

A/F 37A-T88-06-1-0510

15AUGUST 1988

Change 1 1 April 1990

IDENTIFYING TECHNICAL PUBLICATION SHEET

I. PURPOSE.

This technical publication sheet is issued for the purpose of identifying commercial off-the-shelf manuals for support of the KC-135 Operational Flight Trainer System.

A/F 37A-T87/T88
A/F 24U-7

BOEING MILITARY AIRPLANES
F33657-85-C-0020

SIGNAL TRACING GUIDE
SPC9800

901181-375

SEPTEMBER 1989

Manufacturer:

Gould, Inc
Computer Systems Div
6901 W Sunrise Blvd
PO Box 409148
Ft Lauderdale, FL 33340-9970

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II. SUPPLEMENTAL DATA.

Supplemental data attached.

0011

LIST OF EFFECTIVE PAGES

INSERT LATEST CHANGED PAGES, DESTROY SUPERSEDED PAGES

NOTE: The portion of text affected by changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by miniature pointing hands. Changes to wiring diagrams are indicated by shaded areas.

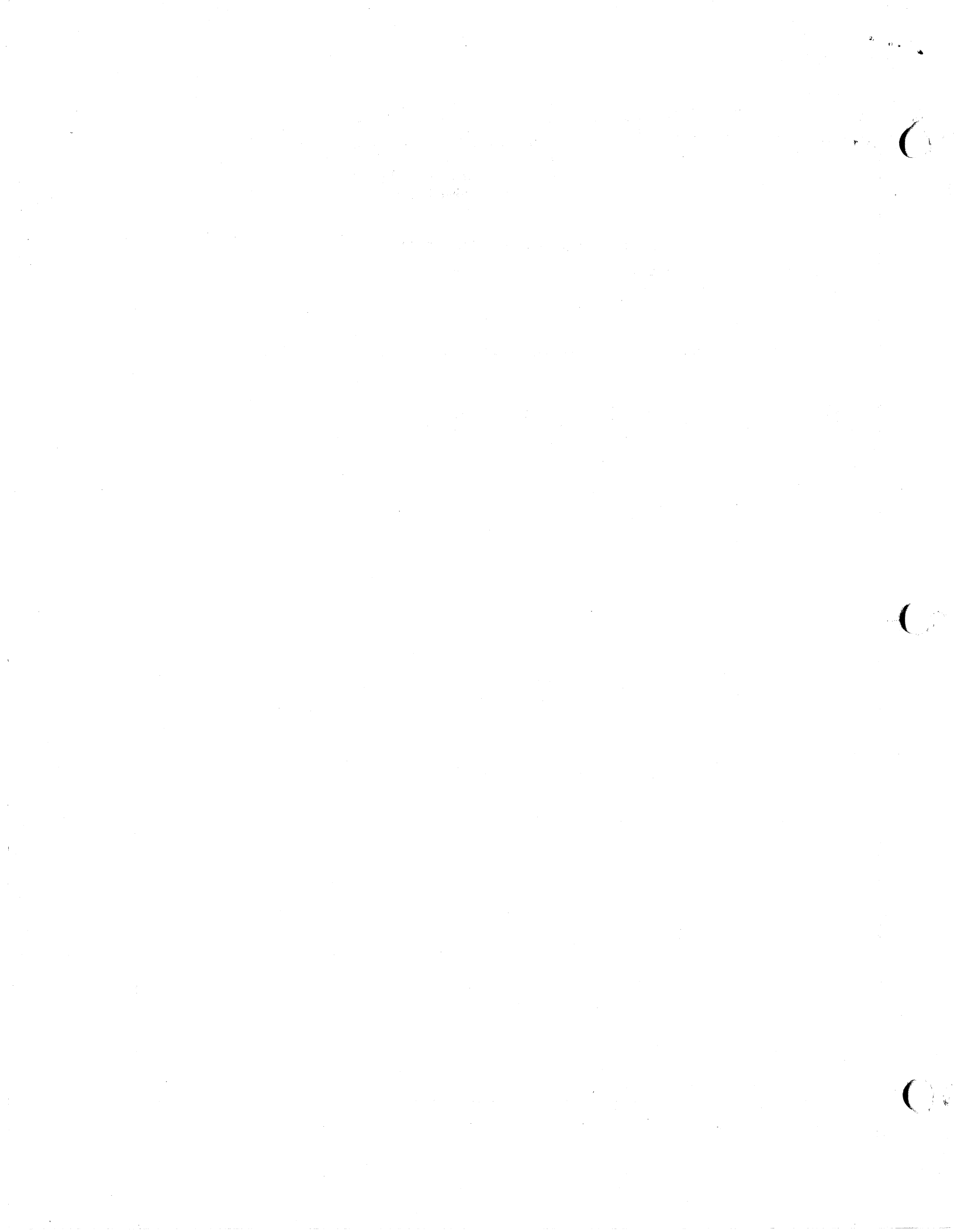
Dates of issue for original and changed pages are:

Original . . . 0 15 AUG 88
Change . . . 1 1 APR 90

TOTAL NUMBER OF PAGES IN THIS MANUAL IS 4 CONSISTING OF THE FOLLOWING:

Page No.	*Change No.	Page No.	*Change No.	Page No.	*Change No.	Page No.	*Change No.
Title	1						
A	1						
i	0						
ii blank	0						

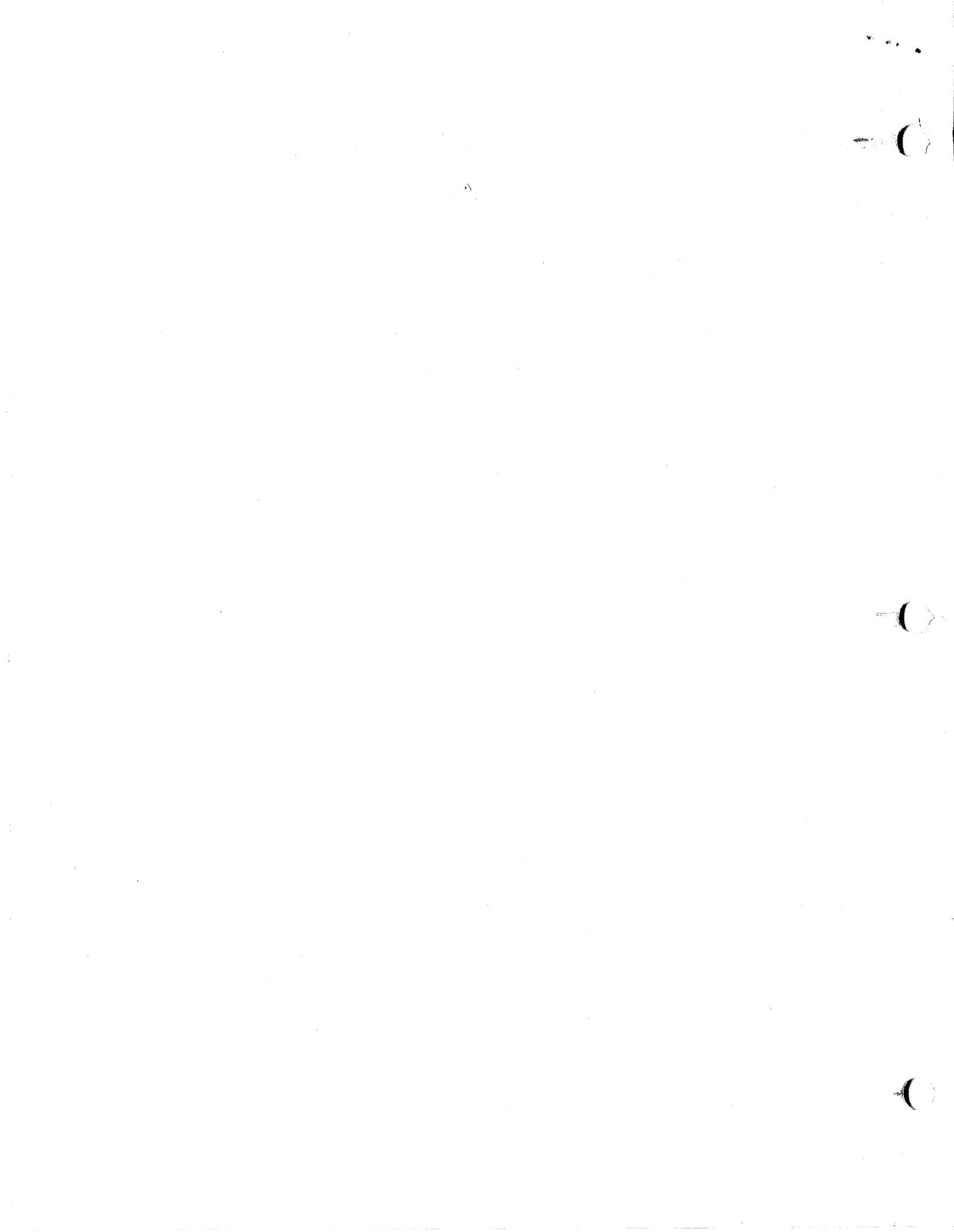
*Zero in this column indicates an original page



2-1. Related Publications.

2-1.1. The following is a list of related publications to this manual, supplemented to include KC-135 Operational Flight Trainer manual numbers.

<u>Vendor No.</u>	<u>Title</u>	<u>Publication No.</u>
700225	Novoview SP1T Visual System Operation and Maintenance Instructions	A/F 37A-T88-04- 1-0001
901181-618B	SP1 and SP1T Computer Image Generation System Operation and Maintenance Manual	A/F 37A-T88-06-1-0101
901181-435	SPC9800 Backpanel, Backpanel Manual With Wire List	A/F 37A-T88-06-1-0610



SIGNAL TRACING GUIDE

SPC9800

EVANS & SUTHERLAND COMPUTER CORPORATION

The symbols and their meanings to be used within this manual for warnings, cautions and notes are listed below:

WARNING

An operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury to or death of personnel.

CAUTION

An operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in damage to, or destruction of, equipment or loss of mission effectiveness.

NOTE

An essential operating or maintenance procedure, condition, or statement, which must be highlighted.

SAFETY SUMMARY

The following general safety precautions are not related to any specific procedures and therefore do not appear elsewhere in this publication. These are recommended precautions that personnel must understand and apply during many phases of operation and maintenance.

KEEP AWAY FROM LIVE CIRCUITS

Operating personnel must at all times observe all safety regulations. Do not replace components or make adjustments inside the equipment with high voltage supplies turned on. Under certain conditions, dangerous potentials may exist when the power controller is in the OFF position because of charges retained by capacitors. To avoid casualties, always remove power and discharge and ground a circuit before touching it.

DO NOT SERVICE OR ADJUST ALONE

Under no circumstances should any person reach into the enclosure for the purpose of servicing or adjusting the equipment except in the presence of someone who is capable of rendering aid.

RESUSCITATION

Personnel working with or near high voltages should be familiar with methods of resuscitation.

LIST OF EFFECTIVE PAGES

NOTE: On a changed text page, the portion affected by the latest change is indicated by a vertical line in the outer margin of the page. Change number 0 indicates an original page.

