

MCR-74-2

Contract NAS8-29777

Design Drawings

January 1974

Universal Stowage Module for Future Space Exploration

(NASA-CR-120173) UNIVERSAL STOWAGE MODULE
FOR FUTURE SPACE EXPLORATION, DESIGN
DRAWINGS (Martin Marietta Corp.) 47 p
HC \$5.50

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16533

Prepared for:

National Aeronautics and Space
Administration

George C. Marshall Space Flight Center

Marshall Space Flight Center,
Alabama 35812**MARTIN MARIETTA**

Contract NAS8-29777
MCR-74-2

DESIGN DRAWINGS

UNIVERSAL STOWAGE MODULE
FOR FUTURE SPACE EXPLORATION

January 4, 1974

PREPARED BY:

MICHAEL W. HUSSEY
PAUL GARBER

APPROVED BY:


VICTOR A. DESCAMP
PROGRAM MANAGER

PREPARED FOR:

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GOERGE C. MARSHALL SPACE FLIGHT CENTER
MARSHALL SPACE FLIGHT CENTER, ALABAMA 35812

MARTIN MARIETTA CORPORATION
DENVER DIVISION
P. O. BOX 179
DENVER, COLORADO 80201

FOREWORD

This report describes the design of the Universal Stowage Module that is intended for use on Shuttle payloads. This document presents the results of work performed by the Martin Marietta Corporation's Denver Division for the National Aeronautics and Space Administration, George C. Marshall Space Flight Center. This report was prepared as partial fulfillment of Contract NAS8-29777, Universal Stowage Module for Future Space Exploration. The NASA Technical Monitor was Mr. Paul Artis, of the Astronautics Laboratory, Mechanical and Crew Systems Integration Division.

ABSTRACT

This report describes the design drawings accomplished under contract NAS8-29777 to develop, design, and fabricate a prototype Universal Stowage Module with universal restraints that are readily adaptable for most sizes and shapes of items that would be launched into space and returned aboard shuttle payloads.

DRAWING LIST

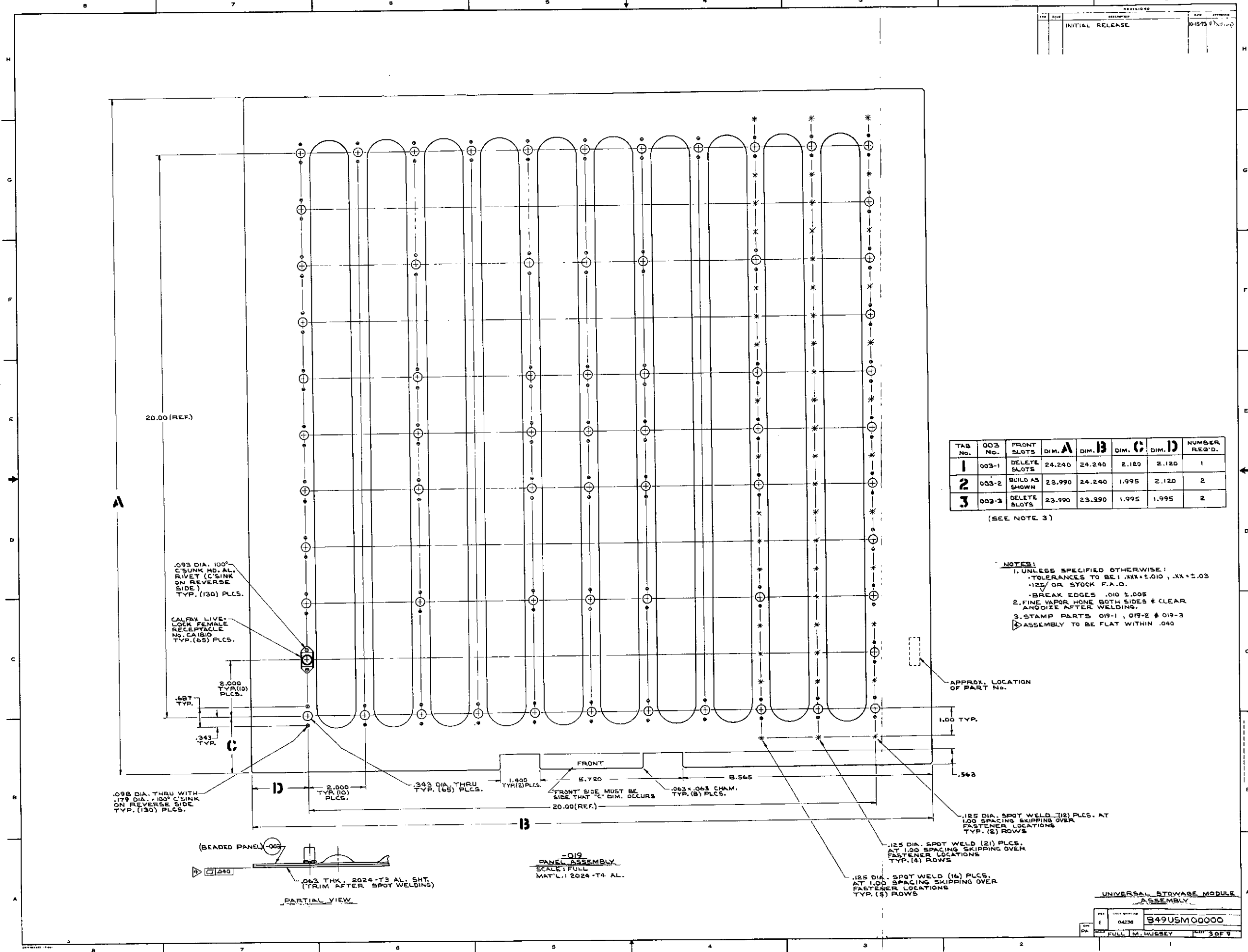
Martin Marietta Corporation

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FOLDOUT FRAME

FOLDOUT FRAME 2

REV.	DATE	BY	APP'D.	REVISIONS
1				INITIAL RELEASE
2				10-15-78



TAB No.	003 No.	FRONT SLOTS	DIM. A	DIM. B	DIM. C	DIM. D	NUMBER REQ'D.
1	003-1	DELETE SLOTS	24.240	24.240	2.180	2.120	1
2	003-2	BUILD AS SHOWN	23.990	24.240	1.995	2.120	2
3	003-3	DELETE SLOTS	23.990	23.990	1.995	1.995	2

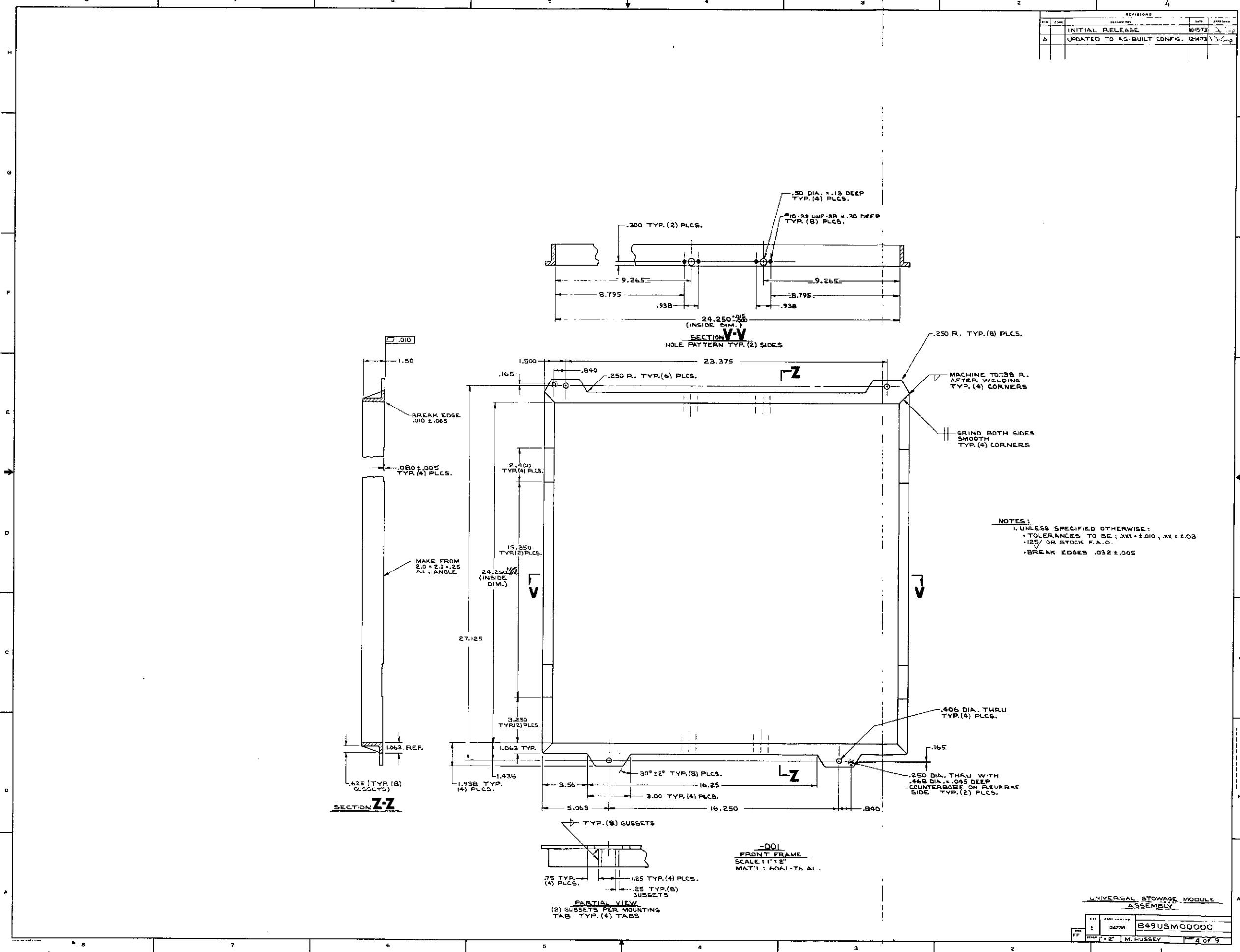
(SEE NOTE 3)

- NOTES:
- UNLESS SPECIFIED OTHERWISE:
 *TOLERANCES TO BE $\pm .010$, $\pm .005$ OR STOCK F.A.O.
 *BREAK EDGES $\pm .005$
 - FINE VAPOR HONE BOTH SIDES & CLEAR ANODIZE AFTER WELDING.
 - STAMP PARTS 019-1, 019-2 & 019-3
- ASSEMBLY TO BE FLAT WITHIN .040

