Leonardo S.p.A.
Via Giovanni Agusta, 520
21017 Cascina Costa di Samarate (VA) Italy
Tel.: +39 0331 229111 - Fax: +39 0331 229605/222595

AgustaWestland Products

SERVICE BULLETIN

OPTIONAL

N° 139-561

DATE: February 20, 2019

REV. : A September 30, 2024

TITLE

ATA 93 – VIDEO CUSTOMIZATION AND CB PANEL REPLACEMENT

REVISION LOG

The Revision A of this Service Bulletin cancels and supersedes all the previous issues.

If the first issue of this Service Bulletin has been already complied with, implementation of present Rev. A is NOT required.

Revision A is issued to:

extend the effectivity of this Service Bulletin to AW139 S/N 31764, S/N 31766, S/N 31791 and S/N 31796.

1. PLANNING INFORMATION

A. EFFECTIVITY

Part I: AW139 helicopters S/N 31764, S/N 31766, S/N 31781 and S/N 31782.

Part II: AW139 helicopters S/N 31764 and S/N 31766.

Part III: AW139 helicopters S/N 31764, S/N 31766, S/N 31781 and S/N 31782.

Part IV: AW139 helicopters S/N 31791 and S/N 31796.

Part V: AW139 helicopters S/N 31764, S/N 31766, S/N 31781, S/N 31782, S/N 31791 and S/N 31796.

B. COMPLIANCE

At Customer's option.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued in order to provide the necessary instruction on how to perform the video customization and CB panel replacement on helicopters S/N 31764, S/N 31766, S/N 31781, S/N 31782, S/N 31791 and 31796.

LH issued this SB for the following reason:

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

E. DESCRIPTION

Modifications introduced are the following:

- Part I provides all necessary instructions on how to perform the AUX CB panel retro modification P/N 3G2460P01016. This retromod allows the replacement of the illuminated NVIS panel switch and illuminated NVIS panel AUX.
- Part II provides all necessary instructions on how to perform the 2ND anticollision LT NVG MIL VAR P/N 3G3320P00411.

- Part III provides all necessary instructions on how to perform the utility CB panel RH installation P/N 3G2460A03813.
- Part IV provides all necessary instructions on how to perform the replacement of the illuminated NVIS utility breaker panel and the installation of the DVAR HD circuit breaker.
- Part V provides all necessary instructions on how to perform the video interface Pakistan Air Force variant P/N 3G9310P02511. This variant allows the installation of cable assemblies to allow the communication between DVAR and FLIR systems.

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 the following MMH are deemed necessary:

Part I: approximately ninety (90) MMH;

Part II: approximately eighty (80) MMH;

Part III: approximately seventy (70) MMH;

Part IV: approximately twenty-four (24) MMH;

Part V: approximately forty (40) MMH.

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

PART I

WEIGHT (Kg)	-0.107	
	ARM (mm)	**MOMENT (Kgmm)**
LONGITUDINAL BALANCE	3199	-342.293
LATERAL BALANCE	550	-58.85

PART II

WEIGHT (Kg)	1.0	
	ARM (mm)	**MOMENT (Kgmm)**
LONGITUDINAL BALANCE	13520	13520
LATERAL BALANCE	-30	-30

PART III

WEIGHT (Kg)	1.1	
	ARM (mm)	**MOMENT (Kgmm)**
LONGITUDINAL BALANCE	3131	3444.1
LATERAL BALANCE	397	436.7

PART IV

WEIGHT (Kg)	0.19	
	ARM (mm)	**MOMENT (Kgmm)**
LONGITUDINAL BALANCE	3055	580.5
LATERAL BALANCE	605	115.0

PART V

WEIGHT (Kg)	0.47	
	ARM (mm)	**MOMENT (Kgmm)**
LONGITUDINAL BALANCE	3422	1608.34
LATERAL BALANCE	-662	-311.14

I. REFERENCES

I.1 PUBLICATIONS

Following Data Modules refer to AMP:

DATA MODULE		DESCRIPTION	PART
DM01	39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance.	I, II, III, IV, V
DM02	39-A-06-41-00-00A-010A-A	Access doors and panels - General data.	I, II, III, IV, V
DM03	39-A-11-00-01-00A-720A-A	Decal - Install procedure.	I, III, IV, V

DATA MODULE		DESCRIPTION	PART
DM04	39-A-20-10-01-00A-259A-A	Ground connections - Other procedures to protect surfaces	I
DM05	39-A-20-10-08-00A-622A-A	Electrical contacts - Crimp.	I, II, IV
DM06	39-A-20-10-18-00A-691A-A	Electrical wires and cables - Marking.	I, II, IV
DM07	39-A-24-91-04-00A-920A-K	Integrally lighted panel - Replacement	I
DM08	39-A-24-93-01-00A-921A-K	Integrally lighted panel - Replacement	IV
DM09	39-A-25-81-06-00A-520A-A	Right aft lining installation - Remove procedure	III
DM10	39-A-25-81-06-00A-720A-A	Right aft lining installation - Install procedure	III

I.2 ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
CB	Circuit Breaker
CNSL	Console
DM	Data Module
DMU	Data Management Unit
DOA	Design Organization Approval
DVAR	Digital Video Audio Recorder
EASA	European Aviation Safety Agency
FH	Flight Hours
FLIR	Forward Looking Infra-Red
LHD	Leonardo Helicopters
MC	Mission Console
MMH	Maintenance Man Hours
NVIS	Night Vision Imaging System
NVG	Night Vision Goggles
RH	Right Hand

I.3 ANNEX

N.A.

J. PUBLICATIONS AFFECTED

N.A.

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

A.1 PARTS

PART I

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL NOTE	LOG P/N
1	**3G2460P01016**		**CB PANEL RETRO MODIFICATION**	**REF**	**.**	**-**
2	3G2490L04252		Illuminated NVIS Panel AUX Breaker (NVG)	1	..	139-561L1
3	3G2490V00959		Illuminated NVIS Panel Elec Switch (NVG)	1	..	139-561L1
4	**3G9E01C29703**		**CB Panel Retromod C/A (E1C297)**	**REF**	**..**	**-**
5	A556A-T20		Electrical wire	8 m	...	139-561L1
6	M39029/1-101		Electrical contact	5	...	139-561L1
7	M39029/58-363		Electrical contact	4	...	139-561L1
8	M81824/1-2		Electrical splice	1	...	139-561L1
9	**3G9E01C29805**		**CB Panel Retromod C/A (E1C298)**	**REF**	**..**	**-**
10	A556A-T16		Electrical wire	1 m	...	139-561L1
11	A556A-T20		Electrical wire	30 m	...	139-561L1
12	A523A-A02		Electrical contact	6	...	139-561L1
13	M39029/101-553		Electrical contact	10	...	139-561L1
14	AW001YD03		Diode assembly	2	...	139-561L1
15	M12883/52-002		Relay socket	2	...	139-561L1
16	M39029/56-351		Electrical contact	12	...	139-561L1
17	M81824/1-2		Electrical splice	5	...	139-561L1
18	MS25036-108		Terminal lug	1	...	139-561L1
19	MS25036-149		Terminal lug	3	...	139-561L1
20	MS25036-153		Terminal lug	1	...	139-561L1
21	AW010FP220	999-5001-10-220 or A196A437B	Plug	1	..	139-561L1
22	ED300CB201		Decal	1	..	139-561L1
23	ED300CB361		Decal	1	..	139-561L1
24	ED300CB465		Decal	1	..	139-561L1
25	ED300K365		Decal	1	..	139-561L1
26	ED300K366		Decal	1	..	139-561L1
27	ED300S135		Decal	1	..	139-561L1
28	M12883/53-001		Relay socket track	1	..	139-561L1
29	M220-E4N003	M220E4N003	Relay	2	..	139-561L1
30	MS24693-S50		Screw	2	..	139-561L1
31	A635A01	112TW1-1	Switch	1	..	139-561L1
32	**3G5310A52211**		**STRUCTURAL PROVISION AUX CB PANEL**	**REF**	**..**	**-**
33	MS20426AD3-7		Rivet	0.1 kg	...	139-561L1
34	MS21069L08		Anchor nut	2	...	139-561L1
35	A578A02-9		Marker sleeve	100	.	139-561L1

PART II

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
36	**3G3320P00411**		**2ND ANTICOLLISION LT NVG MIL VAR**	**REF**	**.**		**-**
37	3G3340V00951		Anticollision Light RED/IR (NVG)	1	..		139-561L6
38	3G9A01A63001		2ND Anticoll LT NVG MIL VAR C/A (A1A630)	1	..		139-561L6
39	3G9B01B89901		2ND Anticoll LT NVG MIL VAR (B1B899)	1	..		139-561L6
40	3G9B01L03501		2ND Anticoll LT NVG MIL VAR C/A (B1L35)	1	..		139-561L6
41	3G9C01B32301		2ND Anticoll LT NVG MIL VAR C/A (C1B323)	1	..		139-561L6
42	A388A3E18C		Standoff	1	..		139-561L6
43	AW001CB03H		Clamp	1	..		139-561L6
44	AW001CL001-N6		Support	1	..		139-561L6
45	NAS1149D0332J		Washer	1	..		139-561L6
46	NAS1190E3P5AK		Screw	1	..		139-561L6

PART III

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
47	**3G2460A03813**		**UTILITY CB PANEL RH INSTALLATION**	**REF**	**.**		**-**
48	1035685-22		Bus Bar,Circuit Breaker Panel	1	..		139-561L2
49	3G2490L04065		Illuminated NVIS Panel Utility Breaker	1	..		139-561L2
50	3G5315A60731		Breakers Panel Assy	1	..		139-561L2
51	3G9B11B09531		Utility CB Panel C/A (B1B95)	1	..	(1)	139-561L2
52	3G9B11B16712	3G9B11B16712A1R	Utility CB Panel RH C/A (B1B167)	1	..	(2)	139-561L2
53	3G9B11B16813		Utility CB Panel RH C/A (B1B168)	1	..	(3)	139-561L2
54	3G9E01C24323		Utility CB Panel RH C/A (E1C243)	1	..		139-561L2
55	A363A01		Ground Stud	1	..		139-561L2
56	A366A3E16C		Stud	1	..		139-561L2
57	A584A02		Nipple, Electrical Terminal	2	..		139-561L2
58	A584A03		Nipple, Electrical Terminal	1	..		139-561L2
59	A601A2B17	A601A217	Bonding And Earthing Cable Assy	1	..		139-561L2
60	AN525-10R7		Screw	4	..		139-561L2
61	AS44417-B12		Grommet	9	..		139-561L2
62	AW001CB05H		Clamp	3	..		139-561L2
63	AW001CL001-N6		Support	2	..		139-561L2
64	AW001YC01RED		Locking Ring	3	..		139-561L2
65	ED300CB229		Decal	1	..		139-561L2
66	ED300CB377		Decal	1	..		139-561L2
67	ED300CB427		Decal	1	..		139-561L2
68	ED300CB580		Decal	1	..		139-561L2
69	ED300GS120		Decal	1	..		139-561L2
70	ED300J184		Decal	1	..		139-561L2
71	MS21043-08		Nut	1	..		139-561L2
72	MS21043-3		Nut	1	..		139-561L2
73	MS24693-S52		Screw	1	..		139-561L2
74	30-072-1	MS25244-50	Circuit Breaker	1	..		139-561L2
75	MS3320-1		Circuit Breaker	2	..		139-561L2

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
76	MS3320-5		Circuit Breaker	1	..		139-561L2
77	MS35206-242		Screw	1	..		139-561L2
78	MS35338-138		Lock Washer	1	..		139-561L2
79	MS35338-42		Lock Washer	2	..		139-561L2
80	MS35489-16		Grommet	1	..		139-561L2
81	MS35650-302		Nut	1	..		139-561L2
82	MS90335-6		Connector	1	..		139-561L2
83	NAS1149D0316K		Washer	4	..		139-561L2
84	NAS1149D0332J		Washer	1	..		139-561L2
85	NAS1149D0332K		Washer	1	..		139-561L2
86	NAS1149DN832H		Washer	3	..		139-561L2
87	NAS1190E3P14AK		Screw	1	..		139-561L2
88	NAS1802-3-12		Screw	1	..		139-561L2
89	NAS1802-3-7		Screw	1	..		139-561L2
90	NAS43DD3-25N		Spacer	2	..		139-561L2
91	NAS43DD3-30N		Spacer	1	..		139-561L2
92	MS20426AD3-3A		Rivet	0.1 kg	..		139-561L2
93	**3G5310A29012**		**UTILITY BREAKERS PANEL STRUCTURAL PROVISION**	**REF**	**..**		**-**
94	3G5306P13913	3G5320P01057	Cover STA 3120 RH Upper	1	...		139-561L2
95	3G5315A60431		Support Assy	1	...		139-561L2
96	3G5315A68151		Bracket	1	...		139-561L2
97	3G5316A52451		Bracket	1	...		139-561L2
98	MS20426AD3-7	NAS1399C3-7	Rivet	0.1 kg	...		139-561L2
99	MS20426AD4-7		Rivet	0.1 kg	...		139-561L2
100	MS21073L3		Nut Plate	4	...		139-561L2
101	NAS1097AD4-7	NAS9302B-4-03, NAS9302B-4-02	Rivet	20	...		139-561L2
102	NAS1149D0316K		Washer	4	...		139-561L2
103	NAS1802-3-10		Screw	1	...		139-561L2
104	NAS1802-3-9		Screw	3	...		139-561L2
105	**3G5310A63413**		**MISSION BUS RH STRUCTURAL PROVISION**	**REF**	**..**		**-**
106	3G5315A68151		Bracket	1	...		139-561L2
107	NAS9302B-4-02		Rivet	4	...		139-561L2

PART IV

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
108	**3G2460P01311**		**UTILITY CB PANEL RH RETRO MOD**	**REF**	**.**		**-**
109	3G2490L04065		Illuminated NVIS panel utility breaker	1	..		139-561L7
110	ED300CB580		Decal	1	..		139-561L7
111	MS3320-1		Circuit breaker	1	..		139-561L7
112	AW001YC01RED		Locking ring	1	..		139-561L7
113	3G9B11B09531		Utility CB Panel C/A (B1B95)	1	..	(1)	139-561L7
114	A584A03		Nipple, electrical terminal	1	..		139-561L7
115	MS35206-242		Screw	1	..		139-561L7
116	3G9E01C30201		Utility CB panel RH retromod C/A (E1C302)	1	..	(8)	139-561L7

PART V

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
117	**3G9310P02511**		**VIDEO INTERFACE PAKISTAN AIR FORCE VARIANT**	**REF**	.		-
118	3G9B02L02401		MC PAF Variant C/A (B2L24)	1	..	(4)	139-561L3
119	3G9B02L02501	3G9310P02511A1R	DVAR - MC I/F C/A (B2L25)	1	..		139-561L3 139-561L4
120	3G9B02L02601		DVAR - MC I/F C/A (B2L26)	1	..		139-561L3 139-561L4
121	3G9B02L02701		FLIR - DVAR I/F C/A (B2L27)	1	..		139-561L3 139-561L4
122	3G9B02L02801		FLIR - DVAR I/F C/A (B2L28)	1	..		139-561L3 139-561L4
123	3G9B02L02901		MC PAF Variant C/A (B2L29)	1	..	(5)	139-561L4
124	M39029/77-428		Electrical contact	1	.		139-561L3 139-561L4
125	**3G9B01B99501**		**AVIONIC CUSTOMIZATION C/A (B1B995)**	**REF**	.		-
126	A556A-T20		Electrical wire	1.5 m	..		139-561L5
127	M81824/1-2		Splice	2	..		139-561L5
128	M39029/58-363		Electrical contact	2			139-561L5
129	**3G9B01L10301**		**AVIONIC CUSTOMIZATION C/A (B1L103)**	**REF**	.		-
130	A556A-T20		Electrical wire	6 m	..		139-561L5
131	A523A-A03		Electrical contact	2	..		139-561L5
132	M39029/56-351		Electrical contact	2	..		139-561L5
133	TBD		Configuration file	1	.	(6)	-

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
134	MMM-A-132 Type 1, Class 3 199-05-002 Type II, Class 2	Adhesive EA934NA (C057)	AR	(7)	III
135	MMM-A-132, Type 2, Class II 199-05-002, Type I, Class 2	Adhesive EA9309.3NA (C021)	AR	(7)	II, III
136	Commercial	Hexcel fabrics 20749-1200 Twill 2-2 (EC9 68X3)	AR	(7)	III
137	199-50-002 Type I	Araldit resin LY5138-2	AR	(7)	III
138	A582A or EN6049-006	Nomex sleeve	AR	(7)	I, II, III, IV
139	A236A	Edging	AR	(7)	II, V

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
139-561L1	1		I
139-561L6	1		II
139-561L2	1		III
139-561L7	1		IV
139-561L3	1	(4)	V
139-561L4	1	(5)	
139-561L5	1		
Configuration File	1	(6)	

NOTES

(1) Cable assy B1B637 will be supplied as part of cable assy B1B95

(2) Cable assy B1B399 will be supplied as part of cable assy B1B167.

(3) Cable assy B1B401 will be supplied as part of cable assy B1B168.

(4) To be ordered only if mission console is installed on helicopter.

(5) To be ordered only if mission console is NOT installed on helicopter.

(6) This P/N is not defined because it is depending on helicopter configuration. Customer must contact AW139 Product Support Engineering engineeting.support.lhd@leonardo.com to request the correct P/N at least three months in advance from the scheduled application of this Service Bulletin.

(7) Item to be procured as local supply.

(8) The C/A P/N 3G9E01C30201 (E1C302) can be provided as loose items not assembled. Below, the list of the parts:

P/N	DESCRIPTION	Q.TY
A556A-T16	Electrical wire	2.5 m
MS25036-153	Terminal lug	1
M39029/56-352	Electrical contact	1

B. SPECIAL TOOLS

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

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.

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 Figures 1 thru 7, gain access to the area affected by the installation and perform CB panel retro modification P/N 3G2460P01016 as described in the following procedure:
   2.1 With reference to Figure 7, perform structural provision AUX CB panel P/N 3G5310A52211 as described in the following procedure:

2.1.1 In accordance with AMP 39-A-20-10-01-00A-259A-A and with reference to Figure 7 Detail C, prepare indicated contact surfaces to assure the correct electrical bonding.

2.1.2 With reference to Figure 7, install n°2 anchor nut P/N MS21069L08 by means of n°4 rivets P/N MS20426AD3-7.

2.2 In accordance with AMP DM 39-A-24-91-04-00A-920A-K and with reference to Figure 6 View F-F, remove and discard the illuminated NVIS panel switch P/N 3G2490V00556 and the illuminated NVIS panel AUX breaker P/N 3G2490L03761 and retain existing hardware for later reuse.

2.3 With reference to Figure 3 Detail E (WAS), remove and discard NON ESS BUS 2 W12B.

2.4 With reference to Figure 3 Detail E (WAS), remove MAIN BUS 2 W22F and retain for later reuse.

2.5 With reference to Figures 5, 6 and Figure 24 wiring diagram, remove the electrical connections between:

- connector PL1J6 and circuit breaker CB229;
- connector PL1J7and circuit breaker CB427;
- connector PL1J6 and connector PL1J500;
- connector PL1J10 and connector PL1J500;
- connector PL1J10 and circuit breaker CB6;
- connector PL1J10 and terminal board TB502;
- terminal board TB511 and 28VDC NON ESS BUS 2 W12B;
- connector PL1P500 and external lights anti-collision switch S231.

2.6 With reference to Figures 2, remove and discard the switch P/N MS27722-23 and the decal P/N ED300S231 and install the switch P/N A635A01.

2.7 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 2, install decal P/N ED300S135 in an area adjacent to previously installed switch.

2.8 With reference to Figures 4 Detail D (WAS), remove circuit breakers CB427 P/N MS3320-1, CB229 P/N MS3320-5, retain for later reuse (Refer to Part III).

2.9 With reference to Figures 4 Detail D (WAS), remove and discard decals relative to circuit breakers CB427 and CB229.

2.10 With reference to Figures 4 Detail D (WAS), remove circuit breakers CB361, CB465, retain for later reuse.

2.11 With reference to Figures 4 Detail D (WAS), remove and discard decals P/N ED300CB361 and P/N ED300CB465.

2.12 With reference to Figures 4 Detail D (BECOMES), reinstall in the new positions circuit breakers CB361 and CB465.

2.13 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 4 Detail D (BECOMES), install decals P/N ED300CB361 and P/N ED300CB465 in an area adjacent to previously installed circuit breakers.

2.14 With reference to Figures 4 Detail D (BECOMES), install n°1 circuit breaker P/N MS3320-5 (CB201).

2.15 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 4 Detail D (BECOMES), install decal P/N ED300CB201 in an area adjacent to previously installed circuit breaker.

2.16 With reference to Figure 4 Detail D (BECOMES), install n°1 plug P/N 999-5001-10-220 to close open position of the breakers panel assy.

2.17 With reference to Figure 3 Detail E (BECOMES), reinstall in the new position the MAIN BUS 2 W22F by means of previously removed hardware.

NOTE

Use braided tubing P/N EN6049-006 where cable assemblies chafing or contact with structure may occur.

2.18 With reference to Figure 2 and Figure 25 wiring diagram, assemble the video CB panel retromod C/A P/N 3G9E01C29703 (E1C297) as described in the following procedure:

2.18.1 With reference to Figure 2 and Figure 25 wiring diagram, cut n°6 wires P/N A556A-T20 of adequate length and lay them down between connector PL1P500, external light anti-collision switch S135, splice SP548 (P/N M81824/1-2), following the existing routes as shown.

2.18.2 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 25 wiring diagram, crimp on wires n°5 electrical contacts P/N M39029/1-101 (S135 side) and n°4 electrical contacts P/N M39029/58-363 (PL1P500 side) by means of proper crimping tool.

2.18.3 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 25 wiring diagram, mark wires as indicated by means of marker sleeves P/N A578A02-9.

2.18.4 With reference to Figure 25 wiring diagram, perform the connections of the wires marked as 2006-20, 2007-20 and 2008-20.

2.19 With reference to Figures 2 thru 6 and Figure 25 wiring diagram, assemble the video CB panel retromod C/A P/N 3G9E01C29805 (E1C298) as described in the following procedure:

2.19.1 With reference to Figure 2 thru 6 and Figure 25 wiring diagram, cut n°23 wires P/N A556A-T20 of adequate length and lay them down between connectors PL1J500, PL1J10, PL1J6, terminal board TB505, splices SP5003, SP5008, SP5009, SP544, SP545, circuit breakers CB201 and CB6, socket relays K365P1 and K366P1, diodes CR511 and CR512, following the existing routes as shown.

2.19.2 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 25 wiring diagram, crimp on wires n°6 electrical contacts P/N A523A-A02 (CR511, CR512 and TB505 sides), n°10 electrical contacts P/N A523A-B02 (K365P1, K366P1 sides), n°12 electrical contacts P/N M39029/56-351 (PL1J500, PL1J10, PL1J6 sides) and n°3 terminal lugs P/N MS25036-149 (CB201 and CB6 sides) by means of proper crimping tool.

2.19.3 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 25 wiring diagram, mark wires as indicated by means of marker sleeves P/N A578A02-9.

2.19.4 With reference to Figure 25 wiring diagram, perform the electrical connections of the wires marked as 885-20, 884-20 and 886-20 by means of the splice SP5008 P/N M81824/1-2.

2.19.5 With reference to Figure 25 wiring diagram, perform the electrical connections of the wires marked as 853-20, 852-20 and 851-20 by means of the splice SP5003 P/N M81824/1-2.

2.19.6 With reference to Figure 25 wiring diagram, perform the electrical connections of the wires marked as 745-20N, 880-20 and 887-20 by means of the splice SP5009 P/N M81824/1-2.

2.19.7 With reference to Figure 25 wiring diagram, perform the electrical connections of the wires marked as 881-20, 861-20 and 883-20 by means of the splice SP544 P/N M81824/1-2.

2.19.8 With reference to Figure 25 wiring diagram, perform the electrical connections of the wires marked as 750-20N, 882-20 and 888-20 by means of the splice SP545 P/N M81824/1-2.

2.19.9 With reference to Figure 25 wiring diagram, perform the electrical connections of the wires marked as 853-20 and 886-20 with the diode CR512 P/N AW001YD03.

2.19.10 With reference to Figure 25 wiring diagram, perform the electrical connections of the wires marked as 1051-20 and 884-20 with the diode CR511 P/N AW001YD03.

2.19.11 With reference to Figure 2 thru 6 and Figure 25 wiring diagram, cut n°1 wire P/N A556A-T16 of adequate length and lay it down between 28VDC main bus W22F and circuit breaker CB201 following the existing route as shown.

2.19.12 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 25 wiring diagram, crimp on wire n°1 terminal lug P/N MS25036-108 (W22F side), n°1 terminal lug P/N MS25036-153 (CB201 side) by means of proper crimping tool.

2.19.13 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 25 wiring diagram, mark wire as 850-16 by means of marker sleeve P/N A578A02-9.

2.20 With reference to Figure 25 wiring diagram, perform the electrical connection of C/A E1C297 to connector PL1P500 and to external light anti-collision switch S135.

2.21 With reference to Figure 25 wiring diagram, perform the electrical connection of C/A E1C298 to connectors PL1J500, PL1J10, PL1J6, terminal board TB505, 28VDC main bus W22F, circuit breakers CB201 and CB6, socket relays K365P1 and K366P1.

2.22 With reference to Figure 3 Detail K, install the relay socket track P/N M12883/53-001 by means of n°2 screws P/N MS24693-S50.

2.23 With reference to Figure 3 Detail K, install the two relay sockets of the C/A E1C298 to the previously installed socket relay track.

2.24 With reference to Figure 3 Detail K, install n°2 relays P/N M220E4N003 to the previously installed relay sockets.

2.25 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 3 Detail K, install decals P/N ED300CK365 and P/N ED300CK366 in an area adjacent to previously installed relays.

2.26 In accordance with AMP DM 39-A-24-91-04-00A-920A-K and with reference to Figure 6 View F-F, install illuminated NVIS panel switch P/N 3G2490V00959 and illuminated NVIS panel AUX breaker P/N 3G2490L04252 by means of previously removed hardware.

3. Perform a pin-to-pin continuity check of all the electrical connection made.
4. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
5. Return the helicopter to flight configuration and record for compliance with Part I of this

Service Bulletin on the helicopter logbook.

6. 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

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 Figures 40 thru 47, gain access to the area affected by the installation and perform 2ND anticollision LT NVG MIL VAR P/N 3G3320P00411 as described in the following procedure:

   2.1 With reference to Figure 42, at position n°1, install standoff P/N A388A3E18C by means of adhesive EA9309.3NA (C021) and install clamp P/N AW001CB03H by means of washer P/N NAS1149D0332J and screw P/N NAS1190E3P5AK.

   2.2 With reference to Figure 47, at position n°2, install support P/N AW001CL001-N6 by means of adhesive EA9309.3NA (C021).

   2.3 With reference to Figure 48 (WAS) wiring diagram, disconnect and stow the indicated connections of C/A C1P2 to sectioning connectors P212 AND P300.

   2.4 With reference to Figure 48 (WAS) wiring diagram, disconnect and stow the indicated connections of C/A C1P1 to sectioning connector P210 and 2ND anticollision light connector DS116P1.

NOTE

Use edging P/N A236A on metallic edges which can damage cable assemblies and where abrasion may occur.

Use braided tubing P/N EN6049 where cable assemblies chafing or contact with structure may occur.

   2.5 With reference to Figures 40 thru 47, lay down the following cable assemblies following the existing route unless otherwise indicated on the figures:

   - 2ND Anticoll LT NVG MIL VAR C/A P/N 3G9C01B32301 (C1B323);
   - 2ND Anticoll LT NVG MIL VAR C/A P/N 3G9A01A63001 (A1A630);
   - 2ND Anticoll LT NVG MIL VAR C/A P/N 3G9B01B89901 (B1B899);
   - 2ND Anticoll LT NVG MIL VAR C/A P/N 3G9B01L03501 (B1L35).

2.6 With reference to Figures 41 thru 44 and Figure 48 wiring diagram, perform the electrical connection of C/A C1B323 between splices SP3535, SP3536, SP3537 and SP3538, 2ND anticollision light connector DS116P1, sectioning connectors P212, P210 and P300. Apply cap end P/N A583A2418C (CE3053) to the wire L3306C22-G(WH) (DS116P1 side).

2.7 With reference to Figures 45 thru 47 and Figure 49 wiring diagram, perform the electrical connection of C/A A1A630 between IR external light control panel connector PL58P2 and sectioning connector P131.

2.8 With reference to Figure 41 and Figure 48 wiring diagram, perform the electrical connection of C/A B1B899 between circuit breaker panel connector PL1P10 and sectioning connector J212.

2.9 With reference to Figures 45 thru 47 and Figure 49 wiring diagram, perform the electrical connection of C/A B1L35 to sectioning connector J131. Apply cap end P/N A583A2418C (CE1389) to AUX O/H panel connector PL1P9 side.

2.10 Perform a pin-to-pin continuity check of all the electrical connection made.

2.11 With reference to Figure 44, remove anticollision light P/N 109-0740V33-101 and install anticollision Light RED/IR (NVG) P/N 3G3340V00951.

3. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).

4. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.

5. 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

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 Figures 8 thru 19, gain access to the area affected by the installation and perform utility CB panel RH installation P/N 3G2460A03813 as described in the following procedure:

   2.1 With reference to Figures 14 thru 17, perform the utility breakers panel structural provision P/N 3G5310A29012 as described in the following procedure:

   2.1.1 In accordance with the applicable steps of AMP DM 39-A-25-81-06-00A-520A-A and with reference to Figure 14 View A, remove the existing cover assy STA 3120 upper RH from the structure and retain existing hardware for later reuse.

   2.1.2 With reference to Figure 15 View B, remove the existing rivets from the structure.

   2.1.3 With reference to Figure 15 View B, drill n°4 nut plate holes Ø4.90÷5.03 in the indicated positions on the structure.

   2.1.4 With reference to Figure 15 View B, install n°4 nut plates P/N MS21073L3 by means of n°8 rivets P/N MS20426AD3-7.

   2.1.5 With reference to Figure 15 Section E-E, install the support assy P/N 3G5315A60431 by means of n°1 screw P/N NAS1802-3-10, n°3 screws P/N NAS1802-3-9 and n°4 washers P/N NAS1149D0316K.

   2.1.6 With reference to Figure 16 Section F-F, perform the indicated cut out to the panel and fill honeycomb core all around the cut out with adhesive EA934NA (C397).

   2.1.7 With reference to Figure 16, install the bracket P/N 3G5315A68151 by means of n°3 rivets P/N NAS1097AD4-7 to the RH longeron BL 800.

   2.1.8 With reference to Figure 17, perform the indicated cut out to the lower panel assy and fill honeycomb core all around the cut out with adhesive EA934NA (C397).

   2.1.9 With reference to Figure 17, apply n°2 plies of fiberglass as indicated on the cut out edges.

   2.1.10 With reference to Figure 17, install the bracket P/N 3G5316A52451 by means of n°3 rivets P/N NAS1097AD4-7 to the LH longeron BL 550.

   2.2 With reference to Figures 18 and 19, perform the mission bus RH structural provision P/N 3G5310A63413 as described in the following procedure:

2.2.1 With reference to Figure 19, perform the indicated cut out to the lower middle panel and fill honeycomb core all around the cut out with adhesive EA934NA (C397).

2.2.2 With reference to Figures 18 and 19, install the bracket P/N 3G5315A68151 by means of n°3 rivets P/N NAS9302B-4-02 to the right wall P/N 3P5333A19151.

NOTE

Following step 2.3 is applicable only to helicopters not equipped with single hoist Goodrich electrical provision P/N 4G2591A00911.

2.3 With reference to Figure 10 Detail B, at positions n°1, install n°1 stud P/N A366A3E16C by means of adhesive EA9309.3NA (C021) and install n°1 clamp P/N AW001CB05H, n°1 spacer P/N NAS43DD3-25N by means of n°1 nut P/N MS21043-3.

2.4 With reference to Figure 11, at positions n°2 and n°3, install n°2 supports P/N AW001CL001-N6 by means of adhesive EA9309.3NA (C021).

2.5 With reference to Figure 11, at position n°4, remove and discard existing screw P/N NAS1190E3P5AK and install n°1 clamp P/N AW001CB05H, n°1 spacer P/N NAS43DD3-30N by means of n°1 screw P/N NAS1190E3P14AK.

2.6 With reference to Figure 11, at position n°5, install n°1 ground stud P/N A363A01 by means of n°2 rivets P/N MS20426AD3A.

2.7 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 11, install decal P/N ED300GS120 in an area adjacent to previously installed ground stud.

2.8 With reference to Figure 12, at position n°6, remove and discard the grommet P/N MS35489-14 and install the grommet P/N MS35489-16.

2.9 With reference to Figure 13, at position n°7, install n°1 clamp P/N AW001CB05H and n°1 spacer P/N NAS43DD3-25N by means of n°1 screw P/N NAS1802-3-12 and n°1 washer P/N NAS1149D0332J.

2.10 With reference to Figure 10, install n°1 circuit breaker P/N MS25244-50.

2.11 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 10, install decal P/N ED300CB377 in an area adjacent to previously installed circuit breaker.

2.12 With reference to Figure 13, install n°1 circuit breaker P/N MS3320-5 (CB229), n°1 circuit breakers P/N MS3320-1 (CB427), n°1 circuit breakers P/N MS3320-1 (CB580).

2.13 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 13, install decals P/N ED300CB229, P/N ED300CB427 and P/N ED300CB580 in an area adjacent to previously installed circuit breakers.

2.14 With reference to Figure 13, install n°1 essential bus bar W32A P/N 1035685-22 by means of necessary screws to circuit breaker CB229 pin 1 and circuit breaker CB427 pin 1.

2.15 With reference to Figure 13, install n°1 connector MS90335-6 on the breakers panel assy.

2.16 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 13, install decal P/N ED300J184 in an area adjacent to previously installed connector.

2.17 With reference to Figure 13, install n°9 plugs P/N AS44417-B12 to close open positions of the breakers panel assy.

2.18 With reference to Figure 11, install the breakers panel assy P/N 3G5315A60731 by means of n°4 bolts P/N AN525-10R7 and n°4 washers P/N NAS1149D0316K to the support.

2.19 With reference to Figure 13 Detail D and Figure 11, connect one end of the bonding cable assy P/N A601A217 to breakers panel assy by means of one screw P/N MS24693-S52, n°3 washers P/N NAS1149DN832H, one nut P/N MS35650-302, n°2 washers P/N MS35338-42 and one nut P/N MS21043-08. Connect the other end of the bondig cable assy to ground stud GS120.

NOTE

Use braided tubing P/N A582A where cable assemblies chafing or contact with structure may occur.

2.20 With reference to Figures 8 thru 13, lay down the following cable assemblies following the existing route unless otherwise indicated on the figures:

- Utility CB panel C/A P/N 3G9B11B09531 (B1B95);
- Utility CB panel RH C/A P/N 3G9B11B16712 (B1B167);
- Utility CB panel RH C/A P/N 3G9B11B16813 (B1B168);
- Utility CB panel RH C/A P/N 3G9E01C24323 (E1C243).

2.21 With reference to Figures 9, remove and discard the nipple P/N A584A02 and existing screw from circuit breaker CB272 pin 2.

2.22 With reference to Figures 9, 13 and Figure 26 wiring diagram, perform the electrical connection of C/A B1B637 (part of B1B95) between circuit breaker CB580 terminal lug CB580-1 and circuit breaker CB272 terminal lug CB272-2 by means of n°1 screw P/N MS35206-242. Protect the electrical connection with terminal lug CB272-2 by means of n°1 nipple P/N A584A03.

2.23 With reference to Figures 9, 13 and Figure 26 wiring diagram, perform the electrical connection of C/A B1B401 (part of B1B168) between circuit breaker CB377 terminal lug CB377-2 and utility circuit breaker panel essential bus bar W32A by means of n°1 screw P/N NAS1802-3-7, n°1 washer P/N NAS1149D0332K and n°1 washer P/N MS35338-138. Protect the electrical connection with terminal lug CB377-2 by means of n°1 nipple P/N A584A02.

