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## SERVICE BULLETIN

N° **139-135**

**DATE:** September 27, 2016

**REV. :** A - February 10, 2022

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## TITLE

**ATA 25 - INSTALLATION OF KIT WIRE STRIKE PROTECTION SYSTEM (WSPS)**

## REVISION LOG

Helicopters that have complied with previous issue of this Service Bulletin do not need any additional action.

Revision A is issued to introduce Part V that provides instructions to perform nose SAR structure WSPS retromod P/N 3G5306P32211.

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An appropriate entry should be made in the aircraft log book upon accomplishment.  
If ownership of aircraft has changed, please, forward to new owner.

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## **1. PLANNING INFORMATION**

### **A. EFFECTIVITY**

Part I: AW139 helicopters from S/N 31201 onwards or from S/N 41201 onwards.

Part II: AW139 helicopters from S/N 31201 onwards or from S/N 41201 onwards.

Part III: AW139 helicopters from S/N 31400 to S/N 31699 or from S/N 41300 to S/N 41499.

Part IV: AW139 helicopters from S/N 31400 to S/N 31699 or from S/N 41300 to S/N 41499.

Part V: AW139 helicopters from S/N 31700 onwards or from S/N 41500 onwards.

### **B. COMPLIANCE**

At Customer's option.

### **C. CONCURRENT REQUIREMENTS**

N.A.

### **D. REASON**

This Service Bulletin is issued in order to provide the necessary instruction on how to perform the installation of the kit Wire Strike Protection System (WSPS) P/N 4G9540F00212.

### **E. DESCRIPTION**

The kit WSPS P/N 4G9540F00212 is a protection for the helicopter in case of accidentally crash against horizontal wires and cables during flight.

The primary components of the wire-strike installation are:

- the top cable cutter that has two blade cutters made of steel and it is attached to the forward sliding fairing and to the top deflector;
- the bottom cable cutter that has two blade cutters made of steel and it is installed in the lower side of the helicopter nose;
- the left and right windshield deflectors that are installed on the left and right side of the nose fairing, below the windshield; they catch the wire and moves it to the blades of the top cable cutter.

This Service Bulletin provides the necessary instructions on how to perform the installation of kit WSPS P/N 4G9540F00212:

For the upper part of the helicopter, Part I and Part II are in common for all S/Ns 31201 onwards or 41201 onwards and permit the installation of WSPS upper fixed part P/N 4G9540A00112 and WSPS upper cutter P/N 4G9540A00311 respectively.

For the bottom part, the new nose SAR structure WSPS retromod P/N 3G5306P32211 has been developed for helicopter S/Ns 31700 onwards or 41500 onwards. For this reason, Part III (WSPS lower fixed parts P/N 4G9540A00212) and Part IV (WSPS lower short cutter P/N 4G9540A00512) are only applicable to S/Ns up to 31699 or 41499 while Part V is applicable to subsequent S/Ns.

#### **NOTE**

Compliance with Part I is a mandatory prerequisite to perform Part II.

Compliance with Part III is a mandatory prerequisite to perform Part IV.

### **F. APPROVAL**

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

EASA states mandatory compliance with inspections, modifications or technical directives and related time of compliance by means of relevant Airworthiness Directives. If an aircraft listed in the effectivity embodies a modification or repair not LHD certified and affecting the content of this Service Bulletin, it is responsibility of the Owner/Operator to obtain a formal approval by Aviation Authority having jurisdiction on the aircraft, for any adaptation necessary before incorporation of the present Service Bulletin.

### **G. MANPOWER**

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

Part I: approximately ninety (90) MMH.

Part II: approximately two (2) MMH.

Part III: approximately forty (40) MMH.

Part IV: approximately eight (8) MMH.

Part V: approximately forty (40) MMH.

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

## H. WEIGHT AND BALANCE

### PART I

WEIGHT (kg)		5.90
	<b>ARM (mm)</b>	<b>MOMENT (kgmm)</b>
LONGITUDINAL BALANCE	2049	12089.1
LATERAL BALANCE	0	0

### PART II

WEIGHT (kg)		2.60
	<b>ARM (mm)</b>	<b>MOMENT (kgmm)</b>
LONGITUDINAL BALANCE	2734	7108.4
LATERAL BALANCE	0	0

### PART III

WEIGHT (kg)		0.31
	<b>ARM (mm)</b>	<b>MOMENT (kgmm)</b>
LONGITUDINAL BALANCE	890	267
LATERAL BALANCE	0	0

### PART IV

WEIGHT (kg)		2.40
	<b>ARM (mm)</b>	<b>MOMENT (kgmm)</b>
LONGITUDINAL BALANCE	982	2356.8
LATERAL BALANCE	0	0

### PART V

WEIGHT (kg)		3
	<b>ARM (mm)</b>	<b>MOMENT (kgmm)</b>
LONGITUDINAL BALANCE	990	2790
LATERAL BALANCE	0	0

## I. REFERENCES

### 1) PUBLICATIONS

Following Data Modules refer to AMP:

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM01 39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance.	
DM02 39-A-24-91-01-00A-520A-A	Circuit breaker panel - Remove procedure	
DM03 39-A-24-91-01-00A-720A-A	Circuit breaker panel - Install procedure	

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM04 39-A-71-11-07-00A-520A-A	Forward sliding fairing - Remove procedure	I
DM05 39-A-71-11-07-00A-720A-A	Forward sliding fairing - Install procedure	I
DM06 39-B-25-68-01-00A-720A-K	Left strut - Install procedure	I, II
DM07 39-B-25-68-02-00A-720A-K	Right strut - Install procedure	I, II
DM08 39-B-25-68-06-00A-720A-K	Top cable cutter - Install procedure	I, II
DM09 39-A-52-44-03-00A-540A-A	Access door (latch lock) - Open for access procedure	I, III, IV
DM10 39-A-52-44-03-00A-740A-A	Access door (latch lock) - Close after access procedure	I, III, IV
DM11 39-A-06-41-00-00A-010A-A	Access doors and panels - General data.	II
DM12 39-B-25-68-03-00A-720A-K	Left strut aft fitting - Install procedure	II
DM13 39-B-25-68-04-00A-720A-K	Right strut aft fitting - Install procedure	II
DM14 39-B-25-68-05-00A-720A-K	Strut top fittings - Install procedure	II
DM15 39-B-25-68-13-00A-720A-K	Bottom cable cutter - Install procedure	III, IV
DM16 39-E-52-41-01-00A-520A-K	Nose door - Remove procedure	V
DM17 39-E-52-41-01-00A-720A-K	Nose door - Install procedure	V
DM18 39-A-93-55-01-00A-520A-A	Cover - Remove procedure	V

## 2) ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
ITEP	Illustrated Tool and Equipment Publication
LHD	Leonardo Helicopters Division
MMH	Maintenance Man Hours
SAR	Search and Rescue
WSPS	Wire Strike Protection System

**3) ANNEX**

N.A.

**J. PUBLICATIONS AFFECTED**

N.A.

**K. SOFTWARE ACCOMPLISHMENT SUMMARY**

N.A.

## 2. MATERIAL INFORMATION

### A. REQUIRED MATERIALS

#### 1) PARTS

##### PART I

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	4G9540F00212		KIT WIRE STRIKE PROTECTION SYSTEM (WSPS)	REF	.		-
2	4G9540A00112		WSPS UPPER FIXED PART INSTALLATION	REF	..		-
3	3G5320A12051		Support	1	...		139-135L1
4	3G9506P01551		Ramp LH rework	1	...	(1)	-
5	3G9506P01651		Ramp RH rework	1	...	(2)	-
6	3G9506P01751		Deflector LH rework	1	...	(3)	-
7	3G9506P01851		Deflector RH rework	1	...	(4)	-
8	3G9540A00151		Shim	2	...		139-135L1
9	3G9540A00251		Shim	2	...		139-135L1
10	3G9540A00351		Doubler LH	1	...		139-135L1
11	3G9540A00451		Doubler RH	1	...		139-135L1
12	3G9540A01551		Peeling Shim	1	...		139-135L1
13	3G9540A01651		Peeling Shim	1	...		139-135L1
14	3G9540A03951		Doubler	1	...	(5)	-
15	421-83040-1		Pin quick release	2	...		139-135L1
16	423-83006-1		Retainer, upper cowling	1	...		139-135L1
17	423-83008-1		Deflector windshield	1	...		139-135L1
18	423-83021-1		Receptacle	1	...		139-135L1
19	423-83022-1		Insert	26	...		139-135L1
20	423-83024-1		Crossbar	1	...		139-135L1
21	423-83030-1		Clip	1	...		139-135L1
22	423-83032-1		Doubler	3	...		139-135L1
23	423-83022-3		Insert	2	...		139-135L1
24	423-83025-1		Mounting tee assembly upper	1	...		139-135L1
25	423-83030-2		Clip	1	...		139-135L1
26	A297A04TW06	CR7771S-04-06	Rivet	4	...		139-135L1
27	A297A05TW07	CR7770S-05-07	Rivet	10	...		139-135L1
28	A297A05TW08		Rivet	8	...		139-135L1
29	A297A05TW09		Rivet	4	...		139-135L1
30	A298A04TW04	CR7770S-04-04	Rivet	6	...		139-135L1
31	A298A05TW04	CR7770S-05-04	Rivet	4	...		139-135L1
32	A298A05TW05	CR7770S-05-05	Rivet	2	...		139-135L1
33	MS21042L08		Anchor nut	4	...		139-135L1
34	MS21042L3		Anchor nut	40	...		139-135L1
35	MS27039-0810		Screw	4	...		139-135L1
36	MS27039C1-04		Screw	14	...		139-135L1
37	MS27039C1-12		Screw	6	...		139-135L1
38	MS27039C1-13		Screw	10	...		139-135L1
39	MS27039C1-14		Screw	8	...		139-135L1
40	MS27039C1-15		Screw	12	...		139-135L1
41	MS27039C1-16		Screw	8	...		139-135L1
42	MS27039C1-18		Screw	28	...		139-135L1

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
43	MS27039C1-19		Screw	6	...		139-135L1
44	MS27039C1-21		Screw	4	...		139-135L1
45	NAS1149C0332R		Washer	122	...		139-135L1
46	NAS1149C0363R		Washer	14	...		139-135L1
47	NAS1149FN832P		Washer	10	...		139-135L1
48	NAS1836C3-07M		Insert	14	...		139-135L1
49	NAS43DD3-17N		Spacer	8	...		139-135L1
50	NAS43DD3-27N		Spacer	4	...		139-135L1

## PART II

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
51	4G9540F00212		KIT WIRE STRIKE PROTECTION SYSTEM (WSPS)	REF	.		-
52	4G9540A00311		WSPS INSTL UPPER CUTTER	REF	..		-
53	3G9506P01431		Upper cutter assy reworked	1	...		139-135L2
54	423-83023-1		Bracket LH upper	1	...		139-135L2
55	423-83023-2		Bracket RH upper	1	...		139-135L2
56	990-00026-3		Screw	4	...		139-135L2
57	990-00062-7		Strut	2	...		139-135L2
58	MS17826-4		Nut	1	...		139-135L2
59	MS24665-134	MS24665-136	Cutter-pin	5	...		139-135L2
60	MS27039C1-14		Screw	6	...		139-135L2
61	NAS1149F0363P		Washer	8	...	(6)	139-135L2
62	NAS1149FN832P		Washer	8	...		139-135L2
63	990-00060-1		Support	2	...		139-135L2
64	MS17826-3		Nut	4	...		139-135L2
65	MS21042L08		Nut	4	...		139-135L2
66	NAS1149F0332P		Washer	8	...		139-135L2
67	NAS1149F0432P		Washer	2	...		139-135L2
68	NAS6603D14		Nut	2	...		139-135L2

## PART III

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
69	4G9540F00212		KIT WIRE STRIKE PROTECTION SYSTEM (WSPS)	REF	.		-
70	4G9540A00212		WSPS LOWER FIXED PARTS INSTALLATION	REF	..		-
71	3G9540A00751		Doubler	1	...		139-135L3
72	MS21042L3		Nut	23	...		139-135L3
73	MS27039-1-12		Screw	17	...		139-135L3
74	MS27039-1-14		Screw	6	...		139-135L3
75	NAS1149C0332R		Washer	46	...		139-135L3
76	NAS43DD3-25N		Spacer	23	...		139-135L3

## PART IV

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
77	4G9540F00212		KIT WIRE STRIKE PROTECTION SYSTEM (WSPS)	REF	.		-
78	4G9540A00512		WSPS INSTALLATION LOWER SHORT CUTTER	REF	..		-
79	3G9540A00551	3G9540A00551A1	Shim LH	1	...		139-135L4
80	3G9540A00651	3G9540A00651A1	Shim RH	1	...		139-135L4



#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
81	3G9540A00831		Bracket assy RH	1	...		139-135L4
82	3G9540A00931		Bracket assy LH	1	...		139-135L4
83	3G9540A01031		RH radome hinged assy	1	...		139-135L4
84	3G9540A01131		LH radome hinged assy	1	...		139-135L4
85	3G9540A01251	3G9540A01251A1	Shim LH	1	...		139-135L4
86	3G9540A01351	3G9540A01351A1	Shim RH	1	...		139-135L4
87	3G9540A01451	3G9540A01451A1	Stiffener	1	...		139-135L4
88	423-83002-1		Lower cutter assembly	1	...		139-135L4
89	A298A04TW02		Rivet	6	...		139-135L4
90	HL18PB-6-5		Rivet	10	...		139-135L4
91	HL70-6		Collar	10	...		139-135L4
92	MS21042L3		Nut	22	...		139-135L4
93	MS24665-155		Cotter-pin	2	...		139-135L4
94	MS27039-1-18		Screw	6	...		139-135L4
95	MS27039-1-19		Screw	8	...		139-135L4
96	MS27039-1-20		Screw	2	...		139-135L4
97	NAS1149C0332R		Washer	8	...		139-135L4
98	NAS6203-4		Bolt	2	...		139-135L4
99	NAS6203-6		Bolt	6	...		139-135L4
100	NAS620C10L		Washer	6	...		139-135L4

### PART V

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
<b>101</b>	<b>4G9540F00212</b>		<b>KIT WIRE STRIKE PROTECTION SYSTEM (WSPS)</b>	<b>REF</b>	<b>.</b>		<b>-</b>
<b>102</b>	<b>3G5306P32211</b>		<b>NOSE SAR STRUCTURE WSPS RETRO MOD</b>	<b>REF</b>	<b>..</b>		<b>-</b>
103	3G5240A14051		Cover	1	...		139-135L5
104	3G5306P47951		LH Lower Shim	1	...		139-135L5
105	3G5306P47952		RH Lower Shim	1	...		139-135L5
106	3G5331A37731		Aft Lower Angle Assy	1	...		139-135L5
107	3G5331A37831		FWD Lower Angle Assy	1	...		139-135L5
108	3G5331A45452		Reinforcement	1	...		139-135L5
109	3G5331A45551		LH Spacer	1	...		139-135L5
110	3G5331A45651		RH Spacer	1	...		139-135L5
111	3G9540A00551	3G9540A00551A1	Shim LH	1	...		139-135L5
112	3G9540A00651	3G9540A00651A1	Shim RH	1	...		139-135L5
113	3G9540A00751		Doubler	1	...		139-135L5
114	3G9540A00831		Bracket Assy RH	1	...		139-135L5
115	3G9540A00931		Bracket Assy LH	1	...		139-135L5
116	3G9540A01031		RH Radome Hinge Assy	1	...		139-135L5
117	3G9540A01131		LH Radome Hinge Assy	1	...		139-135L5
118	3G9540A01251	3G9540A01251A1	Shim RH	1	...		139-135L5
119	3G9540A01351	3G9540A01351A1	Shim LH	1	...		139-135L5
120	3G9540A01451	3G9540A01451A1	Stiffener	1	...		139-135L5
121	3P5331A54533		Lower Panel	1	...		139-135L5
122	423-83002-1		Lower Cutter Assembly (Short)	1	...		139-135L5
123	A298A04TW02		Rivet	4	...		139-135L5
124	A428A3C08		Screw	30	...		139-135L5
125	HL18PB-6-6		Pin-Rivet	2	...		139-135L5
126	HL20PB-6-6		Pin-Rivet	8	...		139-135L5
127	HL70-6		Collar	6	...		139-135L5
128	HL86PBW6		Collar	4	...		139-135L5
129	MS20426AD3-7		Rivet	0.1 kg	...		139-135L5

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
130	MS20426AD4-7		Rivet	0.1 kg	...		139-135L5
131	MS20470AD4-7		Rivet	0.1 kg	...		139-135L5
132	MS21042L3		Nut	29	...		139-135L5
133	MS21069L3		Nut	4	...		139-135L5
134	MS21071L3		Nut	4	...		139-135L5
135	MS27039-1-12		Screw	7	...		139-135L5
136	MS27039-1-18		Screw,	6	...		139-135L5
137	MS27039-1-19		Screw	8	...		139-135L5
138	MS27039-1-20		Screw	2	...		139-135L5
139	MS90354S0502		Rivet	16	...		139-135L5
140	MS90354S0503		Rivet	7	...		139-135L5
141	MS90354S0504		Rivet	4	...		139-135L5
142	NAS1149C0332R		Washer	52	...		139-135L5
143	NAS43DD3-25N		Spacer	23	...		139-135L5
144	NAS6203-4		Bolt	2	...		139-135L5
145	NAS6203-6		Bolt	6	...		139-135L5
146	NAS620C10L		Washer	6	...		139-135L5

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

## 2) CONSUMABLES

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

#	Spec./LHD code number	DESCRIPTION	Q.TY	NOTE	PART
147	CCC-C-46 / Code No. 42501025	Soft lint-free cloth (C011)	AR	(7)	All
148	TT-M-261 / Code No. 32002675	Methyl-Ethyl-Ketone (C005)	AR	(7)	All
149	TT-N-95-B / Code No. 531055030	Aliphatic Naphtha (C059)	AR	(7)	All
150	MS20995C32	Wire	AR	(7)	IV, V
151	MMM-A-132 Type 1, Class 3 199-05-002 Type II, Class 2 Code No. 900004603	Adhesive EA934NA (C057)	AR	(7)	I, III, V
152	MMM-A-132, Type 2, Class II 199-05-002, Type I, Class 2 Code No. 900000581	Adhesive EA9309.3NA (C021)	AR	(7)	I, III, V
153	AWMS05-001 Type 1, Class B, Grade 2	Sealant MC-780 B-2 (C465)	AR	(7)	I, II, IV
154	MIL-PRF-81733, Type II, Class 1	Sealing compound (C274)	AR	(7)	V
155	MIL-C-5541	Alodine 1200 (C237)	AR	(7)	I
156	900004523 Type 1 Class 1 (MIL-P-23377)	Primer (C042)	AR	(7)	I

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

### 3) LOGISTIC MATRIX

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

LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
139-135L1	1		I
3G9506P01551	1	(1)	I
3G9506P01651	1	(2)	I
3G9506P01751	1	(3)	I
3G9506P01851	1	(4)	I
139-135L2	1		II
139-135L3	1		III
139-135L4	1		IV
139-135L5	1		V

#### NOTE

- (1) P/N 3G9506P01551 may be obtained reworking vendor P/N 423-83010-1 as specified in compliance instructions.
- (2) P/N 3G9506P01651 may be obtained reworking vendor P/N 423-83010-2 as specified in compliance instructions.
- (3) P/N 3G9506P01751 may be obtained reworking vendor P/N 423-83009-1 as specified in compliance instructions.
- (4) P/N 3G9506P01851 may be obtained reworking vendor P/N 423-83009-2 as specified in compliance instructions.
- (5) P/N 3G9540A03951 may be obtained reworking vendor P/N 423-83034-1 as specified in compliance instructions.
- (6) Washer P/N NAS1149F0316P or P/N NAS1149F0332P can be used as an appropriate alternative to eliminate the gap between strut and bracket (Refer to Figure 9).
- (7) Item to be procured as local supply.

