

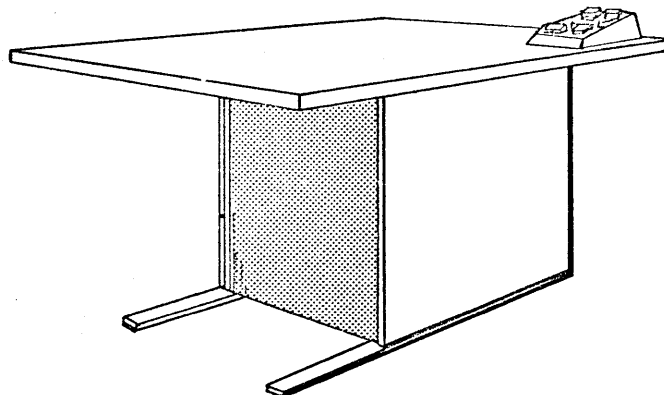
CONTROL DATA®

217-2

EQUIPMENT CONTROLLER

This Publication Includes
Information on the Listed
Equipments:

FC710-A
FC710-B
FC711-A
FC711-B



CONTROL DATA
CORPORATION

PARTS DATA BOOK

217-2
EQUIPMENT CONTROLLER
PARTS DATA BOOK

PARTS IN THIS BOOK:

- Part A — Equipment Controller
- Part B — Adapter Kits
- Part C — Circuit Card Types

Any comments concerning this
publication should be addressed to:

Control Data Corporation
Data Display Division
Technical Publications Department
2401 North Fairview Avenue
St. Paul, Minnesota 55113

Publication No. 82128400
August 1968, September 1969

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PRINTED IN USA

217-2
Equipment Controller
Parts Data Book

REVISION RECORD	
REVISION	DESCRIPTION
B-0-0 (9-69)	Revised Edition. This manual obsoletes all previous editions.

DDI 219 REV 3/68

FOREWORD

Basic terminal configuration consists of the Equipment Controller and a Display Station. Part A of this book provides a parts list and illustrated parts breakdown for the Equipment Controller. To add other units, special adapter kits are installed in the controller. Part B of this book provides a parts list and illustrated parts breakdown for all available adapter kits. Part C provides a parts list and illustrated parts breakdown for all circuit card types.

Meanings of form columns in the provisioning parts list are as follows.

- (a) Item Number — lists each electrical part in numerical order.
- (b) Reference Designation — gives the associated designation for electrical parts located on a unit or subassembly.
- (c) Part Number — lists the CONTROL DATA number for each part. Use this number when ordering replacement parts.
- (d) Description — contains a brief description of each electrical part and gives important electrical details.
- (e) Quantity — gives the total quantity of each part per next higher order assembly.

All volumes comprising the 217-2 Equipment Controller Customer Engineering Manual have been written to reflect the same level of equipment configuration. For a list of the equipment configurations covered by this volume, refer to the configuration listings on page 5-0 (the blue page) at the beginning of each part in Book 2 of 2, Publication Number 82128200.

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	C-20	Card 7BDD
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	C-22	Card 7BJD
	C-23	Card 7BRD
	C-24	Card 7BSD
	C-25	Card 7BTD
	C-26	Card 7BUD
	C-27	Card 7BVD
	C-28	Card 7BWD
	C-29	Card 7BZD
	C-30	Card 7CBD
	C-31	Card 7CCD
	C-32	Card 7CDD
	C-33	Card 7CFD
	C-34	Card 7FZD
	C-35	Card 7GZD
	C-36	Card 8CQD
	C-37	Card 8CRD
	C-38	Card 8CSD
	C-39	Card 8CXD
	C-40	Card 8CYD
	C-41	Card 8DRD
	C-42	Card 8DUD
	C-43	Card 8GYD
	C-44	Card 8HAD
	C-45	Card 8HBD
	C-46	Card 8HCD
	C-47	Card 8JDD
	C-48	Card 9CJD
	C-49	Card 9CMD
		C-32
		C-34
		C-36
		C-38
		C-40
		C-42
		C-44
		C-46
		C-48
		C-50
		C-52
		C-56
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		C-100
		C-102
		C-104
		C-106
		C-108

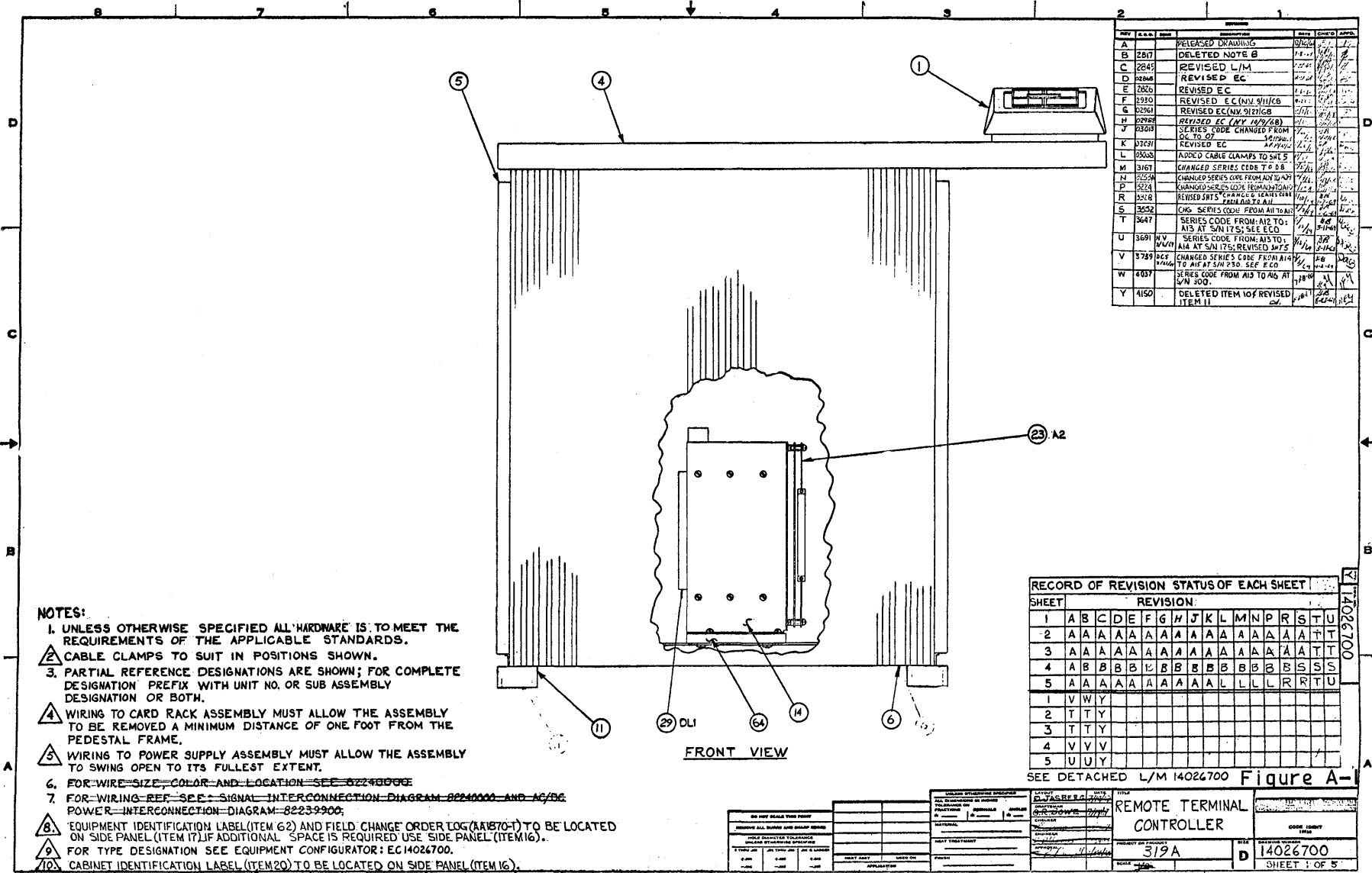
PART A

EQUIPMENT CONTROLLER

EQUIPMENT CONTROLLER

This part details four Equipment Controller configurations. Two configurations incorporate control logic for a 50 by 20 page format presentation. The other two configurations contain logic for an 80 by 13 page and differ in part number listed in the chart, and circuit card types indicated by parts breakdown items.

EQUIPMENT TYPE IDENTIFIER	PART NUMBER	POWER		DISPLAY FORMAT	
		120V -60HZ	220V -50HZ	50 X 20	80 X 13
FC710-A	14026700	●		●	
FC710-B	14026800		●	●	
FC711-A	14026900	●			●
FC711-B	14027000		●		●



NOTES:

1. UNLESS OTHERWISE SPECIFIED ALL HARDWARE IS TO MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS.
2. CABLE CLAMPS TO SUIT IN POSITIONS SHOWN.
3. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT NO. OR SUB ASSEMBLY DESIGNATION OR BOTH.
4. WIRING TO CARD RACK ASSEMBLY MUST ALLOW THE ASSEMBLY TO BE REMOVED A MINIMUM DISTANCE OF ONE FOOT FROM THE PEDESTAL FRAME.
5. WIRING TO POWER SUPPLY ASSEMBLY MUST ALLOW THE ASSEMBLY TO SWING OPEN TO ITS FULLEST EXTENT.
6. FOR WIRE SIZE, COLOR AND LOCATION SEE 82240000.
7. FOR WIRING REF. SEE SIGNAL INTERCONNECTION DIAGRAM 82240000 AND AC/DC POWER INTERCONNECTION DIAGRAM 82239900.
8. EQUIPMENT IDENTIFICATION LABEL (ITEM 62) AND FIELD CHANGE ORDER LOG (A1870-1) TO BE LOCATED ON SIDE PANEL (ITEM 17). IF ADDITIONAL SPACE IS REQUIRED USE SIDE PANEL (ITEM 16).
9. FOR TYPE DESIGNATION SEE EQUIPMENT CONFIGURATOR: EC14026700.
10. CABINET IDENTIFICATION LABEL (ITEM 20) TO BE LOCATED ON SIDE PANEL (ITEM 16).

REV	DATE	DESCRIPTION	BY	CHKD	APPRD
A		RELEASED DRAWING			
B	2817	DELETED NOTE B			
C	2842	REVISED L/M			
D	2844	REVISED EC			
E	2856	REVISED EC			
F	2920	REVISED EC (NY 5112)CB			
G	32261	REVISED EC (NY 5121)CB			
H	32262	REVISED EC (NY 1179)CB			
J	3308	SERIES CODE CHANGED FROM DC TO 02			
K	37631	REVISED EC			
L	38003	ADDED CABLE CLAMPS TO SHS			
M	3167	CHANGED SERIES CODE TO 08			
N	3554	CHANGED SERIES CODE FROM A12 TO A13			
P	3224	CHANGED SERIES CODE FROM A12 TO A13			
R	3428	REVISED SHS, CHANGED IDENTIFICATION LABEL TO A13			
S	3552	CHG. SERIES CODE FROM A12 TO A13			
T	3647	SERIES CODE FROM A12 TO A13 AT SHS; SEE ECO			
U	3691	SERIES CODE FROM A13 TO A14 AT SHS; REVISED SHS			
V	3729	CHANGED SERIES CODE FROM A14 TO A15 AT SHS; SEE ECO			
W	4037	SERIES CODE FROM A15 TO A16 AT SHS; SEE ECO			
Y	4150	DELETED ITEM 10; REVISED ITEM 11			

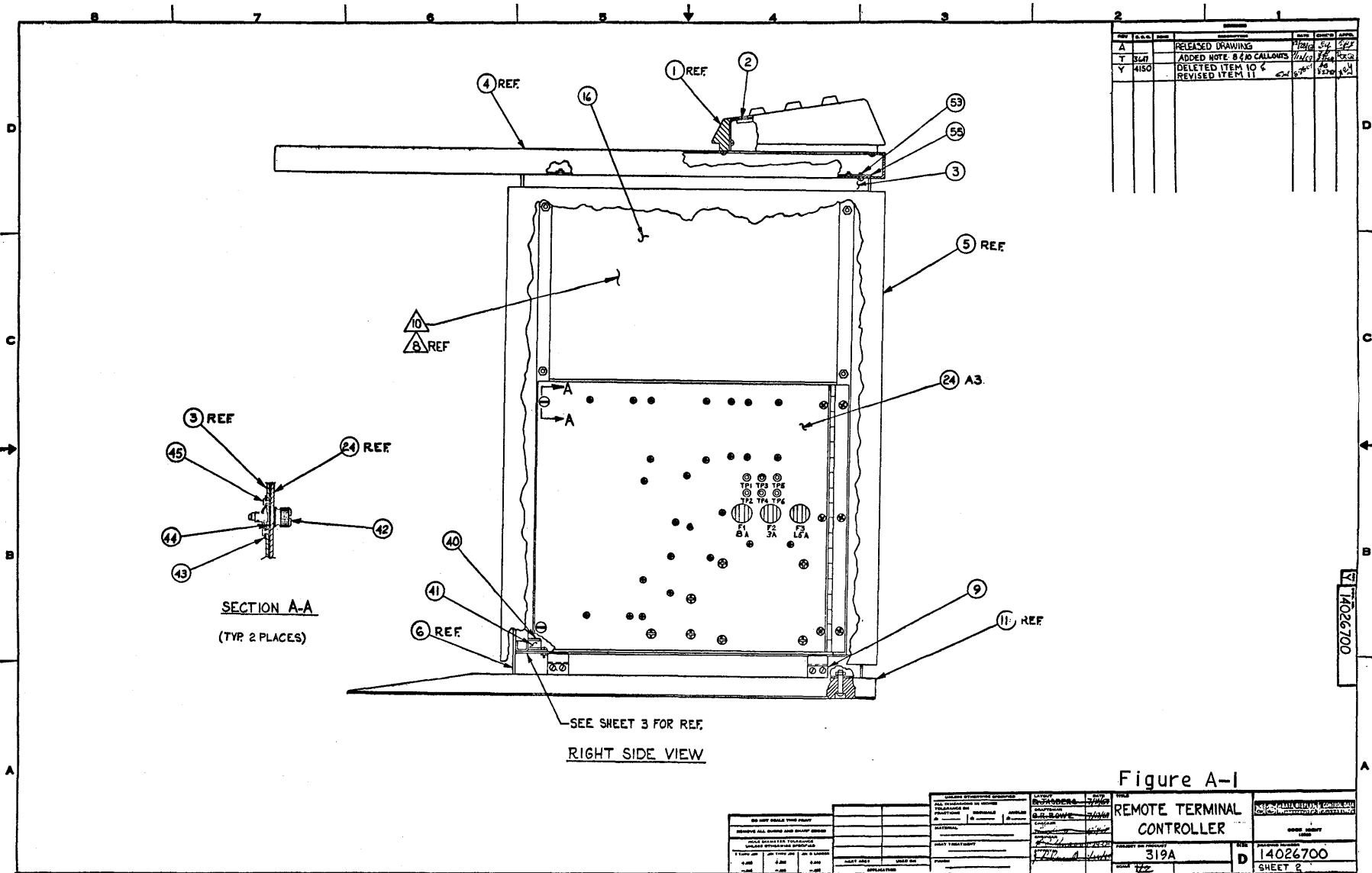
RECORD OF REVISION STATUS OF EACH SHEET	
SHEET	REVISION
1	A B C D E F G H J K L M N P R S T U
2	A A A A A A A A A A A A A A A A T T
3	A A A A A A A A A A A A A A A A T T
4	A B B B B B B B B B B B B B B S S S S
5	A A A A A A A A A A L L L L R R T U
1	V W Y
2	T T Y
3	T T Y
4	V V V
5	U U Y

SEE DETACHED L/M 14026700 Figure A-1

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES	DATE: 11/17/70	BY: D. JACOBSON	CHKD: [Signature]	APPRD: [Signature]
REMOVE ALL DIMS AND DIMLINES	PROJECT: 319A	TITLE: REMOTE TERMINAL CONTROLLER		
TO SHOW ALL DIMS AND DIMLINES	SCALE: 1/8" = 1"	SHEET NO: 14026700		
TO SHOW ALL DIMS AND DIMLINES	DATE: 11/17/70	SHEET 1 OF 5		

82128400

A-3



REV	DATE	BY	CHKD	APP'D	DESCRIPTION
A					RELEASED DRAWING
T	5/27				ADDED NOTE 8 & 20 CALLOUTS
Y	4/50				DELETED ITEM 10 & REVISED ITEM 11

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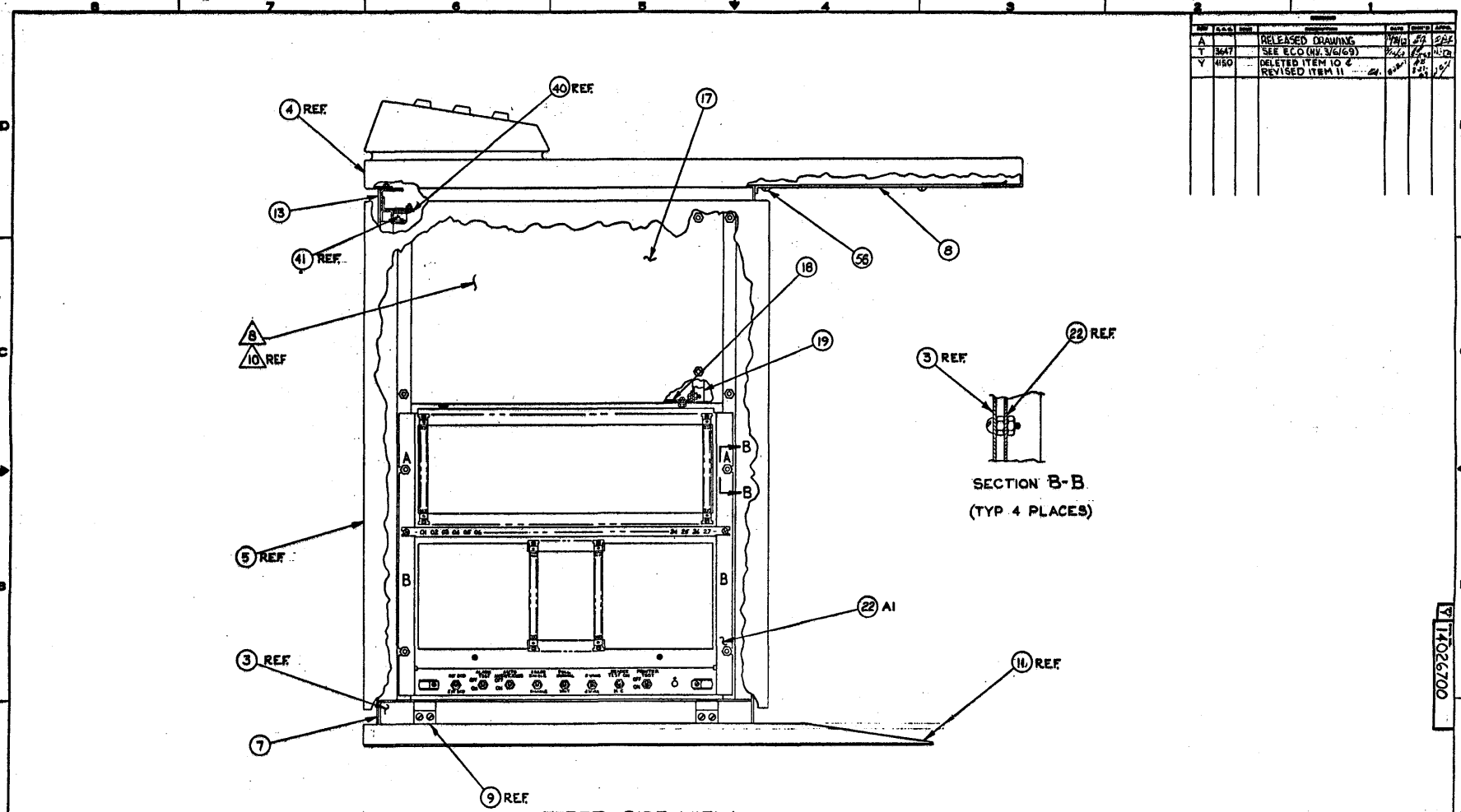
14026700

Figure A-1

DESIGNATION		DATE		BY		CHKD		APP'D	
REMOTE TERMINAL CONTROLLER		319A		F.P.P. A. J. J.		S. L. LOWE		S. L. LOWE	
SHEET 2		14026700		D		SHEET 2		SHEET 2	

A-4

82128400



REV	DATE	BY	CHKD	APPD
A				
T	3/6/67			
Y	4/50			

SECTION B-B
(TYP 4 PLACES)

LEFT SIDE VIEW

Figure A-1

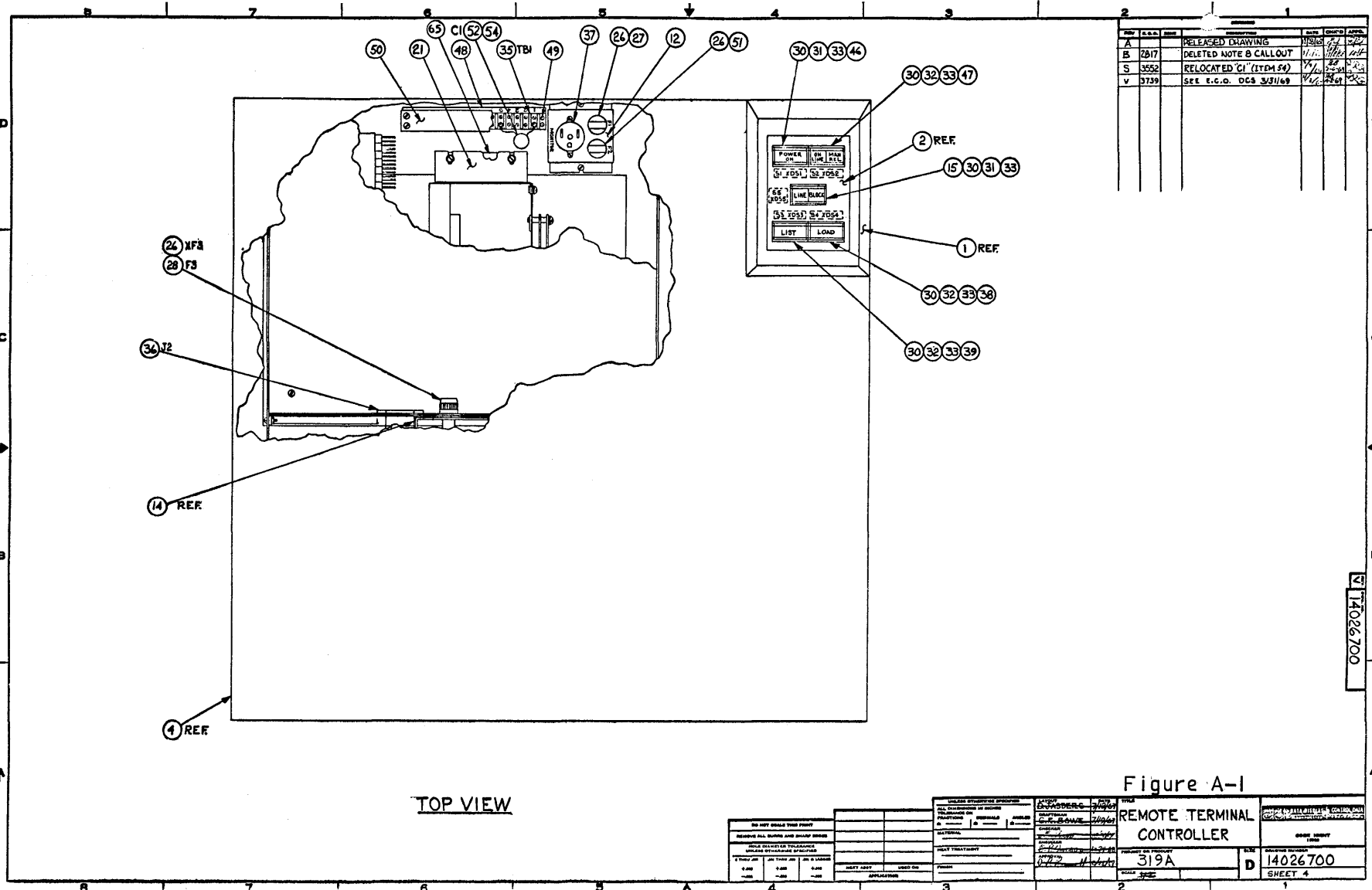
REMOTE TERMINAL CONTROLLER 319A		14026700 SHEET 3	
REMOTE TERMINAL CONTROLLER 319A		14026700 SHEET 3	

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14026700

82128400

A-5



REV	DATE	DESCRIPTION	BY	CHKD	APPD
A		RELEASED DRAWING			
B	2/21/7	DELETED NOTE & CALLOUT			
S	3/5/52	REFLOCATED CI (ITEM 54)			
V	3/7/59	SEE E.C.O. DCA 3/31/69			

TOP VIEW

Figure A-1

REMOTE TERMINAL CONTROLLER 319A		SHEET 4 14026700
------------------------------------	--	---------------------

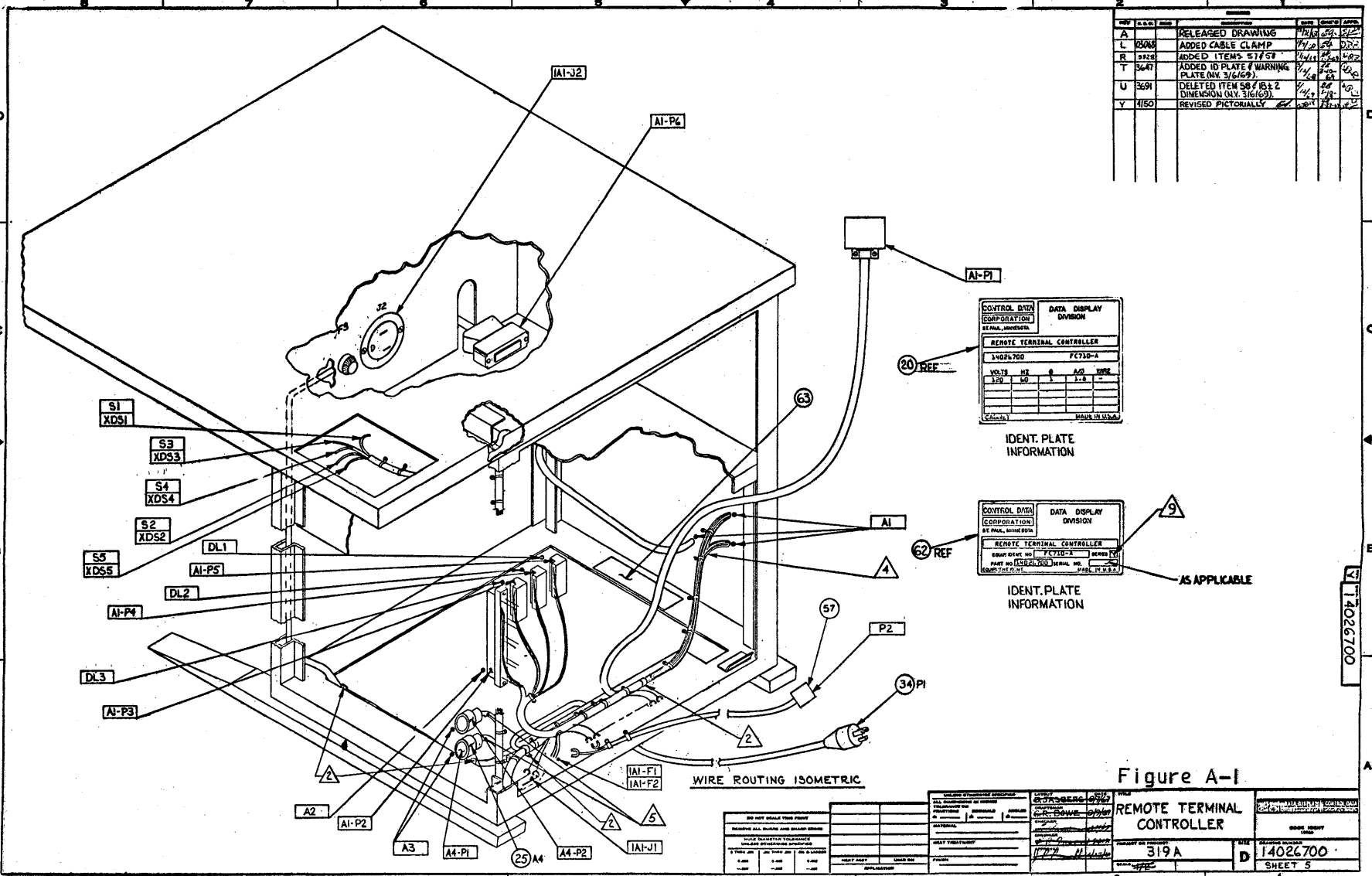
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED	FINISHES UNLESS OTHERWISE SPECIFIED	MATERIALS UNLESS OTHERWISE SPECIFIED	TOLERANCES UNLESS OTHERWISE SPECIFIED
DIMENSIONS TO CENTER UNLESS OTHERWISE SPECIFIED	DIMENSIONS TO SURFACE UNLESS OTHERWISE SPECIFIED	DIMENSIONS TO SURFACE UNLESS OTHERWISE SPECIFIED	DIMENSIONS TO SURFACE UNLESS OTHERWISE SPECIFIED
DIMENSIONS TO CENTER UNLESS OTHERWISE SPECIFIED	DIMENSIONS TO SURFACE UNLESS OTHERWISE SPECIFIED	DIMENSIONS TO SURFACE UNLESS OTHERWISE SPECIFIED	DIMENSIONS TO SURFACE UNLESS OTHERWISE SPECIFIED

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14026700

A-6

821 28400



REV	DATE	DESCRIPTION	BY	CHKD	APP'D
A		RELEASED DRAWING	1/16/68	1/16/68	
L	2/20/68	ADDED CABLE CLAMP	1/1/68	2/20/68	
R	3/12/68	ADDED ITEMS 57 & 34	1/1/68	3/12/68	
T	3/6/67	ADDED ID PLATE & WARNING PLATE (NY 3/6/69)	1/1/68	3/6/67	
U	3/6/69	DELETED ITEM 58 & B&Z DIMENSION (NY 3/6/69)	1/1/68	3/6/69	
Y	4/50	REVISED PICTORIALY	1/1/68	4/50	

CONTROL DATA CORPORATION REPAIR, AMSTERDAM		DATA DISPLAY DIVISION	
REMOTE TERMINAL CONTROLLER			
14026700		P73AD-A	
VOLTS	Hz	Ø	AMP WIRE
120	60	Ø	1.8
CONTROL DATA CORPORATION		MADE IN U.S.A.	

IDENT. PLATE INFORMATION

CONTROL DATA CORPORATION 85 PINE BROOK BOYS		DATA DISPLAY DIVISION	
REMOTE TERMINAL CONTROLLER			
14026700		P73AD-A	
VOLTS	Hz	Ø	AMP WIRE
120	60	Ø	1.8
CONTROL DATA CORPORATION		MADE IN U.S.A.	

IDENT. PLATE INFORMATION

Figure A-1

DO NOT SCALE THIS PRINT		DATE OF ISSUE: 1/16/68		DRAWN BY: [Signature]	
REVISIONS: ALL WORKING AND DESIGN CHANGES		CHECKED BY: [Signature]		APPROVED BY: [Signature]	
TITLE: REMOTE TERMINAL CONTROLLER		PROJECT OR ORDER NO.: 319A		SHEET NO.: 5	
PART NO.: 14026700		DRAWN DATE: 1/16/68		SHEET TOTAL: 5	

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14026700

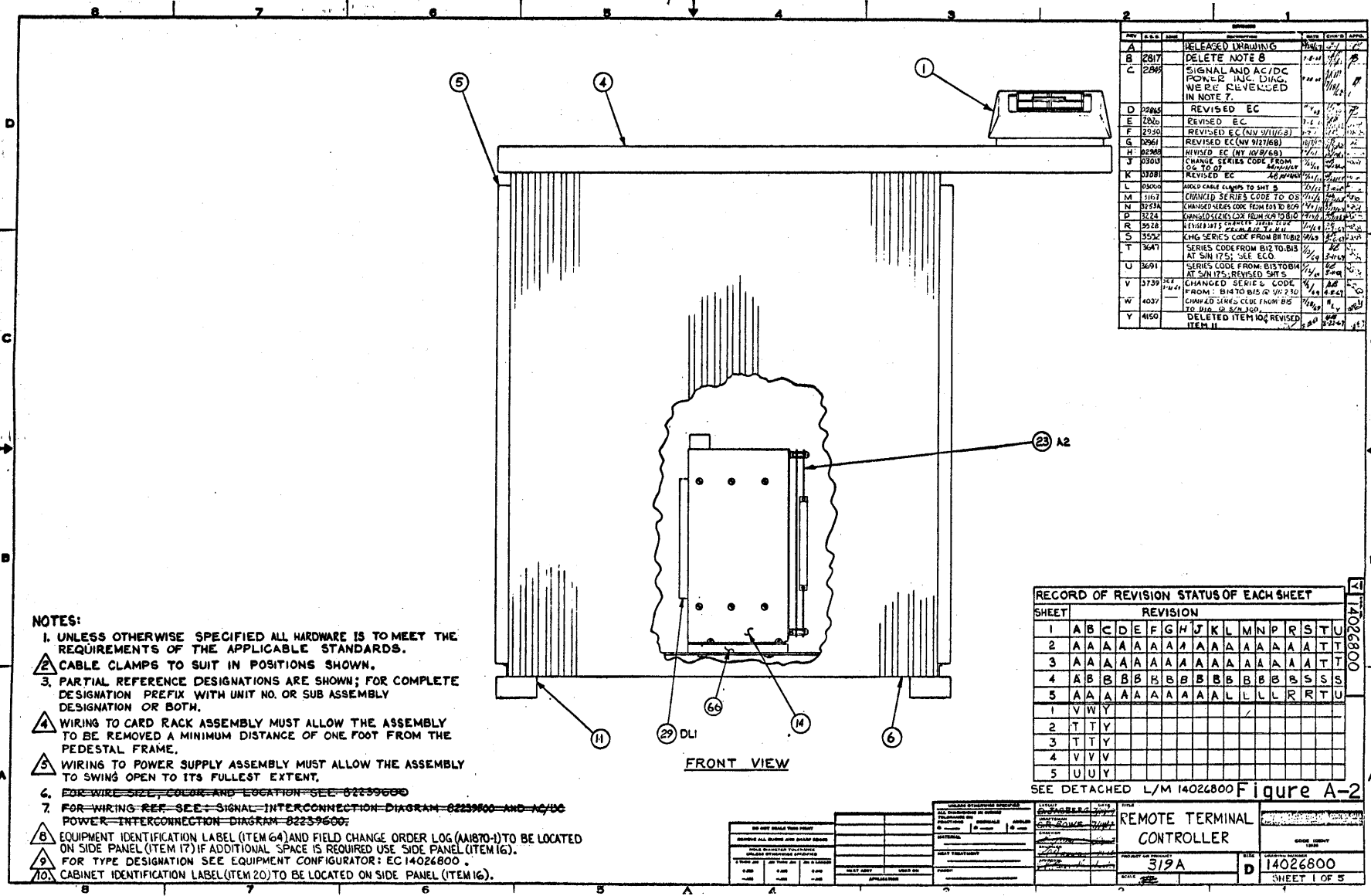
82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	
52	C1	51549700	CAP.,FXD,CERAMIC; .02uf 125vac	1			90004304	CIRCUIT CARD ASSEMBLY; Type 7BAD	1	
29	DL1	51531110	DL;1MHz prf adj 9901-9905 usec	1			90004310	CIRCUIT CARD ASSEMBLY; Type 7BCD	1	
33	DS1	94034003	LAMP,INCANDESCENT;SL 24V .073ma	10			90004313	CIRCUIT CARD ASSEMBLY; Type 7BDD	1	
	Thru DS10									
27	F1	51001810	FUSE,CTG;3.00A @125V, 3AG SB	1			90004349	CIRCUIT CARD ASSEMBLY; Type 7BRD	1	
51	F2	51001817	FUSE,CTG;5.00A @125V, 3AG SB	1			90004361	CIRCUIT CARD ASSEMBLY; Type 7BVD	1	
28	F3	51506200	FUSE,CTG;.050A @125V, 3AG SB	1			90004364	CIRCUIT CARD ASSEMBLY; Type 7BWD	1	
37	J1	51623500	CONN,RECP,ELEC; 15A 125V singl. gr	1			90004373	CIRCUIT CARD ASSEMBLY; Type 7BZD	1	
36	J2	51002034	CONNECTOR,RECP,ELEC;15A 124V, 3soc	1			90004379	CIRCUIT CARD ASSEMBLY; Type 7CBD	1	
34	P1	51003307	CABLE,PWR ELEC; 3-#18ga,type SVT	1			90004382	CIRCUIT CARD ASSEMBLY; Type 7CCD	1	
57	P2	61146100	FAN CABLE ASSEMBLY	1			90004960	CIRCUIT CARD ASSEMBLY; Type 8CQD	1	
31	S1	51001577	SW,PUSH;2pdt 5A 250vac alt action	2			90004963	CIRCUIT CARD ASSEMBLY; Type 8CRD	1	
32	S2	51001506	SW,PUSH;2spdt ckt mc 5A 250vac	3			90004981	CIRCUIT CARD ASSEMBLY; Type 8CXD	1	
	Thru S4						90005035	CIRCUIT CARD ASSEMBLY; Type 8DRD	1	
	S5		SAME AS S1				90005254	CIRCUIT CARD ASSEMBLY; Type 8GYD	1	
35	TB1	51001855	TERM.BOARD; 14 terminals,#6-32scr	1				For Equipment Controller 14025900		
30	XDS1	24511501	LAMPHOLDER;PB Horiz mtg, T-2	5				120 Volts-60 Hertz (80 by 13).		
	Thru XDS5							DELETE:		
26	KF1	51002787	FUSEHOLDER;Neon clr lens 100-125V	3			90004304	CIRCUIT CARD ASSEMBLY; Type 7BAD	1	
	Thru KF3						90004349	CIRCUIT CARD ASSEMBLY; Type 7BRD	1	
		90004235	CIRCUIT CARD ASSEMBLY; Type 7ABD	1			90004382	CIRCUIT CARD ASSEMBLY; Type 7CCD	1	
		90004253	CIRCUIT CARD ASSEMBLY; Type 7AHD	1			90004981	CIRCUIT CARD ASSEMBLY; Type 8CXD	1	
		90004256	CIRCUIT CARD ASSEMBLY; Type 7AJD	1				ADD:		
		90004262	CIRCUIT CARD ASSEMBLY; Type 7ALD	1			90004250	CIRCUIT CARD ASSEMBLY; Type 7AGD	1	
		90004268	CIRCUIT CARD ASSEMBLY; Type 7AND	1			90004307	CIRCUIT CARD ASSEMBLY; Type 7BBD	1	
		90004271	CIRCUIT CARD ASSEMBLY; Type 7APD	1			90004362	CIRCUIT CARD ASSEMBLY; Type 7BSD	1	
		90004274	CIRCUIT CARD ASSEMBLY; Type 7AQD	1			90004984	CIRCUIT CARD ASSEMBLY; Type 8CYD	1	
		90004280	CIRCUIT CARD ASSEMBLY; Type 7ASD	1						
		90004286	CIRCUIT CARD ASSEMBLY; Type 7AUD	1						
		90004289	CIRCUIT CARD ASSEMBLY; Type 7AVD	1						
		90004292	CIRCUIT CARD ASSEMBLY; Type 7AWD	1						
		90004295	CIRCUIT CARD ASSEMBLY; Type 7AXD	1						
		90004298	CIRCUIT CARD ASSEMBLY; Type 7AYD	1						
		90004301	CIRCUIT CARD ASSEMBLY; Type 7AZD	1						
							PART NO.	14026700	REVISION	Y
TITLE EQUIPMENT CONTROLLER, 120 VOLTS-60 HERTZ (50 by 20)										

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A-7

DDD 329



NOTES:

1. UNLESS OTHERWISE SPECIFIED ALL HARDWARE IS TO MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS.
2. CABLE CLAMPS TO SUIT IN POSITIONS SHOWN.
3. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT NO. OR SUB ASSEMBLY DESIGNATION OR BOTH.
4. WIRING TO CARD RACK ASSEMBLY MUST ALLOW THE ASSEMBLY TO BE REMOVED A MINIMUM DISTANCE OF ONE FOOT FROM THE PEDESTAL FRAME.
5. WIRING TO POWER SUPPLY ASSEMBLY MUST ALLOW THE ASSEMBLY TO SWING OPEN TO ITS FULLEST EXTENT.
6. FOR WIRE SIZE, COLOR AND LOCATION SEE 82239600
7. FOR WIRING REF SEE SIGNAL INTERCONNECTION DIAGRAM 82239600 AND AC/DC POWER INTERCONNECTION DIAGRAM 82239600
8. EQUIPMENT IDENTIFICATION LABEL (ITEM 64) AND FIELD CHANGE ORDER LOG (AA1870-1) TO BE LOCATED ON SIDE PANEL (ITEM 17) IF ADDITIONAL SPACE IS REQUIRED USE SIDE PANEL (ITEM 16).
9. FOR TYPE DESIGNATION SEE EQUIPMENT CONFIGURATOR: EC 14026800.
10. CABINET IDENTIFICATION LABEL (ITEM 20) TO BE LOCATED ON SIDE PANEL (ITEM 16).

