

# TEXAS INSTRUMENTS

*Improving Man's Effectiveness Through Electronics*

## Model 980B Computer Maintenance Manual Electrical Drawings

MANUAL NO. 943012-9704  
ORIGINAL ISSUE 15 OCTOBER 1974  
REVISED AND REISSUED 1 FEBRUARY 1976

**Digital Systems Division**



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## LIST OF EFFECTIVE PAGES

INSERT LATEST CHANGED PAGES DESTROY SUPERSEDED PAGES

Note: The portion of the text affected by the changes is indicated by a vertical bar in the outer margins of the page.

Model 980B Computer Maintenance Manual: Electrical Drawings  
(943012-9704)

Original Issue . . . . . 15 October 1974

Revised and Reissued . . . . . 1 February 1976 (ECN 408203)

Total number of pages in this publication is 52 consisting of the following:

PAGE NO.	CHANGE NO.	PAGE NO.	CHANGE NO.	PAGE NO.	CHANGE NO.
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Eff. Pages . . . . .	0				
iii - iv . . . . .	0				
1-1 - 1-2 . . . . .	0				
2-1 - 2-42 . . . . .	0				
User's Resp . . . . .	0				
Bus. Reply . . . . .	0				
Cover Blank . . . . .	0				
Cover . . . . .	0				



TABLE OF CONTENTS

Title

SECTION I. INTRODUCTION

SECTION II. DRAWINGS





SECTION I  
INTRODUCTION

This volume contains the electrical drawings necessary to properly maintain and service the Texas Instruments Model 980B Computer.

Drawings of the Direct Memory Access Channel (DMAC), Input/Output (I/O) Interface board, I/O Expander board, and power supply are included in separate volumes. The load, pin, wire, and logic documentation lists are also in separate volumes. These publications are the following:

<u>Title</u>	<u>Manual No.</u>
Model 960/980 Computers Direct Memory Access Channel Manual	966312-9701
Model 980 Computer Maintenance Manual: Input/Output and Input/Output Expansion	960699-9704
Model 960B/980B Computer Maintenance Manual: Power Supply	942773-9703
Model 980B Computer Maintenance Manual: Load, Pin and Wire Lists	943012-9705
Model 980B Computer Maintenance Manual: Logic Documentation List	943012-9706



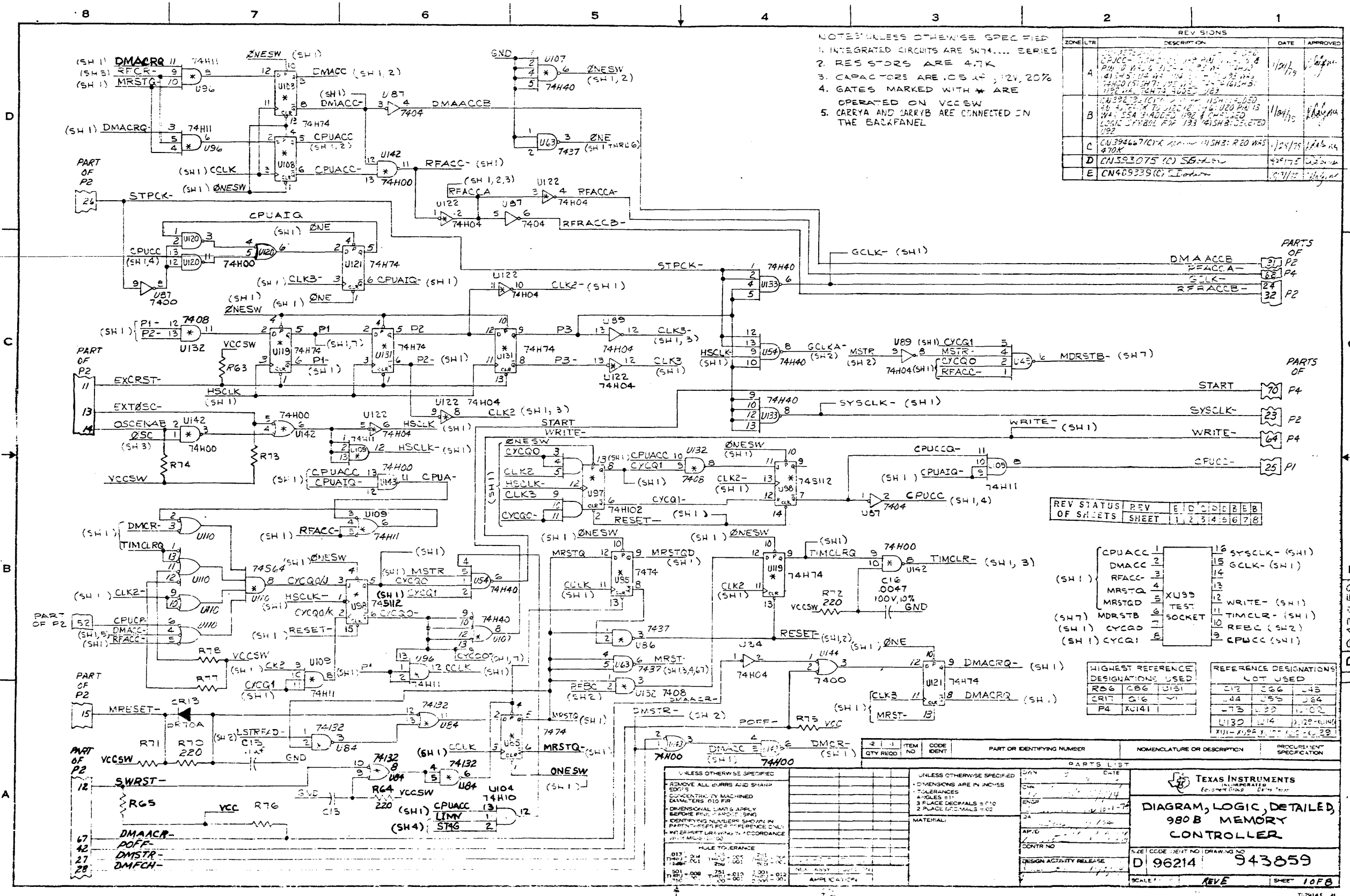
SECTION II  
DRAWINGS

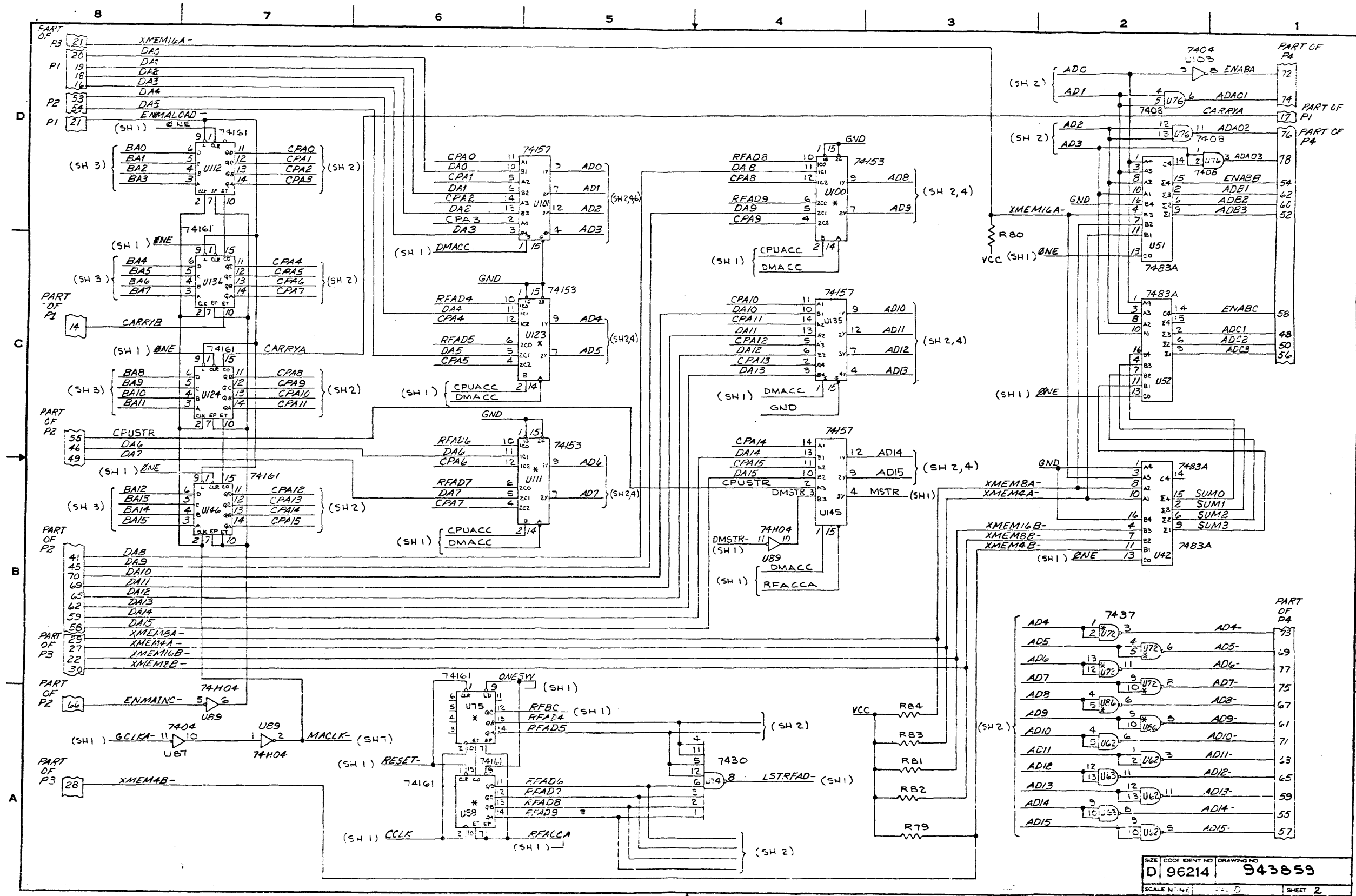
The Model 980B electrical drawings are listed below according to function and are included on the pages that follow.

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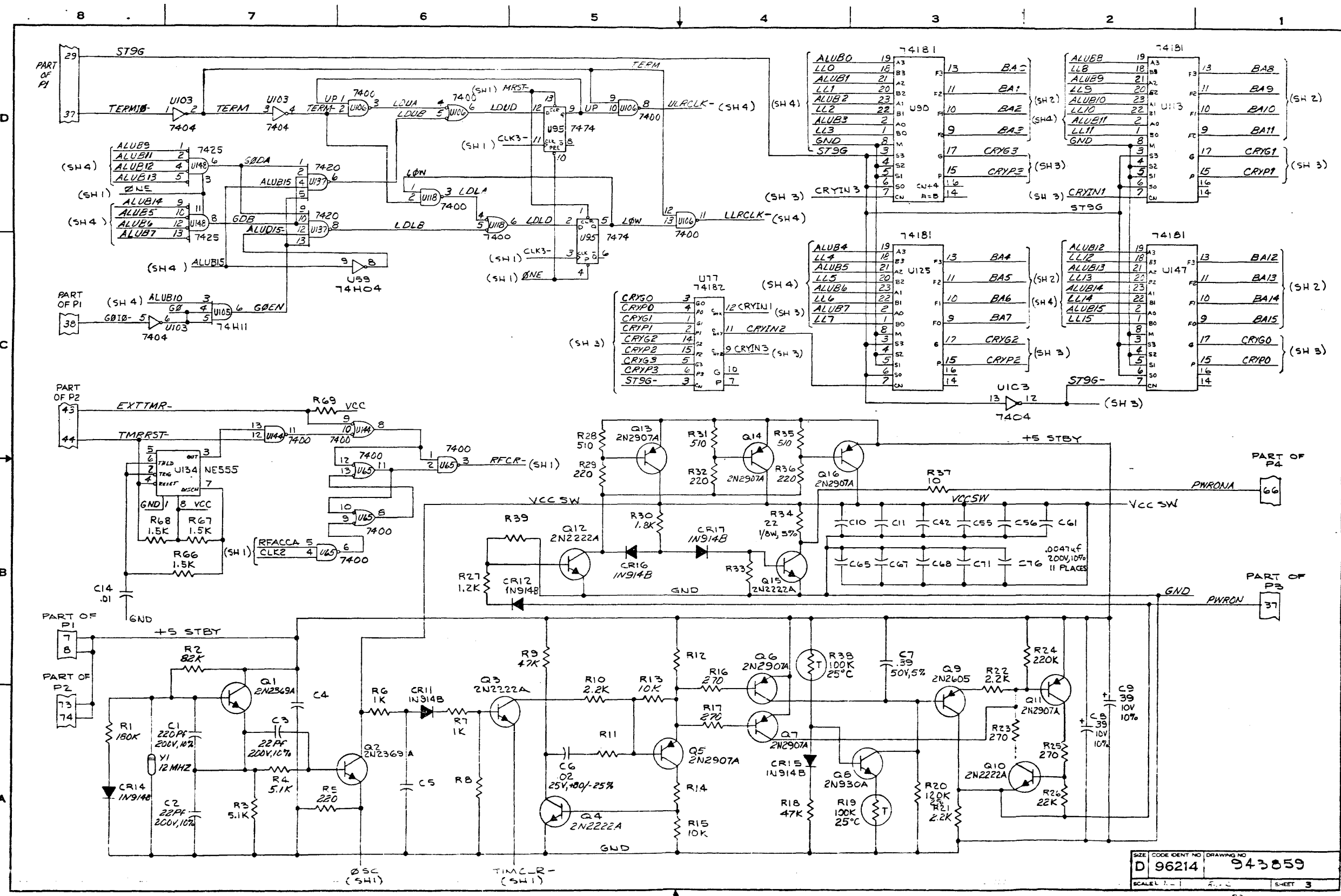




