
SERVICE BULLETIN

N° **139-606**

OPTIONAL

DATE: September 11, 2024

REV. : /

TITLE

ATA 93 – CUSTOMIZATION BMS SAR

REVISION LOG

First Issue

1. PLANNING INFORMATION

A. EFFECTIVITY

AW139 helicopters S/N 31568, S/N 31577, S/N 31596, S/N 31599, S/N 31600, S/N 31603 and S/N 31373.

B. COMPLIANCE

At Customer's option.

C. CONCURRENT REQUIREMENTS

Service Bulletin 139-602 must be accomplished on the helicopter before the application of this Service Bulletin.

D. REASON

This Service Bulletin is issued in order to provide the necessary instructions on how to perform the installation of the avionic customization UAE SAR variant P/N 3G4600P00911, the mission console UAE SAR variant P/N 3G2520P01511 and the utility CB panel RH retromod P/N 3G2460P01312 in order to complete the installation of kit BMS video downlink P/N 4G9300F01511.

LH issued this SB for the following reason:

Helicopter Reliability/Maintainability	
Product Improvement	
Obsolescence	
Customization	✓
Product/Capability Enhancement	

E. DESCRIPTION

This Service Bulletin introduces n°3 retro mod in order to complete the installation of the kit BMS video downlink P/N 4G9300F01511:

- the avionic customization UAE SAR variant P/N 3G4600P00911 consists of the installation, in the rear avionic bay and under the cabin floor, of C/A B2L152 and C/A C2A447 with the corresponding hardware;
- the mission console UAE SAR variant P/N 3G2520P01511 consists of the installation of C/A B1L150, C/A B2L153, the DLC50N control panel and n°2 plate assy to complete the installation on the mission console;

- the utility CB panel RH retromod P/N 3G2460P01312 consists of the installation of C/A E1C302 and n°2 circuit breaker on the utility CB panel RH.

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 LH 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 forty-four (44) MMH are deemed necessary.

MMH are based on hands-on time and can change with personnel and facilities available. MMH are not comprehensive of the overall hours necessary to get access to work areas and to remove all the equipment that interferes with the application of the prescribed instructions.

H. WEIGHT AND BALANCE

NOTE

Weight and balance data contained in the following table refer to all the parts installed in this Service Bulletin except for DLC50N control panel P/N 8714395003.

WEIGHT (Kg)	ARM (mm)	MOMENT (Kgmm)
		1.615
LONGITUDINAL BALANCE	4999	8073.4
LATERAL BALANCE	-581	-938.3

NOTE

Weight and balance data contained in the following table refer only to the DLC50N control panel P/N 8714395003.

WEIGHT (Kg)	ARM (mm)	MOMENT (Kgmm)
		0.450
LONGITUDINAL BALANCE	3470	1561.5
LATERAL BALANCE	-245	-110.3

I. REFERENCES

I.1 PUBLICATIONS

Following Data Modules refer to AMP:

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM01 39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance	-
DM02 39-A-06-41-00-00A-010A-A	Access doors and panels - General data.	-
DM03 39-A-20-10-18-00A-691A-A	Electrical wires and cables - Marking	-
DM04 39-A-20-10-08-00A-622A-A	Electrical contacts - Crimp	-
DM05 39-D-23-63-01-00A-720A-K	Control panel - Install procedure	-
DM06 39-A-11-00-01-00A-720A-A	Decal - Install procedure	-
DM07 39-A-24-91-01-00A-520A-A	Circuit breaker panel - Remove procedure	-
DM08 39-A-24-91-01-00A-720A-A	Circuit breaker panel - Install procedure	-
DM09 39-D-23-63-00-00A-369A-K	Video down-link system - Bonding check - Other check	-
DM10 39-D-23-63-00-00A-340A-K	Video down-link system - Function test	-
DM11 39-D-23-63-00-00A-110A-K	Video down-link system - Operation test	-

I.2 ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
AUX	Auxiliary
BMS	Broadcast Microwave Services
CB	Circuit Breaker
DM	Data Module

DOA Design Organization Approval
EASA European Aviation Safety Agency
FLIR Forward Looking Infrared
LHD Leonardo Helicopters Division
MMH Maintenance-Man-Hours
O/H Overhead
SAR Search and Rescue
VMU Video Management Unit

I.3 ANNEX

N.A.

J. PUBLICATIONS AFFECTED

AW139 Aircraft Maintenance Publication (AMP)
AW139 Illustrated Parts Data (IPD)

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

A.1 PARTS

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	3G4600P00911		AVIONIC CUSTOMIZATION UAE SAR VARIANT	REF	.		-
2	3G9B02L15201		VMU - BMS I/F C/A (B2L152)	REF	..		-
3	11BNC75-2- 15/133N		Connector	REF	...	(1)	-
4	M17/94-RG179		Wire	REF	...	(1)	-
5	M39029/77-428		Electrical contact	REF	...	(1)	-
6	M23053/8-004-C		Insulation sleeving	1	...		139-606L1
7	3G9C02A44701		FLIR WESCAM - BMS video I/F C/A (C2A447)	REF	..		-
8	11BNC75-2- 15/133N		Connector	REF	...	(2)	-
9	M17/94-RG179		Wire	REF	...	(2)	-
10	M23053/8-004-C		Insulation sleeving	2	...		139-606L1
11	M39012/16-0220		Electrical contact	1	...		139-606L1
12	A388A3E24C		Standoff	1	..		139-606L1
13	NAS1190E3P7AK		Screw	1	..		139-606L1
14	NAS1190E3P18AK		Screw	1	..		139-606L1
15	NAS1149D0332J		Washer	1	..		139-606L1
16	MS25281-R13		Clamp	1	..		139-606L1
17	MS25281-R14		Clamp	4	..		139-606L1
18	AW002FT110		Grommet	1	..		139-606L1
19	AW002FT111		Grommet	4	..		139-606L1
20	NAS43DD3-40N		Spacer	1	..		139-606L1
21	NAS43DD3-70N		Spacer	1	..		139-606L1
22	AW001CL001-N6		Support	2	..		139-606L1
23	3G9B01L15001		MISSION CONSOLE UAE SAR VAR. C/A (B1L150)	REF	..		-
24	A556A-T20		Wire	2.5 m	...		139-606L1
25	A556A-T22		Wire	1.5 m	...		139-606L1
26	M23053/8-004-C		Insulation sleeving	8	...		139-606L1
27	M23053/8-005-C		Insulation sleeving	2	...		139-606L1
28	M39029/58-363		Electrical contact	10	...		139-606L1
29	M39029/56-351		Electrical contact	1	...		139-606L1
30	3G2520P01511		MISSION CONSOLE UAE SAR VARIANT	REF	.		-
31	3G9B02L15301		MISSION CONSOLE UAE SAR VAR. C/A (B2L153)	REF	..		-
32	A532A400-1702B		Clamp	1	...		139-606L1
33	A561A-T1-20		Wire	5 m	...		139-606L1
34	A561A-T3-20		Wire	1.5 m	...		139-606L1
35	D38999/26WE99PN		Connector	1	...		139-606L1
36	DB121073-151		Backshell	1	...		139-606L1
37	M23053/8-004-C		Insulation sleeving	8	...		139-606L1
38	M23053/8-005-C		Insulation sleeving	2	...		139-606L1
39	M24308/4-3F	M24308/4-8F	Connector	1	...		139-606L1
40	M39029/58-363		Electrical contact	10	...		139-606L1
41	M39029/64-369		Electrical contact	8	...		139-606L1
42	250-8501-010		Backshell	2	...		139-606L1
43	202K132-25-0		Shrink boot	2	...		139-606L1

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
44	8714395003		DLC50N control panel	1	..		139-606L1
45	999-0500-85-137		Plate assy	1	..		139-606L1
46	999-0500-85-261		Plate assy	1	..		139-606L1
47	ED300PL197		Decal	1	..		139-606L1
48	PT06E-12-4S(SR)		Connector	1	.		139-606L1
49	3G2460P01312		UTILITY CB PANEL RH RETROMOD	REF	.		-
50	3G9E01C30202		UTILITY CB PANEL RH RETROMOD C/A (E1C302)	REF	..		-
51	A556A-T16		Wire	2.5 m	...		139-606L1
52	A556A-T20		Wire	2 m	...		139-606L1
53	M39029/56-351		Electrical contact	1	...		139-606L1
54	M39029/56-352		Electrical contact	1	...		139-606L1
55	MS25036-107		Terminal lug	1	...		139-606L1
56	MS25036-108		Terminal lug	1	...		139-606L1
57	MS25036-149		Terminal lug	1	...		139-606L1
58	MS25036-153		Terminal lug	1	...		139-606L1
59	3G2490L05351		Illuminated NVIS panel AUX breaker	1	..		139-606L1
60	999-8001-73-211		Bus bar	1	..		139-606L1
61	AW001CB05H		Clamp	1	..		139-606L1
62	AW001YC01RED		Locking ring	1	..		139-606L1
63	ED300CB429		Decal	1	..		139-606L1
64	ED300CB578		Decal	1	..		139-606L1
65	MS21043-3		Nut	1	..		139-606L1
66	MS3320-1		Circuit breaker	1	..		139-606L1
67	MS3320-5		Circuit breaker	1	..		139-606L1
68	MS35207-262		Screw	1	..		139-606L1
69	MS35489-16		Grommet	1	..		139-606L1
70	MS51957-42		Screw	2	..		139-606L1
71	NAS1149D0332J		Washer	1	..		139-606L1
72	NAS1190E3P14AK		Screw	1	..		139-606L1
73	NAS1190E3P5AK		Screw	1	..		139-606L1
74	NAS43DD3-30N		Spacer	1	..		139-606L1
75	3G9A02A41001		FLIR WESCAM VIDEO I/F C/A (A2A410)	REF	.		-
76	M17/94-RG179		Coaxial wire	2.5 m	..		139-606L1
77	D-181-1220-90/9		Solder sleeve	1	..		139-606L1
78	FCC4102D		Contact	1	..		139-606L1

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

A.2 CONSUMABLES

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

#	Spec./LHD code number	DESCRIPTION	Q.TY	NOTE	PART
79	A236A02AB	Edging	AR	(3)	-
80	A582A	Tubing braided	AR	(3)	-

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

A.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
139-606L1	1	-	-

NOTES

- (1) Item to be obtained from the rework of the VMU-BMS I/F C/A B2L152 P/N 3G9B02L15201.
- (2) Item to be obtained from the rework of the SS380HD-DOWNLINK BMS I/F C/A B2A944 P/N 3G9B02A94401
- (3) Item to be procured as local supply.

B. SPECIAL TOOLS

N.A.

