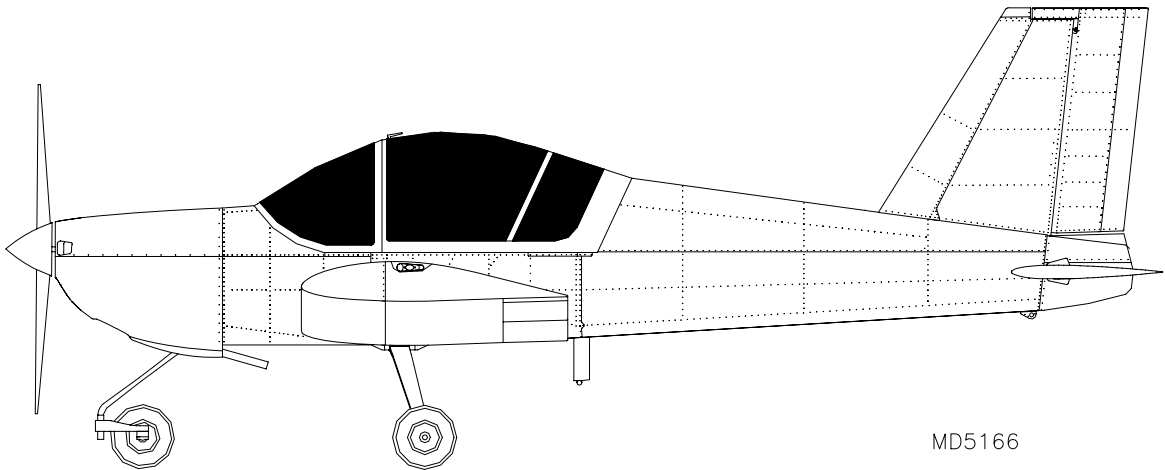


RANS

S-19 VENTERRA

PARTS MANUAL



MD5166

Serial Number:

Registration Number:

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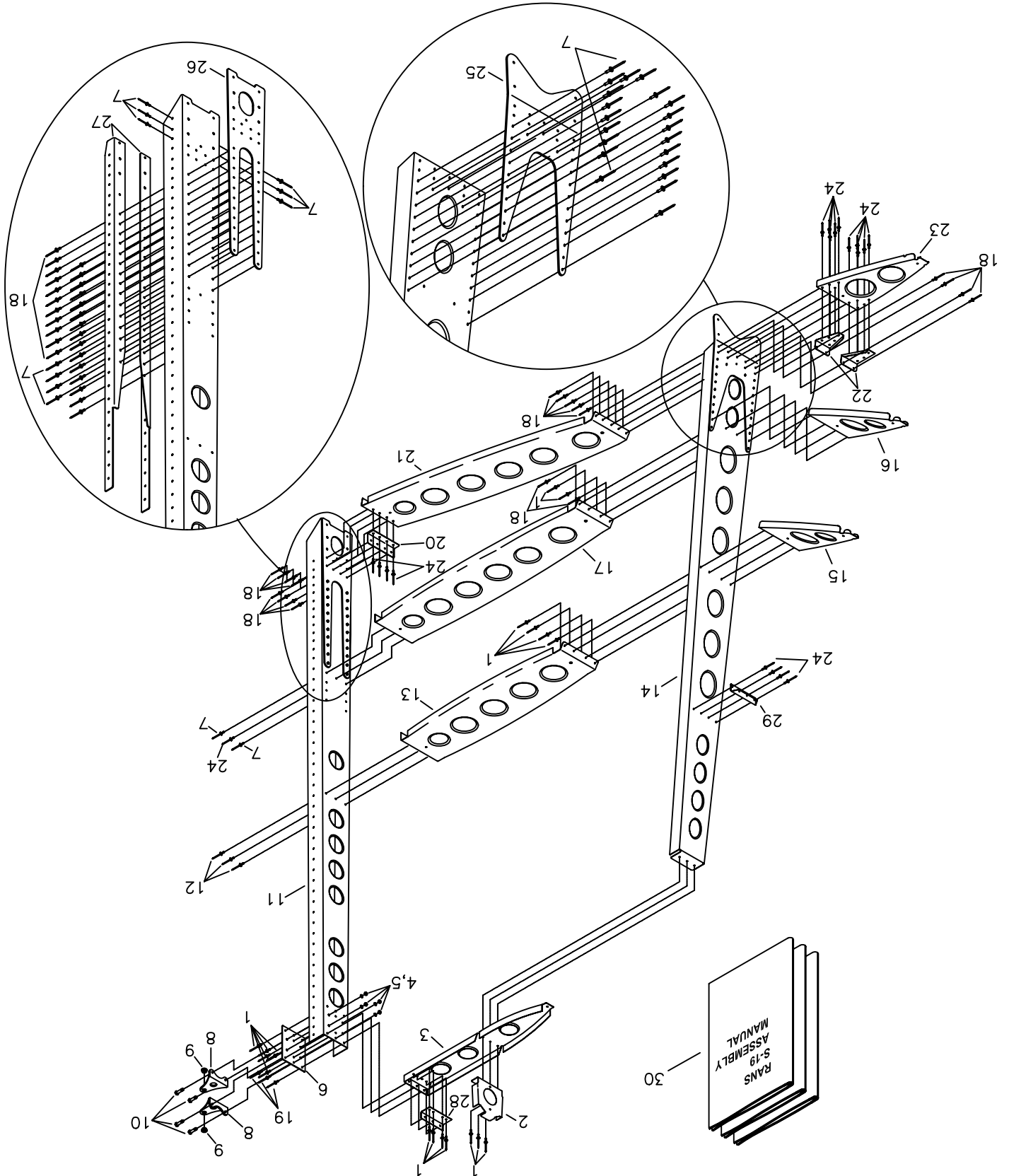
02 – EMPENNAGE (TAIL) GROUP

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VERTICAL STABILIZER FRAME ASSEMBLY

