AD_____

(2)

MIPR NO: 92MM2594

TITLE: INTEGRATION OF THE MOLECULAR SIEVE OXYGEN GENERATING SYSTEM (MSOGS) INTO THE UH-60Q MEDEVAC BLACKHAWK

PRINCIPAL INVESTIGATOR: John Hight
Orlando Cordero-Montalvo

CONTRACTING ORGANIZATION: SERVAIR
Lexington Bluegrass Army Depot
Lexington, Kentucky 40511 -5125

REPORT DATE: March 11, 1994

TYPE OF REPORT: Final Report

PREPARED FOR: U.S. Army Medical Research, Development, Acquisition and Logistics Command (Provisional), Fort Detrick, Frederick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for public release; distribution unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	March 11, 1994	Final Report (8/24/92 - 5/30/93)

4. TITLE AND SUBTITLE
Integration of the Molecular Sieve Oxygen Generating System (MSOGS) into the UH-60Q Medevac Blackhawk

5. FUNDING NUMBERS
MIPR No.
92MM2594

63807A
30463807D836.JC.121
WUDA336079

6. AUTHOR(S)
John Hight
Orlando Cordero-Montalvo

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
SERVAIR
Lexington Bluegrass Army Depot
Lexington, Kentucky 40511-5125

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Medical Research, Development, Acquisition and Logistics Command (Provisional), ATTN: SGRD-RMI-S
Fort Detrick
Frederick, Maryland 21702-5012

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

A Molecular Sieve Oxygen Generated System (MSOGS) was integrated in the UH-60Q Medevac Helicopter as part of the requirements of this program. Support equipment for the system operation was also integrated in this effort. Problems such as intake air sources, air flow cooling and moisture build-up were addressed. Functional and performance tests were conducted by personnel from the United States Army Aeromedical Research Laboratory. As a result of the integration effort a more simple and efficient method of isntalling the MSOGS unit and its supporting systems will be developed. Emphasis will be on the servicing of the oxygen lines on the field to make the system user friendly.

14. SUBJECT TERMS	15. NUMBER OF PAGES
Oxygen, MSOGS, UH-60Q, RAII, MIPR	5
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

FOREWORD

Opinions, interpretations, conclusions and recommendations are those of the author and are not necessarily endorsed by the US Army.

____ Where copyrighted material is quoted, permission has been obtained to use such material.

____ Where material from documents designated for limited distribution is quoted, permission has been obtained to use the material.

____ Citations of commercial organizations and trade names in this report do not constitute an official Department of Army endorsement or approval of the products or services of these organizations.

____ In conducting research using animals, the investigator(s) adhered to the "Guide for the Care and Use of Laboratory Animals," prepared by the Committee on Care and Use of Laboratory Animals of the Institute of Laboratory Resources, National Research Council (NIH Publication No. 86-23, Revised 1985).

____ For the protection of human subjects, the investigator(s) adhered to policies of applicable Federal Law 45 CFR 46.

____ In conducting research utilizing recombinant DNA technology, the investigator(s) adhered to current guidelines promulgated by the National Institutes of Health.

____ In the conduct of research utilizing recombinant DNA, the investigator(s) adhered to the NIH Guidelines for Research Involving Recombinant DNA Molecules.

____ In the conduct of research involving hazardous organisms, the investigator(s) adhered to the CDC-NIH Guide for Biosafety in Microbiological and Biomedical Laboratories.

Accesion For	
NTIS CRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By	
Distribution /	
Availability Codes	
Dist	Avail and / or Special
A-1	

PI — Signature 3-11-94 Date

Table of contents

Introduction

The UH60Q Proof of Concept medical evacuation helicopter required the installation of a patient, continuous oxygen supply system. The Litton MSOGS (Molecular Sieve Oxygen Generating System) part no. 3261093, used on the F-15E, was selected by the United States Army Medical Research and Development Command to be incorporated in to the UH60Q package. Serv-Air Inc. had the tasking of installing this system on the UH60Q. All the functional and qualifications tests were done by the United States Army Aeromedical Research Laboratory. All the structural modifications and systems integration were done by Serv-Air Inc.

The systems integration performed by SAI included the design of the structural modifications required to install the system, the routing of oxygen lines to the delivery ports,power integration, and intake air supply. Materials selection, hardware and safety requirements such as airworthiness were also addressed. The installation of support systems like a purity sensor, flow regulator, heat exchanger, and shut-off valve were also part of the integration effort.

System layout description

The MSOGS unit is installed between STA 485 and STA 505 on WL 209, LBL 7.0, on the transition area of the aircraft. The unit is mounted on an aluminum honeycomb tray, which is supported by two extruded aluminum angles integrated to the basic airframe. This location was selected for easy maintenance and installation/ removal of the unit. Furthermore since the source of air supply is the APU bleed air tube, this location is ideal for that purpose.

In order to keep the intake air at a temperature of at least no more than 80 deg.F, and to reduce moisture build up due to condensation, a heat exchanger was installed. The heat exchanger is composed of a radiator/diffuser with a fan that discharges the warm air outboard. Aluminum extruded shapes are the main structural supports for the system. The heat exchanger is located at STA 468, WL 239, LBL 32.0.

A shut-off valve was installed to cut the air supply to the MSOGS from the APU intake in the event that more power was required to the aircraft engines. It is located at LBL 32.0, STA 468, WL 221. The shut-off valve is held in place by standard aluminum shapes.

An oxygen purity sensor monitors the concentration of oxygen delivered to the patient, which must be at least a 93% concentration of pure oxygen. Another support mechanism is the oxygen flow regulator. Its function is to ensure that oxygen is delivered at a rate of 27 liters per minute. It is located at STA 495, WL 220, RBL 29.5, which is opposite to the oxygen sensor position . The location of these support systems responded mainly to the space available and the routing of the system lines. The supporting structure for these two items consist of extruded aluminum shapes or formed aluminum parts integrated to the airframe and fastened with standard aircraft hardware.

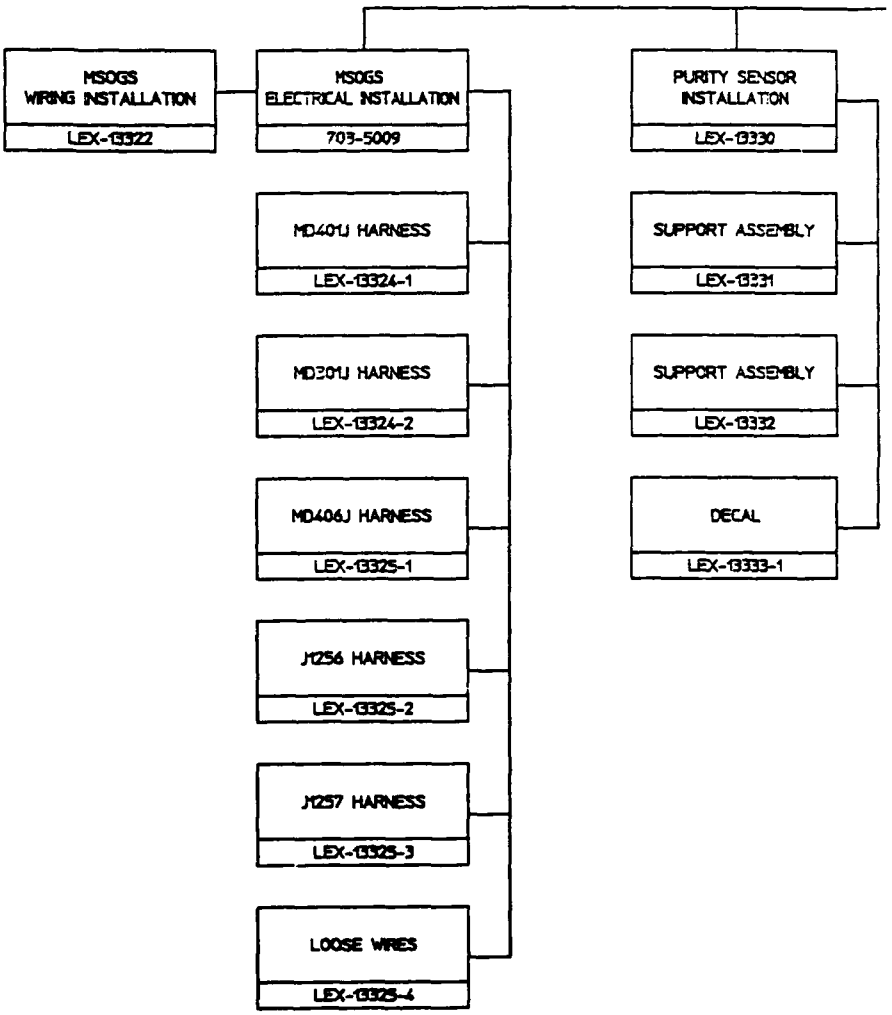
As a result of the amount of equipment installed for other systems, the routing developed for the oxygen lines was based on the space available for routing, but at the same time serviceability was an important factor too. The oxygen lines were made of 5052-0 aluminum tubing with diameters ranging from .50 in. to .375 in. and type 302/304 cres (corrosion resistant steel) with a diameter of .25 in. The fittings used to join the lines are standard AN and MS flared fittings.

Conclusions

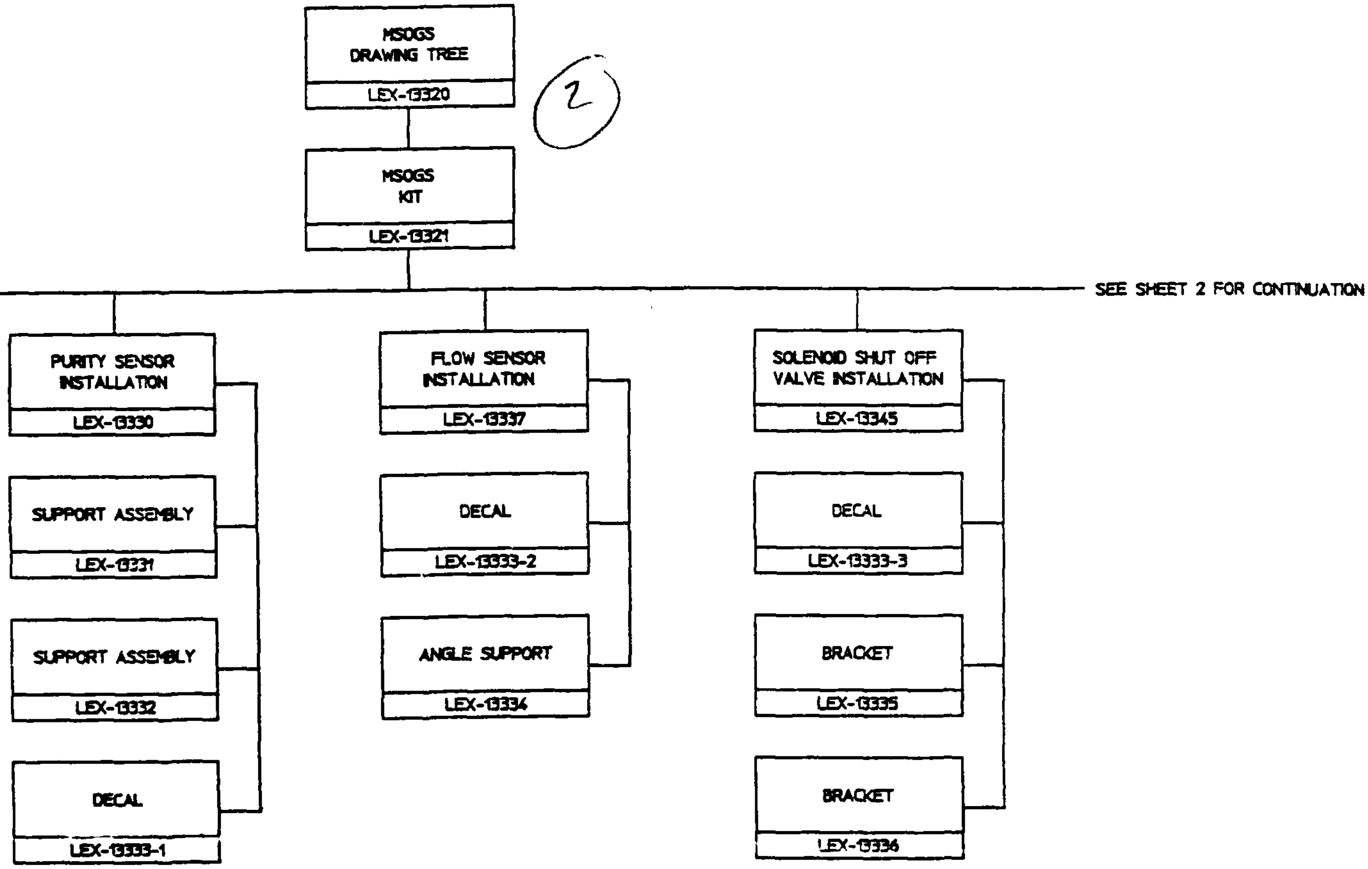
The integration of the MSOGS system on the UH60Q was acomplished without any major difficulties. A more efficient method of installing and servicing the oxygen lines is being explored. All other support systems locations make them user friendly for replacement and servicing.

NOTES

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12



CAD GENERATED


MSOGS DRAWING TREE
LEX-13320
MSOGS KIT
LEX-13321
SEE SHEET 2 FOR CONTINUATION
PURITY SENSOR INSTALLATION
LEX-13330
SUPPORT ASSEMBLY
LEX-13331
SUPPORT ASSEMBLY
LEX-13332
DECAL
LEX-13333-1
FLOW SENSOR INSTALLATION
LEX-13337
DECAL
LEX-13333-2
ANGLE SUPPORT
LEX-13334
SOLENOID SHUT OFF VALVE INSTALLATION
LEX-13345
DECAL
LEX-13333-3
BRACKET
LEX-13335
BRACKET
LEX-13336

REFERENCE
MAR 1 1 1994
ONLY

SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION

QUANTITY REQUIRED PER DASH NO. — PARTS LIST

UNLESS OTHERWISE SPECIFIED · NA · NA · NA

CONTRACT NO. DAAB07-90-Z-C008

S.L.H. 93-06-22
L.M. 93-12-07
O.C.H. 93-12-07

SERV-AIR, INC.
A SUBSIDIARY OF E-SYSTEMS

MSOGS
DRAWING TREE

UH-60Q
APPLICATION

D | 7S976 | LEX

NONE

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	92-08-12	

SEE SHEET 2 FOR CONTINUATION

- SOLENOID SHUT OFF VALVE INSTALLATION — LEX-13345
- DECAL — LEX-13333-3
- BRACKET — LEX-13335
- BRACKET — LEX-13336

SYM	NOMENCLATURE	USE ON	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	FIG NO.
	PARTS LIST						

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES — TOLERANCES ON FRACTIONS ± — DECIMALS .XX ± — .XXX ± — • NA .XX NA • NA .XXX

CONTRACT NO. DAAB07-90-Z-C008

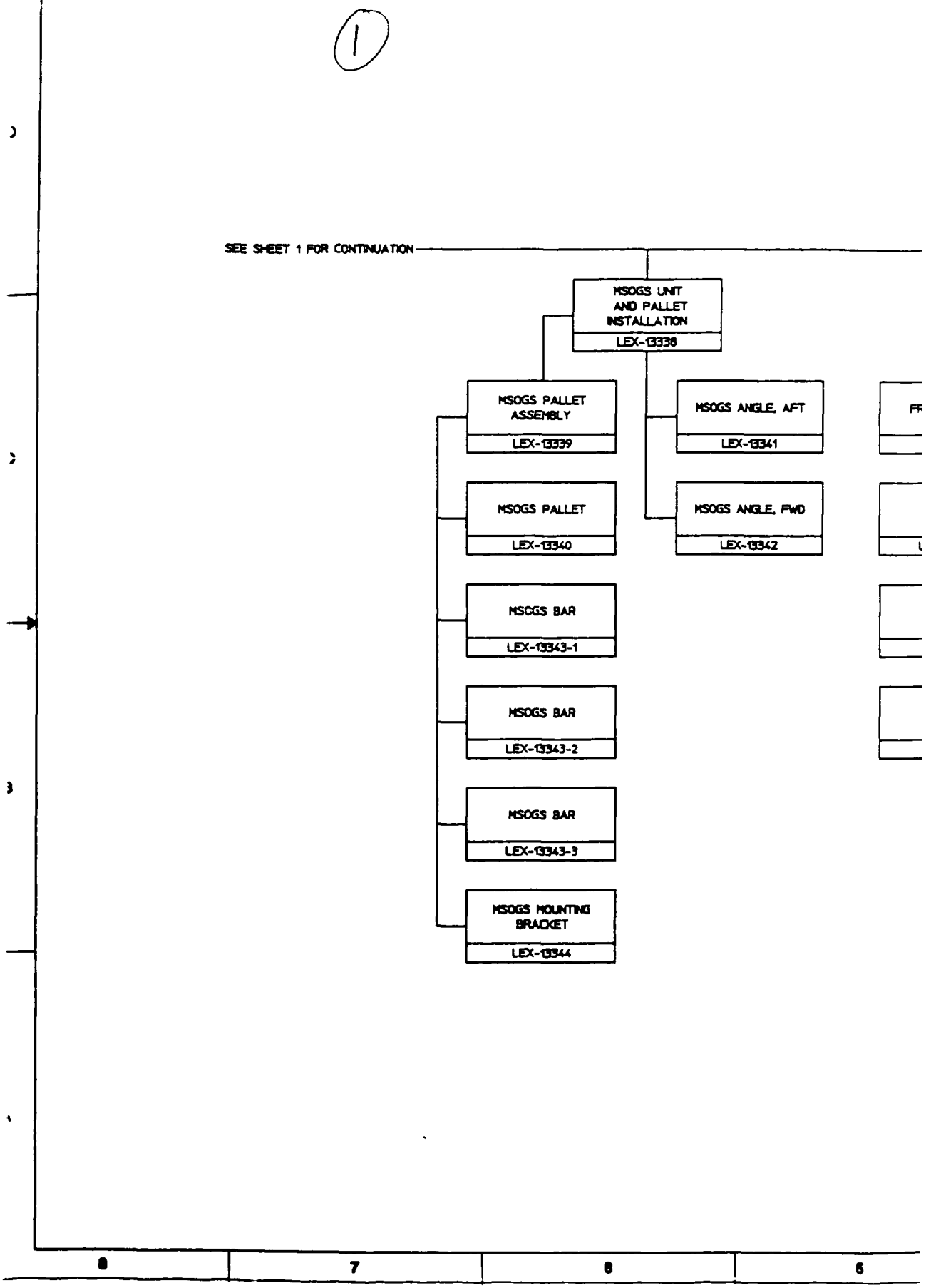
DR	S.L.H.	93-06-22
DES	L.H.	93-12-07
ENG	O.C.H.	93-12-07

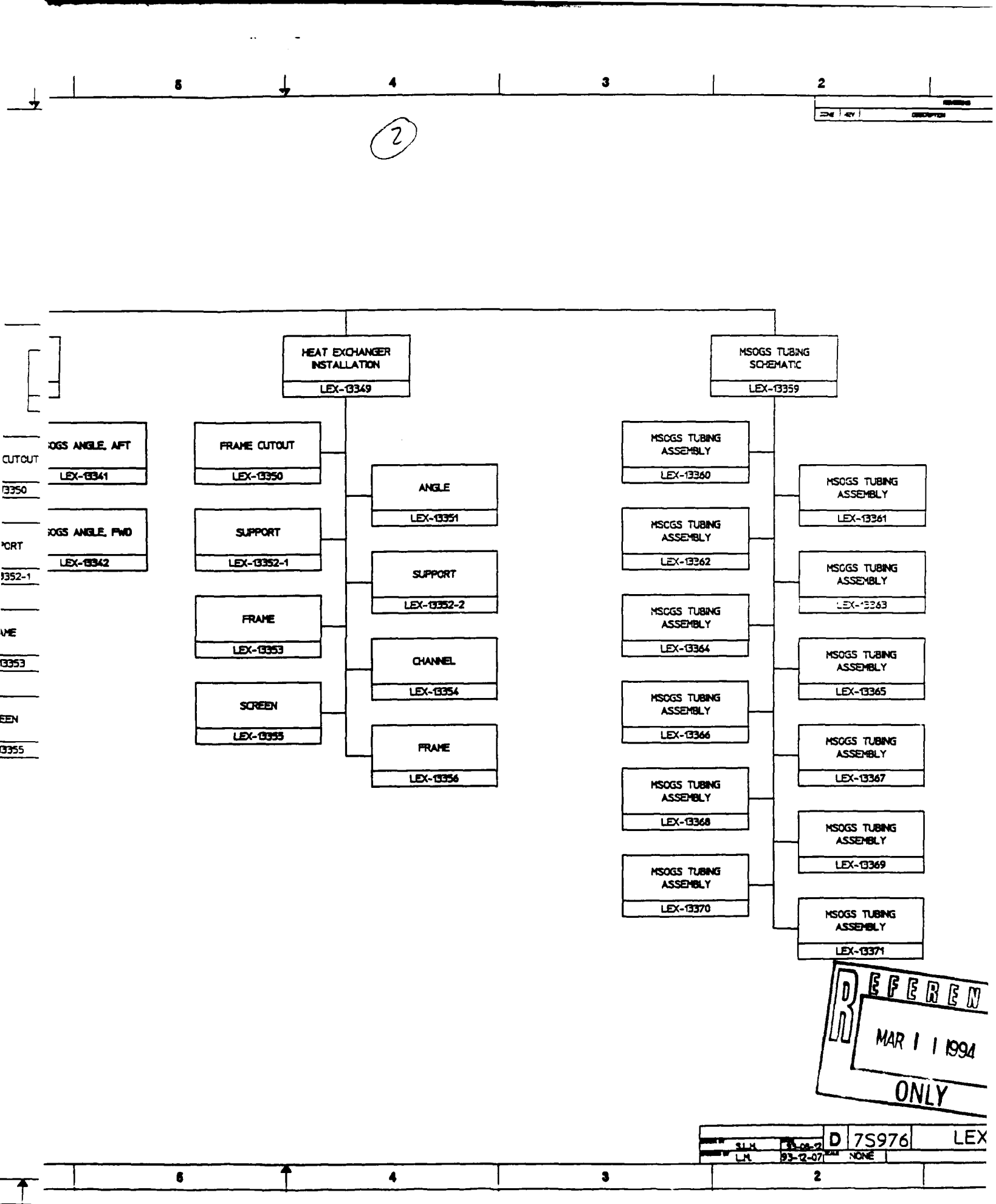
SERV-AIR, INC. SOPSA
A SUBSIDIARY OF E-SYSTEMS,INC. LBAD LEX, KY.

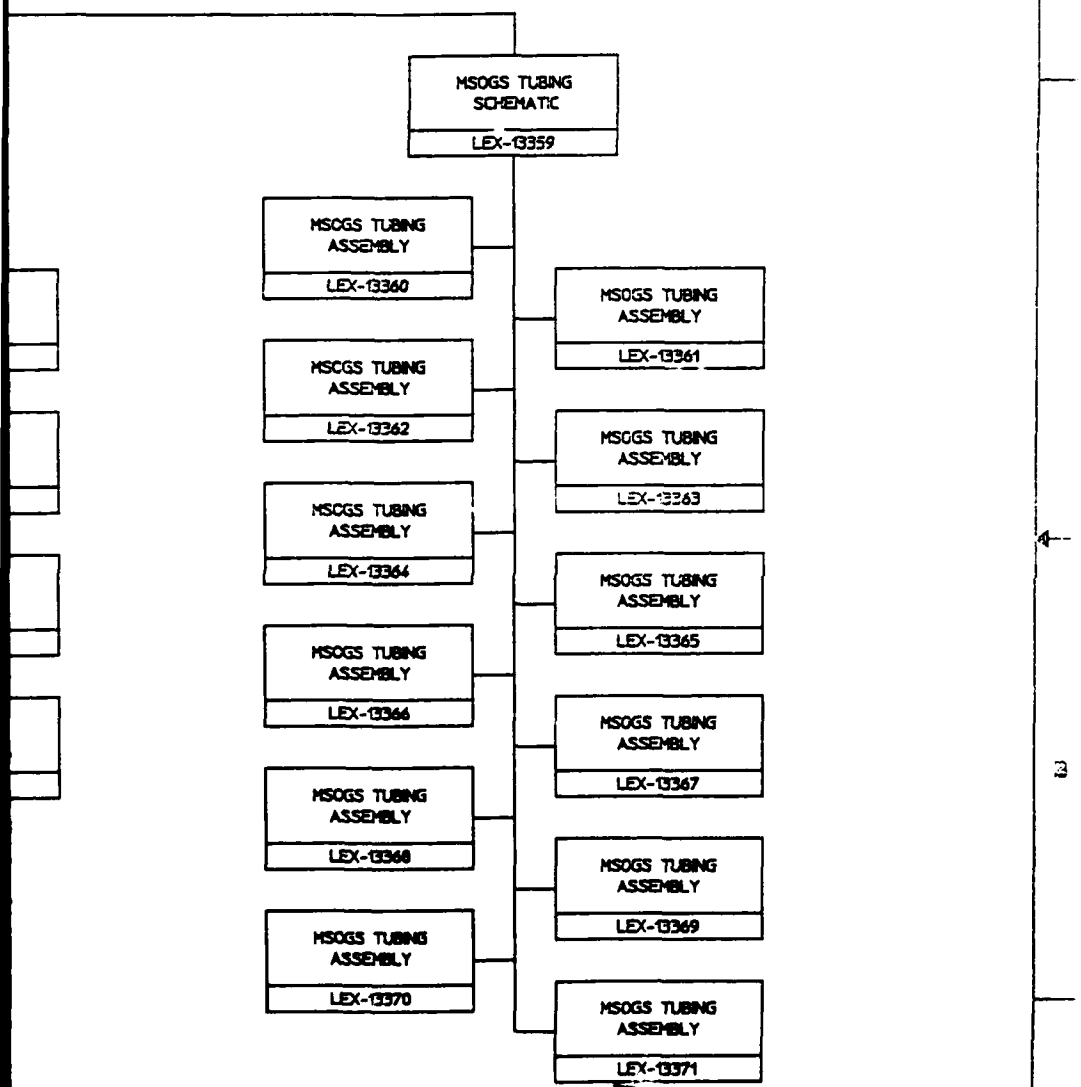
MSOGS
DRAWING TREE

SIZE	DRAWING NO.	REV
D	7S976	LEX-13320

NEXT ASSY NONE — SHEET 1 OF 2


8
7
6
5
1
SEE SHEET 1 FOR CONTINUATION
MSOGS UNIT AND PALLET INSTALLATION
LEX-13338
MSOGS PALLET ASSEMBLY
LEX-13339
MSOGS PALLET
LEX-13340
MSCGS BAR
LEX-13343-1
MSOGS BAR
LEX-13343-2
MSOGS BAR
LEX-13343-3
MSOGS MOUNTING BRACKET
LEX-13344
MSOGS ANGLE, AFT
LEX-13341
MSOGS ANGLE, FWD
LEX-13342
8
7
6
5


6
4
3
2
(2)
HEAT EXCHANGER INSTALLATION
LEX-13349
MSOGS TUBING SCHEMATIC
LEX-13359
OGS ANGLE, AFT
LEX-13341
OGS ANGLE, FWD
LEX-13342
FRAME CUTOUT
LEX-13350
SUPPORT
LEX-13352-1
FRAME
LEX-13353
SCREEN
LEX-13355
ANGLE
LEX-13351
SUPPORT
LEX-13352-2
CHANNEL
LEX-13354
FRAME
LEX-13356
MSOGS TUBING ASSEMBLY
LEX-13360
MSOGS TUBING ASSEMBLY
LEX-13362
MSOGS TUBING ASSEMBLY
LEX-13364
MSOGS TUBING ASSEMBLY
LEX-13366
MSOGS TUBING ASSEMBLY
LEX-13368
MSOGS TUBING ASSEMBLY
LEX-13370
MSOGS TUBING ASSEMBLY
LEX-13361
MSOGS TUBING ASSEMBLY
LEX-13363
MSOGS TUBING ASSEMBLY
LEX-13365
MSOGS TUBING ASSEMBLY
LEX-13367
MSOGS TUBING ASSEMBLY
LEX-13369
MSOGS TUBING ASSEMBLY
LEX-13371
REFEREN
MAR 1 1 1994
ONLY
S.L.H.
93-08-12
L.M.
93-12-07
D
7S976
LEX
NONE
6
4
3
2



S.L.H. 93-08-12	D	7S976	LEX-13320
L.M. 93-12-07	NONE		2 OF 2

8 7 6 5

(1)

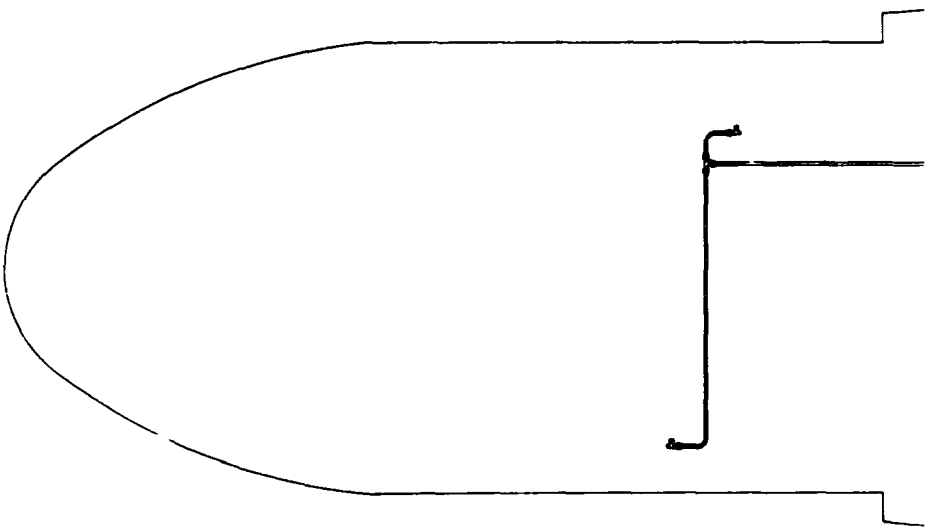
NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

D

C



VIEW LOOKING

B

A

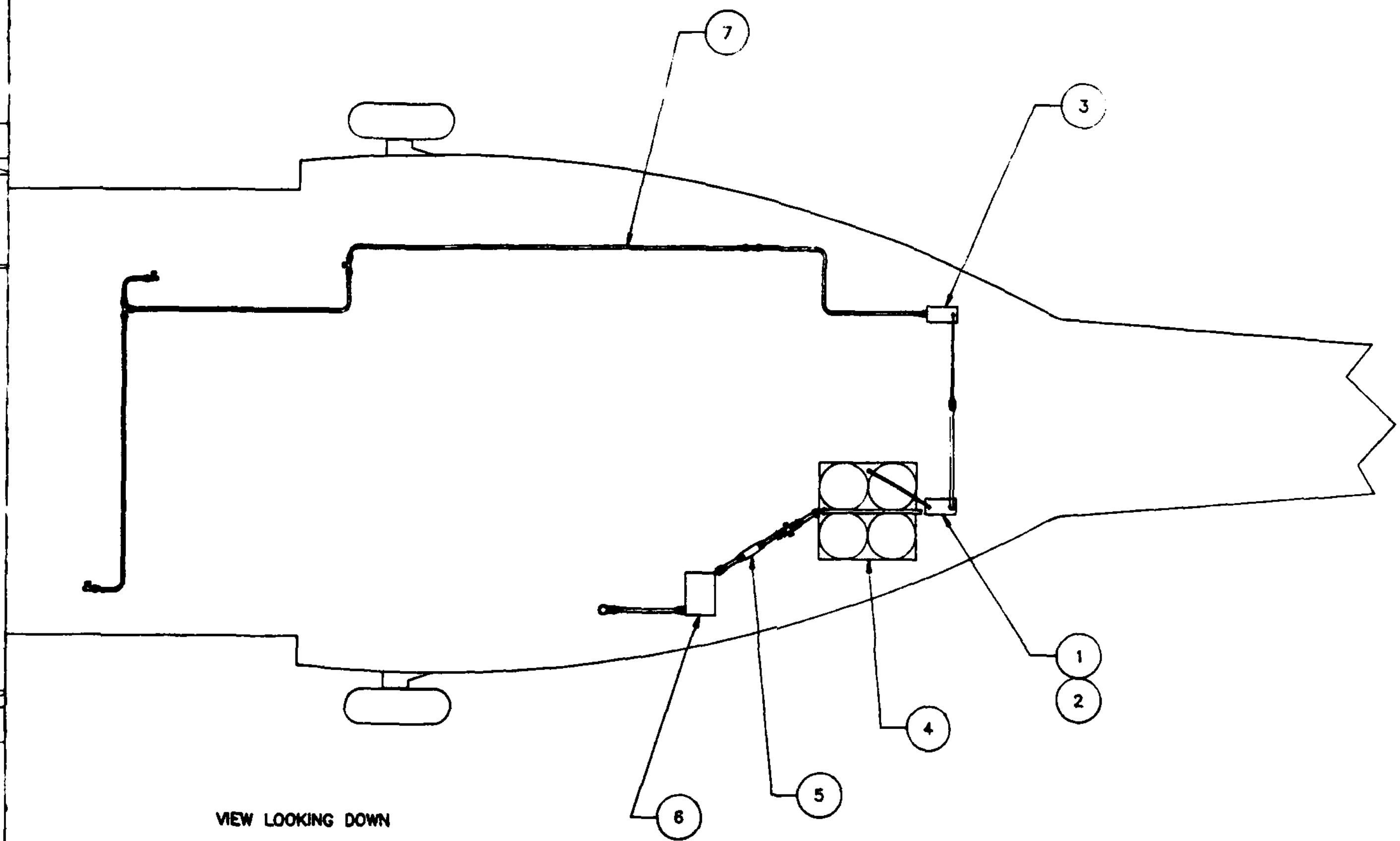
8 7 6 5

5	4	3	2

REVISIONS

ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)



VIEW LOOKING DOWN

	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL, SPECIF
1		MSOGS TUBING SCHEM		LEX-13359	
1		HEAT EXCHANGE INSTL		LEX-13349	
1		SOLENOID SHUT OFF VALVE INSTL		LEX-13345	
1		MSOG UNIT AND PALLET INSTL		LEX-13338	
1		FLOW SENSOR INSTL		LEX-13337	
1		PURITY SENSOR INSTL		LEX-13330	
1		MSOGS ELEC INSTL		703-5009	
X		MSOGS KIT		LEX-13321	

QUANTITY REQUIRED PER DASH NO

PARTS LIST

NEXT ASSEMBLY	USED ON
LEX-13320	UH-60Q

APPLICATION

CONTRACT NO. DAAB07-92-Z-B506

DR	W.B.H.	93-07-07
CHK	L.M.	93-08-18

SERV-AIR, A SUBSIDIARY OF E

MS K

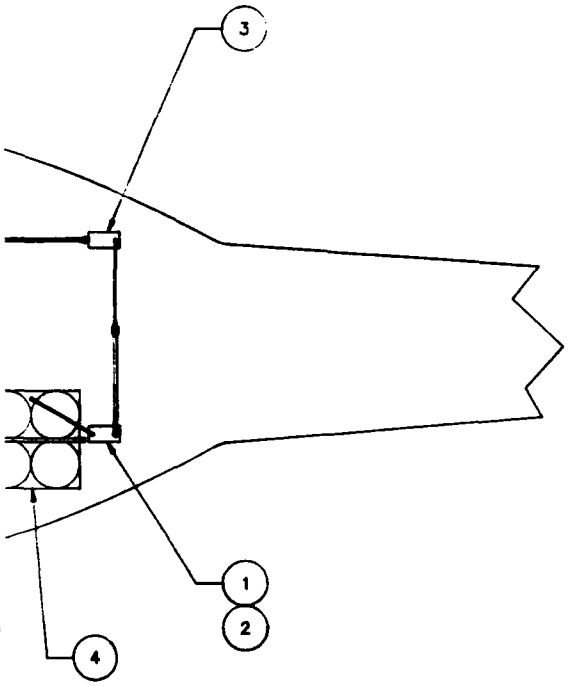
SIZE D | CAGE CODE NO. 7S976

SCALE NONE

5	4	3	2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-07	

(3)



ITEM	QTY	NOMENCLATURE	CAGE CODE	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	REF
7	1	MSOGS TUBING SCHEM		LEX-13359		EA		
6	1	HEAT EXCHANGE INSTL		LEX-13349		EA		
5	1	SOLENOID SHUT OFF VALVE INSTL		LEX-13345		EA		
4	1	MSOG UNIT AND PALLET INSTL		LEX-13338		EA		
3	1	FLOW SENSOR INSTL		LEX-13337		EA		
2	1	PURITY SENSOR INSTL		LEX-13330		EA		
1	1	MSOGS ELEC INSTL		703-5009		EA		
	X	MSOGS KIT		LEX-13321				

PARTS LIST

DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LEAD LEX, KY.