FRONT VIEW

REV	NO.	DATE	DESCRIPTION	BY	CHKD	APPR
A			RELEASED DRAWING			
B	2817		DELETE NOTE 8			
C	2869		SIGNAL AND AC/DC POWER ING. DIAG. WERE CLEARED IN NOTE 7.			
D	22805		REVISED EC			
E	2020		REVISED EC			
F	2030		REVISED EC (NV 5/17/63)			
G	4061		REVISED EC (NV 9/27/68)			
H	8288		REVISED EC (NY 10/27/63)			
J	0300		CHANGE SERIES CODE FROM 82 TO 07			
K	0708		REVISED EC			
L	0500		ADD CABLE CLAMPS TO SHIT 5			
M	1107		CHANGED SERIES CODE TO 03			
N	3123		CHANGED SERIES CODE FROM 821 TO 829			
D	3224		CHANGED SERIES CODE FROM 821 TO 829			
R	3518		CHANGED SERIES CODE FROM 821 TO 829			
S	3532		CHG SERIES CODE FROM 821 TO 829			
T	3647		SERIES CODE FROM 812 TO 813 AT SIN 175; SEE ECO.			
U	3691		SERIES CODE FROM 815 TO 814 AT SIN 175; REVISED SHIT.			
V	3739		CHANGED SERIES CODE FROM: B14 TO B15 @ V1 230			
W	4037		CHANGED SERIES CODE FROM B15 TO B16 @ S/A JCO.			
Y	4150		DELETED ITEM 100; REVISED ITEM 11			

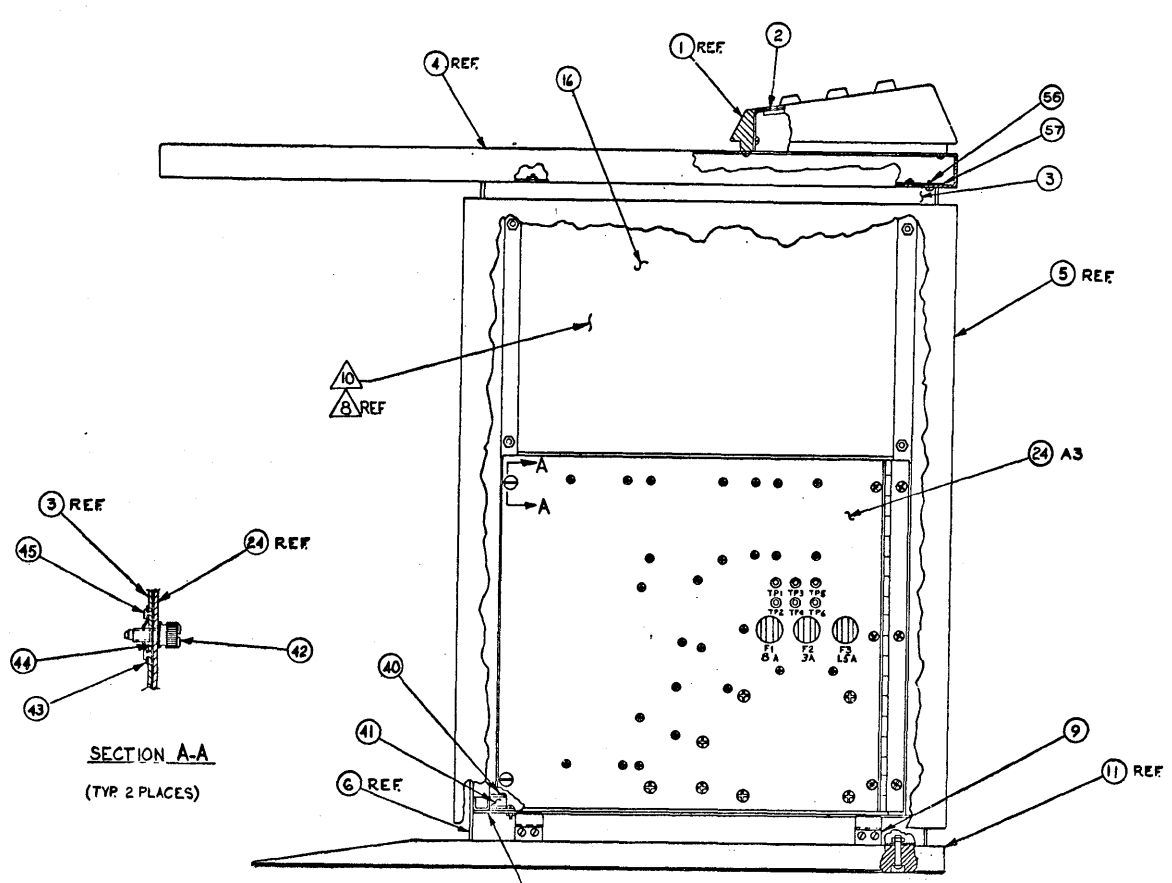
RECORD OF REVISION STATUS OF EACH SHEET																				
SHEET	REVISION																			
1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	R	S	T	U	
2	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	T
3	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	T
4	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	S
5	A	A	A	A	A	A	A	A	A	A	A	L	L	L	L	L	R	R	T	U
1	V	W	Y																	
2	T	T	Y																	
3	T	T	Y																	
4	V	V	V																	
5	U	U	Y																	

SEE DETACHED L/M 14026800 Figure A-2

DO NOT SCALE THIS PRINT SHOW ALL DIMS AND DIML SYMBOLS DIMENSIONS IN INCHES DIMENSIONS IN MILLIMETERS DIMENSIONS IN METERS		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS TO CENTER UNLESS NOTED OTHERWISE FINISHES: UNLESS NOTED OTHERWISE		SCALE: AS SHOWN DATE: 10/27/63 DRAWN BY: [Signature] CHECKED BY: [Signature]	
TITLE: REMOTE TERMINAL CONTROLLER		PROJECT NO: 319A		CODE UNIT: 14026800	
SHEET NO: 1		TOTAL SHEETS: 5		SHEET 1 OF 5	

32128400

REV	DATE	BY	DESCRIPTION	CHKD	DATE	APPROV
A			RELEASED DRAWING	Hobbs	2/9	WEP
T	3/27		ADDED NOTE 8 & 10 CALLOUTS	WEP	4/12	WEP
Y	4/50		DELETED ITEM 10 & REVISED ITEM 11	WEP	5/27	WEP



14026800

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Figure A-2

REMOTE TERMINAL CONTROLLER

DO NOT SCALE THIS PRINT		UNLESS OTHERWISE SPECIFIED		MATERIAL		FINISH		HEAT TREATMENT		MATERIAL		USE ON		SPECIFICATION	
REQUIRE ALL DIMS AND DRILL DIMS		ALL DIMENSIONS IN INCHES		STEEL		POLISHED		NONE		ALUMINUM		NONE		NONE	
MUST SPECIFY LOCATION UNLESS OTHERWISE SPECIFIED		PROVIDE TO: DRAWING		BRASS		NONE		NONE		COPPER		NONE		NONE	
3 DIMS OR 2 DIMS OR 1 DIM AT A CORNER		DRAWN BY: [Signature]		ZINC		NONE		NONE		SILVER		NONE		NONE	
3 DIMS OR 2 DIMS OR 1 DIM AT A CORNER		CHECKED BY: [Signature]		NONE		NONE		NONE		NONE		NONE		NONE	
3 DIMS OR 2 DIMS OR 1 DIM AT A CORNER		APPROVED BY: [Signature]		NONE		NONE		NONE		NONE		NONE		NONE	
3 DIMS OR 2 DIMS OR 1 DIM AT A CORNER		DATE: 1/20/50		NONE		NONE		NONE		NONE		NONE		NONE	

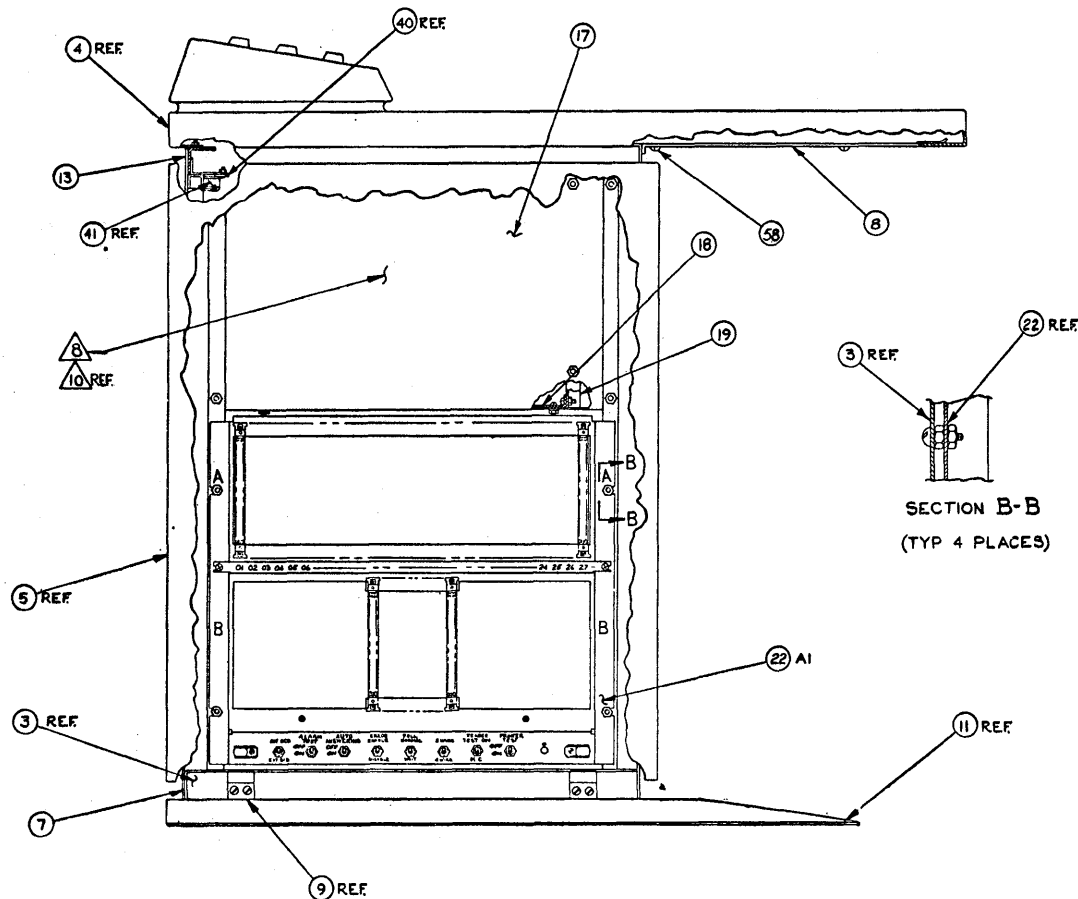
319A D 14026800 SHEET 2

A-9

A-10

821 28400

REV	DATE	DESCRIPTION	BY	CHKD	APPD
A		RELEASED DRAWING	Hilly	SP	W
T	3/47	SEE ECO (NV 3/41/69)	W/ly	SP	W
Y	4/50	DELETED ITEM 10 & REVISED ITEM 11	W/ly	SP	W



LEFT SIDE VIEW

SECTION B-B
(TYP 4 PLACES)

Figure A-2

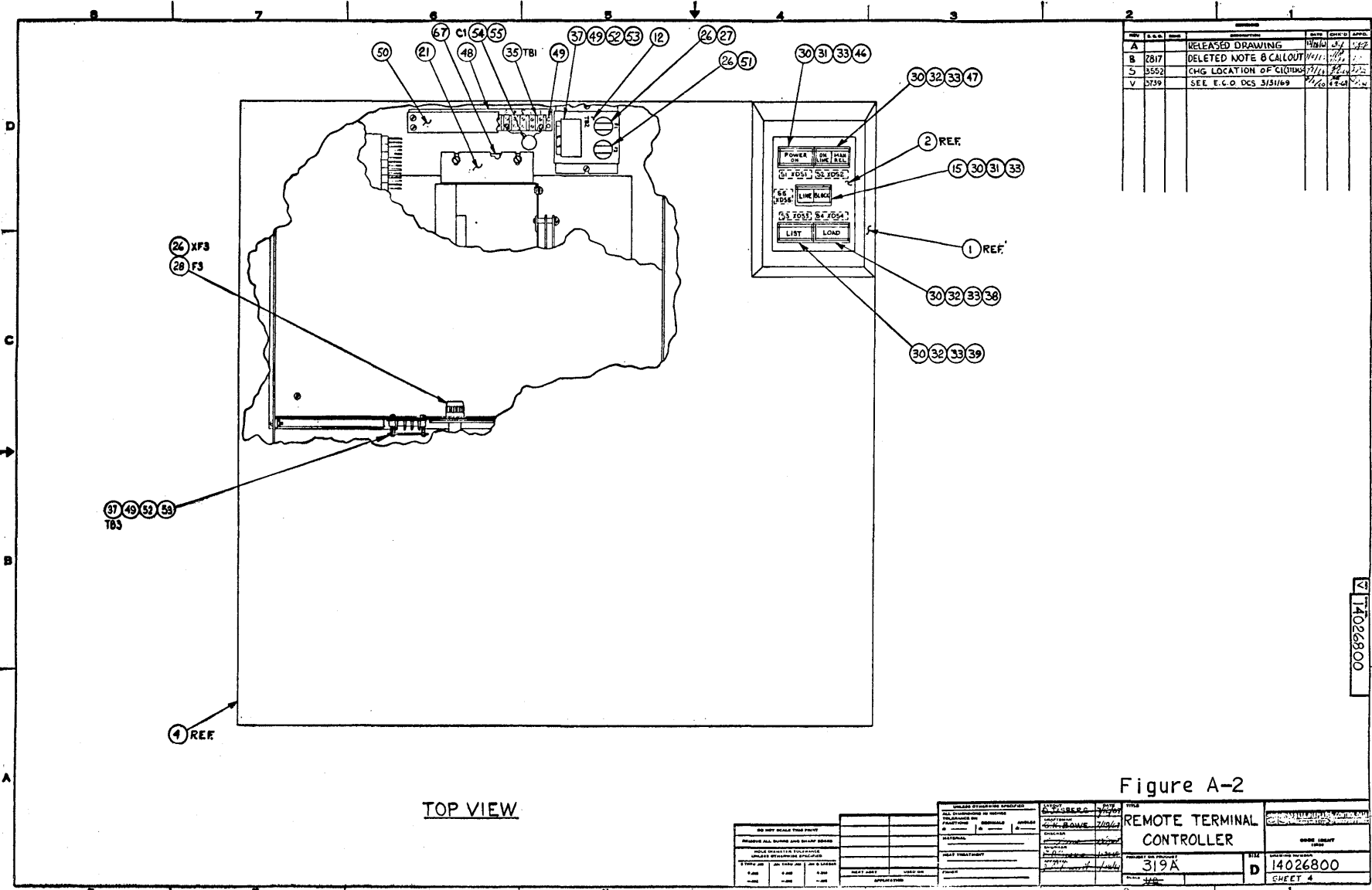
REMOTE TERMINAL CONTROLLER 319 A	14026800 SUF 7
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217

14026800

82128400

A-11



REV	DATE	DESCRIPTION	BY	CHK'D	APPROV
A		RELEASED DRAWING	Hylko	5/1/62	
B	2817	DELETED NOTE & CALLOUT	Hylko	5/1/62	
C	3552	CHG LOCATION OF CALLOUTS	Hylko	5/1/62	
V	3739	SEE E.C.O DCS 3/31/69	Hylko	4/2/69	

TOP VIEW

Figure A-2

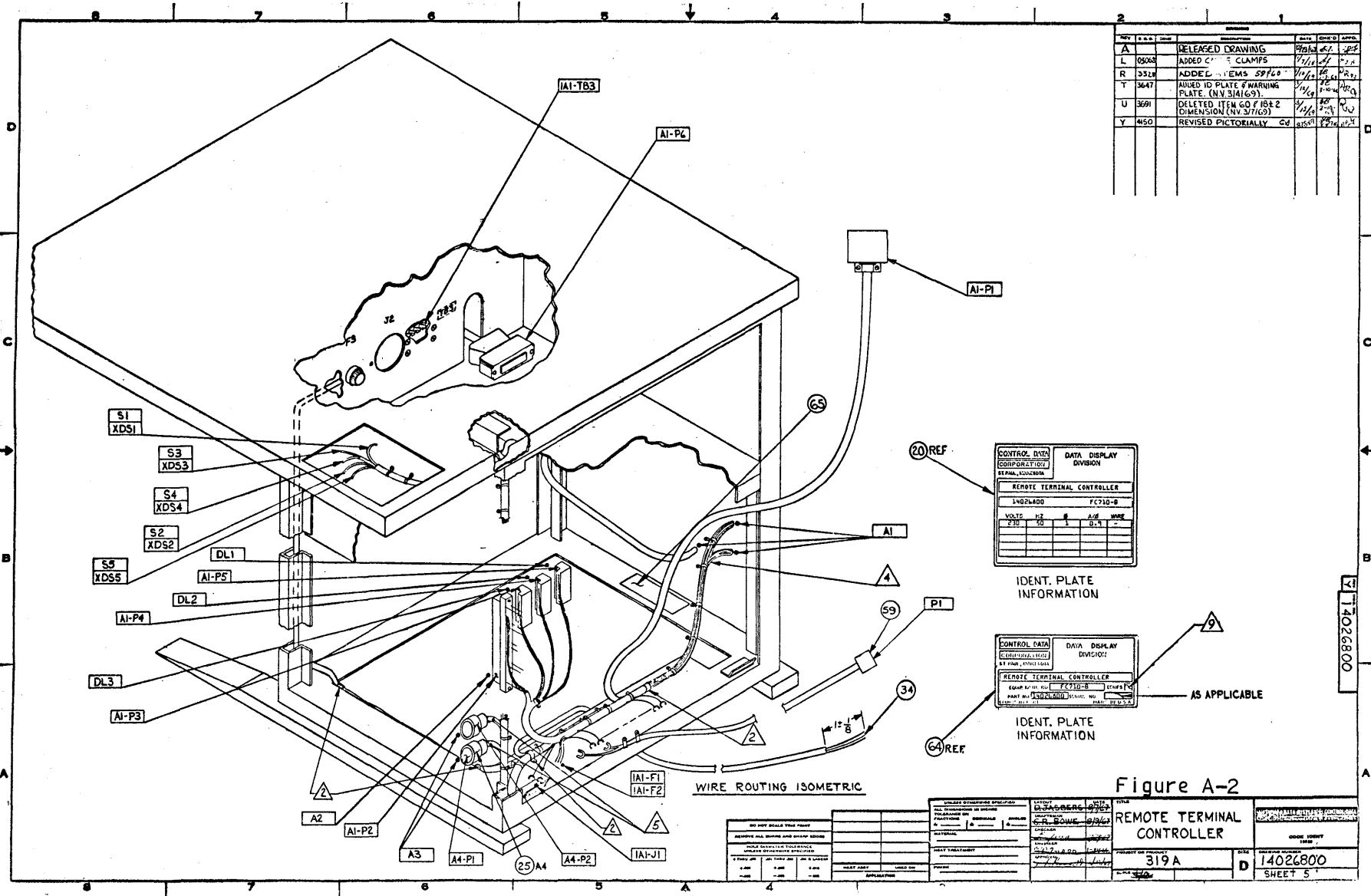
DO NOT SCALE THIS PRINT			ALL DIMENSIONS IN INCHES			DATE: 2/27/62			BY: Hylko		
REMOVE ALL DIMS AND DIMENSION LINES			DIMENSIONS TO CENTER UNLESS OTHERWISE SPECIFIED			MATERIAL: 3030 STAINLESS STEEL			DRAWN BY: BOVE		
INDICATE IN TECHNICAL DRAWING OF DIMENSIONS			TOLERANCES UNLESS OTHERWISE SPECIFIED			FINISH: POLISHED			CHECKED BY: Hylko		
1/16" ± .001			1/32" ± .001			1/64" ± .001			APPROVED BY: Hylko		
1/8" ± .002			3/16" ± .002			1/4" ± .002			TITLE: REMOTE TERMINAL CONTROLLER		
1/2" ± .003			3/4" ± .003			1" ± .003			PART NUMBER: 319A		
1 1/2" ± .004			2" ± .004			3" ± .004			DRAWING NUMBER: 14026800		
4" ± .005			6" ± .005			8" ± .005			SHEET 4		

14026800

217

A-12

82128400



REV	DATE	DESCRIPTION	BY	CHKD	APPR
A	0502	RELEASED DRAWING	11/11/67	11/11/67	11/11/67
L	0502	ADDED C-1 CLAMPS	11/11/67	11/11/67	11/11/67
R	3512	ADDED 10 ITEMS 59760	11/11/67	11/11/67	11/11/67
T	3647	PAUSED ID PLATE WARNING PLATE (NV 31/69)	11/11/67	11/11/67	11/11/67
U	3691	DELETED ITEM 60 F IS 2 DIMENSION (NV 31/69)	11/11/67	11/11/67	11/11/67
Y	4150	REVISED PICTORIALY	11/11/67	11/11/67	11/11/67

CONTROL DATA		DATA DISPLAY	
DESCRIPTION	DATE	DESCRIPTION	DATE
RELEASED DRAWING	11/11/67		
ADDED C-1 CLAMPS	11/11/67		
ADDED 10 ITEMS 59760	11/11/67		
PAUSED ID PLATE WARNING PLATE (NV 31/69)	11/11/67		
DELETED ITEM 60 F IS 2 DIMENSION (NV 31/69)	11/11/67		
REVISED PICTORIALY	11/11/67		

CONTROL DATA		DATA DISPLAY	
DESCRIPTION	DATE	DESCRIPTION	DATE
RELEASED DRAWING	11/11/67		
ADDED C-1 CLAMPS	11/11/67		
ADDED 10 ITEMS 59760	11/11/67		
PAUSED ID PLATE WARNING PLATE (NV 31/69)	11/11/67		
DELETED ITEM 60 F IS 2 DIMENSION (NV 31/69)	11/11/67		
REVISED PICTORIALY	11/11/67		

Figure A-2

DO NOT SCALE THIS DRAWING		CHECK DIMENSIONS		DATE		FILE	
DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE
RELEASED DRAWING	11/11/67	ADDED C-1 CLAMPS	11/11/67	ADDED 10 ITEMS 59760	11/11/67	PAUSED ID PLATE WARNING PLATE (NV 31/69)	11/11/67
DELETED ITEM 60 F IS 2 DIMENSION (NV 31/69)	11/11/67	REVISED PICTORIALY	11/11/67				

REMOTE TERMINAL CONTROLLER	
319A	D
14026800	SHEET 5

217

14026800

82128400

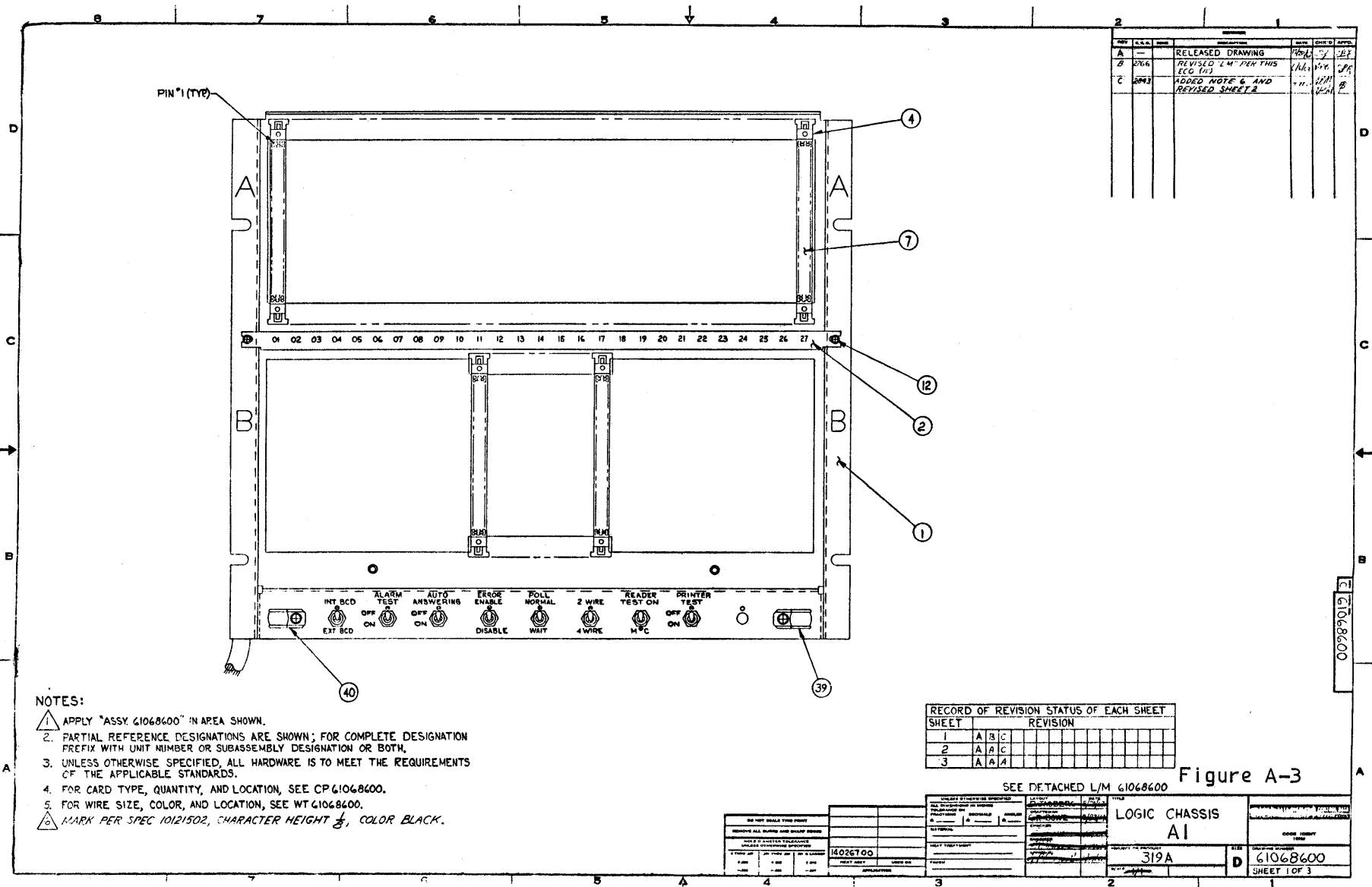
ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
54	C1	51649700	CAP.,FXD,CERAMIC; .02 uf 240vac	1			90004304	CIRCUIT CARD ASSEMBLY; Type 7BAD	1
29	DL1	51531110	DL; 1MHz prf adj 9901-9905 usec	1			90004310	CIRCUIT CARD ASSEMBLY; Type 7BCD	1
33	DS1	94034003	LAMP,INCANDESCENT;Slide 24V .073ma	10			90004313	CIRCUIT CARD ASSEMBLY; Type 7BDD	1
			Thru DS10						
27	F1	51650219	FUSE,CTG;1.50A @250V,Type MDA	1			90004349	CIRCUIT CARD ASSEMBLY; Type 7BRD	1
51	F2	51648700	FUSE,CTG;3A @250V, Type MDA	1			90004361	CIRCUIT CARD ASSEMBLY; Type 7BVD	1
28	F3	51001830	FUSE,CTG;0.50A @250V Type MDL	1			90004364	CIRCUIT CARD ASSEMBLY; Type 7BWD	1
59	P1	61146100	Fan Cable Assembly	1			90004373	CIRCUIT CARD ASSEMBLY; Type 7BZD	1
31	S1	51001577	SW,PUSH;2pdt 5A 250vac alt action	2			90004379	CIRCUIT CARD ASSEMBLY; Type 7CBD	1
32	S2	51001506	SW,PUSH;2spdt ckt mc 5A 250vac	3			90004382	CIRCUIT CARD ASSEMBLY; Type 7CCD	1
			Thru S4				90004960	CIRCUIT CARD ASSEMBLY; Type 8CQD	1
			S5				90004963	CIRCUIT CARD ASSEMBLY; Type 8CRD	1
35	TB1	51001855	SAME AS S1	1			90004981	CIRCUIT CARD ASSEMBLY; Type 8CXD	1
37	TB2	51001862	TERM.BOARD; 14 terminals,#6-32scr	1			90005035	CIRCUIT CARD ASSEMBLY; Type 8DRD	1
			TERM.BOARD;3terminals,#6-32 scr	2			90005254	CIRCUIT CARD ASSEMBLY; Type 8GYD	1
			TB3					For Equipment Controller 14027000	
30	XDS1	24511501	LAMPHOLDER;PB Horiz mtg, T-2	5				220 Volts-50 Hertz (80 by 13).	
			Thru XDS5					DELETE:	
26	XF1	51002787	FUSEHOLDER;Neon clr lens 100-125V	3			90004304	CIRCUIT CARD ASSEMBLY; Type 7BAD	1
			Thru XF3				90004349	CIRCUIT CARD ASSEMBLY; Type 7BRD	1
34		51646500	CABLE,SPL PURPOSE,ELEC;3#18 ga	1			90004382	CIRCUIT CARD ASSEMBLY; Type 7CCD	1
		90004235	CIRCUIT CARD ASSEMBLY; Type 7ABD	1			90004981	CIRCUIT CARD ASSEMBLY; Type 8CXD	1
		90004253	CIRCUIT CARD ASSEMBLY; Type 7AHD	1				ADD:	
		90004256	CIRCUIT CARD ASSEMBLY; Type 7AJD	1			90004250	CIRCUIT CARD ASSEMBLY; Type 7AGD	1
		90004263	CIRCUIT CARD ASSEMBLY; Type 7ALD	1			90004307	CIRCUIT CARD ASSEMBLY; Type 7BBD	1
		90004268	CIRCUIT CARD ASSEMBLY; Type 7AND	1			90004352	CIRCUIT CARD ASSEMBLY; Type 7BSD	1
		90004271	CIRCUIT CARD ASSEMBLY; Type 7APD	1			90004984	CIRCUIT CARD ASSEMBLY; Type 8CYD	1
		90004274	CIRCUIT CARD ASSEMBLY; Type 7AQD	1					
		90004280	CIRCUIT CARD ASSEMBLY; Type 7ASD	1					
		90004286	CIRCUIT CARD ASSEMBLY; Type 7AUD	1					
		90004289	CIRCUIT CARD ASSEMBLY; Type 7AVD	1					
		90004292	CIRCUIT CARD ASSEMBLY; Type 7AWD	1					
		90004295	CIRCUIT CARD ASSEMBLY; Type 7AXD	1					
		90004298	CIRCUIT CARD ASSEMBLY; Type 7AYD	1					
		90004301	CIRCUIT CARD ASSEMBLY; Type 7AZD	1					
PART NO. 14026800								REVISION	Y
TITLE EQUIPMENT CONTROLLER, 200 VOLTS-50 HERTZ (50 by 20)									

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A-13

000 320

A-14



REV	DATE	DESCRIPTION	BY	CHKD	APPR
A		RELEASED DRAWING			
B	2766	REVISED L/M PER THIS ECO TAG			
C	2763	ADDED NOTE & AND REVISED SHEET 2			

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C 61068600

- NOTES:
- 1 APPLY "ASSY 61068600" IN AREA SHOWN.
 2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION OR BOTH.
 3. UNLESS OTHERWISE SPECIFIED, ALL HARDWARE IS TO MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS.
 4. FOR CARD TYPE, QUANTITY, AND LOCATION, SEE CP 61068600.
 5. FOR WIRE SIZE, COLOR, AND LOCATION, SEE WT 61068600.
- △ MARK PER SPEC 10121502, CHARACTER HEIGHT $\frac{1}{8}$, COLOR BLACK.

SHEET	REVISION			
	A	B	C	
1				
2				
3				

SEE DETACHED L/M 61068600

Figure A-3

82128400

<p>DO NOT SCALE THIS PRINT</p> <p>REMOVE ALL BURRS AND SHARP EDGES</p> <p>WELD TO SPECIFICATIONS</p> <p>WELD TO SPECIFICATIONS</p> <p>WELD TO SPECIFICATIONS</p>		<p>ALL DIMENSIONS IN DECIMALS</p> <p>FINISHES: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z</p> <p>WELD TO SPECIFICATIONS</p> <p>WELD TO SPECIFICATIONS</p> <p>WELD TO SPECIFICATIONS</p>	<p>DATE: 10/27/60</p> <p>BY: [Signature]</p> <p>CHKD: [Signature]</p> <p>APPR: [Signature]</p>	<p>LOGIC CHASSIS</p> <p>AI</p> <p>319A</p>	<p>CODE LETTER</p> <p>D</p> <p>61068600</p> <p>SHEET 1 OF 3</p>
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82128400

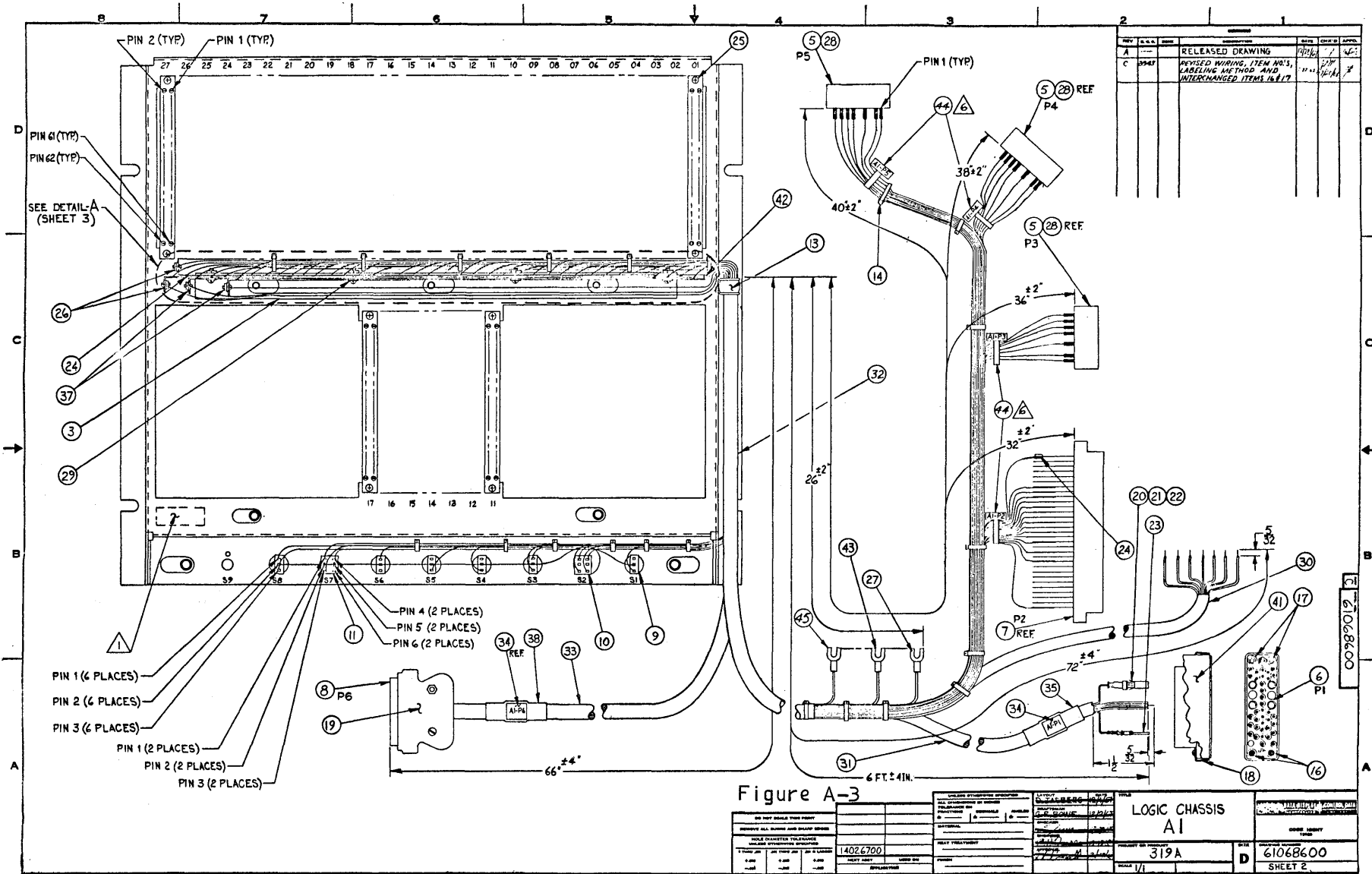


Figure A-3

DO NOT DRILL FROM FRONT		MATERIAL: METAL POLYESTER		LOGIC CHASSIS A1	
REMOVE ALL BURRS AND SHARP EDGES		PART NUMBER: 319A		DRAWING NUMBER: 61068600	
MOLD DIMENSION TOLERANCES UNLESS OTHERWISE SPECIFIED		REVISED WIRING, ITEM NO. 1, LABELING METHOD AND INTERCHANGED ITEMS 16 & 17		SHEET 2	
1 THRU 31 IN. DIM. ± .010 IN. 32 IN. & LARGER ± .015 IN.		14026700		D	
MATERIAL: METAL POLYESTER		DATE: 1/1		SHEET 2	

A-15

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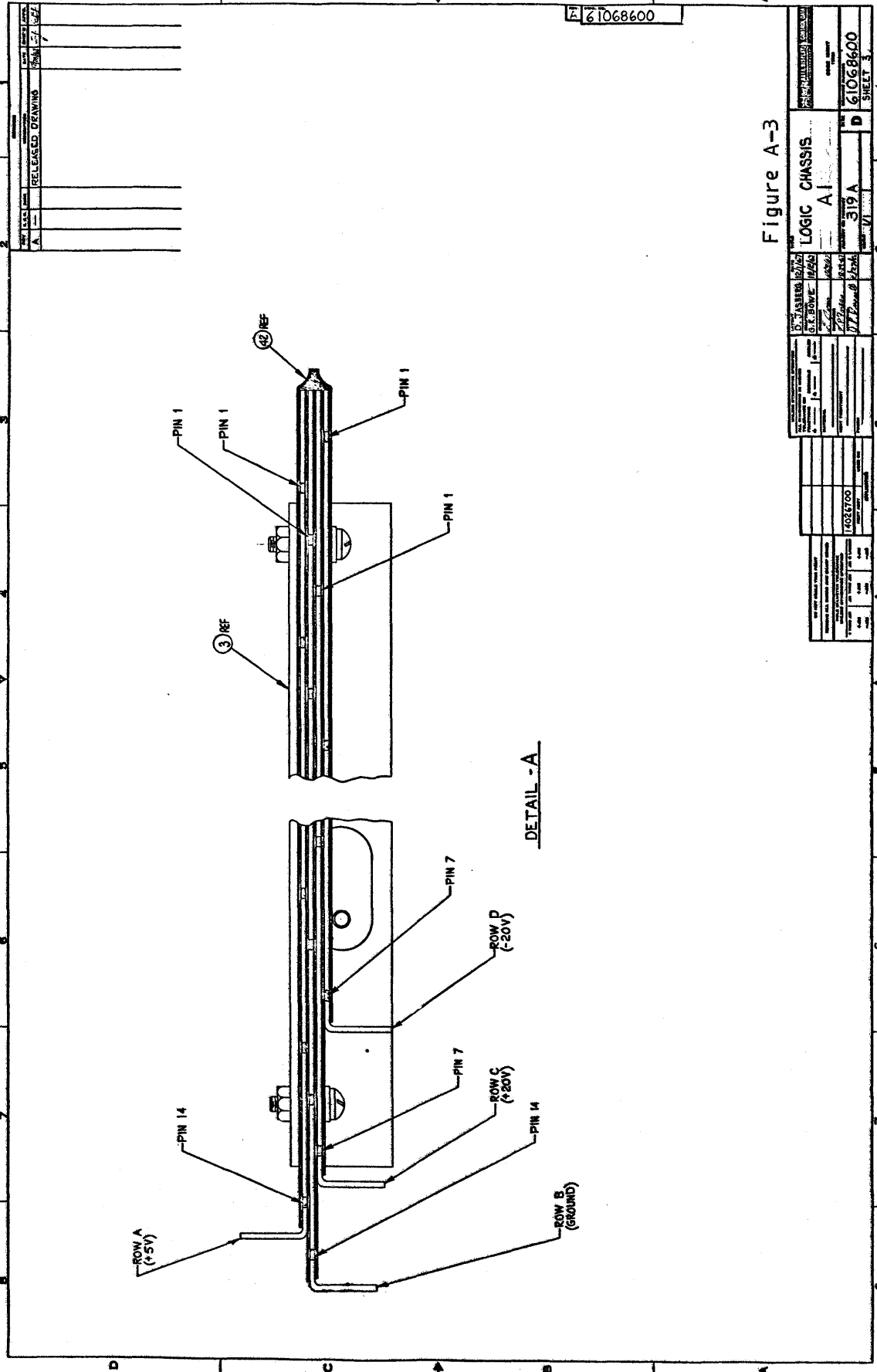


Figure A-3

PART INFORMATION				DRAWING INFORMATION			
PART NUMBER		61068600		DRAWING NUMBER		61068600	
PART NAME		LOGIC CHASSIS AI		DRAWING TITLE		SHEET 3	
REV		319 A		REV		VI	
DATE		1/11/54		DATE		1/11/54	
BY		J.F. BURKE		BY		J.F. BURKE	
CHK		J.F. BURKE		CHK		J.F. BURKE	
APP				APP			

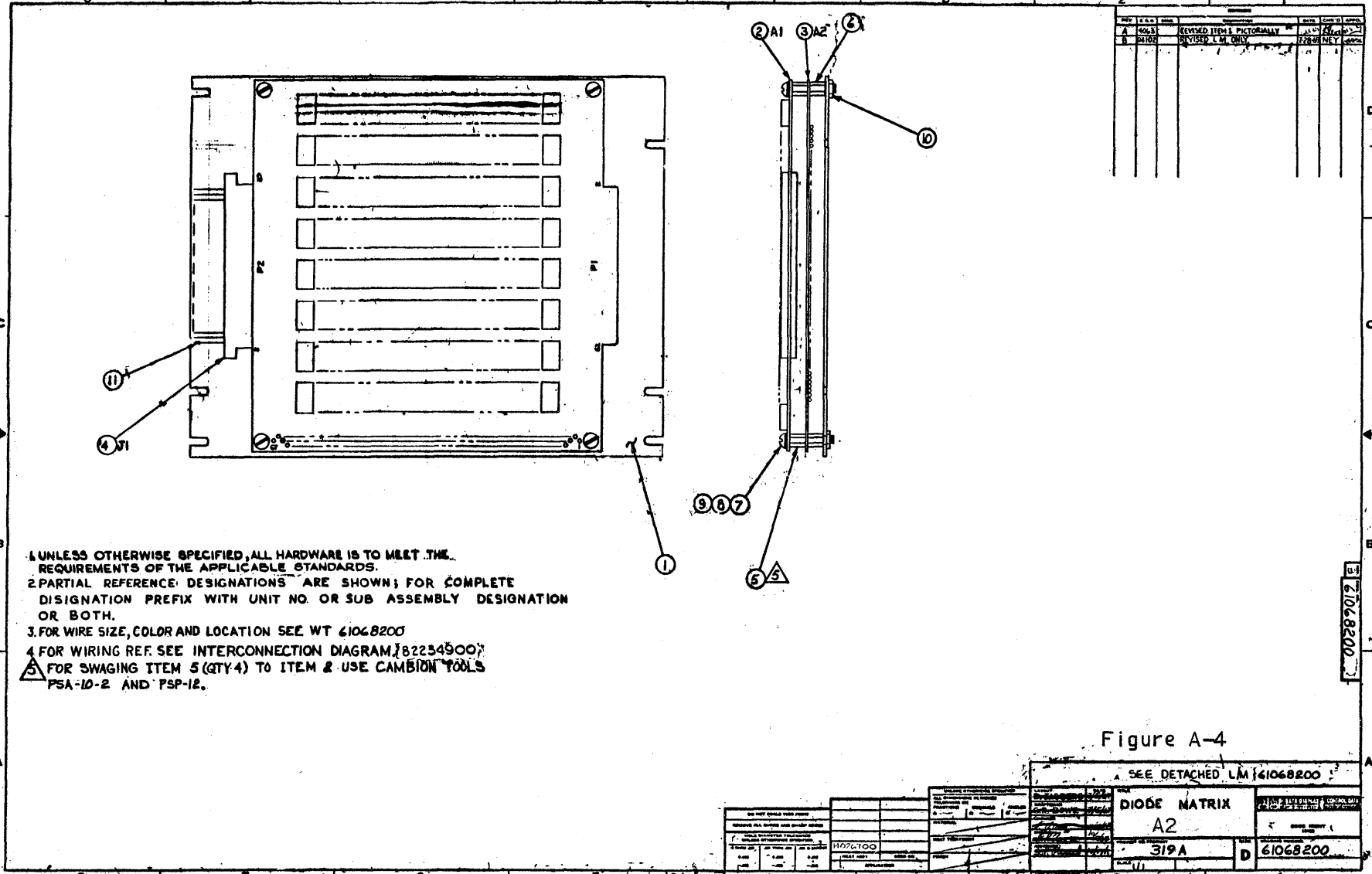
DETAIL - A

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
7	J1 Thru J23 J25 Thru J27 J28 Thru J34 J37 J38 J39 J42 J44 J45 J47 Thru J54	51007306	CONN,RECP,ELEC; Chassis mtg 62 soc SAME AS J1 USED WITH ADAPTER KITS USED WITH ADAPTER KITS SAME AS J1 SAME AS J1 SAME AS J1 SAME AS J1 USED WITH ADAPTER KITS USED WITH ADAPTER KITS	31				*LOGIC CHASSIS 61077300,61077400, and 61077500, differ only in part number and internal wiring.	
6	P1	51002449	INSERT,ELEC CONN; 42 pos male block	1					
	P2		SAME AS J1						
5	P3	51648500	CONN,PRINTED CKT,EDGE; 9 pos	3					
	Thru P5								
8	P6	51522300	CONNECTOR,PLUG,ELEC; Type D 25 pin	1					
9	S1	51618400	SWITCH,TOGGLE; Spdt 5A @ 115vac	6					
10	S2	51618501	SWITCH,TOGGLE; Dpdt 5A @ 115vac	1					
	S3		SAME AS S1						
	Thru S6								
11	S7	51618502	SWITCH,TOGGLE; Dpdt 5A @ 115vac	1					
	S8		SAME AS S1						
*61068600/C									
LOGIC CHASSIS AI									

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A-17



- 1. UNLESS OTHERWISE SPECIFIED, ALL HARDWARE IS TO MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS.
- 2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT NO. OR SUB ASSEMBLY DESIGNATION OR BOTH.
- 3. FOR WIRE SIZE, COLOR AND LOCATION SEE WT 61068200
- 4. FOR WIRING REF. SEE INTERCONNECTION DIAGRAM 82234900
- 5. FOR SWAGING ITEM 5 (QTY 4) TO ITEM 2 USE CAMBION TOOLS PSA-10-2 AND PSP-12.