2.24 With reference to Figures 9, 13 and Figure 26 wiring diagram, perform the electrical connection of C/A B1B399 (part of B1B167) between circuit breaker CB377 terminal lug CB377-1 and PDP2 pin A4-T11. Protect the electrical connection with terminal lug CB377-1 by means of n°1 nipple P/N A584A02.

2.25 With reference to Figures 9, 12, 13 and Figure 26 wiring diagram, perform the electrical connection of C/A E1C243 to:

- Circuit breaker panel PL1 terminal boards TB510 pin G and TB505 pin C;
- Circuit breaker panel PL1 connectors PL1J1, PL1J6, PL1J7;
- Utility circuit breaker panel PL78 circuit breakers CB229 pin 2, CB427 pin2, CB580 pin 2;
- Utility circuit breaker panel PL78 connector J184.

2.26 With reference to Figure 11, install the illuminated NVIS panel utility breaker P/N 3G2490L04065 by means of four captive screws to the breakers panel assy.

2.27 Perform a pin-to-pin continuity check of all the electrical connections made.

2.28 In accordance with AMP DM 39-A-25-81-06-00A-720A-A and with reference to Figure 14 View A, install Cover STA 3120 RH Upper P/N 3G5306P13913 by means of previously removed hardware.

3. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
4. Return the helicopter to flight configuration and record for compliance with Part III of this Service Bulletin on the helicopter logbook.
5. 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

PART IV

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 Figures 37 and 38, gain access to the area affected by the installation and perform the utility CB panel RH retro modification P/N 3G2460P01311, as described in the following procedure:

2.1 In accordance with AMP DM 39-A-24-93-01-00A-921A-K and with reference to Figure 37, remove and discard the illuminated NVIS panel utility breaker P/N 3G2490L04059 and retain existing hardware for later reuse.

2.2 With reference to Figure 38 View A-A, install n°1 circuit breaker P/N MS3320-1 (CB580) and n°1 lock ring P/N AW001YC01RED.

2.3 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 38, install decal P/N ED300CB580 in an area adjacent to previously installed circuit breaker.

NOTE

Use braided tubing P/N A582A where cable assemblies chafing or contact with structure may occur.

2.4 With reference to Figure 37, lay down the utility CB panel C/A P/N 3G9B11B09531 (B1B95) following the existing route unless otherwise indicated on the figures.

2.5 With reference to Figure 37, remove and discard the nipple P/N A58402 and existing screw from circuit breaker CB272 pin 2.

2.6 With reference to Figures 37, 38 and Figure 39 wiring diagram, perform the electrical connection of C/A B1B637 (part of B1B95) between circuit breaker CB580 terminal lug CB580-1 and circuit breaker CB272 terminal lug CB272-2 by means of n°1 screw P/N MS35206-242. Protect the electrical connection with terminal lug CB272-2 by means of n°1 nipple P/N A584A03.

NOTE

Perform steps 2.7 thru 2.9 if C/A P/N 3G9B11B09531 (B1B95) has been supplied as loose items not assembled.

2.7 With reference to Figures 37, 38 and Figure 39 wiring diagram, cut n°1 wire P/N A556A-T16 of adequate length and lay down between circuit breaker panel PL1 connector PL1J1 and circuit breaker CB580 following the existing routes as shown. Mark

2.8 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 39 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/56-352 (PL1J1 side) and n°1 electrical contact P/N MS25036-153 (CB580 side) by means of proper crimping tool.

2.9 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 39 wiring diagram, mark wire as R413-16 by means of marker sleeve P/N A578A02-9.

2.10 With reference to Figure 39 wiring diagram, perform the electrical connection of C/A B1B95 between circuit breaker CB580 terminal lug CB580-2 and circuit breaker panel PL1 connector PL1J1 pin J.

2.11 In accordance with AMP DM 39-A-24-93-01-00A-921A-K and with reference to Figure 37, install the illuminated NVIS panel utility breaker P/N 3G2490L04065 by means of four captive screws on the breakers panel assy.

3. Perform a pin-to-pin continuity check of all the electrical connection made.
4. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
5. Return the helicopter to flight configuration and record for compliance with Part IV of this Service Bulletin on the helicopter logbook.
6. 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

PART V

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 Figures 20 thru 23, gain access to the area affected by the installation and perform video interface Pakistan Air Force variant P/N 3G9310P02511 as described in the following procedure:

NOTE

Use edging P/N A236A on metallic edges which can damage cable assemblies and where abrasion may occur.

Use braided tubing P/N EN6049 where cable assemblies chafing or contact with structure may occur.

2.1 With reference to Figures 21 thru 23, lay down the following cable assemblies following the existing route unless otherwise indicated on the figures:

- DVAR - Mission CNSL I/F C/A P/N 3G9B02L02501 (B2L25);
- DVAR - Mission CNSL I/F C/A P/N 3G9B02L02601 (B2L26);
- FLIR - DVAR I/F C/A P/N 3G9B02L02701 (B2L27);
- FLIR - DVAR I/F C/A P/N 3G9B02L02801 (B2L28).

Secure the cables by means of existing hardware and lacing cord.

NOTE

Perform step 2.2 if the mission console is installed.

2.2 With reference to Figures 21 thru 23, lay down the MC PAF Variant C/A P/N 3G9B02L02401 (B2L24).

NOTE

Perform step 2.3 if the mission console is NOT installed.

2.3 With reference to Figures 21 thru 23, lay down the MC PAF Variant C/A P/N 3G9B02L02901 (B2L29);

2.4 With reference to Figures 21, 22 and Figure 29 wiring diagram, perform the electrical connection of C/A B2L25 to video recorder CTRL PNL PL198 and to pin M of sectioning connector J2199. Use electrical contact P/N M39029/77-428 for J2199.

2.5 With reference to Figures 21, 22 and Figure 30 wiring diagram, perform the electrical connection of C/A B2L26 to video recorder CTRL PNL PL198 and to pin E of sectioning connector J2199. Use electrical contact P/N M39029/77-428 for J2199.

2.6 With reference to Figures 21, 22 and Figure 31 wiring diagram, perform the electrical connection of C/A B2L27 between video recorder CTRL PNL PL198 and pin D of sectioning connector J2199. Use electrical contact P/N M39029/77-428 for J2199.

2.7 With reference to Figures 21 thru 23 and Figure 32 wiring diagram, perform the electrical connection of C/A B2L28 to video recorder CTRL PNL PL198 and to pin Z of video mix unit A270 connector A270P3. Use electrical contact P/N M39029/77-428 for A270P3.

NOTE

Following step 2.8 is applicable only to helicopters equipped with mission console.

2.8 With reference to Figures 21, 22 and Figure 27 wiring diagram, perform the electrical connection of C/A B2L24 to sectioning connector P2199 and to mission display Siro A523 connectors A523P11, A523P4 and A523P6.

NOTE

Following steps 2.9 and 2.10 is applicable only to helicopters not equipped with mission console.

2.9 With reference to Figures 22 View B, remove protective cap P/N D38999/33W21R.

2.10 With reference to Figures 21, 22 and Figure 28 wiring diagram, perform the electrical connection of C/A B2L29 between pin M and pin D of sectioning connector P2199.

3. With reference to Figures 33, 34 and Figure 36 wiring diagram, assemble the avionic customization Pakistan C/A P/N 3G9B01B99501 (B1B995) as described in the following procedure:

3.1 With reference to Figure 36 (WAS) wiring diagram, cut the wires of C/A B1B273 near to ICS hoist operator panel connectors A93P1 and A93P2. Stow only the remaining part of the wires to the sectioning connector J116 side.

3.2 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 39 wiring diagram, mark the wires connected to ICS hoist operator panel connectors A93P1 and A93P2 as follows:

- L20P22-G becomes U7760C22-G;
- L21M22-G becomes U7761A22-G;

- L20R22-G becomes U7760D22-G;
- L21P22-G becomes U7761B22-G.

3.3 With reference to Figure 34 and Figure 36 wiring diagram, perform the electrical connection between the wires previously marked as U7760C22-G, U7760D22-G and pin 2 of the splice SP21466 P/N M81824/1-2.

3.4 With reference to Figure 34 and Figure 36 wiring diagram, perform the electrical connection between the wires previously marked as U7761A22-G, U7761B22-G and pin 2 of the splice SP21467 P/N M81824/1-2.

3.5 With reference to Figure 34 and Figure 36 wiring diagram, cut n°2 wires P/N A556A-T20 of adequate length and lay them down between splices SP21466, SP21467 and sectioning connector P203 following the existing routes. Secure the cables by means of existing hardware and lacing cord.

3.6 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 36 wiring diagram, crimp on wires n°2 electrical contacts P/N M39029/58-363 (P203 sides) by means of proper crimping tool.

3.7 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 36 wiring diagram, mark wires as U7760B20-G and U7761C20-G by means of marker sleeves P/N A578A02-9.

4. With reference to Figures 34, 35 and Figure 36 wiring diagram, assemble the avionic customization Pakistan C/A P/N 3G9B01L10301 (B1L103) as described in the following procedure:

4.1 With reference to Figures 34, 35 and Figure 36 wiring diagram, cut n°2 wires P/N A556A-T20 of adequate length and lay them down between sectioning connector J203 and terminal boards TB267-1 and TB269 following the existing routes. Secure the cables by means of existing hardware and lacing cord.

4.2 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to Figure 36 wiring diagram, crimp on wires n°2 electrical contacts P/N M39029/56-351 (J203 sides) and n°2 electrical contacts P/N A523A-A03 (TB267-1 and TB269 sides) by means of proper crimping tool.

4.3 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 36 wiring diagram, mark wires as U7760A20-G and U7761D20N-G by means of marker sleeves P/N A578A02-9.

5. With reference to Figure 34 and Figure 36 wiring diagram, perform the electrical connection of C/A B1B995 to sectioning connector P203, the splice SP21466 and the splice SP21467.

6. With reference to Figures 34, 35 and Figure 36 wiring diagram, perform the electrical connection of C/A B1L103 to sectioning connector J203, terminal board TB267-1 and terminal board TB269.
7. Perform a pin-to-pin continuity check of all the electrical connection made.
8. In accordance with Annex A perform the MFD21 in service test.
9. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
10. Return the helicopter to flight configuration and record for compliance with Part V of this Service Bulletin on the helicopter logbook.
11. 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

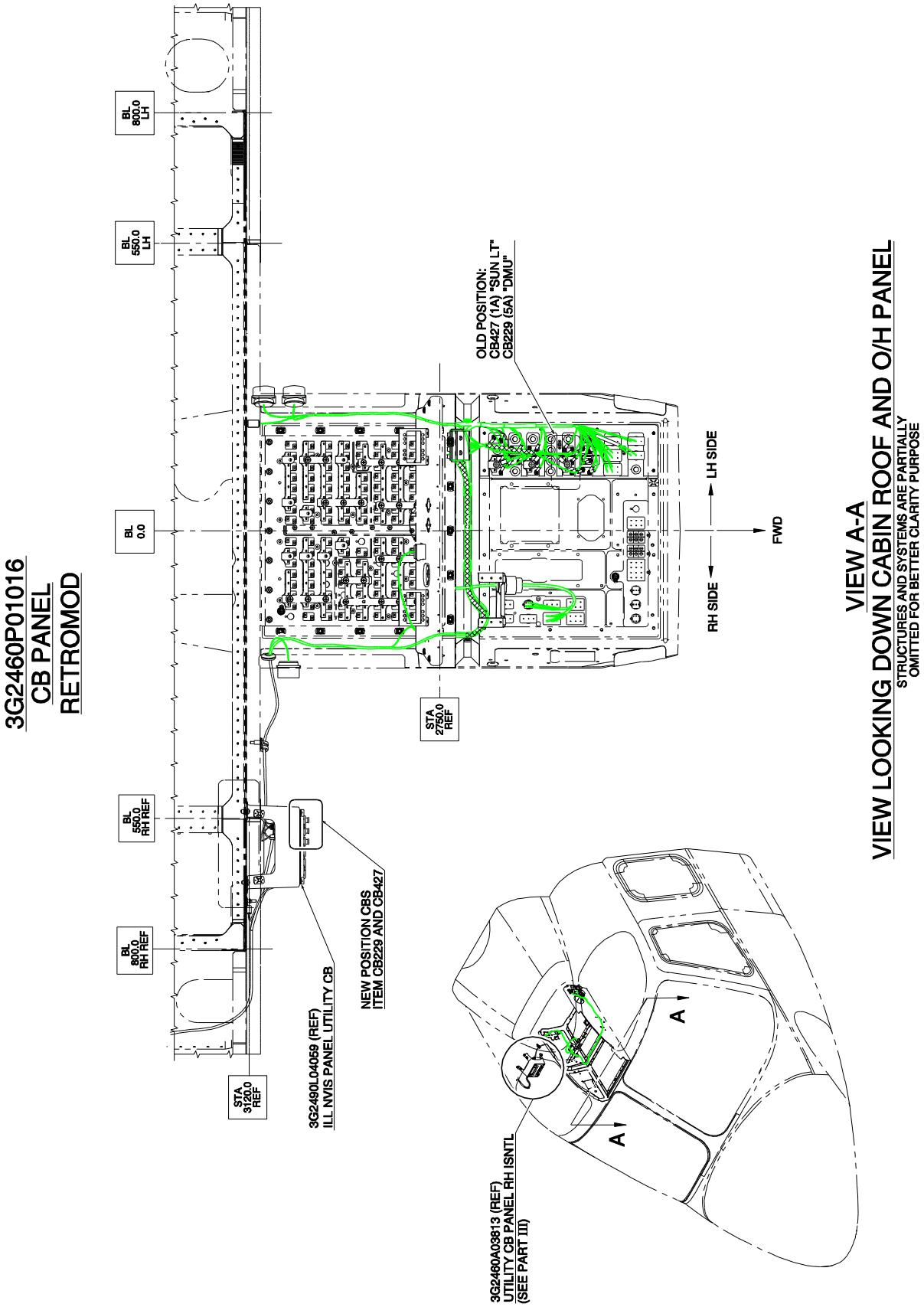

3G2460P01016
CB PANEL
RETROMOD
BL 800.0 LH
BL 550.0 LH
BL 0.0
BL 550.0 RH REF
BL 800.0 RH REF
STA 3120.0 REF
STA 2750.0 REF
OLD POSITION:
CB427 (1A) "SUN LT"
CB229 (5A) "DMU"
NEW POSITION CBS
ITEM CB229 AND CB427
3G2490L04059 (REF)
ILL NVIS PANEL UTILITY CB
LH SIDE
RH SIDE
FWD
A
A
3G2460A03813 (REF)
UTILITY CB PANEL RH ISNTL
(SEE PART III)
VIEW A-A
VIEW LOOKING DOWN CABIN ROOF AND O/H PANEL
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 1

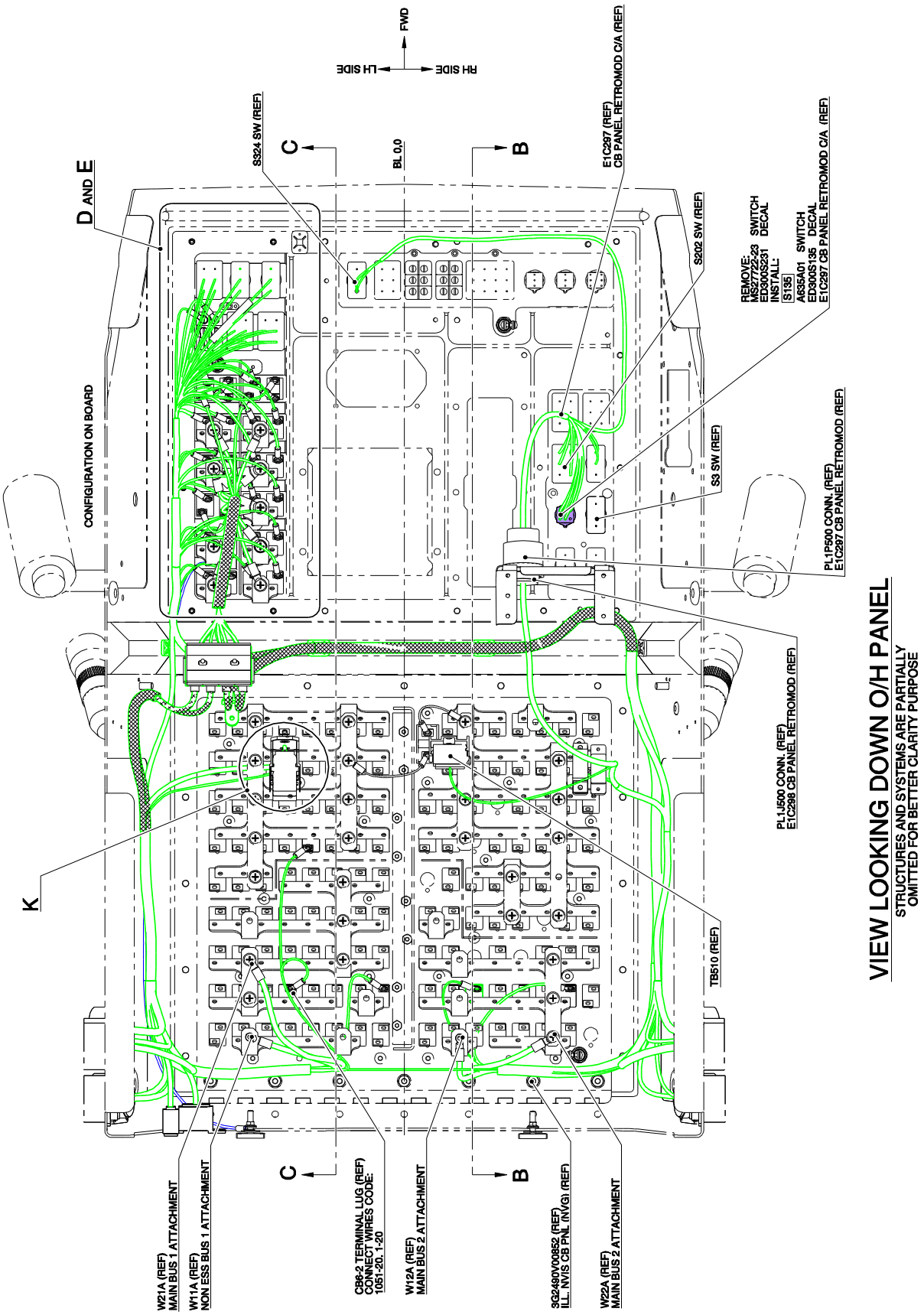
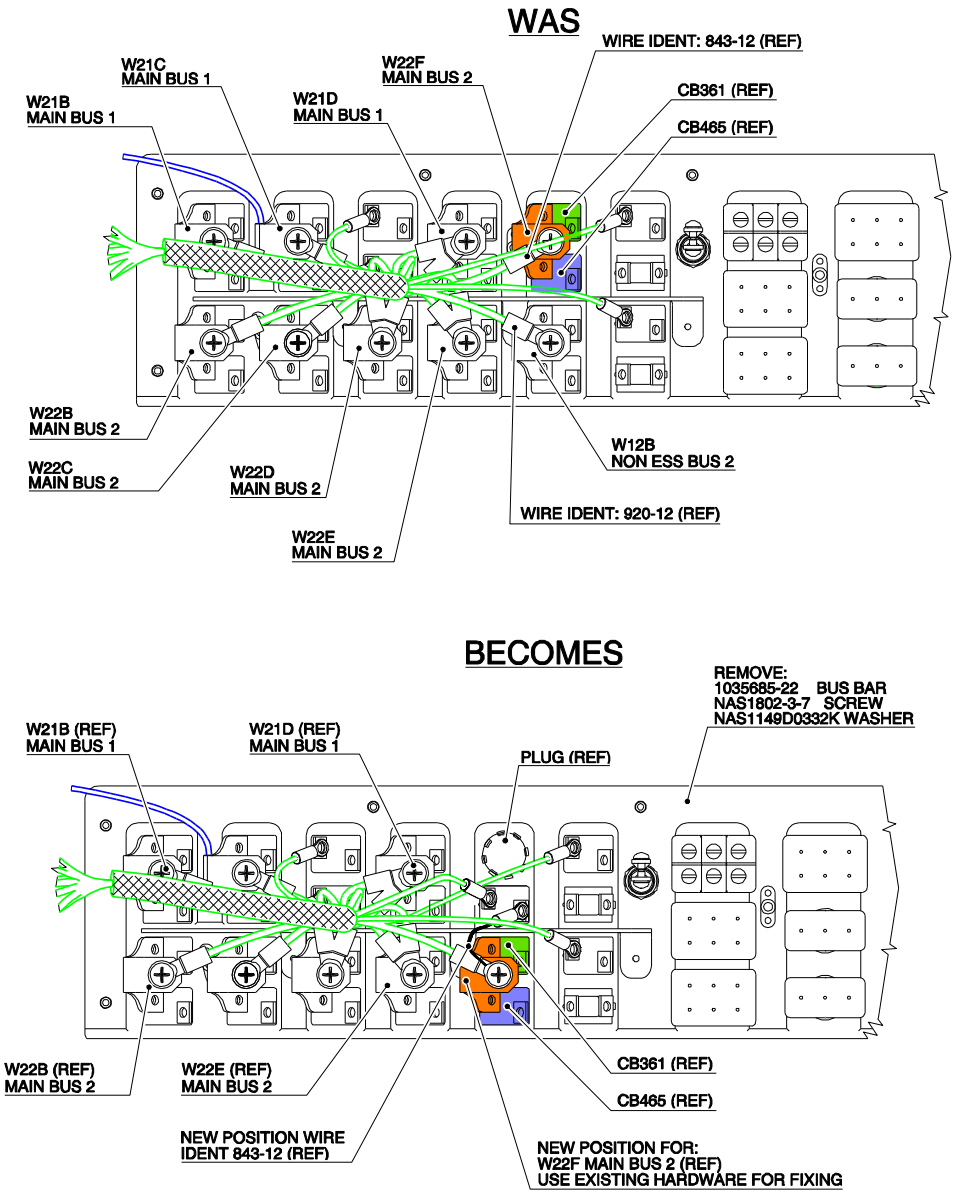
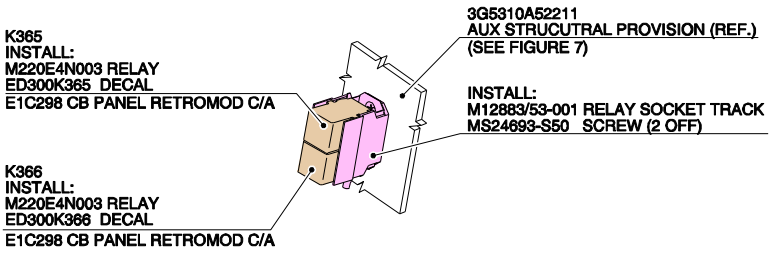

FWD
RH SIDE
LH SIDE
D AND E
CONFIGURATION ON BOARD
S324 SW (REF)
C
BL 0,0
B
E1C297 (REF)
CB PANEL RETROMOD C/A (REF)
S202 SW (REF)
REMOVE:
MS27722-23 SWITCH
ED3003S231 DECAL
INSTALL:
S135
A635A01 SWITCH
ED3003S135 DECAL
E1C297 CB PANEL RETROMOD C/A (REF)
S3 SW (REF)
PL1P500 CONN. (REF)
E1C297 CB PANEL RETROMOD (REF)
PL1J500 CONN. (REF)
E1C298 CB PANEL RETROMOD (REF)
TB510 (REF)
K
W21A (REF)
MAIN BUS 1 ATTACHMENT
W11A (REF)
NON ESS BUS 1 ATTACHMENT
CB6-2 TERMINAL LUG (REF)
CONNECT WIRES CODE:
1051-20, 1-20
W12A (REF)
MAIN BUS 2 ATTACHMENT
9G2490V00852 (REF)
ILL. NVIS CB PNL (NVG) (REF)
W22A (REF)
MAIN BUS 2 ATTACHMENT
VIEW LOOKING DOWN O/H PANEL
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 2

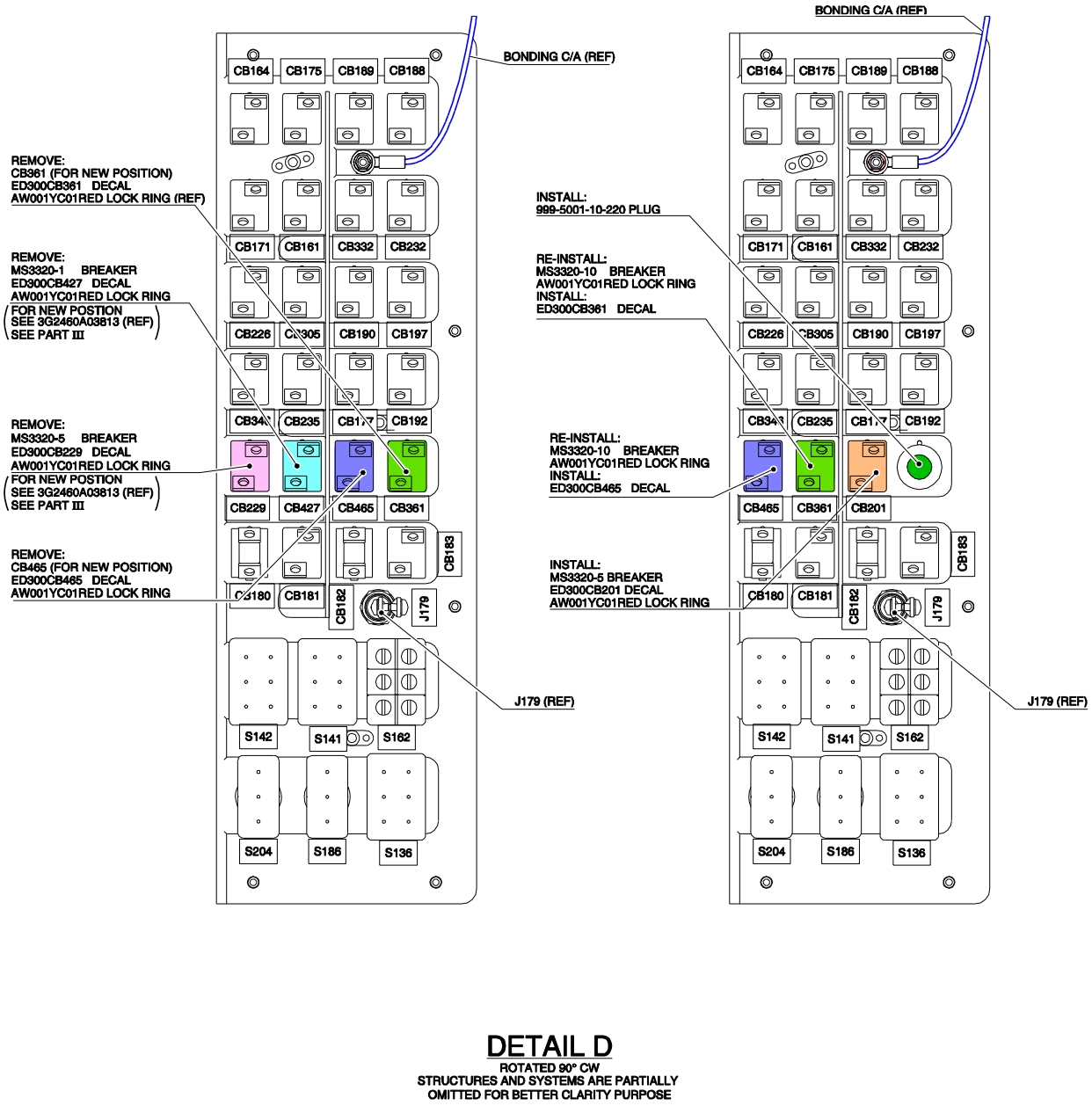


DETAIL E
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE



DETAIL K
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 3



DETAIL D

ROTATED 90° CW
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 4

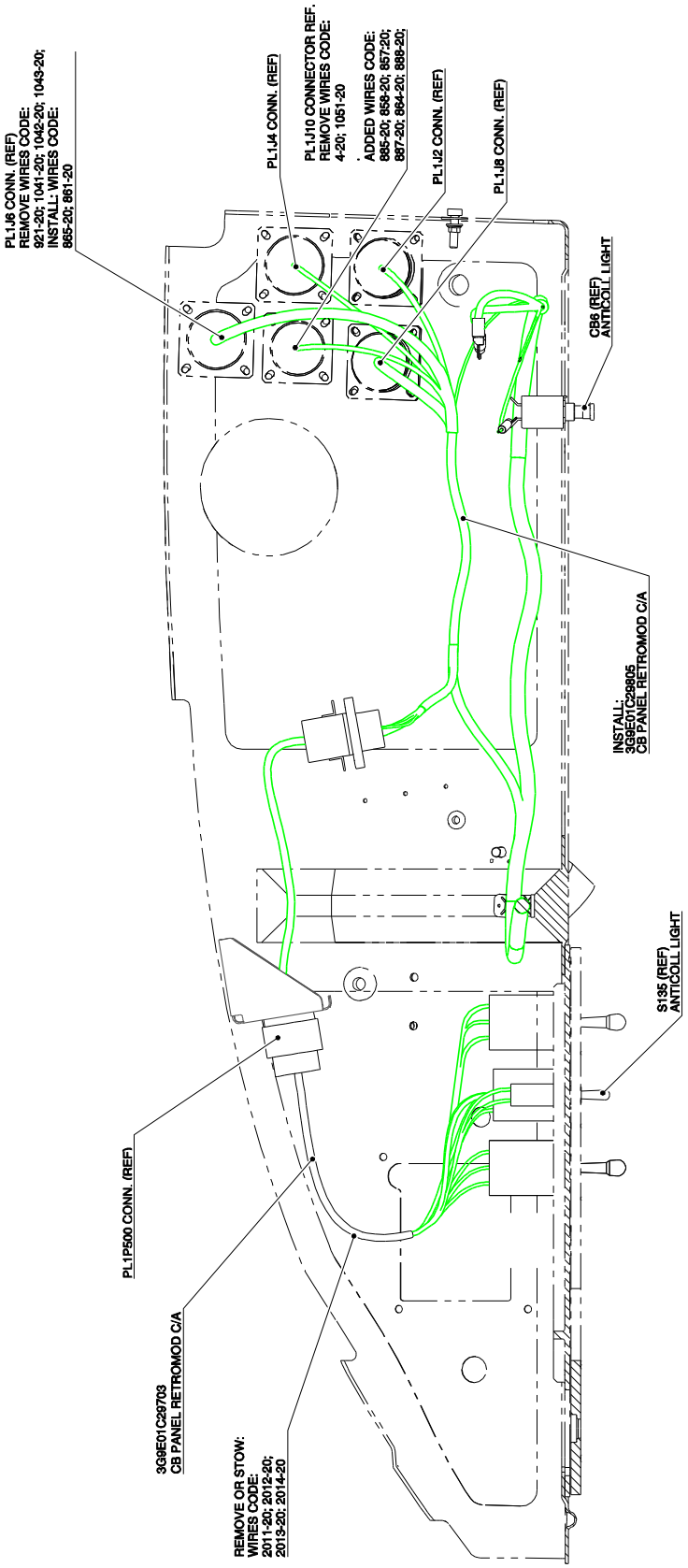

PL1J6 CONN. (REF)
REMOVE WIRES CODE:
921-20; 1041-20; 1042-20; 1043-20;
INSTALL: WIRES CODE:
865-20; 861-20
PL1J4 CONN. (REF)
PL1J10 CONNECTOR REF.
REMOVE WIRES CODE:
4-20; 1051-20
.
ADDED WIRES CODE:
885-20; 858-20; 857-20;
887-20; 864-20; 889-20;
PL1J2 CONN. (REF)
PL1J8 CONN. (REF)
CB6 (REF)
ANTICOLL LIGHT
INSTALL:
3G9E01C29805
CB PANEL RETROMOD C/A
S135 (REF)
ANTICOLL LIGHT
PL1P500 CONN. (REF)
3G9E01C29703
CB PANEL RETROMOD C/A
REMOVE OR STOW:
WIRES CODE:
2011-20; 2012-20;
2019-20; 2014-20
SECTION B-B
ROTATED 180°
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 5

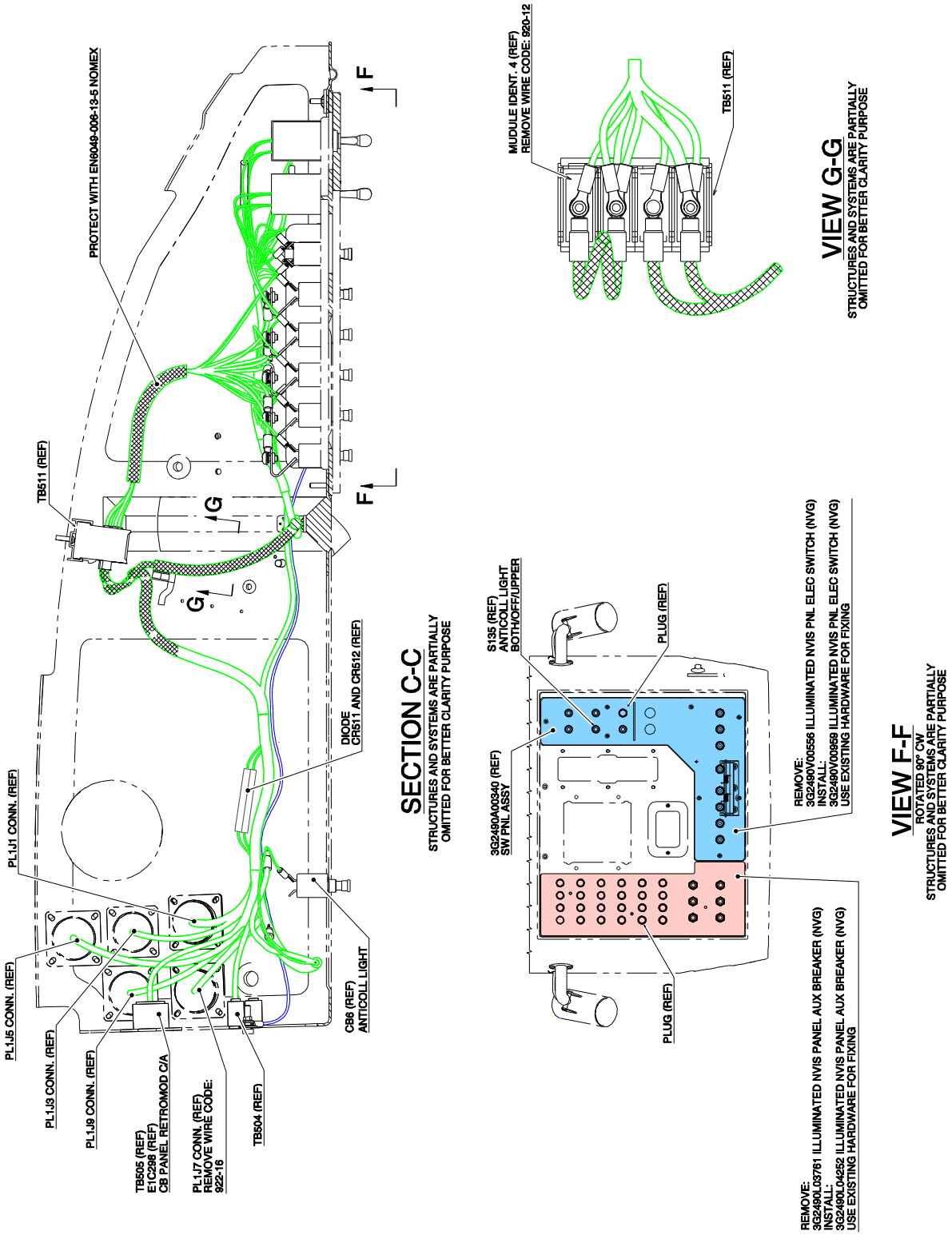

PROTECT WITH EN6049-006-13-5 NOMEX
TB511 (REF)
P1.1J1 CONN. (REF)
P1.1J5 CONN. (REF)
P1.1J3 CONN. (REF)
P1.1J9 CONN. (REF)
TB505 (REF)
E1C298 (REF)
CB PANEL RETROMOD C/A
P1.1J7 CONN. (REF)
REMOVE WIRE CODE:
922-16
TB504 (REF)
CB6 (REF)
ANTICOLL LIGHT
DIODE
CR511 AND CR512 (REF)
SECTION C-C
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
MJDULE IDENT. 4 (REF)
REMOVE WIRE CODE: 920-12
TB511 (REF)
VIEW G-G
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
S135 (REF)
ANTICOLL LIGHT
BOTH/OFF/UPPER
PLUG (REF)
3G2490A00340 (REF)
SW PNL ASSY
REMOVE:
3G2490V00556 ILLUMINATED NVIS PNL ELEC SWITCH (NVG)
INSTALL:
3G2490V00959 ILLUMINATED NVIS PNL ELEC SWITCH (NVG)
USE EXISTING HARDWARE FOR FIXING
PLUG (REF)
REMOVE:
3G2490L03761 ILLUMINATED NVIS PANEL AUX BREAKER (NVG)
INSTALL:
3G2490L04252 ILLUMINATED NVIS PANEL AUX BREAKER (NVG)
USE EXISTING HARDWARE FOR FIXING
VIEW F-F
ROTATED 90° CW
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 6

