555	120°
8	A366A3E22C	8260	-440	1421	0°
9	GROUND STUD	8151	-273	1580	0°



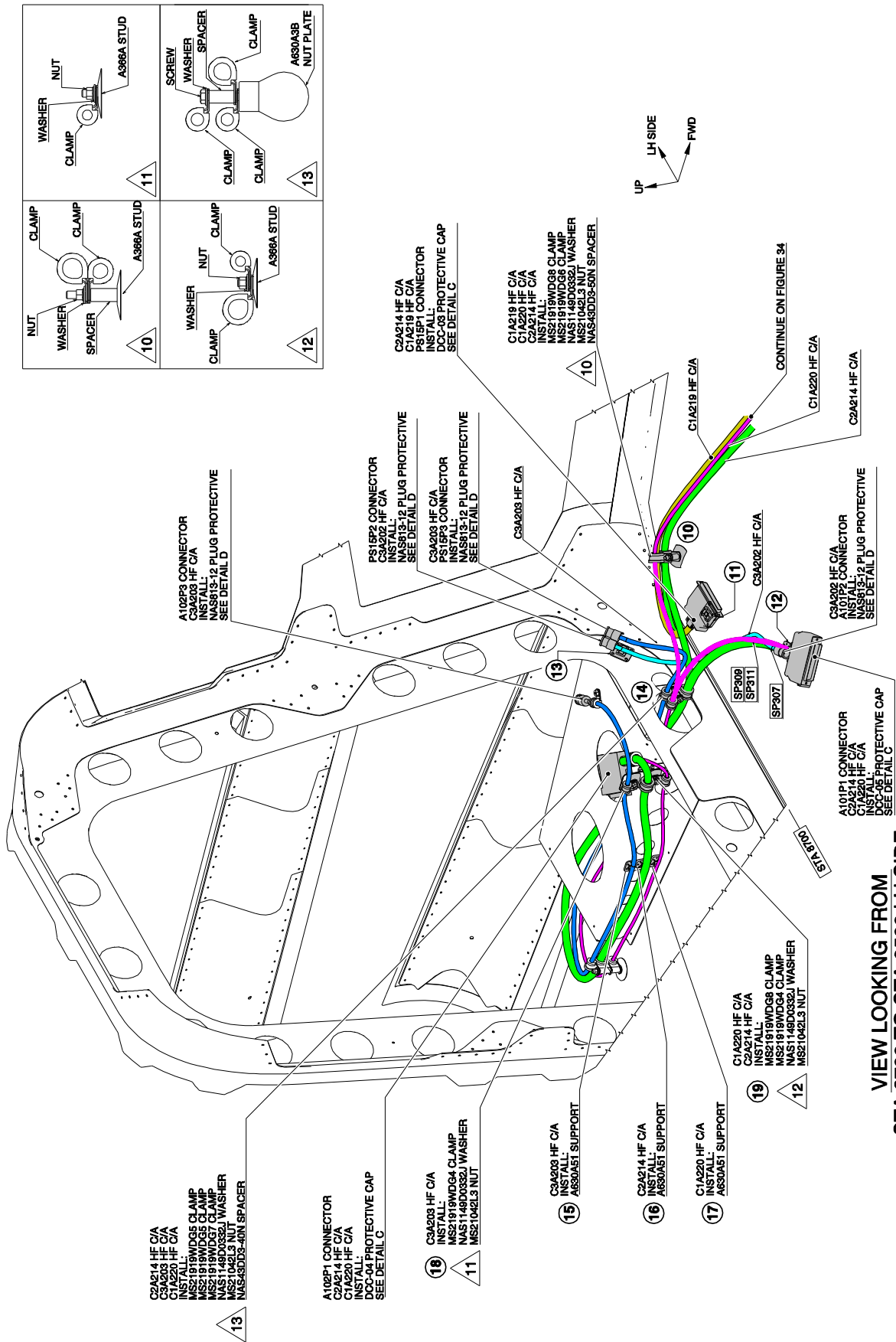
**VIEW A-A**



**VIEW B-B**



**Figure 35**



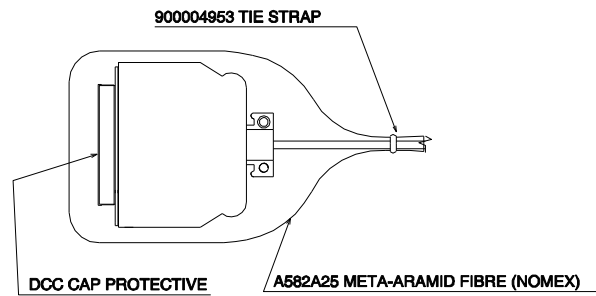
**VIEW LOOKING FROM  
STA 8700 TO STA 9500 LH SIDE**

STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 36**

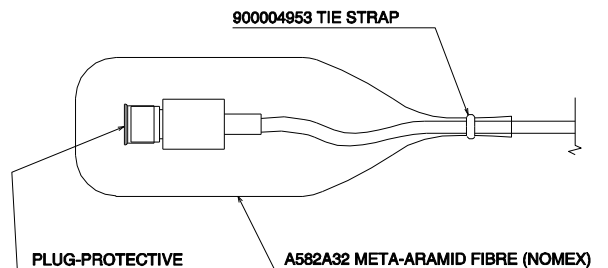


LOCATION NUMBER	PART. NUMBER	STA	BL	WL	ORIENTATION
10	A366A3E22C75	8605	-395	1552	10°
11	A630A31	8610	-288	1551	0°
12	A630A31	8530	-130	1520	45°
13	A630A31	8700	-320	1650	45°
14	A630A3B	8700	-255	1620	0°
15	A630A51	8943	-146	1664	0°
16	A630A51	8943	-146	1644	90°
17	A630A51	8943	-146	1624	10°
18	A366A3E08C75	8760	-145	1705	0°
19	A366A3E08C75	8760	-145	1670	90°
20	A366A3E30C	9140	-120	1640	0°
21	A630A51	9092	-213	1676	0°
22	A630A51	9092	-243	1676	0°
23	A630A51	9092	-246	1676	0°
24	A366A3E18C	8905	-220	1609	0°
25	A630A31	8900	-255	1608	0°
26	REF.	8767	-160	1677	
27	REF.	8767	-312	1677	



INSERT THE CONNECTOR ASSEMBLY INTO THE CAP PROTECTIVE COVER WITH THE NOMEX FIBRE SLEEVE AND USE THE CABLE STRAPS TO TIE UP SLEEVE FIRMLY TO THE CONNECTOR CABLING. USE CABLE STRAPS TO FIX THE CONNECTOR ASSY TO THE CABLE LOOM.

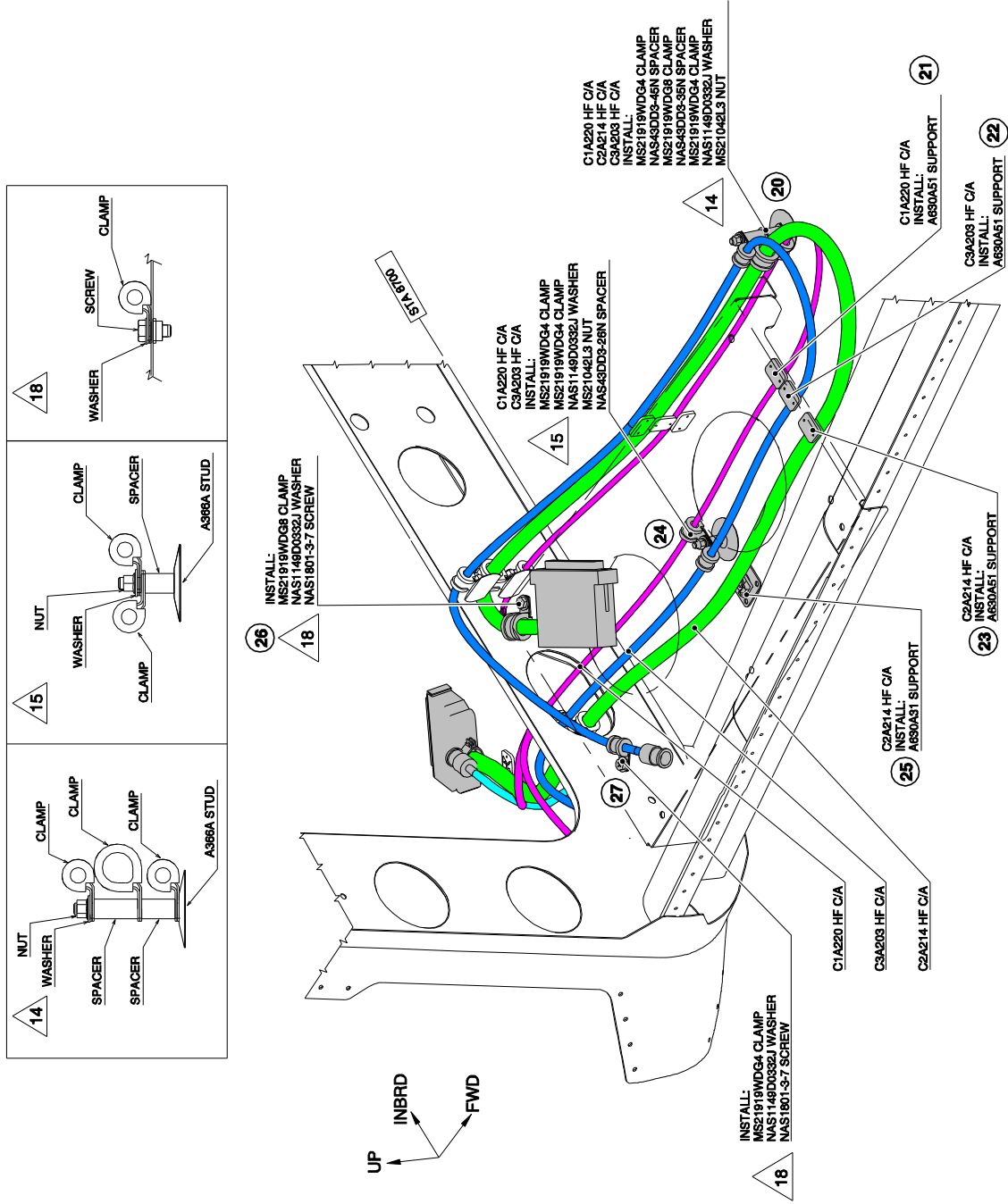
### DETAIL C



INSERT THE CONNECTOR ASSEMBLY INTO THE PROTECTIVE PLUG. COVER WITH THE NOMEX FIBRE SLEEVE AND USE THE CABLE STRAPS TO TIE UP SLEEVE FIRMLY TO THE CONNECTOR CABLING. USE CABLE STRAPS TO FIX THE CONNECTOR ASSY TO THE PLUG.

### DETAIL D

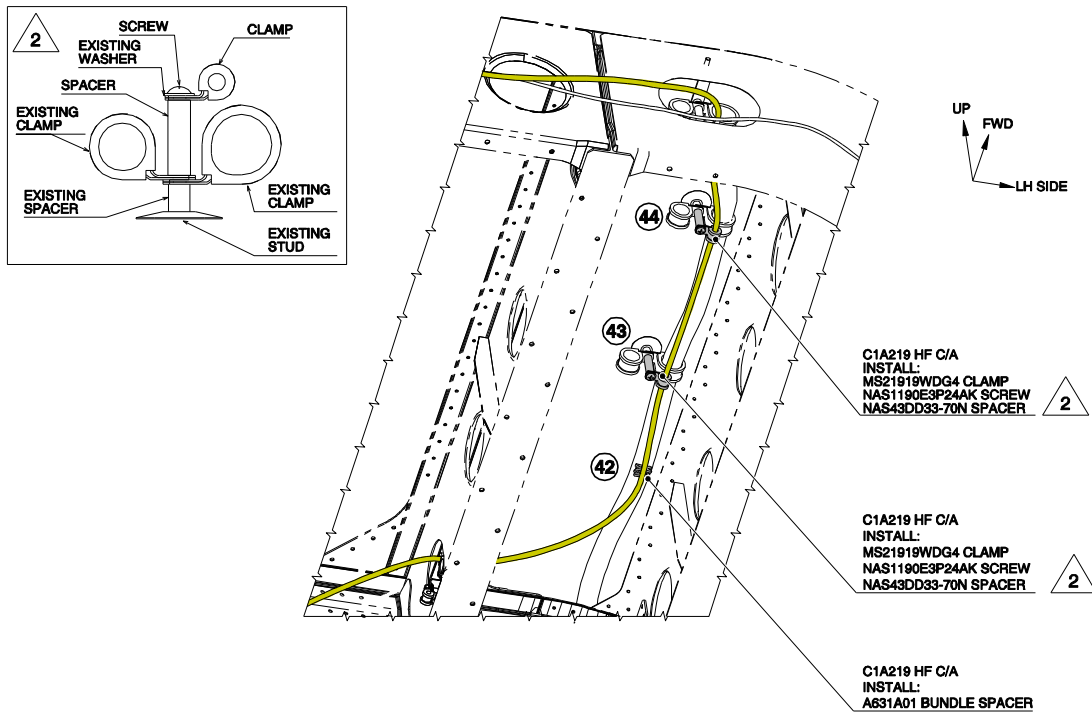
Figure 37



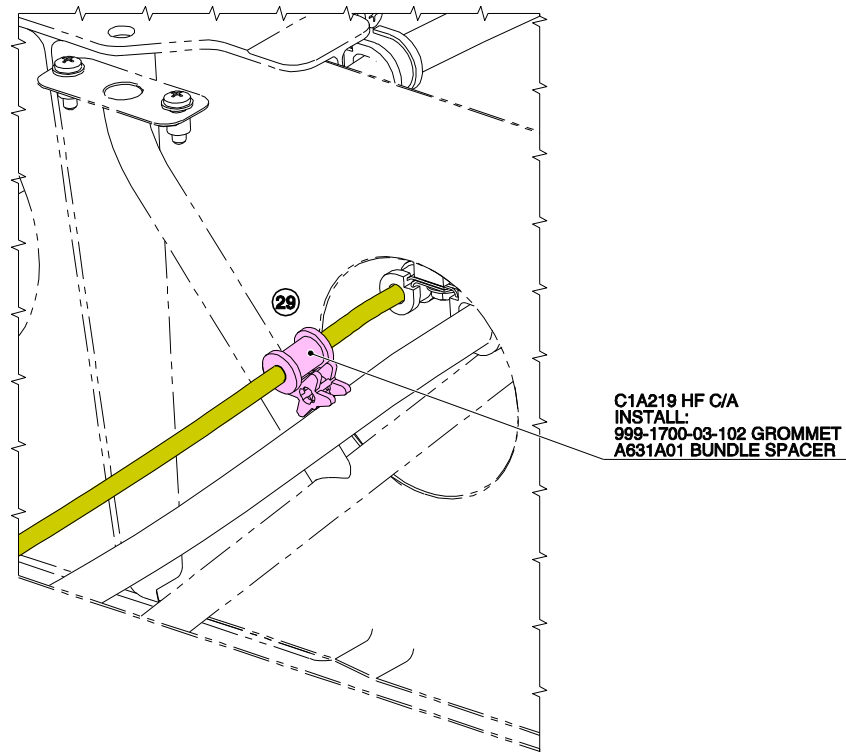
**VIEW LOOKING FROM STA 8700 TO STA 9500 ADOF**  
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