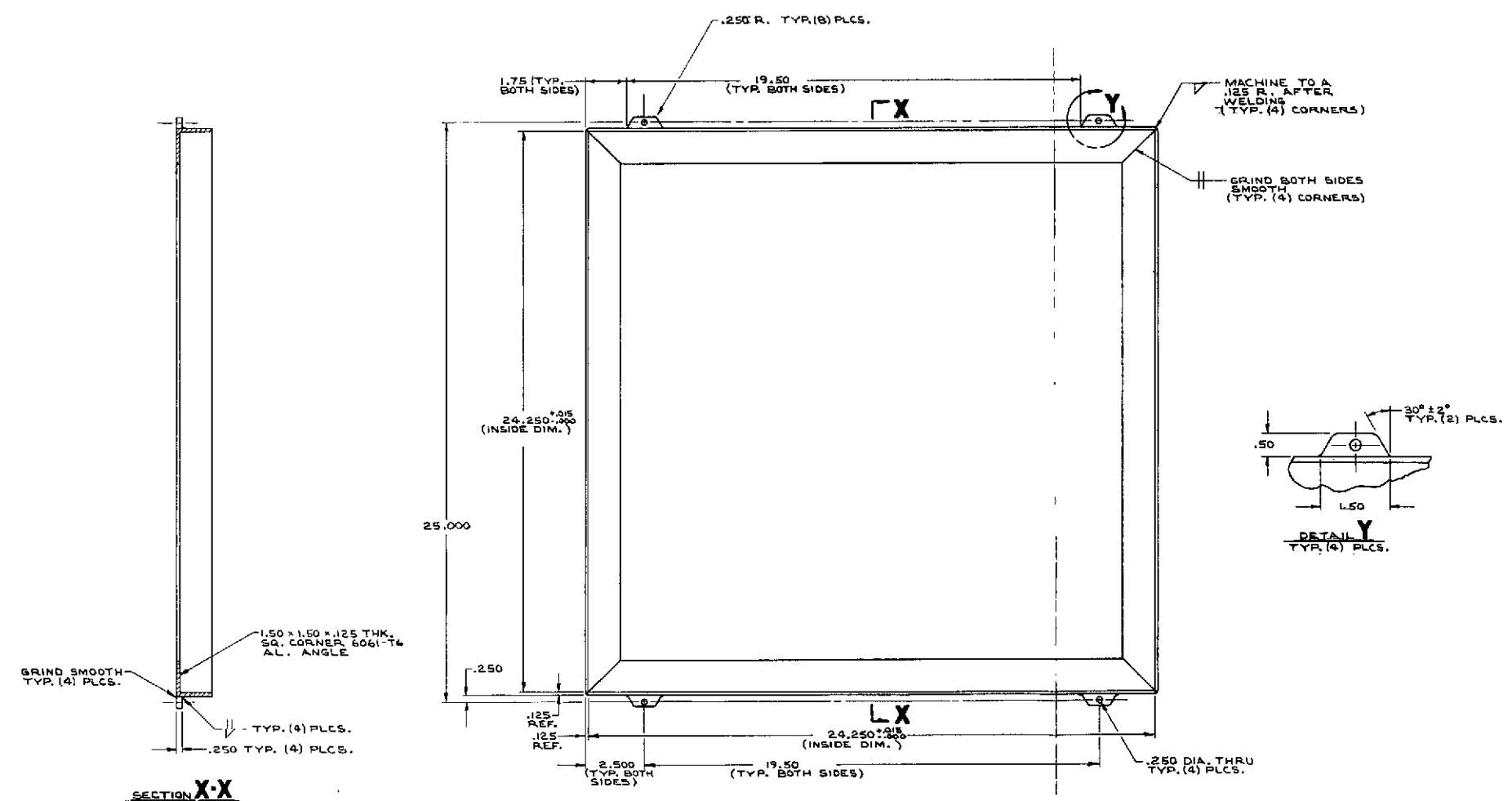
UNIVERSAL STORAGE MODULE ASSEMBLY

REV.	DATE	BY	APP'D.	REVISIONS
1	04/30			B49USM00000
PA		FULL	M. HUSSEY	3 OF 9

REVISIONS			
NO.	DATE	DESCRIPTION	BY
		INITIAL RELEASE	04573
A		UPDATED TO AS-BUILT CONFIG.	12473



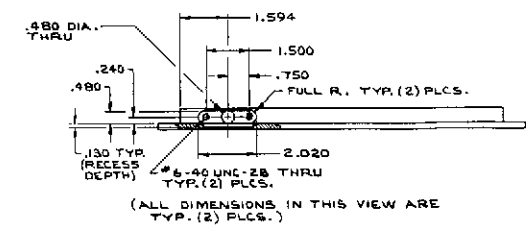
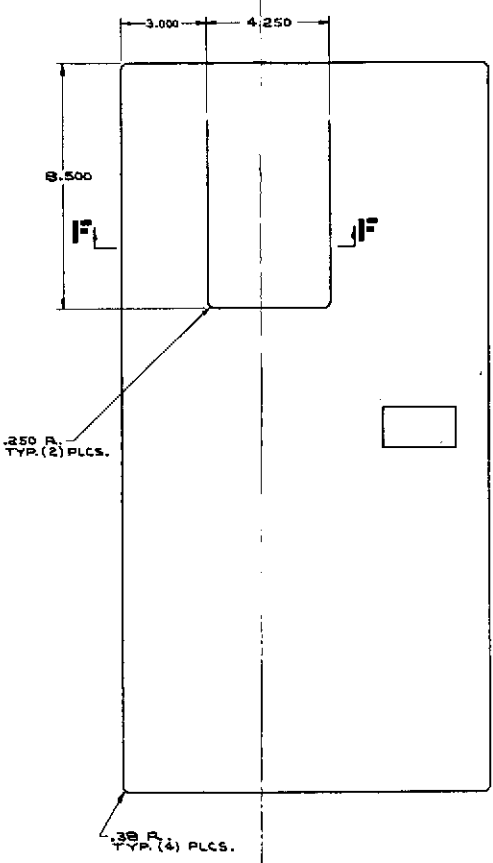
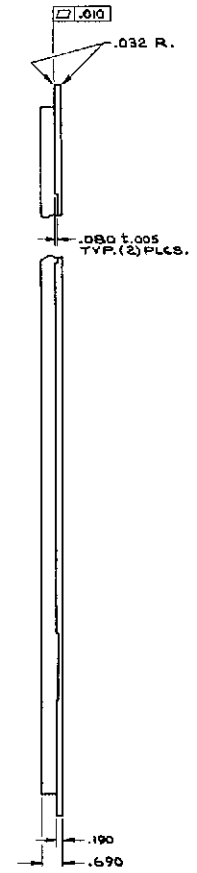
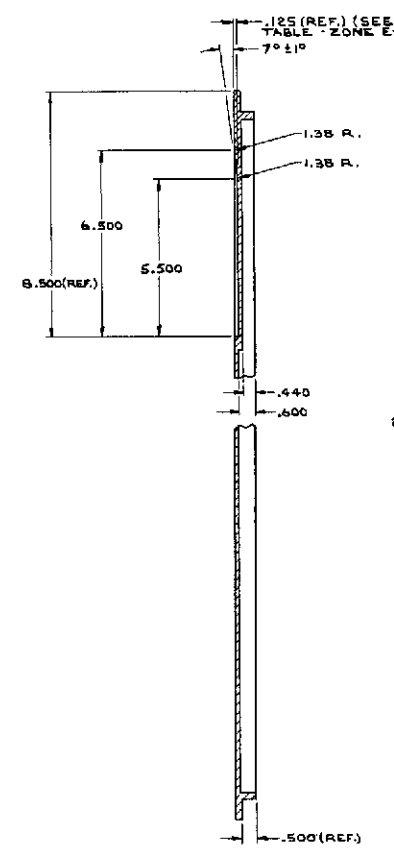
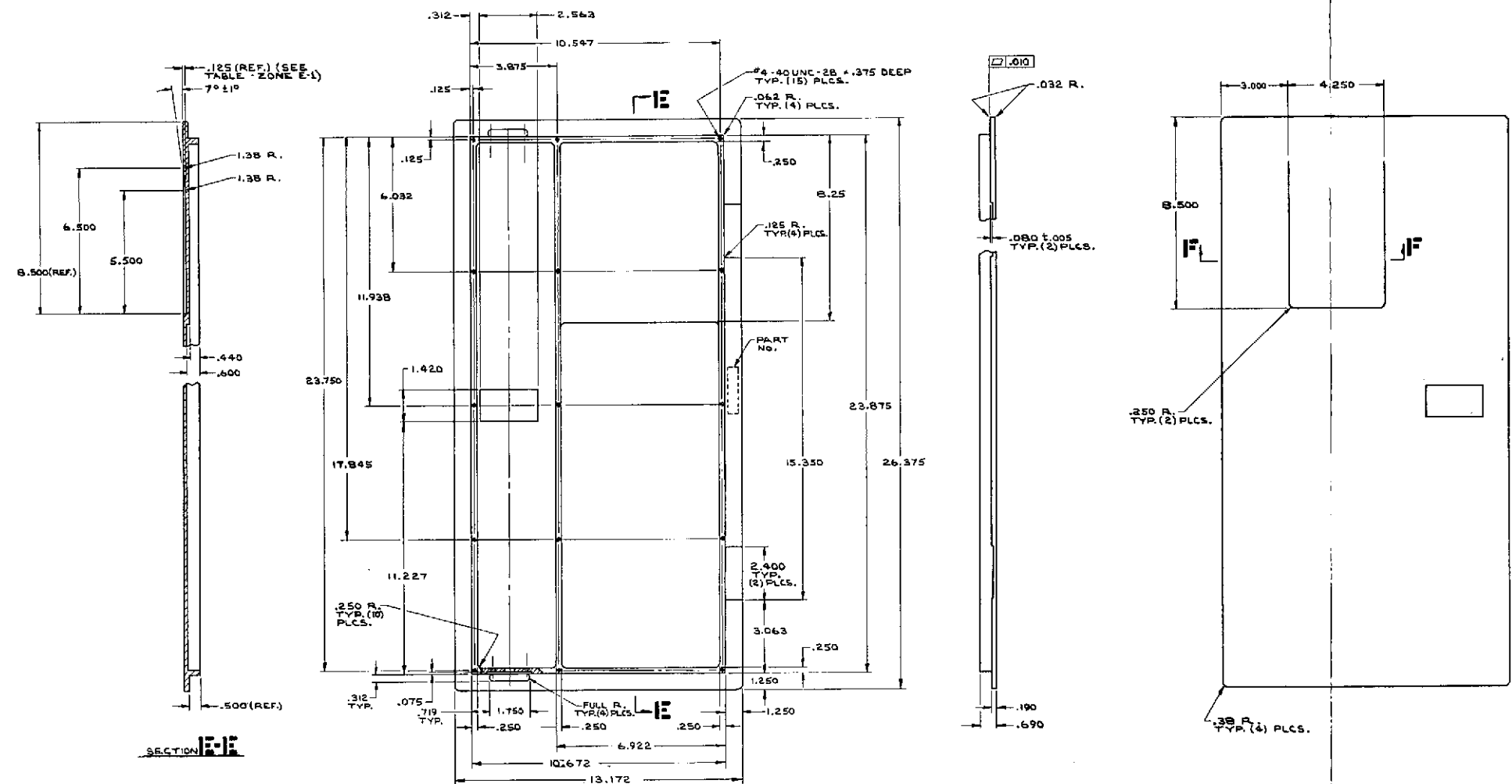
REVISIONS		DATE	APPROVED
INITIAL RELEASE		10-15-72	
DELETED NOTE 2		12-14-73	



-002
REAR FRAME
SCALE: 1" = 2"
MAT'L.: 6061-T6 AL.