W.B.H. 93-07-07
L.M. 93-08-18

MSOGS
KIT

D 7S976 LEX-13321

NONE

SHEET 1 OF 1

8 7 6 5

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REFERENCE ELECTRICAL INSTALLATION, DWG 703-5009 FSCM 99251

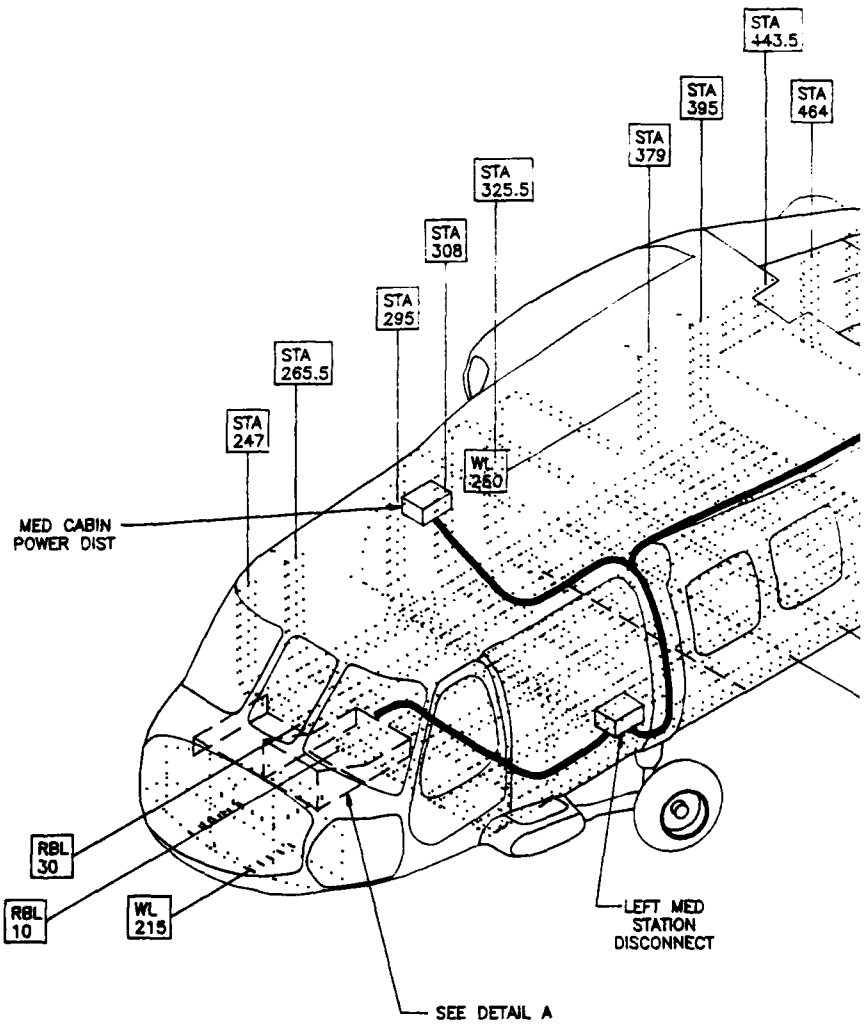
4. HARNESS INSTALLATION PER MIL-W-5088K

D

C

B

A

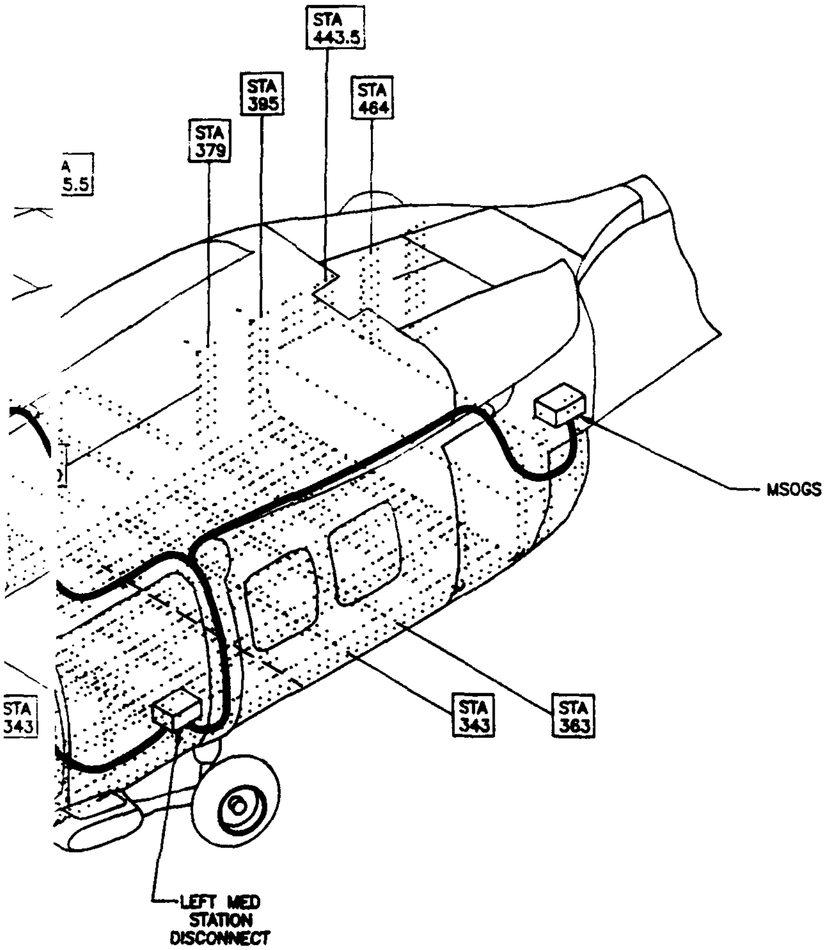


5	4	3	2

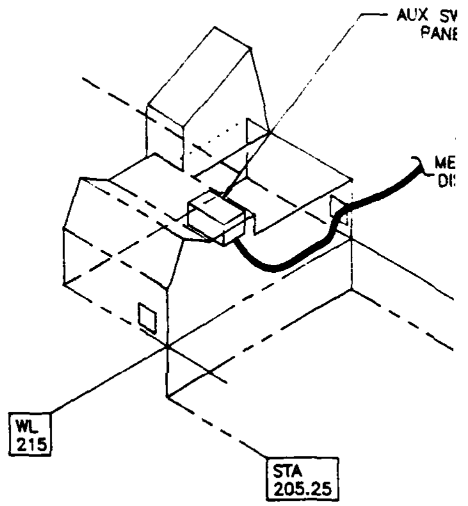
REVISIONS

ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)



TAIL A



DETAIL A
LOWER CONSOLE AND
INSTRUMENT PANEL

SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFIC

QUANTITY REQUIRED PER DASH NO — PARTS LIST

Contract No.	DAAB07-92-Z-B506
Dr.	W.B.H. 93-05-13
Chk.	L.M. 93-05-20

SERV-AIR, A SUBSIDIARY OF E

MS
WIRING IN

APPLICATION: 703-6000 | UH-60Q

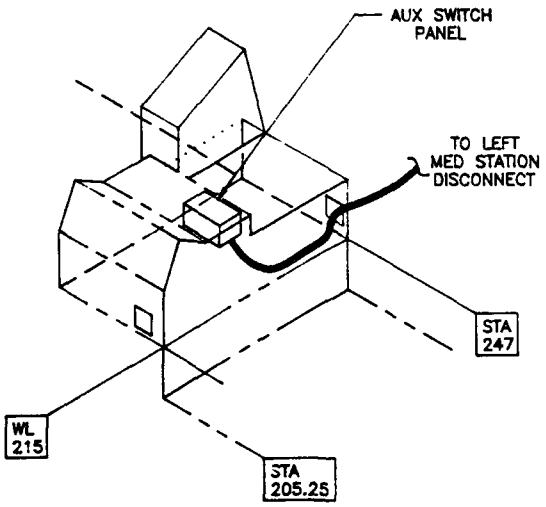
Size	Code Ident No.	Drawing No.
D	7S976	

SCALE NONE

5	4	3	2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-05-13	

(3)



DETAIL A
LOWER CONSOLE AND INSTRUMENT PANEL

ITEM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE
	PARTS LIST					

UNLESS OTHERWISE SPECIFIED	CONTRACT NO. DAAB07-92-Z-B506
	DR. W.B.H. 93-05-13
	CHK. L.M. 93-05-20
	APVD.
	SERV-AIR, INC. S.O.F.S.A. A SUBSIDIARY OF E-SYSTEMS, INC. LBAO LEX, KY.
	TITLE: MSOGS WIRING INSTALLATION
	SIZE D; CAGE DRAW NO. 7S976; DRAWING NO. LEX-13322
	NEXT ASSY NONE; SHEET 1 OF 1

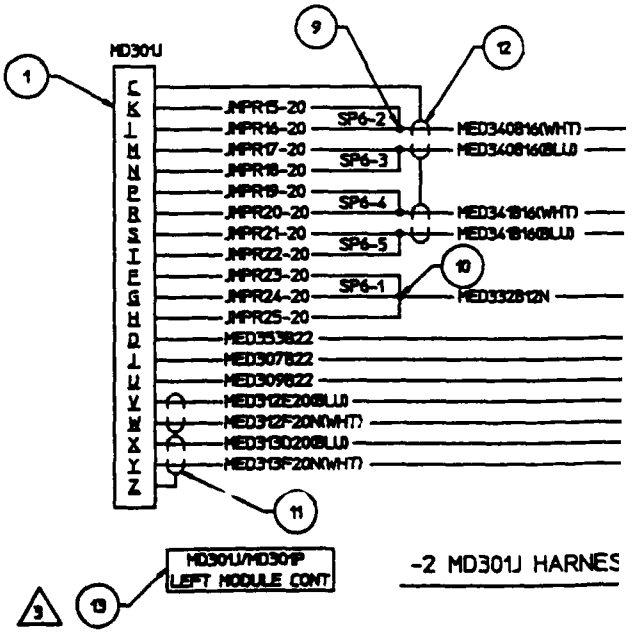
- MSOGS

NOTES:

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. STAMP CONNECTOR IDENTIFIER(S) AS SHOWN PER MIL-STD-130
4. FABRICATE AND INSPECT PER MIL-W-5088L

WIRE TABLE				
WIRE NO.	FROM	TO	FND	LENGTH
JMPR7-20	MD401J-AA	SP5-1	3	6"
MED422G16	SP5-1	SP5-5	5	500"
JMPR8-20	MD401J-BB	SP5-1	3	6"
JMPR9-20	MD401J-CC	SP5-2	3	6"
MED422B16	SP5-2	SP5-6	5	500"
JMPR10-20	MD401J-DD	SP5-2	3	6"
JMPR11-20	MD401J-EE	SP5-3	3	6"
MED403G16	SP5-3	SP5-7	5	500"
JMPR12-20	MD401J-FF	SP5-3	3	6"
JMPR13-20	MD401J-GG	SP5-4	3	6"
MED403B16	SP5-4	SP5-8	5	500"
JMPR14-20	MD401J-HH	SP5-4	3	6"
MED401B22	MD401J-T	SP4-1	4	500"
MED417B20	MD401J-U	MD406J-U	7	500"
MED41ME20(BLU)	MD401J-V	MD411P	8	500"
MED41F20N(WHT)	MD401J-W	MD411P	8	500"
MED412D20(BLU)	MD401J-X	MD411P	8	500"
MED412F20N(WHT)	MD401J-Y	MD411P	8	500"

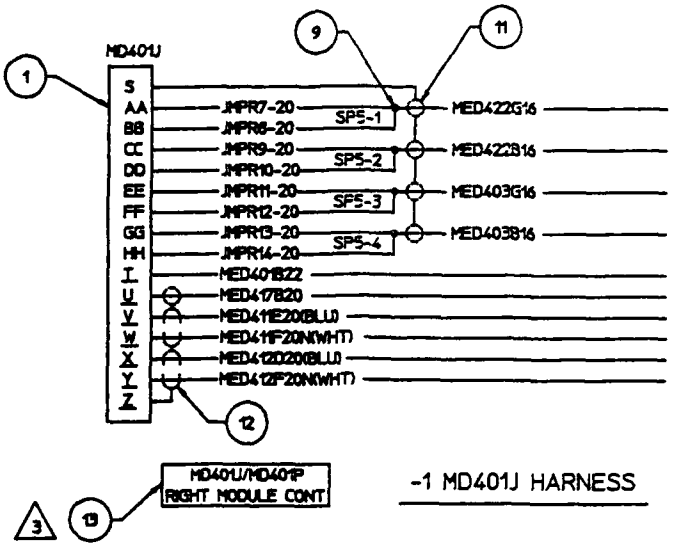
WIRE TABLE				
WIRE NO.	FROM	TO	FND	LENGTH
JMPR15-20	MD301U-K	SP6-2	3	6"
JMPR16-20	MD301U-L	SP6-2	3	6"
MED340B16(WHT)	SP6-2	SP6-7	6	500"
JMPR17-20	MD301U-M	SP6-3	3	6"
MED340B16(BLU)	SP6-3	SP6-8	6	500"
JMPR18-20	MD301U-N	SP6-3	3	6"
JMPR19-20	MD301U-P	SP6-4	3	6"
JMPR20-20	MD301U-R	SP6-4	3	6"
MED341B16(WHT)	SP6-4	SP6-9	6	500"
JMPR21-20	MD301U-S	SP6-5	3	6"
MED341B16(BLU)	SP6-5	SP6-10	6	500"
JMPR22-20	MD301U-T	SP6-5	3	6"
JMPR23-20	MD301U-E	SP6-1	3	6"
JMPR24-20	MD301U-G	SP6-1	3	6"
MED332B12N	SP6-1	SP6-6	2	500"
JMPR25-20	MD301U-H	SP6-1	3	6"
MED353B22	MD301U-D	MD401J-D	4	500"
MED307B22	MD301U-J	MD4302-J	4	500"
MED309B22	MD301U-U	SP4-1	4	500"
MED312E20(BLU)	MD301U-V	MD309P	8	500"
MED312F20N(WHT)	MD301U-W	MD309P	8	500"
MED313D20(BLU)	MD301U-X	MD309P	8	500"
MED313F20N(WHT)	MD301U-Y	MD309P	8	500"



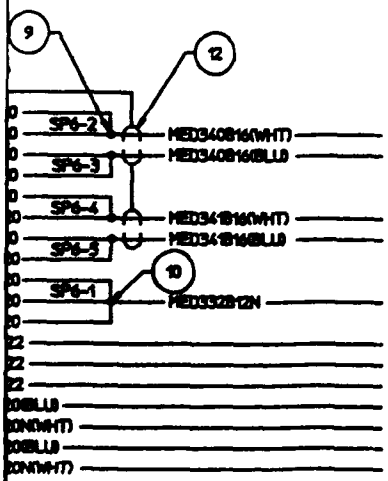
-2 MD301J HARNES

ZONE	REV	DESCRIPTION
		CAD GENERATED

WIRE TABLE			
FROM	TO	FIND	LENGTH
MD401J-AA	SP5-1	3	6"
SP5-1	SP5-5	5	500"
MD401J-BB	SP5-1	3	6"
MD401J-CC	SP5-2	3	6"
SP5-2	SP5-6	5	500"
MD401J-DD	SP5-2	3	6"
MD401J-EE	SP5-3	3	6"
SP5-3	SP5-7	5	500"
MD401J-FF	SP5-3	3	6"
MD401J-GG	SP5-4	3	6"
SP5-4	SP5-8	5	500"
MD401J-HH	SP5-4	3	6"
MD401J-T	SP4-1	4	500"
MD401J-U	MD406J-U	7	500"
MD401J-V	MD411P	8	500"
MD401J-W	MD411P	8	500"
MD401J-X	MD411P	8	500"
MD401J-Y	MD411P	8	500"



-1 MD401J HARNESS



-2 MD301J HARNESS

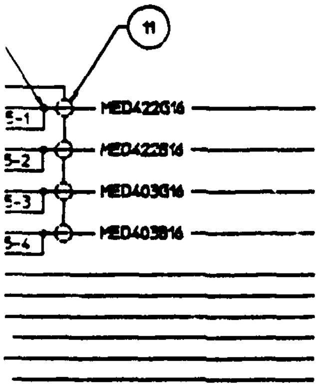
QUANTITY REQUIRED PER DASH NO.			SYM	NOMENCLATURE	USE CODE	IDENTIFYING NO.	MATERIAL/SPECIFICATION
157	84			I.D. SLEEVE		M23053/5-108-9	MIL-I-23053
2	3			SHIELD TERMINATOR		M83519/2-10	MIL-S-83519
2	4			SHIELD TERMINATOR		M83519/2-8	MIL-S-83519
1				SPLICE	06090	D-436-53	
4	4			SPLICE		M81824/1-2	MIL-S-81824
1000	1000			CABLE, SHIELDED		M27500-20SP2S23	MIL-C-27500
	500			CABLE, SHIELDED		M27500-20SP1S23	MIL-C-27500
1000				CABLE, SHIELDED		M27500-16SP2S23	MIL-C-27500
	2000			CABLE, SHIELDED		M27500-16SP1S23	MIL-C-27500
1500	500			WIRE, 22 AWG		M22759/43-22-9	MIL-W-22759
66	48			WIRE, 20 AWG		M22759/43-20-9	MIL-W-22759
500				WIRE, 12 AWG		M22759/43-12-9	MIL-W-22759
1	1			CONNECTOR		MS3122E22-55P	MIL-W-22759
X				MD301J HARNESS		LEX-13324-2	
	X			MD401J HARNESS		LEX-13324-1	

PARTS LIST

UNLESS OTHERWISE SPECIFIED	CONTRACT NO. DAAB07-92-Z-8506
FINISH	S.L.H. 93-02-16
	L.M. 93-12-07
	Q.C.M. 93-12-07
703-5009 UH-400 APPLICATION	SERV-AIR, INC. A SUBSIDIARY OF E-SYSTEMS
	MSOGS HARNESS
	D 7S976 LEX-13
	NONE

			REVISIONS	
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-02-16	

(3)



-1 MD401J HARNESS

167	84		I.D. SLEEVE		M23053/5-108-9	MIL-I-23053	IN		13
2	3		SHIELD TERMINATOR		M83519/2-10	MIL-S-83519	EA		12
2	4		SHIELD TERMINATOR		M83519/2-8	MIL-S-83519	EA		11
1			SPLICE	06090	D-436-53		EA		10
4	4		SPLICE		M81824/1-2	MIL-S-81824	EA		9
1000	1000		CABLE, SHIELDED		M27500-20SP2S23	MIL-C-27500	IN		8
	500		CABLE, SHIELDED		M27500-20SP1S23	MIL-C-27500	IN		7
1000			CABLE, SHIELDED		M27500-16SP2S23	MIL-C-27500	IN		6
	2000		CABLE, SHIELDED		M27500-16SP1S23	MIL-C-27500	IN		5
1500	500		WIRE, 22 AWG		M22759/43-22-9	MIL-W-22759	IN		4
66	48		WIRE, 20 AWG		M22759/43-20-9	MIL-W-22759	IN		3
500			WIRE, 12 AWG		M22759/43-12-9	MIL-W-22759	IN		2
1	1		CONNECTOR		M83723/22-55P	MIL-W-22759	EA		1
X			MD501J HARNESS		LEX-13324-2				-
	X		MD401J HARNESS		LEX-13324-1				-
		SYM	NOMENCLATURE	CAGE CODE	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	FIND NO.

PARTS LIST

CONTRACT NO. DAAB07-92-Z-B506

SERV-AIR, INC.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX. KY.

S.L.H. 93-02-16
L.H. 93-12-07
O.C.M. 93-12-07

FINISH

MSOGS
HARNESS

D 7S976 LEX-13324

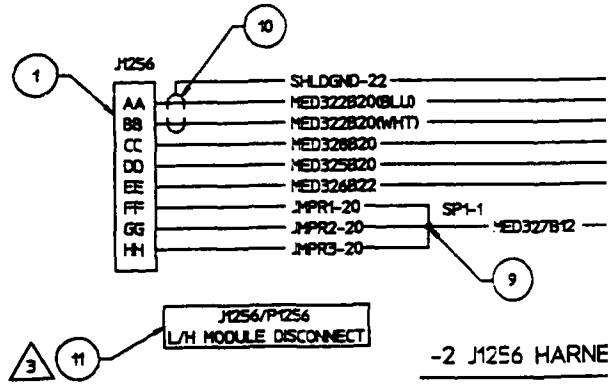
SCALE NONE SHEET 1 OF 1

NOTES:

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. STAMP CONNECTOR IDENTIFIER(S) AS SHOWN PER MIL-STD-130
4. FABRICATE AND INSPECT PER MIL-W-5088L

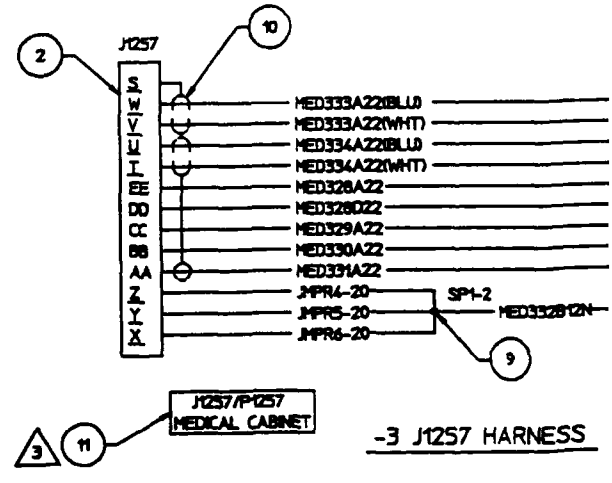
WIRE TABLE			
WIRE NO.	FROM	TO	FIND
MED413822	MD406J-T	SP4-1	5
MED417G20(BLU)	MD406J-V	MD413P	7
MED417H20N(WHT)	MD406J-W	MD413P	7
MED418D20(BLU)	MD406J-X	CAP	7
MED418E20N(WHT)	MD406J-Y	CAP	7

WIRE TABLE				
WIRE NO.	FROM	TO	FIND	LENGTH
SHLDGND-22	SHIELD	GND	5	72"
MED322B20(BLU)	J1256-AA	RELAY	7	500"
MED322B20(WHT)	J1256-BB	RELAY	7	500"
MED328B20	J1256-CC	RELAY-X1	4	500"
MED325B20	J1256-DD	P1259-A	4	500"
MED326B22	J1256-EE	P1260-3	5	500"
JMPR1-20	J1256-FF	SP1-1	4	6"
JMPR2-20	J1256-GG	SP1-1	4	6"
MED327B12	SP1-1	SP1-2	3	500"
JMPR3-20	J1256-HH	SP1-1	4	6"



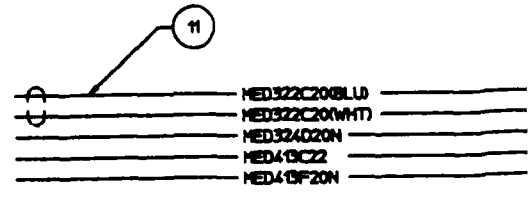
-2 J1256 HARNE

WIRE TABLE				
WIRE NO.	FROM	TO	FIND	LENGTH
MED333A22(BLU)	J1257-W	P1261-2	8	500"
MED333A22(WHT)	J1257-V	P1261-10	8	500"
MED334A22(BLU)	J1257-U	P1261-2	8	500"
MED334A22(WHT)	J1257-T	P1261-1	8	500"
MED328A22	J1257-EE	ENSW-1	5	500"
MED328D22	J1257-DD	RELAY-X2	5	500"
MED329A22	J1257-CC	P1258-2	5	500"
MED330A22	J1257-BB	P1259-C	5	500"
MED331A22	J1257-AA	P1259-D	6	500"
JMPR4-20	J1256-Z	SP1-2	4	6"
JMPR5-20	J1257-Y	SP1-2	4	6"
MED332B12N	SP1-2	MEDTB-3	3	500"
JMPR6-20	J1257-X	SP1-2	4	6"



-3 J1257 HARNESS

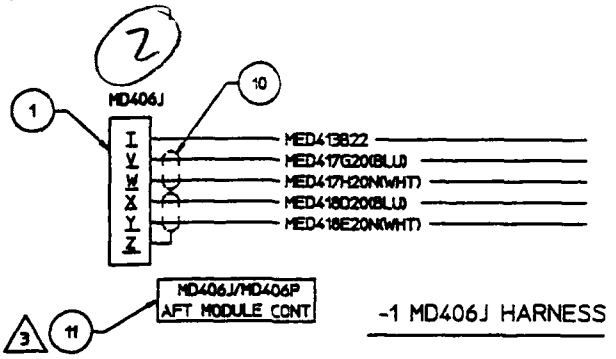
WIRE TABLE				
WIRE NO.	FROM	TO	FIND	LENGTH
MED322C20(BLU)	RELAY	P1258-12	7	72"
MED322C20(WHT)	RELAY	P1258-13	7	72"
MED324D20N	ENSW-2	GND	4	72"
MED413C22	SP4-1	P1088-J	5	500"
MED413F20N	GND	P1088-K	4	500"



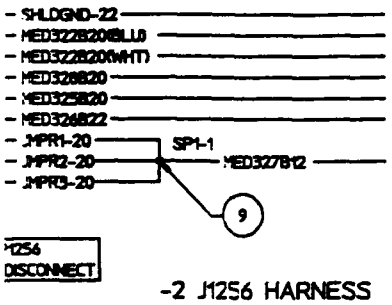
-4 LOOSE WIRES

ZONE	REV	DESCRIPTION
		CAD GENERATED

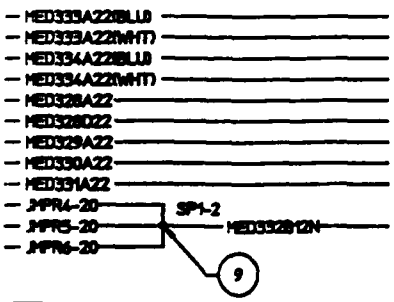
WIRE TABLE				
NO.	FROM	TO	FIND	LENGTH
2	MD406J-I	SP4-1	5	500"
0(BLU)	MD406J-V	MD413P	7	500"
0N(WHT)	MD406J-W	MD413P	7	500"
0(BLU)	MD406J-X	CAP	7	500"
0N(WHT)	MD406J-Y	CAP	7	500"



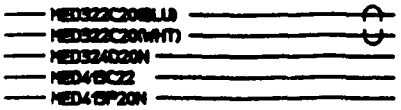
-1 MD406J HARNESS



-2 J1256 HARNESS



-3 J1257 HARNESS



-4 LOOSE WIRES

-4	-3	-2	-1	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION
6	84	42	84		I.D. SLEEVE		M23053/5-106-9	MIL-I-23053
	3	1	2		SHIELD TERMINATOR		M83519/2-8	MIL-S-83519
	1	1			SPLICE	06090	D-436-53	
	1000				CABLE, SHIELDED		M27500-22SP2S23	MIL-C-27500
72		500	1000		CABLE, SHIELDED		M27500-20SP2S23	MIL-C-27500
	500				CABLE, SHIELDED		M27500-22SP1S23	MIL-C-27500
500	2000	572	500		WIRE, 22 AWG		M22759/43-22-9	MIL-W-22759
572	18	1018			WIRE, 20 AWG		M22759/43-20-9	MIL-W-22759
	500	500			WIRE, 12 AWG		M22759/43-12-9	MIL-W-22759
	1				CONNECTOR		MS3122E22-55S	
		1	1		CONNECTOR		MS3122E22-55P	
X					LOOSE WIRES		LEX-13925-4	
	X				J1257 HARNESS		LEX-13925-3	
		X			J1256 HARNESS		LEX-13925-2	
			X		MD406J HARNESS		LEX-13925-1	

QUANTITY REQUIRED PER DASH NO. — PARTS LIST

UNLESS OTHERWISE SPECIFIED

FINISH

CONTRACT NO. DAAB07-92-Z-B506

S.L.H. 93-01-16
L.M. 93-12-07
D.C.M. 93-12-07

703-5009 — UH-60Q

APPLICATION

SERV-AIR, INC.
A SUBSIDIARY OF E-SYSTEM

MSOGS
HARNES

D | 7S976 | LEX-

NONE

RELEASED
MAR 11 1994
ONLY

ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-01-16	

(3)

(10)

MED413B22
MED417G20(BLU)
MED417H20N(WHT)
MED418D20(BLU)
MED418E20N(WHT)

06J/MD406P
MODULE CONT

-1 MD406J HARNESS

REFERENCE
MAR 1 1 1994
ONLY

-4	-3	-2	-1	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	FIND NO.
6	84	42	84		I.D. SLEEVE		M23053/5-106-9	MIL-I-23053	IN		11
	3	1	2		SHIELD TERMINATOR		M83519/2-8	MIL-S-83519	EA		10
	1	1			SPLICE	06090	D-436-53		EA		9
	1000				CABLE, SHIELDED		M27500-22SP2S23	MIL-C-27500	IN		8
72		500	1000		CABLE, SHIELDED		M27500-20SP2S23	MIL-C-27500	IN		7
	500				CABLE, SHIELDED		M27500-22SP1S23	MIL-C-27500	IN		6
00	2000	572	500		WIRE, 22 AWG		M22759/43-22-9	MIL-W-22759	IN		5
72	18	1018			WIRE, 20 AWG		M22759/43-20-9	MIL-W-22759	IN		4
	500	500			WIRE, 12 AWG		M22759/43-12-9	MIL-W-22759	IN		3
	1				CONNECTOR		MS3122E22-55S		EA		2
		1	1		CONNECTOR		MS3122E22-55P		EA		1
X					LOOSE WIRES		LEX-13325-4				-
	X				J1257 HARNESS		LEX-13325-3				-
		X			J1256 HARNESS		LEX-13325-2				-
			X		MD406J HARNESS		LEX-13325-1				-

QTY REQUIRED PER DASH NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

FINISH:

CONTRACT NO. DAAB07-92-Z-B506

DRAWN S.L.H. 93-01-16
CHECKED L.M. 93-12-07
ENGR O.C.M. 93-12-07

SERV-AIR, INC. SOPSA
A SUBSIDIARY OF E-SYSTEMS,INC. LBAD LEX, KY.

TITLE: MSOGS HARNESS

SIZE D | CODE IDENT NO. 7S976 | DWG NO. LEX-13325

SCALE NONE | SHEET 1 OF 1

UH-60A

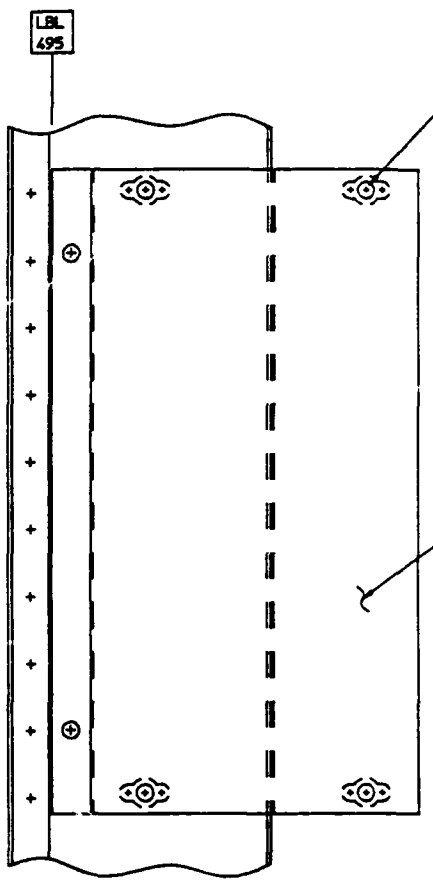
APPLICATION

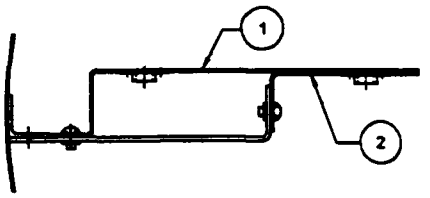
25

NOTES:

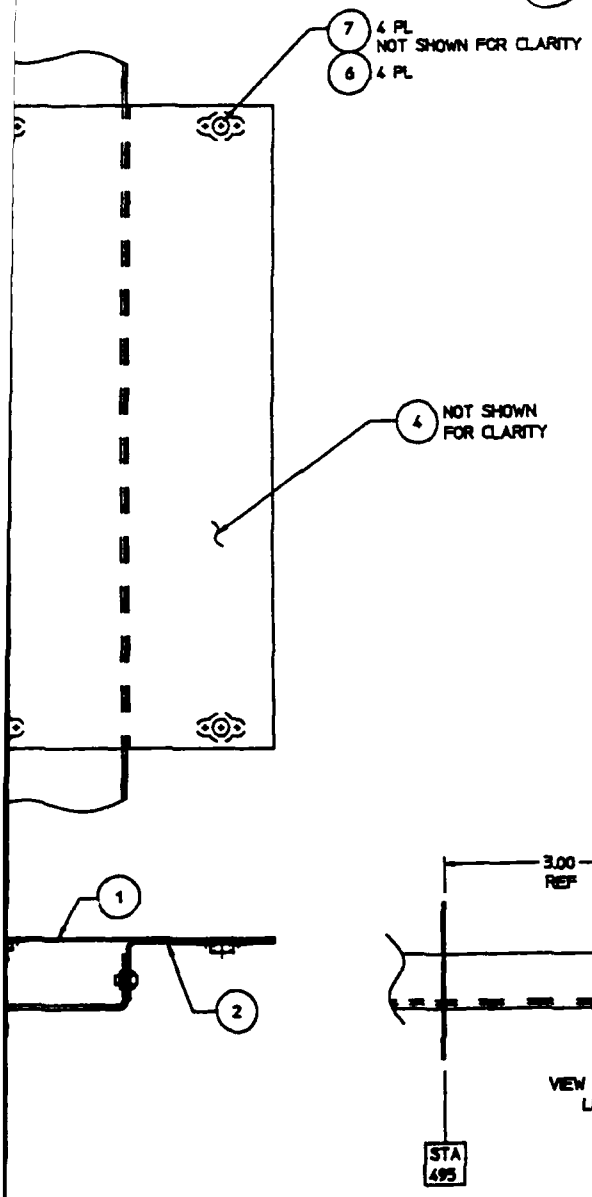
1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. REMOVE BURRS AND BREAK ALL SHARP EDGES
4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982
5. IDENTIFICATION CODE OF FASTENERS PER NAS 523
6. INSTALLATION OF FASTENERS PER MIL-STD-1515

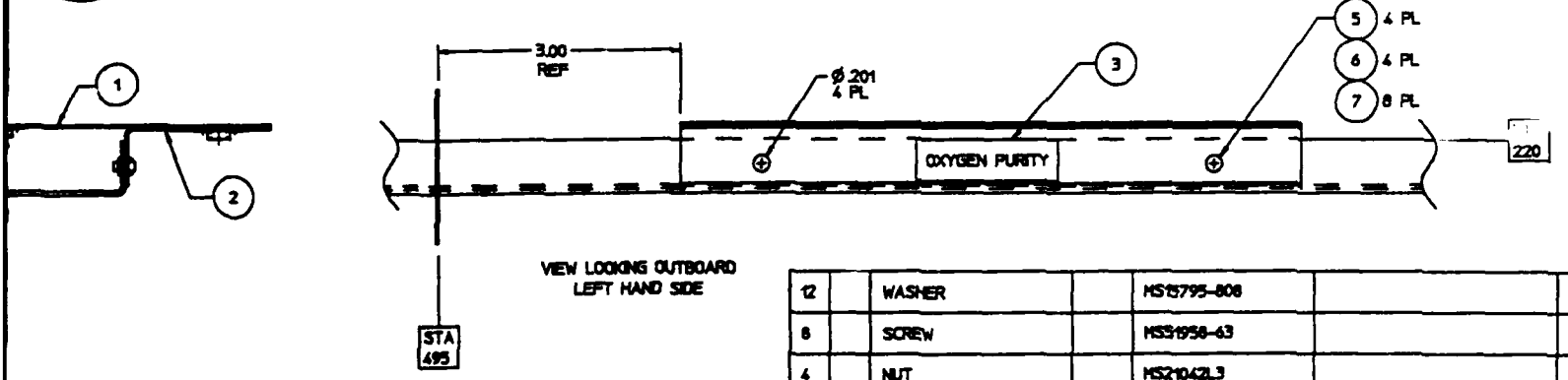
SKIN REMOVED FOR CLARITY





	REV	DESCRIPTION	
		CAD GENERATED	93-0





VIEW LOOKING OUTBOARD
LEFT HAND SIDE

STA
495

12		WASHER		MS15795-808		E
8		SCREW		MS51958-63		E
4		NUT		MS21042L3		E
1		OXYGEN PURITY		708-1019-80		S
1		DECAL		LEX-13333-1		E
1		SUPPORT ASSY		LEX-13332		E
1		SUPPORT ASSY		LEX-13331		E
	SYM	NOMENCLATURE	USE CODE	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U

PARTS LIST

QUANTITY REQUIRED PER DASH NO.

LEX-13321	UH-600
APPLICATION	

UNLESS OTHERWISE SPECIFIED

FINISH

CONTRACT NO.
DAAB07-92-Z-8506

SERV-AIR, INC.
A SUBSIDIARY OF E-SYSTEMS,INC.

S.L.H.	93-04-13
L.M.	93-12-07
V.L.D.	93-12-10

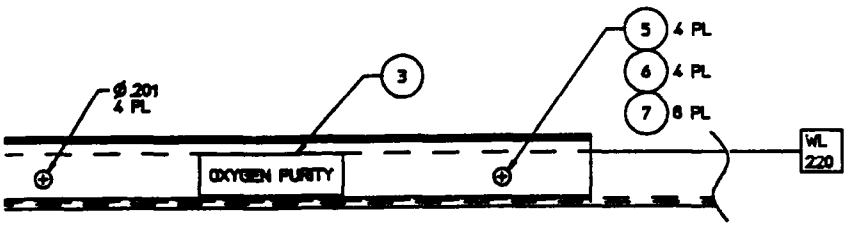
PURITY SENS(
INSTALLATIO

SIZE	CAGE DRAWING NO.	REVISION NO.
D	7S976	LEX-133

SHEET 1/1

ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-04-13	

(3)



ITEM	QTY	NOMENCLATURE	USE ON	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	FIG NO.
7		WASHER		MS15795-808		EA		12
6		SCREW		MS51958-43		EA		8
5		NUT		MS21042L3		EA		4
4		OXYGEN PURITY		708-1019-60		EA		1
3		DECAL		LEX-13333-1		EA		1
2		SUPPORT ASSY		LEX-13332		EA		1
1		SUPPORT ASSY		LEX-13331		EA		1

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

SERV-AIR, INC. 50P3A
A SUBSIDIARY OF E-SYSTEMS,INC. LBAD LEX, KY.

FINISH

S.L.H. 93-04-13
L.H. 93-12-07
V.L.O. 93-12-10

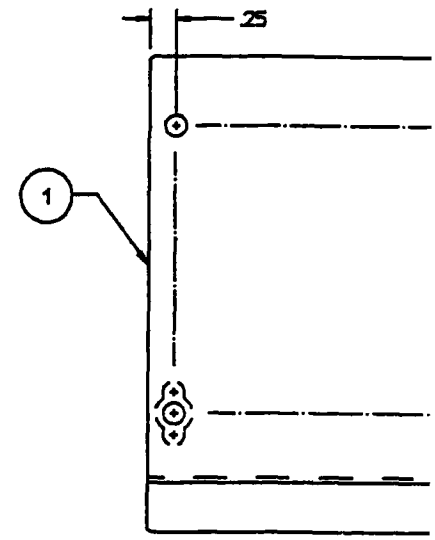
PURITY SENSOR INSTALLATION

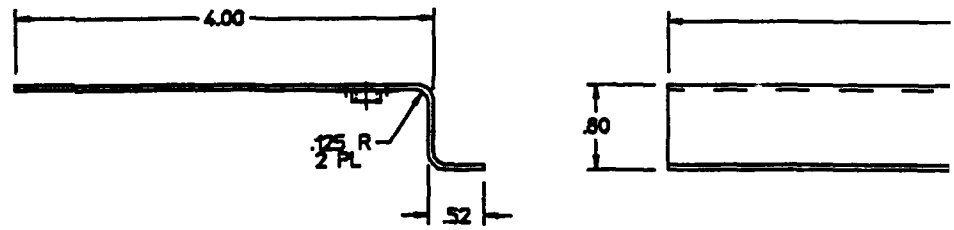
D 7S976 LEX-13330

SHT 1 OF 1

NOTES:

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. REMOVE BURRS AND BREAK ALL SHARP EDGES
4. MARK PARTS PER MIL-STD-130
5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982
6. IDENTIFICATION CODE OF FASTENERS PER NAS 523
7. INSTALLATION OF FASTENERS PER MIL-STD-1515
8. CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A
   EPOXY POLYAMIDE PRIME PER MIL-P-23377 TYPE I, 2 COATS





SYM		NOMENCLATURE
4		RIVET
2		NUTPLATE
1		SUPPORT

QUANTITY REQUIRED PER DASH NO.		
LEX-13930	UH-600	APPLICATION

BASIC CODE	NAS 523 FASTENER CODE
BB = MS20426AD	INSTALL RIVETS PER MS515
BASIC CODE	DASH NO. FOR DIA N = MS FLUSH HEAD N/S F = MS FLUSH HEAD F/S
C = COUNTERSINK BOTH SIDES CSK 100° AND GRIND FLUSH	DASH NO. FOR LENGTH

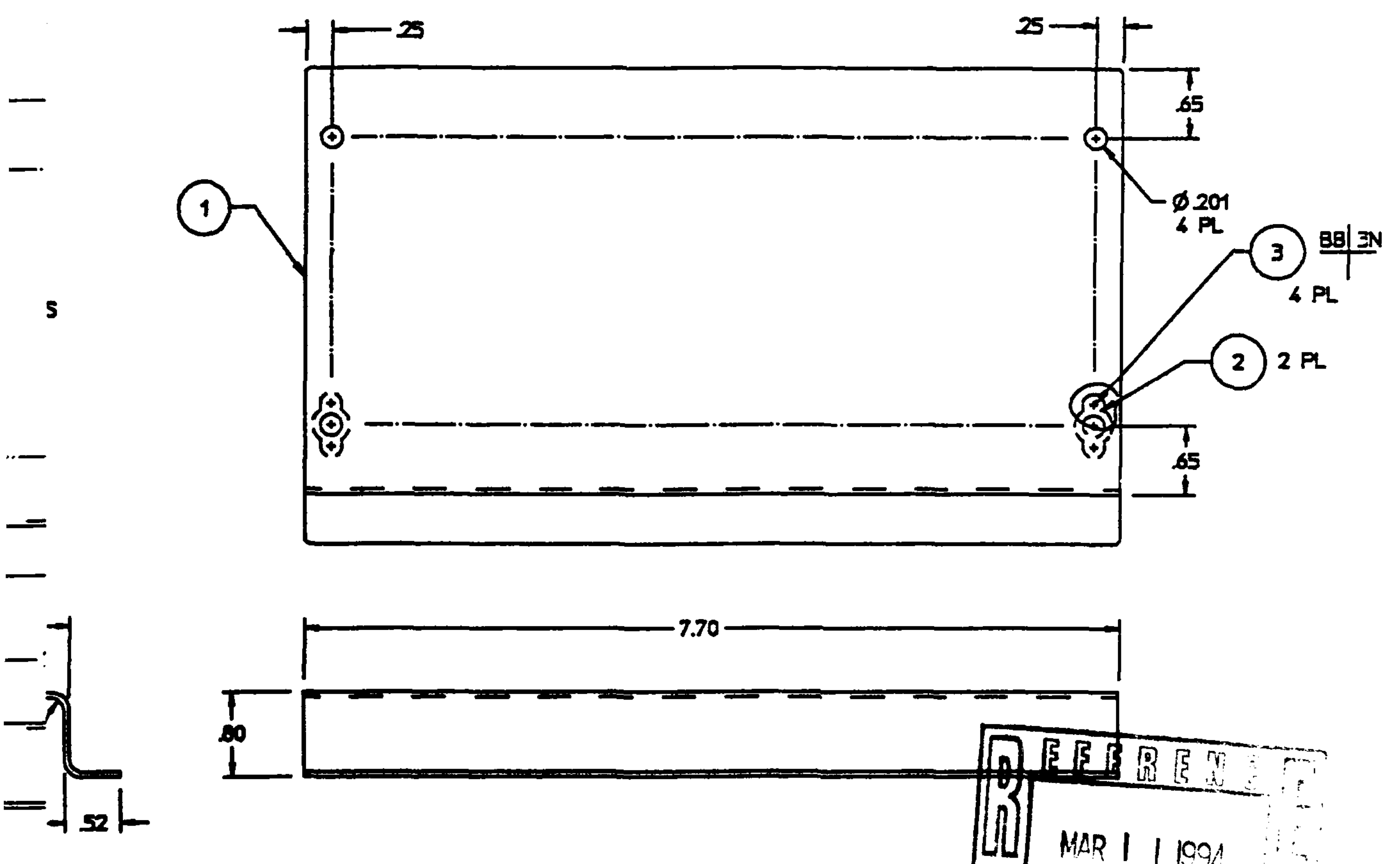
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES TOLERANCE ON
FRACTIONS: ± NA
DECIMALS: X ± .1, XX ± .03, XXX ± .010
ANGLES: ± 1°

FINISH:

8

ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-04-13	

(2)



FIND NO.	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	QTY
4		RIVET		MS24026AD3		EA		3
2		NUTPLATE		MS21075L3		EA		2
1		SUPPORT		LEX-13331-1	.050x5.5x7.95 2024-T3 AL ALY QQ-A-250/5	EA		1

QUANTITY REQUIRED PER DASH NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES-TOLERANCES ON: FRACTIONS ± NA; DECIMALS .X ± .1, .XX ± .03, .XXX ± .010; ANGLES ± 1°

FINISH:

CONTRACT NO. DAAB07-92-Z-B506

DR	S.L.H.	93-04-13
CHK	L.M.	93-12-07
ENG	V.L.D.	93-12-10

SERV-AIR, INC. SOPSA
A SUBSIDIARY OF E-SYSTEMS,INC. LBAD LEX. KY.

