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INSTALLATION INSTRUCTIONS

STEP UTILITY MOUNT

FOR THE

EUROCOPTER BK117/EC145 ROTORCRAFT

RECORD OF REVISIONS

Rev.	Page	Date	Description	FAA Approval
N/C	Cvr i 1-34	9 May 2008	Initial Release	FAA APPROVED MAY 9 2008 LOS ANGELES AIRCRAFT CERTIFICATION OFFICE INITIALS: .....
A	7 8 & 12 18	19 May 2009	Changed wording for bonding strap Part number changes Inserted picture for assembly	FAA APPROVED MAY 1 9 2009 LOS ANGELES AIRCRAFT CERTIFICATION OFFICE INITIALS: .....
B	1, 2 7 29-35	25 May 2010	Revised to Part 29 Added bushing comment. Revised to Part 29	FAA APPROVED MAY 2 5 2010 LOS ANGELES AIRCRAFT CERTIFICATION OFFICE INITIALS: .....
C	6	7 Jun 2012	Removed steps for the field installation of rivets in the cross tube fitting to the step mount. Riveting procedures now completed during factory manufacturing	FAA Approved JUN 0 7 2012 Los Angeles Aircraft Certification Office

RECORD OF REVISIONS

Rev.	Page	Date	Description	FAA Approval
D	3	22 Jan 2013	Added 3 additional sensor / camera / light models	FAA Approved JAN 22 2013 Los Angeles Aircraft Certification Office
E	6, 7 8-14 17-18 20	14 Mar 2016	Added provisions for M26 attach fitting for EC145/BK117 D-2 model Updated Section 5.0 for AFM-SM117D-10 and AFM-SM117D-11 Relabeled Figure 2, Added installation views for D-2 model (Figure 3) Updated Figure 5 to reflect the most recent drawing revision	SEE AML SR02137LA FOR APPROVAL

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1. List of Approved Sensor / Camera/ Light / Downlinks

The following sensor / camera / light have been installed and flown.

- FLIR STAR SAFIRE SERIES
- FLIR ULTRAMEDIA SERIES
- SPECTROLAB SX-16 SERIES
- WESCAM MX-10 SERIES
- WESCAM MX-15 SERIES
- TROLL SKYLINK MINI SERIES

This STC addresses the Structural, Performance & Handling Qualities requirement for the largest configurations (2.1 sq ft & 125 lbs for the A10/A11/C10 Arms and 2.1 sq ft & 100 lbs for the C11 arm). Configurations include any combination of one, two, three or four simultaneous sensor / camera / lights or payloads.

The specific sensor/cameras/light not listed here is accepted with the follow-on test plan found in Appendix B.

1.1. For helicopters registered in the United States or other countries recognizing FAA Certification:

Sensor / camera / lights or payloads listed above do not require further FAA flight testing.

Once the installation for a sensor/camera/payload not on the list above is completed by the Integrator/Operator and the flight test conducted by the Pilot/Operator and the FAA (certified) mechanic the sensor /camera / light payload can be added to the accepted list in this manual. The report contained herein must be completed and signed prior to the “return to service” for any sensor/ camera / light payload.

The flight will be conducted as an “Operational Check Flight”. Operational check flights do not require a special airworthiness certificate in the experimental category. The term “operational check flight” (14 CFR § 91.407(b)) includes flight tests performed to check installation and/or operation of an approved STC, amended TC, or any other FAA-approved data after installation and return to service.

Operational check flights are performed under the current airworthiness certificate.

The purpose of this test is to ensure the approved modification and/or alteration functions properly and does not adversely affect aircraft operation.

1.2. For helicopters registered in an EU-Member State:

For a specific sensor/camera/light or downlink antenna to be added to the STC, a Minor Change is required with an EASA accepted certification program.

Once the testing is completed by the Integrator/Operator and the flight test conducted by the Pilot/Operator and EASA Engineer and the Minor Change is approved the sensor/camera/light, can be added to the accepted list in this manual. The report contained herein must be completed and signed prior to the "return to service" for sensor/camera/light.

The flights have to be conducted with a "Permit to Fly".

The purpose of this test is to ensure the approved modification and/or alteration functions properly and does not adversely affect aircraft operation.

1.3. For all helicopters:

The installation is assumed to have a self-contained power supply or connected to the aircraft through a previously approved electrical connection. If modification to the ship's system is necessary to support this installation, additional minor modifications with appropriate approval is necessary.

2. Installation Introduction

This manual presents the installation instructions for the Airfilm Camera Systems model AFM-SM117-1 Step-mount for the Eurocopter EC145/BK117 series of Rotorcraft. The mount is designed to facilitate the attachment of equipment such as FLIR cameras, video cameras, searchlights, microwave downlinks, etc.

The step-mount installs directly to the front and rear cross-tubes, replacing OEM step using existing bolt hole patterns. 2 bolts per cross-tube: front and rear, left or right or both.

Camera / sensor payloads are attached to various available payload arms either direct or with the use of MADT-1 (dovetail), QDD-1 (quick disconnect) or other factory approved adaptor hardware configurations.

Payloads can be installed on either end, both ends or no payload (step only), left or right or both.

Payload arms can be installed and flown with our without payloads installed.

Lower wire strike skid-tube deflectors can be removed if conflict with payload operation is encountered.

Compatible with, high, mid and low gear configurations

The Step is compatible with emergency floats

The Step Installation is compatible with hoist

NOTE

Installation of arms /payloads must not interfere with the aft cargo door function

2.1. General

These instructions cover the AirFilm /Meeker Aviation Multi Purpose Step Mount installation on the Eurocopter EC-145 / BK117 rotorcraft.

Precautions:
- All precautions will be in **bold face**

Referenced publications
- (AC) 43.13-2 and (AC)43.13-1B

Distribution:
- Installation instructions shall accompany the maintenance manuals of aircraft on which the mount is installed.

Definitions / Abbreviations:
- FLIR: forward looking infrared
- IAW: in accordance with

Standards of measurement:
- all measurements in 100ths of an inch
- all weights in US pounds
- all torques in inch pounds

Tools Required
- ¼ Drive ratchet set

3. Control & Operational Information

Special procedures / precautions:

- Maximum mount payload 125 lbs, or 2.1 square feet surface area, whichever is higher
- For the C11 arm the maximum weight is 100 lbs.
- Installation of mount must not interfere with any existing installed equipment or aft cargo door.

4. Installation Information

- Installation of mount assembly:

- Position aircraft on level ground

- Install procedure for step is same for either left or right side

- Remove existing entry step (C-2 Model, retain aft cross-tube hardware) (D-2 Model, retain forward and aft cross-tube hardware including Damper mounting hardware)

- Position AFM-SM117. Step orientation (fwd and aft) is determined by cross-tube fittings. Forward cross-tube fitting is positioned (fore and aft) and held in place on the step tube by Delron step surface plates (see figure 1)

- Aft cross-tube fitting is allowed to move fore and aft

- C-2 Model: Install AFM-SM117 step on forward cross-tube fitting using supplied hardware (bolt / shoulder washer / nut)
  - 2 ea AN5-42A bolt or equivalent
  - 2 ea MS21044-5 nut or equivalent
  - 4 ea AN960-516L washer or equivalent
  - 2 ea M16 shoulder bushing

- D-2 Model: Install AFM-SM117 step on forward cross-tube fitting using original hardware.

- On aft cross-tube re-use original hardware.

- Tighten, but do not torque hardware.

- Mark the outer edges of the aft cross-tube fitting, this will indicate location to apply mast tape / Teflon tape

- Remove AFM-SM step

- Apply mast / Teflon tape on the tube surface where the aft cross-tube fitting is located. Cut tape such that it does not overlap, position the tape seam opposite to the aft cross-tube fitting “split”

- Re-install step on aircraft. Install hardware with Mastinox or equivalent

- On aft cross-tube install bonding strap, reference specification M83413/8K-A018CK or any bonding jumper meeting this specification.

- On aft cross-tube fitting, tighten and final torque, 30 inch lbs clamp hardware.
  AN3-6A , 2EA
  AN960-10 , 4EA
  AN365-1032A or MS21042-3 , 2EA

- D-2 Model: On forward cross-tube fitting, tighten and final torque clamp hardware to 90-110 inch lbs.

- D-2 Model: When reinstalling the Damper on the forward cross-tube fitting, use OEM maintenance manual torque values for Damper mounting hardware.

- Torque hardware IAW (AC) 43.13-2 and (AC)43.13-1B

- Recommended torque values
  - ¼ -28 50-70 inch pounds
  - 5/16-24 100-140 inch pounds

- Mark torqued hardware with torque seal

- Note: on aircraft originally equipped with ECD multi-purpose carrier step: use bushings AFM-SM117-M16A and AFM-SM117-M16B, 2ea, 2 plcs on fwd crosstube. Contact factory for `these parts.

5. Removal

- remove fore and aft cross-tube hardware

- remove step

6. Installation of Payload Arms

- Payload arms must be installed with supplied MS2000 or MS21250 hardware only

- If washers are necessary, only use MS20002C / NAS143 washers, under bolt head.

- Torque hardware IAW (AC) 43.13-2 and (AC)43.13-1B

- Recommended torque values
  - ¼ -28 50-70 inch pounds
  - 5/16-24 100-140 inch pounds

5.0 WEIGHT AND BALANCE

TABLE 5.1: COMPONENT WEIGHTS (English Units)

PART NO.	DESCRIPTION	WEIGHT (LBS)	STATION (IN)	BL (IN)
AFM-SM117-10	LH Utility Step Assy BK117 Series (EC145), Assy with -M21 Caps	27	164.2	-40L
AFM-SM117-11	LH Utility Step Assy BK117 Series (EC145), Assy with -M21 Caps	27	164.2	40R
AFM-SM117A-10	LH Utility Step Assy BK117 Series (EC145), Long Assy with -M21 Caps	29	164.2	-40L
AFM-SM117A-11	RH Utility Step Assy BK117 Series (EC145) Long, Assy with -M21 Caps	29	164.2	40R
AFM-SM117D-10	LH Utility Step Assy BK117 Series (EC145), D-2 Assy with -M21 Caps	30	164.2	-40L
AFM-SM117D-11	LH Utility Step Assy BK117 Series (EC145), D-2 Assy with -M21 Caps	30	164.2	40R
AFM-SM117-A10	Long Arm Bracket Assy, CF Style	16.8	Front 101.6 Rear 218.9	40R/-40L
AFM-SM117-A11	Long Arm Bracket Assy, DT Style	14.2	Front 103.5 Rear 216.9	40R/-40L
AFM-SM117-C10	Short Arm Utility Bracket	9.0	Front 105.3 Rear 215.1	40R/-40L
AFM-SM117-C11	Medium Arm Utility Bracket	9.0	Front 102.3 Rear 218.2	40R/-40L

TABLE 5.2: PAYLOAD LOCATIONS

LOCATION	MAX WEIGHT (POUNDS)	MAX AREA (FT^2)	STATION (IN)	BL (IN)
Forward Payload				
A10 ARM	125	2.1	91.7	
A11 ARM	125	2.1	91.7	40R/-40L
C10 ARM	125	2.1	96.5	
C11 ARM	100	2.1	91.1	
Aft Payload				
A10 ARM	125	2.1	228.8	
A11 ARM	125	2.1	228.8	40R/-40L
C10 ARM	125	2.1	223.9	
C11 ARM	100	2.1	229.3	

TABLE 5.3: PAYLOAD WEIGHTS

PART NO.	DESCRIPTION	WEIGHT (LBS)
V1725-1	Vibration Reducer	17.2
DT-1-1	Dovetail	2.0
QDD	Quick Disconnect	3.5

TABLE 5.4 CONFIGURATION WEIGHTS AND CENTER OF GRAVITY LOCATIONS (English Units)[1]