RANS S-19 VENTERRA

MD4785



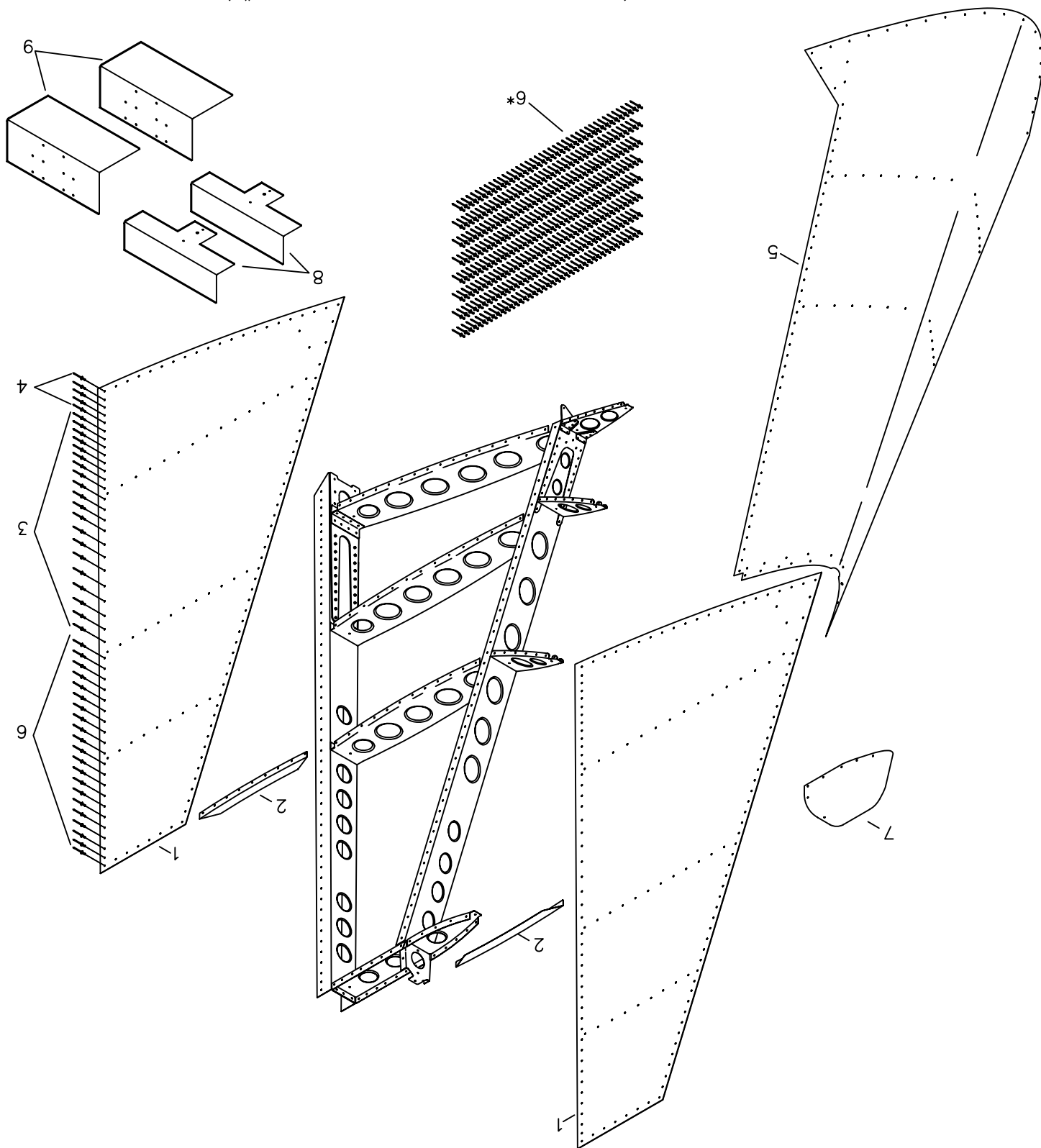
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" Aluminum Rivet - Cherry Q	AAPQ-42	18
2.	Vertical Stabilizer Tip Bulkhead	KPVS0070	1
3.	Vertical Stabilizer Rib #1	KPVS0059	1
4.	3/16" Thick Washer	AN960-10	4
5.	3/16" Tensile Nut	AN365-1032A	4
6.	Plate Reinforcement	KPVS0078	1
7.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-42	37
8.	Vertical Stabilizer Hinge	KPVS0077	2
9.	Flange Bushing	KSAC0019-3	2
10.	3/16" Bolt	AN3-5A	4
11.	Channel - Stabilizer Rear Spar	KPVS0066	1
12.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-41	3
13.	Vertical Stabilizer Rib #2	KPVS0072	1
14.	Channel - Stabilizer Front Spar	KPVS0065	1
15.	Vertical Stabilizer Rib #3	KPVS0058	1
16.	Vertical Stabilizer Rib #5	KPVS0064	1
17.	Vertical Stabilizer Rib #4	KPVS0073	1
18.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-43	43
19.	1/8" Aluminum Rivet - Cherry Q	AAPQ-43	3
20.	Vertical Stabilizer - Rib Stiffener	KPVS0061	1
21.	Vertical Stabilizer Rib #6	KPVS0056	1
22.	Vertical Stabilizer - Rib Stiffener - RH	KPVS0062-R	1
22.	Vertical Stabilizer - Rib Stiffener - LH	KPVS0062-L	1
23.	Vertical Stabilizer Rib #7	KPVS0057	1
24.	1/8" Aluminum Rivet - Cherry Q	AAPQ-41	19
25.	Vertical Stabilizer Plate - Front Spar	KPVS0067	1
26.	Vertical Stabilizer Plate - Rear Spar	KPVS0060	1
27.	Stabilizer Spar - Reinforcing Angle - LH	KPVS0069-L	1
27.	Stabilizer Spar - Reinforcing Angle - RH	KPVS0069-R	1
28.	Rib Reinforcement	KPVS0079	1
29.	Vertical Stabilizer Spar Stiffener	KPVS0080	1
30.	S-19 Assembly Manual on CD - Empennage	S-19 Assembly Manual	1

VERTICAL STABILIZER SKIN INSTALLATION

RRMS S-19 VENTURA

MD4786

*RIVET AS SHOWN (ALL OTHERS AVEX 1691-0410 ITEM #6)

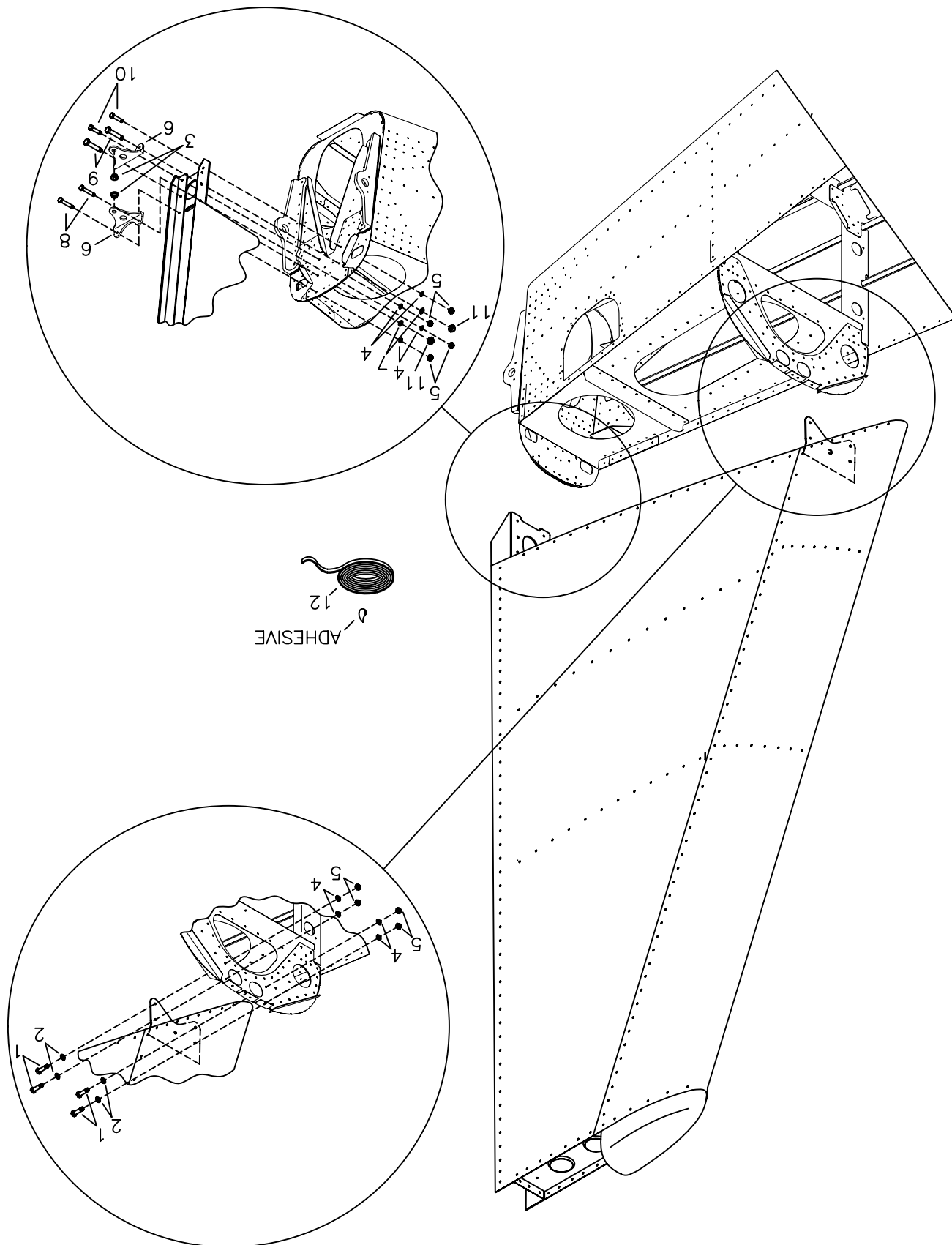


#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Vertical Stabilizer Side Skin	KPVS0074	2
2.	Vertical Stabilizer - Skin Stiffener *	KPVS0068	1
3.	1/8" Aluminum Rivet - Cherry Q	AAPQ-42	40
4.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-42	10
5.	Vertical Stabilizer FWD Skin	KPVS0075	1
6.	1/8" Aluminum Rivet - Avex	1691-0410	349
7.	Vertical Stabilizer Tip	KPVS0071	1
8.	Vertical Stabilizer Jig - Tip	KPVS0082	2
9.	Vertical Stabilizer Jig - Root	KPVS0081	2

* Builder modifies.