C. INDUSTRY SUPPORT INFORMATION

N.A.

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) During the installation of bonding braids or components requiring grounding, clean the surface structure in order to obtain a good ground contact.
 - d) Let adhesive cure at room temperature for at least 24 hours unless otherwise specified.
 - e) Exposed thread surface and nut must be protected using a layer of tectyl according to MIL-C-16173 grade I.
 - f) All lengths are in mm.
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.

NOTE

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

NOTE

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

NOTE

When necessary replace existing clamp with suitable clamp.

2. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figures 1 thru 3 and Figure 10 Wiring Diagram, gain access to the area affected by the installation and perform the avionic customization UAE SAR variant P/N 3G4600P00911 as described in the following procedure:
 - 2.1 With reference to Figure 4 View D, install n°2 supports P/N AW001CL001-N6.
 - 2.2 With reference to Figure 4 and Figure 10 Wiring Diagram, assemble the FLIR WESCAM - BMS video I/F C/A P/N 3G9C02A44701 (C2A447) as described in the following procedure:
 - 2.2.1 With reference to Figure 4 View D and View E and Figure 10 Wiring Diagram, cut an adequate length of wire P/N M17/94-RG179 and lay it down between connector A580P12 and connector T45P1.
 - 2.2.2 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 10 Wiring Diagram, mark wire as U3710A-S-ME by means of marker sleeves.
 - 2.2.3 With reference to Figure 10 Wiring Diagram, protect the wire by means of n°2 insulations sleeving P/N M23053/8-004-C.
 - 2.2.4 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 4 and Figure 10 Wiring Diagram, mark the so obtained cable assembly as C2A447 by means of marker sleeves.
 - 2.3 With reference to Figure 4 View D, lay down and secure C/A C2A447 on the previously installed supports by means of lacing cords.
 - 2.4 With reference to Figure 4 View D and View E and Figure 10 Wiring Diagram, perform the electrical connection of C/A C2A447 to connector P/N M39012/16-0220 (T45P1) and to connector P/N 11BNC75-2-15/133N (A580P12).
 - 2.5 With reference to Figure 4 View D and View E and Figure 10 Wiring Diagram, plug connector T45P1 to the impedance adapter T45 and connector A580P12 to the helicoder 4.

NOTE

Perform following Steps 2.6 only if wire U3400A-S is present on pin a of A270P3 connector (refer to Figure 8 Wiring Diagram). Otherwise skip to Step 2.7.

- 2.6 With reference to Figure 2, Figure 3 and Figure 8 Wiring Diagram, rework existing

wire ident U3400A-S to obtain FLIR WESCAM VIDEO I/F C/A (A2A410) C/A P/N 3G9A02A41001 (A2A410) as described in the following procedure:

- 2.6.1 With reference to Figure 2 View A, Figure 3 and Figure 8 Wiring Diagram, remove wire U3400A-S from pin a of A270P3 connector.
- 2.6.2 Reroute the removed wire back to J1055 connector by means of solder sleeve P/N D-181-1220-90/9 according to W/D FLIR WESCAM VIDEO I/F P/N 3G9310W07311.
- 2.6.3 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and Figure 2 View A, Figure 3 and Figure 8 Wiring Diagram, remark the wire as U3705A-S.

NOTE

Perform following Steps 2.7 only if wire U3400A-S is NOT present on pin a of A270P3 connector (refer to Figure 8 Wiring Diagram). Otherwise skip to Step 2.8.

- 2.7 With reference to Figure 2, Figure 3 and Figure 8 Wiring Diagram, assemble the FLIR WESCAM VIDEO I/F C/A (A2A410) C/A P/N 3G9A02A41001 (A2A410) as described in the following procedure:
 - 2.7.1 With reference to Figure 3 and Figure 8 Wiring Diagram, cut an adequate length of wire P/N M17/94-RG179 and lay it down between connector J1055 and connector A1-3P3.
 - 2.7.2 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 8 Wiring Diagram, crimp on wire n°1 electrical contact P/N FCC4102D (A1-3P3 side) by means of proper crimping tool.
 - 2.7.3 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 8 Wiring Diagram, connect solder sleeve P/N D-181-1220-90/9 to the wire (J1055 side) by means of proper crimping tool.
 - 2.7.4 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and Figure 2 View A, Figure 3 and Figure 8 Wiring Diagram, mark the wire as U3705A-S.
- 2.8 With reference to Figure 2, Figure 3 and Figure 8 Wiring Diagram, perform electrical connections between connectors A1-3P3 and J1055
- 2.9 With reference to Figure 2 View A, install the standoff P/N A388A3E24C.
- 2.10 With reference to Figures 2 and 3 and Figure 10 Wiring Diagram, assemble the VMU - BMS I/F C/A P/N 3G9B02L15201 (B2L152) as described in the following procedure:

- 2.10.1 With reference to Figure 2, Figure 4 View C and View E and Figure 10 Wiring Diagram, cut an adequate length of wire P/N M17/94-RG179 and lay it down between connector A580P9 and connector A270P3.
- 2.10.2 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 10 Wiring Diagram, crimp on wire n°1 electrical contact P/N M39029/77-428 (A270P3 side) by means of proper crimping tool.
- 2.10.3 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 10 Wiring Diagram, mark wire as U4365A-S-ME by means of marker sleeves.
- 2.10.4 With reference to Figure 10 Wiring Diagram, protect the wire by means of n°1 insulation sleeving P/N M23053/8-004-C.
- 2.10.5 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and Figure 2, Figure 4 and Figure 10 Wiring Diagram, mark the so obtained cable assembly as B2L152 by means of marker sleeves.
- 2.11 With reference to Figure 2 and Figure 4 View C, lay down and secure the C/A B2L152 by means of existing hardware and lacing cords.
- 2.12 With reference to Figure 2 View A, Figure 4 View E and Figure 10 Wiring Diagram, perform the electrical connection of C/A B2L152 to connector A270P3 and to connector P/N 11BNC75-2-15/133N (A580P9).
- 2.13 With reference to Figure 4 View E and Figure 10 Wiring Diagram, plug connector A580P9 to the heli-coder 4.
- 2.14 With reference to Figure 1 and Figure 2 View A, install clamp P/N MS25281-R13 by means of screw P/N NAS1190E3P7AK, washer P/N NAS1149D0332J and grommet P/N AW002FT110.
- 2.15 With reference to Figure 2 View A, remove n°4 existing screws.
- 2.16 With reference to Figure 1 and Figure 2 View A, install n°2 clamps P/N MS25281-R14 by means of n°2 grommets P/N AW002FT111 and existing hardware.
- 2.17 With reference to Figure 1 and Figure 2 View A, install clamp P/N MS25281-R14 by means of spacer P/N NAS43DD3-70N and grommet P/N AW002FT111.
- 2.18 With reference to Figure 1 and Figure 2 View A, install clamp P/N MS25281-R14 by means of screw P/N NAS1190E3P18AK, spacer P/N NAS43DD3-40N and grommet P/N AW002FT111.
- 2.19 Perform a pin-to-pin continuity check of all the electrical connections made.
3. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figure 5

and Figure 9 Wiring Diagram, gain access to the area affected by the installation and perform the mission console UAE SAR variant P/N 3G2520P01511 as described in the following procedure:

- 3.1 With reference to Figure 5 and Figure 9 Wiring Diagram, assemble the mission console UAE SAR var. C/A P/N 3G9B02L15301 (B2L153) as described in the following procedure:
 - 3.1.1 With reference to Figure 5 View and Figure 9 Wiring Diagram, cut n°4 wires P/N A561A-T1-20 of adequate length and lay them down between connector P/N P2079 and connector PL197PY.
 - 3.1.2 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 9 Wiring Diagram, crimp n°4 electrical contacts P/N M39029/58-363 (P2079 side) and n°4 electrical contacts P/N M39029/64-369 on wires by means of proper crimping tool.
 - 3.1.3 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 9 Wiring Diagram, mark wires as U7096A20-S-ME, U7097A20-S-ME, U7093A20-S-ME and U7094A20-S-ME by means of marker sleeves.
 - 3.1.4 With reference to Figure 9 Wiring Diagram, protect the wires by means of n°8 insulations sleeving P/N M23053/8-004-C.
 - 3.1.5 With reference to Figure 5 and Figure 9 Wiring Diagram, cut n°3 wires P/N A561A-T3-20 of adequate length and lay them down between connector P2079 and connector PL197PY.
 - 3.1.6 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 9 Wiring Diagram, crimp n°3 electrical contacts P/N M39029/58-363 (P2079 side) and n°3 electrical contacts P/N M39029/64-369 on wires by means of proper crimping tool.
 - 3.1.7 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 9 Wiring Diagram, mark wires as U7095A20-S(WH)-ME, U7095A20-S(OR)-ME and U7095A20-S(BL)-ME by means of marker sleeves.
 - 3.1.8 With reference to Figure 5 View B, install backshell P/N DB121073-151 on the connector PL197PY.
 - 3.1.9 With reference to Figure 5 View A, install clamp P/N A532A400-1702B on the connector P2079.
 - 3.1.10 With reference to Figure 9 Wiring Diagram, protect the wires by means of n°2 insulations sleeving P/N M23053/8-005-C.

- 3.1.11 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 5 and Figure 9 Wiring Diagram, mark the so obtained cable assembly as B2L153 by means of marker sleeves.
- 3.2 With reference to Figure 5, lay down and secure C/A B2L153 by means of existing hardware and lacing cords.
- 3.3 With reference to Figure 5 and Figure 9 Wiring Diagram, perform the electrical connection of C/A B2L153 to connector P/N D38999/26WE99PN (P2079) and to connector P/N M24308/4-3F (PL197PY).
- 3.4 With reference to Figure 5 and Figure 9 Wiring Diagram, connect the connector P2079 to the connector J2079.
- 3.5 With reference to Figure 5 and Figure 9 Wiring Diagram, assemble the mission console UAE SAR var. C/A P/N 3G9B01L15001 (B1L150) as described in the following procedure:
 - 3.5.1 With reference to Figure 5 and Figure 9 Wiring Diagram, cut n°2 wires P/N A556A-T20 of adequate length and lay down between connector P2099 and connector PL197PX. Remove and discard shrink boot on connector P2099.
 - 3.5.2 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 9 Wiring Diagram, crimp n°2 electrical contacts P/N M39029/58-363 (P2099 side) on wires by means of proper crimping tool.
 - 3.5.3 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 9 Wiring Diagram, mark wires as U7100A20-G-ME and U7099A20-G-ME by means of marker sleeves.
 - 3.5.4 With reference to Figure 5 and Figure 9 Wiring Diagram, cut n°1 wire P/N A556A-T22 of adequate length and lay it down between connector P2099 and connector PL197PY.
 - 3.5.5 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 9 Wiring Diagram, crimp n°1 electrical contact P/N M39029/58-363 (P2099 side) and n°1 electrical contact P/N M39029/64-369 (PL197PY side) on wire by means of proper crimping tool.
 - 3.5.6 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 9 Wiring Diagram, mark wire as U7098A22-G-ME by means of marker sleeves.