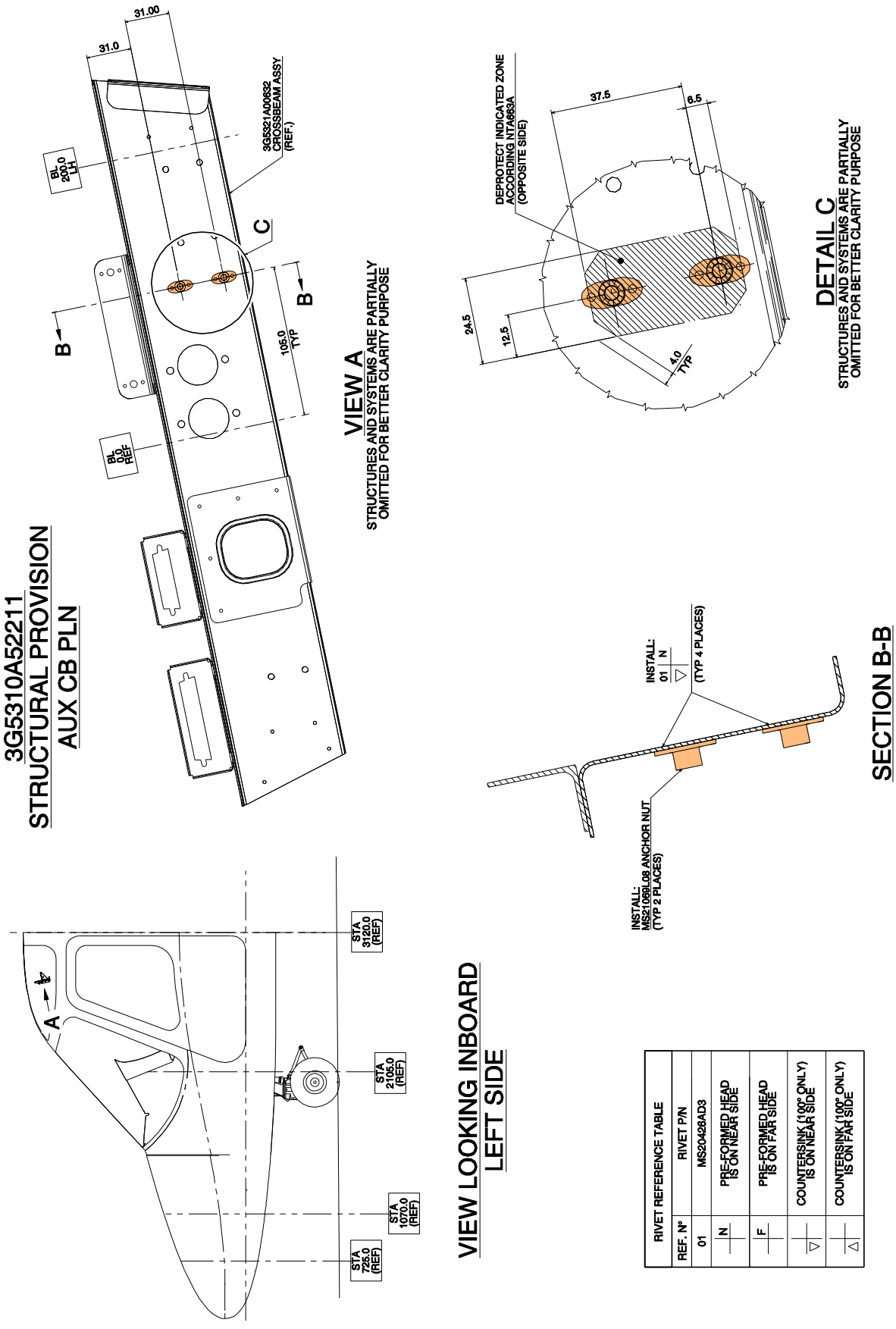

3G5310A52211
STRUCTURAL PROVISION
AUX CB PLN
VIEW A
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
DETAIL C
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
SECTION B-B
VIEW LOOKING INBOARD
LEFT SIDE
RIVET REFERENCE TABLE
REF. N°
RIVET P/N
01
MS20426AD3
PRE-FORMED HEAD IS ON NEAR SIDE
PRE-FORMED HEAD IS ON FAR SIDE
COUNTERSINK (100° ONLY) IS ON NEAR SIDE
COUNTERSINK (100° ONLY) IS ON FAR SIDE

Figure 7

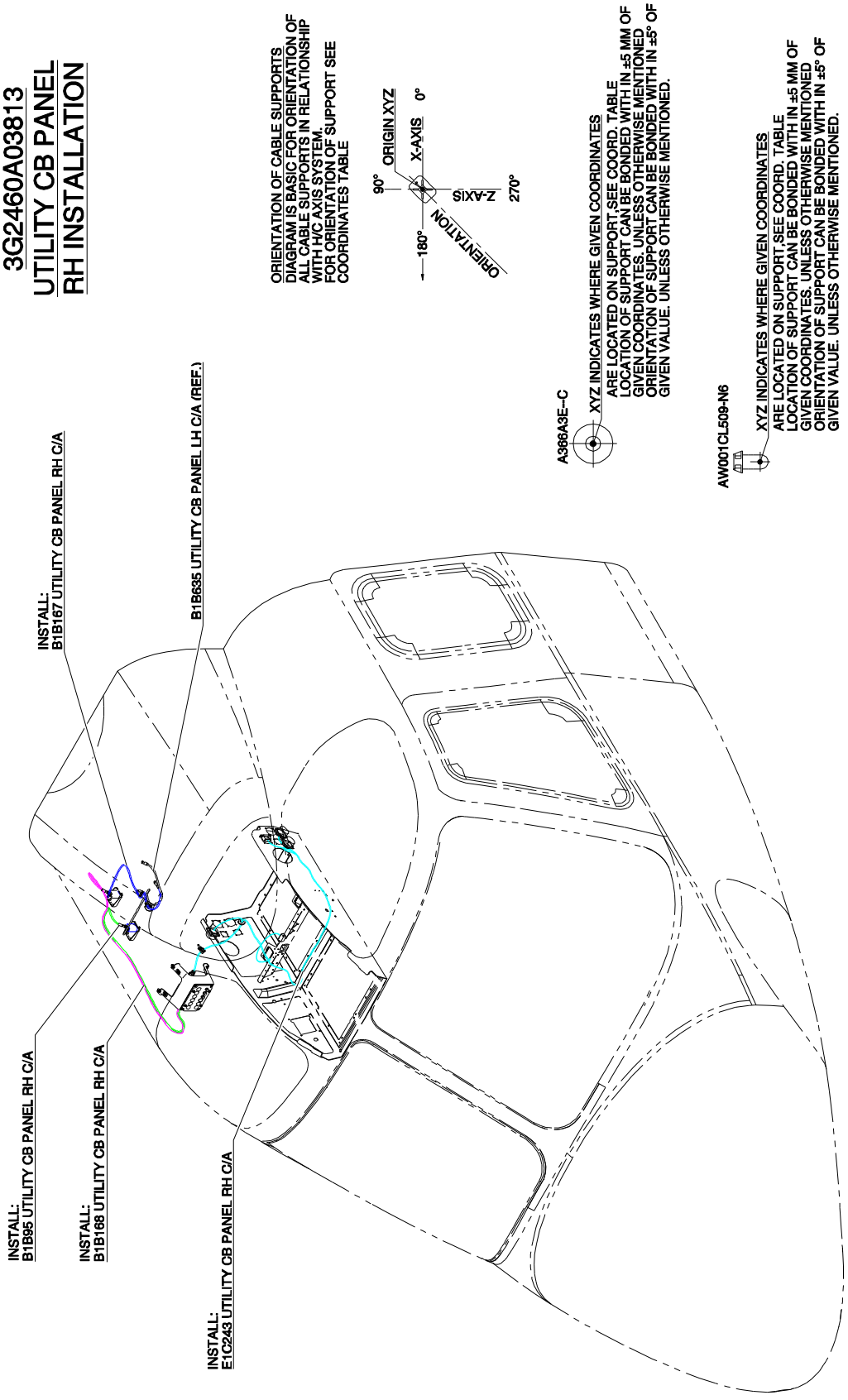

3G2460A03813
UTILITY CB PANEL
RH INSTALLATION
ORIENTATION OF CABLE SUPPORTS DIAGRAM IS BASIC FOR ORIENTATION OF ALL CABLE SUPPORTS IN RELATIONSHIP WITH H/C AXIS SYSTEM. FOR ORIENTATION OF SUPPORT SEE COORDINATES TABLE
90°
ORIGIN XYZ
X-AXIS
0°
180°
Z-AXIS
270°
ORIENTATION
A366A3E–C
XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT, SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN ±5 MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN ±5° OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.
AW001CL509-N6
XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT, SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN ±5 MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN ±5° 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 ±5 MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN ±5° OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.
INSTALL:
B1B167 UTILITY CB PANEL RH C/A
B1B635 UTILITY CB PANEL LH C/A (REF.)
INSTALL:
B1B95 UTILITY CB PANEL RH C/A
INSTALL:
B1B168 UTILITY CB PANEL RH C/A
INSTALL:
E1C243 UTILITY CB PANEL RH C/A

Figure 8

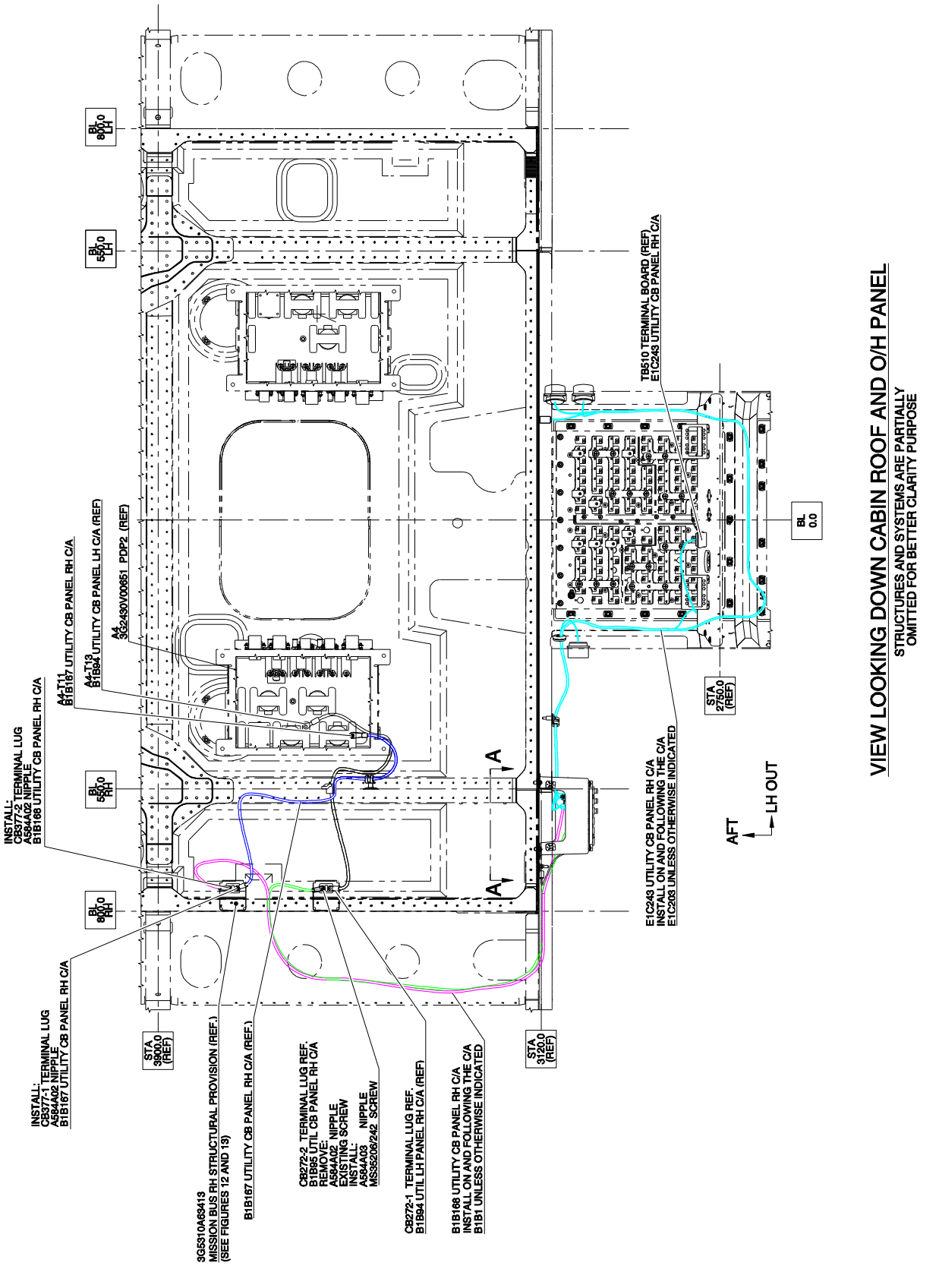
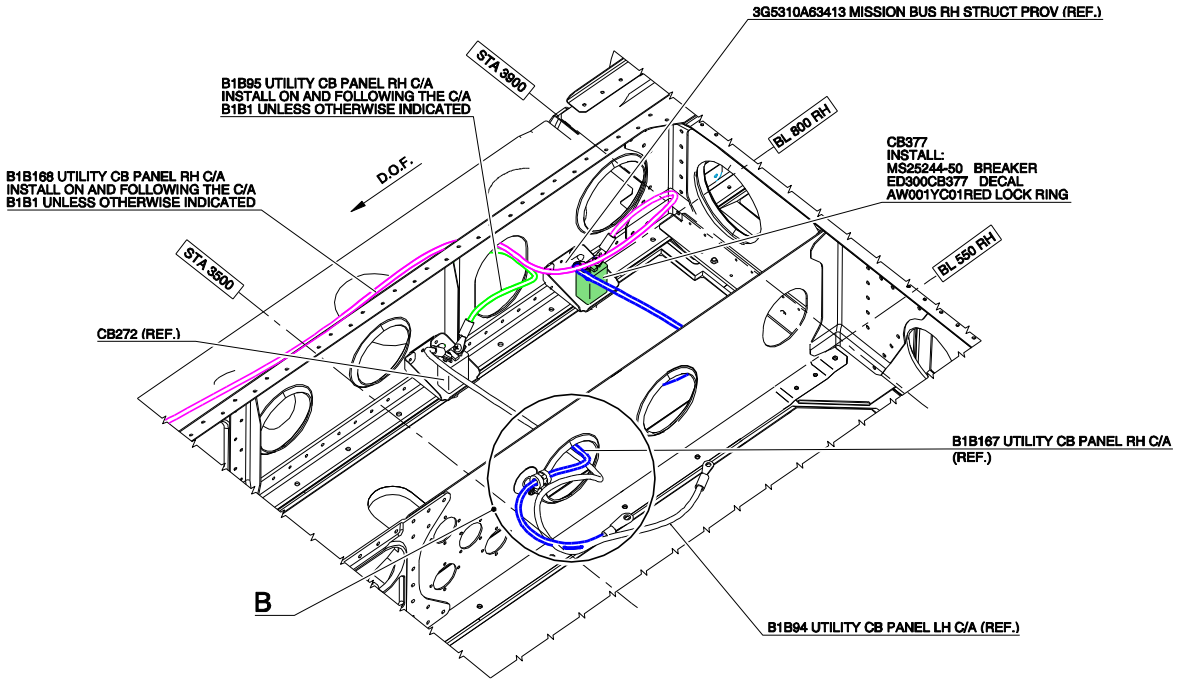
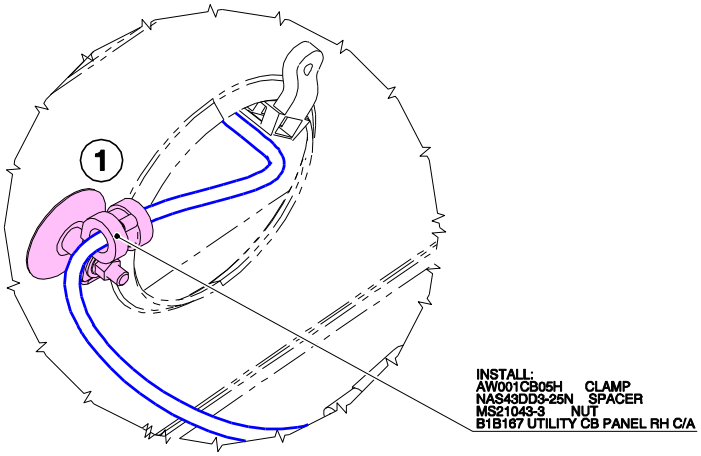

VIEW LOOKING DOWN CABIN ROOF AND O/H PANEL
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
AFT
LH OUT
A
A
BL 80.0 LH
BL 55.0 LH
BL 0.0
BL 55.0 RH
BL 80.0 RH
STA 3900.0 (REF)
STA 3120.0 (REF)
STA 2750.0 (REF)
INSTALL:
C8377-2 TERMINAL LUG
A584A02 NIPPLE
B1B167 UTILITY CB PANEL RH C/A
INSTALL:
C8377-1 TERMINAL LUG
A584A02 NIPPLE
B1B167 UTILITY CB PANEL RH C/A
A4-T11
B1B167 UTILITY CB PANEL RH C/A
A4-T13
B1B94 UTILITY CB PANEL LH C/A (REF)
A4
3G2430V00651 PDP2 (REF)
3G5310A63413
MISSION BUS RH STRUCTURAL PROVISION (REF.)
(SEE FIGURES 12 AND 13)
B1B167 UTILITY CB PANEL RH C/A (REF.)
C8272-2 TERMINAL LUG REF.
B1B95 UTIL CB PANEL RH C/A
REMOVE:
A584A02 NIPPLE
EXISTING SCREW
INSTALL:
A584A03 NIPPLE
MS35206/242 SCREW
C8272-1 TERMINAL LUG REF.
B1B94 UTIL LH PANEL RH C/A (REF)
B1B168 UTILITY CB PANEL RH C/A
INSTALL ON AND FOLLOWING THE C/A
B1B1 UNLESS OTHERWISE INDICATED
E1C243 UTILITY CB PANEL RH C/A
INSTALL ON AND FOLLOWING THE C/A
E1C206 UNLESS OTHERWISE INDICATED
TB510 TERMINAL BOARD (REF)
E1C243 UTILITY CB PANEL RH C/A

Figure 9



VIEW LOOKING DOWN CABIN ROOF RH SIDE
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE



DETAIL B
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

LOCATION NUMBER	PART. NUMBER	STA	BL	WL	ORIENTATION
1	A366A3E16C	3465	550	2602	-

Figure 10

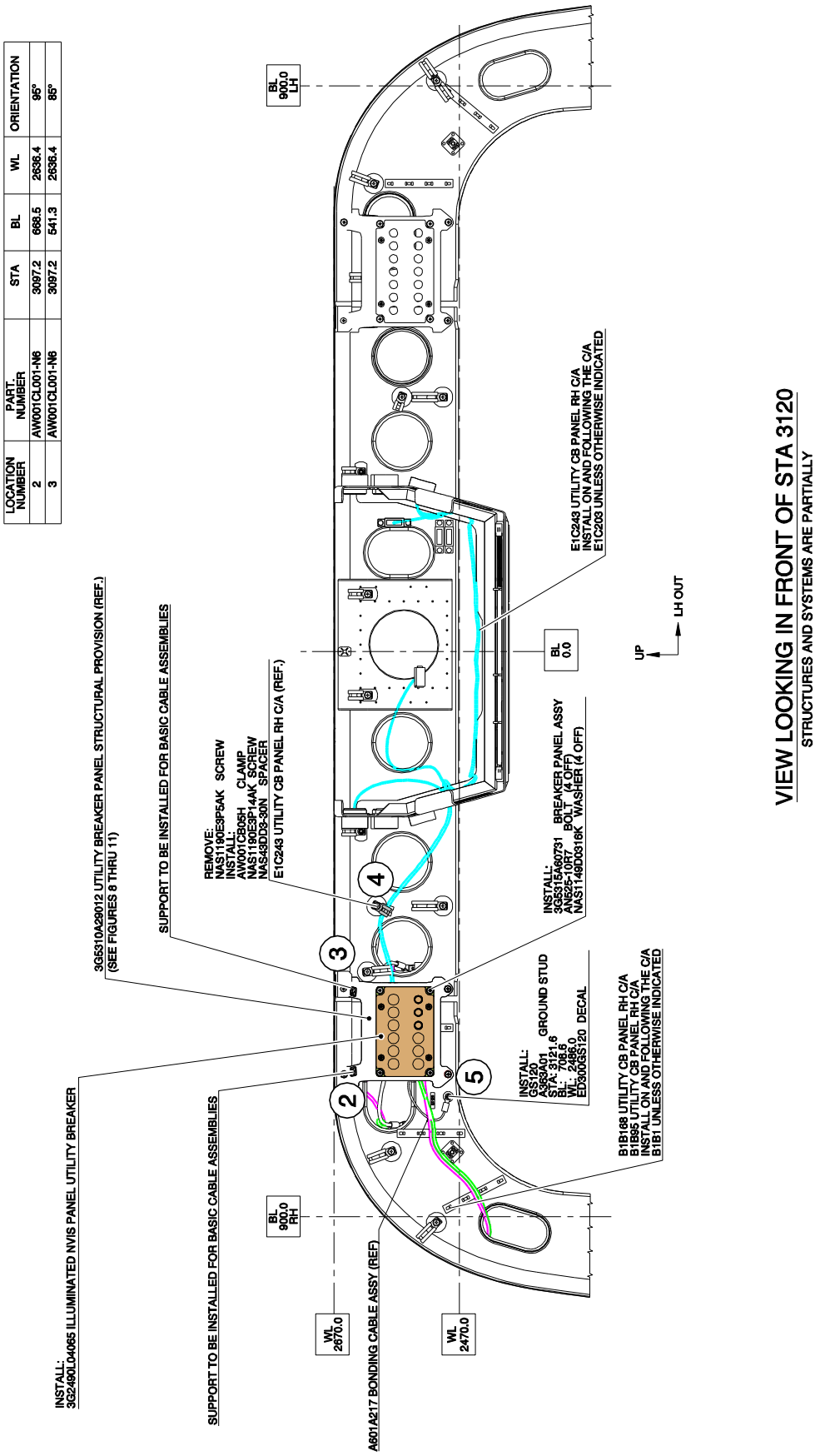
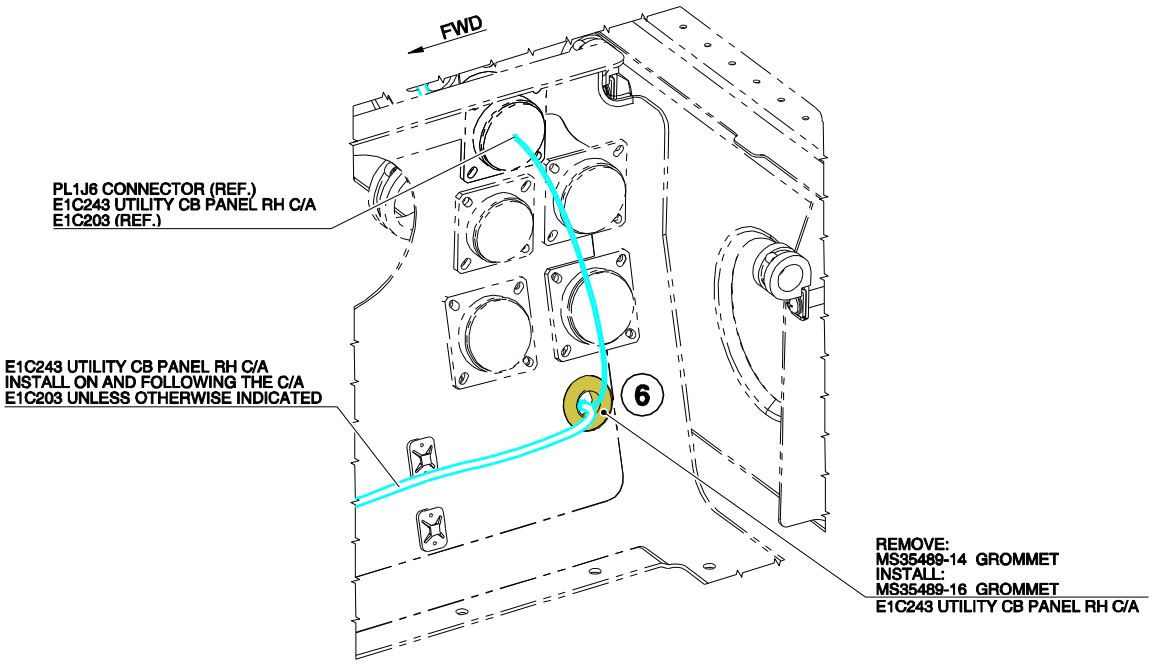
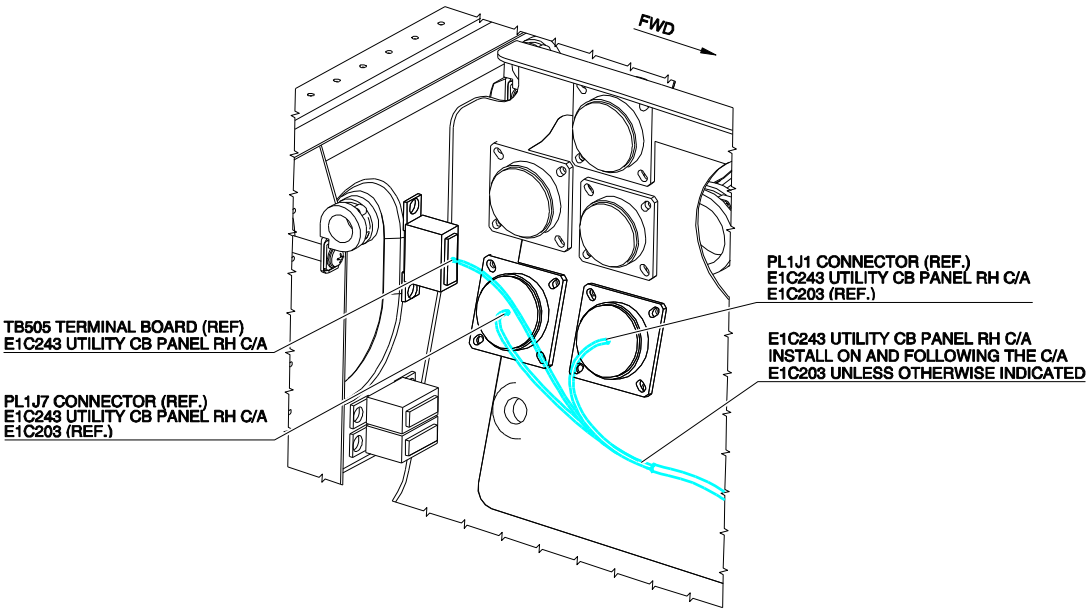

LOCATION NUMBER
PART NUMBER
STA
BL
WL
ORIENTATION
2
AW001CL001-N6
3097.2
668.5
2636.4
95°
3
AW001CL001-N6
3097.2
541.3
2636.4
85°
VIEW LOOKING IN FRONT OF STA 3120
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
BL 900.0 LH
BL 0.0
BL 900.0 RH
WL 2670.0
WL 2470.0
UP
LH OUT
3GS310A28012 UTILITY BREAKER PANEL STRUCTURAL PROVISION (REF.) (SEE FIGURES 8 THRU 11)
SUPPORT TO BE INSTALLED FOR BASIC CABLE ASSEMBLIES
REMOVE:
NAS1190E3P5AK SCREW
INSTALL:
AW001CB05H CLAMP
NAS1190E3P144AK SCREW
NAS43D03-30N SPACER
E1C243 UTILITY CB PANEL RH C/A (REF.)
E1C243 UTILITY CB PANEL RH C/A
INSTALL ON AND FOLLOWING THE C/A
E1C203 UNLESS OTHERWISE INDICATED
INSTALL:
3GS315A60731 BREAKER PANEL ASSY
AN525-10R7 BOLT (4 OFF)
NAS1149D0316K WASHER (4 OFF)
INSTALL:
GS120 GROUND STUD
A383A01
STA: 3121.8
BL: 709.5
WL: 2486.0
ED3000S120 DECAL
B1B168 UTILITY CB PANEL RH C/A
B1B95 UTILITY CB PANEL RH C/A
INSTALL ON AND FOLLOWING THE C/A
B1B1 UNLESS OTHERWISE INDICATED
INSTALL:
3G2490L04065 ILLUMINATED NVIS PANEL UTILITY BREAKER
SUPPORT TO BE INSTALLED FOR BASIC CABLE ASSEMBLIES
A601A217 BONDING CABLE ASSY (REF)
1
2
3
4
5

Figure 11



VIEW LOOKING O/H PANEL RH CUT-OFF CONNECTORS

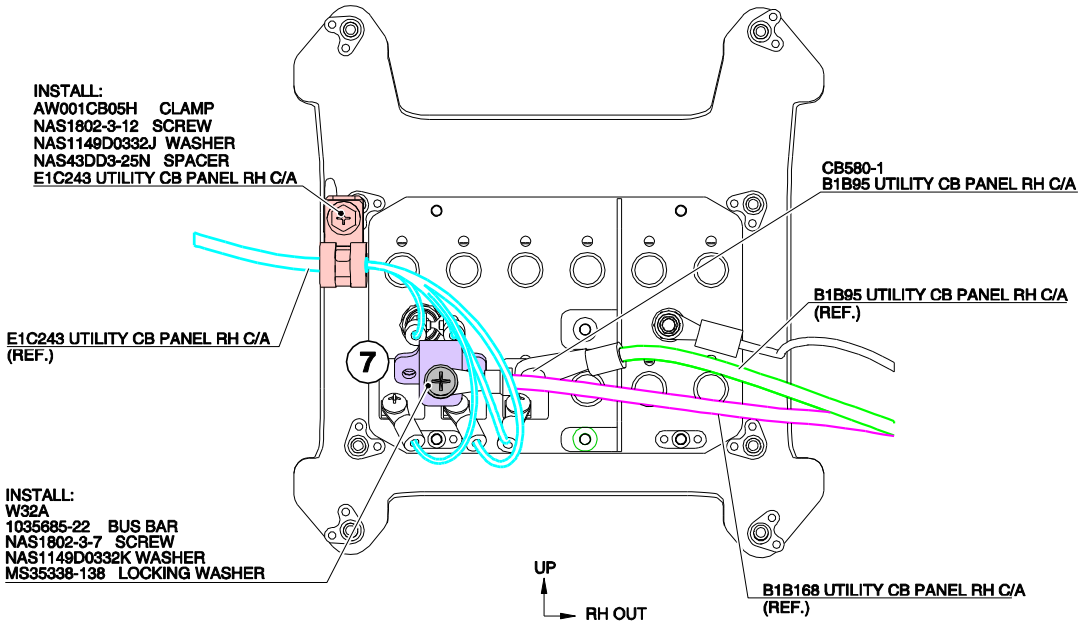
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE



VIEW LOOKING O/H PANEL LH CUT-OFF CONNECTORS

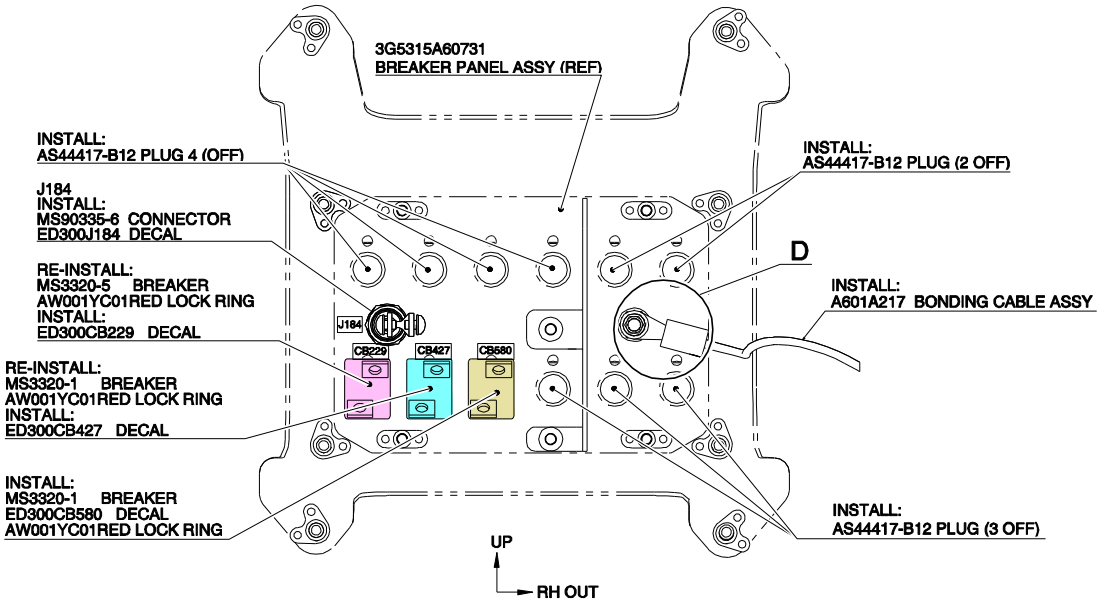
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 12