TITLE: SUPPORT ASSEMBLY

SIZE C | CODE IDENT NO. 7S976 | DRAWING NO. LEX-13331

SCALE 1/1 | SHEET 1 OF 1

NEXT ASSY	USED ON
LEX-13330	UH-60Q

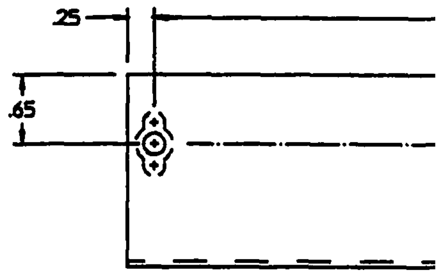
APPLICATION

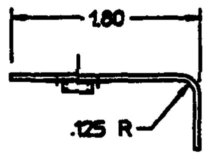
(1)

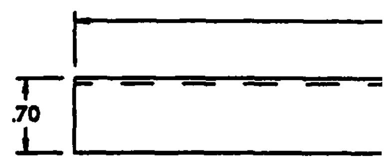
4	3

NOTES:

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. REMOVE BURRS AND BREAK ALL SHARP EDGES
4. MARK PARTS PER MIL-STD-130
5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982
6. IDENTIFICATION CODE OF FASTENERS PER NAS 523
7. INSTALLATION OF FASTENERS PER MIL-STD-1515
8. (△) CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A
   EPOXY POLYAMIDE PRIME PER MIL-P-23377 TYPE I, 2 COATS







4		RIVET	
2		NUTPLATE	
1		SUPPORT	
QUANTITY REQUIRED PER DASH NO.	SYM	NOMENCLATURE	

BASIC CODE	NAS 523 FASTENER CODE
BB - MS20426AD	INSTALL RIVETS PER MS1515
	BASIC CODE / DASH NO. FOR DIA; N - NFS HEAD N/S; F - NFS HEAD F/S
	C = COUNTERSINK BOTH SIDES CSK 100° AND GRIND FLUSH / DASH NO. FOR LENGTH

APPLICATION	
LEX-13330	UH-60Q

UNLESS OTHERWISE SPECIFIED

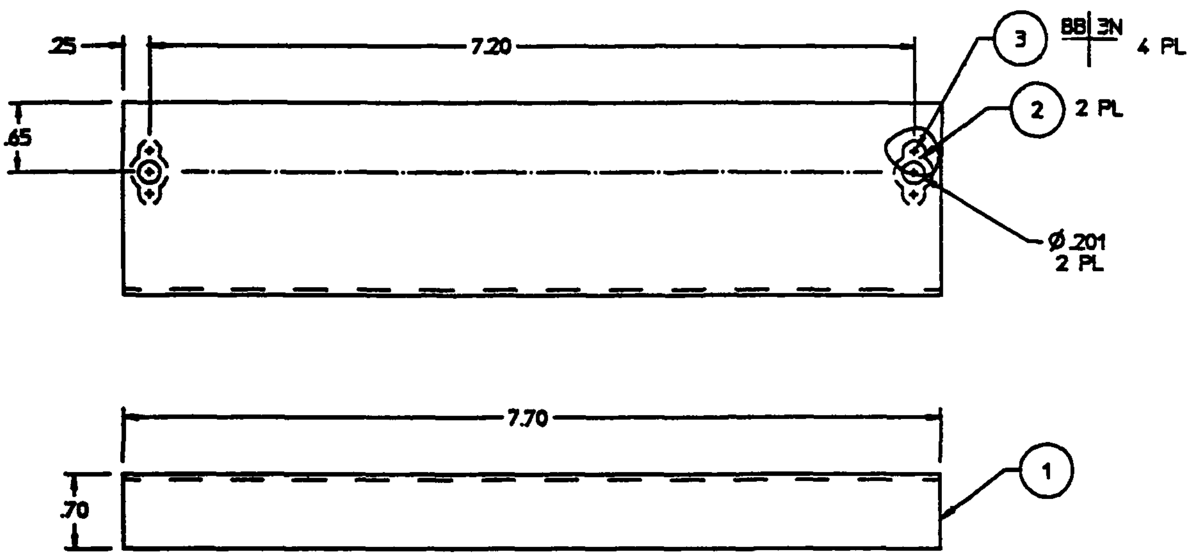
• NA X= .1 .XX= .03 .XXX= .010 • 1°

FINISH: △8

4	3

(2)

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-04-13	



REFERENCE
MAR 1 1 1994
ONLY

FIND NO.	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	QTY
4		RIVET		MS24026AD3		EA		3
2		NUTPLATE		MS21075L3		EA		2
1		SUPPORT		LEX-13332-1	.050x2.60x7.9 2024-T3 AL ALY QQ-A-250/5	EA		1

PARTS LIST

UNLESS OTHERWISE SPECIFIED
• NA .x • .1 .xx • .03 .xxx • .010 • 1°

FINISH

CONTRACT NO. DAAB07-92-Z-8506

S.L.H. 93-04-13
L.M. 93-12-07
V.L.D. 93-12-10

SERV-AIR, INC. SOFSA
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX. KY.

SUPPORT ASSEMBLY

SIZE C | CAGE CODE 7S976 | DWG NO. LEX-13332
SCALE 1/1 | SHEET 1 OF 1

UH-60A

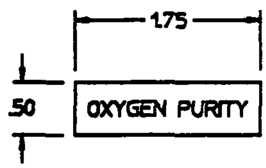
4 ① 3

C

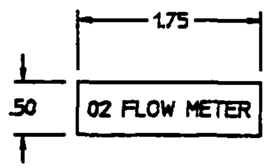
NOTES:

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. REMOVE BURRS AND BREAK ALL SHARP EDGES
4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982
5. DECAL HAS DOUBLE FACED ADHESIVE BACKING PER MIL-P-19834 TYPE 1 STYLE 3 QQ-A-250/1

B



-1 DECAL



-2 DECAL

A

			-3	-2	-1	SYM	NOME
			X				DECAL
				X			DECAL
					X		DECAL

QUANTITY REQUIRED PER DASH NO.

LEX-13330	UH-60Q

APPLICATION

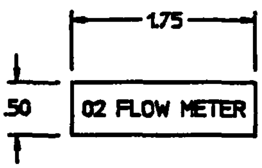
UNLESS OTHERW...
• NA
X= .1
.XX= .03
.XXX= .01

FINISH:

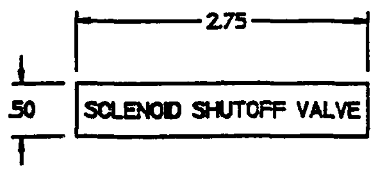
4 3

2 1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-04-16	



-2 DECAL



-3 DECAL

-3	-2	-1	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	FIND NO.
X				DECAL		LEX-13333-3	.012x.50x2.75 PHOTOSENSITIZED 2024-T3 AL ALY QQ-A-250/5			-
	X			DECAL		LEX-13333-2	.012x.50x1.75 PHOTOSENSITIZED 2024-T3 AL ALY QQ-A-250/5			-
		X		DECAL		LEX-13333-1	.012x.50x1.75 PHOTOSENSITIZED 2024-T3 AL ALY QQ-A-250/5			-

QTY REQD PER DASH NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
FRACTIONS ± NA; DECIMALS .X ± .1, .XX ± .03, .XXX ± .010; ANGLES ± 1°

FINISH:

CONTRACT NO. DAAB07-92-Z-B506

DRAWN	S.L.H.	93-04-16
CHECK	L.M.	93-12-07
ENGR	V.L.D.	93-12-10

SERV-AIR, INC. SOFSA
A SUBSIDIARY OF E-SYSTEMS,INC. LBAD LEX. KY.

TITLE: DECAL

SIZE: C | CAGE CODE NO. 7S976 | DRAWING NO. LEX-13333

SCALE 1/1 | SHEET 1 OF 1

UH-60Q
APPLICATION

2 1

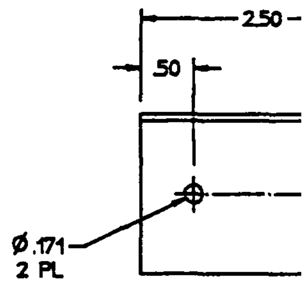
(1)

4 | 3

C

NOTES:

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. REMOVE BURRS AND BREAK ALL SHARP EDGES
4. MARK PARTS PER MIL-STD-130
5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982
6. (triangle) CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A
   EPOXY POLYAMIDE PRIME PER MIL-P-23377 TYPE I, 2 COATS



B

A

ANGLE SUP

SYM | NOMENC

QUANTITY REQUIRED PER DASH NO.

UNLESS OTHERWISE
• NA
X= .1
.XX= .03
.XXX= .010

FINISH:

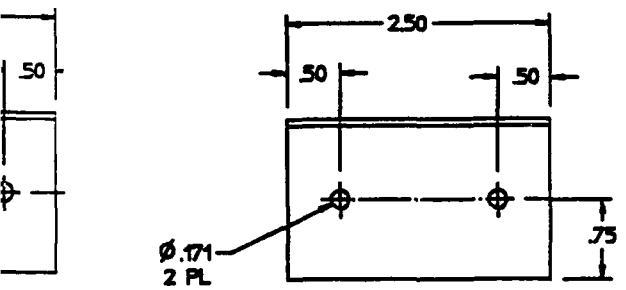
(triangle 6)

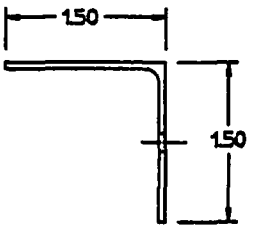
LEX-13337 | UH-60Q

APPLICATION

4 | 3

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-04-16	





SYM	NOMENCLATURE	DSE DSR	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	FIG NO.
	ANGLE SUPPORT		LEX-13334-1	MS14284D293 x 2.70 LONG 2024-T8511 AL ALY QQ-A-200/3			-

REQUIRED PER DASH NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES TOLERANCE ON
FRACTIONS DECIMALS ANGLES
XX ± .1
• NA XXX .03 • 1°
XXXX .010

FINISH:

CONTRACT NO.
DAAB07-92-Z-B506

DES	S.L.H.	93-04-16
DRN	L.H.	93-12-07
ENGR	V.L.D.	93-12-10

SERV-AIR, INC. SOPSA
A SUBSIDIARY OF E-SYSTEMS,INC. LBAD LEX, KY.

TITLE
ANGLE SUPPORT

SIZE	CAGE IDENT NO.	DRAWING NO.
C	7S976	LEX-13334

SCALE 1/1 SHEET 1 OF 1

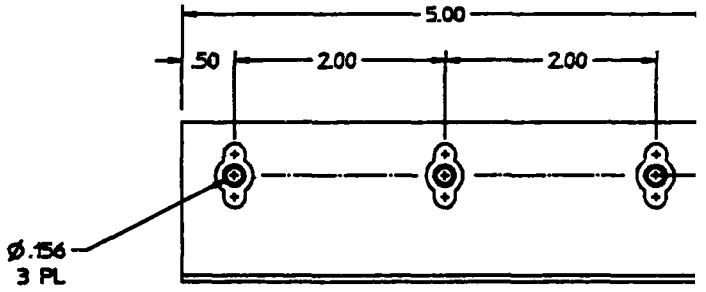
UH-60D

APPLICATION

2 1

NOTES:

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. REMOVE BURRS AND BREAK ALL SHARP EDGES
4. MARK PARTS PER MIL-STD-130
5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982
6. IDENTIFICATION CODE OF FASTENERS PER NAS 523
7. INSTALLATION OF FASTENERS PER MIL-STD-1515
8. CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A
   EPOXY POLYAMIDE PRIME PER MIL-P-23377 TYPE I, 2 COATS



BASIC CODE	NAS 523 FASTENER CODE
BJ = MS20470AD BB = MS20426AD	INSTALL RIVETS PER MS1515 BASIC CODE: DASH NO. FOR DIA N = HPS HEAD N/S F = HPS HEAD F/S C = COUNTERSINK BOTH SIDES CSK 100° AND GRIND FLUSH: DASH NO. FOR LENGTH

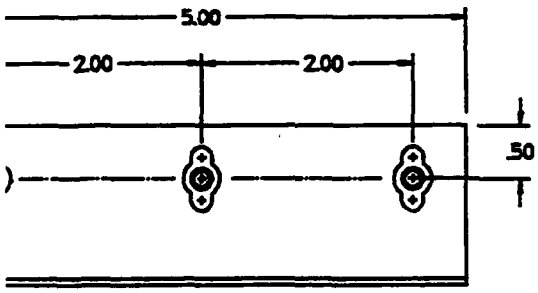
SYM	NOMENCLATURE	QUANTITY REQUIRED PER DASH NO.	
	BRACKET		
		LEX-13345	UH-600
		APPLICATION	

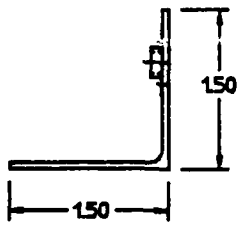
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES-TOLERANCES
FRACTIONS DECIMALS ANGLES
NA .X ± .1 .XX ± .03 .XXX ± .010

FINISH: 8

(2)

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-04-16	





SYM	NOMENCLATURE	DWG IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	FIND NO.
	BRACKET		LEX-13335-1	MS14284D293 x 5.2 LONG 2024-T8511 AL ALY QQ-A-200/3			-

REQUIRED PER DASH NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ON FRACTIONS .X ± .1, .XX ± .03, .XXX ± .010, ANGLES ± 1°

• NA

FINISH

8

CONTRACT NO. DAAB07-92-Z-B506

DR	S.L.H.	92-08-06
DES	L.M.	93-12-07
ENG	V.L.D.	93-12-10

SERV-AIR, INC. 50PSA
A SUBSIDIARY OF E-SYSTEMS,INC. LBAD LEX. KY.

TITLE: BRACKET

SIZE	CAGE IDENT NO.	DRAWING NO.
C	7S976	LEX-13335

SCALE 1/1 SHEET 1 OF 1

CONTRACT

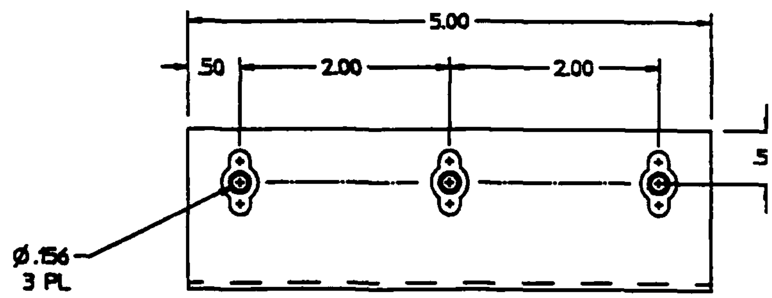
DR S.L.H.
DES L.M.
ENG V.L.

45 UH-60D
APPLICATION

NOTES:

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. REMOVE BURRS AND BREAK ALL SHARP EDGES
4. MARK PARTS PER MIL-STD-130
5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982
6. IDENTIFICATION CODE OF FASTENERS PER NAS 523
7. INSTALLATION OF FASTENERS PER MIL-STD-1515

8. (flag note) CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A
EPOXY POLYAMIDE PRIME PER MIL-P-23377 TYPE I, 2 COATS



BASIC CODE	NAS 523 FASTENER CODE
BJ - MS20470AD BB - MS20426AD	INSTALL RIVETS PER [illegible] BASIC CODE / DASH NO. FOR DIA N - HPG HEAD N/S F - HPG HEAD F/S C - COUNTERSINK BOTH SIDES CSK 100° AND GRIND FLUSH / DASH NO. FOR LENGTH

QUANTITY REQUIRED PER DASH NO.

NEXT ASSEMBLY	USED ON
LEX-13345	UH-60Q

CURRENT CODE IDENT NO.

APPLICATION

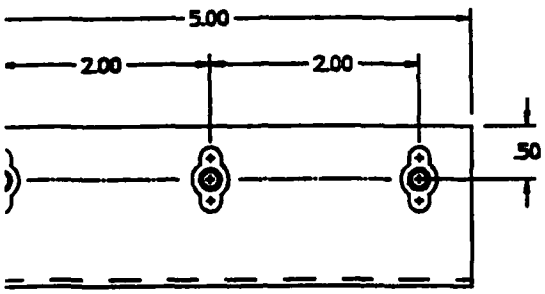
SYM	NOMENCLATURE
	BRACKET

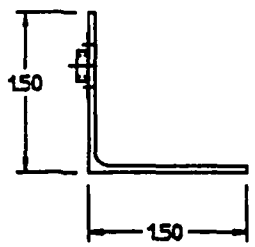
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES-TOLERANCES
FRACTIONS ± NA
DECIMALS .X ± .1, .XX ± .03, .XXX ± .010

FINISH: (flag note 8)

(2)

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-04-16	





SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	FND NO.
	BRACKET		LEX-13336-1	MS14284D293 x 5.2 2024-T8511 AL ALY QQ-A-200/3			-

PARTS LIST

QUANTITY REQUIRED PER DASH NO.

CONTRACT DA/

S.L.H.
L.M.
V.L.D.

EX-13345 UH-60Q

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE ON FRACTIONS ±1/64 DECIMALS .X ±.1 .XX ±.03 .XXX ±.010 ANGLES ± 1°

• NA

FINISH:

8

CONTRACT NO. DAAB07-92-Z-B506

S.L.H. 92-08-06
L.M. 93-12-07
V.L.D. 93-12-10

SERV-AIR, INC. SOPSA
A SUBSIDIARY OF E-SYSTEMS,INC. LEAD LEX, KY.

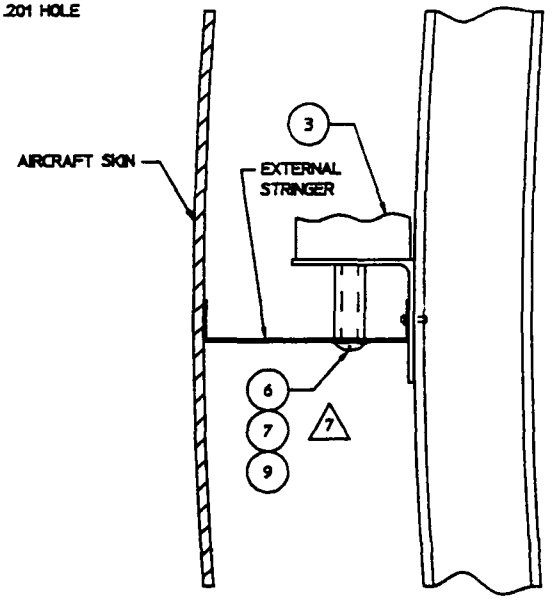
TITLE: BRACKET

SIZE	CAGE CODE NO.	DRAWING NO.
C	7S976	LEX-13336

SCALE 1/1 SHEET 1 OF 1

NOTES:

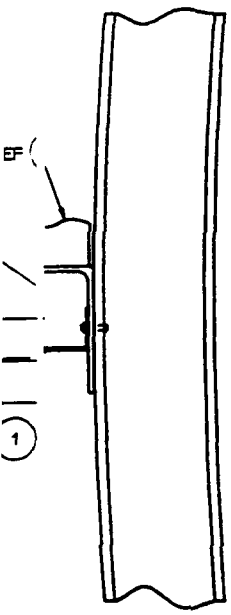
1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. REMOVE BURRS AND BREAK ALL SHARP EDGES
4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982
5. INSTALLATION CODE OF FASTENERS PER MIL-STD-1515
6. DRILL (2) Ø .171 HOLES IN EXISTING STRINGER AFTER LEX-13334 (FIND NO. 2) IS POSITIONED
7. USE FIND NO. 3 AS TEMPLATE TO LOCATE Ø.201 HOLE THROUGH EXISTING STRINGER

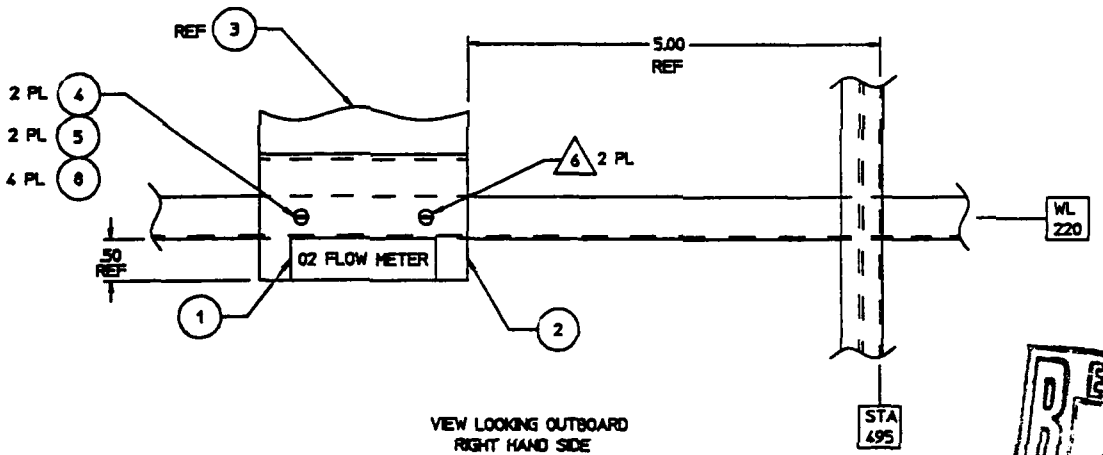


2 PL 4
2 PL 5
4 PL 8

.50 REF

ZONE	REV	DESCRIPTION
		CAD GENERATED





VIEW LOOKING OUTBOARD
RIGHT HAND SIDE

QUANTITY REQUIRED PER DASH NO.		SYM	NOMENCLATURE	CAGE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFI
1			WASHER		AN960KD10L	
4			WASHER		MS15795-807	
1			SPACER		NAS43003-64	
1			SCREW		MS51958-69	
2			SCREW		MS51957-43	
2			NUT		MS21042-08	
1			FLOW METER	8C816	5860E	
1			ANGLE SUPPORT		LEX-13334	
1			DECAL		LEX-13333-2	

PARTS LIST

LEX-13321	UH-60Q
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± .1
• NA ± .03 • 1°
± .010
FINISH

CONTRACT NO.
DAAB07-92-Z-B506

DR	S.L.H.	93-05-18
CH	L.M.	93-12-07
APP	V.L.D.	93-12-10

SERV-AIR
A SUBSIDIARY OF

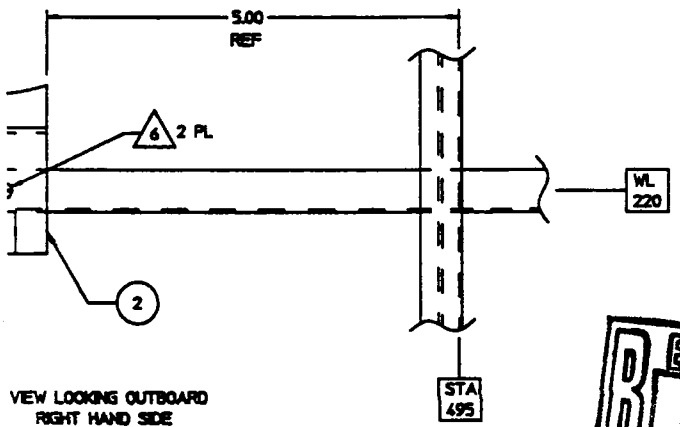
FLOW
INSTA

SIZE	CAGE CODE NO.	DRAWING NO.
D		7S976
SCALE		SHEET 1/1

3 2 1

(3)

ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-05-18	



VIEW LOOKING OUTBOARD
RIGHT HAND SIDE

ITEM	QTY	SYM	NOMENCLATURE	CAGE CODE	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	FIG NO.
9	1		WASHER		AN960KD10L		EA		
8	4		WASHER		MS15795-807		EA		
7	1		SPACER		NAS43003-44		EA		
6	1		SCREW		MS51958-69		EA		
5	2		SCREW		MS51957-43		EA		
4	2		NUT		MS21042-08		EA		
3	1		FLOW METER	8C016	3860E		EA		
2	1		ANGLE SUPPORT		LEX-13334		EA		
1	1		DECAL		LEX-13333-2		EA		

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± 1/64 DECIMALS .X ± .1 .XX ± .03 .XXX ± .010 ANGLES ± 1°

• NA

FINISH

CONTRACT NO. DAAB07-92-Z-B906

S.L.H. 93-05-18
L.H. 93-12-07
V.L.O. 93-12-10

SERV-AIR, INC. SCPEA
A SUBSIDIARY OF E-SYSTEMS,INC. LEAD LEX, KY.

FLOW SENSOR INSTALLATION

D | 7S976 | LEX-13337

V1 | 1 OF 1

UH-60D

3 2 1

8 7 6 5

D

C

B

A

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

BASIC CODE	NAS
BJ-MS20470AD	INSTA
	BASI
	—
	C=COUNT BOTH CSK 1 GRIND

8 7 6 5

5 | 4 | 3 | 2

ZONE	REV	DESCRIP[TION]
		CAD GENERATED

(2)

QTY	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.
1		MSOGS UNIT	99251	3261093
53		RIVET		MS20470AD
10		WASHER		MS51958-809
10		BOLT		AN4C7A
1		MSOGS ANGLE, FWD		LEX-13342
1		MSOGS ANGLE, AFT		LEX-13341
1		MSOGS PALLET ASSY		LEX-13339
X		MSOGS PALLET INSTL		LEX-13338

QUANTITY REQUIRED PER DASH NO

PARTS LIST

BASIC CODE	NAS 523 FASTENER CODE
BJ-MS20470AD	INSTALL RIVETS PER MS1515

BASIC CODE	DASH NO FOR DIA N=MFG HEAD N/S F=MFG HEAD F/S
C=COUNTERSINK BOTH SIDES CSK 100° AND GRIND FLUSH	DASH NO FOR LENGTH

APPLICATION: LEX-13321 | UH-60Q

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

W.B.H. 93-07-21

L.M. 93-08-06

SE[...]
A SU[...]

D | 7S9[...]

1/2

5 | 4 | 3 | 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-21	

(3)

SHT	NOMENCLATURE	USED ON	DRAWING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	ITEM
1	MSOGS UNIT	99251	3261093		EA		7
53	RIVET		MS20470AD		EA		6
10	WASHER		MS51958-809		EA		5
10	BOLT		AN4C7A		EA		4
1	MSOGS ANGLE, FWD		LEX-13342		EA		3
1	MSOGS ANGLE, AFT		LEX-13341		EA		2
1	MSOGS PALLET ASSY		LEX-13339		EA		1
X	MSOGS PALLET INSTL		LEX-13338				

PARTS LIST

DAAB07-92-Z-B506

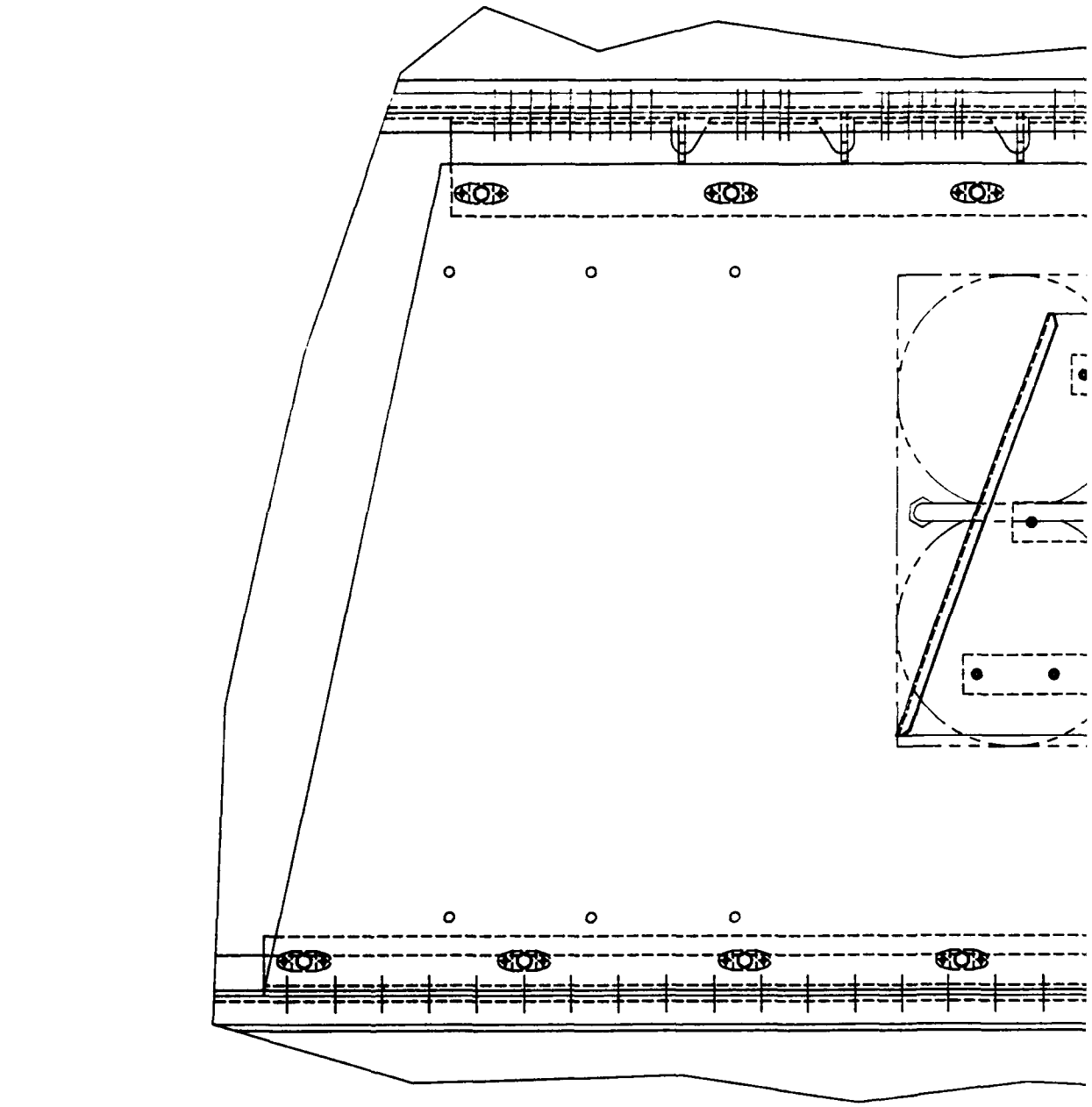
SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

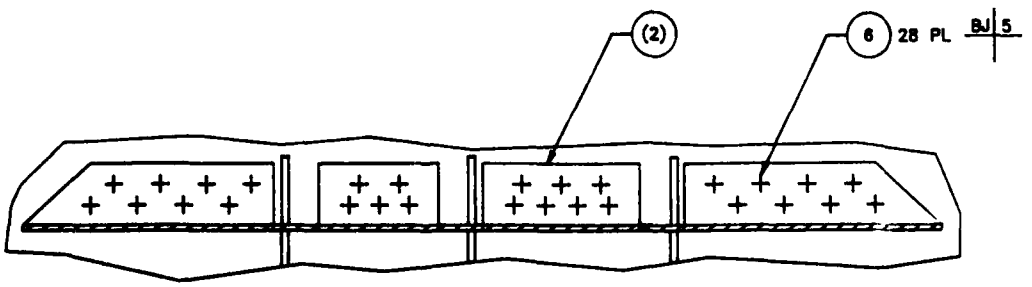
W.B.H.	93-07-21	
L.M.	93-08-06	

MSOGS UNIT AND PALLET INSTALLATION

D | 7S976 | LEX-13338

1/2 | 1 of 2

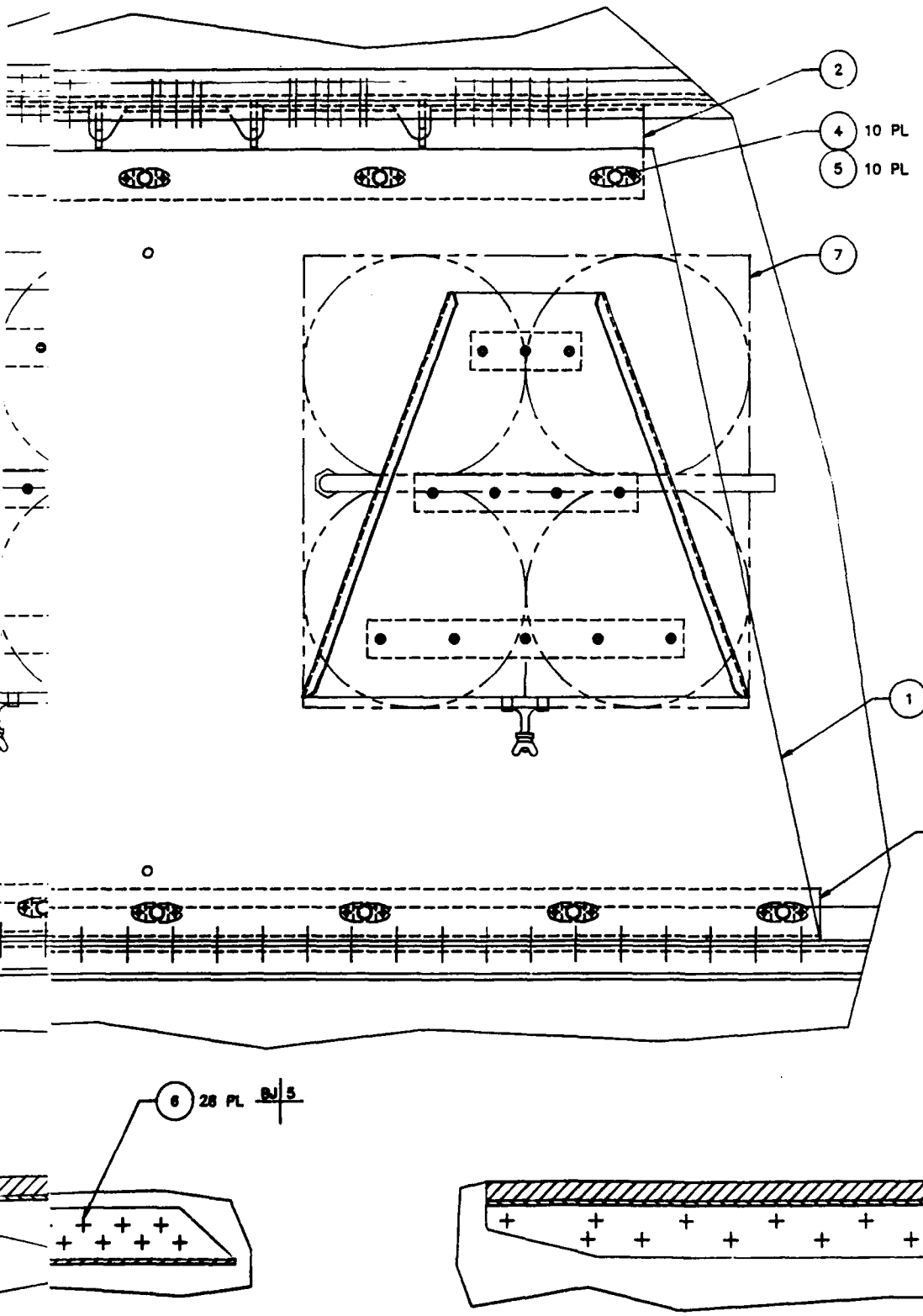


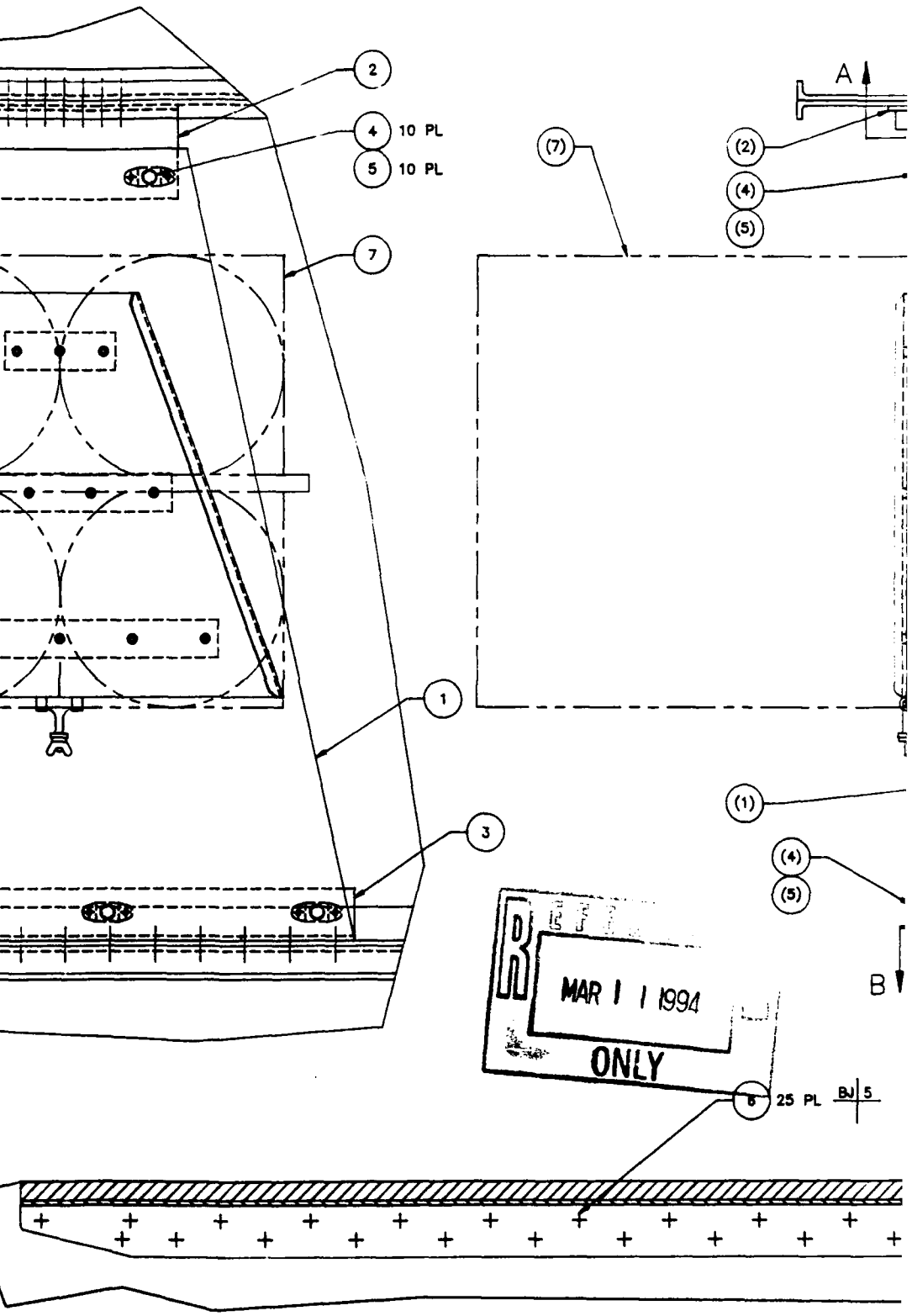


SECTION A–A
ROTATED 90° CCW FOR CLARITY

ZONE	REV	
		CAD GENERATE

(2)