Figure A-4

SEE DETACHED LM 61068200	
DIODE MATRIX	
A2	
319A	D 61068200

82128400

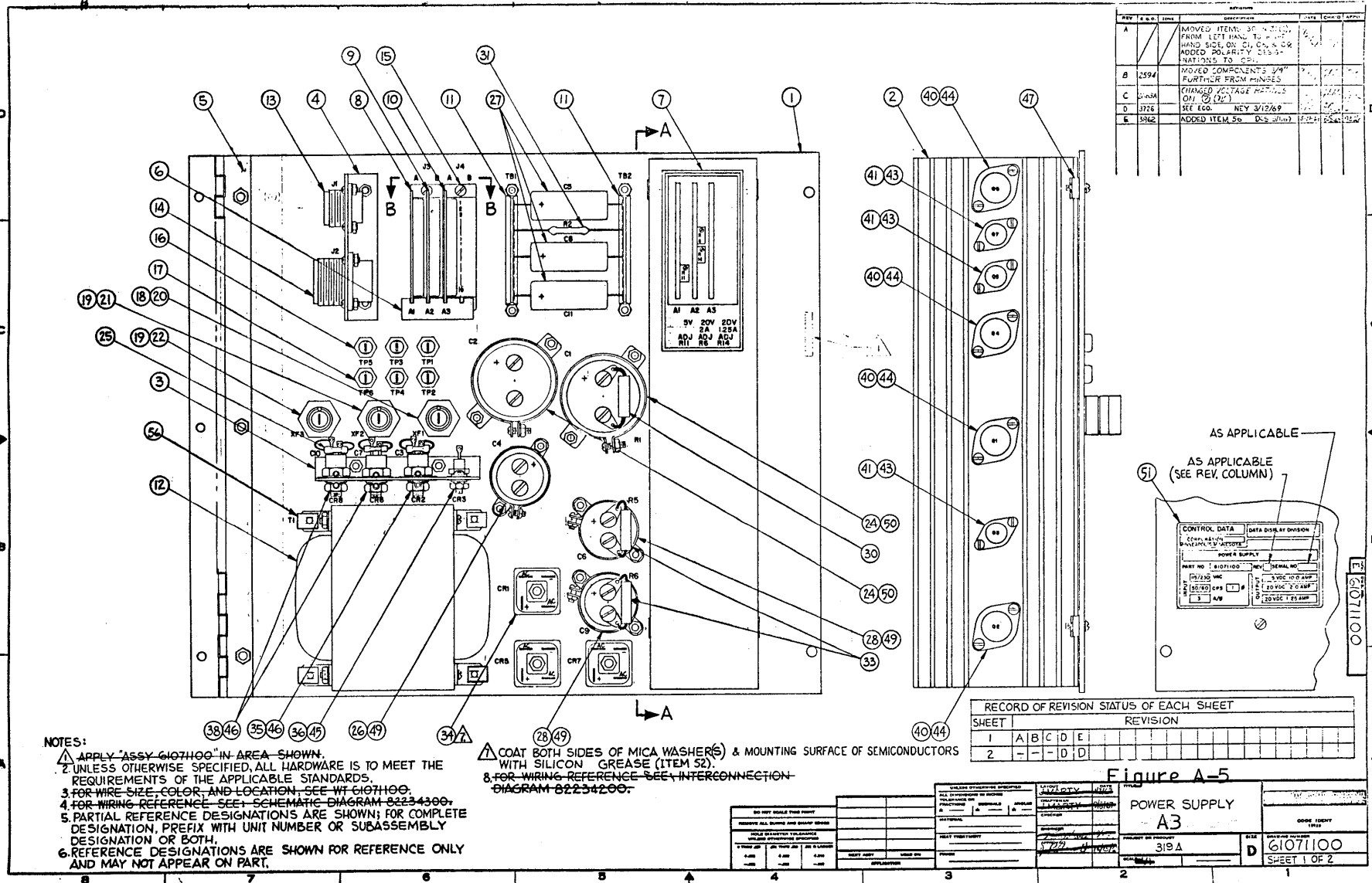
ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
2	A1	90004247	CIRCUIT CARD ASSEMBLY; Type 7AFD	1		A1CR1	51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	821
	A1A1	51577600	INTEGRATED CKT; Dual buffer elem.	35		A1CR2		SAME AS A1CR1	
	A1A2	51577500	INTEGRATED CKT; Dual gate elem.	17	3	A2	90004259	CIRCUIT CARD ASSEMBLY; Type 7AKD	1
	A1A3	51578100	INT.CKT; Triple 3 input gate elem.	12		A2CR1		SAME AS A1CR1	
	A1A4		SAME AS A1A2			Thru			
	A1A5		SAME AS A1A3		4	A2CR819			
	Thru					J1	51007306	CONN,RECP,ELEC; Chassis mtg 62 soc	1
	A1A7								
	A1A8		SAME AS A1A2						
	A1A9		SAME AS A1A2						
	A1A10		SAME AS A1A3						
	A1A11		SAME AS A1A2						
	Thru								
	A1A13								
	A1A14		SAME AS A1A3						
	A1A15		SAME AS A1A2						
	A1A16		SAME AS A1A2						
	A1A17		SAME AS A1A3						
	A1A18		SAME AS A1A2						
	A1A19		SAME AS A1A3						
	A1A20		SAME AS A1A2						
	A1A21		SAME AS A1A3						
	A1A22		SAME AS A1A2						
	A1A23		SAME AS A1A3						
	A1A24		SAME AS A1A2						
	A1A25		SAME AS A1A2						
	A1A26		SAME AS A1A3						
	A1A27		SAME AS A1A2						
	Thru								
	A1A29								
	A1A30		SAME AS A1A3						
	A1A31		SAME AS A1A1						
	Thru								
	A1A64								
	A1C1	51001119	CAP.,FXD,CERAMIC; .01 uf 25vdc	16					
	Thru								
	A1C16								
61068200/B									
DIODE MATRIX A2									

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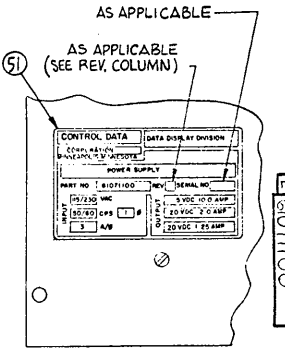
A-19/20

82128400

A-21



REV	NO	DATE	DESCRIPTION	DATE	LOC	BY	APP
A			MOVED ITEMS 37-41 FROM LEFT HAND TO RIGHT HAND SIDE ON C, C, C, & C. ADDED POLARITY INDICATIONS TO C.				
B	2594		MOVED COMPONENTS 3/4" FURTHER FROM PINNDS				
C	2634		CHANGED MOUNTAGE METHODS ON C (12)				
D	3726		SEE ECO. NEY 3/13/69				
E	3962		ADDED ITEM 56 DCS 3/11/71				



RECORD OF REVISION STATUS OF EACH SHEET									
SHEET	REVISION								
1	A	B	C	D	E				
2	-	-	D	D					

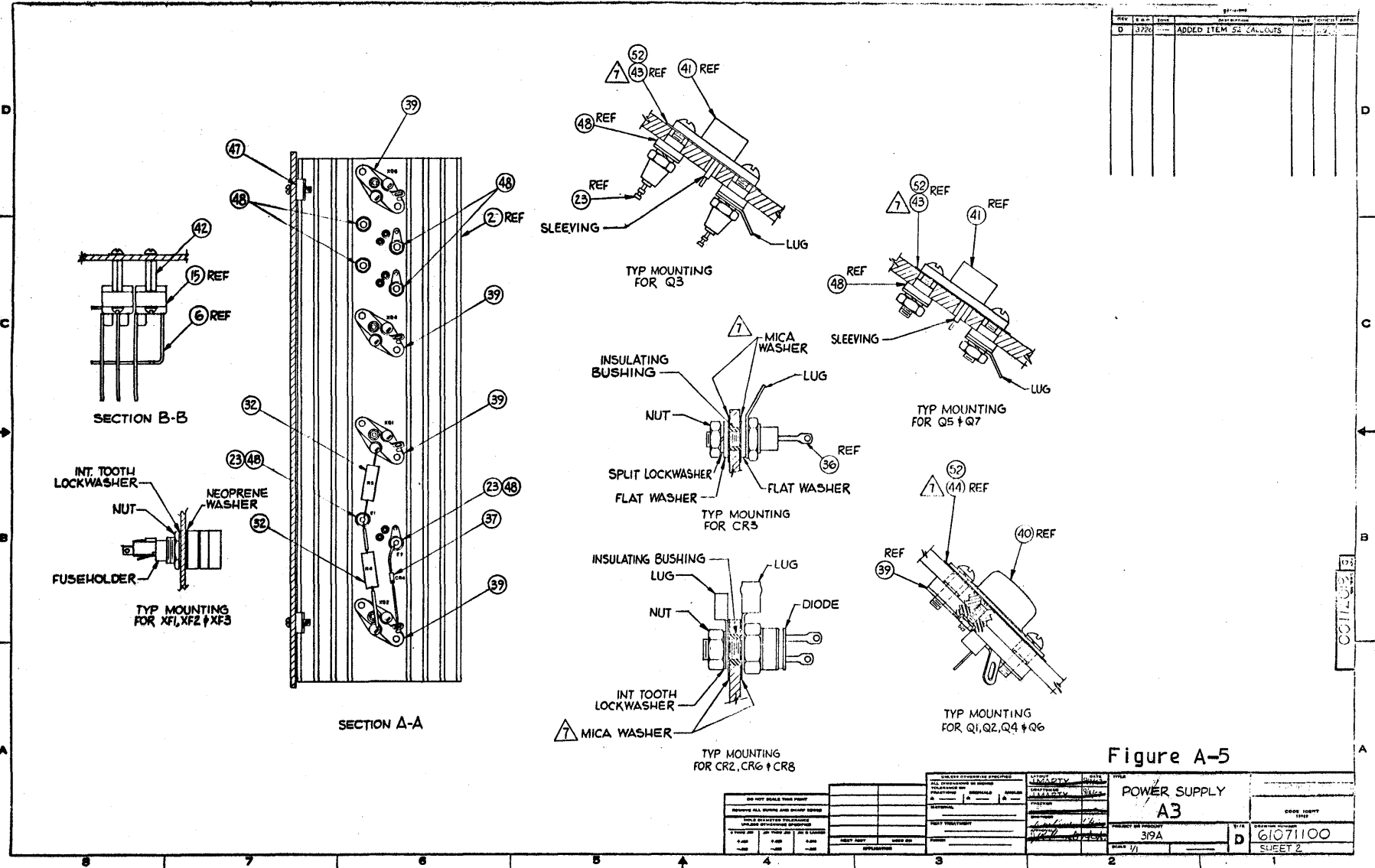
Figure A-5

NOTES:

1. APPLY ASSY 6107100 IN AREA SHOWN.
2. UNLESS OTHERWISE SPECIFIED, ALL HARDWARE IS TO MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS.
3. FOR WIRE SIZE, COLOR, AND LOCATION, SEE WT 6107100.
4. FOR WIRING REFERENCE, SEE SCHEMATIC DIAGRAM 82234300.
5. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION OR BOTH.
6. REFERENCE DESIGNATIONS ARE SHOWN FOR REFERENCE ONLY AND MAY NOT APPEAR ON PART.
7. COAT BOTH SIDES OF MICA WASHERS & MOUNTING SURFACE OF SEMICONDUCTORS WITH SILICON GREASE (ITEM 52).
8. FOR WIRING REFERENCE, SEE INTERCONNECTION DIAGRAM 82234200.

<p>DO NOT SCALE THIS PRINT</p> <p>REPRODUCTION OF THIS PRINT IS PROHIBITED</p> <p>ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN INCHES</p> <p>UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE TO BE TAKEN TO THE CENTER OF THE DIMENSIONED FEATURE</p> <p>ALL DIMENSIONS ARE TO BE TAKEN TO THE CENTER OF THE DIMENSIONED FEATURE</p> <p>ALL DIMENSIONS ARE TO BE TAKEN TO THE CENTER OF THE DIMENSIONED FEATURE</p>	<p>VOLUME OPERATIONAL SPECIFICATIONS</p> <p>OPERATIONAL SPECIFICATIONS</p> <p>OPERATIONAL SPECIFICATIONS</p> <p>OPERATIONAL SPECIFICATIONS</p> <p>OPERATIONAL SPECIFICATIONS</p> <p>OPERATIONAL SPECIFICATIONS</p>	<p>POWER SUPPLY</p> <p>A3</p> <p>319A</p> <p>61071100</p> <p>SHEET 1 OF 2</p>
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REV	DATE	BY	DESCRIPTION	PAGE	TOTAL PAGES
0	3/22		ADDED ITEM 52 CALL-OUTS		

Figure A-5

DO NOT SCALE THIS PRINT		DESIGN ORIGINATOR ENGINEER		DATE	
REWORK ALL DIMS AND DIMENSIONS		ALL DIMENSIONS IN INCHES		DRAWN BY	
SCALE DIMENSIONS UNLESS OTHERWISE SPECIFIED		POLYMERIZATION		MATERIAL	
TYPICAL DIMS ARE IN INCHES		FINISH TREATMENT		FINISH	
PART NAME		PART NUMBER		PART QUANTITY	
319A		POWER SUPPLY		A3	
SHEET 1/1		D		61071100	
				SHEET 2	

COLLUS

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
8	A1	90007569	CIRCUIT CARD ASSEMBLY; Type 534	1	30	R1	51504616	RES.FXD,WV; Non-ind 75 ohm 5% %W	1
9	A2	90001442	CIRCUIT CARD ASSEMBLY; Type 525	1	31	R2	51504612	RES.FXD,WV; Non-ind 25 ohm 5% 5W	1
10 *	A3	90007572	CIRCUIT CARD ASSEMBLY; Type 535	1	32	R3	51585600	RES.FXD,WV; 0.1 ohm 5% 5W	2
24	C1	51639100	CAP.,FXD,ELECT; 21000uf 20vdcw	2		R4		SAME AS R3	
	C2		SAME AS C1		33	R5	51623900	RESISTOR,FXD,WV; 400 ohms 5% 5W	2
25	C3	51001170	CAP.,FXD,PLASTIC; .022 uf 200vdcw	3		R6		SAME AS R5	
26	C4	51574200	CAP.,FXD,ELECT; 9200uf 15vdcw	1	12	T1	51640000	XMFR,STEP-DN; Mult input-oupt	1
27	C5	51574100	CAP.,FXD,ELECT; 1000uf 15vdcw	3	11	TB1	51555500	TERM.BOARD; 8 solder lugs brkt type	2
28	C6	51639000	CAP.,FXD,ELECT; 3600uf 50vdcw	2		TB2		SAME AS TB1	
	C7		SAME AS C3		16	TP1	51534600	JACK,TIP; std panel mount,red 10A	3
	C8		SAME AS C5		17	TP2	51536500	JACK,TIP; std panel mount,blk 10A	3
	C9		SAME AS C6			TP3		SAME AS TP1	
	C10		SAME AS C3			TP4		SAME AS TP2	
	C11		SAME AS C5			TP5		SAME AS TP1	
34	CR1	51585700	SEMICONV.DEVICE,RECT BRDG;50V @25A	3		TP6		SAME AS TP2	
35	CR2	51588500	SEMICONV.DEVICE,SCR; 25PRV 25A	1	18	XF1	51574800	FUSEHOLDER; Lamp ind amb lens 7-16V	1
36	CR3	51573700	SEMICONV.DEVICE,DIODE; Zener 10V	1	19	XF2	51002784	FUSEHOLDER; Lamp ind amb lens16-32V	2
37	CR4	51001239	SEMICONV.DEVICE,DIODE; 75V SI	1		XF3		SAME AS XF2	
	CR5		SAME AS CR1		39	XQ1	51605400	SOCKET,SEMICONV.DEVICE; Tstr T0-3	4
38	CR6	51586100	SEMICONV.DEVICE,SCR; 50PRV 7.4A	2		XQ2		SAME AS XQ1	
	CR7		SAME AS CR1			XQ4		SAME AS XQ1	
	CR8		SAME AS CR6			XQ6		SAME AS XQ1	
23	E1	51001330	TERM.STUD; Isulated 6-32 screw mtg	2	10 *	A3	90022400	CIRCUIT CARD ASSEMBLY; Type 9DDD	1
	E2		SAME AS E1						
20	F1	51001809	FUSE,CTG; 8.0A @ 250V, type 3AB	1					
21	F2	51001823	FUSE,CTG; 3.00A @ 250V, type AGC	1					
22	F3	51001825	FUSE,CTG; 1.50A @ 250V, type 3AG	1					
13	J1	51639400	CONN,RECP,ELEC; Solid shell 6 pin	1					
14	J2	51574900	CONN,RECP,ELEC; Solid shell 7 soc	1					
15	J3	51000108	CONN,RECP,CKT CARD; blk 2X15 soc	2					
	J4		SAME AS J3						
40	Q1	51003117	TSTR; NPN SI T03 case, high power	4					
	Q2		SAME AS Q1						
41	Q3	51003115	TSTR; NPN SI mtg case, high power	3					
	Q4		SAME AS Q1						
	Q5		SAME AS Q3						
	Q6		SAME AS Q1						
	Q7		SAME AS Q3						

*A3 on power supply serial numbers 374 and below is card type 535; serial numbers 375 and up use card type 9DDD.

PART NO. 61071100

REVISION E

TITLE

POWER SUPPLY

A3

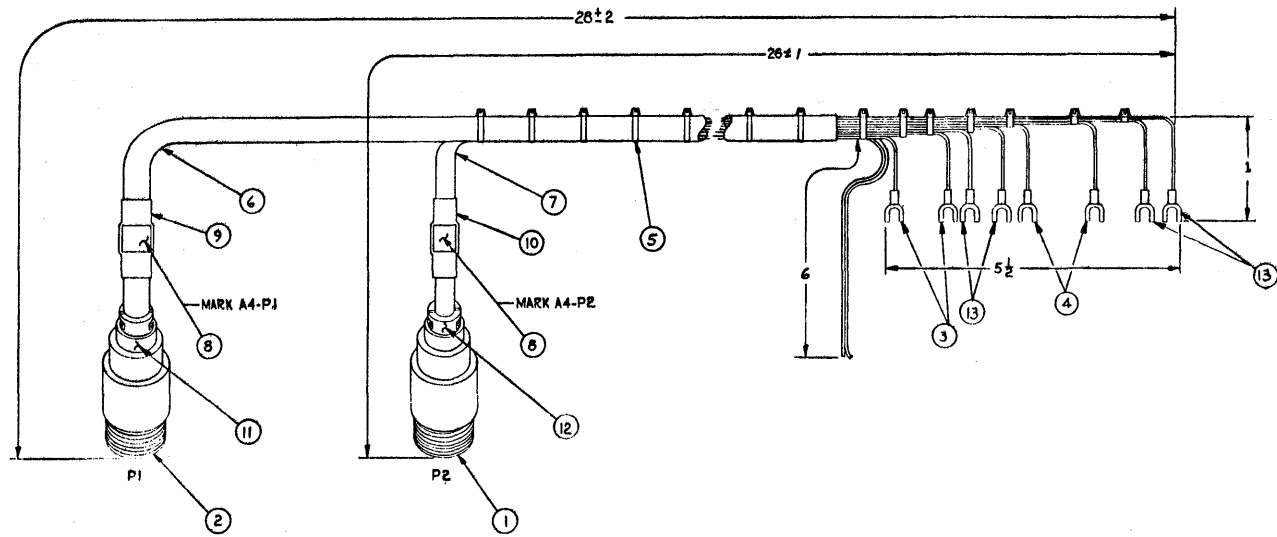
A-23

DDD 329

217

A-24

REV	DATE	BY	DESCRIPTION	CHKD	APPD
A			RELEASED DRAWING		
B	2646		INTERCHANGE P1 & P2		
C	2783		CHANGED LENGTH OF CABLES		
D	3064	A	CHANGED DETAIL OF ITEMS 3 & 4, ADDED ITEM 13		



NOTES:

1. ASSEMBLE ITEMS 6, 7, 8, 9 AND 10 PER DRAWING 82191061 (METHOD 1).
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION OR BOTH.
3. FOR WIRE SIZE, COLOR, AND LOCATION, SEE WT. 41070600.

Figure A-6

SEE DETACHED L/M 41070600.

14026300 14026300		POWER HARNESS A4		319A		41070600	
----------------------	--	---------------------	--	------	--	----------	--

82128400

217

41070600

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
2	P1	51669800	CONN,PLUG,ELEC; Solid shell 6 soc	1				*POWER HARNESS 61077800 differ in part number and wiring. See illustrated parts breakdown.	
1	P2	51575000	CONN,PLUG,ELEC; Solid shell 7 pin	1					
								*61070600	
								POWER HARNESS A4	

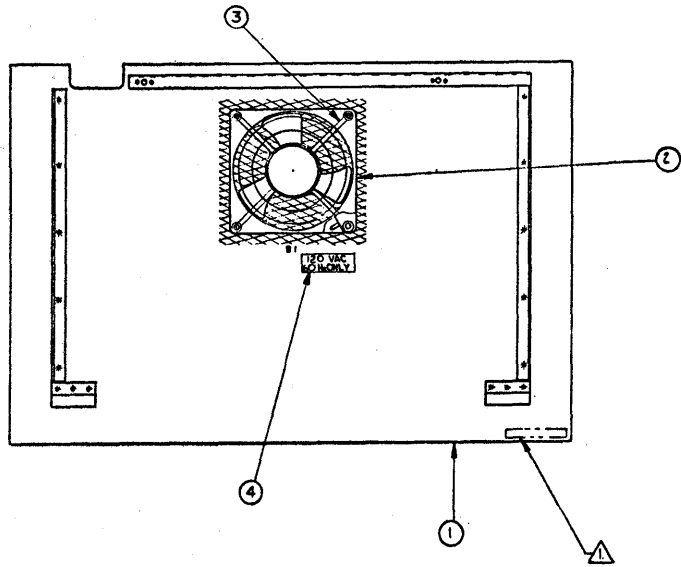
217

A-25

A-26

007821912

SHEET REVISION STATUS		REVISION RECORD					
REV	CD	DESCRIPTION	DATE	BY	CHKD	APPD	
01		UPDATED.	11/21/68	NEV	11/21/68	K.24	
A		REMOVED ITEMS 3F4					
B		ADDED ITEMS 3F4					
C		ADDED ITEMS 3F4					



NOTES:

- 1. APPLY ASSY 61128400 #15920 IN AREA SHOWN. MARK PER SPEC 10121508, CHARACTER HEIGHT .12 (12PT) COLOR WHITE.
- 2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION OR BOTH.
- 3. UNLESS OTHERWISE SPECIFIED, ALL HARDWARE IS TO MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS.

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Figure A-7

61128400 DETACHED LIST	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES:		CONTROL DATA		DATE DISPLAY DIVISION	
	±.015	±.010	±.005	DATE	16920	
	±.005	±.003	±.002	DESIGNED BY		
	±.002	±.001	±.0005	CHECKED BY		
DO NOT SCALE DRAWING			ENGINEER			
MATERIAL			APPROVED			
FINISH						
			SCALE 1/2	DRAWING NO. 61128400		SHEET 01

82128400

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
2	B1	94275505	FAN, AXIAL; 115V 60Hz 115CFM	1					

PART NO. 61128400

REVISION C

TITLE REAR PANEL ASSEMBLY, 115 Volt - 60 Hertz

A5

A-27

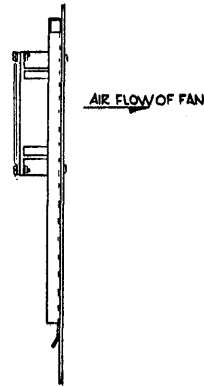
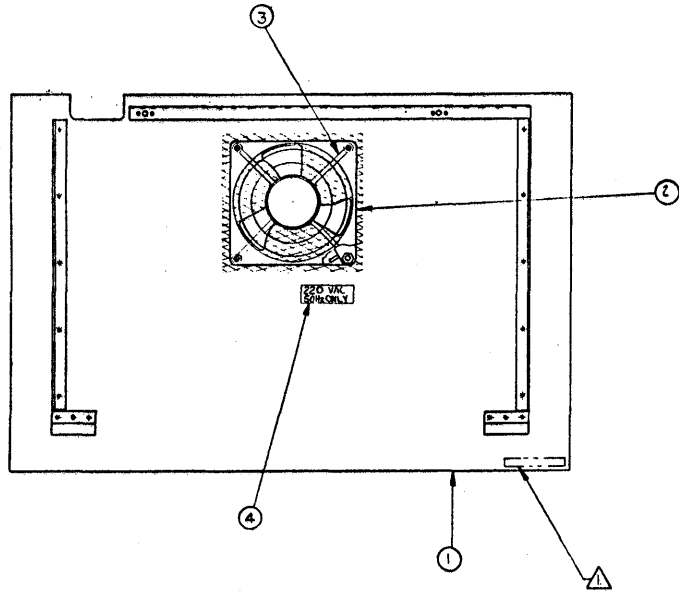
DDD 329

217

A-28

00362119/2

SHEET REVISION STATUS		REVISION RECORD					
REV	CD	DESCRIPTION	DRFT	DATE	CHKD	APP	
01		UPDATED	11/21/68	DET	7/2/68	1/1	
A		RELEASED				1/1	
B		REMOVED ITEMS 3&4				1/1	
C		ADDED ITEMS 3&4				1/1	



NOTES:
 1. APPLY ASSY 61129300 (15920) IN AREA SHOWN. MARK PER SPEC. 10121508, CHARACTER HEIGHT .12(12PT), COLOR WHITE.
 2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION OR BOTH.
 3. UNLESS OTHERWISE SPECIFIED, ALL HARDWARE IS TO MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS.

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Figure A-8

LM 61129300 DETACHED LIST	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			DATE DISPLAY DIVISION		TITLE	
	TOLERANCES			PART NUMBER		REAR PANEL ASSEMBLY (230V) A5	
	SPACE	SPACE	ANGLES	FILE NUMBER	16920	CODE IDENT	DRAWING NO
	A	A	A	DRAWN BY		15920	D 61129300
DO NOT SCALE DRAWING				CHECKED BY	INCHES		SCALE 1/2
DATE PLEN				ENGINEER	NHA 14076500		SHEET OF
FORM				APPROVED			

821 28400

82128400

A-29

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
2	B1	94275506	FAN, AXIAL; 230V 50-60Hz 115CFM	1					

PART NO. 61129300

REVISION C

TITLE REAR PANEL ASSEMBLY, 230 Volt - 50 Hertz

A5

DDD 329

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PART B
ADAPTER KITS

TYPEWRITER

Type	P/N
FF 305 A	14029500
FF 305 B	14029600
FF 306 A	14029700
FF 306 B	14029800

LINE PRINTER

FF 512 A	14029900
FF 512 B	14030000
FF 513 A	14030100
FF 513 B	14030200
FF 514 A	14029100
FF 514 B	14029200
FF 515 A	14029300
FF 515 B	14029400

CARD READER

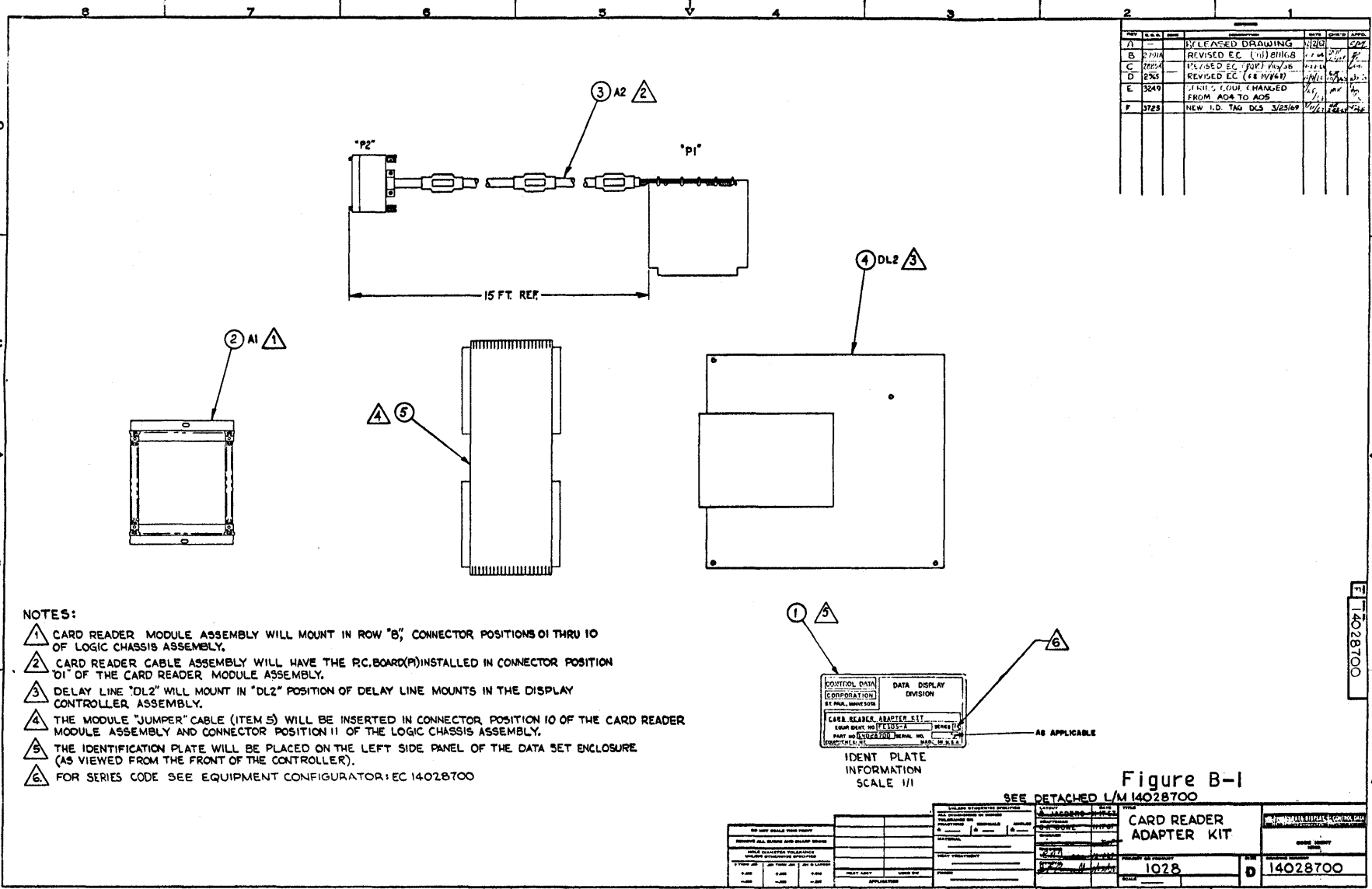
FE 105 A	14028700
FE 105 B	14028800
FE 106 A	14028900
FE 106 B	14029000
FE 108 A	15500000
FE 108 B	15500100
FE 109 A	15500200
FE 109 B	15500300

ADAPTER KITS

This part includes an illustrated parts breakdown and a complete listing of replaceable parts for each adapter kit. The adapter kits, when installed in the Equipment Controller, allow the addition of other input or output devices to the basic configuration.

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82128400



REV	DATE	DESCRIPTION	BY	CHKD
A		RELEASED DRAWING	1/20	GGZ
B	2/20/64	REVISED EC (11) 2816-8		
C	2/25/64	REVISED EC (10) 14028700		
D	2/25/64	REVISED EC (11) 14028700		
E	3/24/64	TRN'S LOGS CHANGED FROM AOA TO AOS		
F	3/25/64	NEW I.D. TAG DCS		

NOTES:

- 1 CARD READER MODULE ASSEMBLY WILL MOUNT IN ROW "B", CONNECTOR POSITIONS 01 THRU 10 OF LOGIC CHASSIS ASSEMBLY.
- 2 CARD READER CABLE ASSEMBLY WILL HAVE THE P.C. BOARD(P) INSTALLED IN CONNECTOR POSITION "01" OF THE CARD READER MODULE ASSEMBLY.
- 3 DELAY LINE "DL2" WILL MOUNT IN "DL2" POSITION OF DELAY LINE MOUNTS IN THE DISPLAY CONTROLLER ASSEMBLY.
- 4 THE MODULE "JUMPER" CABLE (ITEM 5) WILL BE INSERTED IN CONNECTOR POSITION 10 OF THE CARD READER MODULE ASSEMBLY AND CONNECTOR POSITION 11 OF THE LOGIC CHASSIS ASSEMBLY.
- 5 THE IDENTIFICATION PLATE WILL BE PLACED ON THE LEFT SIDE PANEL OF THE DATA SET ENCLOSURE (AS VIEWED FROM THE FRONT OF THE CONTROLLER).
- 6 FOR SERIES CODE SEE EQUIPMENT CONFIGURATOR: EC 14028700

CONTROL DATA (CORPORATION) 85 PAUL, MINNESOTA	DATA DISPLAY DIVISION
CARD READER ADAPTER KIT	
EQUIP IDENT NO (P) 1013-2	SERIES 11
PART NO 14028700	REVISION NO. 1
DATE: 11/64	MADE IN U.S.A.

IDENT PLATE INFORMATION SCALE 1/1

Figure B-1

SEE DETACHED L/M 14028700

SEE DETACHED L/M 14028700 CARD READER ADAPTER KIT		EQUIPMENT IDENTIFICATION CONTROL DATA DATA DISPLAY DIVISION MODEL NO. 14028700 SERIAL NO. 11 DATE: 11/64 MADE IN U.S.A.
EQUIPMENT IDENTIFICATION CONTROL DATA DATA DISPLAY DIVISION MODEL NO. 14028700 SERIAL NO. 11 DATE: 11/64 MADE IN U.S.A.	EQUIPMENT IDENTIFICATION CONTROL DATA DATA DISPLAY DIVISION MODEL NO. 14028700 SERIAL NO. 11 DATE: 11/64 MADE IN U.S.A.	EQUIPMENT IDENTIFICATION CONTROL DATA DATA DISPLAY DIVISION MODEL NO. 14028700 SERIAL NO. 11 DATE: 11/64 MADE IN U.S.A.

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14028700

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
2	A1 AIJ28 Thru AIJ34 AIJ37	61069300 51007306	CARD READER MODULE ASSEMBLY CONN,RECP,ELEC; Chassis mtg 62 soc	1 8				*CARD READER ADAPTER KITS, 14028800 14028900, and 14029000, differ in part number, depending upon the configuration used.	
3	A2 A2P1 A2P2	61061200 90000241 51002457	CABLE ASSEMBLY; CARD READER CIRCUIT CARD ASSEMBLY; Type 925 INSERT,ELEC CONN; 50 pos 'M" block	1 1 1				**CARD READER ADAPTER KITS, 14028900 and 14029000 use DELAY LINE 51531100	
4	**DL2	51531110 90004313 90004328 90005260 90005263 90005266 90005044	DL; 1MHz prf adj 9901-9905 usec CIRCUIT CARD ASSEMBLY; Type 7BDD CIRCUIT CARD ASSEMBLY; Type 7BJD CIRCUIT CARD ASSEMBLY; Type 8HAD CIRCUIT CARD ASSEMBLY; Type 8HBD CIRCUIT CARD ASSEMBLY; Type 8HCD CIRCUIT CARD ASSEMBLY; Type 8DUD	1 1 1 1 1 1 1					

14028700/F

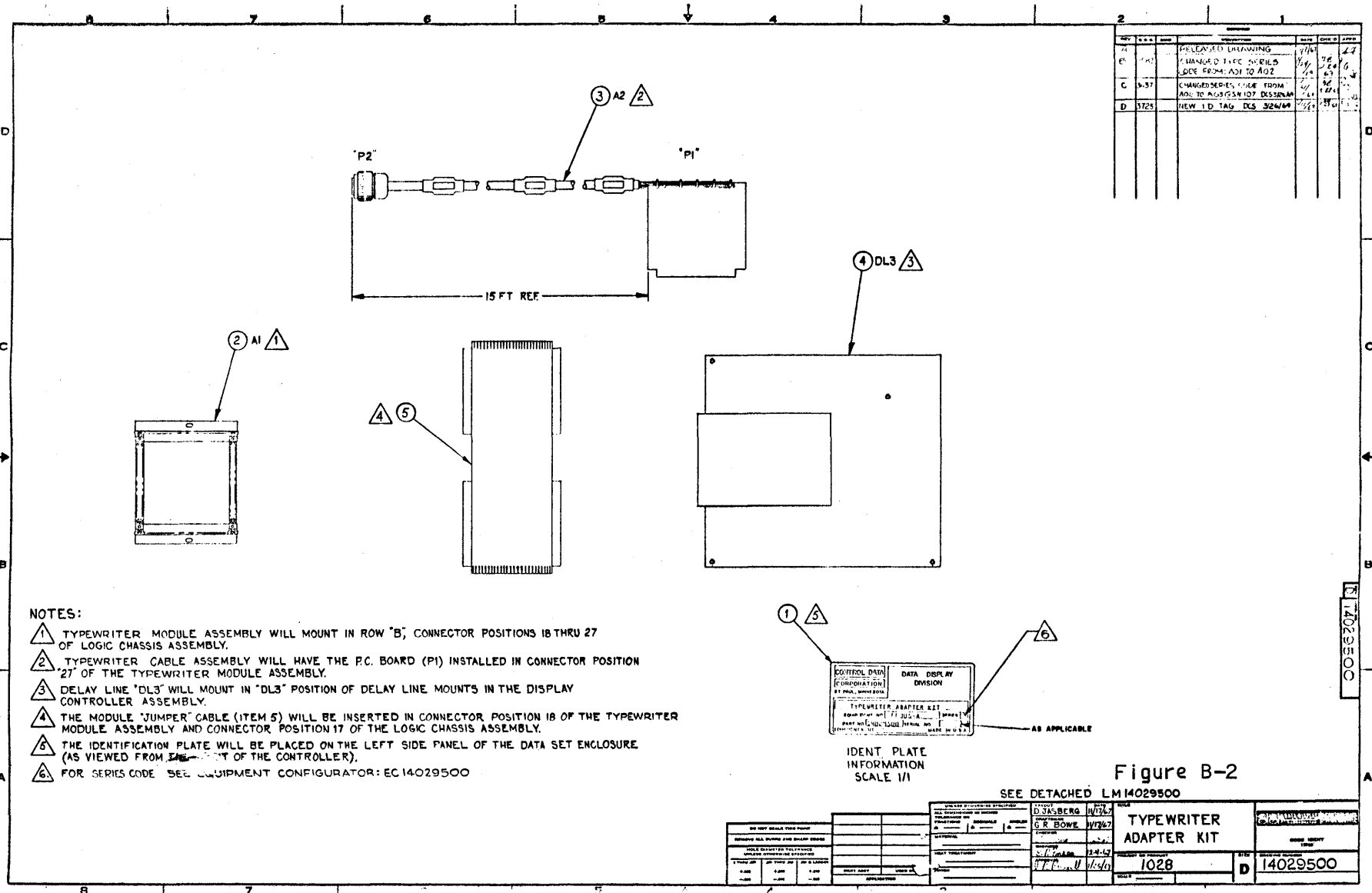
* CARD READER ADAPTER KIT

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B-4

82128400

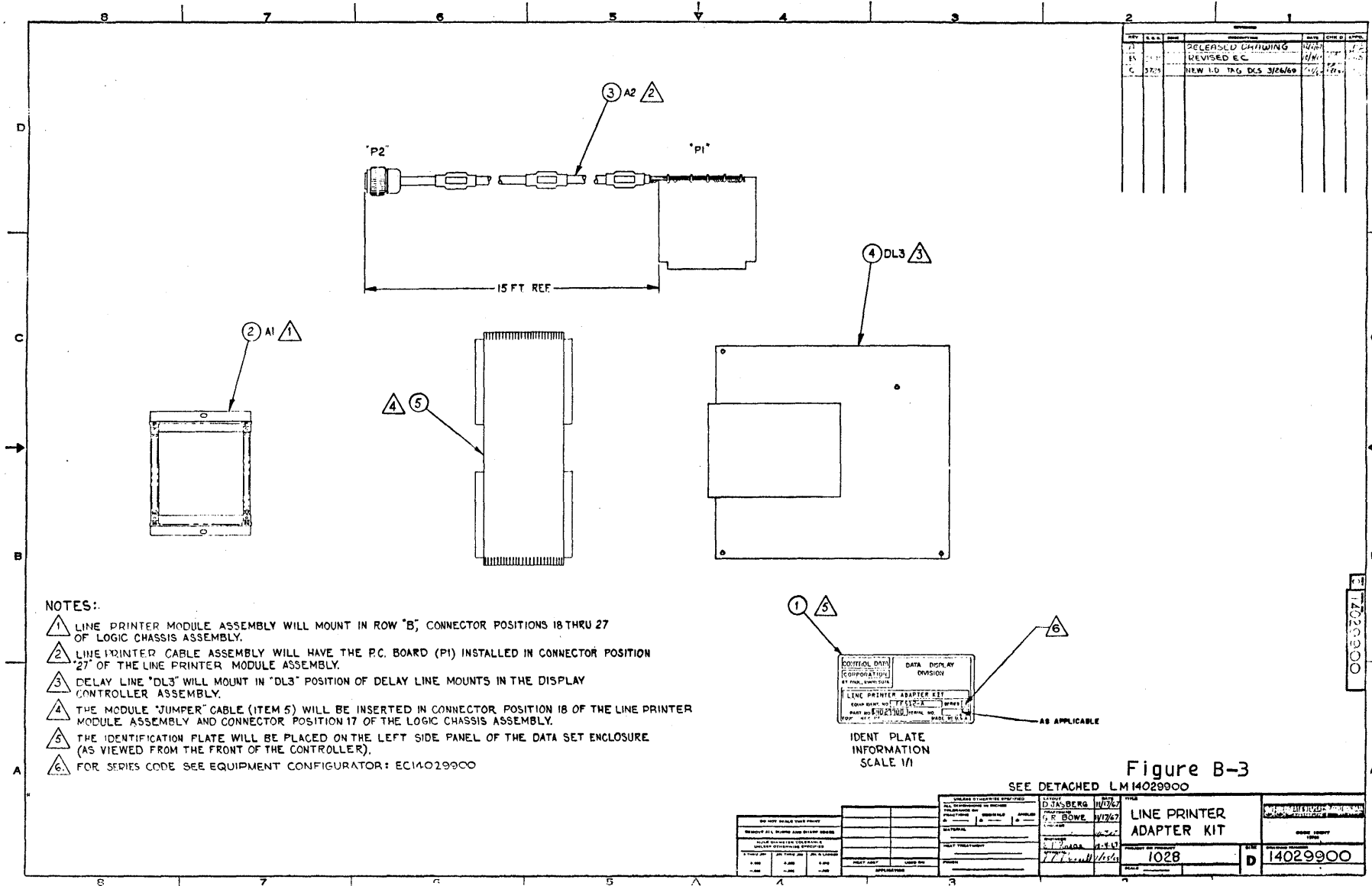


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N 14029500

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
2	A1	61069500	TYPEWRITER, MODULE ASSEMBLY	1				*TYPEWRITER ADAPTER KITS, 14029600, 14029700, and 14029800 differ in part number, depending upon the configuration used.	
	A1J45	51007306	CONN,RECP,ELEC; Chassis mtg 62 soc	9					
	Thru							**TYPEWRITER ADAPTER KITS,14029700, 14029800, use DELAY LINE 51531100	
	A1J54								
3	A2	61061300	CABLE ASSEMBLY; TYPEWRITER	1					
	A2P1	90000241	CIRCUIT CARD ASSEMBLY; Type 925	1					
	A2P2	51002331	CONN,PLUG,ELEC; Potting, 24 soc	1					
4	DL3**	51531110	DL; 1MHz prf adj 9901-9905 usec	1					
		90004232	CIRCUIT CARD ASSEMBLY; Type 7AAD	3					
		90004313	CIRCUIT CARD ASSEMBLY; Type 7BDD	1					
		90004325	CIRCUIT CARD ASSEMBLY; Type 7BHD	1					
		90016700	CIRCUIT CARD ASSEMBLY; Type 9CJD	1					
		90017600	CIRCUIT CARD ASSEMBLY; Type 9CMD	1					
						PART NO. 14029500		REVISION D	
						TITLE *TYPEWRITER ADAPTER KIT			