**Figure 38**





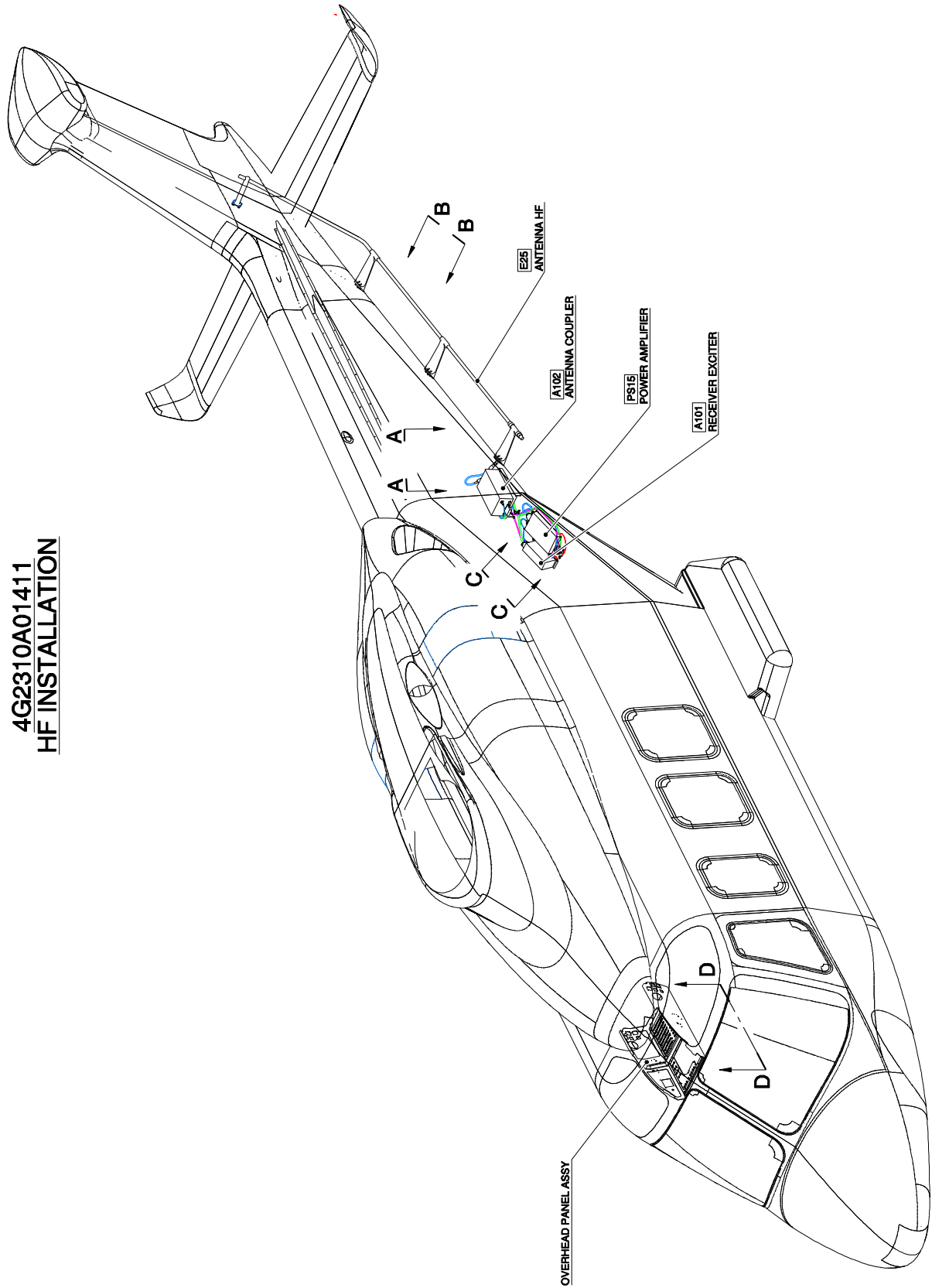
**VIEW E-E**



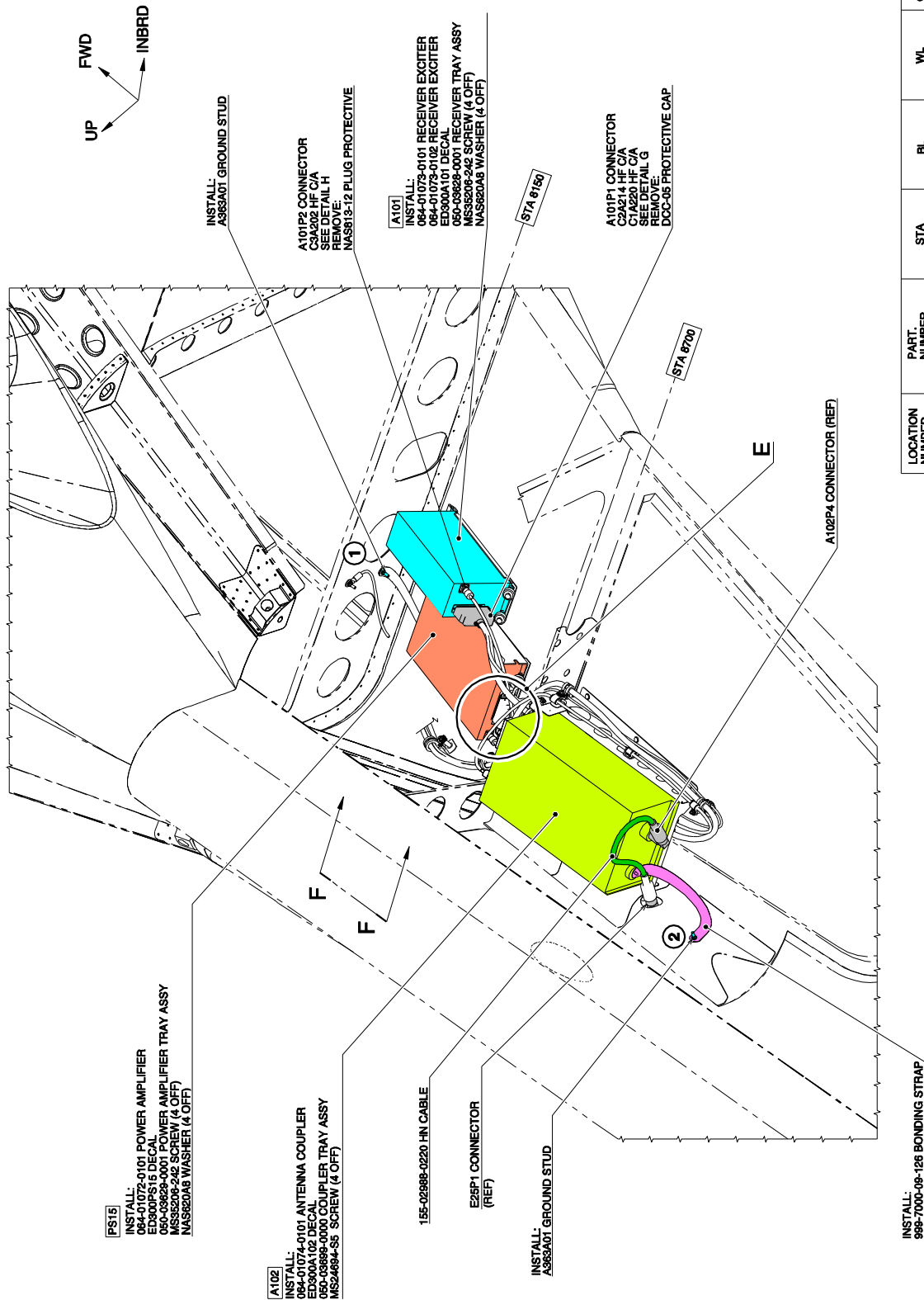
**VIEW F-F**

**Figure 40**

**4G2310A01411**  
**HF INSTALLATION**



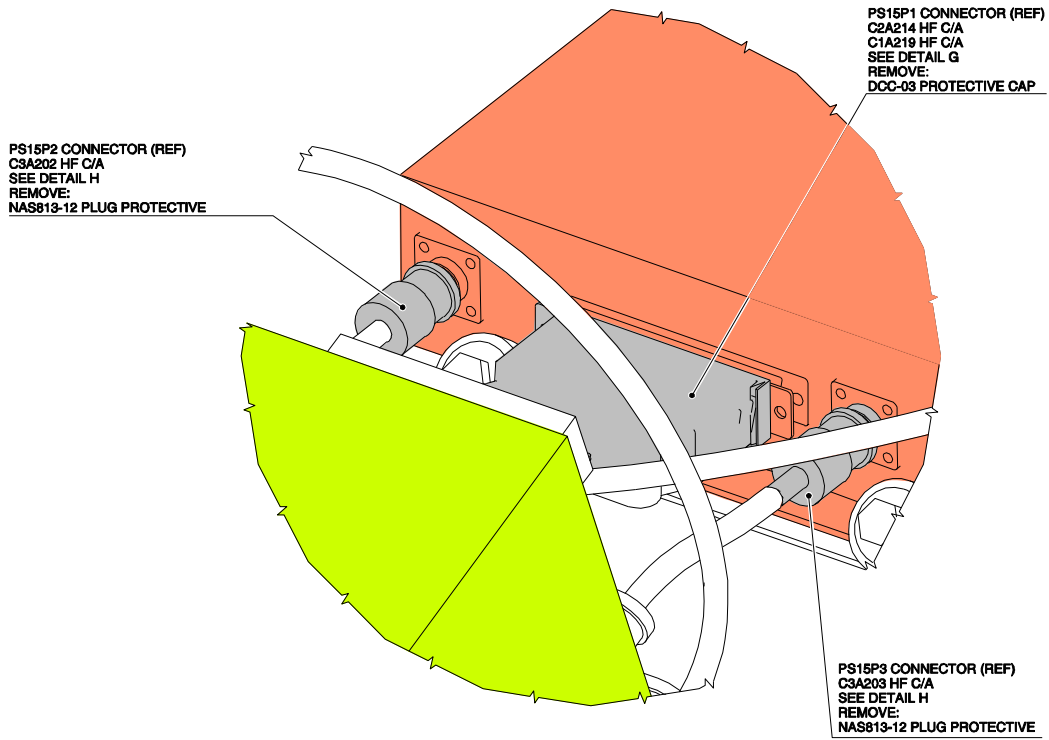
**Figure 41**



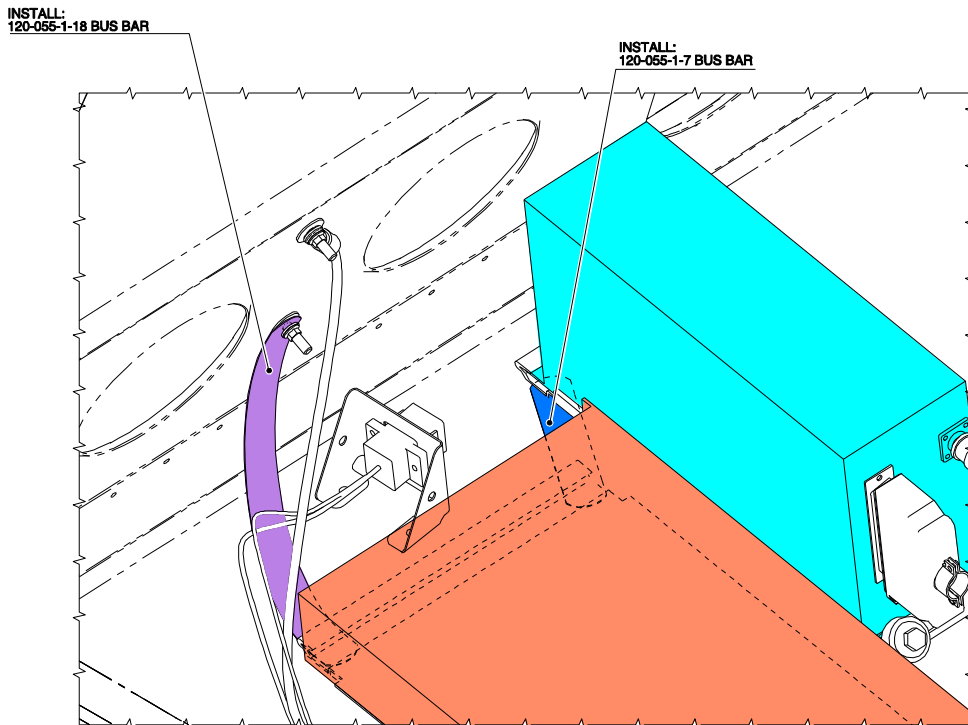
LOCATION NUMBER	PART NUMBER	STA	BL	WL	ORIENTATION
1	GROUND STUD	6151	-270	1480	0°
2	GROUND STUD	9271	-384	1745	0°

**VIEW A-A**  
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

**Figure 42**

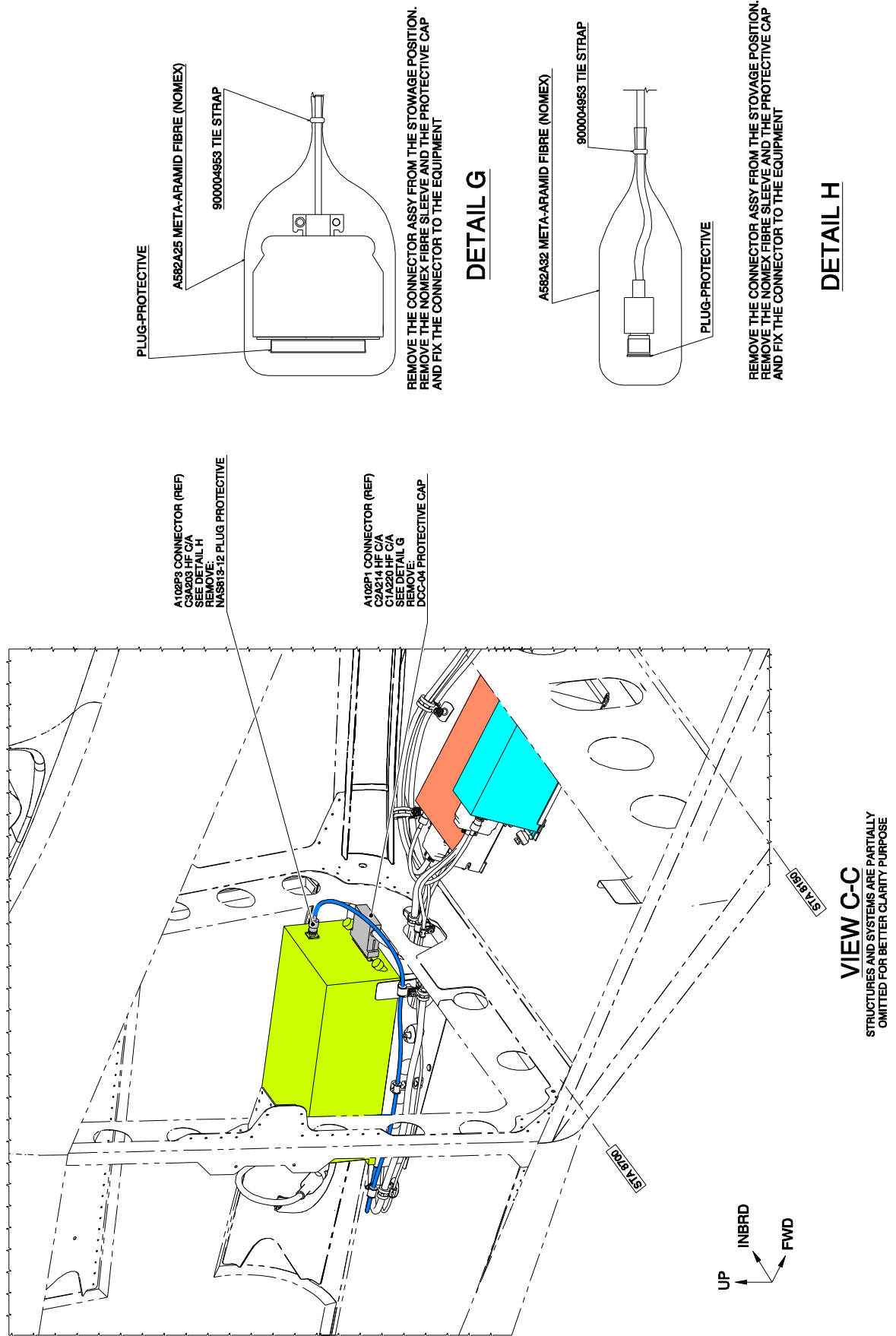


**DETAIL E**



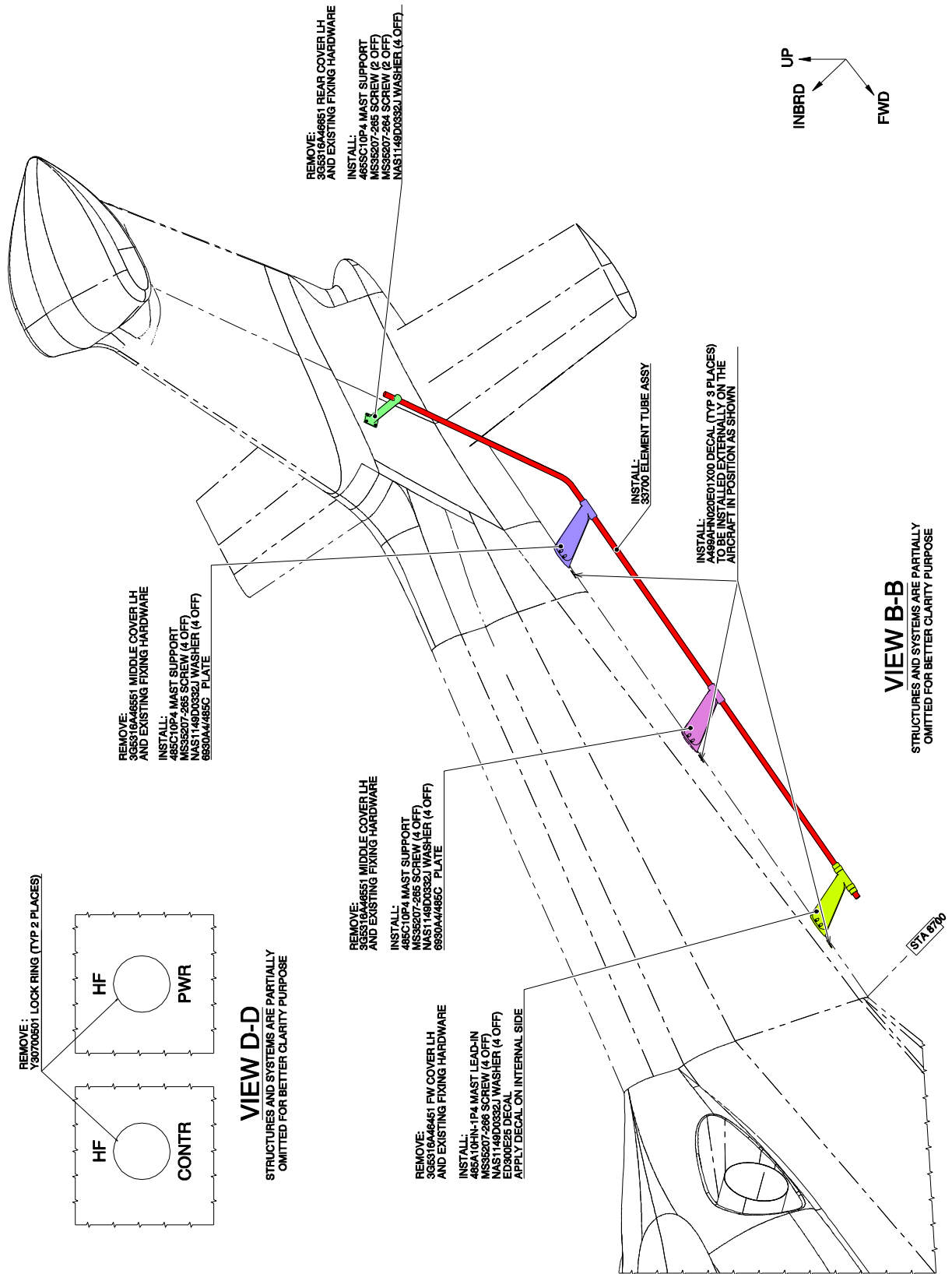
**VIEW F-F**

**Figure 43**




**Figure 44**








**Figure 45**

# 4G2310A00912 HF ELECTRICAL PROVISION

- AW001CL002...  