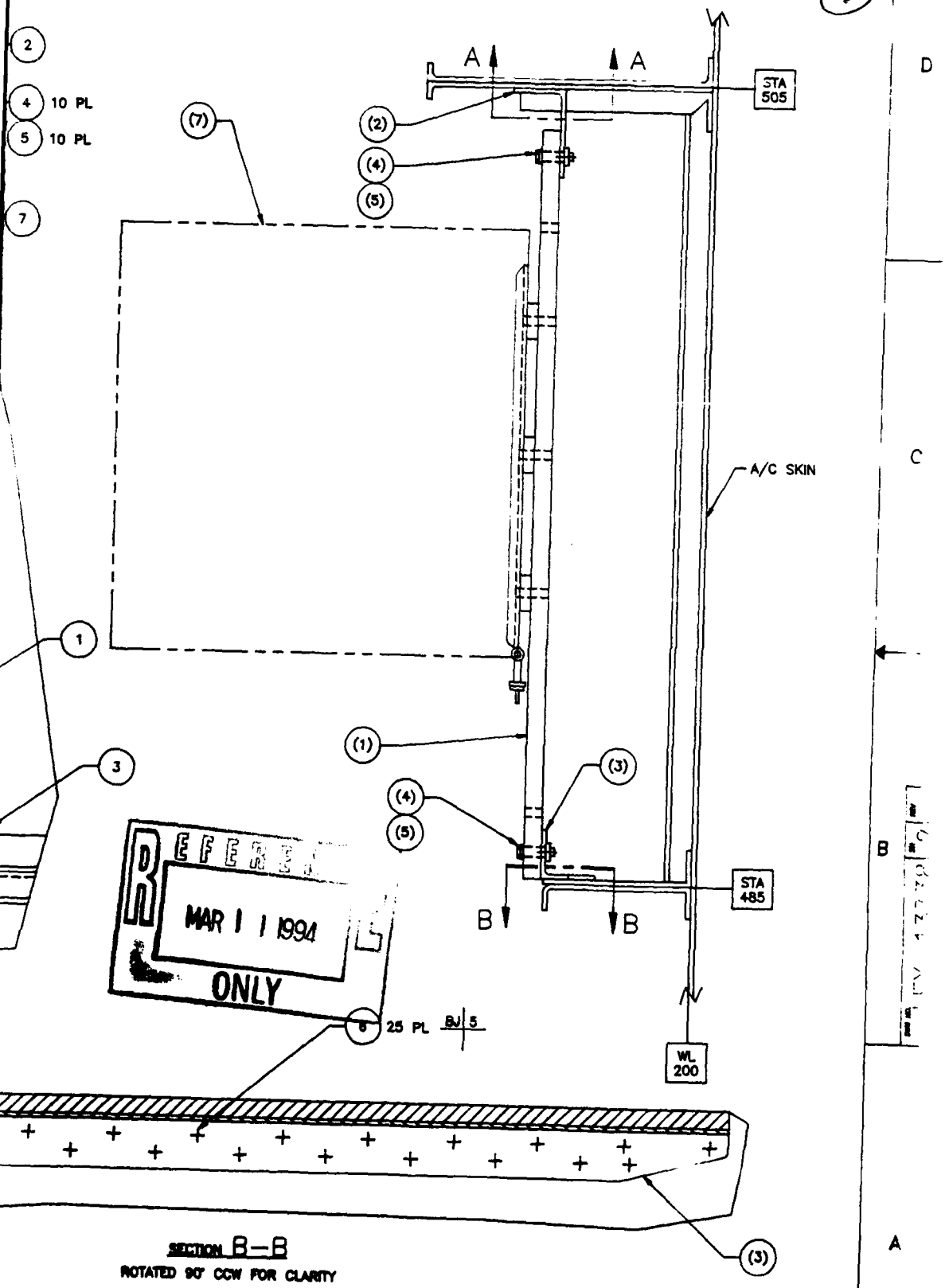


SECTION B–B
ROTATED 90° CCW FOR CLARITY

DAAB07-92-Z-B506	
W.B.H.	93-07-21
L.M.	93-08-06

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-21	

3



SECTION B–B
ROTATED 90° CCW FOR CLARITY

DAAB07-92-Z-B506		D	7S976	LEX-13338
W.S.H.	93-07-21			
L.M.	93-08-04	1/2		2 of 2

3 2 1

8 7 6 5

D

C

B

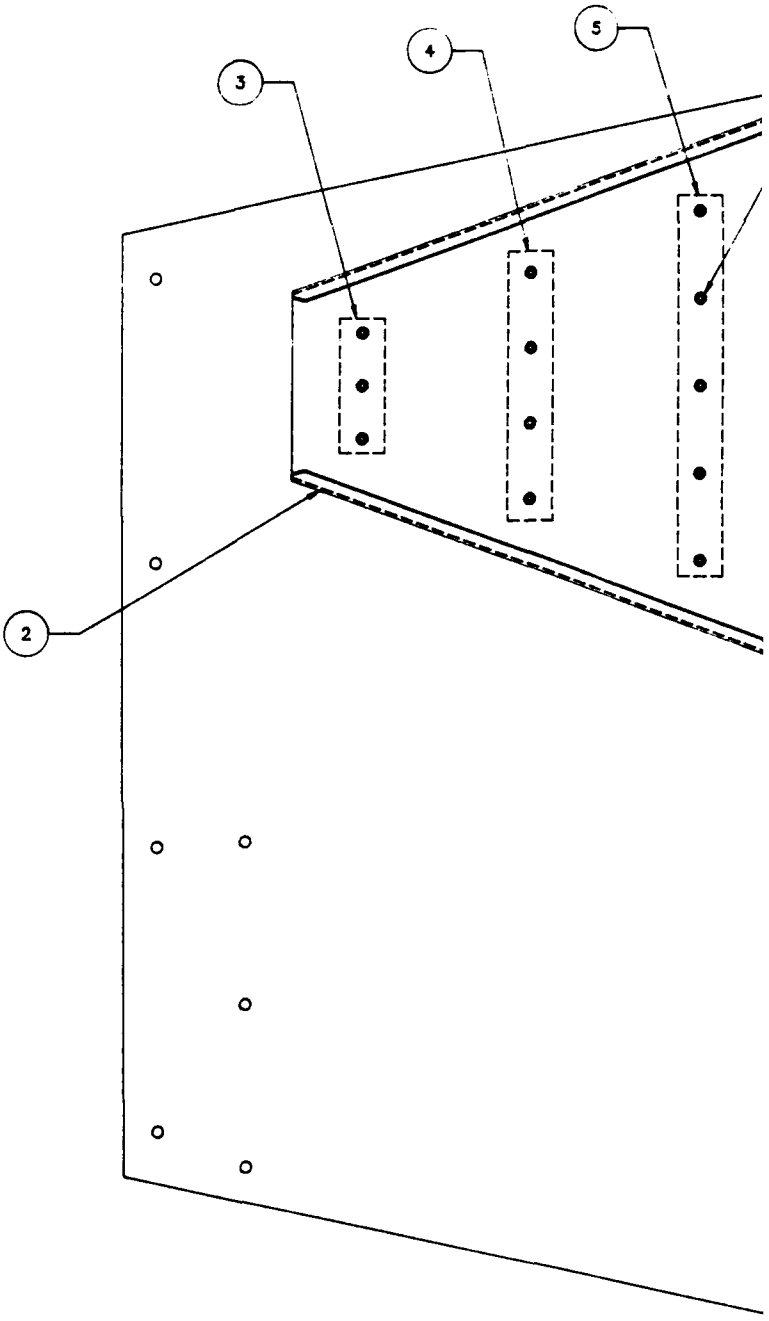
A

(1)

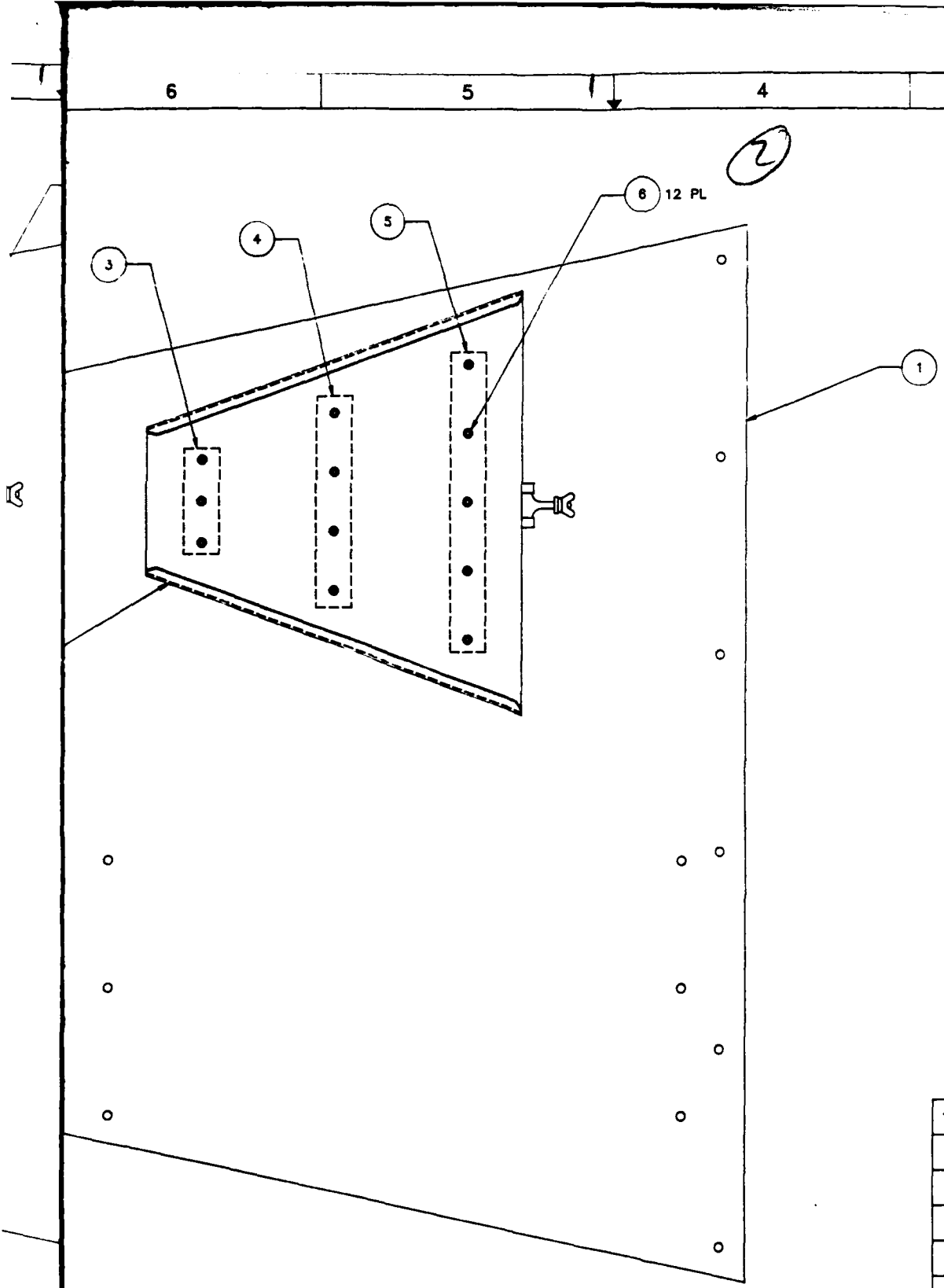
NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12



8 7 6 5



12		SCREW		NAS5
1		BAR		LEX–
1		BAR		LEX–
1		BAR		LEX–
1		MOUNTING BRACKET		LEX–
1		PALLET		LEX–
X		MSOGS PALLET ASSY		LEX–
	SYM	NOMENCLATURE	CODE IDENT	

QUANTITY REQUIRED PER DASH NO

UNLESS OTHERWISE SPECIFIED

DAAB07-92-2

W.B.H.

L.M.

LEX-13350 UH-60Q

APPLICATION

6 5 4 3

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-20	

(3)

(1)

12		SCREW		NAS517-3-7		EA		6
1		BAR		LEX-13343-3		EA		5
1		BAR		LEX-13343-2		EA		4
1		BAR		LEX-13343-1		EA		3
1		MOUNTING BRACKET		LEX-13344		EA		2
1		PALLET		LEX-13340		EA		1
X		MSOGS PALLET ASSY		LEX-13339				
	SYS	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	ITEM

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

DR. W.B.H. 93-07-20
CHK. L.M. 93-08-06
ENG.

TITLE
MSOGS
PALLET
ASSY

SIZE D | CAGE IDENT NO. 7S976 | DRAWING NO. LEX-13339

SCALE 1/2 | SHEET 1 OF 1

8 7 6 5

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

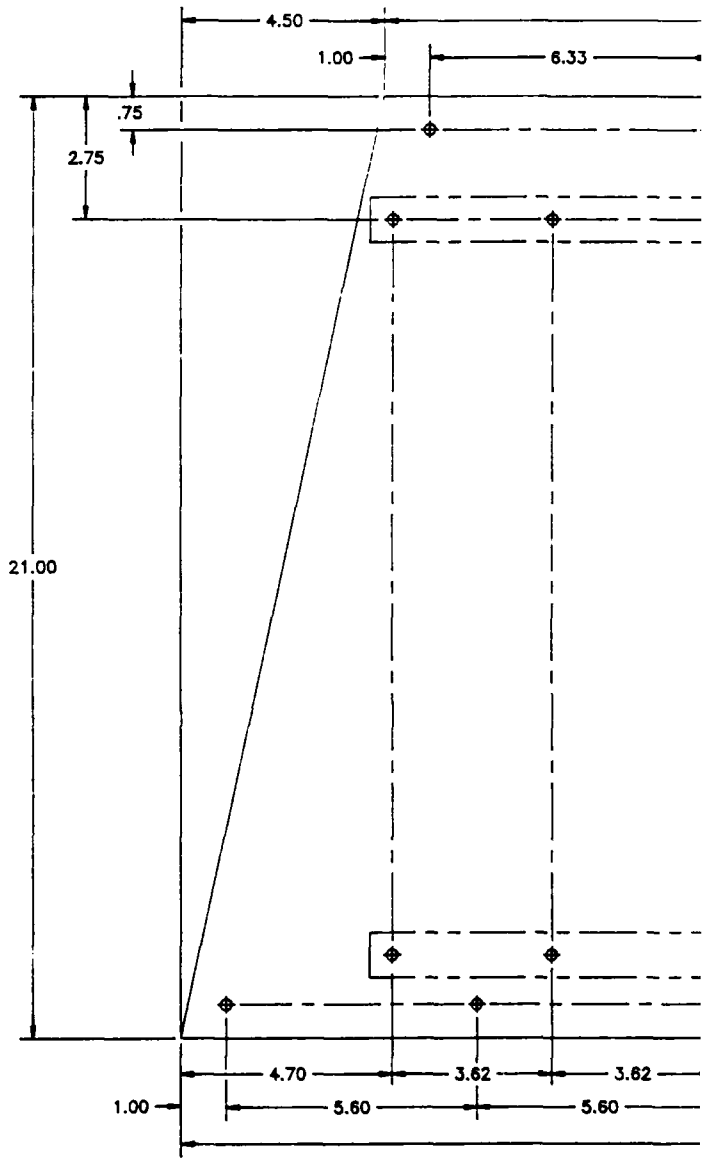
3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. AFTER CUTTING HONEYCOMB PANEL FILL EDGES WITH EA934 OR EQUIVALENT

⚠7. ELECTRICAL BONDING PER MIL-B-5087



D

C

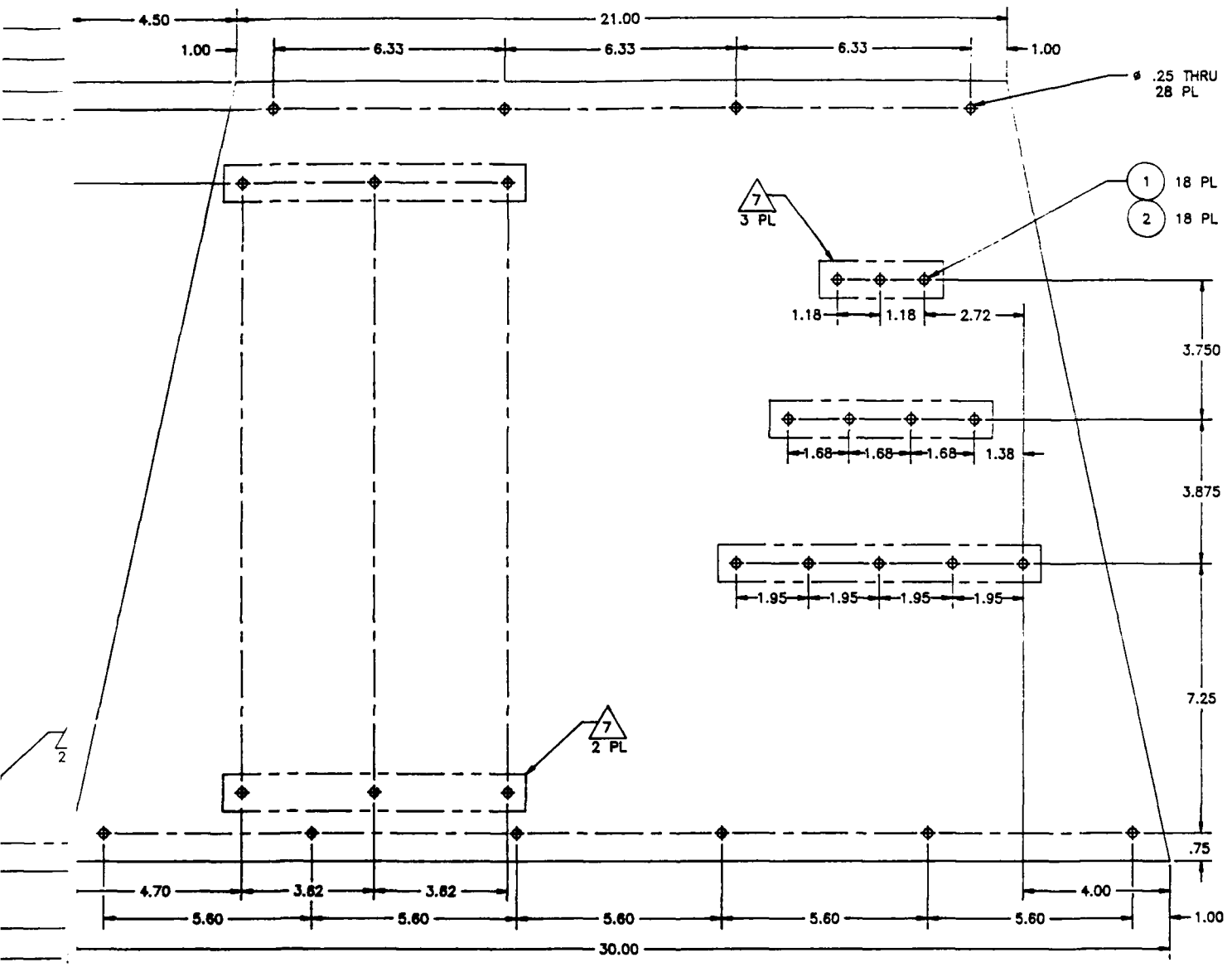
B

A

8 7 6 5

ZONE	REV	
		CAD GENER

(2)



QTY	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.
AR		ADHESIVE	33564	EA934
18		INSERT		NAS1833-3-50
X		PALLET		LEX-11340

QUANTITY REQUIRED PER DASH NO

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

DR. W.B.H. 93-08-28

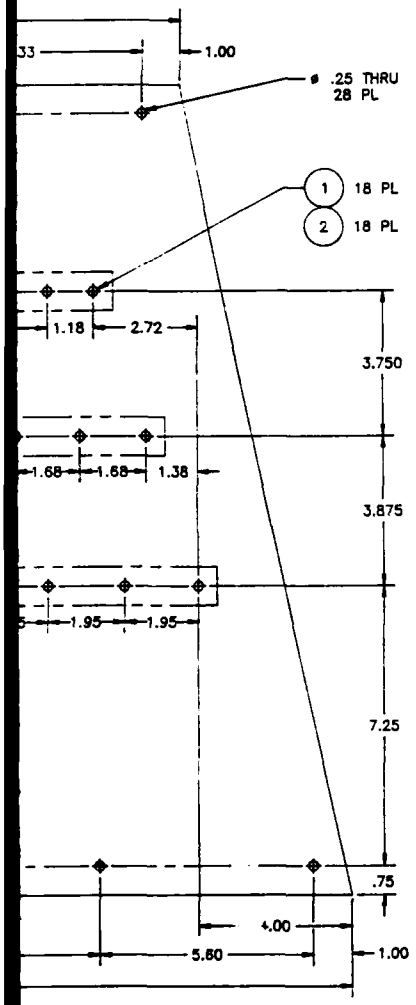
CHK. L.M. 93-08-06

APPROVED

LEX-13339 UH-60Q

APPLICATION

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-06-28	



ITEM	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	QTY
AR		ADHESIVE	33564	EA934		EA		2
18		INSERT		NAS1833-3-500		EA		1
	X	PALLET		LEX-11340	50x21.25x30.25 HONEYCOMB P/N 810--11233-500			

PER DASH NO

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

W.B.H. 93-06-28

L.M. 93-06-06

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

TITLE: PALLET

SIZE D | CAGE CODE NO. 7S976 | SHEET NO. LEX-13340

SCALE 1/2 | SHEET 1

UH-60Q

TION

8 7 6 5

D C B A

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

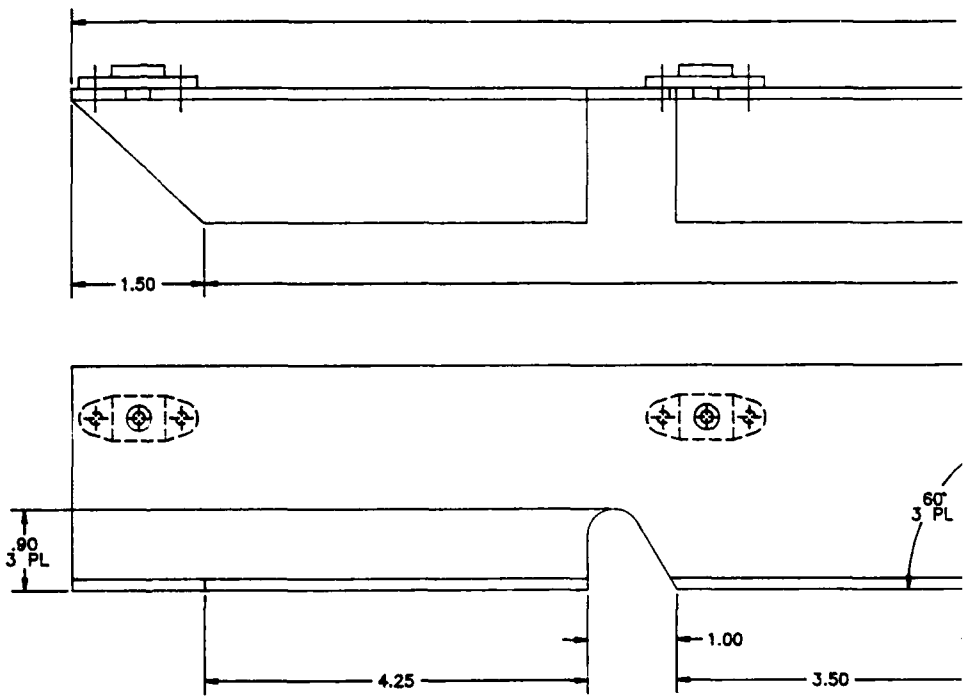
3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A EPOXY POLYAMIDE PRIME PER MIL-P-23377 TYPE 1 OR TT-P-1757, 2 COATS

7. LOCATE ITEM 1 NUTPLATES BY USING LEX-13340 PALLET AS TEMPLATE

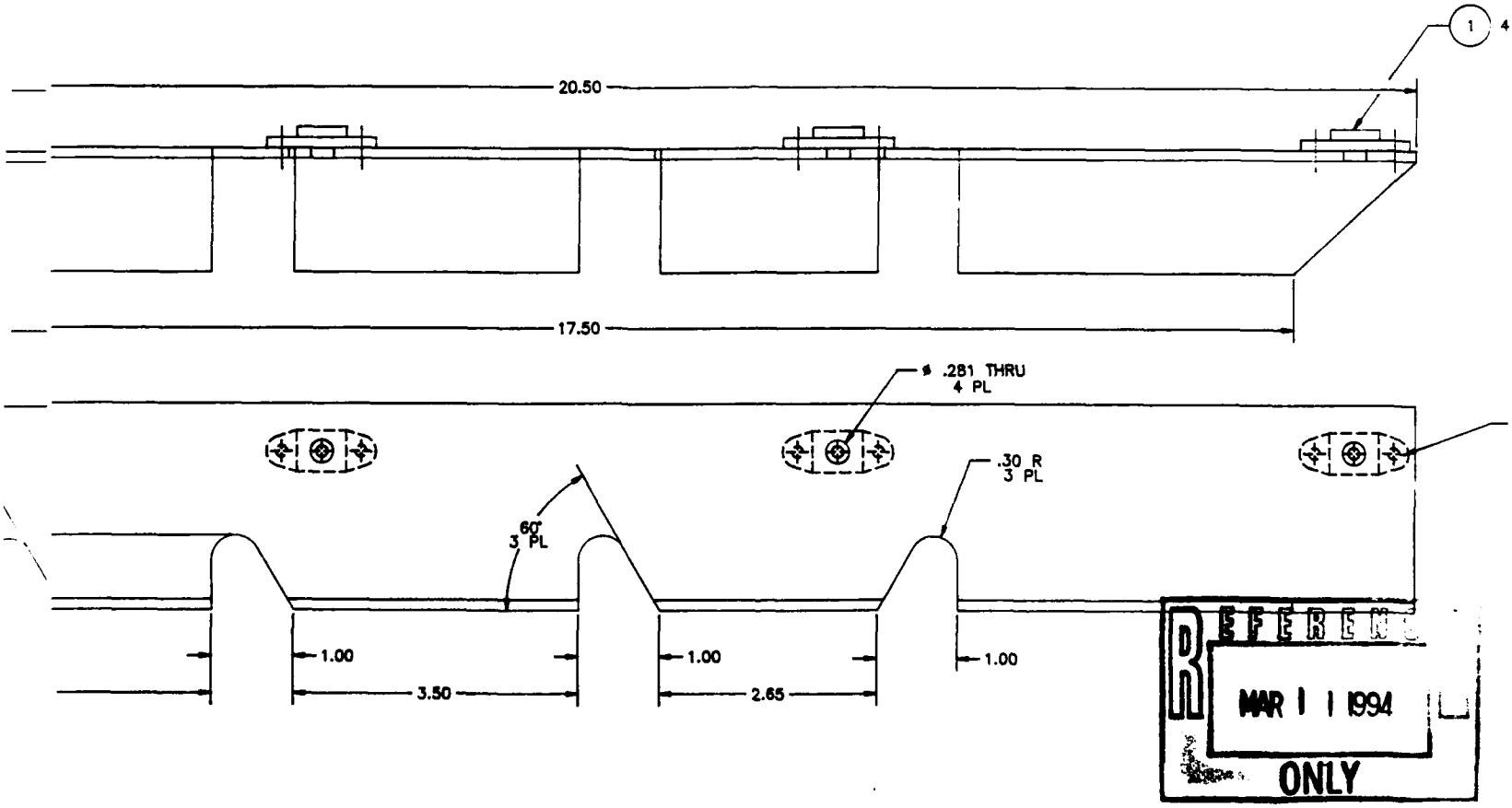


BASIC CODE	NAS 52
BB-MS20426AD	INSTALL
	BASIC
	C-COUNTER BOTH SI CSK 100 GRIND FL

6 | 5 | 4 | 3 | 2

ZONE	REV	
		CAD GENERA

(2)



8		RIVET		MS20426AD3
4		NUTPLATE		MS21076L4
X		MSOGS ANGLE, AFT		LEX-13341
	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.

QUANTITY REQUIRED PER DASH NO

BASIC CODE	NAS 523 FASTENER CODE
SB-MS20426AD	INSTALL RIVETS PER MS1515
	BASIC CODE: DASH NO FOR DIA; M=MFG HEAD M/S, F=MFG HEAD F/S
	C=COUNTERSINK BOTH SIDES CSK 100° AND GRIND FLUSH: DASH NO FOR LENGTH

LEX-13336	UH-60	
APPLICATION		

UNLESS OTHERWISE SPECIFIED

FINISH: 6

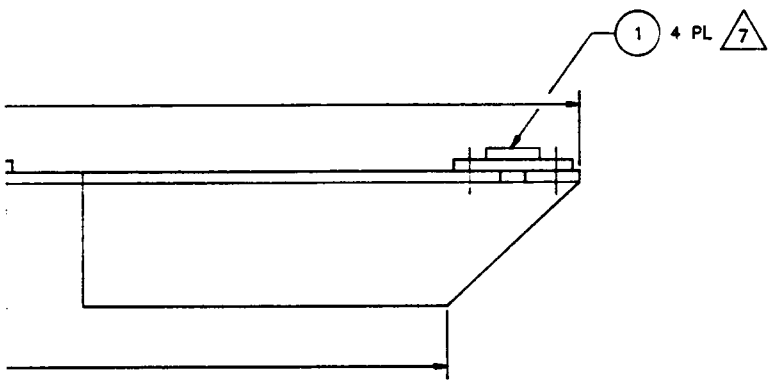
DAAB07-92-Z-B506

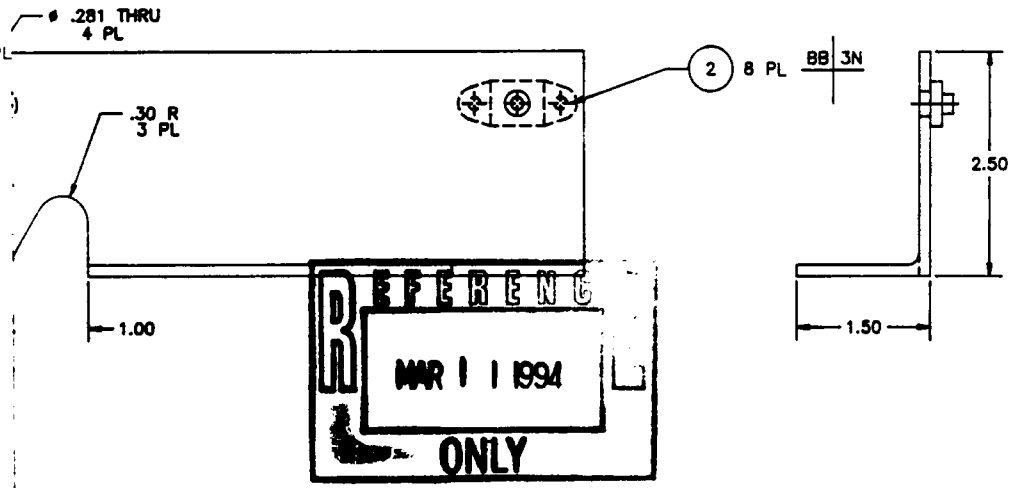
W.B.H. 93-06-29

L.M. 93-06-06

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-06-28	

(3)





8		RIVET		MS20426AD3		EA		2
4		NUTPLATE		MS21076L4		EA		1
X		MSOGS ANGLE, AFT		LEX-13341	60-14935 X 20.70 LONG 7075-T6511 AL ALY QQ-A-200/11			
	SMR	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	

PARTS LIST

QUIRED PER DASH NO

UNLESS OTHERWISE SPECIFIED

FINISH: 6

CONTRACT NO. DAAB07-92-Z-B506

DRN W.S.H. 93-06-29
ENGR L.M. 93-06-08
QUAL

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LOAD LEX, KY.

TITLE
MSOGS
ANGLE, AFT

SIZE D | CAGE IDENT NO. 7S976 | DRAWING NO. LEX-13341

WEIGHT | SHEET 1/1 | SCALE | REV 1 OF 1

PLICATION

8 7 6 5

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

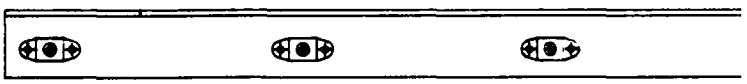
3. REMOVE BURRS AND BREAK ALL SHARP EDGES

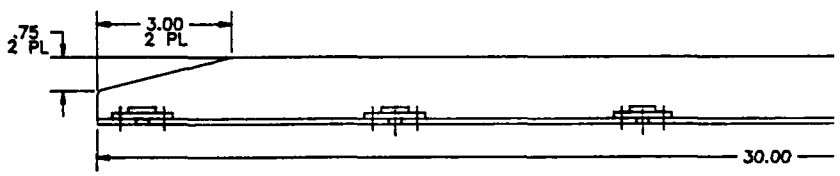
4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A EPOXY POLYAMIDE PRIME PER MIL-P-23377 TYPE 1 OR TT-P-1757, 2 COATS

7. TO LOCATE ITEM 1 NUTPLATES USE LEX-13340 PALLET AS TEMPLATE





BASIC CODE	NAS 5
B8-NS20426AD	INSTAL
	BASIC
	C=COUNTE BOTH S CSK 10 GRIND

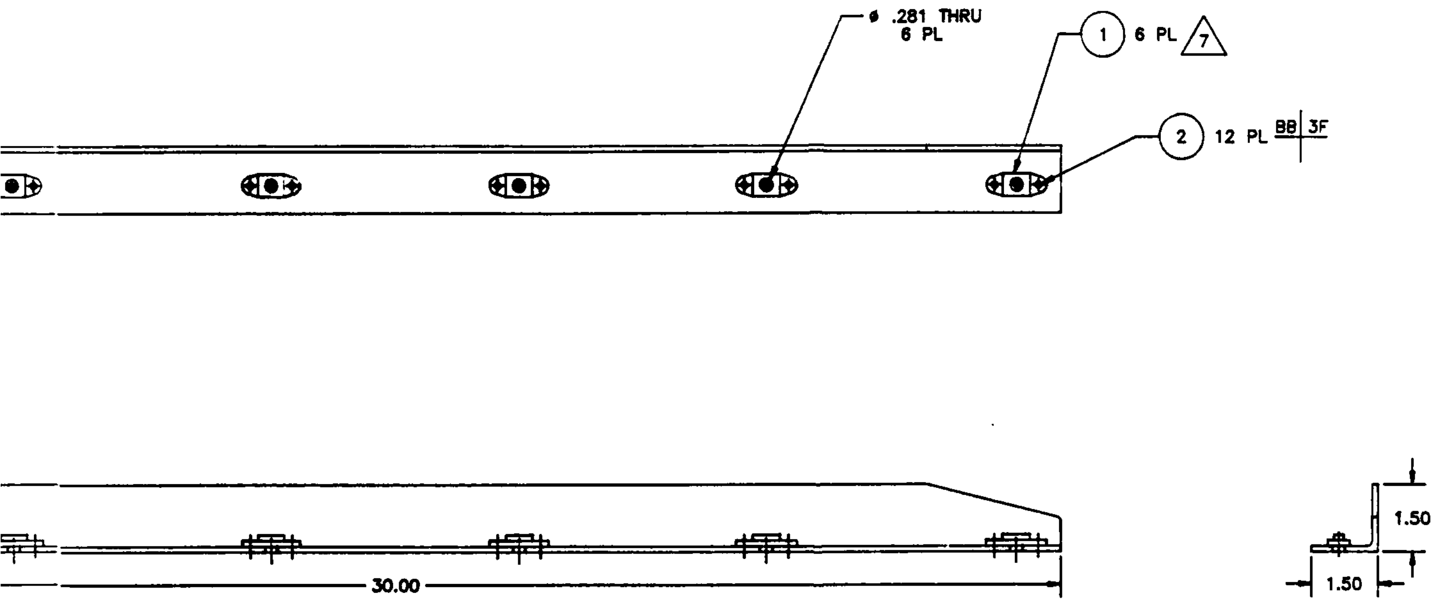
D C B A

8 7 6 5

REV

ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)



12		RIVET		MS20426AD3	
6		NUTPLATE		MS21076L4	
		MSOGS ANGLE		LEX-13342	AND10133 7075-T651
SYM		NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	

QUANTITY REQUIRED PER DASH NO

PARTS LIST

BASIC CODE	NAS 523 FASTENER CODE
BB-MS20426AD	INSTALL RIVETS PER MS1515
	BASIC CODE — DASH NO FOR DIA N=MFG HEAD N/S F=MFG HEAD F/S
	C=COUNTERSINK BOTH SIDES CSK 100° AND GRIND FLUSH — DASH NO FOR LENGTH

NEXT ASSEMBLY	USED ON
LEX-13336	UH-60Q

APPLICATION

UNLESS OTHERWISE SPECIFIED

FINISH: 6

CONTRACT NO. DAAB07-92-Z-B506

DR	W.B.H.	93-06-29
CHK	L.M.	93-06-06

SERV
A SUBSI

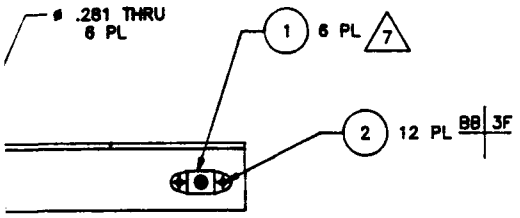
SIZE D 7S97

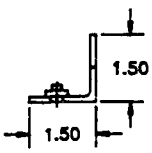
SHEET 1/1

MA

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-06-29	

(3)





ITEM	ZONE	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	QTY
12		RIVET		MS20426AD3		EA		2
6		NUTPLATE		MS21076L4		EA		1
X		MSOGS ANGLE		LEX-13342	AND10133-1403 X 30.2 LONG 7075-T6511 AL ALY QQ-A-200/11			

PARTS LIST

ACQUIRED PER DASH NO

UNLESS OTHERWISE SPECIFIED

FINISH: 6

CONTRACT NO. DAAB07-92-Z-B506

W.B.H. 93-06-29

L.M. 93-06-06

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

MSOGS
ANGLE, FWD

SIZE D | CAGE CODE 7S976 | DRAWING NO. LEX-13342

SHEET 1/1 | SHEET 1 OF 1

APPLICATION

4 3

C

B

A

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

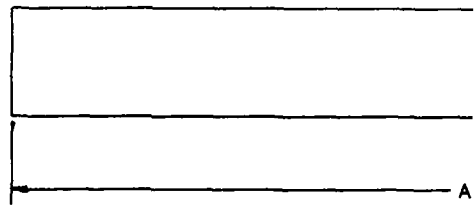
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A EPOXY POLYAMIDE PRIME PER MIL-P-23377 TYPE 1 OR TT-P-1757, 2 COATS



	A
-1	8.50
-2	6.00
-3	3.00

					BAR
					BAR
					BAR
-3	-2	-1	SYM	NOMENCLATURE	
QUANTITY REQUIRED PER DASH NO					

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN DECIMAL-TOLERANCED INCHES
FRACTIONS ± 1/64 | DECIMALS .X ± .1, .XX ± .03, .XXX ± .010 | ANGLES ± 1°

FINISH:

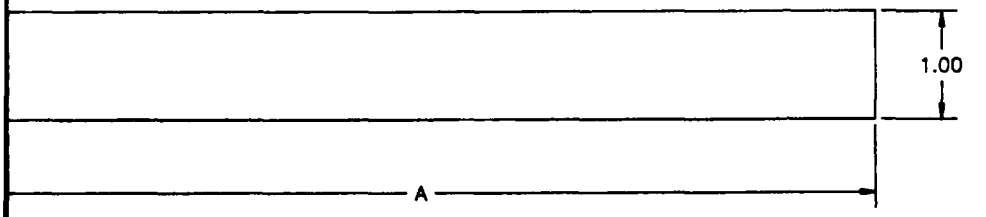
6

LEX-13339	UH-60Q
NEXT ASSEMBLY	USED ON
APPLICATION	

4 3

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-20	

(2)



LEX-13343 REV 1

-2	-1	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	REF DES
			BAR		LEX-13343-3	.313x1.2x3.2 6061-T6 AL ALY QQ-A-250/11			
X			BAR		LEX-13343-2	.313x1.2x6.2 6061-T6 AL ALY QQ-A-250/11			
	X		BAR		LEX-13343-1	.313x1.2x8.7 6061-T6 AL ALY QQ-A-250/11			

DASH NO

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN DECIMAL-TOLERANCED INCH
FRACTIONS ± 1/64 DECIMALS .X ± .1 .XX ± .02 .XXX ± .005 ANGLES ± 1°

FINISH:

6

CONTRACT NO. DAAB07-92-Z-B506

DR. W.B.H. 93-07-20
CHK. L.M. 93-08-06
ENGR.