B-6



REV	DATE	DESCRIPTION	BY	CHK'D	APP'D
A	11/27/67	RELEASED DRAWING			
B	12/11/67	REVISED E.C.			
C	3/22/69	NEW I.D. TRG. DLS 3/22/69			

NOTES:

- 1. LINE PRINTER MODULE ASSEMBLY WILL MOUNT IN ROW "B", CONNECTOR POSITIONS 18 THRU 27 OF LOGIC CHASSIS ASSEMBLY.
- 2. LINE PRINTER CABLE ASSEMBLY WILL HAVE THE P.C. BOARD (P1) INSTALLED IN CONNECTOR POSITION 27 OF THE LINE PRINTER MODULE ASSEMBLY.
- 3. DELAY LINE "DL3" WILL MOUNT IN "DL3" POSITION OF DELAY LINE MOUNTS IN THE DISPLAY CONTROLLER ASSEMBLY.
- 4. THE MODULE "JUMPER" CABLE (ITEM 5) WILL BE INSERTED IN CONNECTOR POSITION 18 OF THE LINE PRINTER MODULE ASSEMBLY AND CONNECTOR POSITION 17 OF THE LOGIC CHASSIS ASSEMBLY.
- 5. THE IDENTIFICATION PLATE WILL BE PLACED ON THE LEFT SIDE PANEL OF THE DATA SET ENCLOSURE (AS VIEWED FROM THE FRONT OF THE CONTROLLER).
- 6. FOR SERIES CODE SEE EQUIPMENT CONFIGURATOR: EC14029900

SEE DETACHED LM14029900

Figure B-3
LINE PRINTER ADAPTER KIT

CONTROL DATA CORPORATION	DATA DISPLAY DIVISION
LINE PRINTER ADAPTER KIT	
PART NO. 1028	
SERIES CODE EC14029900	

DATE	BY	CHK'D	APP'D
11/27/67	D. J. BERG		
11/27/67	G. R. BOWE		
12/11/67			
3/22/69			

NO. OF THIS DRAWING	OF THIS DRAWING
1	1

DATE	BY	CHK'D	APP'D
11/27/67	D. J. BERG		
11/27/67	G. R. BOWE		
12/11/67			
3/22/69			

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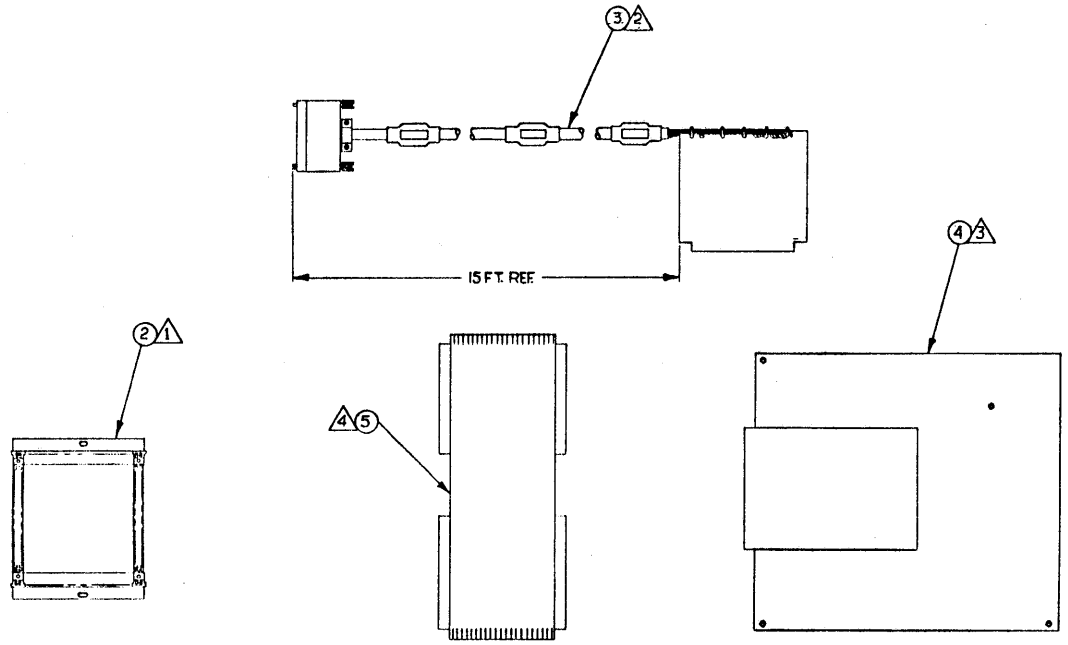
82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
2	**A1 A1J45 Thru A1J54	61069400 51007306	LINE PRINTER, MODULE ASSEMBLY CONN,RECP,ELEC; Chassis mtg 62 soc	1 7				*LINE PRINTER ADAPTER KITS 14030000, 14030100, 14030200, 14029100, 14029200, 14029300, and 14029400, differ in part number, depending upon the configuration used.	
3	A2 A2P1 A2P2	61068400 90000241 51002330	CABLE ASSEMBLY, LINE PRINTER CIRCUIT CARD ASSEMBLY; Type 925 CONN,PLUG,ELEC; Potting, 24 pin	1 1 1					
4	DL3***	51531110 90004313 90004355 90004358 90004966	DL; 1MHz prf adj 9901-9905 usec CIRCUIT CARD ASSEMBLY; Type 7BDD CIRCUIT CARD ASSEMBLY; Type 7BTD CIRCUIT CARD ASSEMBLY; Type 7BUD CIRCUIT CARD ASSEMBLY; Type 8CSD	1 1 2 1 1				**LINE PRINTER ADAPTER KITS 14029100, 14029200, 14029300 and 14029400 use LINE PRINTER MODULE ASSEMBLY 61077200 *** LINE PRINTER ADAPTER KITS 14030100, 14030200, 14029300, and 14029400 use DELAY LINE 51531100	
								14029900/C	
* LINE PRINTER ADAPTER KIT									

B-8

15500000 2

SHEET REVISION STATUS		REVISION RECORD				
REV	CD	DESCRIPTION	DATE	CHKD	APP	
A		RELEASED	7/25/68		KJ	
B	3377	SERIES DESIGNATOR FROM A01 TO A02	8/1/68			
C	3728	ADDED NEW I.D TAG	7/25/68			



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NOTES:

- 1. CARD READER MODULE ASSEMBLY WILL MOUNT IN ROW "B," CONNECTOR POSITIONS O1 THRU 10 OF LOGIC CHASSIS ASSEMBLY.
- 2. CARD READER CABLE ASSEMBLY WILL HAVE THE P.C. BOARD (PI) INSTALLED IN CONNECTOR POSITION "O1" OF THE CARD READER MODULE ASSEMBLY.
- 3. DELAY LINE "DL 2" WILL MOUNT IN "DL2" POSITION OF DELAY LINE MOUNTS IN THE DISPLAY CONTROLLER ASSEMBLY.
- 4. THE MODULE "JUMPER" CABLE (ITEM 5) WILL BE INSERTED IN CONNECTOR POSITION 10 OF THE CARD READER MODULE ASSEMBLY AND CONNECTOR POSITION 11 OF THE LOGIC CHASSIS ASSEMBLY.
- 5. THE IDENTIFICATION PLATE WILL BE PLACED ON THE LEFT SIDE PANEL OF THE DATA SET ENCLOSURE (AS VIEWED FROM THE FRONT OF THE CONTROLLER).
- 6. FOR SERIES CODE SEE EQUIPMENT CONFIGURATOR: EC 15500000.

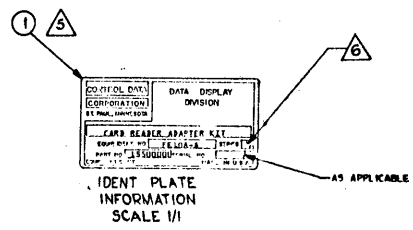


Figure B-4

82128400

15500000 DETACHED LISTS	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES		SCIENTIFIC DATA CORPORATION DATA DISPLAY DIVISION		TITLE	CARD READER ADAPTER KIT	
	PLACE 1	PLACE 2	ANGLE 2	PLAT LOCATION	528	CODE IDENT	DESIGNED TO
DO NOT SCALE DRAWING				CHECKED BY: NVASQUEZ 4/18/68		15920	D 15500000
MATERIALS				ENGINEER: [Signature]			
FINISH				APPROVED: [Signature]			

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
2	A1	61094500	CARD READER MODULE ASSEMBLY	1				*CARD READER ADAPTER KITS, 15500000, 15500100, 15500200, and 15500300 differ in part number, depending upon the configuration used. **CARD READER ADAPTER KITS, 15500000 and 15500100 use DELAY LINE 51531110 ***CARD READER ADAPTER KITS, 15500200 and 15500300 use DELAY LINE 51531100	
	A1J28	51007306	CONN,RECP,ELEC;Chassis mtg 62 soc	10					
	Thru								
	A1J37								
3	A2	61094400	CABLE ASSEMBLY; CARD READER	1					
	A2P1	90000241	CIRCUIT CARD ASSEMBLY; Type 925	1					
	A2P2	51002457	INSERT,ELEC CONN; 50 pos "M" block	1					
4	**DL2	51531110	DL; 1MHz prf adj 9901-9905 usec	1					
	***DL2	51531100	DL; 1MHz prf adj 9816-9820 usec	1					
		90004661	CIRCUIT CARD ASSEMBLY; Type 7FZD	1					
		90004385	CIRCUIT CARD ASSEMBLY; Type 7CDD	1					
		90004733	CIRCUIT CARD ASSEMBLY; Type 7GZD	1					
		90004391	CIRCUIT CARD ASSEMBLY; Type 7CFD	3					
		90005333	CIRCUIT CARD ASSEMBLY; Type 8JDD	1					
		90004313	CIRCUIT CARD ASSEMBLY; Type 7BDD	1					

15500000/c

*411 CARD READER ADAPTER KIT

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PART C

CIRCUIT CARD TYPES

CIRCUIT CARD TYPES

This part includes an illustrated parts breakdown and a complete listing of replaceable parts for each circuit card.

90004232

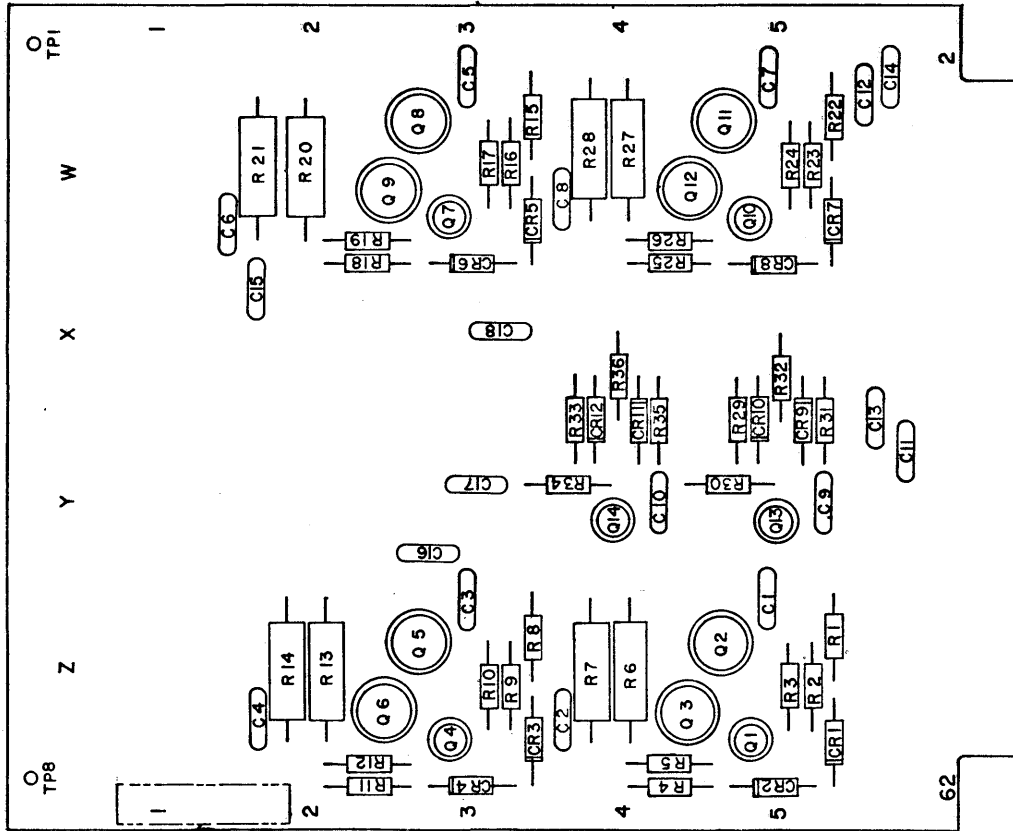


Figure C-1
Card 7AAD

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
C1		51001119	CAP.,FIXED,CERAMIC; .01 uf 25vdcw	16		R12		SAME AS R5	
Thru C8						R13		SAME AS R6	
C9		51000989	CAP.,FXD,CERAMIC; .1 uf 25vdcw	2		R14		SAME AS R6	
C10			SAME AS C9			R15		SAME AS R1	
C11			SAME AS C1			R16		SAME AS R2	
Thru C18						R17		SAME AS R3	
CR1		51001275	SEMICONDUCTOR DEVICE,DIODE; 20V Si	10		R18		SAME AS R4	
Thru CR9						R19		SAME AS R5	
CR10		51001233	SEMICONDUCTOR DEVICE,DIODE; Zener	2		R20		SAME AS R6	
CR11			SAME AS CR1			R21		SAME AS R6	
CR12			SAME AS CR10			R22		SAME AS R1	
Q1		51003059	TRANSISTOR; NPN Si TO18 case	4		R23		SAME AS R2	
Q2		51587600	TRANSISTOR; PNP Si TO-5 case	8		R24		SAME AS R3	
Q3			SAME AS Q2			R25		SAME AS R4	
Q4			SAME AS Q1			R26		SAME AS R5	
Q5			SAME AS Q2			R27		SAME AS R6	
Q6			SAME AS Q2			R28		SAME AS R6	
Q7			SAME AS Q1			R29		SAME AS R1	
Q8			SAME AS Q2			R30		SAME AS R3	
Q9			SAME AS Q2			R31	92512999	RESISTOR,FXD,COMP; 43 ohm 5% 1/4W	2
Q10			SAME AS Q1			R32	51000274	RESISTOR,FXD,COMP; 6.8K 5% 1/4W	2
Q11			SAME AS Q2			R33		SAME AS R1	
Q12			SAME AS Q2			R34		SAME AS R3	
Q13		51003107	TRANSISTOR; PNP Si TO18 case	2		R35		SAME AS R31	
Q14			SAME AS Q13			R36		SAME AS R32	
R1		51000281	RESISTOR,FXD,COMP; 15K 5% 1/4W	6					
R2		51000265	RESISTOR,FXD,COMP; 1.3K 5% 1/4W	4					
R3		51000272	RESISTOR,FXD,COMP; 4.7K 5% 1/4W	6					
R4		51000286	RESISTOR,FXD,COMP; 24K 5% 1/4W	4					
R5		51000280	RESISTOR,FXD,COMP; 13K 5% 1/4W	4					
R6		51000495	RESISTOR,FXD,COMP; 1K 5% 1W	8					
R7			SAME AS R6						
R8			SAME AS R1						
R9			SAME AS R2						
R10			SAME AS R3						
R11			SAME AS R4						

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90004232

CARD 7AAD

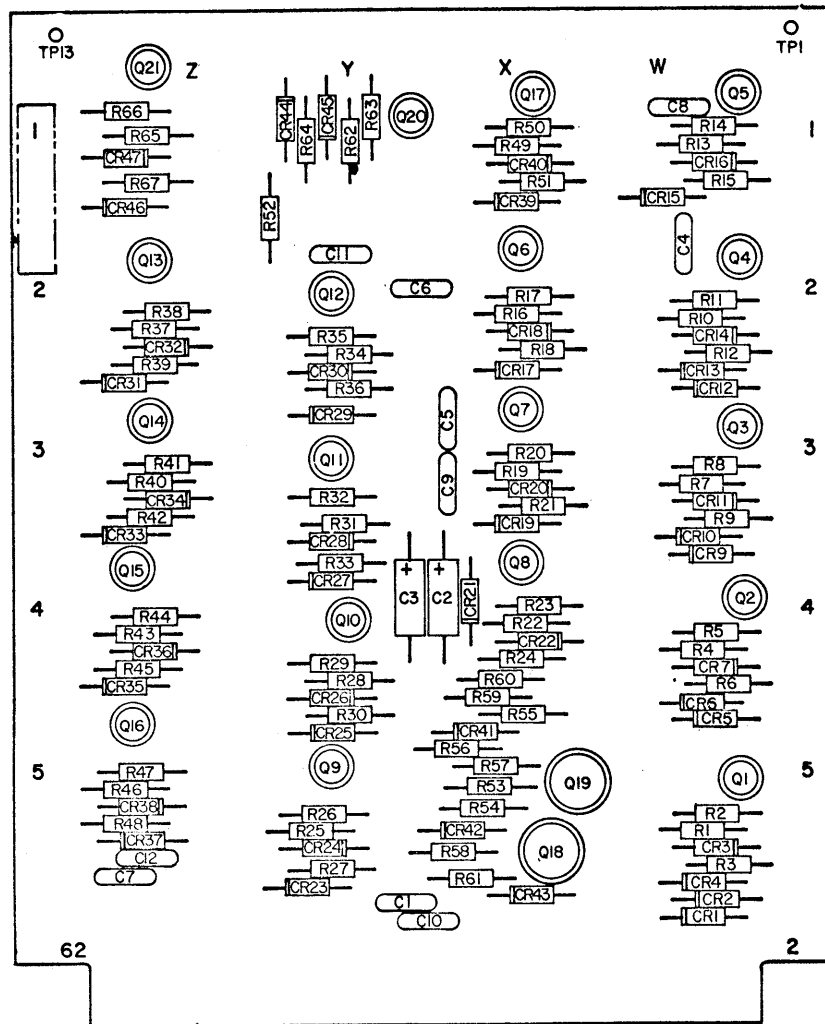


Figure C-2
Card 7ABD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
C1		51001119	CAP.,FIXED,CERAMIC; .01uf 25vdcw	10		CR35		SAME AS CR1	
C2		51000953	CAP.,FIXED,ELECT.; 15uf 20vdcw	2		CR36		SAME AS CR3	
C3			SAME AS C2			CR37		SAME AS CR1	
C4			SAME AS C1			CR38		SAME AS CR3	
Thru						CR39		SAME AS CR1	
C12						CR40		SAME AS CR3	
CR1		51001275	SEMICONDUCTOR DEVICE,DIODE; 20V Si	24		CR41	51001277	SEMICONDUCTOR DEVICE,DIODE; 10V Ge	3
CR2			SAME AS CR1			CR42		SAME AS CR41	
CR3		51001233	SEMICONDUCTOR DEVICE,DIODE; Zener	19		CR43		SAME AS CR41	
CR4			SAME AS CR1			CR44		SAME AS CR1	
CR5			SAME AS CR1			CR45		SAME AS CR3	
CR6			SAME AS CR1			CR46		SAME AS CR1	
CR7			SAME AS CR3			CR47		SAME AS CR3	
CR9			SAME AS CR1			Q1	51003107	TRANSISTOR; PNP Si T018 case	19
CR10			SAME AS CR1			Thru			
CR11			SAME AS CR3			Q17			
CR12			SAME AS CR1			Q18	51003055	TRANSISTOR; PNP Ge T09 case	2
CR13			SAME AS CR1			Q19		SAME AS Q18	
CR14			SAME AS CR3			Q20		SAME AS Q1	
CR15			SAME AS CR1			Q21		SAME AS Q1	
CR16			SAME AS CR3			R1	51000281	RESISTOR,FXD,COMP; 15K 5% 1/4W	19
CR17			SAME AS CR1			R2	51000272	RESISTOR,FXD,COMP; 4.7K 5% 1/4W	19
CR18			SAME AS CR3			R3	51000274	RESISTOR,FXD,COMP; 6.8K 5% 1/4W	22
CR19			SAME AS CR1			R4		SAME AS R1	
CR20			SAME AS CR3			R5		SAME AS R2	
CR21			SAME AS CR1			R6		SAME AS R3	
CR22			SAME AS CR3			R7		SAME AS R1	
CR23			SAME AS CR1			R8		SAME AS R2	
CR24			SAME AS CR3			R9		SAME AS R3	
CR25			SAME AS CR1			R10		SAME AS R1	
CR26			SAME AS CR3			R11		SAME AS R2	
CR27			SAME AS CR1			R12		SAME AS R3	
CR28			SAME AS CR3			R13		SAME AS R1	
CR29			SAME AS CR1			R14		SAME AS R2	
CR30			SAME AS CR3			R15		SAME AS R3	
CR31			SAME AS CR1						
CR32			SAME AS CR3						
CR33			SAME AS CR1						
CR34			SAME AS CR3						

90004235

CARD 7ABD
(Sheet 1 of 2)

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ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
R16			SAME AS R1		R54			SAME AS R3	
R17			SAME AS R2		R55			SAME AS R3	
R18			SAME AS R3		R56			SAME AS R52	
R19			SAME AS R1		R57	51000247		RESISTOR,FXD,COMP; 220 ohm 5% 1/4W	1
R20			SAME AS R2		R58	51000264		RESISTOR,FXD,COMP; 1.2K 5% 1/4W	1
R21			SAME AS R3		R59			SAME AS R3	
R22			SAME AS R1		R60	51000269		RESISTOR,FXD,COM ; 2.2K 5% 1/4W	2
R23			SAME AS R2		R61			SAME AS R60	
R24			SAME AS R3		R62			SAME AS R1	
R25			SAME AS R1		R63			SAME AS R2	
R26			SAME AS R2		R64			SAME AS R3	
R27			SAME AS R3		R65			SAME AS R1	
R28			SAME AS R1		R66			SAME AS R2	
R29			SAME AS R2		R67			SAME AS R3	
R30			SAME AS R3						
R31			SAME AS R1						
R32			SAME AS R2						
R33			SAME AS R3						
R34			SAME AS R1						
R35			SAME AS R2						
R36			SAME AS R3						
R37			SAME AS R1						
R38			SAME AS R2						
R39			SAME AS R3						
R40			SAME AS R1						
R41			SAME AS R2						
R42			SAME AS R3						
R43			SAME AS R1						
R44			SAME AS R2						
R45			SAME AS R3						
R46			SAME AS R1						
R47			SAME AS R2						
R48			SAME AS R3						
R49			SAME AS R1						
R50			SAME AS R2						
R51			SAME AS R3						
R52		51000262	RESISTOR,FXD,COMP; 1K 5% 1/4W	2					
R53		51000285	RESISTOR,FXD,COMP; 22K 5% 1/4W	1					

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90004235

CARD 7ABD
(Sheet 2 of 2)

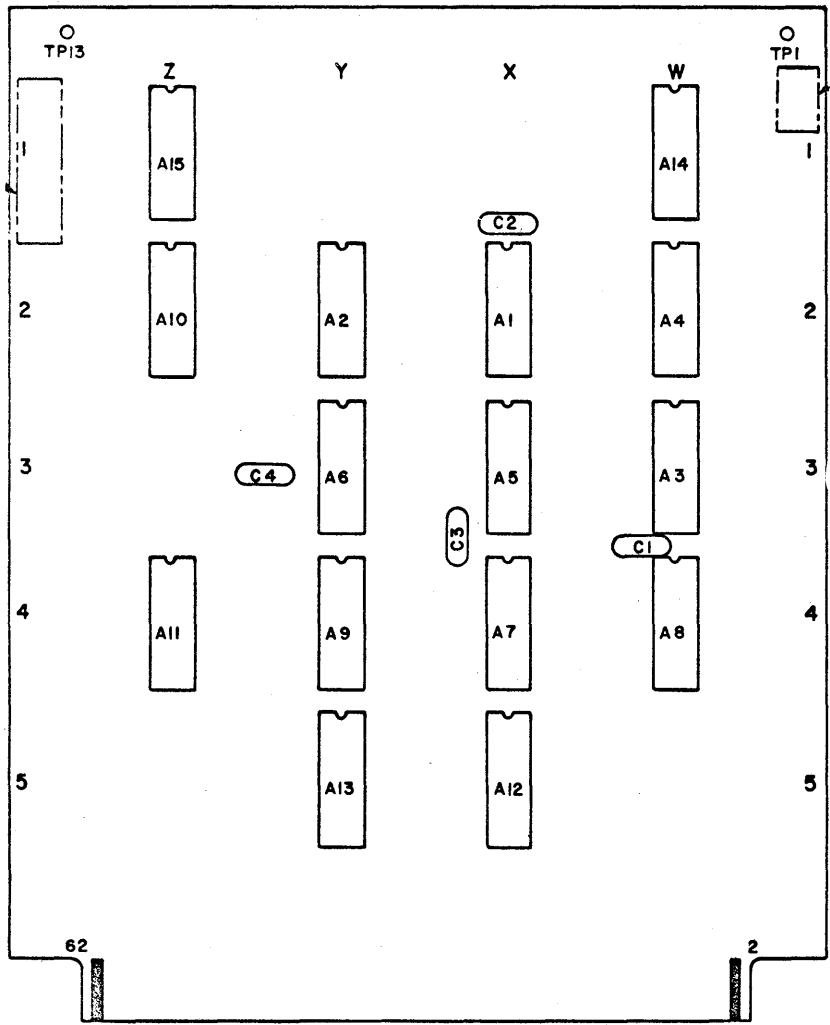


Figure C-3
Card 7AGD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	8					
A2		51578000	INTEGRATED CKT; Clocked flip flop	4					
A3		51577600	INTEGRATED CKT; Dual buffer element	2					
A4			SAME AS A1						
A5			SAME AS A1						
A6			SAME AS A2						
A7			SAME AS A1						
A8		51578100	INTEGRATED CKT; Triple 3 input gate	1					
A9			SAME AS A2						
A10			SAME AS A1						
A11			SAME AS A1						
A12			SAME AS A1						
A13			SAME AS A2						
A14			SAME AS A3						
A15			SAME AS A1						
C1 Thru C4		51001119	CAP.,FXD,CERAMIC; .01uf 25vdcw	4					
								90004250	
CARD TAGD									

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C-9

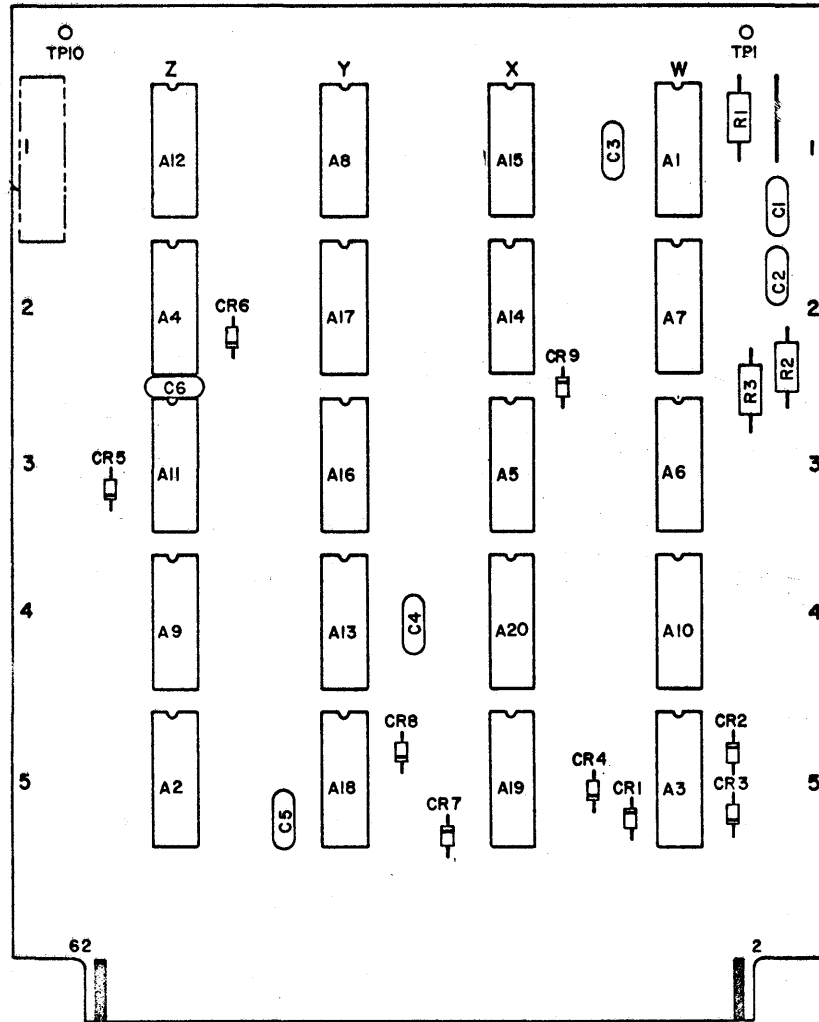


Figure C-4
Card 7AHD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	7					
A2			SAME AS A1						
A3		51577500	INTEGRATED CKT; Dual gate element	7					
A4		51578100	INTEGRATED CKT; Triple 3 input gate	4					
A5			SAME AS A1						
A6		51577600	INTEGRATED CKT; Dual buffer element	2					
A7			SAME AS A3						
A8			SAME AS A4						
A9			SAME AS A1						
A10			SAME AS A1						
A11			SAME AS A3						
A12			SAME AS A1						
A13			SAME AS A4						
A14			SAME AS A6						
A15			SAME AS A3						
A16			SAME AS A3						
A17			SAME AS A3						
A18			SAME AS A4						
A19			SAME AS A1						
A20			SAME AS A3						
C1		51000989	CAP.,FXD,CERAMIC; .1 uf 25vdcw	2					
C2			SAME AS C1						
C3		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
Thru C6									
CR1		51007365	SEMICONDUCTOR DEVICE,DIODE; 10V Si	9					
Thru CR9									
R1		51000402	RESISTOR,FXD,COMP; 5.6K 5% 1/4W	2					
R2			SAME AS R1						
R3		51000254	RESISTOR,FXD,COMP; 470 ohm 5% 1/4W	1					

217

90004253

CARD 7AHD

C-11

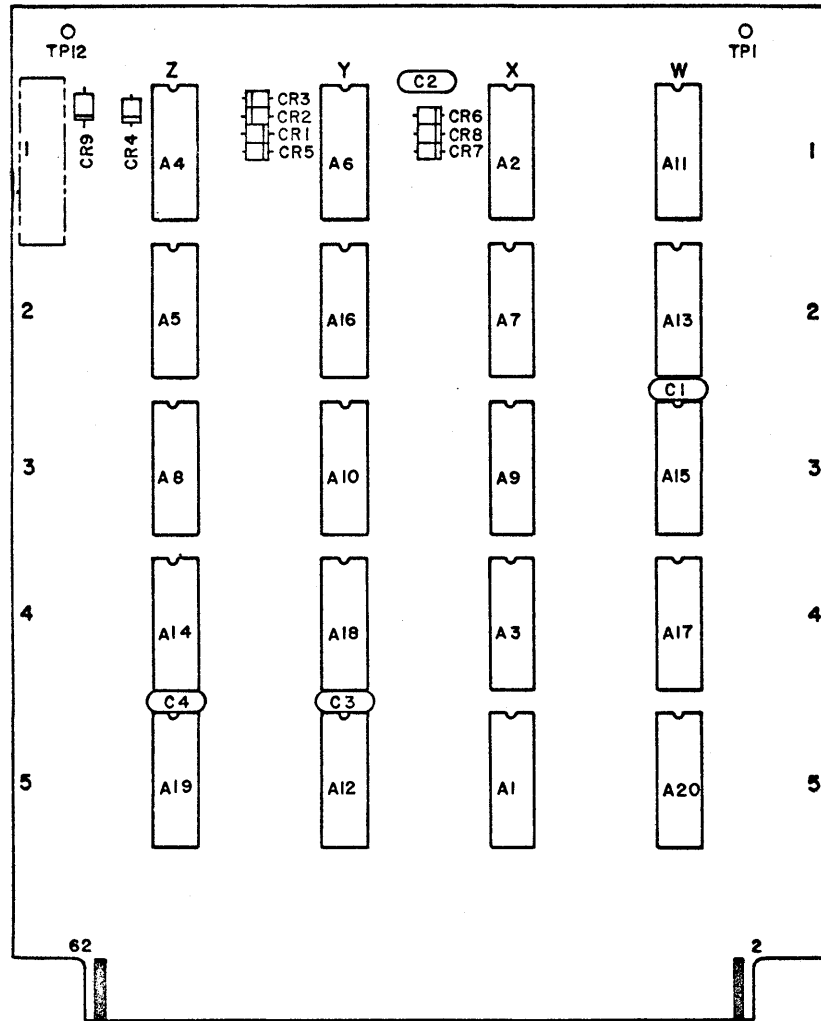


Figure C-5
Card 7AJD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	6					
A2		51578000	INTEGRATED CKT; Clocked flip flop	8					
A3			SAME AS A1						
A4		51577500	INTEGRATED CKT; Dual gate element	2					
A5			SAME AS A1						
A6			SAME AS A4						
A7			SAME AS A2						
A8			SAME AS A1						
A9			SAME AS A2						
A10		51578100	INTEGRATED CKT; Triple 3 input gate	3					
A11			SAME AS A2						
A12			SAME AS A10						
A13			SAME AS A2						
A14			SAME AS A1						
A15			SAME AS A2						
A16			SAME AS A10						
A17			SAME AS A2						
A18			SAME AS A1						
A19		51577600	INTEGRATED CKT; Dual buffer element	1					
A20			SAME AS A2						
C1 Thru C4		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
CR1 Thru. CR9		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	9					

217

90004256

CARD 7AJD

C-13

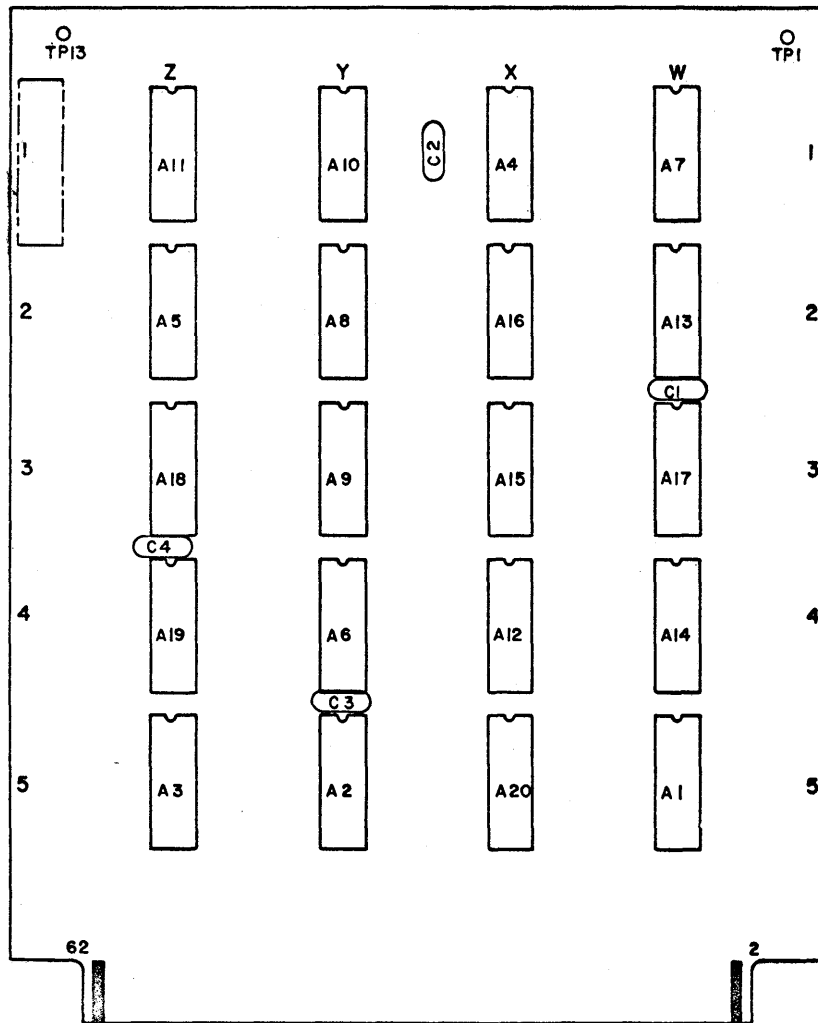


Figure C-6
Card 7ALD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	17					
A2		51577600	INTEGRATED CKT; Dual buffer element	1					
A3			SAME AS A1						
Thru A18									
A19		51578100	INTEGRATED CKT; Triple 3 input gate	2					
A20			SAME AS A19						
C1		51001119	CAP.,FXD,CERAMIC; .01uf 25vdcw	4					
Thru C4									

217

90004262

CARD 7ALD

C-15

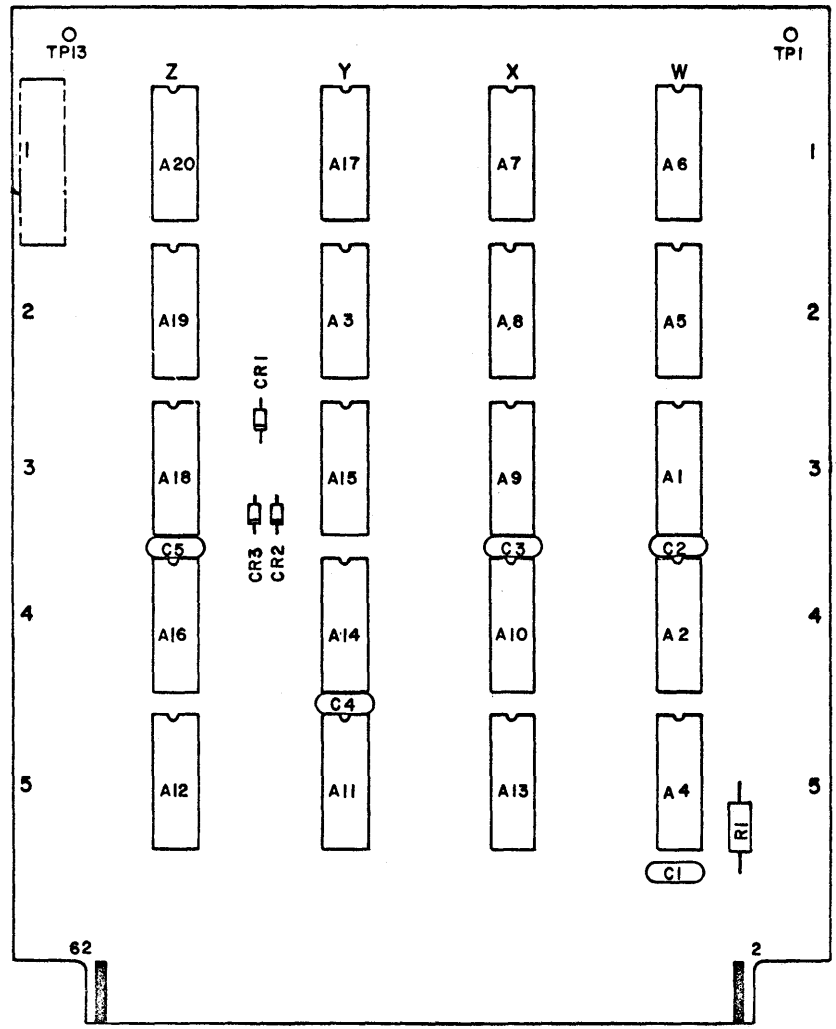


Figure C-7
Card 7AND

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	10					
A2		51578100	INTEGRATED CKT; Triple 3 input gate	2					
A3		51577500	INTEGRATED CKT; Dual gate element	4					
A4			SAME AS A1						
Thru									
A12									
A13			SAME AS A2						
A14			SAME AS A3						
A15			SAME AS A3						
A16		51578000	INTEGRATED CKT; Clocked flip flop	4					
A17			SAME AS A3						
A18			SAME AS A16						
A19			SAME AS A16						
A20			SAME AS A16						
C1		51000989	CAP.,FXD,CERAMIC; .1uf 25vdcw	1					
C2		51001119	CAP.,FXD,CERAMIC; .01uf 25vdcw	4					
Thru									
C5									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	3					
Thru									
CR3									
RI		51000402	RESISTOR,FXD,COMP; 5.6K 5% 1/4W	1					