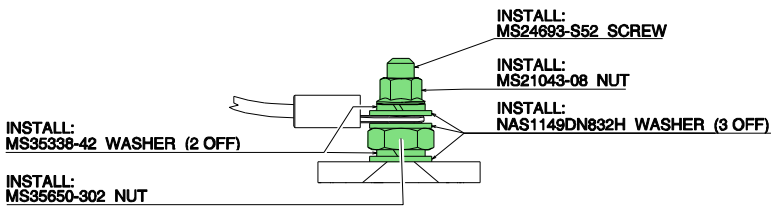
VIEW A-A

ROTATE OF 180°
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE



VIEW A-A

STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

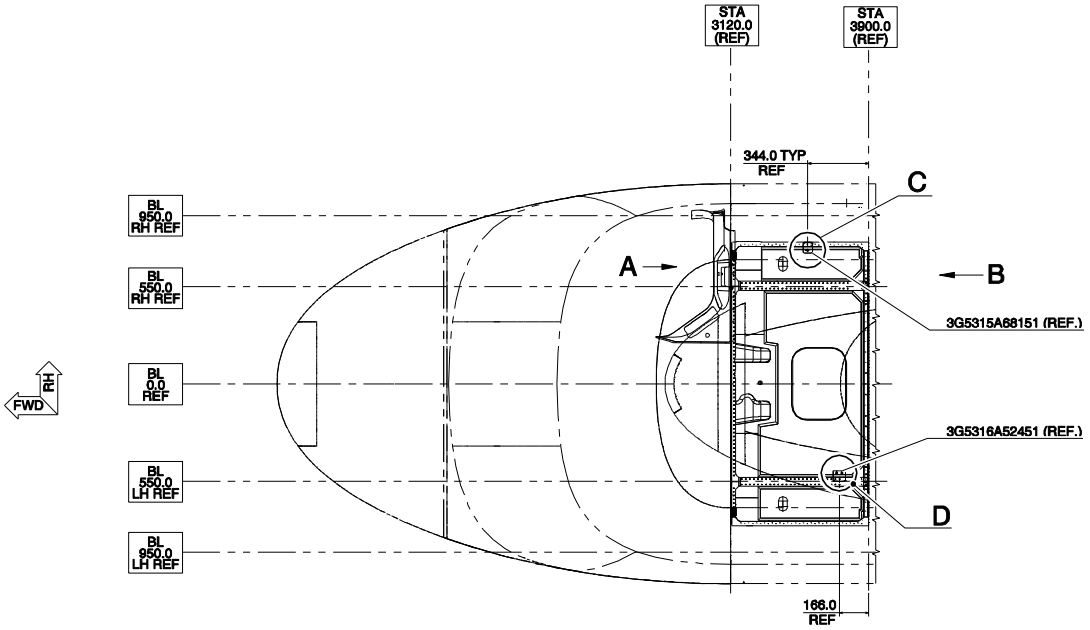


DETAIL D

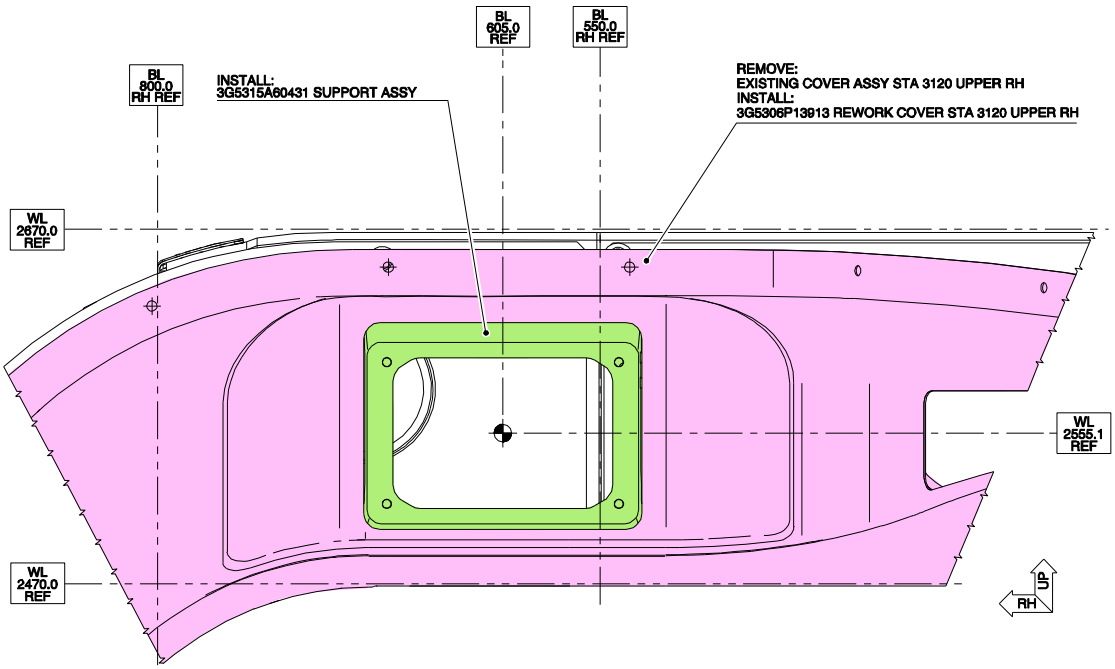
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 13

3G5310A29012
UTILITY BREAKERS PANEL
STRUCTURAL PROVISION

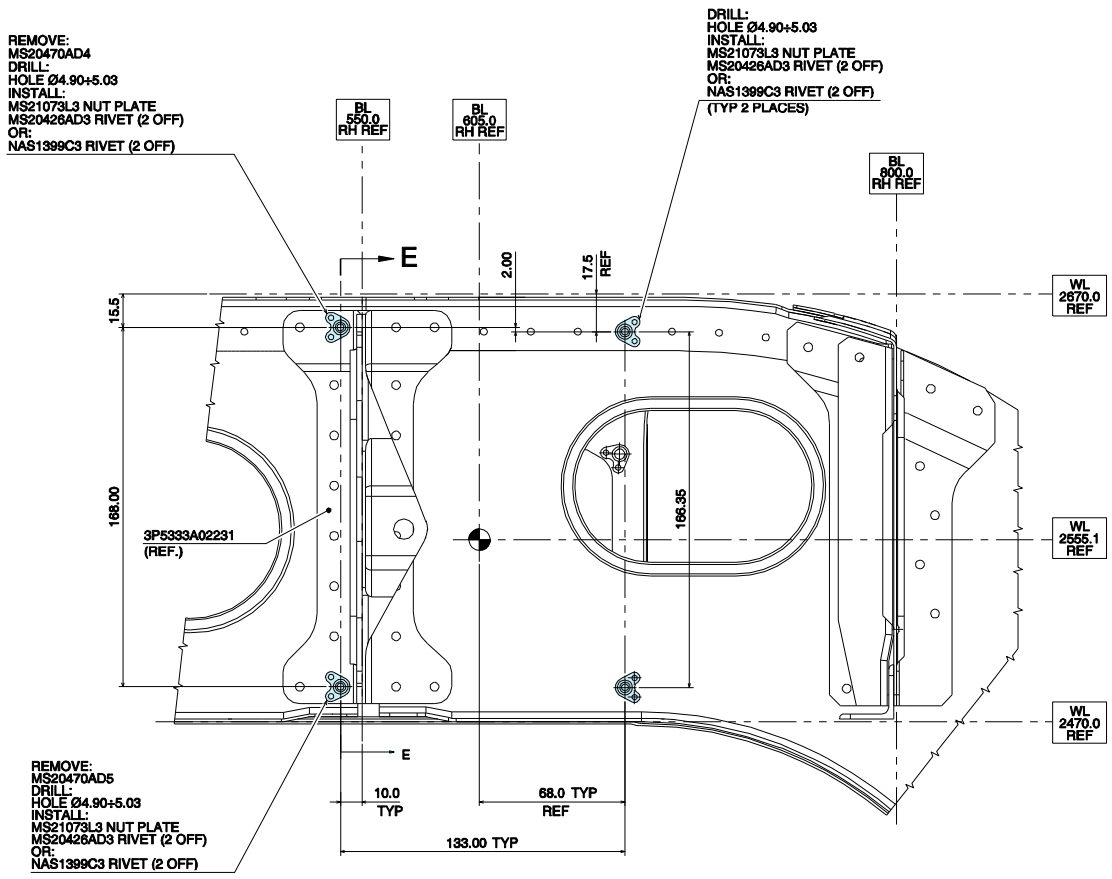


TOP VIEW

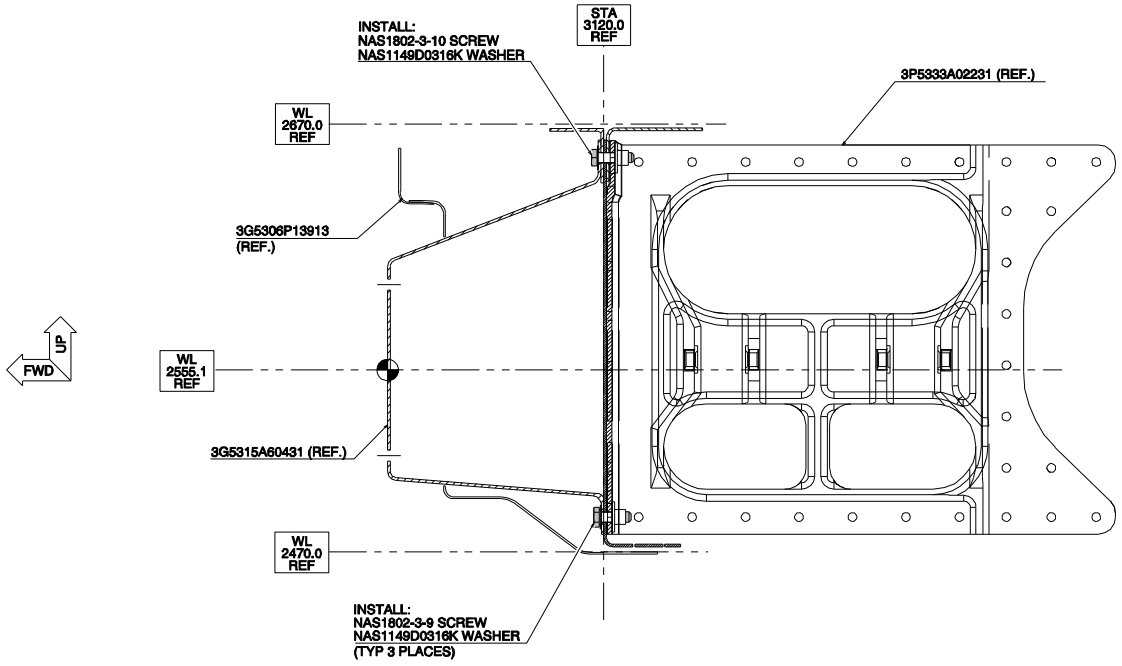


VIEW A

Figure 14

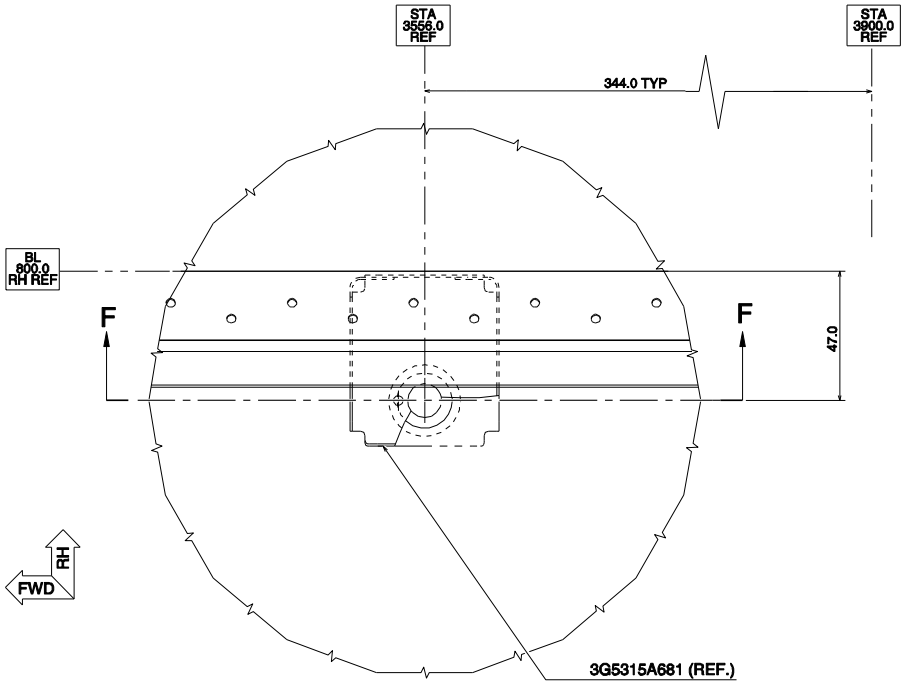


VIEW B

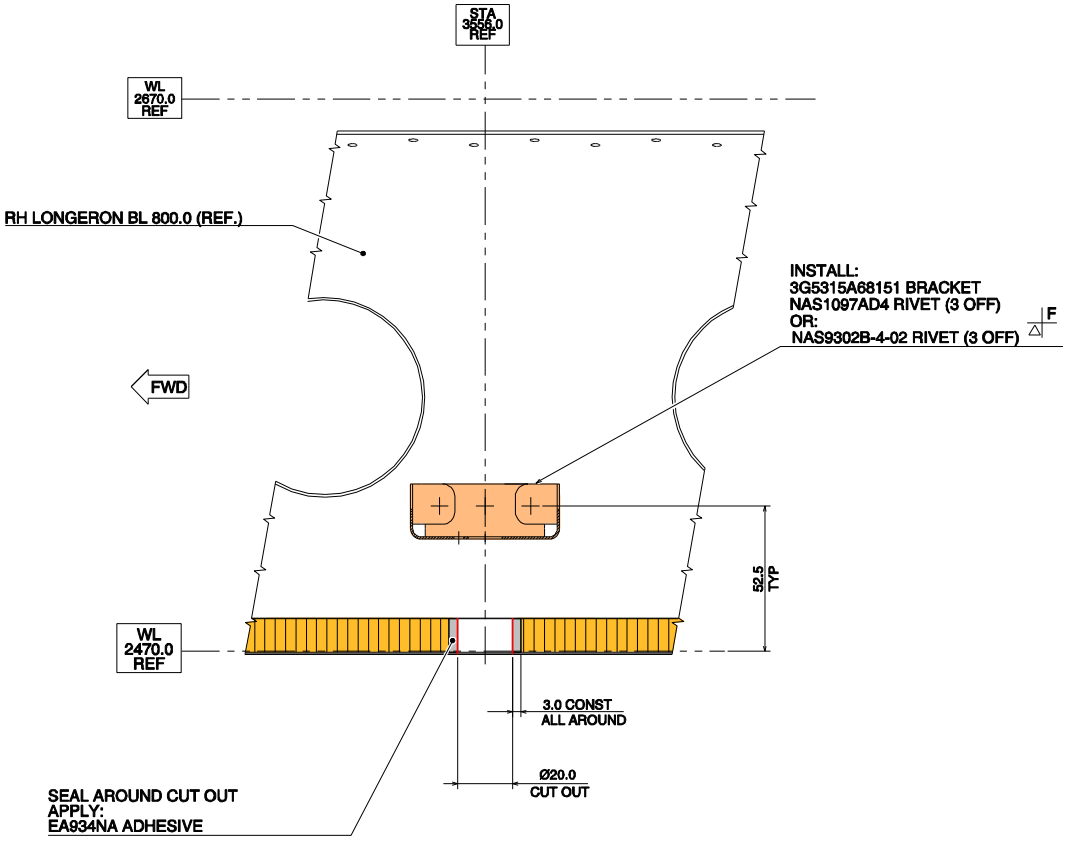


SECTION E-E

Figure 15

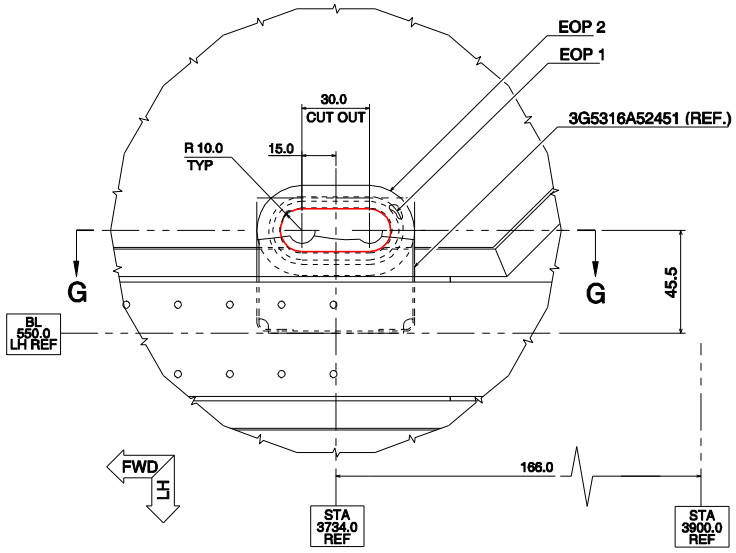


DETAIL C

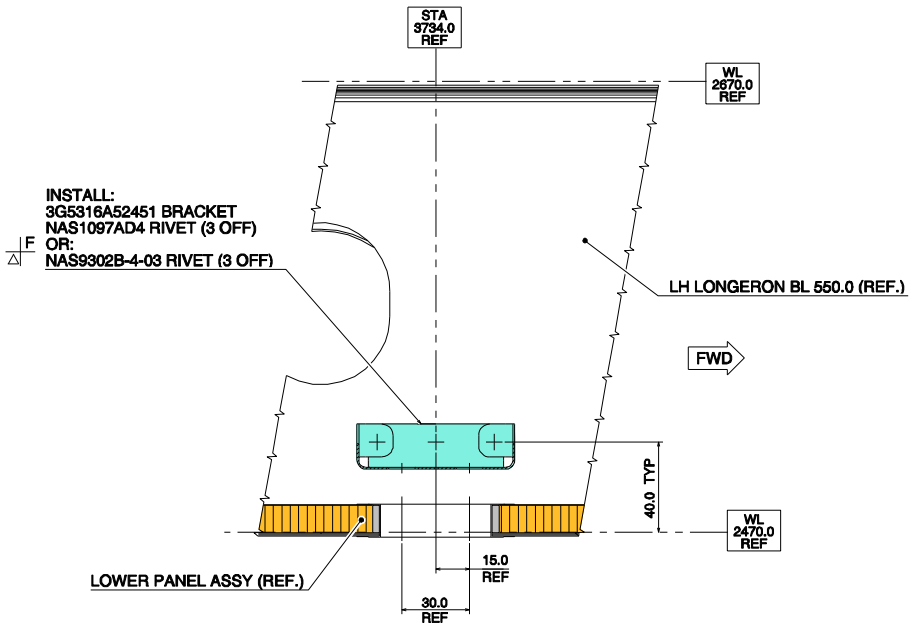


SECTION F-F

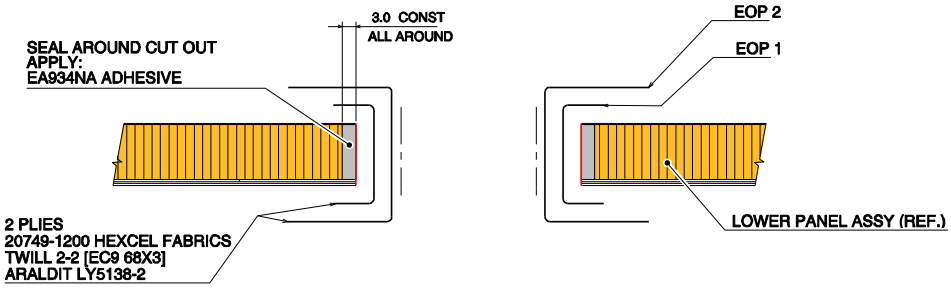
Figure 16



DETAIL D



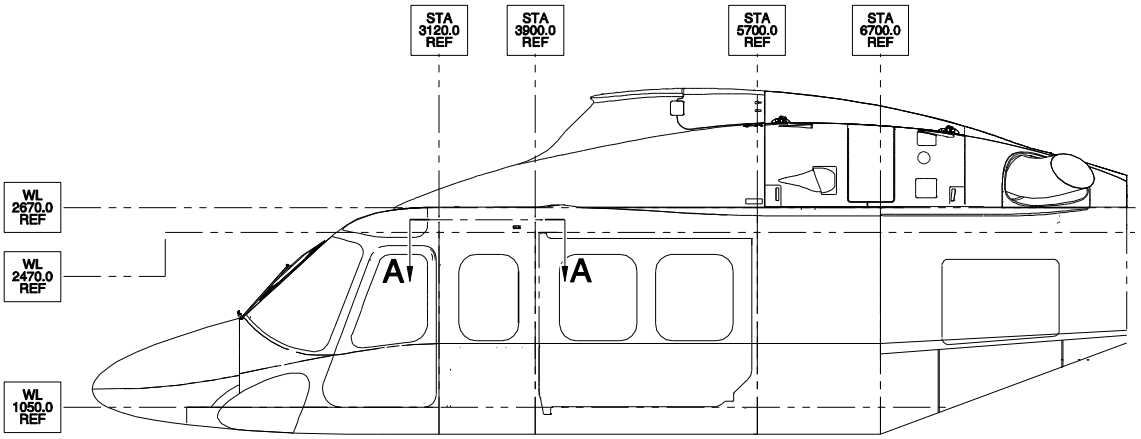
SECTION G-G
ROTATED 180° CCW



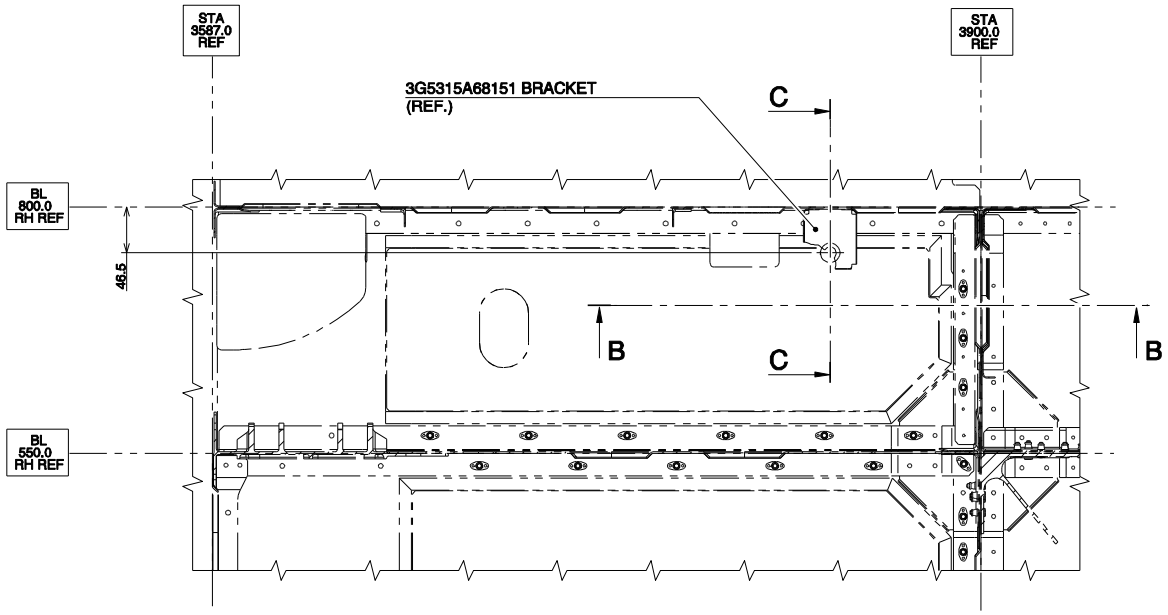
SCHEMATIC SECTION G-G
3G5316A52451 AND LONGERON ASSY OMITTED FOR CLARITY
ROTATED 180° CCW

Figure 17

3G5310A63413
MISSION BUS RH
STRUCTURAL PROVISION



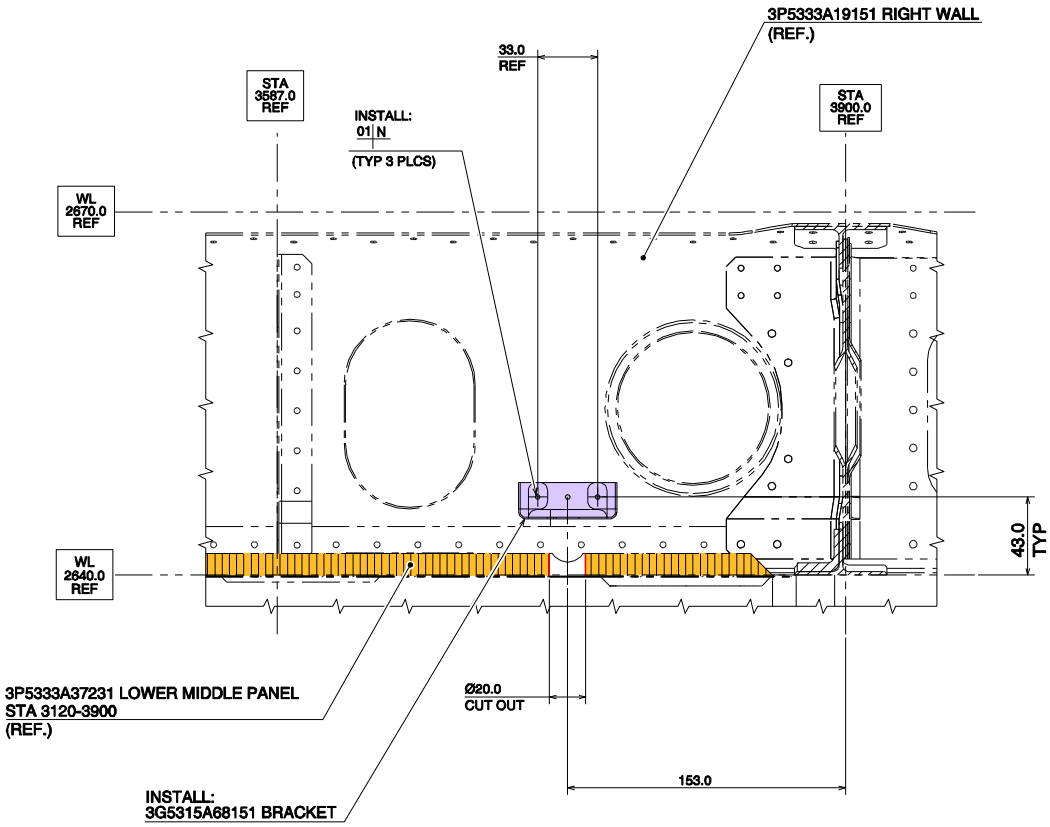
VIEW LOOKING INBOARD LEFT SIDE



SECTION A-A

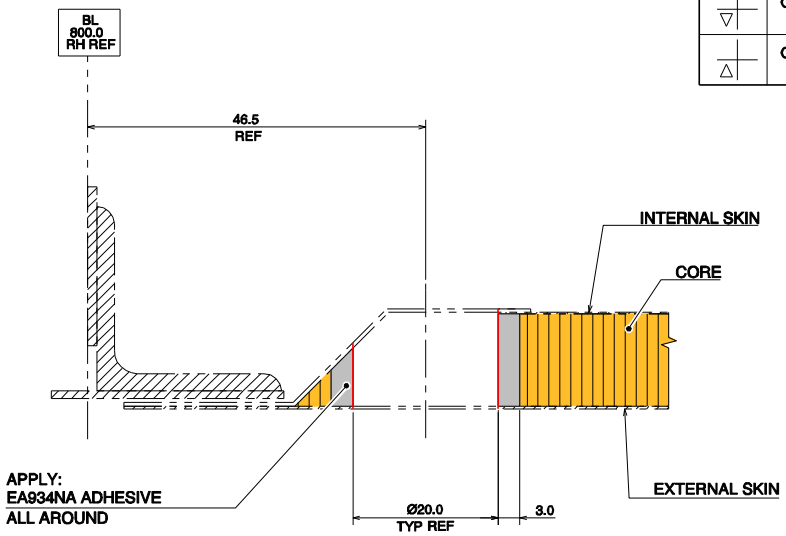
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 18



SECTION B-B

RIVET REFERENCE TABLE	
REF. N°	RIVET P/N
01	NAS9302B-4-02
N	PRE-FORMED HEAD IS ON NEAR SIDE
F	PRE-FORMED HEAD IS ON FAR SIDE
▽	COUNTERSINK (100° ONLY) IS ON NEAR SIDE
△	COUNTERSINK (100° ONLY) IS ON FAR SIDE



SECTION C-C SCHEMATIC

Figure 19

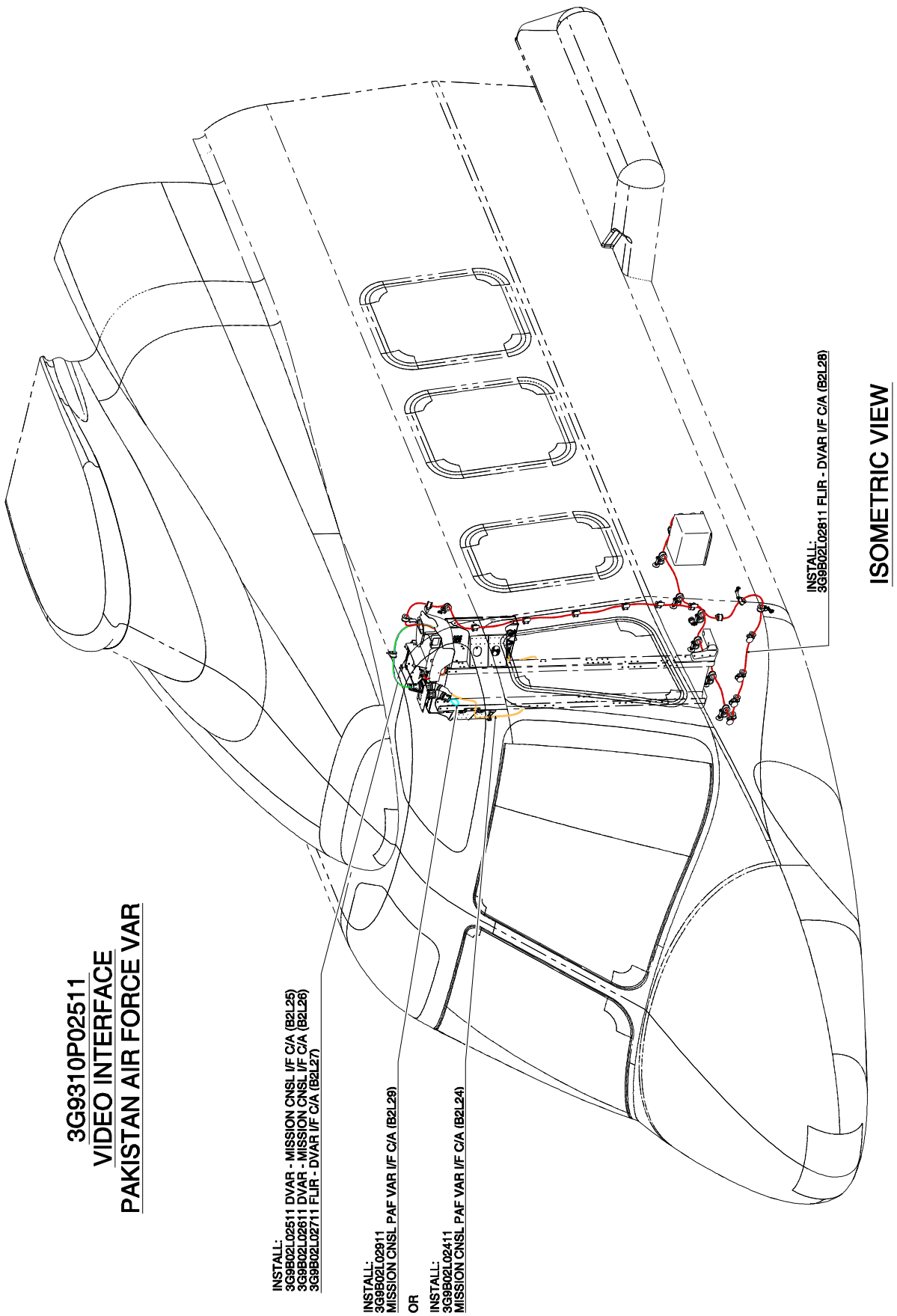
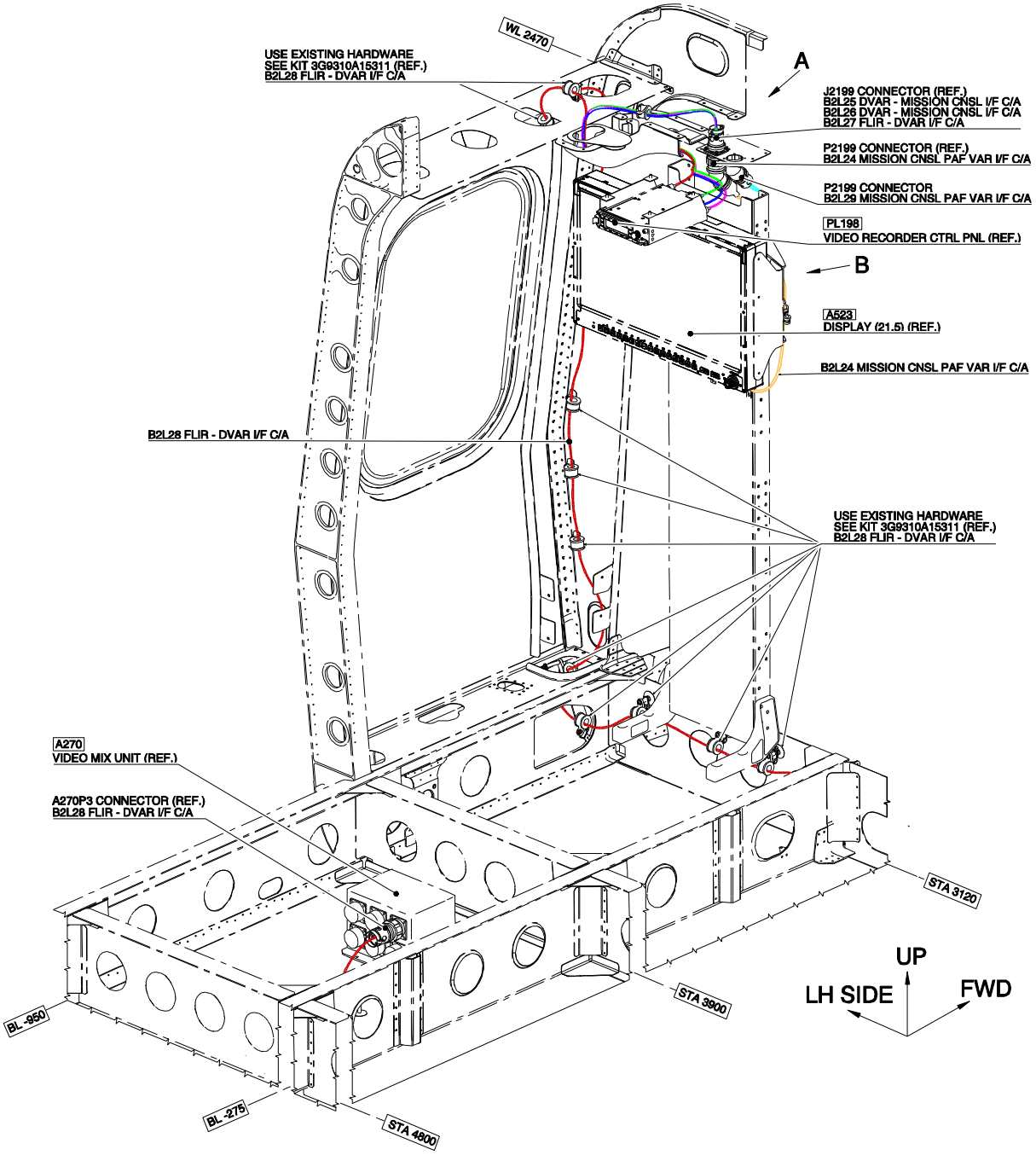
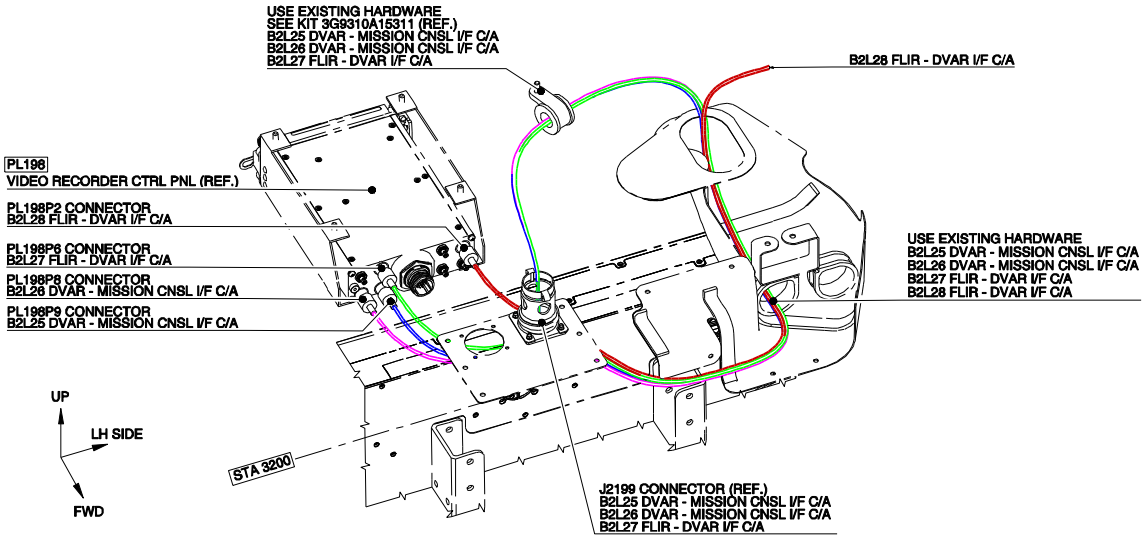