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

TITLE: BAR

SIZE C | CAGE IDENT NO. 7S976 | DRAWING NO. LEX-13343

SCALE 1/1 SHEET 1 OF 1

1-600
USED ON

A

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

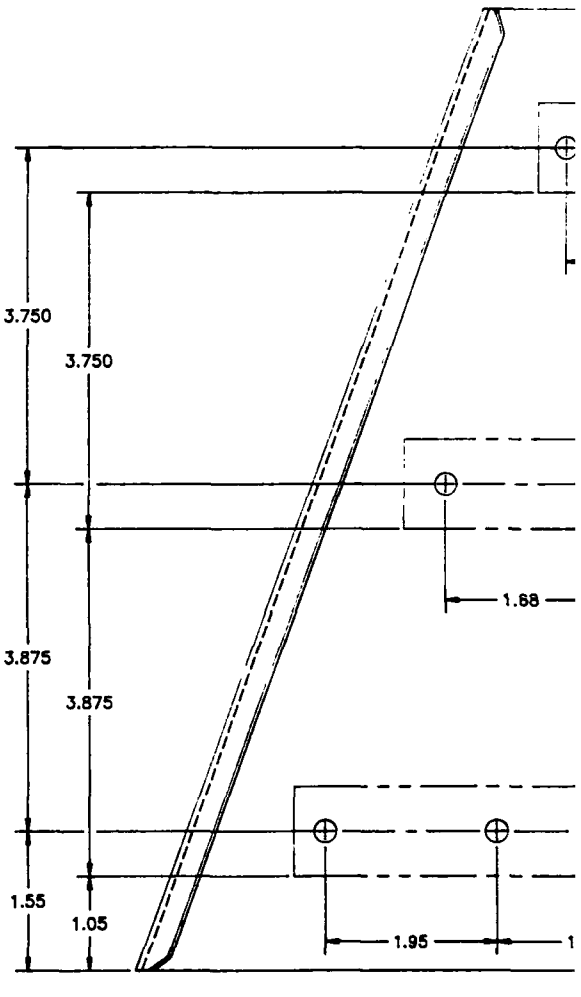
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

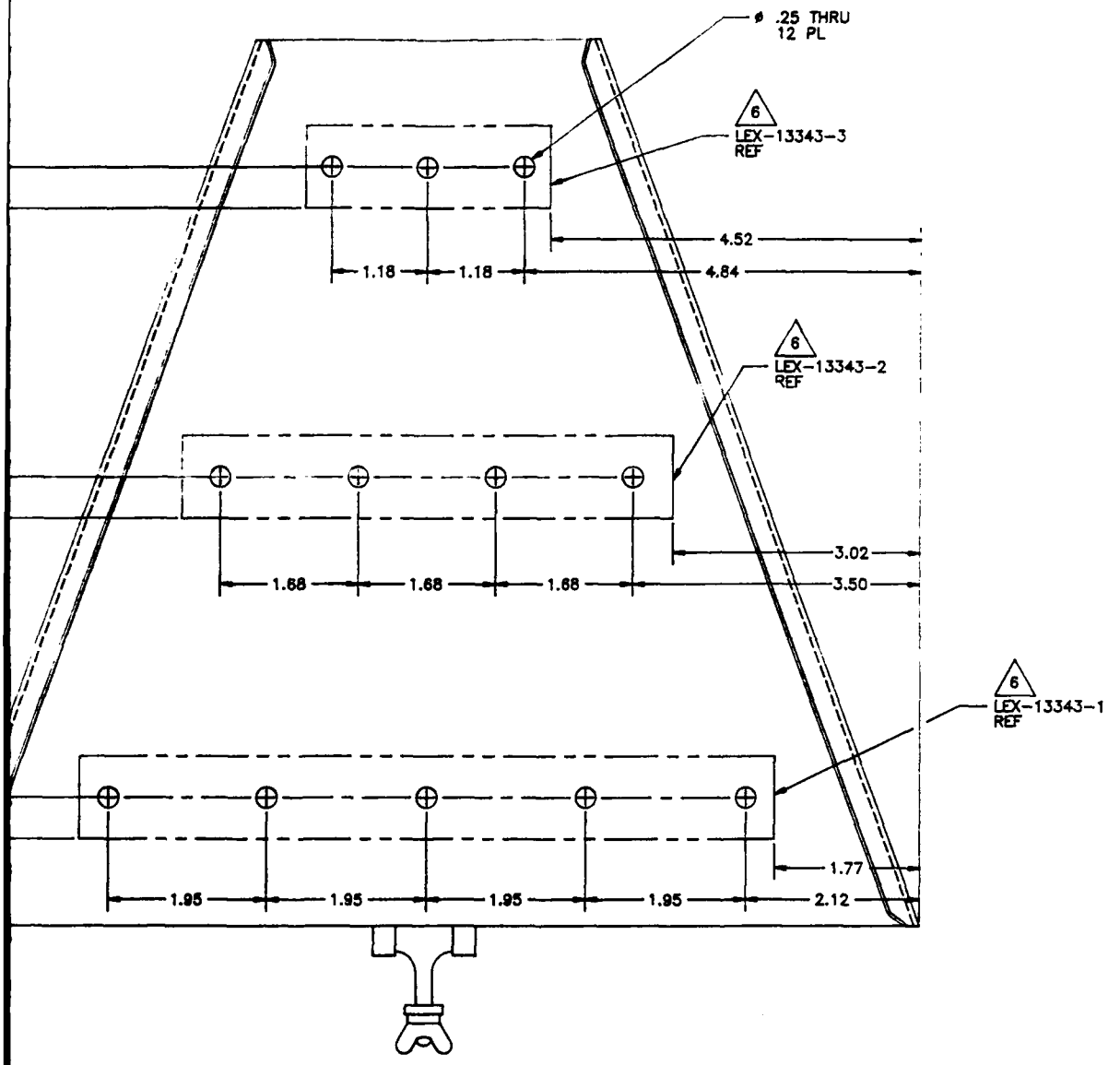
⚠6. LOCATE LEX-13343-1, -2, & -3 AS SHOWN & MATCH DRILL



5 4 3 2

REVIS		
ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)



	MSOGS MOUNTING BRACKET		LEX-13344	MS90341
SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATE
QUANTITY REQUIRED PER DASH NO			PARTS LIST	
	UNLESS OTHERWISE SPECIFIED	CONTRACT NO.	DAAB07-92-Z-B506	SERV A SUBSID
		W.B.H.	93-07-20	
		L.M.	93-08-06	
LEX-13339	UH-60Q			
APPLICATION			D	7S976
			SHEET 1/1	

5 4 3 2

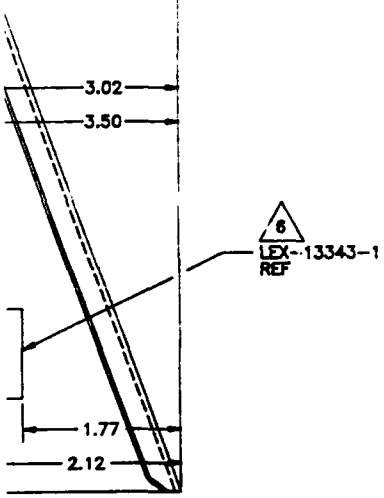
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-20	

(3)

.25 THRU
12 PL

-13343-3

6
LEX-13343-2
REF



SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	
	MSOGS MOUNTING BRACKET		LEX-13344	MS90341			

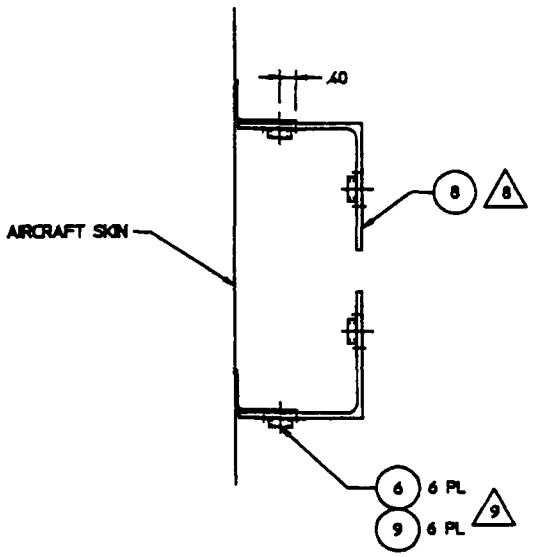
PARTS LIST

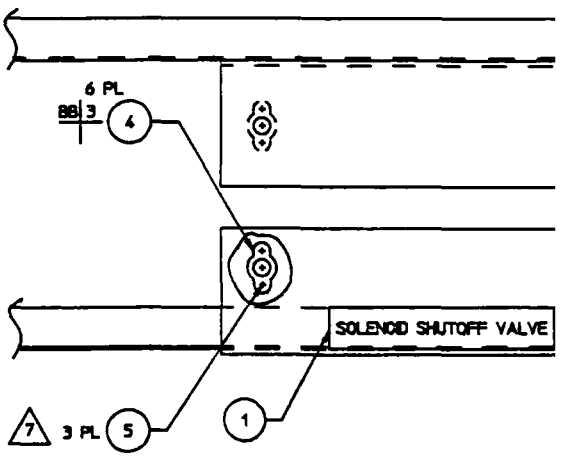
UNLESS OTHERWISE SPECIFIED	CONTRACT NO. DAAB07-92-Z-B506	SERV-AIR, INC. S.O.F.S.A. A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.	
	W.B.H. 93-07-20	MSOGS MOUNTING BRACKET	
	L.M. 93-08-06		
		SIZE D	CAGE IDENT NO. 7S976
		SCALE 1/1	SHEET 1 OF 1

DRAWING NO. LEX-13344

NOTES:

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. REMOVE BURRS AND BREAK ALL SHARP EDGES
4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982
5. IDENTIFICATION CODE OF FASTENERS PER NAS 523
6. INSTALLATION OF FASTENERS PER MIL-STD-1515
7. LOCATE FIND NUMBER 4, 3 PL, AS SHOWN USING SOLENOID SHUTOFF VALVE AS TEMPLATE TO LOCATE HOLES
8. SHUT OFF VALVE NOT SHOWN FOR CLARITY
9. USE LEX-13335 ANS LEX-13336 BRACKETS FOR TEMPLATES FOR Ø .156 HOLES





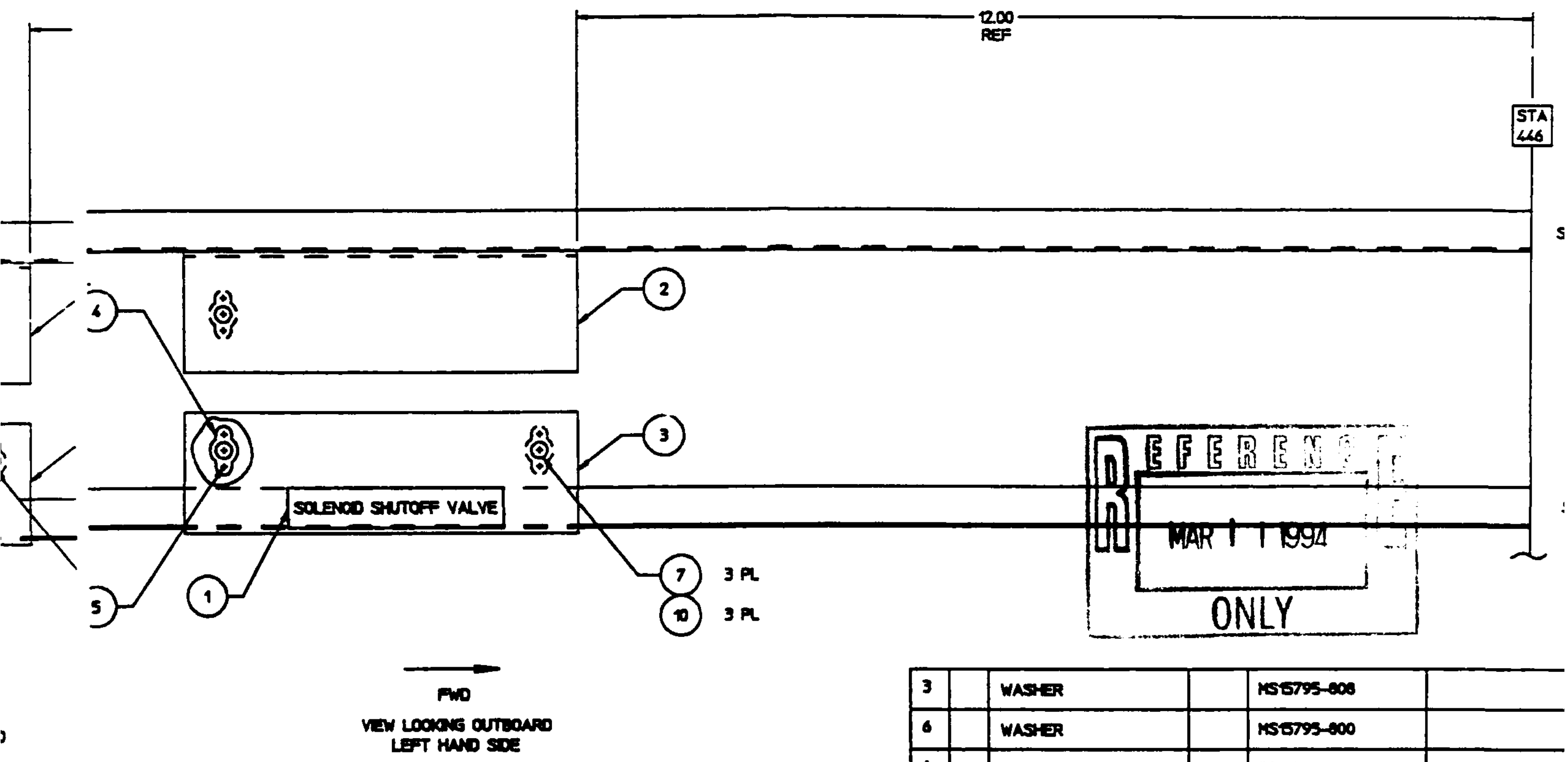
FWD

VIEW LOOKING OUT
LEFT HAND SI

5	4	3	2

CAD GENERATED

(2)



Quantity required per dash no.	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPEC
3		WASHER		MS15795-808	
6		WASHER		MS15795-800	
1		SHUTOFF VALVE	96124	520100-2	
3		SCREW		MS51958-64	
6		SCREW		MS51957-30	
6		RIVET		MS20426AD3	
3		NUTPLATE		MS21075L3	
1		BRACKET		LEX-13336	
1		BRACKET		LEX-13335	
1		DECAL		LEX-13333-3	

PARTS LIST

APPLICATION: LEX-13321 | UH-60Q

UNLESS OTHERWISE SPECIFIED

FINISH:

CONTRACT NO. DAAB07-92-Z-B506

S.L.H. 93-05-18
L.H. 93-12-07
V.L.D. 93-12-10

SERV-AIR
A SUBSIDIARY O

SOLENOI
VALVE I

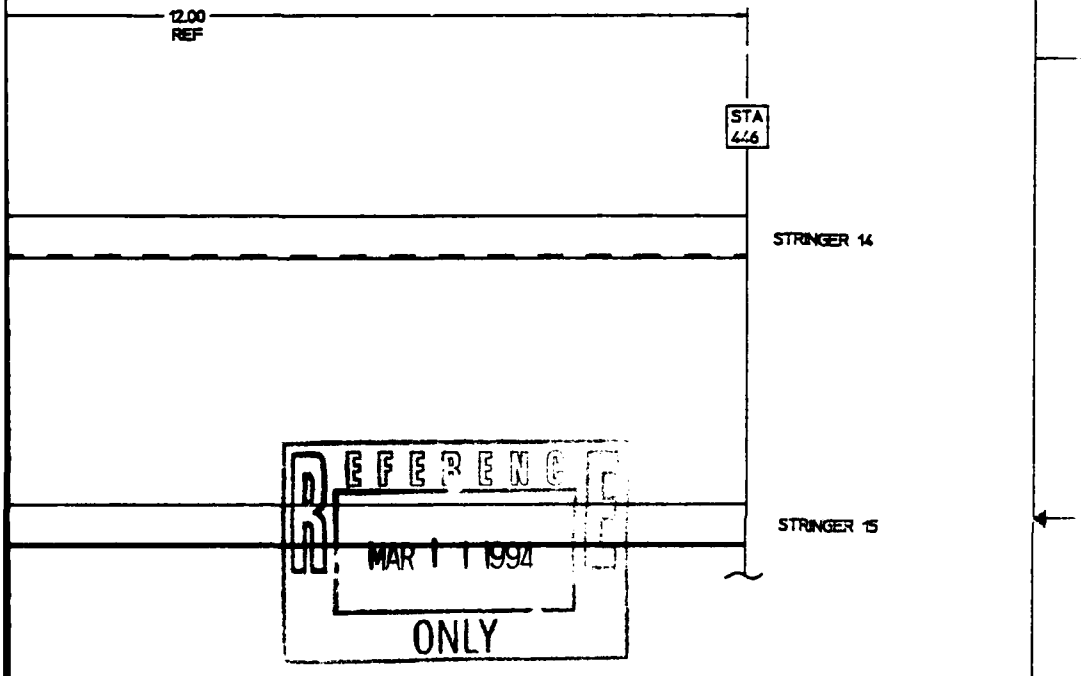
D 7S976

V1

5	4	3	2

ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-05-18	

3



ITEM	SYM	NOMENCLATURE	CAGE CODE	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	FIND NO.
3		WASHER		MS15795-808		EA		10
6		WASHER		MS15795-800		EA		9
1		SHUTOFF VALVE	96124	520100-2		EA		8
3		SCREW		MS51958-64		EA		7
6		SCREW		MS51957-30		EA		6
6		RIVET		MS20426AD3		EA		5
3		NUTPLATE		MS21075L3		EA		4
1		BRACKET		LEX-13336		EA		3
1		BRACKET		LEX-13335		EA		2
1		DECAL		LEX-13333-3		EA		1

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN DECIMAL TOLERANCE ON FRACTIONS ANGLES .XX .X

FINISH

CONTRACT NO. DAAB07-92-Z-B506

SERV-AIR, INC. 90PSA
A SUBSIDIARY OF E-SYSTEMS,INC. LBAD LEX, KY.

S.L.H.	93-05-18
L.M.	93-12-07
V.L.D.	93-12-10

SOLENOID SHUT OFF VALVE INSTALLATION

SIZE	DRAWING NO.	REV
D	7S976	

LEX-13345

SHEET 1/1 SCALE 1 = 1

UH-60Q

3 2 1

8 7 6 5

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. PICK-UP EXISTING RIVET PATTERN. NUMBER OF RIVETS MAY VARY AMONG AIRCRAFT

4. RIVET THROUGH ITEM 3 FRAME, ITEM 4 SCREEN, A/C SKIN AND ITEMS 6-7 SUPPORTS RESPECTIVELY

5. RIVET THROUGH EACH ITEM 5 ANGLE AND EXISTING STRINGER 2 PLACES AND THROUGH EACH ITEM 5 ANGLE AND ITEMS 6-7 2 PLACES

6. AFTER INSTALLATION TOUCH-UP EXTERIOR WITH CARC PAINT PER MIL-C-46168 CC #34031

D

C

B

A

BASIC CODE	NAS 52
ARN=CR3213 BJ=MS20470AD	INSTALL BASIC C=COUNTER BOTH SI CSK 100 GRIND FL

8 7 6 5

5 4 3 2

REVISIONS

ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)

QUANTITY REQUIRED PER DASH NO	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SP
28		RIVET		MS20426AD5	
56		RIVET	11815	CR3213-5	
32		RIVET	11815	CR3213-4	
2		WASHER		AN960C8L	
2		SCREW		MS51957-57	
8		WASHER		MS515795-808	
8		SCREW		MS51958-63	
1		FRAME		LEX-13353	
2		CHANNEL		LEX-13354	
2		SUPPORT		LEX-13352-2	
2		SUPPORT		LEX-13352-1	
8		ANGLE		LEX-13351	
1		SCREEN		LEX-13355	
1		FRAME		LEX-13356	
1		FAN	2W924	PASPT 1624	
1		HEAT EXCHANGER	16630	6501-12	
X		HEAT EXCHANGER INSTALLATION		LEX-13349	

PARTS LIST

BASIC CODE	NAS 523 FASTENER CODE
AFN=CR3213 BJ=MS20470AD	INSTALL RIVETS PER MIL515
BASIC CODE	DASH NO FOR DIA N=MFG HEAD N/S F=MFG HEAD F/S
C=COUNTERSINK BOTH SIDES CSK 100° AND GRIND FLUSH	DASH NO FOR LENGTH

LEX-13321	UH-60Q
APPLICATION	

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

DR W.B.H.	93-08-09
CHK L.M.	93-08-16
ENGR	

SERV-AI
A SUBSIDIARY

TITLE
EX
INS

SIZE D | CAGE SHEET NO. 7S976

SCALE 1/1

5 4 3 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-08-09	

(3)

28		RIVET		MS20426AD5				16
56		RIVET	11815	CR3213-5				15
32		RIVET	11815	CR3213-4				14
2		WASHER		AN960C8L				13
2		SCREW		MS51957-57				12
8		WASHER		MS515795-808				11
8		SCREW		MS51958-63				10
1		FRAME		LEX-13353				9
2		CHANNEL		LEX-13354				8
2		SUPPORT		LEX-13352-2				7
2		SUPPORT		LEX-13352-1				6
8		ANGLE		LEX-13351				5
1		SCREEN		LEX-13355				4
1		FRAME		LEX-13356				3
1		FAN	2W924	PASPT 1624				2
1		HEAT EXCHANGER	16630	6501-12				1
X		HEAT EXCHANGER INSTALLATION		LEX-13349				
	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	

PARTS LIST

USED PER DASH NO

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

DR. W.B.H. 93-08-09
CHK. L.M. 93-08-16
ENG.

TITLE
HEAT EXCHANGER INSTALLATION

SIZE D | CAGE IDENT NO. 7S976 | DRAWING NO. LEX-13349

WT. | SCALE 1/1 | SHEET 1 OF 3

VH-909

LOCATION

D C B A

8 7 6 5

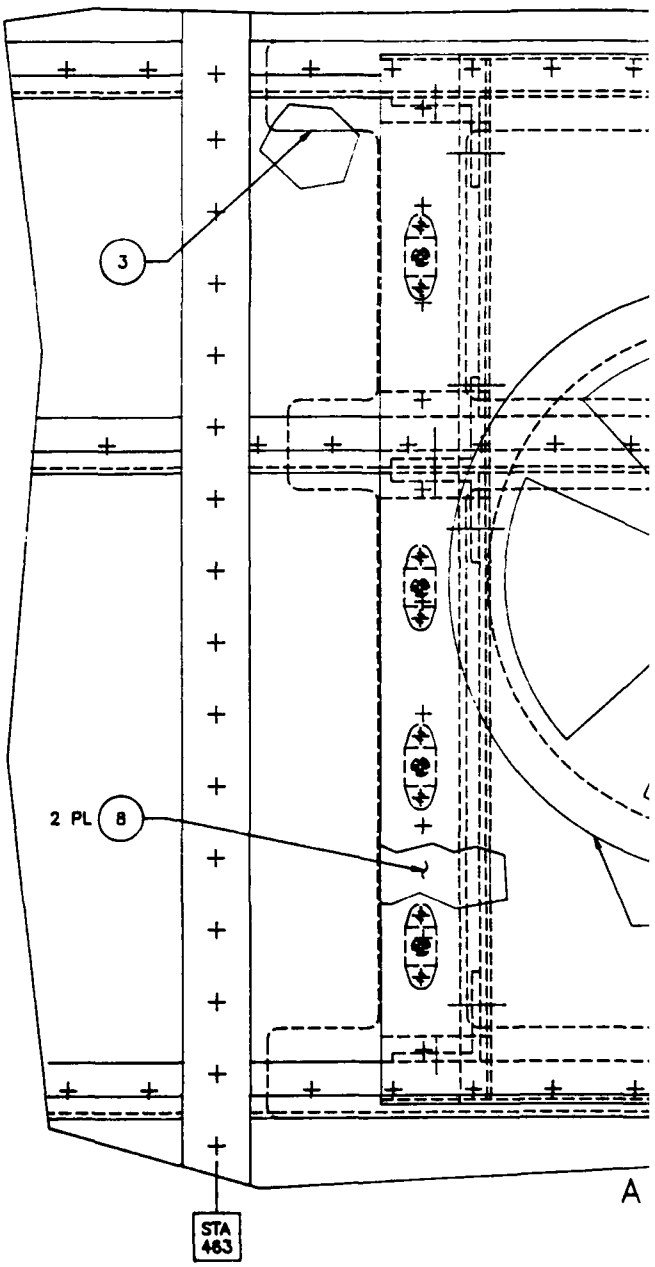
(1)

D

C

B

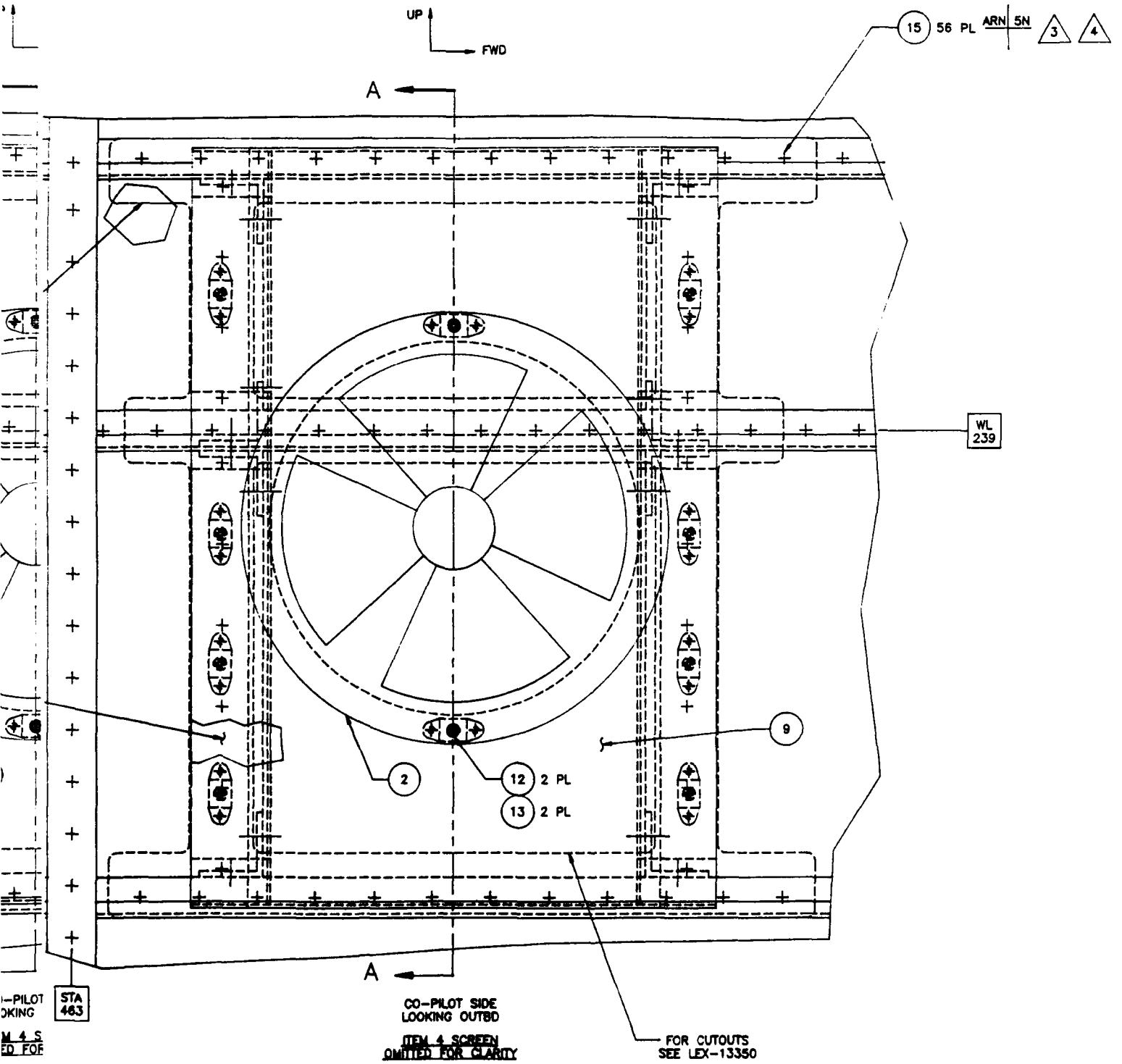
A



8 7 6 5

ZONE	REV	
		CAD GENERATED

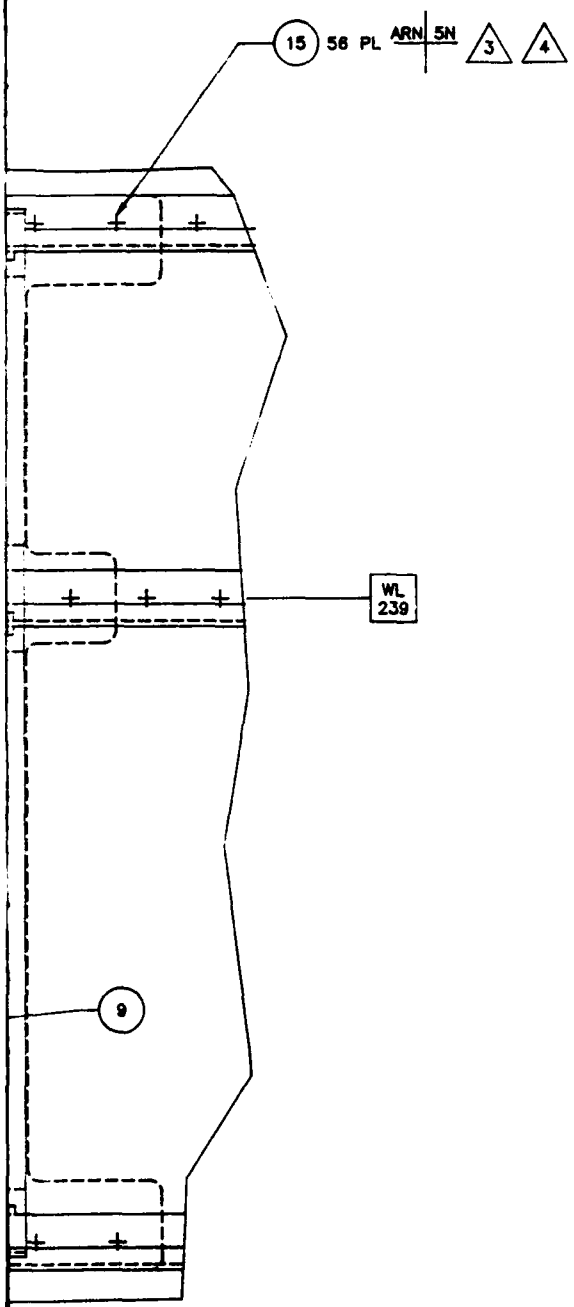
(2)



CONTRACT NO	DAAB07-92-Z-B506	
DRAWN BY W.B.H.	93-08-10	D
CHECKED BY L.M.	93-08-16	

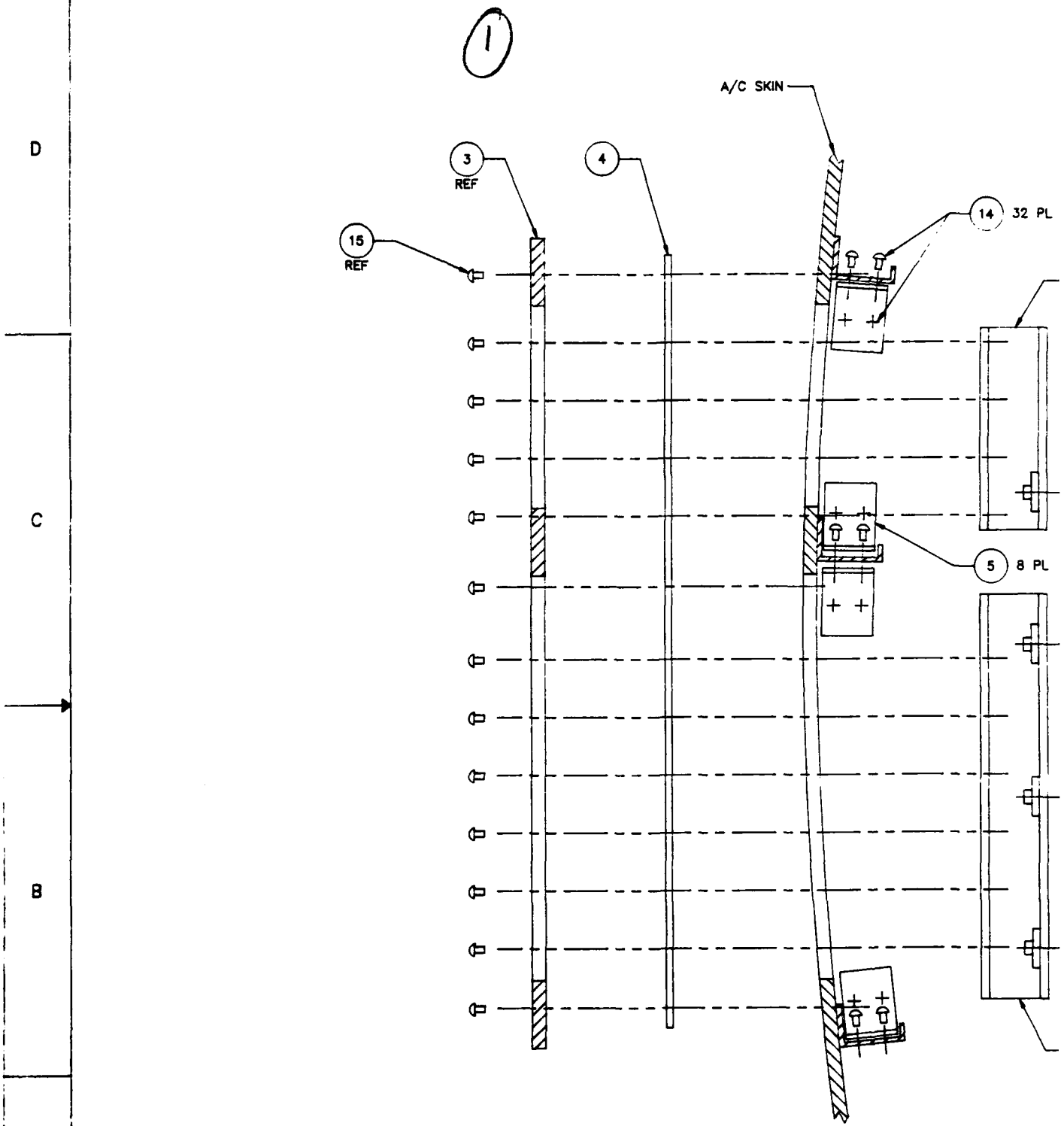
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-08-10	

(3)



UTOUTS
X-13350

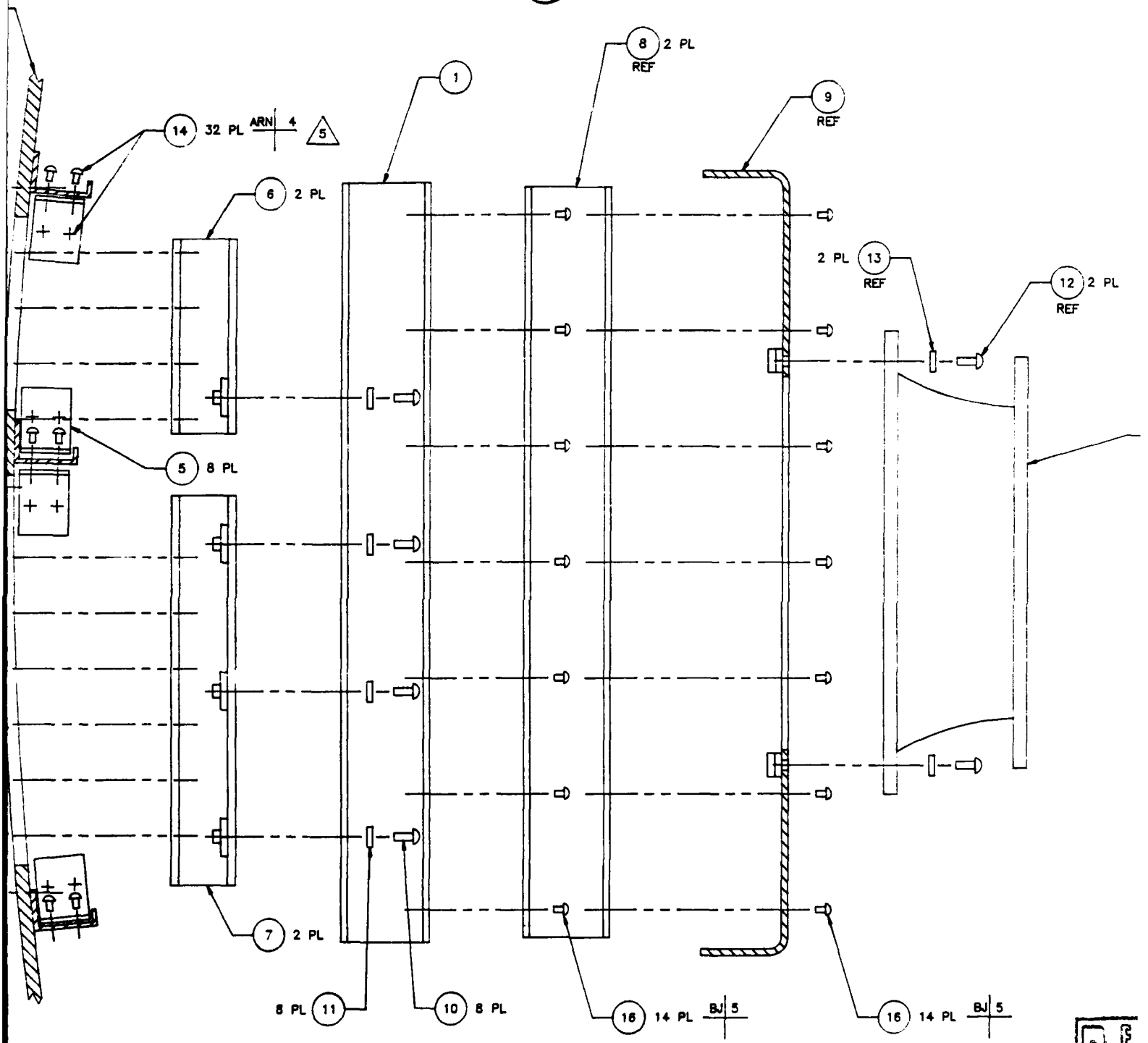
DAAB07-92-Z-B506	D	7S976	LEX-13349
W.B.H. 93-08-10			
L.M. 93-08-10			2 of 3


8
7
6
5
D
C
B
A
1
A/C SKIN
3
REF
4
15
REF
14
32 PL
5
8 PL

REVISIO

ZONE	REV	DESCRIPTION
		CAD GENERATED

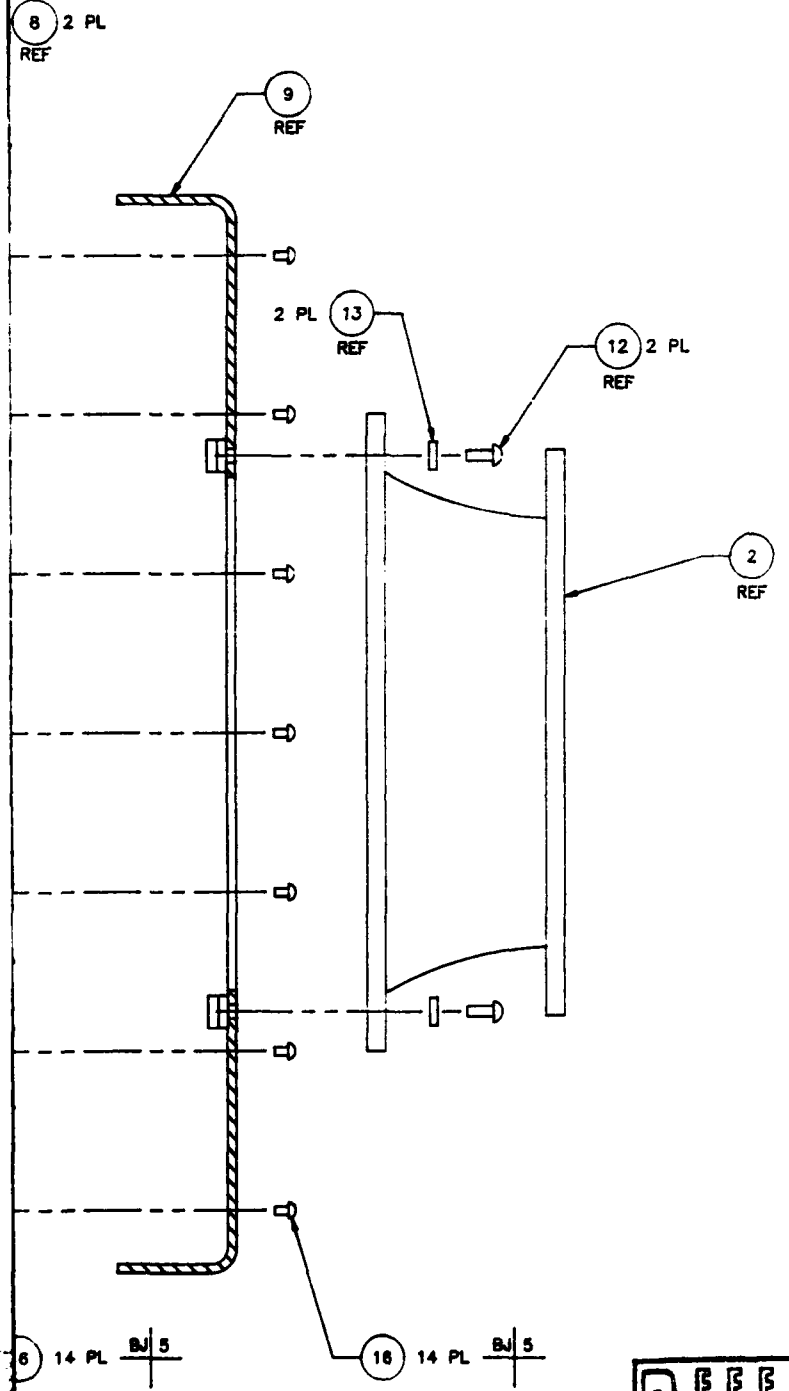
(2)



DAAB07-92-Z-B506		D	7S976
W.B.H.	93-08-11		
L.M.	93-08-16	NONE	

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-08-11	

3



DAAB07-92-Z-B506				
W.S.H. 93-08-11	D	7S976	LEX-13349	
L.M. 93-08-16	NONE			3 of 3

8 7 6 5

D C B A

NOTES:

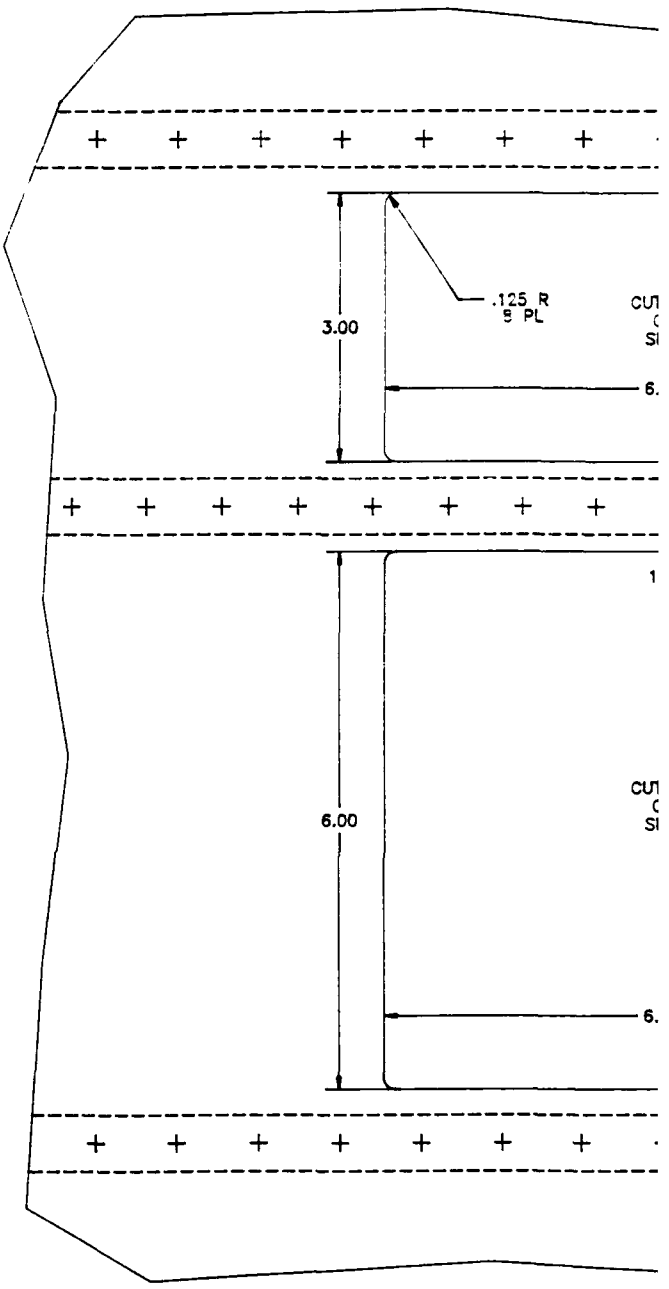
1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