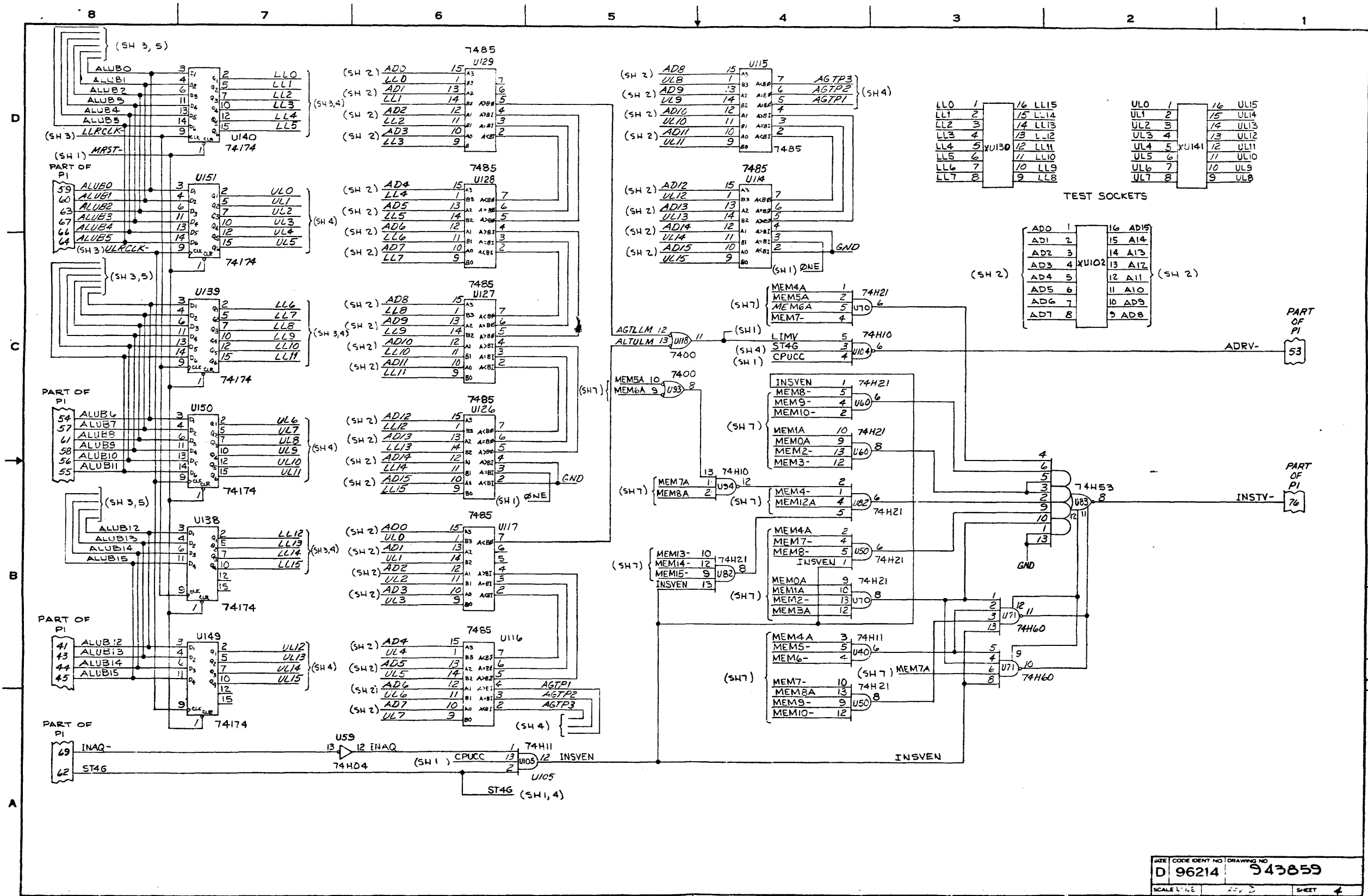




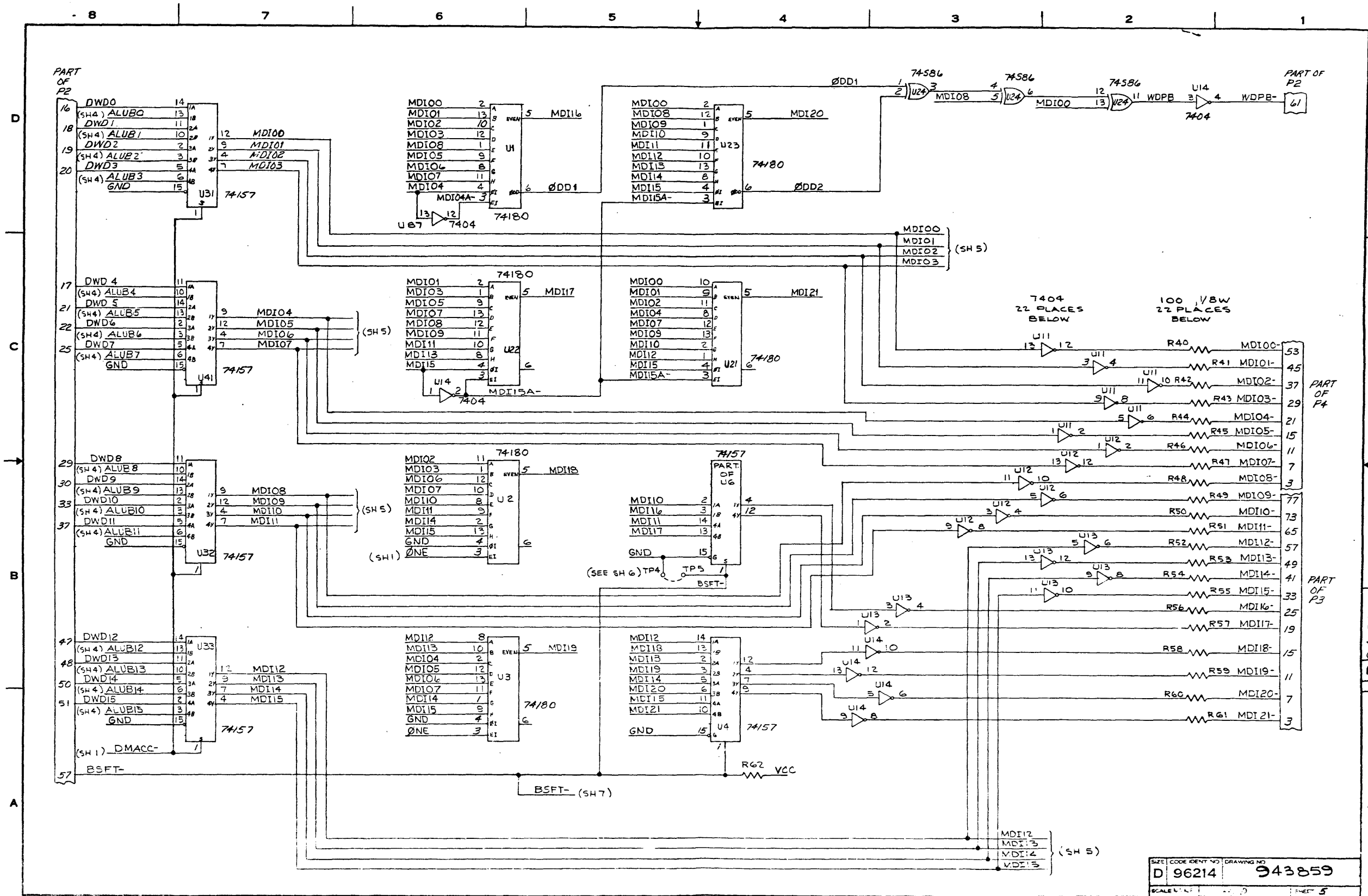
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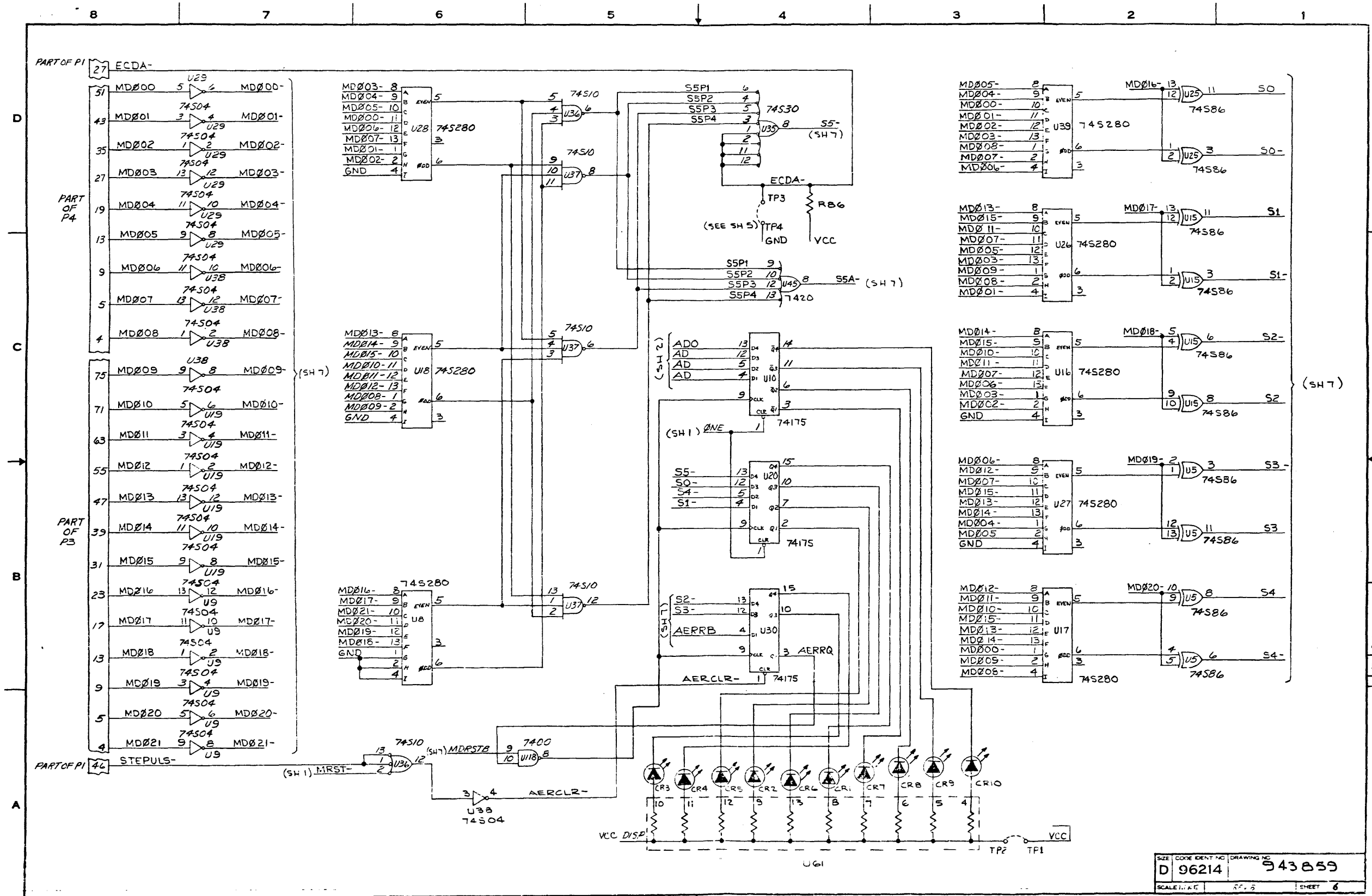
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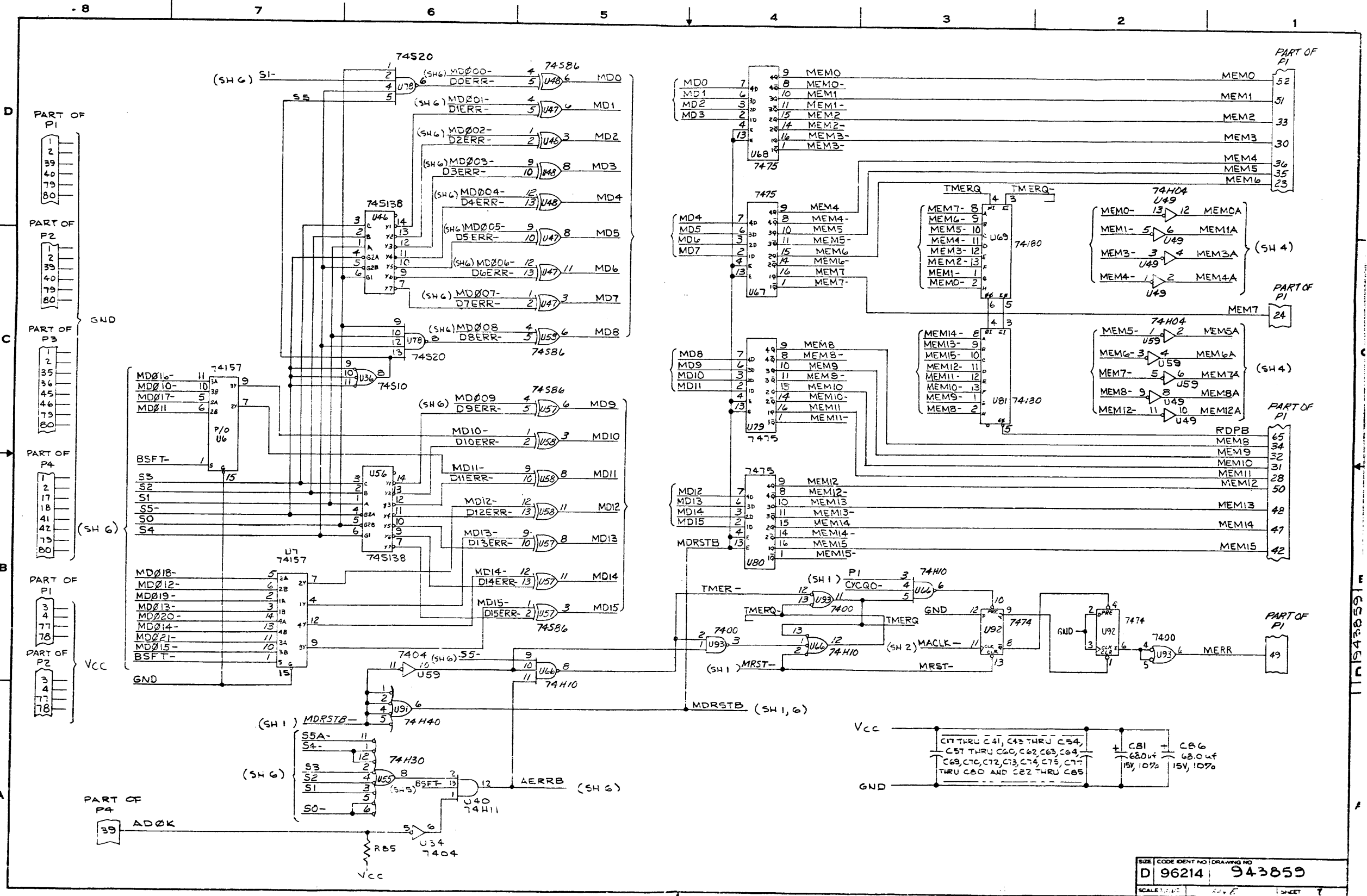
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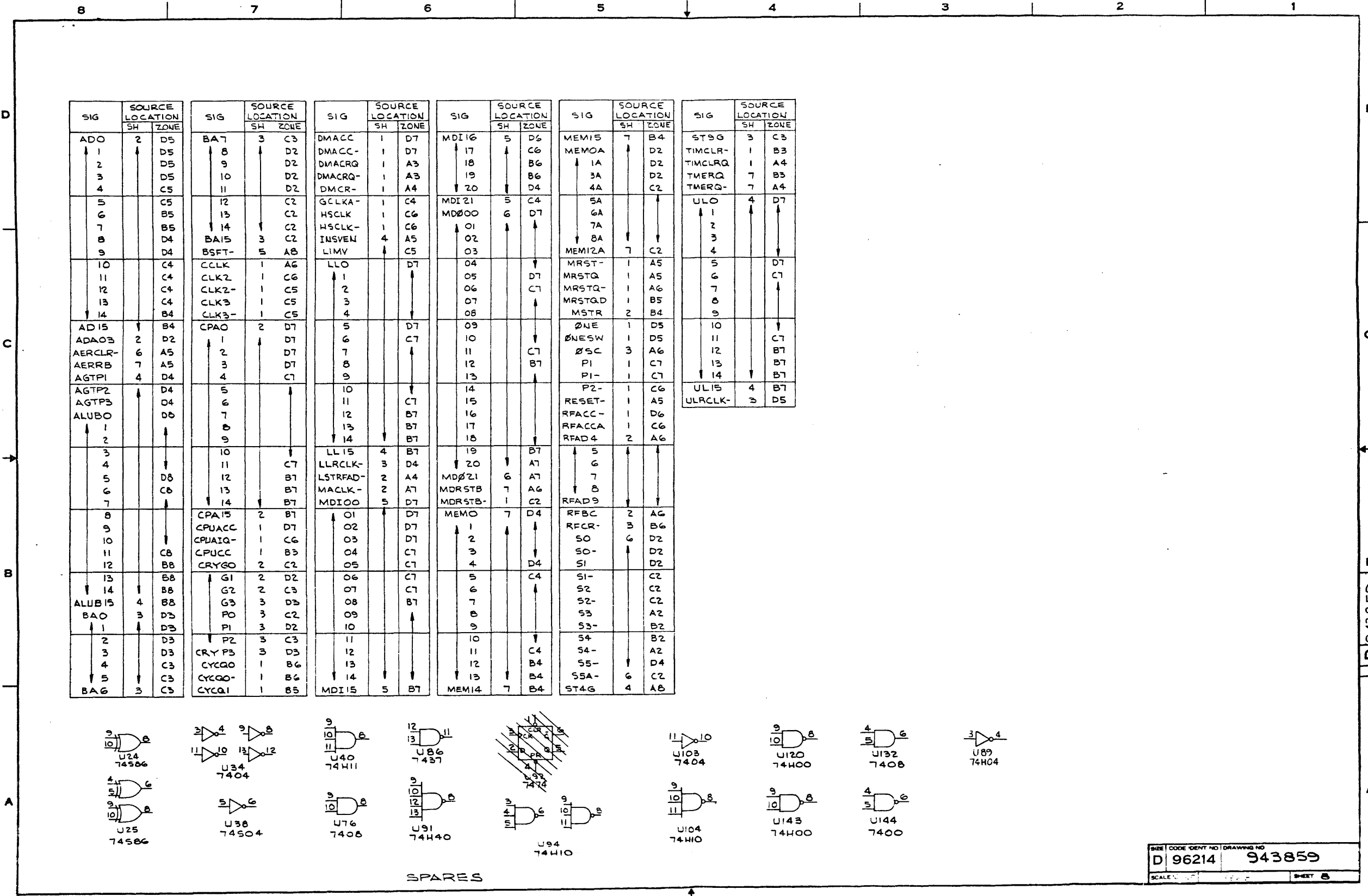
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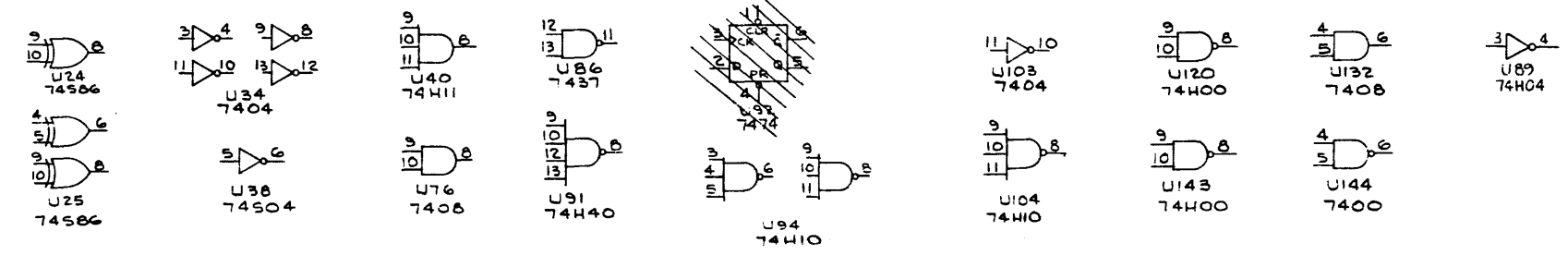
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SCALE	1:1	57.5	SHEET 6