3G9310P02511
VIDEO INTERFACE
PAKISTAN AIR FORCE VAR
INSTALL:
3G9B02L02511 DVAR - MISSION CNSL I/F C/A (B2L25)
3G9B02L02611 DVAR - MISSION CNSL I/F C/A (B2L26)
3G9B02L02711 FLIR - DVAR I/F C/A (B2L27)
INSTALL:
3G9B02L02911
MISSION CNSL PAF VAR I/F C/A (B2L29)
OR
INSTALL:
3G9B02L02411
MISSION CNSL PAF VAR I/F C/A (B2L24)
INSTALL:
3G9B02L02811 FLIR - DVAR I/F C/A (B2L28)
ISOMETRIC VIEW

Figure 20



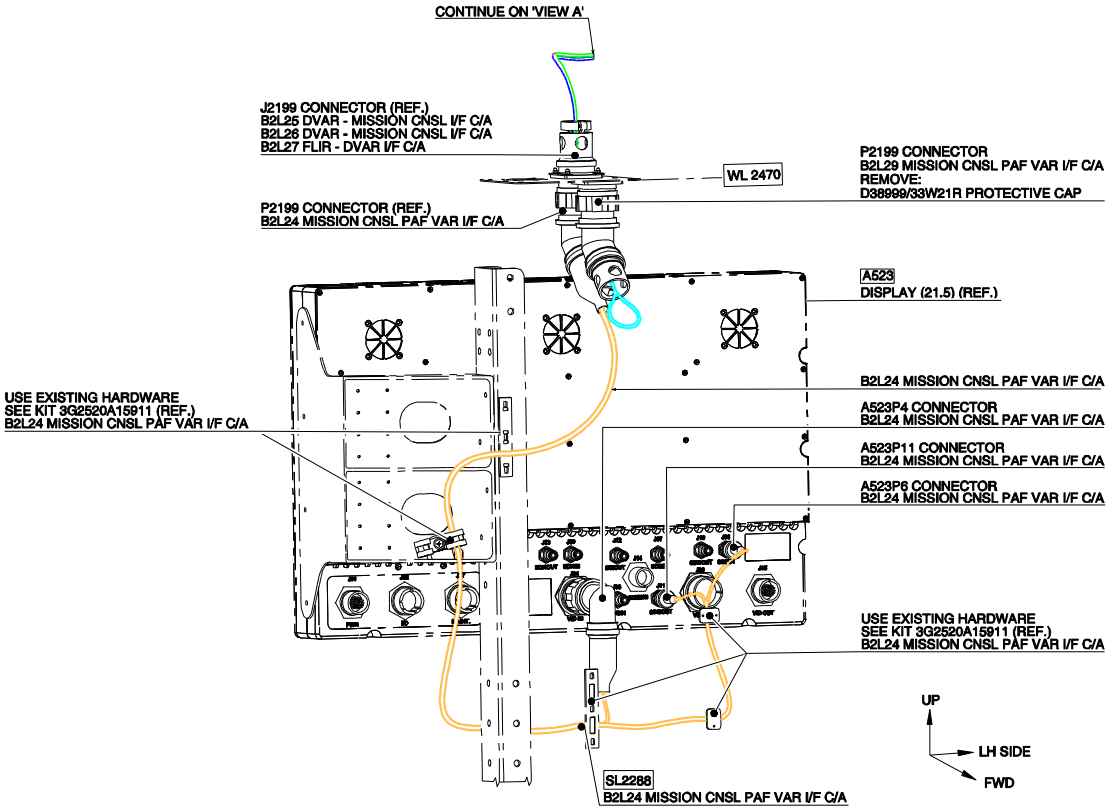
VIEW LOOKING CABIN LH SIDE
FROM STA 3120 TO STA 4800
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 21



VIEW A

STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE



VIEW B

STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 22

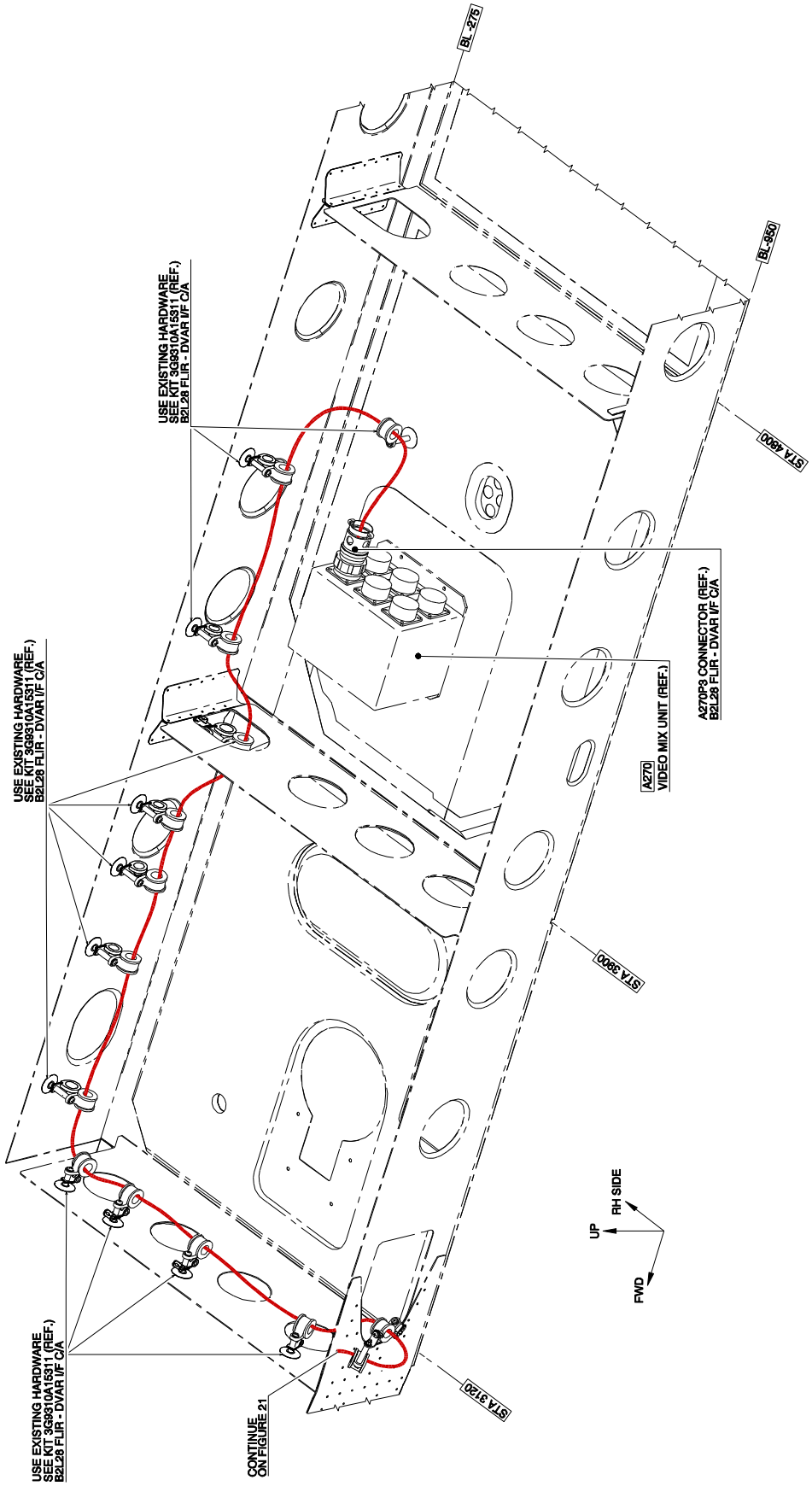

BL -275
BL -350
STA 4900
STA 3900
STA 3120
USE EXISTING HARDWARE
SEE KIT 3G9310A15311 (REF.)
B2L28 FLIR - DVAR I/F C/A
USE EXISTING HARDWARE
SEE KIT 3G9310A15311 (REF.)
B2L28 FLIR - DVAR I/F C/A
USE EXISTING HARDWARE
SEE KIT 3G9310A15311 (REF.)
B2L28 FLIR - DVAR I/F C/A
A270P3 CONNECTOR (REF.)
B2L28 FLIR - DVAR I/F C/A
A270
VIDEO MIX UNIT (REF.)
CONTINUE
ON FIGURE 21
UP
RH SIDE
FWD
VIEW LOOKING DOWN CABIN FLOOR LH SIDE
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 23

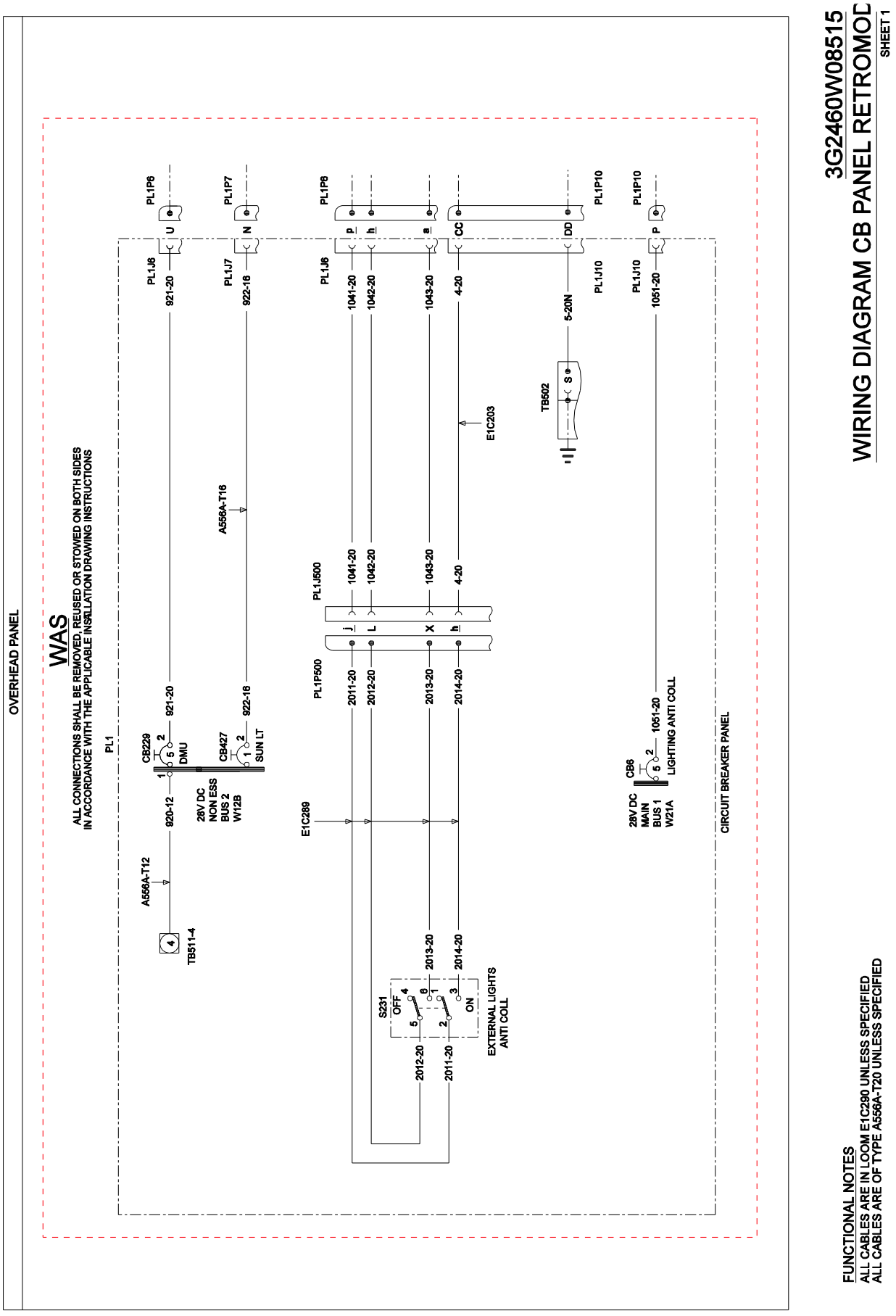

3G2460W08515
WIRING DIAGRAM CB PANEL RETROMOD
SHEET 1
OVERHEAD PANEL
WAS
ALL CONNECTIONS SHALL BE REMOVED, REUSED OR STOWED ON BOTH SIDES IN ACCORDANCE WITH THE APPLICABLE INSTALLATION DRAWING INSTRUCTIONS
PL1
PL1P6
PL1P7
PL1P8
PL1P10
PL1J6
PL1J7
PL1J10
921-20
922-16
1041-20
1042-20
1043-20
4-20
5-20N
1051-20
A556A-T16
E1C203
TB502
PL1J500
PL1P500
2011-20
2012-20
2013-20
2014-20
CB229
DMU
CB427
SUN LT
28V DC NON ESS BUS 2 W12B
920-12
A556A-T12
TB511-4
E1C289
S231
OFF
ON
EXTERNAL LIGHTS ANTI COLL
CB6
28V DC MAIN BUS 1 W21A
LIGHTING ANTI COLL
CIRCUIT BREAKER PANEL
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM E1C290 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556A-T20 UNLESS SPECIFIED

Figure 24

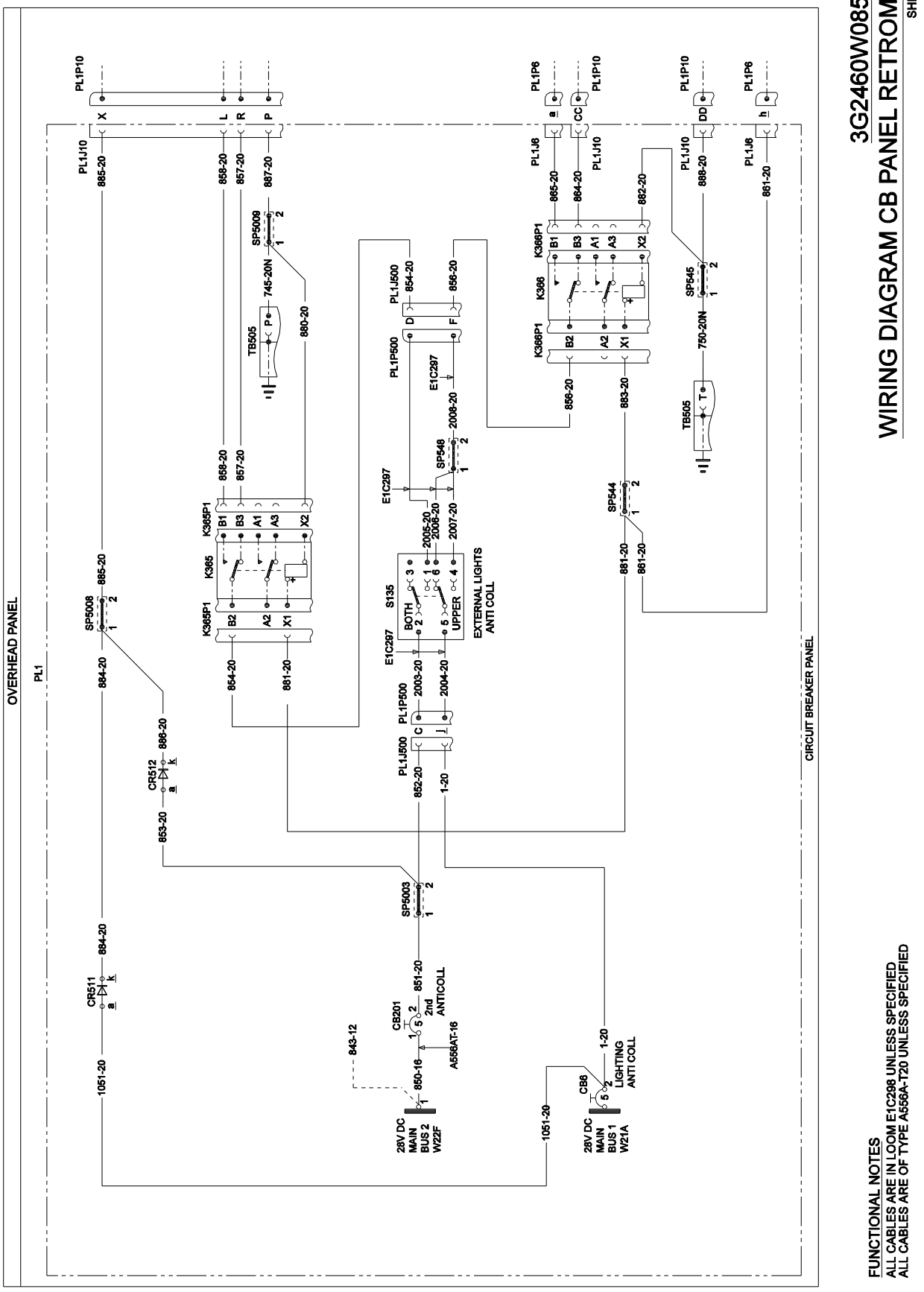

3G2460W08515
WIRING DIAGRAM CB PANEL RETROMOD
SHEET 2
OVERHEAD PANEL
PL1
CIRCUIT BREAKER PANEL
EXTERNAL LIGHTS ANTI COLL
28V DC MAIN BUS 2 W22F
28V DC MAIN BUS 1 W21A
LIGHTING ANTI COLL
2nd ANTICOLL
A556AT-16
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM E1C298 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556A-T20 UNLESS SPECIFIED

Figure 25

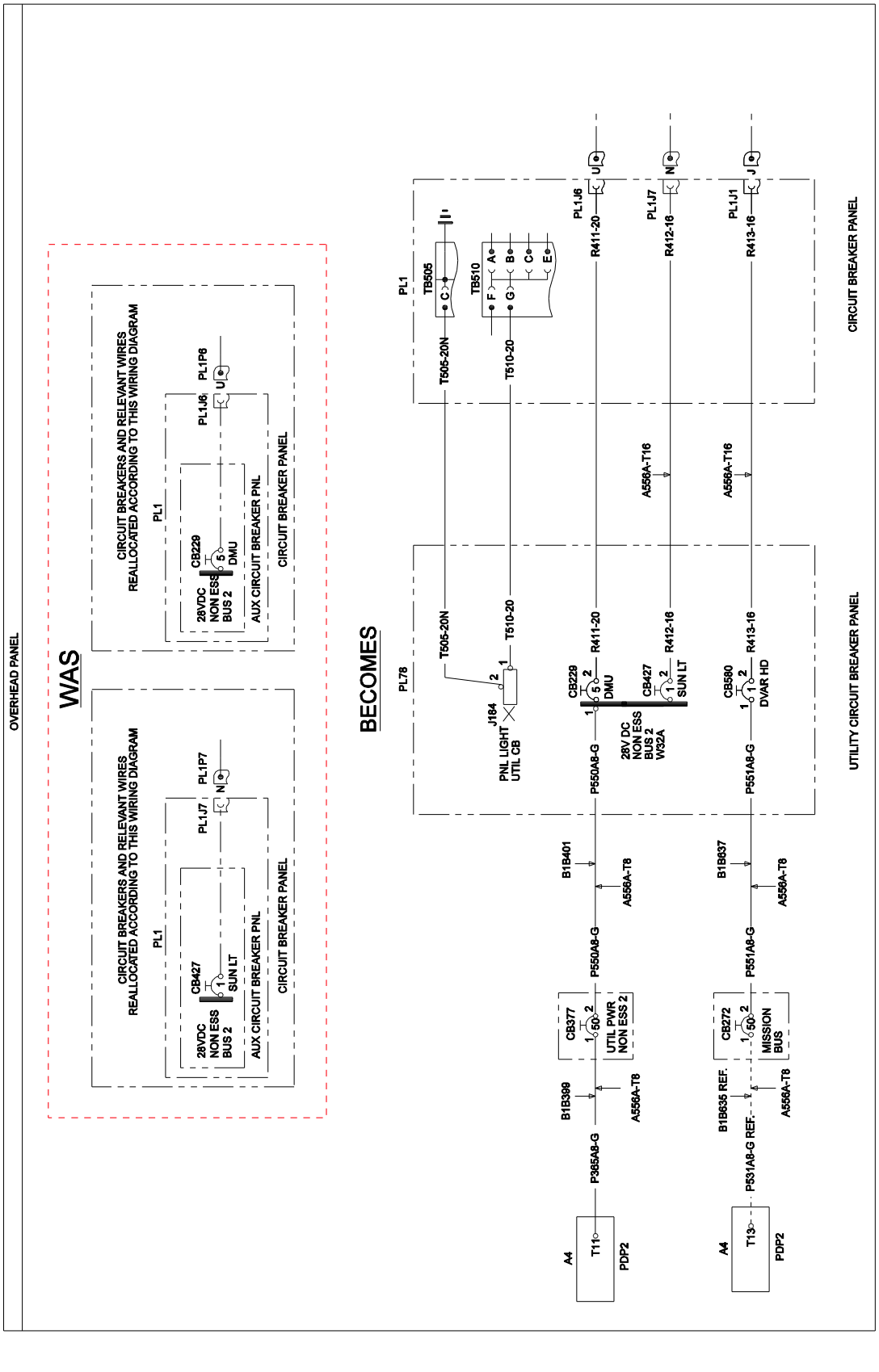

3G2460W06814
WIRING DIAGRAM UTILITY CB PANEL RH
OVERHEAD PANEL
WAS
CIRCUIT BREAKERS AND RELEVANT WIRES REALLOCATED ACCORDING TO THIS WIRING DIAGRAM
PL1
28VDC NON ESS BUS 2
CB427
SUN LT
AUX CIRCUIT BREAKER PNL
CIRCUIT BREAKER PANEL
PL1J7
PL1P7
CIRCUIT BREAKERS AND RELEVANT WIRES REALLOCATED ACCORDING TO THIS WIRING DIAGRAM
PL1
28VDC NON ESS BUS 2
CB229
DMU
AUX CIRCUIT BREAKER PNL
CIRCUIT BREAKER PANEL
PL1J6
PL1P8
BECOMES
PL78
PL1
T505-20N
T510-20
J184
PNL LIGHT UTIL CB
P550A8-G
CB229
DMU
28V DC NON ESS BUS 2 W32A
CB427
SUN LT
R411-20
R412-16
A556A-T16
P551A8-G
CB580
DVAR HD
R413-16
A556A-T16
TB505
TB510
PL1J6
PL1J7
PL1J1
UTILITY CIRCUIT BREAKER PANEL
CIRCUIT BREAKER PANEL
B1B401
A556A-T8
B1B637
A556A-T8
CB377
UTIL PWR NON ESS 2
CB272
MISSION BUS
B1B399
B1B635 REF.
A556A-T8
A556A-T8
P365A8-G
P531A8-G REF.
A4
T11
PDP2
A4
T13
PDP2
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM E1C243 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556A-T20 UNLESS SPECIFIED

Figure 26

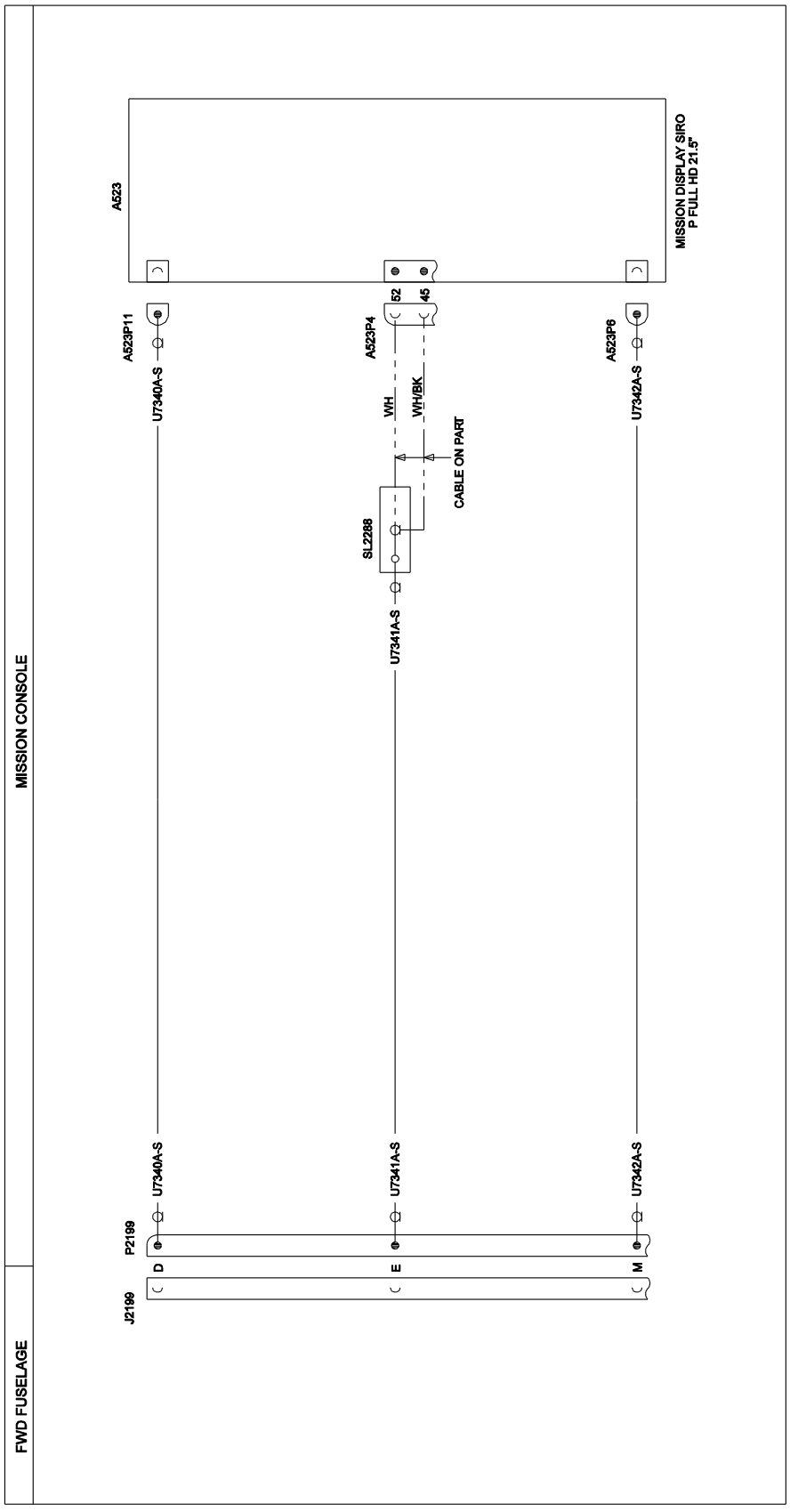
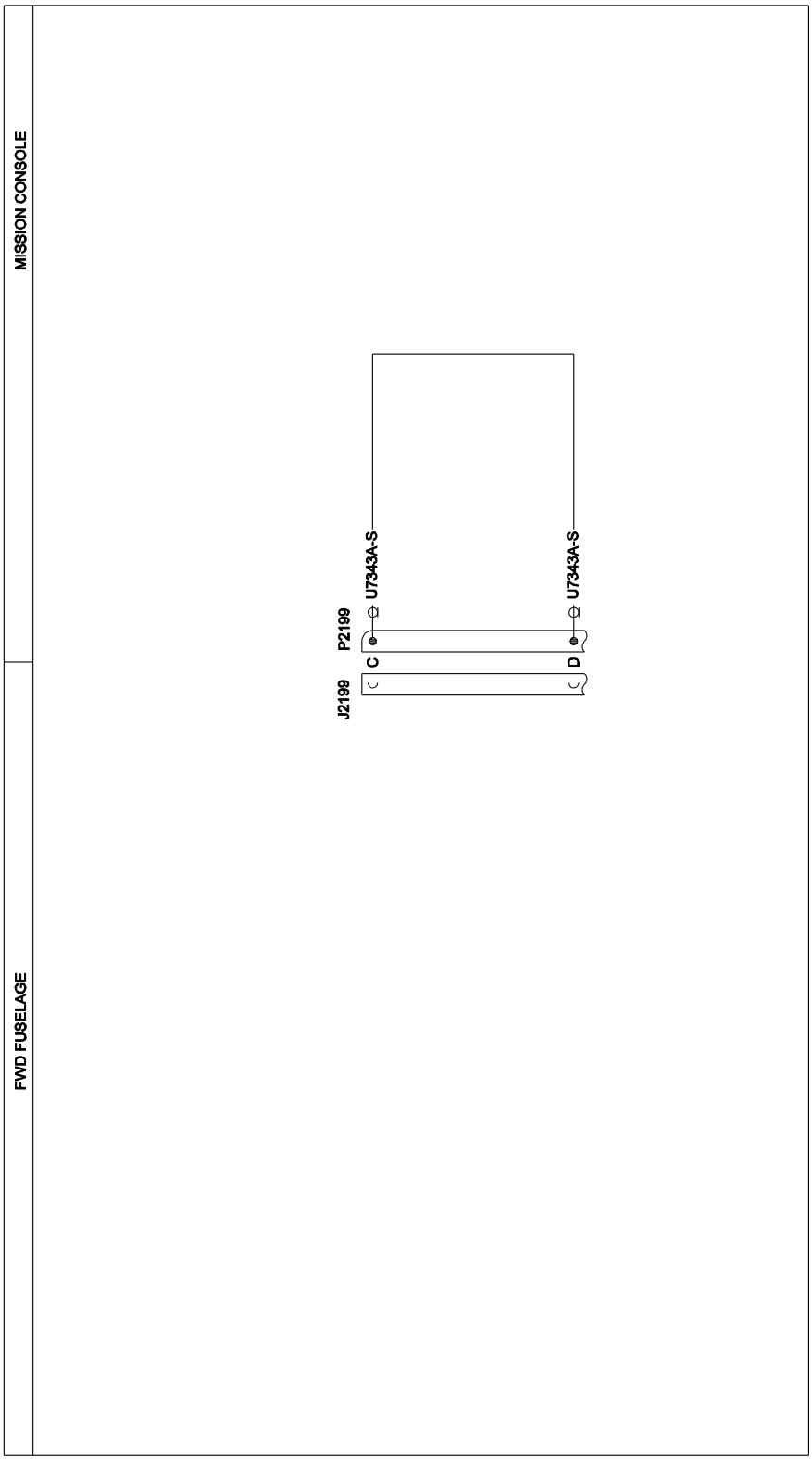

3G2350W13811
WIRING DIAGRAMMISSION CNSL PAF VARIANT
SHEET 1
FWD FUSELAGE
MISSION CONSOLE
A523
MISSION DISPLAY SIRO
P FULL HD 21.5"
A523P11
A523P4
A523P6
52
45
U7340A-S
U7342A-S
WH
WH/BK
CABLE ON PART
SL2288
U7341A-S
U7340A-S
U7341A-S
U7342A-S
P2199
J2199
D
E
M
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOMB2L24 UNLESS SPECIFIED
ALL CABLES ARE OF TYPBM17/94-RG179 UNLESS SPECIFIED

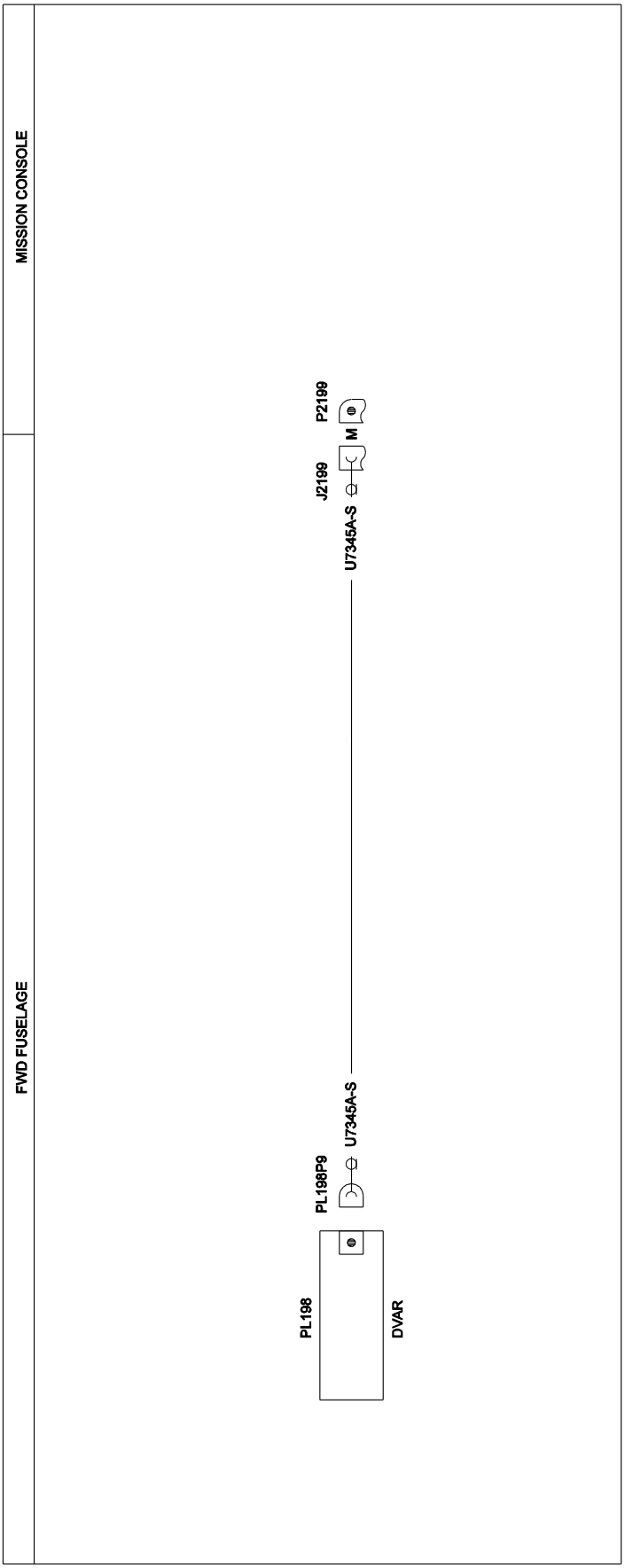
Figure 27



3G2350W13811
WIRING DIAGRAM MISSION CNSL PAF VARIANT
SHEET 2

FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM B2L29 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE M17/94-RG179 UNLESS SPECIFIED