Dates Of Issue For Original And Changed Pages Are:

Original 2 February 85
Changes 19 December 89

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 314
CONSISTING OF THE FOLLOWING:

PAGE NO.	CHANGE NO.
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i - ii	21
1-1 - 1-4	2
2-1 - 2-8	3
3-1 - 3-2	10
200700-100 THRU 200771-230	10
4-1 - 4-2	3
200707-100	3
5-1 - 5-2	2
200720-100	2
6-1 - 6-2	14
200702-100 THRU 200770-230	14
7-1 - 7-2	6
200704-100 THRU 200748-006	6
8-1 - 8-2	15
200722-100 THRU 203130-100	15

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SECTION 1: INTRODUCTION
1.1 IntroductionSECTION 2: CAGE CODE
2.1 IntroductionSECTION 3: SYSTEM DATA
3.1 Introduction

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200700-100	A3	SPC 9800 Computer Assembly
200771-230	A1	Terminal , TI 820, 230

SECTION 4: CABINET DATA
4.1 Introduction

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200707-100	A2	Front Panel Assembly

SECTION 5: BACKPANEL DATA
5.1 Introduction

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200720-100	B0	SPC 9800 Backpanel

SECTION 6: SYSTEM POWER/COOLING DATA
6.1 Introduction

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200702-100	A0	Switch
200703-100	A2	Fan
200770-230	A0	230V Power

SECTION 7: CABLE DATA
7.1 Introduction

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200704-100	A1	Cable, Fan
200705-100	A2	Cable, Power Interconnect
200706-100	A1	Cable, Power
200740-006	A0	Cable, Serial I/O
200745-TAB	A0	Cable, CPU Interconnect
200746-TAB	A0	Cable, CPU Interconnect
200747-TAB	A0	Cable, DMA
200748-006	A0	Cable, Power 230V

SECTION 8: CARD DATA
8.1 Introduction

<u>Drawing Number</u>	<u>Rev</u>	<u>Description</u>
200722-100	A0	Cd, Front Panel Display
200722-600	A0	Logics
200724-100	B3 - A5.	Cd, Front Panel Logic
200724-600	B3	Logics
200724-200	A1	Front Panel Installation Instructions
200725-100	B0 2 A0	Cd, Arithmetic Control
200725-600	B0	Logics
200727-100	B0 3 A0	Cd, Arithmetic Register
200727-600	B0	Logics
200728-100	B0 3 A1	Cd, Arithmetic Status
200728-600	B0	Logics
200729-100	B0 3 A0	Cd, Arithmetic Logic
200729-600	B0	Logics
200732-100	B2 3 A2	Cd, Memory/DMA Controller
200732-600	B2	Logics
200732-200	A1	Installation Instructions
200734-100	B0 3 A2	Cd, 64K Word Memory
200734-600	B0	Logics
200736-100	B0 3 A2	Cd, Internal Timer
200736-600	B0	Logics
200737-100	B0 3 A0	Cd, Serial/Parallel I/O
200737-600	B0	Logics
200737-201	A1	Card, Serial/Parallel
203130-100	A1	Card, Extender
203130-600	A1	Logics

Remove
if you
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LIST OF ILLUSTRATIONS

FIGURE	PAGE
1-1 Parts Locating Diagram.....	1-4

SECTION 1

INTRODUCTION

1.1 ORGANIZATION OF MANUAL

This manual contains the necessary drawings and parts lists required for maintenance of the SPC9800 System. This manual contains the following sections:

SECTION 1: Introduction

This section contains an explanation of the manual structure.

SECTION 2: Cage Code

This section contains a cross reference list of the Vendor ID to manufacturer's name including address. This list allows the reader to locate the manufacturer's name when the Cage Code number is known.

SECTION 3: System Data

This section contains the system drawing that shows the major units that are included in the SPC9800 system.

SECTION 4: Cabinet Data

This section contains detailed drawings of all system cabinets showing all major assemblies. A parts lists for each cabinet is also included.

SECTION 5: Backpanel Data

This section contains detailed drawings of the Object Manager, Polygon Manager, Geometric Processor, and Display Processor backpanels and associated parts lists.

SECTION 6: System Power/Cooling Data

This section contains the drawings and parts lists for all power supplies, power controllers and units of the cooling system.

SECTION 7: Cable Data

This section contains the drawings and parts lists for all system cables.

SECTION 8: Card Data

This section contains the assembly drawings, logics, block diagrams, and parts lists for all cards in the SPC9800 system.

1.2 PARTS LISTS

This manual includes the significant mechanical and electrical parts contained in the system. When ordering replacement parts from Evans and Sutherland include the Part Name/Description and the Part Number. When ordering parts not included in the Parts List, include the assembly drawing number and reference designation.

1.2.1 EXPLANATION OF PARTS LIST COLUMNS

The parts list is divided into five levels:

1. System
2. Cabinet
3. Backpanel, Cable, Power and Cooling unit level
4. Card
5. Component

Each individual parts list contains seven columns as described below:

- a. Reference Designation - Used to identify a part shown on a particular schematic or drawing.
- b. Short Description - Identifies the type of part and specifications.

- c. Cage Code (FSCM) - Designates by code the manufacturer or manufacturer's division of the part.
- d. Manufacturer - Designates the true manufacturer by name.
- e. Manufacturer Part Number - Used when ordering parts from the true manufacturer.
- f. E&S Part Number - Used when ordering parts from E&S.
- g. Quantity/Assembly - Indicates the quantity used in a system, unit, or assembly.

1.2.2 HOW TO LOCATE REPAIR PARTS ORDER INFORMATION

To locate the proper ordering information for a part, you must first obtain the following information. Refer to figure 1-1.

1. What cabinet?
2. What unit?
Backpanel, power unit, cooling unit, or cable.
3. If it is a backpanel part go to section 4.
(If it is a card in the backpanel then go to section 8 after finding card part number.)
4. If it is a power/cooling unit go to section 5.
5. If it is a cable go to section 7.

1.3 DRAWINGS

This section contains the maintenance drawings and illustrations for the display system. The drawings represent the major circuits and assemblies. The three-digit suffix of the drawing number under the E&S system classifies the drawing according to type as follows:

<u>SUFFIX</u>	<u>CLASSIFICATION</u>
-100	ASSEMBLY DRAWINGS (COMPONENT LAYOUT)
-500	P.C. BOARD SILKSCREEN
-600	LOGIC/SCHEMATIC DRAWINGS
-900	BLOCK DIAGRAM
-XXX	CABLE DRAWINGS (e.g., -015 indicates 15 ft.)

Some drawings have the suffix -TAB. A series of parts that varies only slightly, from part to part, are described with a single -TAB drawing. Variations from part to part are described in a table on the drawing. The drawings in this section are listed in numerical order.

PART NUMBERS

101000-XXX indicates a system top assembly number. Each system is assigned a group of assembly numbers, i.e.:

200401-3XX	Left Hand Cabinet
200402-3XX	Right Hand Cabinet

Some systems or parts of systems may interface with others, but the above are basically assigned to the system described.

DASH NUMBERS

Dash numbers have a significance when ordering prints as follows:

-100, 101, 102, etc. indicate an assembly drawing.
Example: 200110-100

-600, 601, 602, etc. are logics or schematics.
Example: 200110-600

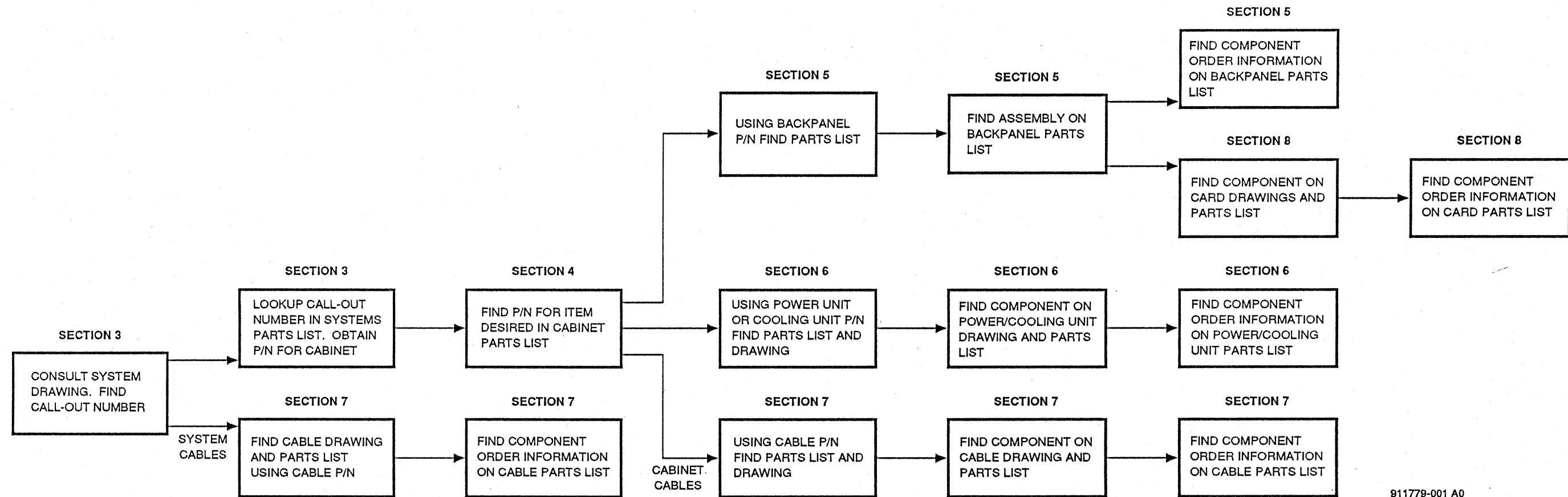
-900, 901, 902, etc. are supporting documents and may be block diagrams or allocation charts (shows placement and part number of cards in backpanels).
Example: 200110-900

-001, 025, 050, etc. indicate length of cable on cable assembly drawings.

-800, 801, 802, etc. are wire lists for W/W cards, backpanels, and harnesses.
Example: 200281-800

Thus a drawing package may contain the following:

200XXX-100	Assembly drawing
200XXX-600	Logic or schematic
200XXX-900	Block diagram



911779-001 A0

SECTION 2

CAGE CODE

2.1 INTRODUCTION

The commercial and government entities (CAGE) Code provides a cross reference between the part number and the manufacturers' names and addresses. To acquire the name and address of a manufacturer, obtain the CAGE code number from the appropriate parts list and refer to Cataloging Handbook H4/H8 Commercial and Government Entity (CAGE), Sections A and B.



SECTION 3

SYSTEM DATA

3.1 INTRODUCTION

This section contains engineering drawings that show system units and cabling interconnection between the units and subunits of the system.