RRMS S-19 VENTURA VERTICAL STABILIZER INSTALLATION

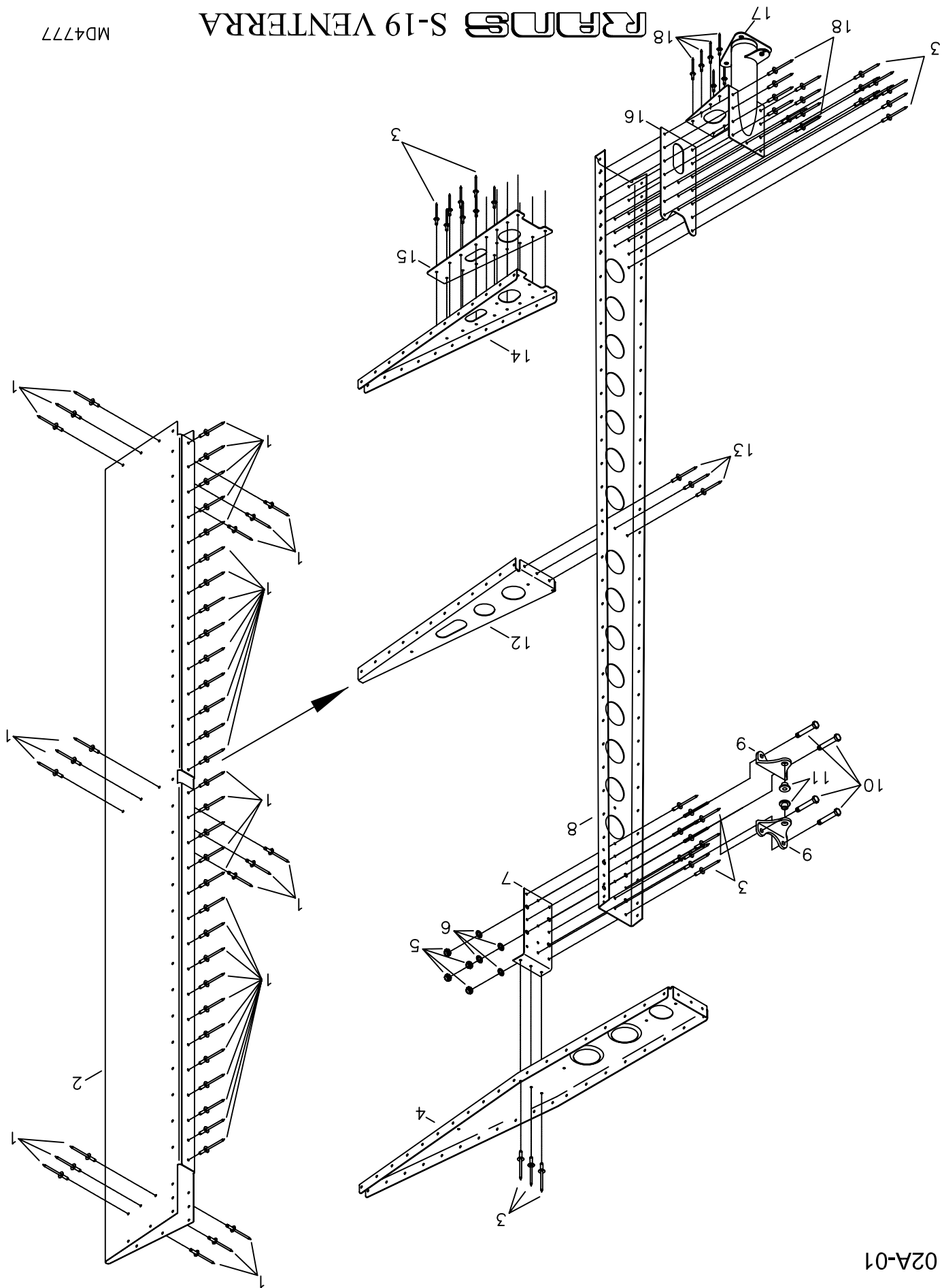
MD4966



#	DESCRIPTION	PART NUMBER	QUANTITY
1.	3/16" Bolt	AN3-5A	4
2.	3/16" Thin Washer	AN960-10L	4
3.	Flange Bushing	KSAC0019-3	2
4.	3/16" Thick Washer	AN960-10	8
5.	3/16" Tensile Nut	AN365-1032A	8
6.	Vertical Stabilizer Hinge	KPVS0076	2
7.	1/4" Thin Washer	AN960-416L	2
8.	3/16" Bolt	AN3-7A	2
9.	1/4" Bolt	AN4-7A	2
10.	3/16" Bolt	AN3-6A	2
11.	1/4" Tensile Nut	AN365-428A	2
12.	Edge Trim	X1011	6 ft.

RANDS S-19 VENTURA RUDDER FRAME ASSEMBLY

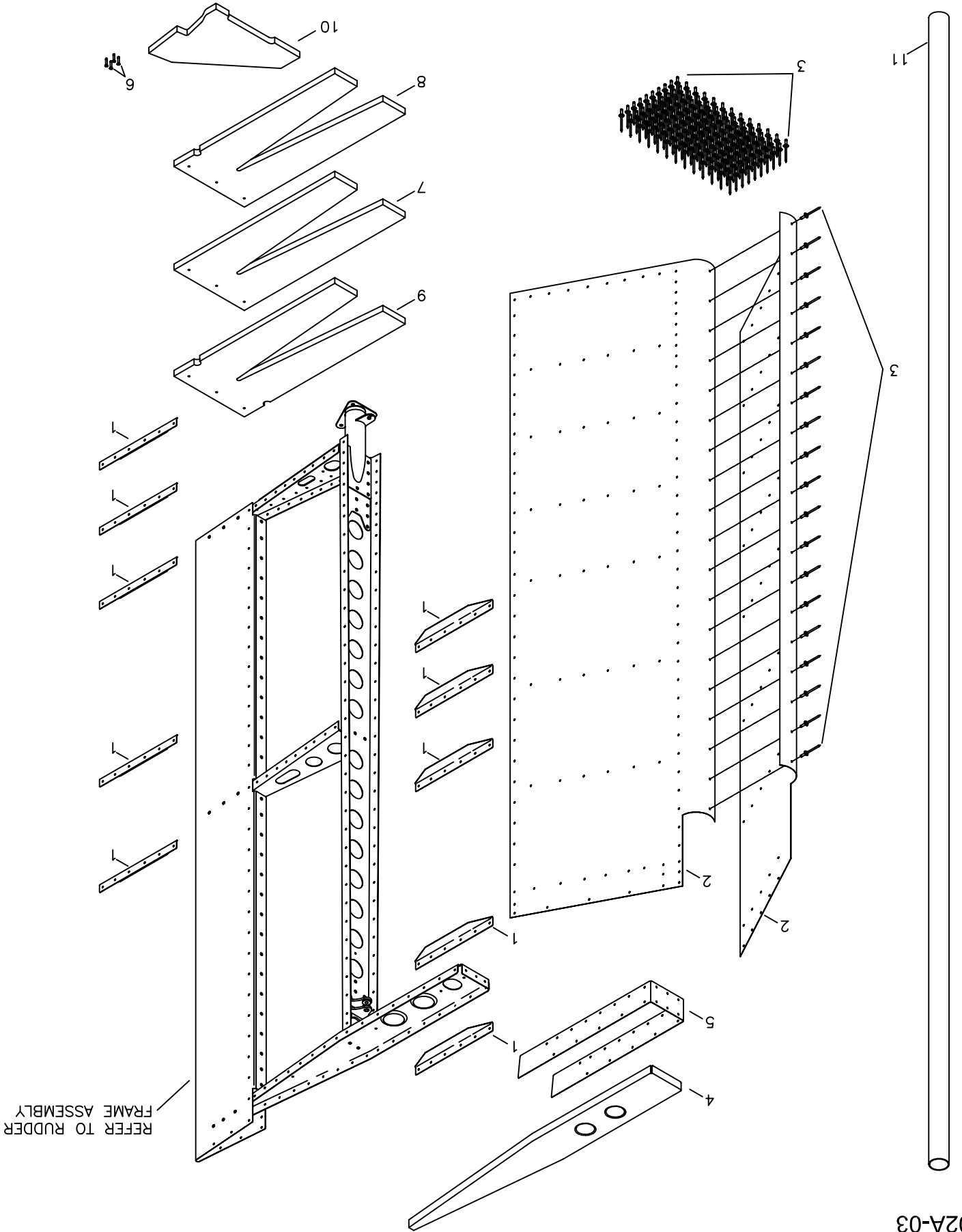
MD4777



#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" Aluminum Rivet - Avex	1691-0410	50
2.	Rudder Trailing Edge	KPRD0072	1
3.	1/8" Aluminum Rivet - Cherry Q	AAPQ-42	29
4.	Rudder Tip Rib	KPRD0064	1
5.	3/16" Shear Nut	AN364-1032A	4
6.	3/16" Thin Washer	AN960-10L	4
7.	Rudder Spar Reinforcement	KPRD0063	1
8.	Rudder Spar	KPRD0070	1
9.	Rudder Hinge	KPRD0025	2
10.	3/16" Bolt	AN3-4A	4
11.	Flange Bushing	KSAC0019-3	2
12.	Rudder Rib #2	KPRD0068	1
13.	1/8" Aluminum Rivet - Cherry Q	AAPQ-41	3
14.	Rudder Rib #1	KPRD0067	1
15.	Plate Reinforcement	KPRD0066	1
16.	Rudder Plate	KPRD0065	1
17.	Rudder Torque Tube	KPRD0071	1
18.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-43	17