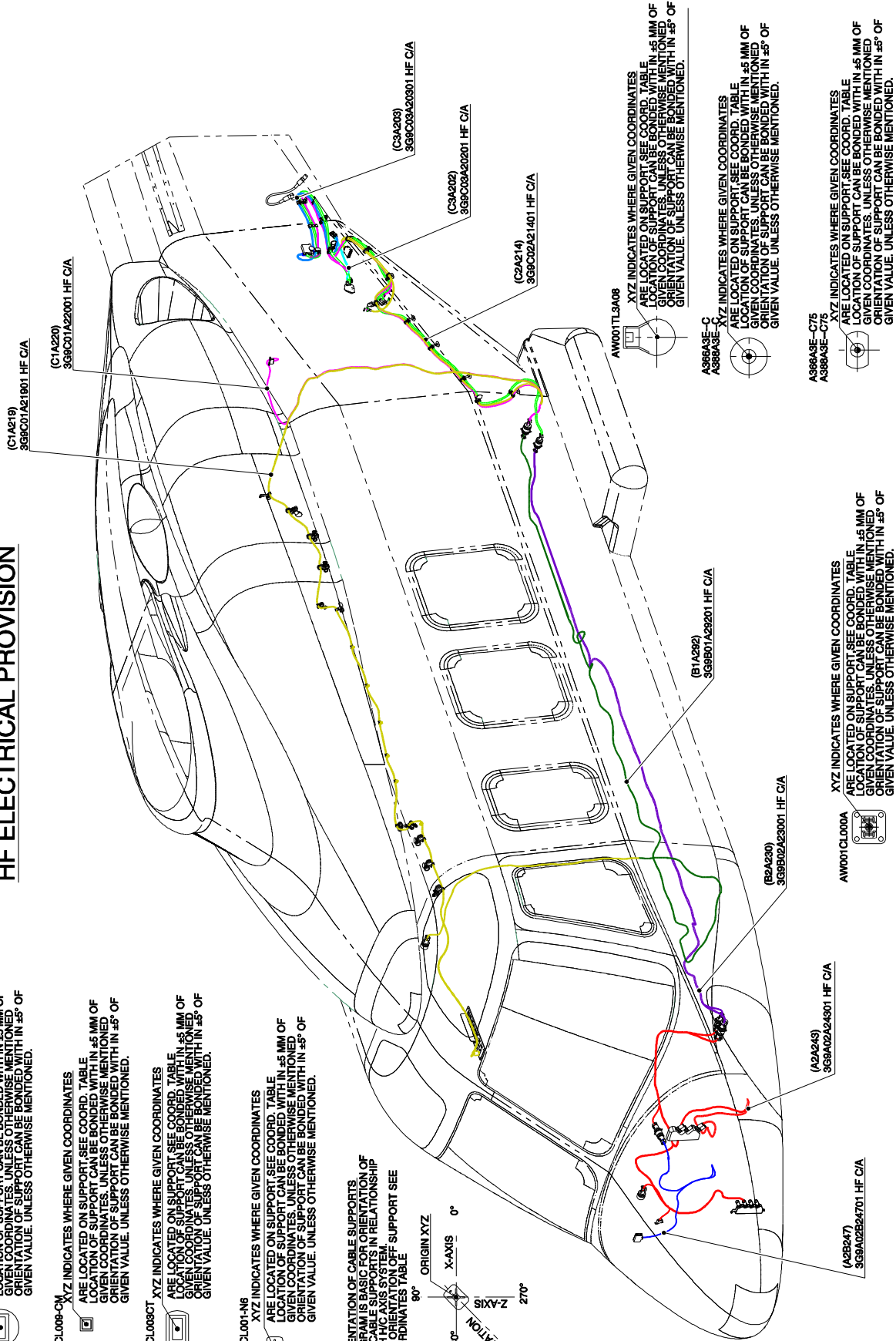
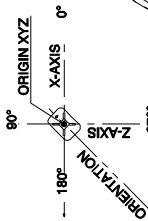
XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT. SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5$  MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5^\circ$  OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.
- AW001CL009-CM  


XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT. SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5$  MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5^\circ$  OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.
- AW001CL008CT  


XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT. SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5$  MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5^\circ$  OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.
- AW001CL001-N6  


XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT. SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5$  MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5^\circ$  OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.

ORIENTATION OF CABLE SUPPORTS  
 ANGLE IN DEGREES FOR ORIENTATION OF  
 CABLE SUPPORTS IN RELATIONSHIP  
 WITH HFC AXIS SYSTEM. FOR ORIENTATION OFF SUPPORT SEE  
 COORDINATES TABLE



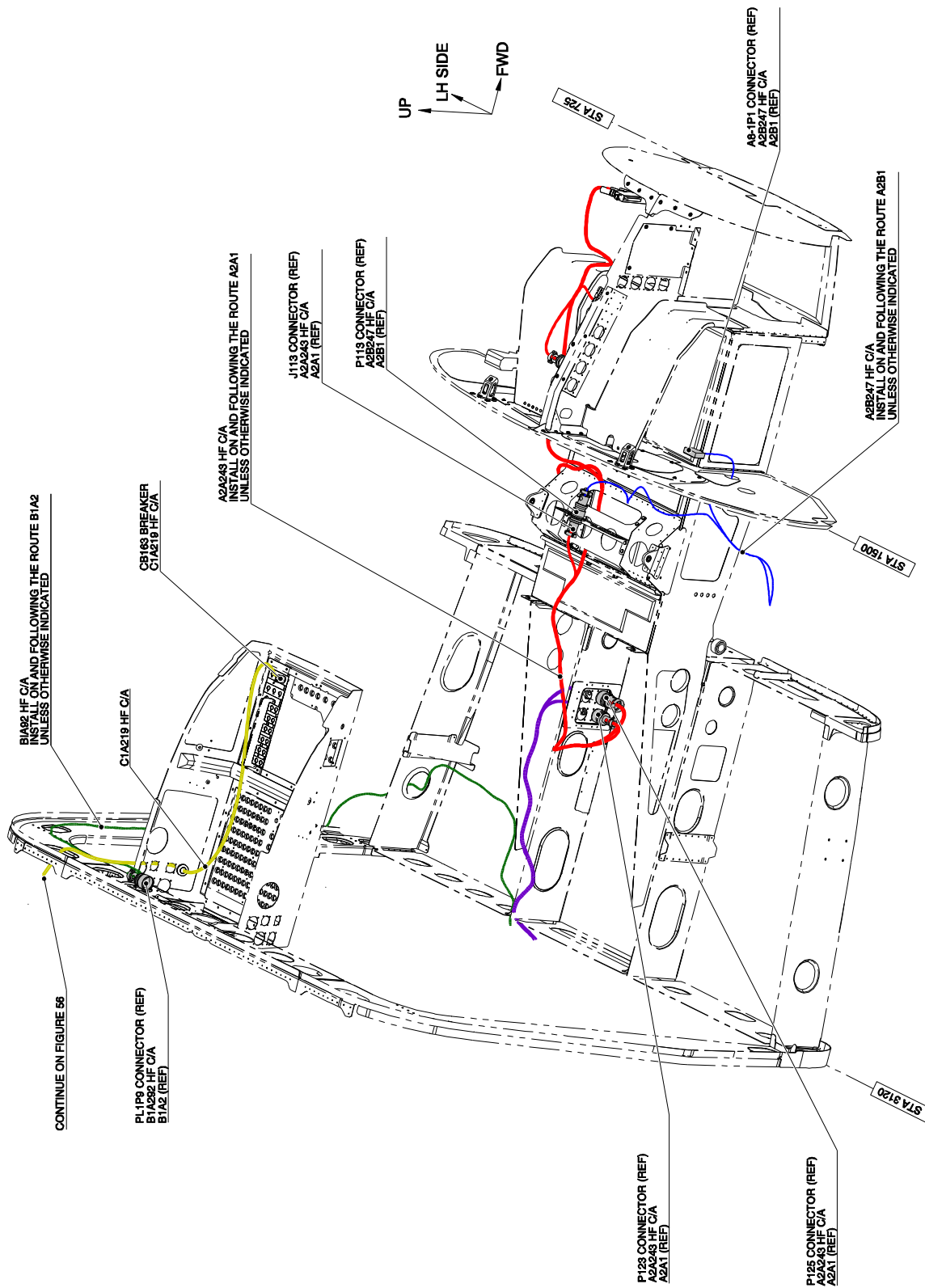
AW001TLA08  
 XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT. SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5$  MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5^\circ$  OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.

A388A3E-C  
 A388A3E-C75  
 XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT. SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5$  MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5^\circ$  OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.

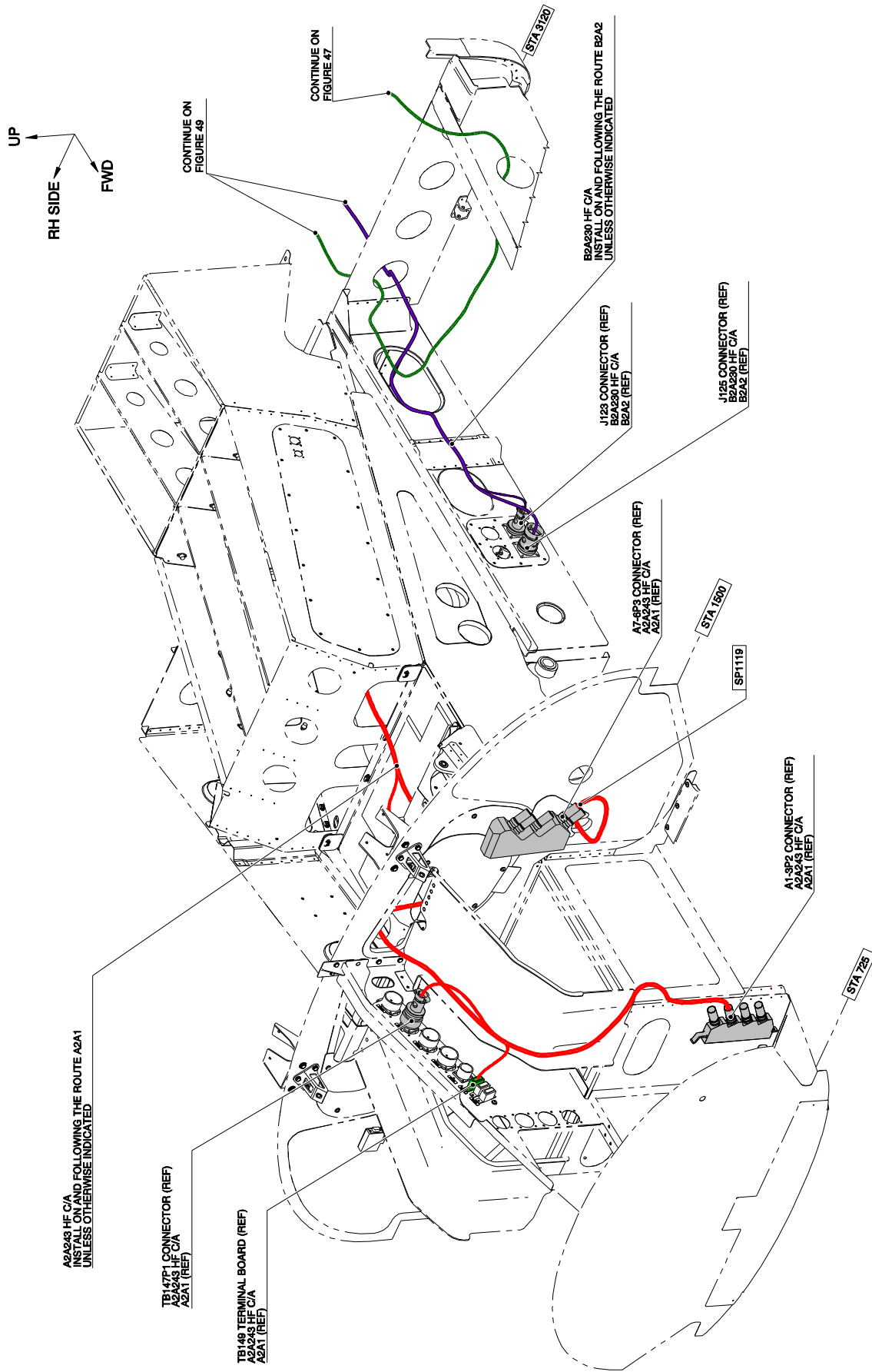
A388A3E-C75  
 A388A3E-C75  
 XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT. SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5$  MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5^\circ$  OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.

AW001CL000A  
 XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT. SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5$  MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN  $\pm 5^\circ$  OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.

Figure 46



**Figure 47**



**VIEW LOOKING FROM STA 725 TO STA 3120 LH SIDE**

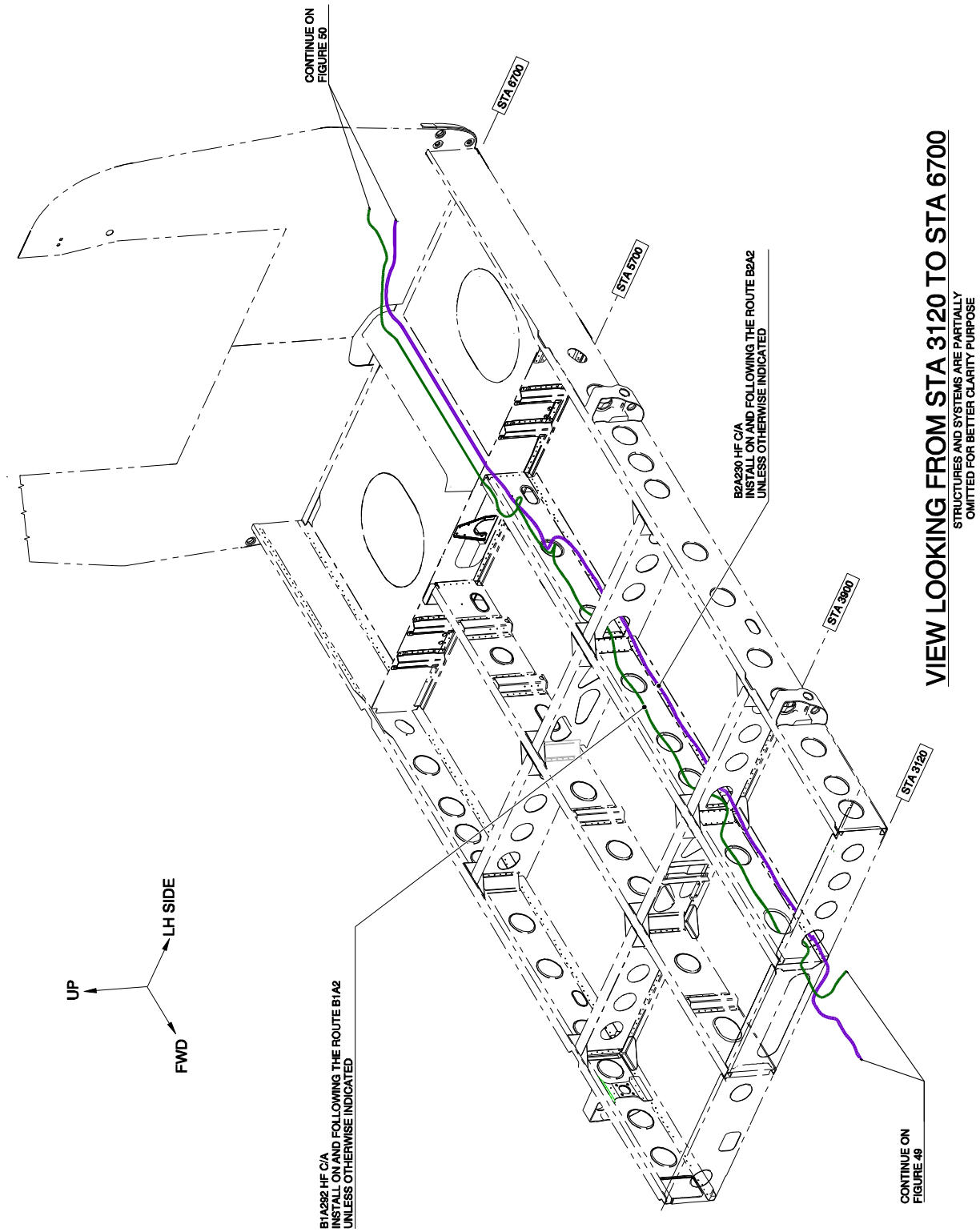
STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 48**