- NOTES:
- 1. UNLESS SPECIFIED OTHERWISE:
 - TOLERANCES TO BE: .XX ± .010, .XX ± .03
 - .125 OR STOCK F.A.D.
 - BREAK EDGES .010 ± .005

REV.	DATE	DESCRIPTION	BY	APP'D.
A		INITIAL RELEASE	10-28-73	
		REVISED NOTE 2	12-14-73	



-004
DOOR HOUSING
SCALE: 1" = 2"
MAT'L: 6061-T6 AL.

SECTION G-G
(SEE TABLE - ZONE E-1)

TAB. No.	DESCRIPTION	NUMBER REQ'D.
1	BUILD AS SHOWN	1
2	DELETE RECESS ON UPPER-LEFT DOOR FRONT	1

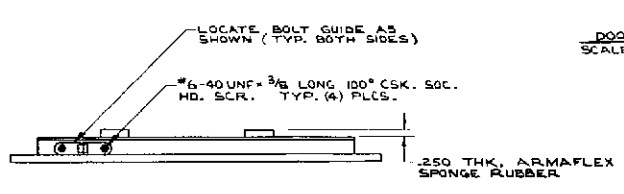
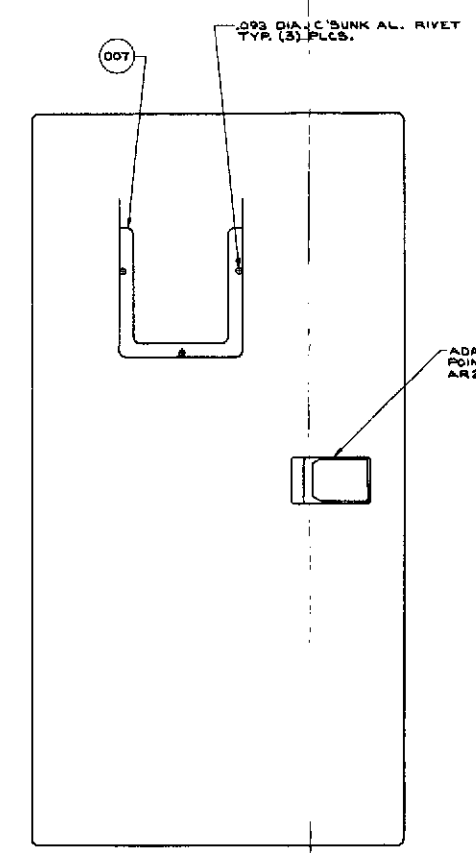
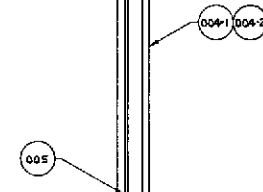
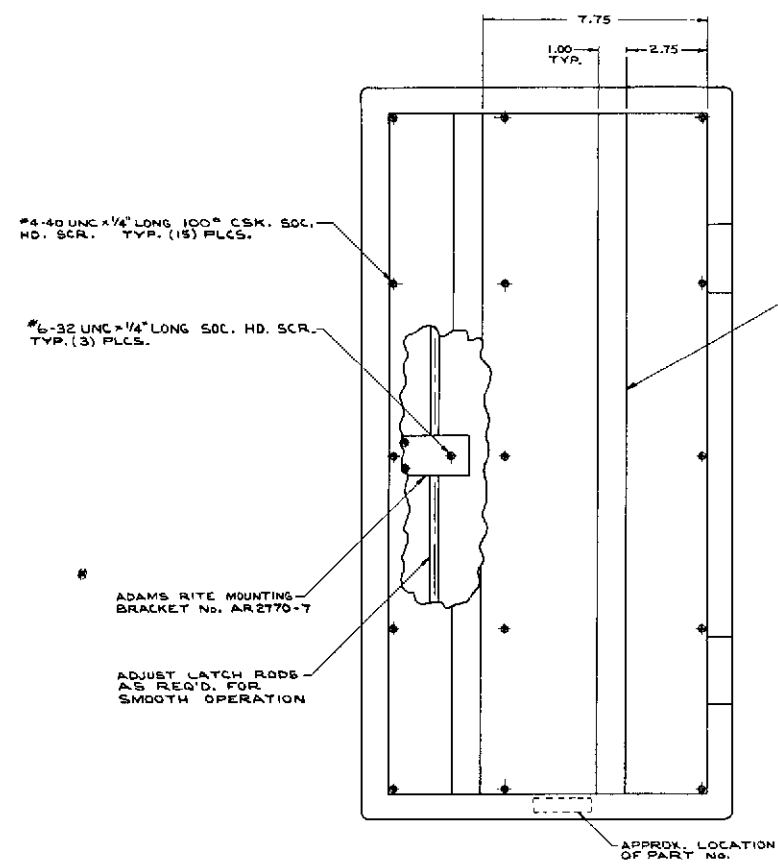
(SEE NOTE 3)

- NOTES:
- UNLESS SPECIFIED OTHERWISE:
 - TOLERANCES TO BE: .XX ±.010, .XX ±.03, .125/ OR STOCK F.A.O.
 - BREAK EDGES .010 ±.005
 - FINE VAPOR HONE & ANODIZE AFTER MACHINING (COLOR TO BE "PL FAST GOLD") (ANODIZE WITH HINGES IN ORDER TO ACHIEVE MATCHING COLORS.)
 - STAMP PARTS 004-1 & 004-2.

FOLDOUT FRAME

FOLDOUT FRAME 2

REVISIONS		DATE	BY	APPROVED
INITIAL RELEASE				



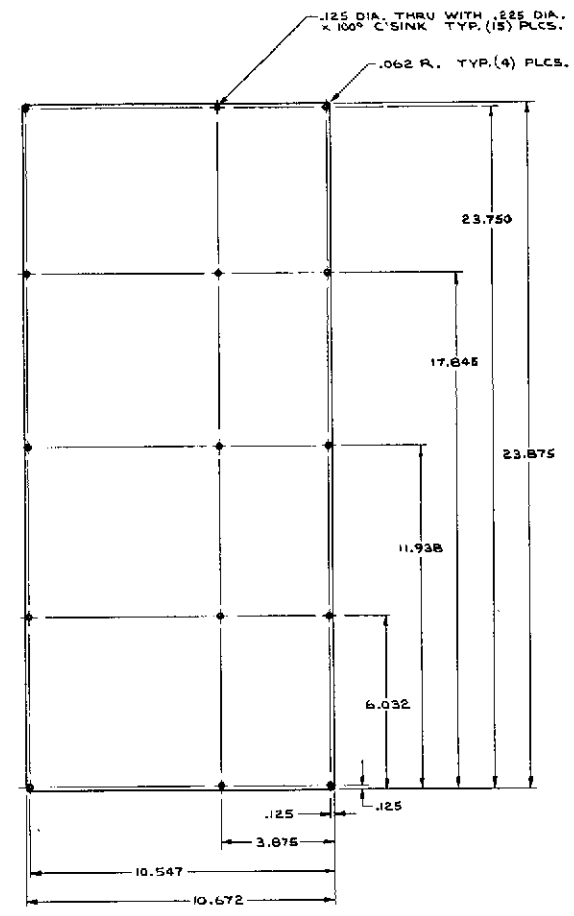
-029
DOOR ASSEMBLY
SCALE: 1" = 2"

TAB. No.	004 No.	DESCRIPTION	NUMBER REQ'D.
1	004-1	007 INSTALLED AS SHOWN	1
2	004-2	NO RECESS 007 DOES NOT APPLY	1

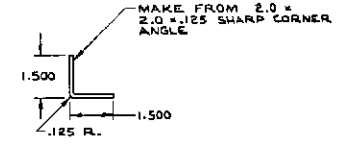
(SEE NOTE 1)

NOTES:
1. STAMP PARTS 029-1 & 029-2

REVISIONS		DATE	INITIALS
1	INITIAL RELEASE	0-2078	15/7/73

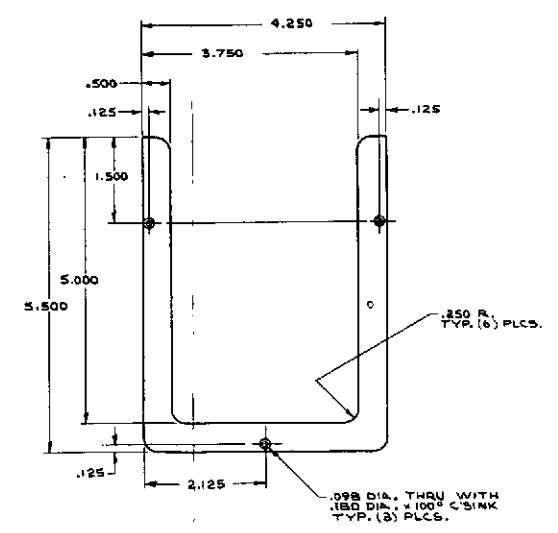
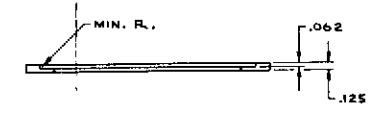
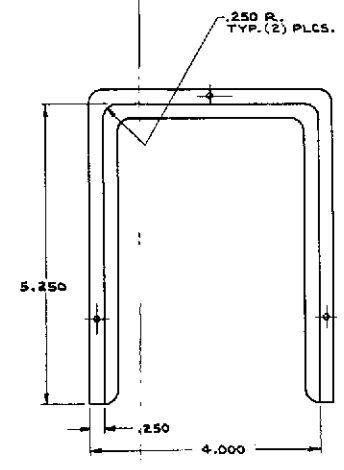


-005 ACCESS COVER
 SCALE: 1/12
 MAT'L: .062 THK. 6061-T6 AL.
 NOTES:
 1. FINE VAPOR HONE & ANODIZE (COLOR TO BE "RL FAST GOLD") WITH DOORS TO ACHIEVE MATCHING COLORS.
 2. BREAK EDGES .010 ±.005.
 3. (2) PARTS REQ'D.



-006 CORNER ANGLE
 SCALE: 1/12
 MAT'L: 6061-T6 AL.
 NOTES:
 1. FINE VAPOR HONE & CLEAR ANODIZE.
 2. BREAK EDGES .032 ±.005.
 3. (4) PARTS REQ'D.

GENERAL NOTES:
 1. UNLESS SPECIFIED OTHERWISE:
 *TOLERANCES TO BE: XXX±.010, XX±.02
 -125/ OR STOCK F.A.O.



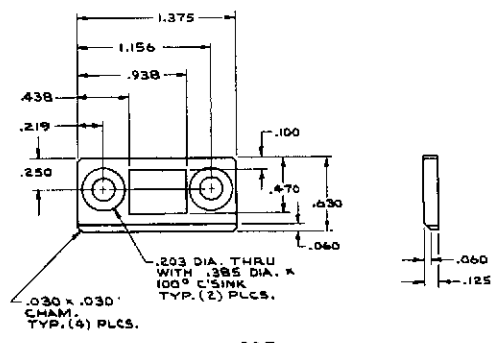
-007 NOMENCLATURE HOLDER
 SCALE: FULL
 MAT'L: 6061-T6 AL.
 NOTES:
 1. BREAK EDGES .010 ±.005.
 2. FINE VAPOR HONE & ANODIZE (COLOR TO BE "RL FAST GOLD") WITH DOORS TO ACHIEVE MATCHING COLORS.
 3. (1) PART REQ'D.