### B. SPECIAL TOOLS

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

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
157	RMGE-DS-06-2010-LH	Platform, LH (GG-01-00)	1	(B1)	I
158	RMGE-DS-06-2010-RH	Platform, RH (GG-02-00)	1	(B2)	I
159	3G5305G00332	Sling, fwd sliding cowling lifting (HA-12-00)	1		I
160	Commercial	Lifting device (ZZ-00-00)	1		I

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

### **SPECIAL TOOLS NOTE**

(B1) P/N RMGE3G-102A may be supplied as a valid alternative.

(B2) P/N RMGE3G-103A may be supplied as a valid alternative.

### **C. INDUSTRY SUPPORT INFORMATION**

Customization.

### **3. ACCOMPLISHMENT INSTRUCTIONS**

#### **GENERAL NOTES**

- a) Place an identification tag on all components that are re-usable, including the attaching hardware that has been removed to gain access to the modification area and adequately protect them until their later re-use.
- b) Exercise extreme care during drilling operations to prevent instruments, cables and hoses damage.
- c) After drilling, remove all swarf and sharp edges. Apply on bare metal a light film of primer unless the hole is used for ground connection.
- d) Before rivet installation in places where fasteners were just removed, in accordance with the procedures reported on ASRP check hole diameter and if necessary install oversized rivets. If necessary install rivets with different grips.
- e) Use aliphatic nafta to degrease. Cleaned surfaces shall be allowed to air dry for at least 30 minutes before bonding.
- 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-24-91-01-00A-520A-A, remove the circuit breaker panel from the cockpit cabin.

#### **CAUTION**

Protect windshield and instrument panel in order to avoid damages.

3. With reference to Figures 1 thru 8, perform WSPS upper fixed part installation P/N 4G9540A00112 as described in the following procedure:

3.1 In accordance with AMP DM 39-A-71-11-07-00A-520A-A and with reference to Figures 1 and 2, remove the upper cowling.

**NOTE**

Do NOT remove the body of the n°4 existing inserts relevant to the bracket P/N 3P7111A11751 because their position is necessary to coordinate the installation of crossbar P/N 423-83024-1 and the mounting tee assembly upper P/N 423-83025-1 (ref steps 3.2 and 3.3).

3.2 With reference to Figures 2 view Z, remove the bracket P/N 3P7111A11751 and relevant n°4 screws P/N MS27039C1-06 and washers P/N NAS1149D0363K; keep the bracket and relevant screws for later re-use. On external side of the cowling remove the head of existing n°4 inserts that supported the screws of the bracket P/N 3P7111A11751. Do not remove the body of the n°4 existing inserts.

3.3 With reference to Figures 2 and Figure 3 view B, temporarily locate the crossbar P/N 423-83024-1 and the mounting tee assembly upper P/N 423-83025-1 by means of n°4 screws P/N MS27039C1-19 to be installed in the n°4 inserts relevant to the bracket P/N 3P7111A11751 removed in previously step 3.2.

3.4 With reference to Figure 4 view G-G and Figure 6 section R-R, temporarily locate the deflector P/N 423-83008-1 on windshield centre line and remove all the existing rivets that interfere with the deflector.

3.5 If P/N 423-83034-1 was supplied, rework it with reference to Figure 2 and rename it with P/N 3G9540A03951.

3.6 With reference to Figure 4 view G-G and Figure 6 section R-R, temporarily relocate the deflector P/N 423-83008-1 with the doubler P/N 3G9540A03951.

3.7 In accordance with AMP DM 39-A-71-11-07-00A-720A-A and with reference to Figure 2 view A, re-install the upper cowling with crossbar P/N 423-83024-1 and the mounting tee assembly upper P/N 423-83025-1 on the helicopter.

3.8 With reference to Figure 2 view A, slide the upper cowling forward checking for no interference with deflector P/N 423-83008-1.

3.9 With reference to Figure 2 view A, if required, adjust the position of the deflector P/N 423-83008-1 to ensure that the n°2 screws of the mounting tee lock the upper end of the deflector.

- 3.10 In accordance with AMP DM 39-A-71-11-07-00A-520A-A and with reference to Figure 2 view A, remove the upper cowling from the helicopter.
- 3.11 With reference to Figure 3 view B, mark the position of n°6 holes of mounting tee assembly upper P/N 423-83025-1 and of n°6 holes of the crossbar P/N 423-83024-1 in the upper cowling.
- 3.12 With reference to Figure 3 view B, remove the mounting tee assembly upper P/N 423-83025-1 and the crossbar P/N 423-83024-1 from the upper cowling.
- 3.13 With reference to Figure 2 view Z, remove completely the n°4 inserts of the bracket P/N 3P7111A11751.
- 3.14 With reference to Figure 3 view B, drill n°12 thru holes  $\varnothing 4.9\div 5.03$  in the upper cowling in positions previously marked in step 3.11.
- 3.15 With reference to Figure 5 view H-H, remove the existing receptacle and relevant n°6 screws.
- 3.16 With reference to Figure 5 view H-H, remove the n°4 existing rivets that interfere with the new receptacle P/N 423-83021-1.
- 3.17 With reference to Figure 5 view H-H, temporarily locate the receptacle P/N 423-83021-1 and countermark n°2 insert holes on the helicopter structure and n°4 rivets holes on the receptacle.
- 3.18 With reference to Figure 5 view H-H, drill n°4 rivet holes in the receptacle P/N 423-83021-1.
- 3.19 With reference to Figure 5 section P-P, drill n°2 thru holes  $\varnothing 4.90\div 5.03$  in the n°2 previously countermarked insert holes.
- 3.20 With reference to Figure 5 section P-P, drill n°2 holes  $\varnothing 14.30\div 14.50$  thru external skin and honeycomb core.

#### NOTE

When performing following step 3.21, in case of any protrusion of the insert with respect to the upper skin, it is acceptable to sand inserts flush with the skin after installation.

- 3.21 With reference to Figure 5 section P-P, install n°2 insert 423-83022-3 by means of adhesive EA934NA.
- 3.22 With reference to Figure 5 section K-K, perform a hole  $\varnothing 4$  in the receptacle P/N 423-83021-1; protect the hole with alodine 1200 (C237) and primer (C042).
- 3.23 With reference to Figure 5, temporarily locate the receptacle P/N 423-83021-1 with shims P/N 3G9540A01651 and P/N 3G9540A01551.

- 3.24 With reference to Figure 2 view Z and Figure 3 view B, temporarily locate the retainer P/N 423-83006-1 in the internal side of upper cowling and countermark the n°4 remaining insert holes.
- 3.25 With reference to Figure 2 view Z, temporarily re-install the retainer P/N 423-83006-1 and the bracket P/N 3P7111A11751 inside the cowling.

**NOTE**

If necessary add a shim to adjust the clearance between the retainer P/N 423-83006-1 and the receptacle P/N 423-83021-1 (ref. step 3.26).

- 3.26 In accordance with AMP DM 39-A-71-11-07-00A-720A-A and with reference to Figure 2 view A, re-install the upper cowling on the helicopter and check for the retainer P/N 423-83006-1 proper position in the receptacle P/N 423-83021-1.
- 3.27 With reference to Figure 2 view A, slide the upper cowling forward checking for no interference between retainer P/N 423-83006-1 and cowling guide rail; if necessary, trim the retainer P/N 423-83006-1.
- 3.28 In accordance with AMP DM 39-A-71-11-07-00A-520A-A, remove the upper cowling from the helicopter.

**NOTE**

When performing following step 3.29, seal the boundary of the receptacle P/N 423-83021-1, the screws and the rivets with Sealant MC780 B-2.

- 3.29 With reference to Figure 5 view H-H, install the receptacle P/N 423-83021-1 by means of n°2 shims P/N 3G9540A01651 and P/N 3G9540A01551 and of n°6 screws P/N MS27039C1-16, n°6 washers P/N NAS1149C0332R and n°4 rivets P/N A297A05TW09.
- 3.30 With reference to Figure 2 view Z and Figure 3 view B and section F-F, remove the retainer P/N 423-83006-1 and perform n°4 thru holes  $\varnothing 4.90 \div 5.03$  in positions previously marked in step 3.24.
- 3.31 With reference to Figure 3 view B and section F-F, drill n°20 holes  $\varnothing 14.30 \div 14.50$  thru internal skin and honeycomb core.



**NOTE**

When performing following step 3.31, in case of any protrusion of the insert with respect to the upper skin, it is acceptable to sand inserts flush with the skin after installation.

- 3.32 With reference to Figure 3 view B and section F-F, install n°20 inserts P/N 423-83022-1 by means of adhesive EA934NA.

**NOTE**

When performing following step 3.33, seal the indicated items and the rivets with Sealant MC780 B-2.

- 3.33 With reference to Figure 2 view A, Figure 3 view B, install the retainer P/N 423-83006-1, the crossbar P/N 423-83024-1 and the mounting tee assembly upper P/N 423-83025-1.
- 3.34 With reference to Figure 2 view A and Figure 4 view AA, remove the existing support P/N 3G5320A06051 from the cockpit.
- 3.35 In accordance with AMP DM 39-A-71-11-07-00A-720A-A and with reference to Figure 2 view A, re-install the upper cowling on the helicopter.
- 3.36 With reference to Figure 2 view A and Figure 4 view G-G, temporarily install the deflector P/N 423-83008-1 with the doubler P/N 3G9540A03951 and countermark n°6 thru holes  $\varnothing$  4.8÷5.10 from cockpit side.
- 3.37 With reference to Figure 4 view G-G, drill n°6 holes  $\varnothing$  4.8÷5.10 thru the deflector P/N 423-83008-1, the doubler P/N 3G9540A03951 and aircraft structure.

**NOTE**

When performing following steps 3.38 thru 3.40, seal the indicated items and the rivets with Sealant MC780 B-2.

**NOTE**

The use of rivets P/N CR7770S-04-04 and P/N CR7770S-05-04 as alternative to P/N A298A04TW04 and P/N A298A05TW04 respectively, is allowed (ref. step 3.38).

- 3.38 With reference to Figure 2 view A and Figure 4 view G-G, install n°3 doubler assy P/N 423-83032-1 by means of n°4 rivets P/N A298A04TW04 and n°4 rivets P/N A298A05TW04 in the cockpit.

**NOTE**

The use of rivets P/N CR7770S-05-05 as alternative to P/N A298A05TW05, is allowed (ref. step 3.39).

- 3.39 With reference to Figure 4 view AA, install the support P/N 3G5320A12051 by means of n°2 rivets P/N A298A05TW05 and n°2 washers P/N NAS1149FN832P in the cockpit.

**NOTE**

The use of rivets P/N CR7770S-05-04 as alternative to P/N A298A05TW04, is allowed (ref. step 3.40).

- 3.40 With reference to Figure 4 view AA, install n°2 rivets P/N A298A05TW04 in the cockpit.
- 3.41 In accordance with AMP DM 39-B-25-68-06-00A-720A-K, DM 39-B-25-68-01-00A-720A-K and DM 39-B-25-68-02-00A-720A-K and with reference to Figure 3 view B, temporarily locate the top cutter 3G9506P01431, the left and right struts P/N 990-00062-7 and the brackets P/N 423-83022-1 and P/N 423-83022-2 and countermark on the structure n°6 insert holes.
- 3.42 With reference to Figure 3 view B and section F-F, drill n°6 thru holes  $\varnothing 4.90 \div 5.03$  in positions previously marked.
- 3.43 With reference to Figure 3 view B and section F-F, drill n°6 holes  $\varnothing 14.30 \div 14.50$  thru internal skin and honeycomb core.

**NOTE**

When performing following step 3.44, in case of any protrusion of the insert with respect to the upper skin, it is acceptable to sand inserts flush with the skin after installation.

- 3.44 With reference to Figure 3 view B and section F-F, install n°6 inserts P/N 423-83022-1 by means of EA934NA adhesive.
- 3.45 With reference to Figure 3 view B, close the holes with n°6 screws P/N MS27039C1-12, n°6 nuts P/N MS21042L3, and n°12 washers P/N NAS1149C0332R.
- 3.46 With reference to Figure 6 section R-R, perform the remaining n°26 holes  $\varnothing 4.90 \div 5.03$  thru the deflector P/N 423-83008-1.

**NOTE**

When performing following step 3.46, seal the indicated items with Sealant MC780 B-2.

- 3.47 With reference to Figure 4 view G-G and Figure 6 section R-R, install the deflector P/N 423-83008-1 and doubler P/N 423-83008-1 by means of n°26 screws P/N MS27039C1-18, n°26 washers P/N NAS1149C0332R, n°6 screws P/N MS27039C1-13 and n°6 washers P/N NAS1149C0332R.

**NOTE**

The use of rivets P/N CR7771S-04-06 as alternative to P/N A297A04TW06 is allowed (ref. step 3.48).

- 3.48 With reference to Figure 6 section S-S, remove existing rivets and install clips P/N 423-83030-2 and P/N 423-83030-2 by means of n°4 rivets P/N A297A04TW06, n°2 screws P/N MS27039-0810, n°2 nuts P/N MS21042L08 and n°4 washers P/N NAS1149FN832P.
- 3.49 In accordance with AMP DM 39-A-52-44-03-00A-540A-A and with reference to Figure 7, open the nose door (access door 213AL).
- 3.50 If P/N 423-83009-1 was supplied, rework it with reference to Figure 7 and rename it with P/N 3G9506P01751.
- 3.51 If P/N 423-83009-2 was supplied, rework it with reference to Figure 7 and rename it with P/N 3G9506P01851.
- 3.52 With reference to Figure 7 view E, remove the existing n°4 rivets that interfere with the installation of LH deflector P/N 3G9506P01751.
- 3.53 With reference to Figure 7 view E and Figure 8 section V-V, remove the n°2 existing screws.
- 3.54 With reference to Figure 7 view E and Figure 8 section V-V, temporarily locate the LH deflector P/N 3G9506P01751 with the shims P/N 3G9540A00151 and P/N 3G9540A00251 and countermark n°9 holes.
- 3.55 With reference to Figure 7 view E and Figure 8 section V-V, temporarily locate the LH deflector P/N 3G9506P01751 with the shims P/N 3G9540A00151 and P/N 3G9540A00251 and countermark n°11 holes.
- 3.56 With reference to Figure 7 view E and Figure 8 section T-T, drill n°9 rivets holes thru LH deflector P/N 3G9506P01751, shim P/N 3G9540A00251 and helicopter structure.
- 3.57 With reference to Figure 7 view E and Figure 8 section V-V, drill n°2 holes  $\varnothing 5.16 \div 5.28$  thru LH deflector P/N 3G9506P01751 and shim P/N 3G9540A00151.

**NOTE**

When performing following step 3.58, seal the indicated items with Sealant MC780 B-2.

**NOTE**

The use of rivets P/N CR7770S-05-07 as alternative to P/N A297A05TW07 is allowed (ref. step 3.58).

- 3.58 With reference to Figure 7 and Figure 8 section T-T and section V-V, install LH deflector P/N 3G9506P01751 with the shims P/N 3G9540A00151 and P/N 3G9540A00251 by means of n°4 rivets P/N A297A05TW08, n°5 rivets P/N A297A05TW07 and n°2 screws P/N MS27039C1-13 and n°2 washers P/N NAS1149C0332R.
- 3.59 Repeat steps 3.52 thru 3.58 to install RH deflector P/N 3G9506P01851.
- 3.60 In accordance with AMP DM 39-A-52-44-03-00A-740A-A and with reference to Figure 7, close the nose door (access door 213AL).
- 3.61 If P/N 423-83010-1 was supplied, rework it with reference to Figure 7 and rename it with P/N 3G9506P01551.
- 3.62 If P/N 423-83010-2 was supplied, rework it with reference to Figure 7 and rename it with P/N 3G9506P01651.
- 3.63 With reference to Figure 7 and Figure 8 section T-T, temporarily locate the LH ramp P/N 3G9506P01551 coordinating it with the LH deflector P/N 3G9506P01751 and countermark n°6 thru holes.
- 3.64 With reference to Figure 8 section T-T, countermark the hole  $\varnothing 4.85\div 4.90$  in the LH deflector P/N 3G9506P01751.
- 3.65 With reference to Figure 8 section T-T, remove the LH ramp P/N 3G9506P01551 and perform the hole  $\varnothing 4.85\div 4.90$  in the LH deflector P/N 3G9506P01751.

**CAUTION**

Before drilling, ensure that the n°6 holes are matching with the holes of the LH doubler P/N 3G9540A00351 and the minimum edge margin requirement is respected (ref. step 3.66).

- 3.66 With reference to Figure 7 and Figure 8 section T-T, drill n°6 thru holes  $\varnothing 5.16\div 5.28$ .

**CAUTION**

Be careful not to damage internal skin (ref. step 3.67).

- 3.67 With reference to Figure 8 section T-T, perform n°6 holes c 8.43÷8.58 thru external skin and honeycomb and install n°4 spacers P/N NAS43DD3-17N and n°2 spacers P/N NAS43DD3-27N by means of EA934NA adhesive.
- 3.68 In accordance with AMP DM 39-A-52-44-03-00A-540A-A and with reference to Figure 7, open the nose door (access door 213AL).

**NOTE**

When performing following step 3.69, it is allowed to trim up to 10mm of the composite ridge on the radome internal side in order to proper locate the drilled holes in a flat area with proper edge distance.