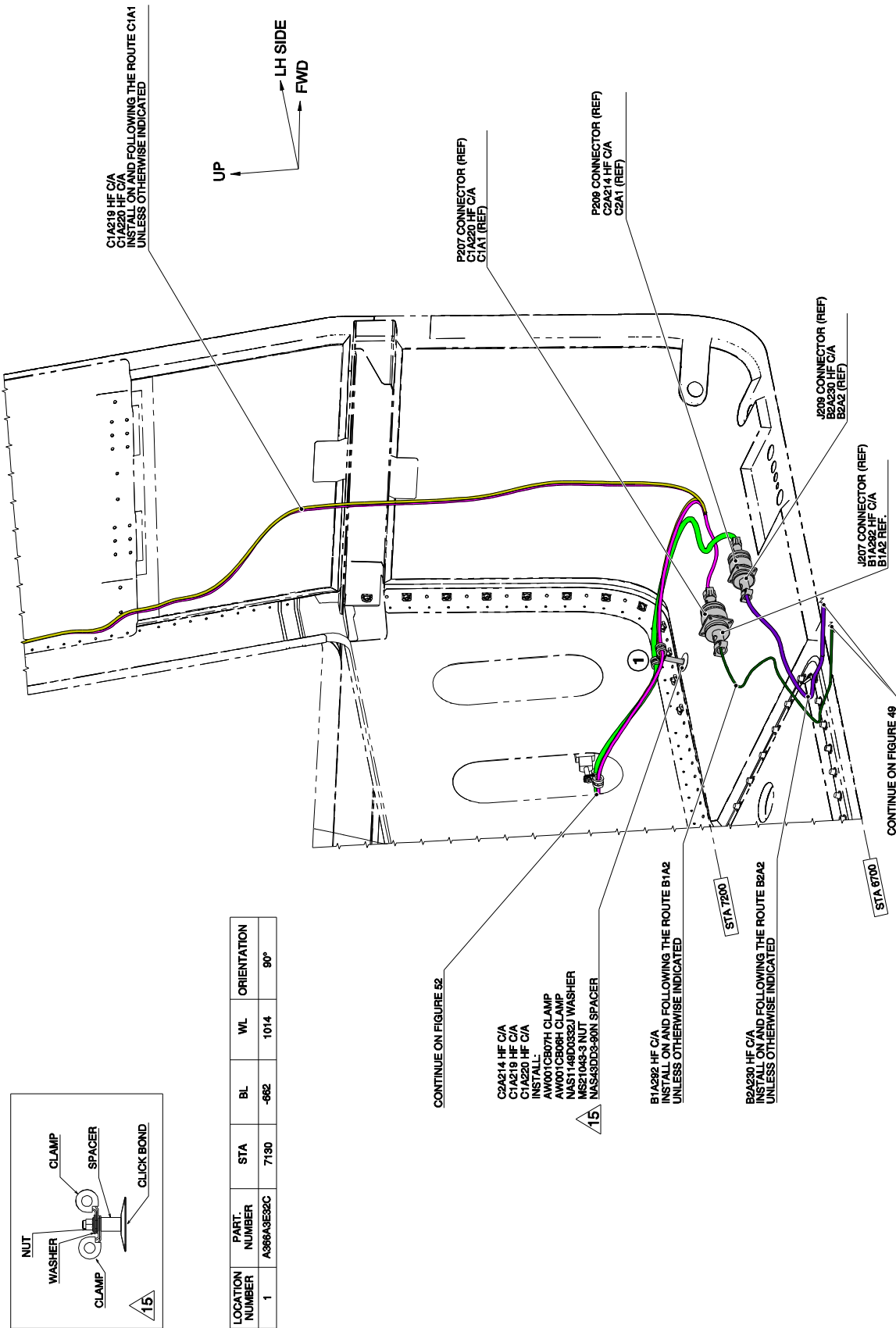
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**Figure 49**



**VIEW LOOKING BAY LH SIDE FROM STA 7200 TO STA 6700**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

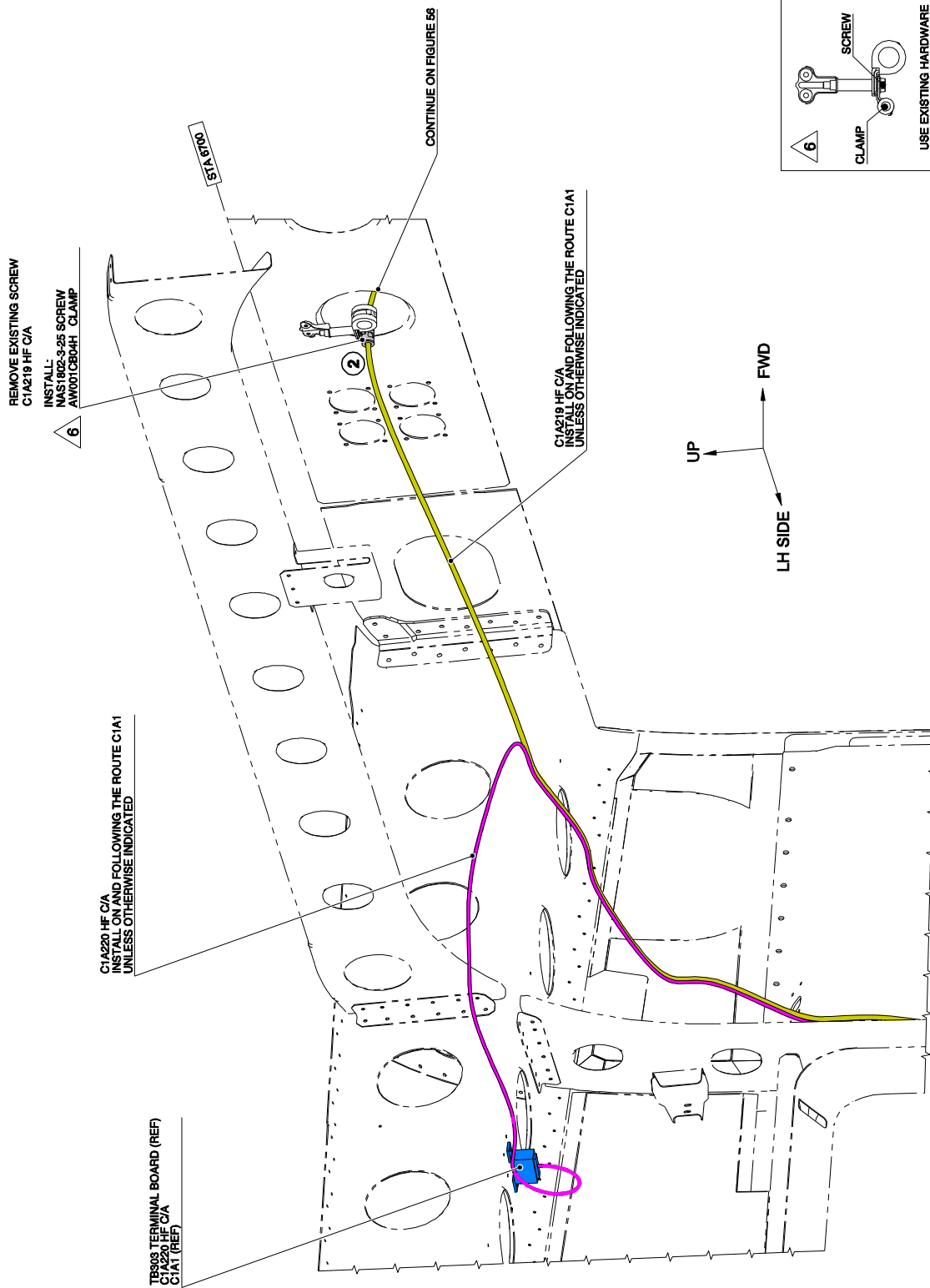
LOCATION NUMBER	PART. NUMBER	STA	BL	WL	ORIENTATION
1	A366A3E32C	7130	-662	1014	90°

Figure 50

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**VIEW LOOKING BAY LH SIDE FROM STA 7200 TO STA 6700**

STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 51**

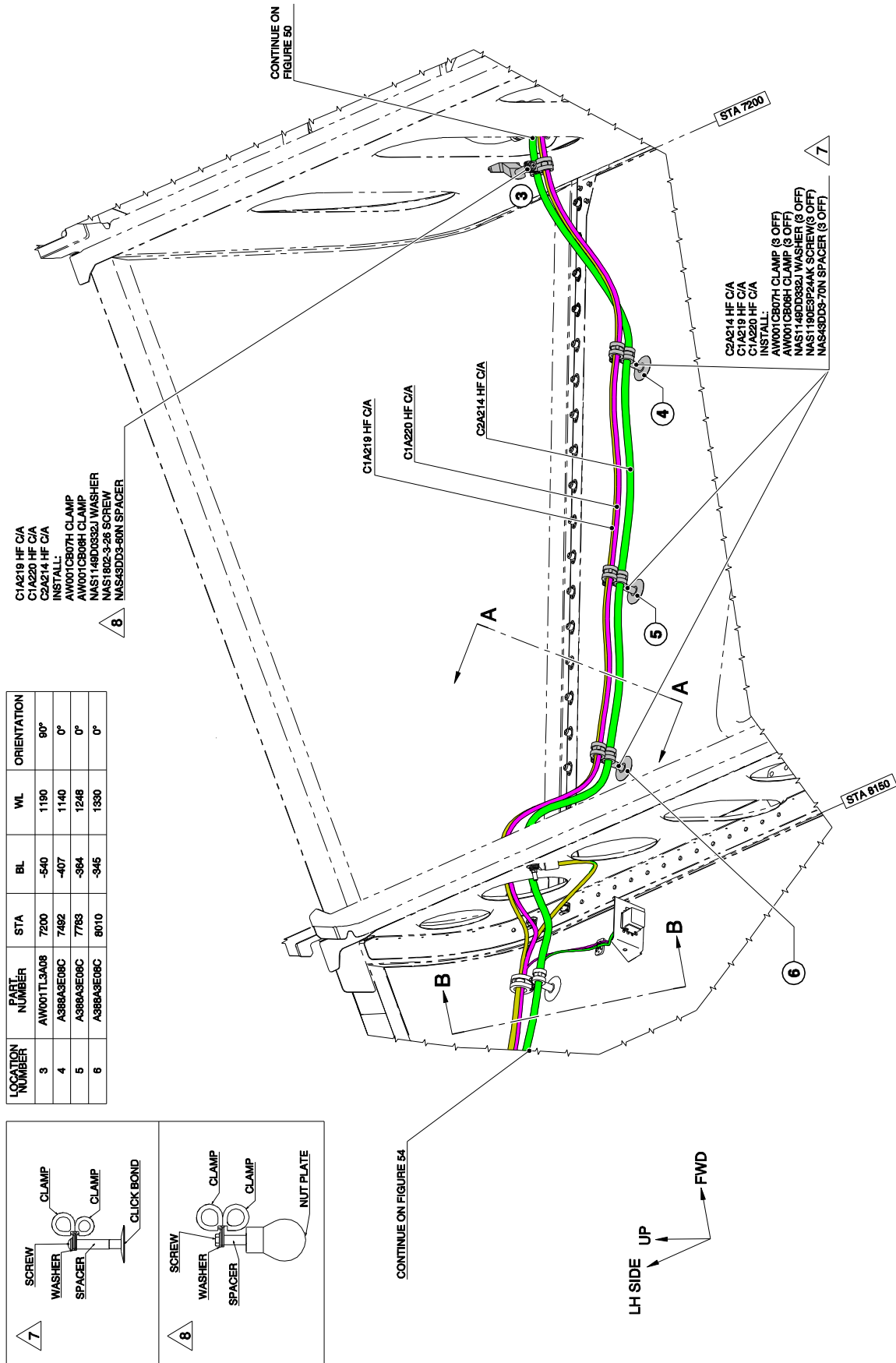


Figure 52

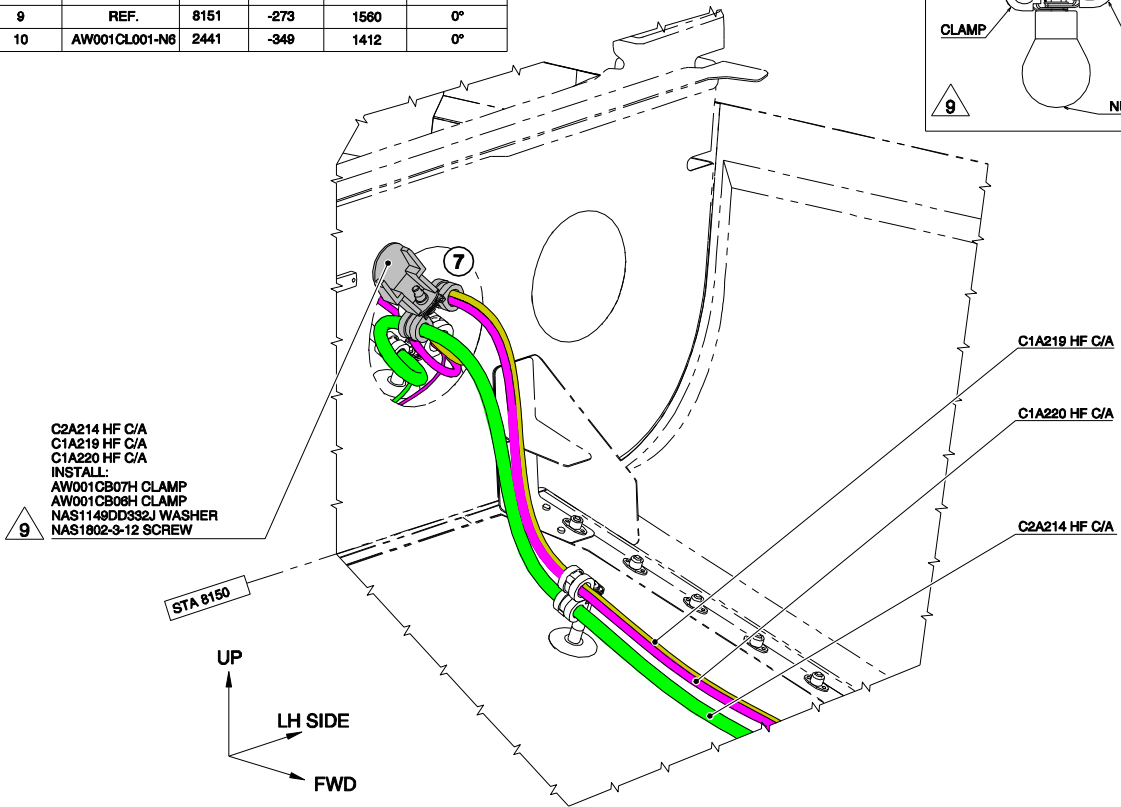
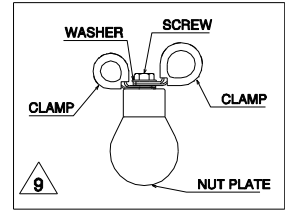
S.B. N°139-034