PART NUMBER - DESCRIPTION - WEIGHT AND LOCATIONS										
CONFIGURATION	PART NUMBERS	TUBE ASSEMBLY	CAP - FWD	ARM - FWD	CAP - AFT	ARM - AFT	TOTAL WEIGHT (lbs)	TOTAL ARM - (inches)	FWD PAYLOAD POINT (inches)	AFT PAYLOAD - STA (inches)
1	AFM-SM117	10	M22	OO	M22	OO	20.0	163.9	--	--
2	AFM-SM117	10	M21	OO	M21	OO	24.8	163.2	--	--
3	AFM-SM117	10	M21	OO	M22	OO	22.4	158.1	--	--
4	AFM-SM117	10	M22	OO	M21	OO	22.4	169.0	--	--
5	AFM-SM117	10	M21	OO	M21	A10	41.6	185.7	--	218.9
6	AFM-SM117	10	M21	OO	M21	A11	39.0	182.7	--	216.9
7	AFM-SM117	10	M21	OO	M21	C10	33.8	177.0	--	215.1
8	AFM-SM117	10	M21	OO	M21	C11	33.8	177.8	--	218.2
9	AFM-SM117	10	M21	A10	M22	OO	39.2	133.9	91.7	--
10	AFM-SM117	10	M21	A11	M22	OO	36.6	136.9	91.7	--
11	AFM-SM117	10	M21	C10	M22	OO	31.4	143.0	96.5	--
12	AFM-SM117	10	M21	C11	M22	OO	31.4	142.1	91.1	--
13	AFM-SM117	10	M22	OO	M21	A10	39.2	190.4	--	218.9
14	AFM-SM117	10	M22	OO	M21	A11	36.6	187.6	--	216.9
15	AFM-SM117	10	M22	OO	M21	C10	31.4	182.2	--	215.1
16	AFM-SM117	10	M22	OO	M21	C11	31.4	183.1	--	218.2
17	AFM-SM117	10	M21	A10	M21	OO	41.6	138.3	91.7	--
18	AFM-SM117	10	M21	A10	M22	OO	39.2	133.9	91.7	--
19	AFM-SM117	10	M21	A10	M21	A10	58.4	161.5	91.7	218.9
20	AFM-SM117	10	M21	A10	M21	A11	55.8	158.3	91.7	216.9
21	AFM-SM117	10	M21	A10	M21	C10	50.6	152.0	91.7	215.1
22	AFM-SM117	10	M21	A10	M21	C11	50.6	152.5	91.7	218.2
23	AFM-SM117	10	M21	A11	M21	OO	39.0	141.5	91.7	--
24	AFM-SM117	10	M21	A11	M22	OO	36.6	136.9	91.7	--
25	AFM-SM117	10	M21	A11	M21	A10	55.8	164.8	91.7	218.9
26	AFM-SM117	10	M21	A11	M21	A11	53.2	161.6	91.7	216.9
27	AFM-SM117	10	M21	A11	M21	C10	48.0	155.3	91.7	215.1
28	AFM-SM117	10	M21	A11	M21	C11	48.0	155.8	91.7	218.2
29	AFM-SM117	10	M21	C10	M21	OO	33.8	147.8	96.5	--
30	AFM-SM117	10	M21	C10	M22	OO	31.4	143.0	96.5	--
31	AFM-SM117	10	M21	C10	M21	A10	50.6	171.4	96.5	218.9
32	AFM-SM117	10	M21	C10	M21	A11	48.0	168.2	96.5	216.9
33	AFM-SM117	10	M21	C10	M21	C10	42.8	161.9	96.5	215.1
34	AFM-SM117	10	M21	C10	M21	C11	42.8	162.6	96.5	218.2
35	AFM-SM117	10	M21	C11	M21	OO	33.8	147.0	91.1	--
36	AFM-SM117	10	M21	C11	M22	OO	31.4	142.1	91.1	--
37	AFM-SM117	10	M21	C11	M21	A10	50.6	170.9	91.1	218.9
38	AFM-SM117	10	M21	C11	M21	A11	48.0	167.7	91.1	216.9
39	AFM-SM117	10	M21	C11	M21	C10	42.8	161.3	91.1	215.1
40	AFM-SM117	10	M21	C11	M21	C11	42.8	162.0	91.1	218.2

[1] For AFM-SM117D-10 and AFM-SM117d-11, add 2.73 lbs to total weight

PART NUMBER - DESCRIPTION - WEIGHT AND LOCATIONS										
CONFIGURATION	PART NUMBERS	TUBE ASSEMBLY	CAP - FWD	ARM - FWD	CAP - AFT	ARM - AFT	TOTAL WEIGHT (lbs)	TOTAL ARM - (inches)	FWD PAYLOAD POINT (inches)	AFT PAYLOAD - STA (inches)
41	AFM-SM117	11	M22	OO	M22	OO	20.0	163.9	--	--
42	AFM-SM117	11	M21	OO	M21	OO	24.8	163.2	--	--
43	AFM-SM117	11	M21	OO	M22	OO	22.4	158.1	--	--
44	AFM-SM117	11	M22	OO	M21	OO	22.4	169.0	--	--
45	AFM-SM117	11	M21	OO	M21	A10	41.6	185.7	--	218.9
46	AFM-SM117	11	M21	OO	M21	A11	39.0	182.7	--	216.9
47	AFM-SM117	11	M21	OO	M21	C10	33.8	177.0	--	215.1
48	AFM-SM117	11	M21	OO	M21	C11	33.8	177.8	--	218.2
49	AFM-SM117	11	M21	A10	M22	OO	39.2	133.9	91.7	--
50	AFM-SM117	11	M21	A11	M22	OO	36.6	136.9	91.7	--
51	AFM-SM117	11	M21	C10	M22	OO	31.4	143.0	96.5	--
52	AFM-SM117	11	M21	C11	M22	OO	31.4	142.1	91.1	--
53	AFM-SM117	11	M22	OO	M21	A10	39.2	190.4	--	218.9
54	AFM-SM117	11	M22	OO	M21	A11	36.6	187.6	--	216.9
55	AFM-SM117	11	M22	OO	M21	C10	31.4	182.2	--	215.1
56	AFM-SM117	11	M22	OO	M21	C11	31.4	183.1	--	218.2
57	AFM-SM117	11	M21	A10	M21	OO	41.6	138.3	91.7	--
58	AFM-SM117	11	M21	A10	M22	OO	39.2	133.9	91.7	--
59	AFM-SM117	11	M21	A10	M21	A10	58.4	161.5	91.7	218.9
60	AFM-SM117	11	M21	A10	M21	A11	55.8	158.3	91.7	216.9
61	AFM-SM117	11	M21	A10	M21	C10	50.6	152.0	91.7	215.1
62	AFM-SM117	11	M21	A10	M21	C11	50.6	152.5	91.7	218.2
63	AFM-SM117	11	M21	A11	M21	OO	39.0	141.5	91.7	--
64	AFM-SM117	11	M21	A11	M22	OO	36.6	136.9	91.7	--
65	AFM-SM117	11	M21	A11	M21	A10	55.8	164.8	91.7	218.9
66	AFM-SM117	11	M21	A11	M21	A11	53.2	161.6	91.7	216.9
67	AFM-SM117	11	M21	A11	M21	C10	48.0	155.3	91.7	215.1
68	AFM-SM117	11	M21	A11	M21	C11	48.0	155.8	91.7	218.2
69	AFM-SM117	11	M21	C10	M21	OO	33.8	147.8	96.5	--
70	AFM-SM117	11	M21	C10	M22	OO	31.4	143.0	96.5	--
71	AFM-SM117	11	M21	C10	M21	A10	50.6	171.4	96.5	218.9
72	AFM-SM117	11	M21	C10	M21	A11	48.0	168.2	96.5	216.9
73	AFM-SM117	11	M21	C10	M21	C10	42.8	161.9	96.5	215.1
74	AFM-SM117	11	M21	C10	M21	C11	42.8	162.6	96.5	218.2
75	AFM-SM117	11	M21	C11	M21	OO	33.8	147.0	91.1	--
76	AFM-SM117	11	M21	C11	M22	OO	31.4	142.1	91.1	--
77	AFM-SM117	11	M21	C11	M21	A10	50.6	170.9	91.1	218.9
78	AFM-SM117	11	M21	C11	M21	A11	48.0	167.7	91.1	216.9
79	AFM-SM117	11	M21	C11	M21	C10	42.8	161.3	91.1	215.1
80	AFM-SM117	11	M21	C11	M21	C11	42.8	162.0	91.1	218.2

[1] For AFM-SM117D-10 and AFM-SM117D-11, add 2.73 lbs to total weight

PART NUMBER - DESCRIPTION - WEIGHT AND LOCATIONS										
CONFIGURATION	PART NUMBERS	TUBE ASSEMBLY	CAP - FWD	ARM - FWD	CAP - AFT	ARM - AFT	TOTAL WEIGHT (lbs)	TOTAL ARM - (inches)	FWD PAYLOAD POINT (inches)	AFT PAYLOAD - STA (inches)
81	AFM-SM117A	10	M22	OO	M21	C10	33.9	180.9	--	215.1
82	AFM-SM117A	10	M22	OO	M21	C11	33.9	181.7	--	218.2
83	AFM-SM117A	10	M22	OO	M21	A10	41.7	188.8	--	218.9
84	AFM-SM117A	10	M22	OO	M21	A11	39.1	186.1	--	216.9
85	AFM-SM117A	10	M22	OO	M22	OO	22.5	164.0	--	--
86	AFM-SM117A	10	M21	OO	M21	OO	27.3	163.3	--	--
87	AFM-SM117A	11	M22	OO	M21	C10	33.9	180.9	--	215.1
88	AFM-SM117A	11	M22	OO	M21	C11	33.9	181.7	--	218.2
89	AFM-SM117A	11	M22	OO	M21	A10	41.7	188.8	--	218.9
90	AFM-SM117A	11	M22	OO	M21	A11	39.1	186.1	--	216.9
91	AFM-SM117A	11	M22	OO	M22	OO	22.5	164.0	--	--
92	AFM-SM117A	11	M21	OO	M21	OO	27.3	163.3	--	--

TABLE 5.5: COMPONENT WEIGHTS (Metric)

PART NO.	DESCRIPTION	MASS (KG)	STATION (mm)	BL (mm)
AFM-SM117-10	LH Utility Step Assy BK117 Series (EC145), Assy with -M21 Caps	12.3	4171	1016R -1016L
AFM-SM117-11	LH Utility Step Assy BK117 Series (EC145), Assy with -M21 Caps	12.3	4171	1016R -1016L
AFM-SM117A-10	LH Utility Step Assy BK117 Series (EC145), Long Assy with -M21 Caps	13.2	4171	1016R -1016L
AFM-SM117A-11	LH Utility Step Assy BK117 Series (EC145) Long, Assy with -M21 Caps	13.2	4171	1016R -1016L
AFM-SM117D-10	LH Utility Step Assy BK117 Series (EC145), D-2 Assy with -M21 Caps	13.5	4171	1016R -1016L
AFM-SM117D-11	LH Utility Step Assy BK117 Series (EC145), D-2 Assy with -M21 Caps	13.5	4171	1016R -1016L
AFM-SM117-A10	Long Arm Bracket Assy, CF Style	7.6	Front 2581 Rear 5560	1016R -1016L
AFM-SM117-A11	Long Arm Bracket Assy, DT Style	6.4	Front 2629 Rear 5509	1016R -1016L
AFM-SM117-C10	Short Arm Utility Bracket	4.1	Front 2675 Rear 5564	1016R -1016L
AFM-SM117-C11	Medium Arm Utility Bracket	4.1	Front 2598 Rear 5542	1016R -1016L

TABLE 5.6: PAYLOAD LOCATIONS

LOCATION	MAX MASS (KG)	MAX AREA (m^2)	STATION (mm)	BL (mm)
Forward Payload				
A10 ARM	56.7	0.2	2329	1016R -1016L
A11 ARM	56.7	0.2	2329	
C10 ARM	56.7	0.2	2451	
C11 ARM	45.4	0.2	2314	
Aft Payload				
A10 ARM	56.7	0.2	5812	1016R -1016L
A11 ARM	56.7	0.2	5812	
C10 ARM	56.7	0.2	5687	
C11 ARM	45.4	0.2	5824	

TABLE 5.7: PAYLOAD WEIGHTS

PART NO.	DESCRIPTION	MASS (kg)
V1725-1	Vibration Reducer	7.8
MADT-11	Dovetail	0.9
QDD	Quick Disconnect	1.6

TABLE 5.8 CONFIGURATION WEIGHTS AND CENTER OF GRAVITY LOCATIONS (Metric Units) [2]