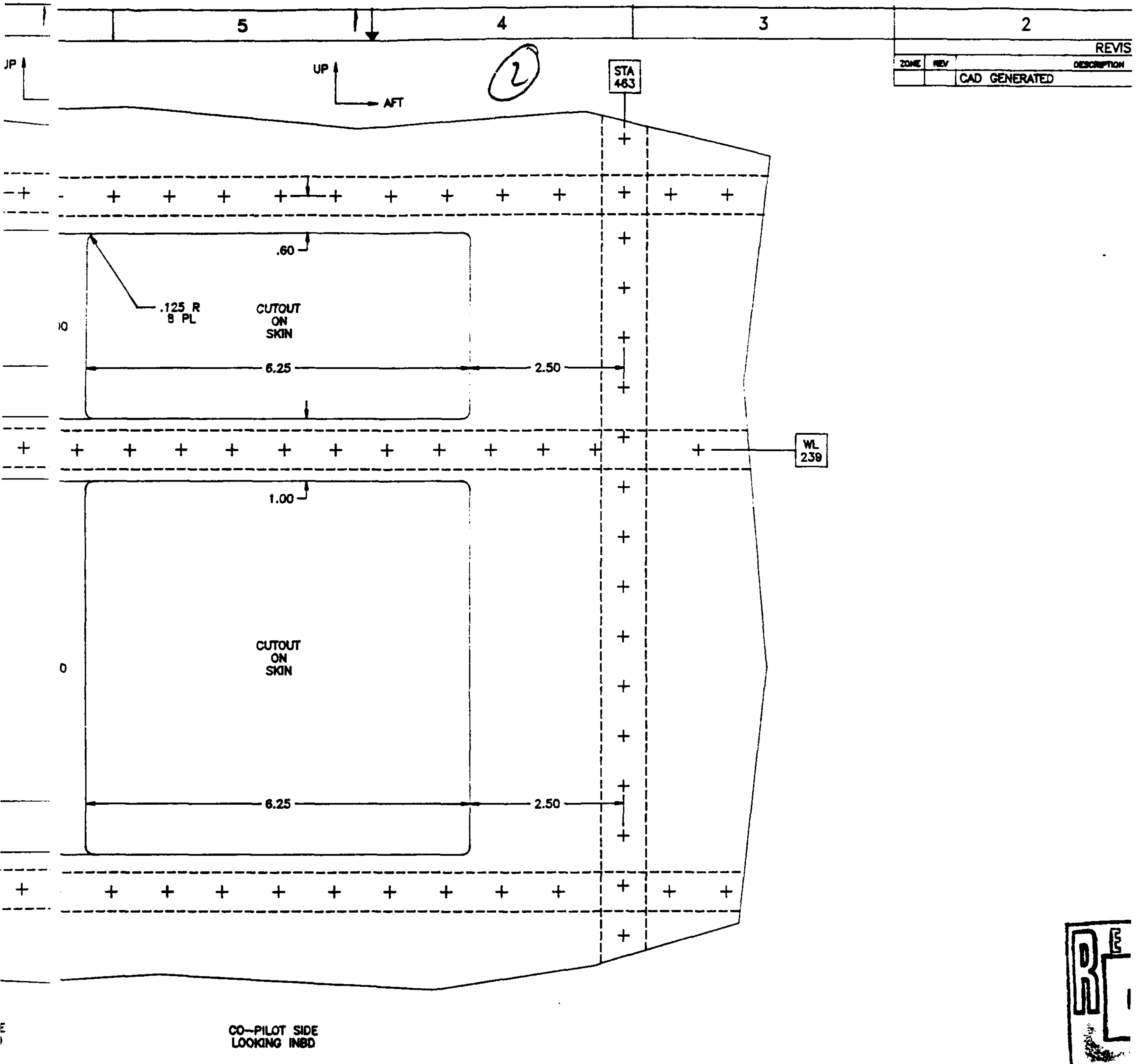
3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

5. AFTER CUTTING APPLY MIL-C-5541 CLASS 1A ALODINE, THEN PRIME PER MIL-P-23377 TYPE 1 OR TT-P-1757 2 COATS. PAINT PER MIL-C-46168 CC #34031



8 7 6 5



FRAME CUTOUT		LEX–13350	
NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATER

QUANTITY REQUIRED PER DASH NO

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07–92–Z–B506

W.B.H. 93–08–09

L.M. 93–08–16

FINISH: 5

SERV–
A SUBSIDI

LEX–13349 UH–60Q

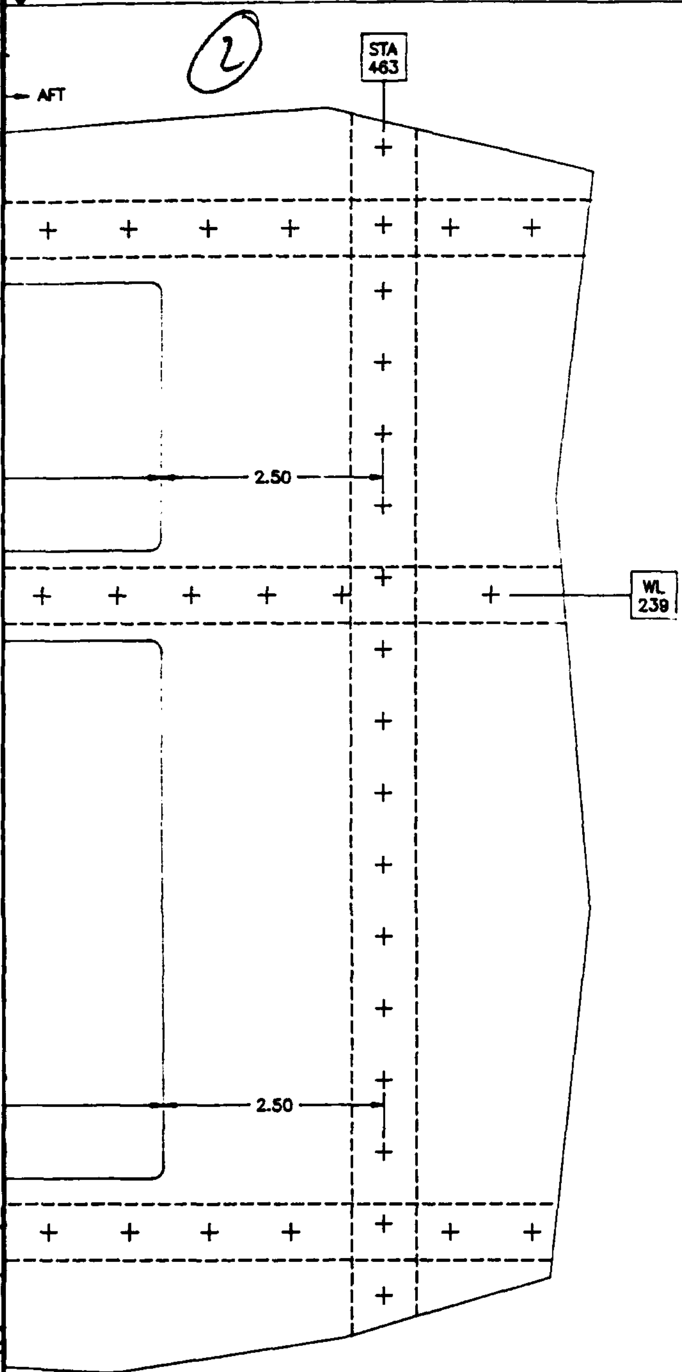
APPLICATION

D 7S976

SCALE 1/1

5 4 3 2

ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-08-09	



PARTS LIST

QTY	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE
		FRAME CUTOUT		LEX-13350			

QUANTITY REQUIRED PER DASH NO

APPLICATION: NEXT ASSEMBLY LEX-13348 — USED ON UH-60Q

UNLESS OTHERWISE SPECIFIED

FINISH: 5

CONTRACT NO. DAAB07-92-Z-B506

DR. W.B.H. 93-08-09

CHK. L.M. 93-08-16

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

TITLE: FRAME CUTOUT

SIZE D | CODE IDENT NO. 7S976 | DRAWING NO. LEX-13350

SCALE 1/1 | SHEET 1 of 1

4 3

C

B

A

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

△6. CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A EPOXY POLYAMIDE PRIME PER MIL-P-23377 OR TT-P-1757 TYPE 1, 2 COATS

.75

ANGLE

SYM	NOMENCLATURE

QUANTITY REQUIRED PER DASH NO

UNLESS OTHERWISE SPECIFI
DIMENSIONS ARE IN INCHES-TOLERANC
FRACTIONS ± NA
DECIMALS
.X ± .1
.XX ± .03
.XXX ± .010

FINISH:

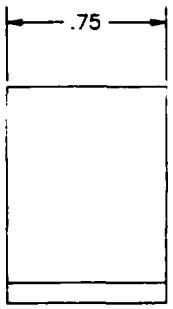
△6

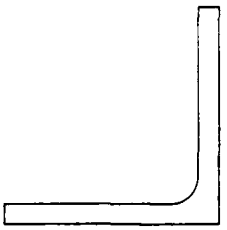
CURRENT CODE IDENT. NO.	NEXT ASSEMBLY	USED ON
APPLICATION	LEX-13349	UH-60Q

4 3

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-08-09	

(2)





SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	FSCM NO.
	ANGLE		LEX-13351	.094x.95 AND .0133-1002 7075-T6511 QQ-A-200/11			

PARTS LIST

ED PER DASH NO

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES TOLERANCES ON:
FRACTIONS ± 1/64 | DECIMALS .X ± .1, .XX ± .03, .XXX ± .010 | ANGLES ± 1°

FINISH: (6)

UH-60Q
USED ON
CATION

CONTRACT NO. DAAB07-92-Z-B506

DR. W.B.H. 93-08-09
CHK. L.M. 93-08-16
ENGR.

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

TITLE: ANGLE

SIZE	CODE IDENT NO.	DRAWING NO.
C	7S976	LEX-13351

SCALE 2/1 SHEET 1 OF 1

SH	REV
1	

DWG NO. LEX-13351

1

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

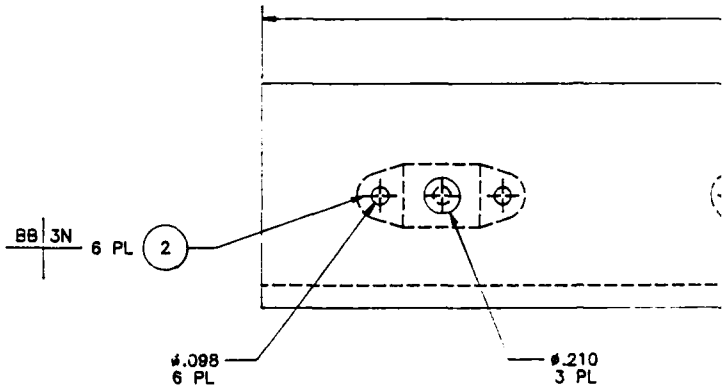
5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

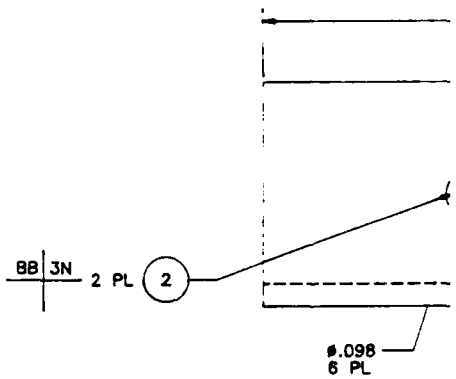
6. IDENTIFICATION CODE OF FASTENERS PER NAS-523

7. INSTALLATION CODE OF FASTENERS PER MIL-STD-1515

8. CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A EPOXY POLYAMIDE PRIME PER MIL-P-23377 TYPE 1 OR TT-P-1757, 2 COATS

9. USE HEAT X-CHANGER PN/16630 CAGE 6501-12 TO DETERMINE ø.210 HOLE AND ITEM 1 NUTPLATE LOCATION



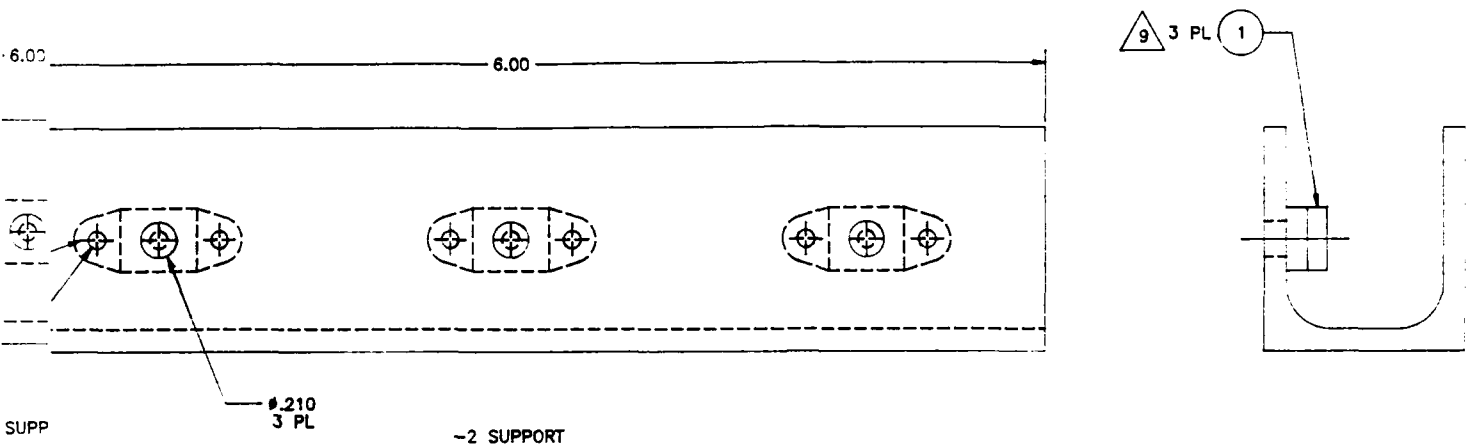


BASIC CODE	NAS 5
BB=MS20426AD	INSTALL
	BASIC
	C=COUNTE BOTH SI CSK 10 GRIND F

5	4	3	2

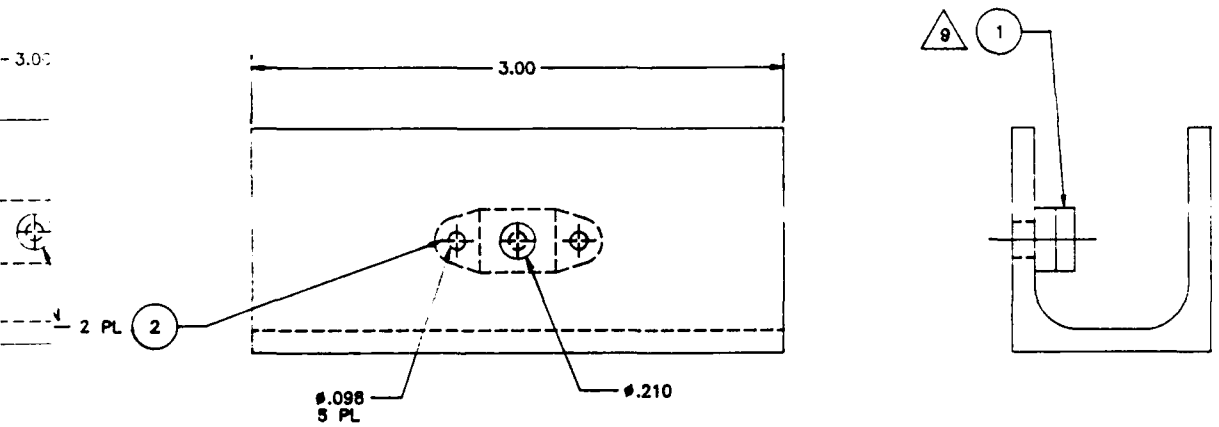
REVISIO		
ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)



SUPP

-2 SUPPORT



SUPF

-1 SUPPORT

6	2		RIVET		MS20426AD3	
3	1		NUTPLATE		MS21076L3	
X			SUPPORT		LEX-13352-2	.125x6.2 A 7075-T651
	X		SUPPORT		LEX-13352-1	.125x3.2 A 7075-T651
-2	-1	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATER

QUANTITY REQUIRED PER DASH NO

PARTS LIST

BASIC CODE	NAS 523 FASTENER CODE
99=MS20426AD	INSTALL RIVETS PER MS1515
BASIC CODE	DASH NO FOR DIA H=MFG HEAD H/3 F=MFG HEAD F/S
C=COUNTERSINK BOTH SIDES CSK 100° AND GRIND FLUSH	DASH NO FOR LENGTH

UNLESS OTHERWISE SPECIFIED

FINISH:

8

APPLICATION

LEX-13349 UH-60Q

DAAB07-92-Z-8506

SERV-
A SUBSIDI

W.B.H. 93-08-09

L.M. 93-08-16

D 7S976

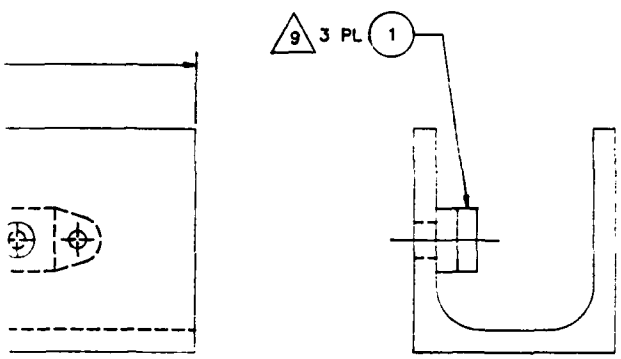
SIZE 2/1

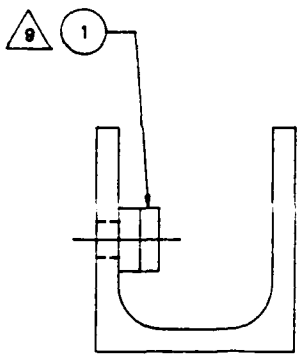
5 4 3 2

3	2	1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-08-09	

3





6	2		RIVET		MS20426AD3		EA		2
3	1		NUTPLATE		MS21076L3		EA		1
X			SUPPORT		LEX-13352-2	.125x6.2 AND10137-1012 7075-T6511 QQ-A-200/11			
	X		SUPPORT		LEX-13352-1	.125x3.2 AND10137-1012 7075-T6511 QQ-A-200/11			
FICATION	-2	-1	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	TP

PARTS LIST

UNLESS OTHERWISE SPECIFIED

FINISH: 8

DAAB07-92-Z-B508

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

W.B.H. 93-08-09
L.M. 93-08-16

SUPPORT

D 7S976 LEX-13352

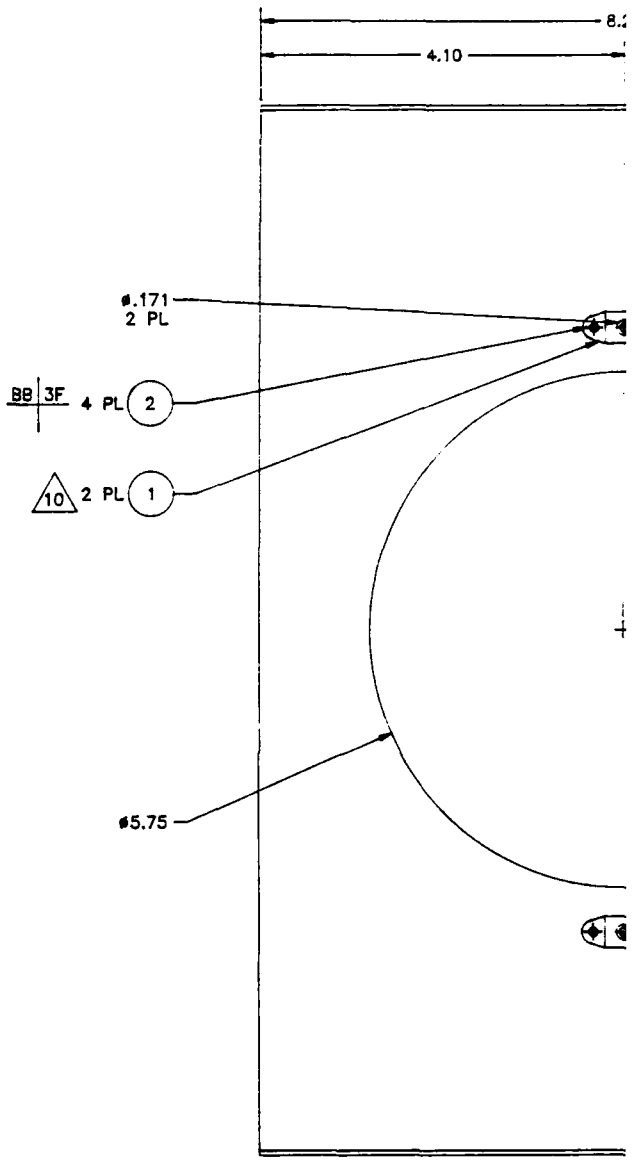
2/1 1 of 1

8 7 6 5

D C B A

NOTES:

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. REMOVE BURRS AND BREAK ALL SHARP EDGES
4. MARK PARTS PER MIL-STD-130
5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982
6. IDENTIFICATION CODE OF FASTENERS PER NAS-523
7. INSTALLATION CODE OF FASTENERS PER MIL-STD-1515
8. CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A EPOXY POLYAMIDE PRIME PER MIL-P-23377 TYPE 1 OR TT-P-1757, 2 COATS
9. CARC PAINT PER MIL-C-46168, 1 COAT CC #36231 (GREY). APPLY CARC PAINT PER MIL-C-53072
10. USE FAN PN/PASPT 1624 CAGE 2W924 TO DETERMINE ø.171 HOLES AND ITEM 1 NUTPLATE LOCATION



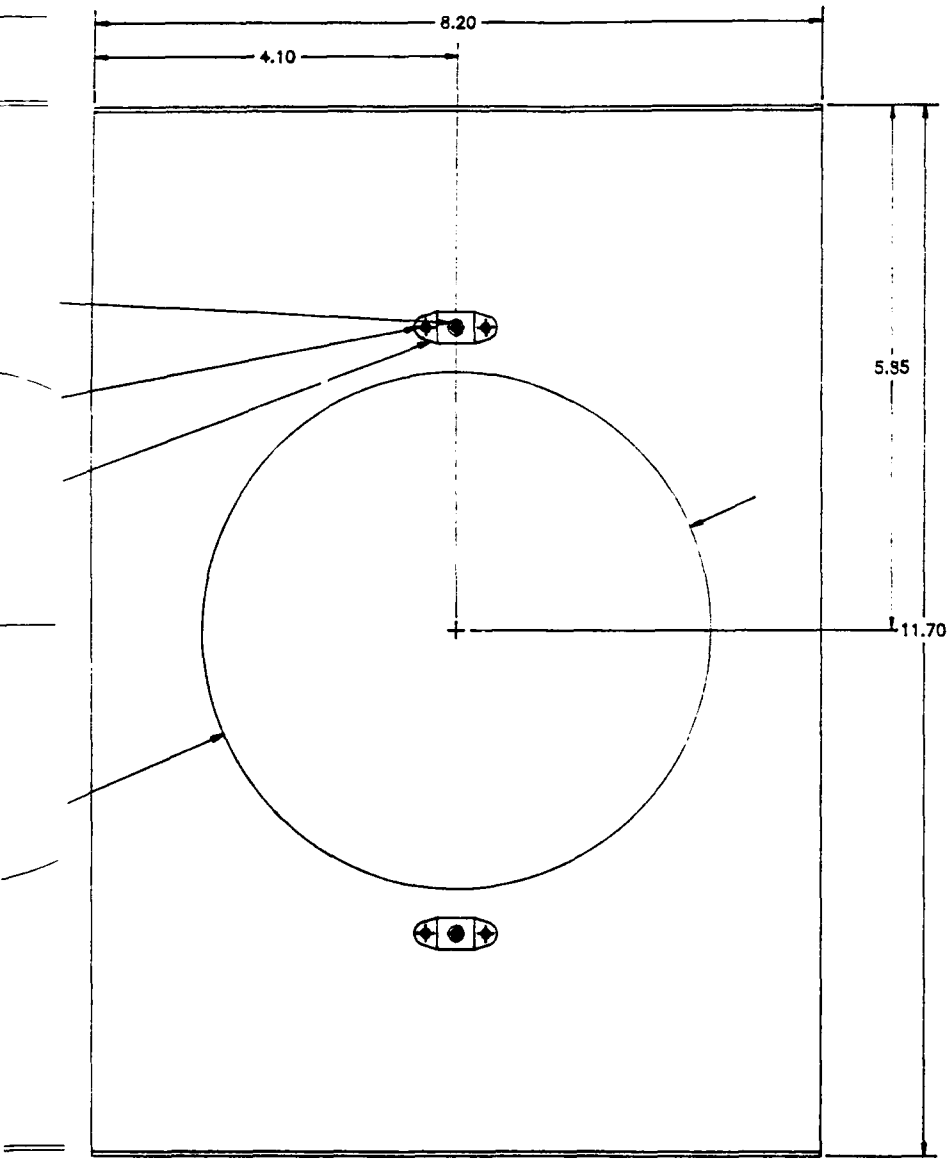
BASIC CODE	NAS 52
BB-MS20426AD	INSTALL
	BASIC
	C-COUNTE BOTH SI CSK 10 GRIND F

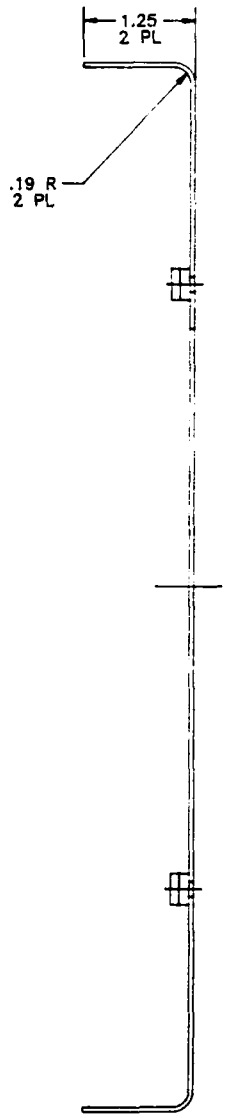
8 7 6 5

5	4	3	2

REV		
ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)





ITEM	QTY	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATL
4		RIVET		MS20426AD3	
2		NUTPLATE		MS21076L08	
X		FRAME		LEX-13353	.050x8.4 AL ALY

QUANTITY REQUIRED PER DASH NO

PARTS LIST

BASIC CODE	NAS 623 FASTENER CODE
BD=MS20426AD	INSTALL RIVETS PER MR1515
BASIC CODE	DASH NO FOR DIA W=MPG HEAD W/S F=MPG HEAD F/S
C=COUNTERSINK BOTH SIDES CSK 100° AND GRIND FLUSH	DASH NO FOR LENGTH

UNLESS OTHERWISE SPECIFIED

FINISH:

6 9

CONTRACT NO. DAA807-92-Z-B506

W.B.H. 93-08-09

L.M. 93-08-16

LEX-13349 UH-60Q

APPLICATION

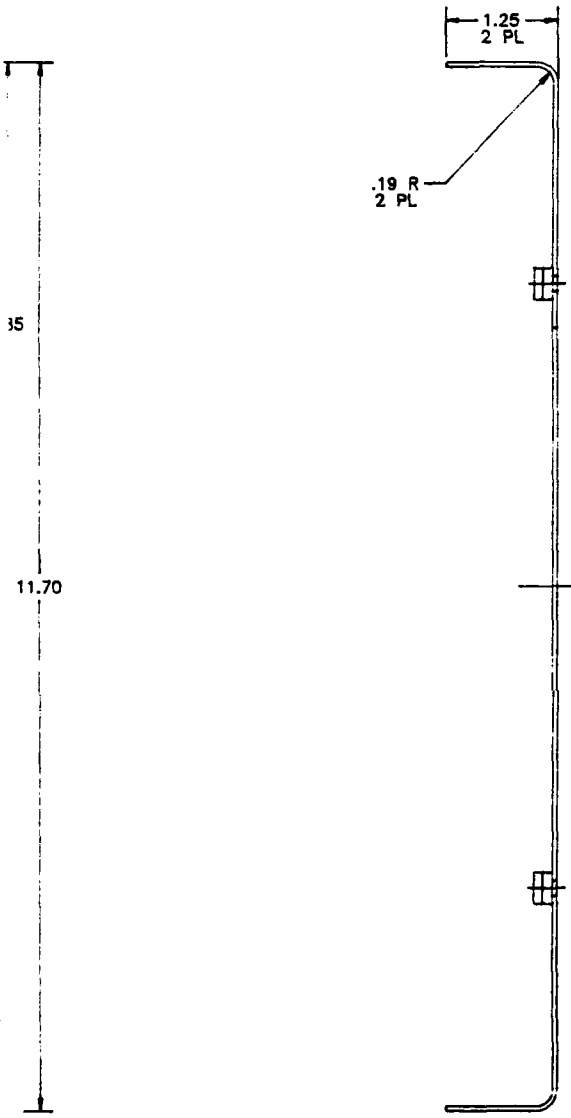
SERV
A SUBSID

D 7S976

1/1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-08-09	

(3)



ITEM	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	QTY
4		RIVET		MS20426AD3		EA		2
2		NUTPLATE		MS21076L08		EA		1
X		FRAME		LEX-13353	.050x8.4x14.4 2024-T3 AL ALY QQ-A-250/5			

DASH NO

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

W.B.H. 93-08-09

L.M. 93-08-16

FINISH:

8 9

TITLE: FRAME

SIZE D | CAGE SHOP NO. 7S976 | DRAWING NO. LEX-13353

SCALE 1/1 | SHEET 1 OF 1

8 | 7 | 6 | 5

D

C

B

A

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

⚠6. CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A EPOXY POLYAMIDE PRIME PER MIL-P-23377 TYPE 1 OR TT-P-1757, 2 COATS

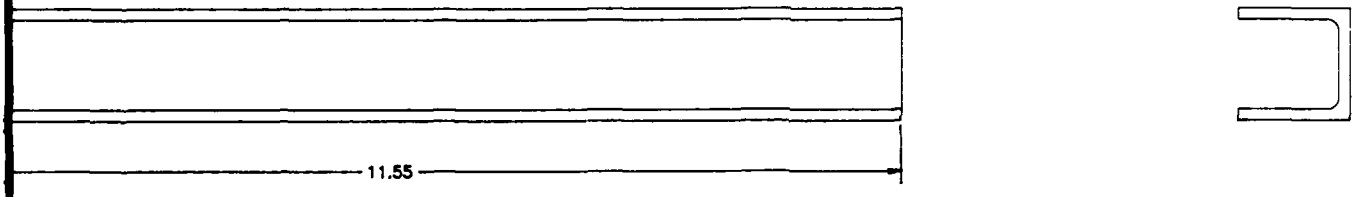
⚠7. CARC PAINT PER MIL-C-46168, 1 COAT CC #36231 (GREY). APPLY CARC PAINT PER MIL-C-53072

5	4	3	2

REVISI

ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)



REF

MAI

	CHANNEL		LEX-13354	.125x11.6 7075-T651
SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERI

QUANTITY REQUIRED PER DASH NO

PARTS LIST

UNLESS OTHERWISE SPECIFIED

DAAB07-92-Z-B506

SERV-
A SUBSIDIA

W.B.H. 93-08-09

L.M. 93-08-16

FINISH:

6 7

LEX-13349 UH-60Q

APPLICATION

D 7S976

1/1

DAAB07-92-Z-B506	D	7S976	LEX-13349
W.B.H. 93-08-11			
L.M. 93-08-16		NONE	3 of 3

3 2 1

3 2 1

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-08-09	

(3)

B

A

	CHANNEL		LEX-13354	.125x11.6 AND10137-1207 7075-T6511 QQ-A-200/11			
SYM	NOMENCLATURE		CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE

PARTS LIST

DAAB07-92-Z-B506	SERV-AIR, INC. A SUBSIDIARY OF E-SYSTEMS, INC. LEAV LEX, KY.	S.O.F.S.A.	
W.B.H. 93-08-09	CHANNEL		
L.M. 93-08-16			
FINISH: 6 7	D	7S976	LEX-13354
	1/1		1 of 1

8 7 6 5

D

C

B

A

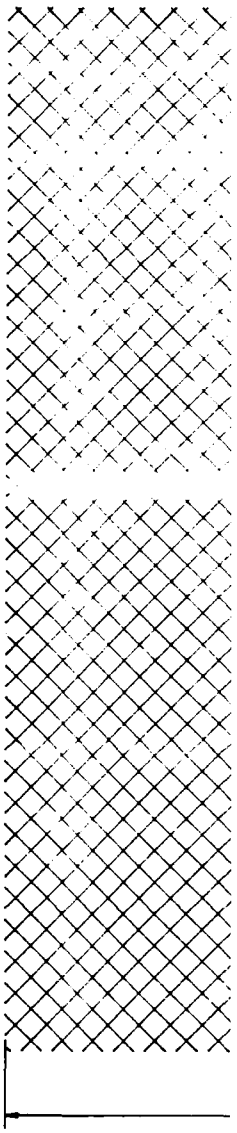
NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. MARK PARTS PER MIL-STD-130

4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

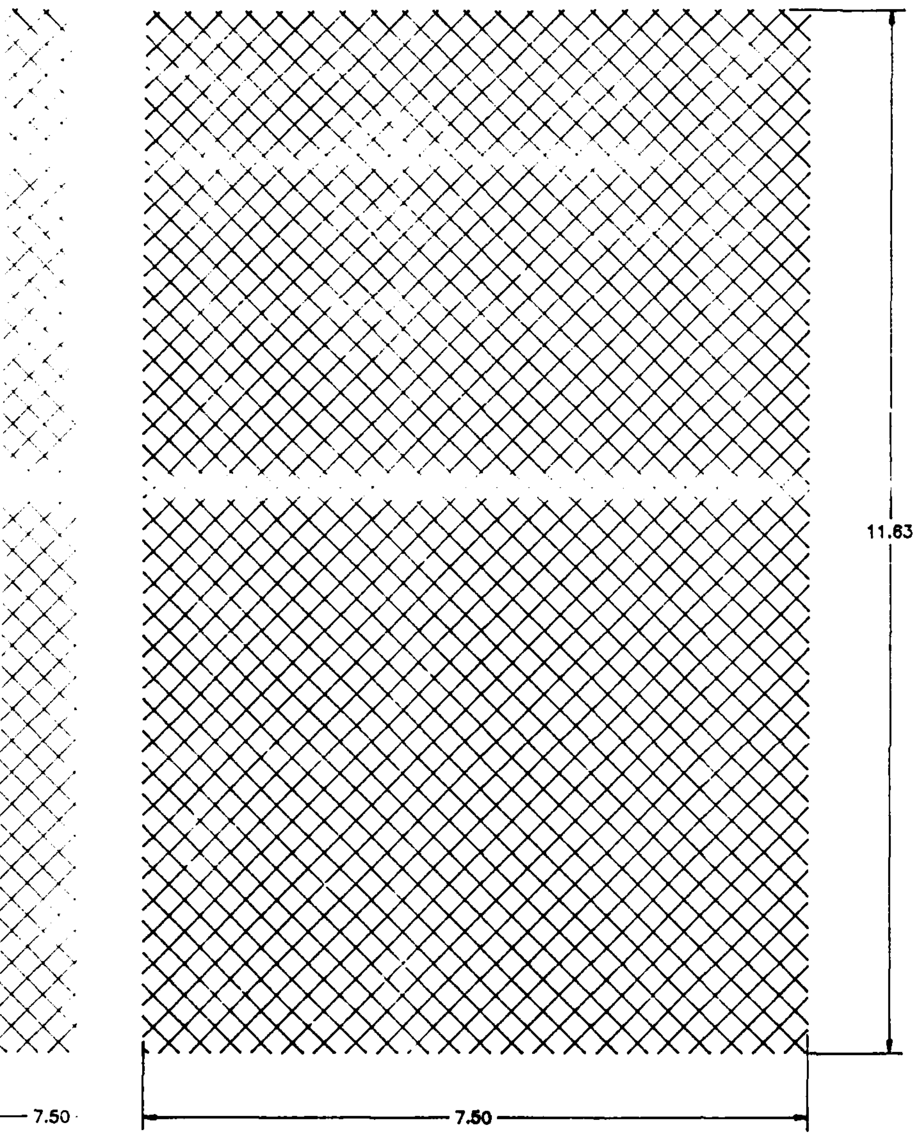


8 7 6 5

ZONE	REV	DESCRIPTION
		CAD GENERATED

REVISIONS

(2)



	SCREEN		LEX-13355-1	.032x.25 MESH 304 CRES	
SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	

QUANTITY REQUIRED PER DASH NO

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

DR W.B.H. 93-08-09

CHK L.M. 93-08-16

SERV-AI[R]
A SUBSIDIARY ...

NEXT ASSEMBLY	USED ON
LEX-13346	UH-60Q

APPLICATION

SIZE D CODE IDENT NO. 7S976

SCALE 1/1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-08-09	

(3)

11.63

SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE
	SCREEN		LEX-13355-1	.032x.25 MESH 7.7x11.9 304 CRES		

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

W.B.H. 93-08-09
L.M. 93-08-16

SCREEN

D | 7S976 | LEX-13355

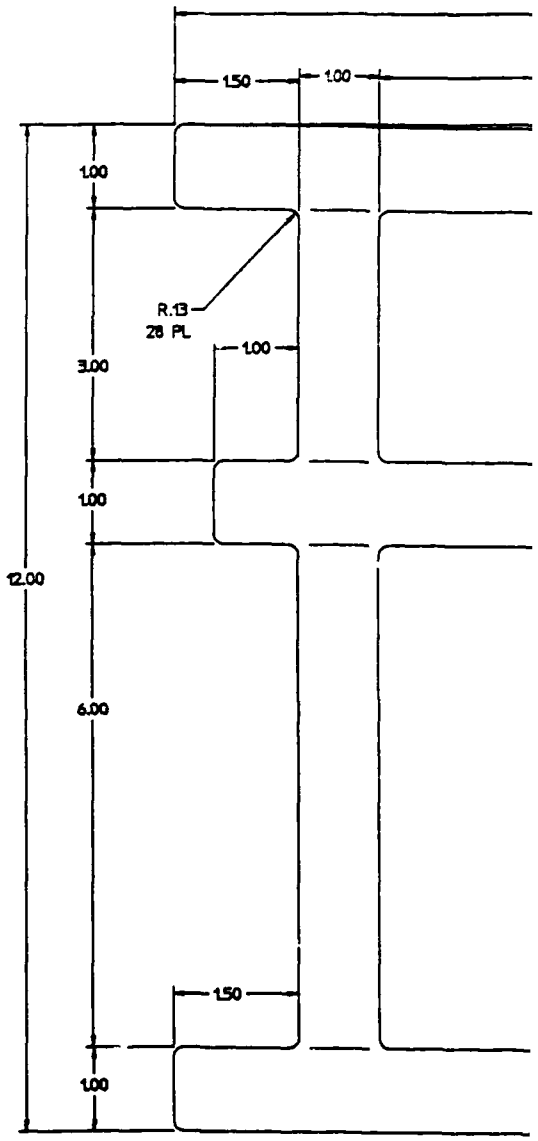
1/1 | 1 of 1

(1)

8 | 7 | 6 | 5

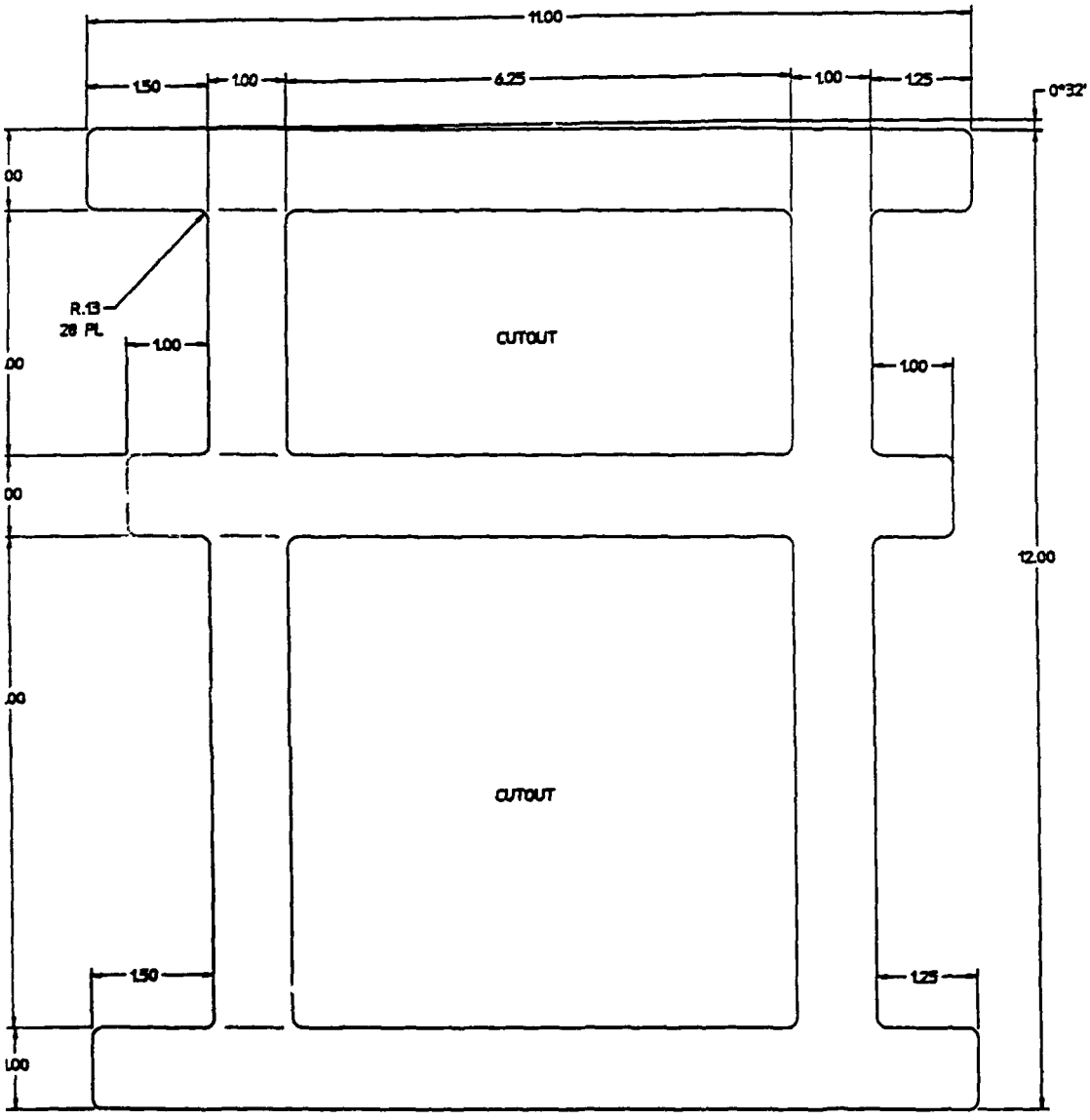
NOTES:

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. REMOVE BURRS AND BREAK ALL SHARP EDGES
4. MARK PARTS PER MIL-STD-130
5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982
6. CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 1A
   EPOXY POLYAMIDE PRIME PER MIL-P-23377 TYPE I, 1 COAT



8 | 7 | 6 | 5

		CAD GENERATED



	FRAME		LEX-13954	.032x12.25x11.25 2024-T3 AL ALY 00-A-250/
SYM	NOMENCLATURE	USE ON	IDENTIFYING NO.	MATERIAL/SPECIFICATION

PARTS LIST

QUANTITY REQUIRED PER DASH NO.