SHEET CONTENTS:
 -005 ACCESS COVER
 -006 CORNER ANGLE
 -007 NOMENCLATURE HOLDER

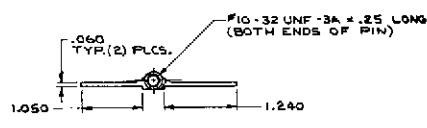
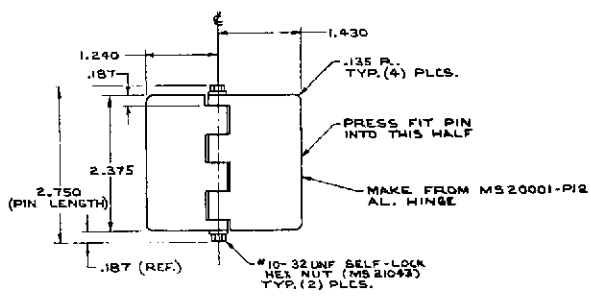
UNIVERSAL STOWAGE MODULE ASSEMBLY

REV	DATE	BY	APP	DESCRIPTION
E	04226			849 USM 00000
DRAWN BY M. HUBBEY				8 OF 9

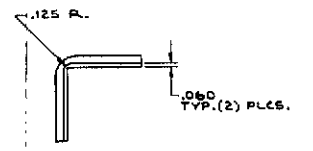
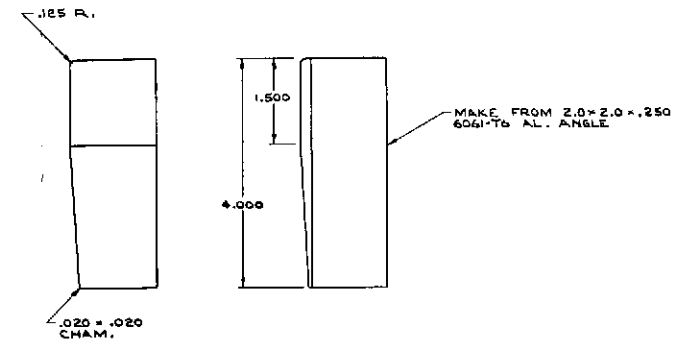
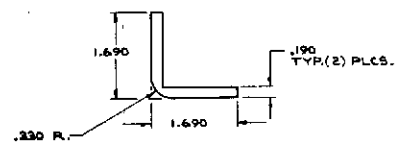
REV	DATE	BY	APP
1			
INITIAL RELEASE		11-2-73	



-008
STRIKER PLATE
SCALE: 1:2.11
MAY L. 1: 304 CRES.
NOTES:
1. BREAK EDGES .015 ± .005.
2. (4) PARTS REQ'D.



-039
HINGE ASSEMBLY
SCALE: FULL
NOTES:
1. BREAK EDGES .015 ± .005.
2. FINE VAPOR HONE & ANODIZE (COLOR TO BE "RL FAST GOLD") WITH DOORS TO ACHIEVE MATCHING COLORS.
3. (4) PARTS REQ'D.



-010
TAKE-UP WEDGE
SCALE: FULL
NOTES:
1. BREAK EDGES .015 ± .005.
2. FINE VAPOR HONE & CLEAR ANODIZE.
3. (4) PARTS REQ'D.

GENERAL NOTES:
1. UNLESS SPECIFIED OTHERWISE:
TOLERANCES TO BE: .XXX = ±.010, .XX = ±.03
.125/ OR STOCK F.A.O.

SHEET CONTENTS:
-008 STRIKER PLATE
-010 TAKE-UP WEDGE
-039 HINGE ASSEMBLY

UNIVERSAL STORAGE MODULE ASSEMBLY

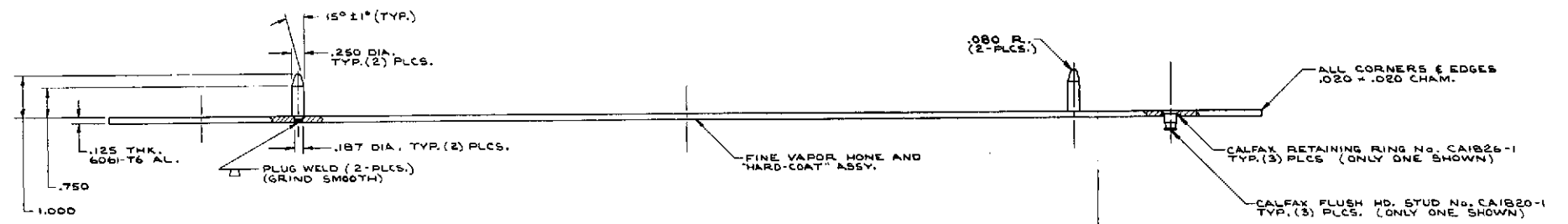
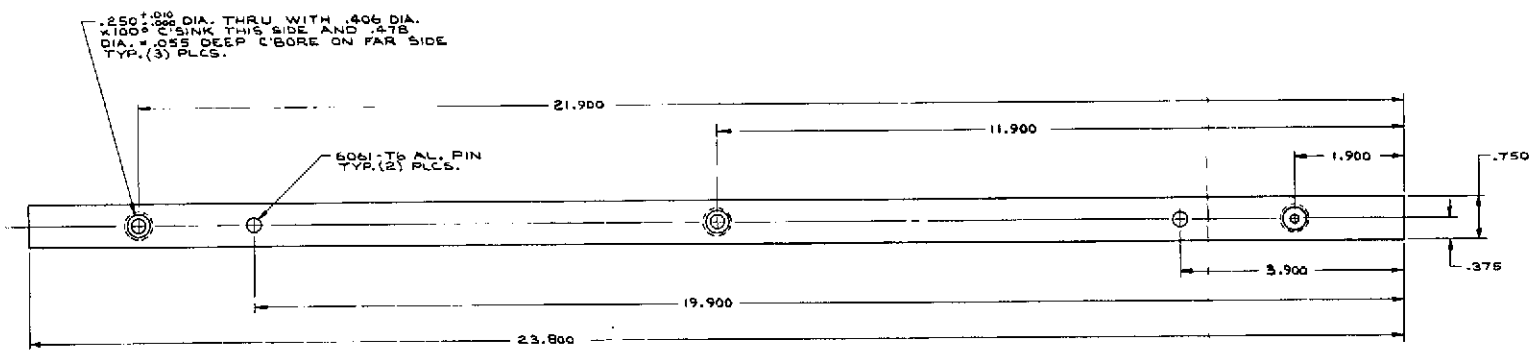
REV	DATE	BY	APP	849 USM 00000
1	042768			
NOTED M. HUSSEY				9 OF 9

FOLDOUT FRAME 1

FOLDOUT FRAME 2

11

REV	DATE	BY	CHKD	APP'D	REVISIONS
1					INITIAL RELEASE



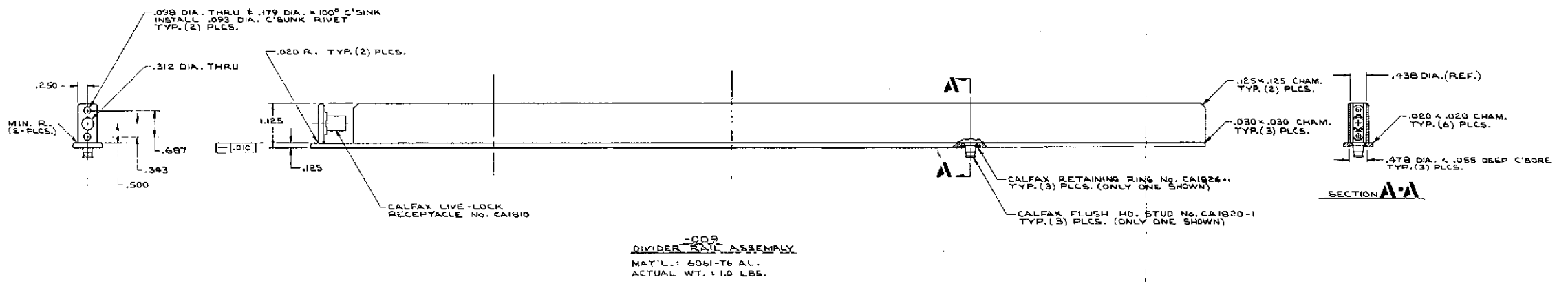
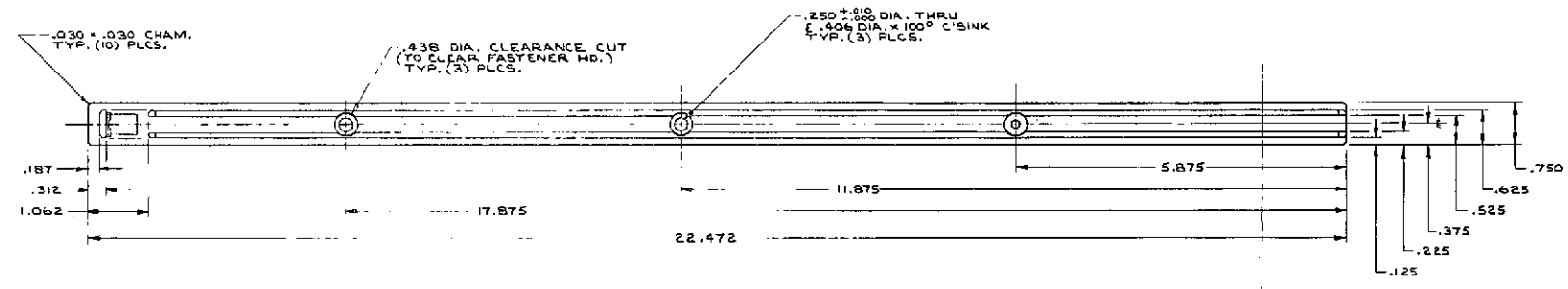
-D19
PIN BAR ASSEMBLY
ACTUAL WT. = .5 LBS.

SHEET CONTENTS
-D19 PIN BAR ASSY.