RANDS S-19 VENTERRA RUDDER SKIN INSTALLATION

MD4778



#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Skin Stiffener *	KPRD0069	2
2.	Rudder Skin *	KPRD0073	2
3.	1/8" Aluminum Rivet - Avex	1691-0410	309
4.	Rudder Closeout Rib	KPRD0076	1
5.	Rudder Strap	KPRD0074	1
6.	Wood Screw	PPP4-38Z	4
7.	Rudder Jig - Center	KPRD0075-1	1
8.	Rudder Jig - Root	KPRD0075-2	1
9.	Rudder Jig - Tip	KPRD0075-3	1
10.	Rudder Jig - Tip Angle	KPRD0075-4	1
11.	1-1/4" x 95" Tubing **	----	0

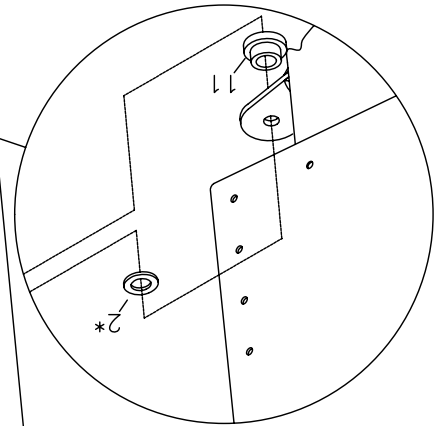
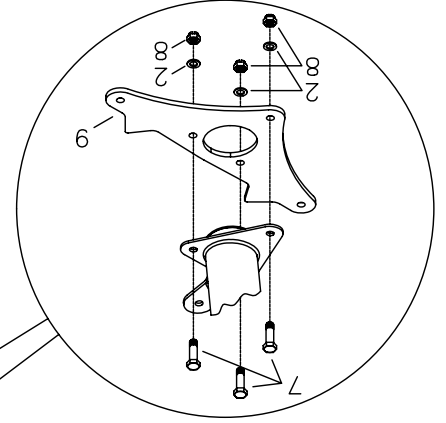
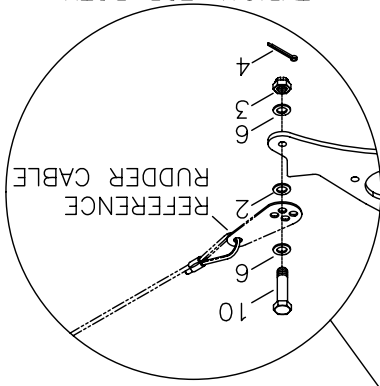
* Builder modifies.