- 3.69 With reference to Figure 7 and Figure 8 section U-U, temporarily locate the LH doubler P/N 3G9540A00351 on nose internal side and countermark the remaining n°7 holes.
  - 3.70 With reference to Figure 7 and Figure 8 section U-U, install n°7 inserts P/N NAS1836C3-07M in previously marked holes by means of EA934NA adhesive.
  - 3.71 With reference to Figure 7 and Figure 8 section U-U, install the LH doubler P/N 3G9540A00351 by means of n°7 screws P/N MS27039C1-04 and n°7 washers P/N NAS1149C0363R and EA9309.3NA adhesive.
  - 3.72 In accordance with AMP DM 39-A-52-44-03-00A-740A-A and with reference to Figure 7, close the nose door (access door 213AL).
  - 3.73 With reference to Figure 7 view E, install the LH ramp P/N 3G9506P01551.
  - 3.74 With reference to Figure 8 section T-T, drill hole  $\varnothing$  4.20÷4.40 thru the LH ramp P/N 3G9506P01551.
  - 3.75 With reference to Figure 7 view E, install the quick release pin assy P/N 421-83040-1 by means of n°1 screw P/N MS27039C-0810, n°1 nut P/N MS21042L08 and n°2 washers P/N NAS1149FN832P.
  - 3.76 Repeat steps 3.60 thru 3.75 to install the RH ramp P/N 3G9506P01651 and the RH doubler P/N 3G9540A00451.
4. In accordance with AMP DM 39-A-24-91-01-00A-720A-A, re-install the circuit breaker panel from the cockpit cabin.
  5. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
  6. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.

7. Send the attached compliance form to the following mail box:

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

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

## **PART II**

1. In accordance with AMP DM 39-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figure 9, gain access to the area affected by the installation and perform WSPS upper cutter installation P/N 4G9540A00311 as described in the following procedure:

### **NOTE**

Apply sealant MC780 B-2 between the upper cutter assy reworked P/N 3G9506P01431 and the mounting tee assy P/N 423-83025-1.

- 2.1 In accordance with AMP DM 39-B-25-68-06-00A-720A-K and with reference to Figure 9, install the upper cutter assy reworked P/N 3G9506P01431.

### **NOTE**

When performing following step 2.2 thru 2.6, seal the relevant hardware with Sealant MC780 B-2.

- 2.2 In accordance with AMP DM 39-B-25-68-05-00A-720A-K and with reference to Figure 9, install n°2 supports P/N 990-00060-1.
- 2.3 In accordance with AMP DM 39-B-25-68-03-00A-720A-K and with reference to Figure 9, install bracket LH upper P/N 423-83023-1.
- 2.4 In accordance with AMP DM 39-B-25-68-04-00A-720A-K and with reference to Figure 9, install bracket RH upper P/N 423-83023-2.

### **NOTE**

Use appropriate washer to eliminate the gap between the left strut P/N 990-00062-7 and bracket LH upper P/N 423-83023-1 (max gap 0,25 mm).

- 2.5 In accordance with AMP DM 39-B-25-68-01-00A-720A-K and with reference to Figure 9, install left strut P/N 990-00062-7.

### **NOTE**

Use appropriate washer to eliminate the gap between the right strut P/N 990-00062-7 and bracket RH upper P/N 423-83023-2 (max gap 0,25 mm).

- 2.6 In accordance with AMP DM 39-B-25-68-02-00A-720A-K and with reference to Figure 9, install right strut P/N 990-00062-7.

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

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

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### **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. With reference to Figure 10, perform the WSPS lower fixed parts installation P/N 4G9540A00212 as described in the following procedure:
  - 2.1 In accordance with AMP DM 39-A-52-44-03-00A-540A-A and with reference to Figure 10, open the nose door (access door 213AL).
  - 2.2 With reference to Figure 10, temporarily locate the doubler P/N 3G9540A00751 on internal skin of nose panel and centre it to BL 0.0.
  - 2.3 With reference to Figure 10, countermark n°7 holes of the doubler P/N 3G9540A00751 on the nose panel.
  - 2.4 With reference to Figure 10 view A and section B-B, perform n°7 thru holes  $\varnothing 5.16\div 5.28$  near the edge of the doubler P/N 3G9540A00751.

#### **CAUTION**

**Be careful not to damage the internal skin (ref. step 2.5).**

- 2.5 With reference to Figure 10 view A and section B-B, enlarge the n°7 holes to  $\varnothing 8.43\div 8.58$  on external skin and honeycomb.
- 2.6 With reference to Figure 10 view A and section B-B, install n°7 spacer P/N NAS43DD3-25N by means of adhesive EA934NA.
- 2.7 With reference to Figure 10 view A and section C-C, install the doubler P/N 3G9540A00751 by means of n°7 screws P/N MS27039-1-12, n°7 nuts P/N MS21042L3, n°14 washers P/N NAS1149C0332R and EA9309.3NA adhesive.
- 2.8 In accordance with AMP DM 39-B-25-68-13-00A-720A-K and with reference to Figure 10, temporarily locate the lower cutter assy P/N 423-83002-1 and countermark n°16 thru holes.
- 2.9 With reference to Figure 10 view A and section B-B, perform n°16 thru holes  $\varnothing 5.16\div 5.28$ .

#### **CAUTION**

**Be careful not to damage the internal skin (ref. step 2.10).**

- 2.10 With reference to Figure 10 view A and section B-B, enlarge the n°16 holes to  $\varnothing 8.43\div 8.58$  on external skin and honeycomb.
- 2.11 With reference to Figure 10 view A and section B-B, install n°16 spacer P/N NAS43DD3-25N by means of adhesive EA934NA.

- 2.12 With reference to Figure 10 view A, install n°10 screws P/N MS27039-1-12, n°10 nuts P/N MS21042L3 and n°20 washers P/N NAS1149C0332R.
- 2.13 With reference to Figure 10 view A, install n°6 screws P/N MS27039-1-14, n°6 nuts P/N MS21042L3 and n°12 washers P/N NAS1149C0332R.
- 2.14 In accordance with AMP DM 39-A-52-44-03-00A-740A-A and with reference to Figure 10, close the nose door (access door 213AL).
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. Send the attached compliance form to the following mail box:

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

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

## **PART 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-52-44-03-00A-540A-A, open the nose door (access door 213AL).
3. With reference to Figures 11 and 12, perform the WSPS lower short cutter installation P/N 4G9540A00512 as described in the following procedure:
  - 3.1 With reference to Figure 11, remove the n°16 indicated rivets.
  - 3.2 With reference to Figure 11, install n°6 rivets P/N A298A04TW02.
  - 3.3 With reference to Figure 11 and Figure 12 section C-C, temporarily install the LH and RH bracket assy P/N 3G9540A00931 and P/N 3G9540A00831 and enlarge the n°10 holes to  $\varnothing 5.16 \div 5.28$ .
  - 3.4 With reference to Figure 11 and Figure 12 section C-C, install the LH and RH bracket assy P/N 3G9540A00931 and P/N 3G9540A00831 by means of n°10 rivets P/N HL18PB-6-5 and n°10 collars HL70-6.
  - 3.5 With reference to Figure 11, remove all the indicated screws and nuts.

### **NOTE**

When performing following step 3.6, seal the relevant hardware with Sealant MC780 B-2.

- 3.6 In accordance with AMP DM 39-B-25-68-13-00A-720A-K with reference to Figures 11 and 12, install the lower cutter assy P/N 423-83002-1, the LH and RH shims P/N 3G9540A01251 and P/N 3G9540A01351, the LH and RH shims P/N 3G9540A00551 and P/N 3G9540A00651 and the stiffener P/N 3G9540A01451.
- 3.7 With reference to Figure 11, remove the LH and RH radome hinge assy P/N 3G5240A03531 and P/N 3G5240A03631.
- 3.8 With reference to Figure 11, install the LH and RH radome hinge assy P/N 3G9540A01131 and P/N 3G9540A01031 by means of lockwire P/N MS20995C32 and cotter pin P/N MS24665-155.
4. In accordance with AMP DM 39-A-52-44-03-00A-740A-A, close the nose door (access door 213AL).
5. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
6. Return the helicopter to flight configuration and record for compliance with Part IV of this Service Bulletin on the helicopter logbook.

7. Send the attached compliance form to the following mail box:

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

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

## **PART 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-E-52-41-01-00A-520A-K and with reference to Figure 14 view B, remove the nose door (access door 213AL) from the helicopter.
3. In accordance with AMP DM 39-A-93-55-01-00A-520A-A and with reference to Figure 14 view B, remove the cover FLIR nose radome P/N 3G5240A14151 from the nose door and retain existing hardware for later reuse.
4. With reference to Figure 19 view M, install cover P/N 3G5240A14051 on the nose door by means of previously removed hardware.
5. With reference to Figure 14 view B, remove LH radome hinge assy P/N 3G5240A03531 and RH radome hinge assy P/N 3G5240A03631 from the nose door and retain existing hardware for later reuse.
6. With reference to Figure 19 view M, install LH radome hinge assy P/N 3G9540A01131 and RH radome hinge assy P/N 3G9540A01031 on the nose door by means of previously removed hardware. Reinstate lockwire P/N MS20995C32 or cutter pins P/N MS24665.
7. With reference to Figure 13 view A and Figure 14 view B, remove the lower panel P/N 3G5331A19332.
8. With reference to Figure 13 view A and Figure 14 view C, remove lower vertical bracket assemblies P/N 3G5331A20731 and P/N 3G5331A20831.
9. With reference to Figure 13 view A and Figure 14 view C, remove lower angle P/N 3G5331A21151.
10. With reference to Figure 13 view A and Figure 14 view C, remove aft lower angle P/N 3G5331A19452.
11. With reference to Figure 14 view C, temporarily remove upper hinge LH P/N 3P5331A53351 and upper hinge RH P/N 3P5331A53251. Retain for later reuse with their fixing hardware.
12. With reference to Figure 13 view A, remove existing nutplates as indicated and fill the holes as required by means of adhesive EA934NA (C057).
13. With reference to Figure 17 section H-H, temporarily locate FWD lower angle assy P/N 3G5331A37831 and countermark positions of nutplate holes coordinating them with RH lower bracket P/N 3G5331A21051 and LH lower bracket P/N 3G5331A20951.
14. With reference to Figure 17 section H-H, drill n°8 nutplate holes  $\varnothing 4.902 \pm 0.029$  on the the previously countermarked positions.

15. With reference to Figure 17 section H-H, install n°4 nutplates P/N MS21071L3 and n°4 nutplates P/N MS21069L3 by means of n°16 rivets P/N MS20426AD3 on the FWD lower angle assy P/N 3G5331A37831.
16. With reference to Figure 17 section H-H, reinstall upper hinge LH P/N 3P5331A53351 and upper hinge RH P/N 3P5331A53251 with FWD lower angle assy P/N 3G5331A37831 by means of existing hardware.
17. With reference to Figure 17 section J-J, drill out existing rivets as required.
18. With reference to Figure 15 View E and Figure 17 section H-H and section J-J, temporarily locate reinforcement P/N 3G5331A45452 and countermark positions of existing rivet holes and new rivet holes. Drill pilot holes as required on the previously countermarked positions.
19. With reference to Figure 16 View F, drill n°2 holes Ø 4.0 on reinforcement P/N 3G5331A45452 coordinating them with existing rivets.
20. With reference to Figure 15 View E and Figure 17 section J-J, install reinforcement P/N 3G5331A45452, RH lower shim P/N 3G5306P47952, LH lower shim P/N 3G5306P47951, RH spacer P/N 3G5331A45651 and LH spacer P/N 3G5331A45551 by means of N°4 rivets P/N MS90354S0504 and N°7 rivets P/N MS90354S0503.
21. With reference to Figure 17 section H-H, fix FWD lower angle assy P/N 3G5331A37831 to reinforcement P/N 3G5331A45452 by means of n°16 rivets P/N MS90354S0502.
22. With reference to Figure 18 section L-L, perform the indicated cut out of closure panel P/N 3P5331A55052.
23. With reference to Figure 18 section K-K, install aft lower angle assy P/N 3G5331A37731 by means of n°22 rivets P/N MS20470AD4.
24. With reference to Figure 19 view M, drill out existing rivets as indicated and replace with n°4 rivets P/N A298A04TW02.
25. With reference to Figure 20 section P-P, drill out existing rivets as indicated and replace with n°7 rivets P/N MS20426AD4.
26. With reference to Figure 20 section P-P, drill out existing rivets in the installation positions of the LH and RH bracket assemblies.
27. With reference to Figure 20 section P-P, enlarge n°10 existing rivet holes up to Ø 5.16÷5.28.
28. With reference to Figure 20 section P-P, install bracket assy LH P/N 3G9540A00931 and bracket assy RH P/N 3G9540A00831 by means of n°8 pin-rivets P/N HL20PB-6-6, n°2 pin-rivets P/N HL18PB-6-6, n°6 collars P/N HL70-6 and n°4 collars P/N HL86PBW6.
29. With reference to Figure 16 detail G, perform indicated cut outs of lower panel P/N 3P5331A54533 coordinating them with bracket assy LH P/N 3G9540A00931 and bracket assy RH P/N 3G9540A00831.

30. With reference to Figure 16 view F, temporarily locate lower panel P/N 3P5331A54533 and countermark positions of existing nut plates.
31. With reference to Figure 16 view F, drill n°30 screw holes  $\varnothing 4.902\pm 5.029$  through lower panel P/N 3P5331A54533 on the previously countermarked positions.
32. With reference to Figure 19 view M, temporarily locate the doubler P/N 3G9540A00751 on internal skin of lower panel and centre it to BL 0.0 and countermark positions of n°7 holes on the lower panel.
33. With reference to Figure 19 view M and Figure 21 section R-R, drill n°7 thru holes  $\varnothing 5.16\pm 5.28$  on the previously countermarked positions.

**CAUTION**

Be careful not to damage the internal skin (ref. step 34)

34. With reference to Figure 19 view M and Figure 21 section R-R, enlarge n°7 previously performed hole up to  $\varnothing 8.43\pm 8.58$  on external skin and honeycomb.
35. With reference to Figure 19 view M and Figure 21 section R-R, install n°7 spacer P/N NAS43DD3-25N by means of adhesive EA934NA (C057).
36. With reference to Figure 19 view M and Figure 21 section R-R, install the doubler P/N 3G9540A00751 by means of n°7 screws P/N MS27039-1-12, n°7 nuts P/N MS21042L3, n°14 washers P/N NAS1149C0332R and adhesive EA9309.3NA (C021).
37. With reference to Figure 19 view M, temporarily locate lower panel P/N 3P5331A54533 and the lower cutter assy P/N 423-83002-1 and countermark positions of n°16 holes on the lower panel.
38. With reference to Figure 19 view M and Figure 21 section R-R, drill n°16 thru holes  $\varnothing 5.16\pm 5.28$  on the previously countermarked positions.

**CAUTION**

Be careful not to damage the internal skin (ref. step 39)

39. With reference to Figure 19 view M and Figure 21 section R-R, enlarge n°16 previously performed hole up to  $\varnothing 8.43\pm 8.58$  on external skin and honeycomb.
40. With reference to Figure 19 view M and Figure 21 section R-R, install n°16 spacer P/N NAS43DD3-25N by means of adhesive EA934NA (C057).
41. With reference to Figures 19 and 21, on the lower panel, install lower cutter assy P/N 423-83002-1, shims LH P/N 3G9540A00551 and RH P/N 3G9540A00551, shims LH P/N 3G9540A01351 and RH P/N 3G9540A01251, stiffener P/N 3G9540A01451 by means of n°8 screws P/N MS27039-1-19, n°2 screws P/N MS27039-1-20, n°6 screws P/N MS27039-1-18, n°32 washers P/N NAS1149C0332R and n°16 nuts P/N MS21042L3.

42. With reference to Figure 19, seal fasteners previously installed by means of sealing compound (C274).

**NOTE**

If necessary, it is allowed to use peelable shim between  
FWD lower angle assy P/N 3G5331A37831 and lower  
panel P/N 3P5331A54533.

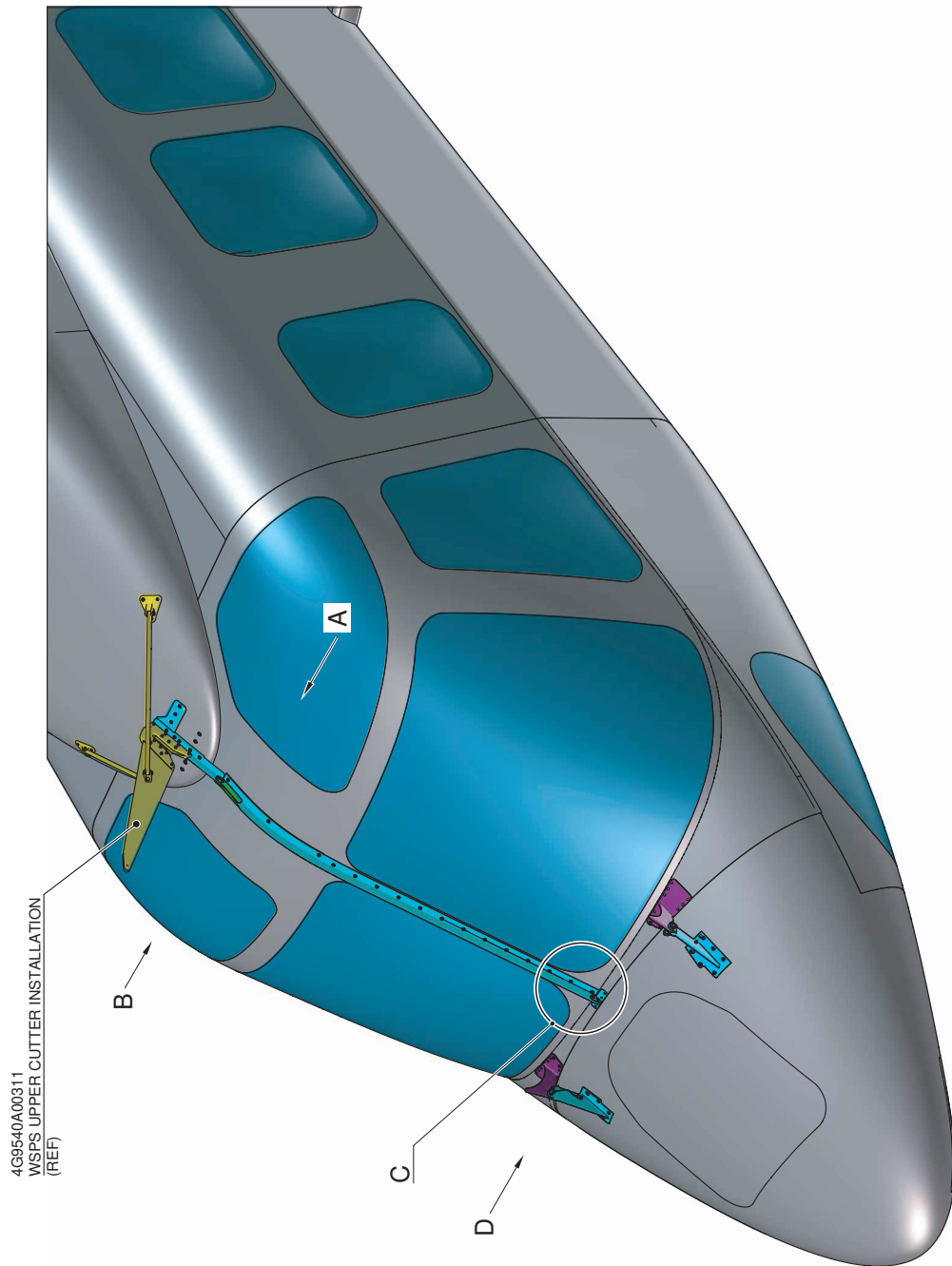
43. With reference to Figures 15 view D, 16 view F and 20, install the assembly of the lower panel P/N 3P5331A54533 and lower cutter assy P/N 423-83002-1 by means of n°30 screws P/N A428A3C08, n°6 bolts P/N NAS6203-6, n°2 bolts P/N NAS6203-4, n°8 washers P/N NAS1149C0332R, n°6 washers P/N NAS620C10L and n°6 nuts P/N MS21042L3.
44. In accordance with AMP DM 39-E-52-41-01-00A-720A-K and with reference to Figure 15 view D, reinstall the nose door (access door 213AL) on the helicopter.
45. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
46. Return the helicopter to flight configuration and record for compliance with Part V of this Service Bulletin on the helicopter logbook.
47. Send the attached compliance form to the following mail box:

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

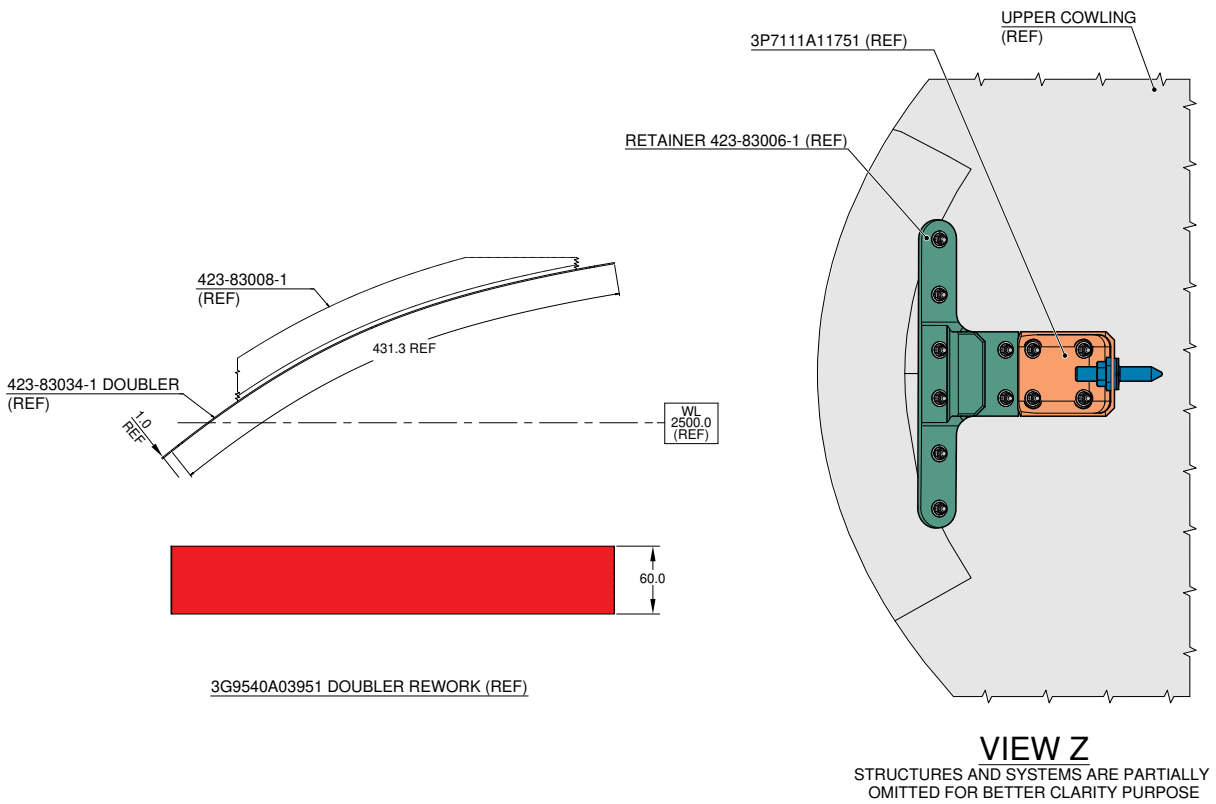
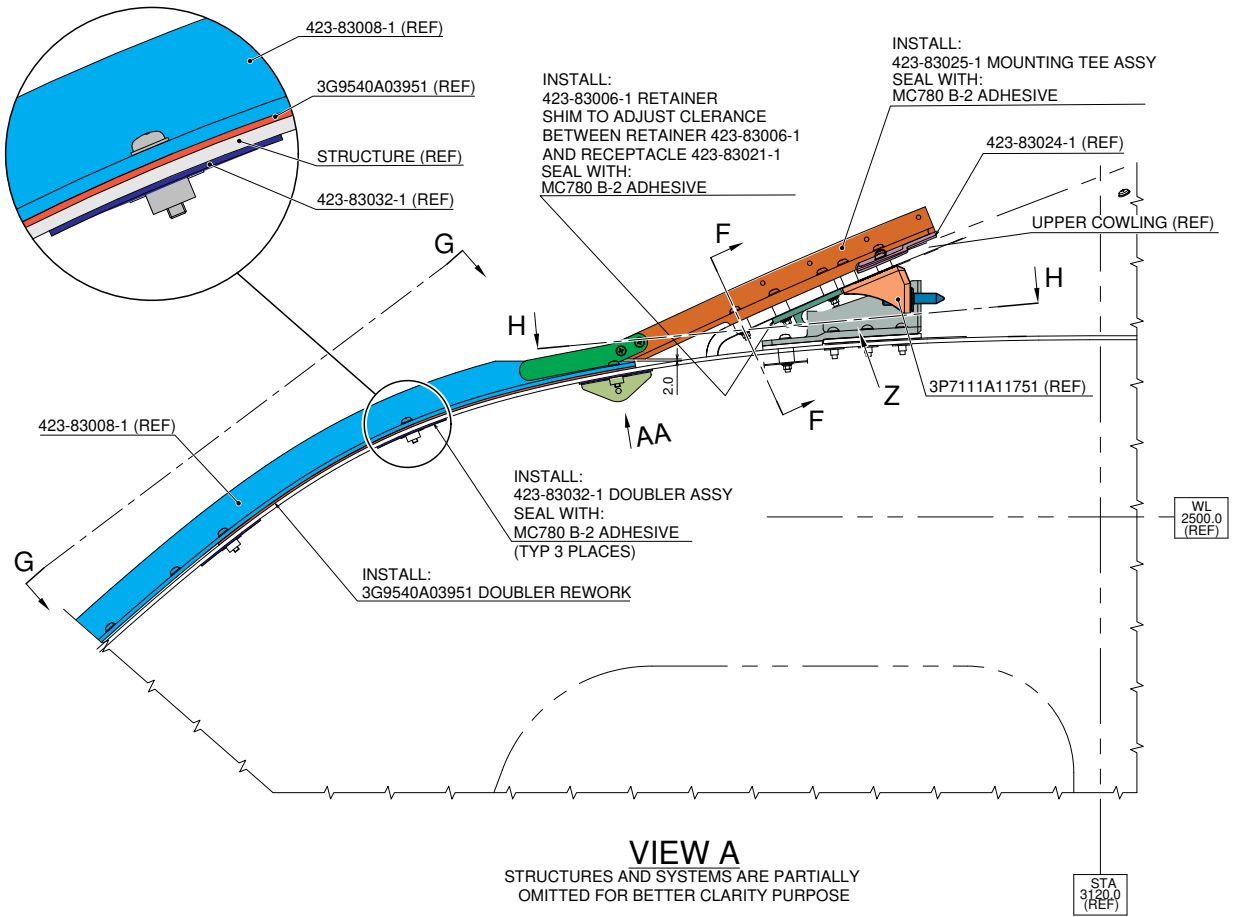
As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the "Service Bulletin Application Communication".



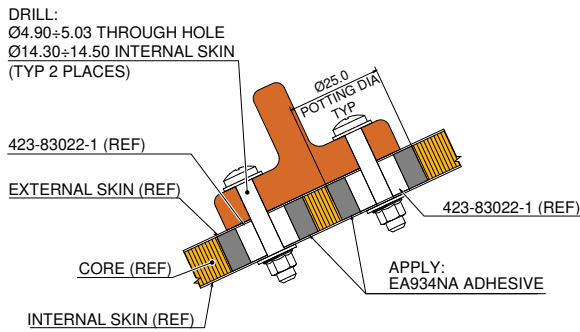
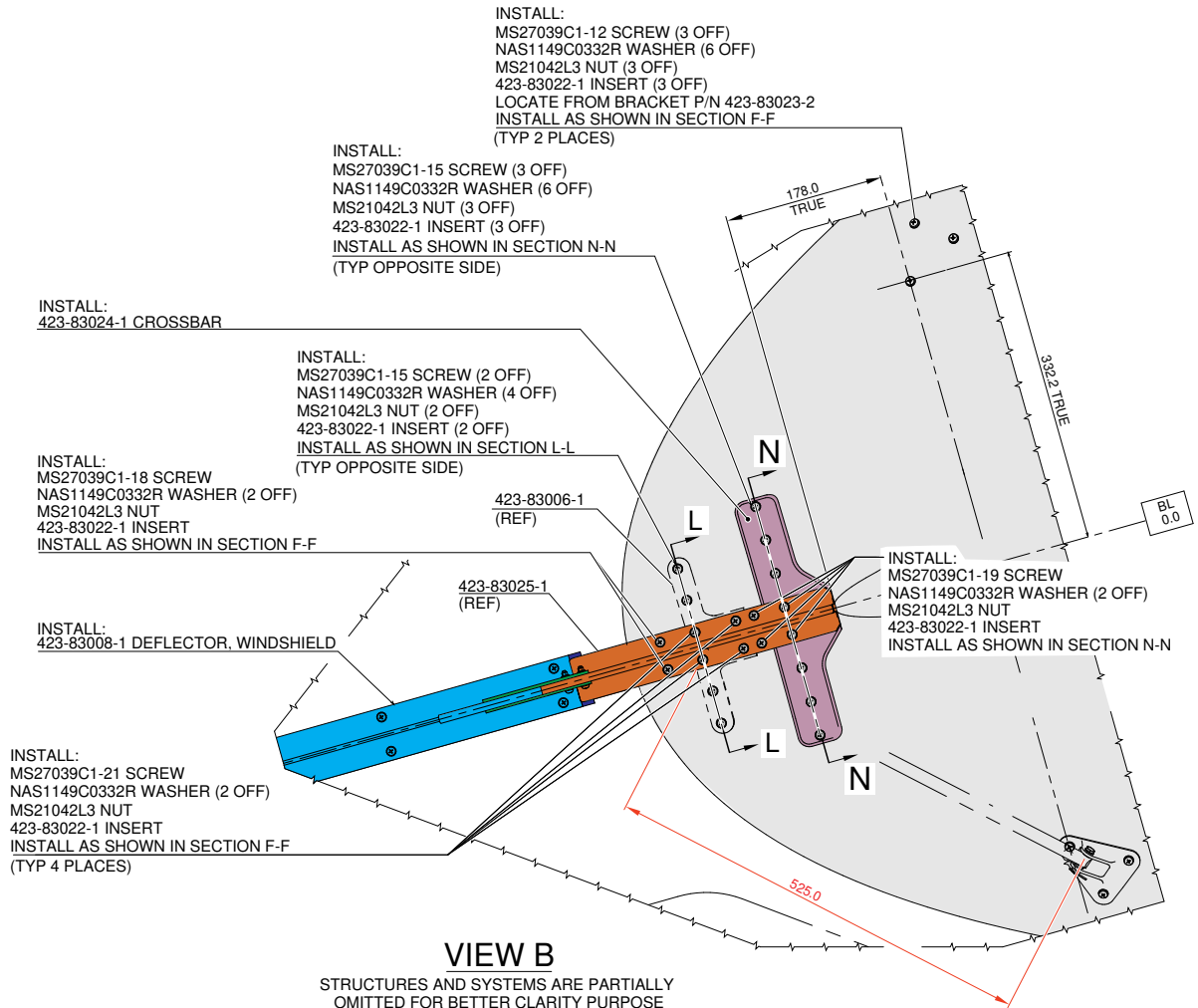
4G9540A00112  
WSPS UPPER FIXED PART  
INSTALLATION



**Figure 1**



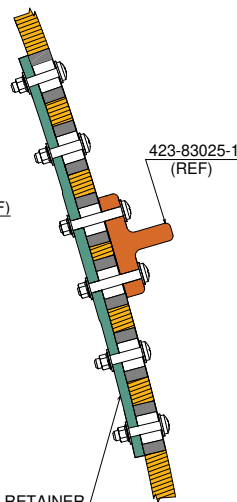
**Figure 2**



**SECTION F-F**

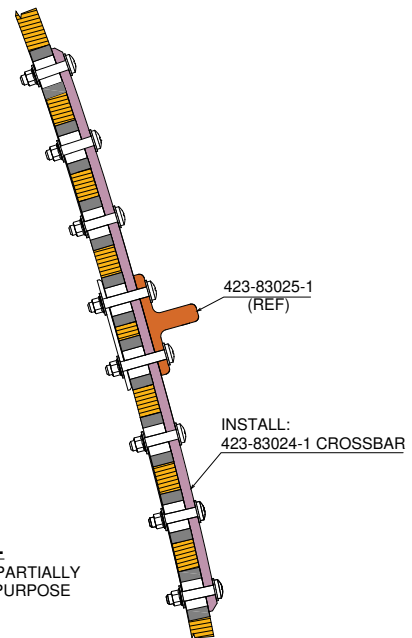
(TYPICAL FOR 423-83022-1 INSERT INSTL)  
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

**INSTALL:**  
423-83006-1 RETAINER



**SECTION L-L**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

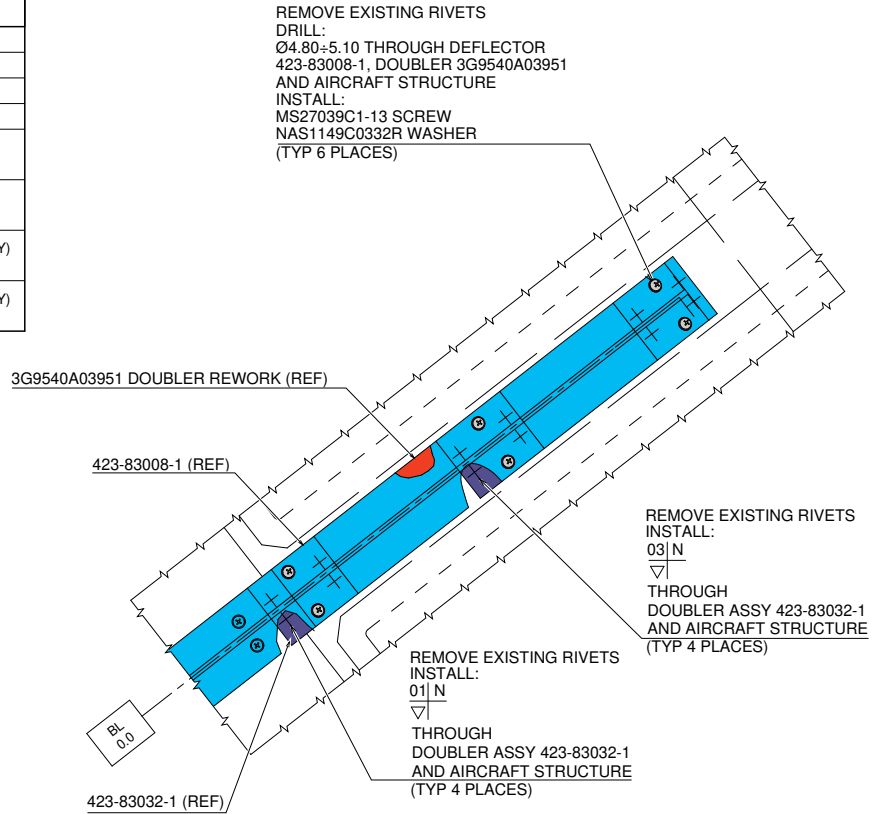


**SECTION N-N**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

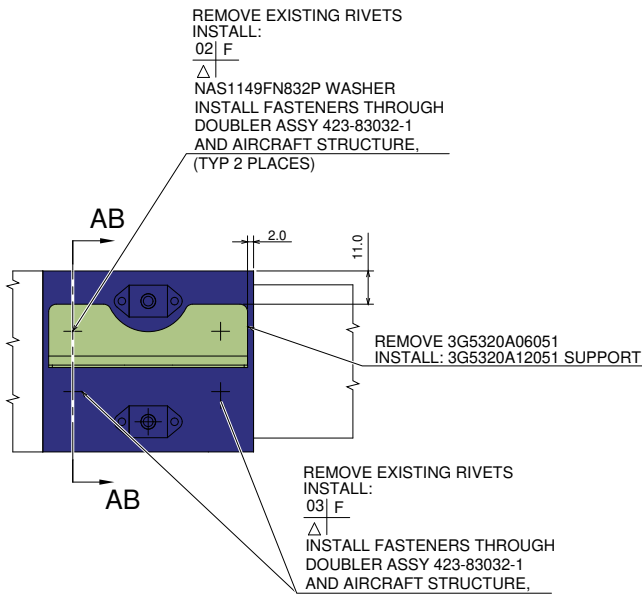
**Figure 3**

RIVET REFERENCE TABLE	
REF. N°	RIVET P/N
01	A298A05TW04
02	A298A05TW05
03	A298A04TW04
	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



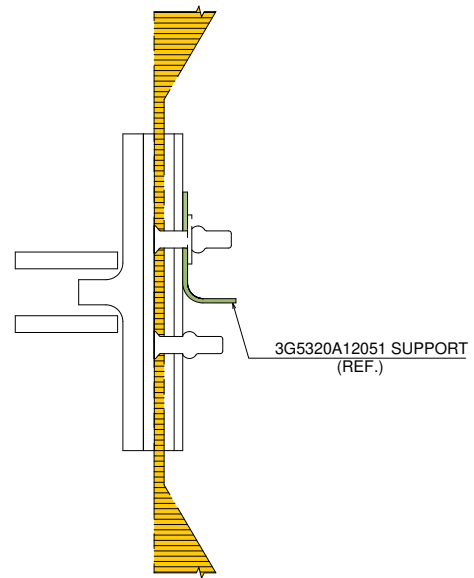
**VIEW G-G**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