DATE: February 8, 2011

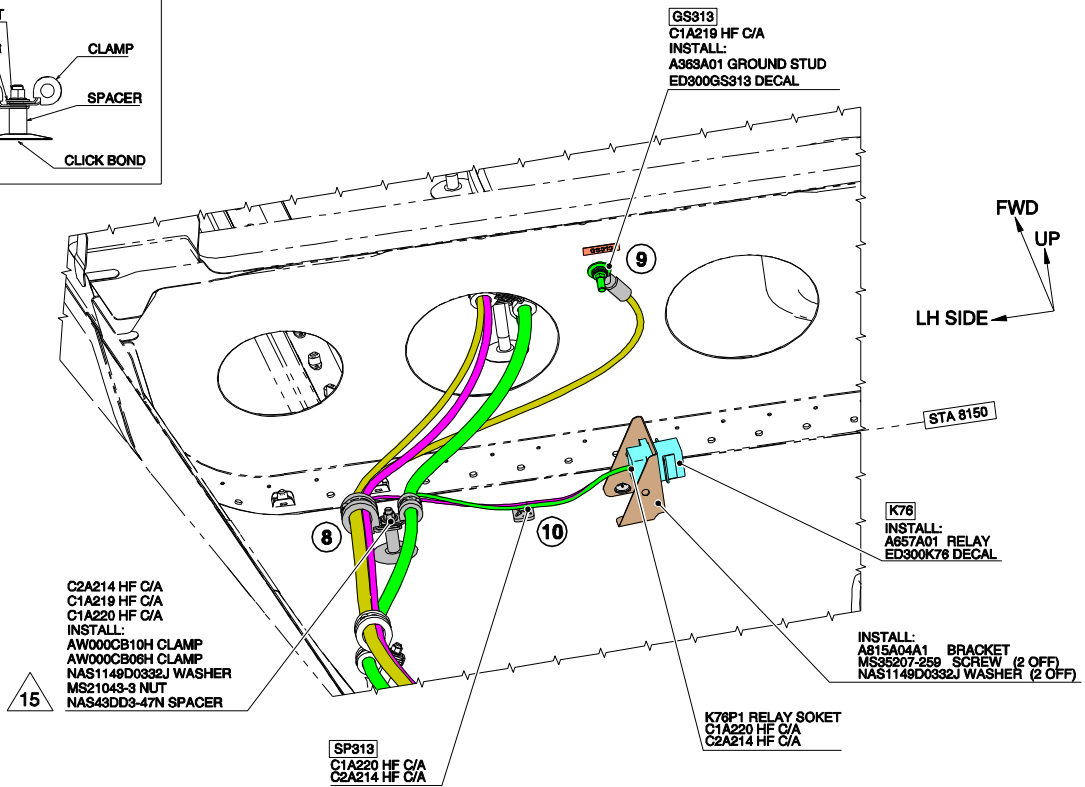
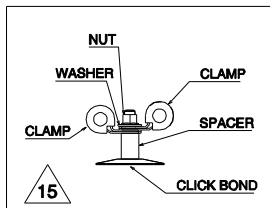
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LOCATION NUMBER	PART NUMBER	STA	BL	WL	ORIENTATION
7	AW001TL3A08	8150	-320	1555	120°
8	A366A3E22C	8260	-440	1421	0°
9	REF.	8151	-273	1580	0°
10	AW001CL001-N6	2441	-349	1412	0°



**VIEW A-A**



**VIEW B-B**

**Figure 53**

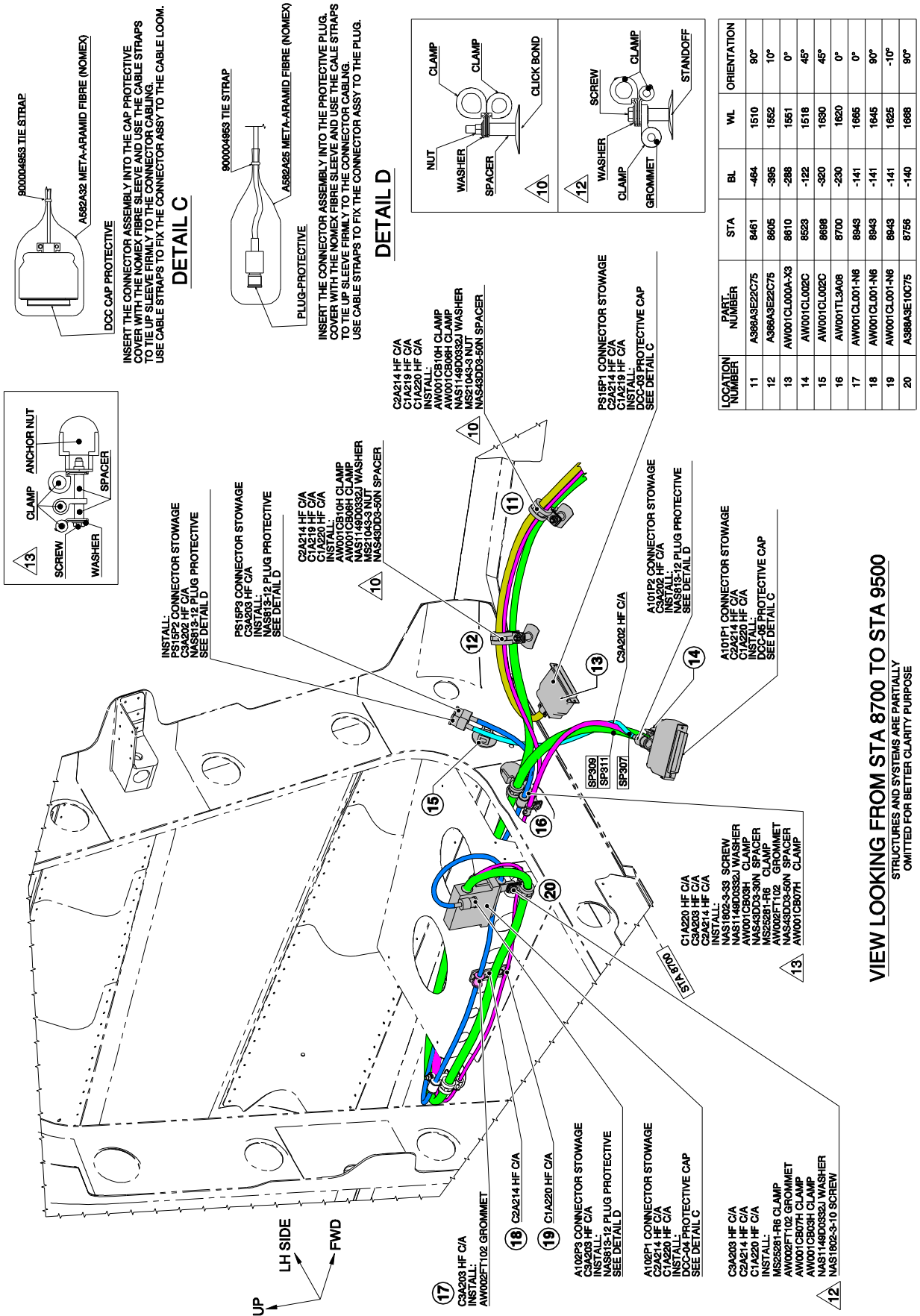


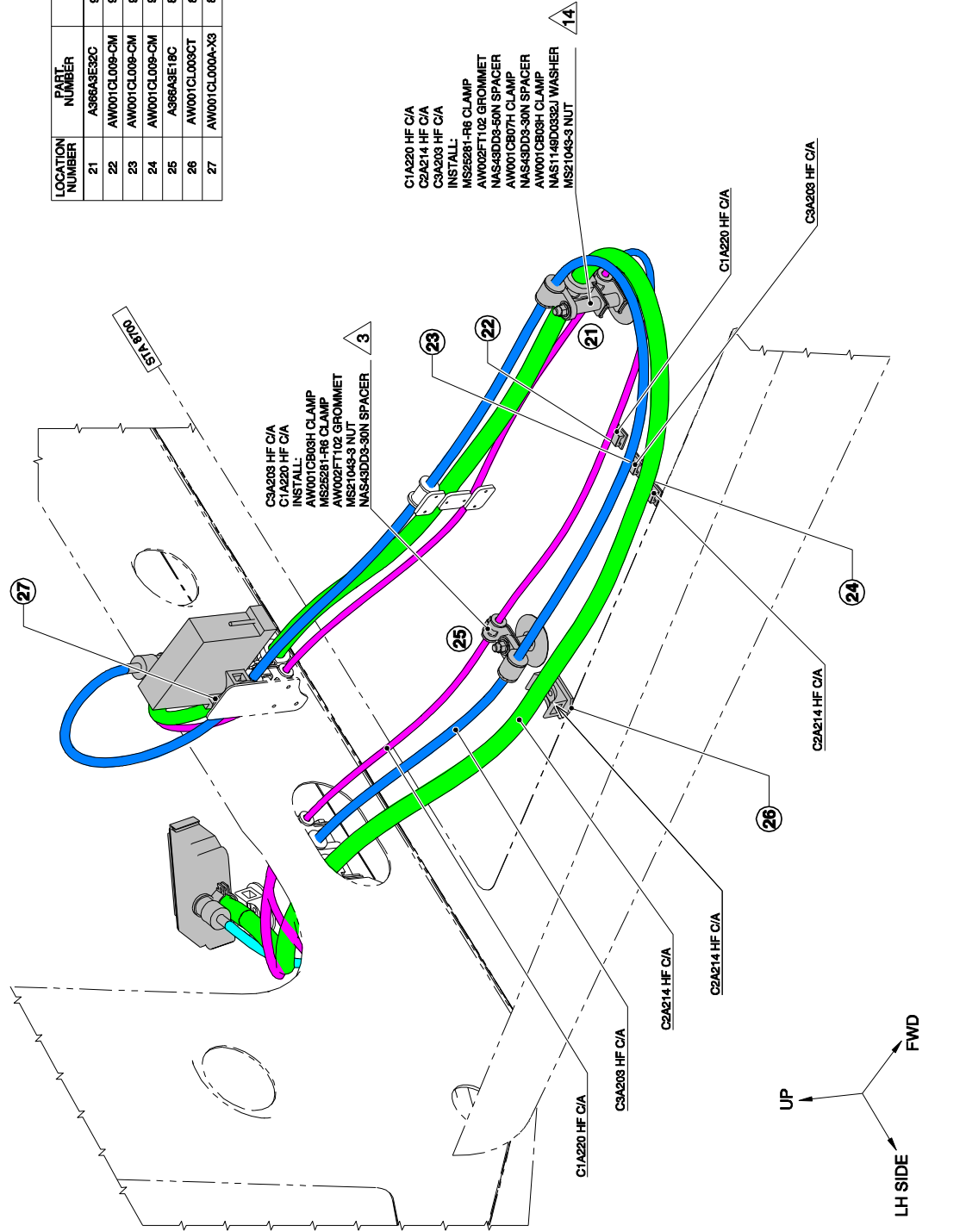
Figure 54

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LOCATION NUMBER	PART NUMBER	STA	BL	WL	ORIENTATION
21	A386A8E35C	9139	-145	1639	0°
22	AW001CL009-CM	9070	-197	1629	0°
23	AW001CL009-CM	9070	-219	1629	0°
24	AW001CL009-CM	9070	-241	1629	0°
25	A386A8E18C	8905	-220	1609	0°
26	AW001CL009CT	8900	-255	1608	0°
27	AW001CL000A-X3	8763	-140	1704	0°



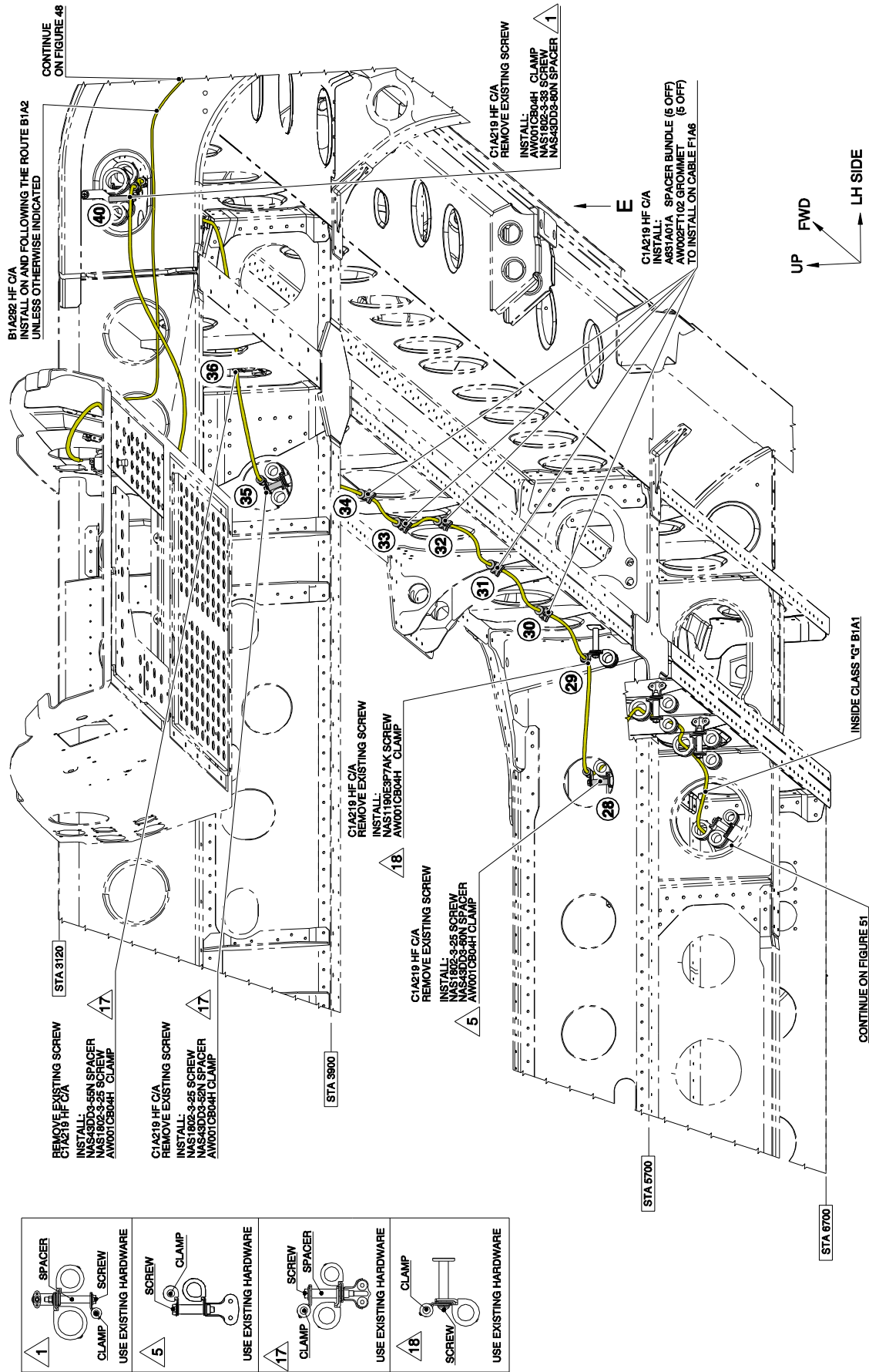
C1A220 HF C/A  
C2A214 HF C/A  
C3A203 HF C/A  
INSTALL:  
MS22581-R6 CLAMP  
AW002FT102 GROMMET  
NAS43DD3-50N SPACER  
AW001CR07H CLAMP  
NAS43DD3-30N SPACER  
AW001CR08H CLAMP  
NAS1149D0321 WASHER  
MS21043-3 NUT

C3A203 HF C/A  
C1A220 HF C/A  
INSTALL:  
AW001CR08H CLAMP  
MS22581-R6 CLAMP  
AW002FT102 GROMMET  
MS21043-3 NUT  
NAS43DD3-50N SPACER

**VIEW LOOKING FROM STA 8700 TO STA 9500**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

**Figure 55**



**VIEW LOOKING FROM STA 3120 TO STA 6700**

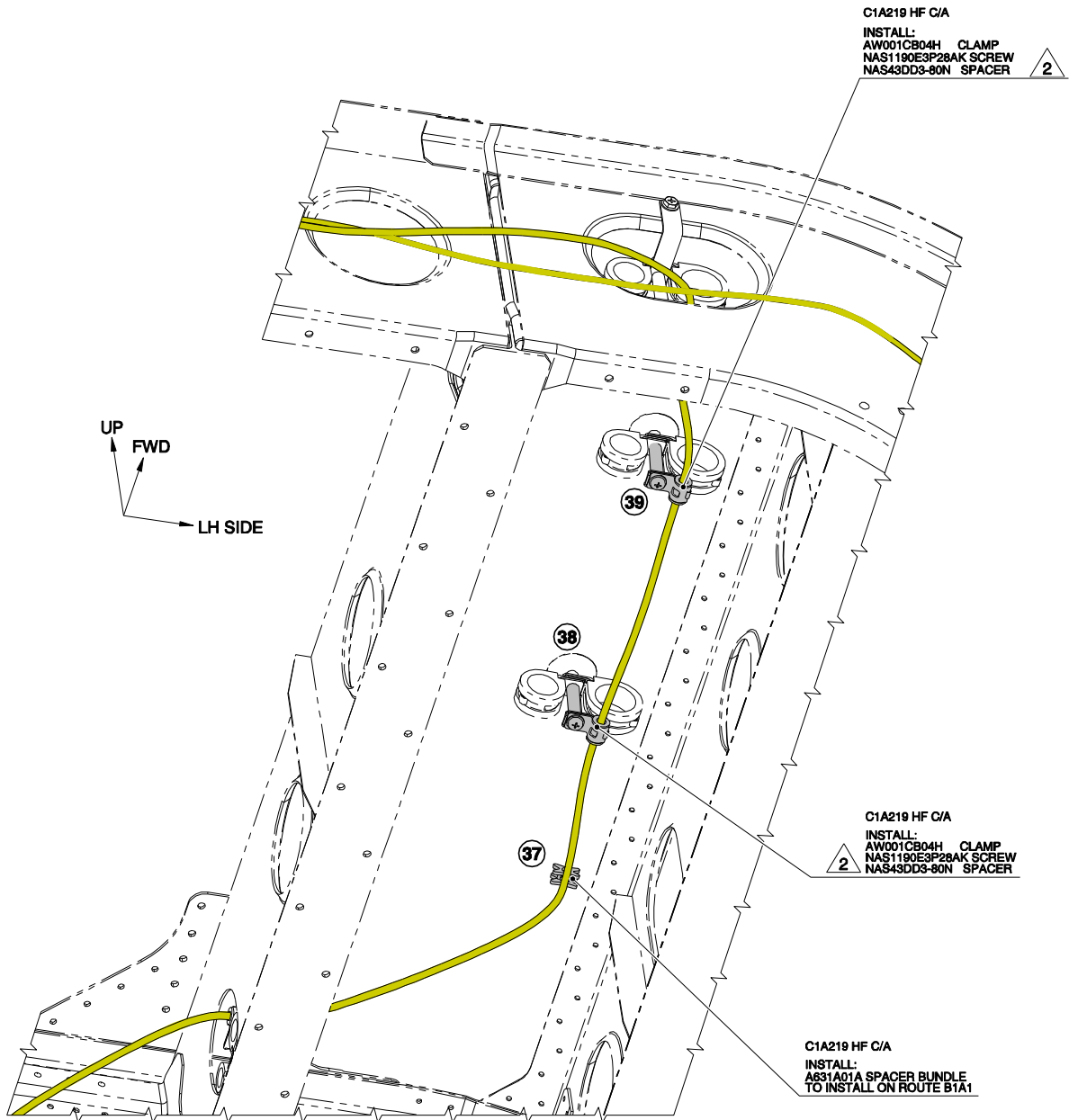
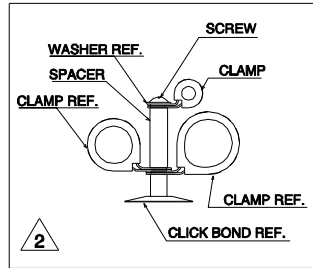
STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 56**