- 3.5.7 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and Figure 5 and Figure 9 Wiring Diagram, mark the so obtained cable assembly as B1L150 by means of marker sleeves.
- 3.6 With reference to Figure 5, lay down and secure the C/A B1L150 by means of existing hardware and lacing cords.
- NOTE**
- Place an identification tag on cables before remove them from the connector P2099.
- 3.7 With reference to Figure 9 Wiring Diagram, remove all cables from connector P2099 and put the shrink boot P/N 202K132-25-0 on them.
- 3.8 With reference to Figure 5 View A and View B and Figure 9 Wiring Diagram, and perform the electrical connection of C/A B1L150 to connector P2099, connector PL197PY and connector P/N PT06E-12-4S(SR) (PL197PX).
- 3.9 With reference to Figure 5 View A, remove the plate assy P/N 999-0500-85-19 and the plate assy P/N 999-0500-85-213 from the mission console.
- 3.10 In accordance with AMP DM 39-D-23-63-01-00A-720A-K and with reference to Figure 5 View A, install the DLC50N control panel P/N 8714395003.
- 3.11 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 5 View A, apply decal P/N ED300PL197 on the DLC50N control panel P/N 8714395003.
- 3.12 With reference to Figure 5 View A, install the blank panel P/N 999-0500-85-137 and the blank panel P/N 999-0500-85-261.
- 3.13 Perform a pin-to-pin continuity check of all previously performed electrical connections.
4. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figures 5 and 6 and Figure 11 Wiring Diagram, gain access to the area affected by the installation and perform the installation of the utility CB panel RH retromod P/N 3G2460P01312 as described in the following procedure:
- 4.1 In accordance to the applicable steps of AMP DM 39-A-24-91-01-00A-520A-A, open the circuit breaker panel.
- 4.2 With reference to Figure 6 View B, remove and replace the grommet P/N MS35489-14 from the O/H panel RH side with the grommet P/N MS35489-16.
- 4.3 With reference to Figure 6 View A, remove the existing illuminated NVIS panel AUX breaker P/N 3G2490L01065 from the breaker panel assy P/N 3G5315A60731.

- 4.4 With reference to Figure 6 View A and Figure 7 Detail E, remove the plug P/N 999-5001-10-220 and install the circuit breaker P/N MS3320-5 (CB578) in the indicated position on the breaker panel assy P/N 3G5315A60731 by means of the locking ring P/N AW001YC01RED.
- 4.5 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 7 Detail E, apply the decal P/N ED300CB578 next to the CB578 on the breaker panel assy P/N 3G5315A60731.
- 4.6 With reference to Figure 6 View A and Figure 7 Detail E, remove the plug P/N 999-5001-10-220 and install the circuit breaker P/N MS3320-1 (CB429) in the indicated position on the breaker panel assy P/N 3G5315A60731.
- 4.7 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 7 Detail E, apply decal P/N ED300CB429 next to the CB429 on the breaker panel assy P/N 3G5315A60731.
- 4.8 With reference to Figure 7 View D, install the bus bar P/N 999-8001-73-211 (W41A) by means of screw P/N MS35207-262 washer P/N NAS1149D0332J and nut P/N MS21043-3.
- 4.9 With reference to Figure 7 View D, remove n°2 screws P/N MS51957-41 and install n°2 screws P/N MS51957-42 on the CB578 and CB429.
- 4.10 With reference to Figures 5 and 6 and Figure 11 Wiring Diagram, assemble the cable assy P/N 3G9E01C30202 (E1C302) as described in the following procedure:
 - 4.10.1 With reference to Figure 6 and in accordance to the applicable steps of AMP DM 39-A-24-91-01-00A-520A-A, open the O/H panel.
 - 4.10.2 With reference to Figure 7 and Figure 11 Wiring Diagram, cut an adequate length of wire P/N A556A-T16 and lay it down between CB229 and bus bar W41A.
 - 4.10.3 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 11 Wiring Diagram, crimp n°1 terminal lug P/N MS25036-107 (CB229 side) and n°1 terminal lug P/N MS25036-108 (W41A side) on wire by means of crimping tool.
 - 4.10.4 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 11 Wiring Diagram, mark wire as P407-16 by means of marker sleeves.
 - 4.10.5 With reference to Figures 5 and 6 and Figure 11 Wiring Diagram, cut an adequate length of wire P/N A556A-T20 and lay it down between CB429 and connector PL1J2.
 - 4.10.6 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 11 Wiring Diagram, crimp n°1 terminal lug

- P/N MS25036-149 (CB429 side) and n°1 electrical contact P/N M39029/56-351 (PL1J2 side) on wire by means of crimping tool.
- 4.10.7 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 11 Wiring Diagram, mark wire as P408-20 by means of marker sleeves.
 - 4.10.8 With reference to Figure 7 View C and Detail E and Figure 11 Wiring Diagram, cut an adequate length of wire P/N A556A-T16 and lay it down between CB578 and connector PL1J7.
 - 4.10.9 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 11 Wiring Diagram, crimp n°1 terminal lug P/N MS25036-153 (CB578 side) and n°1 electrical contact P/N M39029/56-352 (PL1J7 side) on wire by means of proper crimping tool.
 - 4.10.10 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 11 Wiring Diagram, mark wire as P409-16 by means of marker sleeves.
 - 4.10.11 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and Figure 11 Wiring Diagram, mark the cable assembly so obtained as E1C302 by means of marker sleeves.
- 4.11 With reference to Figures 5 and 6, lay down and secure the C/A E1C302 by means of existing hardware and lacing cords.
 - 4.12 With reference to Figures 5 View A, remove the screw P/N NAS1190E3P5AK.
 - 4.13 With reference to Figures 5 View A, install the clamp P/N AW001CB05H on the C/A E1C302 by means of the screw P/N NAS1190E3P14AK and the spacer P/N NAS43DD3-30N.
 - 4.14 With reference to Figures 5 and 6 and Figure 11 Wiring Diagram perform the electrical connection of C/A E1C302 to connector PL1J7, connector PL1J2, circuit breaker CB429, circuit breaker CB578, bus bar W41A and circuit breaker CB229.
 - 4.15 With reference to Figure 6 View A, install the new illuminated NVIS panel AUX breaker P/N 3G2490L05351 on the breaker panel assy P/N 3G5315A60731 by means of existing hardware.
 - 4.16 Perform a pin-to-pin continuity check of all the electrical connections made.
 - 4.17 In accordance to the applicable steps of AMP DM 39-A-24-91-01-00A-720A-A, close the circuit breaker panel.
- 5. In accordance with AMP DM 39-D-23-63-00-00A-369A-K, perform a bonding check of the installed equipment.
 - 6. In accordance with AMP DM 39-D-23-63-00-00A-320A-K perform an operational test.

NOTE

Perform following Step 7 if signal problems have been found during the operational test.

7. In accordance with AMP DM 39-D-23-63-00-00A-340A-K perform a functional test.
8. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
9. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.
10. Gain access to My Communications section on [Leonardo Customer Portal](#) and compile the "Service - Technical Bulletin Application".

As an alternative, send the attached compliance form to the following mail box:

engineering.support.lhd@leonardo.com

and (for North, Central and South America) also to:

AWPC.Engineering.Support@leonardocompany.us

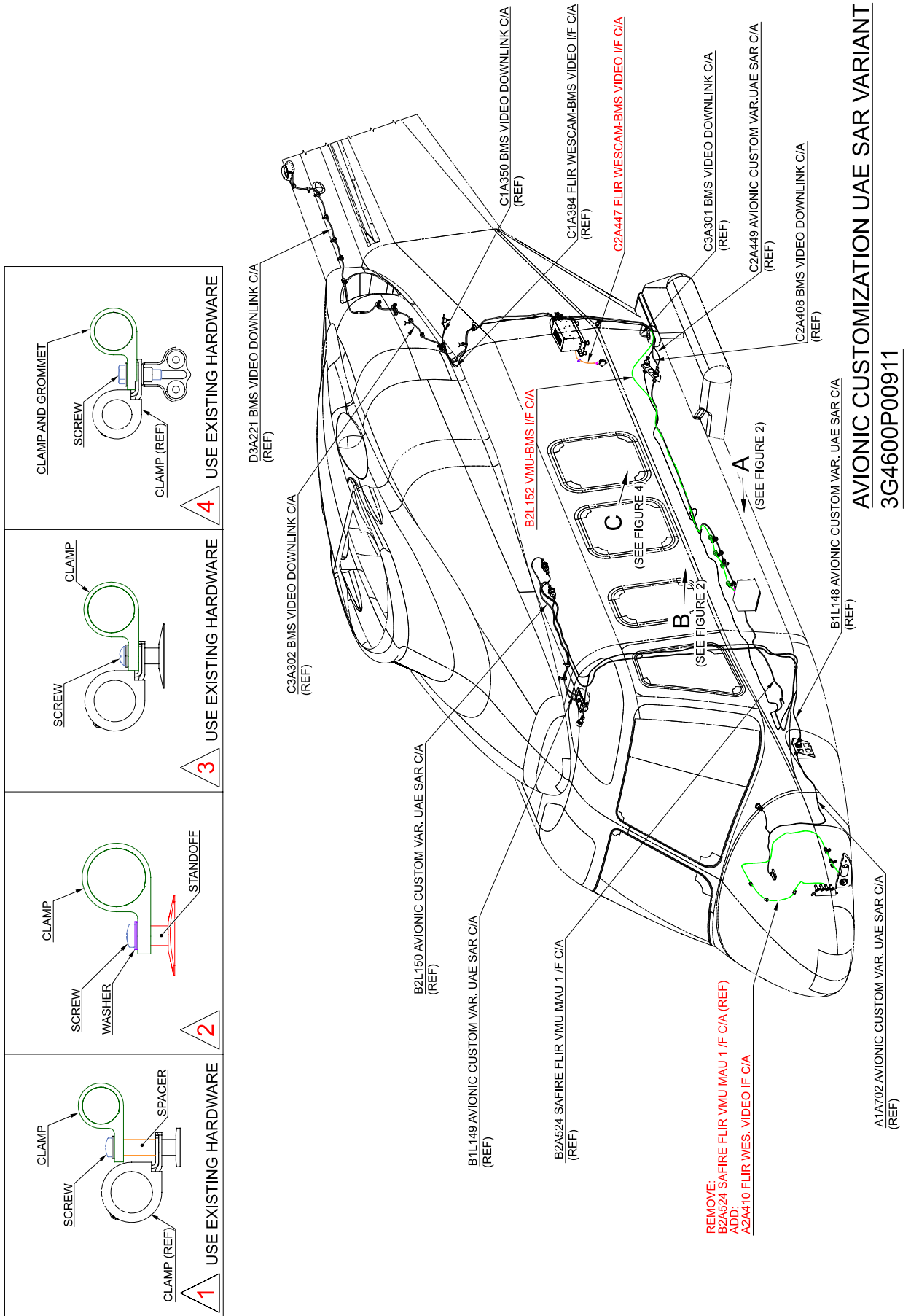
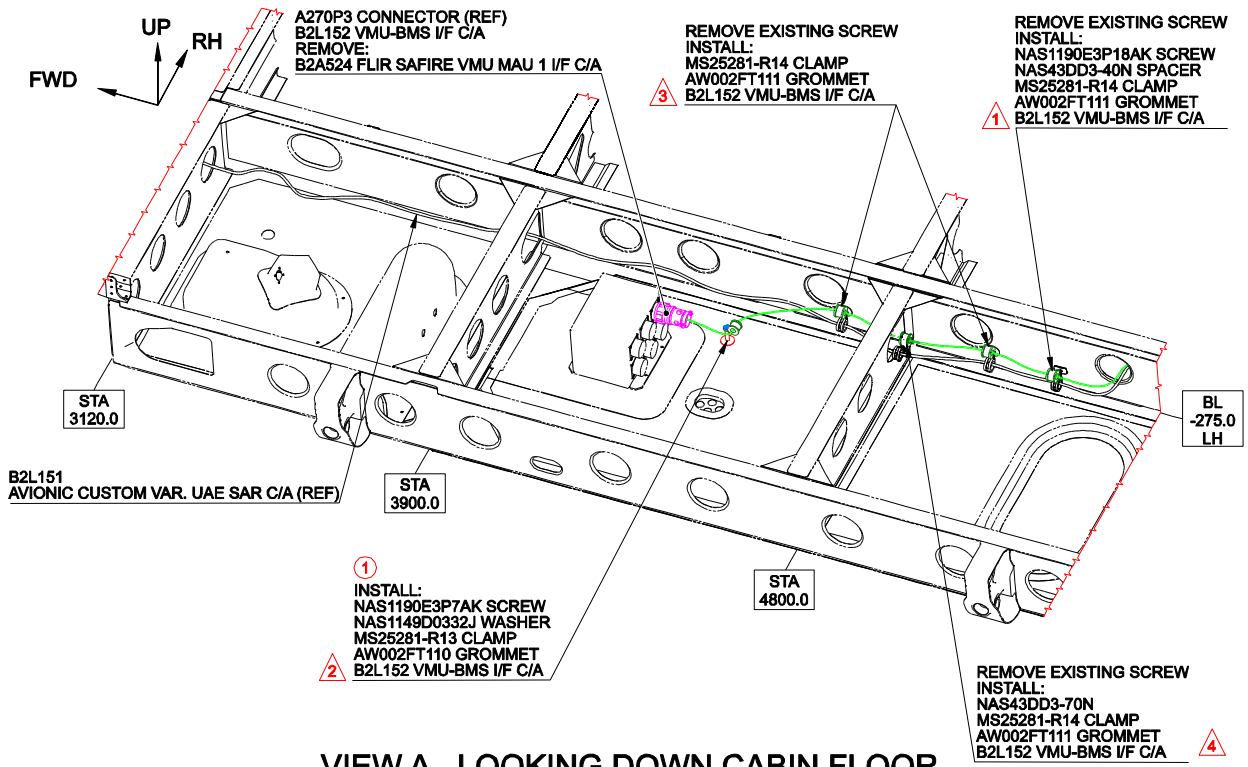


Figure 1



VIEW A - LOOKING DOWN CABIN FLOOR

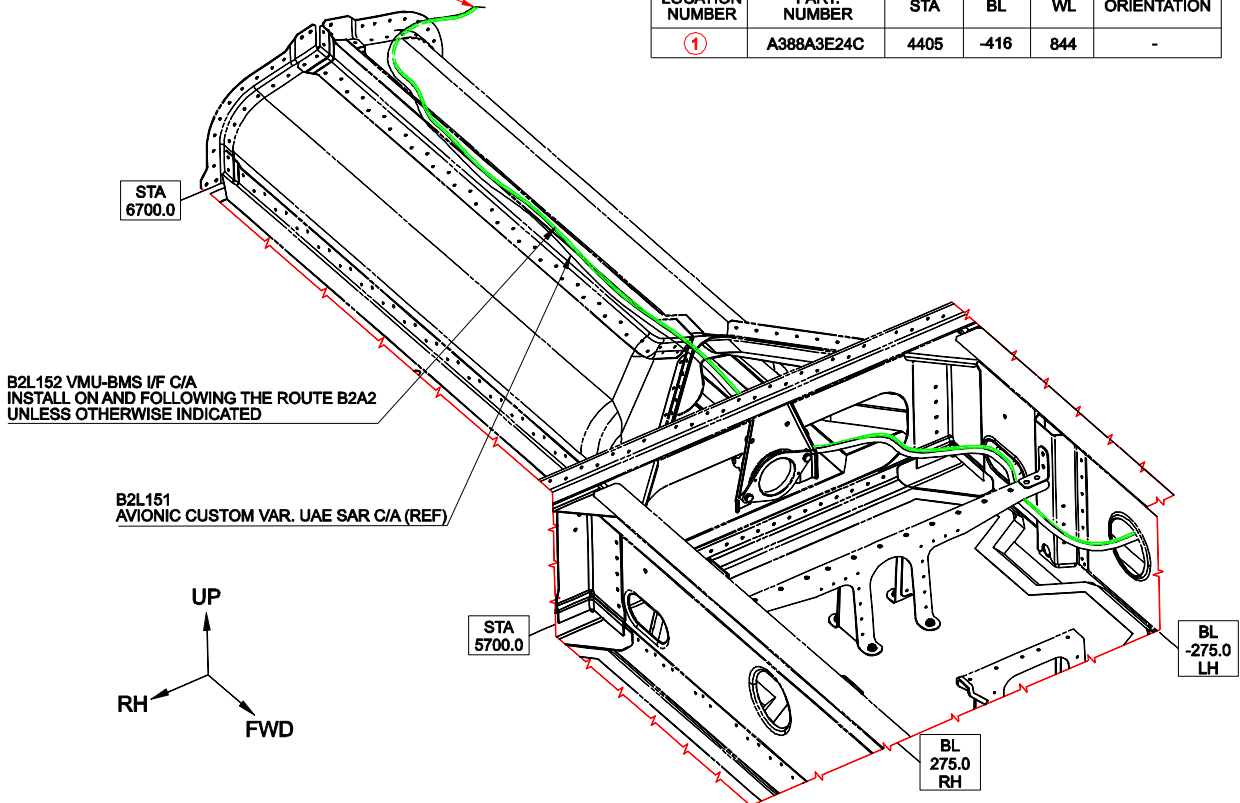
(REFER TO FIGURE 1)
LH SIDE

PARTS OMITTED FOR BETTER CLARITY PURPOSE

CONTINUE ON
FIGURE 4

INSTALL ELECTRICAL SUPPORT REPORTED IN TABLE BELOW:

LOCATION NUMBER	PART. NUMBER	STA	BL	WL	ORIENTATION
1	A388A3E24C	4405	-416	844	-

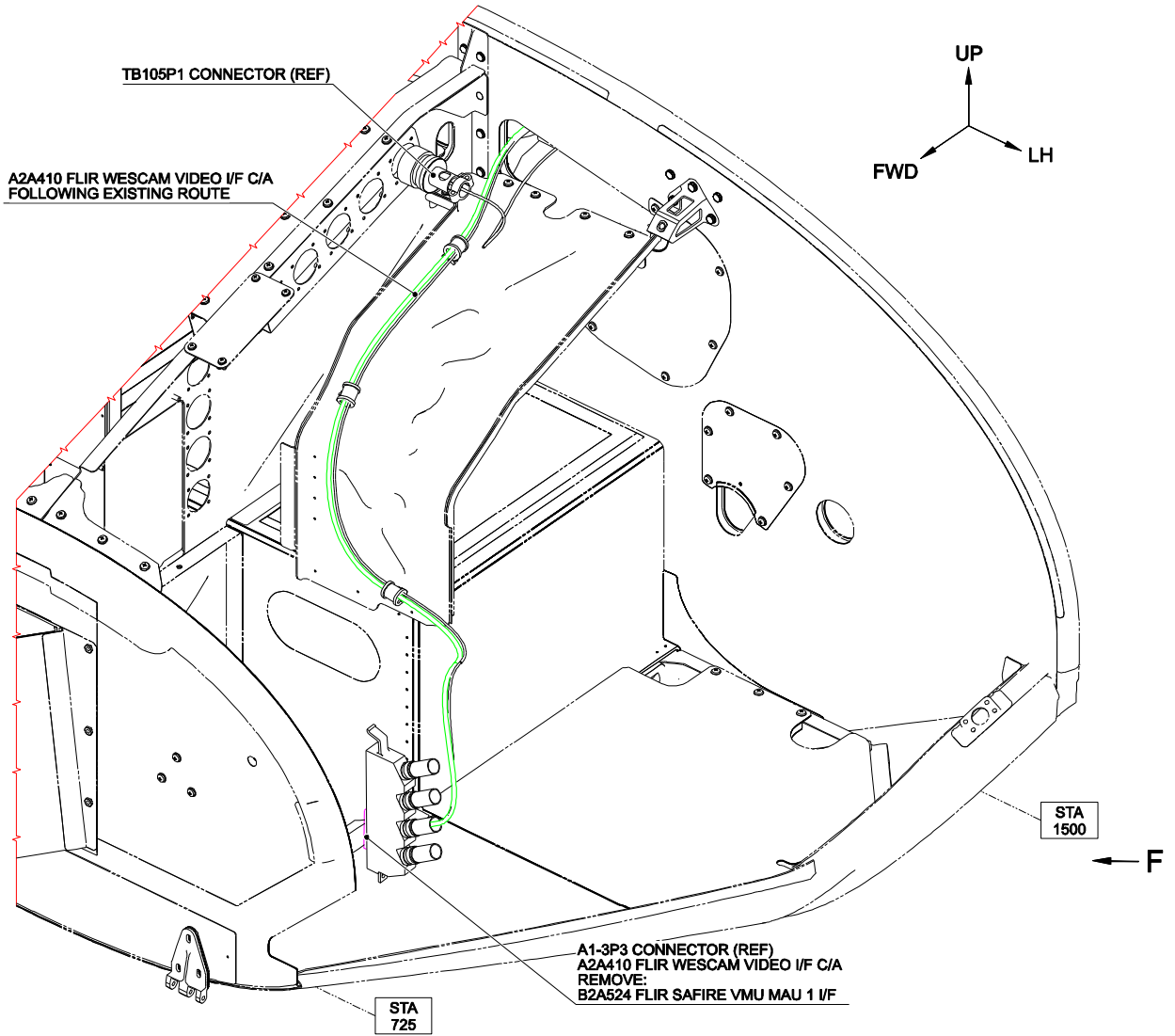


VIEW B - LOOKING DOWN CABIN FLOOR TUNNEL AREA

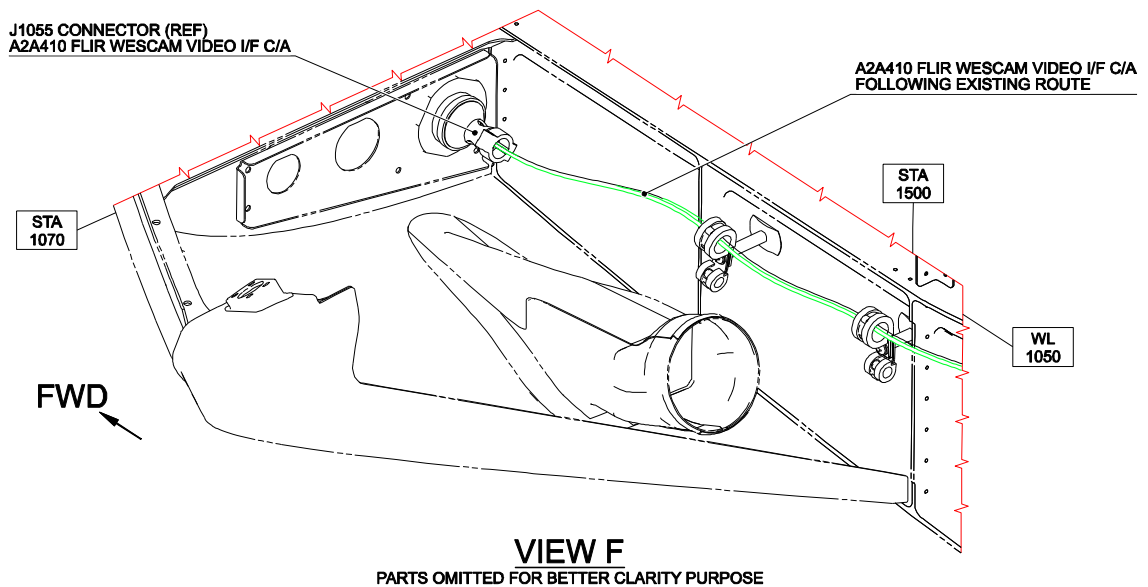
(REFER TO FIGURE 1)
LH SIDE

PARTS OMITTED FOR BETTER CLARITY PURPOSE

Figure 2



VIEW LOOKING NOSE LH SIDE
PARTS OMITTED FOR BETTER CLARITY PURPOSE

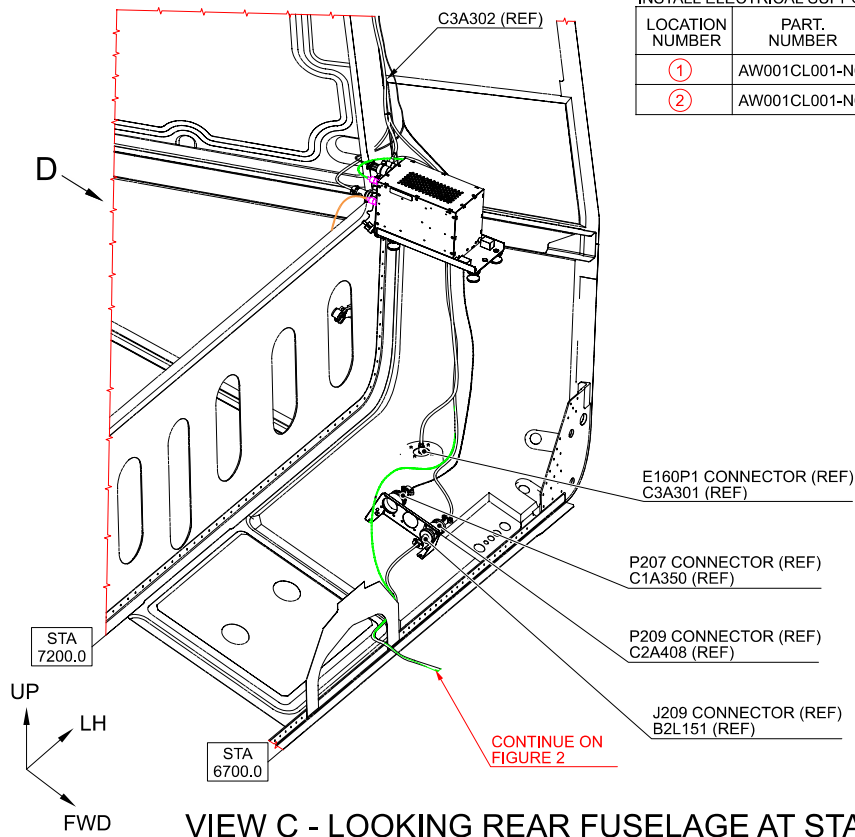


VIEW F
PARTS OMITTED FOR BETTER CLARITY PURPOSE

Figure 3

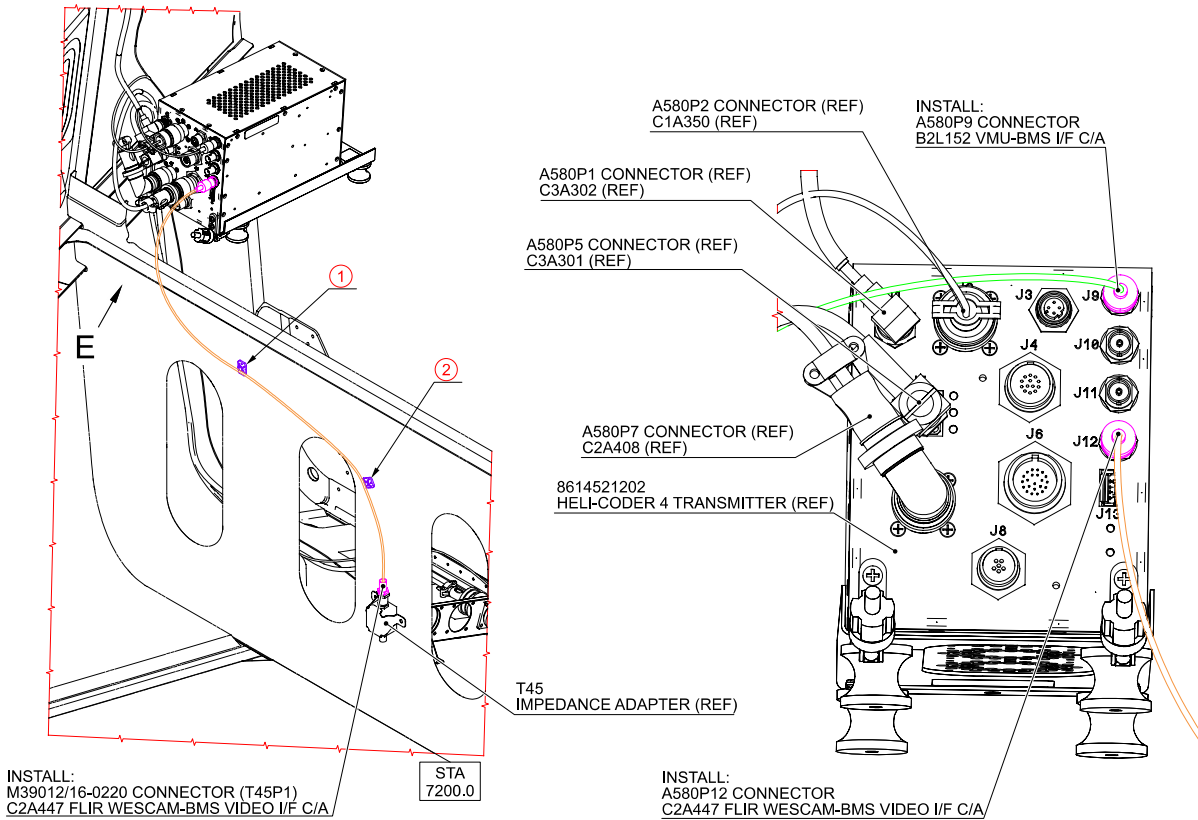
INSTALL ELECTRICAL SUPPORT REPORTED IN TABLE BELOW:

LOCATION NUMBER	PART. NUMBER	STA	BL	WL	ORIENTATION
①	AW001CL001-N6	7200	-623	1472.5	0°
②	AW001CL001-N6	7200	-385.5	1403.5	0°