Figure 28

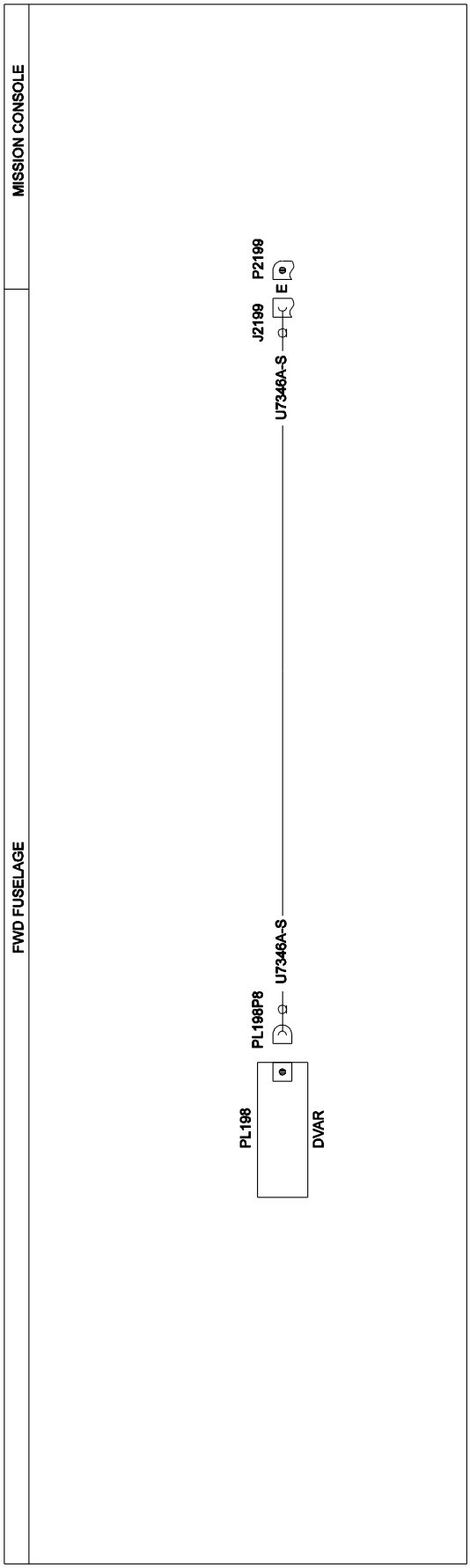


3G9310W27311

WIRING DIAGRAMDVAR - MISSION CNSL I/F

FUNCTIONAL NOTES
ALL CABLES ARE IN LOOMB2L25 UNLESS SPECIFIED
ALL CABLES ARE OF TYPBM1794-RG179 UNLESS SPECIFIED

Figure 29

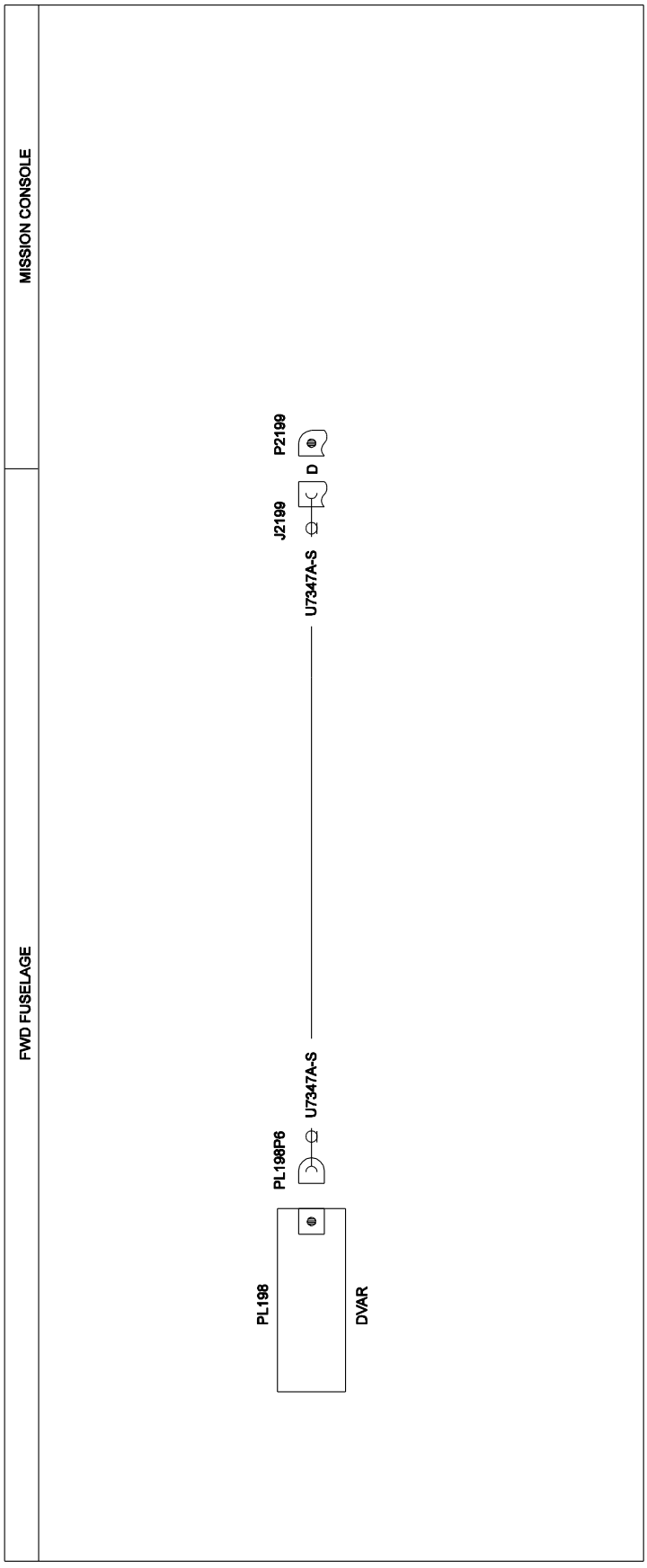


3G9310W27411
WIRING DIAGRAMDVAR - MISSION CNSL I/F

FUNCTIONAL NOTES
ALL CABLES ARE IN LOOMB2L26 UNLESS SPECIFIED
ALL CABLES ARE OF TYPBM17/94-RG179 UNLESS SPECIFIED

Figure 30

3G9310W27511
WIRING DIAGRAMFLIR - DVAR I/F



FUNCTIONAL NOTES
ALL CABLES ARE IN LOOMB2127 UNLESS SPECIFIED
ALL CABLES ARE OF TYPBM17/94-RG179 UNLESS SPECIFIED

Figure 31

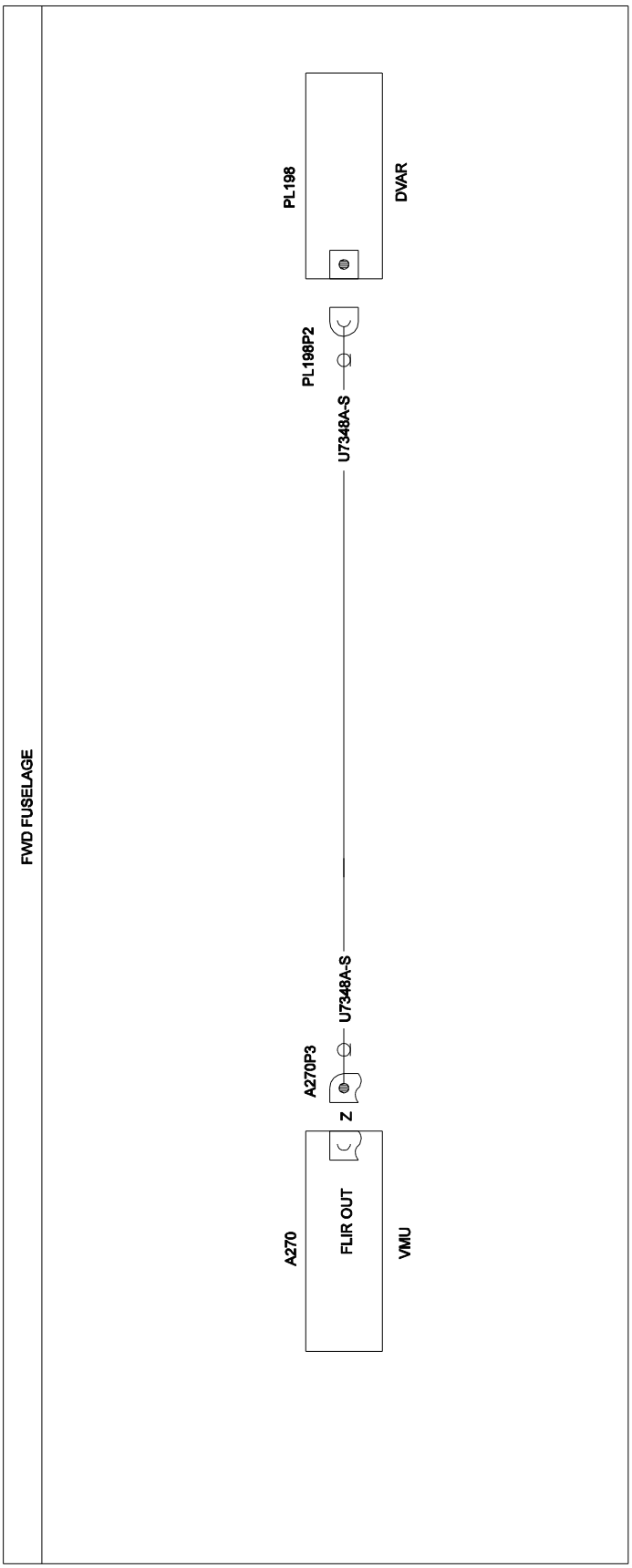

3G9310W27611
WIRING DIAGRAMFLIR - DVAR I/F
FWD FUSELAGE
PL198
DVAR
PL198P2
U7348A-S
A270P3
U7348A-S
Z
A270
FLIR OUT
VMU
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOMB2L28 UNLESS SPECIFIED
ALL CABLES ARE OF TYPBM17/94-RG179 UNLESS SPECIFIED

Figure 32

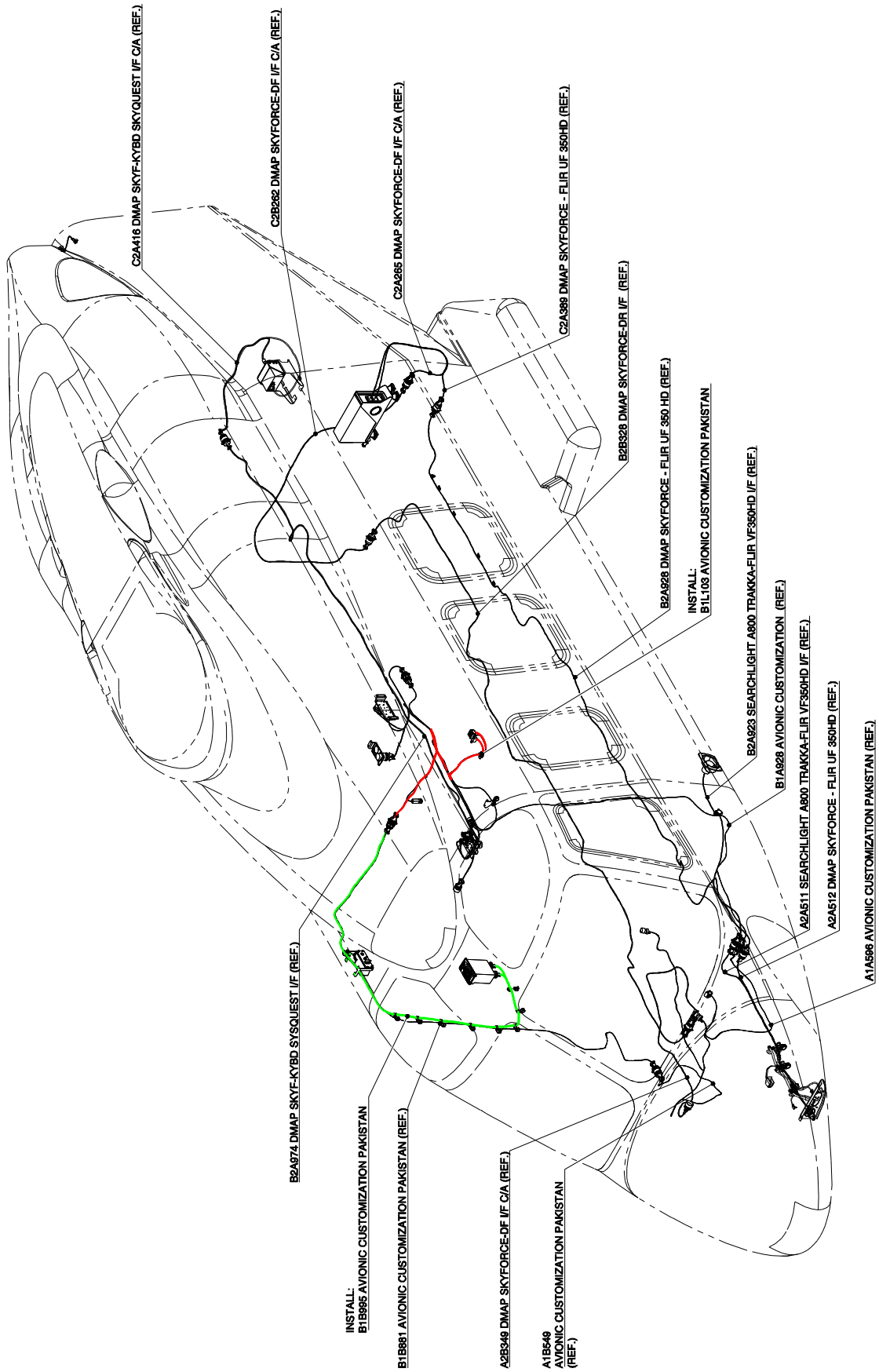
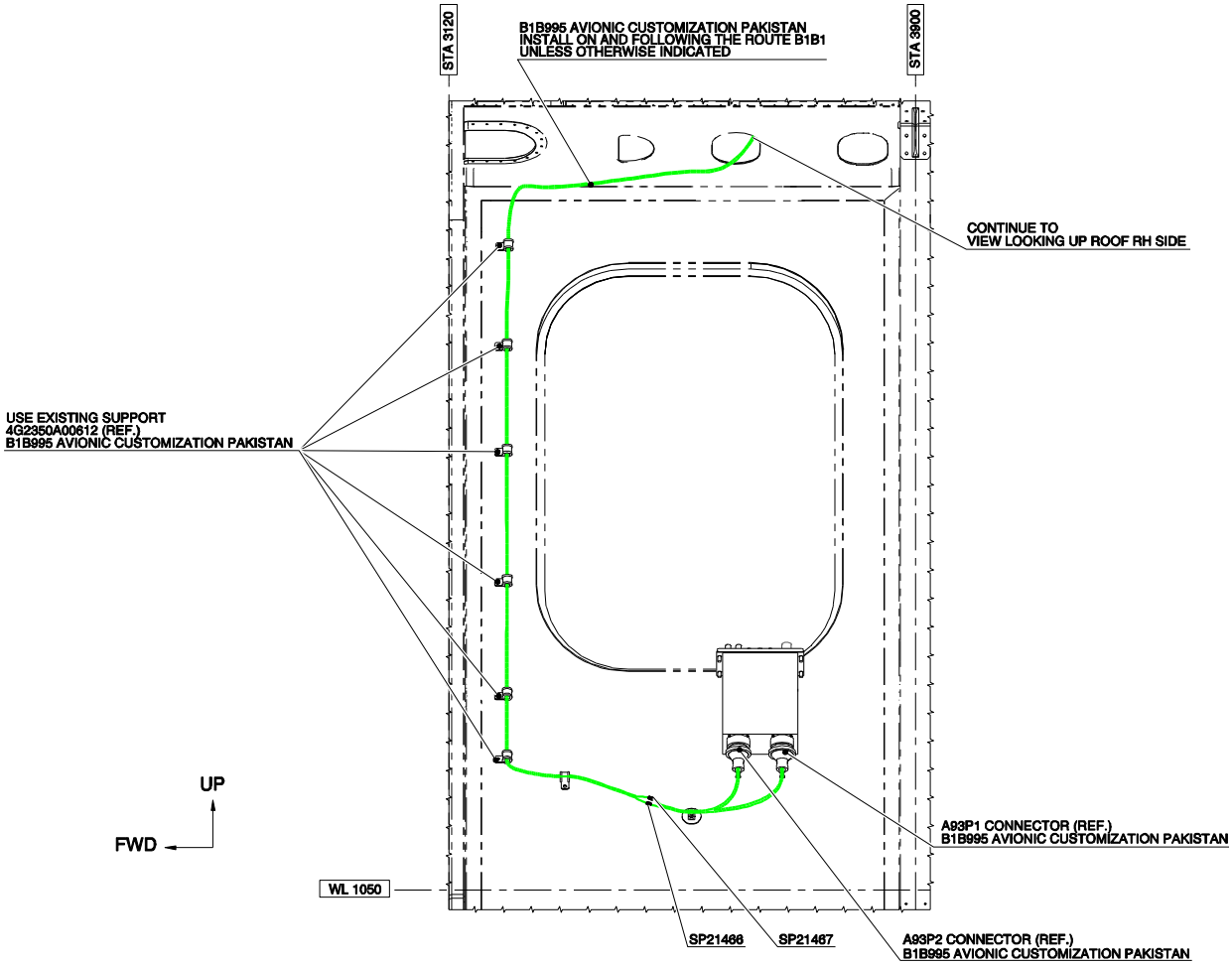
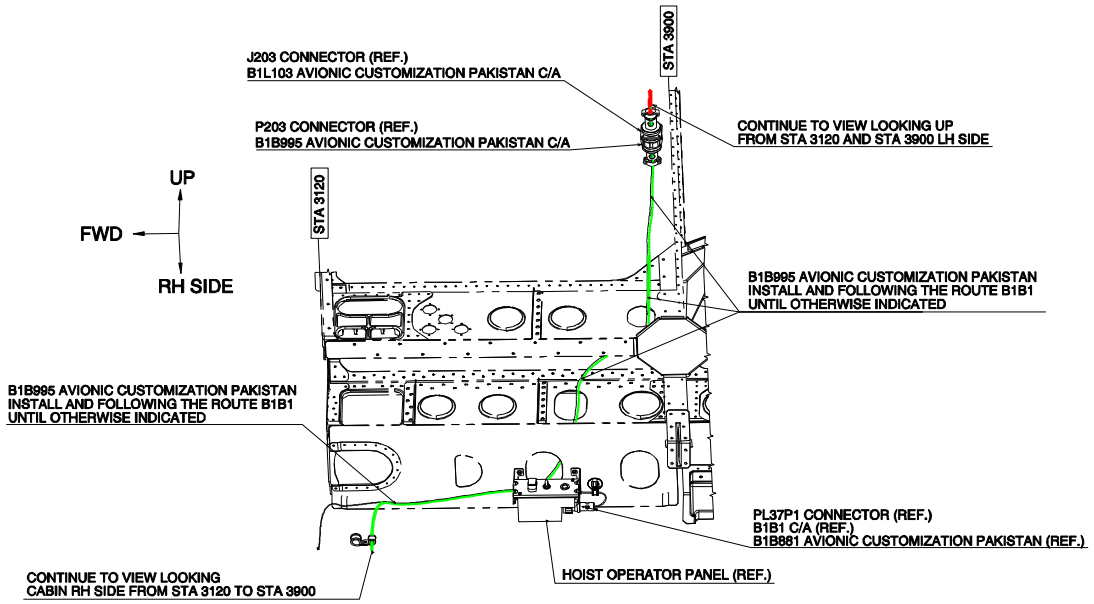

C2A416 DMAP SKYF-KYBD SKYQUEST I/F C/A (REF.)
C2B262 DMAP SKYFORCE-DF I/F C/A (REF.)
C2A265 DMAP SKYFORCE-DF I/F C/A (REF.)
C2A389 DMAP SKYFORCE - FLIR UF 350HD (REF.)
B2B328 DMAP SKYFORCE-DR I/F (REF.)
B2A928 DMAP SKYFORCE - FLIR UF 350 HD (REF.)
INSTALL:
B1L103 AVIONIC CUSTOMIZATION PAKISTAN
B2A923 SEARCHLIGHT A800 TRAKKA-FLIR VF350HD I/F (REF.)
B1A928 AVIONIC CUSTOMIZATION (REF.)
A2A511 SEARCHLIGHT A800 TRAKKA-FLIR VF350HD I/F (REF.)
A2A512 DMAP SKYFORCE - FLIR UF 350HD (REF.)
A1A596 AVIONIC CUSTOMIZATION PAKISTAN (REF.)
B2A974 DMAP SKYF-KYBD SYSQUEST I/F (REF.)
INSTALL:
B1B995 AVIONIC CUSTOMIZATION PAKISTAN
B1B881 AVIONIC CUSTOMIZATION PAKISTAN (REF.)
A2B349 DMAP SKYFORCE-DF I/F C/A (REF.)
A1B549
AVIONIC CUSTOMIZATION PAKISTAN
(REF.)

Figure 33



VIEW LOOKING CABIN RH SIDE FROM STA 3120 TO STA 3900
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE



VIEW LOOKING UP ROOF RH SIDE
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 34

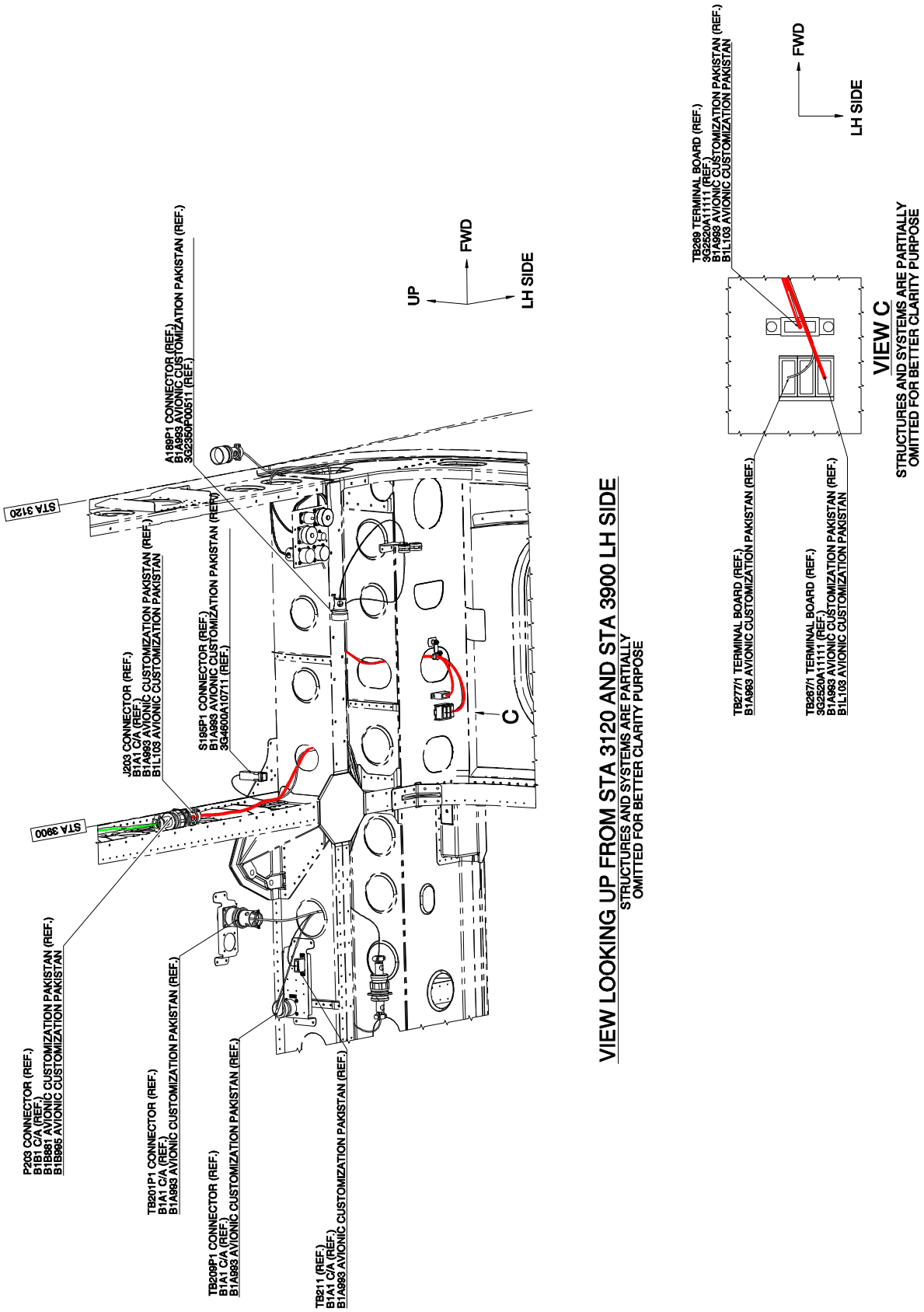

VIEW LOOKING UP FROM STA 3120 AND STA 3900 LH SIDE
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
UP
FWD
LH SIDE
STA 3120
STA 3800
A189P1 CONNECTOR (REF.)
B1A993 AVIONIC CUSTOMIZATION PAKISTAN (REF.)
3G2250AP00511 (REF.)
J203 CONNECTOR (REF.)
B1A1 C/A (REF.)
B1A993 AVIONIC CUSTOMIZATION PAKISTAN (REF.)
B1L103 AVIONIC CUSTOMIZATION PAKISTAN
S195P1 CONNECTOR (REF.)
B1A993 AVIONIC CUSTOMIZATION PAKISTAN (REF.)
3G4600A10711 (REF.)
C
P203 CONNECTOR (REF.)
B1B1 C/A (REF.)
B1B881 AVIONIC CUSTOMIZATION PAKISTAN (REF.)
B1B995 AVIONIC CUSTOMIZATION PAKISTAN
TB201P1 CONNECTOR (REF.)
B1A1 C/A (REF.)
B1A993 AVIONIC CUSTOMIZATION PAKISTAN (REF.)
TB209P1 CONNECTOR (REF.)
B1A1 C/A (REF.)
B1A993 AVIONIC CUSTOMIZATION PAKISTAN (REF.)
TB211 (REF.)
B1A1 C/A (REF.)
B1A993 AVIONIC CUSTOMIZATION PAKISTAN (REF.)
VIEW C
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
FWD
LH SIDE
TB269 TERMINAL BOARD (REF.)
3G2520A11111 (REF.)
B1A993 AVIONIC CUSTOMIZATION PAKISTAN (REF.)
B1L103 AVIONIC CUSTOMIZATION PAKISTAN
TB277/1 TERMINAL BOARD (REF.)
B1A993 AVIONIC CUSTOMIZATION PAKISTAN (REF.)
TB287/1 TERMINAL BOARD (REF.)
3G2520A11111 (REF.)
B1A993 AVIONIC CUSTOMIZATION PAKISTAN (REF.)
B1L103 AVIONIC CUSTOMIZATION PAKISTAN

Figure 35

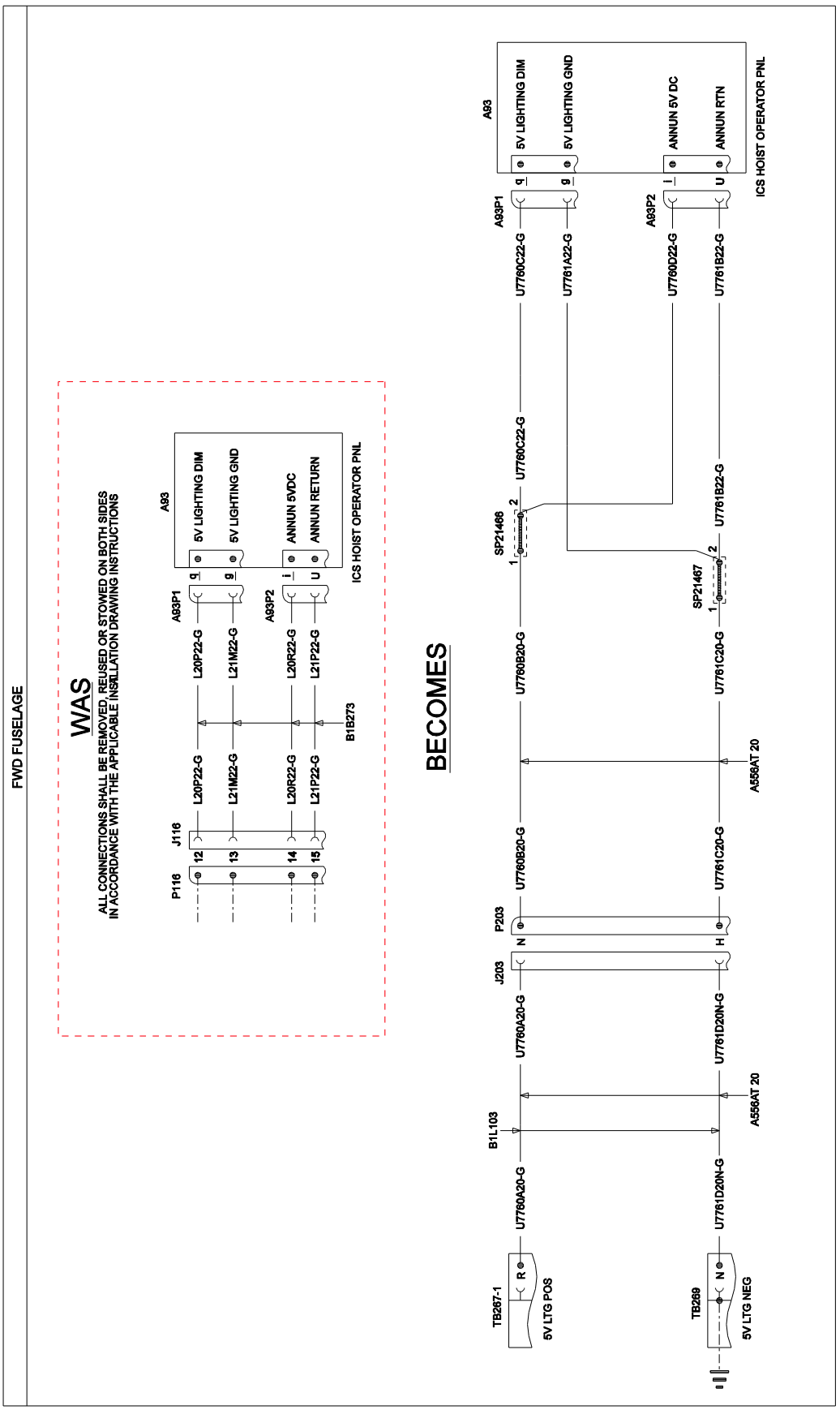
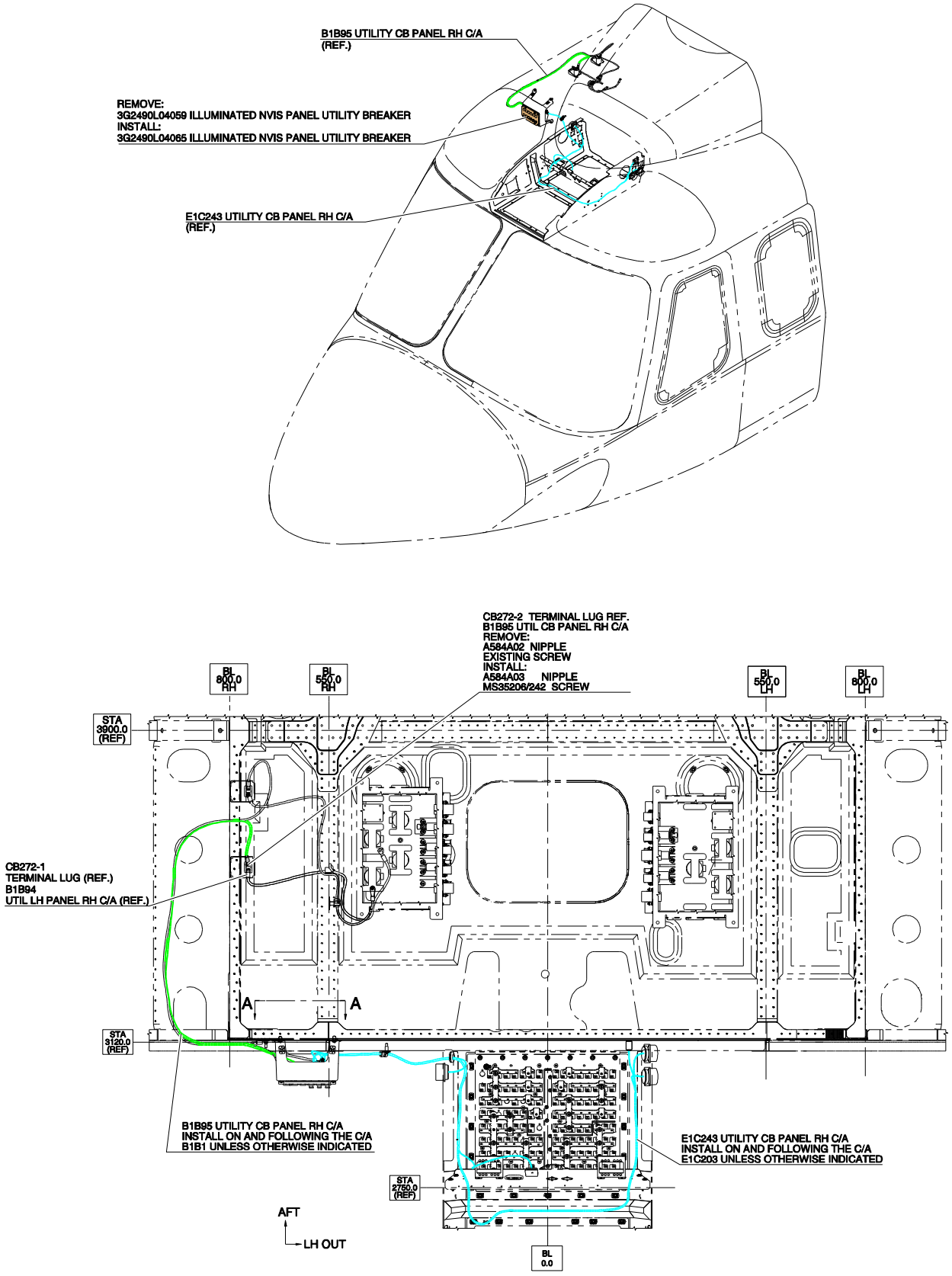

FWD FUSELAGE
WAS
ALL CONNECTIONS SHALL BE REMOVED, REUSED OR STOWED ON BOTH SIDES IN ACCORDANCE WITH THE APPLICABLE INSTALLATION DRAWING INSTRUCTIONS
A93
5V LIGHTING DIM
5V LIGHTING GND
ANNUN 5VDC
ANNUN RETURN
ICS HOIST OPERATOR PNL
A93P1
A93P2
P116
J116
L20P22-G
L21M22-G
L20R22-G
L21P22-G
B1B273
BECOMES
SP21466
SP21467
U7760C22-G
U7761A22-G
U7760D22-G
U7761B22-G
U7760B20-G
U7761C20-G
A556AT 20
P203
J203
U7760A20-G
U7761D20N-G
B1L103
TB267-1
TB269
5V LTG POS
5V LTG NEG
3G4600W10411
WIRING DIAGRAMAVIONIC CUSTOMIZATION PAKISTAN
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM B1B995 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556A 22 UNLESS SPECIFIED