217

90004268

CARD 7AND

C-17

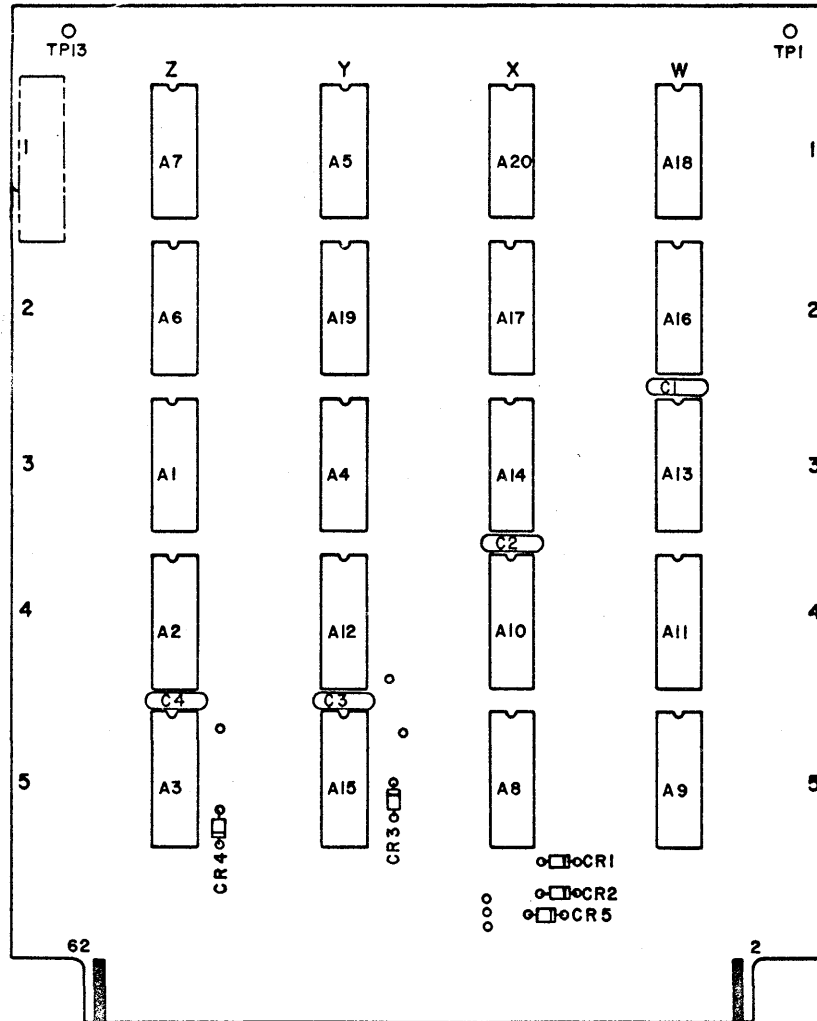


Figure C-8
Card 7APD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51578100	INTEGRATED CKT; Triple 3 input gate	1					
A2		51577900	INTEGRATED CKT; Quad 2 input gate	9					
Thru A5									
A6		51577600	INTEGRATED CKT; Dual buffer element	3					
A7			SAME AS A6						
A8		51578000	INTEGRATED CKT; Clocked flip flop	7					
A9			SAME AS A2						
A10			SAME AS A8						
A11			SAME AS A2						
A12			SAME AS A8						
A13			SAME AS A2						
A14			SAME AS A8						
A15			SAME AS A6						
A16			SAME AS A2						
A17			SAME AS A8						
A18			SAME AS A2						
A19			SAME AS A8						
A20			SAME AS A8						
C1		51001119	CAP.,FXD,CERAMIC; .01uf 25vdcw	4					
Thru C4									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	5					
Thru CR5									

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90004271/A

CARD 7APD

C-19

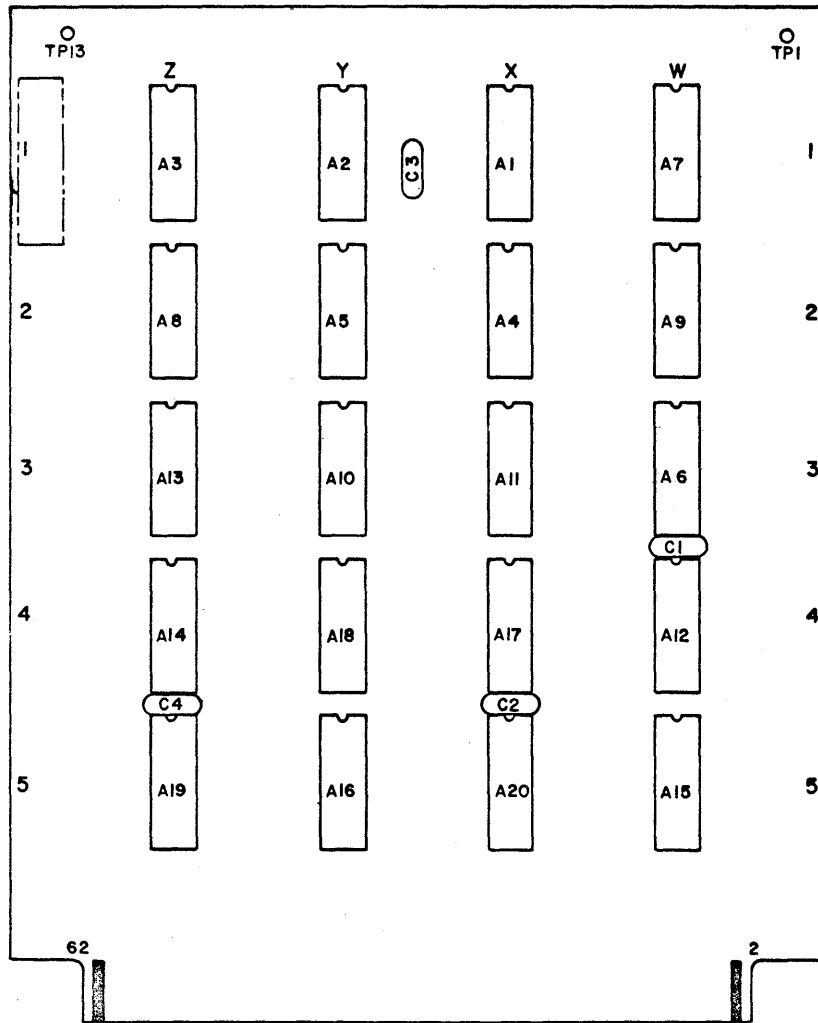


Figure C-9
Card 7AQD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51578000	INTEGRATED CKT; Clocked flip flop	5					
A2		51578100	INTEGRATED CKT; Triple 3 input gate	4					
A3		51577900	INTEGRATED CKT; Quad 2 input gate	8					
A4			SAME AS A1						
A5			SAME AS A2						
A6			SAME AS A3						
Thru A8									
A9		51577500	INTEGRATED CKT; Dual gate element	2					
A10			SAME AS A2						
A11			SAME AS A1						
A12			SAME AS A2						
A13		51577600	INTEGRATED CKT; Dual buffer element	1					
A14			SAME AS A3						
A15			SAME AS A9						
A16			SAME AS A3						
A17			SAME AS A1						
A18			SAME AS A3						
A19			SAME AS A3						
A20			SAME AS A1						
C1 Thru C4		51001119	CAP., FXD, CERAMIC; .01uf 25vdcw	4					

217

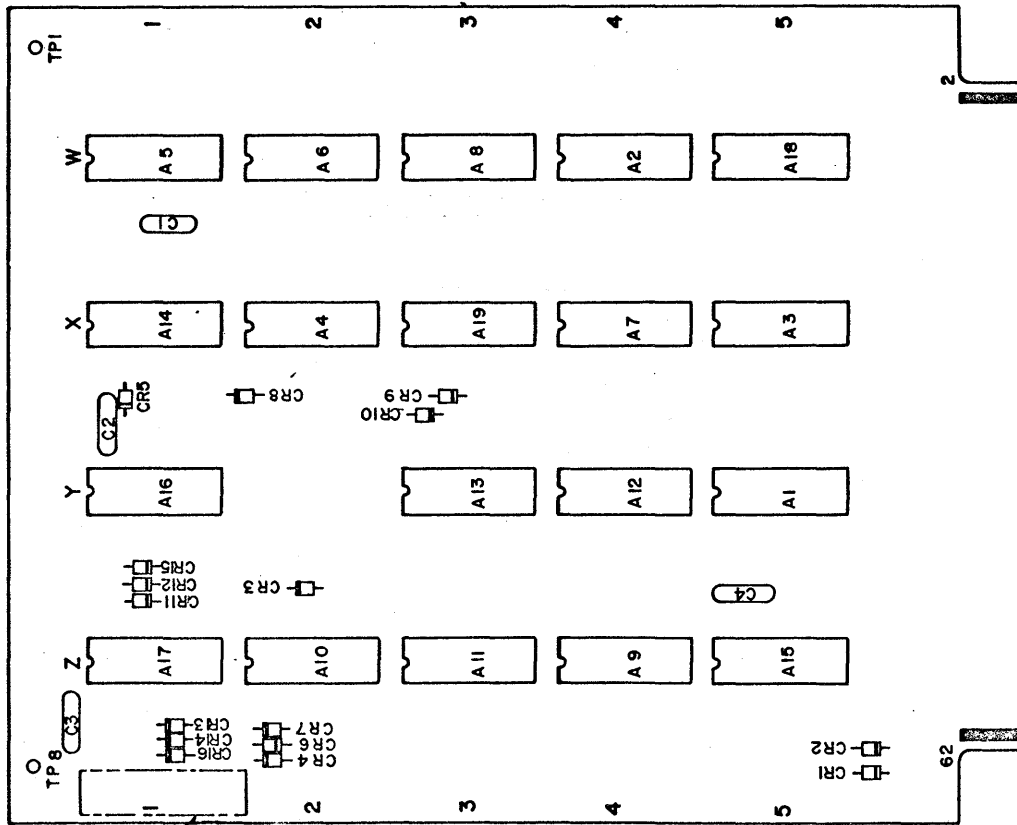
900C4274

CARD 7A0D

C-21

90004280

Figure C-10
Card 7ASD



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577500	INTEGRATED CKT; Dual gate element	9					
A2		51577900	INTEGRATED CKT; Quad 2 input gate	6					
A3		51578100	INTEGRATED CKT; Triple 3 input gate	4					
Thru A5									
A6			SAME AS A2						
A7			SAME AS A1						
A8			SAME AS A2						
A9			SAME AS A1						
A10			SAME AS A2						
A11			SAME AS A2						
A12			SAME AS A1						
Thru A14									
A15			SAME AS A3						
A16			SAME AS A1						
A17			SAME AS A1						
A18			SAME AS A2						
A19			SAME AS A1						
C1		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
Thru C4									
CRI		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	16					
Thru CRI6									

217

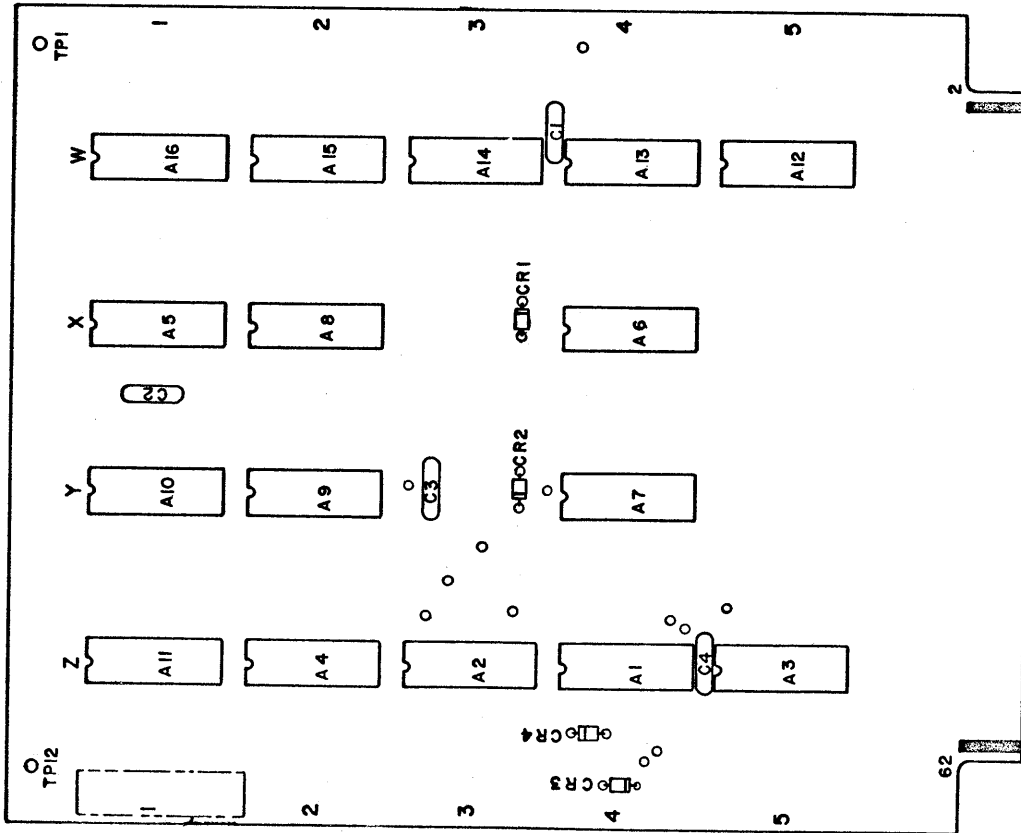
90004280

CARD 7ASD

C-23

90004286

Figure C-11
Card 7AUD



821284001

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577500	INTEGRATED CKT; Dual gate element	3					
A2			SAME AS A1						
A3		51578100	INTEGRATED CKT; Triple 3 input gate	2					
A4		51577900	INTEGRATED CKT; Quad 2 input gate	4					
A5		51578000	INTEGRATED CKT; Clocked flip flop	7					
A6			SAME AS A1						
A7			SAME AS A4						
A8			SAME AS A5						
A9			SAME AS A3						
A10			SAME AS A4						
A11			SAME AS A4						
A12			SAME AS A5						
Thru A16									
C1		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
Thru C4									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	4					
Thru CR4									

217

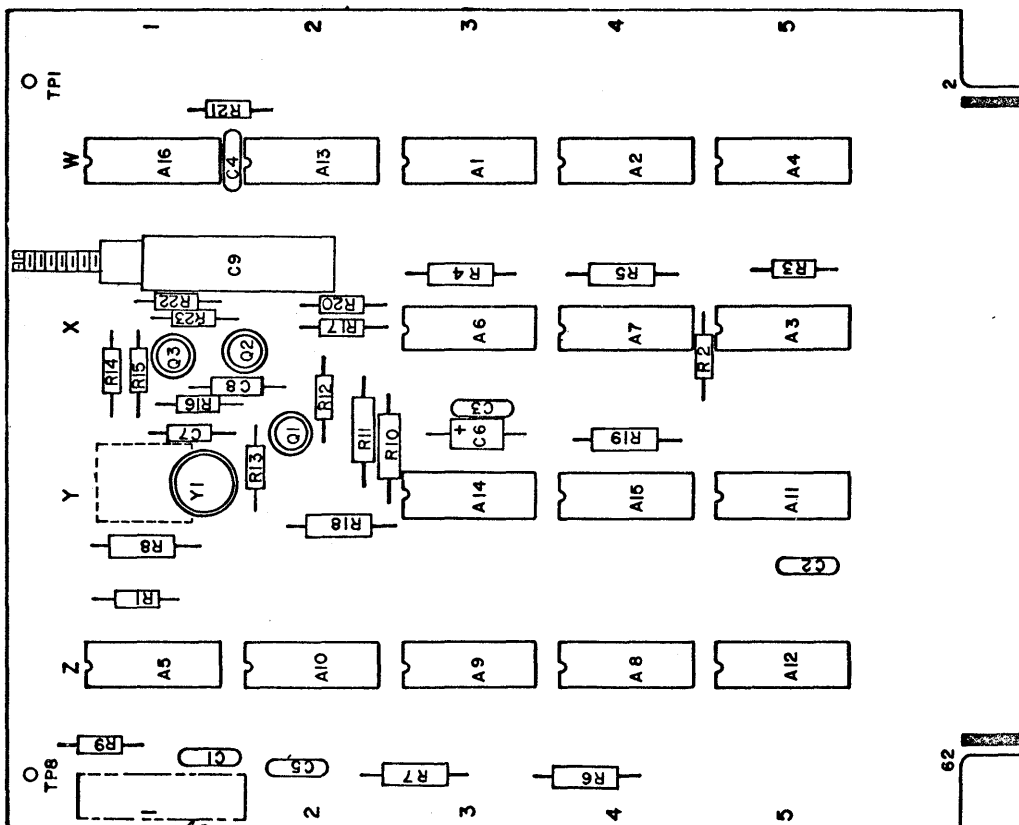
90004286/A

CARD 7AUD

C-25

90004289

Figure C-12
Card 7AVD



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
	A1	51577600	INTEGRATED CKT; Dual buffer element	5		R17	51000250	RESISTOR,FXD,COMP;330 ohms 5% 1/4W	1
	A2		SAME AS A1			R18		SAME AS R4	
	A3	51578100	INTEGRATED CKT;Triple 3 input gate	1		R19		SAME AS R4	
	A4		SAME AS A1			R20		SAME AS R3	
	A5	51577500	INTEGRATED CKT; Dual gate element	1		R21		SAME AS R3	
	A6	51623200	INTEGRATED CKT; Clocked flip flop	7		Y1	51620500	CRYSTAL UNIT, QUARTZ; 20MHz	1
	Thru					R22	51000271	RESISTOR,FXD,COMP; 3.3K, 5% 1/4W	1
	A10					R23		SAME AS R16	
	A11		SAME AS A1						
	A12	51578000	INTEGRATED CKT; Clocked flip flop	2					
	A13		SAME AS A1						
	A14		SAME AS A6						
	A15		SAME AS A6						
	A16		SAME AS A12						
	C1	51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
	Thru								
	C4								
	C5	51000989	CAP.,FXD,CERAMIC; .1 uf 25vdcw	1					
	C6	51617104	CAP.,FXD,ELECT; 1.0 uf 35vdcw	1					
	C7	51000985	CAP.,FXD,CERAMIC; 18uuf 50vdcw	1					
	C8	51000956	CAP.,FXD,CERAMIC: 33uuf 100vdcw	1					
	C9	51001122	CAP.,VAR.,CERAMIC: 5uuf to 50uuf	1					
	Q1	51003059	TRANSISTOR; NPN S1 T018 case	3					
	Thru								
	Q3								
	R1	51000258	RESISTOR,FXD,COMP; 680 ohms 5% 1/4W	2					
	R2		SAME AS R1						
	R3	51000262	RESISTOR,FXD,COMP; 1.0K 5% 1/4W	5					
	R4	51000476	RESISTOR,FXD,COMP; 2K 5% 1/4W	7					
	Thru								
	R8								
	R9	51000402	RESISTOR,FXD,COMP; 5.6K 5% 1/4W	1					
	R10	51000303	RESISTOR,FXD,COMP; 120 ohms 5% 1/2W	2					
	R11		SAME AS R10						
	R12	51000247	RESISTOR,FXD,COMP; 220 ohms 5% 1/4W	1					
	R13		SAME AS R3						
	R14	51000249	RESISTOR,FXD,COMP; 300 ohms 5% 1/4W	1					
	R15		SAME AS R3						
	R16	51000266	RESISTOR,FXD,COMP; 1.5K 5% 1/4W	2					
						PART NO. 90004289			REVISION B
						TITLE Card 7AVD			

C-27

217

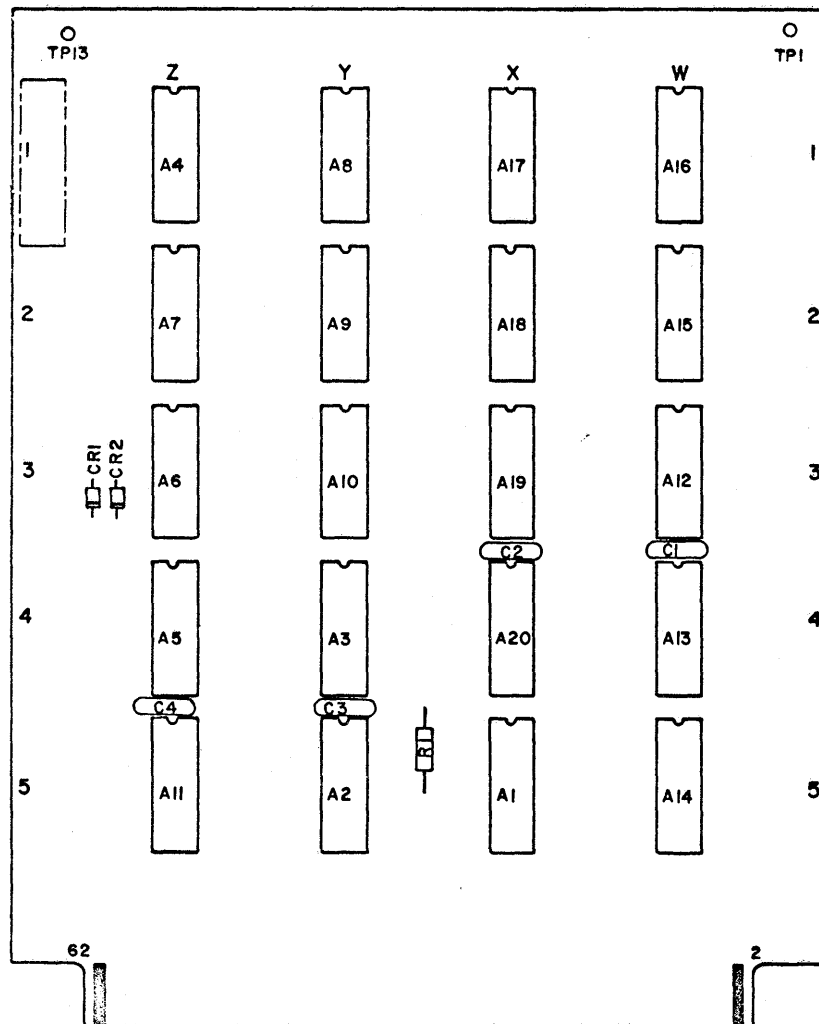


Figure C-13
Card 7AWD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	4					
A2		51577600	INTEGRATED CKT; Dual buffer element	4					
A3			SAME AS A1						
A4			SAME AS A2						
A5		51578000	INTEGRATED CKT; Clocked flip flop	12					
Thru									
A10									
A11			SAME AS A1						
A12			SAME AS A1						
A13			SAME AS A2						
A14			SAME AS A2						
A15			SAME AS A5						
Thru									
A20									
C1		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
Thru									
C4									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	2					
CR2			SAME AS CR1						
R1		51000262	RESISTOR,FXD,COMP; 1.0K 5% 1/4W	1					

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90004292/A

CARD 7AWD

C-29

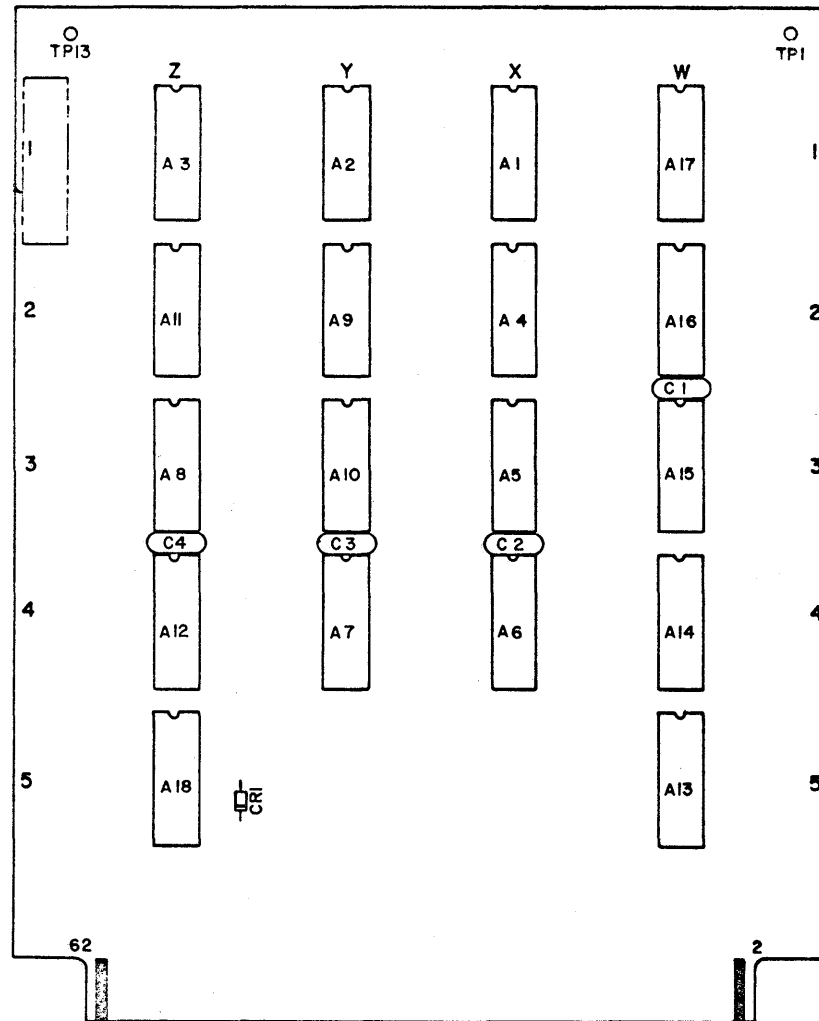


Figure C-14
Card 7AXD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	5					
A2		51577600	INTEGRATED CKT; Dual buffer element	10					
Thru A4									
A5			SAME AS A1						
A6			SAME AS A2						
Thru A8									
A9			SAME AS A1						
A10			SAME AS A2						
Thru A12									
A13		51578000	INTEGRATED CKT; Clocked flip flop	2					
A14			SAME AS A13						
A15			SAME AS A1						
A16			SAME AS A1						
A17		51578100	INTEGRATED CKT; Triple 3 input gate	1					
A18			SAME AS A2						
C1		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
Thru C4									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	1					

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90004295

CARD 7AXD

C-31

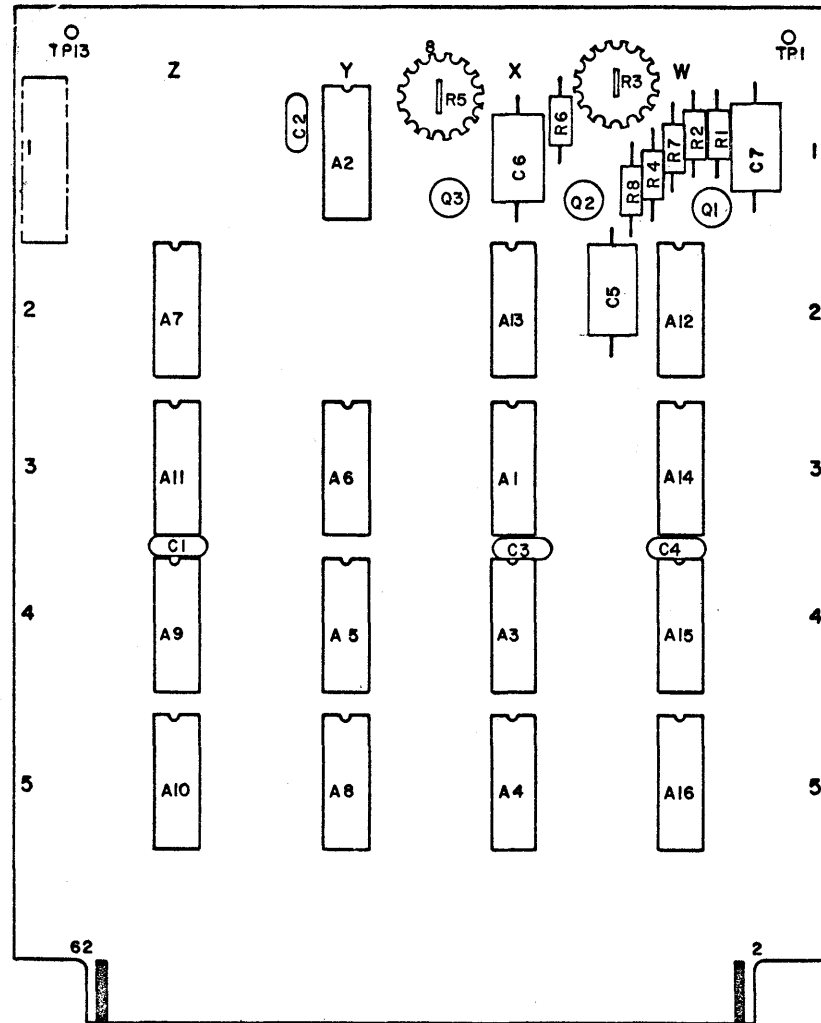


Figure 7-15
Card 7AYD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	2					
A2		51578000	INTEGRATED CKT; Clocked flip flop	3					
A3		51578100	INTEGRATED CKT; Triple 3 input gate	3					
A4		51577600	INTEGRATED CKT; Dual buffer element	7					
A5			SAME AS A3						
A6			SAME AS A4						
A7			SAME AS A2						
A8			SAME AS A4						
A9			SAME AS A3						
A10			SAME AS A4						
A11			SAME AS A2						
A12		51577500	INTEGRATED CKT; Dual gate element	1					
A13			SAME AS A1						
A14			SAME AS A4						
Thru A16									
C1		51001119	CAP.,FXD,CERAMIC; .01uf 25vdcw	4					
Thru C4									
C5		51001056	CAP.,FXD,MICA; 100uuf 500vdcw	3					
Thru C7									
Q1		51565600	TRANSISTOR; NPN Si ϕ 097a Case	3					
Thru Q3									
R1		51000255	RESISTOR,FXD,COMP; 510 ohms 5% 1/4W	2					
R2		51000246	RESISTOR,FXD,COMP; 200 ohms 5% 1/4W	3					
R3		51001425	RESISTOR,VAR; Minat WW 5K 4% 1.5W	2					
R4			SAME AS R2						
R5			SAME AS R3						
R6		51000249	RESISTOR,FXD,COMP; 300 ohms 5% 1/4W	1					
R7			SAME AS R2						
R8			SAME AS R1						

217

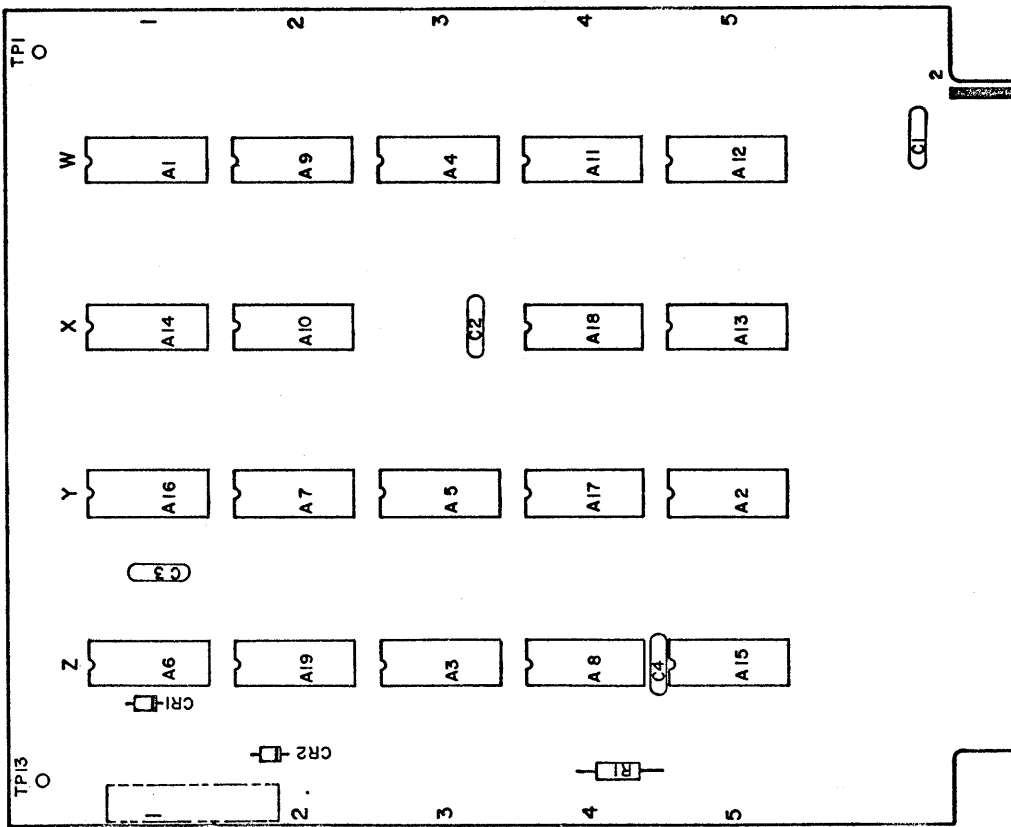
90004298

CARD 7AYD

C-33

90004301

Figure C-16
Card 7AZD



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51578100	INTEGRATED CKT; Triple 3 input gate	7					
A2		51577900	INTEGRATED CKT; Quad 2 input gate	8					
A3			SAME AS A1						
A4			SAME AS A2						
A5			SAME AS A2						
A6		51577500	INTEGRATED CKT; Dual gate element	2					
A7			SAME AS A2						
A8			SAME AS A2						
A9			SAME AS A1						
A10		51577600	INTEGRATED CKT; Dual buffer element	2					
A11			SAME AS A1						
A12			SAME AS A2						
A13			SAME AS A1						
A14			SAME AS A10						
A15			SAME AS A2						
A16			SAME AS A1						
A17			SAME AS A2						
A18			SAME AS A1						
A19			SAME AS A6						
C1 Thru C4		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
CR1 CR2		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	2					
R1		51000262	RESISTOR,FXD,COMP; 1.0K 5% 1/4W	1					

217

90004301

CARD 7AZD

C-35

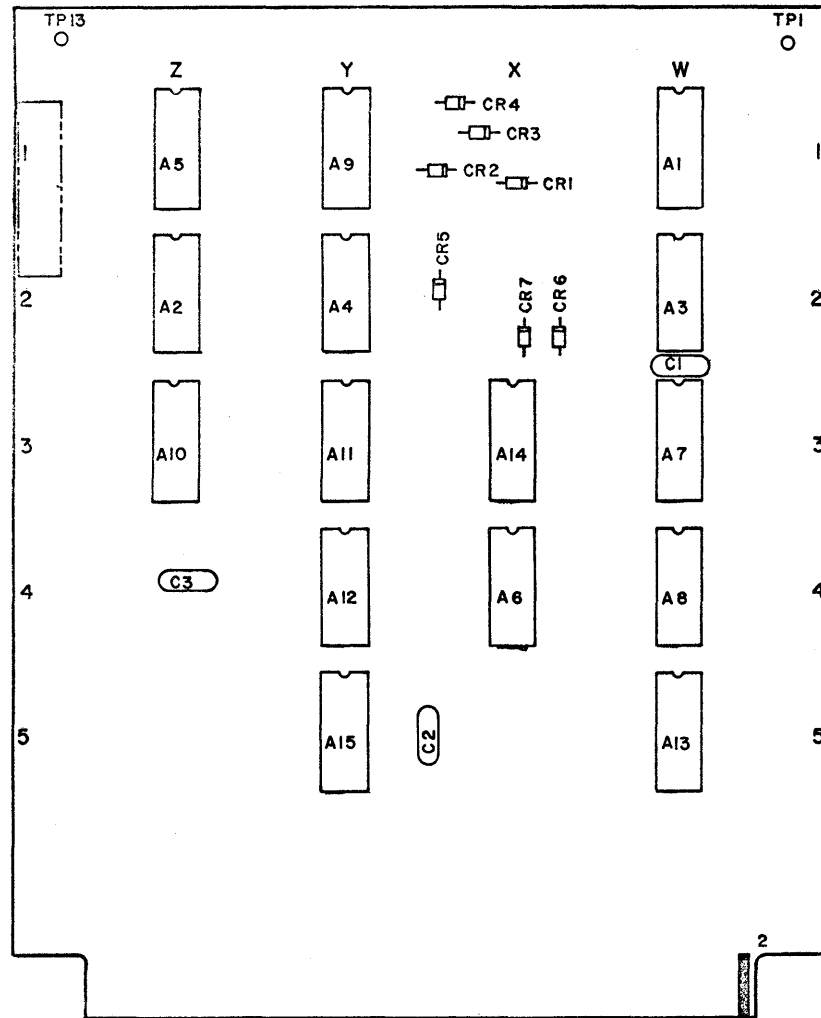


Figure C-17
Card 7BAD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51578000	INTEGRATED CKT; Clocked flip flop	6					
A2		51577900	INTEGRATED CKT; Quad 2 input gate	3					
A3			SAME AS A1						
A4		51578100	INTEGRATED CKT; Triple 3 input gate	3					
A5			SAME AS A2						
A6			SAME AS A4						
A7			SAME AS A1						
A8			SAME AS A1						
A9		51577500	INTEGRATED CKT; Dual gate element	2					
A10			SAME AS A4						
A11		51577600	INTEGRATED CKT; Dual buffer element	1					
A12			SAME AS A2						
A13			SAME AS A1						
A14			SAME AS A9						
A15			SAME AS A1						
C1		51001119	CAP.,FXD,CERAMIC;.01uf 25vdcw	3					
Thru C3									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	7					
Thru CR7									

217

90004304

CARD 7BAD

C-37

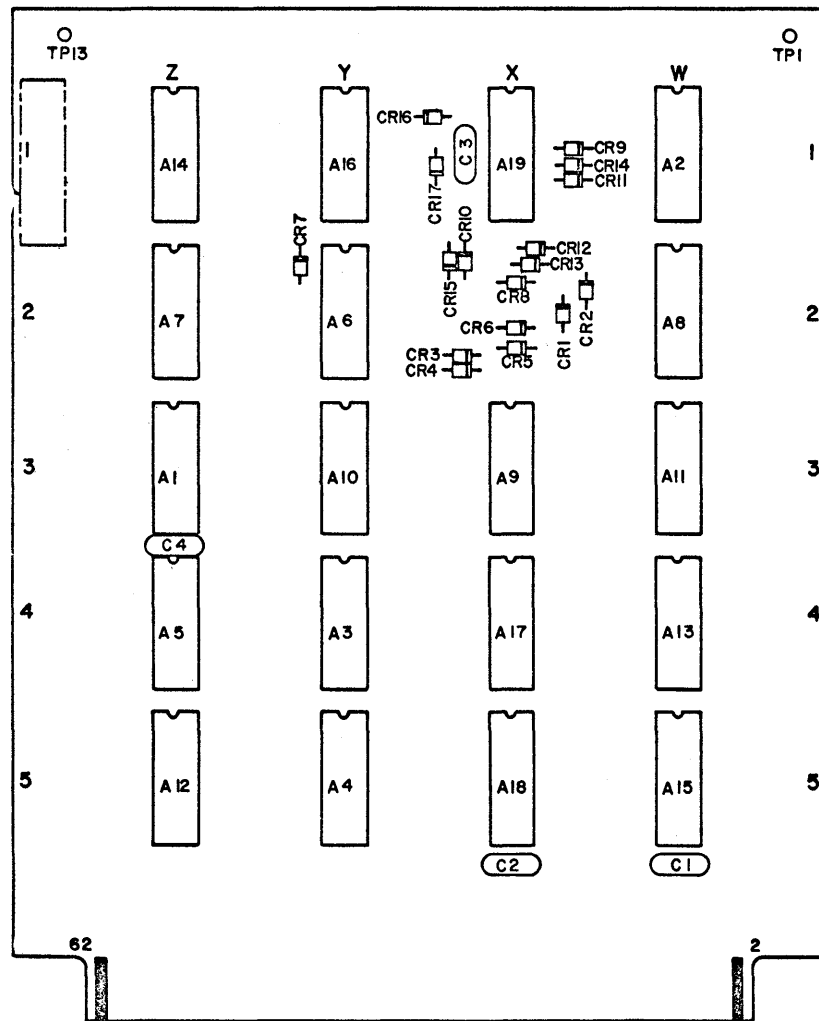


Figure C-18
Card 7BBD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51578100	INTEGRATED CKT; Triple 3 input gate	2					
A2		51578000	INTEGRATED CKT; Clocked flip flop	7					
A3		51577500	INTEGRATED CKT; Dual gate element	5					
A4		51577900	INTEGRATED CKT; Quad 2 input gate	4					
A5			SAME AS A4						
A6			SAME AS A3						
A7			SAME AS A4						
A8			SAME AS A2						
A9			SAME AS A1						
A10			SAME AS A3						
A11			SAME AS A2						
A12		51577600	INTEGRATED CKT; Dual buffer element	1					
A13			SAME AS A2						
A14			SAME AS A4						
A15			SAME AS A2						
A16			SAME AS A3						
A17			SAME AS A2						
A18			SAME AS A2						
A19			SAME AS A3						
C1		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
Thru C4									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	17					
Thru CR17									