VIEW C - LOOKING REAR FUSELAGE AT STA 7200

(REFER TO FIGURE 1)
PARTS OMITTED FOR BETTER CLARITY PURPOSE



VIEW D

PARTS OMITTED FOR BETTER CLARITY PURPOSE

VIEW E

PARTS OMITTED FOR BETTER CLARITY PURPOSE

Figure 4

S.B. N°139-606 OPTIONAL
DATE: September 11, 2024
REVISION: /

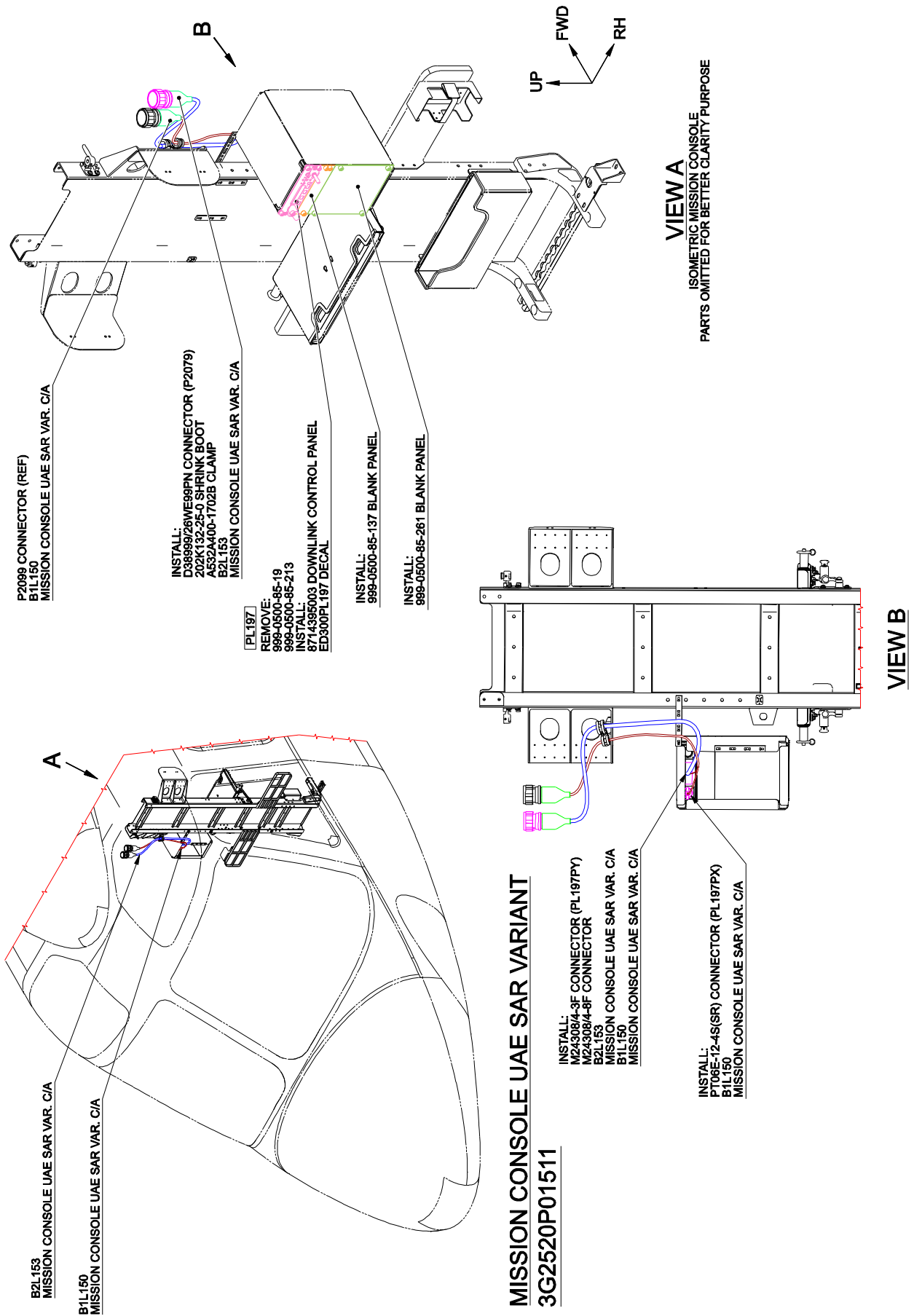
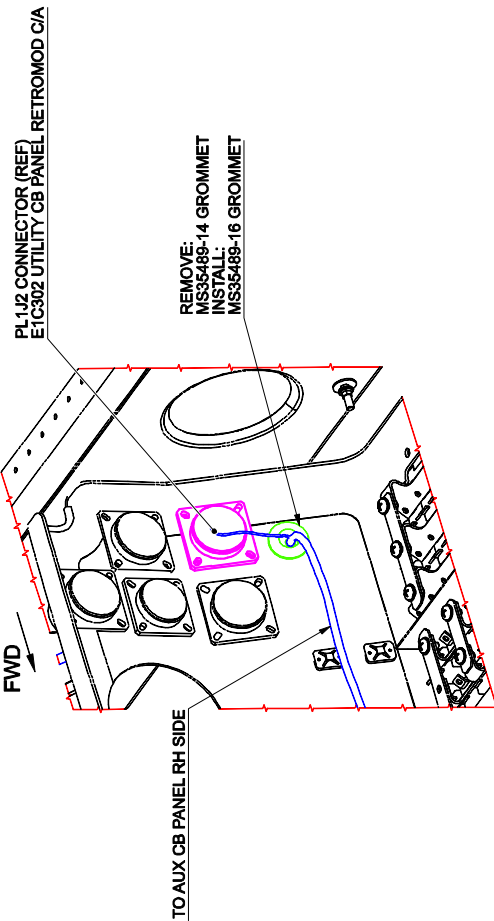
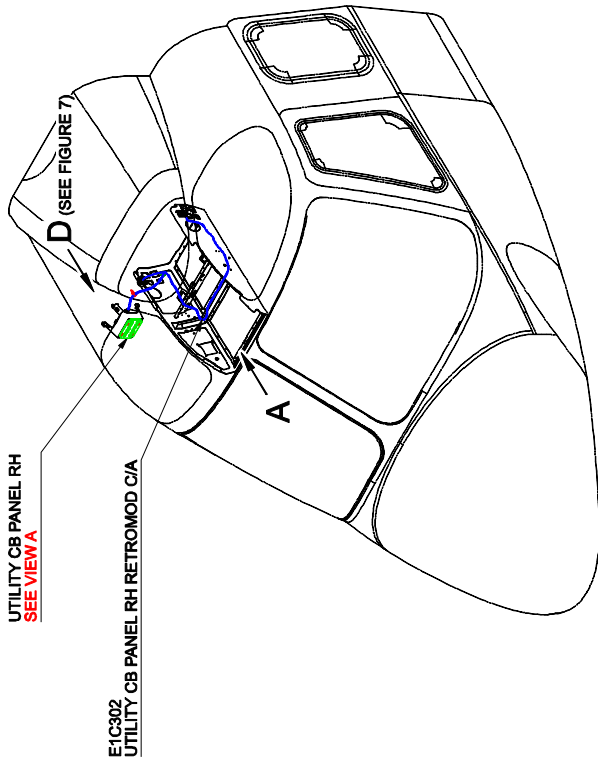
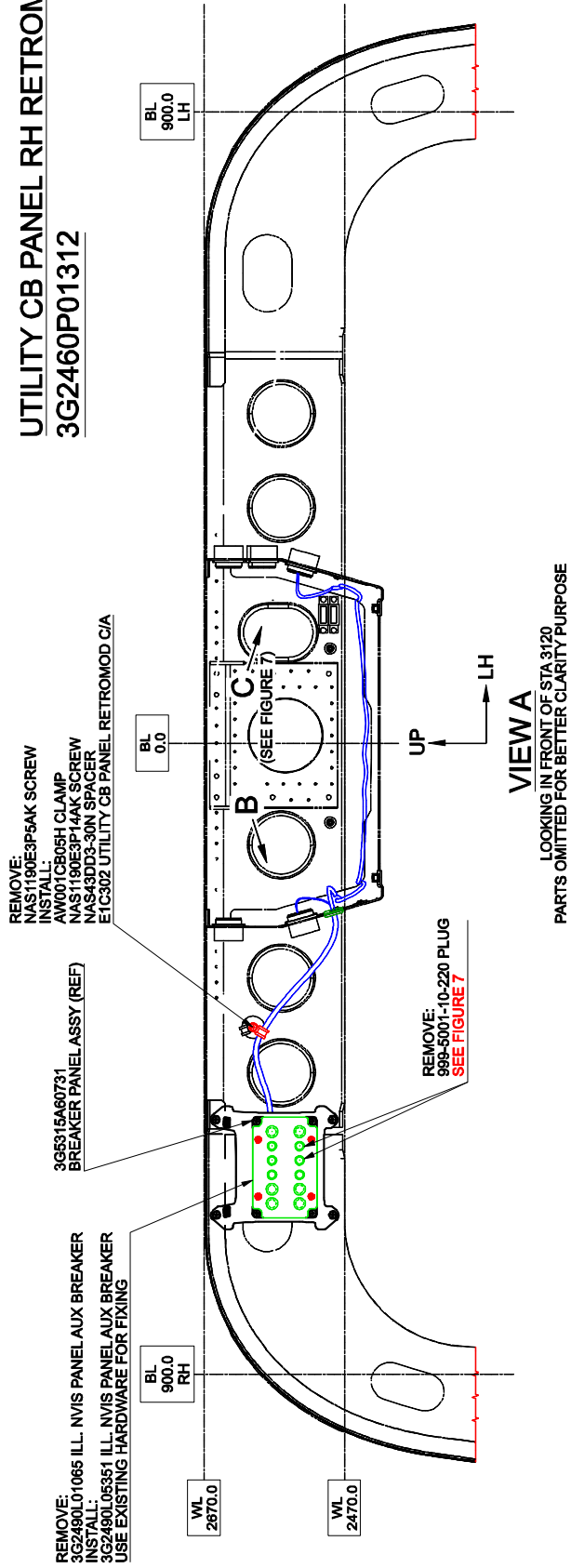