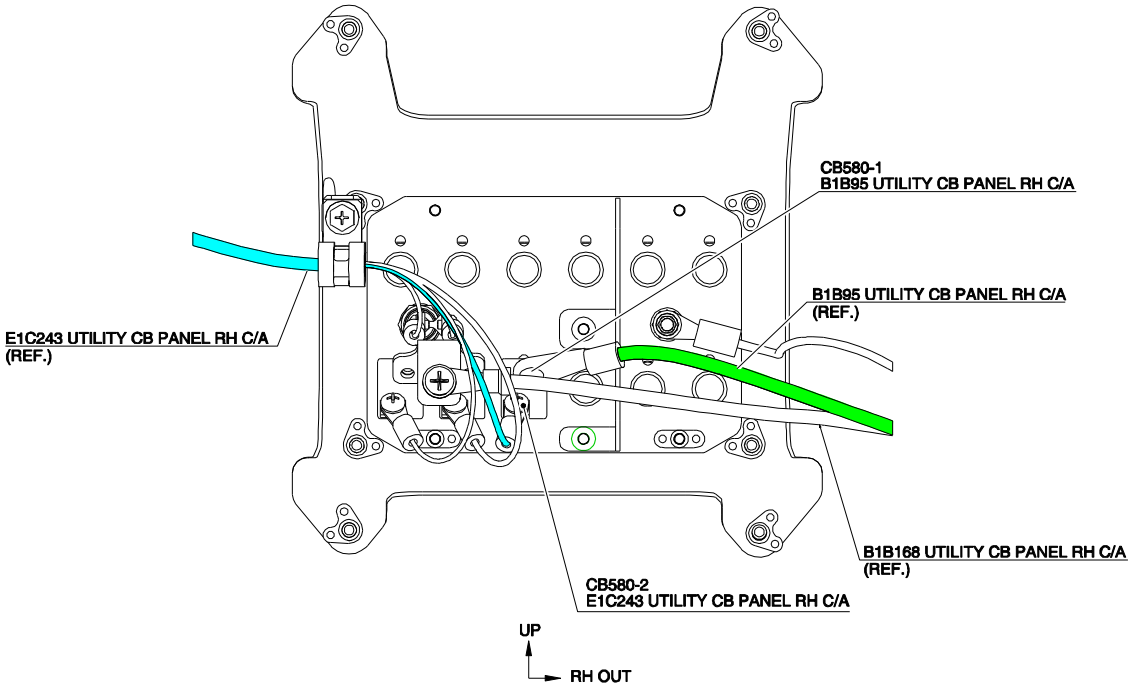
Figure 36



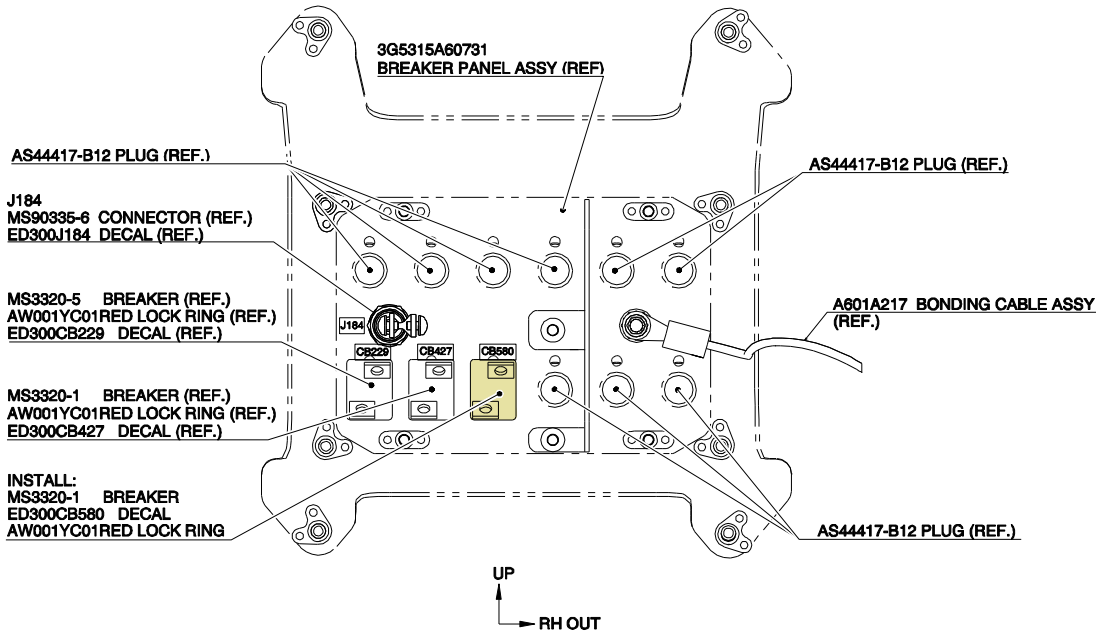
VIEW LOOKING DOWN CABIN ROOF AND O/H PANEL

STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 37



VIEW A-A
ROTATE OF 180°
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE



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

Figure 38

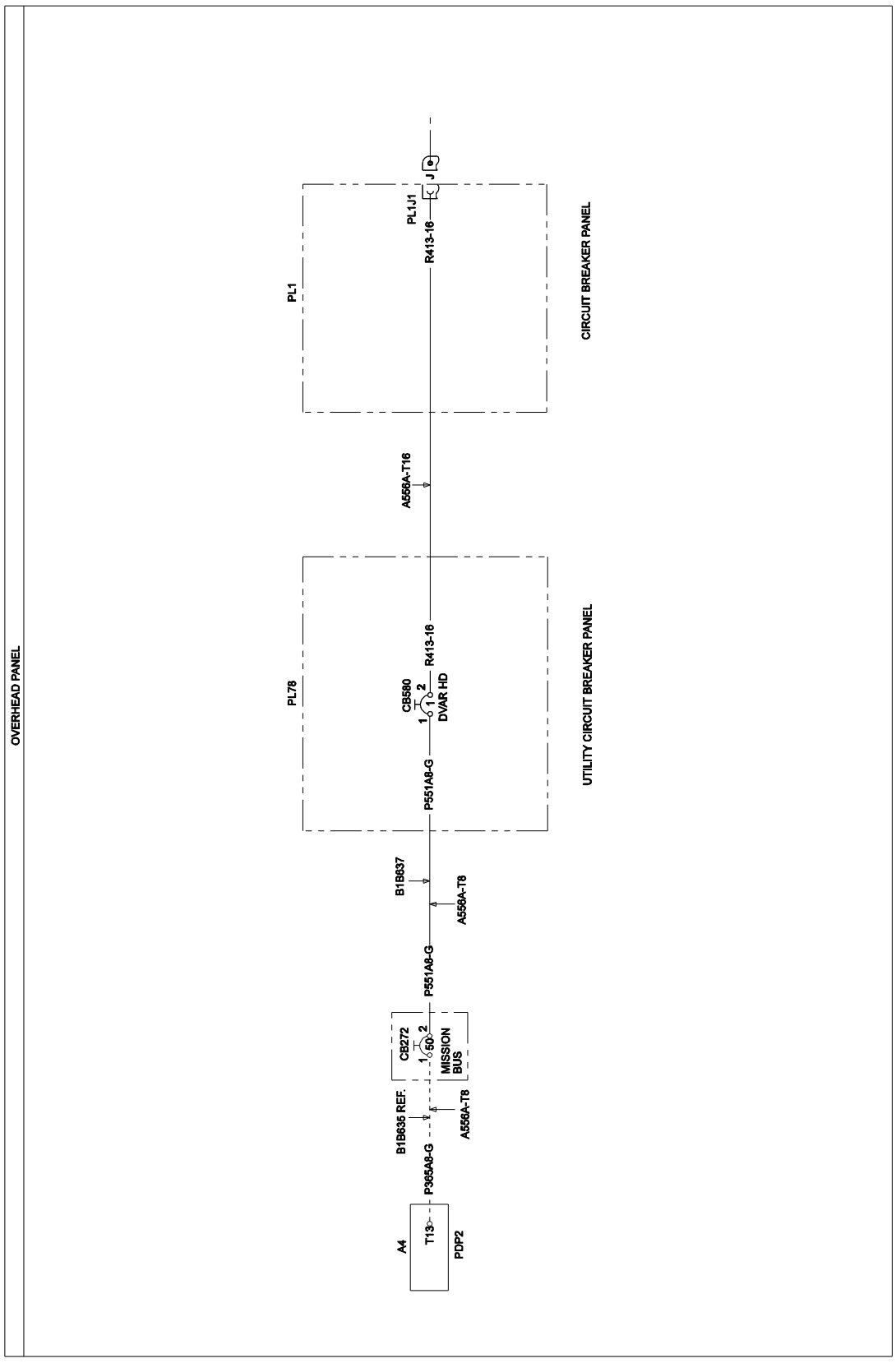

3G2460W06814
WIRING DIAGRAM UTILITY CB PANEL RH
OVERHEAD PANEL
PL1
CIRCUIT BREAKER PANEL
PL1J1
R413-16
A556A-T16
PL78
UTILITY CIRCUIT BREAKER PANEL
CB580
DVAR HD
P551A8-G
B1B837
A556A-T8
CB272
MISSION BUS
B1B635 REF:
P365A8-G
A4
T13
PDP2
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM E1C243 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556A-T20 UNLESS SPECIFIED

Figure 39

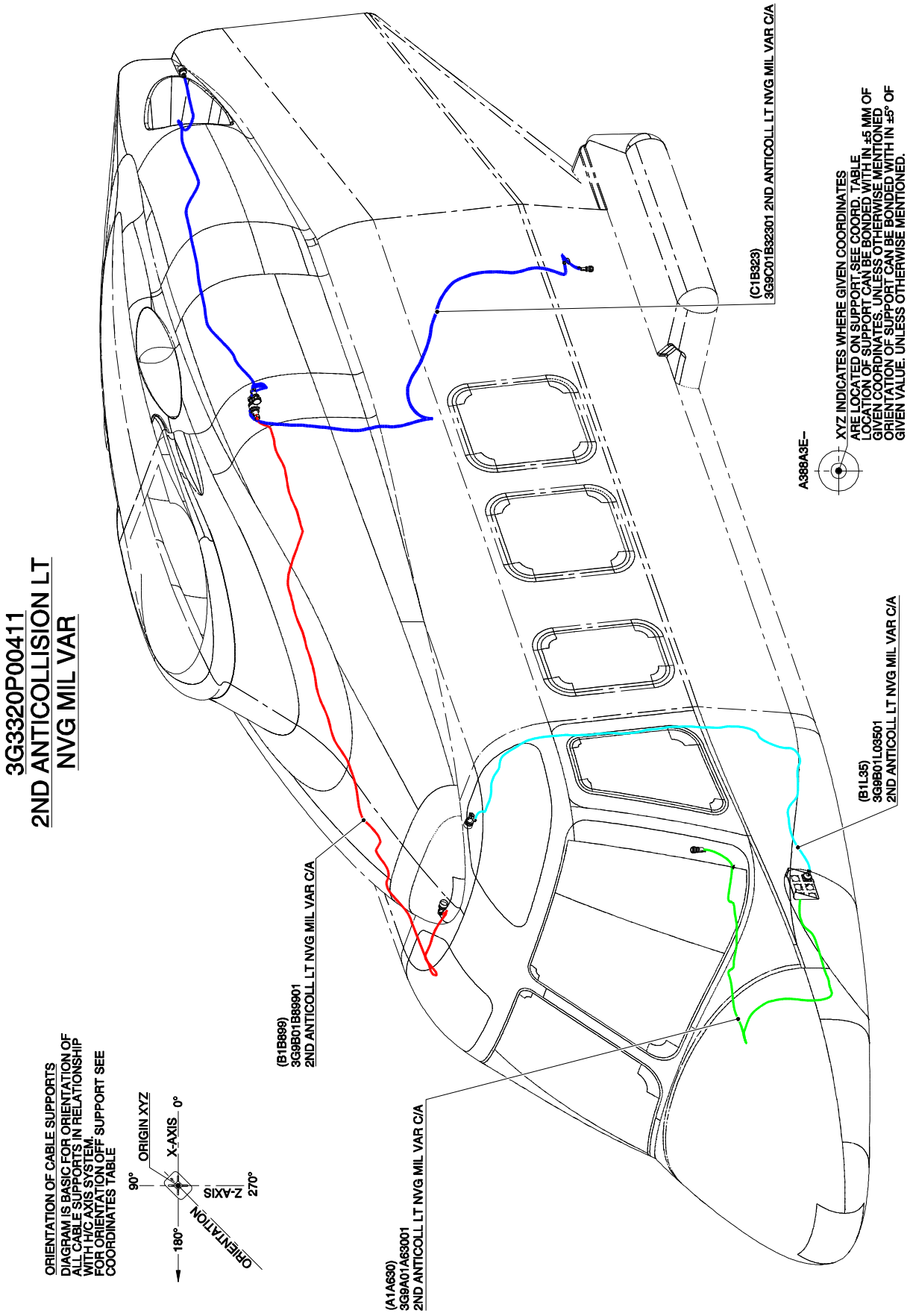

3G3320P00411
2ND ANTICOLLISION LT
NVG MIL VAR
ORIENTATION OF CABLE SUPPORTS
DIAGRAM IS BASIC FOR ORIENTATION OF
ALL CABLE SUPPORTS IN RELATIONSHIP
WITH H/C AXIS SYSTEM.
FOR ORIENTATION OFF SUPPORT SEE
COORDINATES TABLE
ORIGIN XYZ
X-AXIS
Z-AXIS
ORIENTATION
0°
90°
180°
270°
(B1B899)
3G9B01B89901
2ND ANTICOLL LT NVG MIL VAR C/A
(A1A630)
3G9A01A63001
2ND ANTICOLL LT NVG MIL VAR C/A
(B1L35)
3G9B01L03501
2ND ANTICOLL LT NVG MIL VAR C/A
(C1B323)
3G9C01B32301 2ND ANTICOLL LT NVG MIL VAR C/A
A388A3E--
XYZ INDICATES WHERE GIVEN COORDINATES
ARE LOCATED ON SUPPORT. SEE COORD. TABLE
LOCATION OF SUPPORT CAN BE BONDED WITH IN ±5 MM OF
GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED
ORIENTATION OF SUPPORT CAN BE BONDED WITH IN ±5° OF
GIVEN VALUE. UNLESS OTHERWISE MENTIONED.

Figure 40

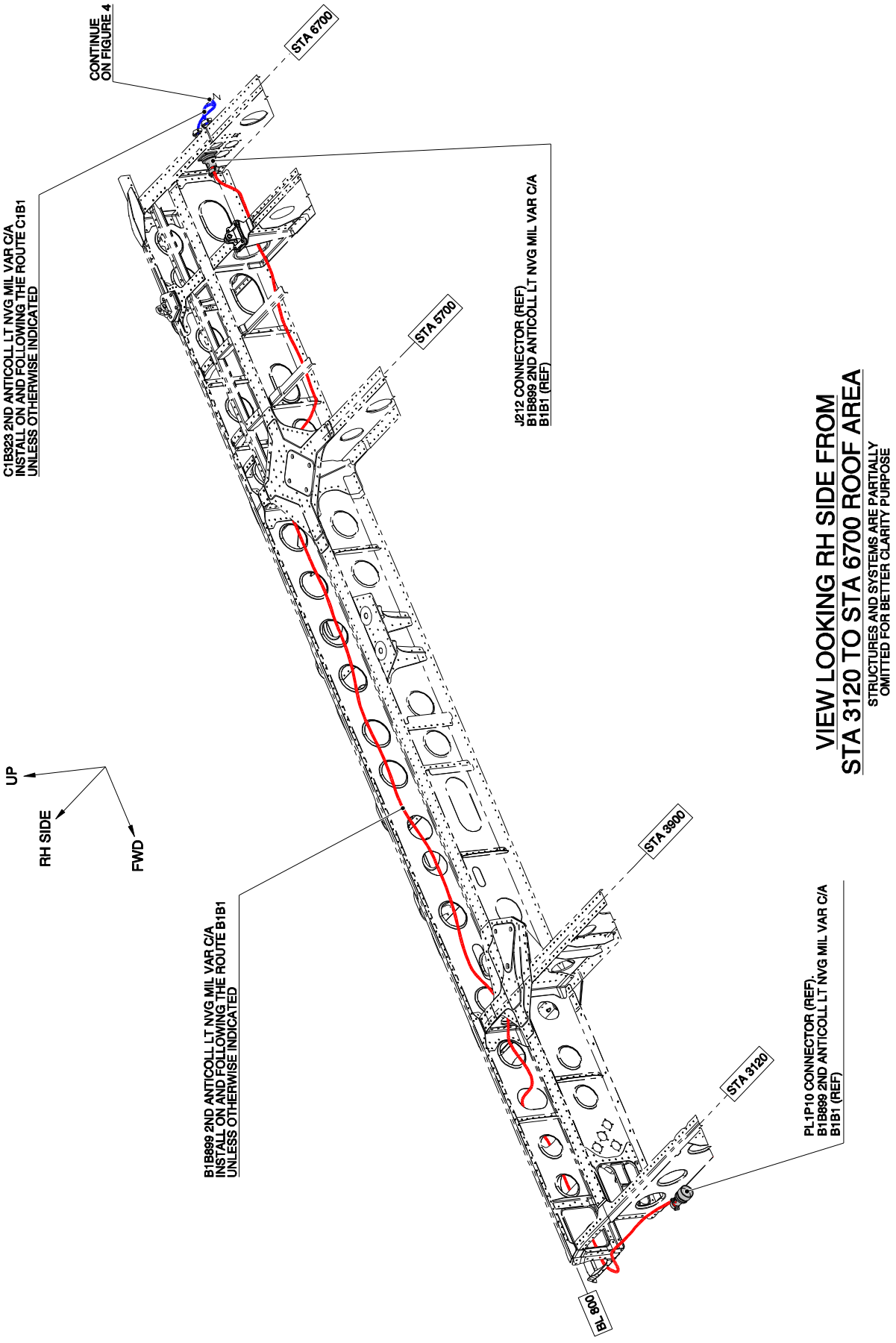
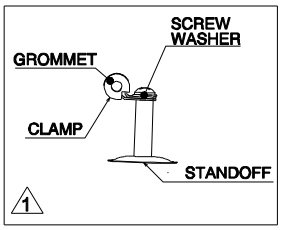

CONTINUE ON FIGURE 4
STA 6700
STA 5700
STA 3900
STA 3120
BL 600
C1B323 2ND ANTICOLL LT NVG MIL VAR C/A INSTALL ON AND FOLLOWING THE ROUTE C1B1 UNLESS OTHERWISE INDICATED
J212 CONNECTOR (REF) B1B899 2ND ANTICOLL LT NVG MIL VAR C/A B1B1 (REF)
B1B899 2ND ANTICOLL LT NVG MIL VAR C/A INSTALL ON AND FOLLOWING THE ROUTE B1B1 UNLESS OTHERWISE INDICATED
PL1P10 CONNECTOR (REF). B1B899 2ND ANTICOLL LT NVG MIL VAR C/A B1B1 (REF)
UP
RH SIDE
FWD
VIEW LOOKING RH SIDE FROM STA 3120 TO STA 6700 ROOF AREA
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 41

LOCATION NUMBER	PART. NUMBER	STA	BL	WL	ORIENTATION
1	A388A3E18C	7028	-333	966	



VIEW LOOKING A.D.O.F. RH SIDE REAR AREA

STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 42

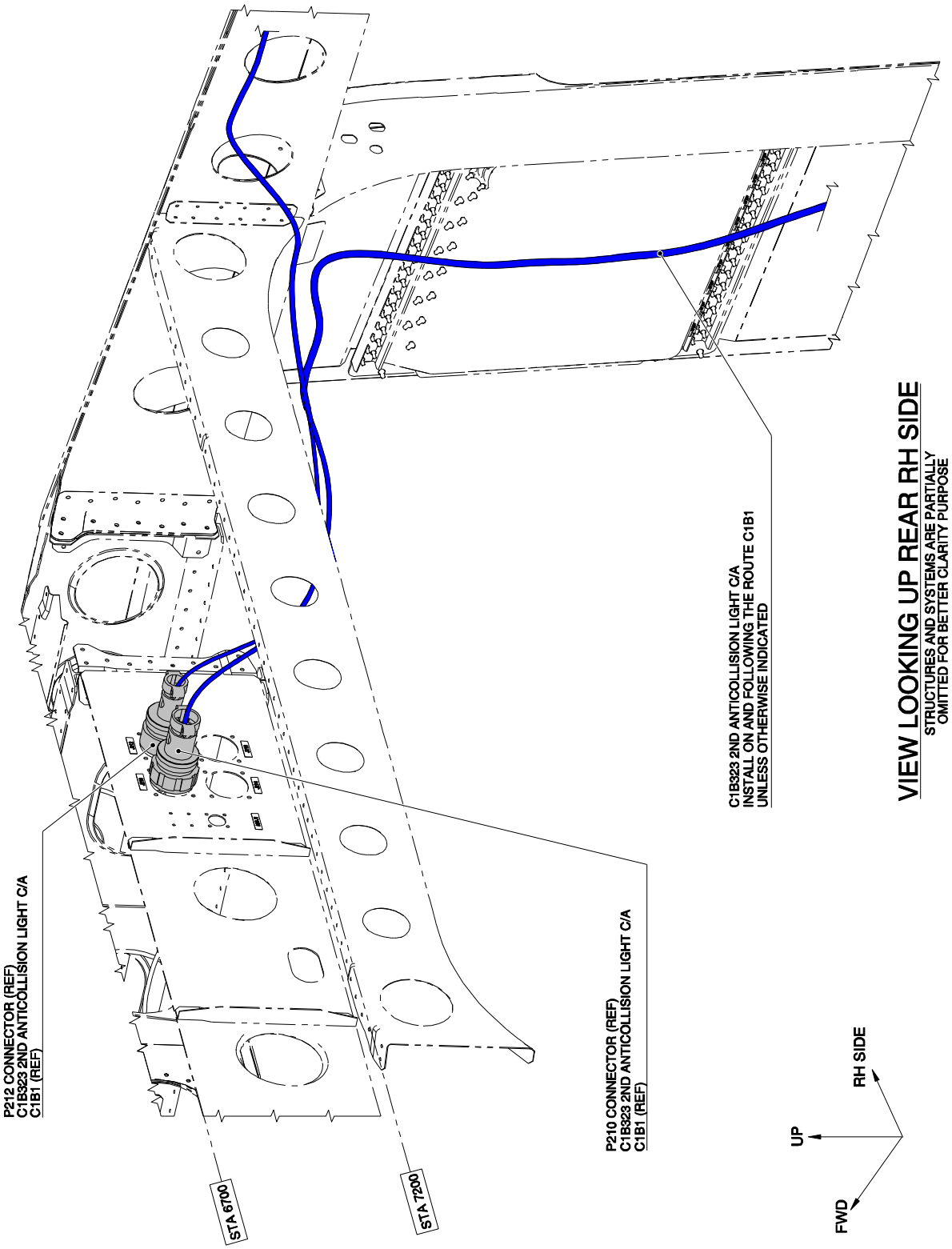

VIEW LOOKING UP REAR RH SIDE
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
C1B323 2ND ANTICOLLISION LIGHT C/A INSTALL ON AND FOLLOWING THE ROUTE C1B1 UNLESS OTHERWISE INDICATED
P212 CONNECTOR (REF) C1B323 2ND ANTICOLLISION LIGHT C/A C1B1 (REF)
P210 CONNECTOR (REF) C1B323 2ND ANTICOLLISION LIGHT C/A C1B1 (REF)
STA 6700
STA 7200
UP
RH SIDE
FWD

Figure 43

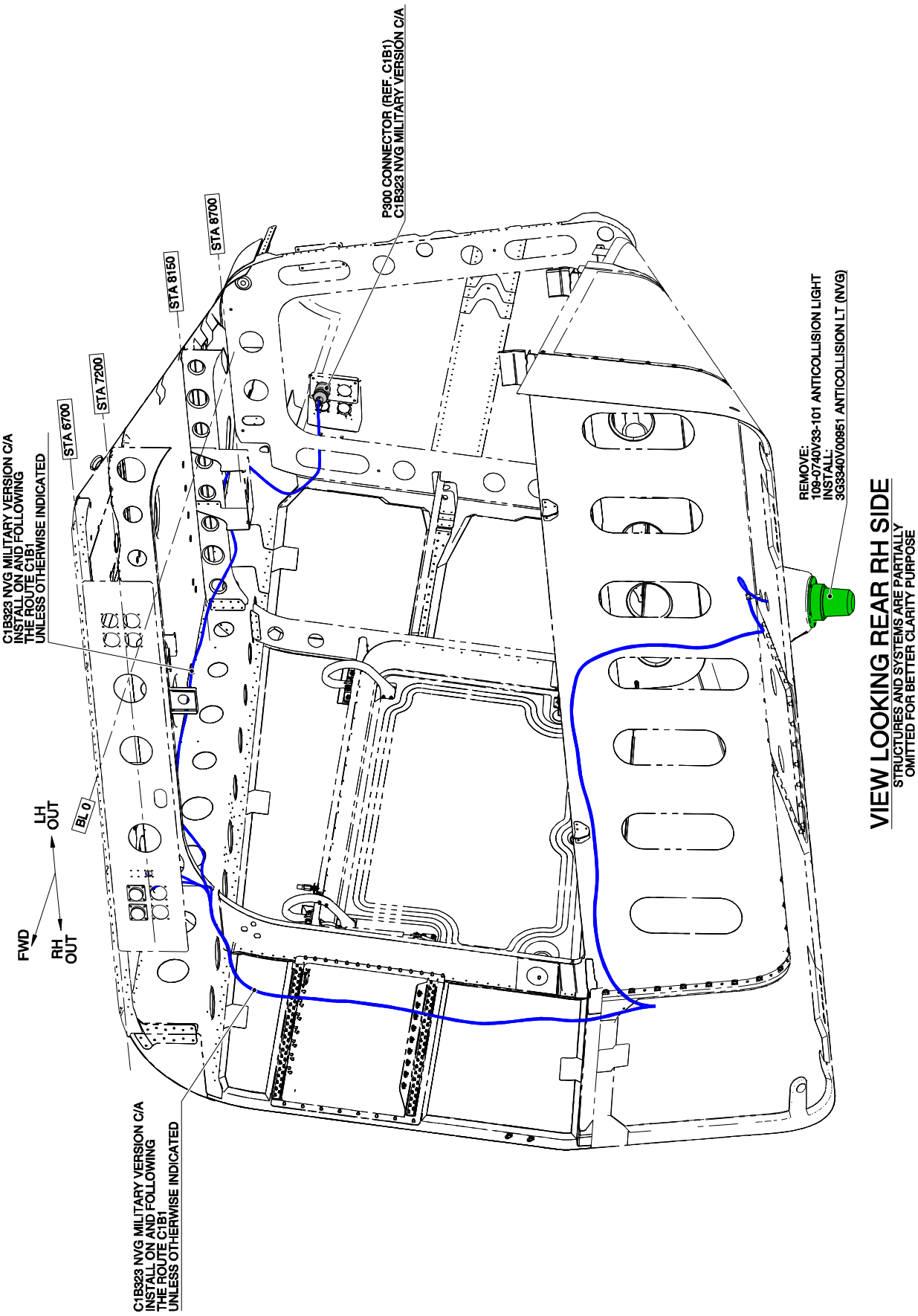
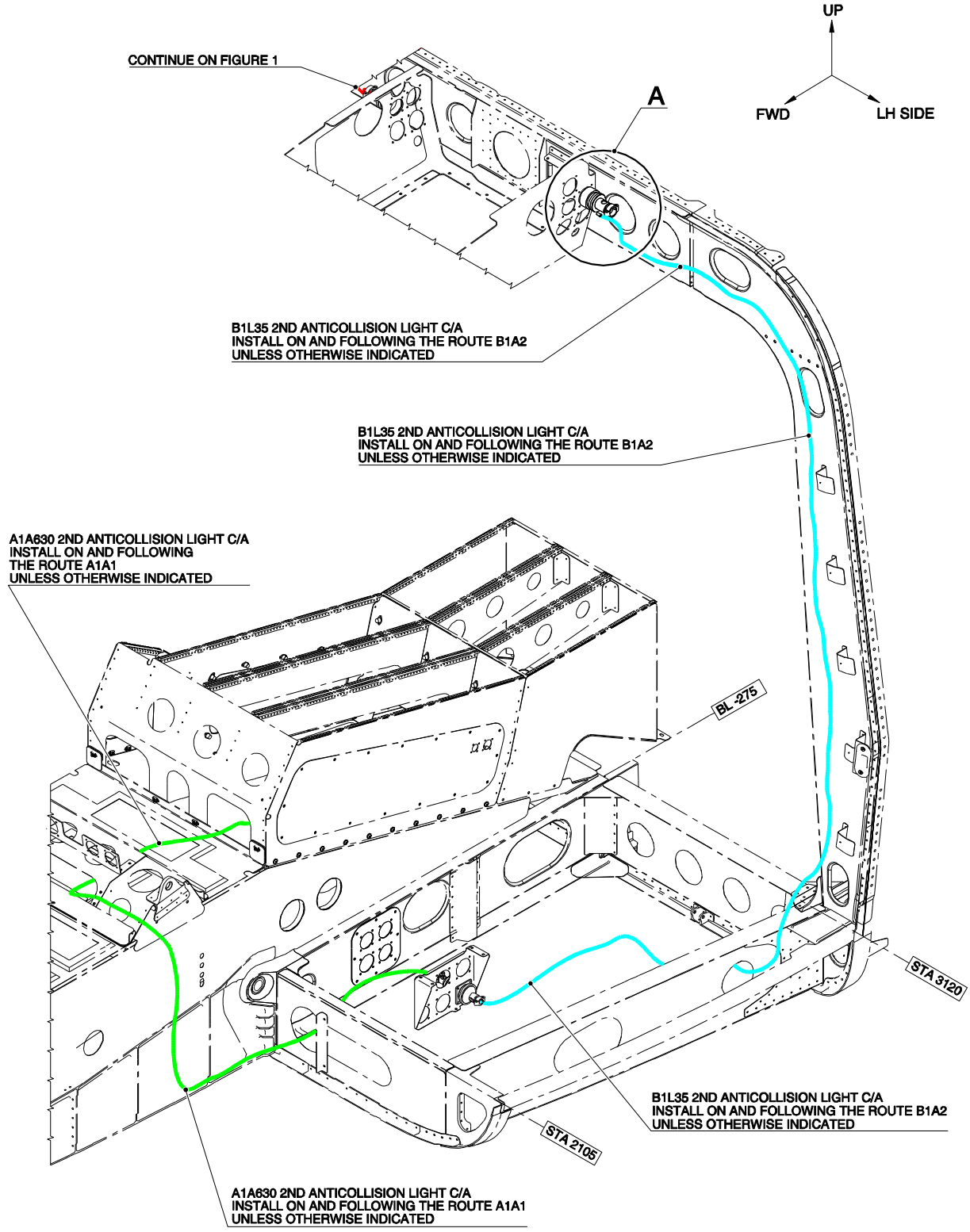

P300 CONNECTOR (REF. C1B1)
C1B323 NVG MILITARY VERSION C/A
STA 8700
STA 8150
STA 7200
STA 6700
BL 0
C1B323 NVG MILITARY VERSION C/A
INSTALL ON AND FOLLOWING
THE ROUTE C1B1
UNLESS OTHERWISE INDICATED
REMOVE:
109-0740V33-101 ANTICOLLISION LIGHT
INSTALL:
3G334V00951 ANTICOLLISION LT (NVG)
VIEW LOOKING REAR RH SIDE
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
LH
OUT
RH
OUT
FWD
C1B323 NVG MILITARY VERSION C/A
INSTALL ON AND FOLLOWING
THE ROUTE C1B1
UNLESS OTHERWISE INDICATED

Figure 44



VIEW LOOKING CABIN FROM STA 2105 TO STA 3120 LH SIDE

STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 45

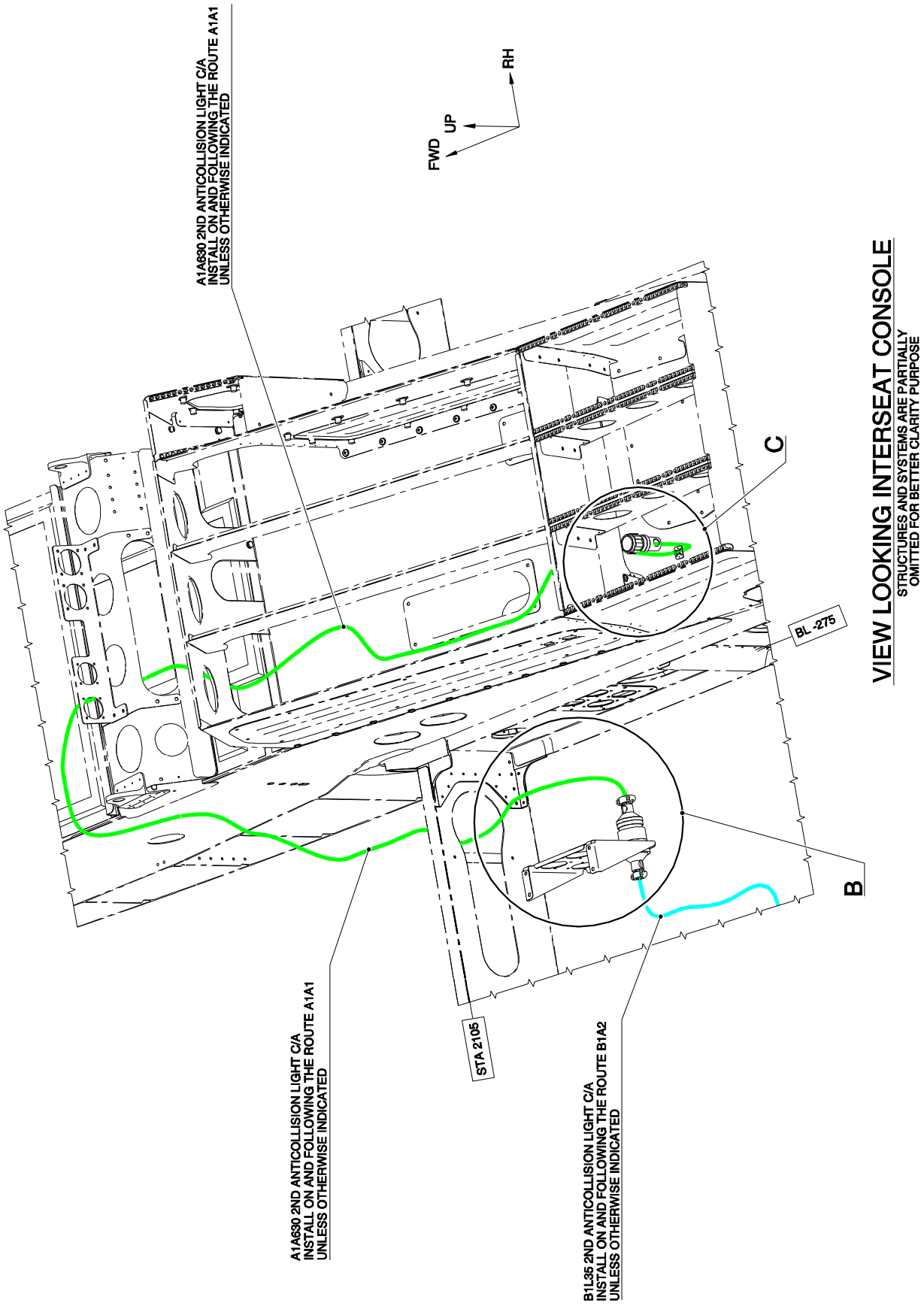
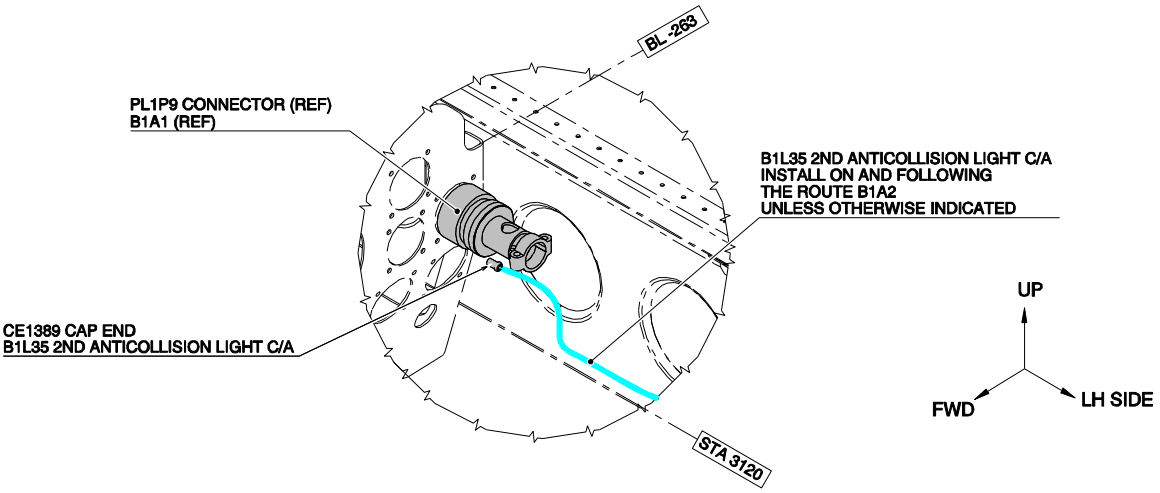
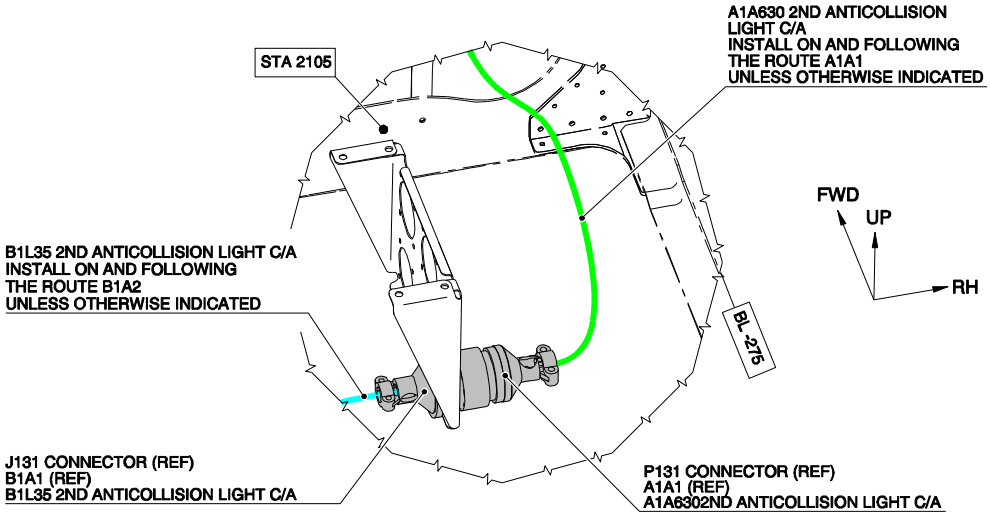