**VIEW AA**

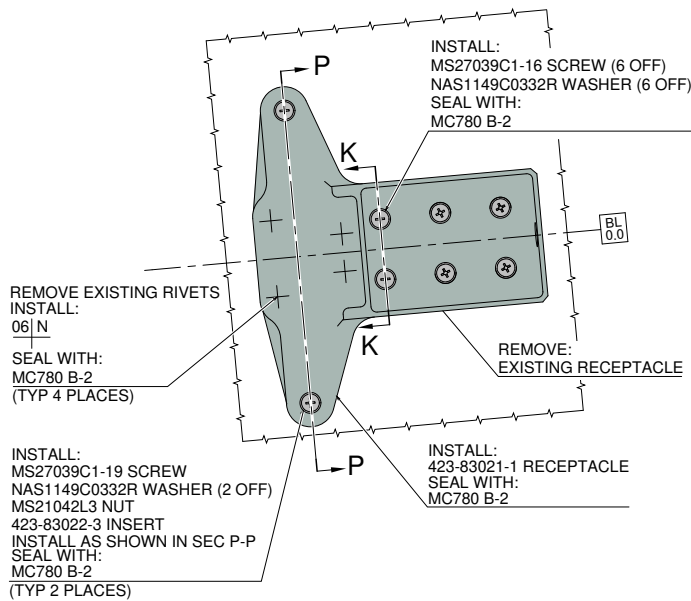
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



**SECTION AB-AB**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

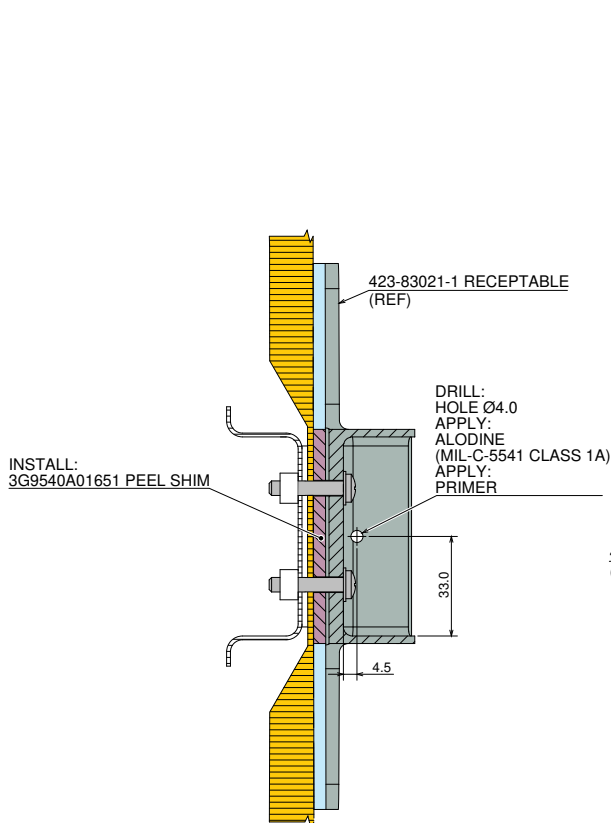
**Figure 4**



RIVET REFERENCE TABLE	
REF. N°	RIVET P/N
06	A297A05TW09
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

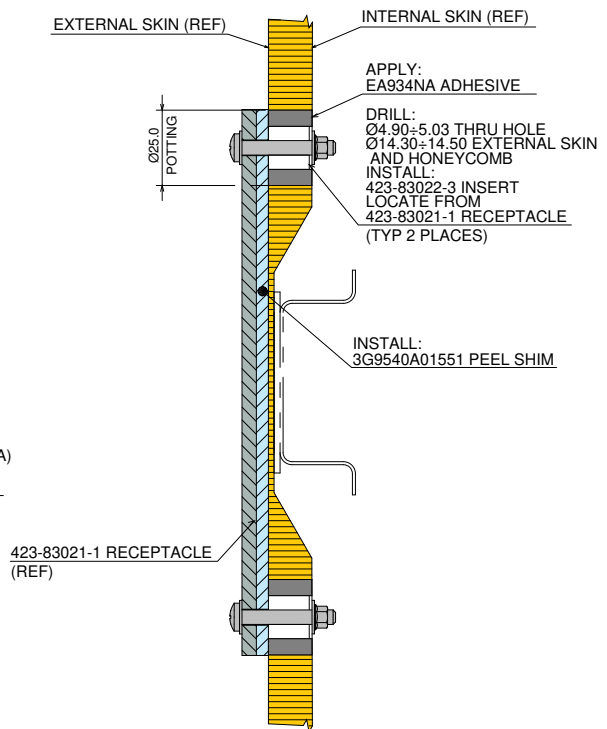
**VIEW H-H**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



**SECTION K-K**

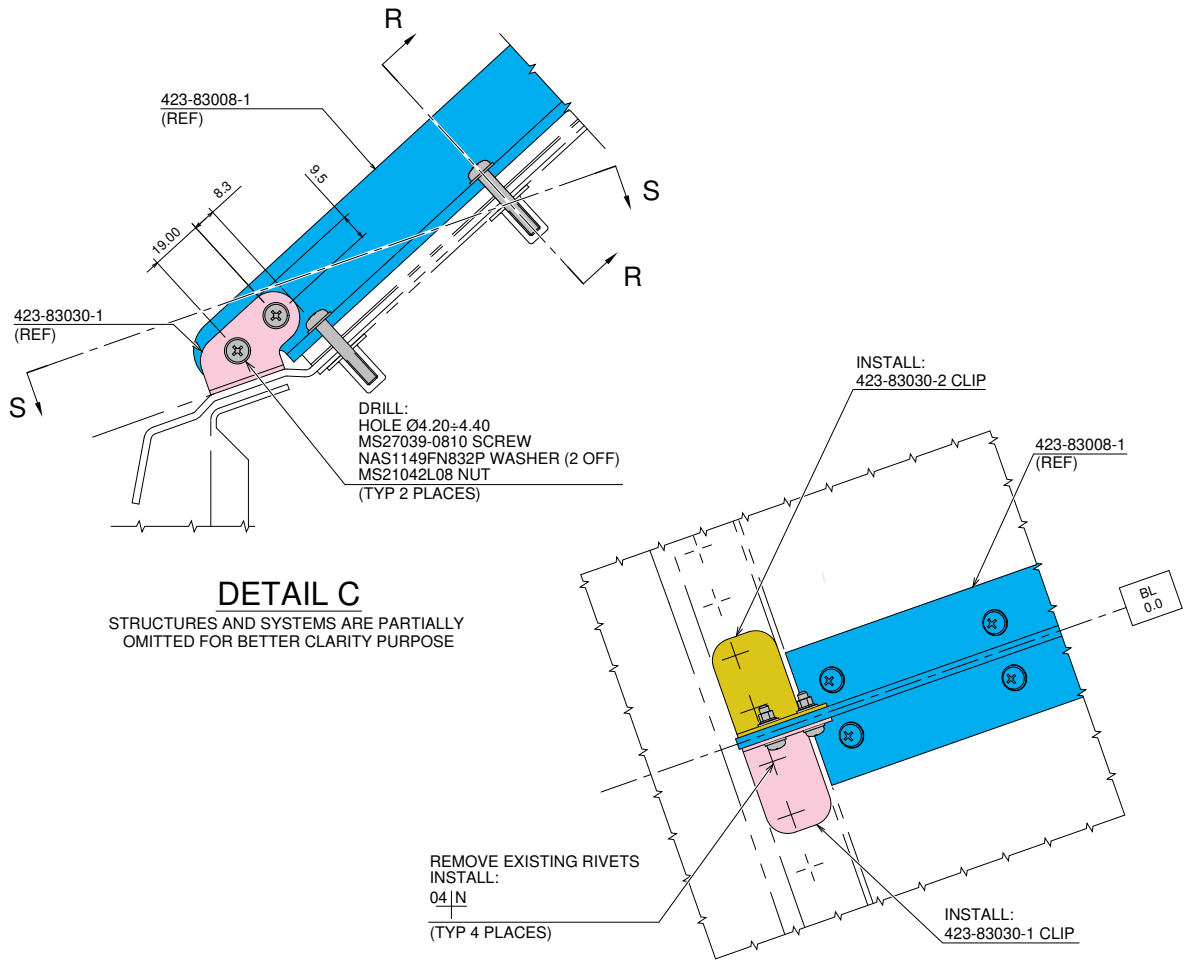
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



**SECTION P-P**

TYP FOR INSERT 423-83022-3  
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

**Figure 5**

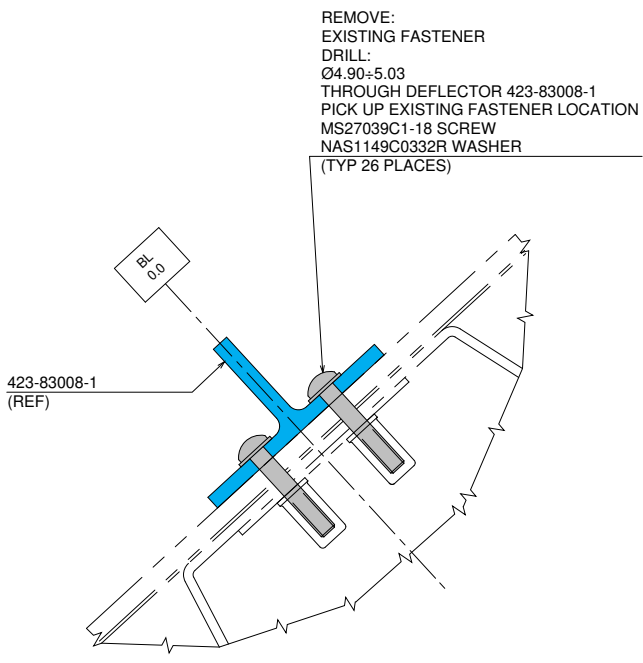


**DETAIL C**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

**SECTION S-S**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



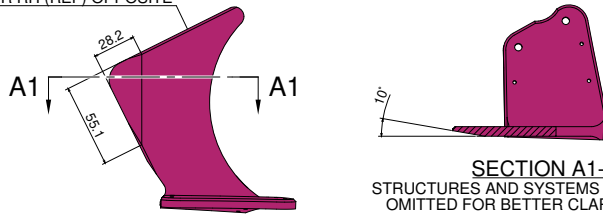
**SECTION R-R**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

RIVET REFERENCE TABLE	
REF. N°	RIVET P/N
04	A297A04TW06
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

**Figure 6**

423-83009-1 DEFLECTOR LH (REF) SHOWN  
423-83009-2 DEFLECTOR RH (REF) OPPOSITE

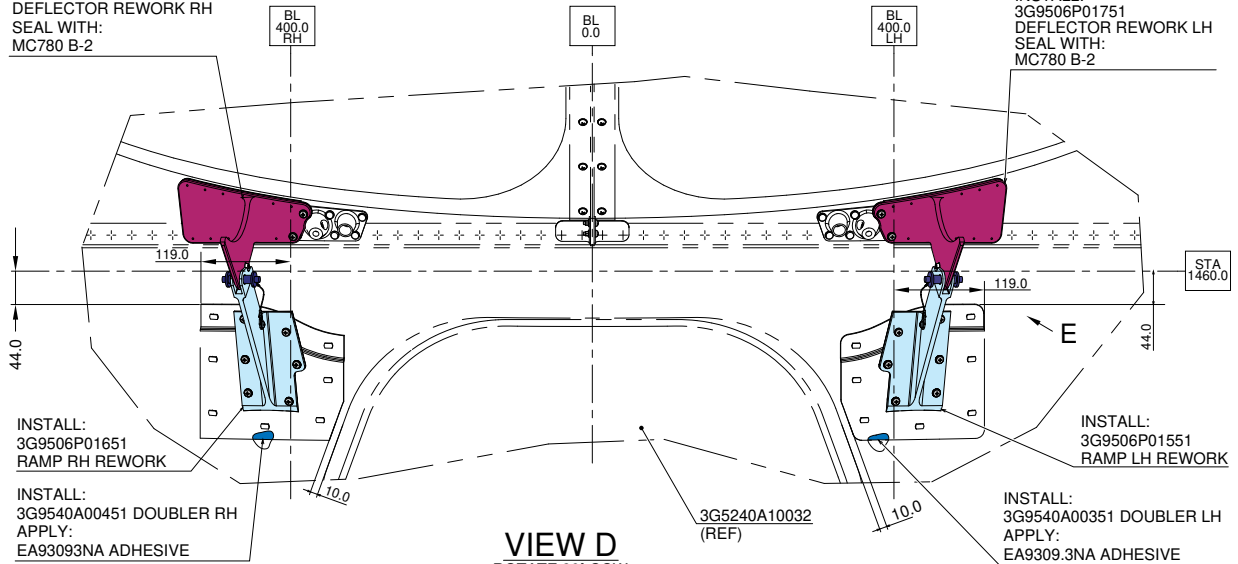


**SECTION A1-A1**  
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

INSTALL:  
3G9506P01851  
DEFLECTOR REWORK RH  
SEAL WITH:  
MC780 B-2

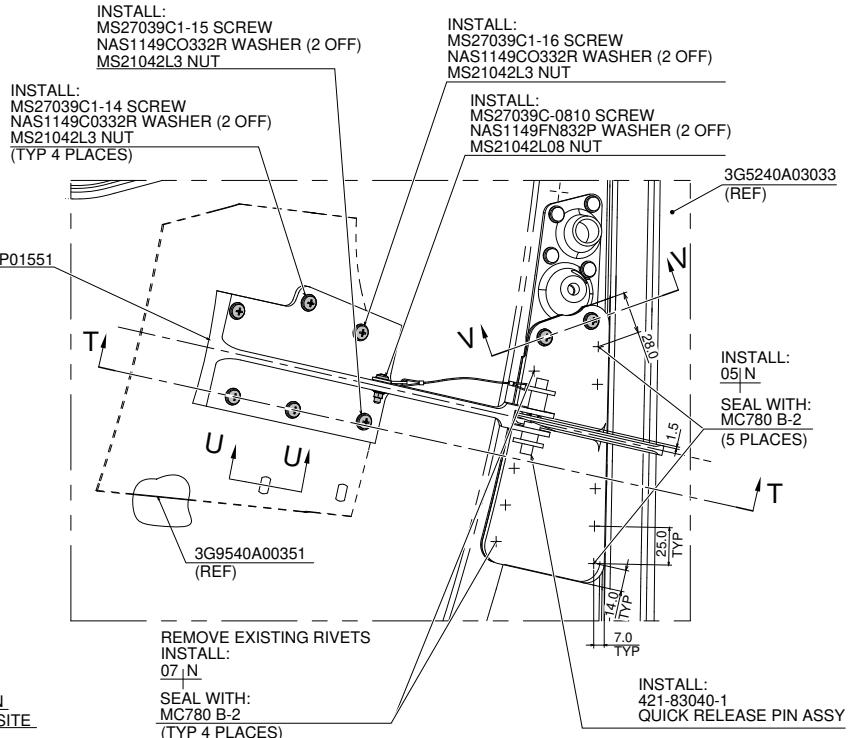
3G9506P01751 DEFLECTOR REWORK LH (REF) SHOWN  
3G9506P01851 DEFLECTOR REWORK RH (REF) OPPOSITE

INSTALL:  
3G9506P01751  
DEFLECTOR REWORK LH  
SEAL WITH:  
MC780 B-2



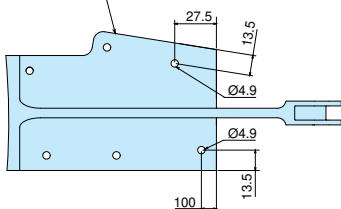
**VIEW D**  
ROTATE 90° CCW  
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

RIVET REFERENCE TABLE	
REF. N°	RIVET P/N
05	A297A05TW07
07	A297A05TW08
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



**VIEW E**  
- LEFT SIDE SHOWN -  
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

423-83010-1 RAMP LH (REF) SHOWN  
423-83010-2 RAMP RH (REF) OPPOSITE

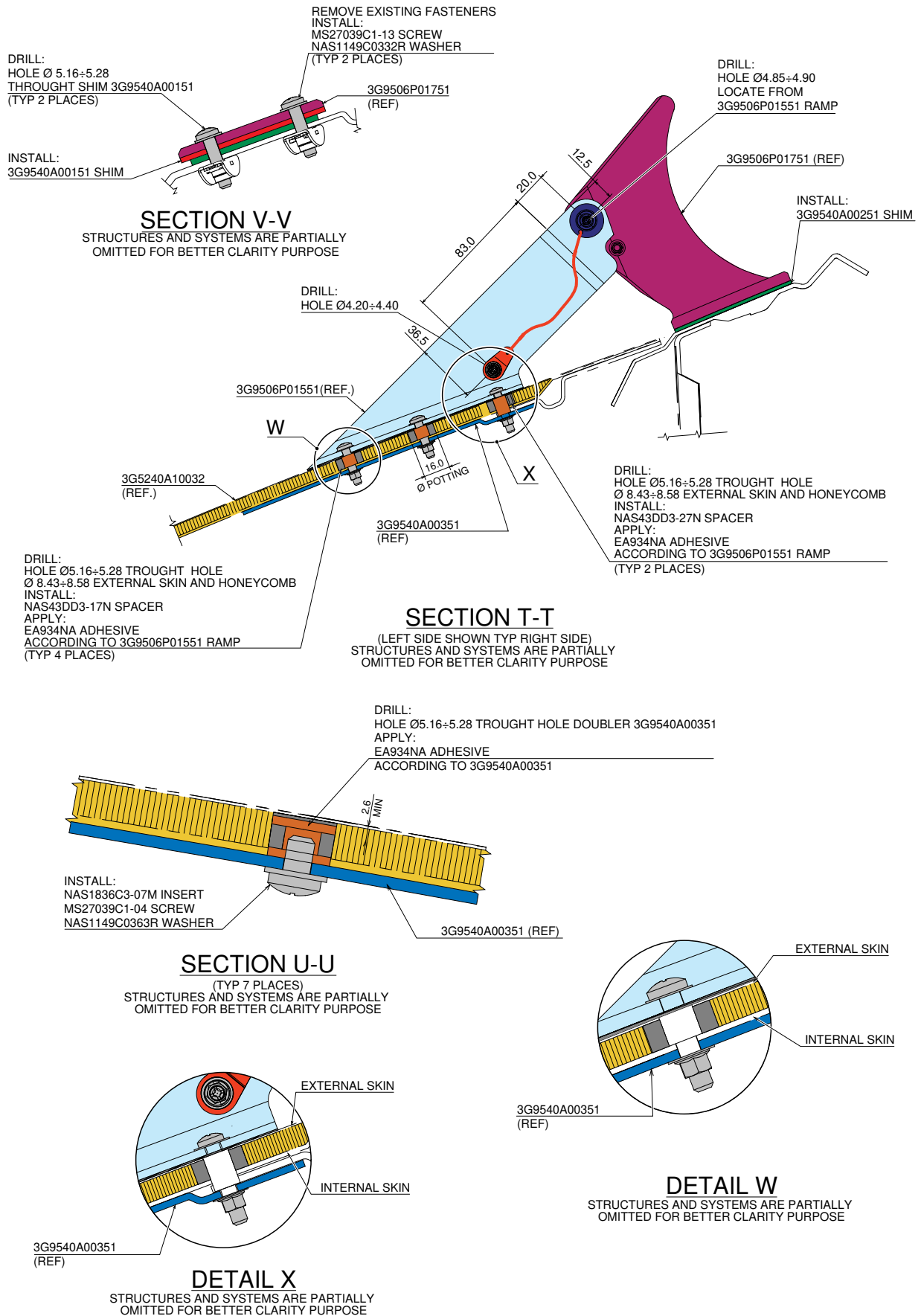


3G9506P01551 RAMP LH REWORK (REF) SHOWN  
3G9506P01651 RAMP RH REWORK (REF) OPPOSITE

REMOVE EXISTING RIVETS  
INSTALL:  
07 N  
SEAL WITH:  
MC780 B-2  
(TYP 4 PLACES)