DIVIDER ASSEMBLY

REV	DATE	BY	CHKD	APP'D	REVISIONS
E	04236				B49USM00001
FULL J. M. HUSSEY					2 OF 2

REVISIONS			
REV	DATE	DESCRIPTION	BY
1	11-6-73	INITIAL RELEASE	HUSSEY

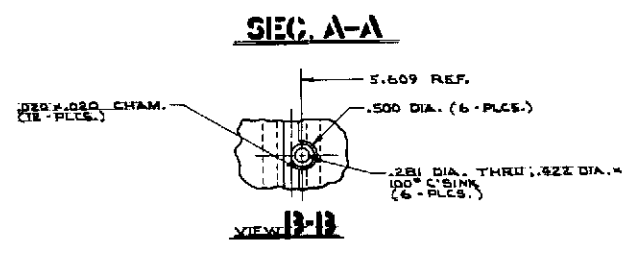
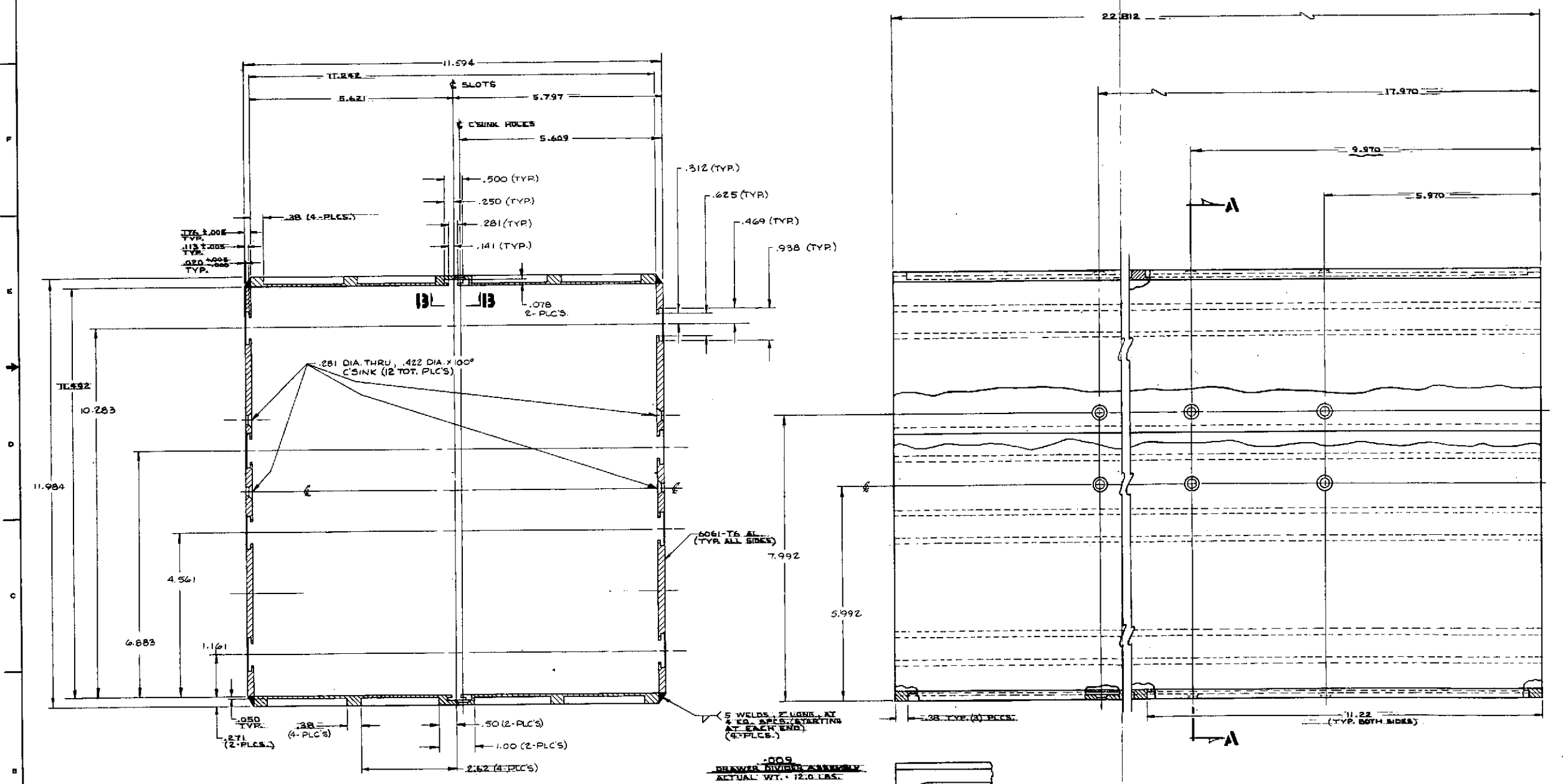


NOTES:
 1. BREAK EDGES .015 UNLESS SPECIFIED OTHERWISE.
 2. "NITUFF" PART PRIOR TO ASSY.
 3. (2) PARTS REQ'D.

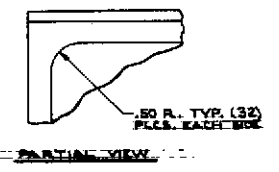
REV	DATE	DESCRIPTION	BY

M. MUSSEY 0472 11-6-73 DIVIDER RAIL ASSEMBLY		PART NO. 04236 QTY. 1000
MANUFACTURED BY: M. MUSSEY CORPORATION DIVIDER RAIL ASSEMBLY		DRAWING NO. 849USM00002 PART 1 OF 1

REVISIONS			
REV	DATE	DESCRIPTION	BY
		INITIAL RELEASE	11-5-78 M. MURPHY
A		UPDATED TO AS-BUILT CONFIG.	12-29-80



5 WELDS, 2" LONG, AT 7 ED. SPLTS. EXTENDING AT EACH END. (6-PLCS.)
 .009 DRAWER DIVIDER ASSEMBLY
 ACTUAL WT. 12.0 LBS.



- NOTES**
1. $R_{1.25}$ ON ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED.
 2. BREAK ALL SHARP EDGES
 3. FINE VAPOR HONE & CLEAR ANODIZE AFTER WELDING.

SHEET CONTENTS:
 .009 DRAWER DIVIDER ASSEMBLY

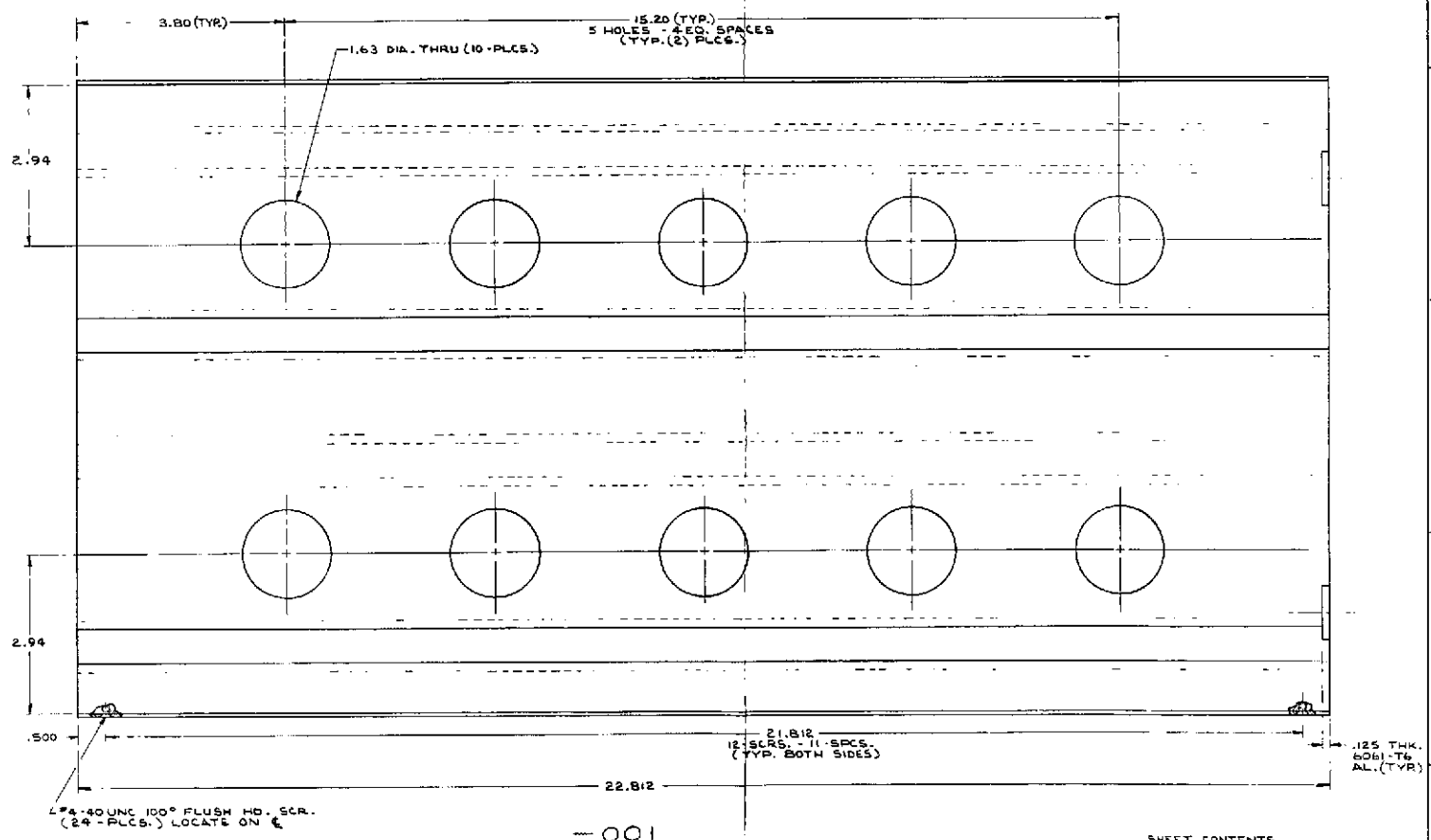
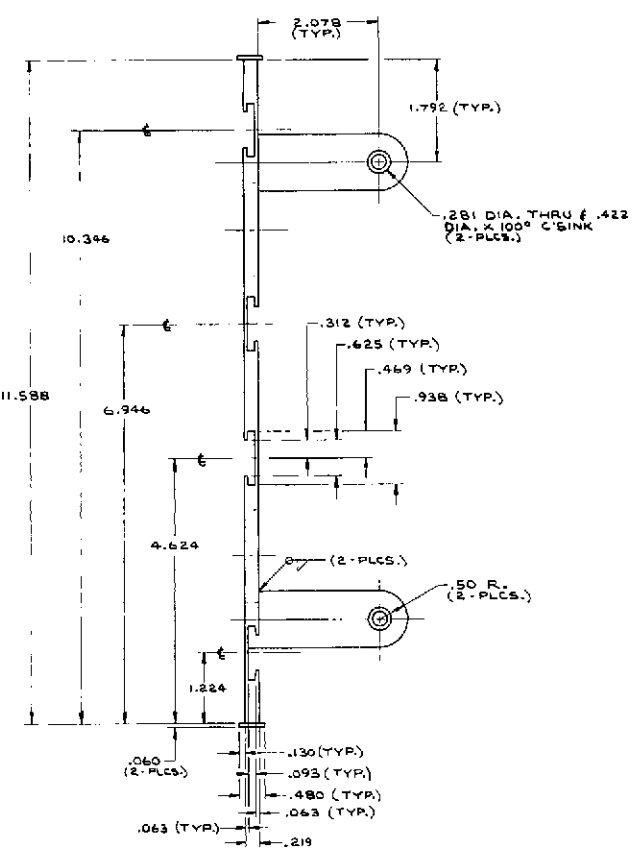
DRAWER DIVIDER

REV	DATE	DESCRIPTION	BY
E	04/23/80	849USM00003	
DESIGNED BY	FULL P. J. BARBER		
DRAWN BY	1 OF 2		

FOLDOUT FRAME

FOLDOUT FRAME 2

REV	DATE	DESCRIPTION	BY	CHKD
		INITIAL RELEASE		
A		UPDATED TO AS-BUILT CONFIG.		



NOTES:
 1. BREAK ALL SHARP EDGES
 2. FINE VAPOR HONE & CLEAR ANODIZE.