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 SCALE: 1:1 SHEET 1



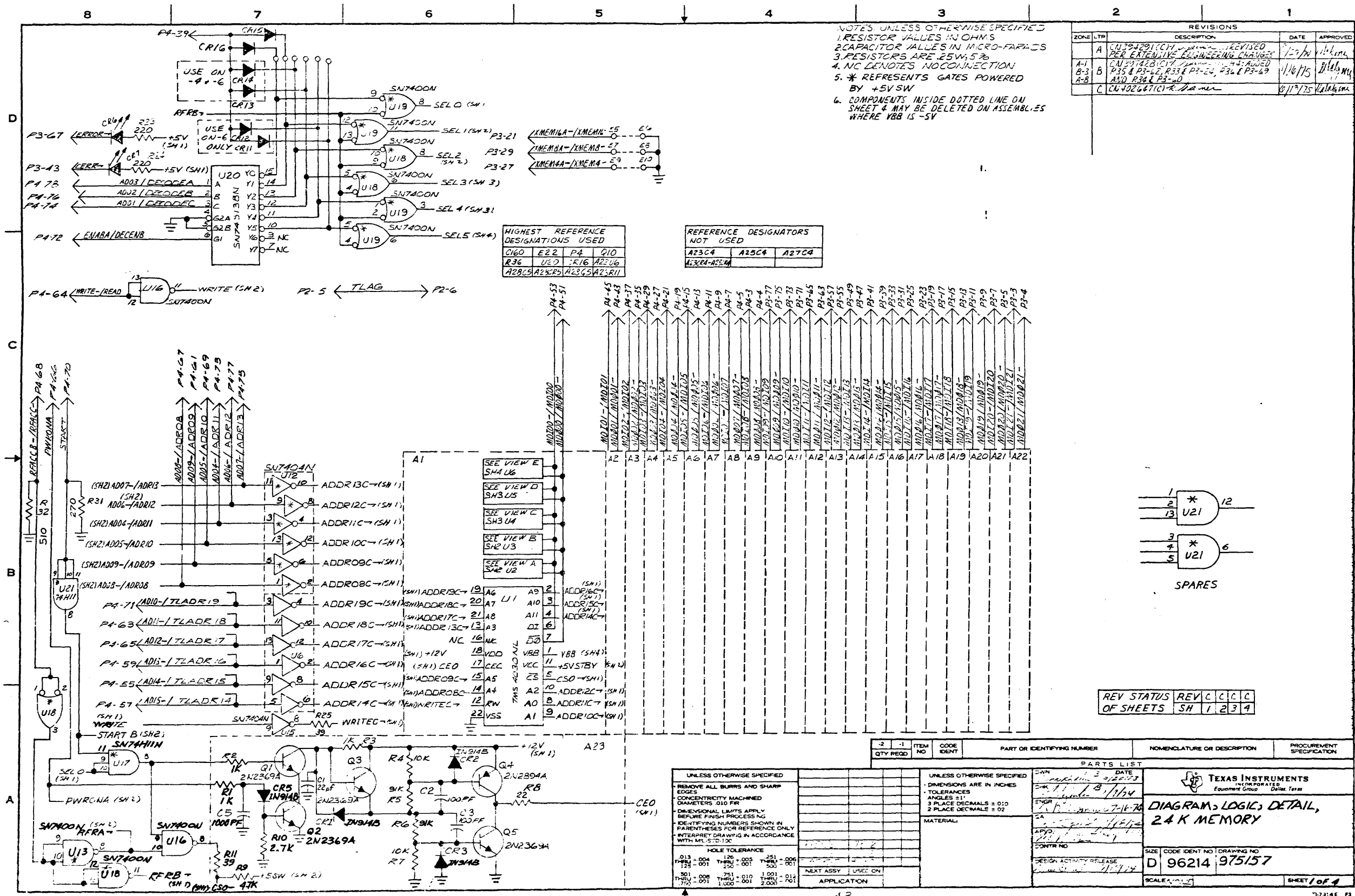
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ADO	2	D5	BA7	3	C3	DMACC	1	D7	MDI16	5	D6	MEM15	7	B4	ST9G	3	C3												
1	↑	D5	8	↑	D2	DMACC-	1	D7	17	↑	C6	MEMOA	↑	D2	TIMCLR-	1	B3												
2	↑	D5	9	↑	D2	DMACRQ	1	A3	18	↑	B6	1A	↑	D2	TIMCLRQ	1	A4												
3	↑	D5	10	↑	D2	DMACRQ-	1	A3	19	↑	B6	3A	↑	D2	TMERQ	7	B3												
4	↑	C5	11	↑	D2	DMCR-	1	A4	20	↑	D4	4A	↑	C2	TMERQ-	7	A4												
5	↑	C5	12	↑	C2	GCLKA-	1	C4	MDI21	5	C4	5A	↑	↑	ULO	4	D7												
6	↑	B5	13	↑	C2	HCLK	1	C6	MD000	6	D7	6A	↑	↑	1	↑	↑												
7	↑	B5	14	↑	C2	HCLK-	1	C6	01	↑	↑	7A	↑	↑	2	↑	↑												
8	↑	D4	BA15	3	C2	INSVEN	4	A5	02	↑	↑	8A	↑	↑	3	↑	↑												
9	↑	D4	BSFT-	5	AB	LIMV	↑	C5	03	↑	↑	MEM12A	7	C2	4	↑	↑												
10	↑	C4	CCLK	1	A6	LLO	↑	D7	04	↑	↑	MRST-	1	A5	5	↑	D7												
11	↑	C4	CLK2	1	C6	1	↑	↑	05	↑	D7	MRSTQ	1	A5	6	↑	C7												
12	↑	C4	CLK2-	1	C5	2	↑	↑	06	↑	C7	MRSTQ-	1	A6	7	↑	↑												
13	↑	C4	CLK3	1	C5	3	↑	↑	07	↑	↑	MRSTQD	1	B5	8	↑	↑												
14	↑	B4	CLK3-	1	C5	4	↑	↑	08	↑	↑	MSTR	2	B4	9	↑	↑												
AD15	↑	B4	CPAO	2	D7	5	↑	D7	09	↑	↑	ONE	1	D5	10	↑	↑												
ADA03	2	D2	1	↑	D7	6	↑	C7	10	↑	↑	ONESW	1	D5	11	↑	C7												
AERCLR-	6	A5	2	↑	D7	7	↑	↑	11	↑	C7	OSC	3	A6	12	↑	B7												
AERRB	7	A5	3	↑	D7	8	↑	↑	12	↑	B7	PI	1	C7	13	↑	B7												
AGTPI	4	D4	4	↑	C7	9	↑	↑	13	↑	↑	PI-	1	C7	14	↑	B7												
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AGTP3	↑	D4	6	↑	↑	11	↑	C7	15	↑	↑	RESET-	1	A5	ULRCLK-	3	D5												
ALUBO	↑	D6	7	↑	↑	12	↑	B7	16	↑	↑	RFACC-	1	D6															
1	↑	↑	8	↑	↑	13	↑	B7	17	↑	↑	RFACCA	1	C6															
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3	↑	↑	10	↑	↑	LL15	4	B7	19	↑	B7	5	↑	↑															
4	↑	↑	11	↑	C7	LLRCLK-	3	D4	20	↑	A7	6	↑	↑															
5	↑	D6	12	↑	B7	LSTRFAD-	2	A4	MD021	6	A7	7	↑	↑															
6	↑	C6	13	↑	B7	MACLK-	2	A7	MDRSTB	7	A6	8	↑	↑															
7	↑	↑	14	↑	B7	MADIOO	5	D7	MDRSTB-	1	C2	9	↑	↑															
8	↑	↑	CPA15	2	B7	01	↑	D7	MEMO	7	D4	RFAD9	↑	↑															
9	↑	↑	CPUACC	1	D7	02	↑	D7	1	↑	↑	RFBC	2	A6															
10	↑	↑	CPUIQ-	1	C6	03	↑	D7	2	↑	↑	RFCR-	3	B6															
11	↑	C8	CPUCC	1	B3	04	↑	C7	3	↑	↑	SO	6	D2															
12	↑	B8	CRYGO	2	C2	05	↑	C7	4	↑	D4	SO-	↑	D2															
13	↑	B8	G1	2	D2	06	↑	C7	5	↑	C4	S1	↑	D2															
14	↑	B8	G2	2	C3	07	↑	C7	6	↑	↑	S1-	↑	C2															
ALUB15	4	B8	G3	3	D3	08	↑	B7	7	↑	↑	S2	↑	C2															
BAO	3	D3	PO	3	C2	09	↑	↑	8	↑	↑	S2-	↑	C2															
1	↑	D3	PI	3	D2	10	↑	↑	9	↑	↑	S3	↑	A2															
2	↑	D3	P2	3	C3	11	↑	↑	10	↑	↑	S3-	↑	B2															
3	↑	D3	CRYP3	3	D3	12	↑	↑	11	↑	C4	S4	↑	A2															
4	↑	C3	CYCQ0	1	B6	13	↑	↑	12	↑	B4	S4-	↑	A2															
5	↑	C3	CYCQ0-	1	B6	14	↑	↑	13	↑	B4	S5-	↑	D4															
BA6	3	C3	CYCQ1	1	B5	MDI15	5	B7	MEM14	7	B4	S5A-	6	C2															
												ST4G	4	AB															