** Builder Supplied

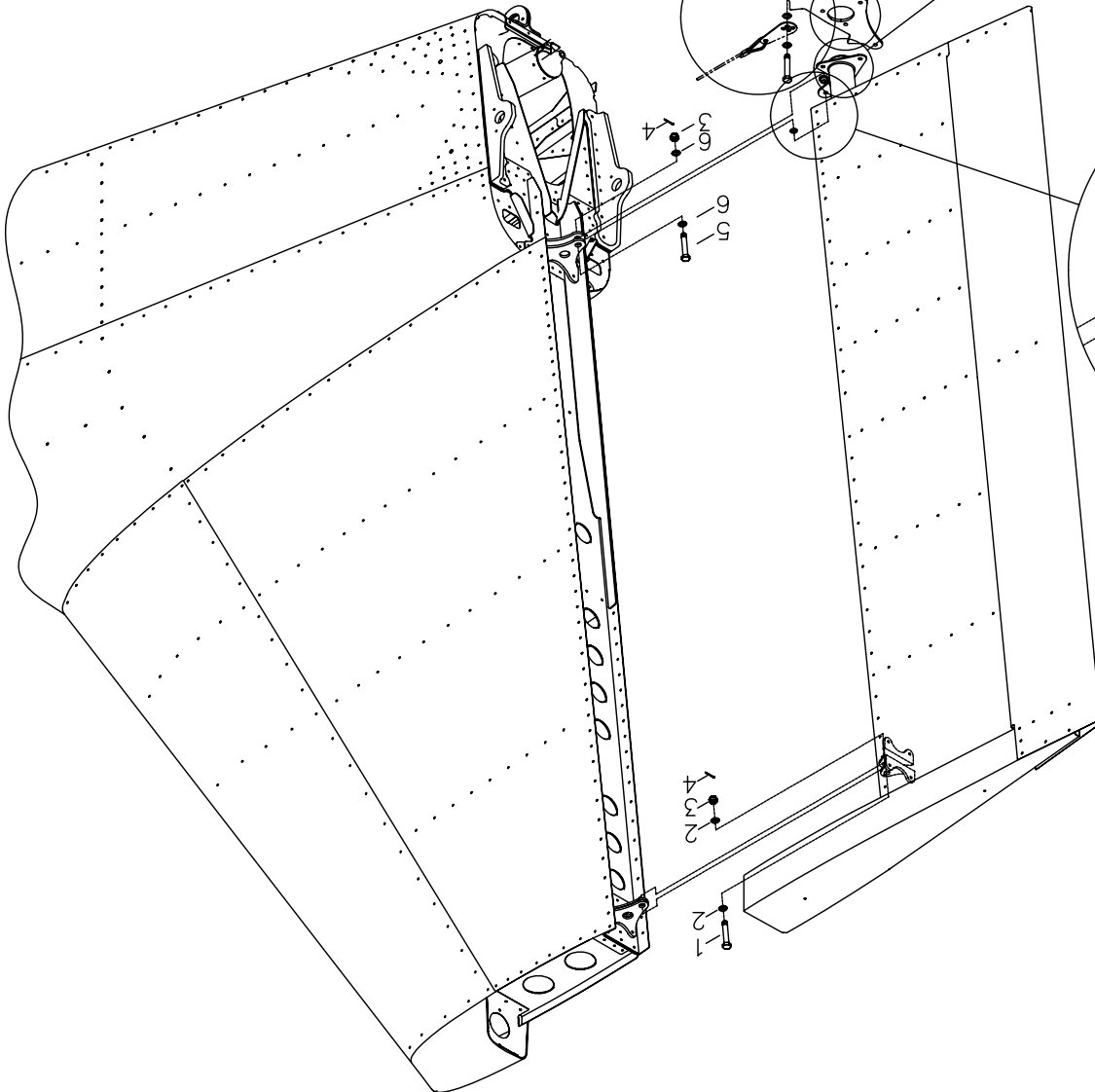
RRMS S-19 VENTURA RUDDER INSTALLATION

MD5073

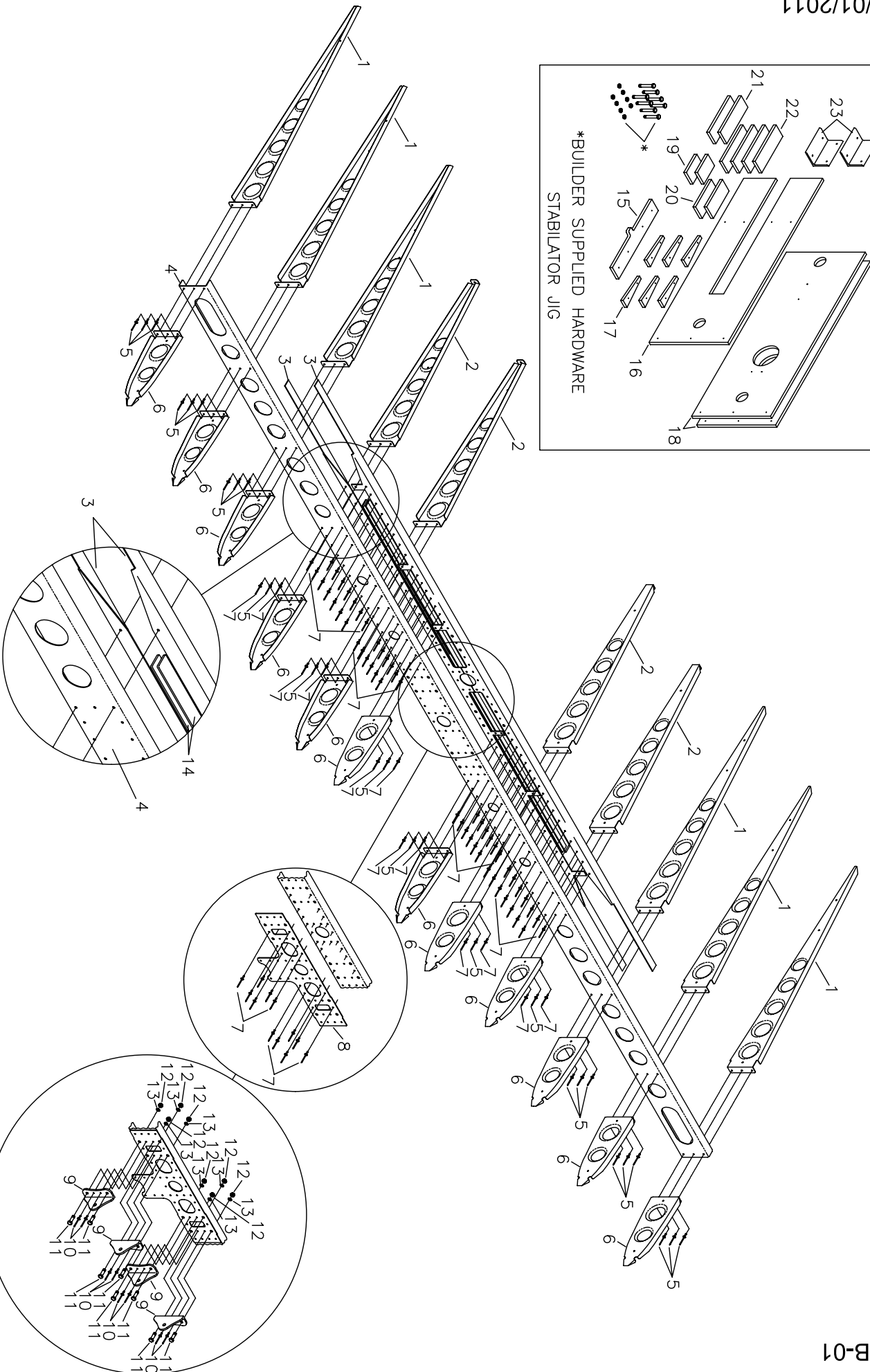
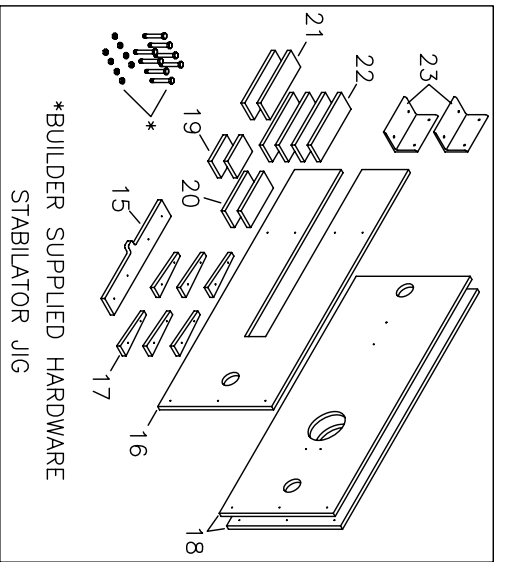
TYPICAL FOR BOTH
SIDES



* ADD WASHER
AS NEEDED



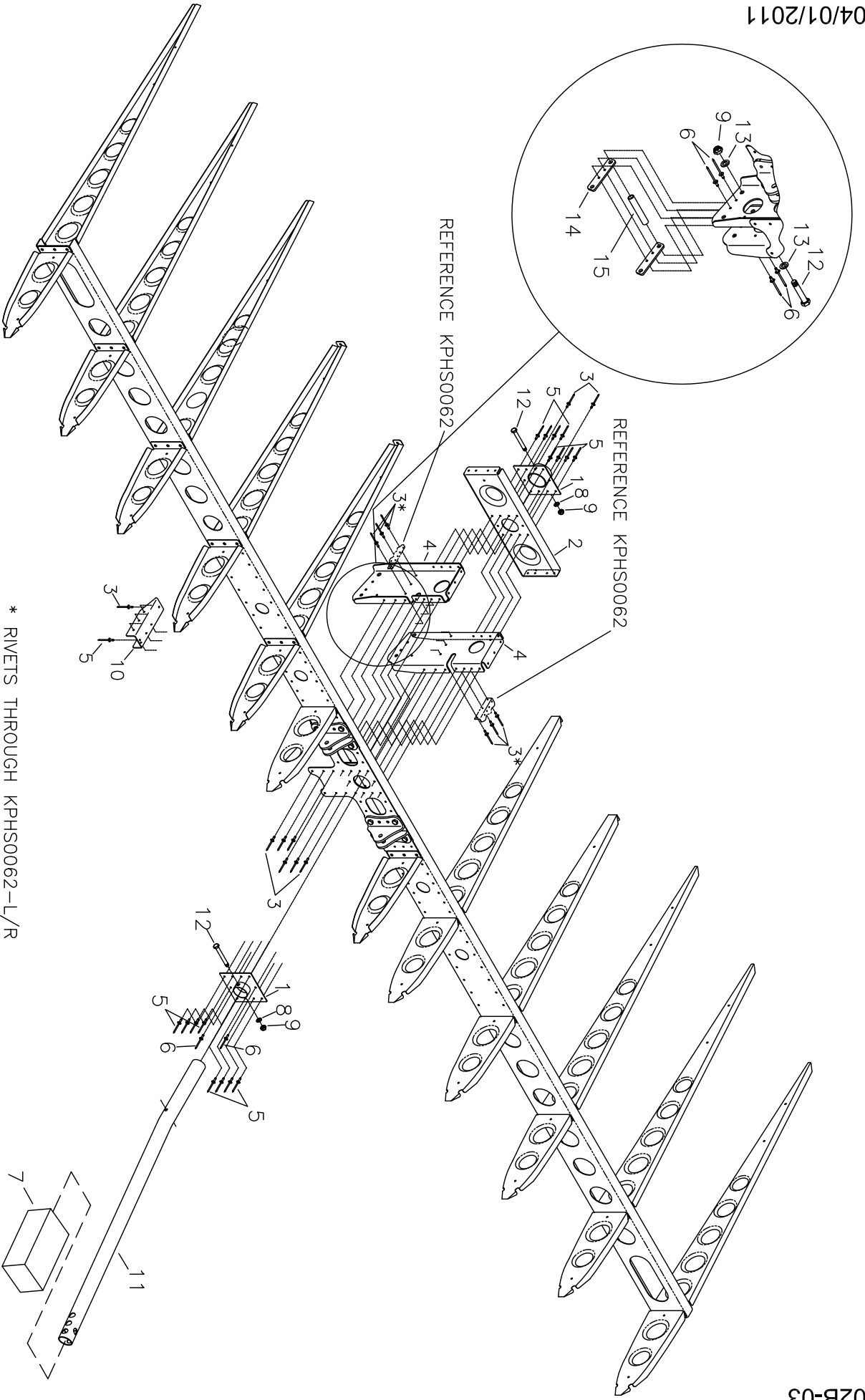
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	3/16" Bolt	AN3-11	1
2.	3/16" Thin Washer	AN960-10L	8
3.	3/16" Castle Nut	AN310-3	4
4.	Cotter Pin - Small	MS24665-134	4
5.	3/16" Bolt	AN3-10	1
6.	3/16" Thick Washer	AN960-10	6
7.	3/16" Bolt	AN3-4A	3
8.	3/16" Shear Nut	AN364-1032A	3
9.	Rudder Horn	KPRD0078	1
10.	3/16" Bolt	AN3-5	2
11.	Flange Bushing	KSAC0019-3	1