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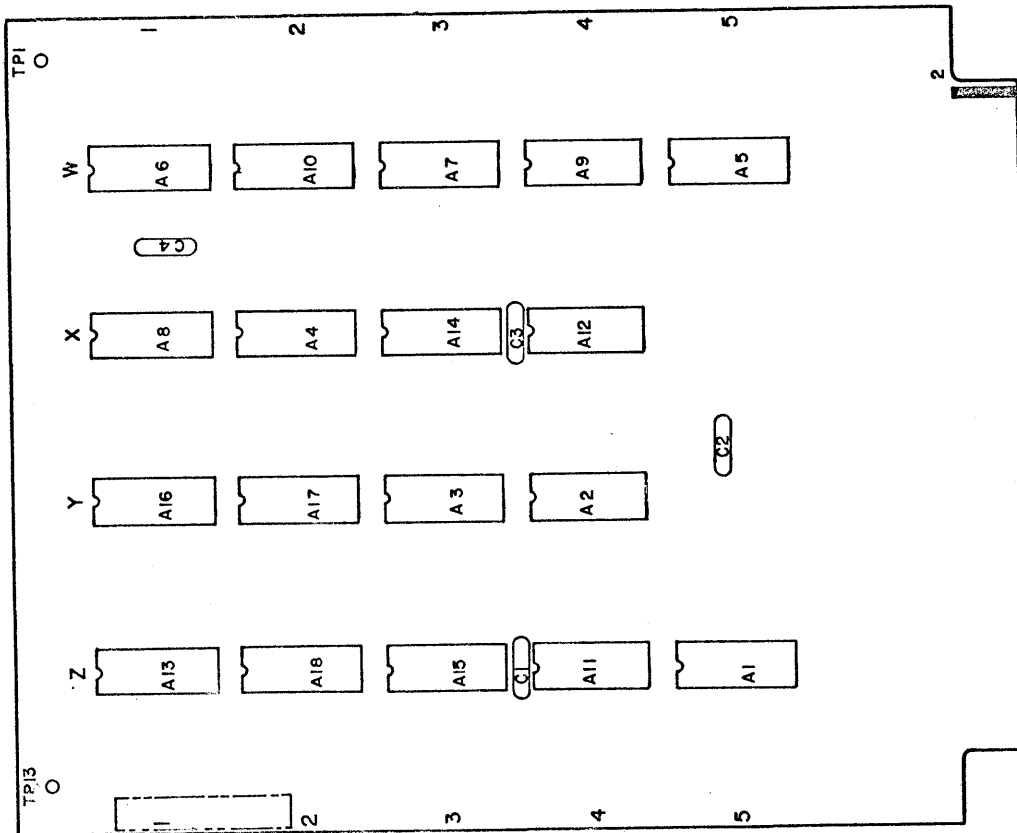
90004307/A

CARD 788D

C-39

90004310

Figure C-19
Card 7BCD



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1 Thru A3		51577900	INTEGRATED CKT; Quad 2 input gate	10					
A4 A5 A6		51578100	INTEGRATED CKT; Triple 3 input gate SAME AS A1 SAME AS A4	5					
A7 A8 A9 A10 A11 Thru A13 A14 A15 A16 A17 A18		51577600	INTEGRATED CKT; Dual buffer element SAME AS A1 SAME AS A1 SAME AS A4 SAME AS A1 SAME AS A1 SAME AS A4 SAME AS A7 SAME AS A7	3					
C1 Thru C4		51001119	CAP.,FXD,CERAMIC;.01uf 25vdcw	4					

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90004310

CARD 7BCD

C-41

90004313

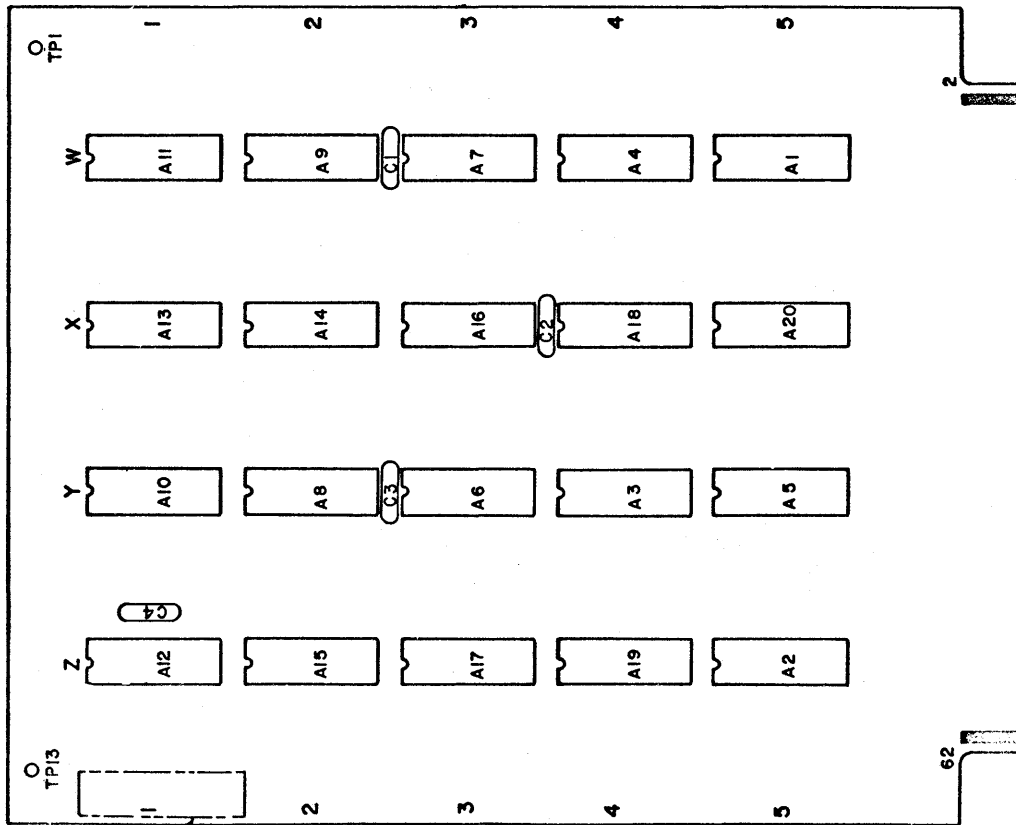


Figure C-20
Card 7BDD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	3					
A2			SAME AS A1						
A3		51578000	INTEGRATED CKT; Clocked flip flop	17					
A4			SAME AS A3						
A5			SAME AS A1						
A6			SAME AS A3						
Thru A20									
C1 Thru C4		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					

217

90004313

CARD 7BDD

C-43

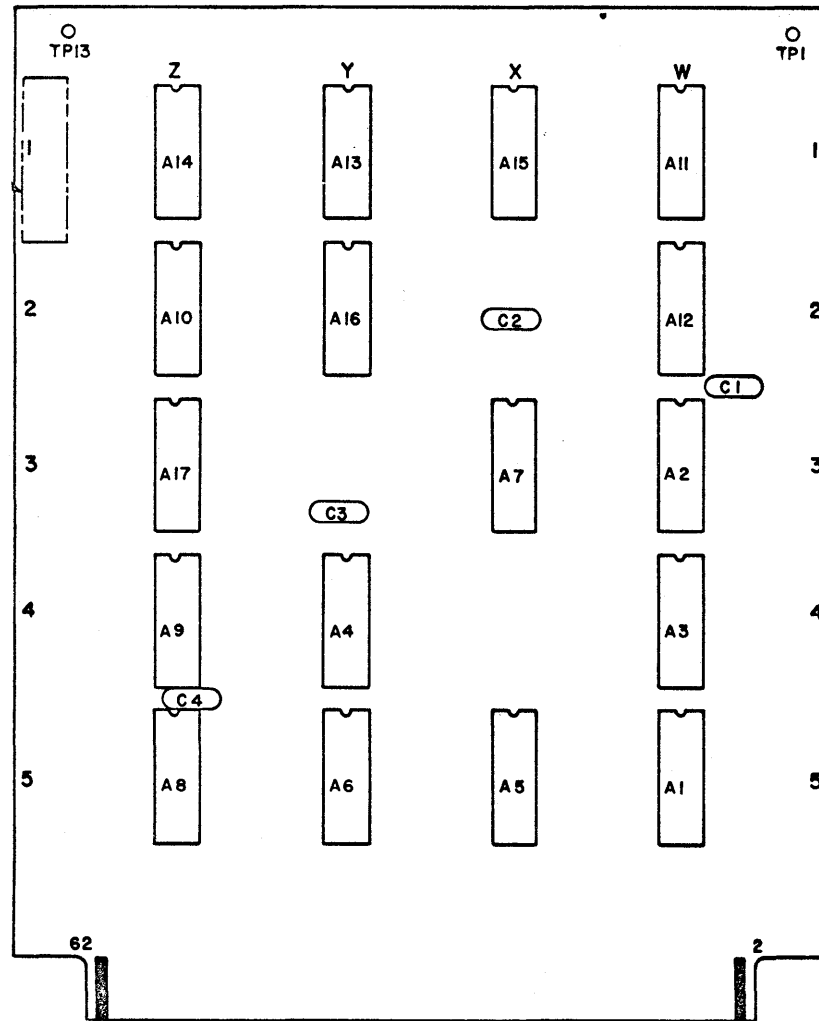


Figure C-21
Card 7BHD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51578100	INTEGRATED CKT; Triple 3 input gate	8					
A2		51577500	INTEGRATED CKT; Dual gate element	6					
A3		51577900	INTEGRATED CKT; Quad 2 input gate	2					
A4			SAME AS A2						
A5			SAME AS A1						
A6			SAME AS A1						
A7			SAME AS A3						
A8		51577600	INTEGRATED CKT; Dual buffer element	1					
A9			SAME AS A2						
A10			SAME AS A1						
A11			SAME AS A1						
A12			SAME AS A1						
A13			SAME AS A2						
A14			SAME AS A1						
A15			SAME AS A1						
A16			SAME AS A2						
A17			SAME AS A2						
C1 Thru C4		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					

217

90004325

CARD 7BHD

C-45

90004328

The diagram shows a circuit board layout with components arranged in columns. On the left, there are two vertical strips labeled '62' and '2'. On the right, there are two vertical strips labeled '2' and '62'. The board is divided into sections labeled Z, Y, X, W, and A1 through A12. Components include resistors (R1-R22), capacitors (C1-C17), and diodes (Q1-Q4). Connections are shown with lines and dots. The board has two circular terminals labeled 'TPI' at the top corners.

Figure C-22
Card 7BJD

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82128400

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82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	5	R17			SAME AS R4	
A2		51577600	INTEGRATED CKT; Dual buffer element	2	R18		51000253	RESISTOR,FXD,COMP; 430 ohm.5% 1/4W	2
A3			SAME AS A1		R19			SAME AS R4	
A4		51578100	INTEGRATED CKT; Triple 3 input gate	2	R20			SAME AS R18	
A5			SAME AS A2		R21			SAME AS R4	
A6			SAME AS A4		R22		51000258	RESISTOR,FXD,COMP; 680 ohm 5% 1/4W	1
A7			SAME AS A1						
A8		51578000	INTEGRATED CKT; Clocked dlip-flop	1					
A9		51577500	INTEGRATED CKT; Dual gate element	1					
A10			SAME AS A1						
A11			SAME AS A1						
A12		51577800	INTEGRATED CKT; Dual power gate	1					
C1		51001119	CAP.,FXD,CERAMIC; .01uf 25vdcw	16					
C2		51617104	CAP.,FXD,ELECT.; 1 uf 35vdcw	1					
C3			SAME AS C1						
Thru C17									
CR1		51001248	SEMICONDUCTOR DEVICE,DIODE; Zener	1					
CR2		51001310	SEMICONDUCTOR DEVICE,DIODE; Zener	1					
CR3		51001241	SEMICONDUCTOR DEVICE,DIODE; 0.64V	1					
CR4		51001275	SEMICONDUCTOR DEVICE,DIODE; 20V Si	1					
CR5		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	3					
CR6			SAME AS CR5						
CR7			SAME AS CR5						
Q1		51003104	TRANSISTOR; PNP Si T018 case	1					
Q2		51565600	TRANSISTOR; NPN Si R097a case	1					
Q3		51580600	TRANSISTOR; NPN Si R097 case	2					
Q4			SAME AS Q3						
R1		51000260	RESISTOR,FXD,COMP; 820 ohm 5% 1/4W	1					
R2		51000268	RESISTOR,FXD,COMP; 2K 5% 1/4W	2					
R3			SAME AS R2						
R4		51000262	RESISTOR,FXD,COMP; 1K 5% 1/4W	5					
R5		51620400	RESISTOR,FXD,COMP; 130K 2% 1/4W	1					
R6		51000236	RESISTOR,FXD,COMP; 10 ohms 5% 1/4W	1					
R7		51000246	RESISTOR,FXD,COMP; 200 ohm 5% 1/4W	1					
R8		51000250	RESISTOR,FXD,COMP; 330 ohm 5% 1/4W	1					
R9			SAME AS R4						
R10		51000402	RESISTOR,FXD,COMP; 5.6K 5% 1/4W	7					
Thru R16									

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90004328/A

CARD 7BJD

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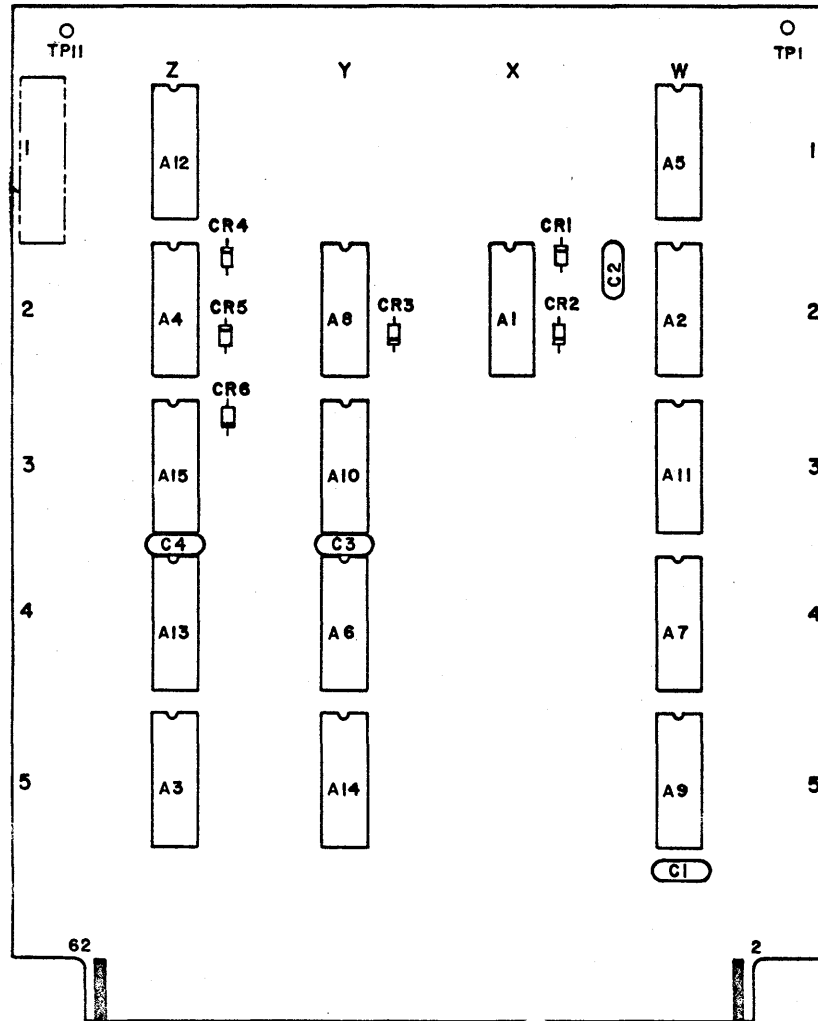


Figure C-23
Card 7BRD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577500	INTEGRATED CKT; Dual gate element	2					
A2		51578000	INTEGRATED CKT; Clocked flip flop	5					
A3		51577900	INTEGRATED CKT; Quad 2 input gate	5					
A4			SAME AS A3						
A5			SAME AS A2						
A6		51578100	INTEGRATED CKT; Triple 3 input gate	2					
A7			SAME AS A2						
A8		51577600	INTEGRATED CKT; Dual buffer element	1					
A9			SAME AS A2						
A10			SAME AS A1						
A11			SAME AS A2						
A12			SAME AS A3						
A13			SAME AS A3						
A14			SAME AS A6						
A15			SAME AS A3						
C1 Thru C4		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
CR1 Thru CR6		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	6					
									217
									90004349
									CARD 7BRD

C-49

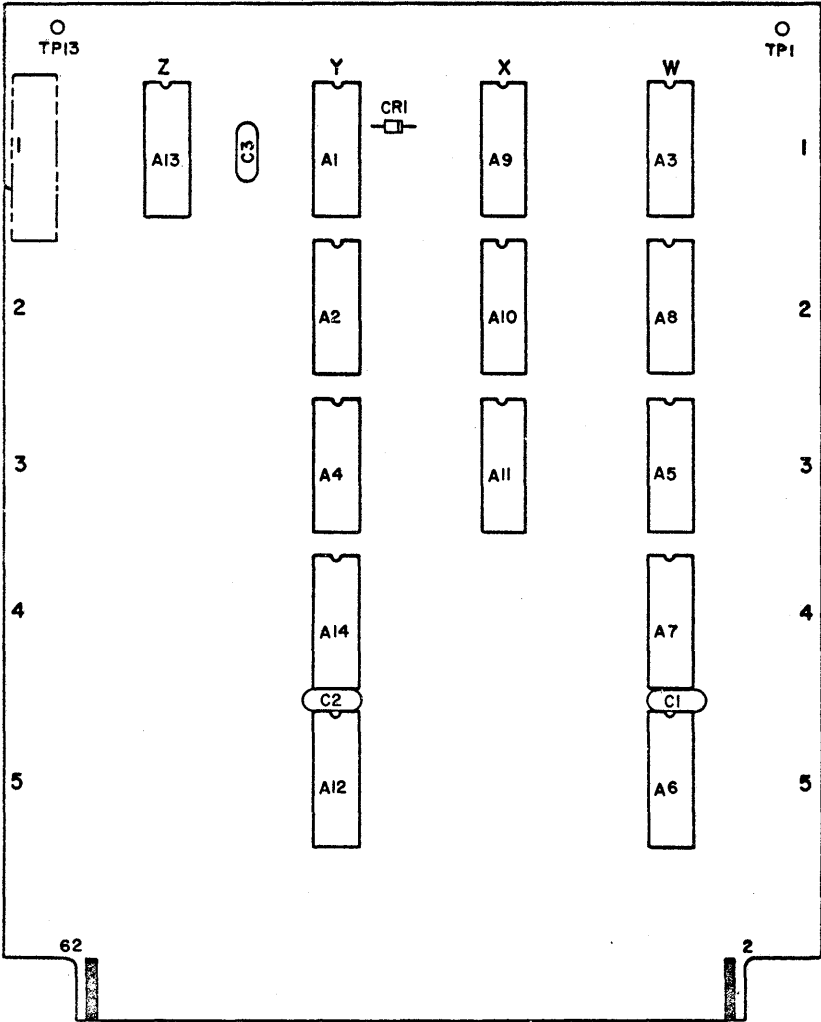


Figure C-24
Card 7BSD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577500	INTEGRATED CKT;Dual gate element	3					
A2		51577900	INTEGRATED CKT; Quad 2 input gate	5					
A3		51578000	INTEGRATED CKT; Clocked flip flop	4					
A4			SAME AS A2						
A5			SAME AS A3						
A6		51578100	INTEGRATED CKT; Triple 3 input gate	2					
A7			SAME AS A3						
A8			SAME AS A3						
A9			SAME AS A1						
A10			SAME AS A6						
A11			SAME AS A1						
A12			SAME AS A2						
Thru A14									
C1		51001119	CAP.,FXD,CERAMIC; .01uf 25vdcw	3					
Thru C3									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	1					

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90004352

CARD 7BSD

C-51

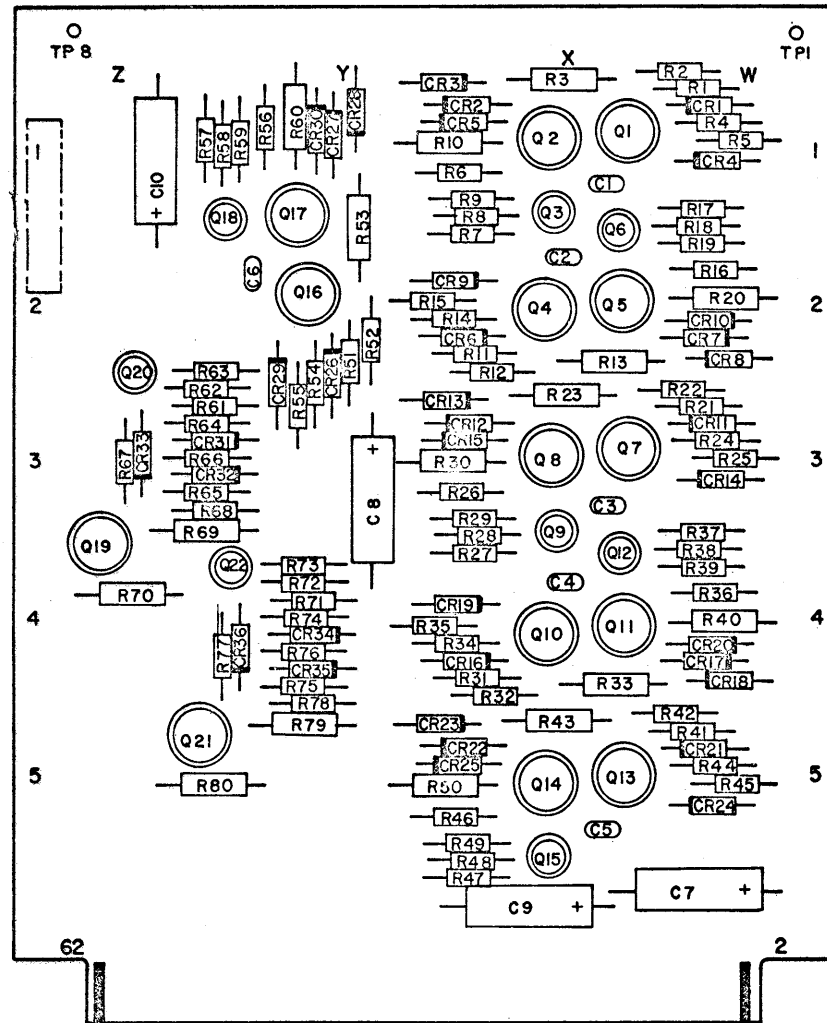


Figure C-25
Card 7BTD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
C1 Thru C6		51630800	CAP.,FXD,MICA; 150uuf 500vdcw	6	Q3		51003059	TRANSISTOR; NPN T018 case	8
C7 Thru C10		51573900	CAP.,FXD,ELEC; 10uf 25vdcw	4	Q4			SAME AS Q1	
CR1		51001239	SEMICONDUCTOR DEVICE,DIODE; 75V Si	6	Q5			SAME AS Q1	
CR2 Thru CR5		51001289	SEMICONDUCTOR DEVICE,DIODE; 80V Ge	24	Q6			SAME AS Q3	
CR6			SAME AS CR1		Q7			SAME AS Q1	
CR7 Thru CR10			SAME AS CR2		Q8			SAME AS Q1	
CR11			SAME AS CR1		Q9			SAME AS Q3	
CR12 Thru CR15			SAME AS CR2		Q10			SAME AS Q1	
CR16			SAME AS CR1		Q11			SAME AS Q1	
CR17 Thru CR20			SAME AS CR2		Q12			SAME AS Q3	
CR21			SAME AS CR1		Q13			SAME AS Q1	
CR22 Thru CR25			SAME AS CR2		Q14			SAME AS Q1	
CR26			SAME AS CR1		Q15			SAME AS Q3	
CR27 Thru CR30			SAME AS CR2		Q16			SAME AS Q1	
CR31		51001277	SEMICONDUCTOR DEVICE,DIODE; 10V Ge	4	Q17			SAME AS Q1	
CR32			SAME AS CR31		Q18			SAME AS Q3	
CR33		51001275	SEMICONDUCTOR DEVICE,DIODE; 20V Si	2	Q19			SAME AS Q1	
CR34			SAME AS CR31		Q20			SAME AS Q3	
CR35			SAME AS CR31		Q21			SAME AS Q1	
CR36			SAME AS CR33		Q22			SAME AS Q3	
Q1		51509201	TRANSISTOR; PNP Ge T05 case	14	R1		51000272	RESISTOR,FXD,COMP; 4.7K 5% 1/4W	6
Q2			SAME AS Q1		R2		51000257	RESISTOR,FXD,COMP; 620 ohms 5% 1/4W	6
					R3		51000446	RESISTOR,FXD,COMP; 82 ohms 5% 1/2W	12
					R4		51000247	RESISTOR,FXD,COMP; 220 ohms 5% 1/4W	14
					R5		51000249	RESISTOR,FXD,COMP; 300 ohms 5% 1/4W	6
					R6			SAME AS R4	
					R7		51000280	RESISTOR,FXD,COMP; 13K 5% 1/4W	6
					R8		51000388	RESISTOR,FXD,COMP; 3.9K 5% 1/4W	6
					R9		51000259	RESISTOR,FXD,COMP; 750 ohms 5% 1/4W	6
					R10			SAME AS R3.	
					R11			SAME AS R1	
					R12			SAME AS R2	
					R13			SAME AS R3	
					R14			SAME AS R4	
					R15			SAME AS R5	
								90004355	

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CARD 7BTD
(Sheet 1 of 2)

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82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
R16			SAME AS R4		R54			SAME AS R4	
R17			SAME AS R7		R55			SAME AS R5	
R18			SAME AS R8		R56			SAME AS R4	
R19			SAME AS R9		R57			SAME AS R7	
R20			SAME AS R3		R58			SAME AS R8	
R21			SAME AS R1		R59			SAME AS R9	
R22			SAME AS R2		R60			SAME AS R3	
R23			SAME AS R3		R61	51000402		RESISTOR,FXD,COMP; 5.6K 5% 1/4W	2
R24			SAME AS R4		R62	51000268		RESISTOR,FXD,COMP; 2.0K 5% 1/4W	2
R25			SAME AS R5		R63	51000329		RESISTOR,FXD,COMP; 1.6K 5% 1/4W	2
R26			SAME AS R4		R64			SAME AS R4	
R27			SAME AS R7		R65	51000262		RESISTOR,FXD,COMP; 1.0K 5% 1/4W	4
R28			SAME AS R8		R66	51000264		RESISTOR,FXD,COMP; 1.2K 5% 1/4W	2
R29			SAME AS R9		R67			SAME AS R65	
R30			SAME AS R3		R68	51000274		RESISTOR,FXD,COMP; 6.8K 5% 1/4W	2
R31			SAME AS R1		R69	51000439		RESISTOR,FXD,COMP; 2.2K 5% 1/2W	2
R32			SAME AS R2		R70	51000819		RESISTOR,FXD,COMP; 2.4K 5% 1/2W	2
R33			SAME AS R3		R71			SAME AS R61	
R34			SAME AS R4		R72			SAME AS R62	
R35			SAME AS R5		R73			SAME AS R63	
R36			SAME AS R4		R74			SAME AS R4	
R37			SAME AS R7		R75			SAME AS R65	
R38			SAME AS R8		R76			SAME AS R66	
R39			SAME AS R9		R77			SAME AS R65	
R40			SAME AS R3		R78			SAME AS R68	
R41			SAME AS R1		R79			SAME AS R69	
R42			SAME AS R2		R80			SAME AS R70	
R43			SAME AS R3						
R44			SAME AS R4						
R45			SAME AS R5						
R46			SAME AS R4						
R47			SAME AS R7						
R48			SAME AS R8						
R49			SAME AS R9						
R50			SAME AS R3						
R51			SAME AS R1						
R52			SAME AS R2						
R53			SAME AS R3						

90004355

CARD 7BTD
(Sheet 2 of 2)

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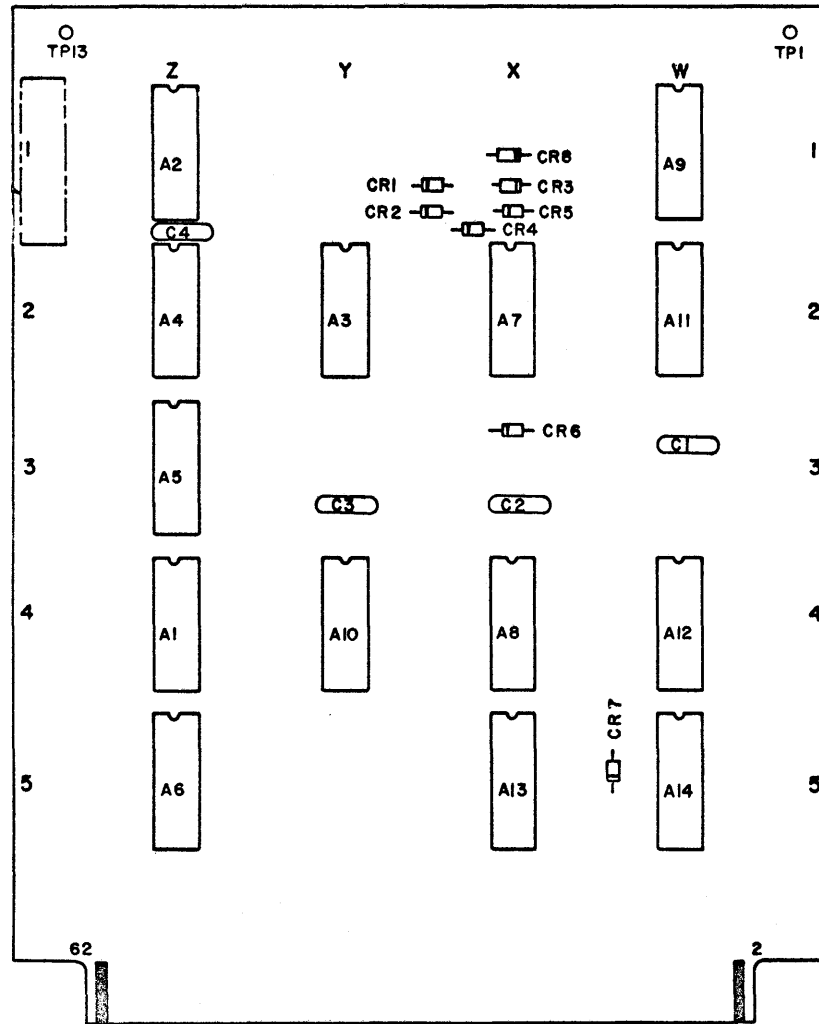


Figure C-26
Card 7BUD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	8					
A2		51578100	INTEGRATED CKT; Tiple 3 input gate	3					
A3			SAME AS A1						
Thru A6									
A7		51577500	INTEGRATED CKT; Dual gate element	2					
A8			SAME AS A2						
A9		51577600	INTEGRATED CKT; Dual buffer element	1					
A10			SAME AS A1						
A11			SAME AS A7						
A12			SAME AS A1						
A13			SAME AS A2						
A14			SAME AS A1						
C1		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
Thru C4									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	8					
Thru CR8									
									217
									90004358/A
									CARD 7BUD

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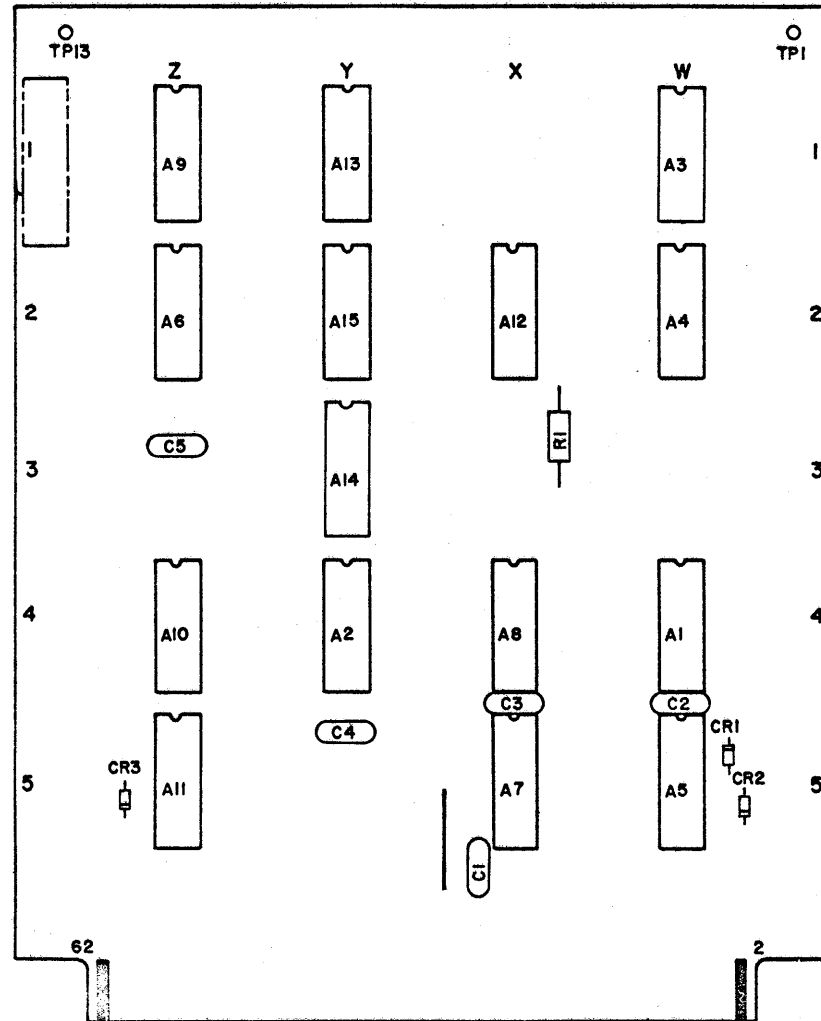


Figure C-27
Card 7BVD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	6					
A2		51577600	INTEGRATED CKT; Dual buffer element	1					
A3		51577500	INTEGRATED CKT; Dual gate element	5					
A4			SAME AS A1						
A5			SAME AS A3						
A6		51578100	INTEGRATED CKT; Triple 3 input gate	3					
A7			SAME AS A1						
A8			SAME AS A6						
A9			SAME AS A1						
A10			SAME AS A3						
A11			SAME AS A1						
A12			SAME AS A3						
A13			SAME AS A1						
A14			SAME AS A6						
A15			SAME AS A3						
C1 Thru C5		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	5					
CR1 Thru CR3		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	3					
R1		51000402	RESISTOR,FXD,COMP; 5.6K 5% 1/4W	1					

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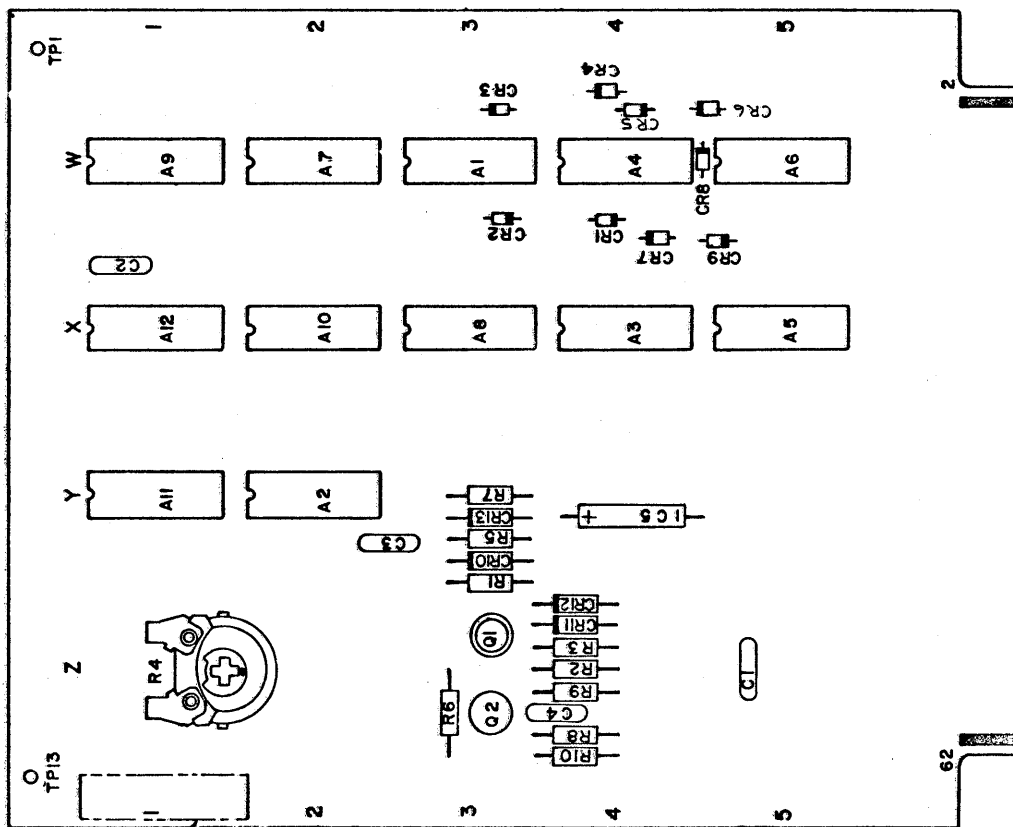
90004361/B

CARD 7BVD

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90004364

Figure C-28
Card 7BWD



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577500	INTEGRATED CKT; Dual Gate Element	3					
A2		51577900	INTEGRATED CKT; Quad 2 input gate	5					
A3			SAME AS A2						
A4			SAME AS A1						
A5			SAME AS A2						
A6		51578100	INTEGRATED CKT; Triple 3 input gate	3					
A7			SAME AS A6						
A8			SAME AS A1						
A9			SAME AS A2						
A10			SAME AS A2						
A11			SAME AS A6						
A12		51577600	INTEGRATED CKT; Dual Buffer Element	1					
C1		51001119	CAP.,FXD,CERAMIC; .01uf 25vdcw	4					
Thru C4									
C5		51597800	CAP.,FXD,ELECT.; 100uf 10vdcw	1					
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	9					
Thru CR9									
CR10		51001248	SEMICONDUCTOR DEVICE,DIODE; 12V	1					
CR11		51001310	SEMICONDUCTOR DEVICE,DIODE; 6.2V	1					
CR12		51001241	SEMICONDUCTOR DEVICE,DIODE; 0.64 Si	1					
CR13		51001275	SEMICONDUCTOR DEVICE,DIODE: 20V Si	1					
Q1		51003104	TRANSISTOR; PNP Si TO18 case	1					
Q2		51565600	TRANSISTOR; NPN Si R097a case	1					
R1		51000260	RESISTOR,FXD,COMP; 820 ohm 5% 1/4W	1					
R2		51000268	RESISTOR,FXD,COMP; 2K 5% 1/4W	2					
R3			SAME AS R2						
R4		51552126	RESISTOR,VARIABLE; Lin Comp 2M 1/4W	1					
R5		51000597	RESISTOR,FXD,COMP; 200K 5% 1/4W	1					
R6		51000262	RESISTOR,FXD,COMP; 1K 5% 1/4W	2					
R7		51000236	RESISTOR,FXD,COMP; 10ohm 5% 1/4W	1					
R8		51000246	RESISTOR,FXD,COMP; 200 ohms 5% 1/4W	1					
R9		51000250	RESISTOR,FXD,COMP; 330 ohm 5% 1/4W	1					
R10			SAME AS R6						

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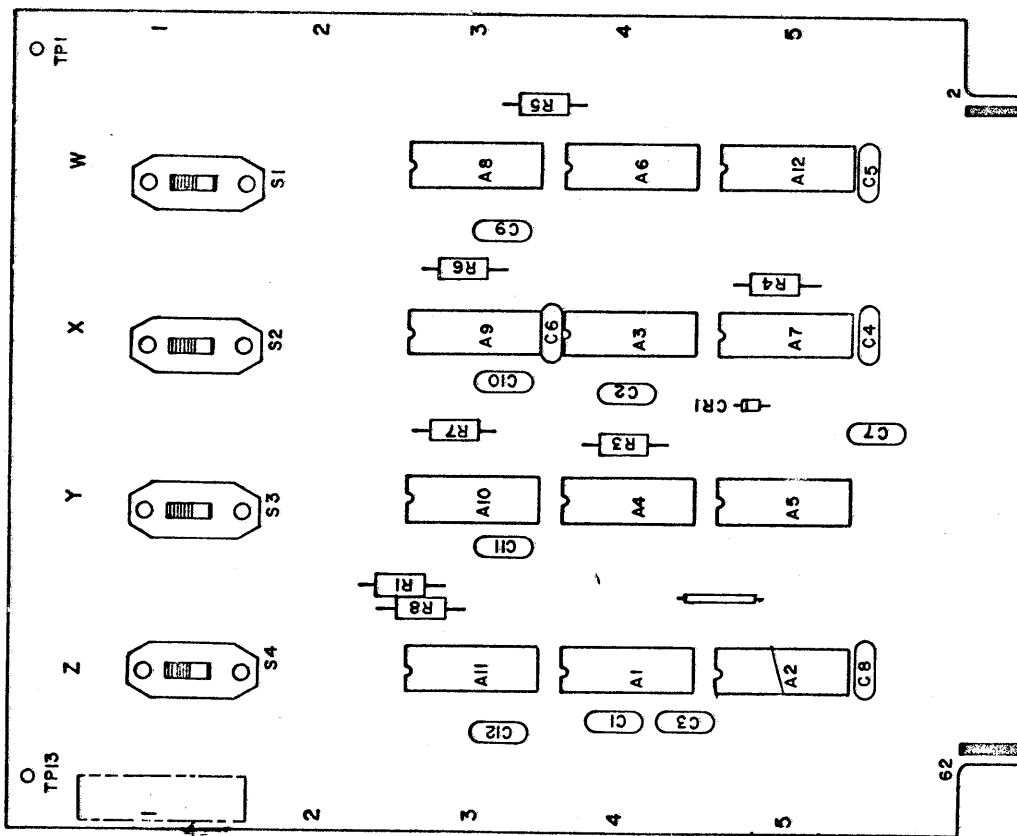
90004364

CARD 7BWD

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90004373

Figure C-29
Card 7BZD



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
1	A1	51578100	INTEGRATED CKT; Triple 3 input gate	2					
2	A2	51577900	INTEGRATED CKT; Quad 2 input gate	8					
	A3		SAME AS A1						
	A4		SAME AS A2						
3	A5	51577500	INTEGRATED CKT; Dual gate element	1					
	A6		SAME AS A2						
4	A7	51577600	INTEGRATED CKT; Dual buffer element	1					
	A8		SAME AS A2						
	Thru A12								
5	C1	51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	10					
	C2	51000989	CAP.,FXD,CERAMIC; .1 uf 25vdcw	1					
6	C3	51671500	CAP.,FXD,CERAMIC; .0027 uf 100vdcw	1					
	C4		SAME AS C1						
	Thru C12								
7	CR1	51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	1					
8	R1	51000262	RESISTOR,FXD,COMP; 1K 5% 1/4W	1					
9	R3	51000402	RESISTOR,FXD,COMP; 5.6K 5% 1/4W	6					
	Thru R8								
10	S1	51630900	SWITCH,SLIDE; SPDT 0.5A @ 125V	4					
	Thru S4								