SPARES

SIZE	CODE	IDENT NO	DRAWING NO
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SCALE			SHEET 8



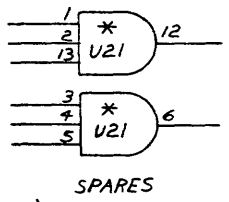


- NOTES UNLESS OTHERWISE SPECIFIED  
 1. RESISTOR VALUES IN OHMS  
 2. CAPACITOR VALUES IN MICRO-FARADS  
 3. RESISTORS ARE .25W, 5%  
 4. NC DENOTES NO CONNECTION  
 5. \* REPRESENTS GATES POWERED BY +5V SW  
 6. COMPONENTS INSIDE DOTTED LINE ON SHEET 4 MAY BE DELETED ON ASSEMBLIES WHERE VBB IS -5V

REVISIONS			
ZONE LTR	DESCRIPTION	DATE	APPROVED
A	CU 78-1291 (CM) - REVISED PER EXTENSION ENGINEERING CHANGES	7/2/74	[Signature]
A-1 B-3 A-8	CU 78-1291 (CM) - REVISED PER EXTENSION ENGINEERING CHANGES	11/16/75	[Signature]
C	CU 702667 (C) - REVISED	6/11/75	[Signature]

HIGHEST REFERENCE DESIGNATIONS USED	
U160	E22 P4 Q10
R36	U20 R16 A22 U6
A28 C9 A28 C9	A23 G5 A23 R11

REFERENCE DESIGNATORS NOT USED		
A23 C4	A25 C4	A27 C4
MEMA-A	MEMB	MEM4



REV STATUS OF SHEETS	REV C	C	C	C
	SH	1	2	3

PARTS LIST			
QTY	REQD	ITEM NO	CODE IDENT
2	1		

UNLESS OTHERWISE SPECIFIED	
REMOVE ALL BURRS AND SHARP EDGES	DIMENSIONS ARE IN INCHES
CONCENTRICITY MACHINED DIAMETERS .010 FIR	TOLERANCES
DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING	ANGLES 1:1
IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY	3 PLACE DECIMALS ± 0.02
INTERPRET DRAWINGS IN ACCORDANCE WITH MIL-STD-120	2 PLACE DECIMALS ± 0.2

HOLE TOLERANCE	
.013 - .004	.126 ± .005
.128 - .001	.251 ± .001
.301 ± .008	.751 ± .010
.752 - .001	1.006 - .001
	2.000 - .001

MATERIAL	

APPLICATION	

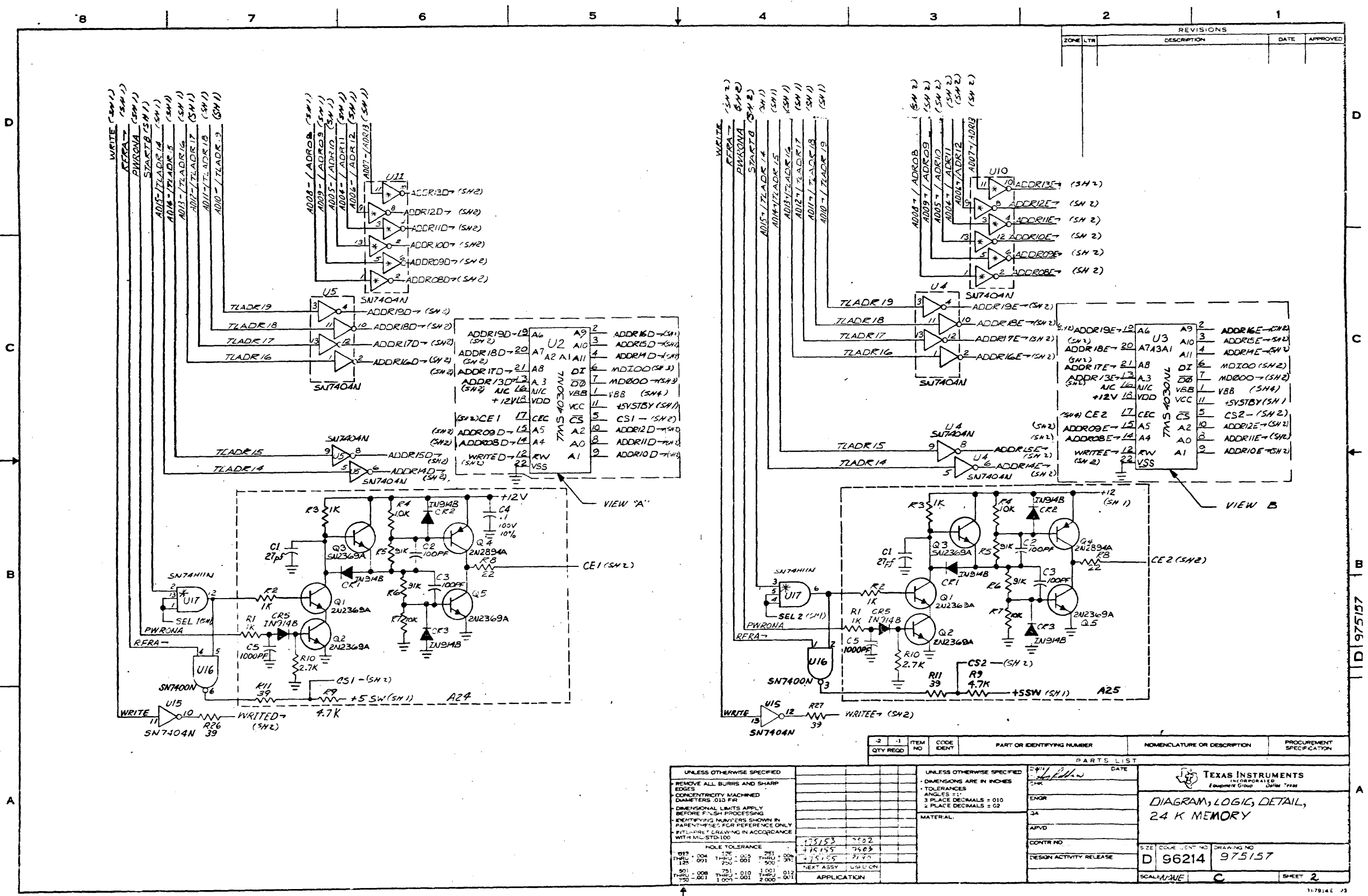
MATERIAL	

MATERIAL	

MATERIAL	



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

U2

A9	2	ADDR16D	(SH1)
A10	3	ADDR15D	(SH1)
A7	4	ADDR14D	(SH1)
A8	6	MD100	(SH3)
A3	7	MD000	(SH4)
A0	8	ADDR11D	(SH1)
A1	9	ADDR10D	(SH1)

U3

A9	2	ADDR16E	(SH2)
A10	3	ADDR15E	(SH2)
A11	4	ADDR14E	(SH2)
A8	6	MD100	(SH2)
A3	7	MD000	(SH2)
A0	8	ADDR11E	(SH2)
A1	9	ADDR10E	(SH2)

U4

A9	2	ADDR16E	(SH2)
A10	3	ADDR15E	(SH2)
A11	4	ADDR14E	(SH2)
A8	6	MD100	(SH2)
A3	7	MD000	(SH2)
A0	8	ADDR11E	(SH2)
A1	9	ADDR10E	(SH2)

U5

A9	2	ADDR16D	(SH2)
A10	3	ADDR15D	(SH2)
A11	4	ADDR14D	(SH2)
A8	6	MD100	(SH2)
A3	7	MD000	(SH2)
A0	8	ADDR11D	(SH2)
A1	9	ADDR10D	(SH2)

UNLESS OTHERWISE SPECIFIED		UNLESS OTHERWISE SPECIFIED		PARTS LIST		
QTY	REQD	ITEM NO	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	PROCUREMENT SPECIFICATION

REMOVE ALL BURRS AND SHARP EDGES  
 CONCENTRICITY MACHINED DIAMETERS .010 FIR  
 DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING  
 IDENTIFYING NUMBERS SHOWN IN PARENT-FIGS FOR REFERENCE ONLY  
 FIT-FINISH DRAWING IN ACCORDANCE WITH MIL-STD-100

DIMENSIONS ARE IN INCHES  
 TOLERANCES  
 ANGLES ±1°  
 3 PLACE DECIMALS = .010  
 2 PLACE DECIMALS = .02

MATERIAL:

HOLE TOLERANCE  
 .015 - .004 THRU .010 THRU .001 THRU .0005  
 .015 - .004 THRU .010 THRU .001 THRU .0005  
 .015 - .004 THRU .010 THRU .001 THRU .0005  
 .015 - .004 THRU .010 THRU .001 THRU .0005

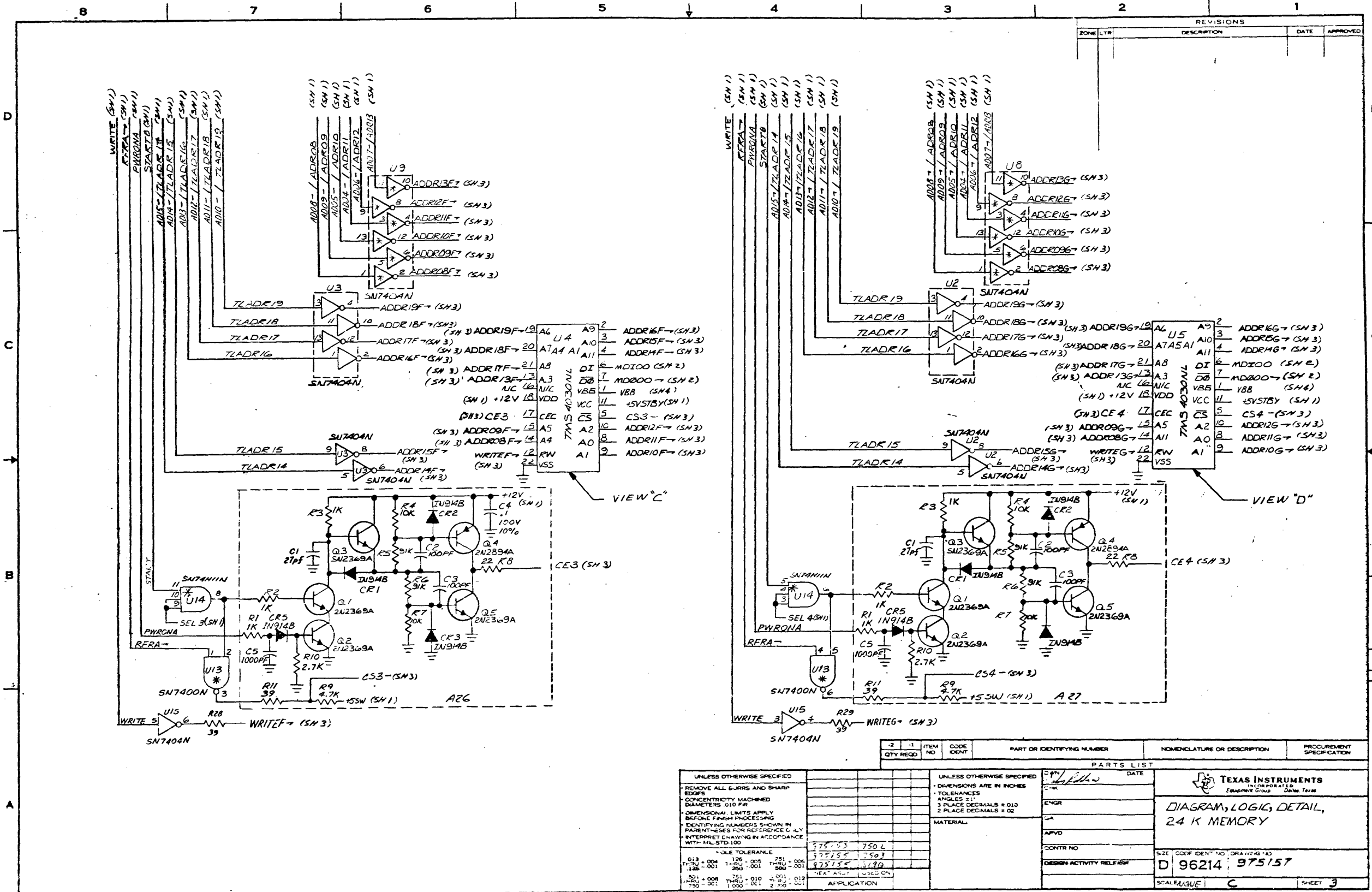
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 ENGR: J. L. HALL  
 DATE: 11/25/53  
 DATE: 11/25/53  
 DATE: 11/25/53

TEXAS INSTRUMENTS  
 INCORPORATED  
 Equipment Group Dallas, Texas

DIAGRAM, LOGIC, DETAIL,  
 24 K MEMORY

SIZE: CODE LIST NO: D 96214  
 DRAWING NO: 975157

CONTR NO:    
 DESIGN ACTIVITY RELEASE:    
 SCALE: 1/16" = 1"      C      SHEET 2



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

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UNLESS OTHERWISE SPECIFIED:  
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 CONCENTRICITY MACHINED DIAMETERS .010 PIR  
 DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING  
 IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY  
 INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100