INSTALL:  
421-83040-1  
QUICK RELEASE PIN ASSY

**Figure 7**



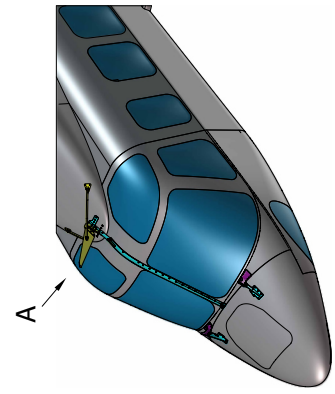
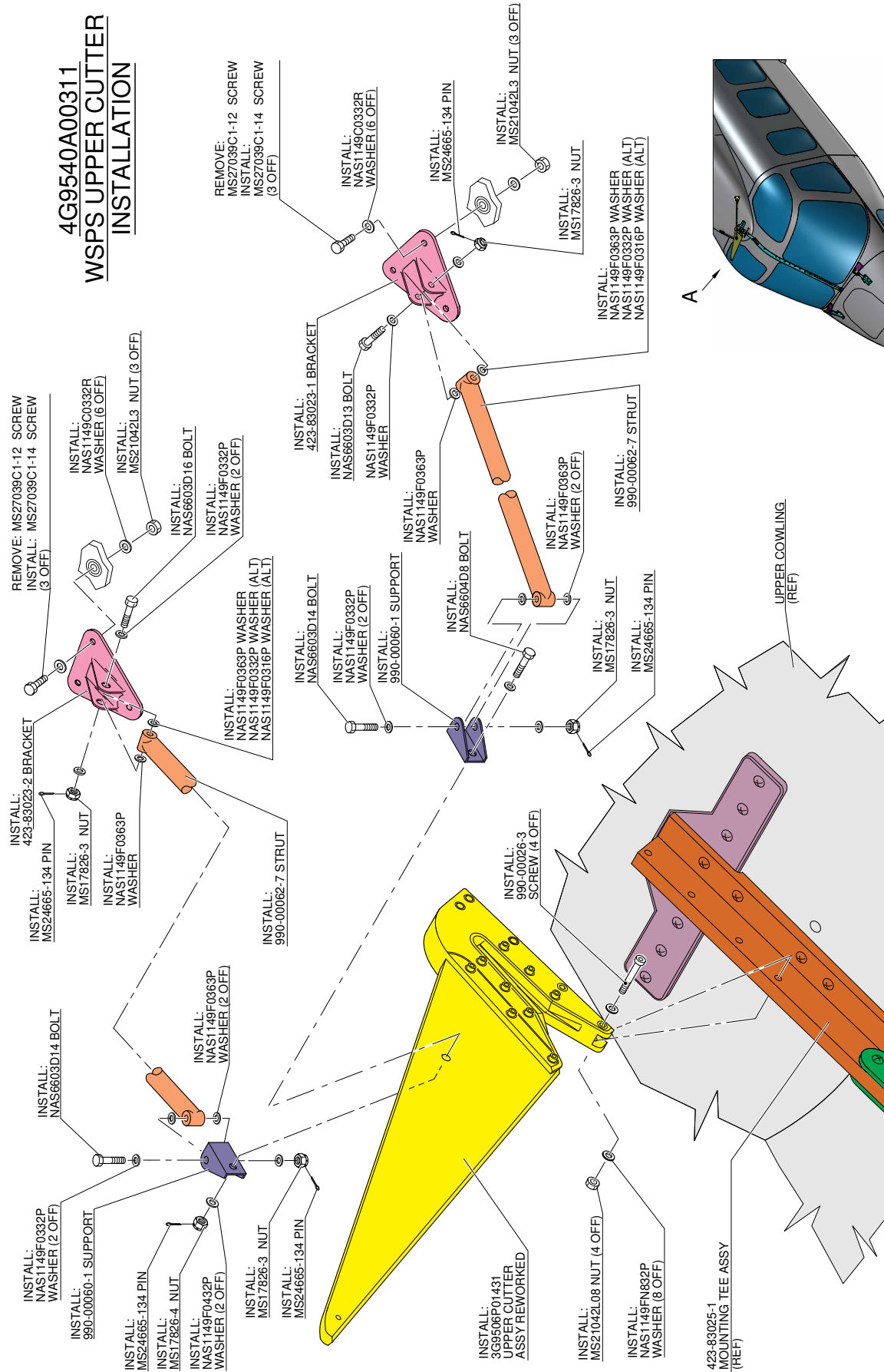
**Figure 8**