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200700-100

REV: A3 = AD

DESC: COMPUTER ASSY,SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	PWR SPLY,600W SWER,5V	24429	POWERTEC INC.	6A5-CC-371-F-3	801660-001	1
002	SW,ASY,SPC9800	53938	EVANS & SUTHERLAND.	200702-100	200702-100	1
003	FRAME,CHAN SPC9800	53938	EVANS & SUTHERLAND.	500701-001	500701-001	1
004	WALL,SPC9800	53938	EVANS & SUTHERLAND.	500702-001	500702-001	1
005	PARTITION SUPPORT SPC	53938	EVANS & SUTHERLAND.	500703-001	500703-001	3
006	COVER TOP	53938	EVANS & SUTHERLAND.	500705-001	500705-001	1
007	COVER,BOT SPC9800	53938	EVANS & SUTHERLAND.	500706-001	500706-001	1
008	FRONT PNL ASY,SPC9800	53938	EVANS & SUTHERLAND.	200707-100	200707-100	1
009	COVER PLATE,CBL ACCES	53938	EVANS & SUTHERLAND.	500715-001	500715-001	5
010	INSULATOR,MYLAR,COVER	53938	EVANS & SUTHERLAND.	500709-001	500709-001	1
011	INSULATOR,MYLAR,PARTI	53938	EVANS & SUTHERLAND.	500710-001	500710-001	3
012	STIF,BP,SPC9800	53938	EVANS & SUTHERLAND.	500711-001	500711-001	2
013	INSULATOR,MYLAR,STIF,	53938	EVANS & SUTHERLAND.	500714-001	500714-001	2
014	INJECT/EJECT RAIL SPC	53938	EVANS & SUTHERLAND.	500712-501	500712-501	2
015	INJECT/EJECT RAIL SPC	53938	EVANS & SUTHERLAND.	500712-502	500712-502	2
016	HW,PLAT 16G,4.5X1	53938	EVANS & SUTHERLAND.	500713-001	500713-001	2
017	MTG. SHELF,PWR SPLY S	53938	EVANS & SUTHERLAND.	500704-001	500704-001	1
019	GROMMET,SERRATED,NYLO	06915	RICHCO PLASTIC CO	SNGS-2.5	802047-104	4
020	GUIDE,CRD,9.06L,LOCKI	71279	INTERCONNECTION PRODUCTS	1900 (9.06L-GUIDE)	801866-201	28
021	GUIDE,CRD,6.50L,.31W,	71279	INTERCONNECTION PRODUCTS	1650	801866-401	16
022	LOCKING-TAB,CRD-GUIDE	71279	INTERCONNECTION PRODUCTS	3000 (LOCKING-TAB)	801866-901	116
023	*SCD*,SUPPORT BAR,CRD	53938	EVANS & SUTHERLAND	*SCD*801192-001	801192-001	6
024	*SCD*,SUPPORT BAR,CRD	53938	EVANS & SUTHERLAND	*SCD*801192-002	801192-002	4
025	FLTR,SPC9800	53938	EVANS & SUTHERLAND.	500808-006	500808-006	1
026	FAN ASY,SPC9800	53938	EVANS & SUTHERLAND.	200703-100	200703-100	2
027	NUT,SPEED,6-32THD,U-T	78553	EATON CORP ENGINEERED FAS	C53635-632-4	802252-004	8
028	BP,CD,SPC9800	53938	EVANS & SUTHERLAND.	200720-100	200720-100	1
029	FANCBL,SPC9800	53938	EVANS & SUTHERLAND.	200704-100	200704-100	1
030	SCR,SLOT-HD-SHLDR,4-4	55566	RAF ELECTRONICS HARDWARE	7002-SS-20	802377-901	6
031	SCR,SOC-HD-CAP,4-40X3	N/A	DISTRIBUTORS	4-40X3/8 (C-SOC-S)BLK	802347-303	2
032	SCR,PAN-HD,PHIL,6-32X	N/A	DISTRIBUTORS	6-32X5/16 (M-P-PH-SS)	802003-405	20
033	HW,SCR 4-40X5/16	N/A	DISTRIBUTORS	4-40X5/16 (M-P-PH-SS)	802002-195	26
034	HW,HW-S 8-32X3/8	N/A	DISTRIBUTORS	8-32X3/8 (M-P-PH-SS)	802004-103	27
035	HW,SCR 632X5/16	N/A	DISTRIBUTORS	6-32X5/16 (M-F-PH-SS)	802003-395	8
036	HW,SCR 6-32X5/8	N/A	DISTRIBUTORS	6-32X5/8 (M-P-PH-SS)	802003-105	9
037	SCR,FLT-HD,PHIL,10-32	N/A	DISTRIBUTORS	10-32X1/2 (M-F-PH-SS)	802053-304	8
038	HW,WSHR #8,FLAT	N/A	DISTRIBUTORS	SAE#8FLAT,SS,.040THK	802007-008	6
039	HW,WSHR 1/4FLAT	N/A	DISTRIBUTORS	WSHR 1/4FLAT-SS	802351-001	8
040	CBL,PWR INTCONN,SPC98	53938	EVANS & SUTHERLAND.	200705-100	200705-100	1
041	CBL,D.C. PWR,SPC9800	53938	EVANS & SUTHERLAND.	200706-100	200706-100	1
042	HW,WSHR 1/4SPLOK	N/A	DISTRIBUTORS	WSHR1/4,LOCK/HELIC,SS	802300-250	12
043	HW,WSHR #6SPLOK	N/A	DISTRIBUTORS	WSHR#6,LOCK/HELIC,SS	802300-006	21
044	HW,WSHR #4SPLOK	N/A	DISTRIBUTORS	WSHR#4,LOCK/HELIC,SS	802300-004	18
045	SCR,1/4-20X7/8,PNH,PH	N/A	DISTRIBUTORS	1/4-20X7/8 (M-P-PH-SS)	802031-107	3
046	FLTR,SPC9800	53938	EVANS & SUTHERLAND.	500808-005	500808-005	2
047	HW,NUT 1/4-20	N/A	DISTRIBUTORS	NUT-HEX(1/4-20)SST	802014-025	12
048	HW,SCR 4-40X3/8	N/A	DISTRIBUTORS	4-40X3/8 (M-F-PH-SS)	802002-303	2
049	HW,WSHR #8SPLOK	N/A	DISTRIBUTORS	WSHR#8,LOCK/HELIC,SS	802300-008	6

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MAINTENANCE PARTS LIST

ASSEMBLY: PL 200700-100

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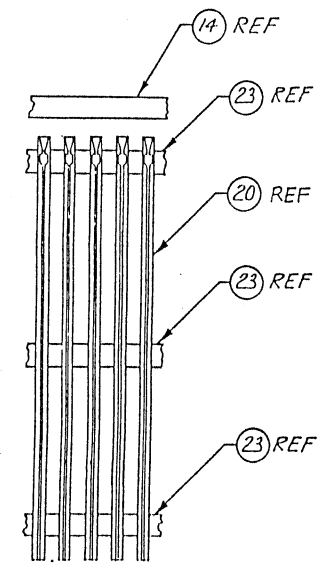
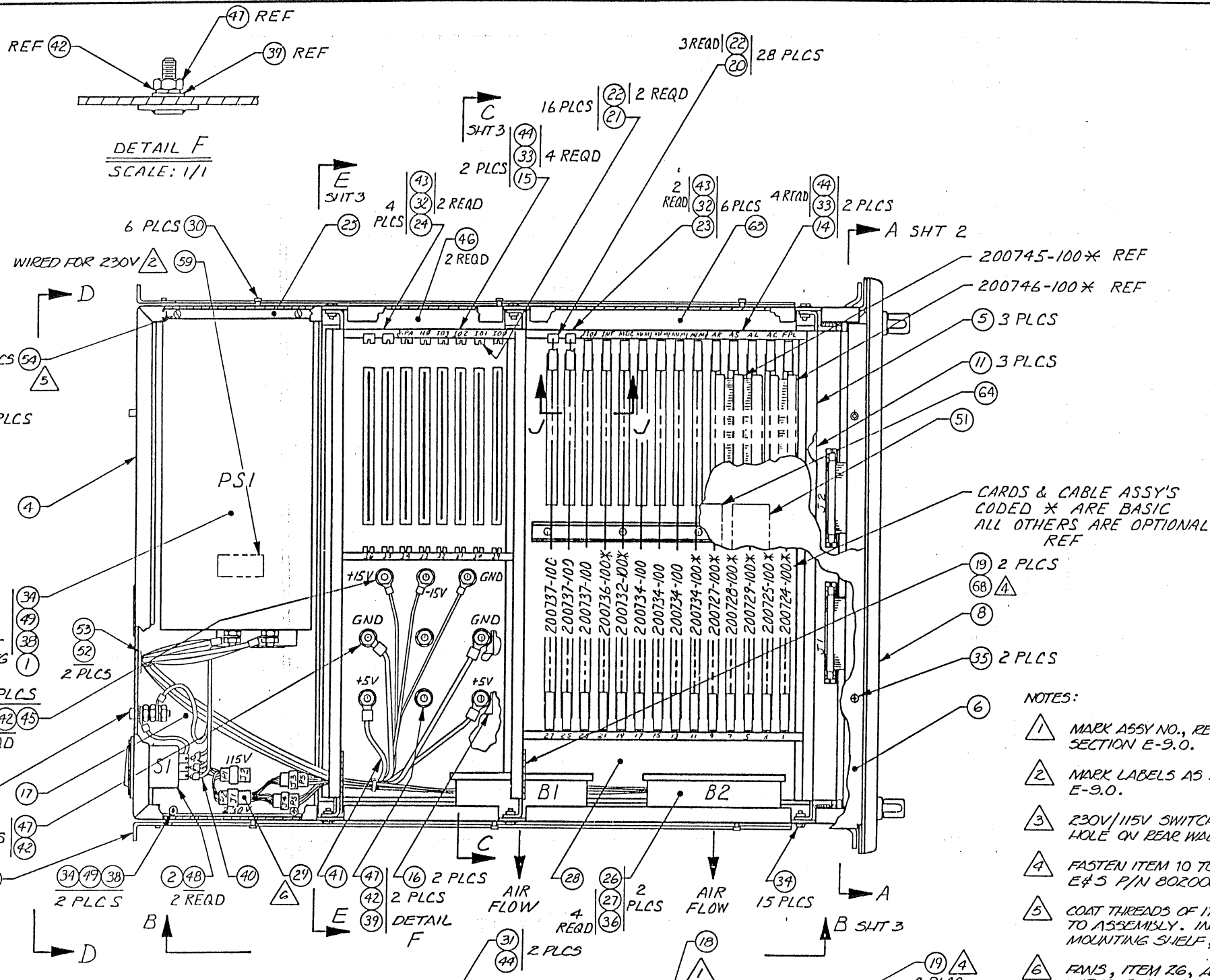
DESC: COMPUTER ASSY,SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
050	SCR,FLT-HD,PHIL,8-32X	N/A	DISTRIBUTORS	8-32X3/8(M-F-PH-SS)	802004-303	10
051	*SCD*DECAL,HIGH-VOLT,	53938	EVANS & SUTHERLAND	*SCD*802258-003	802258-003	1
052	HW,TIE TY-25M	59730	THOMAS AND BETTS CORP.	TY-25M	802061-001	2
053	MOUNT,CBL-TIE,1-1/16S	06383	PANDUIT CORP	ABM2S-A	802125-009	1
054	SCR,SLOT-HD-SHLDR,8-3	55566	RAF ELECTRONICS HARDWARE	7019-SS-20	802377-402	2
055	HW,HW-S 8-32X1/2	N/A	DISTRIBUTORS	8-32X1/2(M-P-PH-SS)	802004-104	6
056	HW,NUT 6-32NUT	N/A	DISTRIBUTORS	NUT-HEX(6-32)SS	802014-006	3
057	HW,WSHR #6EXTLOK	N/A	DISTRIBUTORS	SAE#6,LK EXT,SS	802006-006	1
059	*SCD*LBL,BAR-CODE,PRE	53938	EVANS & SUTHERLAND	*SCD*802178-008	802178-008	2
061	HW,TBNG 1/16TBNG	06090	RAYCHEM CORP/BENTLET HARR	RNF-100-1/16(TUBING)	802033-062	6
062	TERM,RING,UN-INSUL,N	75037	MINN. MINING & MFG.	B-25-001 (NO.6-RING)	802131-106	2
063	FLTR,SPC9800	53938	EVANS & SUTHERLAND.	500808-007	500808-007	1
064	CAUTION LBL,AIR FLOW	53938	EVANS & SUTHERLAND.	500716-500	500716-500	1
065	SLIDE,3-SECTION,QUICK	06666	GENERAL DEVICES CO INC	C-300-S-124 (SLIDE)	801576-101	1
066	SLIDE-MTG-BRKT,ADJUST	06666	GENERAL DEVICES CO INC	B-308(SLIDE-BRACKET)	801576-102	2
067	SCR,PAN-HD,PHIL,10-32	N/A	DISTRIBUTORS	10-32X3/8(M-P-PH-SS)	802053-103	6
068	HW,GLUE #420	05972	LOCTITE CORP	SUPERBONDER-42050	802288-002	1
060 R1	VARISTOR,250VRMS,MAX-	03508	GENERAL ELECTIC CO. SEMI.	V250LA20A	801554-003	1