RRR-100 S-19 VENTERRA
STABILATOR FRAME ASSEMBLY #1

MD4781

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Stabilator Rib - #4, 5 & 6	KPHS0050	6
2.	Stabilator Rib - #2 & 3	KPHS0051	4
3.	Stabilator Spar - Angle	KPHS0043	2
4.	Stabilator Spar	KPHS0042	1
5.	1/8" Aluminum Rivet - Cherry Q	AAPQ-42	18
6.	Stabilator - Nose Rib	KPHS0052	12
7.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-42	64
8.	Stabilator - Plate	KPHS0055	1
9.	Angle Stabilator Hinge	KPHS0058	4
10.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-44	8
11.	3/16" Bolt	AN3-5A	8
12.	3/16" Shear Nut	AN364-1032A	8
13.	3/16" Thin Washer	AN960-10L	8
14.	Stabilator Spar - Bar	KPHS0044	2
15.	Stabilator Jig	KPHS0067-1	1
16.	Stabilator Jig	KPHS0067-2	1
17.	Stabilator Jig	KPHS0067-3	6
18.	Stabilator Jig	KPHS0067-4	2
19.	Stabilator Jig - Spacer Block	KPHS0067-5	2
20.	Stabilator Jig - Spacer Block	KPHS0067-6	2
21.	Stabilator Jig - Spacer Block	KPHS0067-7	2
22.	Stabilator Jig - Spacer Block	KPHS0067-8	4
23.	Stabilator Jig - Angle	KPHS0068	2



* RIVETS THROUGH KPHS0062-L/R

RRR008 S-19 VENTERRA
STABILATOR FRAME ASSEMBLY #2

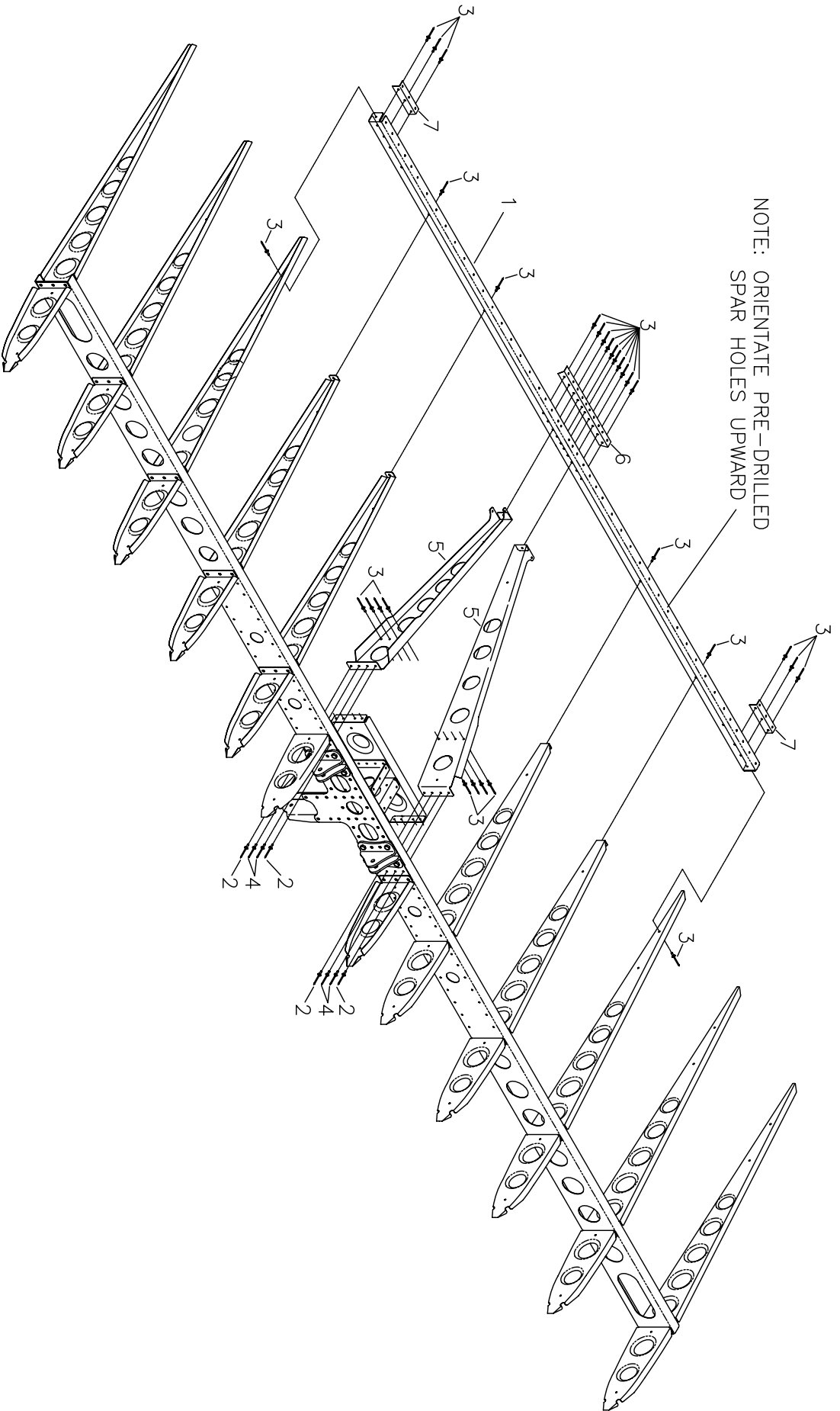
MD4781

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Rear Balance Tube Attach	KPHS0059	2
2.	Torque Box Channel	KPHS0046	1
3.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-42	15
4.	Actuator Horn - LH	KPHS0056-L	1
4.	Actuator Horn - RH	KPHS0056-R	1
5.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-44	17
6.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-43	6
7.	Lead Balance Weight ***	-----	0
8.	3/16" Thick Washer	AN960-10	2
9.	3/16" Shear Nut	AN364-1032A	3
10.	Channel - Stabilator	KPHS0057	1
11.	Balance Arm	KPHS0060	1
12.	3/16" Bolt	AN3-15A	3
13.	3/16" Thin Washer	AN960-10L	2
14.	Horn Reinforcement *	KPHS0074	1
15.	1/4" x .028 x 7/8" Bushing **	KAAC0044-2	0

* Builder modifies. ** Builder fabricates from raw stock.