PART NUMBER - DESCRIPTION - WEIGHT AND LOCATIONS										
CONFIGURATION	PART NUMBERS	TUBE ASSEMBLY	CAP - FWD	ARM - FWD	CAP - AFT	ARM - AFT	TOTAL WEIGHT (KG)	TOTAL ARM - (mm)	FWD PAYLOAD POINT (mm)	AFT PAYLOAD - STA (mm)
1	AFM-SM117	10	M22	OO	M22	OO	9.1	4164.1	---	---
2	AFM-SM117	10	M21	OO	M21	OO	11.2	4145.1	---	---
3	AFM-SM117	10	M21	OO	M22	OO	10.2	4015.0	---	---
4	AFM-SM117	10	M22	OO	M21	OO	10.2	4292.1	---	---
5	AFM-SM117	10	M21	OO	M21	A10	18.9	4716.5	---	5560.1
6	AFM-SM117	10	M21	OO	M21	A11	17.7	4641.8	---	5509.3
7	AFM-SM117	10	M21	OO	M21	C10	15.3	4496.1	---	5463.5
8	AFM-SM117	10	M21	OO	M21	C11	15.3	4517.1	---	5542.3
9	AFM-SM117	10	M21	A10	M22	OO	17.8	3400.4	2329.2	--
10	AFM-SM117	10	M21	A11	M22	OO	16.6	3477.4	2329.2	--
11	AFM-SM117	10	M21	C10	M22	OO	14.2	3630.9	2451.1	--
12	AFM-SM117	10	M21	C11	M22	OO	14.2	3609.1	2313.9	--
13	AFM-SM117	10	M22	OO	M21	A10	17.8	4835.4	--	5560.1
14	AFM-SM117	10	M22	OO	M21	A11	16.6	4764.2	--	5509.3
15	AFM-SM117	10	M22	OO	M21	C10	14.2	4627.8	--	5463.5
16	AFM-SM117	10	M22	OO	M21	C11	14.2	4650.3	--	5542.3
17	AFM-SM117	10	M21	A10	M21	OO	18.9	3513.3	2329.2	--
18	AFM-SM117	10	M21	A10	M22	OO	17.8	3400.4	2329.2	--
19	AFM-SM117	10	M21	A10	M21	A10	26.5	4102.1	2329.2	5560.1
20	AFM-SM117	10	M21	A10	M21	A11	25.3	4021.2	2329.2	5509.3
21	AFM-SM117	10	M21	A10	M21	C10	23.0	3860.2	2329.2	5463.5
22	AFM-SM117	10	M21	A10	M21	C11	23.0	3874.2	2329.2	5542.3
23	AFM-SM117	10	M21	A11	M21	OO	17.7	3593.0	2329.2	--
24	AFM-SM117	10	M21	A11	M22	OO	16.6	3477.4	2329.2	--
25	AFM-SM117	10	M21	A11	M21	A10	25.3	4185.2	2329.2	5560.1
26	AFM-SM117	10	M21	A11	M21	A11	24.1	4104.5	2329.2	5509.3
27	AFM-SM117	10	M21	A11	M21	C10	21.8	3943.7	2329.2	5463.5
28	AFM-SM117	10	M21	A11	M21	C11	21.8	3958.5	2329.2	5542.3
29	AFM-SM117	10	M21	C10	M21	OO	15.3	3753.5	2451.1	--
30	AFM-SM117	10	M21	C10	M22	OO	14.2	3630.9	2451.1	--
31	AFM-SM117	10	M21	C10	M21	A10	23.0	4353.3	2451.1	5560.1
32	AFM-SM117	10	M21	C10	M21	A11	21.8	4272.9	2451.1	5509.3
33	AFM-SM117	10	M21	C10	M21	C10	19.4	4113.1	2451.1	5463.5
34	AFM-SM117	10	M21	C10	M21	C11	19.4	4129.7	2451.1	5542.3
35	AFM-SM117	10	M21	C11	M21	OO	15.3	3733.2	2313.9	--
36	AFM-SM117	10	M21	C11	M22	OO	14.2	3609.1	2313.9	--
37	AFM-SM117	10	M21	C11	M21	A10	23.0	4339.8	2313.9	5560.1
38	AFM-SM117	10	M21	C11	M21	A11	21.8	4258.6	2313.9	5509.3
39	AFM-SM117	10	M21	C11	M21	C10	19.4	4097.1	2313.9	5463.5
40	AFM-SM117	10	M21	C11	M21	C11	19.4	4113.6	2313.9	5542.3

[2] For AFM-SM117D-10 and AFM-SM117D-11, add 1.25 kg to total weight

PART NUMBER - DESCRIPTION - WEIGHT AND LOCATIONS										
CONFIGURATION	PART NUMBERS	TUBE ASSEMBLY	CAP - FWD	ARM - FWD	CAP - AFT	ARM - AFT	TOTAL WEIGHT (KG)	TOTAL ARM - (mm)	FWD PAYLOAD POINT (mm)	AFT PAYLOAD - STA (mm)
41	AFM-SM117	- 11 -	M22 -	OO -	M22 -	OO	9.1	4164.1	--	--
42	AFM-SM117	- 11 -	M21 -	OO -	M21 -	OO	11.2	4145.1	--	--
43	AFM-SM117	- 11 -	M21 -	OO -	M22 -	OO	10.2	4015.0	--	--
44	AFM-SM117	- 11 -	M22 -	OO -	M21 -	OO	10.2	4292.1	--	--
45	AFM-SM117	- 11 -	M21 -	OO -	M21 -	A10	18.9	4716.5	--	5560.1
46	AFM-SM117	- 11 -	M21 -	OO -	M21 -	A11	17.7	4641.8	--	5509.3
47	AFM-SM117	- 11 -	M21 -	OO -	M21 -	C10	15.3	4496.1	--	5463.5
48	AFM-SM117	- 11 -	M21 -	OO -	M21 -	C11	15.3	4517.1	--	5542.3
49	AFM-SM117	- 11 -	M21 -	A10 -	M22 -	OO	17.8	3400.4	2329.2	--
50	AFM-SM117	- 11 -	M21 -	A11 -	M22 -	OO	16.6	3477.4	2329.2	--
51	AFM-SM117	- 11 -	M21 -	C10 -	M22 -	OO	14.2	3630.9	2451.1	--
52	AFM-SM117	- 11 -	M21 -	C11 -	M22 -	OO	14.2	3609.1	2313.9	--
53	AFM-SM117	- 11 -	M22 -	OO -	M21 -	A10	17.8	4835.4	--	5560.1
54	AFM-SM117	- 11 -	M22 -	OO -	M21 -	A11	16.6	4764.2	--	5509.3
55	AFM-SM117	- 11 -	M22 -	OO -	M21 -	C10	14.2	4627.8	--	5463.5
56	AFM-SM117	- 11 -	M22 -	OO -	M21 -	C11	14.2	4650.3	--	5542.3
57	AFM-SM117	- 11 -	M21 -	A10 -	M21 -	OO	18.9	3513.3	2329.2	--
58	AFM-SM117	- 11 -	M21 -	A10 -	M22 -	OO	17.8	3400.4	2329.2	--
59	AFM-SM117	- 11 -	M21 -	A10 -	M21 -	A10	26.5	4102.1	2329.2	5560.1
60	AFM-SM117	- 11 -	M21 -	A10 -	M21 -	A11	25.3	4021.2	2329.2	5509.3
61	AFM-SM117	- 11 -	M21 -	A10 -	M21 -	C10	23.0	3860.2	2329.2	5463.5
62	AFM-SM117	- 11 -	M21 -	A10 -	M21 -	C11	23.0	3874.2	2329.2	5542.3
63	AFM-SM117	- 11 -	M21 -	A11 -	M21 -	OO	17.7	3593.0	2329.2	--
64	AFM-SM117	- 11 -	M21 -	A11 -	M22 -	OO	16.6	3477.4	2329.2	--
65	AFM-SM117	- 11 -	M21 -	A11 -	M21 -	A10	25.3	4185.2	2329.2	5560.1
66	AFM-SM117	- 11 -	M21 -	A11 -	M21 -	A11	24.1	4104.5	2329.2	5509.3
67	AFM-SM117	- 11 -	M21 -	A11 -	M21 -	C10	21.8	3943.7	2329.2	5463.5
68	AFM-SM117	- 11 -	M21 -	A11 -	M21 -	C11	21.8	3958.5	2329.2	5542.3
69	AFM-SM117	- 11 -	M21 -	C10 -	M21 -	OO	15.3	3753.5	2451.1	--
70	AFM-SM117	- 11 -	M21 -	C10 -	M22 -	OO	14.2	3630.9	2451.1	--
71	AFM-SM117	- 11 -	M21 -	C10 -	M21 -	A10	23.0	4353.3	2451.1	5560.1
72	AFM-SM117	- 11 -	M21 -	C10 -	M21 -	A11	21.8	4272.9	2451.1	5509.3
73	AFM-SM117	- 11 -	M21 -	C10 -	M21 -	C10	19.4	4113.1	2451.1	5463.5
74	AFM-SM117	- 11 -	M21 -	C10 -	M21 -	C11	19.4	4129.7	2451.1	5542.3
75	AFM-SM117	- 11 -	M21 -	C11	M21	OO	15.3	3733.2	2313.9	--
76	AFM-SM117	- 11 -	M21 -	C11	M22	OO	14.2	3609.1	2313.9	--
77	AFM-SM117	- 11 -	M21 -	C11 -	M21 -	A10	23.0	4339.8	2313.9	5560.1
78	AFM-SM117	- 11 -	M21 -	C11 -	M21 -	A11	21.8	4258.6	2313.9	5509.3
79	AFM-SM117	- 11 -	M21 -	C11 -	M21 -	C10	19.4	4097.1	2313.9	5463.5
80	AFM-SM117	- 11 -	M21 -	C11 -	M21 -	C11	19.4	4113.6	2313.9	5542.3

[2] For AFM-SM117D-10 and AFM-SM117D-11, add 1.25 kg to total weight

PART NUMBER - DESCRIPTION - WEIGHT AND LOCATIONS

CONFIGURATION	PART NUMBERS	TUBE ASSEMBLY	CAP - FWD	ARM - FWD	CAP - AFT	ARM - AFT	TOTAL WEIGHT (KG)	TOTAL ARM - (mm)	FWD PAYLOAD POINT (mm)	AFT PAYLOAD - STA (mm)
81	AFM-SM117A	10	M22	OO	M21	C10	15.4	4594.0	--	5463.5
82	AFM-SM117A	10	M22	OO	M21	C11	15.4	4614.9	--	5542.3
83	AFM-SM117A	10	M22	OO	M21	A10	18.9	4795.5	--	5560.1
84	AFM-SM117A	10	M22	OO	M21	A11	17.7	4726.2	--	5509.3
85	AFM-SM117A	10	M22	OO	M22	OO	10.2	4164.7	--	--
86	AFM-SM117A	10	M21	OO	M21	OO	12.4	4147.3	--	--
87	AFM-SM117A	11	M22	OO	M21	C10	15.4	4594.0	--	5463.5
88	AFM-SM117A	11	M22	OO	M21	C11	15.4	4614.9	--	5542.3
89	AFM-SM117A	11	M22	OO	M21	A10	18.9	4795.5	--	5560.1
90	AFM-SM117A	11	M22	OO	M21	A11	17.7	4726.2	--	5509.3
91	AFM-SM117A	11	M22	OO	M22	OO	10.2	4164.7	--	--
92	AFM-SM117A	11	M21	OO	M21	OO	12.4	4147.3	--	--