A1A630 2ND ANTICOLLISION LIGHT C/A
INSTALL ON AND FOLLOWING THE ROUTE A1A1
UNLESS OTHERWISE INDICATED
FWD
UP
RH
VIEW LOOKING INTERSEAT CONSOLE
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
C
B
BL -275
STA 2105
A1A630 2ND ANTICOLLISION LIGHT C/A
INSTALL ON AND FOLLOWING THE ROUTE A1A1
UNLESS OTHERWISE INDICATED
B1L35 2ND ANTICOLLISION LIGHT C/A
INSTALL ON AND FOLLOWING THE ROUTE B1A2
UNLESS OTHERWISE INDICATED

Figure 46

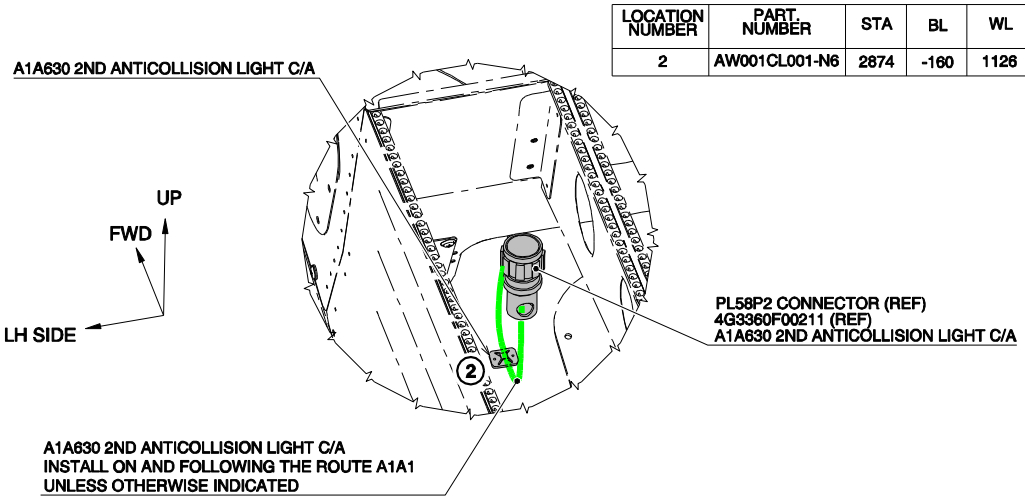


DETAIL A



DETAIL B

LOCATION NUMBER	PART. NUMBER	STA	BL	WL	ORIENTATION
2	AW001CL001-N6	2874	-160	1126	



DETAIL C

Figure 47

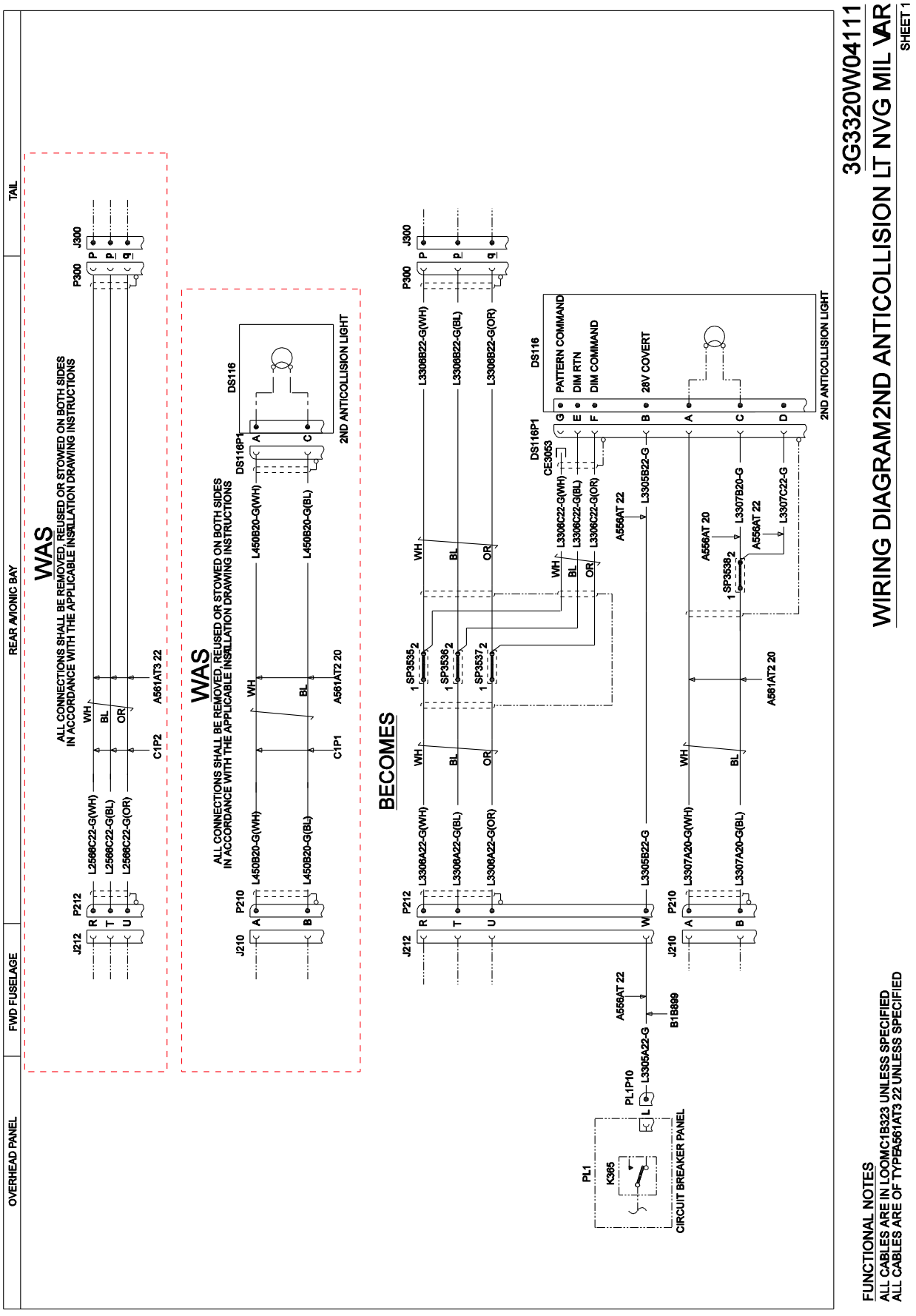

OVERHEAD PANEL
FWD FUSELAGE
REAR AVIONIC BAY
TAIL
3G3320W04111
WIRING DIAGRAM2ND ANTICOLLISION LT NVG MIL VAR
SHEET 1
WAS
ALL CONNECTIONS SHALL BE REMOVED, REUSED OR STOWED ON BOTH SIDES IN ACCORDANCE WITH THE APPLICABLE INSTALLATION DRAWING INSTRUCTIONS
WAS
ALL CONNECTIONS SHALL BE REMOVED, REUSED OR STOWED ON BOTH SIDES IN ACCORDANCE WITH THE APPLICABLE INSTALLATION DRAWING INSTRUCTIONS
BECOMES
2ND ANTICOLLISION LIGHT
PATTERN COMMAND
DIM RTN
DIM COMMAND
28V COVERT
CIRCUIT BREAKER PANEL
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOMC1B323 UNLESS SPECIFIED
ALL CABLES ARE OF TYPEA561AT3 22 UNLESS SPECIFIED

Figure 48

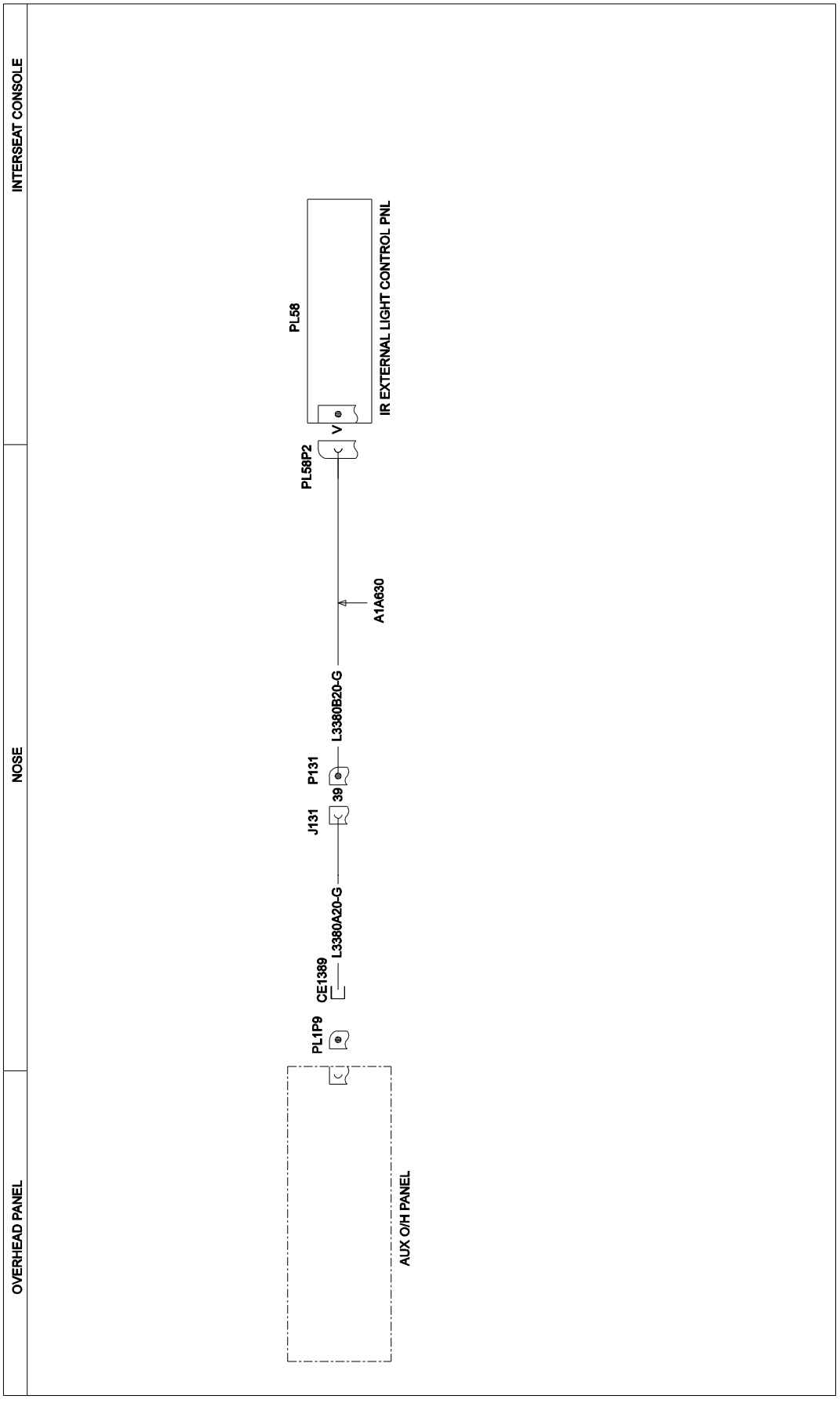

OVERHEAD PANEL
NOSE
INTERSEAT CONSOLE
AUX O/H PANEL
PL1P9
CE1389
L3380A20-G
J131
P131
39
L3380B20-G
A1A630
PL58P2
V
PL58
IR EXTERNAL LIGHT CONTROL PNL
3G3320W04111
WIRING DIAGRAM2ND ANTICOLLISION LT NVG MIL VAR
SHEET 2
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOMB1L35 UNLESS SPECIFIED
ALL CABLES ARE OF TYPBA556A-T20 UNLESS SPECIFIED

Figure 49

ANNEX A

MFD21 IN SERVICE TEST

1 AFTER THE COMPONENT RE-INSTALLATION

1.1 Measure the ohmic value between the LRUs (connector or dedicated pad) and the local structure and ensure that the value does NOT exceed 10 mΩ.

2 AFTER THE REPLACEMENT OF THE COMPONENTS:

NOTE

It is intended that this test procedure could be used in-service following the replacement of electrical system components as Connectors, Cables, LRUs, etc.

2.1 Measure the ohmic value between the LRUs (connector or dedicated pad) and the local structure and ensure that the value does NOT exceed 10 mΩ.

2.2 INIT procedure:

2.2.1 Verify that “DISPLAY” and “HTR” (or “HD”) breaker are pushed in.

2.2.2 Power on the aircraft.

2.2.3 Verify the “stand-by white” LED is lit.

NOTE

Bootstrap operations will take up to 15 seconds. During power on, the “stand-by white” LED blinks.

2.2.4 Push once ON pushbutton and verify the display powers on.

NOTE

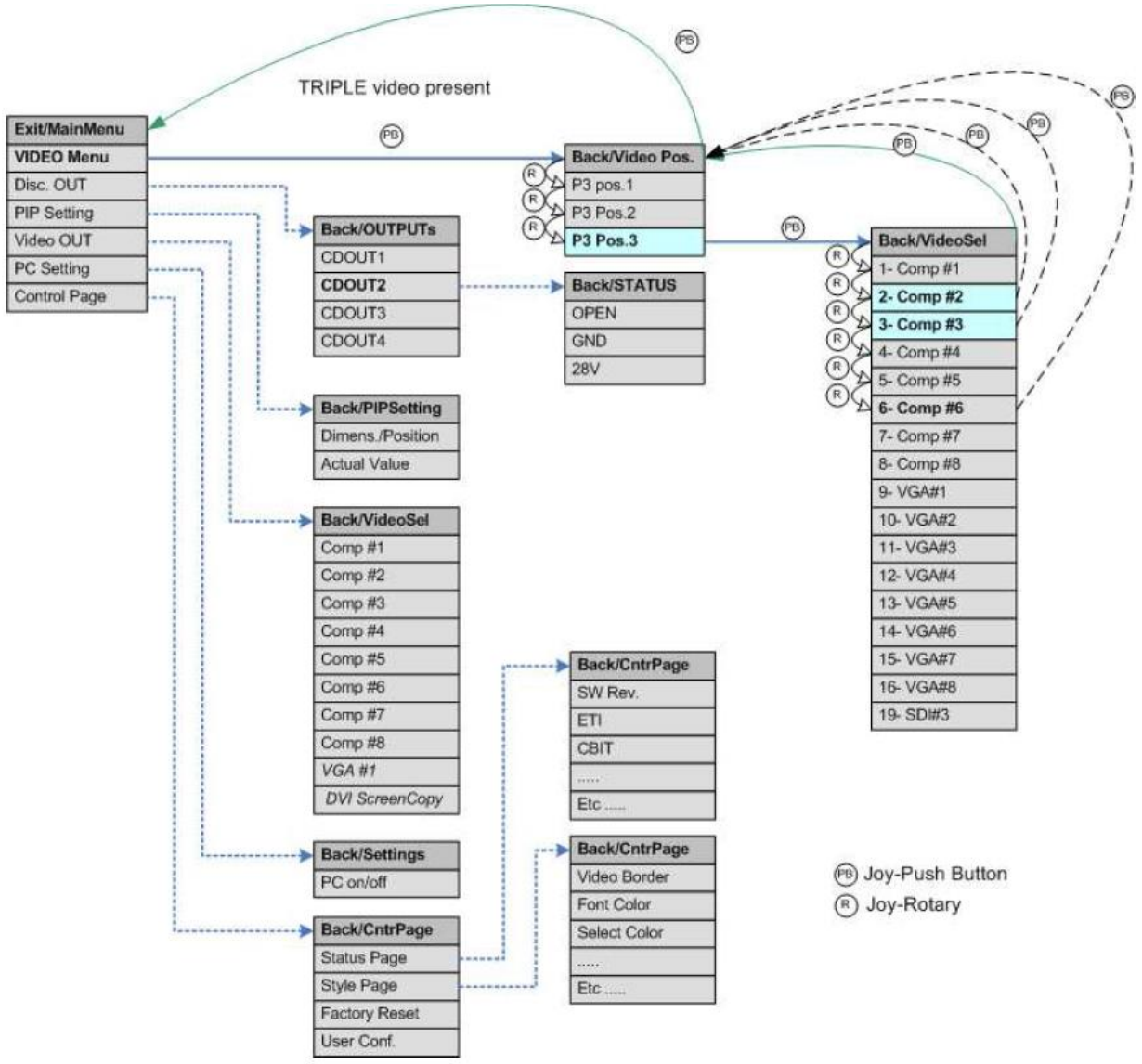
If the LED is lit, see “Status Page” details added in step 2.2.6.

2.2.5 Verify the “yellow” FAIL indicator is not lit.

2.2.6 Enter the “Status Page” menu and verify the following.

- Verify the “PBIT” status is **OK**
- Verify the “CBIT” status is **OK**
- Verify the “FANs” status is **OK**
- Verify the “Heater” status is different by **FAIL**
- Verify the “Overtemp.” status is **OK**
- Verify the “Temp. Sensors” status is **OK**
- Verify the “LCD Backlight” status is **OK**
- Verify the “RS422” status is **OK**
- Verify the “Bezel” status is **OK**
- Verify the “Fail Indicator” status is **OK**

See Figure below for details



2.3 Perform the MFD21 FULL HD CONFIGURATION FILE MANAGEMENT as described in the following procedure:

NOTE

This appendix describes the MFD21 configuration file management. In order to perform these actions the operator shall have the following capability:

- USB flash drive
- "Company work order" related to helicopter S/N.

2.4 Open the "Company Work Order" and retireve the applicable MFD21 configuration file.

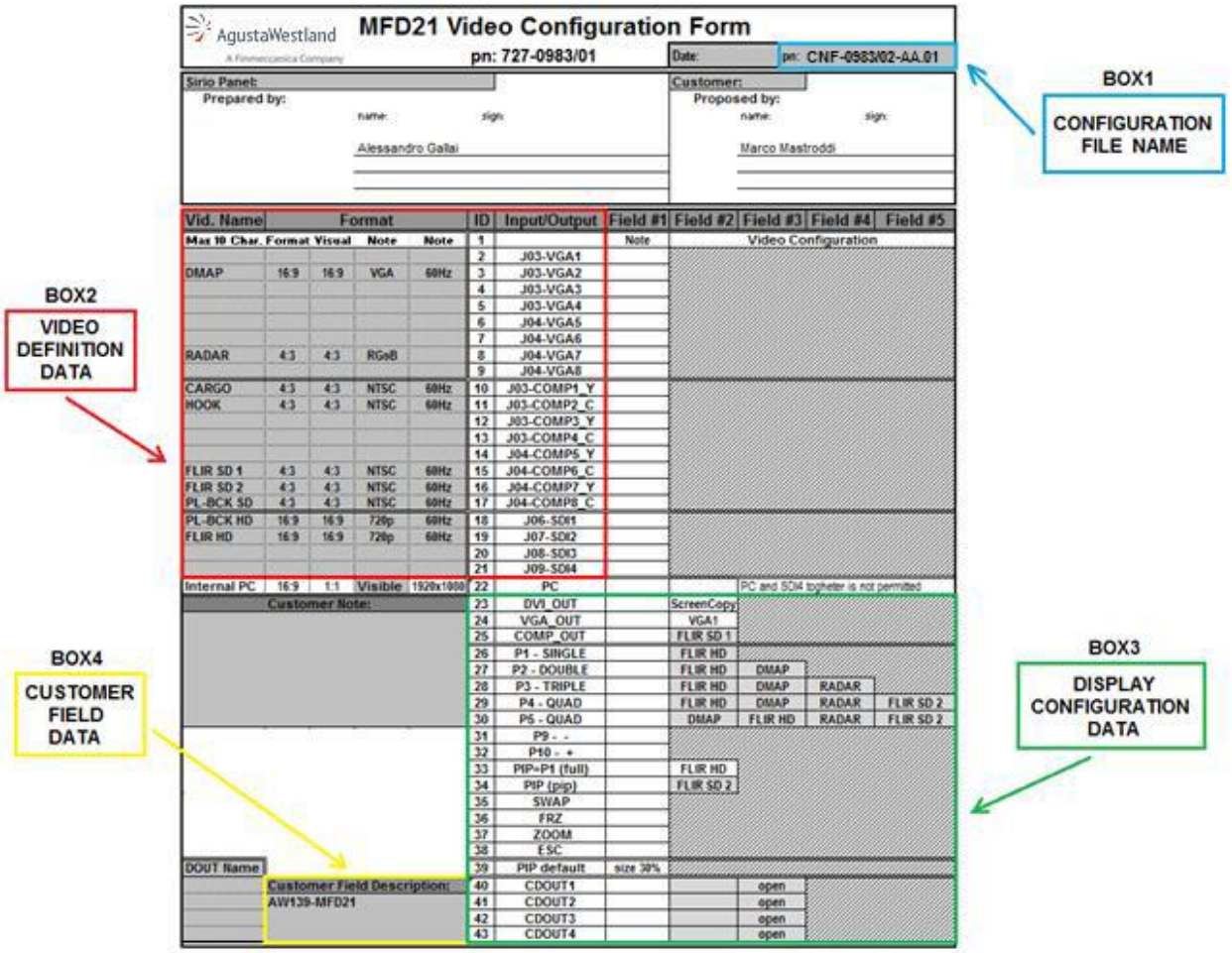
2.5 Perform the MFD21 FULL HD CONFIGURATION FORM MANAGEMENT as described in the following procedure:

2.5.1 Verify the *Configuration Form* page is coherent with Figure below. In particular the highlighted BOXs are filled.

2.5.2 In **BOX1**: Verify the correspondence of the configuration file P/N.

2.5.3 In **BOX4**: Verify the **MFD21-AW139** name is present.

2.5.4 Verify the *Configuration Form* images' Input/Output allocations are coherent with "MISSION DISPLAY" WD connections.



The following discussion is given to associate the configuration form setting to the display features.

2.5.5 BOX2: VIDEO DEFINITION DATA

The video definition data is shown in Figure below. These data are the images characteristics in terms of "Video Name", "Format" and "Input" information.

Vid. Name	Format				ID	Input/Output
Max 10 Char.	Format	Visual	Note	Note	1	
					2	J03-VGA1
DMAP	16:9	16:9	VGA	60Hz	3	J03-VGA2
					4	J03-VGA3
					5	J03-VGA4
					6	J04-VGA5
					7	J04-VGA6
RADAR	4:3	4:3	RGsB		8	J04-VGA7
					9	J04-VGA8
CARGO	4:3	4:3	NTSC	60Hz	10	J03-COMP1_Y
HOOK	4:3	4:3	NTSC	60Hz	11	J03-COMP2_C
					12	J03-COMP3_Y
					13	J03-COMP4_C
					14	J04-COMP5_Y
FLIR SD 1	4:3	4:3	NTSC	60Hz	15	J04-COMP6_C
FLIR SD 2	4:3	4:3	NTSC	60Hz	16	J04-COMP7_Y
PL-BCK SD	4:3	4:3	NTSC	60Hz	17	J04-COMP8_C
PL-BCK HD	16:9	16:9	720p	60Hz	18	J06-SDI1
FLIR HD	16:9	16:9	720p	60Hz	19	J07-SDI2
					20	J08-SDI3
					21	J09-SDI4

Using the information reported in this table the operator has a direct understanding on video source image in terms of displayed image and video signal routing. For example: “FLIR HD” image comes from **FLIR** video source; it is displayed in **16:9** having an “*HD ready*” standard and it is routed to **J07** connector.

The reported information is linked to the MFD21 display as discussed below.

2.5.6 VIDEO NAME

The Video Name field reports all the selectable images on MFD21 display. This list shall be equal to the Video Menu list. The operator shall find all names listed in same order. The used Names are self-explained, they gives a direct reference to the imaging source.

2.5.7 FORMAT

The Format information is described in the following Figure

SOURCE IMAGE FORMAT

DISPLAYED IMAGE ASPECT

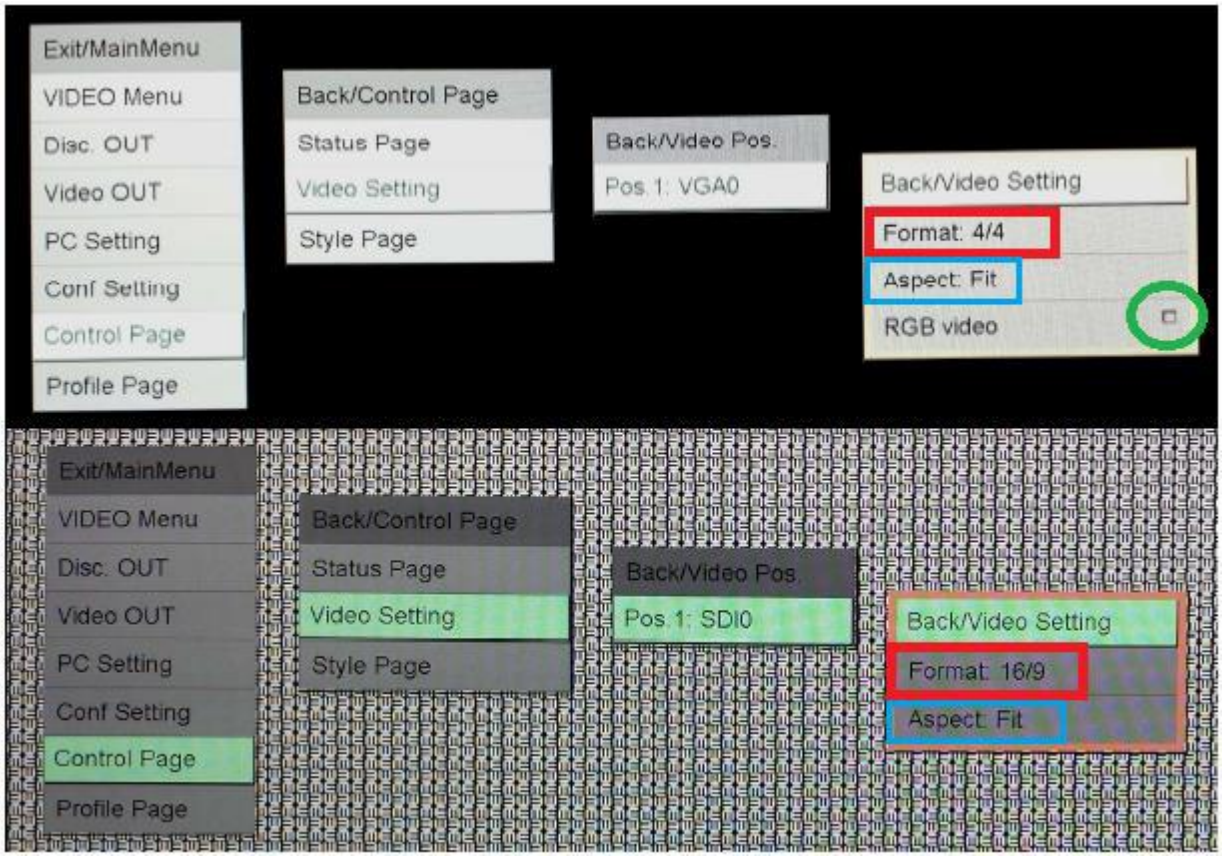
IMAGE STANDARD

IMAGE FREQUENCY REFRESH

Vid. Name	Format				ID	Input/Output
Max 10 Char.	Format	Visual	Note	Note	1	
					2	J03-VGA1
DMAP	16:9	FIT	VGA	60Hz	3	J03-VGA2
					4	J03-VGA3
					5	J03-VGA4
					6	J04-VGA5
					7	J04-VGA6
RADAR	4:3	FIT	RGsB		8	J04-VGA7
					9	J04-VGA8
CARGO	4:3	FIT	NTSC	60Hz	10	J03-COMP1_Y
HOOK	4:3	FIT	NTSC	60Hz	11	J03-COMP2_C
					12	J03-COMP3_Y
					13	J03-COMP4_C
					14	J04-COMP5_Y
FLIR SD 1	4:3	FIT	NTSC	60Hz	15	J04-COMP6_C
FLIR SD 2	4:3	FIT	NTSC	60Hz	16	J04-COMP7_Y
PL-BCK SD	4:3	FIT	NTSC	60Hz	17	J04-COMP8_C
PL-BCK HD	16:9	FIT	720p	60Hz	18	J06-SDI1
FLIR HD	16:9	FIT	720p	60Hz	19	J07-SDI2
					20	J08-SDI3
					21	J09-SDI4

The information reported on MFD21 display menu are the following, see Figure below for reference:

- Image Format: the Format is reported in “Video Setting Menu” (see red boxes)
- Image Aspect: the Aspect is reported in “Video Setting Menu” (see blue boxes)
- Image Standard: the Standard is available for VGA signal only. The RGB box is selected (enabled) if applicable.



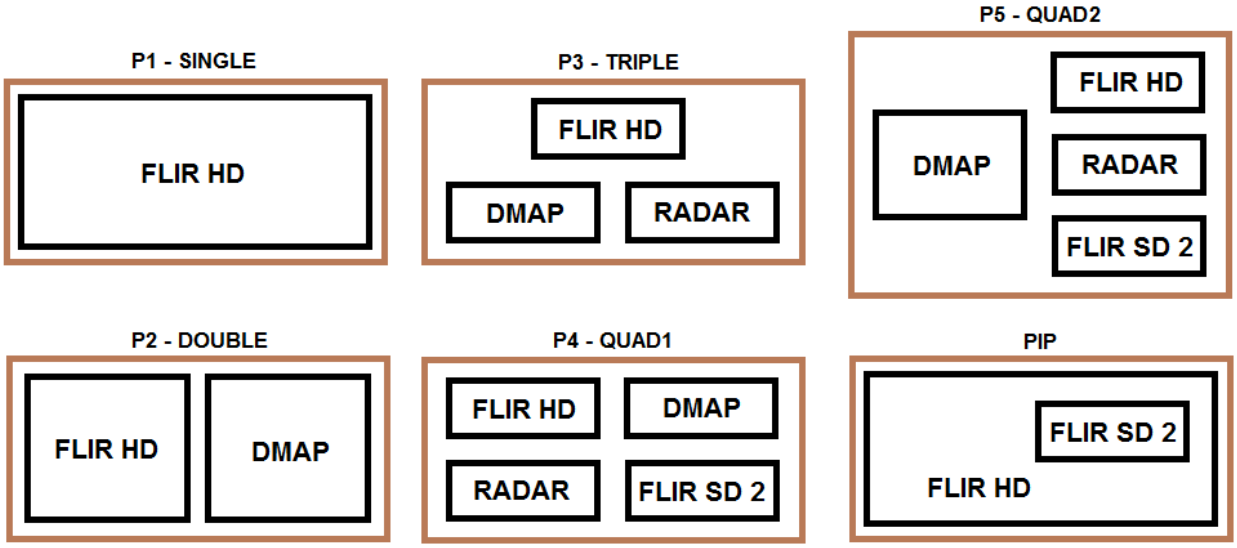
2.5.8 BOX3: DISPLAY CONFIGURATION DATA

The BOX3 of the configuration form reports the display layouts and output signals setting. The box is shown in the following Figure. The reported data are presented only for reference.

23	DVI_OUT		ScreenCopy			
24	VGA_OUT		VGA1			
25	COMP_OUT		FLIR SD 1			
26	P1 - SINGLE		FLIR HD			
27	P2 - DOUBLE		FLIR HD	DMAP		
28	P3 - TRIPLE		FLIR HD	DMAP	RADAR	
29	P4 - QUAD		FLIR HD	DMAP	RADAR	FLIR SD 2
30	P5 - QUAD2		DMAP	FLIR HD	RADAR	FLIR SD 2
31	P9 - -					
32	P10 - +					
33	PIP=P1 (full)		FLIR HD			
34	PIP (pip)		FLIR SD 2			
35	SWAP					
36	FRZ					
37	ZOOM					
38	ESC					
39	PIP default	size 30%				
40	CDOUT1			open		
41	CDOUT2			open		
42	CDOUT3			open		
43	CDOUT4			open		

The display layouts report the default images associated to the display sub-sections, see red rectangle in Figure above in order to compare the configuration form reported data with the relevant display layout images. In the following Figure are reported the images allocations on the display for each layout.

In the blue rectangle highlighted in Figure above there are the discrete output signals setting. They can be set to OPEN/GND or OPEN/28Vdc.



2.6 CONFIGURATION FILE LOAD PROCEDURE:

2.6.1 Press **P9** pushbutton to open the OSD menu, below “PC Setting” activate the internal PC through the OSD command “PC_ON”. During the boot will appear a “Waiting …” label in menu window.

2.6.2 Insert in the USB key on connector J15 or J16 behind the unit

2.6.3 When the internal PC has finished Windows boot system operations (the “PC_OFF” selection is now available in “PC Setting” menu) the system will check if a valid Configuration File is present on the USB Key.

2.6.4 If a valid Configuration File i present on the OSD menu, below “Conf Setting”, will appear a new entry “USB_LOAD”

2.6.5 Select the “USB_LOAD” and press ENT button on the Bezel

2.6.6 Wait for about 30-60sec (it will be displayed the “Waiting ...” label) until the MFD21 will apply the new configuration loaded.

2.6.7 Select the “DEFAULT_STORE” entry and press “ENT” button to store the new Video Configuration.

2.6.8 Wait until the “Waiting ...” label disappears.

2.6.9 Activate the “OSD menu” and check, below “Conf Setting” menu, that the “square” flag relative to “DEFAULT_LOAD “ is now black filled.

2.6.10 Press and old **ON** pushbutton for 3 seconds ca. to turn OFF the display.

2.7 SOFTWARE CHECKS

NOTE

Bootstrap operations will take up to 15 seconds. During power on, the “stand-by white” LED blinks

2.7.1 Press once **ON** pushbutton and verify the display powers on.

NOTE

If the LED is lit, see “Status Page” details added in step 2.7.3.

2.7.2 Verify the “yellow” FAIL indicator is not lit.

2.7.3 Enter the “Status Page” menu and verify the following.

- Report the SW version
- Verify the “Configuration File” P/N is coherent with company work order ones.
- Verify the “Customer Field” is MFD21-AW139

LEONARDO
HELICOPTERS

AgustaWestland Products

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

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.