Figure 5



VIEW B
LOOKING O/H PANEL RH CUT-OFF CONNECTORS

**UTILITY CB PANEL RH RETROMOD
3G2460P01312**



VIEW A
LOOKING IN FRONT OF STA 3120
PARTS OMITTED FOR BETTER CLARITY PURPOSE

Figure 6

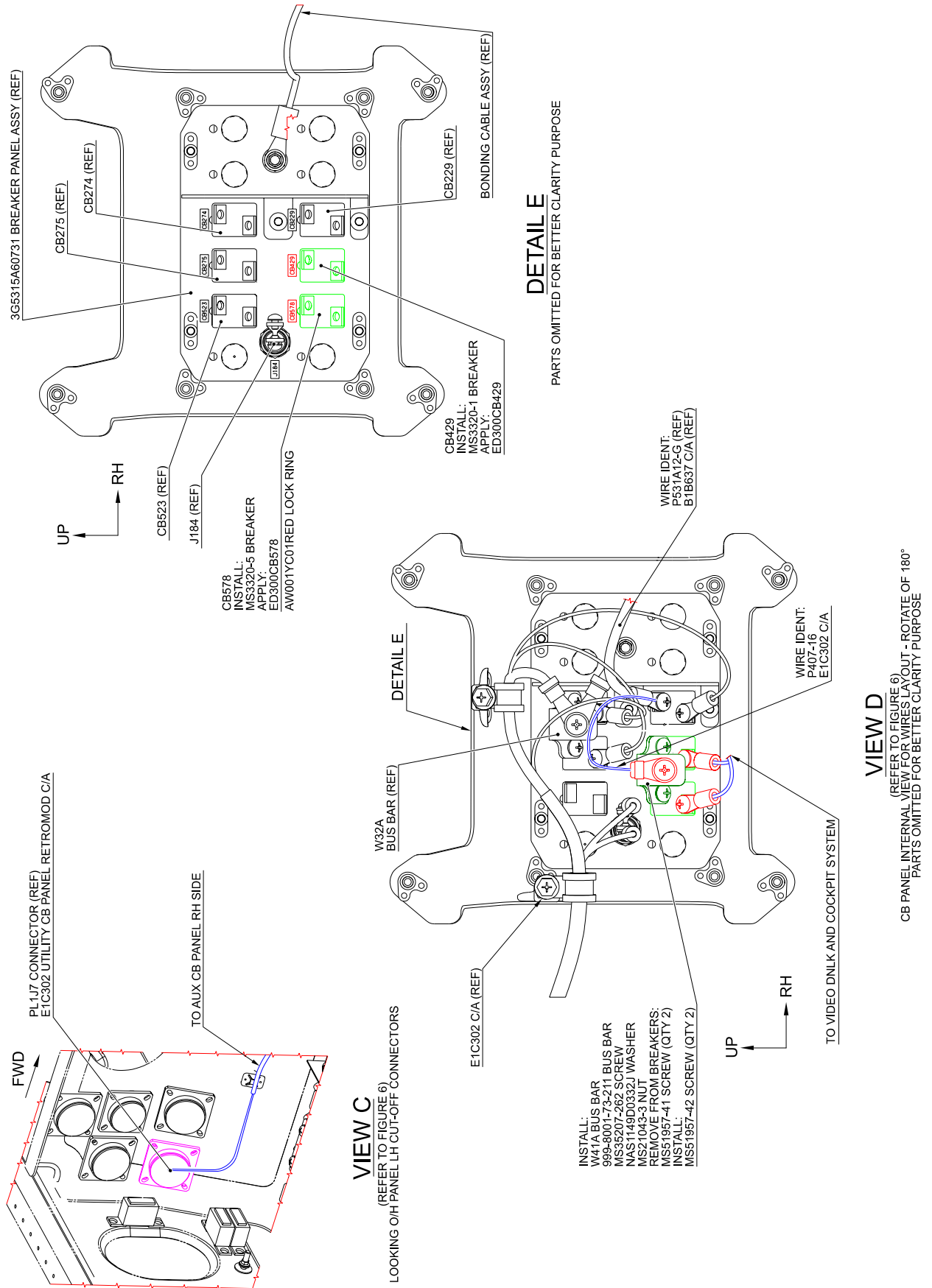
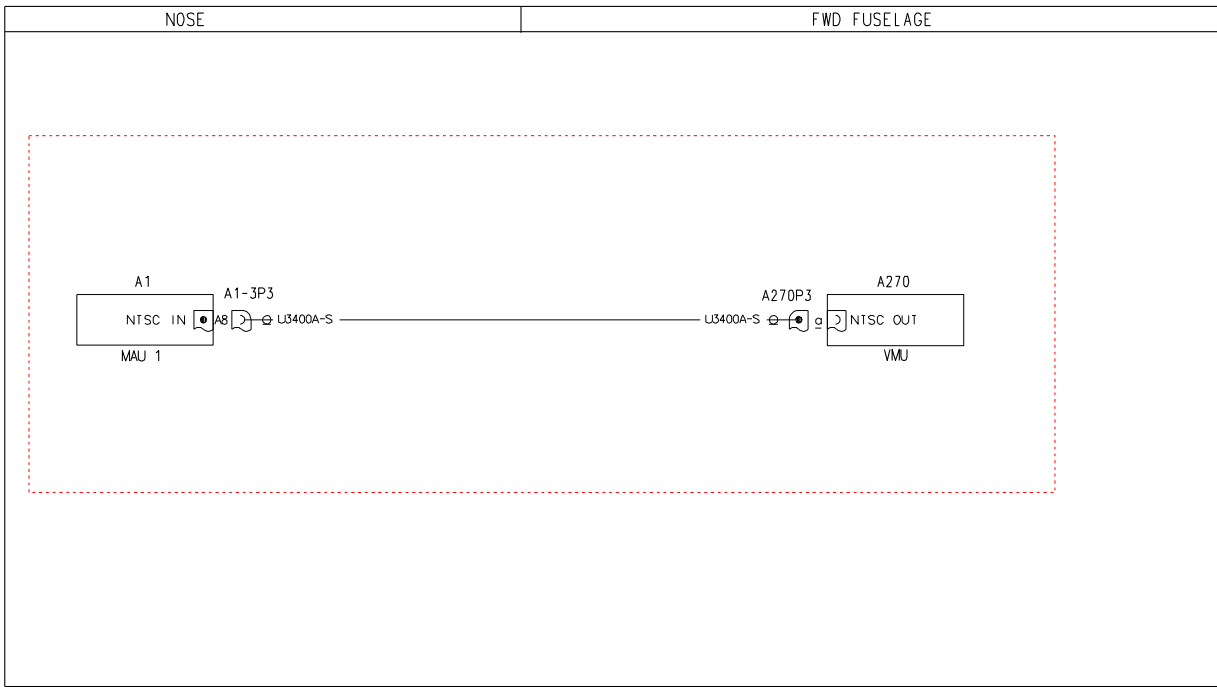