APPENDIX A - DRAWINGS AND REFERENCES

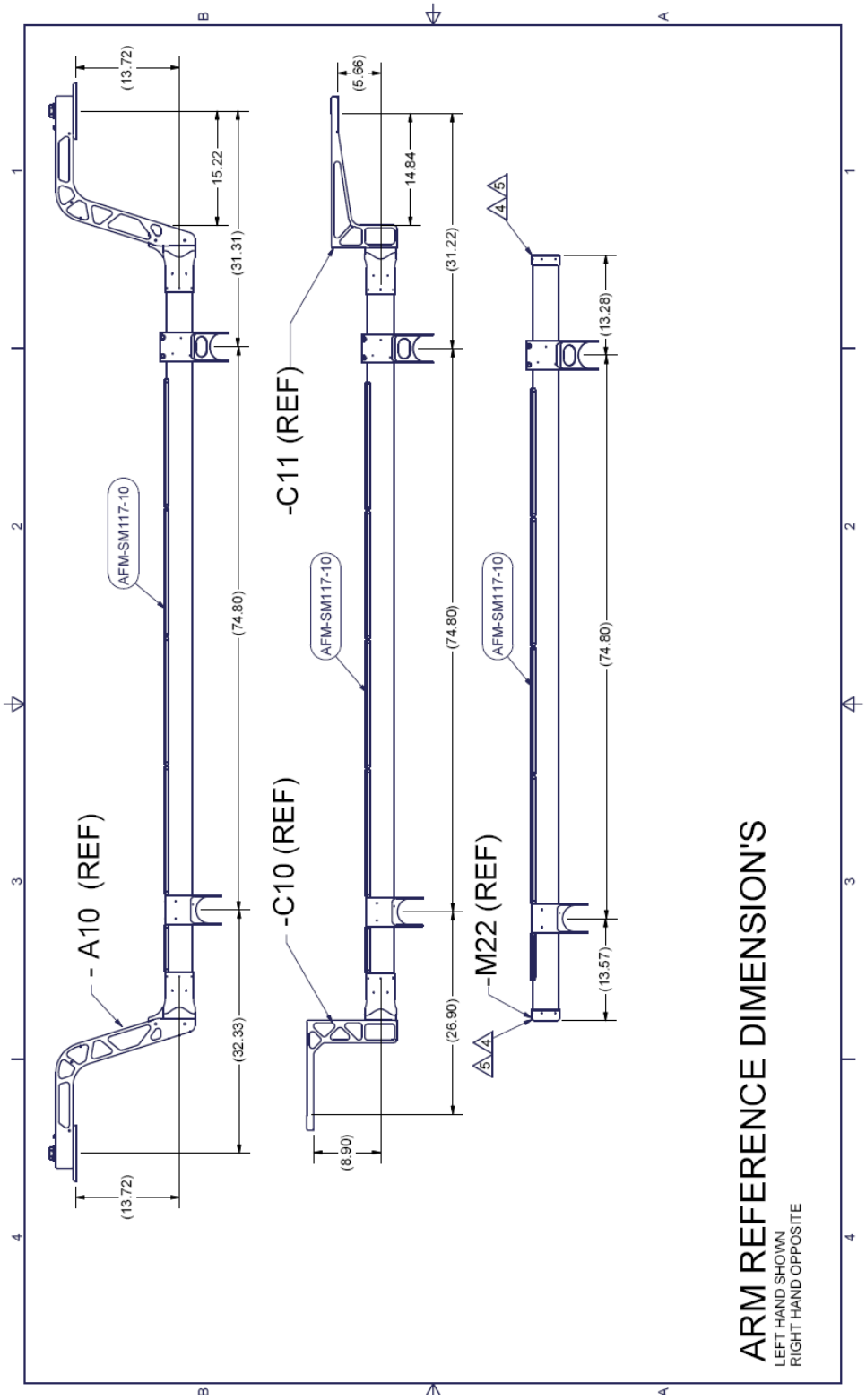

Figure 1. Arm Reference Dimensions

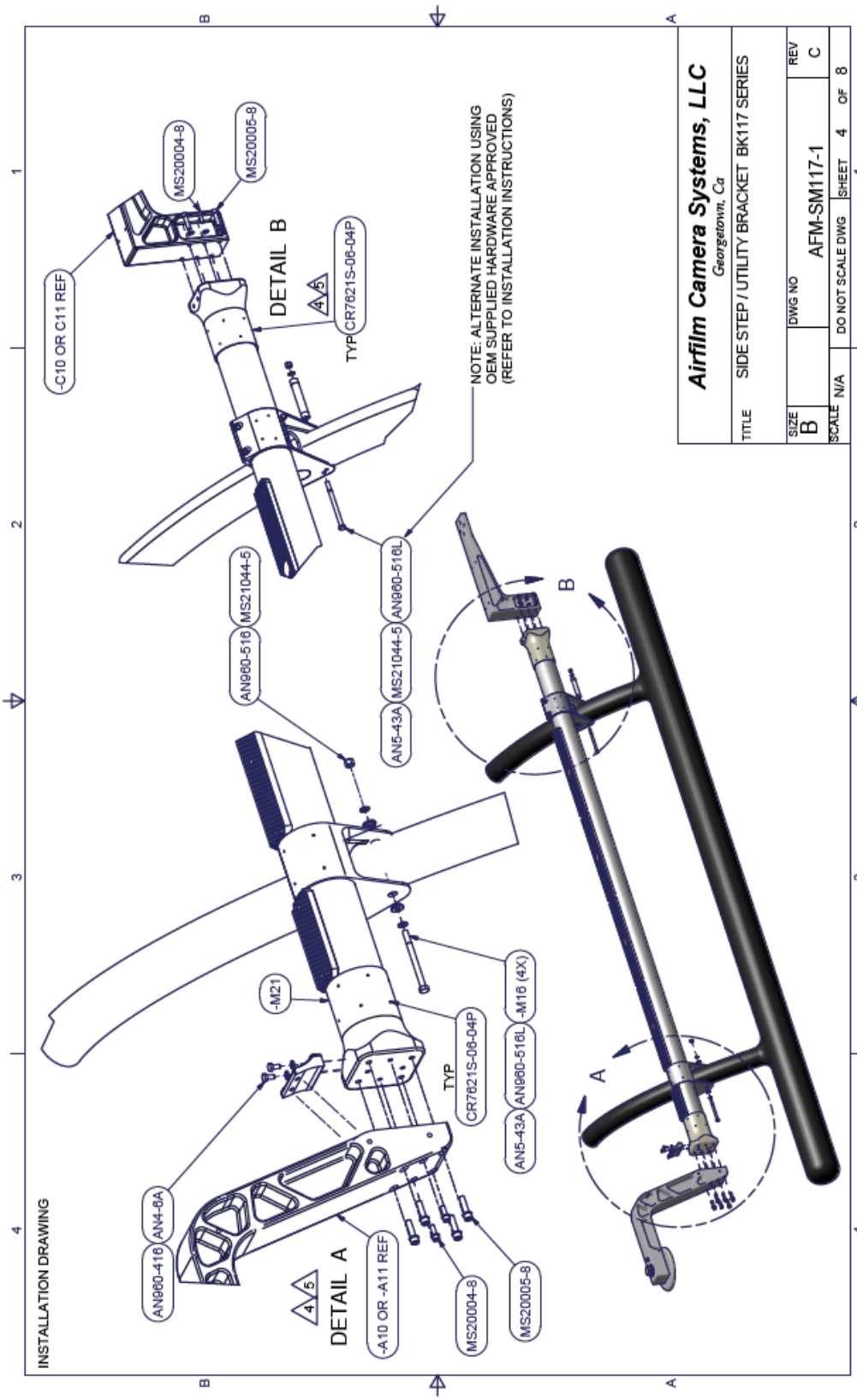

Figure 2. Installation Reference Typical (C-2 Model)

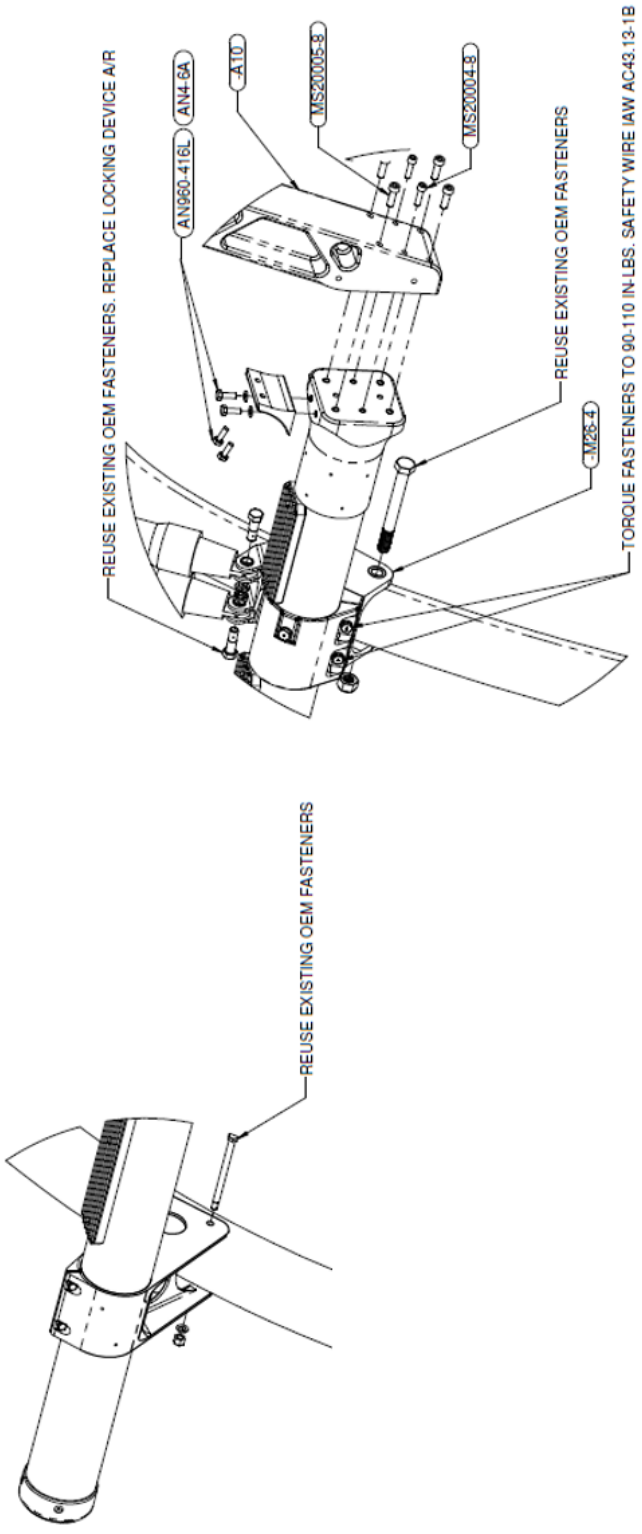

Figure 3. Installation Reference Typical (D-2 Model)