S.B. N°139-034

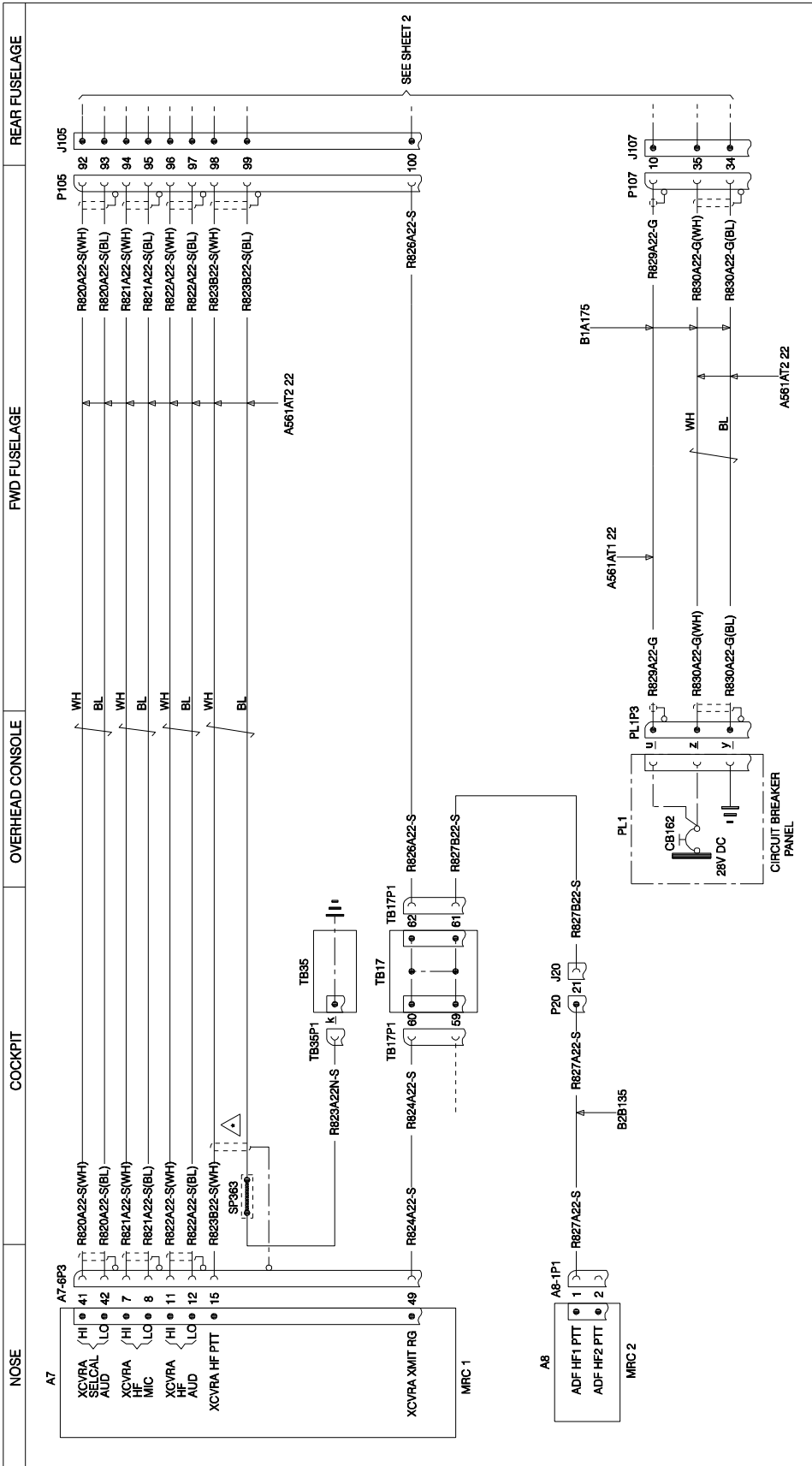
DATE: February 8, 2011

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**VIEW E**  
STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 57**



3G2310W00201  
WIRING DIAGRAM HF  
SHEET 1

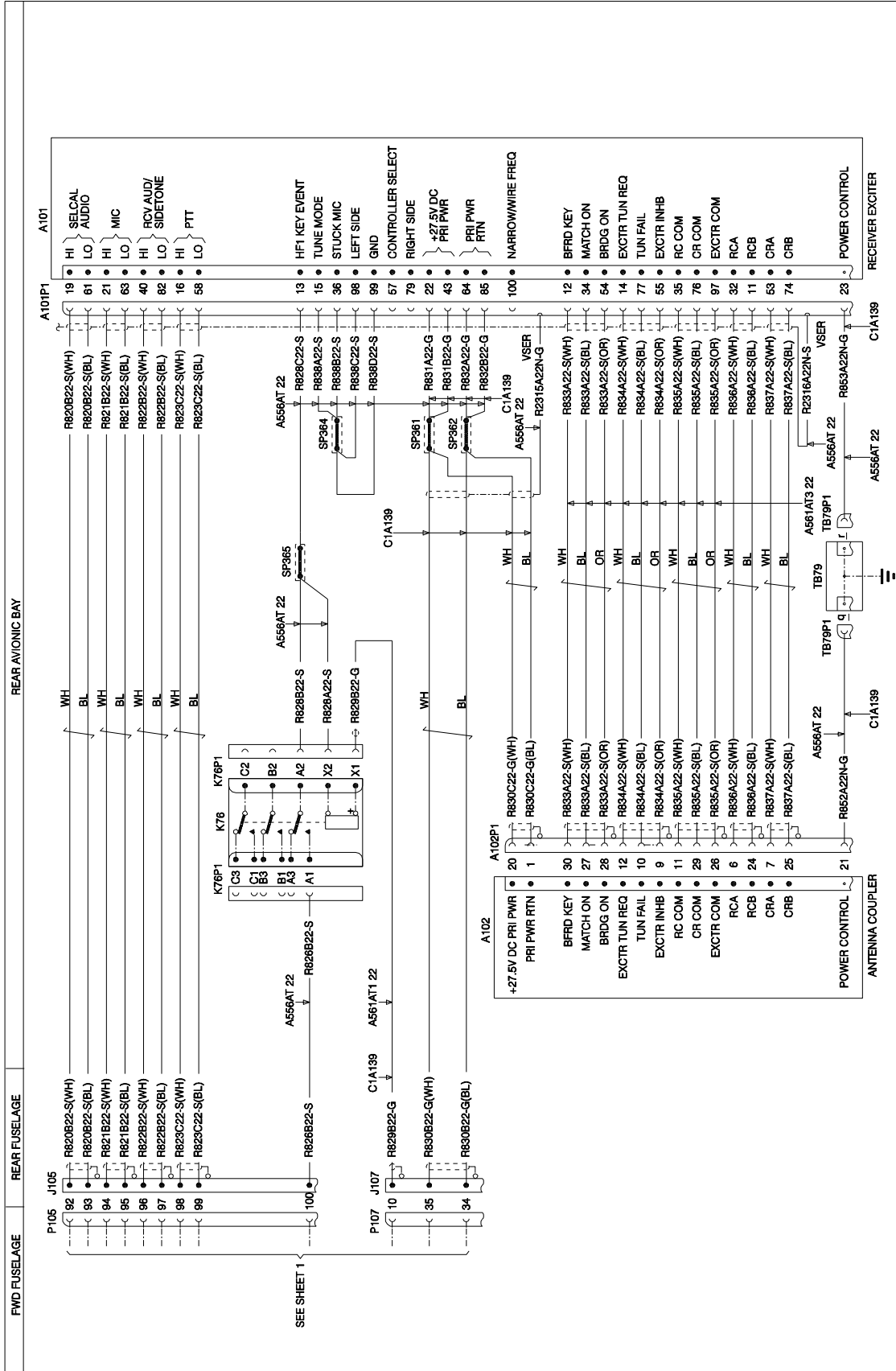
**FUNCTIONAL NOTES**  
ALL CABLES ARE IN LOOM B2A128 UNLESS SPECIFIED  
ALL CABLES ARE OF TYPE A556AT 22 UNLESS SPECIFIED  
△ WHEN DF SYSTEM IS INSTALLED, SEE FOR REMARK DETAILS.

Figure 58

S.B. N°139-034

DATE: February 8, 2011

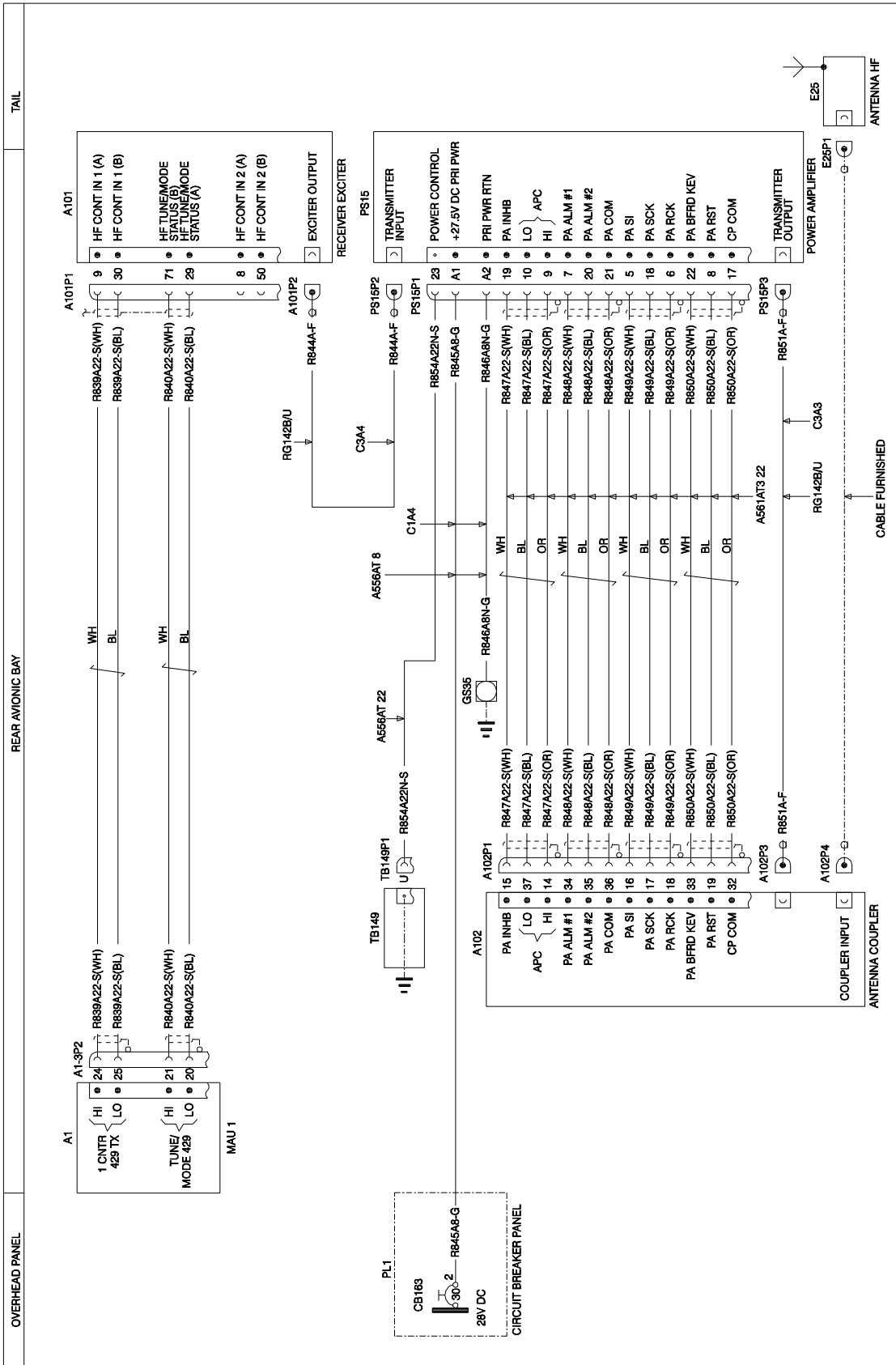
REVISION: D - February 10, 2023



3G2310W00201  
WIRING DIAGRAM HF  
SHEET 2

**FUNCTIONAL NOTES**  
ALL CABLES ARE IN LOOM C2A121 UNLESS SPECIFIED  
ALL CABLES ARE OF TYPE A561AT2 22 UNLESS SPECIFIED

Figure 59



3G2310W00201  
WIRING DIAGRAM HF  
SHEET 3

**FUNCTIONAL NOTES**  
ALL CABLES ARE IN LOOM C2A121 UNLESS SPECIFIED  
ALL CABLES ARE OF TYPE A561AT2 22 UNLESS SPECIFIED