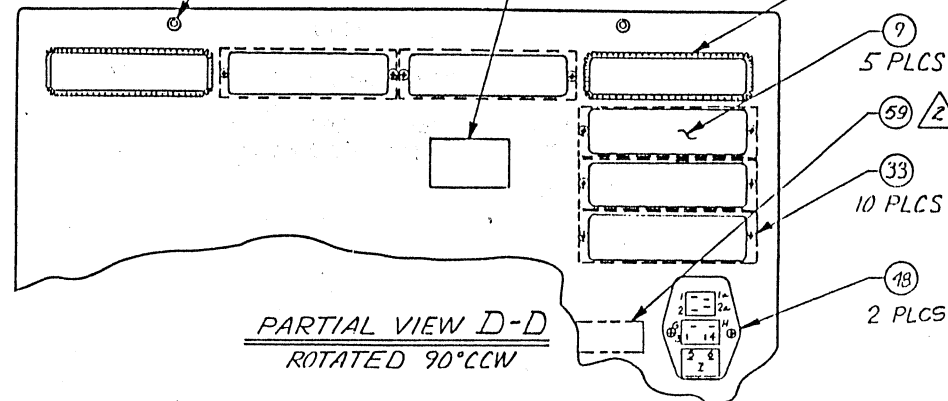
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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A0		RELEASED TO A0	7-785	MLZ
A1		ADDED ITEM 64 & 2 REQD TO 46	4-19-85	MLZ
A2		ADD SLIDE AND HRDW 1" ZEDB	8-27-85	Per 1-1
A3		POWER ASSY ADDITIONS	5-4-85	Per 1-1

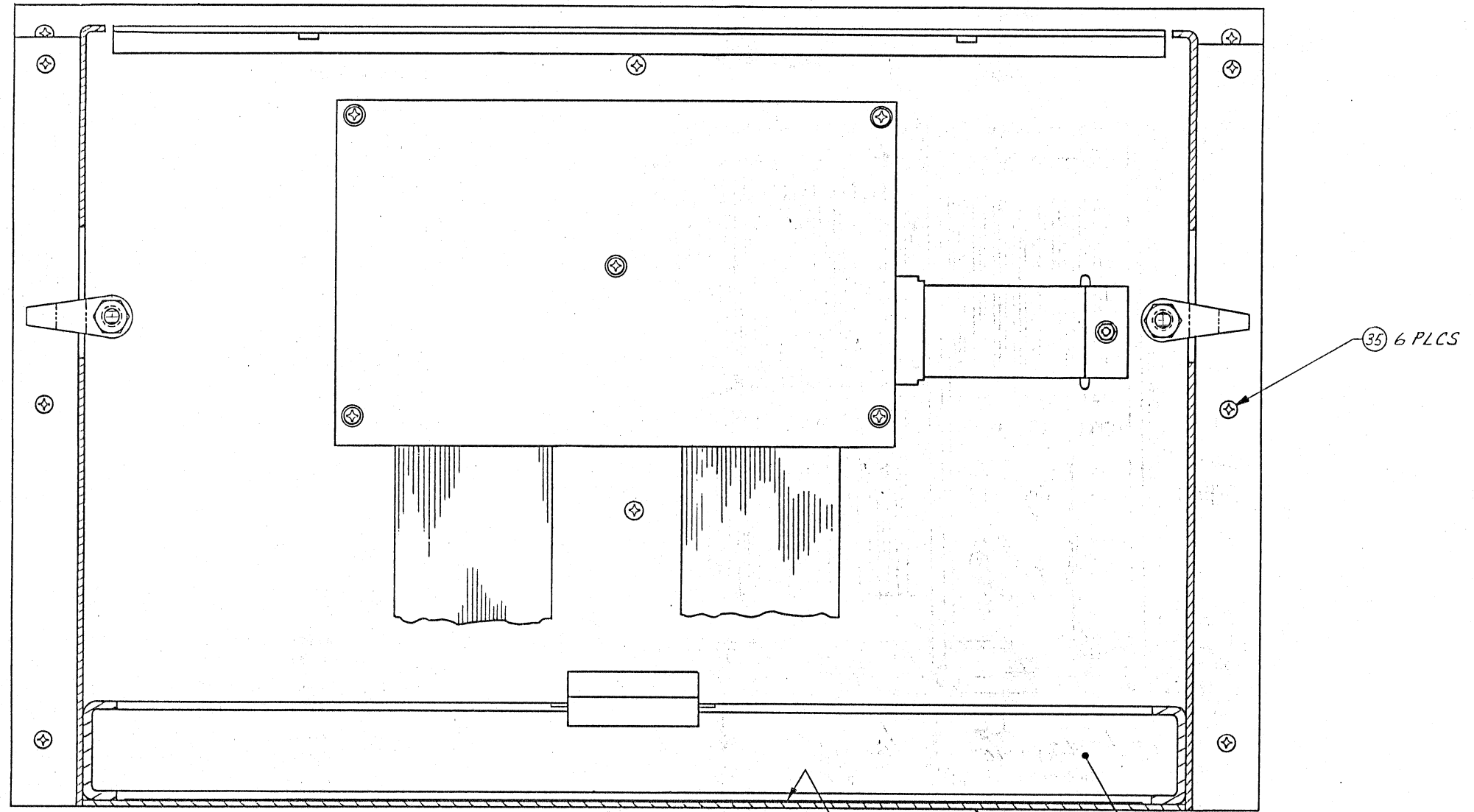


- NOTES:**
- MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.
 - MARK LABELS AS SHOWN PER E&S PRODUCTION PROCESSES SECTION E-9.0.
 - 230V/115V SWITCH ON SIDE OF POWER SUPPLY TO BE ALIGNED WITH HOLE ON REAR WALL, ITEM 4 (AC/DC POWER SUPPLY ONLY).
 - FASTEN ITEM 10 TO PANEL USING INDUSTRIAL CONTACT CEMENT, E&S P/N 802008-606 OR EQUIVALENT
 - COAT THREADS OF ITEM 54 WITH LOCTITE, E&S P/N 802288-301, PRIOR TO ASSEMBLY. INSTALL FINGER TIGHT USING POWER SUPPLY MOUNTING SHIELD, ITEM 3, AS A SPACER.
 - FANS, ITEM 26, AND POWER SUPPLY, ITEM 1, TO BE SET UP AND WIRED FOR 230V.



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .XXX ± ELEC ANGLES ± ✓	CONTRACT NO.	EVANS & SUTHERLAND BALT LAKE CITY, UTAH 84108 COMPUTER ASSEMBLY, SPC 9800
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	CHECKED 11/12/84	
	MECH 11-1-84	
	ELEC 11-1-84	
PROJ. ENGS. 11-1-84	APPROVED	SIZE CODE IDENT NO
MATERIAL SEE PARTS LIST		D 53938 200700-100 A3
FINISH		SCALE 1/2 DO NOT SCALE DWG SHEET 1 OF 4