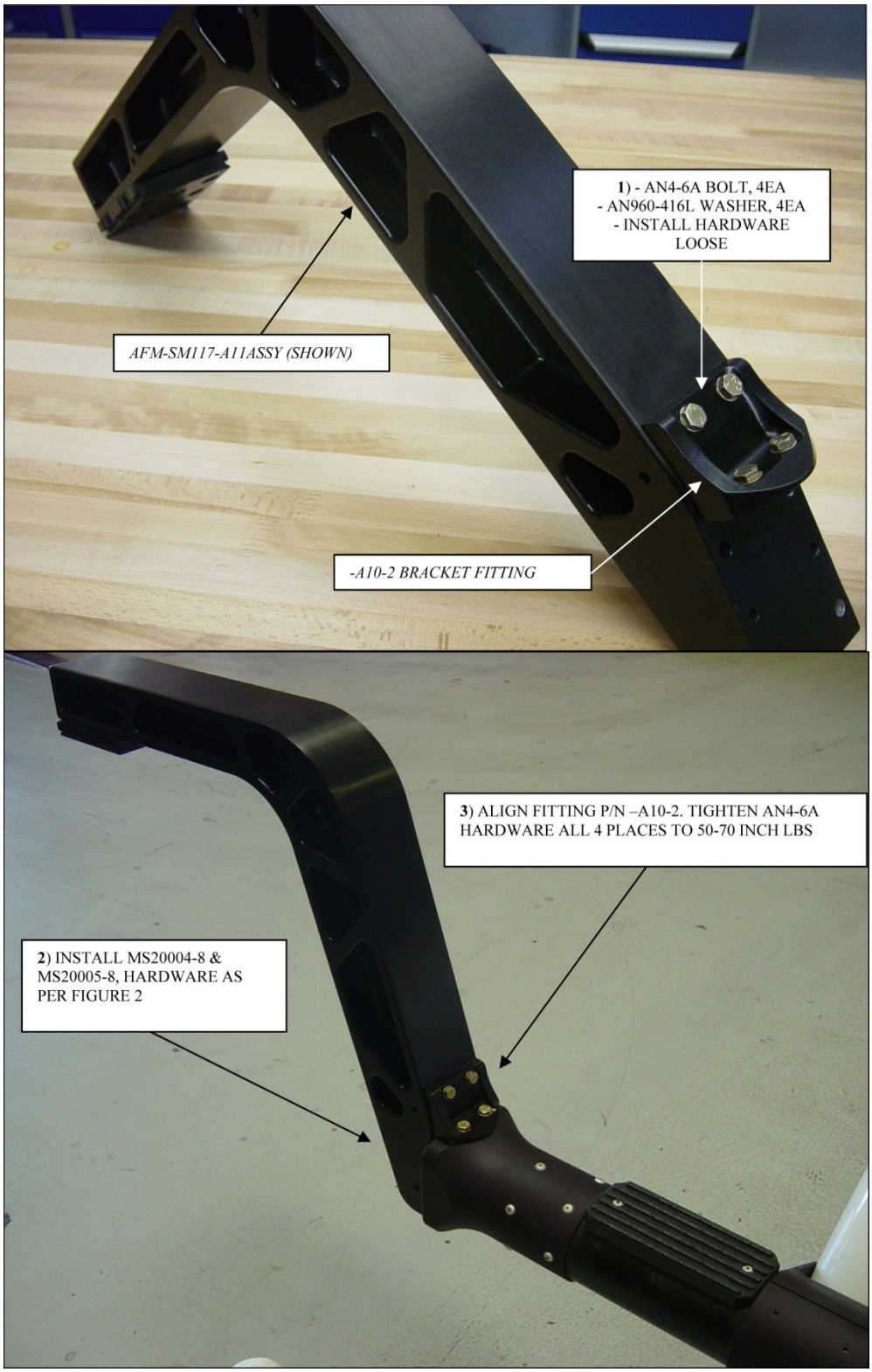

Figure 4. AFM117-SM117-A10 /-A11 Assy Installation Detail

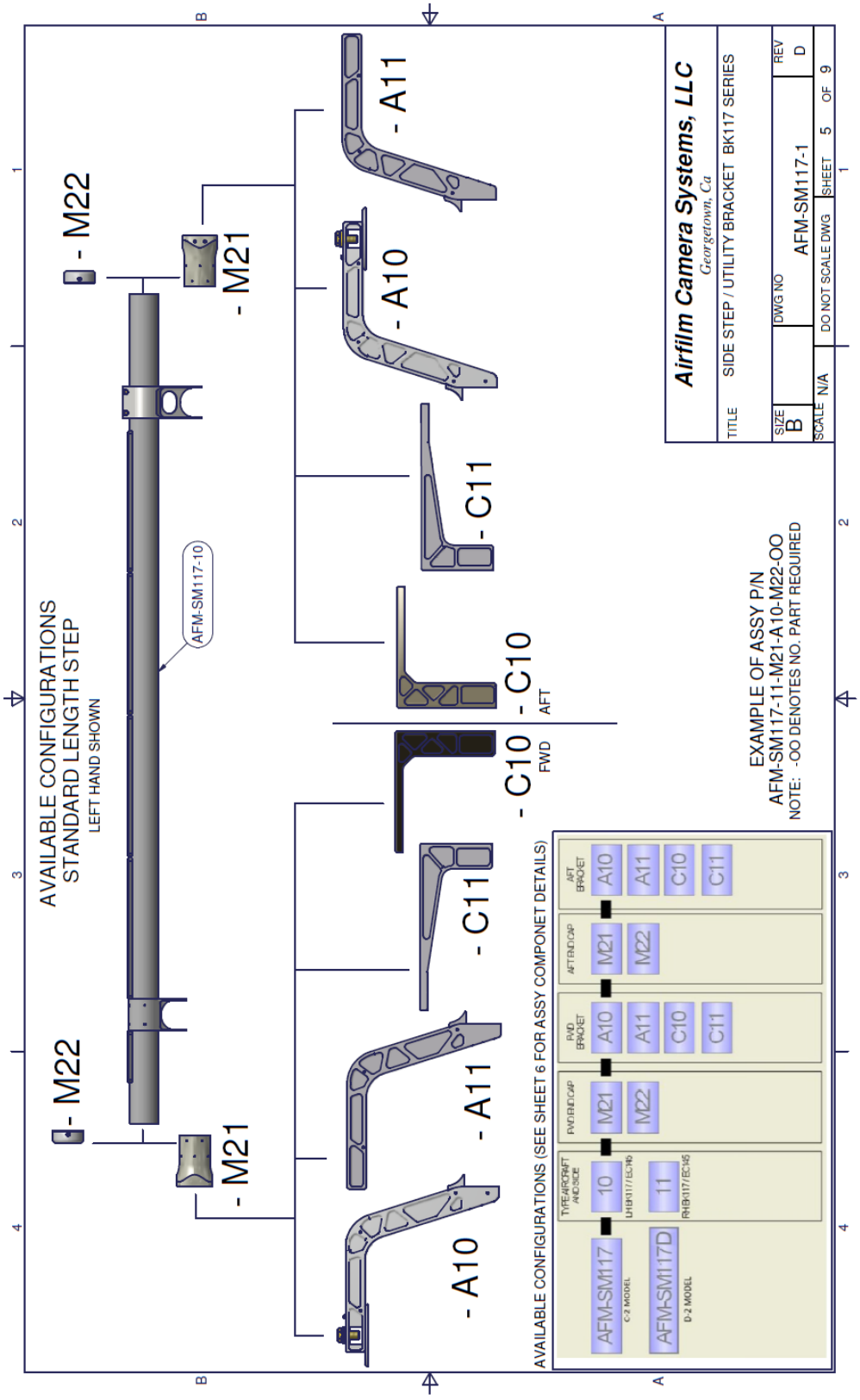

Figure 5. Available Configurations, Standard Length Step

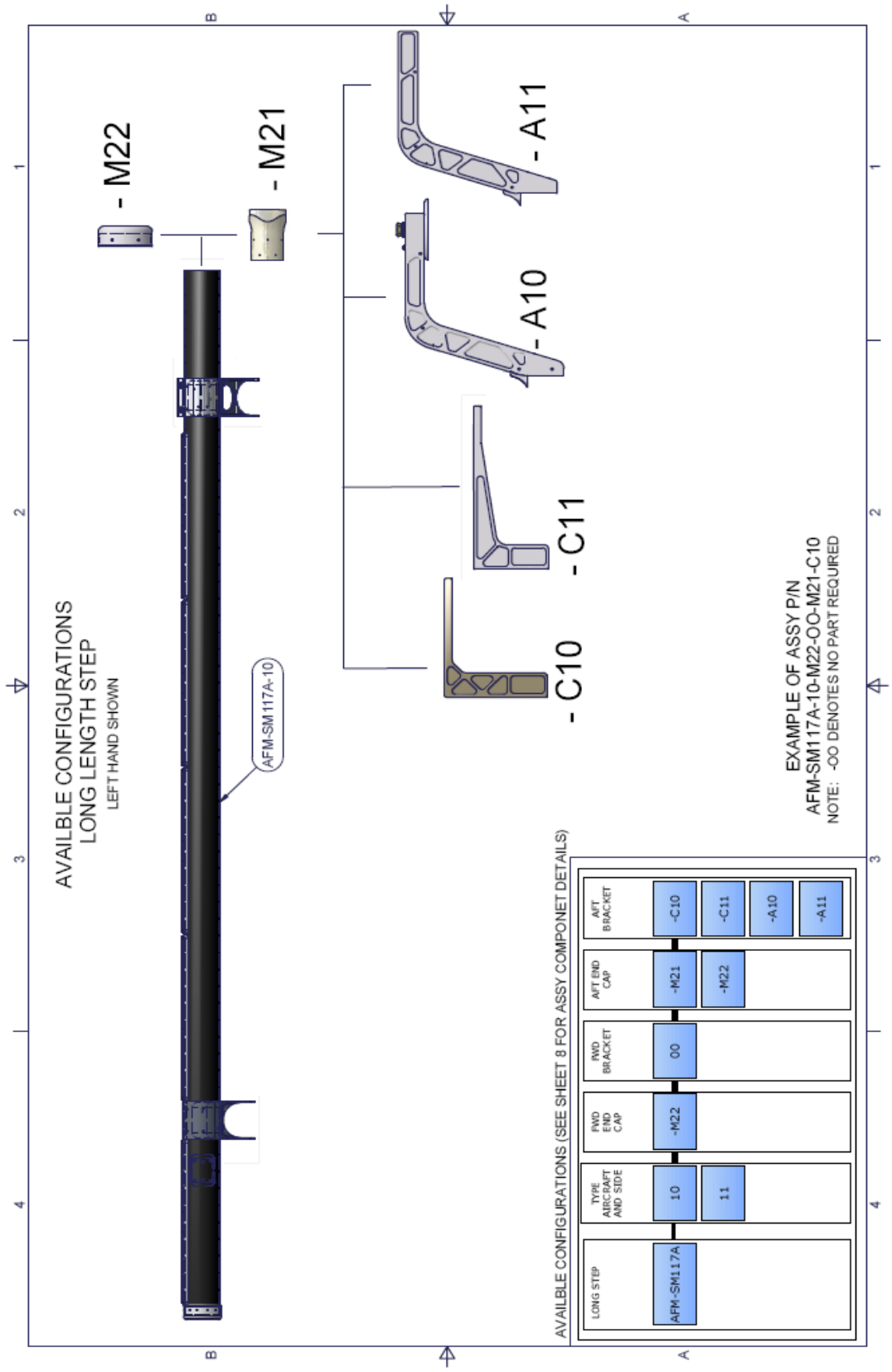

Figure 6. Available Configurations, Long Length Step

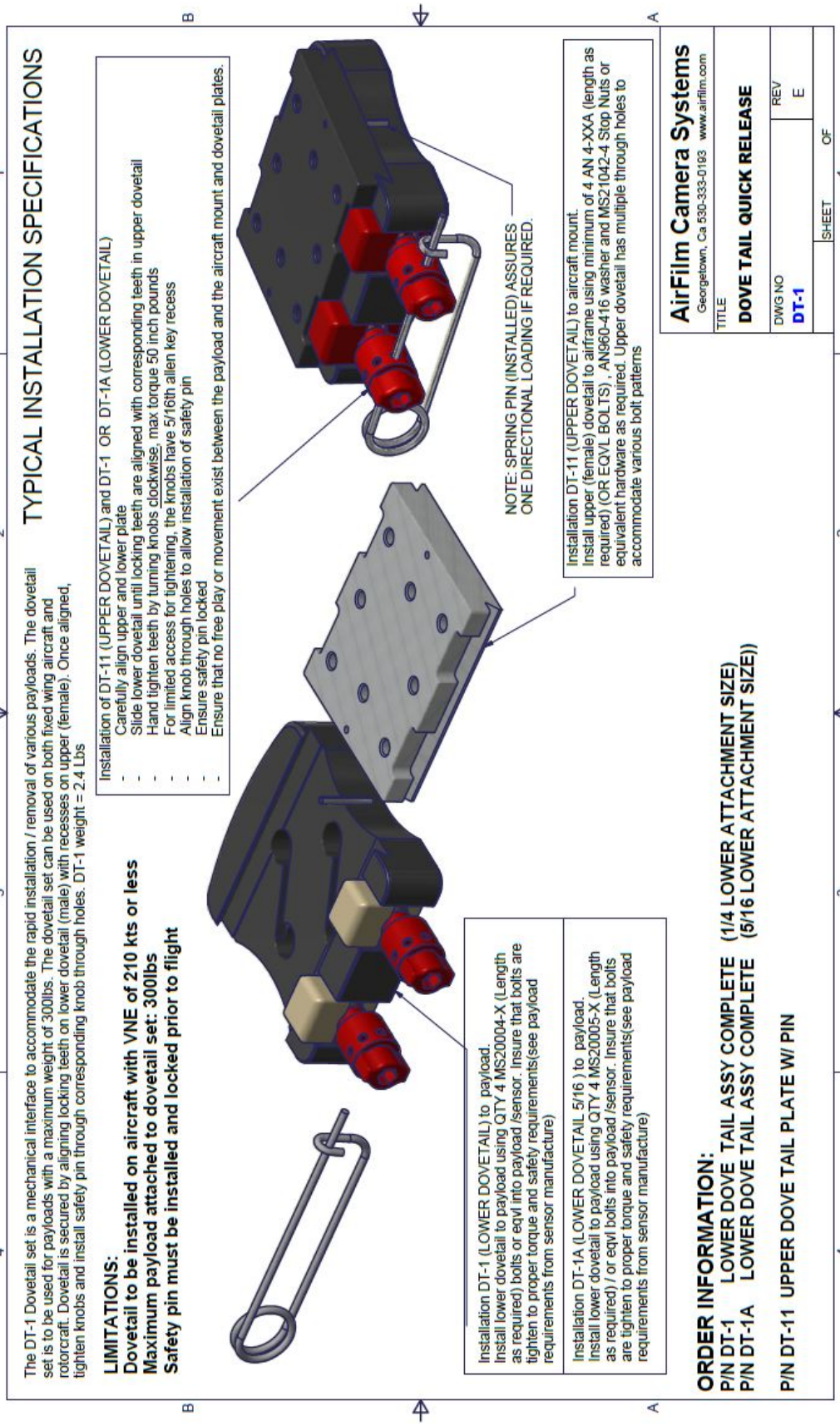

Figure 7. Dove Tail Assembly Installation

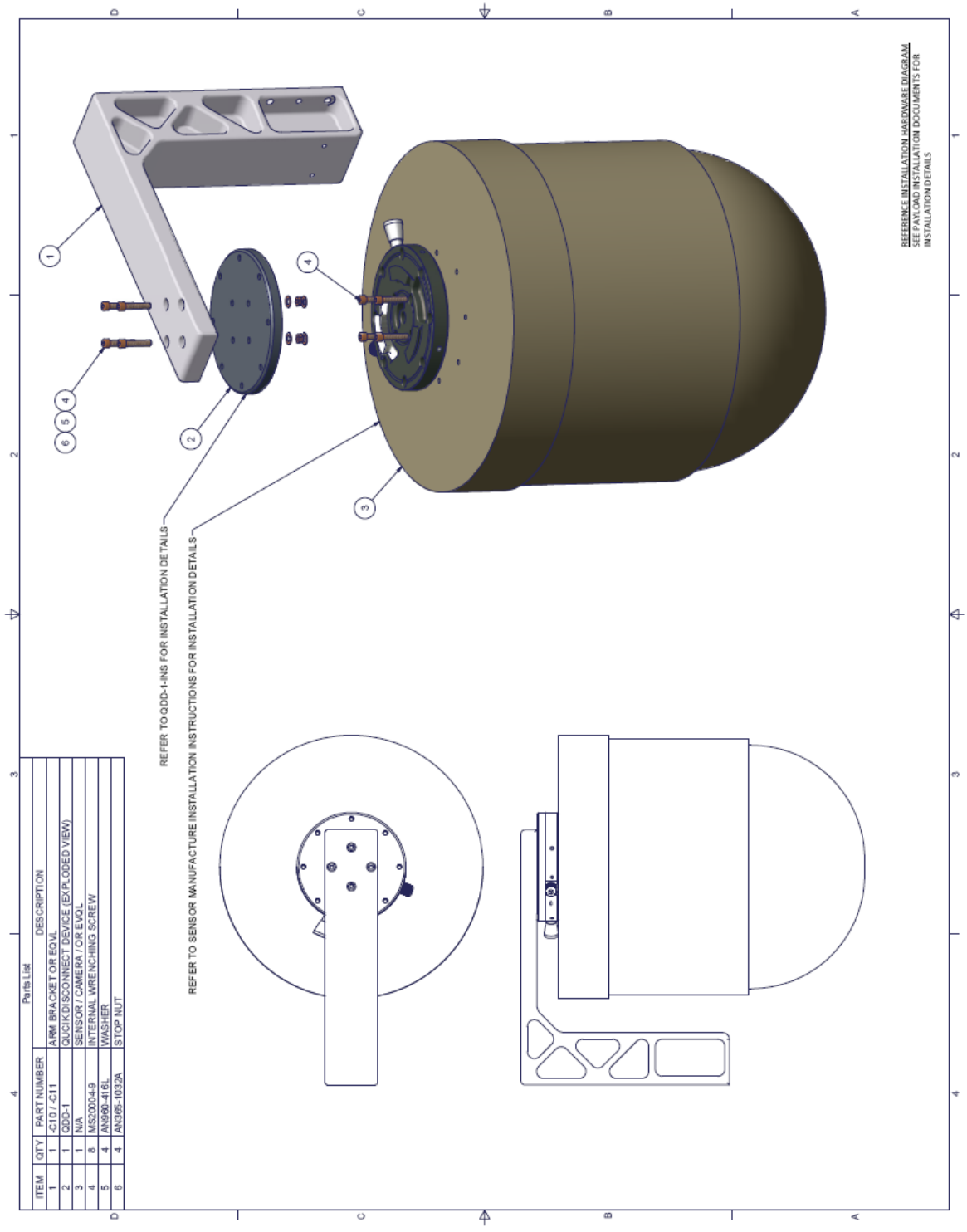

Figure 8. Sensor/Camera/Payload Installation Hardware Diagram

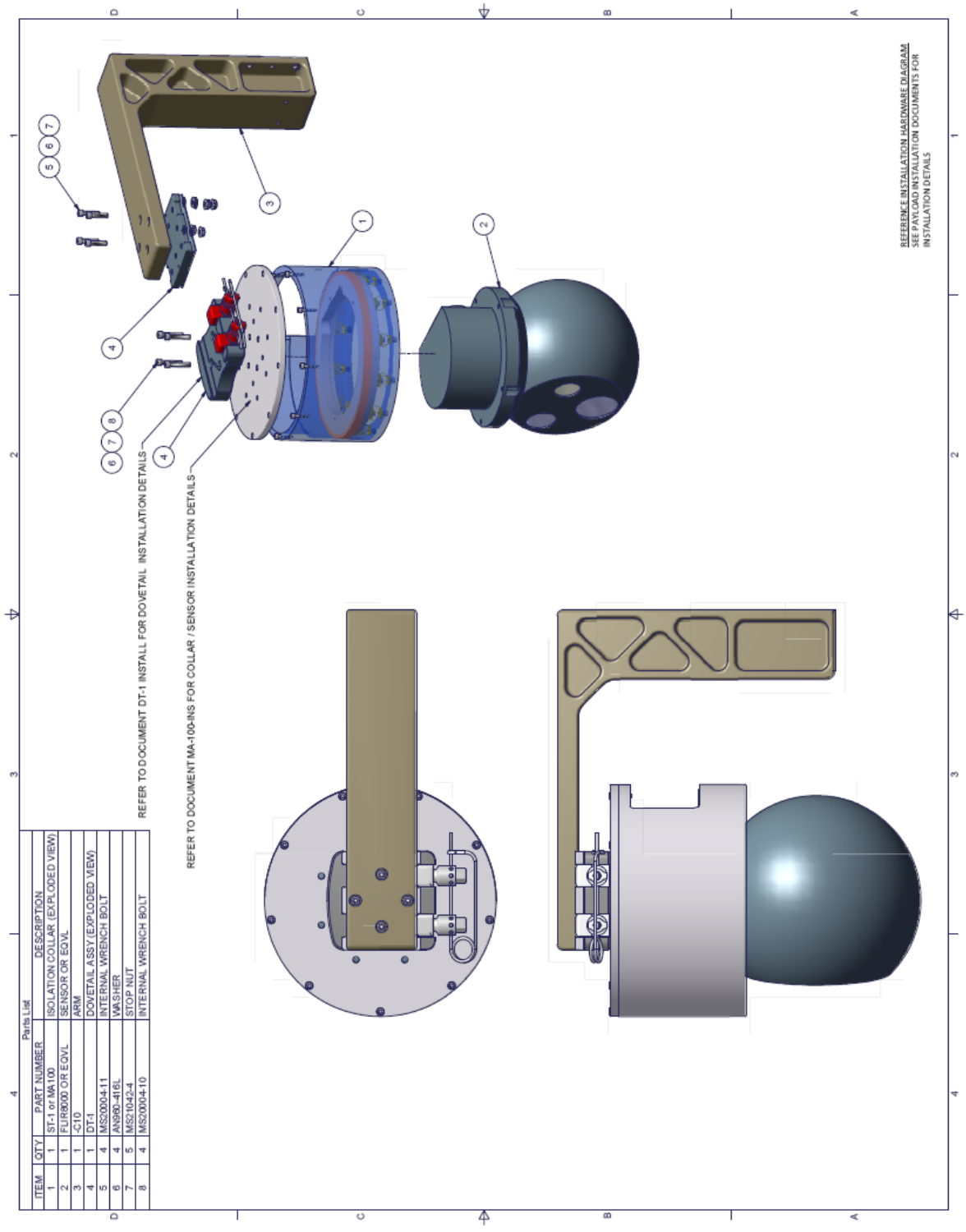

Figure 9. FLIR Reference Installation Hardware

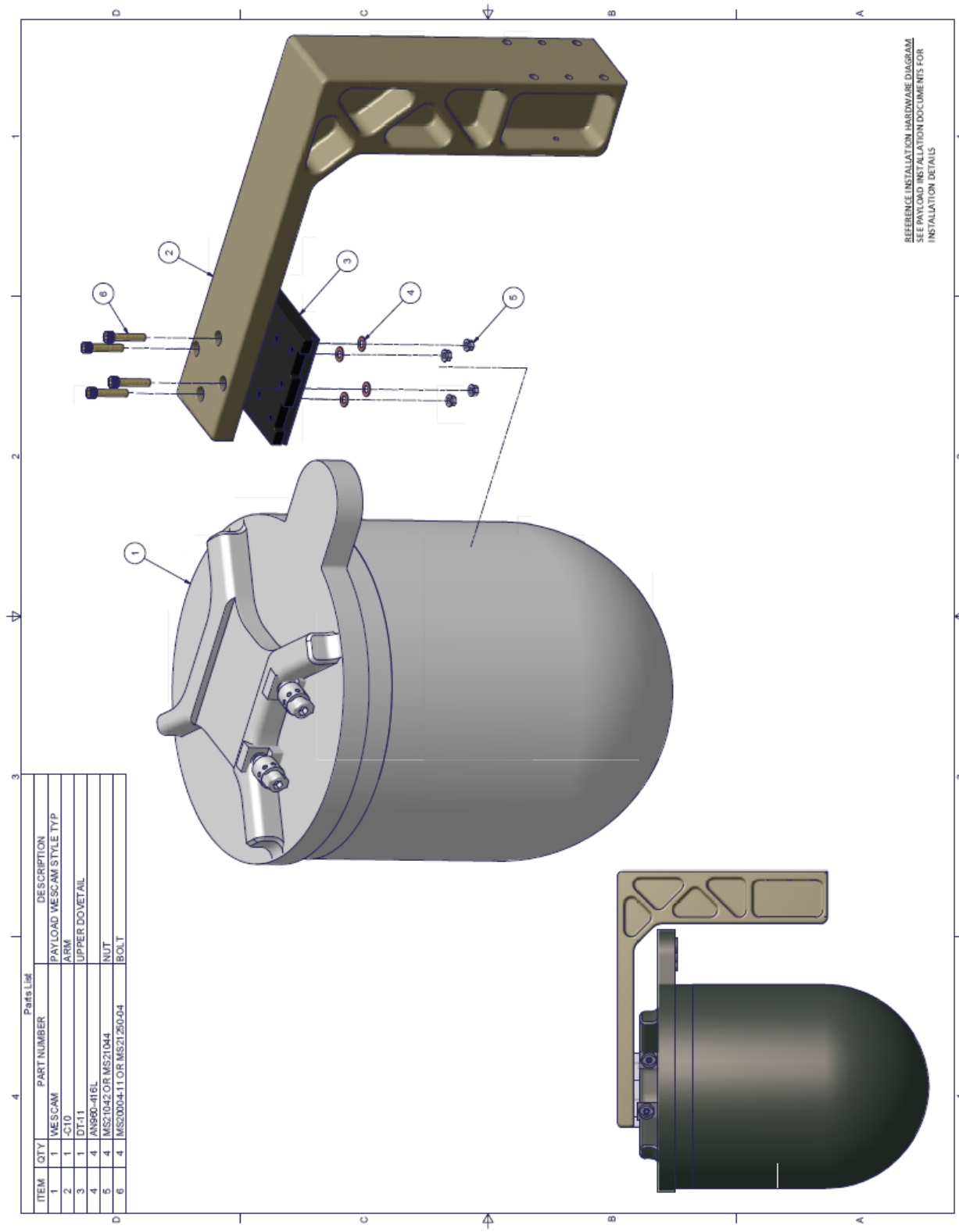

Figure 10. Wescam Reference Installation Hardware

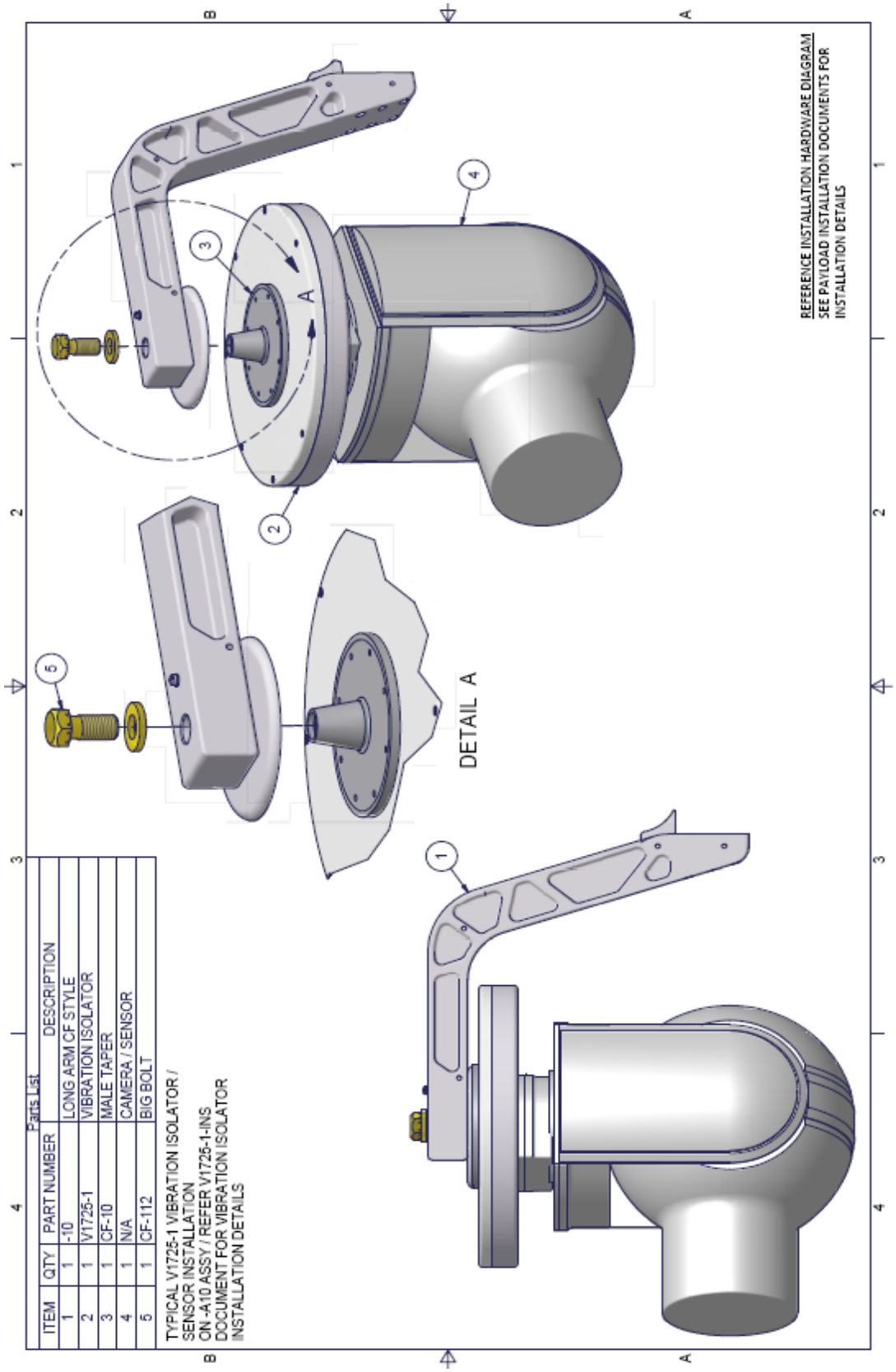

Figure 11. Vibration Isolator Reference Hardware Installation

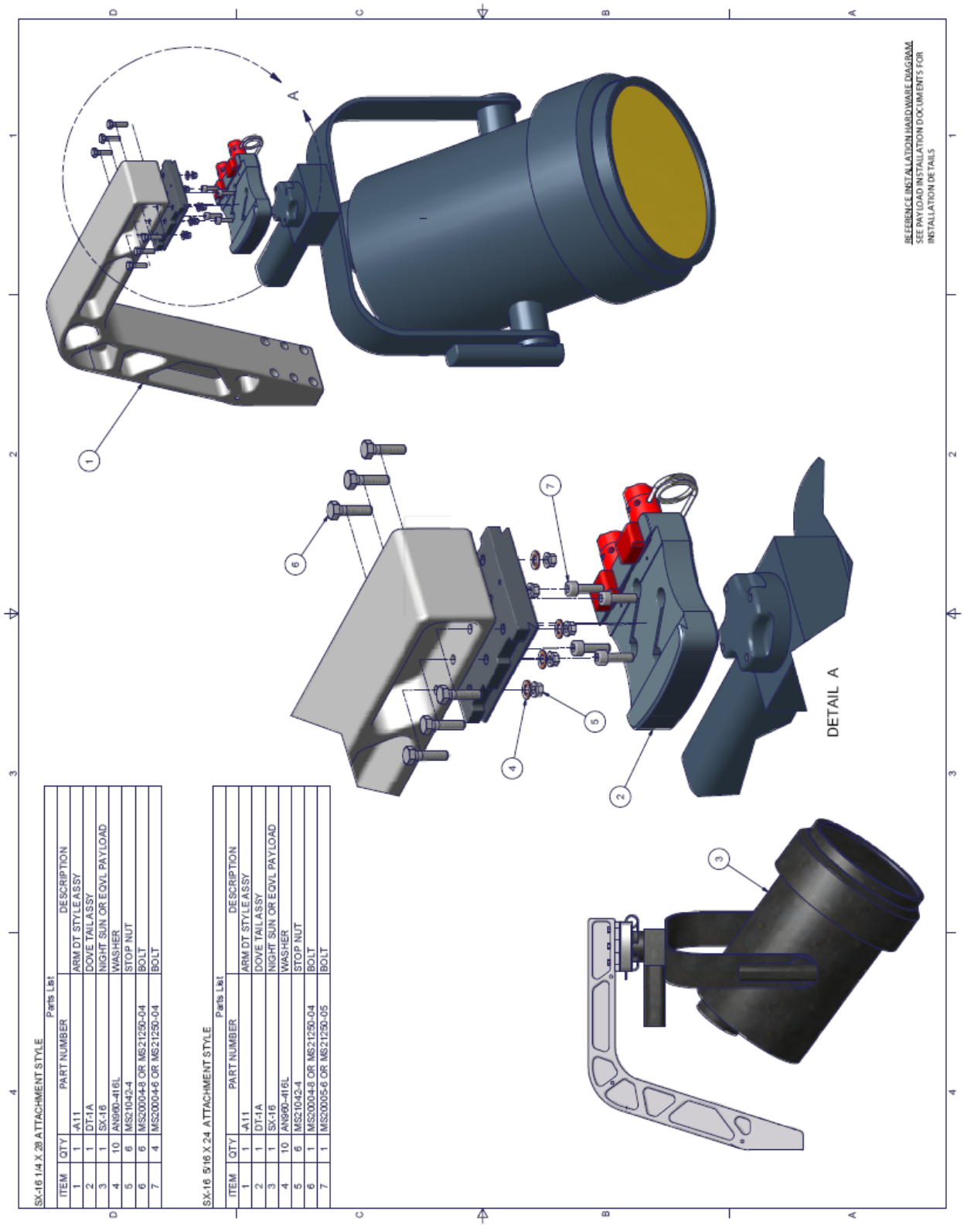

Figure 12. SX-16 Reference Installation Hardware Diagram

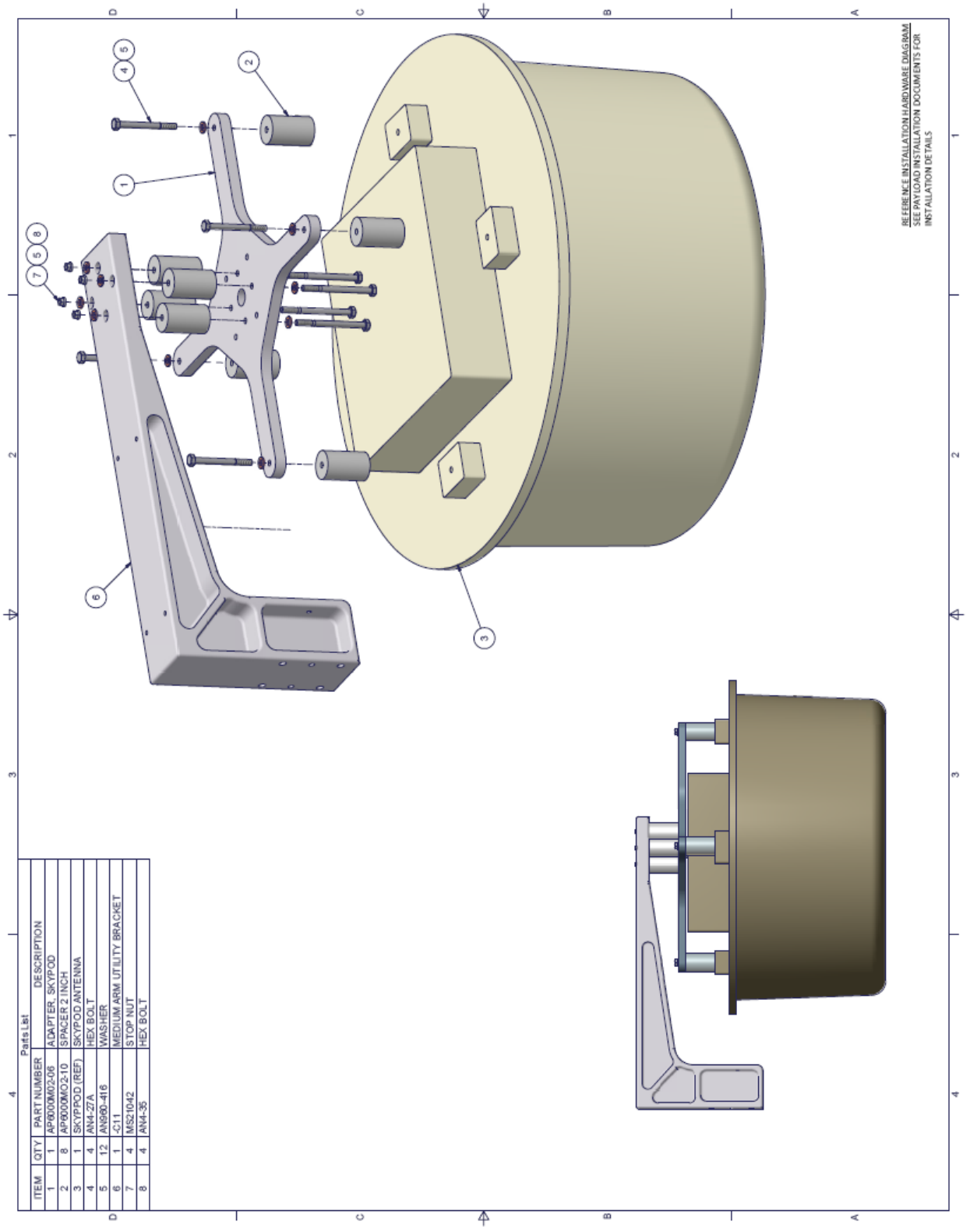

Figure 13. Sky Pod Antenna Reference Installation Hardware Diagram