UNLESS OTHERWISE SPECIFIED

FINISH

CONTRACT NO. DAAB07-92-Z-8506

S.L.H.	93-07-20	
L.M.	93-12-07	
Q.C.H.	93-12-07	

SERV-AIR, INC.
A SUBSIDIARY OF E-SYSTE

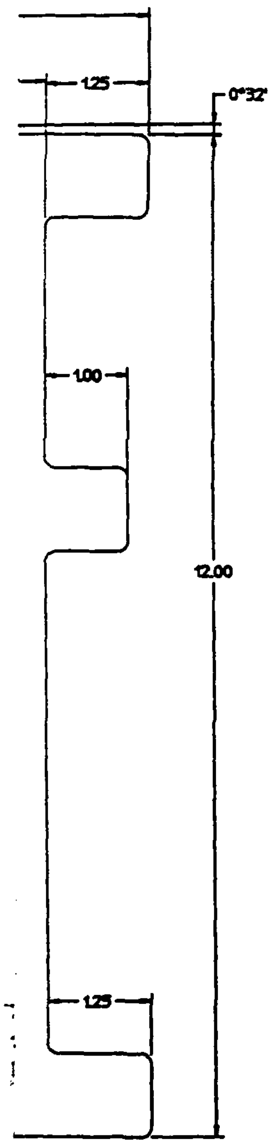
FRAM

LEX-13949	UH-60Q	
APPLICATION		

D	7S976	LEX-

1/1

ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-20	



SYM	NOMENCLATURE	QTY REQD	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	FIND NO.
	FRAME		LEX-13356	.032x12.25x1.25 2024-T3 AL ALY QQ-A-250/8			

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-8506

SERV-AIR, INC. SOPSA
A SUBSIDIARY OF E-SYSTEMS,INC. LBAD LEX. KY.

FINISH:

S.L.H. 93-07-20
L.H. 93-12-07
O.C.H. 93-12-07

FRAME

D 7S976 LEX-13356

SCALE 1/1 SHEET 1 OF 1

8 7 6 5

(1)

NOTES:

1. INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100
2. INTERPRET ABBREVIATIONS PER MIL-STD-12
3. IDENTIFY TUBING ASSY PER MIL-STD-1247

D

C

B

A

8 7 6 5

6	5	4	3	2

ZONE	REV	
		CAD GENERATED

(2)

REF

MAR

QUANTITY REQUIRED PER DASH NO	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.
2		PLUG		AN806-10D
1		UNION		AN815-10D
2		REDUCER		AN919-20D
1		CROSS		AN918-6D
2		ADAPTER		AN816-10-12D
1		REDUCER		AN893-31
1		REDUCER		AN919-6
1		ADAPTER		MS20392-8D
4		TEE		AN824-8D
3		PLUG		AN806-8D
1		MSOGS TUBING ASSY		LEX-13371
1		MSOGS TUBING ASSY		LEX-13370
1		MSOGS TUBING ASSY		LEX-13369
1		MSOGS TUBING ASSY		LEX-13368
1		MSOGS TUBING ASSY		LEX-13367
1		MSOGS TUBING ASSY		LEX-13366
1		MSOGS TUBING ASSY		LEX-13365
1		MSOGS TUBING ASSY		LEX-13364
1		MSOGS TUBING ASSY		LEX-13363
1		MSOGS TUBING ASSY		LEX-13362
1		MSOGS TUBING ASSY		LEX-13361
1		MSOGS TUBING ASSY		LEX-13360
		MSOGS TUBING SCHEM		LEX-13359

PARTS LI

UNLESS OTHERWISE SPECIFIED

DAAB07-92-Z-B506

W.B.H. 93-08-02

L.M. 93-08-09

LEX-13321 UH-60Q

APPLICATION

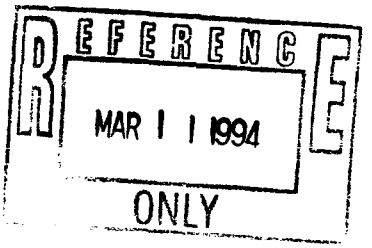
D 7

NO

5	4	3	2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-08-02	

(3)



ITEM	QTY	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE
2		PLUG		AN806-10D		EA	22
1		UNION		AN815-10D		EA	21
2		REDUCER		AN919-20D		EA	20
1		CROSS		AN918-6D		EA	19
2		ADAPTER		AN816-10-12D		EA	18
1		REDUCER		AN893-31		EA	17
1		REDUCER		AN919-6		EA	16
1		ADAPTER		MS20392-8D		EA	15
4		TEE		AN824-8D		EA	14
3		PLUG		AN806-8D		EA	13
1		MSOGS TUBING ASSY		LEX-13371		EA	12
1		MSOGS TUBING ASSY		LEX-13370		EA	11
1		MSOGS TUBING ASSY		LEX-13369		EA	10
1		MSOGS TUBING ASSY		LEX-13368		EA	9
1		MSOGS TUBING ASSY		LEX-13367		EA	8
1		MSOGS TUBING ASSY		LEX-13366		EA	7
1		MSOGS TUBING ASSY		LEX-13365		EA	6
1		MSOGS TUBING ASSY		LEX-13364		EA	5
1		MSOGS TUBING ASSY		LEX-13363		EA	4
1		MSOGS TUBING ASSY		LEX-13362		EA	3
1		MSOGS TUBING ASSY		LEX-13361		EA	2
1		MSOGS TUBING ASSY		LEX-13360		EA	1
		MSOGS TUBING SCHEM		LEX-13359			

PARTS LIST

MATERIAL QTY REQUIRED PER DASH NO

UNLESS OTHERWISE SPECIFIED

DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

W.B.H. 93-08-02
L.M. 93-08-09

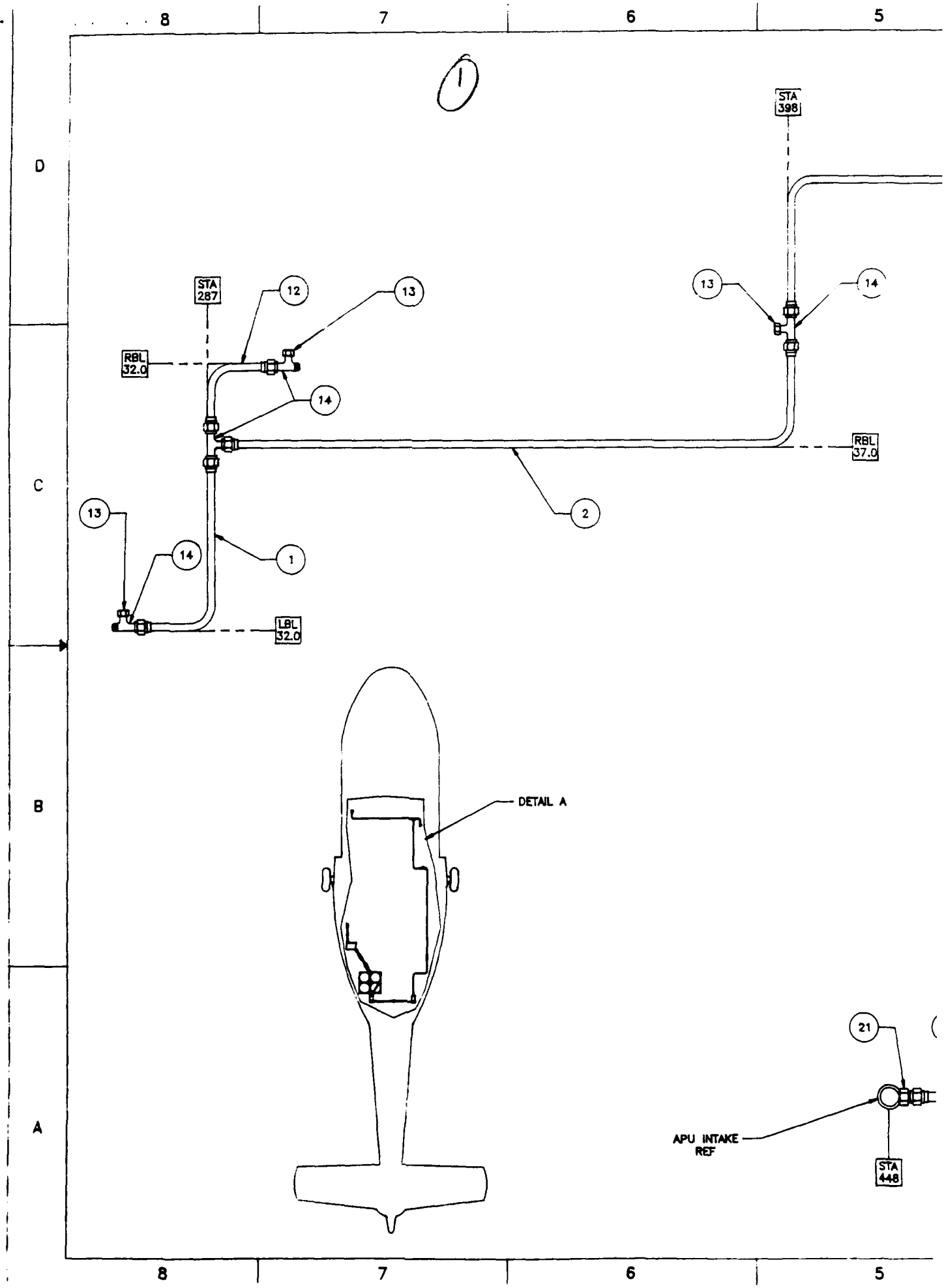
MSOGS
TUBING
SCHEMATIC

D | 7S976 | LEX-13359

NONE

1 of 2

13321 UH-60Q
APPLICATION

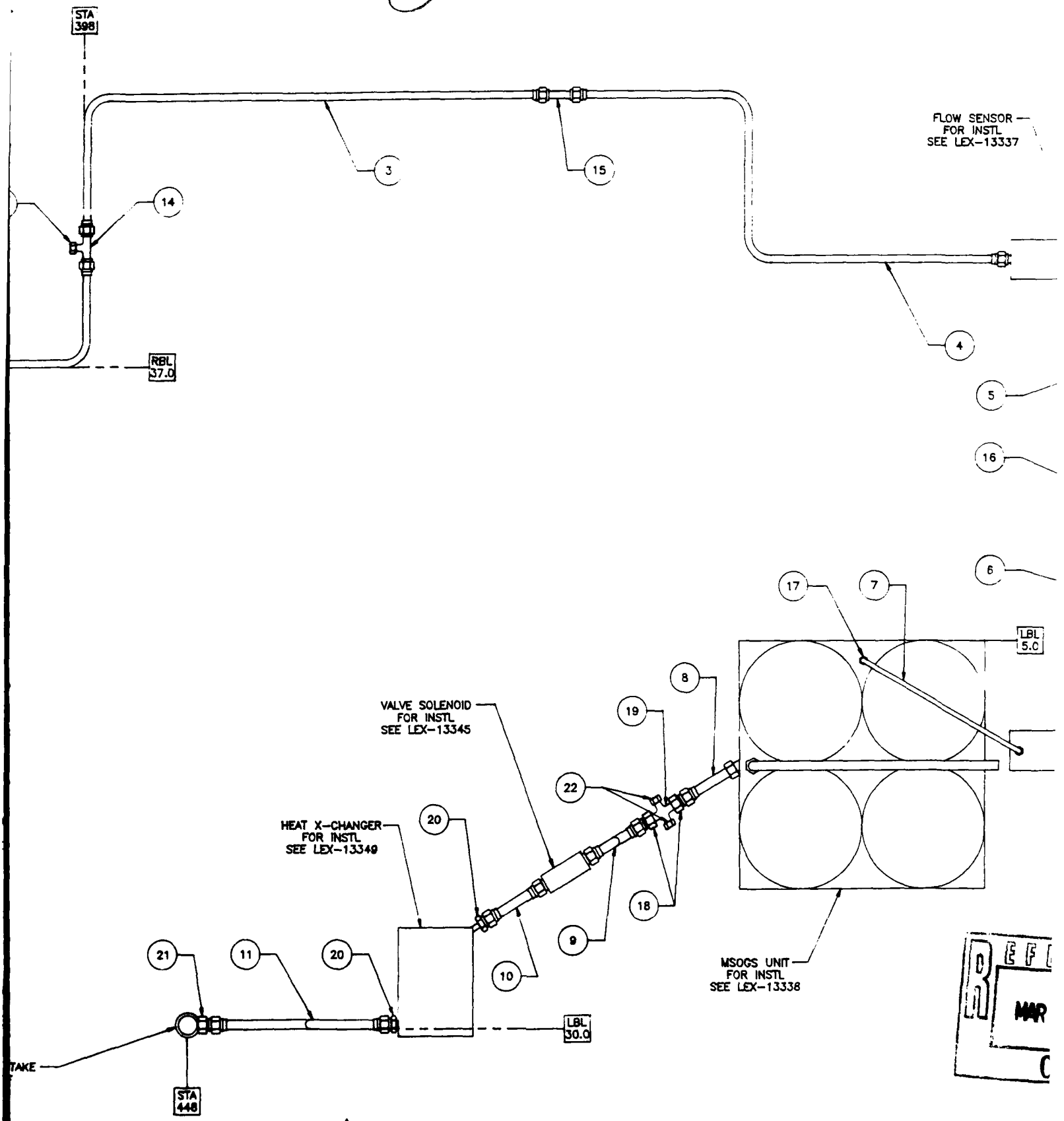

8
7
6
5
D
C
B
A
STA 398
STA 287
RBL 32.0
RBL 37.0
LBL 32.0
12
13
14
1
2
DETAIL A
21
APU INTAKE REF
STA 448

5	4	3	2

REVISIONS

ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)



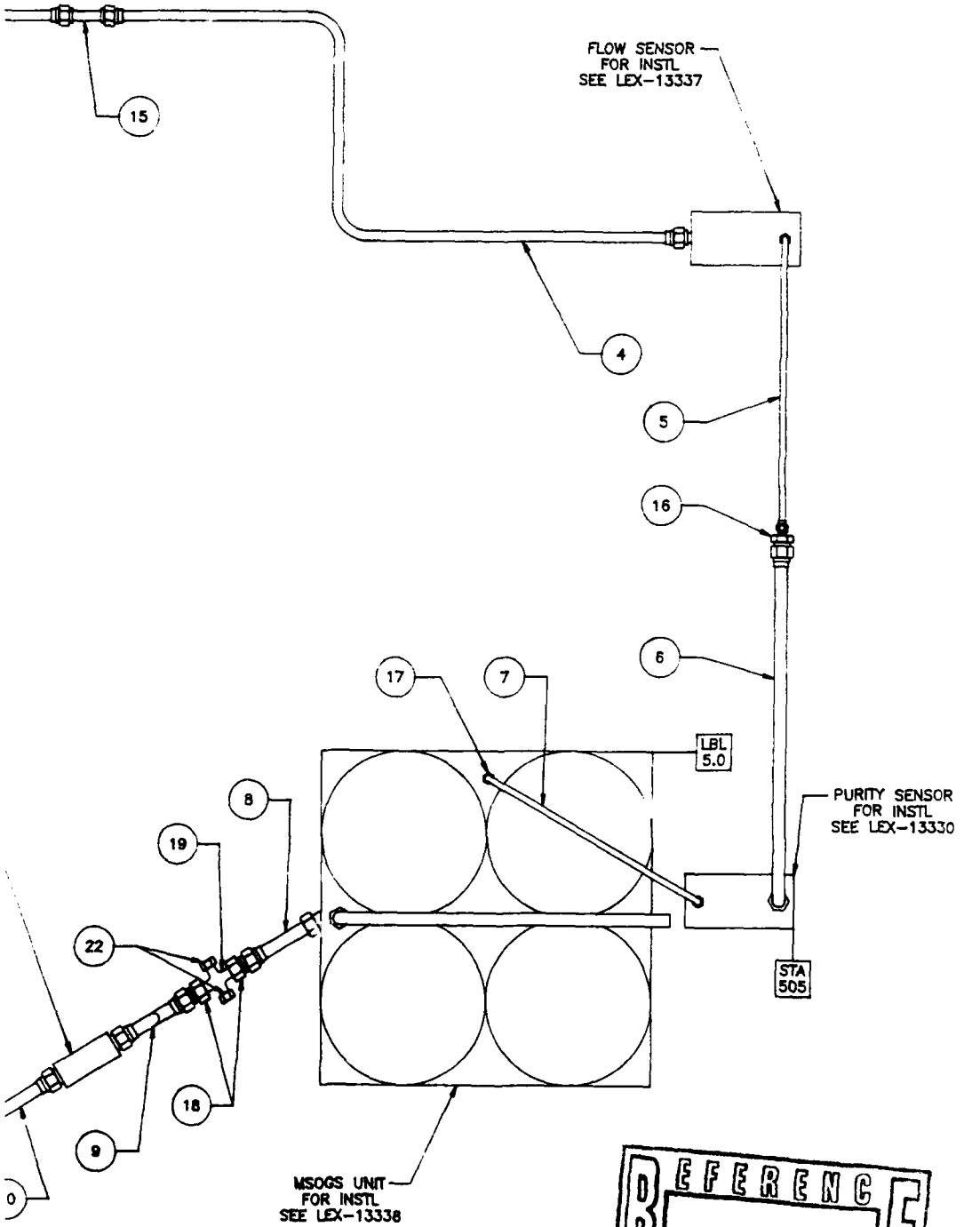
DETAIL A

DAAB07-92-Z-B506		D	7S976
W.B.H.	93-08-02		
L.M.	93-08-09	NONE	

5	4	3	2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-08-02	

3



DAAB07-92-Z-B506	D	7S976	LEX-13359
W.B.H. 93-08-02			
L.M. 93-08-09	NONE		2 of 2

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

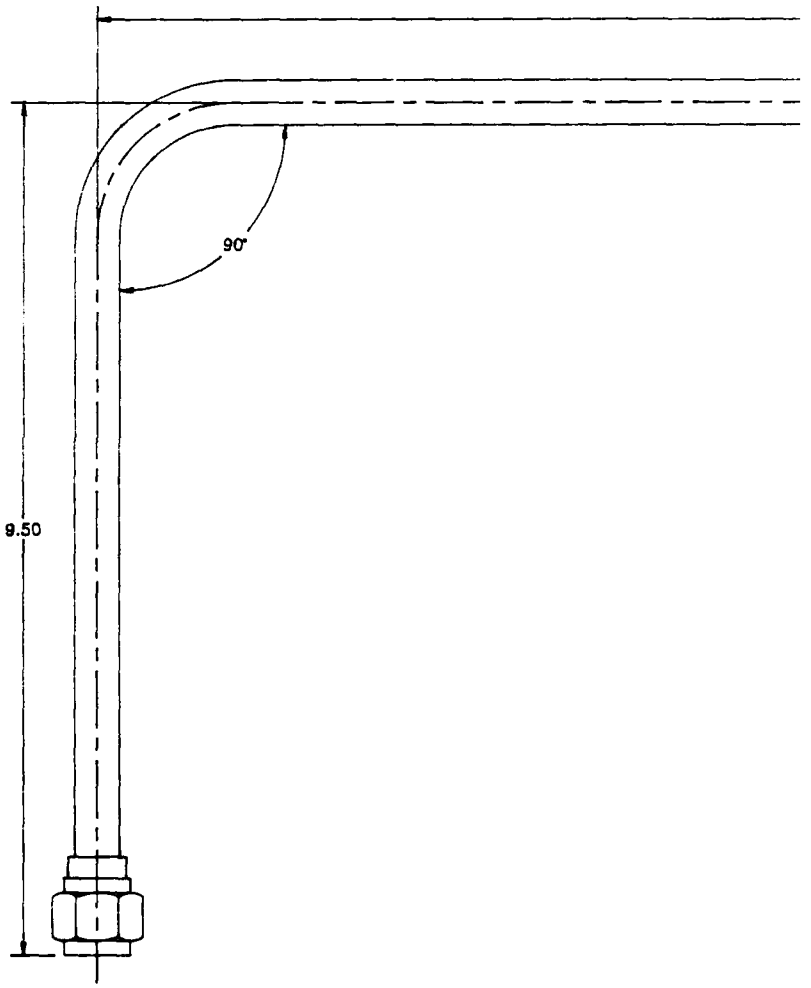
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. ALL BEND RADIUS PER MS33611



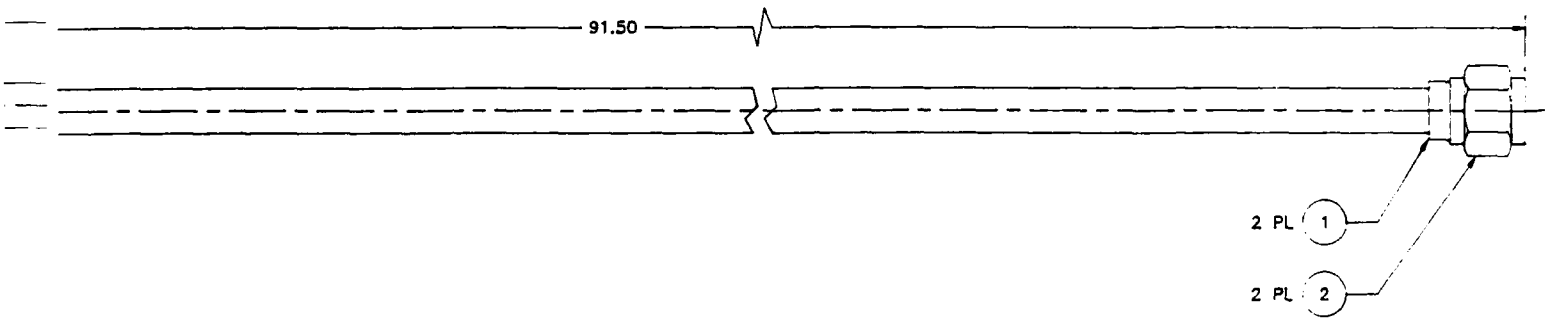
D

C

B

A

ZONE	REV	DESCRIPTION
		CAD GENERATED



QTY	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	
2		NUT		AN818-8DN	
2		SLEEVE		MS20819-8DS	
X		MSOGS TUBING ASSY		LEX-13360	.375 ID 3003-I

QUANTITY REQUIRED PER DASH NO

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO.	DAA807-92-Z-B506
DR. W.B.H.	93-07-30
CHK. L.M.	93-08-09
APPR.	

LEX-13360	UH-60Q
NEXT ASSEMBLY	USED ON

APPLICATION

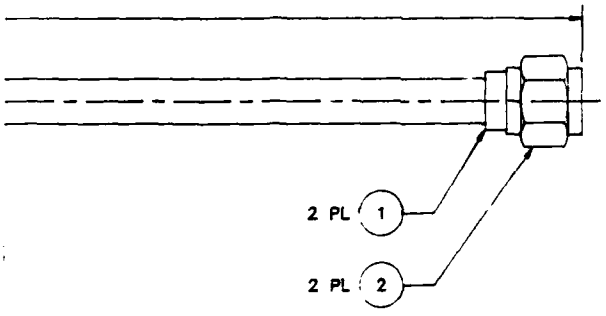
SER
A SUB

D 7S97

SHEET 1/1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-29	

(3)



ITEM	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	QTY
2		NUT		AN818-8DN				2
2		SLEEVE		MS20819-8DS				1
X		MSOGS TUBING ASSY		LEX-13360	.375 ID x .083 WALL x 102.0 3003-H14 ALUMINUM TUBING			

PARTS LIST

DASH NO

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LEAD LEX, KY.

W.B.H. 93-07-30
L.M. 93-08-09

MSOGS TUBING ASSEMBLY

SIZE D | CAGE IDENT NO. 7S976 | DRAWING NO. LEX-13360

SHEET 1/1 | SHEET 1 OF 1

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

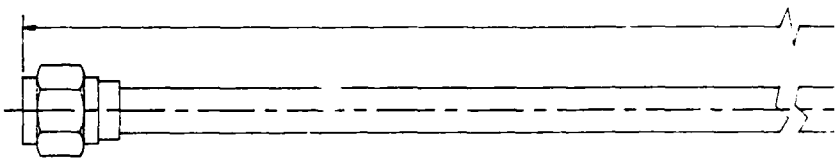
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. ALL BEND RADIUS PER MS33611

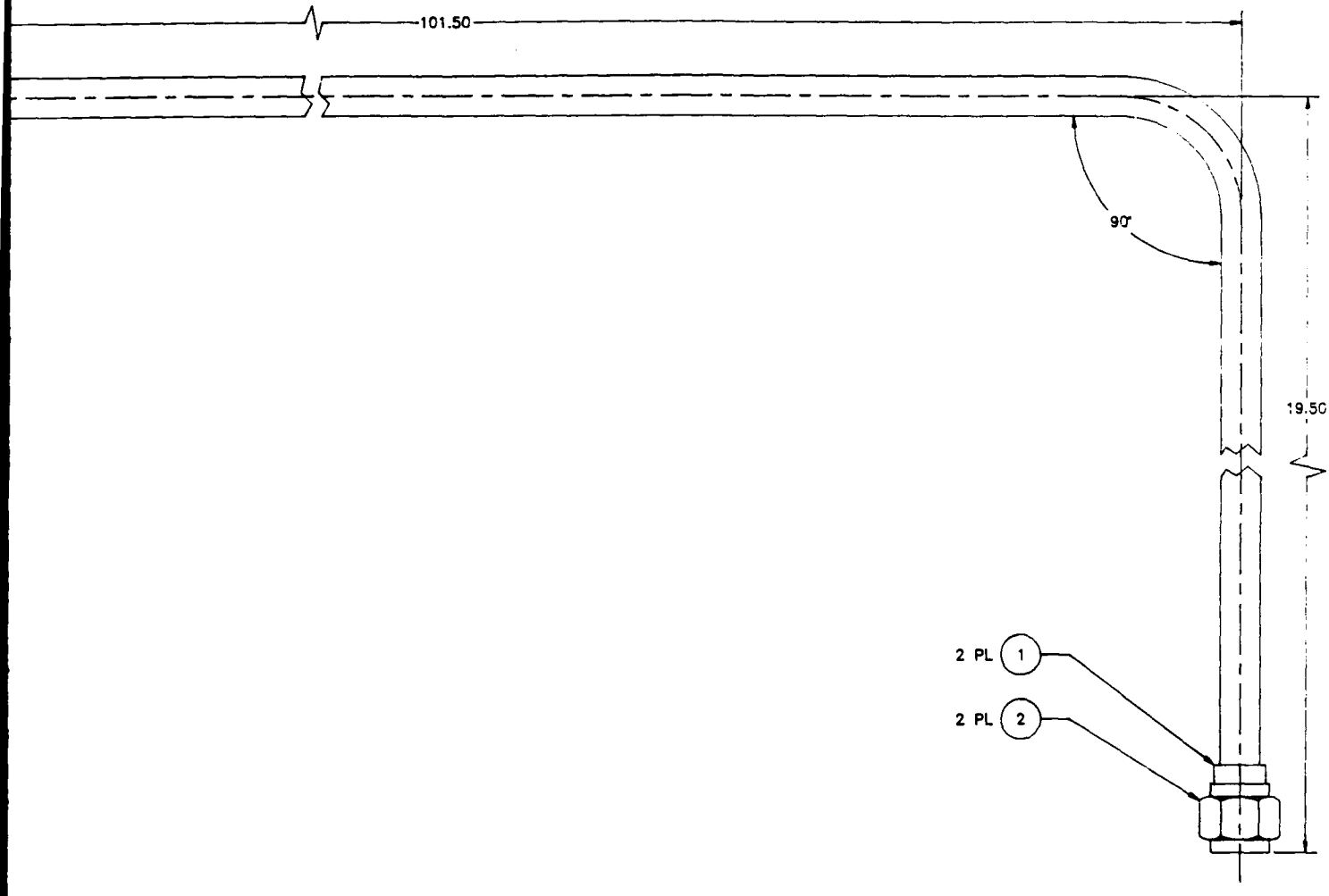


5 4 3 2

RE/ISIO

ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)



QUANTITY REQUIRED PER DASH NO		SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATER
2			NUT		AN818-8D	
2			SLEEVE		MS20819-8D	
X			MSOGS TUBING ASSY		LEX-13361	.375 ID x . 3003-H14

PARTS LIST

UNLESS OTHERWISE SPECIFIED

DAAB07-92-Z-B506

SERV-
A SUBSIDIA

W.B.H. 93-07-30

L.M. 93-08-09

LEX-13360 UH-60Q

APPLICATION

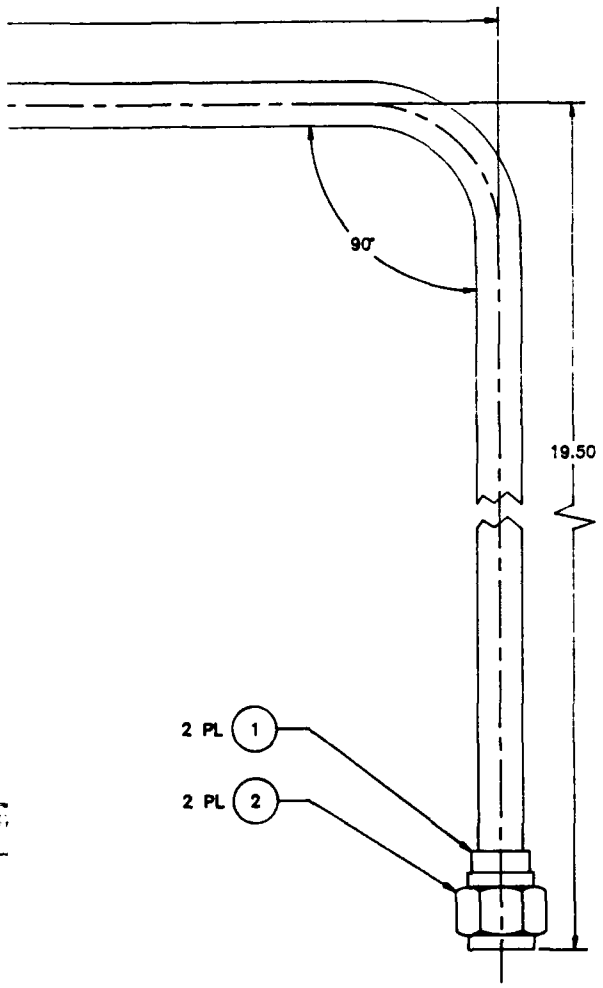
D 7S976

1/1

5 4 3 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-29	

(3)



ITEM NO	QTY	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	REF
2		NUT		AN818-8D				2
2		SLEEVE		MS20819-8D				1
		MSOGS TUBING ASSY		LEX-13361	.375 ID x .083 WALL x 122.0 3003-H14 ALUMINUM TUBING			

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

DR. W.B.H. 93-07-30

CHK'D L.M. 93-08-09

APP'D

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

TITLE
MSOGS
TUBING
ASSEMBLY

SIZE D | CAGE IDENT NO. 7S976 | DRAWING NO. LEX-13361

SCALE 1/1 | SHEET 1 OF 1

8 7 6 5

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

2. INTERPRET ABBREVIATIONS PER MIL-STD-12

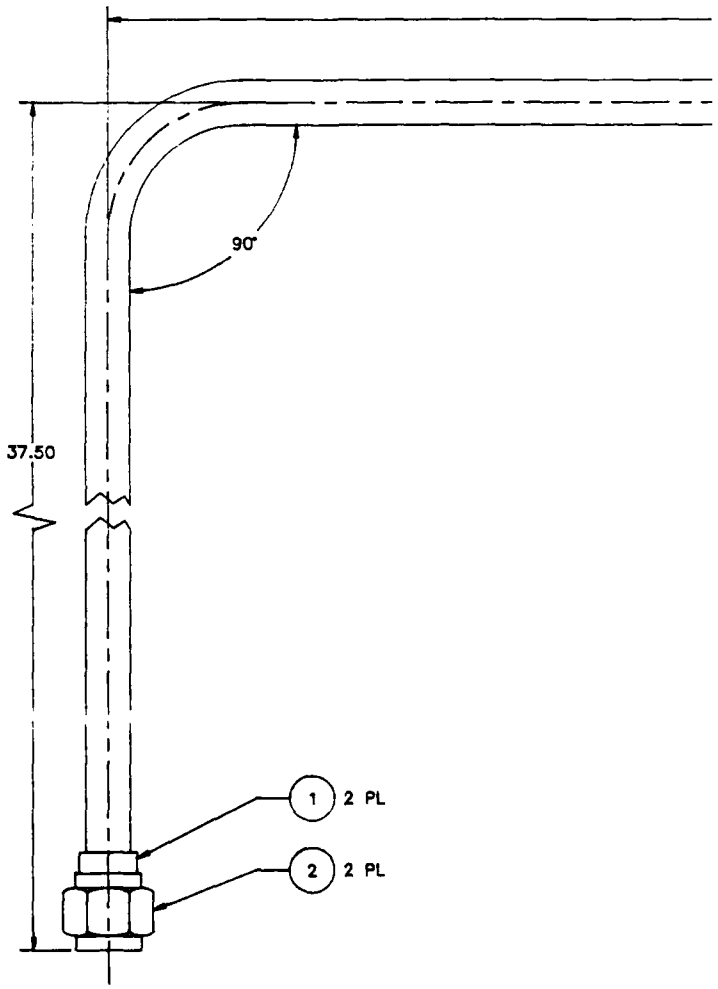
3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. ALL BEND RADIUS PER MS33611

D C B A

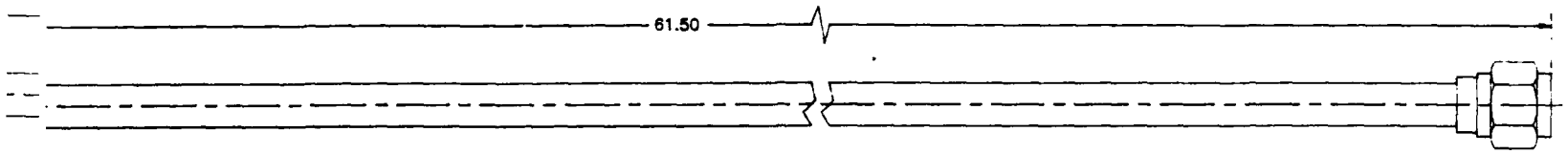


8 7 6 5

5	4	3	2

REVISION		
ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)



) 2 PL

) 2 PL

QUANTITY REQUIRED PER DASH NO	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL
2		NUT		AN818-8D	
2		SLEEVE		MS20819-8D	
X		MSOGS TUBING ASSY		LEX-13362	.375 ID x .0 3003-H14 A

PARTS LIST

UNLESS OTHERWISE SPECIFIED

SERV-

W.B.H.	93-07-30
L.M.	93-08-09

LEX-13369	UH-800	
APPLICATION		

D 7S976

1/1

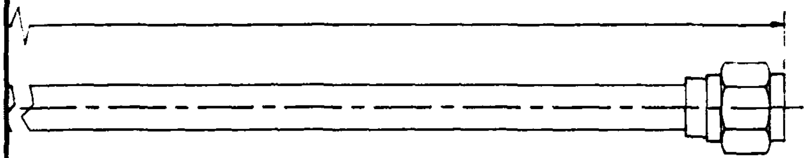
5	4	3	2

3	2	1

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-29	

(3)



REFERENCE
MAR 11 1994
ONLY

2		NUT		AN818-8D				2
2		SLEEVE		MS20819-8D				1
X		MSOGS TUBING ASSY		LEX-13362	.375 ID x .063 WALL x 100.0 3003-H14 ALUMINUM TUBING			
	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	

PARTS LIST

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC.