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



SECTION A-A
 SCALE: 1/1
 ROTATED 90°CCW
 SHT 1

CENTER ON
 BOTTOM PLATE
 FASTEN USING
 INDUSTRIAL
 CONTACT CEMENT

SIZE	CODE IDENT NO	REV
D	53938	200700-100 A3
SCALE 1/2	DO NOT SCALE DWG	SHEET 2 OF 4

200700-100

8

7

6

5

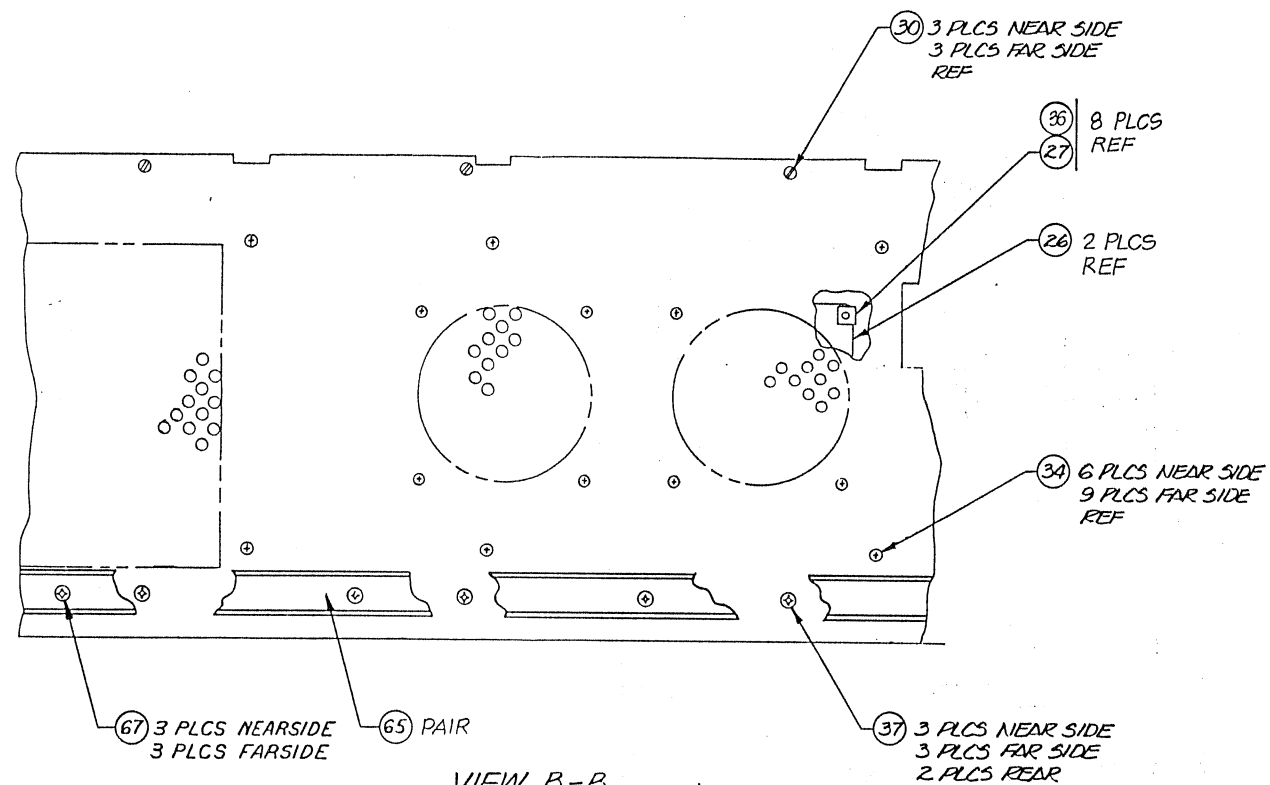
4

3

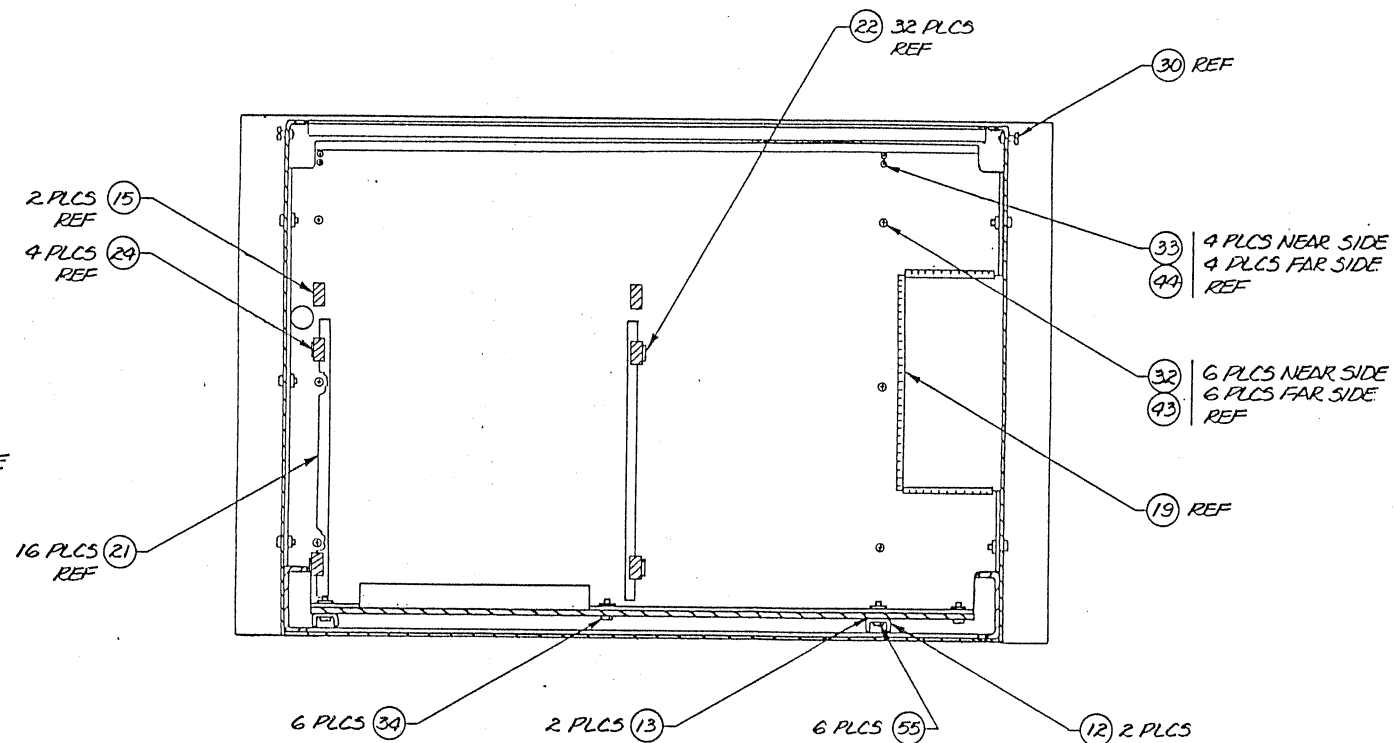
2

1

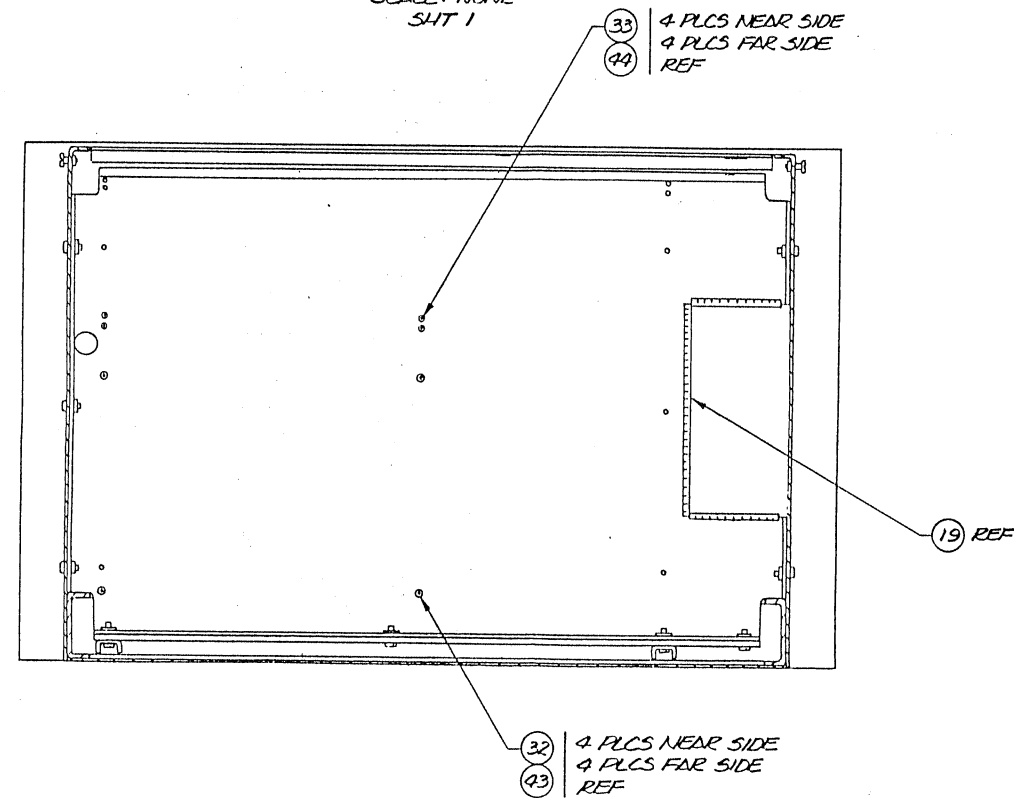
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



VIEW B-B
SCALE: NONE
SHT 1



SECTION C-C
SCALE: NONE
SHT 1

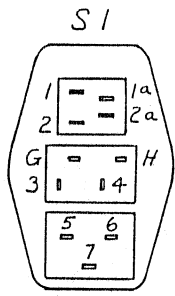


SECTION E-E
SCALE: NONE
SHT 1

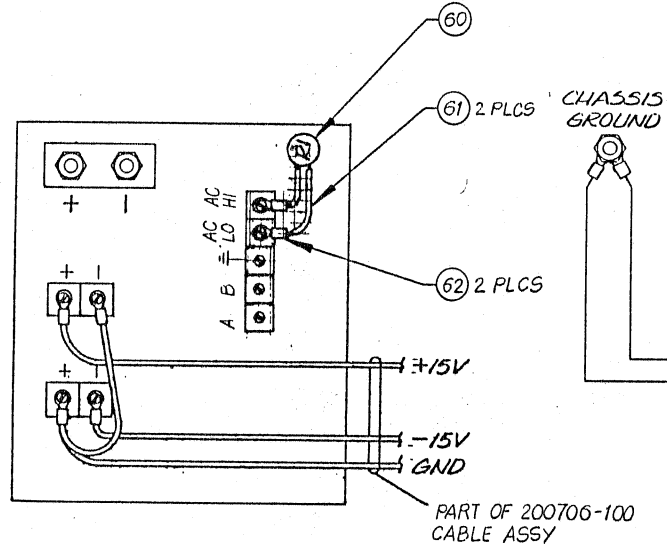
200700-100

SIZE	CODE	IDENT NO	REV
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SCALE 1/2		DO NOT SCALE DWG	SHEET 3 OF 4

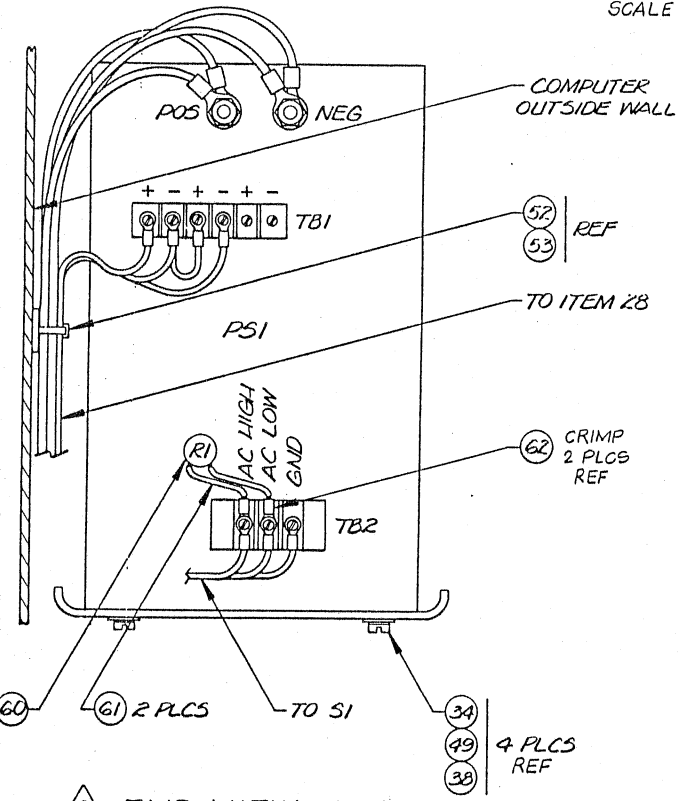
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