*** Builder Supplied

NOTE: ORIENTATE PRE-DRILLED
SPAR HOLES UPWARD



RRRNDG S-19 VENTERRA
STABILATOR FRAME ASSEMBLY #3

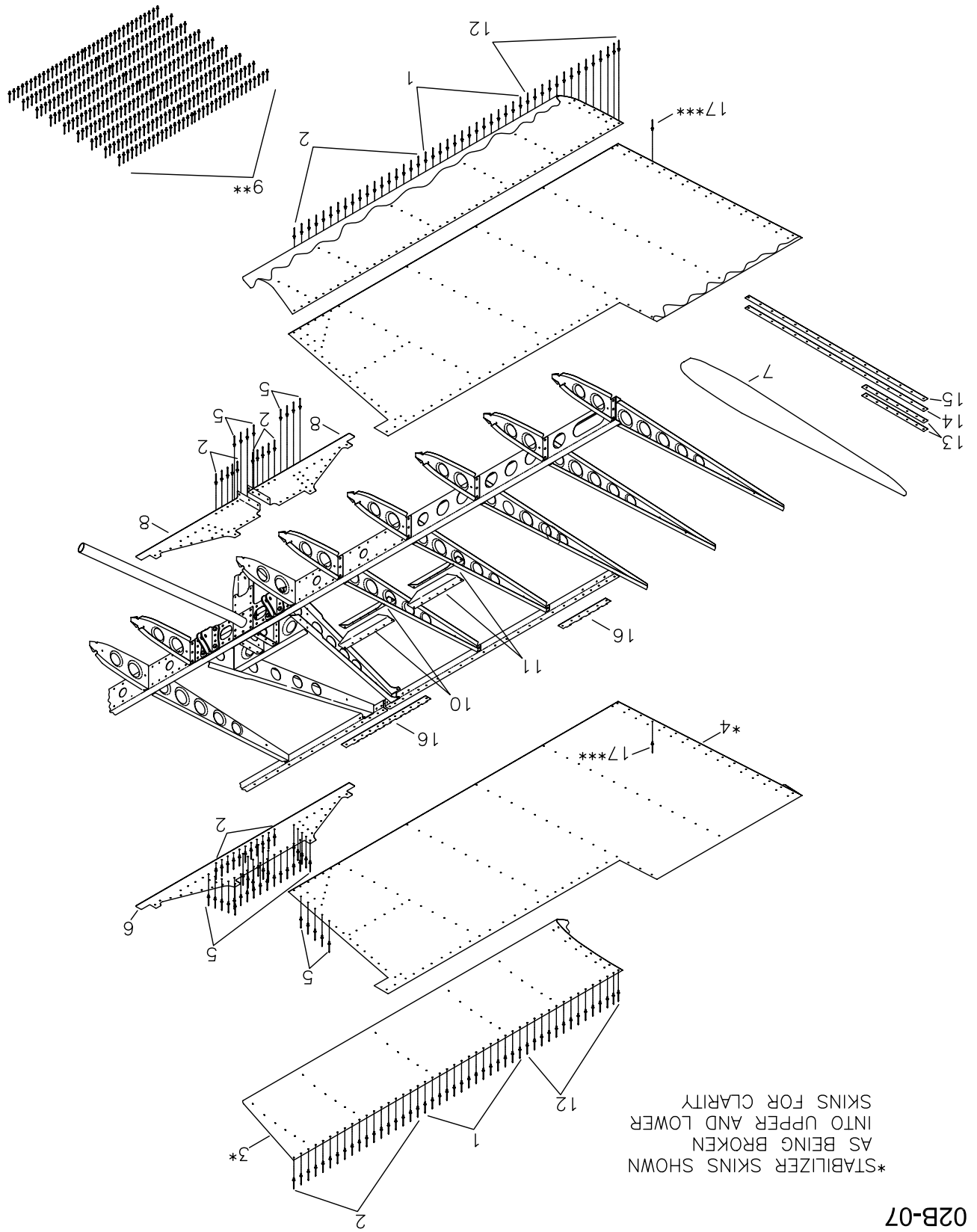
MD4781

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Stabilator - Rear Spar	KPHS0078	1
2.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-43	4
3.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-41	30
4.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-42	4
5.	Stabilator Rib - #1	KPHS0079	2
6.	Stabilator Hinge Support - Inner	KPHS0048	1
7.	Stabilator Hinge Support - Outer	KPHS0049	2

RANDS S-19 VENTERA STABILATOR SKIN INSTALLATION

MD4782

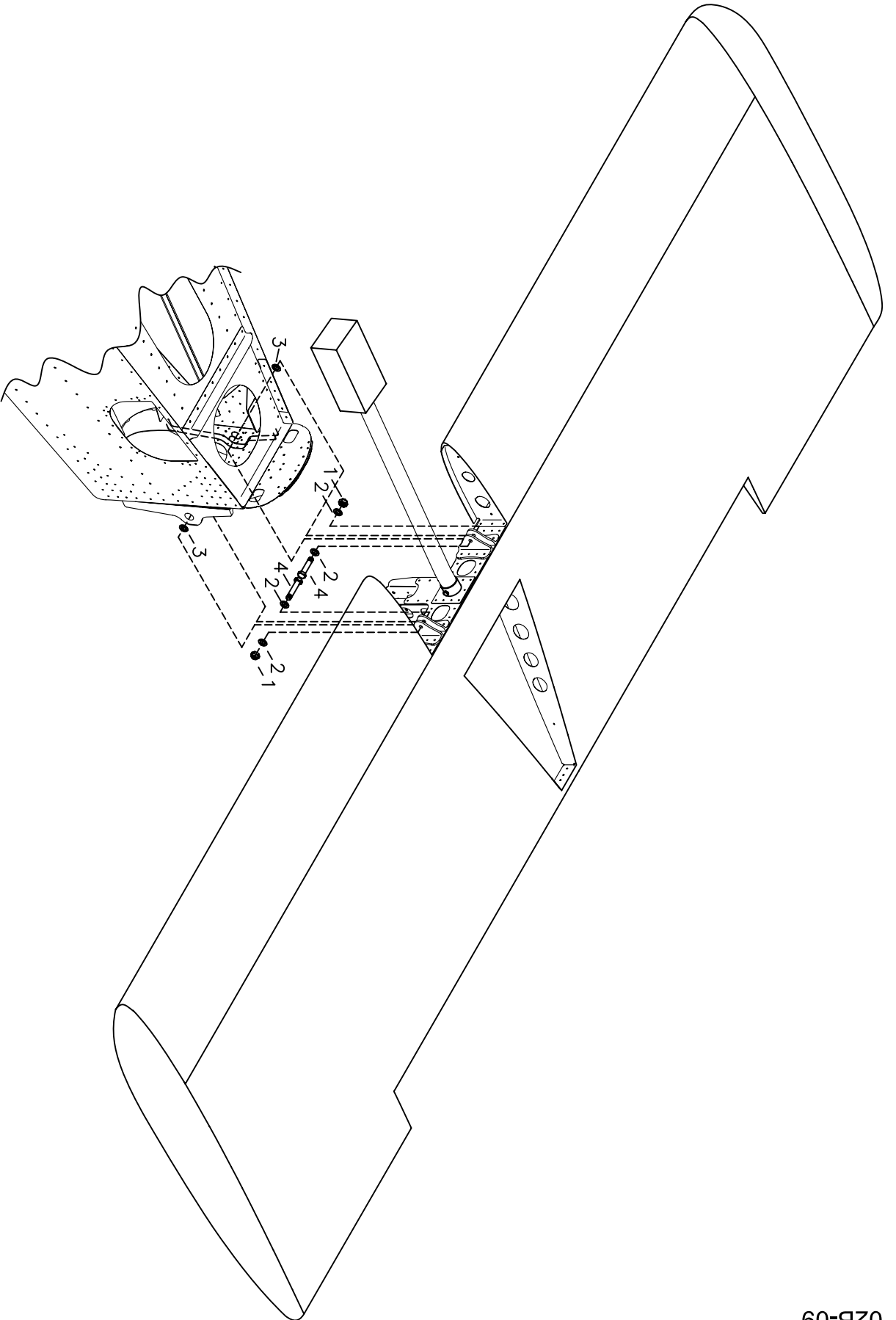
** RIVET AS SHOWN (ALL OTHER RIVETS AVE X 1691-410)
*** TYPICAL RIVET FOR STABILATOR TIP ATTACHMENT



*STABILIZER SKINS SHOWN AS BEING BROKEN INTO UPPER AND LOWER SKINS FOR CLARITY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" Aluminum Rivet - Cherry Q	AAPQ-43	65
2.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-44	110
3.	Stabilator Skin - FWD	KPHS0063	2
4.	Stabilator Skin - AFT - LH	KPHS0064-L	1
4.	Stabilator Skin - AFT - RH	KPHS0064-R	1
5.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-42	45
6.	Stabilator Plate - Top	KPHS0061	1
7.	Stabilator Tip	KPHS0066	2
8.	Stabilator Plate - Bottom - LH	KPHS0062-L	1
8.	Stabilator Plate - Bottom - RH	KPHS0062-R	1
9.	1/8" Aluminum Rivet - Avex	1691-0410	942
10.	Skin Stiffener #1 *	KPHS0065	1
11.	Skin Stiffener #2 *	KPHS0069	1
12.	1/8" Aluminum Rivet - Cherry Q	AAPQ-42	60
13.	Stabilator Tip Stiffener Strip	KPHS0070-1	4
14.	Stabilator Tip Stiffener Strip	KPHS0070-2	2
15.	Stabilator Tip Stiffener Strip	KPHS0070-3	2
16.	Trim Tab Hinge *	KPHS0080	1
17.	3/32" Aluminum Rivet	40APR1/8	88