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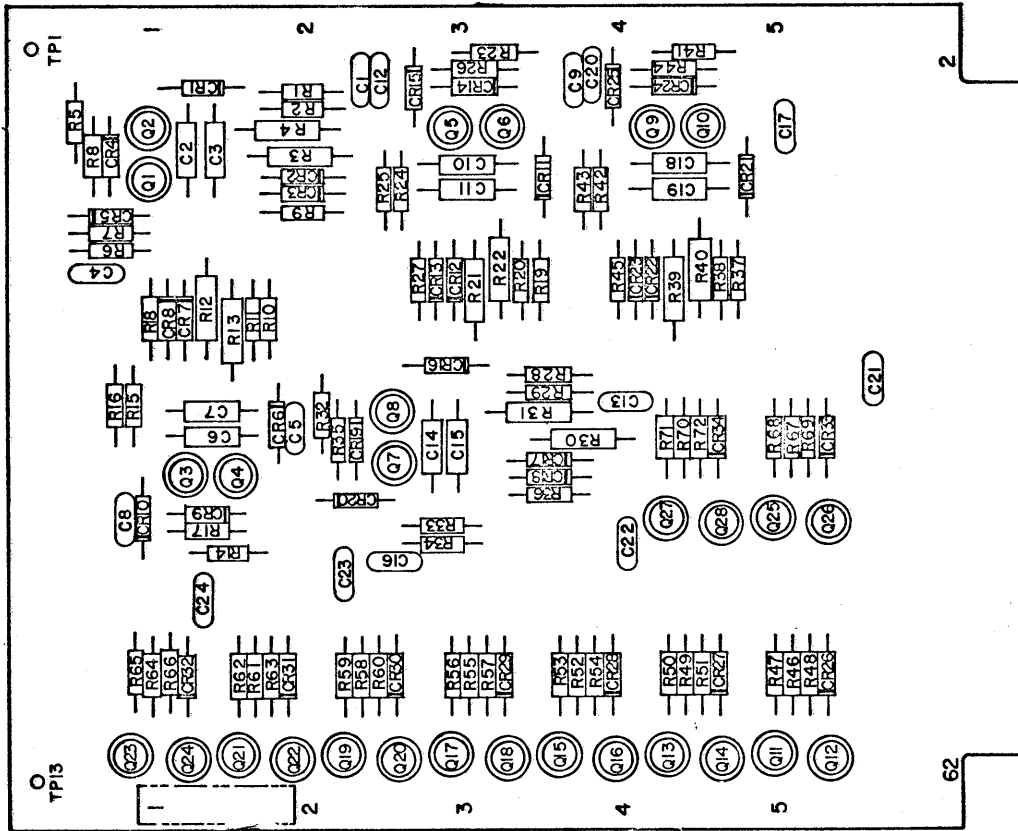
90004373/C

CARD 7BZD

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90004379

Figure C-30
Card 70



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
C1		51000989	CAP.,FXD,CERAMIC; .1uf 25vdcw	10	CR16			SAME AS CR1	
C2		51001011	CAP.,FXD,CERAMIC; 82 uuf 100vdcw	10	CR17			SAME AS CR2	
C3			SAME AS C2		CR18			SAME AS CR3	
C4			SAME AS C1		CR19			SAME AS CR4	
C5			SAME AS C1		CR20			SAME AS CR4	
C6			SAME AS C2		CR21			SAME AS CR1	
C7			SAME AS C2		CR22			SAME AS CR2	
C8			SAME AS C1		CR23			SAME AS CR3	
C9			SAME AS C1		CR24			SAME AS CR4	
C10			SAME AS C2		Thru				
C11			SAME AS C2		CR34				
C12			SAME AS C1		Q1	51003059		TRANSISTOR; NPN Si TO18 case Sw	28
C13			SAME AS C1		Thru				
C14			SAME AS C2		Q28				
C15			SAME AS C2		R1	51000276		RESISTOR,FXD,COMP; 9.1K 5% 1/4W	5
C16			SAME AS C1		R2	51000275		RESISTOR,FXD,COMP; 7.5K 5% 1/4W	5
C17			SAME AS C1		R3	51000476		RESISTOR,FXD,COMP; 2K 5% 1/2W	10
C18			SAME AS C2		R4			SAME AS R3	
C19			SAME AS C2		R5	51000268		RESISTOR,FXD,COMP; 2K 5% 1/4W	5
C20			SAME AS C1		R6	51000251		RESISTOR,FXD,COMP; 360 ohm 5% 1/4W	5
C21		51001119	CAP.,FXD,CERAMIC; .01uf 25vdcw	4	R7	51000262		RESISTOR,FXD,COMP; 1K 5% 1/4W	14
Thru					R8	51000284		RESISTOR,FXD,COMP; 20K 5% 1/4W	5
C24					R9	51000274		RESISTOR,FXD,COMP; 6.8K 5% 1/4W	5
CR1		51505100	SEMICONDUCTOR DEVICE,DIODE; 80V GE	5	R10			SAME AS R1	
CR2		51001275	SEMICONDUCTOR DEVICE,DIODE; 20V Si	5	R11			SAME AS R2	
CR3		51001305	SEMICONDUCTOR DEIVCE,DIODE; Zener	5	R12			SAME AS R3	
CR4		51001239	SEMICONDUCTOR DEVICE,DIODE; 75V Si	19	R13			SAME AS R3	
CR5			SAME AS CR4		R14			SAME AS R5	
CR6			SAME AS CR1		R15			SAME AS R6	
CR7			SAME AS CR2		R16			SAME AS R7	
CR8			SAME AS CR3		R17			SAME AS R8	
CR9			SAME AS CR4		R18			SAME AS R9	
CR10			SAME AS CR4		R19			SAME AS R1	
CR11			SAME AS CR1		R20			SAME AS R2	
CR12			SAME AS CR2		R21			SAME AS R3	
CR13			SAME AS CR3						
CR14			SAME AS CR4						
CR15			SAME AS CR4						

90004379

CARD 7CBD
(Sheet 1 of 2)

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ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
R22			SAME AS R3		R60			SAME AS R48	
R23			SAME AS R5		R61			SAME AS R46	
R24			SAME AS R6		R62			SAME AS R7	
R25			SAME AS R7		R63			SAME AS R48	
R26			SAME AS R8		R64			SAME AS R46	
R27			SAME AS R9		R65			SAME AS R7	
R28			SAME AS R1		R66			SAME AS R48	
R29			SAME AS R2		R67			SAME AS R46	
R30			SAME AS R3		R68			SAME AS R7	
R31			SAME AS R3		R69			SAME AS R48	
R32			SAME AS R5		R70			SAME AS R46	
R33			SAME AS R6		R71			SAME AS R7	
R34			SAME AS R7		R72			SAME AS R48	
R35			SAME AS R8						
R36			SAME AS R9						
R37			SAME AS R1						
R38			SAME AS R2						
R39			SAME AS R3						
R40			SAME AS R3						
R41			SAME AS R5						
R42			SAME AS R6						
R43			SAME AS R7						
R44			SAME AS R8						
R45			SAME AS R9						
R46		51000271	RESISTOR,FXD,COMP; 3.3K 5% 1/4W	9					
R47			SAME AS R7						
R48		51000402	RESISTOR,FXD,COMP; 5.6K 5% 1/4W	9					
R49			SAME AS R46						
R50			SAME AS R7						
R51			SAME AS R48						
R52			SAME AS R46						
R53			SAME AS R7						
R54			SAME AS R48						
R55			SAME AS R46						
R56			SAME AS R7						
R57			SAME AS R48						
R58			SAME AS R46						
R59			SAME AS R7						
								90004379	

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CARD 7CBD
(Sheet 2 of 2)

82128400

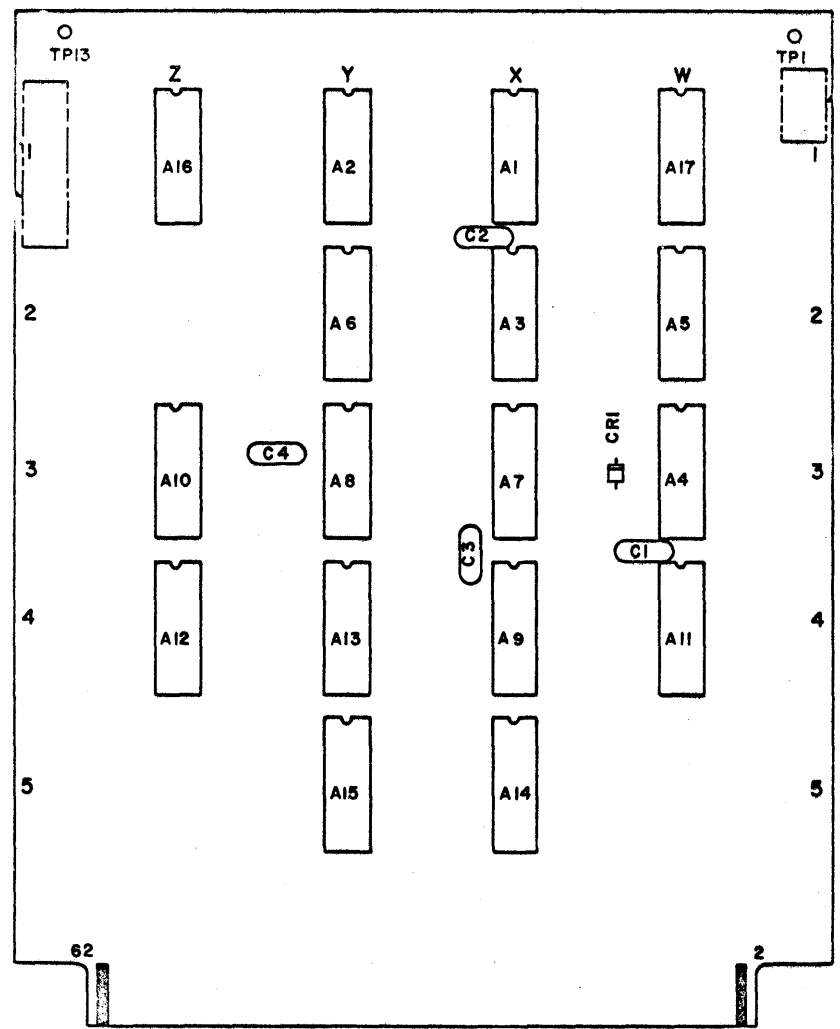


Figure C-31
Card 7CCD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	9					
A2		51578000	INTEGRATED CKT;Clocked flip flop	5					
A3			SAME AS A1						
A4		51577600	INTEGRATED CKT; Dual buffer element	2					
A5			SAME AS A1						
A6			SAME AS A2						
A7			SAME AS A1						
A8			SAME AS A2						
A9			SAME AS A1						
A10			SAME AS A1						
A11		51578100	INTEGRATED CKT; Triple 3 input gate	1					
A12			SAME AS A1						
A13			SAME AS A2						
A14			SAME AS A1						
A15			SAME AS A2						
A16			SAME AS A1						
A17			SAME AS A4						
C1 Thru C4		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
CRI		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	1					

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CARD 7CCD

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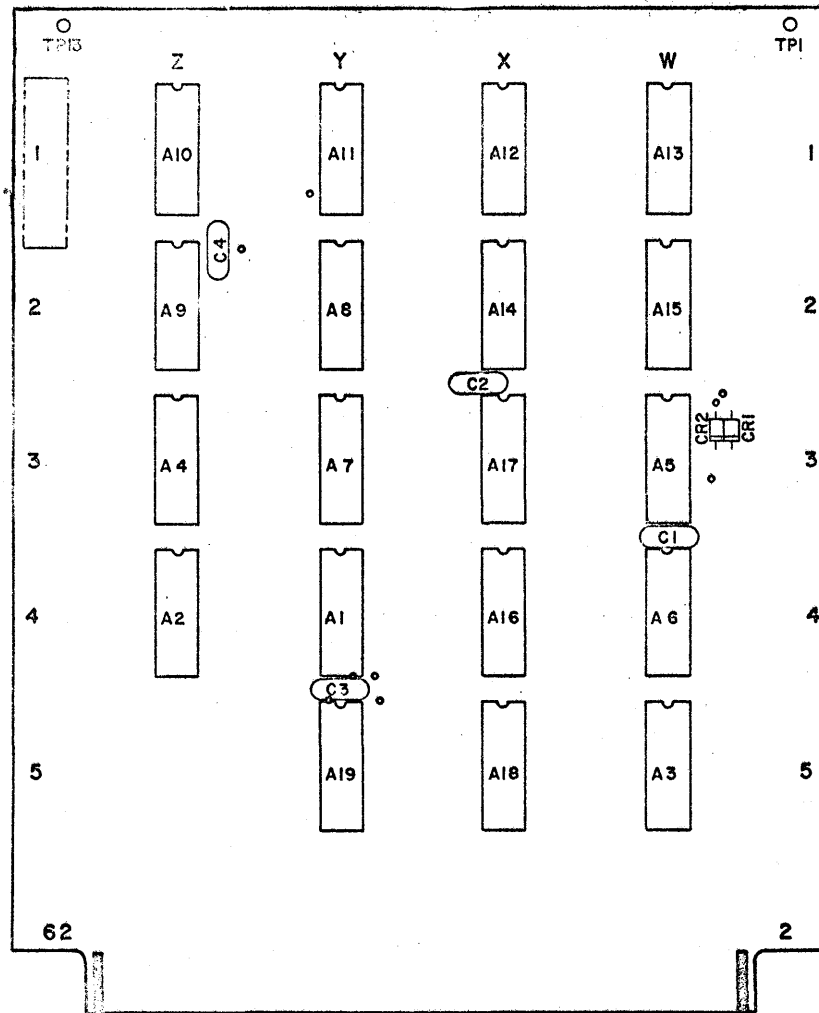


Figure C-32
Card 7CDD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577600	INTEGRATED CKT; Dual Buffer element	4					
A2		51578100	INTEGRATED CKT; Triple 3 input gate	4					
A3			SAME AS A2						
A4			SAME AS A1						
A5		51577500	INTEGRATED CKT; Dual gate element	2					
A6		51577900	INTEGRATED CKT; Quad 2 input gate	3					
A7			SAME AS A6						
A8			SAME AS A1						
A9			SAME AS A1						
A10		65611100	INTEGRATED CKT; Dual clocked FF	6					
A11			SAME AS A10						
A12			SAME AS A10						
A13			SAME AS A10						
A14			SAME AS A10						
A15			SAME AS A10						
A16			SAME AS A5						
A17			SAME AS A6						
A18			SAME AS A2						
A19			SAME AS A2						
C1		51001119	CAPACITOR, FIXED, CER; .01uf 25vdcw	4					
C2			SAME AS C1						
C3			SAME AS C1						
C4			SAME AS C1						
CR1		51007385	SEMICONDUCTOR DEVICE, DIODE; 10V Si	2					
CR2			SAME AS CR1						

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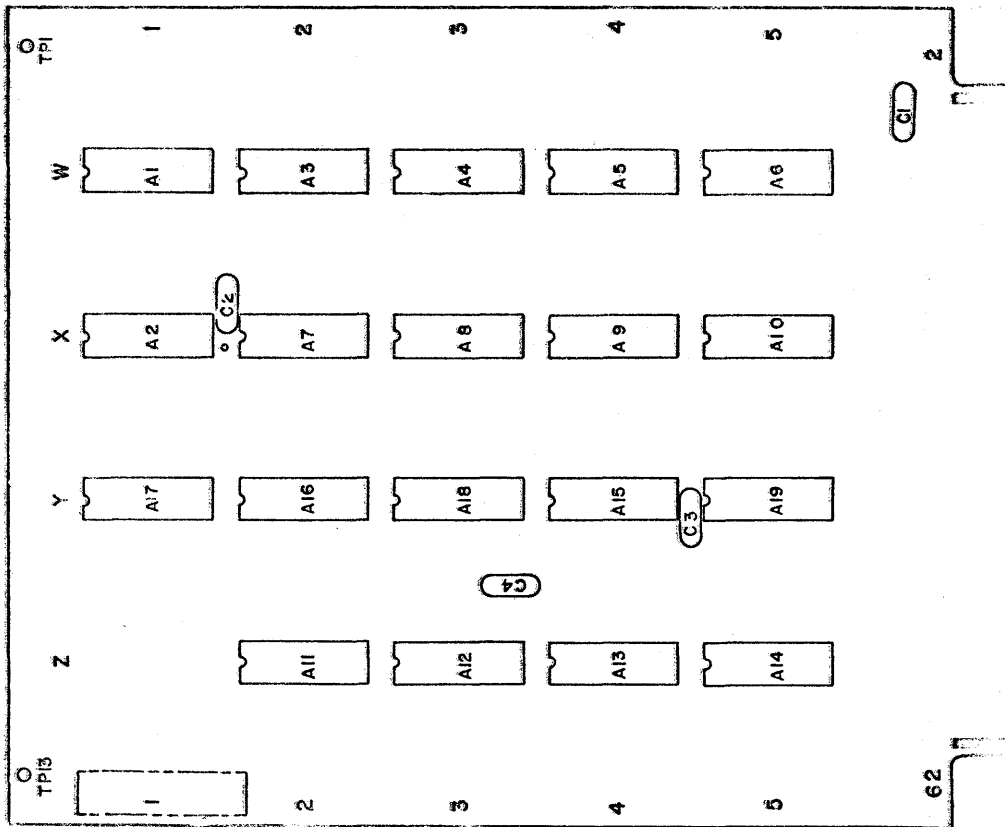
90004385/B

CARD 7CDD

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90004391

Figure C-33
Card 7CFD



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		65611000	INTEGRATED CKT; Dual clocked F/F	2					
A2			SAME AS A1						
A3		65611100	INTEGRATED CKT; Dual clocked F/F	12					
A4			SAME AS A3						
A5			SAME AS A3						
A6			SAME AS A3						
A7			SAME AS A3						
A8			SAME AS A3						
A9			SAME AS A3						
A10			SAME AS A3						
A11			SAME AS A3						
A12			SAME AS A3						
A13			SAME AS A3						
A14			SAME AS A3						
A15		51578100	INTEGRATED CKT; Triple 3 input gate	2					
A16		51577600	INTEGRATED CKT; Dual buffer element	2					
A17		51577900	INTEGRATED CKT; Quad 2 input gate	1					
A18			SAME AS A16						
A19			SAME AS A15						
C1		51001119	CAPACITOR,FXD,CER; .01uf 25vdcw	4					
C2			SAME AS C1						
C3			SAME AS C1						
C4			SAME AS C1						

90004391/A

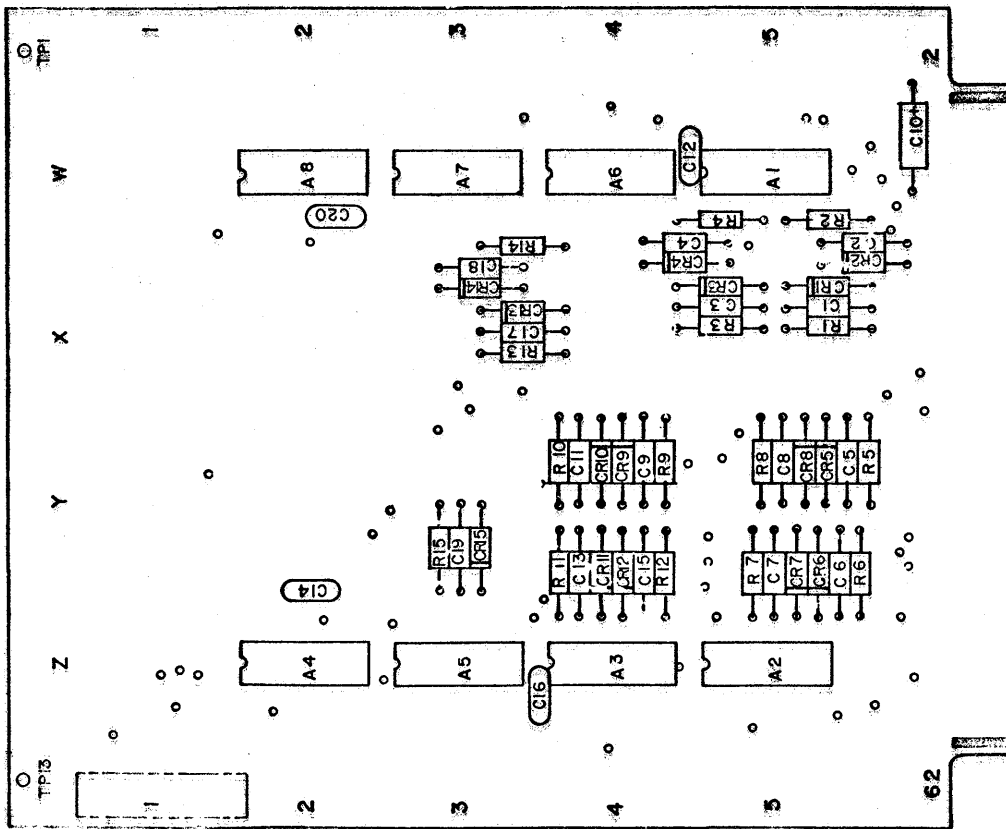
CARD 7CFD

C-73

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90004661

Figure C-34
Card 7FZD



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	5		CR11		SAME AS CR1	
A2			SAME AS A1			CR12		SAME AS CR1	
A3			SAME AS A1			CR13		SAME AS CR1	
A4		51578100	INTEGRATED CKT; Triple 3 input gate	1		CR14		SAME AS CR1	
A5		51577600	INTEGRATED CKT; Dual buffer element	1		CR15		SAME AS CR1	
A6			SAME AS A1		10	R1	51573000	RESISTOR,FXD,COMP; 150 ohms 5% 1/4W	15
A7			SAME AS A1			R2		SAME AS R1	
A8		51578000	INTEGRATED CKT; Clocked flip-flop	1		R3		SAME AS R1	
C1		51001085	CAPACITOR,FXD,CER; 300uuf 100vdcw	15		R4		SAME AS R1	
C2			SAME AS C1			R5		SAME AS R1	
C3			SAME AS C1			R6		SAME AS R1	
C4			SAME AS C1			R7		SAME AS R1	
C5			SAME AS C1			R8		SAME AS R1	
C6			SAME AS C1			R9		SAME AS R1	
C7			SAME AS C1			R10		SAME AS R1	
C8			SAME AS C1			R11		SAME AS R1	
C9			SAME AS C1			R12		SAME AS R1	
C10		51000952	CAPACITOR,FXD,ELEC; 1 uf 35vdcw	1		R13		SAME AS R1	
C11			SAME AS C1			R14		SAME AS R1	
C12		51001119	CAPACITOR,FXD,CER; .01uf 25vdcw	3		R15		SAME AS R1	
C13			SAME AS C1						
C14			SAME AS C12						
C15			SAME AS C1						
C16		51000989	CAPACITOR,FXD,CER; .1uf 25vdcw	1					
C17			SAME AS C1						
C18			SAME AS C1						
C19			SAME AS C1						
C20			SAME AS C12						
CR1		51001277	SEMICONDUCTOR DEVICE,DIODE; 10V Ge	15					
CR2			SAME AS CR1						
CR3			SAME AS CR1						
CR4			SAME AS CR1						
CR5			SAME AS CR1						
CR6			SAME AS CR1						
CR7			SAME AS CR1						
CR8			SAME AS CR1						
CR9			SAME AS CR1						
CR10			SAME AS CR1						

90004661/A

CARD 7FZD

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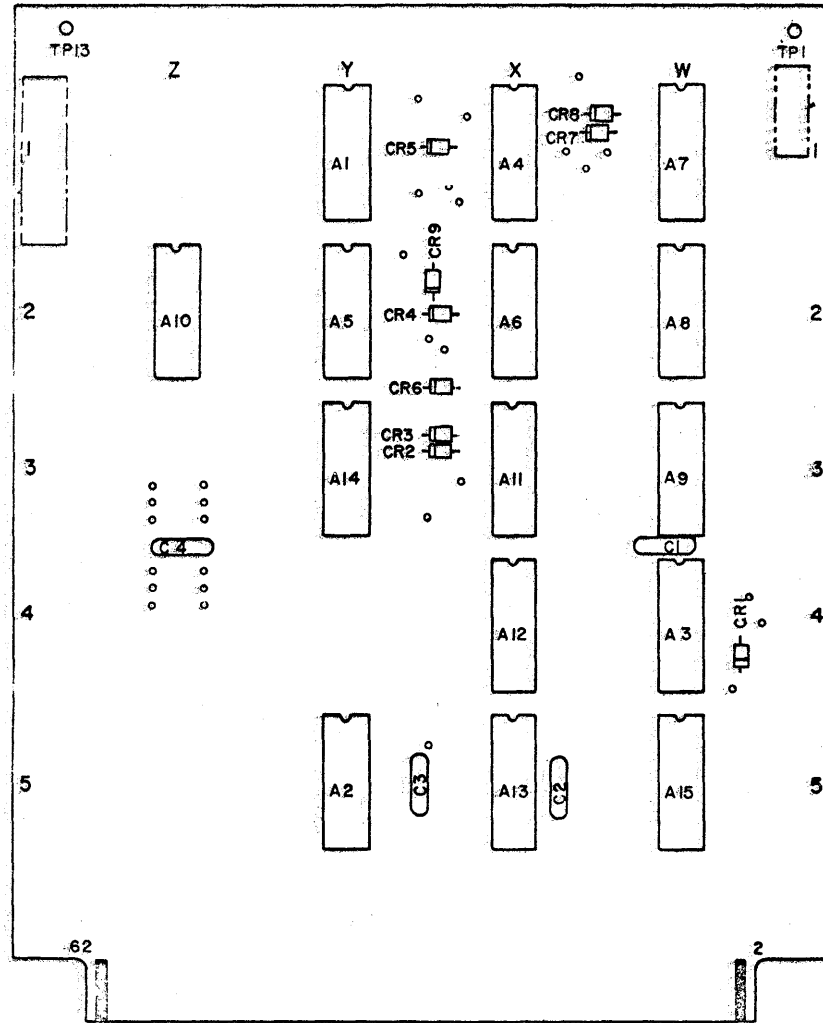


Figure C-35
Card 7GZD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	6					
A2			SAME AS A1						
A3		51578100	INTEGRATED CKT; Triple 3 input gate	2					
A4			SAME AS A1						
A5			SAME AS A1						
A6		51577600	INTEGRATED CKT; Dual buffer element	7					
A7			SAME AS A6						
A8			SAME AS A6						
A9			SAME AS A6						
A10			SAME AS A1						
A11			SAME AS A6						
A12			SAME AS A6						
A13			SAME AS A3						
A14			SAME AS A1						
A15			SAME AS A6						
C1		51001119	CAPACITOR,FXD,CER; .01uf 25vdcw	4					
C2			SAME AS C1						
C3			SAME AS C1						
C4			SAME AS C1						
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	9					
CR2			SAME AS CR1						
CR3			SAME AS CR1						
CR4			SAME AS CR1						
CR5			SAME AS CR1						
CR6			SAME AS CR1						
CR7			SAME AS CR1						
CR8			SAME AS CR1						
CR9			SAME AS CR1						

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90004733/A

CARD 7GZD

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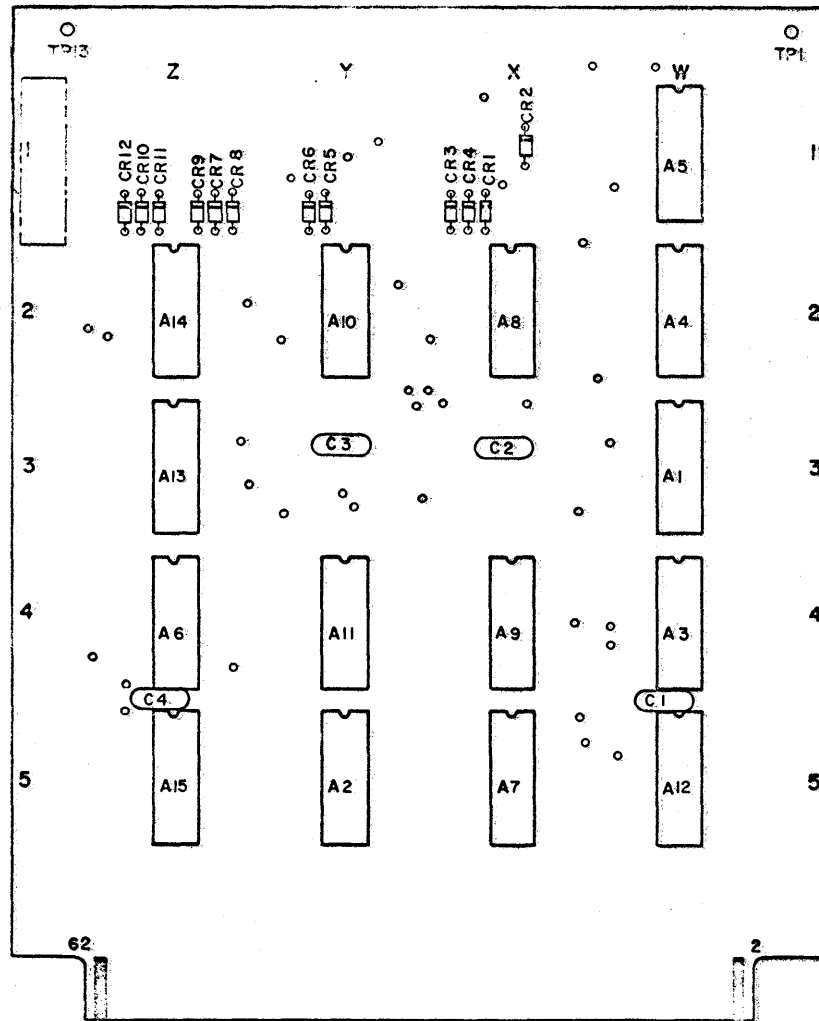


Figure C-36
Card 8CQD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51578100	INTEGRATED CKT; Triple 3 input gate	3					
A2		51577900	INTEGRATED CKT; Quad 2 input gate	9					
A3			SAME AS A1						
A4			SAME AS A1						
A5			SAME AS A2						
Thru									
A7									
A8		51577500	INTEGRATED CKT; Dual gate element	3					
A9			SAME AS A2						
A10			SAME AS A8						
A11			SAME AS A2						
Thru									
A13									
A14			SAME AS A8						
A15			SAME AS A2						
C1		51001119	CAP.,FXD,CERAMIC; .01uf, 25vdcw	4					
Thru									
C4									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	12					
Thru									
CR12									

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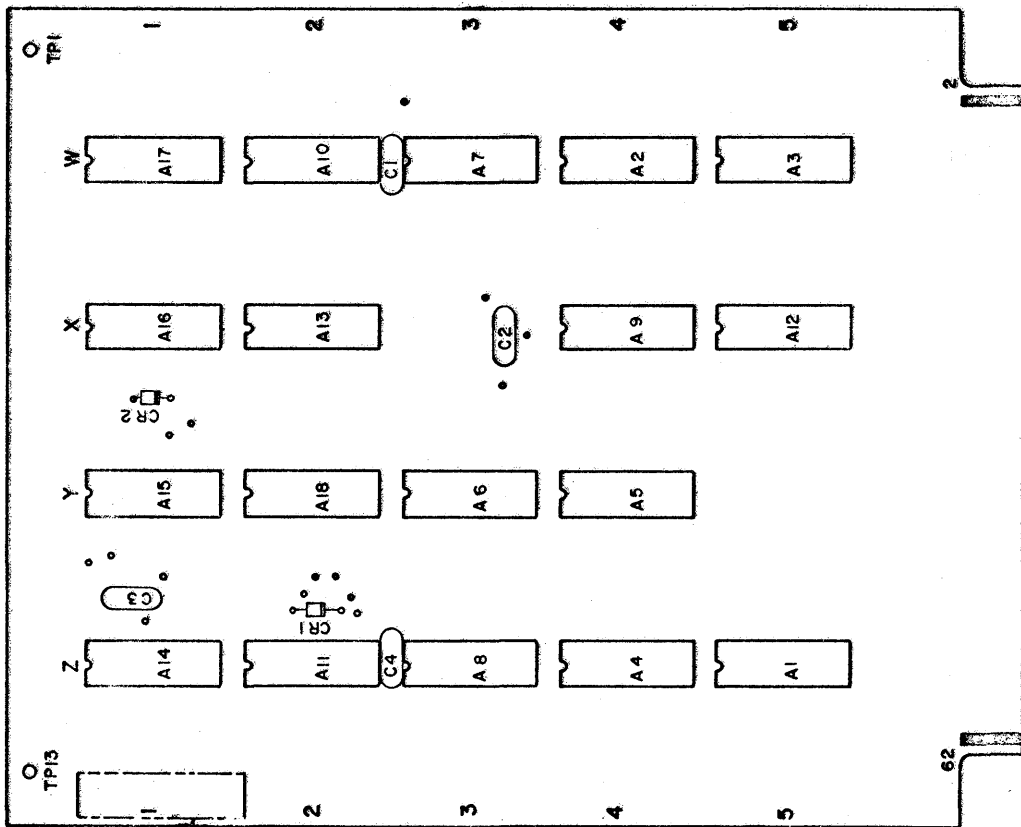
90004960/A

CARD 8CQD

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90004963

Figure C-37
Card 8CRD



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	9					
A2		51577500	INTEGRATED CKT; Dual gate element	5					
A3			SAME AS A1						
Thru									
A6									
A7		51578100	INTEGRATED CKT; Triple 3 input gate	3					
A8			SAME AS A1						
A9			SAME AS A2						
A10			SAME AS A1						
A11			SAME AS A7						
A12			SAME AS A1						
A13			SAME AS A2						
A14		51577600	INTEGRATED CKT; Dual buffer element	1					
A15			SAME AS A2						
A16			SAME AS A1						
A17			SAME AS A7						
A18			SAME AS A2						
C1		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
Thru									
C4									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	2					
CR2			SAME AS CR1						

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90004963/A

CARD 8CRD

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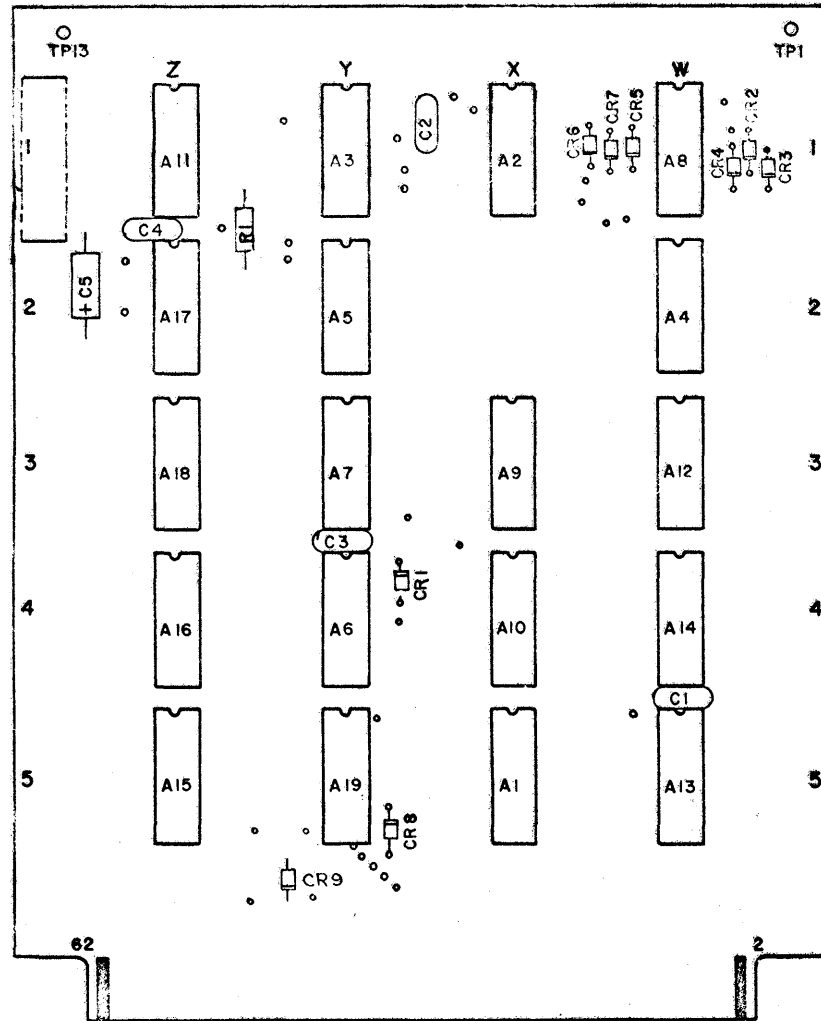


Figure C-38
Card 8CSD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51578100	INTEGRATED CKT; Triple input gate	5					
A2		51577600	INTEGRATED CKT; Dual buffer element	3					
A3			SAME AS A1						
A4		51577900	INTEGRATED CKT; Quad 2 input gate	7					
A5			SAME AS A4						
A6		51577500	INTEGRATED CKT; Dual gate element	3					
A7			SAME AS A4						
A8			SAME AS A6						
A9			SAME AS A1						
A10			SAME AS A1						
A11			SAME AS A2						
A12			SAME AS A4						
A13			SAME AS A4						
A14			SAME AS A1						
A15			SAME AS A4						
A16			SAME AS A2						
A17			SAME AS A4						
A18			SAME AS A6						
A19		51577700	INTEGRATED CKT; Dual 4 input.	1					
C1		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
Thru C4									
C5		51001155	CAP.,FXD,ELECT; 2.2uf 20vdcw	1					
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	9					
Thru CR9									
R1		51000402	RESISTOR,FXD,COMP; 5.6K, 5% 1/4W	1					

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90004966/A

CARD 8CSD

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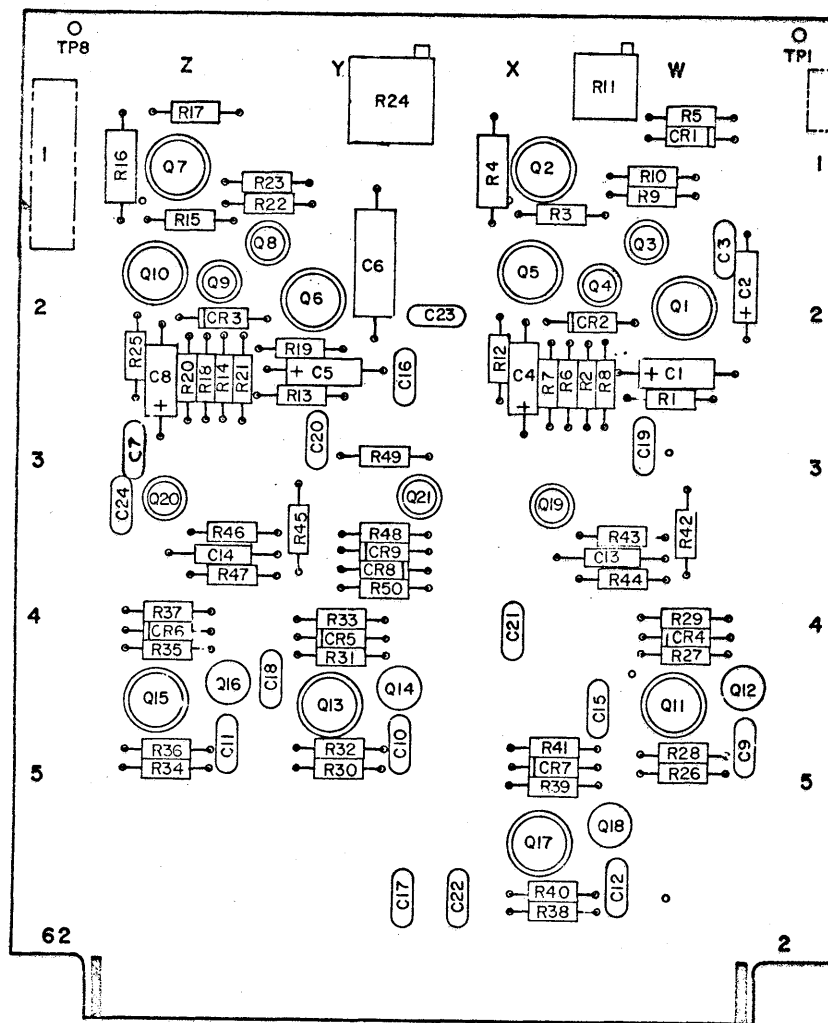


Figure C-39
Card 8CXD

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
	C1	51000953	CAP.,FXD,ELECT; 15 uf 20vdcw	4		Q18		SAME AS Q12	
	C2	51000952	CAP.,FXD,ELECT; 1uf 35vdcw	1		Q19	51003107	TRANSISTOR; PNP Si TO18 case	2
	C3	51000989	CAP.,FXD,CERAMIC; .1uf 25vdcw	2		Q20		SAME AS Q19	
	C4		SAME AS C1			Q21		SAME AS Q4	
	C5		SAME AS C1			R1	51000395	RESISTOR,FXD,COMP; 180 ohm 5% 1/4W	2
	C6	51007718	CAP.,FXD,CERAMIC; .05 uf 100vdcw	1		R2	51000274	RESISTOR,FXD,COMP; 6.8K 5% 1/4W	3
	C7		SAME AS C3			R3	51000284	RESISTOR,FXD,COMP; 20K 5% 1/4W	2
	C8		SAME AS C1			R4	51000547	RESISTOR,FXD,COMP; 2.7K 5% 1/2W	2
	C9	51000990	CAP.,FXD,CERAMIC; .022 uf 25vdcw	4		R5	51000278	RESISTOR,FXD,COMP; 11K 5% 1/4W	2
	Thru					R6	51000252	RESISTOR,FXD,COMP; 390 ohm 5% 1/4W	2
	C12					R7	51000270	RESISTOR,FXD,COMP; 2.7K 5% 1/4W	5
	C13	51000996	CAP.,FXD,CERAMIC; 47 uuf 100vdcw	2		R8	51000276	RESISTOR,FXD,COMP; 9.1K 5% 1/4W	2
	C14		SAME AS C13			R9	51000271	RESISTOR,FXD,COMP; 3.3K 5% 1/4W	2
	C15	51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	10		R10	51000254	RESISTOR,FXD,COMP; 470 ohm 5% 1/4W	2
	Thru					R11	51001365	RESISTOR,VAR,MINAT; 100 ohm 5% 1W	1
	C24					R12		SAME AS R7	
	CR1	51001239	SEMICONDUCTOR DEVICE,DIODE; 75V Si	6		R13		SAME AS R1	
	CR2	51001275	SEMICONDUCTOR DEVICE,DIODE; 20V Si	3		R14		SAME AS R2	
	CR3		SAME AS CR2			R15		SAME AS R3	
	CR4		SAME AS CR1			R16		SAME AS R4	
	Thru					R17		SAME AS R5	
	CR8					R18		SAME AS R6	
	CR9		SAME AS CR2			R19	51000236	RESISTOR,FXD,COMP; 10 ohm 5% 1/4W	1
	Q1	51003108	TRANSISTOR;PNP Si TO5 case med pwr	10		R20		SAME AS R7	
	Q2		SAME AS Q1			R21		SAME AS R8	
	Q3	51003100	TRANSISTOR;PNP Si TO18 case low pwr	2		R22		SAME AS R9	
	Q4	51003059	TRANSISTOR;NPN Si TO18 case low pwr	3		R23		SAME AS R10	
	Q5		SAME AS Q1			R24	51001377	RESISTOR,VAR,MINAT; 100K 20R 1/2W	1
	Thru					R25		SAME AS R7	
	Q7					R26	51000267	RESISTOR,FXD,COMP; 1.8K 5% 1/4W	4
	Q8		SAME AS Q3			R27	51000283	RESISTOR,FXD,COMP; 18K 5% 1/4W	4
	Q9		SAME AS Q4			R28	51000497	RESISTOR,FXD,COMP; 3K 5% 1/4W	4
	Q10		SAME AS Q1			R29	51000597	RESISTOR,FXD,COMP; 200K 5% 1/4W	4
	Q11		SAME AS Q1			R30		SAME AS R26	
	Q12	51573800	TRANSISTOR; NPN Si low pwr	4		R31		SAME AS R27	
	Q13		SAME AS Q1						
	Q14		SAME AS Q12						
	Q15		SAME AS Q1						
	Q16		SAME AS Q12						
	Q17		SAME AS Q1						