W.B.H.	93-07-30
L.M.	93-08-09

MSOGS
TUBING
ASSEMBLY

SIZE	CAGE CODE NO.	DRAWING NO.
D	7S976	LEX-13362

SCALE 1/1 SHEET 1 of 1

UH-60Q

3	2	1

8 7 6 5

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

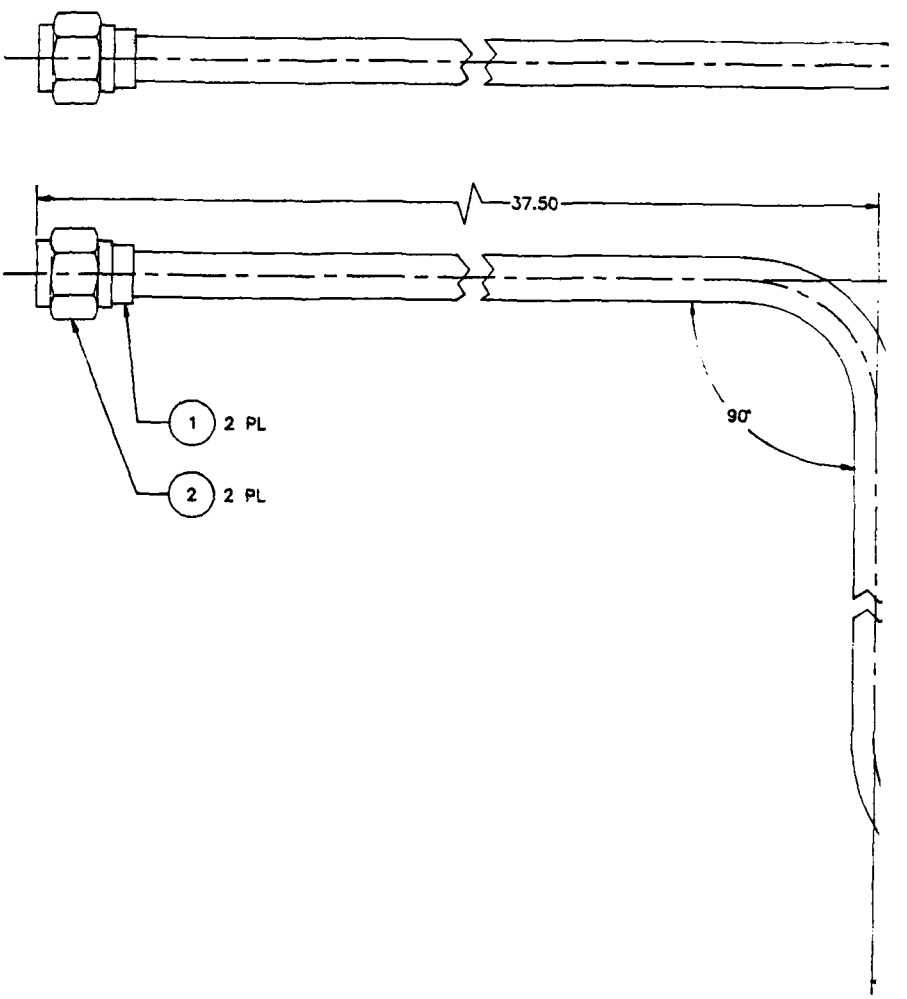
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. ALL BEND RADIUS PER MS33611



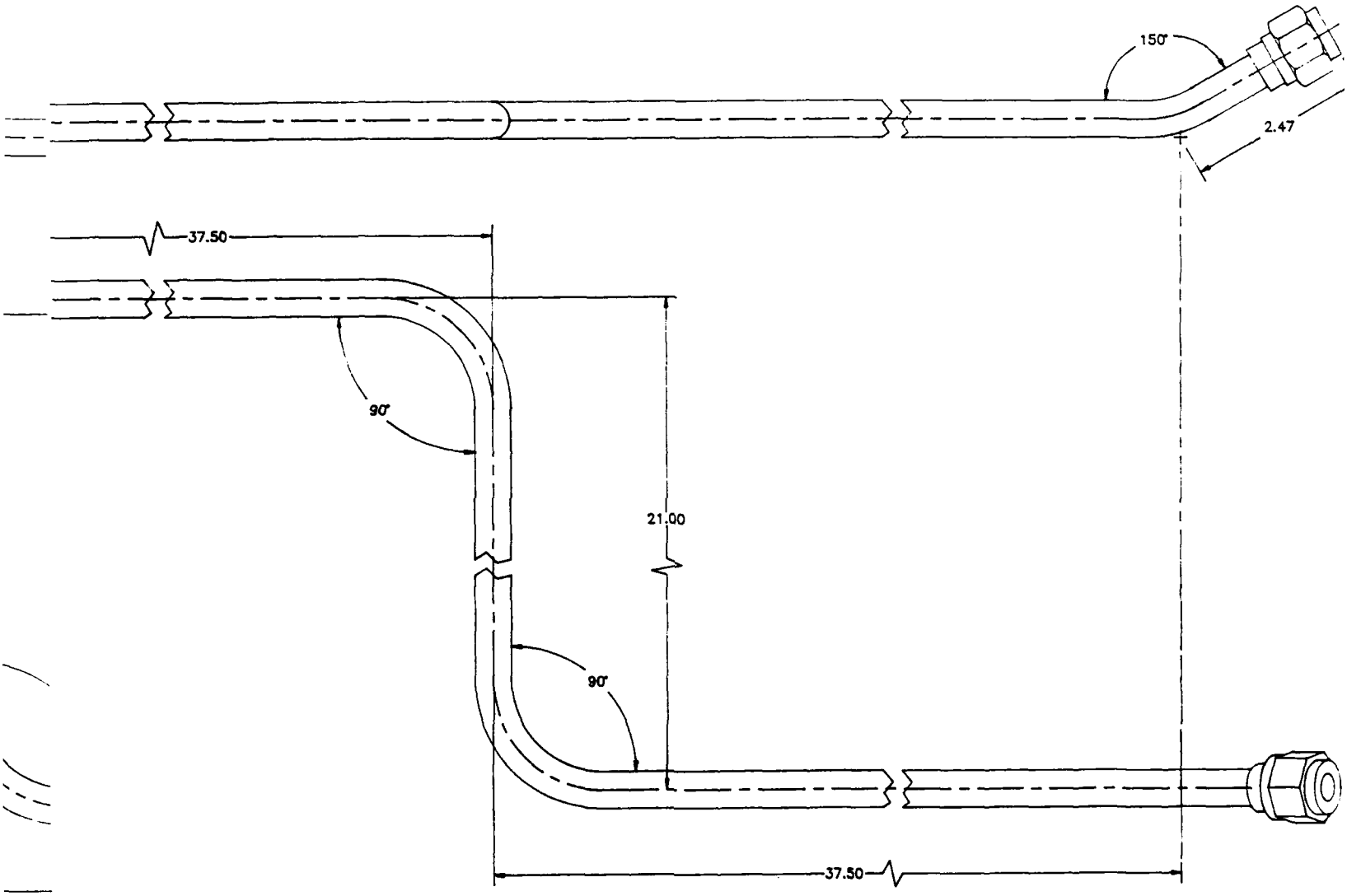
D C B A

8 7 6 5

6 5 4 3 2

ZONE	REV	
		CAD GENERA

(2)



QTY		SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.
2			NUT		AN818-8D
2			SLEEVE		MS20819-8D
	X		MSCGS TUBING ASSY		LEX-13363

QUANTITY REQUIRED PER DASH NO

UNLESS OTHERWISE SPECIFIED

CONTRACT NO.	DAAB07-92-Z-B506
DR. W.B.H.	93-07-30
DES. L.M.	93-08-09
QA	

LEX-13389 UH-60Q

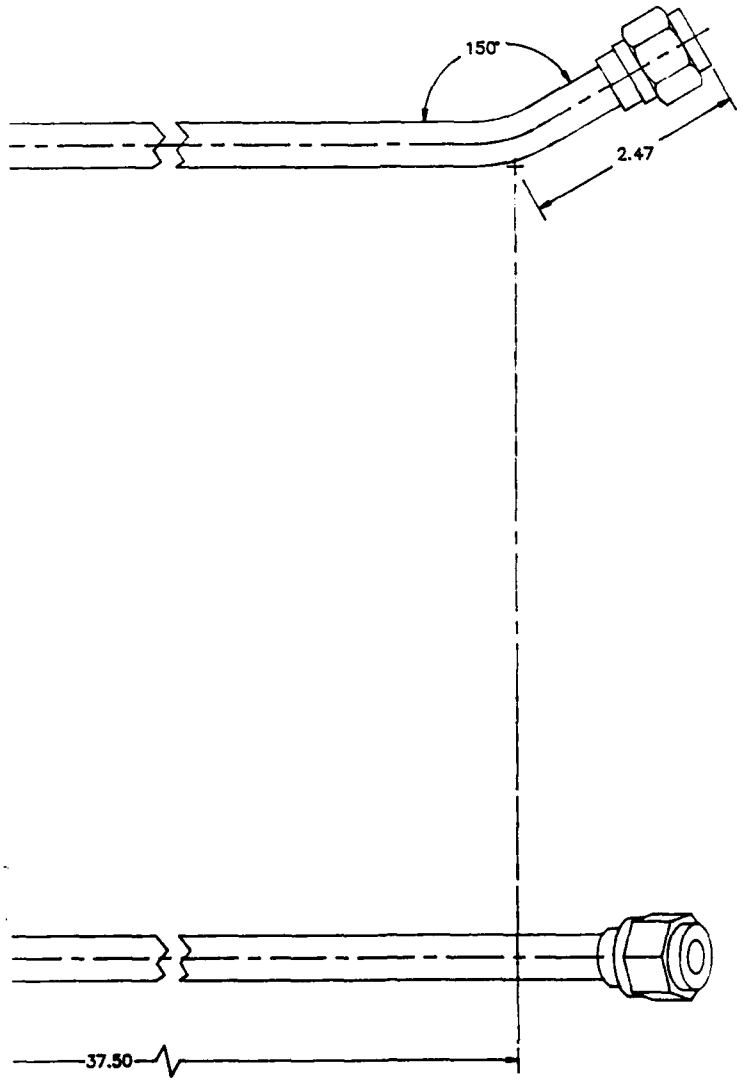
NEXT ASSY USED ON

APPLICATION

6 5 4 3 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-29	

(3)



QTY REQUIRED PER DASH NO	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	ITEM NO.
2		NUT		AN818-8D				2
2		SLEEVE		MS20819-8D				1
X		MSOGS TUBING ASSY		LEX-13363	.375 ID x .063 WALL x 98.0 3003-H14 ALUMINUM TUBING			

PARTS LIST

APPLICATION

DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

W.B.H. 93-07-30
L.M. 93-08-09

MSOGS TUBING ASSEMBLY

D 7S976 LEX-13363

1/1

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

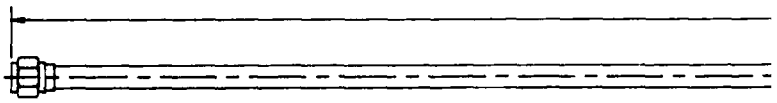
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

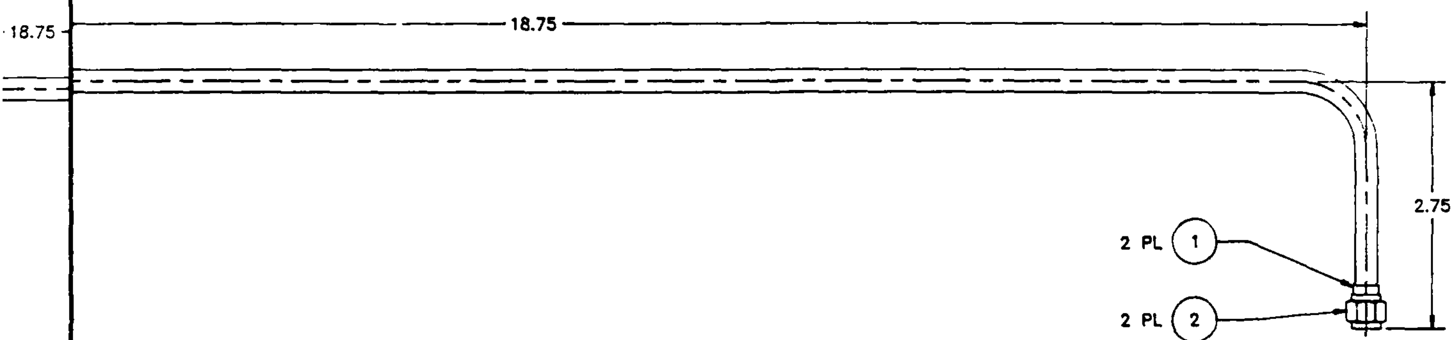
6. ALL BEND RADIUS PER MS33611



5	4	3	2

ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)



2		NUT		AN818-4D	
2		SLEEVE		MS20819-4D	
X		MSOGS TUBING ASSY		LEX-13364	.1875 ID 304 CR
	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	

QUANTITY REQUIRED PER DASH NO

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

W.B.H. 93-07-30

L.M. 93-08-09

SERV
A SUBS

D 7S97

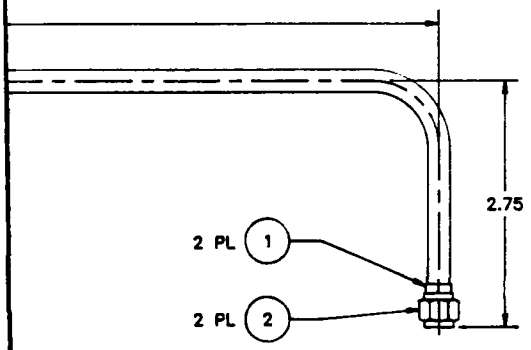
1/1

LEX-13380 UH-60Q

APPLICATION

5	4	3	2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-30	



2		NUT		AN818-4D				2
2		SLEEVE		MS20819-4D				1
X		MSOGS TUBING ASSY		LEX-13364	.1875 ID x .025 WALL x 22.5 304 CRES SS TUBING			
	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	QTY

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

DRN W.B.H. 93-07-30

APPD L.M. 93-08-09

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

MSOGS TUBING ASSY

SIZE D | CAGE IDENT NO. 7S976 | DRAWING NO. LEX-13364

SCALE 1/1 | SHEET 1 OF 1

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

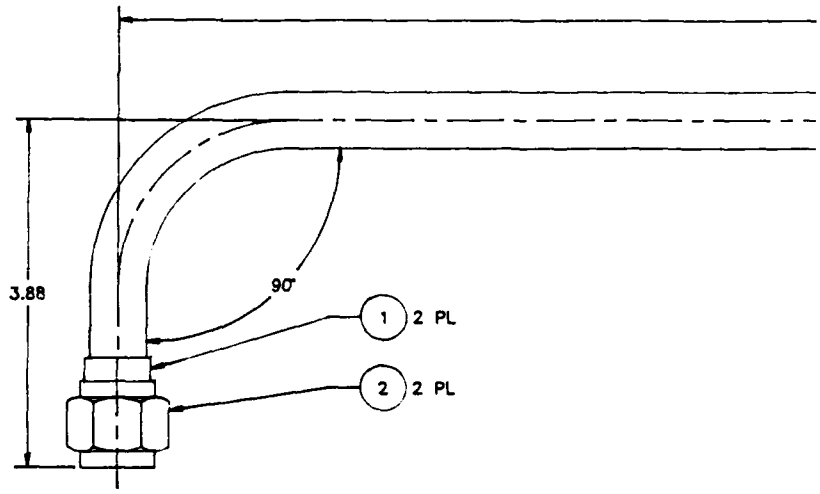
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. ALL BEND RADIUS PER MS33611

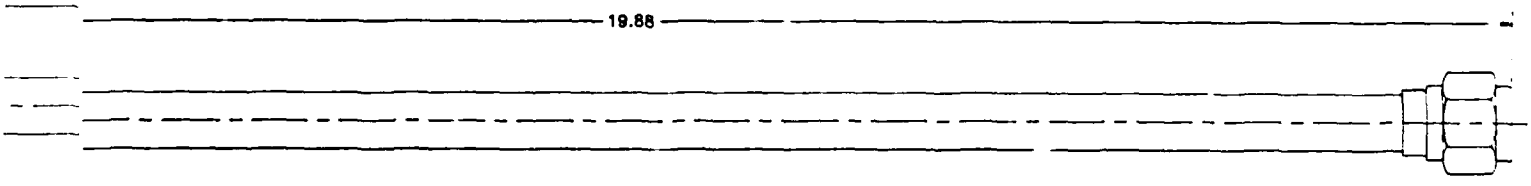


5 4 3 2

REV

ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)



QTY REQUIRED PER DASH NO		SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	
2			NUT		AN818-10D	
2			SLEEVE		MS20819-10D	
	X		MSOGS TUBING ASSY		LEX-13365	.50 ID 3003-H

PARTS LIST

UNLESS OTHERWISE SPECIFIED

DAAB07-92-Z-B506

SER
A SUB

W.B.H. 93-07-30

L.M. 93-08-09

LEX-13365 UH-60Q

APPLICATION

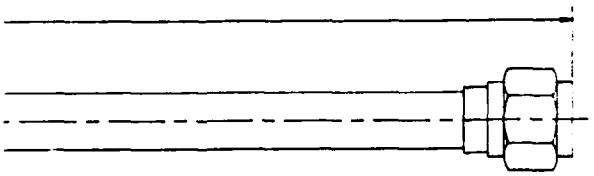
D 7S97

1/1

5 4 3 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-30	

(3)



ITEM	QTY	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	REF
1	2		NUT		AN818-10D				2
2	2		SLEEVE		MS20819-10D				1
	X		MSOGS TUBING ASSY		LEX-13365	.50 ID x .063 WALL x 24.8 3003-H14 ALUMINUM TUBING			

ASH NO

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

DR. W.B.H. 93-07-30
CHK. L.M. 93-08-09
ENG.

TITLE
MSOGS
TUBING
ASSEMBLY

SIZE D | CAGE IDENT NO. 7S976 | DRAWING NO. LEX-13365

SCALE 1/1 SHEET 1 OF 1

8 7 6 5

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

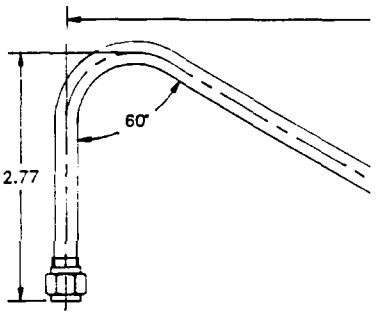
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. ALL BEND RADIUS PER MS33611



D

C

B

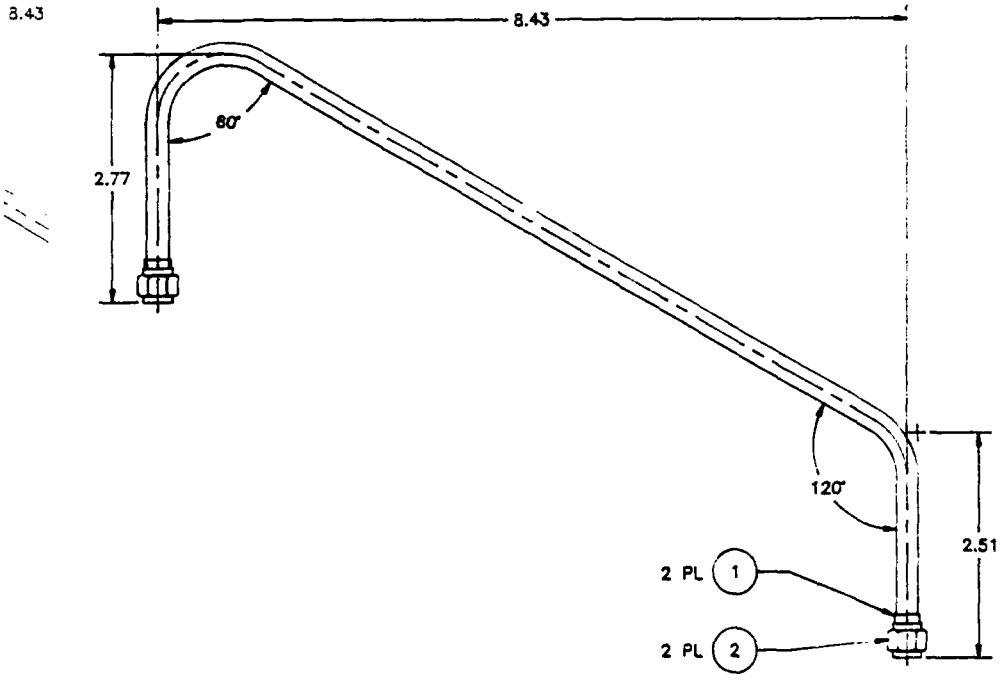
A

8 7 6 5

5	4	3	2

ZONE	REV	DESCRIPTION
		CAD GENERATED

(2)



QTY REQUIRED PER DASH NO	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	
2		NUT		AN818-4D	
2		SLEEVE		MS20819-4D	
X		MSOGS TUBING ASSY		LEX-13366	.1875 I.D. 304 C

PARTS LIST

UNLESS OTHERWISE SPECIFIED

DAAB07-92-Z-B506

SER
A SUB

W.B.H. 93-07-29

L.M. 93-08-09

LEX-13366 UN-000

APPLICATION

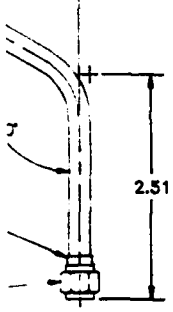
D 7S97

1/1

5	4	3	2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-29	

(3)



2		NUT		AN818-4D					2
2		SLEEVE		MS20819-4D					1
X		MSOGS TUBING ASSY		LEX-13366	.1875 ID x .025 WALL x 15.71 304 CRES SS TUBING				
	SYM	NOMENCLATURE		CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	QTY

PARTS LIST

EQUIRED PER DASH NO

UNLESS OTHERWISE SPECIFIED

DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

W.B.H. 93-07-29
L.M. 93-08-09

MSOGS
TUBING
ASSEMBLY

D | 7S976 | LEX-13366

1/1

1 of 1

PPLICATION

3 2 1

8 7 6 5

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

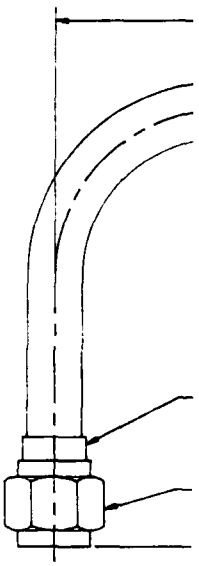
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. ALL BEND RADIUS PER MS33611



D

C

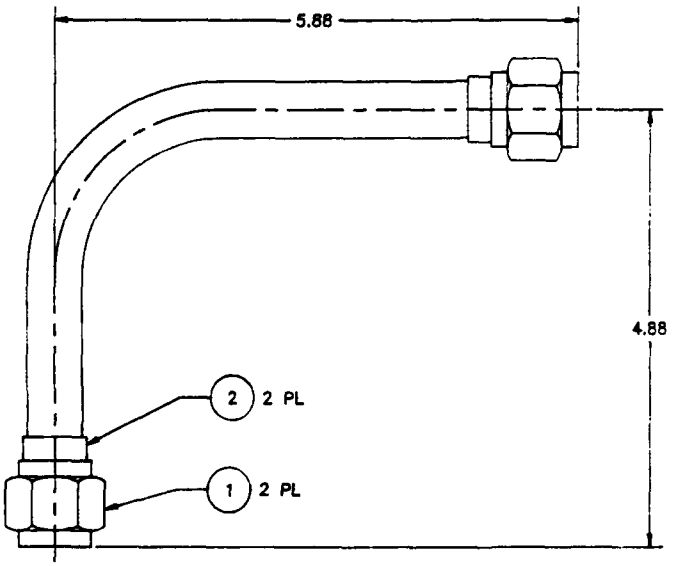
B

A

8 7 6 5

ZONE	REV	
		CAD GENERATED

(2)



QTY	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.
2		NUT		AN818-10D
2		SLEEVE		MS20819-10D
X		MSOGS TUBING ASSY		LEX-13367

QUANTITY REQUIRED PER DASH NO

PARTS

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

W.B.H. 93-07-29

L.M. 93-08-09

LEX-13360 UH-60Q

APPLICATION

D

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-29	

(3)

DASH NO	QTY	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	REF
	2		NUT		AN818-10D				2
	2		SLEEVE		MS20819-10D				1
	X		MSOGS TUBING ASSY		LEX-13367	.50 ID x .063 WALL x 11.75 3003-H14 ALUMINUM TUBING			

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

DR. W.B.H. 93-07-29
CHK. L.M. 93-08-09
APP.

MSOGS TUBING ASSEMBLY

SIZE D | CODE IDENT NO. 7S976 | DRAWING NO. LEX-13367

SCALE 1/1 SHEET 1 OF 1

(1)

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

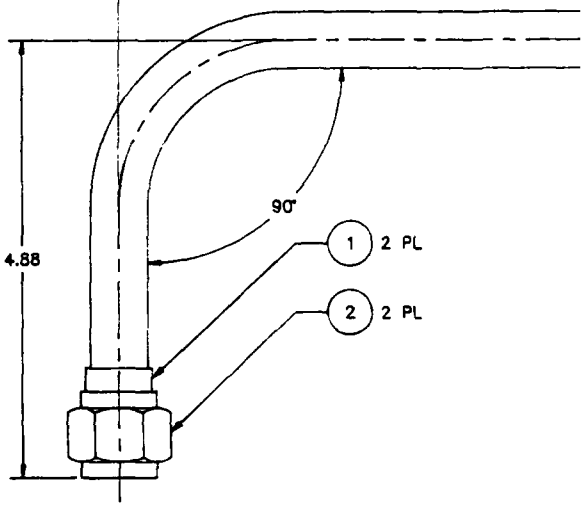
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

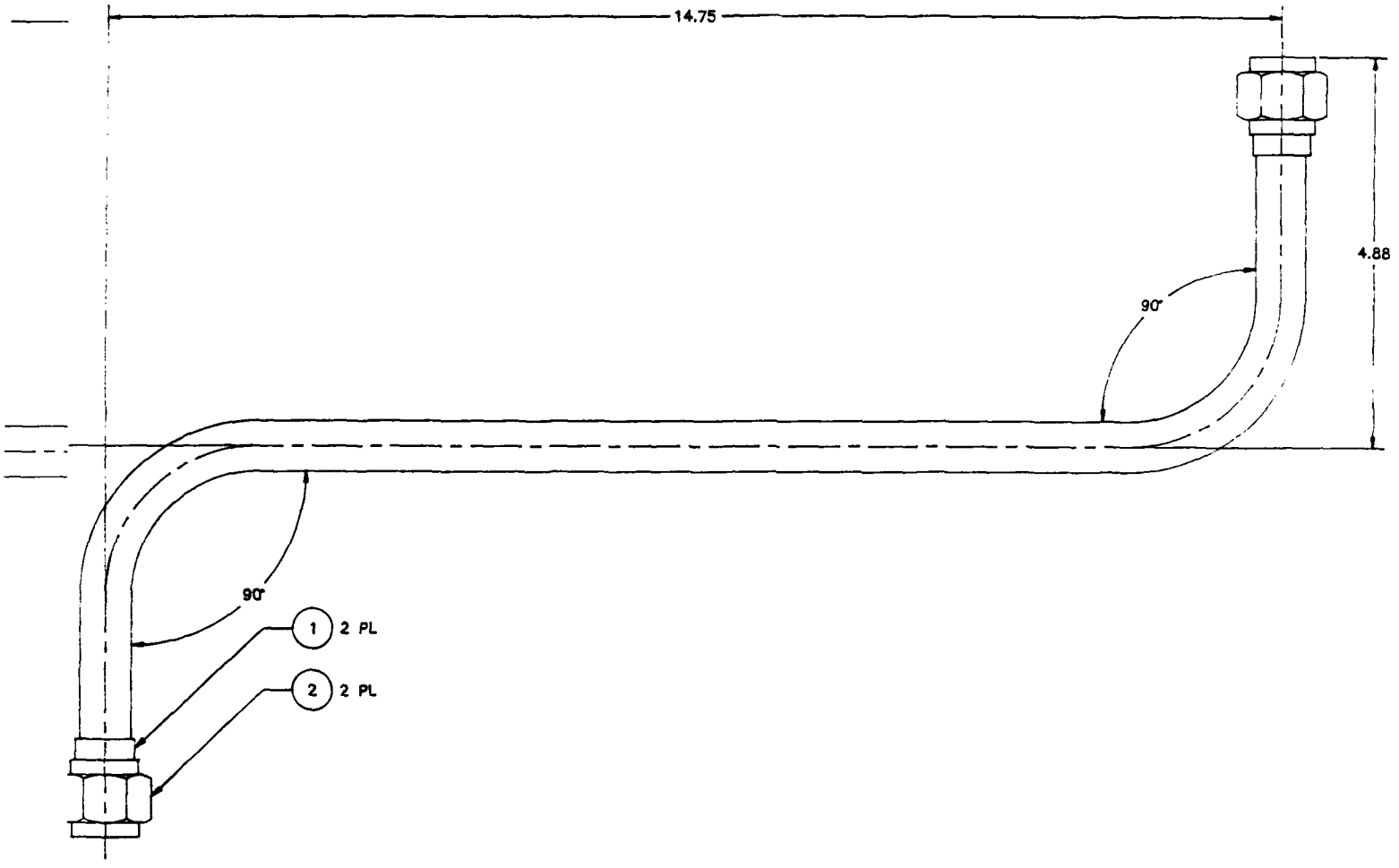
6. ALL BEND RADIUS PER MS33611



6 | 5 | 4 | 3 | 2

ZONE	REV	
		CAD GENERAT

(2)



QTY	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.
2		NUT		AN816-10D
2		SLEEVE		MS20819-10D
X		MSOGS TUBING ASSY		LEX-13368

QUANTITY REQUIRED PER DASH NO

PA

UNLESS OTHERWISE SPECIFIED

DAAB07-92-Z-B506

W.B.H. 93-07-29

L.M. 93-08-09

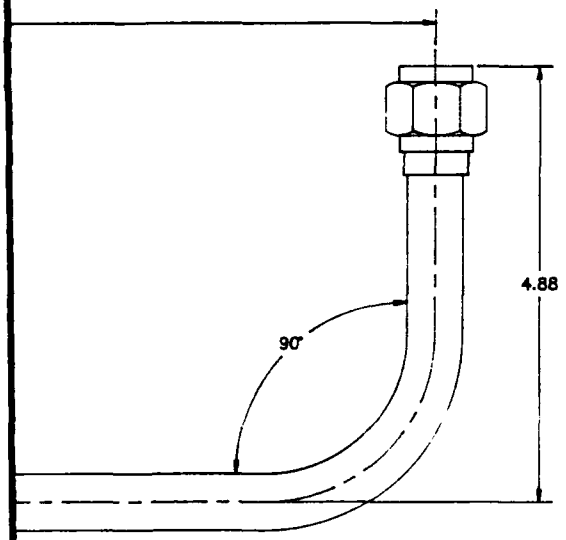
LEX-13368 -H-60G

APPLICATION

6 | 5 | 4 | 3 | 2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-29	

(3)



SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	
2	NUT		AN818-10D				2
2	SLEEVE		MS20819-10D				1
X	MSOGS TUBING ASSY		LEX-13368	.50 ID x .063 WALL x 27.5 3003-H14 ALUMINUM TUBING			

PARTS LIST

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

W.B.H. 93-07-29
L.M. 93-08-09

MSOGS
TUBING
ASSEMBLY

D | 7S976 | LEX-13368

1/1

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

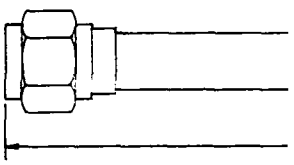
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

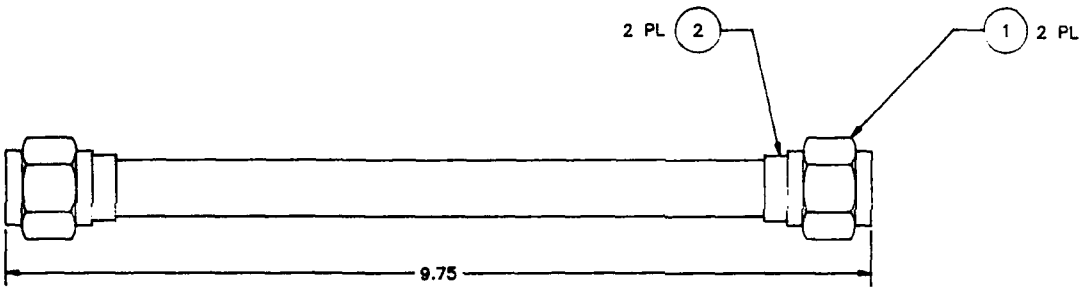
4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. ALL BEND RADIUS PER MS33611



ZONE	REV	DE
		CAD GENERATED



QTY		SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.
2			NUT		AN818-10D
2			SLEEVE		MS20819-10D
X			MSOGS TUBING ASSY		LEX-13370

QUANTITY REQUIRED PER DASH NO

PARTS LIS

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

W.B.H. 93-07-29

L.M. 93-08-09

LEX-13369 UH-60Q

APPLICATION

D 7

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-29	

(3)

(1) 2 PL

SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE	QTY
	NUT		AN818-10D				2
	SLEEVE		MS20819-10D				1
	MSOGS TUBING ASSY		LEX-13370	.50 ID x .063 WALL x 9.75 3003-H14 ALUMINUM TUBING			

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS .X ± .01 .XX ± .005 ANGLES ± 1°

CONTRACT NO. DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LEAD LEVEL

DR W.B.H. 93-07-29
CHK L.M. 93-08-09
APVD

TITLE
MSOGS
TUBING
ASSEMBLY

SIZE D | CAGE SERV NO. 7S976 | DRAWING NO. LEX-13369

WEIGHT 1/1 | SHEET 1 OF 1

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

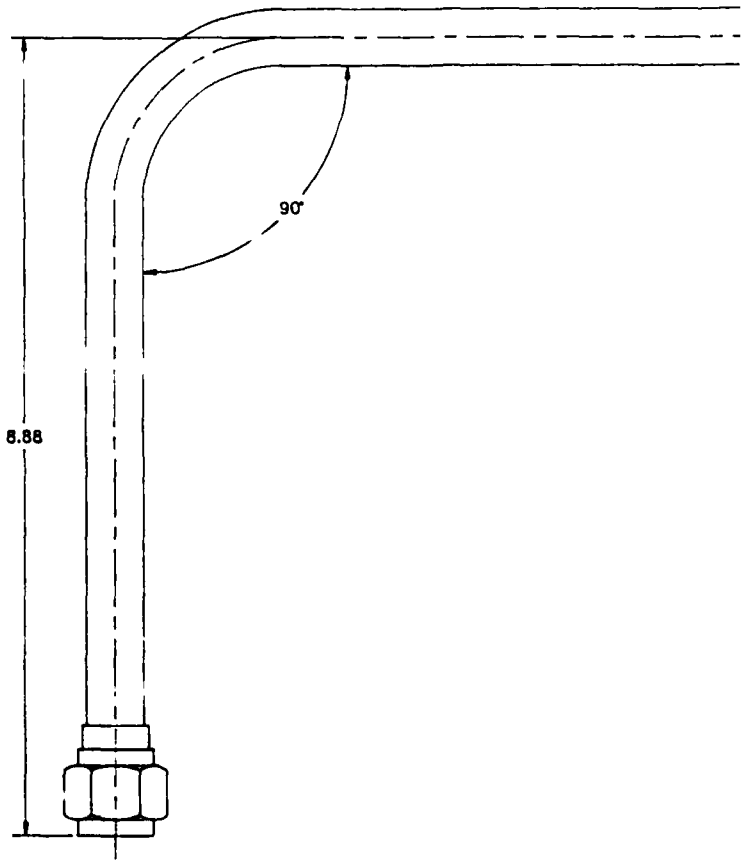
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

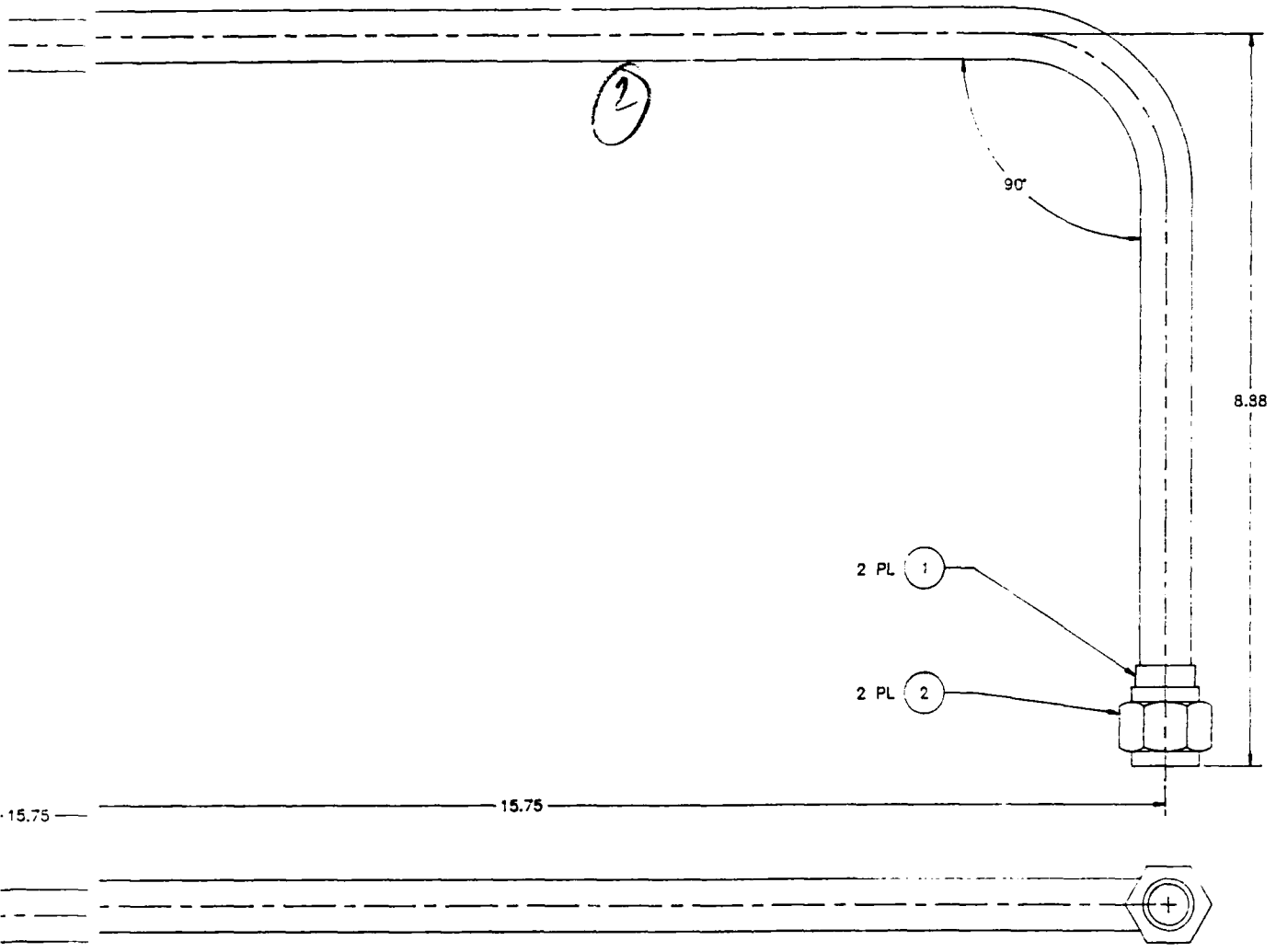
4. MARK PARTS PER MIL-STD-130

5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. ALL BEND RADIUS PER MS33611



ZONE	REV	
		CAD GENERATED



QTY		SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.
2			NUT		AN818-10D
2			SLEEVE		MS20819-10D
X			MSOGS TUBING ASSY		LEX-13370

QUANTITY REQUIRED PER DASH NO

PARTS

UNLESS OTHERWISE SPECIFIED

DAAB07-92-Z-B506

W.B.H. 93-07-29

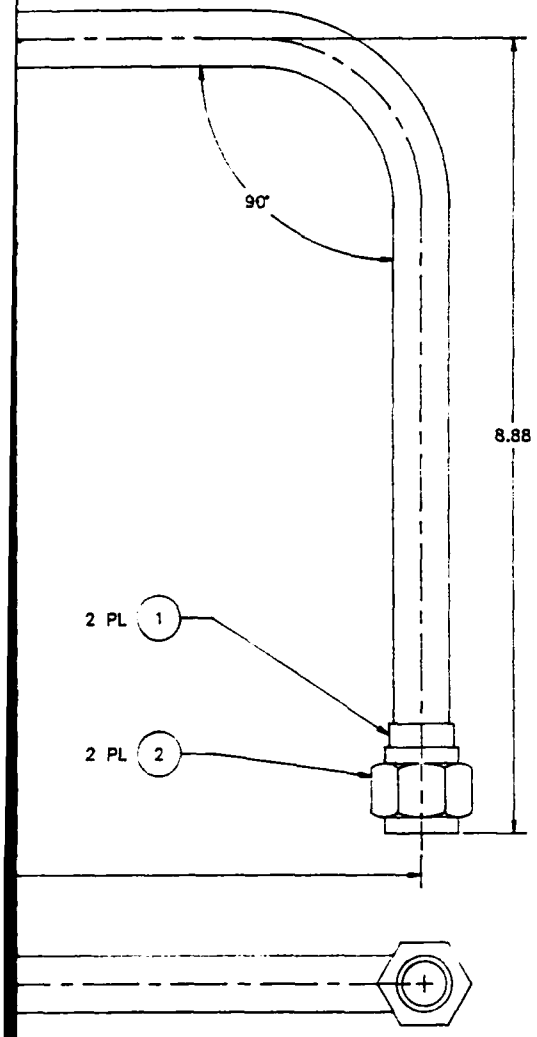
L.M. 93-08-09

LEX-13369 VH-60Q

APPLICATION

D

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-29	



SYM	QUANTITY REQUIRED PER DASH NO	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	U/M	ZONE
2		NUT		AN818-10D			2
2		SLEEVE		MS20819-10D			1
X		MSOGS TUBING ASSY		LEX-13370	.50 ID x .063 WALL x 35.5 3003-H14 ALUMINUM TUBING		

PARTS LIST

APPLICATION

UNLESS OTHERWISE SPECIFIED

CONTRACT NO. DAAB07-92-Z-B506

DR W.B.H. 93-07-29

CHK L.M. 93-08-09

APPD

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LBAD LEX, KY.

TITLE
MSOGS
TUBING
ASSEMBLY

SIZE D | CAGE CODE NO. 7S976 | DRAWING NO. LEX-13370

SCALE 1/1 SHEET 1 OF 1

NOTES:

1: INTERPRET DRAWING PER MIL-T-31000 AND MIL-STD-100

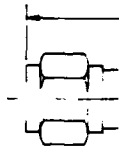
2. INTERPRET ABBREVIATIONS PER MIL-STD-12

3. REMOVE BURRS AND BREAK ALL SHARP EDGES

4. MARK PARTS PER MIL-STD-130

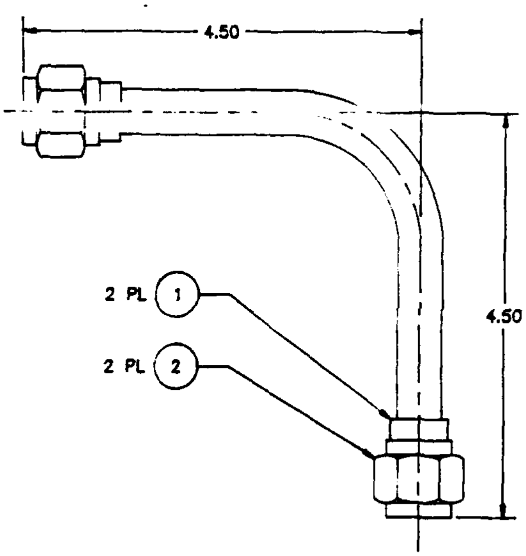
5. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1982

6. ALL BEND RADIUS PER MS33611



5	4	3	2

ZONE	REV	
		CAD GENERATED



2		NUT		AN818-8D
2		SLEEVE		MS20819-8D
X		MSOGS TUBING ASSY		LEX-13371
	SYM	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.

QUANTITY REQUIRED PER DASH NO

PARTS

UNLESS OTHERWISE SPECIFIED

CONTRACT NO.	DAAB07-92-Z-B506
DR. W.B.H.	93-07-30
CHK. L.M.	93-08-09

NEXT ASSEMBLY	USED ON
LEX-13369	UN-600

APPLICATION

D

5	4	3	2

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
		CAD GENERATED	93-07-29	

(3)

ITEM	QTY	NOMENCLATURE	CODE IDENT	IDENTIFYING NO.	MATERIAL/SPECIFICATION	W/M	ZONE	TOT
2		NUT		AN818-8D				2
2		SLEEVE		MS20819-8D				1
X		MSOGS TUBING ASSY		LEX-13371	.375 ID x .063 WALL x 10.0 3003-H14 ALUMINUM TUBING			

PER DASH NO

PARTS LIST

UNLESS OTHERWISE SPECIFIED

DAAB07-92-Z-B506

SERV-AIR, INC. S.O.F.S.A.
A SUBSIDIARY OF E-SYSTEMS, INC. LEAD LEX, KY.

DR W.B.H. 93-07-30
CHK L.M. 93-08-09

MSOGS
TUBING
ASSEMBLY

D 7S976 LEX-13371

1/1 1 OF 1