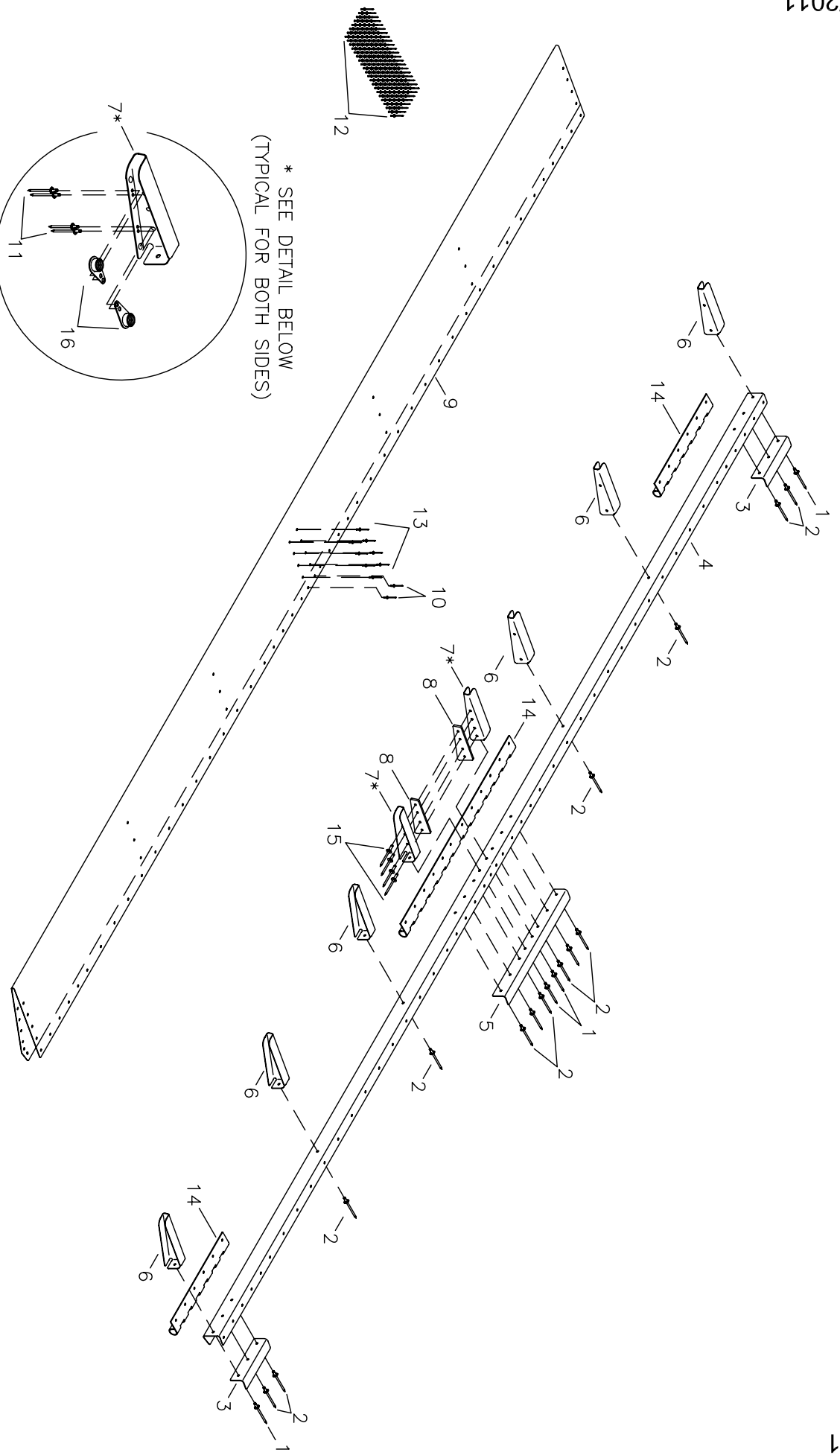
* Builder modifies.



RRR0008 S-19 VENTERRA
STABILATOR INSTALLATION

MD4965

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/4" Shear Nut	AN364-428A	2
2.	1/4" Thin Washer	AN960-416L	4
3.	1/4" Thick Washer	AN960-416	2
4.	1/4" Bolt	AN4-11A	2



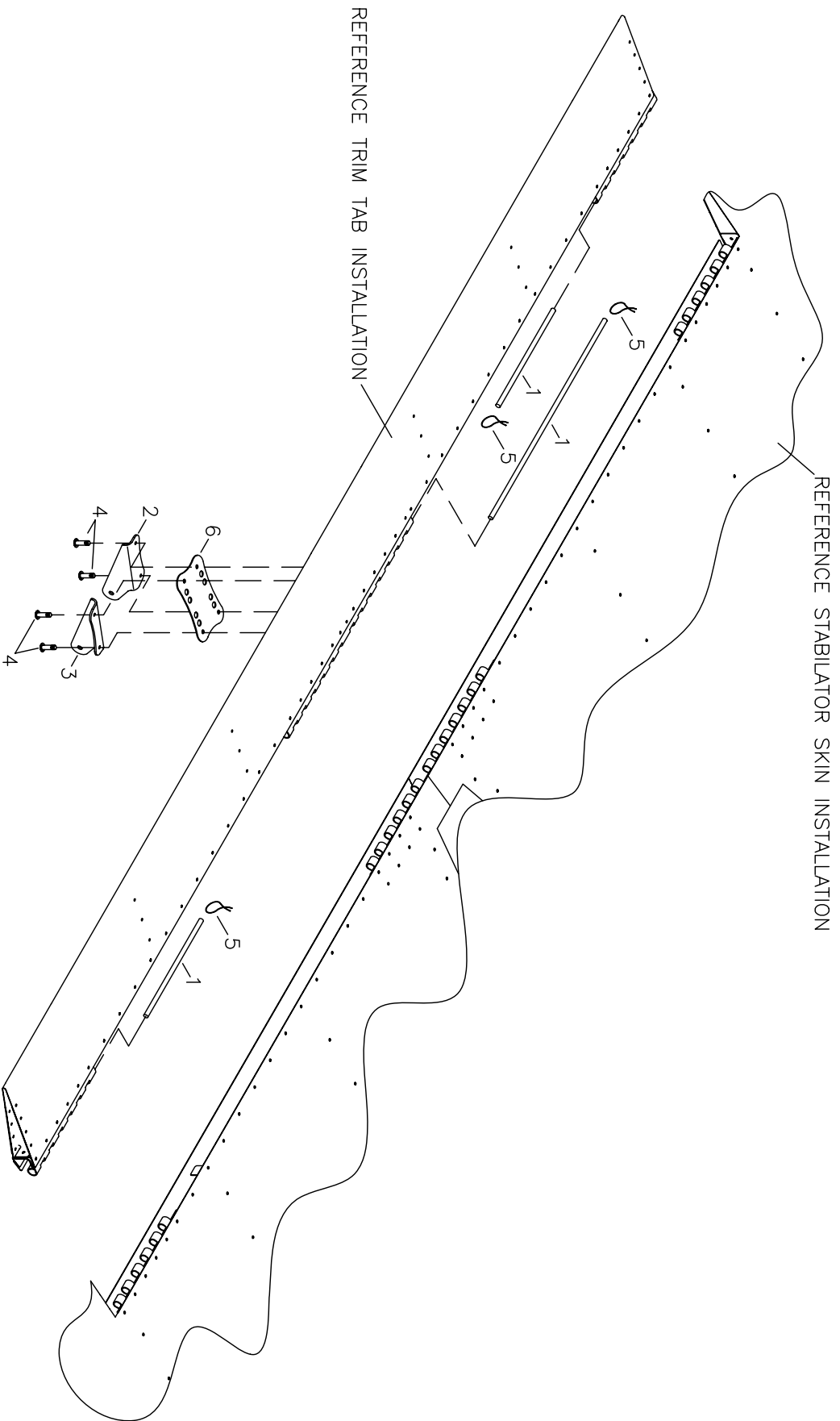
* SEE DETAIL BELOW
(TYPICAL FOR BOTH SIDES)

RRRPNDS S-19 VENTERRA
ANTI-SERVO/TRIM TAB ASSEMBLY

MD5011

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" Aluminum Rivet - Cherry Q	AAPQ-42	4
2.	1/8" Aluminum Rivet - Cherry Q	AAPQ-41	14
3.	Trim Tab Hinge Support	KPTR0037	2
4.	Trim Tab Spar	KPTR0052	1
5.	Trim Tab Hinge Support	KPTR0036	1
6.	Trim Tab Rib - RH	KPTR0032-R	3
6.	Trim Tab Rib - LH	KPTR0032-L	3
7.	Trim Tab Rib - RH	KPTR0034-R	1
7.	Trim Tab Rib - LH	KPTR0034-L	1
8.	Spacer Plate *	KPTR0040	1
9.	Trim Tab Skin	KPTR0051	1
10.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-43	2
11.	3/32" Aluminum Rivet	40APR1/8	8
12.	1/8" Aluminum Rivet - Avex	1691-0410	160
13.	1/8" Stainless Steel Rivet - Cherry Q	CCPQ-42	10
14.	Trim Tab Hinge *	KPHS0080	0
15.	1/8" Aluminum Rivet - Cherry Q	AAPQ-45	4
16.	#8 Single-Ear Nut Plate	MS21051-08	4

* Builder modifies



RRRRII S-19 VENTERRA
ANTI-SERVO/TRIM TAB INSTALLATION

MD5012

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Trim Tab Hinge Pin *	KPHS0080	0
2.	Trim Tab Horn - LH	KPTR0046-L	1
3.	Trim Tab Horn - RH	KPTR0046-R	1
4.	#8 Trusshead Screw	AN526-832R6	4
5.	Safety Wire	-----	0
6.	Spacer Plate	KPTR0039	1

* Builder modifies