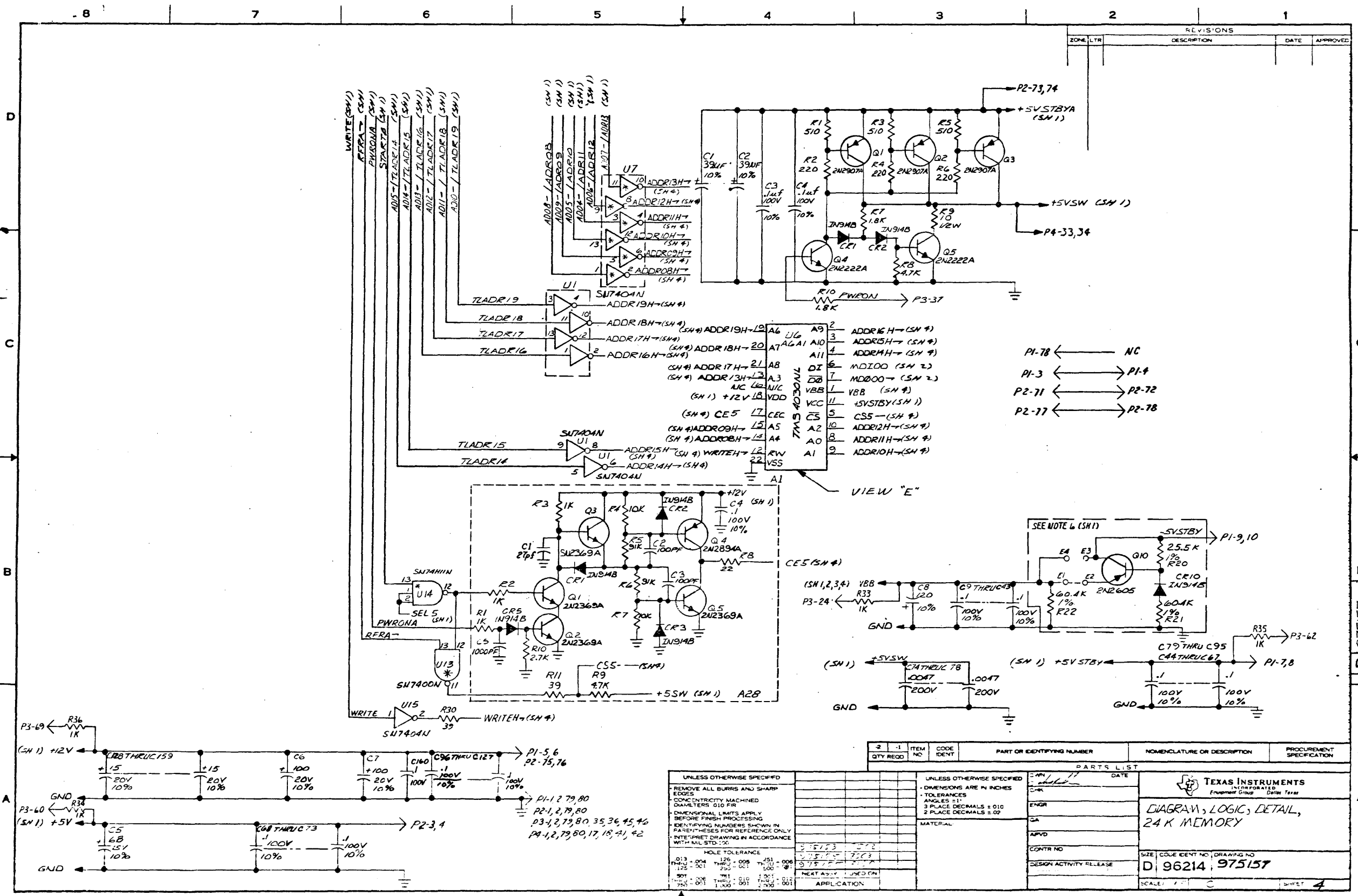
UNLESS OTHERWISE SPECIFIED:  
 DIMENSIONS ARE IN INCHES  
 TOLERANCES  
 ANGLES ±.1  
 3 PLACE DECIMALS ±.010  
 2 PLACE DECIMALS ±.02

MATERIAL:

DATE: 10/24/71  
 DRAWN BY: [Signature]  
 CHECKED BY: [Signature]  
 DESIGNED BY: [Signature]

DESIGN ACTIVITY RELEASE: D 96214, 975157

SCALE/VIEW: C SHEET 3



ZONE	LTR	REVISIONS	DATE	APPROVED
		DESCRIPTION		

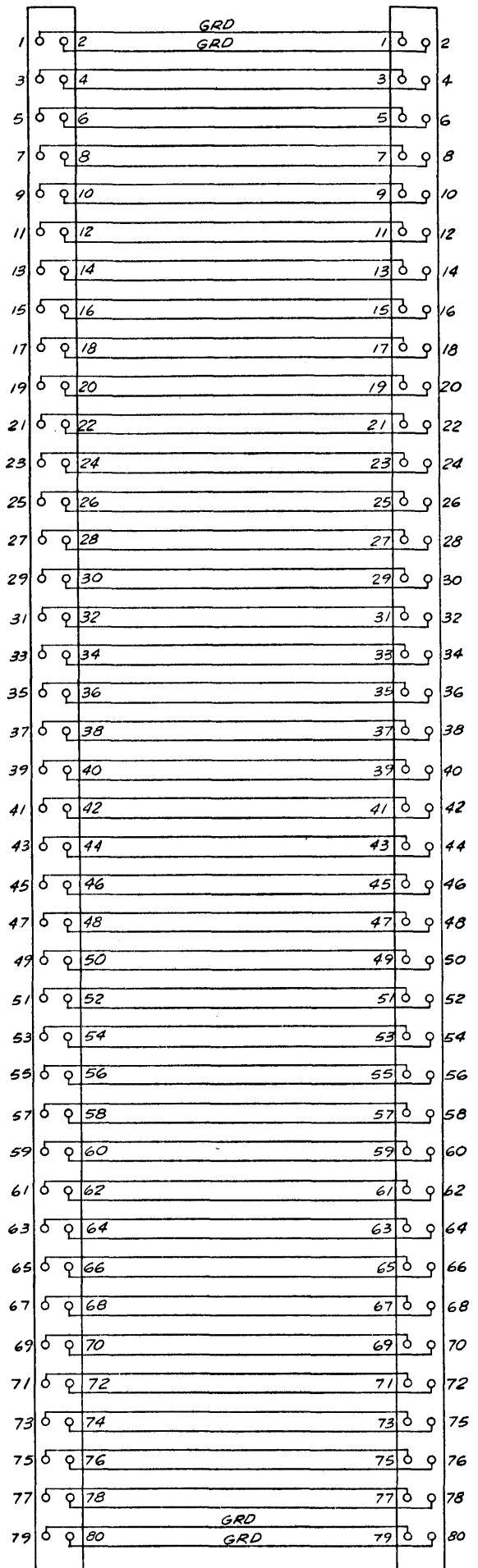
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 P1-3 ← P1-4  
 P2-71 ← P2-72  
 P2-77 ← P2-78

QTY	REQD	ITEM NO	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	PROCUREMENT SPECIFICATION
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PARTS LIST		DATE	
ENGR			
GA			
APVD			
CONTR NO			
DESIGN ACTIVITY RELEASE			

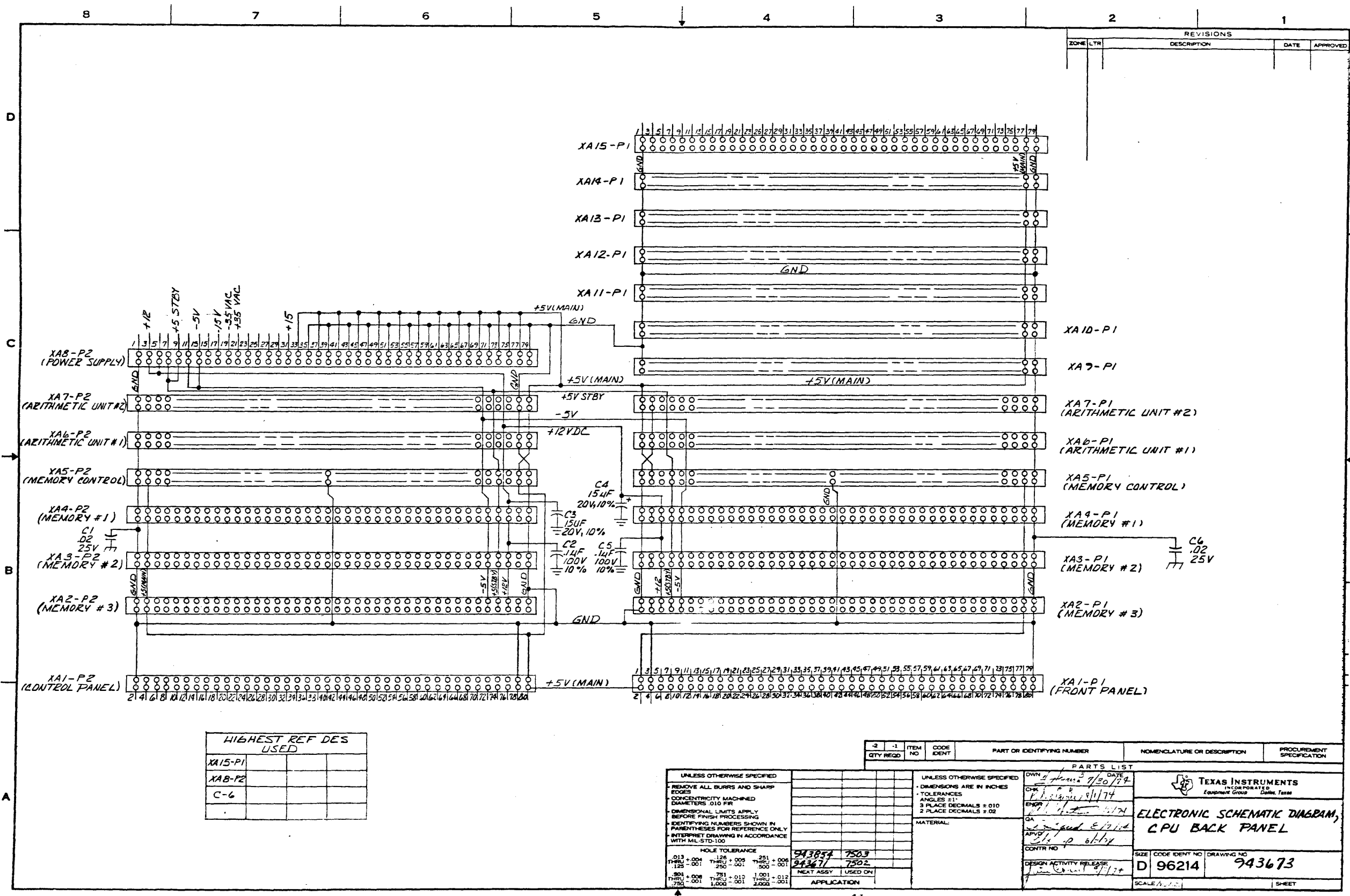
**TEXAS INSTRUMENTS**  
 INCORPORATED  
 Equipment Group Dallas Texas  
**DIAGRAM, LOGIC, DETAIL,**  
**24K MEMORY**  
 SIZE CODE IDENT NO, DRAWING NO  
**D 96214, 975157**  
 SCALE: 1" = 1" C SHEET 4

REV	DESCRIPTION	DATE	APP



UNLESS OTHERWISE SPECIFIED	
SCALE: 1/8" = 1'-0"	DATE: 11/14/51
PROJECT: V.C.V.E.	DRAWN BY: J.S.
NO. 7503	SHEET 0
LIST OF MATERIALS	
DESCRIPTION	QUANTITY
COMPUTER	1
DIAGRAM SCHEMATIC	1
INTERCONNECTOR	1
960763	1

960763



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

HIGHEST REF DES USED	
XA15-P1	
XA8-P2	
C-6	

QTY	REQD	ITEM NO	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	PROCUREMENT SPECIFICATION

UNLESS OTHERWISE SPECIFIED		UNLESS OTHERWISE SPECIFIED	
REMOVE ALL BURRS AND SHARP EDGES	CONCENTRICITY MACHINED	DIMENSIONS ARE IN INCHES	TOLERANCES
DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING	IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY	ANGLES ±1°	3 PLACE DECIMALS ±.010
INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100		2 PLACE DECIMALS ±.02	

HOLE TOLERANCE	
.013 THRU +.001	.124 THRU +.005
.125 THRU -.001	.250 THRU -.005
.501 THRU +.008	.751 THRU +.010
.752 THRU -.001	1.000 THRU -.001