APPENDIX B - METHOD OF ADDING ADDITIONAL SENSOR /CAMERA / PAYLOADS

1. Overview

This Appendix provides the requirements necessary to qualify additional sensor / camera / light payloads not listed in the front of this manual. It may also be used as a check list for previously approved sensor /cameras / light payloads if desired.

The STC flight testing was conducted and the STC approved with the largest and heaviest payload expected for use with this mount. The specific sensor/cameras/light not listed in the installation manual of equal or lesser than the limit case are accepted with this follow-on test plan.

2. Sensor/ Camera/ payload

Make & Model _____

3. Test Team

Pilot/s

_____ _____
Print Name

Mechanic and/or Engineer and/or Camera Operator

_____ _____
Print Name

4. Test Aircraft Configuration and Location

Aircraft Model, Registration & Serial Number

_____ _____ _____
Model Registration Number Serial Number

Test Configurations
Empty weight with appropriate fuel and camera system installed
Takeoff Gross weight with crew

Configuration	Gross Weight	Longitudinal CG	Lateral CG
Empty Wt			
Takeoff Wt			

Test Location

_____
Airport or Test Site

5. Test Conditions

Date: _____

Weather: Ceiling _____ Visibility _____ Winds _____

Altimeter _____ Field Elevation _____

Flight Time: Engine Start _____ Shut Down _____ Flt Time _____

6. Flight Test

6.1. Overview

Applicable regulations demonstrated for compliance are indicated with the following symbol ➔. The testing required for the compliance findings of this installation will be made by as a subject/qualitative evaluation. Although the most critical CG is considered to be at the aft limit for most tests this configuration is mounted forward of the mast should not approach the aft limits. This also depends on crew loading. The test team conducts the following tests and evaluations and mark initial the box at the end of each section if the configuration successfully passes the requirements.