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ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
R32			SAME AS R28						
R33			SAME AS R29						
R34			SAME AS R26						
R35			SAME AS R27						
R36			SAME AS R28						
R37			SAME AS R29						
R38			SAME AS R26						
R39			SAME AS R27						
R40			SAME AS R27						
R41			SAME AS R29						
R42		51000262	RESISTOR,FXD,COMP;1.0K 5% 1/4W	2					
R43		51000264	RESISTOR,FXD,COMP; 1.2K 5% 1/4W	2					
R44		51000277	RESISTOR,FXD,COMP; 10K 5% 1/4W	2					
R45			SAME AS R42						
R46			SAME AS R43						
R47			SAME AS R44						
R48			SAME AS R7						
R49		51000261	RESISTOR,FXD,COMP; 910 ohms 5% 1/4W	1					
R50			SAME AS R2						

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90004981

CARD 8CXD
(Sheet 2 of 2)

82128400

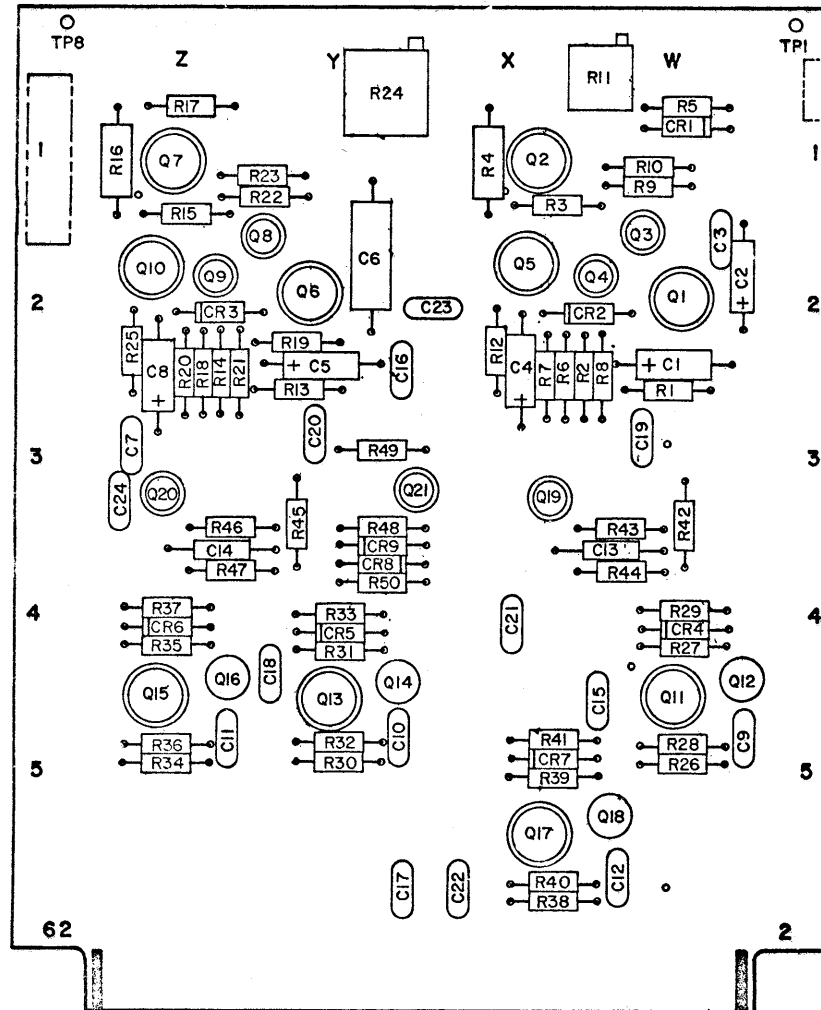


Figure C-40
Card 8CYD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
	C1	51000953	CAP.,FXD,ELECT; 15 uf 20vdcw	4		Q17		SAME AS Q1	
	C2	51000952	CAP.,FXD,ELECT; 1 uf 35vdcw	1		Q18		SAME AS Q12	
	C3	51000989	CAP.,FXD,CERAMIC; .1 uf 25vdcw	2		Q19	51003107	TRANSISTOR;PNP Si TO18 case low pwr	2
	C4		SAME AS C1			Q20		SAME AS Q19	
	C5		SAME AS C1			Q21		SAME AS Q4	
	C6	51007718	CAP.,FXD,CERAMIC; .05 uf 100vdcw	1		R1	51000395	RESISTOR,FXD,COMP; 180 ohm 5% 1/4W	2
	C7		SAME AS C3			R2	51000274	RESISTOR,FXD,COMP; 6.8K 5% 1/4W	3
	C8		SAME AS C1			R3	51000284	RESISTOR,FXD,COMP; 20K 5% 1/4W	2
	C9	51000990	CAP.,FXD,CERAMIC; .022 uf 25vdcw	4		R4	51000547	RESISTOR,FXD,COMP; 2.7K 5% 1/2W	2
	Thru					R5	51000278	RESISTOR,FXD,COMP; 11K 5% 1/4W	1
	C12					R6	51000252	RESISTOR,FXD,COMP; 390 ohm 5% 1/4W	2
	C13	51000996	CAP.,FXD,CERAMIC; 47 uuf 100vdcw	2		R7	51000270	RESISTOR,FXD,COMP; 2.7K 5% 1/4W	5
	C14		SAME AS C13			R8	51000276	RESISTOR,FXD,COMP; 9.1K 5% 1/4W	2
	C15	51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	10		R9	51000271	RESISTOR,FXD,COMP; 3.3K 5% 1/4W	2
	Thru					R10	51000254	RESISTOR,FXD,COMP; 470 ohm 5% 1/4W	2
	C24					R11	51001365	RESISTOR,VAR,MINAT; 100 ohm 5% 1W	1
	CR1	51001239	SEMICONDUCTOR DEVICE,DIODE; 75V Si	6		R12		SAME AS R7	
	CR2	51001275	SEMICONDUCTOR DEVICE,DIODE; 20V Si	3		R13		SAME AS R1	
	CR3		SAME AS CR2			R14		SAME AS R2	
	CR4		SAME AS CR1			R15		SAME AS R3	
	Thru					R16		SAME AS R4	
	CR8					R17	51000283	RESISTOR,FXD,COMP; 18K 5% 1/4W	5
	CR9		SAME AS CR2			R18		SAME AS R6	
	Q1	51003108	TRANSISTOR;PNP Si TO5 case med pwr	10		R19	51000236	RESISTOR,FXD,COMP; 10 ohm 5% 1/4W	1
	Q2		SAME AS Q1			R20		SAME AS R7	
	Q3	51003100	TRANSISTOR;PNP Si TO18 case low pwr	2		R21		SAME AS R8	
	Q4	51003059	TRANSISTOR;NPN Si TO18 case low pwr	3		R22		SAME AS R9	
	Q5		SAME AS Q1			R23		SAME AS R10	
	Thru					R24	51001377	RESISTOR,VAR,MINAT; 100K 20% 1/2W	1
	Q7					R25		SAME AS R7	
	Q8		SAME AS Q3			R26	51000267	RESISTOR,FXD,COMP; 1.8K 5% 1/4W	4
	Q9		SAME AS Q4			R27		SAME AS R17	
	Q10		SAME AS Q1			R28	51000497	RESISTOR,FXD,COMP; 3K 5% 1/4W	4
	Q11		SAME AS Q1			R29	51000597	RESISTOR,FXD,COMP; 200K 5% 1/4W	4
	Q12	51573800	TRANSISTOR;NPN Si low pwr	4		R30		SAME AS R26	
	Q13		SAME AS Q1						
	Q14		SAME AS Q12						
	Q15		SAME AS Q1						
	Q16		SAME AS Q12						

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CARD 8CYD
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ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
R31			SAME AS R17						
R32			SAME AS R28						
R33			SAME AS R29						
R34			SAME AS R26						
R35			SAME AS R17						
R36			SAME AS R28						
R37			SAME AS R29						
R38			SAME AS R26						
R39			SAME AS R17						
R40			SAME AS R28						
R41			SAME AS R29						
R42		51000262	RESISTOR,FXD,COMP;1.0K 5% 1/4W	2					
R43		51000264	RESISTOR,FXD,COMP; 1.2K 5% 1/4W	2					
R44		51000277	RESISTOR,FXD,COMP; 10K 5% 1/4W	2					
R45			SAME AS R42						
R46			SAME AS R43						
R47			SAME AS R44						
R48			SAME AS R7						
R49		51000261	RESISTOR,FXD,COMP; 910 ohms 5% 1/4W	1					
R50			SAME AS R2						

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90004984

CARD 8CYD
(Sheet 2 of 2)

82128400

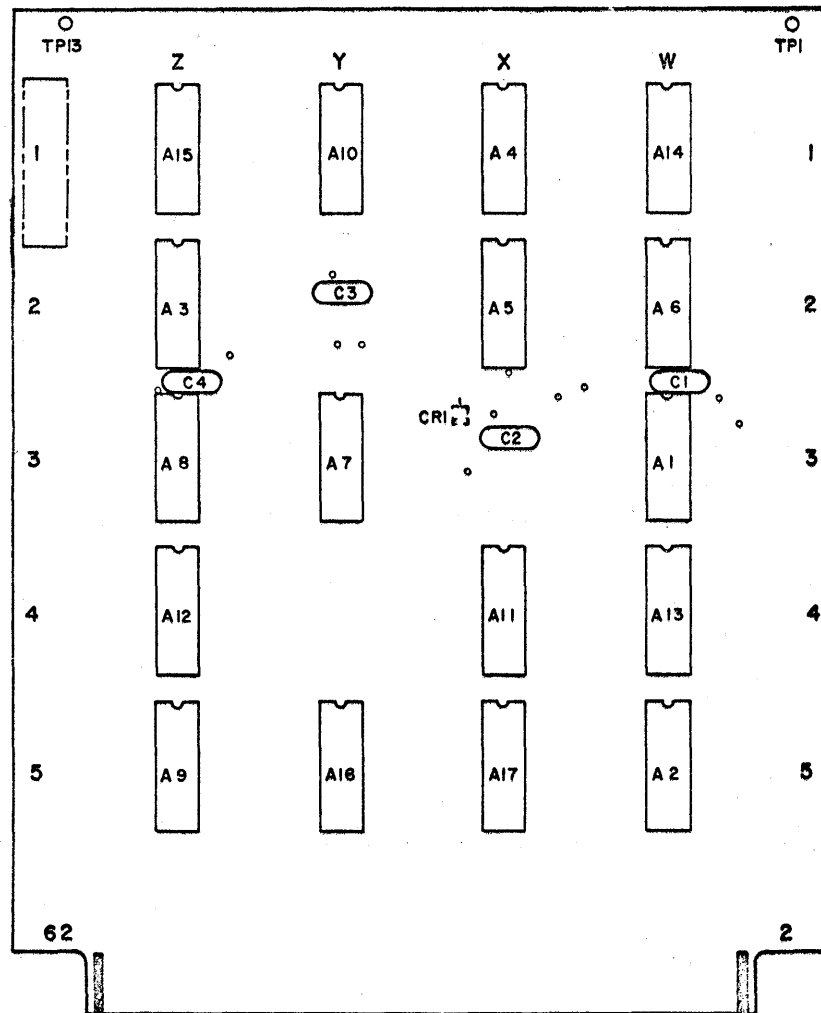


Figure C-41
Card 8DRD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51578100	INTEGRATED CKT; Triple 3 input gate	4					
A2		51577600	INTEGRATED CKT;Dual buffer element	2					
A3			SAME AS A1						
A4			SAME AS A1						
A5		51577500	INTEGRATED CKT; Dual gate element	5					
A6			SAME AS A2						
A7		51577900	INTEGRATED CKT; Quad 2 input gate	6					
A8			SAME AS A5						
A9			SAME AS A5						
A10			SAME AS A7						
Thru									
A12									
A13			SAME AS A5						
A14			SAME AS A1						
A15			SAME AS A7						
A16			SAME AS A7						
A17			SAME AS A5						
C1		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	4					
Thru									
C4									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	1					

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9005035

CARD 8DRD

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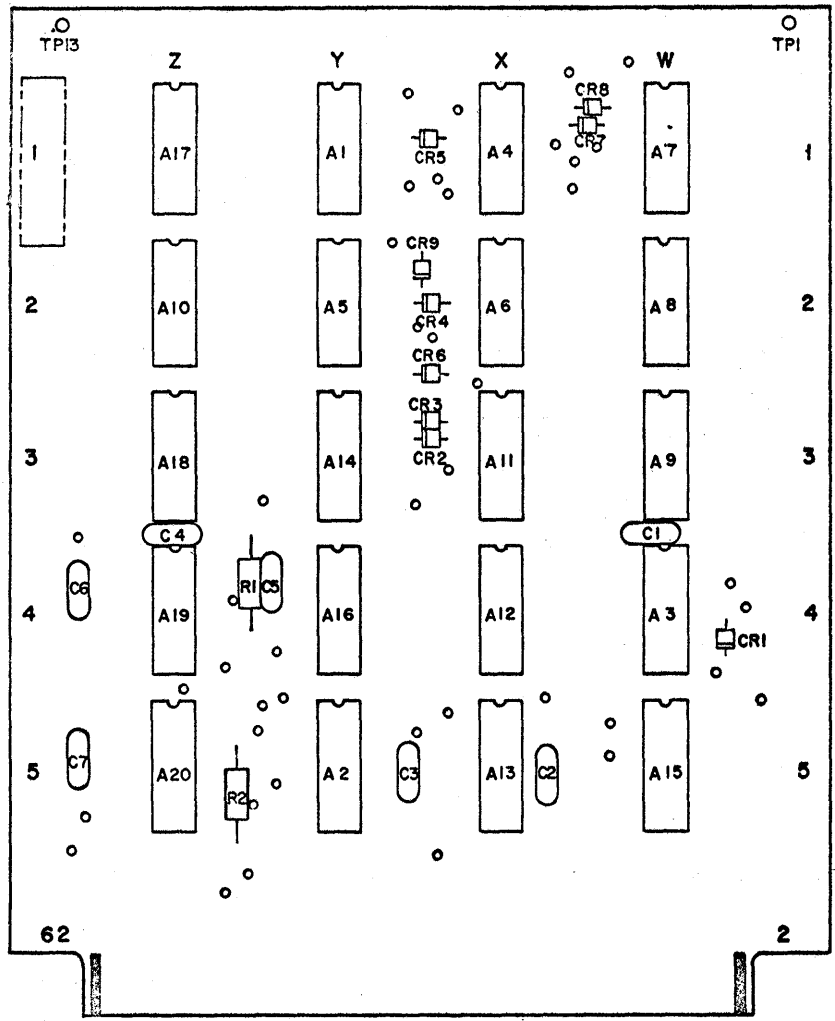


Figure C-42
Card 8DUD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577900	INTEGRATED CKT; Quad 2 input gate	9					
A2			SAME AS A1						
A3		51578100	INTEGRATED CKT; Triple 3 input gate	2					
A4			SAME AS A1						
A5			SAME AS A1						
A6		51577600	INTEGRATED CKT; Dual buffer element	8					
Thru A9									
A10			SAME AS A1						
A11			SAME AS A6						
A12			SAME AS A6						
A13			SAME AS A3						
A14			SAME AS A1						
A15			SAME AS A6						
A16			SAME AS A1						
A17		51577700	INTEGRATED CKT; Dual 4 input ext	1					
A18			SAME AS A6						
A19			SAME AS A1						
A20			SAME AS A1						
C1		51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	7					
Thru C7									
CR1		51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	9					
Thru CR9									
R1		51000258	RESISTOR,FXD,COMP; 680 ohm 5% 1/4W	2					
R2			SAME AS R1						

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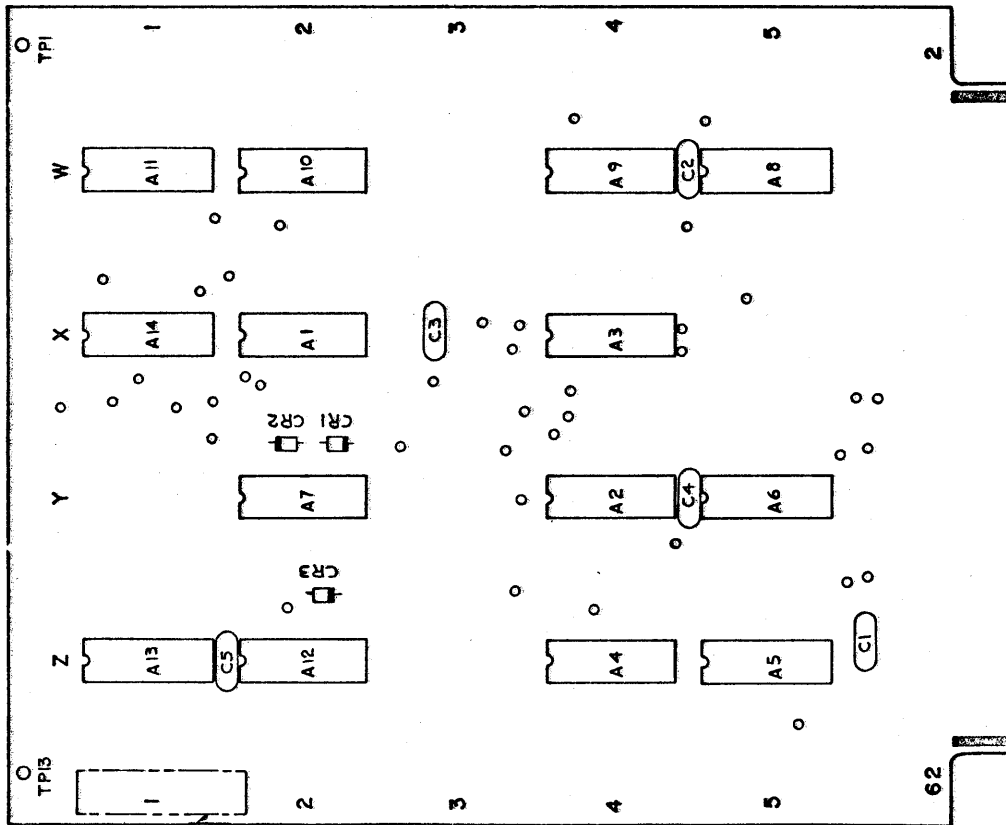
90005044

CARD 8DUD

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90005254

Figure C-43
Card 8GYD



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51578100	INTEGRATED CKT; Triple 3 input gate	3					
A2		51577900	INTEGRATED CKT; Quad 2 input gate	5					
A3			SAME AS A2						
A4			SAME AS A2						
A5		51577600	INTEGRATED CKT; Dual buffer element	4					
A6			SAME AS A5						
A7			SAME AS A5						
A8		51577500	INTEGRATED CKT; Dual gate element	2					
A9			SAME AS A1						
A10			SAME AS A2						
A11			SAME AS A1						
A12			SAME AS A2						
A13			SAME AS A5						
A14			SAME AS A8						
C1		51001119	CAP.,FXD,CERAMIC; .01uf 25vdcw	5					
thru C5									
CR1		51007385	SEMICONDUCTOR DEVICE,D1ODE, 10V s1	3					
thru CR3									
PART NO. 90005254								REVISION B	
TITLE Card 8GYD									

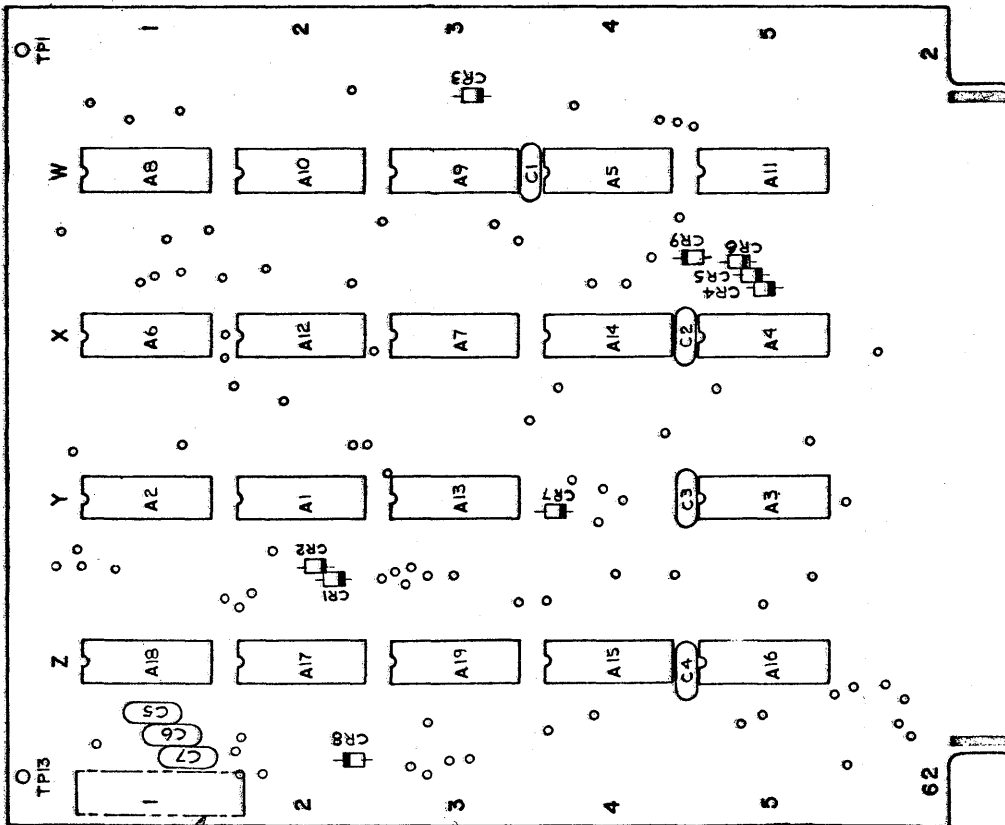
217

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90005260

Figure C-44
Card 8HAD



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
A1		51577500	Integrated Ckt; Dual Gate Ele	3					
A2		51577900	Integrated Ckt; Quad 2 Input Gate Element	6					
A3		51578100	Integrated Ckt; Triple 3 Input Gate Element	6					
A4		51577600	Integrated Ckt; Dual Buffer Element	3					
A5			Same as A2						
A6			Same as A3						
A7			Same as A3						
A8			Same as A2						
A9			Same as A4						
A10			Same as A4						
A11			Same as A2						
A12			Same as A3						
A13			Same as A1						
A14			Same as A2						
A15			Same as A3						
A16			Same as A2						
A17			Same as A1						
A18		51578000	Integrated Ckt; Clocked Flip-Flop	1					
A19			Same as A3						
C1		51001119	Cap, Fxd, Ceramic; .01 uF 25Vdcw	7					
C2 thru C7			Same as C1						
CR1		51007385	Semiconductor Device, Diode; 10V Si	9					
CR2 thru CR9			Same as CR1						
									90005260

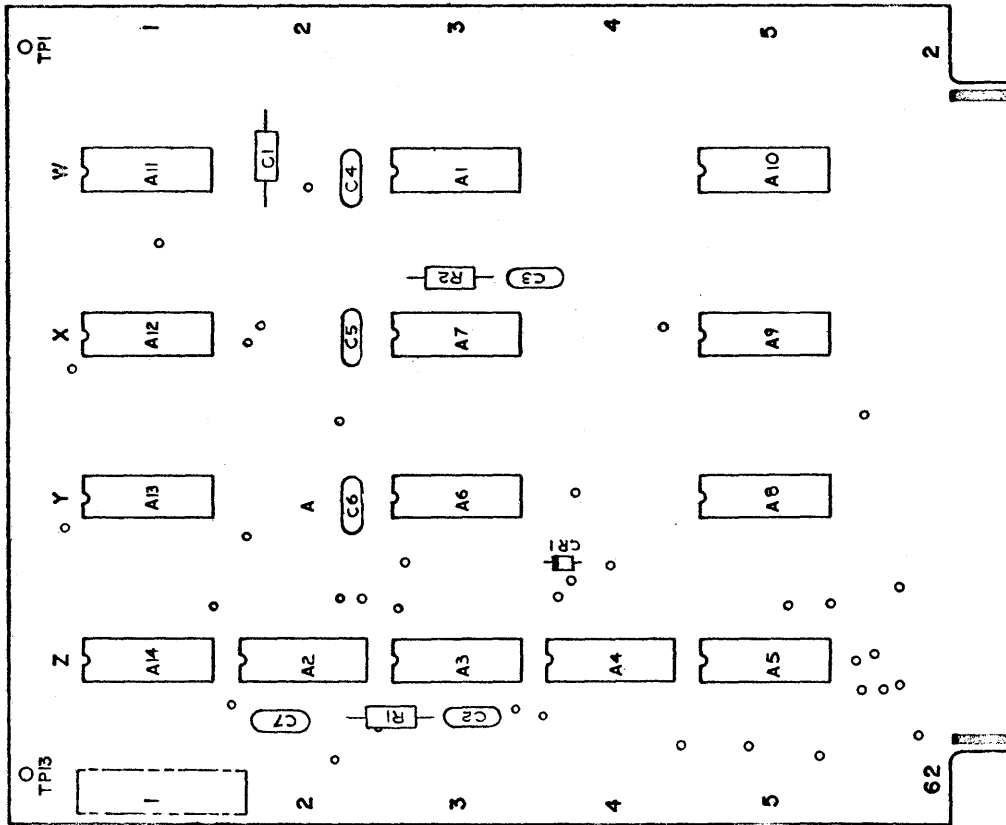
217

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CARD 8HAD

90005263

Figure C-45
Card 8HBD



82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
	A1	51577900	Integrated Ckt; Quad 2 Input Gate Element	6					
	A2	51578100	Integrated Ckt; Triple 3 Input Gate Element	3					
	A3		Same as A1						
	A4	51577500	Integrated Ckt; Dual Gate El.	1					
	A5		Same as A1						
	A6		Same as A1						
	A7		Same as A2						
	A8		Same as A1						
	A9		Same as A2						
	A10		Same as A1						
	A11	51578000	Integrated Ckt; Clocked Flip-Flop	4					
	A12 thru A14		Same as A11						
	C1	51001084	Capacitor; Fxd, Ceramic, .001 uF 100 Vdcw	1					
	C2	51001119	Capacitor, Fxd, Ceramic; .01 uF, 25 Vdcw	6					
	C3 thru C7		Same as C2						
	CR1	51007385	Semiconductor Device, Diode; 10V Si	1					
	R1	51000262	Resistor, Fxd, Comp; 1 K 5% 1/4 W	2					
	R2		Same as R1						

90005263

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CARD 8HBD

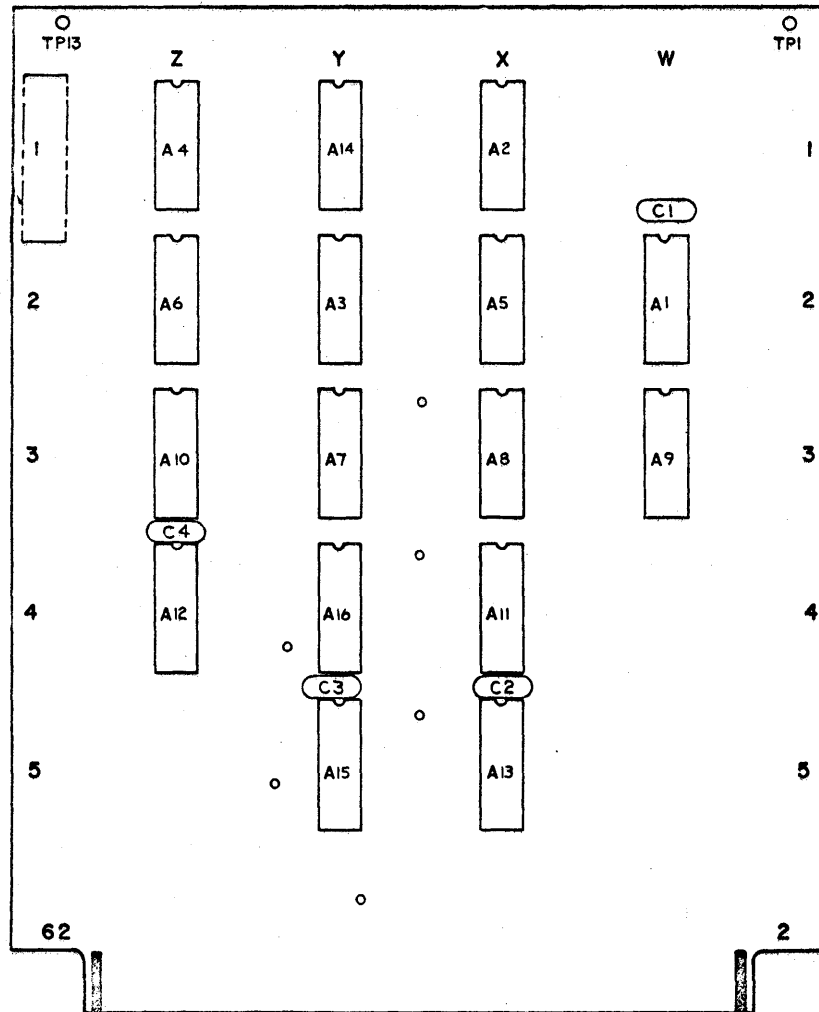


Figure C-46
Card 8HCD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
	A1	51577900	Integrated Ckt; Quad 2 Input Gate Element	12					
	A2		Same as A1						
	A3	51578100	Integrated Ckt; Triple 3 Input Gate Element	1					
	A4								
	thru								
	A13		Same as A1						
	A14	51577600	Integrated Ckt; Dual Buffer Element	1					
	A15	51578000	Integrated Ckt; Clocked Flip-Flop	2					
	A16		Same as A15						
	C1	51001119	Cap, Fxd Ceramic; .01 uf, 25 Vdcw	4					
	C2								
	thru								
	C4		Same as C1						

90005266

CARD 8HCD

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C-103

90005333

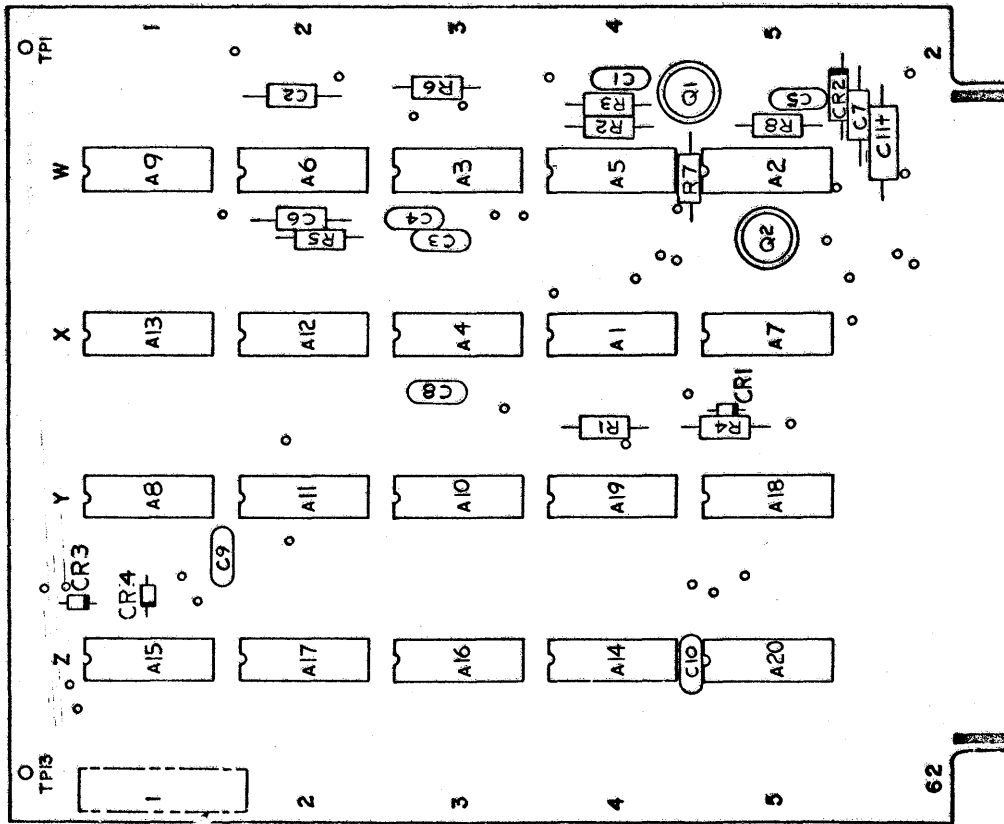


Figure C-47
Card 8JDD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	
	A1	51578100	INTEGRATED CKT; Triple 3 input gate	3		R3	51000253	RESISTOR,FXD,COMP; 430 ohms 5%1/4W	2	
	A2	51577600	INTEGRATED CKT; Dual buffer element	7		R4		SAME AS R1		
	A3	51577900	INTEGRATED CKT; Quad 2 input gate	7		R5		SAME AS R1		
	A4		SAME AS A2			R6		SAME AS R2		
	A5	51577800	INTEGRATED CKT; Dual power gate	1		R7		SAME AS R3		
	A6		SAME AS A2			R8	51573000	RESISTOR,FXD,COMP; 150 ohm 5%1/4W	1	
	A7		SAME AS A3							
	A8		SAME AS A2							
	A9		SAME AS A3							
	A10		SAME AS A3							
	A11		SAME AS A3							
	A12	65611100	INTEGRATED CKT; Dual clocked F/F	2						
	A13		SAME AS A12							
	A14		SAME AS A3							
	A15		SAME AS A2							
	A16		SAME AS A1							
	A17		SAME AS A2							
	A18		SAME AS A2							
	A19		SAME AS A1							
	A20		SAME AS A3							
	C1	51001119	CAPACITOR,FXD,CER; .01uf 25vdcw	5						
	C2	51001084	CAPACITOR,FXD,CER; 1000uuf 100vdcw	2						
	C3	51000989	CAPACITOR,FXD,CER; .1uf 25vdcw	2						
	C4		SAME AS C3							
	C5		SAME AS C1							
	C6		SAME AS C2							
	C7	51001085	CAPACITOR,FXD,CER; 330uuf 100vdcw	1						
	C8		SAME AS C1							
	C9		SAME AS C1							
	C10		SAME AS C1							
	C11	51000952	CAPACITOR,FXD,ELECT; 1uf 35vdcw	1						
	CR1	51007385	SEMICONDUCTOR DEVICE,DIODE; 10V Si	2						
	CR2	51001277	SEMICONDUCTOR DEVICE,DIODE; 10V Ge	1						
	CR3		SAME AS CR1							
	CR4		SAME AS CR1							
	Q1	51580600	TRANSISTOR; NPN Si low power	2						
	Q2		SAME AS Q1							
	R1	51000402	RESISTOR,FXD,COMP; 5.6K 5% 1/4W	3						
	R2	51000262	RESISTOR,FXD,COMP; 1.0K 5% 1/4W	2						
					PART NO. 90005333			REVISION A		
					TITLE CARD 8JDD					

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DDD 329

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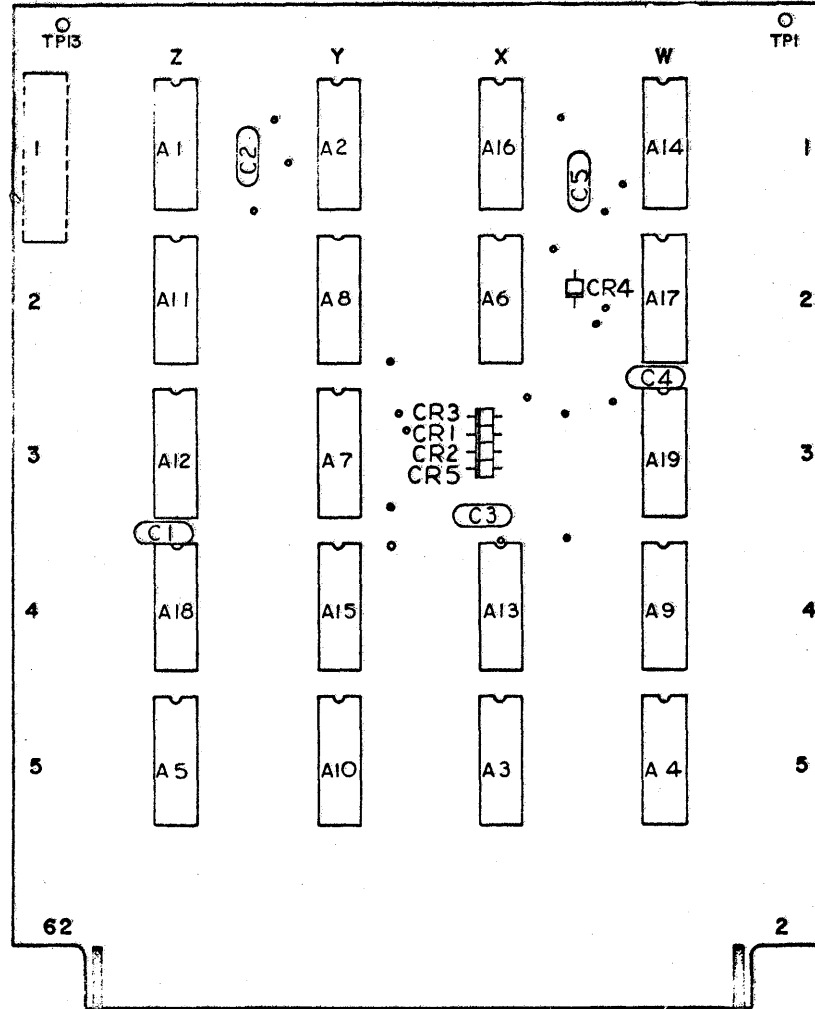


Figure C-48
Card 9CJD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
1	A1	51577900	INTEGRATED CKT; Quad 2 input gate	8					
2	A2	51578100	INTEGRATED CKT; Triple 3 input gate	7					
	A3		SAME AS A1						
	A4		SAME AS A2						
3	A5	51578000	INTEGRATED CKT; Clocked flip flop	1					
4	A6	51577500	INTEGRATED CKT; Dual gate element	2					
	A7		SAME AS A1						
	A8		SAME AS A2						
	A9		SAME AS A1						
5	A10	51577600	INTEGRATED CKT; Dual buffer element	1					
	A11		SAME AS A2						
	A12		SAME AS A1						
	A13		SAME AS A6						
	A14		SAME AS A1						
	A15		SAME AS A2						
	A16		SAME AS A1						
	A17		SAME AS A2						
	A18		SAME AS A1						
	A19		SAME AS A2						
6	C1	51001119	CAP.,FXD,CERAMIC; .01 uf 25vdcw	5					
	Thru C5								
7	CR1	51007385	SEMICONDUCTOR DEVICE,DIODE; 10V SI	5					
	Thru CR5								
PART NO. 90016700								REVISION	A
TITLE								CARD 9CJD	

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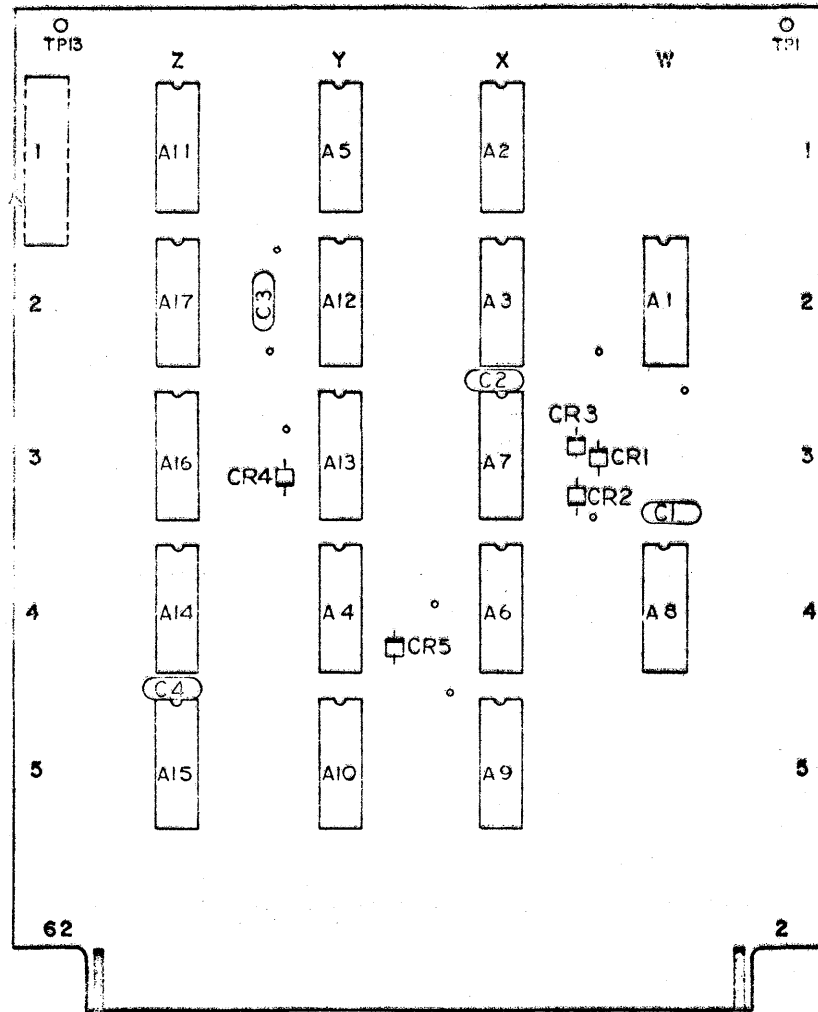


Figure C-49
Card 9CMD

82128400

ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY	ITEM NO.	REF DES	PART NUMBER	DESCRIPTION	QTY
	A1	51577900	INTEGRATED CKT; Quad 2 input gate	10					
	A2		SAME AS A1						
	A3	51578100	INTEGRATED CKT; Triple 3 input gate	2					
	A4		SAME AS A1						
	A5		SAME AS A1						
	A6		SAME AS A1						
	A7	51577600	INTEGRATED CKT; Dual buffer element	4					
	A8		SAME AS A1						
	A9		SAME AS A7						
	A10		SAME AS A7						
	A11		SAME AS A3						
	A12		SAME AS A1						
	A13		SAME AS A7						
	A14		SAME AS A1						
	A15	51577500	INTEGRATED CKT; Dual gate element	1					
	A16		SAME AS A1						
	A17		SAME AS A1						
	C1	51001119	CAP., FXD, CERAMIC; .01 uf 25vdcw	4					
	thru C4								
	CR1	51007385	SEMICONDUCTOR DEVICE, DIODE; 10V Si	5					
	thru CR5								
					PART NO. 90017600			REVISION	
					TITLE CARD 9CMD				

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>>> CUT OUT FOR USE AS LOOSE-LEAF BINDER TITLE TAB