OWN	DATE

CHK	DATE

ENGR	DATE

QA	DATE

APVD	DATE

CONTR NO	DATE

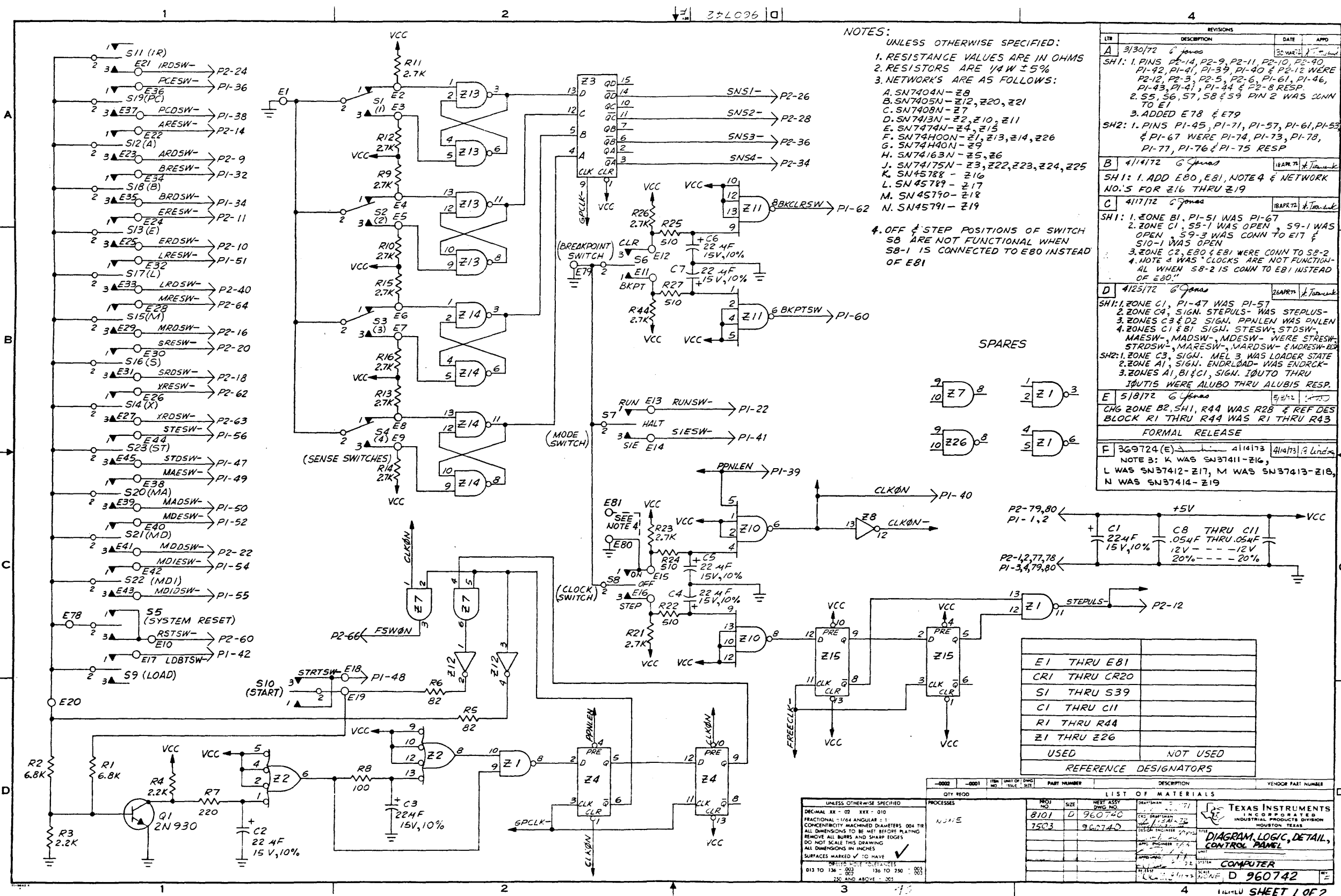
DESIGN ACTIVITY RELEASE	DATE

SIZE	CODE IDENT NO	DRAWING NO
D	96214	943673

SCALE	SHEET



NOTES:  
 UNLESS OTHERWISE SPECIFIED:  
 1. RESISTANCE VALUES ARE IN OHMS  
 2. RESISTORS ARE 1/4W ±5%  
 3. NETWORKS ARE AS FOLLOWS:  
 A. SN7404N-Z8  
 B. SN7405N-Z12, Z20, Z21  
 C. SN7408N-Z7  
 D. SN7413N-Z2, Z10, Z11  
 E. SN7474N-Z4, Z15  
 F. SN74H00N-Z1, Z13, Z14, Z26  
 G. SN74H40N-Z9  
 H. SN74163N-Z5, Z6  
 J. SN74175N-Z3, Z22, Z23, Z24, Z25  
 K. SN45788-Z16  
 L. SN45789-Z17  
 M. SN45790-Z18  
 N. SN45791-Z19  
 4. OFF & STEP POSITIONS OF SWITCH SB ARE NOT FUNCTIONAL WHEN SB-1 IS CONNECTED TO E80 INSTEAD OF E81

REV	DESCRIPTION	DATE	APP'D
A	3/30/72 G. Jones	30 MAR 72	G. Jones
B	4/14/72 G. Jones	14 APR 72	G. Jones
C	4/17/72 G. Jones	17 APR 72	G. Jones
D	4/25/72 G. Jones	25 APR 72	G. Jones
E	5/18/72 G. Jones	18 MAY 72	G. Jones
F	3/6/72 (E) 3 4/14/73 4/14/73 J. Lindner	6 MAR 72	J. Lindner

SH1: 1. PINS P2-14, P2-9, P2-11, P2-10, P2-40, P2-42, P2-41, P1-39, P1-40 & P2-12 WERE P2-12, P2-3, P2-5, P2-6, P1-61, P1-46, P1-43, P1-47, P1-34 & P2-8 RESP.  
 2. S5, S6, S7, S8 & S9 PIN 2 WAS CONN TO E1  
 3. ADDED E78 & E79  
 SH2: 1. PINS P1-45, P1-71, P1-57, P1-61, P1-55, & P1-67 WERE P1-74, P1-73, P1-78, P1-77, P1-76 & P1-75 RESP

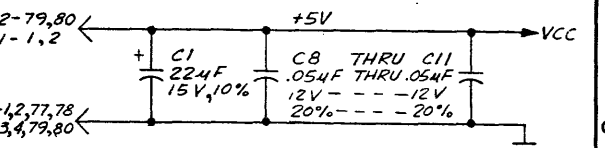
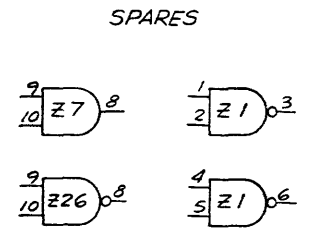
SH1: 1. ZONE B1, P1-51 WAS P1-67  
 2. ZONE C1, S5-1 WAS OPEN, S9-1 WAS OPEN, S9-3 WAS CONN TO E17 & S10-1 WAS OPEN  
 3. ZONE C2, E80 & E81 WERE CONN TO S8-2  
 4. NOTE 4 WAS "CLOCKS ARE NOT FUNCTIONAL WHEN S8-2 IS CONN TO E81 INSTEAD OF E80."

SH1: 1. ZONE C1, P1-47 WAS P1-57  
 2. ZONE C4, SIGN. STEPULS- WAS STEPLUS-  
 3. ZONES C3 & D2 SIGN. PPNLEN WAS PPNLEN  
 4. ZONES C1 & B1 SIGN. STESW, STDSW, MAESW, MADSW, MDESW, WERE STRESW, STRDSW, MARESW, MARDSW, & MRESW-RESW  
 SH2: 1. ZONE C3, SIGN. MEL 3 WAS LOADER STATE  
 2. ZONE A1, SIGN. ENDRLOAD- WAS ENDRCK-  
 3. ZONES A1, B1 & C1, SIGN. IOUTO THRU IOUTIS WERE ALUBO THRU ALUBIS RESP.

CHG ZONE B2, SH1, R44 WAS R28 & REF DES BLOCK R1 THRU R43

FORMAL RELEASE

NOTE 3: K WAS SN37411-Z16, L WAS SN37412-Z17, M WAS SN37413-Z18, N WAS SN37414-Z19



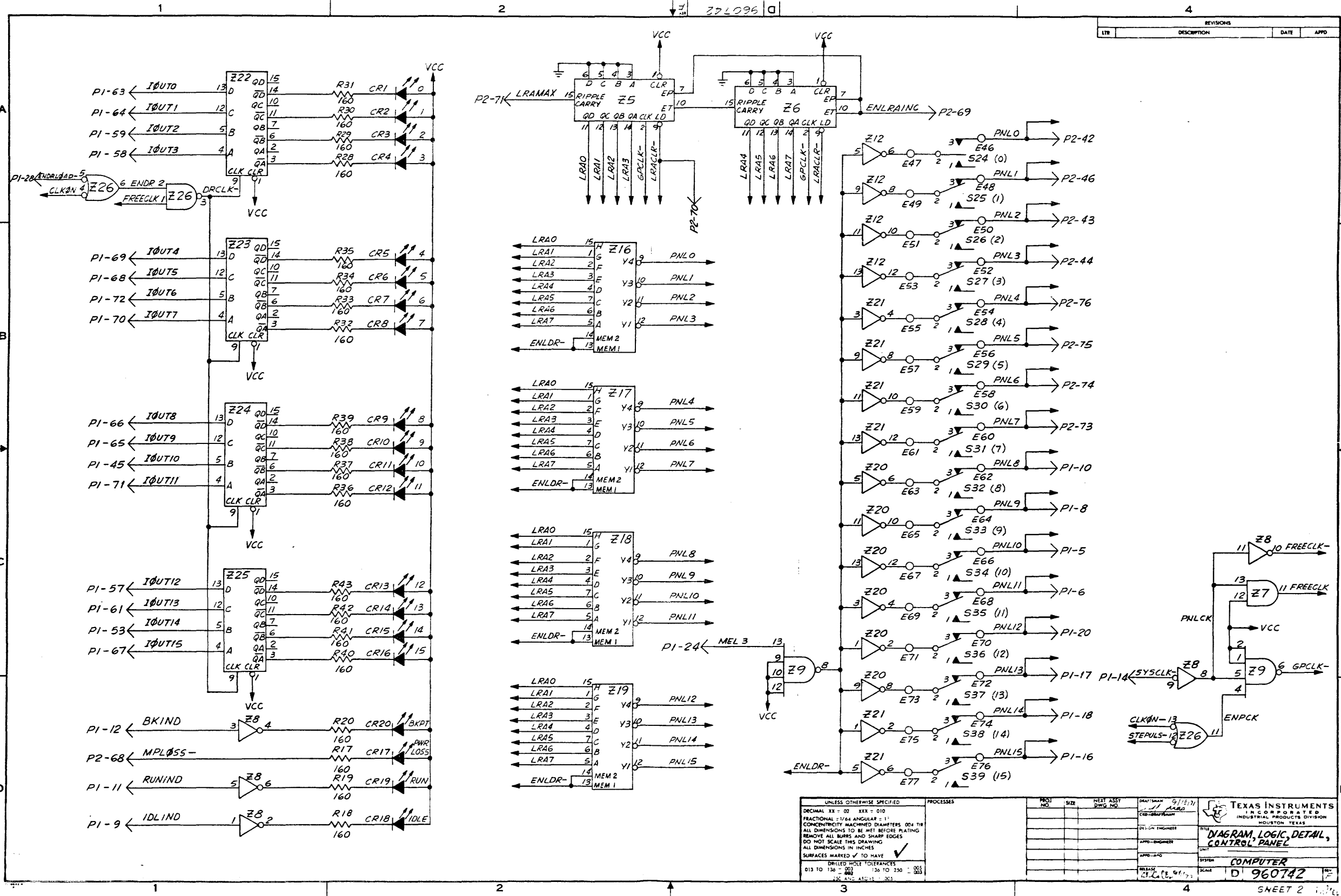
QTY	DESCRIPTION	USED	NOT USED
	E1 THRU E81		
	CR1 THRU CR20		
	S1 THRU S39		
	C1 THRU C11		
	R1 THRU R44		
	Z1 THRU Z26		
	USED		
	NOT USED		

REFERENCE DESIGNATORS

UNLESS OTHERWISE SPECIFIED:	PROCESS	PROJ NO.	SIZE	HEET ASSY	DATE	DESIGNER	CHECKED	APPROVED	DATE	TESTED	DATE
DECIMAL XX - 02 XXX - 010	7503	960740									
FRACTIONAL - 1/64 ANGULAR - 1											
CONCENTRICITY MACHINED DIAMETERS 0.04 TIR											
ALL DIMENSIONS TO BE MET BEFORE PLATING											
REMOVE ALL BURRS AND SHARP EDGES											
DO NOT SCALE THIS DRAWING											
ALL DIMENSIONS IN INCHES											
SURFACES MARKED √ TO HAVE											
PRINTED IN U.S.A.											
D13 TO L1W - 003 136 TO 130 - 003											
75 AND ABOVE - 001											

LIST OF MATERIALS

QTY	DESCRIPTION	VENDOR PART NUMBER
	TEXAS INSTRUMENTS INCORPORATED INDUSTRIAL PRODUCTS DIVISION HOUSTON, TEXAS	
	DIAGRAM, LOGIC, DETAIL, CONTROL PANEL	
	COMPUTER	
	ZONE D 960742	



REVISIONS			
LTW	DESCRIPTION	DATE	APPD

UNLESS OTHERWISE SPECIFIED				PROCESSES		PROJ. NO.		NEXT ASSY		DATE		DRAWN BY		DESIGNED BY		CHECKED BY		APPROVED BY		TITLE			
DECIMAL: XX - 02				FRAC: 1/16		ANG: 1/16		DIM: 1/16		SCALE: 1/16		DATE: 5/11/71		DRAWN BY: J. J. AAR		DESIGNED BY: J. J. AAR		CHECKED BY: J. J. AAR		TITLE: DIAGRAM, LOGIC, DETAIL, CONTROL PANEL			
FRACTIONAL: 1/16 ANGULAR: 1/16				CONCENTRICITY: MACHINED DIAMETERS .004 TIR		REMOVE ALL BURRS AND SHARP EDGES		DO NOT SCALE THIS DRAWING		ALL DIMENSIONS IN INCHES		SURFACES MARKED ✓ TO HAVE		DIMILED HOLE TOLERANCES		013 TO 136 - .003		136 TO 250 - .005		250 AND ABOVE - .003		SYSTEM: COMPUTER	
013 TO 136 - .003				136 TO 250 - .005		250 AND ABOVE - .003		SCALE: D		960742		SHEET NO. 2		TOTAL SHEETS 2		DATE: 5/11/71		SCALE: D		960742			