S.B. N°139-135

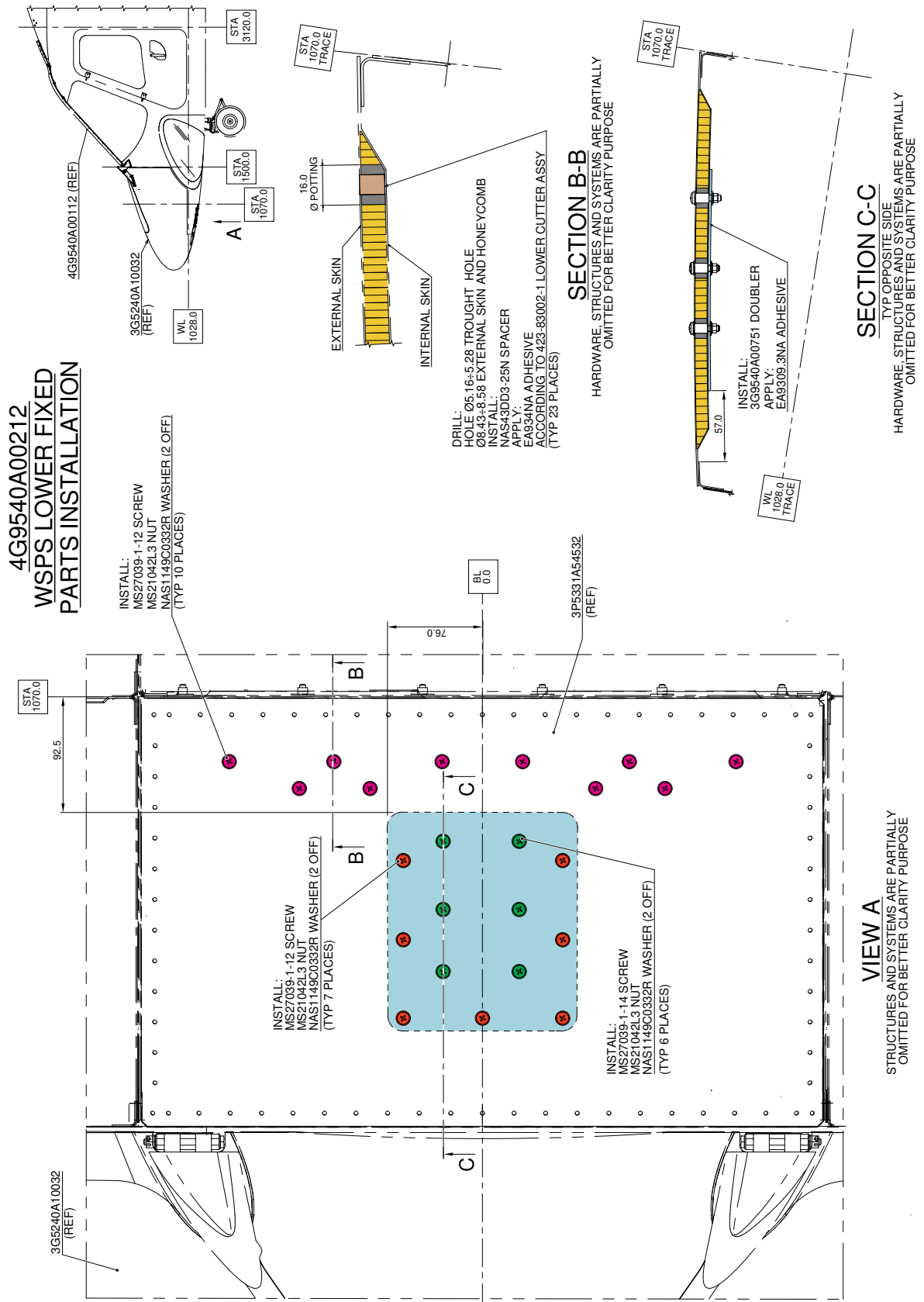
DATE: September 27, 2016

REVISION: A - February 10, 2022





**Figure 9**

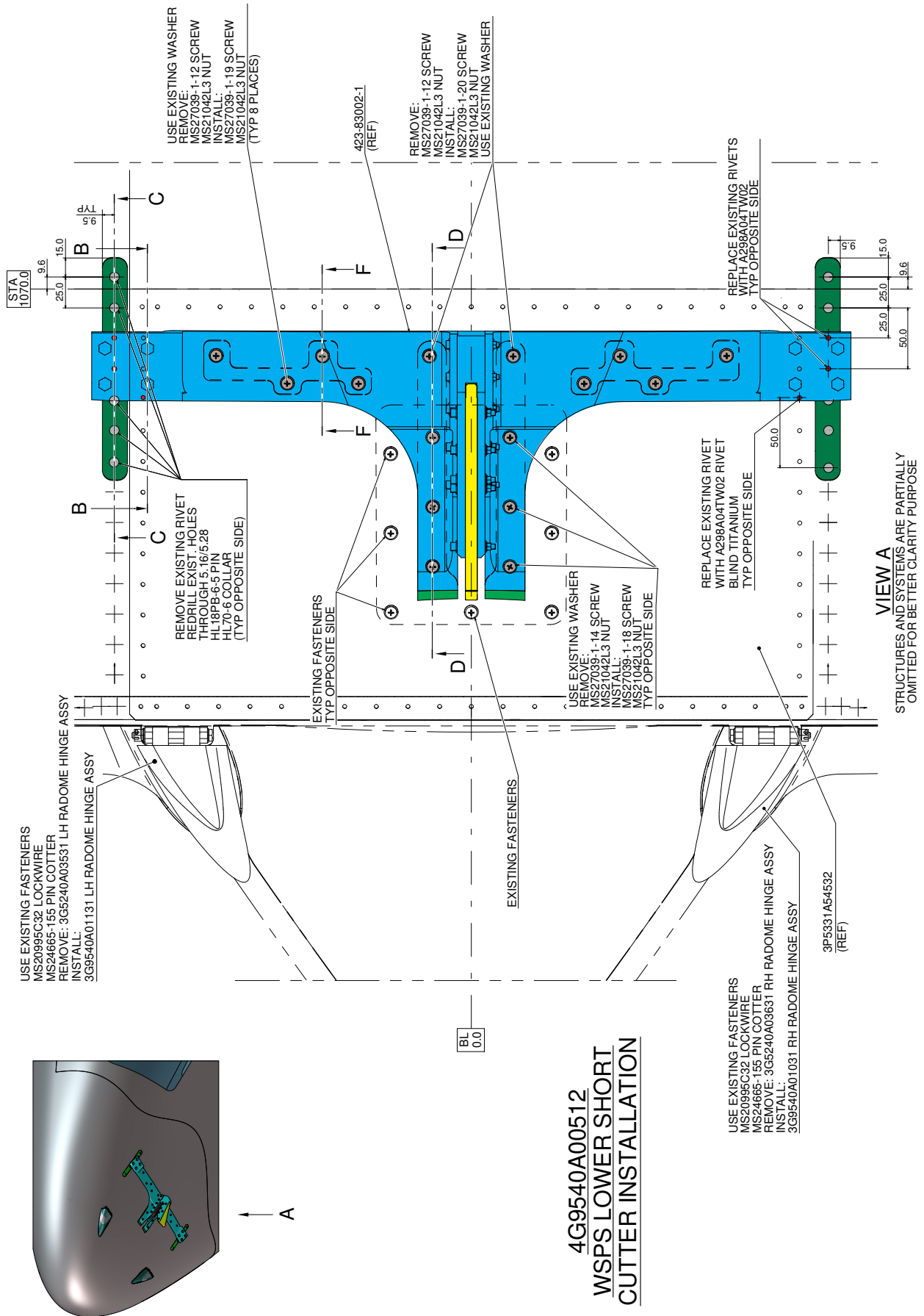


**Figure 10**

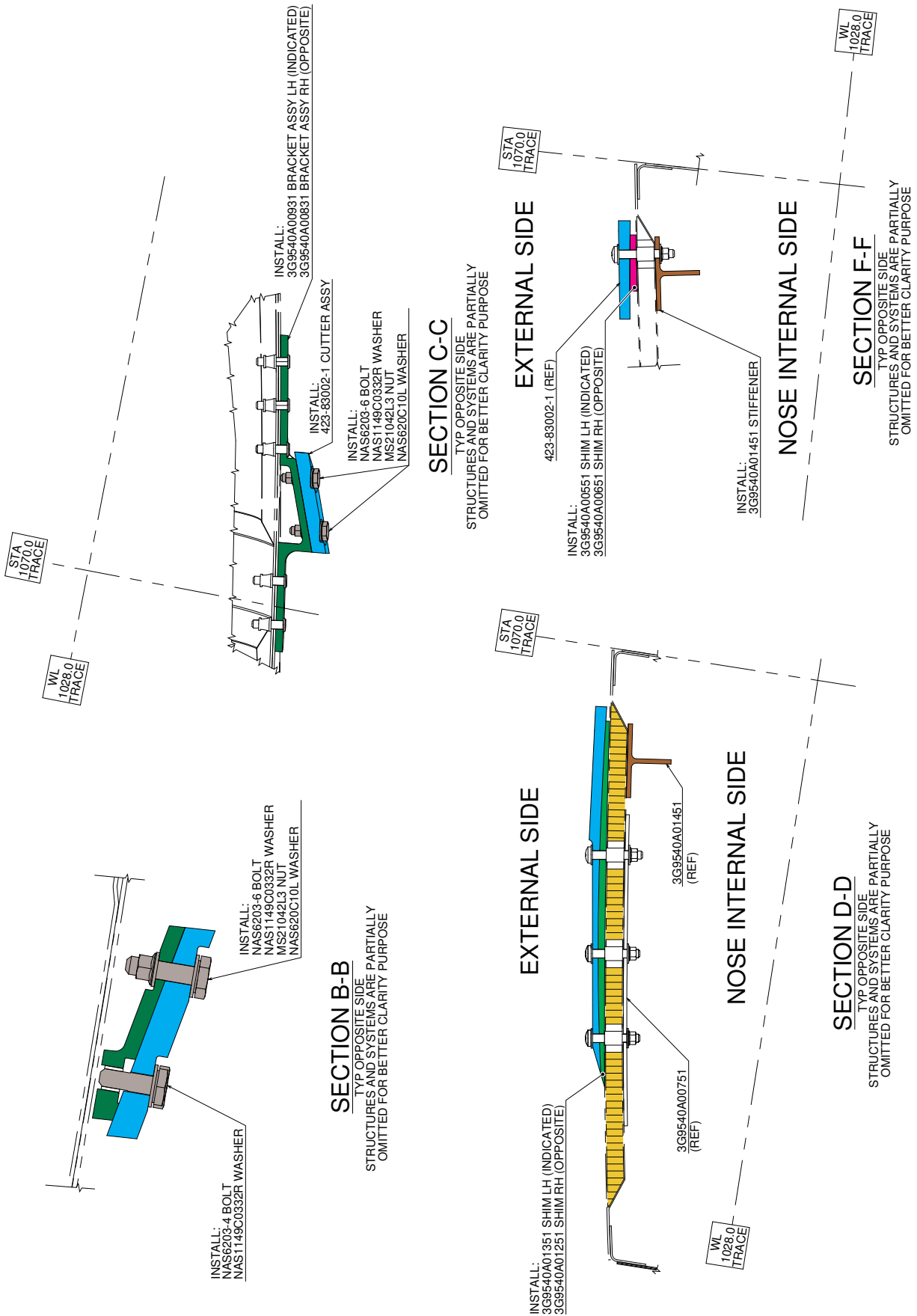
S.B. N°139-135

DATE: September 27, 2016

REVISION: A - February 10, 2022

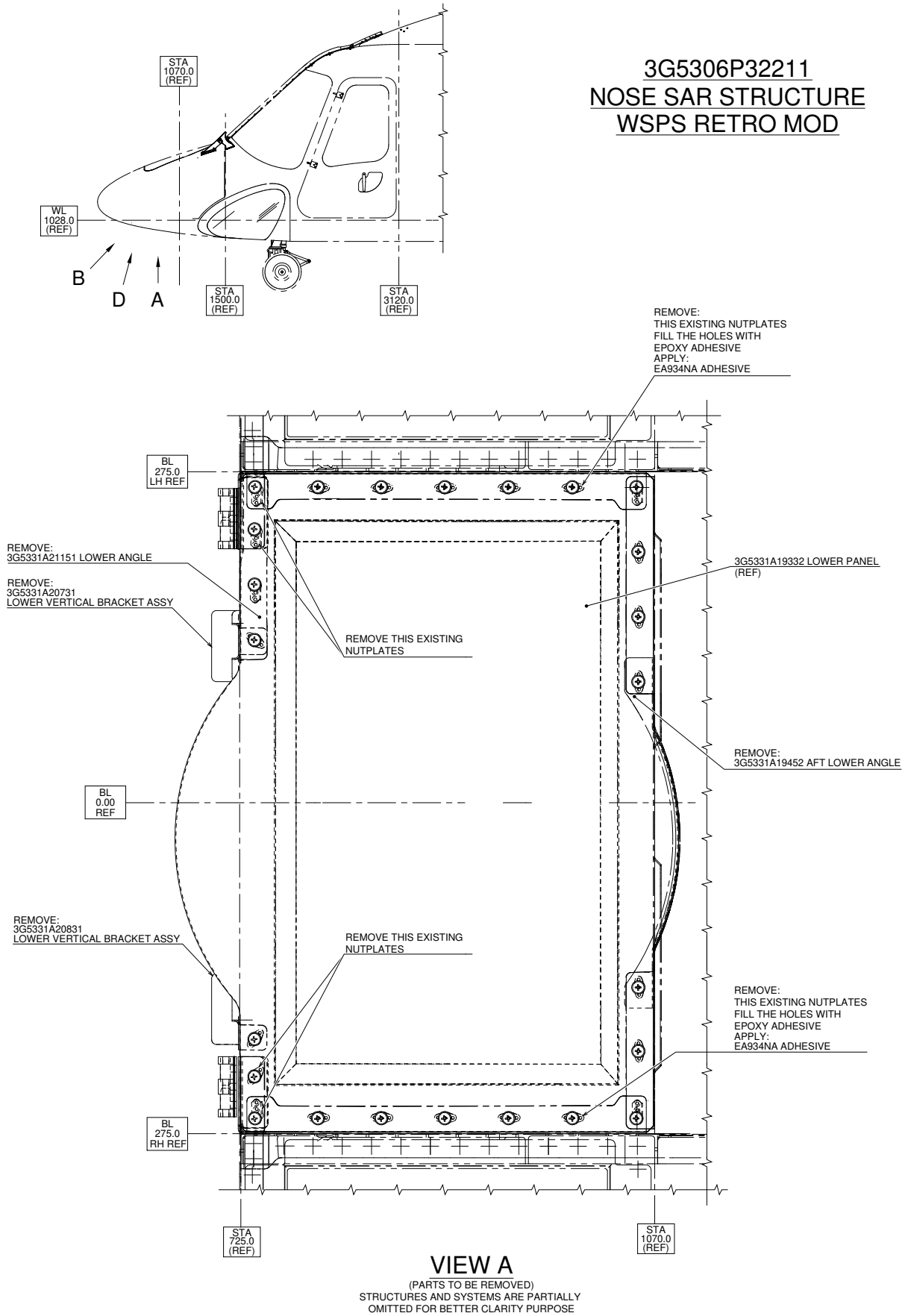


**Figure 11**

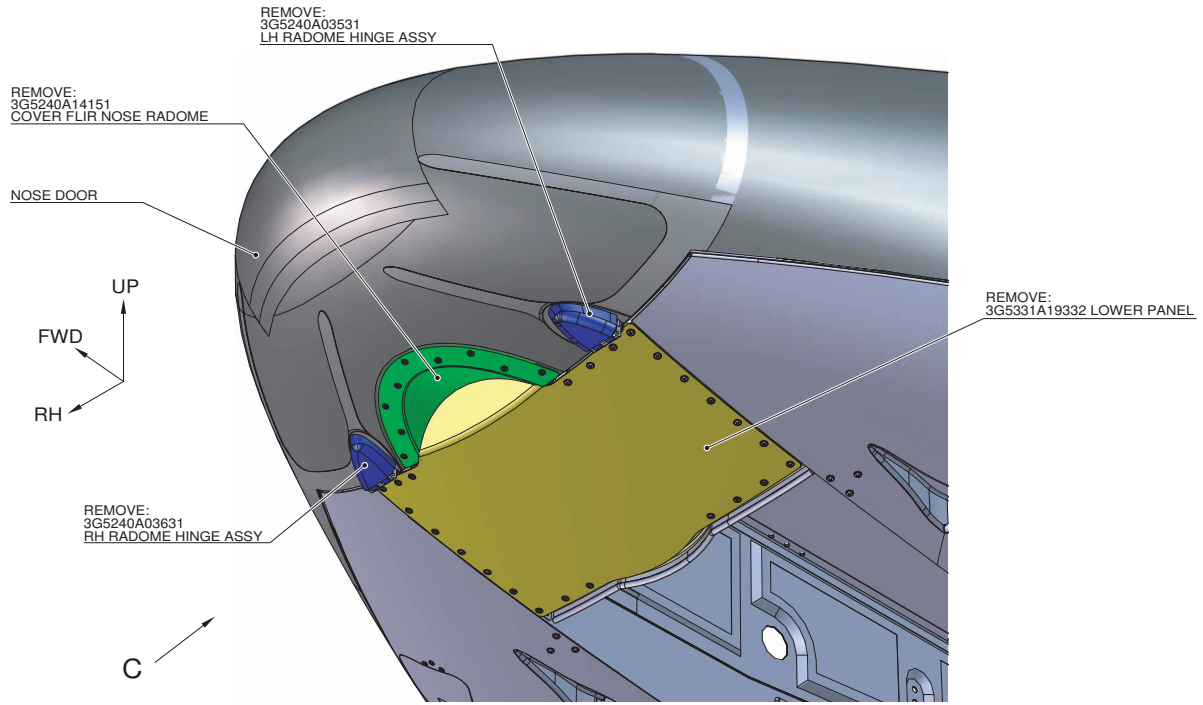


**Figure 12**

**3G5306P32211**  
**NOSE SAR STRUCTURE**  
**WSPS RETRO MOD**

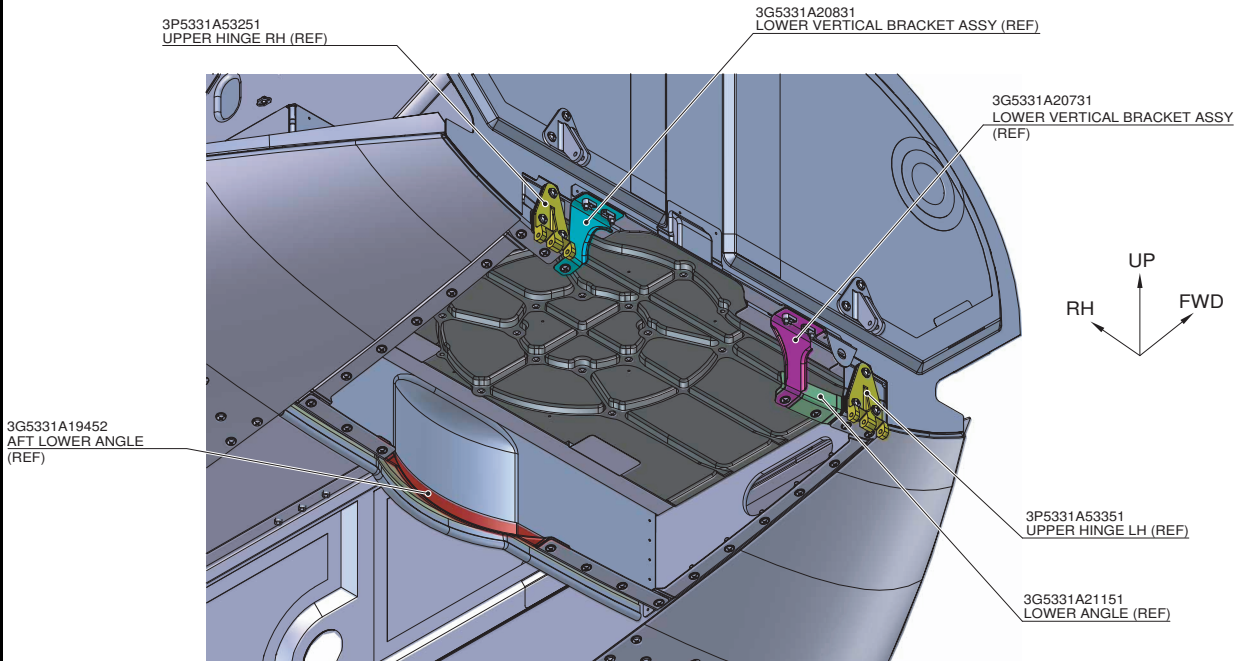


**Figure 13**



**VIEW B**

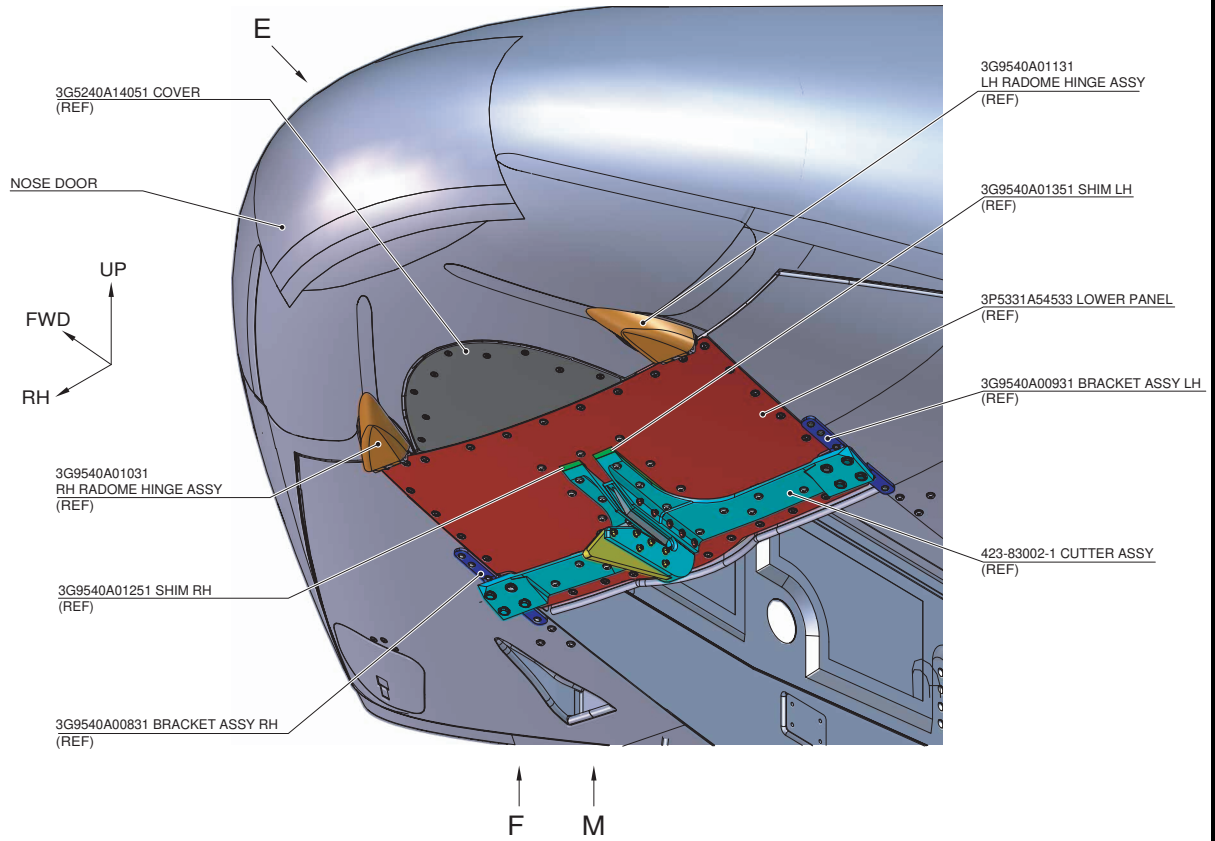
STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE



**VIEW C**

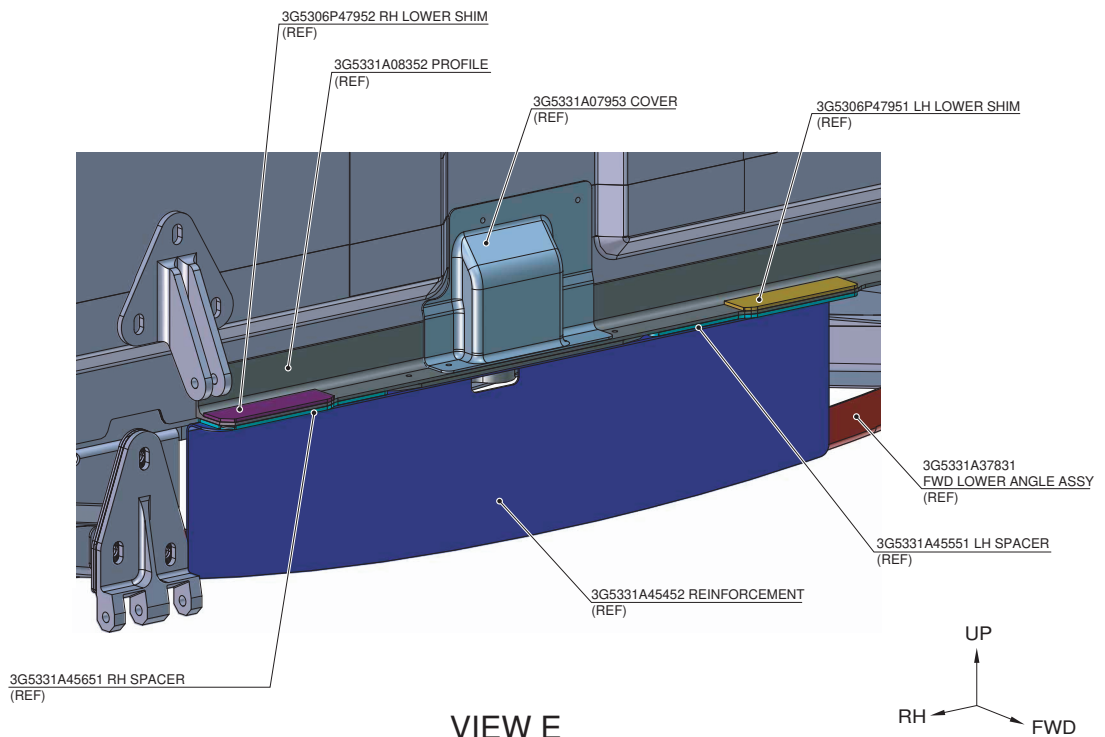
STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 14**



**VIEW D**

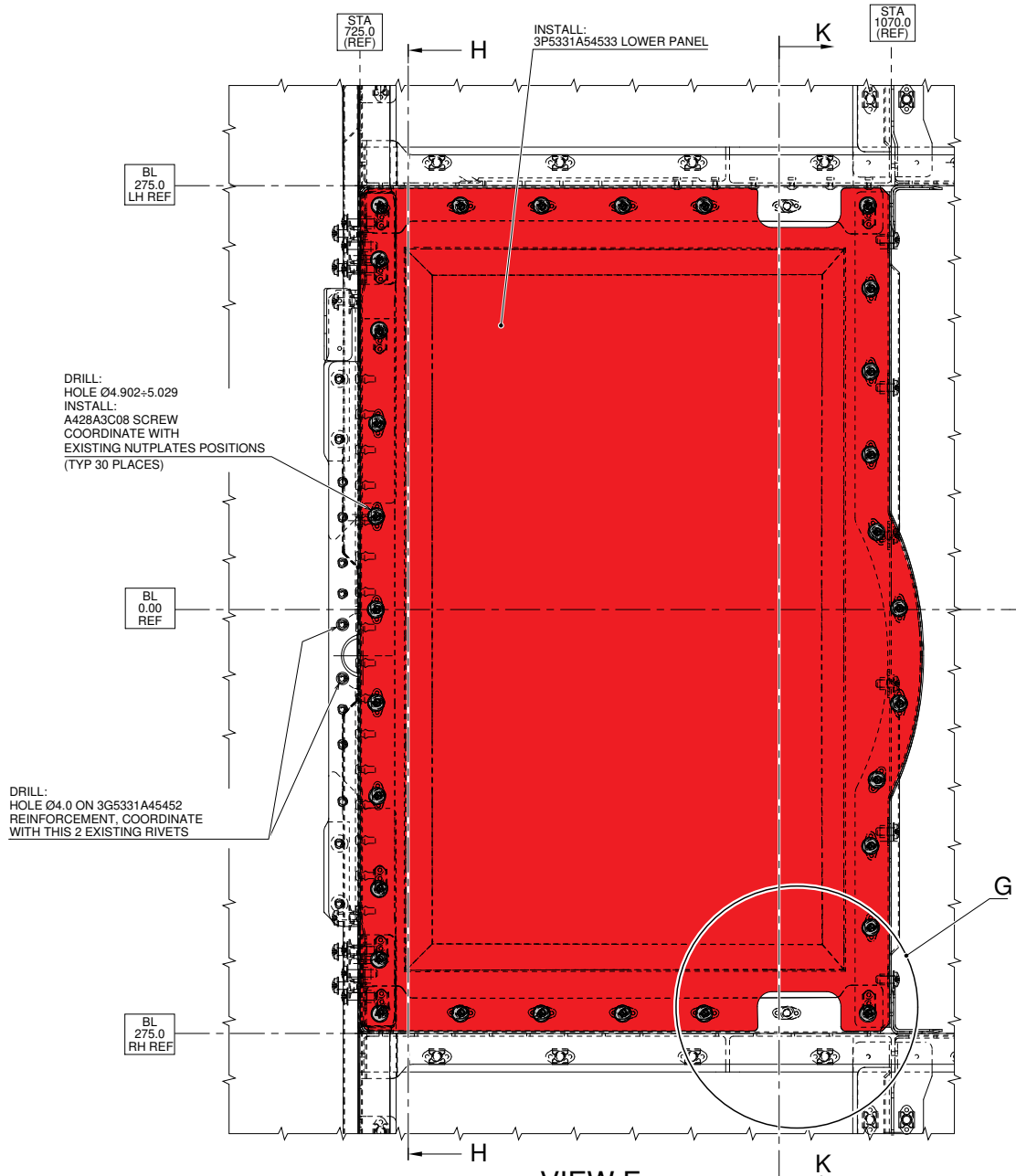
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



**VIEW E**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

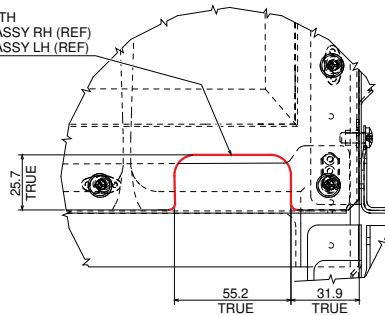
**Figure 15**



**VIEW F**

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

CUTOUT COORDINATE WITH  
3G9540A00831 BRACKET ASSY RH (REF)  
3G9540A00931 BRACKET ASSY LH (REF)