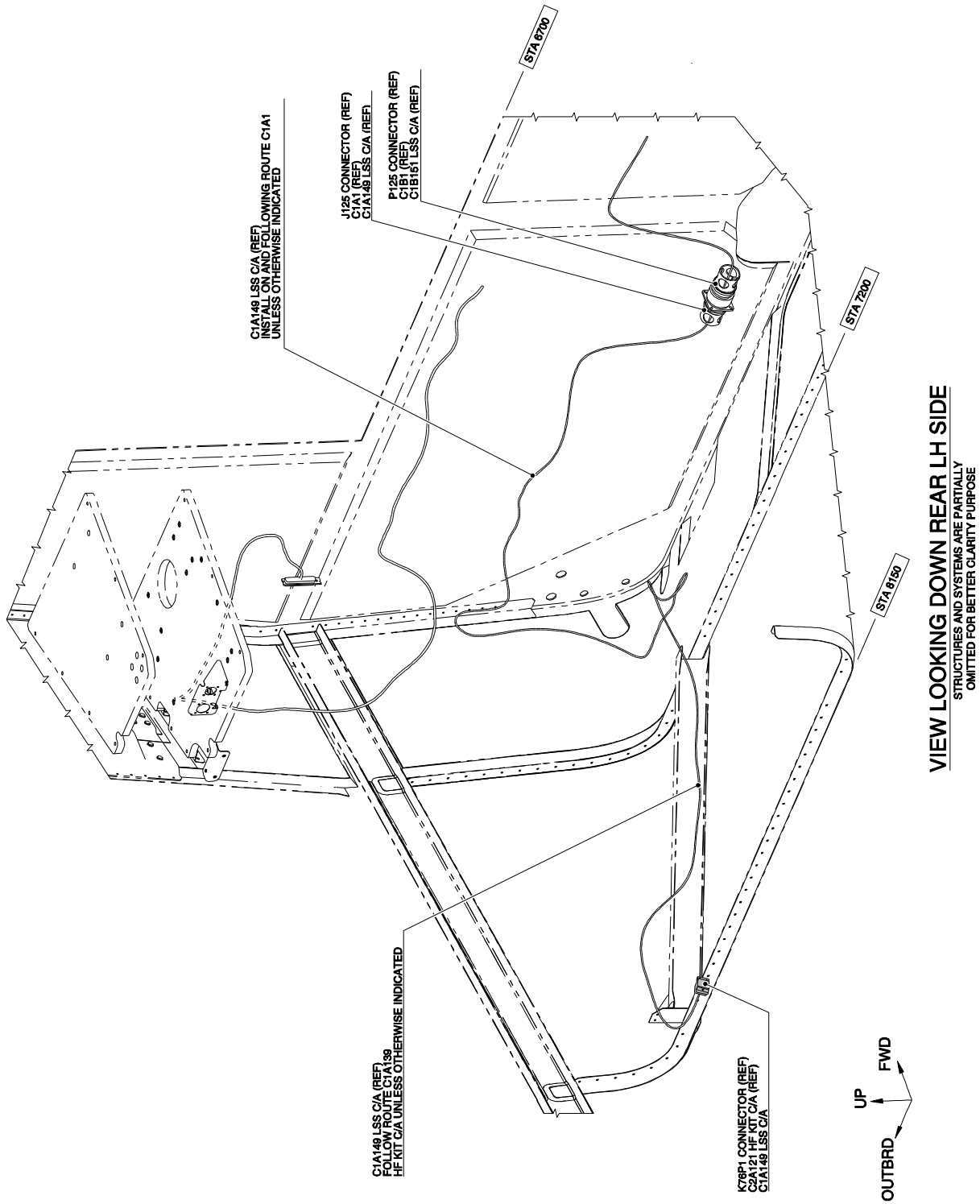
Figure 60

S.B. N°139-034

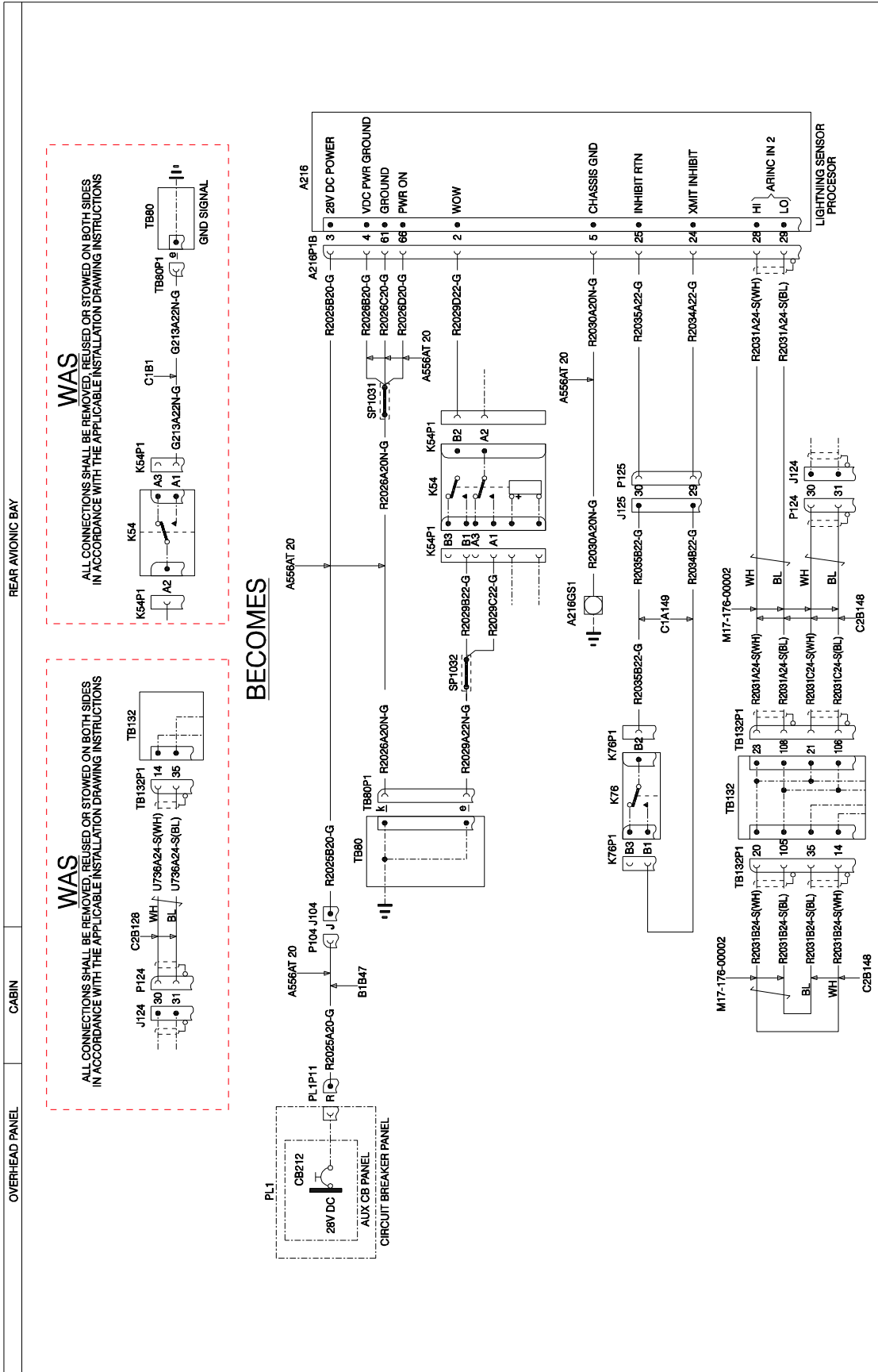
DATE: February 8, 2011

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**Figure 61**



3G9810W00101  
WIRING DIAGRAM LIGHTNING SENSOR SYSTEM  
SHEET 1

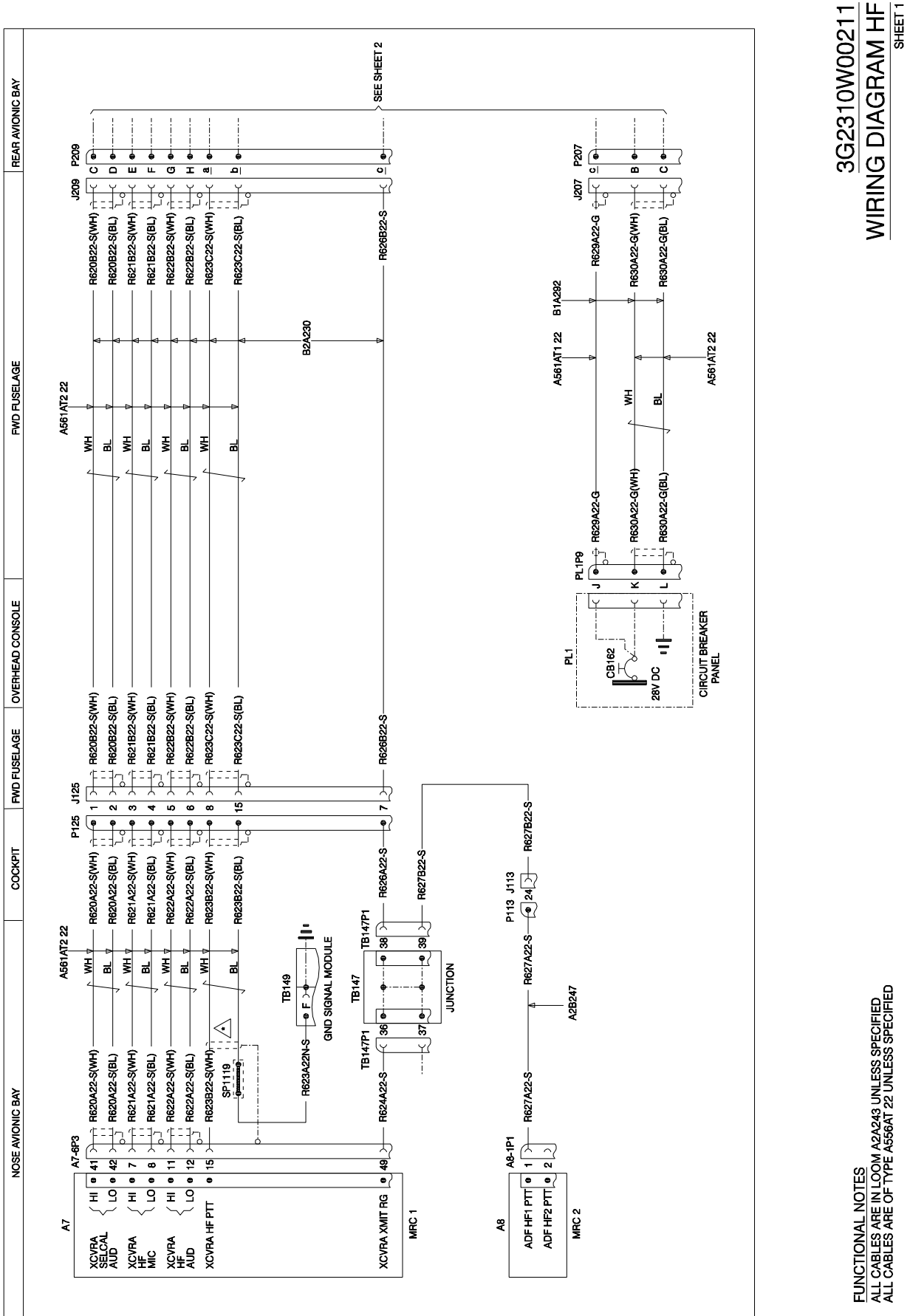
Figure 62

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3G2310W00211  
WIRING DIAGRAM HF  
SHEET 1

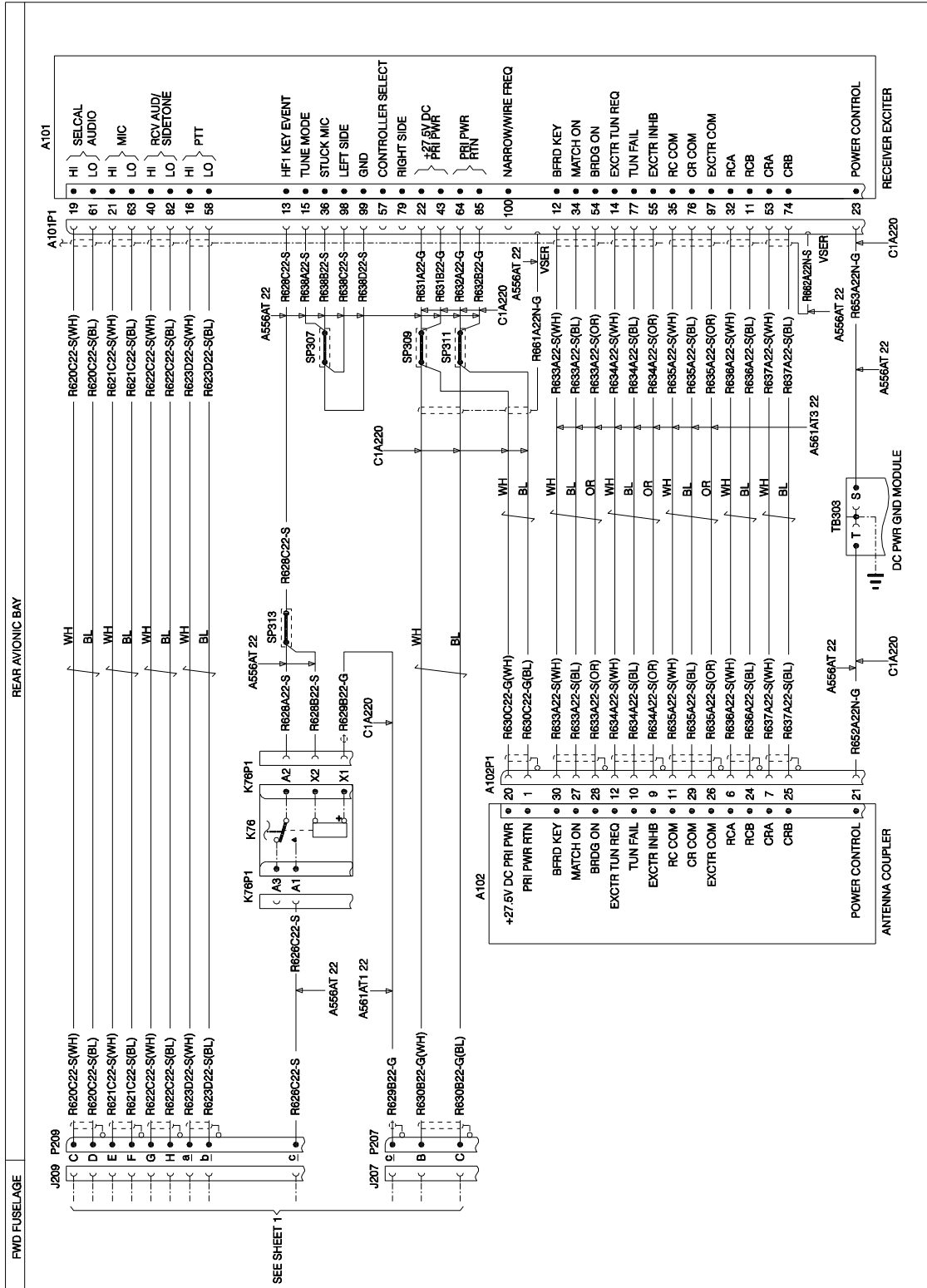
FUNCTIONAL NOTES  
ALL CABLES ARE IN LOOM A2A243 UNLESS SPECIFIED  
ALL CABLES ARE OF TYPE A556AT 22 UNLESS SPECIFIED

Figure 64

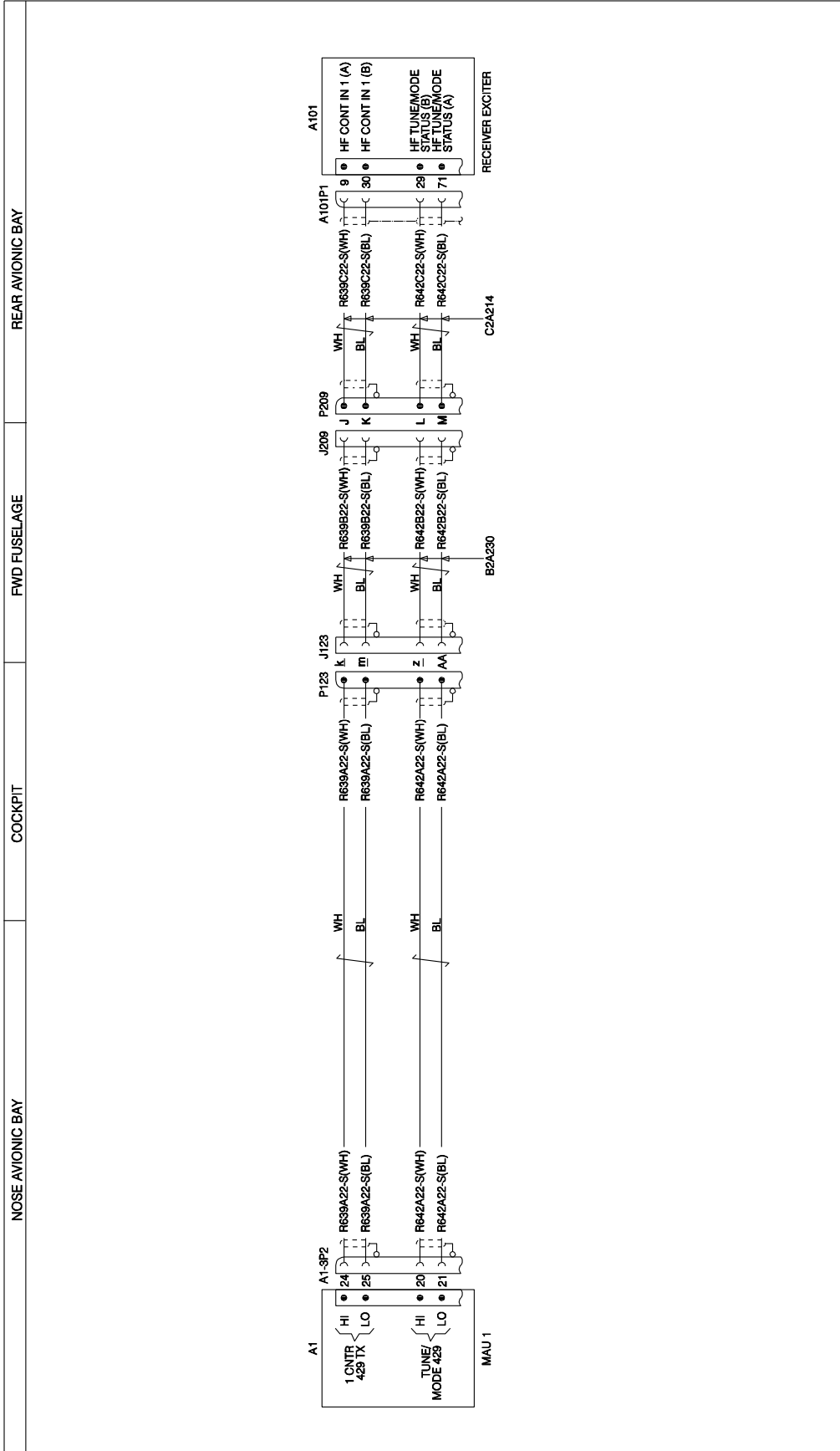
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DATE: February 8, 2011