001
 PARTITION
 ACTUAL WT. = 4.0 LBS.

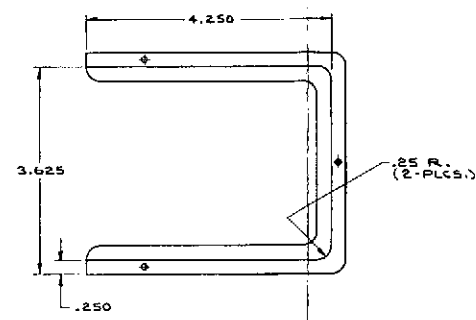
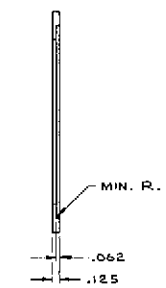
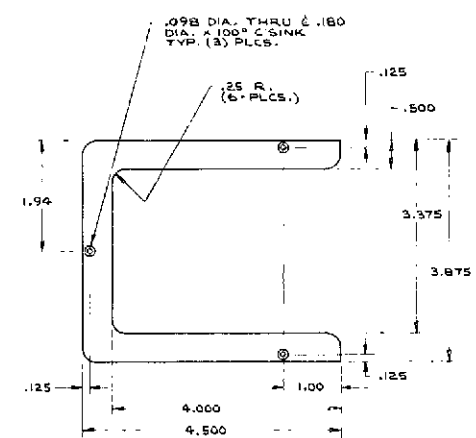
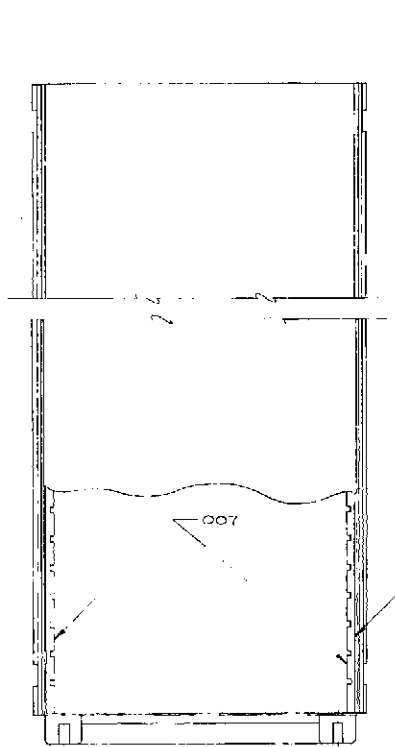
SHEET CONTENTS
 -001 PARTITION

REV	DATE	DESCRIPTION	BY	CHKD

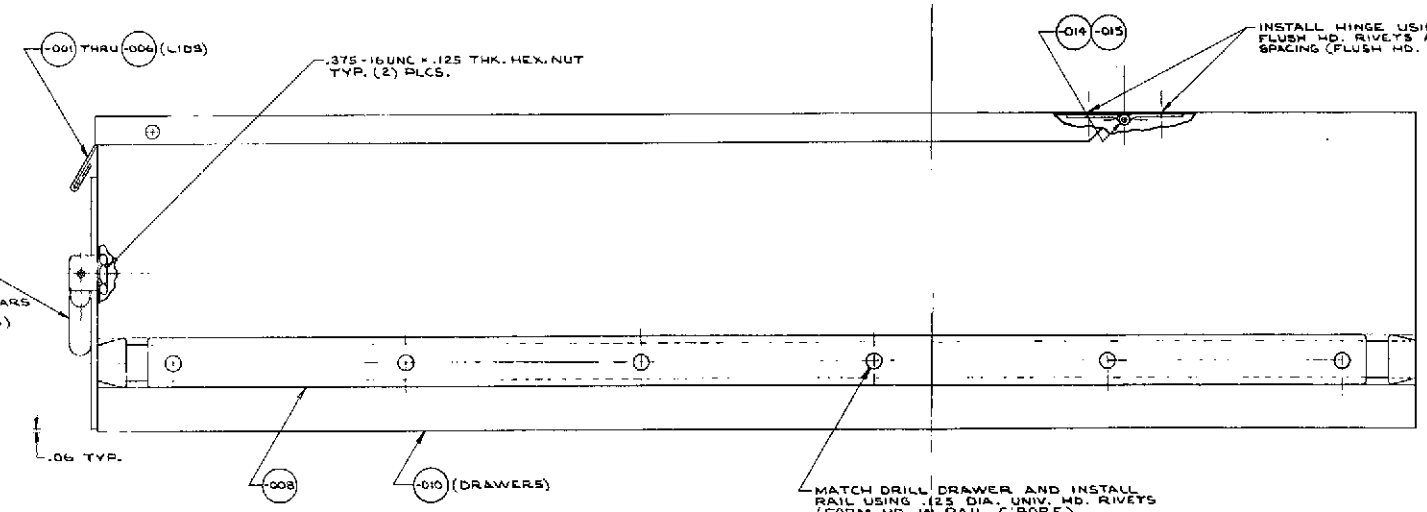
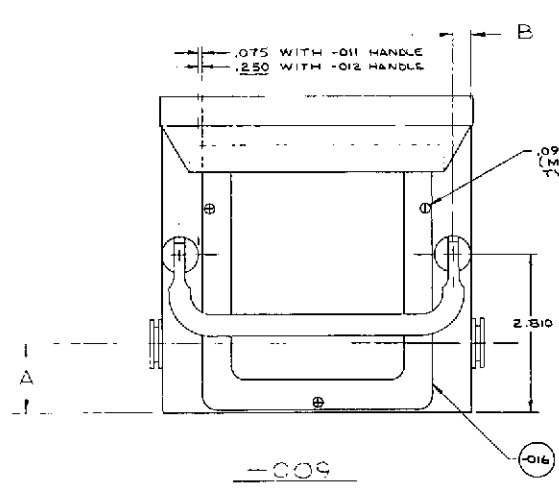
REV	DATE	DESCRIPTION	BY	CHKD

DIMENSIONS IN INCHES DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SPECIFIED	DRAWING NO. 849JEM0003 REV. 04230 DATE 11/27/73	DRAWER DIVIDER 849JEM0003 FULL
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REVISIONS		
NO.	DATE	DESCRIPTION
		INITIAL RELEASE
A	11-14-73	UPDATED TO AS-BUILT CONFIG. 1217-73



-016 CARD HOLDER
 NOTES:
 1. MATL. # 6061-T6 AL.
 2. FINE VAPOR HONE & CLEAR ANODIZE.
 3. (6) PARTS REQ'D.



-009 DRAWER ASSEMBLY
 ACTUAL WTS:
 • SMALL DRAWERS: 3.25 LBS.
 • LARGE DRAWERS: 3.75 LBS.

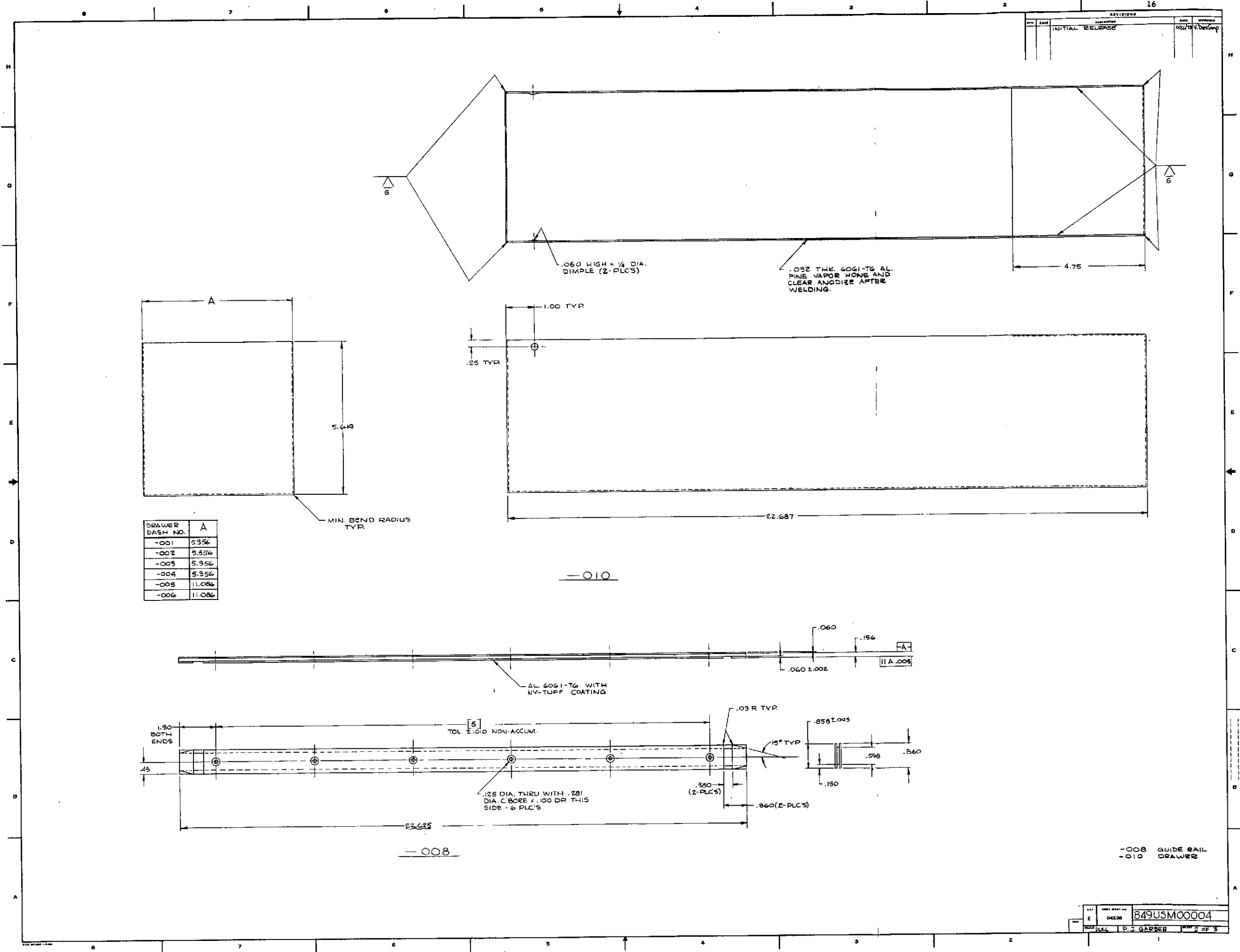
SHEET CONTENTS:
 -009 DRAWER ASSY.
 -016 CARD HOLDER

NOTES:
 1. COVER INSIDE OF DRAWER (ALL SURFACES) WITH .500 THK. ARMAFLEX FOAM RUBBER (EPOXY IN PLACE) DRAWER -002 ONLY

DR. / CK. / DASH. NO.	DIMENSION		ITEM
	A	B	
-001	1.126	.350	AS SHOWN
-002	1.126	.350	SEE NOTE 1
-003	4.526	.350	DELETE
-004	4.526	.350	DELETE
-005	1.126	3.042	DELETE
-006	1.126	3.042	DELETE

Engineering drawing header and title block area. Includes fields for 'DRAWER ASSEMBLY', 'DRAWER DATE 01/73', 'MAYHEM INDUSTRIES CORPORATION', and drawing number '849JSM00004'. It also includes a 'LIST OF MATERIALS' table and a 'REVISIONS' table.