REVISIONS			
ZONE	LTR	DESCRIPTION	DATE

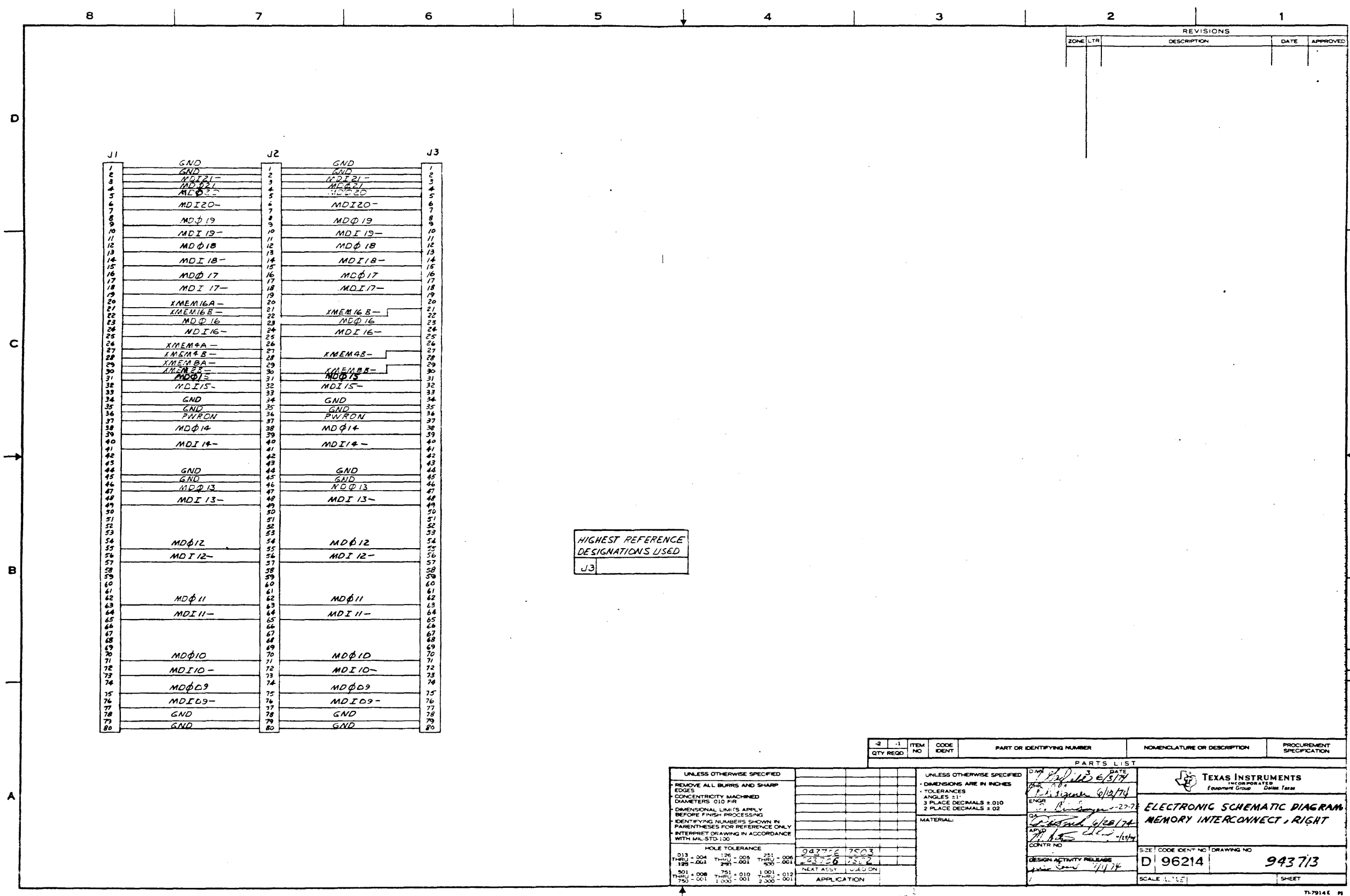
D  
C  
B  
A

J1	J2	J3
1 GND	1 GND	1 GND
2 GND	2 GND	2 GND
3 MDI08-	3 MDI08-	3 MDI08-
4 MDI08-	4 MDI08-	4 MDI08-
5 MDI07-	5 MDI07-	5 MDI07-
6 MDI07-	6 MDI07-	6 MDI07-
7 MDI06-	7 MDI06-	7 MDI06-
8 MDI06-	8 MDI06-	8 MDI06-
9 MDI05-	9 MDI05-	9 MDI05-
10 MDI05-	10 MDI05-	10 MDI05-
11 MDI05-	11 MDI05-	11 MDI05-
12 MDI05-	12 MDI05-	12 MDI05-
13 MDI05-	13 MDI05-	13 MDI05-
14 MDI05-	14 MDI05-	14 MDI05-
15 MDI05-	15 MDI05-	15 MDI05-
16 GND	16 GND	16 GND
17 GND	17 GND	17 GND
18 MDI04-	18 MDI04-	18 MDI04-
19 MDI04-	19 MDI04-	19 MDI04-
20 MDI04-	20 MDI04-	20 MDI04-
21 MDI04-	21 MDI04-	21 MDI04-
22 MDI04-	22 MDI04-	22 MDI04-
23 MDI04-	23 MDI04-	23 MDI04-
24 MDI04-	24 MDI04-	24 MDI04-
25 MDI04-	25 MDI04-	25 MDI04-
26 MDI04-	26 MDI04-	26 MDI04-
27 MDI04-	27 MDI04-	27 MDI04-
28 MDI04-	28 MDI04-	28 MDI04-
29 MDI04-	29 MDI04-	29 MDI04-
30 MDI04-	30 MDI04-	30 MDI04-
31 MDI04-	31 MDI04-	31 MDI04-
32 MDI04-	32 MDI04-	32 MDI04-
33 MDI04-	33 MDI04-	33 MDI04-
34 MDI04-	34 MDI04-	34 MDI04-
35 MDI04-	35 MDI04-	35 MDI04-
36 MDI04-	36 MDI04-	36 MDI04-
37 MDI04-	37 MDI04-	37 MDI04-
38 MDI04-	38 MDI04-	38 MDI04-
39 MDI04-	39 MDI04-	39 MDI04-
40 MDI04-	40 MDI04-	40 MDI04-
41 GND	41 GND	41 GND
42 GND	42 GND	42 GND
43 MDI01-	43 MDI01-	43 MDI01-
44 MDI01-	44 MDI01-	44 MDI01-
45 MDI01-	45 MDI01-	45 MDI01-
46 MDI01-	46 MDI01-	46 MDI01-
47 MDI01-	47 MDI01-	47 MDI01-
48 MDI01-	48 MDI01-	48 MDI01-
49 MDI01-	49 MDI01-	49 MDI01-
50 MDI01-	50 MDI01-	50 MDI01-
51 MDI01-	51 MDI01-	51 MDI01-
52 MDI01-	52 MDI01-	52 MDI01-
53 MDI01-	53 MDI01-	53 MDI01-
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55 MDI01-	55 MDI01-	55 MDI01-
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57 MDI01-	57 MDI01-	57 MDI01-
58 MDI01-	58 MDI01-	58 MDI01-
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63 MDI01-	63 MDI01-	63 MDI01-
64 MDI01-	64 MDI01-	64 MDI01-
65 MDI01-	65 MDI01-	65 MDI01-
66 MDI01-	66 MDI01-	66 MDI01-
67 MDI01-	67 MDI01-	67 MDI01-
68 MDI01-	68 MDI01-	68 MDI01-
69 MDI01-	69 MDI01-	69 MDI01-
70 MDI01-	70 MDI01-	70 MDI01-
71 MDI01-	71 MDI01-	71 MDI01-
72 MDI01-	72 MDI01-	72 MDI01-
73 MDI01-	73 MDI01-	73 MDI01-
74 MDI01-	74 MDI01-	74 MDI01-
75 MDI01-	75 MDI01-	75 MDI01-
76 MDI01-	76 MDI01-	76 MDI01-
77 MDI01-	77 MDI01-	77 MDI01-
78 MDI01-	78 MDI01-	78 MDI01-
79 MDI01-	79 MDI01-	79 MDI01-
80 MDI01-	80 MDI01-	80 MDI01-

HIGHEST REFERENCE DESIGNATIONS USED  
J3

QTY REQD	ITEM NO	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	PROCUREMENT SPECIFICATION
PARTS LIST					
UNLESS OTHERWISE SPECIFIED			UNLESS OTHERWISE SPECIFIED		
REMOVE ALL BURRS AND SHARP EDGES			DIMENSIONS ARE IN INCHES		
CONCENTRICITY MACHINED			TOLERANCES		
DIAMETERS 2:10 MIN			ANGLES 2:1		
DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING			3 PLACE DECIMALS ± 0.10		
IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY			2 PLACE DECIMALS ± 0.2		
INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100			MATERIAL:		
HOLE TOLERANCE			DATE		
0.13 ± 0.04 THRU 1.25 ± 0.06			6/25/74		
1.25 ± 0.01 THRU 2.50 ± 0.01			943705 7505		
5.01 ± 0.08 THRU 7.51 ± 0.10			NEXT ADDY USED ON		
7.51 ± 0.01 THRU 10.01 ± 0.12			APPLICATION		
10.01 ± 0.01 THRU 12.51 ± 0.12			CONTR NO		
12.51 ± 0.01 THRU 15.01 ± 0.12			DESIGN ACTIVITY RELEASE		
15.01 ± 0.01 THRU 17.51 ± 0.12			7/1/74		
17.51 ± 0.01 THRU 20.01 ± 0.12			SCALE		
20.01 ± 0.01 THRU 22.51 ± 0.12			SHEET		

TEXAS INSTRUMENTS  
ELECTRONIC SCHEMATIC  
DIAGRAM, LEFT MEMORY  
INTERCONNECT



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

J1	J2	J3
1 GND	1 GND	1 GND
2 GND	2 GND	2 GND
3 MDI 21-	3 MDI 21-	3 MDI 21-
4 MDΦ 21	4 MDΦ 21	4 MDΦ 21
5 MDΦ 20	5 MDΦ 20	5 MDΦ 20
6 MDI 20-	6 MDI 20-	6 MDI 20-
7	7	7
8 MDΦ 19	8 MDΦ 19	8 MDΦ 19
9 MDI 19-	9 MDI 19-	9 MDI 19-
10 MDI 19-	10 MDI 19-	10 MDI 19-
11 MDI 19-	11 MDI 19-	11 MDI 19-
12 MDΦ 18	12 MDΦ 18	12 MDΦ 18
13 MDI 18-	13 MDI 18-	13 MDI 18-
14 MDI 18-	14 MDI 18-	14 MDI 18-
15 MDΦ 17	15 MDΦ 17	15 MDΦ 17
16 MDI 17-	16 MDI 17-	16 MDI 17-
17 MDI 17-	17 MDI 17-	17 MDI 17-
18 MDI 17-	18 MDI 17-	18 MDI 17-
19 XMEM 16A-	19 XMEM 16B-	19 XMEM 16B-
20 XMEM 16B-	20 XMEM 16B-	20 XMEM 16B-
21 MDΦ 16	21 MDΦ 16	21 MDΦ 16
22 MDI 16-	22 MDI 16-	22 MDI 16-
23 MDI 16-	23 MDI 16-	23 MDI 16-
24 XMEM 14A-	24 XMEM 14B-	24 XMEM 14B-
25 XMEM 14B-	25 XMEM 14B-	25 XMEM 14B-
26 XMEM 14A-	26 XMEM 14B-	26 XMEM 14B-
27 XMEM 14B-	27 XMEM 14B-	27 XMEM 14B-
28 XMEM 14A-	28 XMEM 14B-	28 XMEM 14B-
29 XMEM 14B-	29 XMEM 14B-	29 XMEM 14B-
30 MDΦ 15	30 MDΦ 15	30 MDΦ 15
31 MDI 15-	31 MDI 15-	31 MDI 15-
32 MDI 15-	32 MDI 15-	32 MDI 15-
33 GND	33 GND	33 GND
34 GND	34 GND	34 GND
35 PWRON	35 PWRON	35 PWRON
36 MDΦ 14	36 MDΦ 14	36 MDΦ 14
37 MDI 14-	37 MDI 14-	37 MDI 14-
38 MDI 14-	38 MDI 14-	38 MDI 14-
39 GND	39 GND	39 GND
40 GND	40 GND	40 GND
41 MDΦ 13	41 MDΦ 13	41 MDΦ 13
42 MDI 13-	42 MDI 13-	42 MDI 13-
43 MDI 13-	43 MDI 13-	43 MDI 13-
44 MDΦ 12	44 MDΦ 12	44 MDΦ 12
45 MDI 12-	45 MDI 12-	45 MDI 12-
46 MDI 12-	46 MDI 12-	46 MDI 12-
47 MDΦ 11	47 MDΦ 11	47 MDΦ 11
48 MDI 11-	48 MDI 11-	48 MDI 11-
49 MDI 11-	49 MDI 11-	49 MDI 11-
50 MDΦ 10	50 MDΦ 10	50 MDΦ 10
51 MDI 10-	51 MDI 10-	51 MDI 10-
52 MDI 10-	52 MDI 10-	52 MDI 10-
53 MDΦ 09	53 MDΦ 09	53 MDΦ 09
54 MDI 09-	54 MDI 09-	54 MDI 09-
55 GND	55 GND	55 GND
56 GND	56 GND	56 GND
57	57	57
58	58	58
59	59	59
60	60	60
61	61	61
62	62	62
63	63	63
64	64	64
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66	66	66
67	67	67
68	68	68
69	69	69
70	70	70
71	71	71
72	72	72
73	73	73
74	74	74
75	75	75
76	76	76
77	77	77
78	78	78
79	79	79
80	80	80

HIGHEST REFERENCE DESIGNATIONS USED  
J3

QTY REQD	ITEM NO	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	PROCUREMENT SPECIFICATION
PARTS LIST					
UNLESS OTHERWISE SPECIFIED			UNLESS OTHERWISE SPECIFIED		
REMOVE ALL BURRS AND SHARP EDGES CONCENTRICITY MACHINED DIAMETERS .010 FIR DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100			DIMENSIONS ARE IN INCHES TOLERANCES: ANGLES ±1° 3 PLACE DECIMALS ±.010 2 PLACE DECIMALS ±.02		
HOLE TOLERANCE THRU +.004 THRU -.005 THRU -.006 THRU -.001 THRU -.001 THRU -.001			MATERIAL: 04772 7503 22-26 25-2 22-26 23-2 22-26 23-2 NEXT ASSY USED ON APPLICATION		
DESIGN ACTIVITY RELEASE DATE 1/11/74			DATE 6/12/74 DATE 6/28/74 DATE 1/11/74		
SIZE CODE IDENT NO DRAWING NO D 96214 943713			SCALE 1:1 SHEET		