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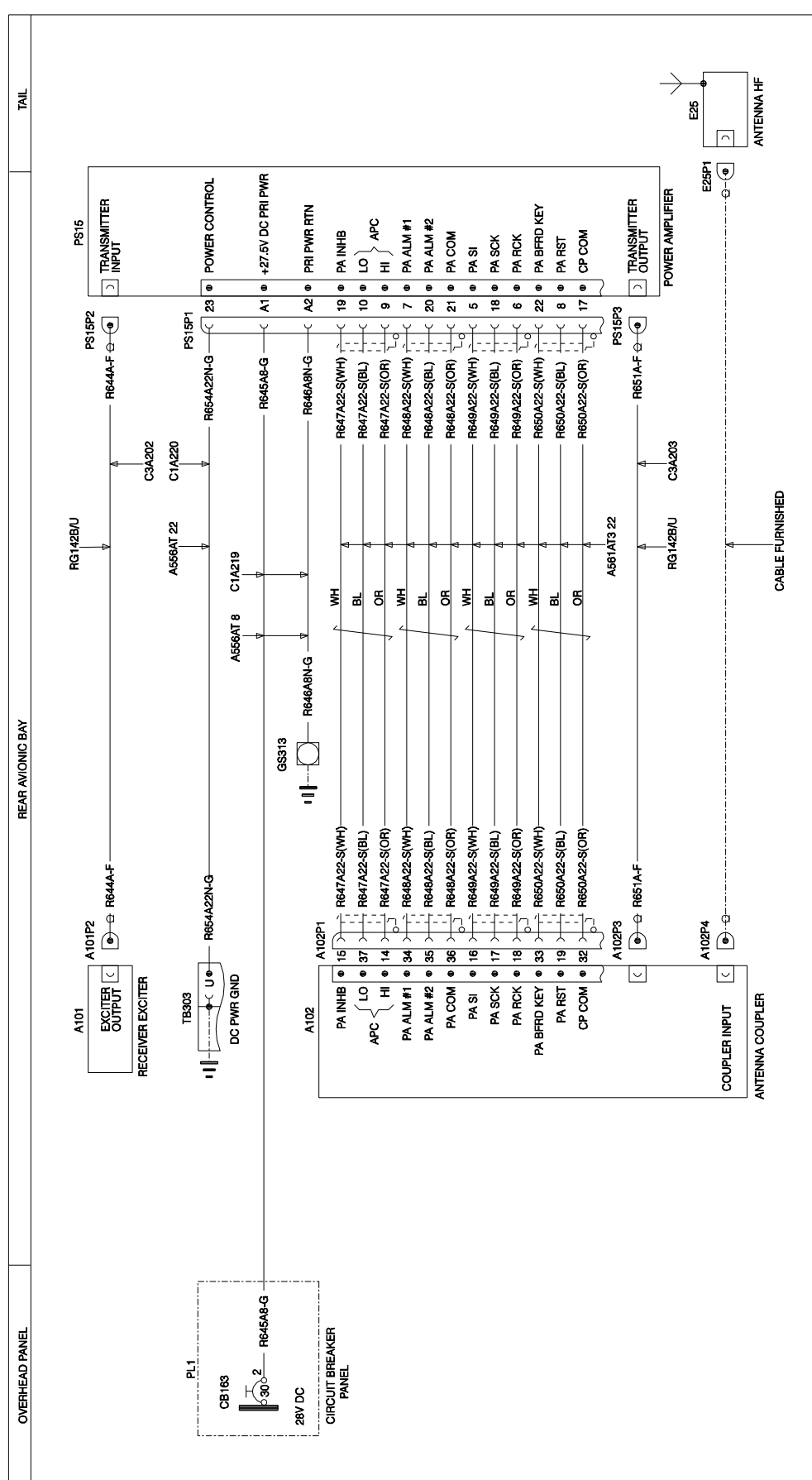
**Figure 65**



3G2310W00211  
WIRING DIAGRAM HF  
SHEET 3

FUNCTIONAL NOTES  
ALL CABLES ARE IN LOOM A2A243 UNLESS SPECIFIED  
ALL CABLES ARE OF TYPE A561 AT2 22 UNLESS SPECIFIED

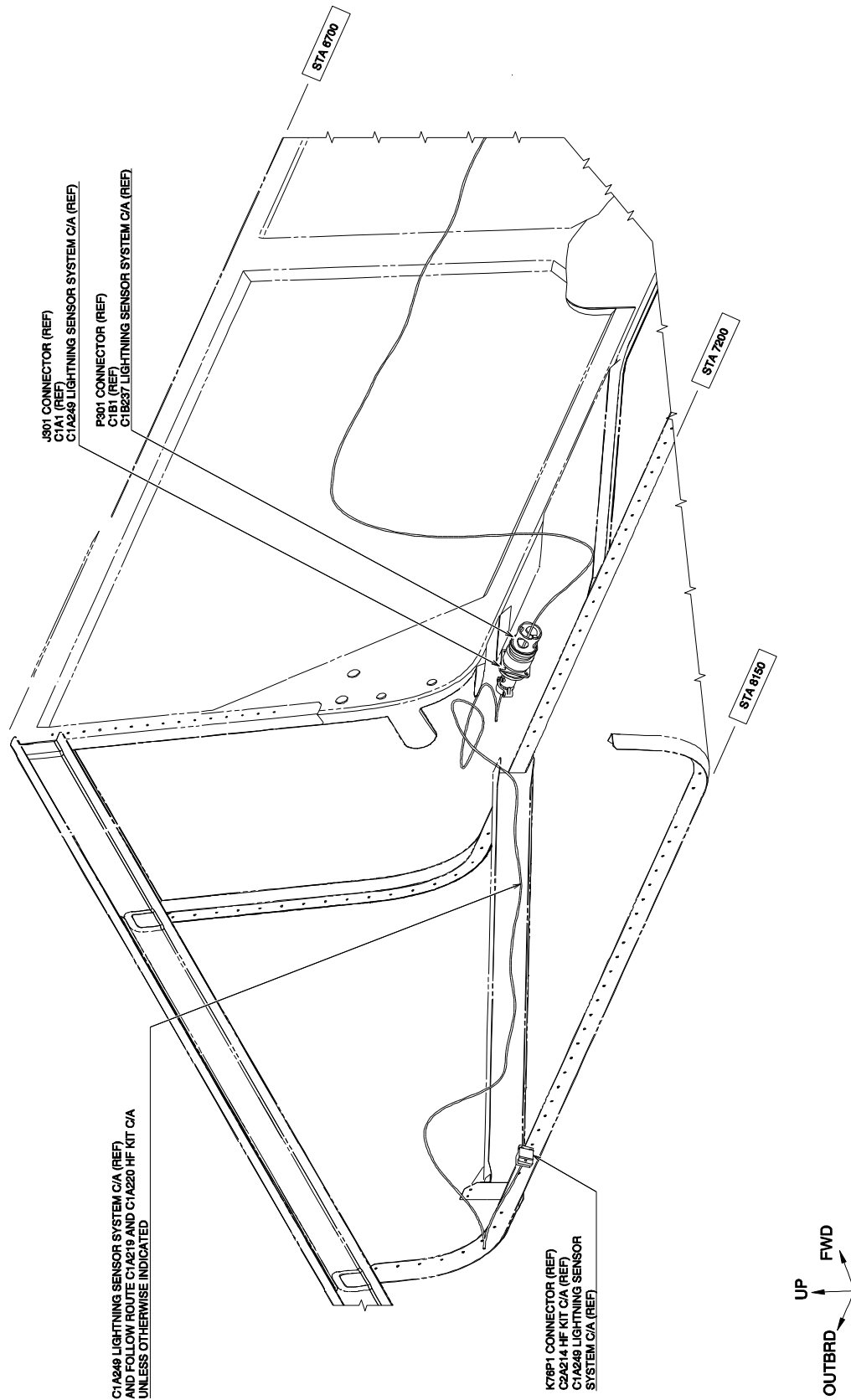
Figure 66



3G2310W00211  
WIRING DIAGRAM HF  
SHEET 4

**FUNCTIONAL NOTES**  
ALL CABLES ARE IN LOOM C2A214 UNLESS SPECIFIED  
ALL CABLES ARE OF TYPE A561AT2 Z2 UNLESS SPECIFIED

Figure 67



**VIEW LOOKING DOWN REAR LH SIDE**

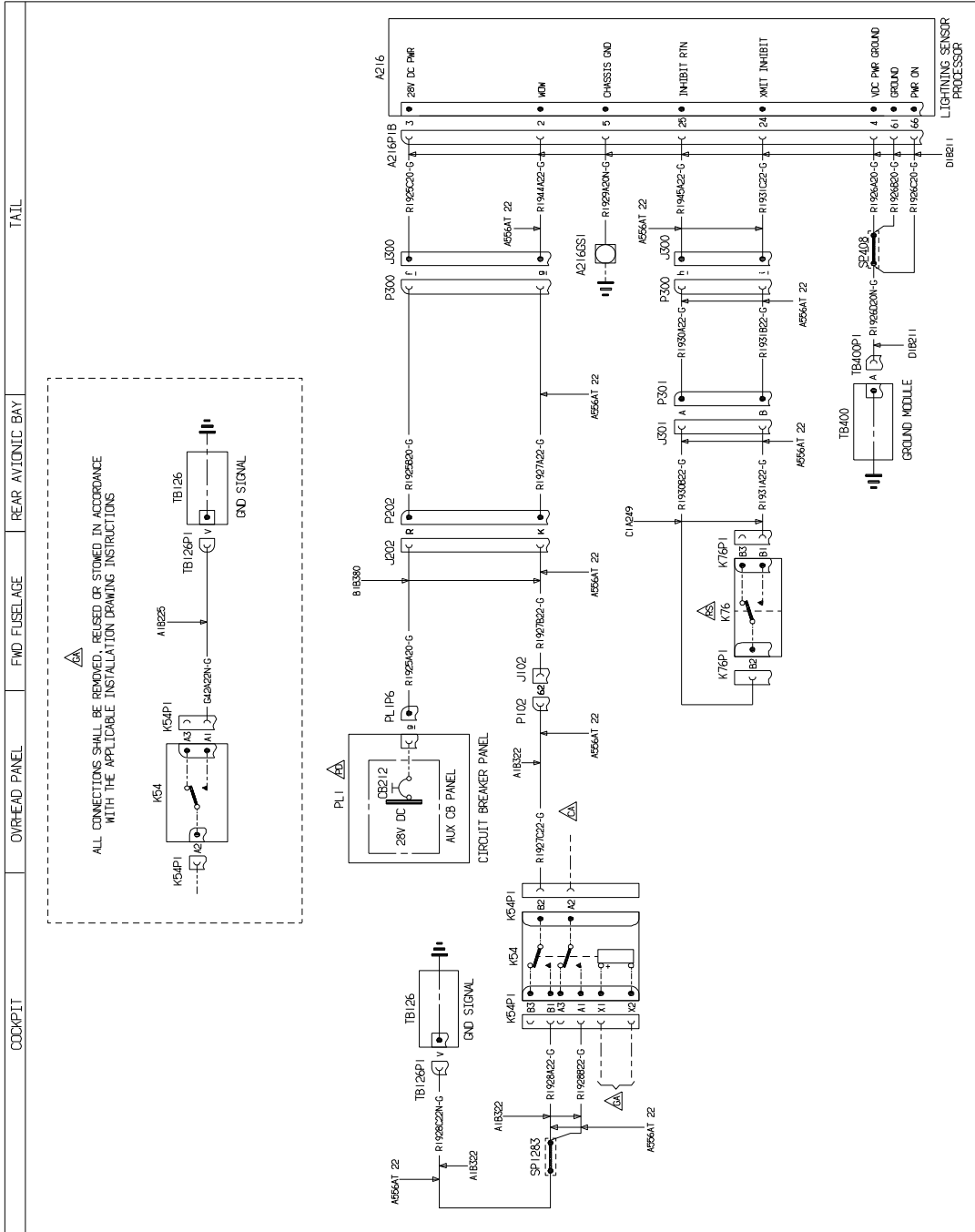
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**Figure 68**

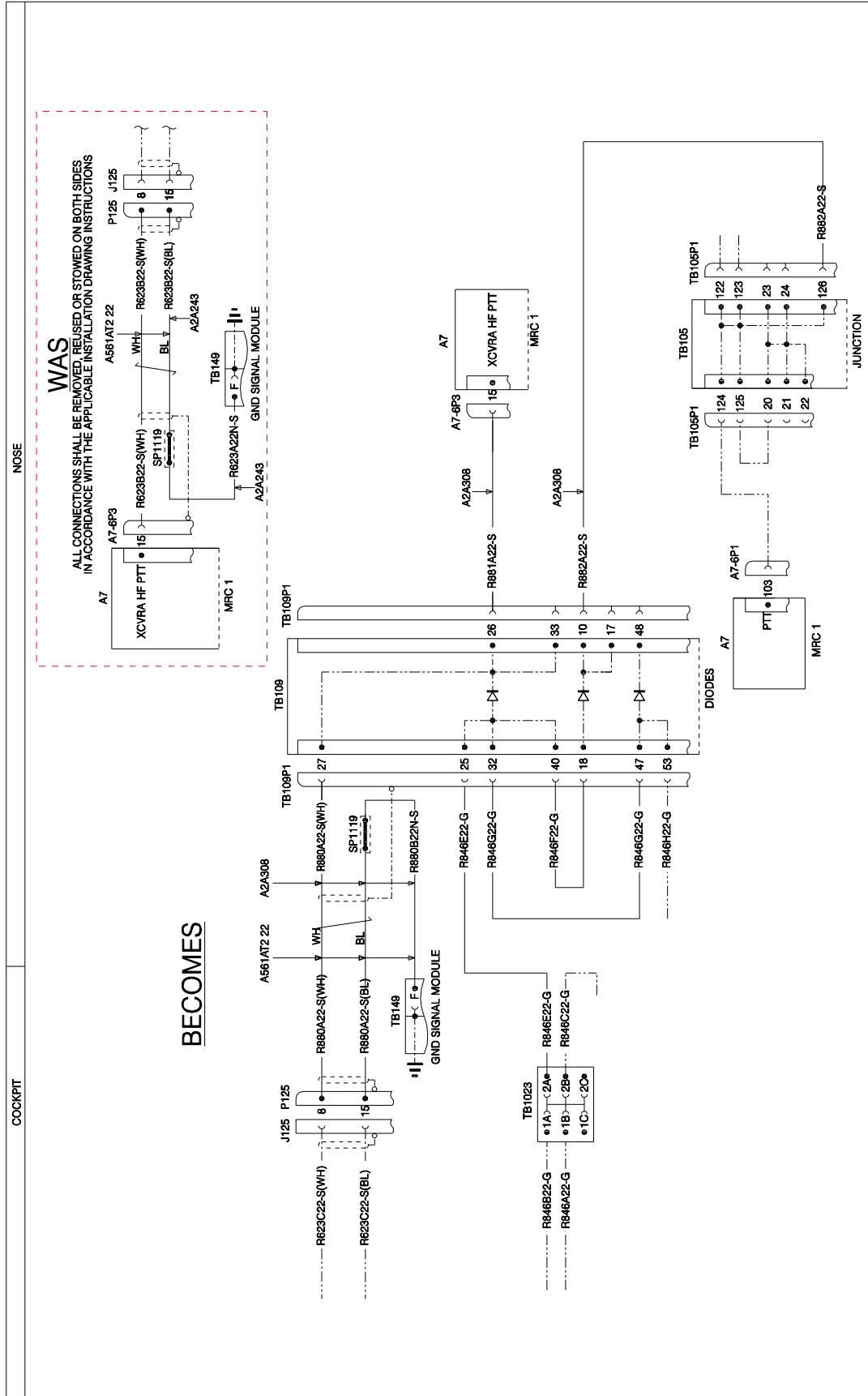


**FUNCTIONAL NOTES**  
ALL CABLES ARE IN LOOM C1B237 UNLESS SPECIFIED  
ALL CABLES ARE OF TYPE A656AT 20 UNLESS SPECIFIED

- DRAWING REF. KEY
- △ AECs 352210M001\*\*
  - △ UNDERCARRIAGE 355330M001\*\*
  - △ FEEDER BUSBARS 352460M001\*\*
  - △ 352310M002\*\*



**Figure 69**



**FUNCTIONAL NOTES**  
ALL CABLES ARE IN LOOM A1B284 UNLESS SPECIFIED  
ALL CABLES ARE OF TYPE A556AT 22 UNLESS SPECIFIED

**Figure 70**

S.B. N°139-034

DATE: February 8, 2011

REVISION: D - February 10, 2023

Please send to the following address:  <b>LEONARDO S.p.A.</b> <b>CUSTOMER SUPPORT &amp; SERVICES - ITALY</b>  <b>PRODUCT SUPPORT ENGINEERING &amp; LICENSES DEPT.</b> Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) - ITALY Tel.: +39 0331 225036 Fax: +39 0331 225988		<b>SERVICE BULLETIN COMPLIANCE FORM</b>		Date:	
		Number:			
		Revision:			
Customer Name and Address:			Telephone:		
			Fax:		
			B.T. Compliance Date:		
Helicopter Model	S/N	Total Number	Total Hours	T.S.O.	
Remarks:					
<b>Information:</b>  We request your cooperation in filling this form, in order to keep out statistical data relevant to aircraft configuration up-to-date. The form should be filled in all its parts and sent to the above address or you can communicate the application also via Technical Bulletin Application Communication Section placed in Leonardo AW Customer Portal - MyCommunications Area. We thank you beforehand for the information given.					