REVISIONS		DATE	BY	DESCRIPTION
1	INITIAL RELEASE			



DRAWER DASH NO.	A
-001	5.356
-002	5.556
-003	5.956
-004	5.356
-005	11.086
-006	11.086

-008

-010

-008 GUIDE RAIL
-010 DRAWER

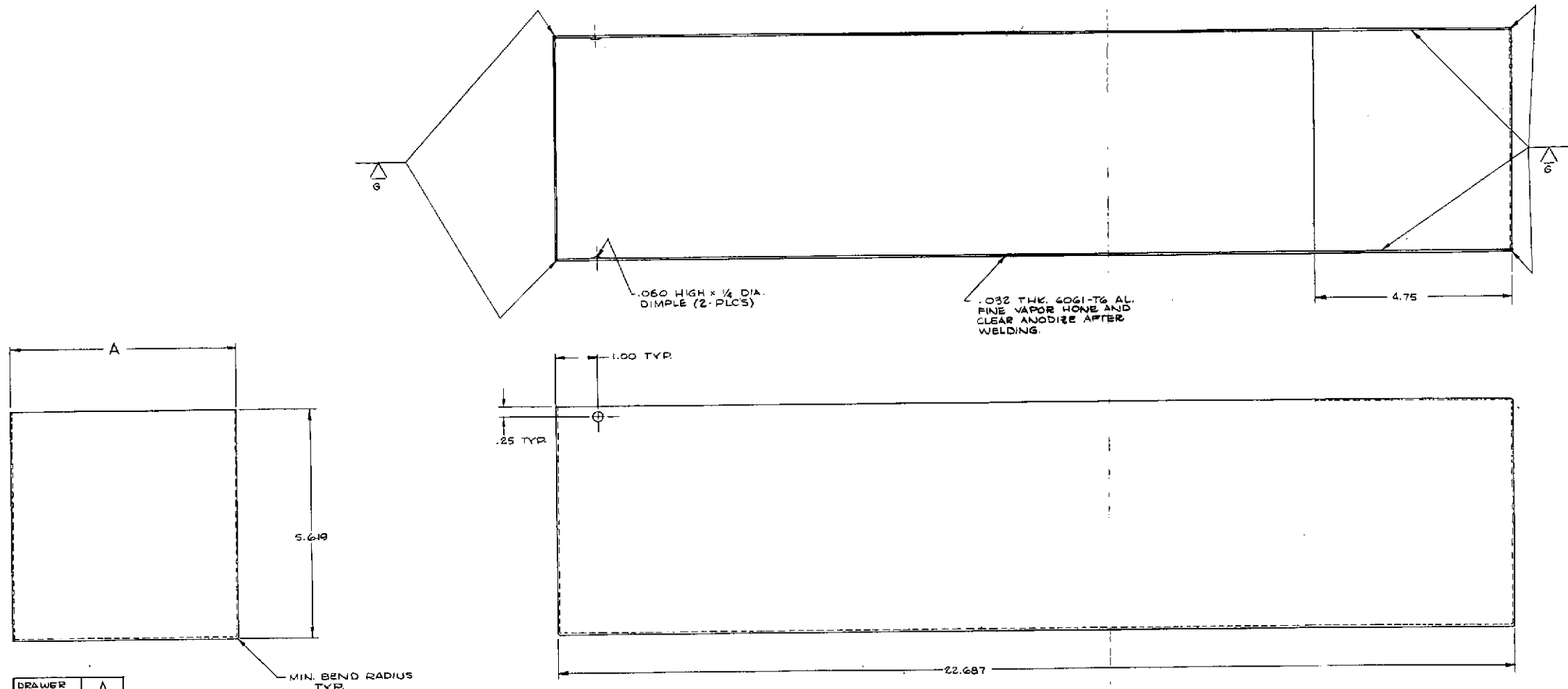
REV	DATE	BY	DESCRIPTION
E	04238	P.J. GARNER	849USM00004

FOLDOUT FRAME 1

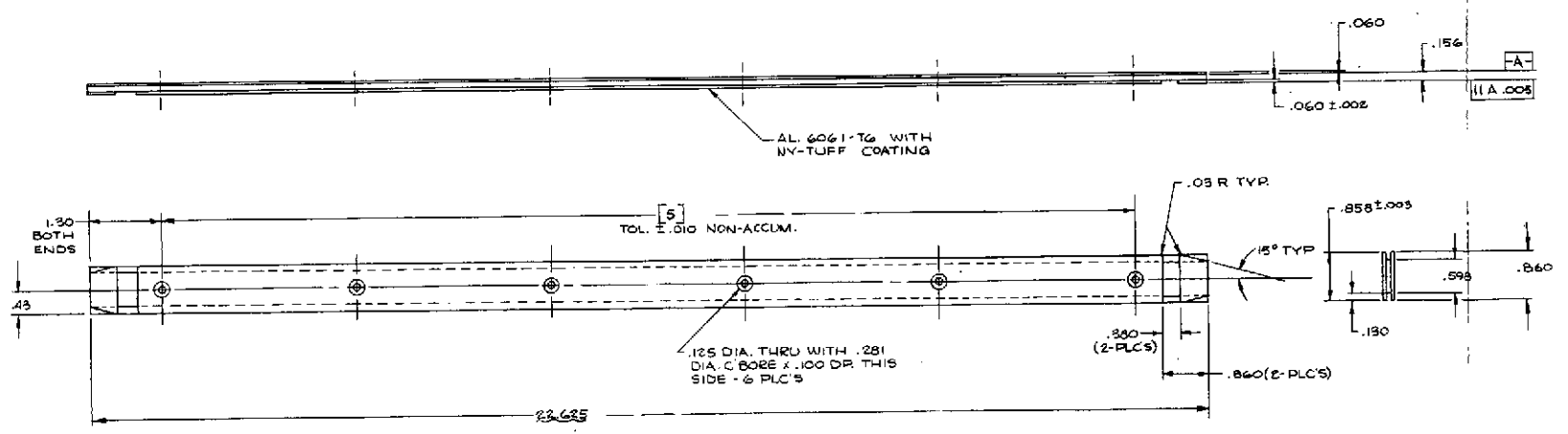
FOLDOUT FRAME 2

16

REV	DATE	DESCRIPTION	BY	CHKD
1		INITIAL RELEASE		



DRAWER DASH NO.	A
-001	5.956
-002	5.956
-003	5.956
-004	5.956
-005	11.086
-006	11.086



-008 GUIDE RAIL
-010 DRAWER

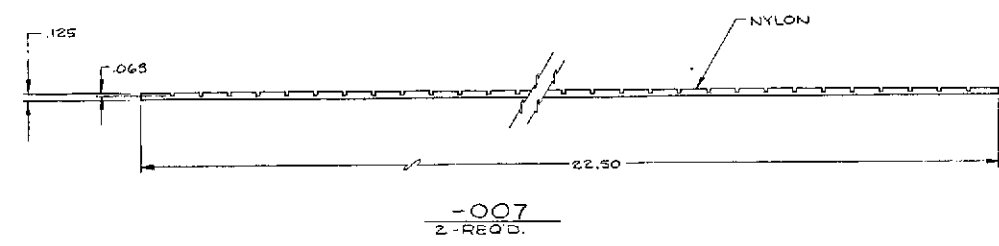
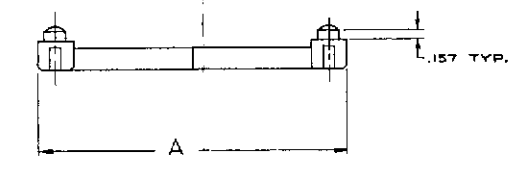
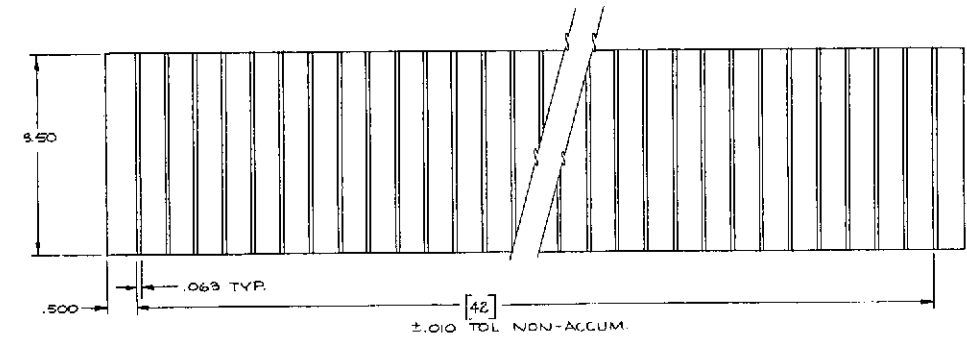
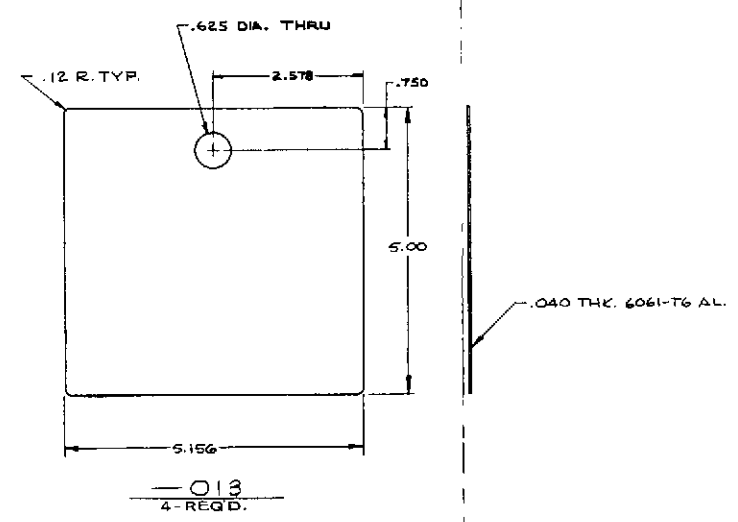
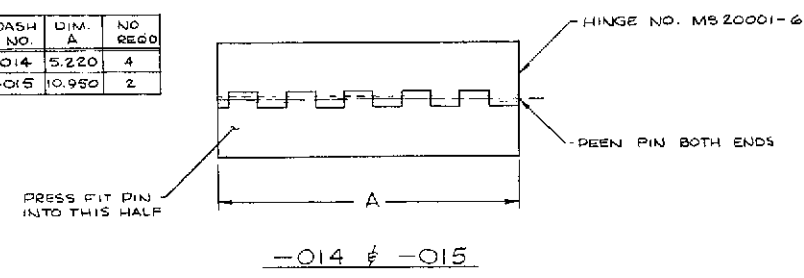
REV	DATE	DESCRIPTION	BY	CHKD
E	04296	849USMC0004		
D.J. GARNER 2 OF 3				