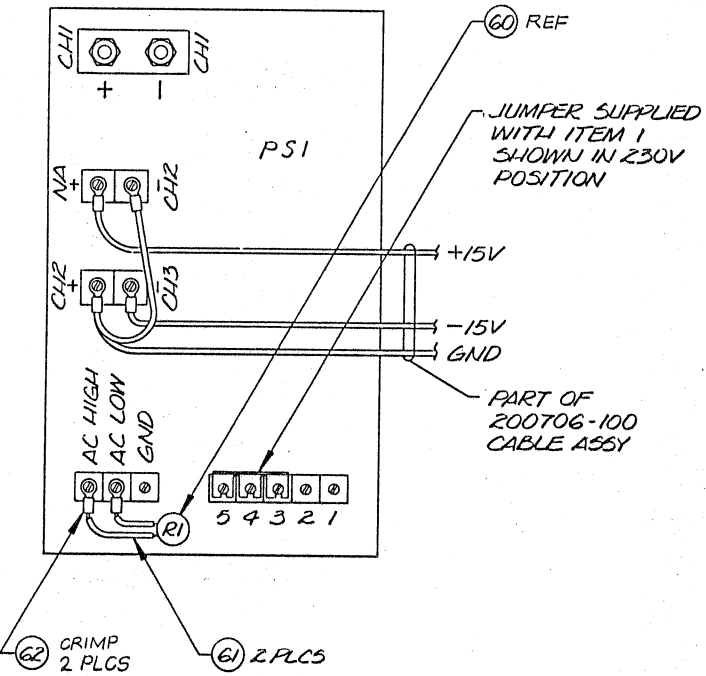
REAR VIEW - ITEM 2
SCALE: NONE



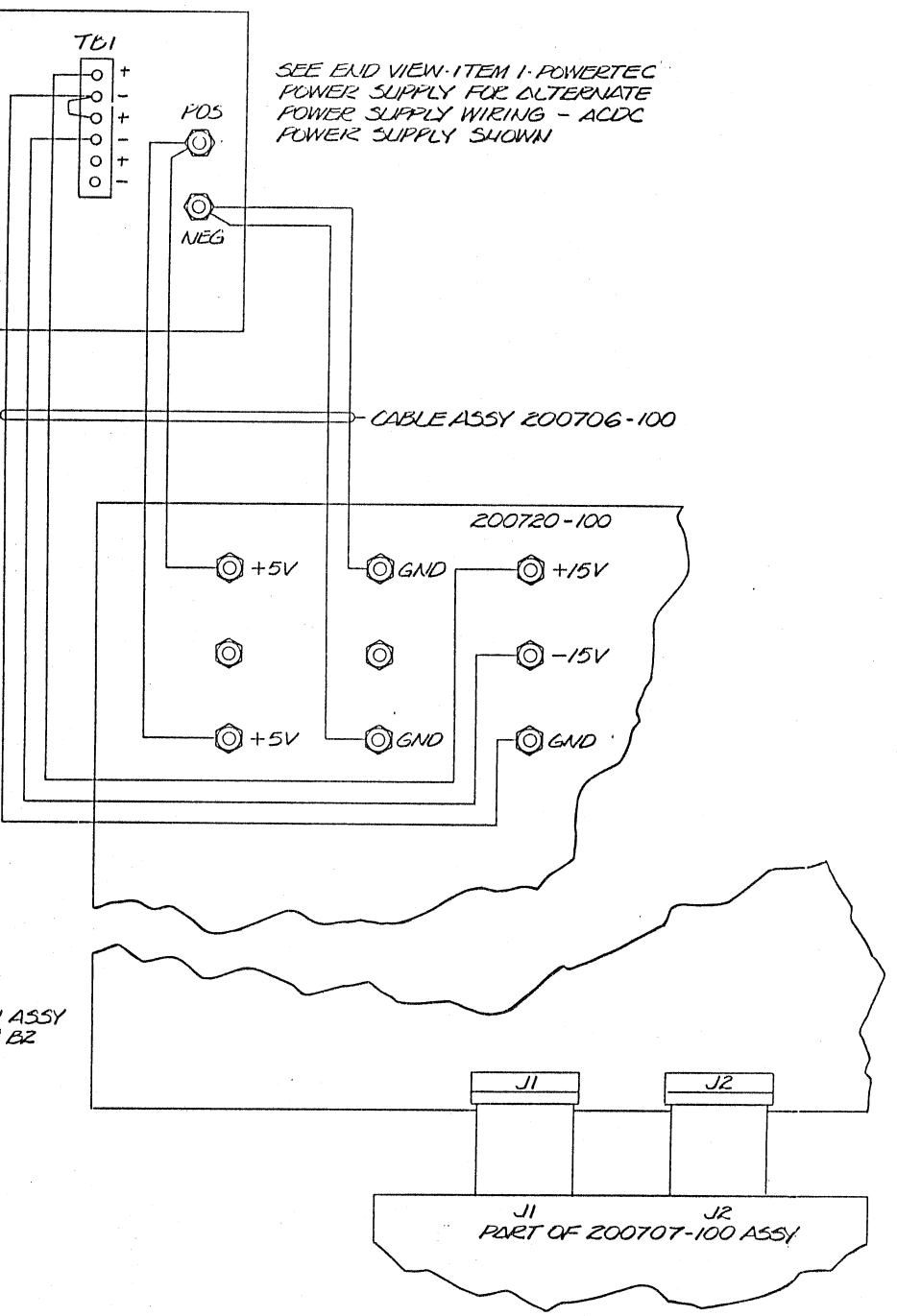
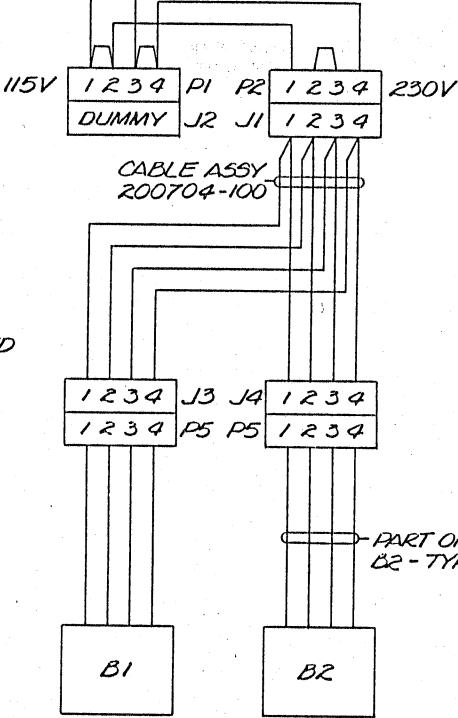
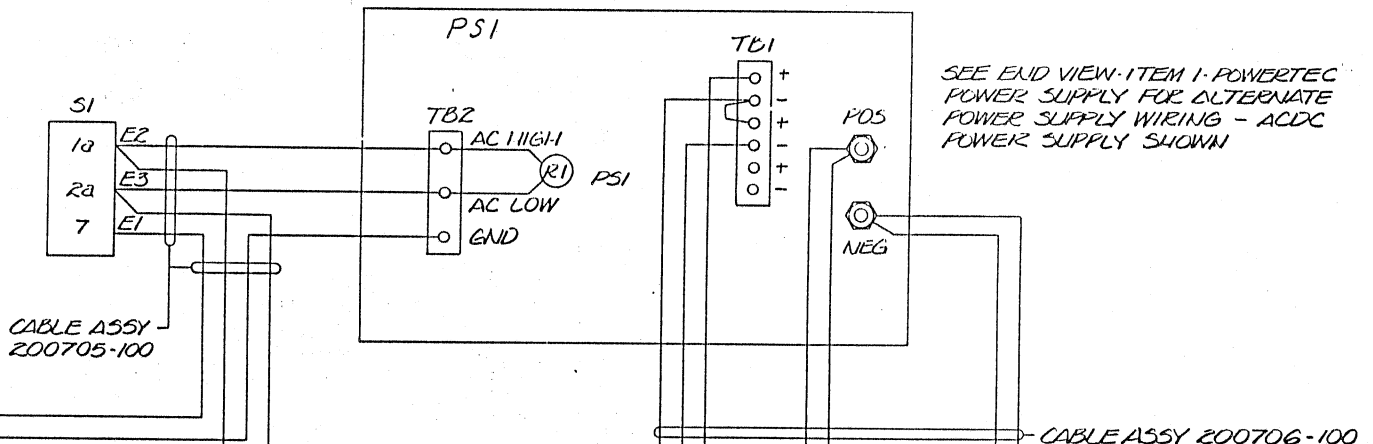
END VIEW - ITEM 1
ACDC POWER SUPPLY
SCALE: NONE



END VIEW - ITEM 1
ACDC POWER SUPPLY
SCALE: NONE



END VIEW - ITEM 1
POWERTEC POWER SUPPLY
SCALE: NONE



SEE END VIEW - ITEM 1 - POWERTEC POWER SUPPLY FOR ALTERNATE POWER SUPPLY WIRING - ACDC POWER SUPPLY SHOWN

SIZE	CODE IDENT NO	REV
D	53938	A3
SCALE 1/2	DO NOT SCALE DWG	SHEET 4 OF 4

TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE

1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200771-230

REV: A1 = AB

DESC: OPTION TERMINAL, TI 820, 230V, SPC9800

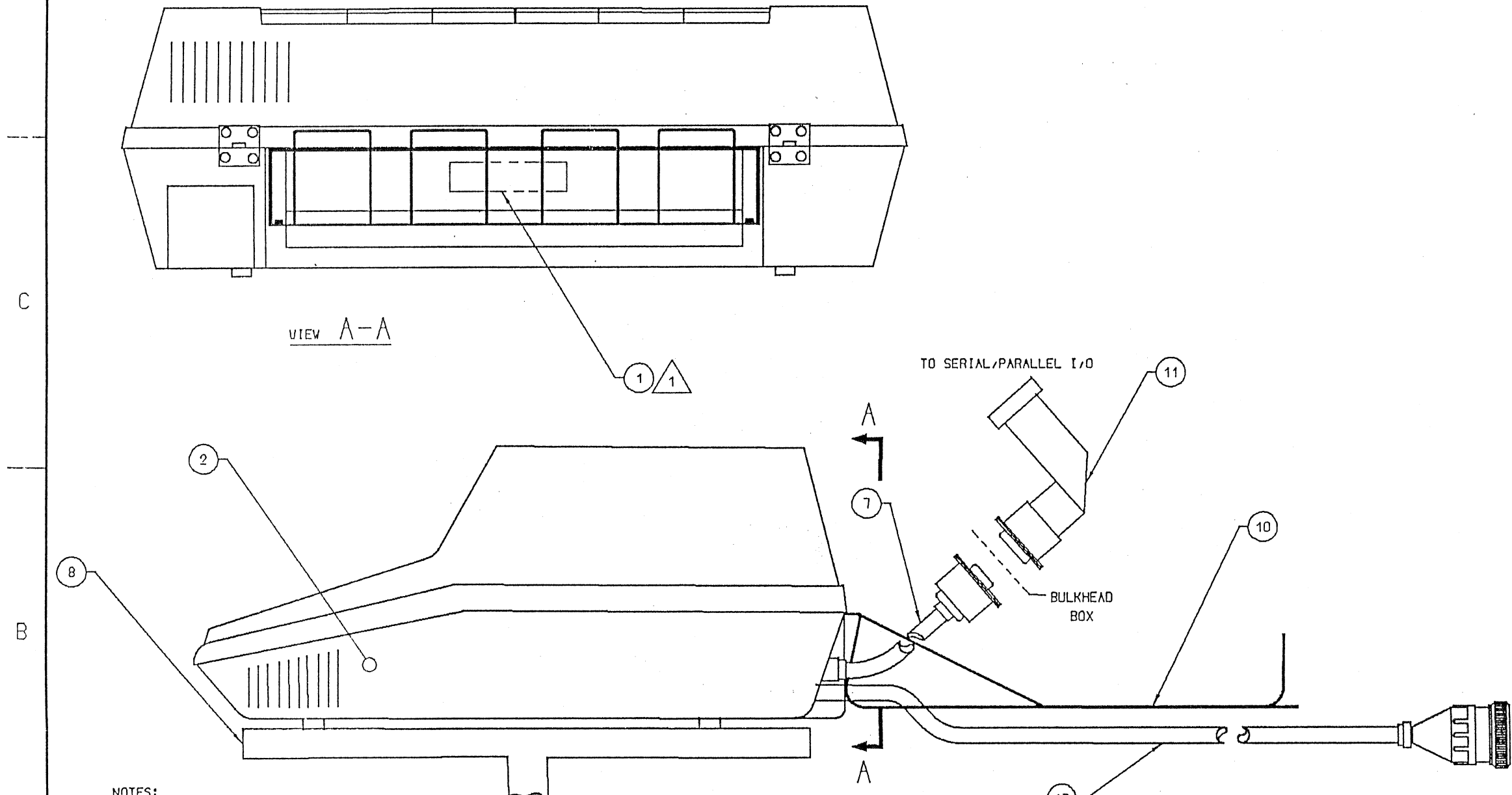
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	*SCD*LBL, BAR-CODE, PRE	53938	EVANS & SUTHERLAND	*SCD*802178-008	802178-008	2
002	TERM, TI 820K/220VT W/	01295	TEXAS INSTR, SEMICON DIV.	09996850201	801389-001	1
007	CBL, RS232C, 25FT, SHLD/	61685	INMAC	399-1 (25FT, SHLD'D)	801130-125	1
008	PRINTER STAND	01295	TEXAS INSTR, SEMICON DIV.	999841-0001	801811-101	1
010	PAPER-RACK, F/820KSR-T	01295	TEXAS INSTR, SEMICON DIV.	PAPER-RACK (820KSR)	801389-002	1
011	CBL ASY, SERIAL I/O, RS	53938	EVANS & SUTHERLAND.	200740-006	200740-006	1
013	CBL, PWR, CMPTR, 230V, SP	53938	EVANS & SUTHERLAND.	200748-006	200748-006	1

7 ITEMS LISTED



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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0	BH 3-1-85	PKB 3-8-85
	A1	DELETED VIEW B-B	BH 3-20-85	1745-1-18