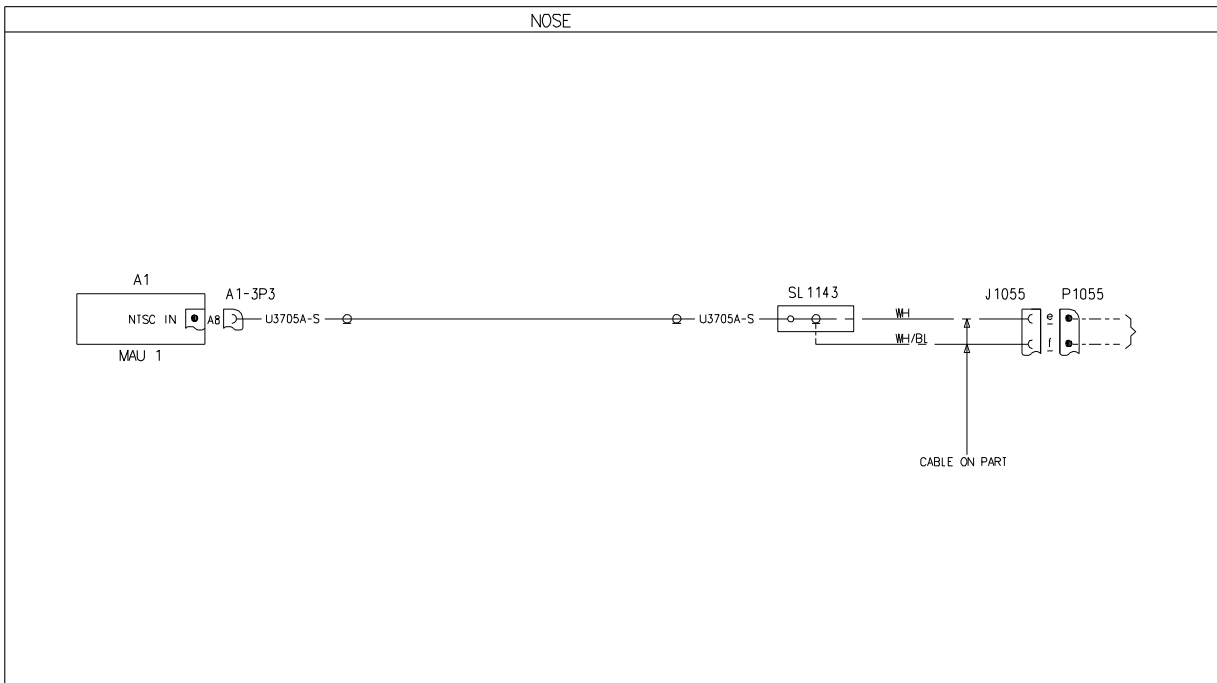
Figure 7



FUNCTIONAL NOTES

ALL CABLES ARE IN LOOM B2A524 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE M17-94RG179 UNLESS SPECIFIED

3G9310W05111
WIRING DIAGRAM FLIR SAFIRE VMU MAU 1 I/F
SHEET 1



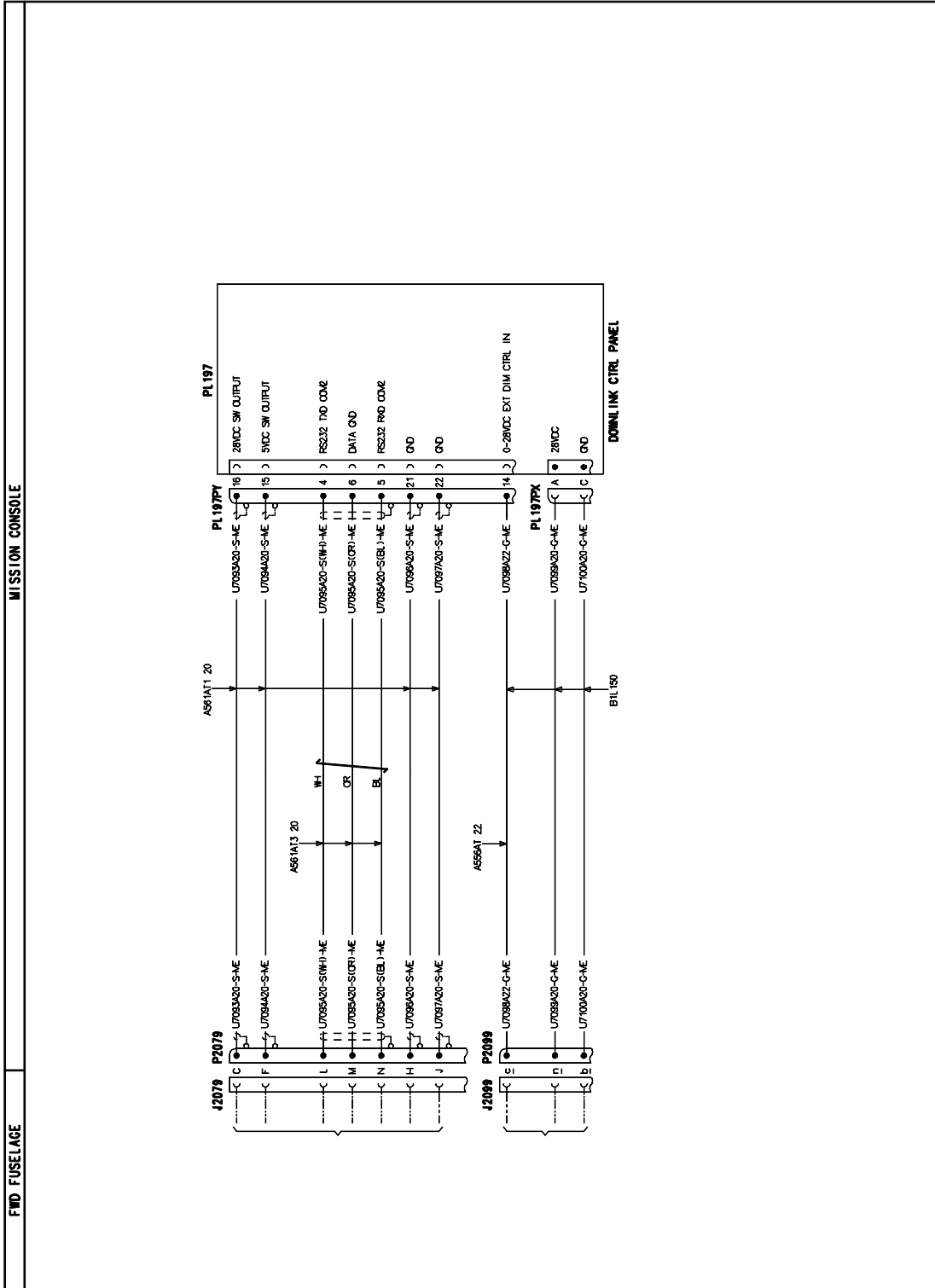
FUNCTIONAL NOTES

ALL CABLES ARE IN LOOM A2A410 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE M17-94RG179 UNLESS SPECIFIED

3G9310W07311
WIRING DIAGRAM FLIR WESCAM VIDEO I/F
SHEET 1

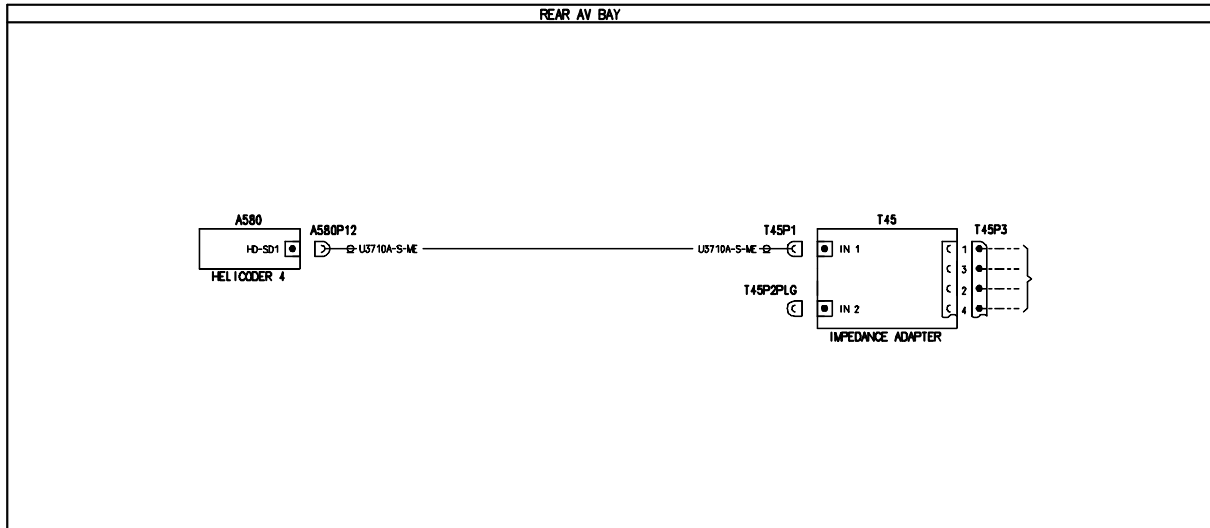
Figure 8

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FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM B2L153 UNLESS SPECIFIED.
ALL CABLES ARE OF TYPE AS66AT 20 UNLESS SPECIFIED.

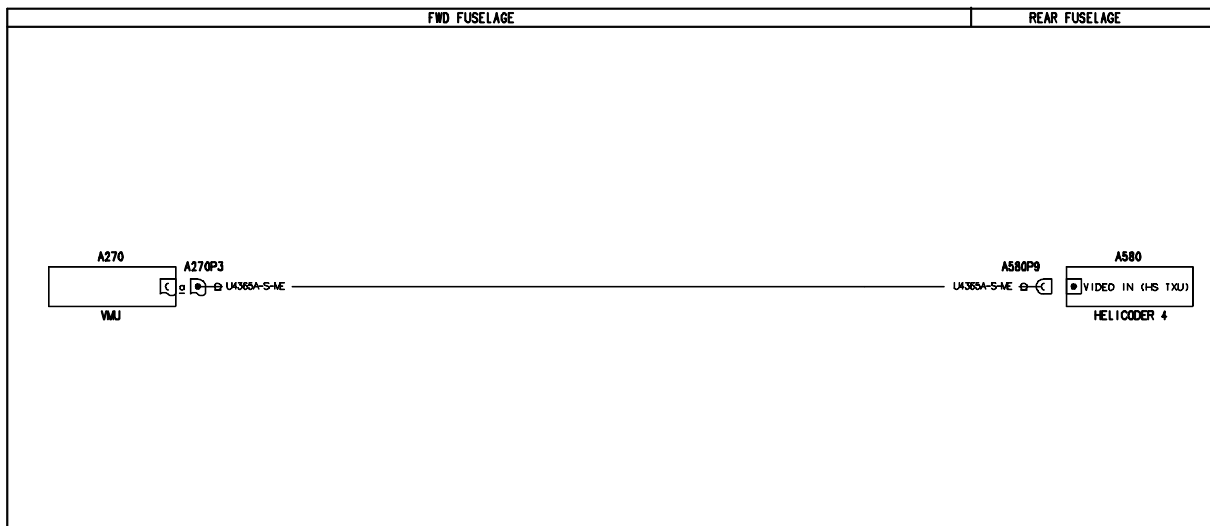
Figure 9



FUNCTIONAL NOTES

ALL CABLES ARE IN LOOM C2447 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE M17-94R6170 UNLESS SPECIFIED

3G9310W32511
WIRING DIAGRAM FLIR WESCAM - BMS VIDEO I/F
SHEET 1



FUNCTIONAL NOTES

ALL CABLES ARE IN LOOM B2152 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE M17-94R6170 UNLESS SPECIFIED

3G9310W32611
WIRING DIAGRAM VMU - BMS I/F
SHEET 1

Figure 10

S.B. N°139-606 OPTIONAL
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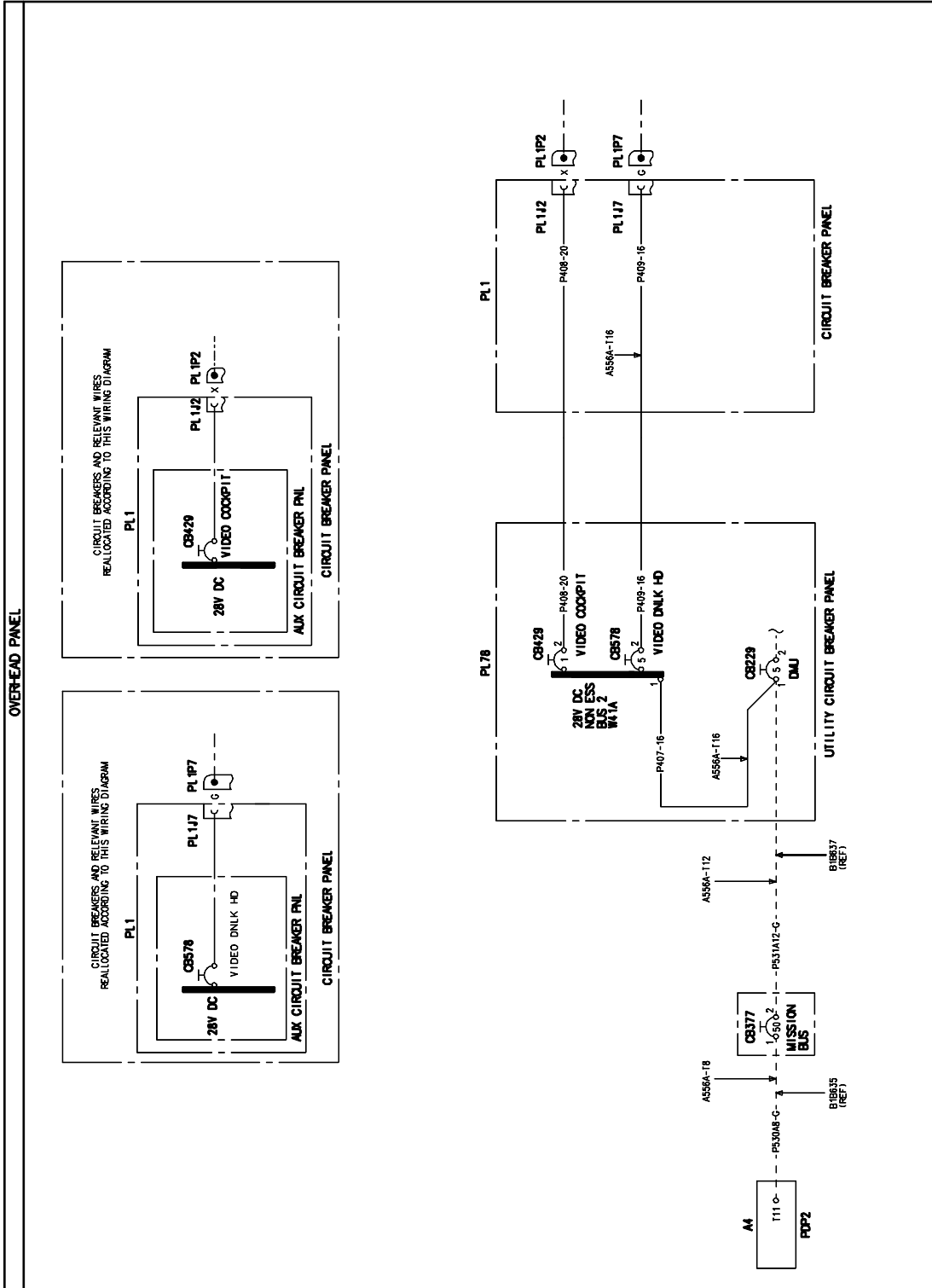


Figure 11

<p>Please send to the following address:</p> <p>LEONARDO S.p.A. CUSTOMER SUPPORT & SERVICES - ITALY</p> <p>PRODUCT SUPPORT ENGINEERING & LICENSES DEPT. Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) - ITALY Tel.: +39 0331 225036 Fax: +39 0331 225988</p>	SERVICE BULLETIN COMPLIANCE FORM			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:				
Information:				
<p>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.</p>				