FOLDOUT FRAME 1

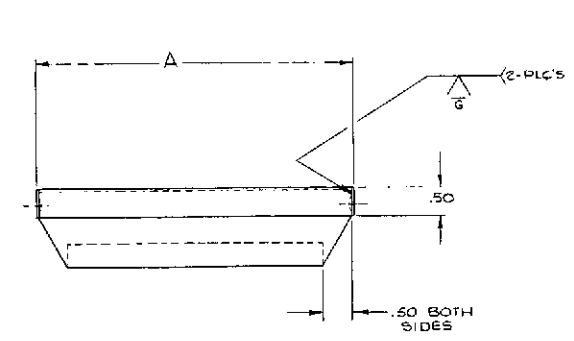
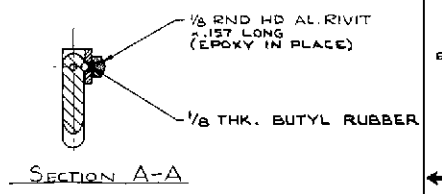
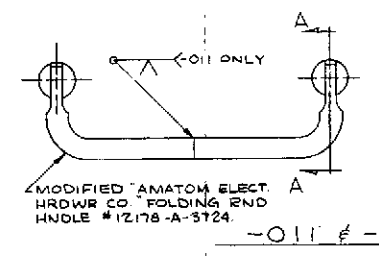
FOLDOUT FRAME 2

REVISIONS			
NO.	DATE	DESCRIPTION	BY
		INITIAL RELEASE	
A		UPDATED TO AS-BUILT CONFIG. 2-17-78	

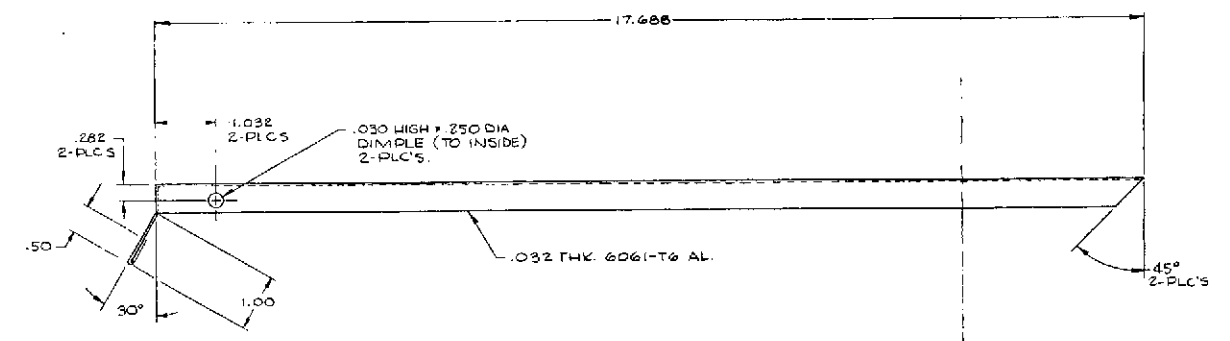
DASH NO.	DIM. A	NO. REQ'D
-014	5.220	4
-015	10.950	2



DASH NO.	DIM A	NO. REQ'D
-011	5.28	4
-012	5TK.	2



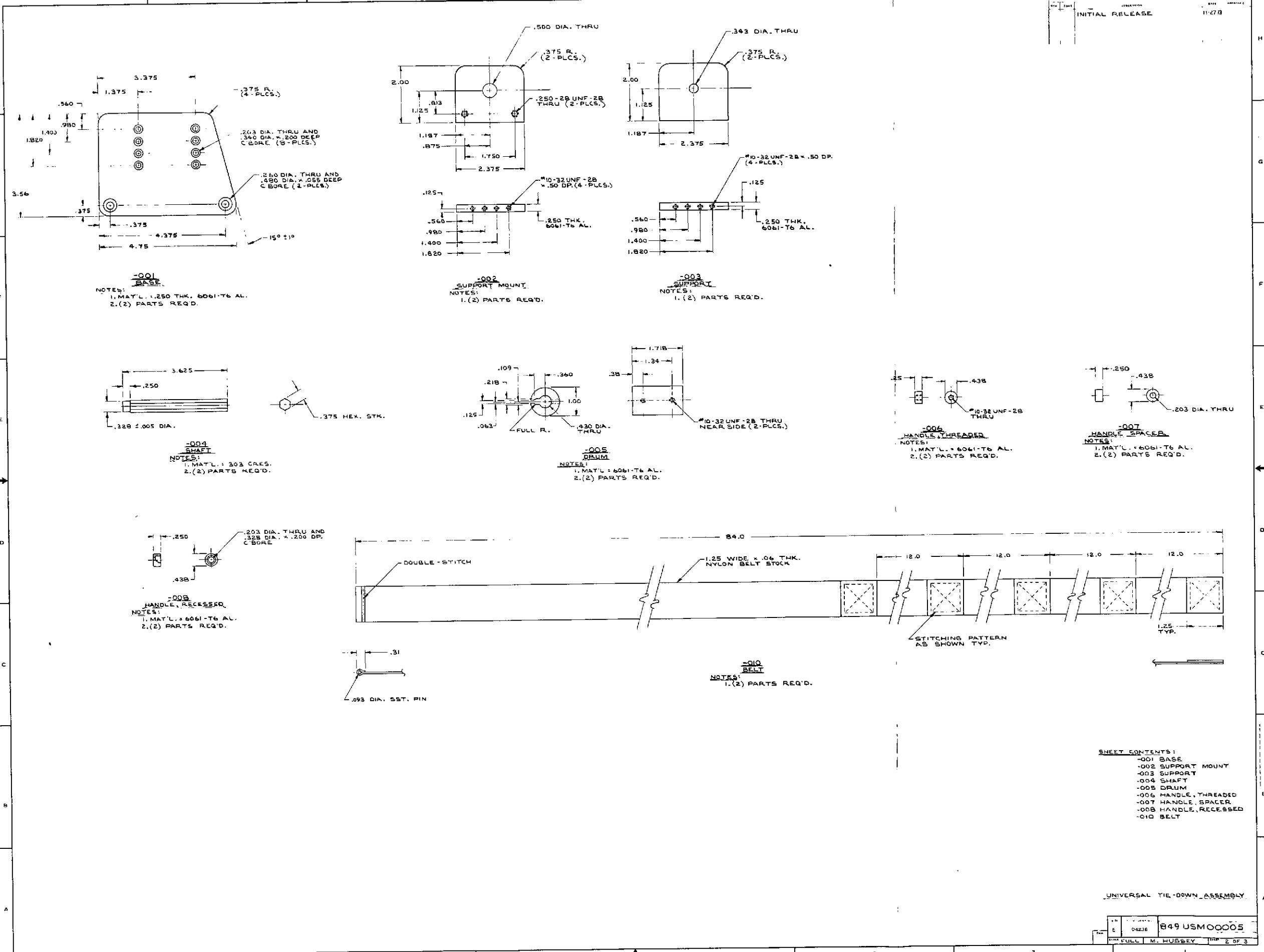
LID DASH NO.	DIM. A
-001	5.435
-002	5.435
-003	5.435
-004	5.435
-005	11.165
-006	11.165



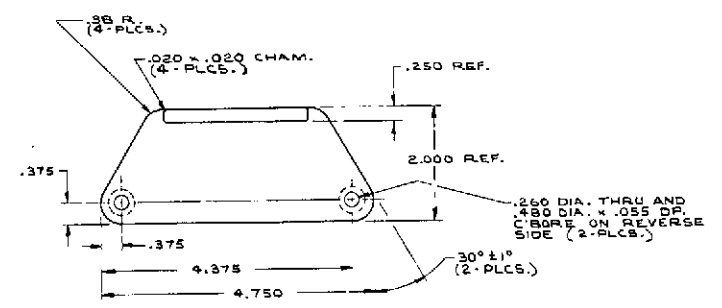
GEN. NOTES

- 1.25 FAO
2. BREAK ALL SHARP EDGES
3. VAPOR HONE AND CLEAR ANODIZE ALL ITEMS EXCEPT -007.

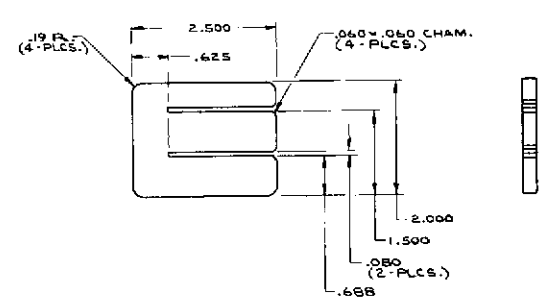
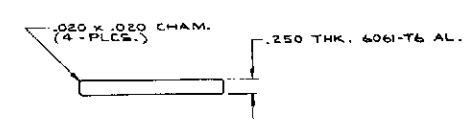
- SHEET CONTENTS
- 001 THRU -006 - DRAWER LIDS
 - 007 - PARTITION GUIDES
 - 011 ± -012 - DRAWER HANDLE
 - 013 - DRAWER PARTITION
 - 014 ± -015 - HINGES, DRAWER



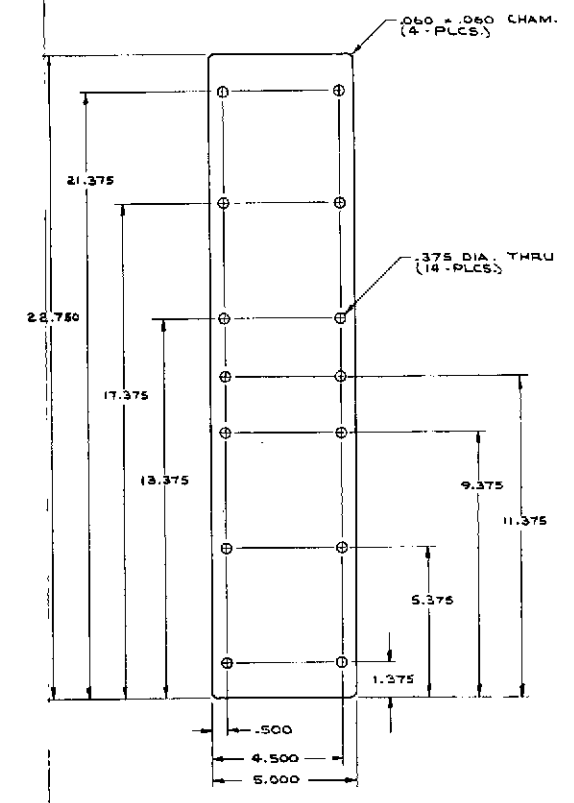
REV.	DATE	DESCRIPTION	BY	CHKD.
1		INITIAL RELEASE		



-011 ANCHOR
 NOTES:
 1. BREAK EDGES .020
 2. (2) PARTS REQ'D.



-012 BRACKET
 NOTES:
 1. BREAK EDGES .020
 2. (2) PARTS REQ'D.



-013 MOUNTING PLATE
 SCALE = 1:1
 NOTES:
 1. BREAK EDGES .020
 2. MAT'L. .250 THK. 6061-T6 AL.
 3. (2) PARTS REQ'D.

SHEET CONTENTS:
 -011 ANCHOR
 -012 BRACKET
 -013 MOUNTING PLATE

UNIVERSAL TIE-DOWN ASSEMBLY

REV.	DATE	DESCRIPTION	BY	CHKD.
E	04238	B49USM00005		
DRAWN BY: FULL M. HUSSEY				