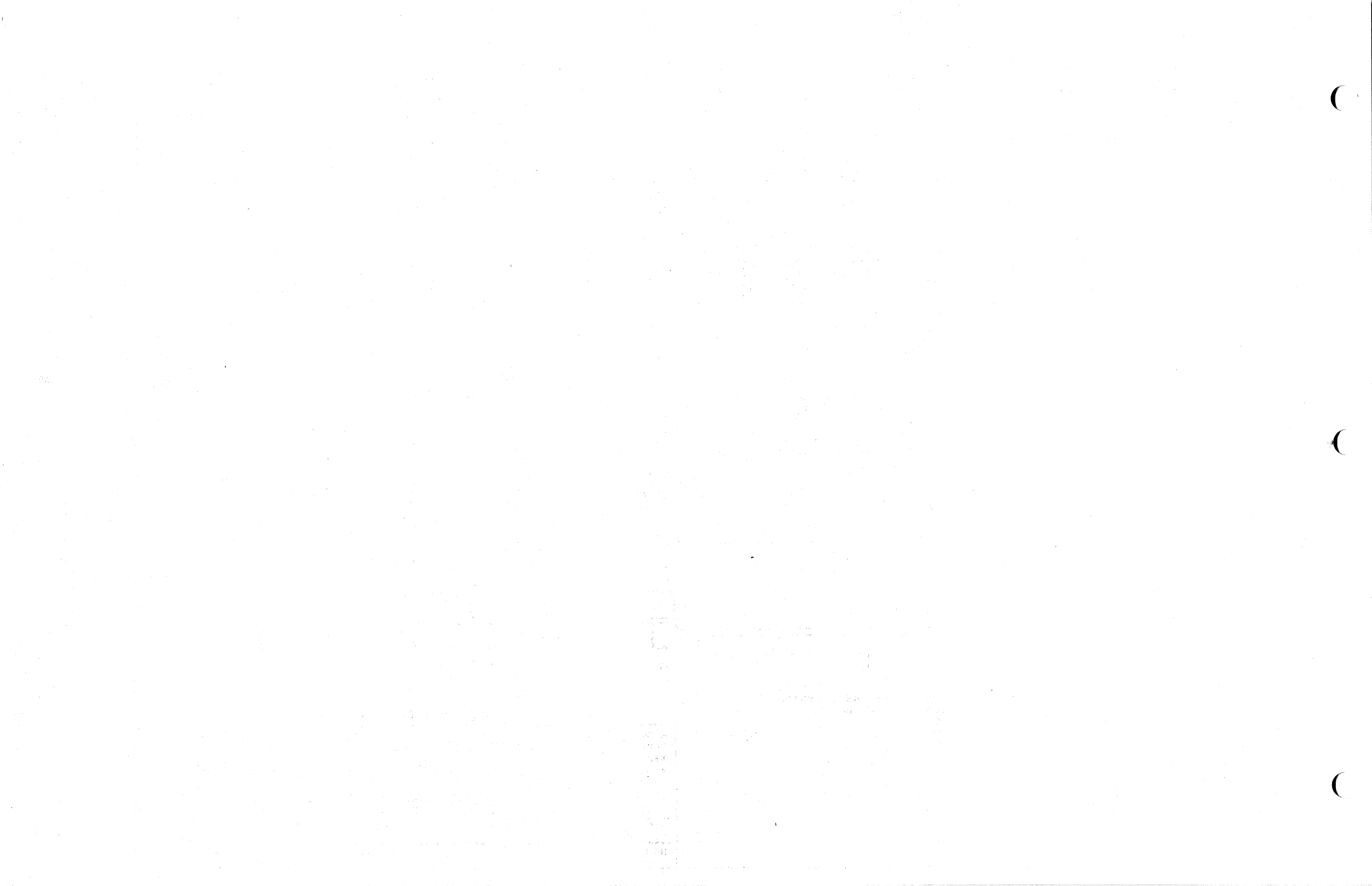
- NOTES:
- MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES SECTION E.9-0. LOCATE APPROX AS SHOWN. INSTALL SECOND LABEL IN OPTIONS LABEL AREA OF CABINET 1 IN I.G.
 - ASSY DWG ITEM 12 TO BE INCLUDED WITH KIT.

INSTALLATION INSTRUCTIONS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± - .XXX ± - ANGLES - ✓ HOLES PER AND 10387	CONTRACT NO.	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
	DRAWN GROBINS 1-23-85	OPTION, TERMINAL, TI820, 230V, SPC 9800	
	CHECKED PRP 1-25-85		
MATERIAL SEE PARTS LIST	MECH	SIZE	CODE IDENT NO
FINISH	ELEC	C	53938
	PROJ. ENG J BLEAK 2-11-85	200771-230	REV
	APPROVED P BOYCE 2-7-85	A1	A
		SCALE NONE	DO NOT SCALE DWG
		SHEET	1 OF 1

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 PER ASPR 7-104.9 (a) (b) 2ii

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SECTION 4

CABINET DATA

4.1 INTRODUCTION

This section contains engineering drawings and parts lists for the cabinets. When ordering replacement parts, include the part name, description, reference designation and part number.



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200707-100	REV: A2 = AC	DESC: FRONT PANEL ASSY, SPC9800				QTY/
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	ASSY
001	FRONT PNL, SPC9800	53938	EVANS & SUTHERLAND.	500707-001	500707-001	1
002	BEZEL, SPC9800	53938	EVANS & SUTHERLAND.	500708-002	500708-002	1
003	*SCD*, KEYBD-MEMBRANE,	53938	EVANS & SUTHERLAND	*SCD*801169-001	801169-001	1
004	FRONT PNL DSPLY, ASY, S	53938	EVANS & SUTHERLAND.	200722-100	200722-100	1
005	LATCH, LIFT & TURN, SI	94222	SOUTHCO INC	62-10-113-10	801799-101	2
006	SCR, PAN-HD, PHIL, 8-32X	N/A	DISTRIBUTORS	8-32X7/16 (M-P-PH-SS)	802004-197	5
007	HW, SCR 632X5/16	N/A	DISTRIBUTORS	6-32X5/16 (M-F-PH-SS)	802003-395	7
008	HW, WSHR #8, FLAT	N/A	DISTRIBUTORS	SAE#8FLAT, SS, .040THK	802007-008	5
009	HW, WSHR #6, FLAT	N/A	DISTRIBUTORS	SAE#6FLAT, SS, .032THK	802007-006	1
010	HW, WSHR #6EXTLOK	N/A	DISTRIBUTORS	SAE#6, LK EXT, SS	802006-006	1
011	HW, WSHR #8SPLOK	N/A	DISTRIBUTORS	WSHR#8, LOCK/HELIC, SS	802300-008	5
012	HW, NUT 6-32NUT	N/A	DISTRIBUTORS	NUT-HEX (6-32) SS	802014-006	5
013	CLAMP, FLAT-CBL, SERRAT	34785	DEK INC	031-0100	802259-101	2

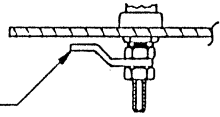
13 ITEMS LISTED



8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

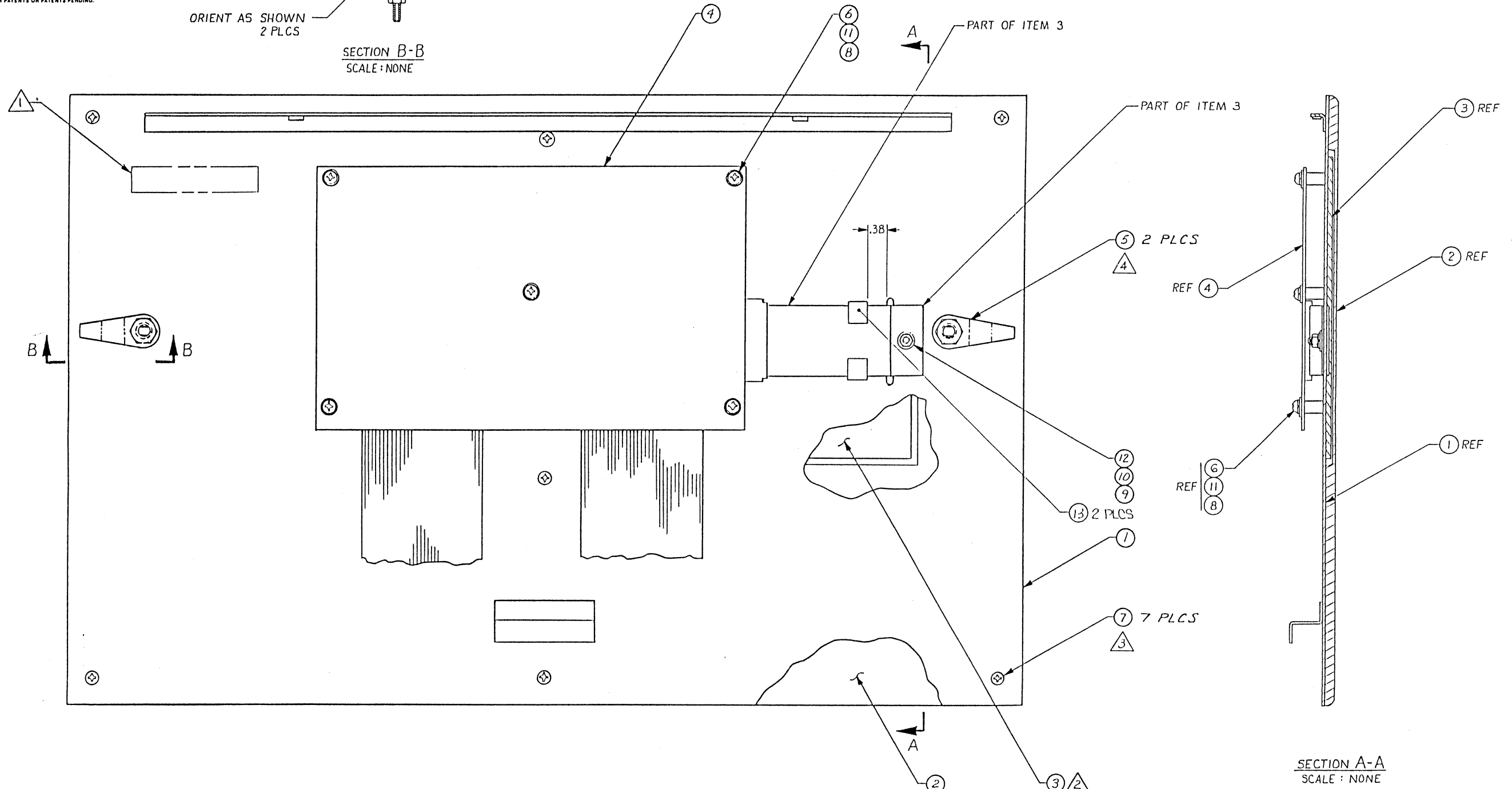
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ORIENT AS SHOWN
 2 PLCS



SECTION B-B
 SCALE: NONE

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A0		ADDED SECTION VIEWS	2-14-85	[Signature]
A1		P/L CHNGS	4-10-85	[Signature]
A2		ADDED 1 ITEM 13	6-05-85	[Signature]



SECTION A-A
 SCALE: NONE

NOTES:

- ① MARK ASSY NO., REV LEVEL AND S/N IN .09 TO .25 CHARACTERS IN CONTRASTING COLOR USING OPAQUE INDUSTRIAL PERMANENT INK. LOCATE APPROX AS SHOWN.
- ② ALIGN RED WINDOWS OF ITEM 3 (KEYBOARD MEMBRANE) WITH ROUND HOLES IN ITEM 1 (FRONT PANEL) TO WITHIN ± .015.
- ③ DO NOT EXCEED 4 INCH POUNDS TORQUE.
- ④ HARDWARE INCLUDED.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓	CONTRACT NO.	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
	DRAWN	FRONT PANEL ASSY SPC9800	
	CHECKED	DATE	REV
	MECH	DATE	REV
MATERIAL SEE PARTS LIST		SIZE	CODE IDENT NO.
FINISH		D 53938	200707-100 A2
		SCALE 1/1	DO NOT SCALE DWG SHEET 1 OF 1

D
C
B
A
200707-100



SECTION 5

BACKPANEL DATA

5.1 INTRODUCTION

This section includes the significant mechanical/electrical parts for each backpanel. When ordering replacement parts, include the part name, description, reference designation and part number.