6.2 FAR § 29.51 Takeoff

6.2.1 Applicable Regulation

➔(a) The takeoff, with takeoff power and rpm, and with the extreme forward center of gravity -
➔(1) May not require exceptional piloting skill or exceptionally favorable conditions; and
(2) Must be made in such a manner that a landing can be made safely at any point along the flight path if an engine fails.
(b) Paragraph (a) of this section must be met throughout the ranges of -
(1) Altitude, from standard sea level conditions to the maximum altitude capability of the rotorcraft, or 7,000 feet, whichever is less; and
(2) Weight, from the maximum weight (at sea level) to each lesser weight selected by the applicant for each altitude covered by paragraph (b)(1) of this section.

6.2.1 Method of Compliance

The recommended takeoff procedure must be demonstrated to remain clear of the HV "avoid" areas without requiring exceptional piloting skill or exceptionally favorable conditions.

A qualitative evaluation of the ability to safely land at any point along the flight path will be made using judgment and experience with the basic aircraft. No engine failure testing at low altitude will be conducted.

The normal takeoff procedures will be used for the sensor/camera/light payload and mount installation.

6.2.2 Findings

Satisfactory ☐

6.3 FAR § 29.71 Glide Performance

6.3.1 Applicable Regulation

➔For single engine helicopters and multiengine helicopters that do not meet the Category A engine isolation requirements of Part 29 of this chapter, the minimum rate of descent airspeed and the best angle of glide airspeed must be determined in autorotation at -
(a) Maximum weight; and
(b) Rotor speed(s) selected by the applicant.

6.3.2 Method of Compliance

(1) Performance capabilities during stabilized autorotative descent are useful tools to assist the pilot when all engines fail. This information is also useful in determining the suitability of available landing areas along a given route segment.

(2) Two speeds are of particular importance, the speed for minimum rate of descent and the speed for best angle of glide. These speeds along with glide distance information are required as flight manual entries per FAR § 29.1587.

The best angle of glide performance will be evaluated at a single speed and low power (needles joined) descent. An autorotative descent starting at least 1000 feet above the ground and at the speed published in the RFM, 100% RPM value will be demonstrated. Small turns will be conducted in the descent.

The aircraft should be easily controllable and the difference between the mount and camera/sensor/light payload and the clean configuration is the evaluation point.

6.3.3 Findings

Satisfactory _____ Altitude Band H_P _____ Fuel Gage Reading _____

6.4 FAR § 29.143 Controllability and Maneuverability

6.4.1 Applicable Regulation

➔(a) The rotorcraft must be safely controllable and maneuverable -
- ➔ (1) During steady flight; and
- ➔(2) During any maneuver appropriate to the type, including -
  - ➔ (i) Takeoff;
  - ➔ (ii) Climb;
  - ➔ (iii) Level flight;
  - ➔ (iv) Turning flight;
  - (v) Glide;
  - ➔ (vi) Landing (power on and power off); and
  - (vii) Recovery to power on flight from a balked autorotative approach.

➔(b) The margin of cyclic control must allow satisfactory roll and pitch control at VNE with -
- (1) Critical weight;
- (2) Critical center of gravity;
- (3) Critical rotor rpm; and
- (4) Power off (except for helicopters demonstrating compliance with paragraph (e) of this section) and power on.

(c) A wind velocity of not less than 17 knots must be established in which the rotorcraft can be operated without loss of control on or near the ground in any maneuver appropriate to the type (such as crosswind takeoffs, sideward flight, and rearward flight), with -
- (1) Critical weight;
- (2) Critical center of gravity;
- (3) Critical rotor rpm; and
- (4) Altitude, from standard sea level conditions to the maximum altitude capability of the rotorcraft or 7,000 feet, whichever is less.

(d) The rotorcraft, after failure of one engine in the case of multiengine rotorcraft that meet Transport Category A engine isolation requirements, or complete engine failure in the case of other rotorcraft, must be controllable over the range of speeds and altitudes for which certification is requested when such power failure occurs with maximum continuous power and critical weight. No corrective action time delay for any condition following power failure may be less than -
- (1) For the cruise condition, one second, or normal pilot reaction time (whichever is greater); and
- (2) For any other condition, normal pilot reaction time.

(e) For helicopters for which a VNE (power off) is established under § 29.1505(c), compliance must be demonstrated with the following requirements with critical weight, critical center of gravity, and critical rotor rpm:
- (1) The helicopter must be safely slowed to VNE (power off), without exceptional pilot skill, after the last operating engine is made inoperative at power on VNE.
- (2) At a speed of 1.1 VNE (power off), the margin of cyclic control must allow satisfactory roll and pitch control with power off.

6.4.2 Method of Compliance

The general requirements for control and for maneuverability are summarized in section (a), which is largely self-explanatory.

Section (b) specifies flight at V_{NE} with critical weight, center of gravity (CG), rotor RPM, and power. Adequate cyclic authority must remain at V_{NE} for nose down pitching of the rotorcraft and for adequate roll control.

The helicopter will be flown between 1000 and 3000 feet above ground. The test altitude will be dependent on traffic and terrain and conditions close to sea level pressure are desirable. V_{NE} will be the value stated in the RFM for the test density altitude.

Qualitative measurement techniques (pilot opinion) will be used. The tests will include:

Takeoff
Climbing flight
Forward flight to V_{NE} at MCP (maybe less than MCP)
Left & right 30 degree bank turns at V_{NE} and at MCP (maybe less than MCP)
Take-off & Landings (Power on only).

The aircraft should be easily controllable and adequate cyclic margins should exist throughout the flight test points. The difference between the mount and sensor / camera / light payload and the clean configuration is the evaluation point.

6.4.3 Findings

Satisfactory _____ Cruise Altitude H_P _____ Fuel Gage Reading _____

6.5 FAR § 29.171 Stability: General

6.5.1 Applicable Regulation

➔The rotorcraft must be able to be flown, without undue pilot fatigue or strain, in any normal maneuver for a period of time as long as that expected in normal operation. At least three landings and takeoffs must be made during this demonstration.

6.5.2 Method of Compliance

Compliance with the requirements of this section can often be obtained for the VFR condition without any specific or designated flight testing. This test should be conducted with minimum required systems in the aircraft and with minimum flight crew.

Compliance for this requirement will be evaluated throughout the test program.

6.5.3 Findings

Satisfactory _____

6.6 FAR § 29.251 Vibration

6.6.1 Applicable Regulation

➔Each part of the rotorcraft must be free from excessive vibration under each appropriate speed and power condition.

6.6.2 Method of Compliance

This flight requirement may be both a qualitative and quantitative flight evaluation. Section 29.571(a) contains the flight load survey requirement that results in accumulation of vibration quantitative data. Section 29.629 generally requires quantitative data to show freedom from flutter for each part of the rotorcraft including control or stabilizing surfaces and rotors.

The aircraft should have a good track & balance for this evaluation. The airspeed should evaluated at 20 kt increments out to the RFM V_{NE} speed. Variations in rotor RPM expected in normal flight should be evaluated. Changes in vibration are best sensed in the cyclic and pedal controls. The stability of the camera/sensor image will be a good indicator.

The pilot will make a subjective evaluation of the difference between the mount and sensor / camera/ light payload and the clean configuration is the evaluation point.

Compliance with this requirement will be evaluated during testing of FAR § 29.143 Controllability and Maneuverability.

6.6.3 Findings

Satisfactory ☐

6.7 FAR § 29.773 Pilot Compartment View

6.7.1 Applicable Regulation

(a) Each pilot compartment must be free from glare and reflections that could interfere with the pilot's view, and designed so that--
➔ (1) Each pilot's view is sufficiently extensive, clear, and undistorted for safe operation; and
(2) Each pilot is protected from the elements so that moderate rain conditions do not unduly impair his view of the flight path in normal flight and while landing.
➔ (b) If certification for night operation is requested, compliance with paragraph (a) of this section must be shown in night flight tests.

6.7.2 Method of Compliance

The section outlines requirements for pilot view in fairly general terms. The aircraft was approved with the installed glareshield and instrument panel that meet the rules. Any additional equipment/monitors must be positioned so as not to limit or obstruct the pilot’s field of view. There will be some cases where the installation will be temporary and for a unique mission and consideration should be given for these limited cases and time.

If night operations are expected with an operational system, a “dark cockpit” or night evaluation will be necessary to insure the glare/reflection will not interfere with the pilot duties. A limitation to the use at night is an option.

Satisfactory ☐

6.8 FAR § 29.787 Cargo & Baggage Compartment

6.8.1 Applicable Regulation

Cargo and baggage compartments.

(a) Each cargo and baggage compartment must be designed for its placarded maximum weight of contents and for the critical load distributions at the appropriate maximum load factors corresponding to the specified flight and ground load conditions, except the emergency landing conditions of Sec. 29.561.

(b) There must be means to prevent the contents of any compartment from becoming a hazard by shifting under the loads specified in paragraph (a) of this section.

➔ **[**(c) Under the emergency landing conditions of Sec. 29.561, cargo and baggage compartments must--

(1) Be positioned so that if the contents break loose they are unlikely to cause injury to the occupants or restrict any of the escape facilities provided for use after an emergency landing; or

(2) Have sufficient strength to withstand the conditions specified in Sec. 29.561 including the means of restraint, and their attachments, required for the maximum authorized weight of cargo and baggage at the critical loading distribution.**]**

(d) If cargo compartment lamps are installed, each lamp must be installed so as to prevent contact between lamp bulb and cargo.

6.8.2 Method of Compliance

Amendment 27-27 adds two subparagraphs to § 29.787(c) which clarify that cargo and baggage compartments should be designed to protect occupants from injury by the compartment contents during emergency landings. This may be done by location or by retention provisions.

The sensor/camera/light controllers and power supply must be located and secured in a position that will not endanger occupants in an emergency landing impact.

Consideration should be given to stowage and egress when filming in hovering flight. In some cases this might not be possible.

6.8.3 Findings

Comment: _____

Satisfactory _____

6.9 FAR § 29.1301 Function and Installation.

6.9.1 Applicable Regulation

Each item of installed equipment must--
➔ (a) Be of a kind and design appropriate to its intended function;
(b) Be labeled as to its identification, function, or operating limitations, or any applicable combination of these factors;
(c) Be installed according to limitations specified for that equipment; and
➔ (d) Function properly when installed.

6.9.2 Method of Compliance

For optional equipment, the emphasis on functioning is rather limited compared to that for required equipment. The conditions under which the optional equipment is evaluated should be recorded in the report. The major emphasis for this type of equipment should be to ensure it does not interfere with the operation of systems that are required for safe operation of the rotorcraft, and that the failure modes are acceptable and do not create any hazards.

During flight operations, operate all avionics and electrical systems. Complete the matrix below. The matrix is laid out with the newly installed equipment listed at the top of the page and all aircraft systems listed down the left side of the page. Note any EMI or RFI either TO or FROM the installed equipment.

Note any anomalies or EMI/RFI interference to other instruments or indications during all testing phases of flight.

Each item must be checked. Check off each block if no interference is noted. If interference is present during the test, DO NOT CHECK THE BOX and explain in Comments section at end of section. If applicable, note relevant conditions (i.e. frequencies, OBI selection, function modes) under which the interference occurred.

6.9.3 Findings

Interference?	**Camera/Sensor/Light**	**Position Controller**
Camera/Sensor/Light		
Position Controller		
VHF Comm 1		
VHF Comm 2		
VHF Comm 3		
VHF NAV 1		
VHF NAV 2		
ADF 1		
XPONDER 1		
Other Radios		
Audio 1		
Audio 2		
Standby Compass		
Engine Inst		
Fuel Gage		
Clock		
Voltmeter		
Ammeter		
Other		

EMI / RFI Comments:

Satisfactory ☐

Signatures

General test findings _____

Pilot Signature _____

Mechanic/ Engineer _____

Other Flt Personnel Signature & Function

_____