**DETAIL G**

(TYP. OPPOSITE SIDE)  
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

**Figure 16**



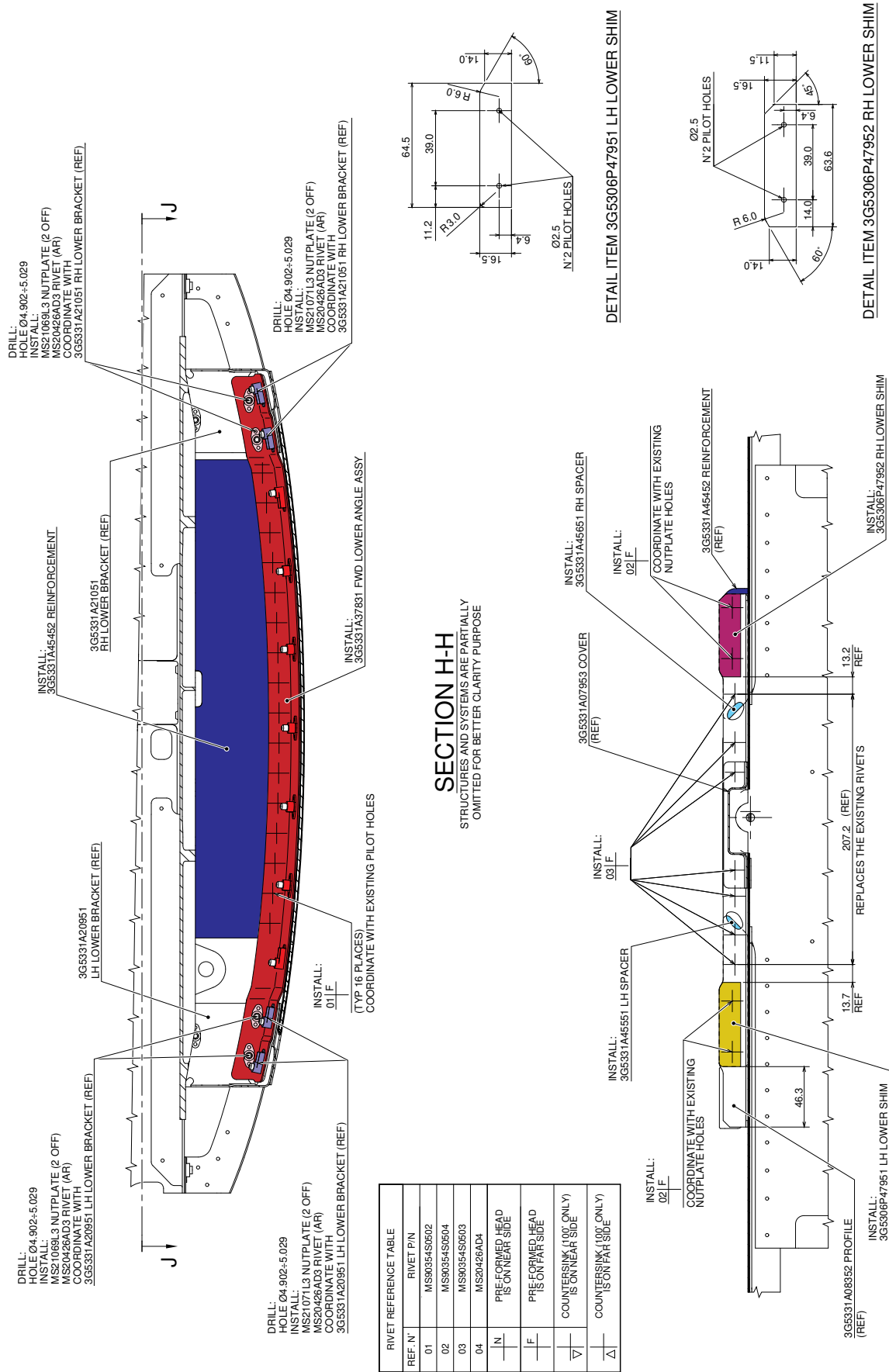
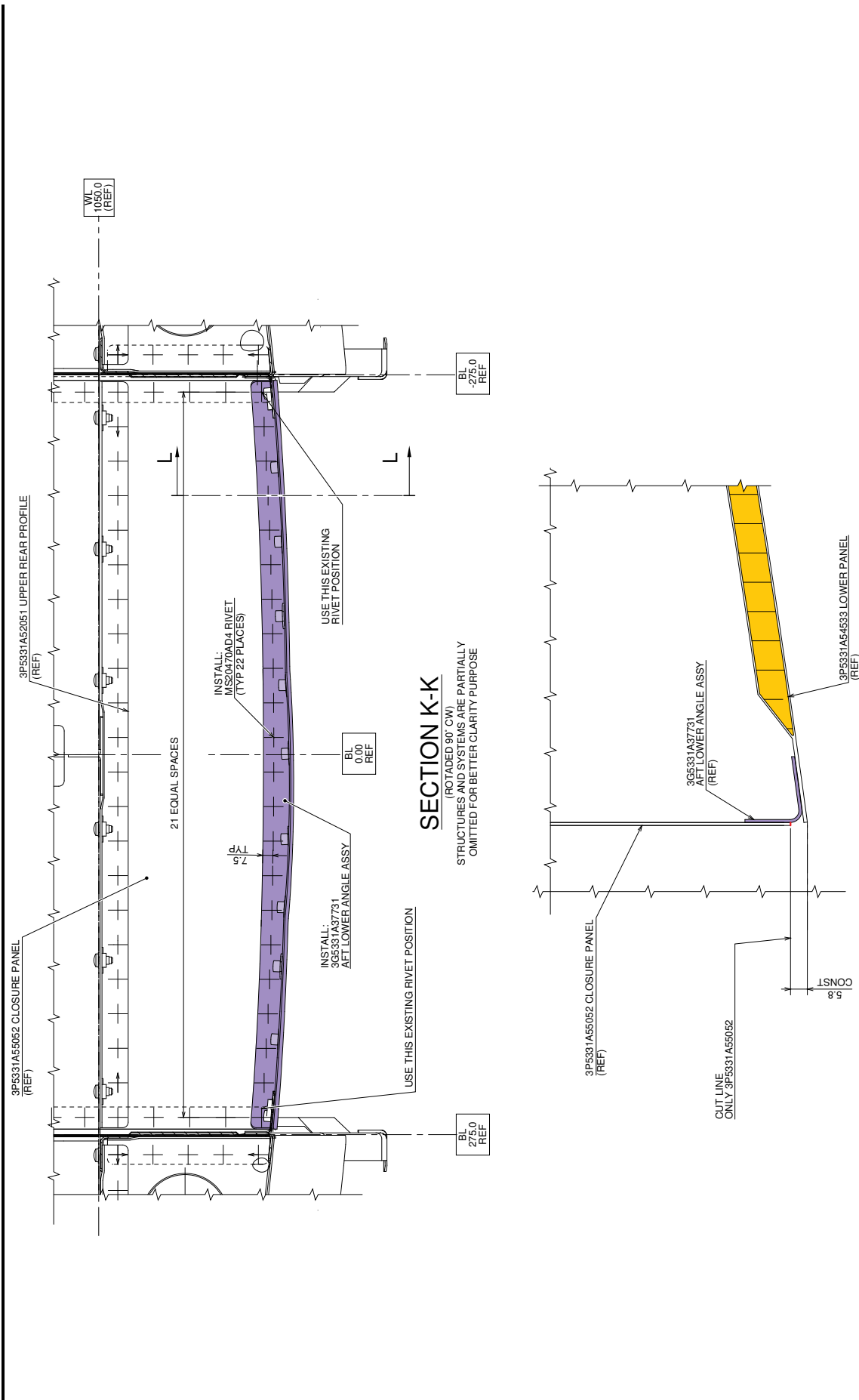


Figure 17



**Figure 18**

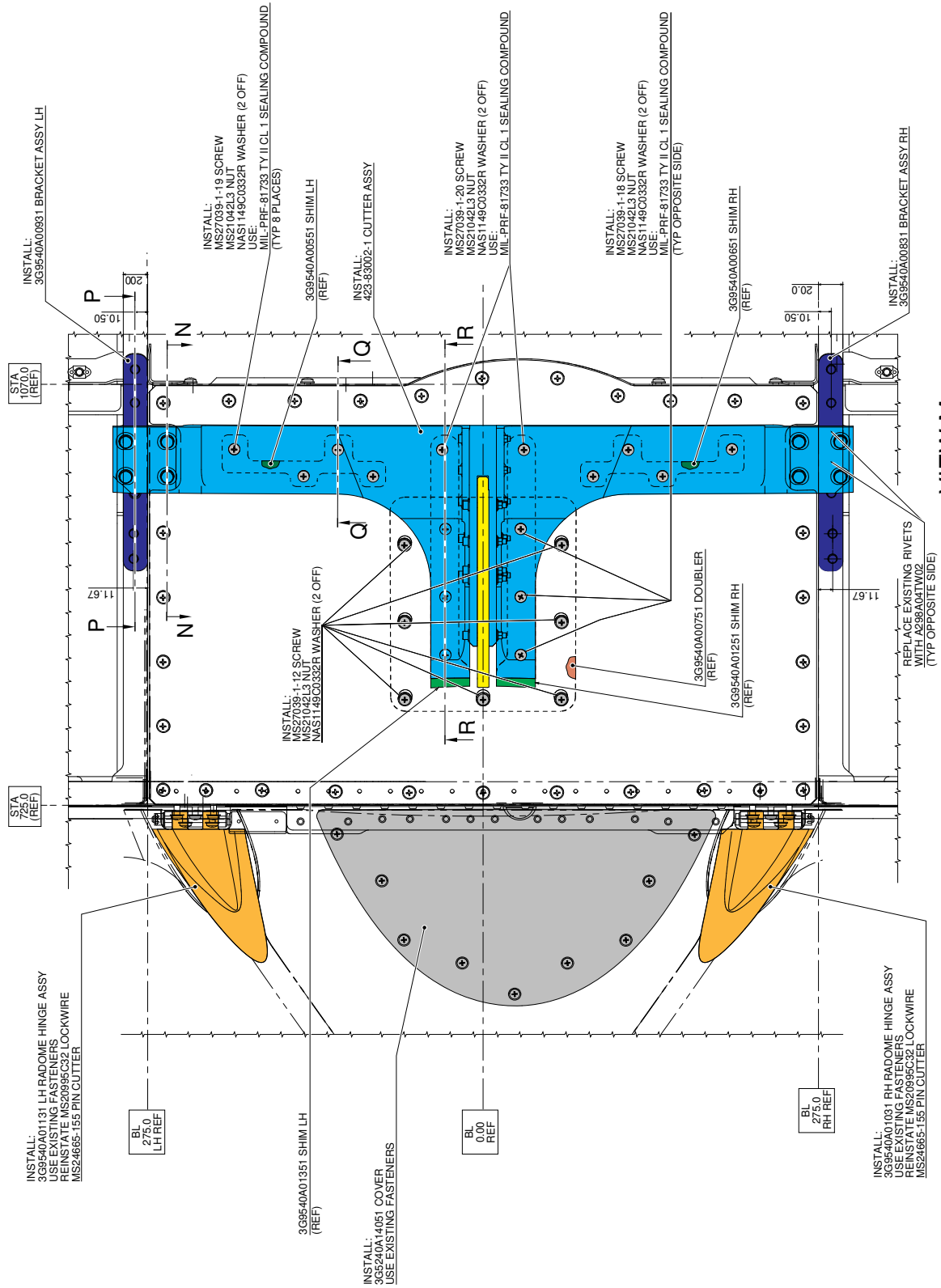
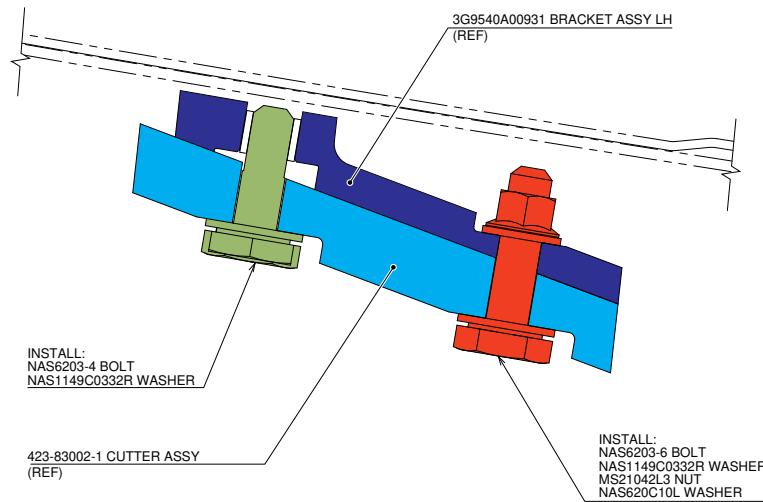
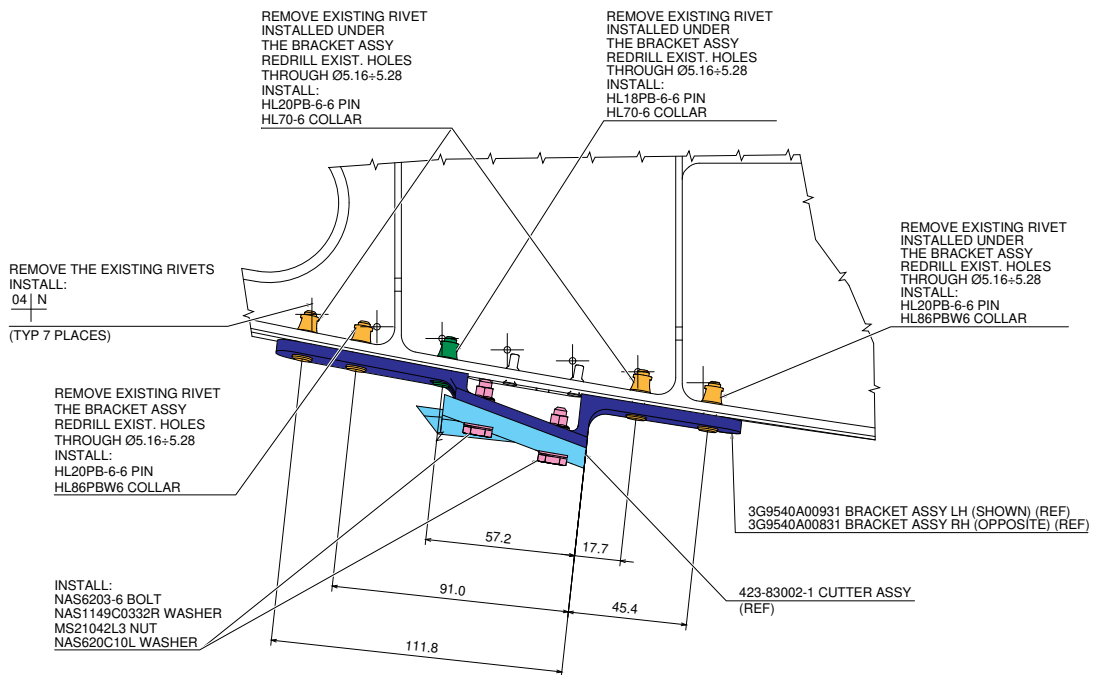


Figure 19



**SECTION N-N**

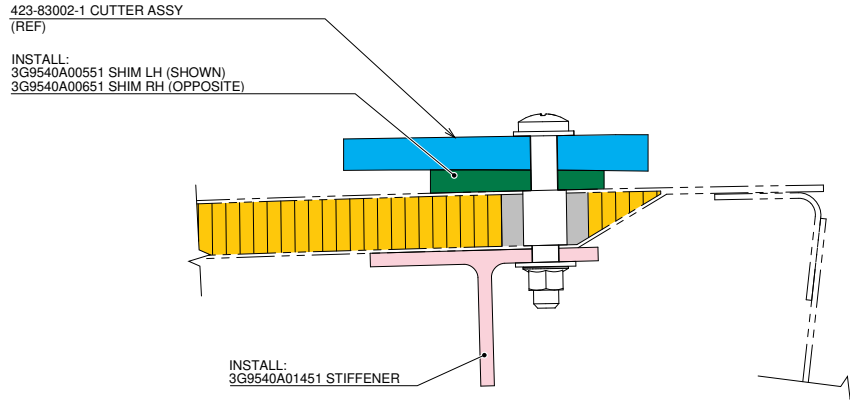
(TYP OPPOSITE SIDE)  
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



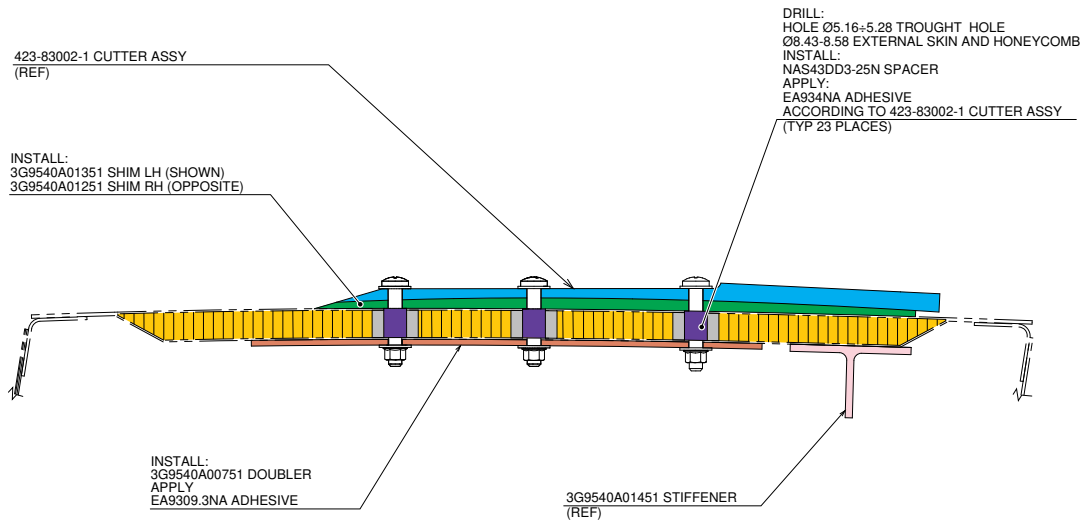
**SECTION P-P**

(TYP OPPOSITE SIDE)  
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

**Figure 20**



**SECTION Q-Q**  
(TYP OPPOSITE SIDE)  
STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE



**SECTION R-R**  
(TYP OPPOSITE SIDE)  
STRUCTURES AND SYSTEMS ARE PARTIALLY  
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 21**