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D  
C  
B  
A

J1	J2	J3	J4
1 GND	1 GND	1 GND	1 GND
2 MDI 08	2 MDI 08	2 MDI 08	2 MDI 08
3 MDI 08	3 MDI 08	3 MDI 08	3 MDI 08
4 MDI 07	4 MDI 07	4 MDI 07	4 MDI 07
5 MDI 07	5 MDI 07	5 MDI 07	5 MDI 07
6 MDI 06	6 MDI 06	6 MDI 06	6 MDI 06
7 MDI 06	7 MDI 06	7 MDI 06	7 MDI 06
8 MDI 05	8 MDI 05	8 MDI 05	8 MDI 05
9 MDI 05	9 MDI 05	9 MDI 05	9 MDI 05
10 MDI 04	10 MDI 04	10 MDI 04	10 MDI 04
11 MDI 04	11 MDI 04	11 MDI 04	11 MDI 04
12 GND	12 GND	12 GND	12 GND
13 GND	13 GND	13 GND	13 GND
14 MDI 04	14 MDI 04	14 MDI 04	14 MDI 04
15 MDI 04	15 MDI 04	15 MDI 04	15 MDI 04
16 MDI 03	16 MDI 03	16 MDI 03	16 MDI 03
17 MDI 03	17 MDI 03	17 MDI 03	17 MDI 03
18 MDI 02	18 MDI 02	18 MDI 02	18 MDI 02
19 MDI 02	19 MDI 02	19 MDI 02	19 MDI 02
20 ADOK	20 ADOK	20 ADOK	20 ADOK
21 GND	21 GND	21 GND	21 GND
22 GND	22 GND	22 GND	22 GND
23 MDI 01	23 MDI 01	23 MDI 01	23 MDI 01
24 MDI 01	24 MDI 01	24 MDI 01	24 MDI 01
25 ADC1 J4-74			
26 ADC2 J4-76			
27 MDI 00			
28 ADI3 J3-78 MDI 00			
29 ENABB J3-72 ADI4			
30 ADI3 J4-78 ADI5			
31 ENABC J4-72 ADI3			
32 ADI2 J3-76 ADI3			
33 ADI1 J3-74 ADI1			
34 WRITE ADI2			
35 PWRONVA ADI2			
36 PWRONVA ADI2			
37 RFACCA ADI2			
38 RFACCA ADI2			
39 START ADI2			
40 START ADI2			
41 ENABA ADI2			
42 ADI2			
43 ADI2			
44 ADI2			
45 ADI2			
46 GND			
47 GND			

HIGHEST REFERENCE DESIGNATIONS USED J4

QTY REQD	ITEM NO	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	PROCUREMENT SPECIFICATION

UNLESS OTHERWISE SPECIFIED		UNLESS OTHERWISE SPECIFIED	
REMOVE ALL BURRS AND SHARP EDGES	CONCENTRICITY MACHINED	DIMENSIONS ARE IN INCHES	TOLERANCES
DIAMETERS 010 FIR	DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING	ANGLES ±1°	3 PLACE DECIMALS ± 0.10
IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY	INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100	2 PLACE DECIMALS ± 0.02	
HOLE TOLERANCE			
Ø19 - .004	THRU - .001	Ø25 - .001	THRU - .001
Ø31 - .001	THRU - .001	Ø50 - .001	THRU - .001
Ø75 - .001	THRU - .001	Ø100 - .001	THRU - .001
Ø150 - .001	THRU - .001	Ø200 - .001	THRU - .001

OWN: <i>[Signature]</i>	DATE: 3/1/74
ENGR: <i>[Signature]</i>	DATE: 6/22/74
DR: <i>[Signature]</i>	DATE: 6/22/74
CHK: <i>[Signature]</i>	DATE: 6/22/74
CONTR NO: <i>[Signature]</i>	DATE: 6/22/74

DESIGN ACTIVITY RELEASE	DATE: 7/1/74
-------------------------	--------------

SIZE: CODE IDENT NO   DRAWING NO	D   96214	943715
SCALE: NONE		

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D  
C  
B  
A

J1	J2	J3	J4
1	GND	GND	GND
2	GND	GND	GND
3	MDI 21-	MDI 21-	MDI 21-
4	MDI 21	MDI 21	MDI 21
5	MDI 20-	MDI 20-	MDI 20-
6	MDI 20	MDI 20	MDI 20
7	MDI 19-	MDI 19-	MDI 19-
8	MDI 19	MDI 19	MDI 19
9	MDI 19-	MDI 19-	MDI 19-
10	MDI 19	MDI 19	MDI 19
11	MDI 18-	MDI 18-	MDI 18-
12	MDI 18	MDI 18	MDI 18
13	MDI 18-	MDI 18-	MDI 18-
14	MDI 18	MDI 18	MDI 18
15	MDI 17-	MDI 17-	MDI 17-
16	MDI 17	MDI 17	MDI 17
17	MDI 17-	MDI 17-	MDI 17-
18	MDI 17	MDI 17	MDI 17
19	MDI 17-	MDI 17-	MDI 17-
20	XMEM 16A-	XMEM 16B-	MDI 16
21	XMEM 16B-	MDI 16	MDI 16
22	MDI 16	MDI 16	MDI 16
23	MDI 16-	MDI 16-	MDI 16-
24	MDI 16	MDI 16	MDI 16
25	MDI 16-	MDI 16-	MDI 16-
26	XMEM 14A-	XMEM 14B-	MDI 15
27	XMEM 14B-	XMEM 14B-	MDI 15
28	XMEM 14A-	XMEM 14B-	MDI 15
29	XMEM 14B-	XMEM 14B-	MDI 15
30	XMEM 14A-	XMEM 14B-	MDI 15
31	XMEM 14B-	XMEM 14B-	MDI 15
32	MDI 15-	MDI 15-	MDI 15-
33	MDI 15	MDI 15	MDI 15
34	GND	GND	GND
35	GND	GND	GND
36	PWRON	PWRON	PWRON
37	PWRON	PWRON	PWRON
38	MDI 14	MDI 14	MDI 14
39	MDI 14	MDI 14	MDI 14
40	MDI 14-	MDI 14-	MDI 14-
41	MDI 14	MDI 14	MDI 14
42	MDI 14-	MDI 14-	MDI 14-
43	MDI 14	MDI 14	MDI 14
44	GND	GND	GND
45	GND	GND	GND
46	MDI 13	MDI 13	MDI 13
47	MDI 13	MDI 13	MDI 13
48	MDI 13-	MDI 13-	MDI 13-
49	MDI 13	MDI 13	MDI 13
50	MDI 13-	MDI 13-	MDI 13-
51	MDI 12	MDI 12	MDI 12
52	MDI 12-	MDI 12-	MDI 12-
53	MDI 12	MDI 12	MDI 12
54	MDI 12-	MDI 12-	MDI 12-
55	MDI 12	MDI 12	MDI 12
56	MDI 12-	MDI 12-	MDI 12-
57	MDI 12	MDI 12	MDI 12
58	MDI 12-	MDI 12-	MDI 12-
59	MDI 12	MDI 12	MDI 12
60	MDI 12-	MDI 12-	MDI 12-
61	MDI 11	MDI 11	MDI 11
62	MDI 11-	MDI 11-	MDI 11-
63	MDI 11	MDI 11	MDI 11
64	MDI 11-	MDI 11-	MDI 11-
65	MDI 11	MDI 11	MDI 11
66	MDI 11-	MDI 11-	MDI 11-
67	MDI 11	MDI 11	MDI 11
68	MDI 11-	MDI 11-	MDI 11-
69	MDI 11	MDI 11	MDI 11
70	MDI 11-	MDI 11-	MDI 11-
71	MDI 10	MDI 10	MDI 10
72	MDI 10-	MDI 10-	MDI 10-
73	MDI 10	MDI 10	MDI 10
74	MDI 10-	MDI 10-	MDI 10-
75	MDI 09	MDI 09	MDI 09
76	MDI 09-	MDI 09-	MDI 09-
77	MDI 09	MDI 09	MDI 09
78	GND	GND	GND
79	GND	GND	GND
80	GND	GND	GND

HIGHEST REFERENCE DESIGNATIONS USED  
J4

QTY	REQD	ITEM NO	CODE IDENT	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION	PROCUREMENT SPECIFICATION
PARTS LIST						
UNLESS OTHERWISE SPECIFIED				UNLESS OTHERWISE SPECIFIED		
REMOVE ALL BURRS AND SHARP EDGES				DIMENSIONS ARE IN INCHES		
CONCENTRICITY MACHINED				TOLERANCES		
DIAMETERS .010 FIR				ANGLES ±1°		
DIMENSIONAL LIMITS APPLY BEFORE FINISH PROCESSING				3 PLACE DECIMALS ±0.10		
IDENTIFYING NUMBERS SHOWN IN PARENTHESES FOR REFERENCE ONLY				2 PLACE DECIMALS ±0.02		
INTERPRET DRAWING IN ACCORDANCE WITH MIL-STD-100				MATERIAL:		
HOLE TOLERANCE				DWN		
.013 THRU .004				DATE		
.013 THRU .005				CHK		
.013 THRU .006				ENGR		
.013 THRU .007				APVD		
.013 THRU .008				CONTR NO		
.013 THRU .009				DESIGN ACTIVITY RELEASE		
.013 THRU .010				SCALE		
.013 THRU .011				SHEET		
.013 THRU .012				APPLICATION		
.013 THRU .013				43		
.013 THRU .014				TEXAS INSTRUMENTS		
.013 THRU .015				ELECTRONIC SCHEMATIC DIAGRAM		
.013 THRU .016				MEMORY INTERCONNECT, RIGHT		
.013 THRU .017				D 96214		
.013 THRU .018				94377		
.013 THRU .019				SCALE 1/2"		
.013 THRU .020				SHEET		

# USER'S RESPONSE SHEET

Manual Title: Model 980B Computer Maintenance Manual:

Electrical Drawings (943012-9704)

Manual Date: 1 February 1976 Date of This Letter: \_\_\_\_\_

User's Name: \_\_\_\_\_ Telephone: \_\_\_\_\_

Company: \_\_\_\_\_ Office/Department: \_\_\_\_\_

Street Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Please list any discrepancy found in this manual by page, paragraph, figure, or table number in the following space. If there are any other suggestions that you wish to make, feel free to include them. Thank you.

CUT ALONG LINE

Location in Manual	Comment/Suggestion
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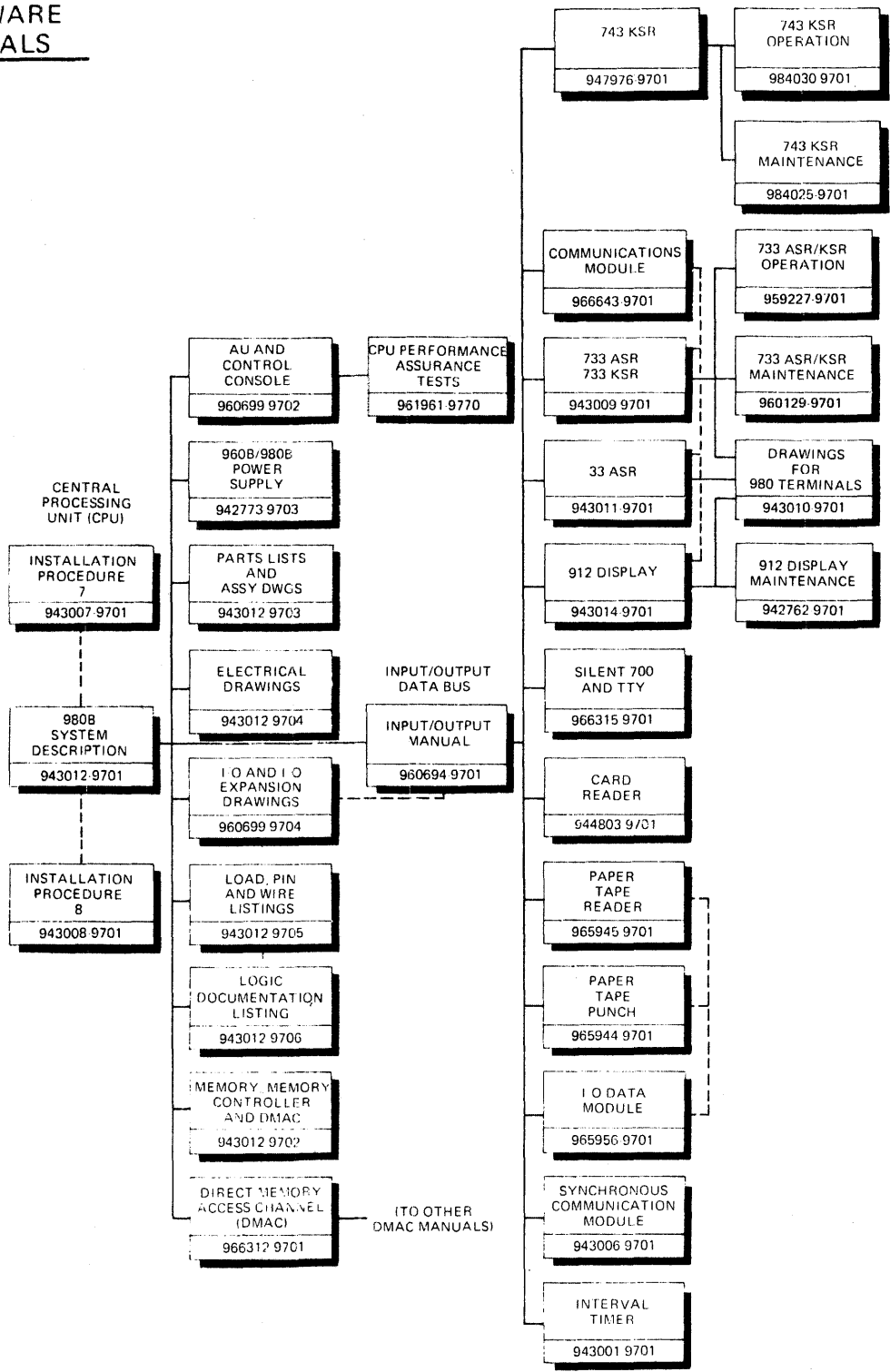
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