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200720-100

REV: B0 = BA

DESC: BACKPANEL,CARD ASSY,SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	BP,WV,SPC9800	53938	EVANS & SUTHERLAND.	200720-500	200720-500	1
002	STIF,BP,SPC9800	53938	EVANS & SUTHERLAND.	500711-002	500711-002	1
003	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	15
004	HW,HW-S 8-32X1/2	N/A	DISTRIBUTORS	8-32X1/2 (M-P-PH-SS)	802004-104	4
005	HW,WSHR #8,FLAT	N/A	DISTRIBUTORS	SAE#8FLAT,SS,.040THK	802007-008	4
006	HW,WSHR #8SPLOK	N/A	DISTRIBUTORS	WSHR#8,LOCK/HELIC,SS	802300-008	4
007	HW,NUT 8-32NUT	N/A	DISTRIBUTORS	NUT-HEX (8-32)SS	802014-008	4
008	BP,W/L	53938	EVANS & SUTHERLAND.	200720-800	200720-800	1

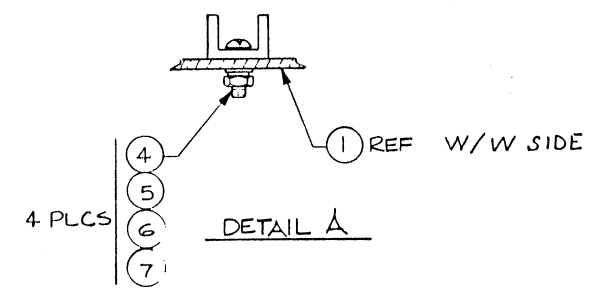
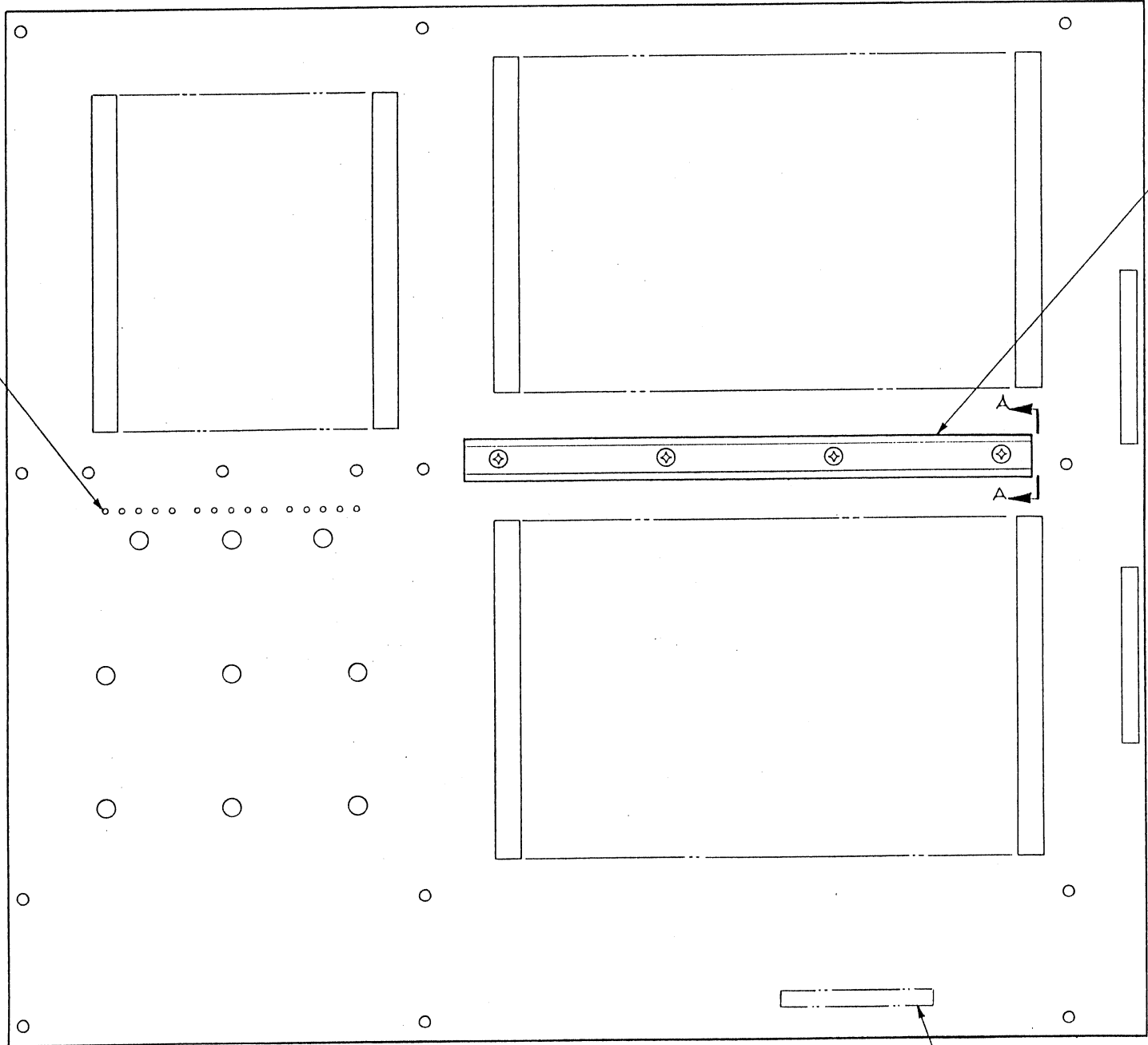
8 ITEMS LISTED



8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AD	RELEASED TO AD	JGR 1-23-85	JLL
	BO	ADDED NOTE 2	JLP 5-31-85	JLL

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15 PLCS
 FAR SIDE
 ③
 ②

4 PLCS
 ④
 ⑤
 ⑥
 ⑦

NOTES:
 ①. MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.
 ②. REFER TO ITEM 8 ON PARTS LIST FOR ASSOCIATED WIRE LIST.

COMPONENT SIDE

① FAR SIDE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓	CONTRACT NO.	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
	DRAWN: BROWN 10-25-84	BACKPANEL CARD ASSY-SPC9800			
	CHECKED: [Signature] 10/27/84				
	MECH: [Signature] 11-1-84				
MATERIAL SEE PARTS LIST	APPROVED	SIZE	CODE IDENT NO	REV	
FINISH		D	53938	200720-100	BO
SCALE: NONE		DO NOT SCALE DWG		SHEET 1 OF 1	

001-022007

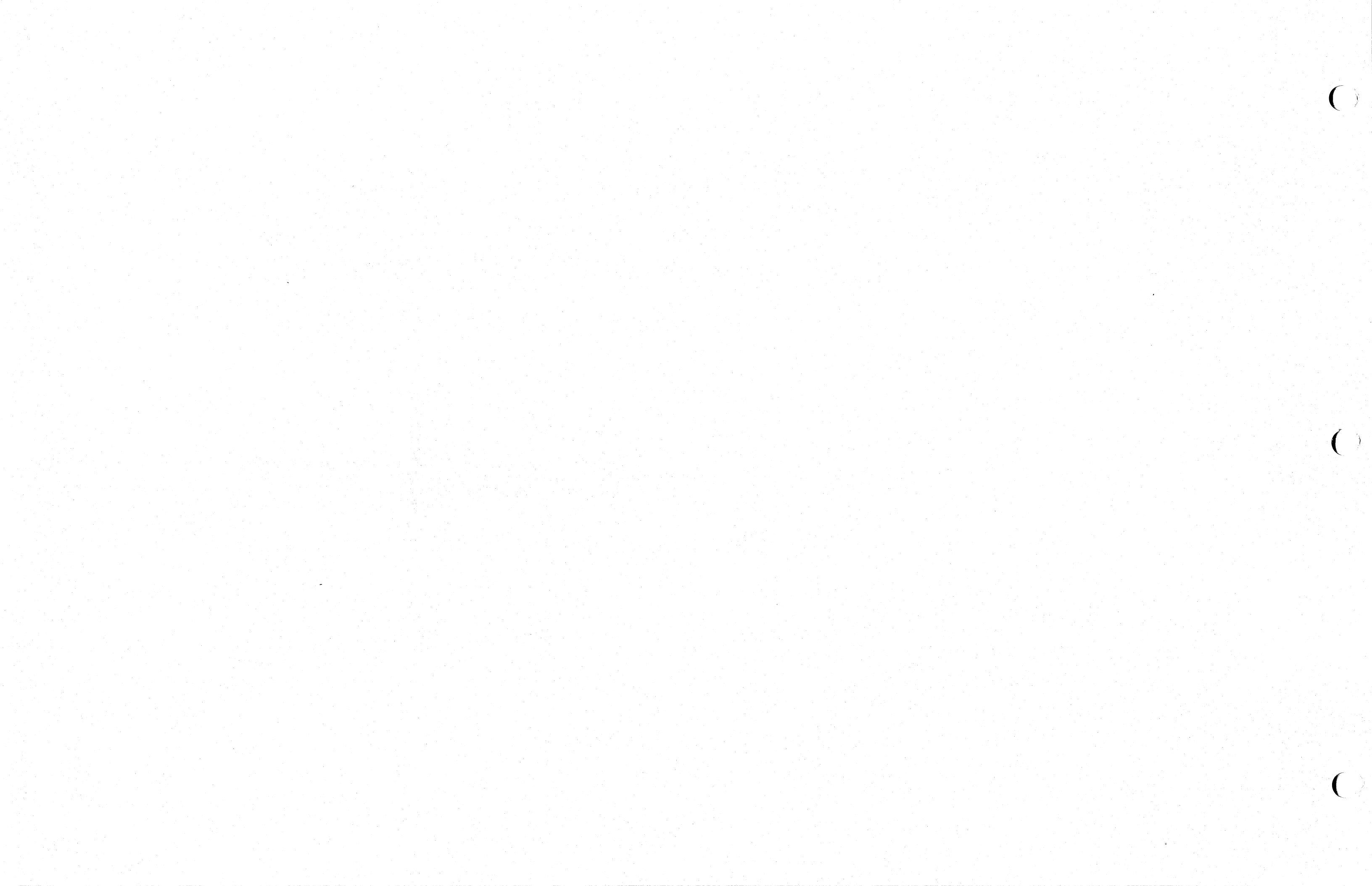


SECTION 6

SYSTEM POWER/COOLING DATA

6.1 INTRODUCTION

This section contains engineering drawings and parts lists for the power and cooling units. When ordering replacement parts, include the part name, description, reference designation, and part number.



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200702-100

REV: A0 = AA

DESC: SWITCH, ASSY, SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	WIRE, 16AWG (STRANDED),	92194	ALPHA WIRE CORP.	3057	802508-999	2
002	HW, TBNG 3/16TBNG	92194	ALPHA WIRE CORP.	FIT-221M-3/16"	802033-187	6
003	SW, FLTR, 2-FUSES, PWR-L	N/A	SCHAFFNER E M C INC	FN388-6/22	804902-301	1
004	WIRE, 16AWG (19/29; 26/3	73612	CONSOLATED ELEC, W/C CORP	9404 (16AWG) GREEN	802508-555	1
005	TERM, RING, NO. 6 STUD, 1	98410	ETC-MOLEX INC.	B-823-06T	802132-006	1

5 ITEMS LISTED

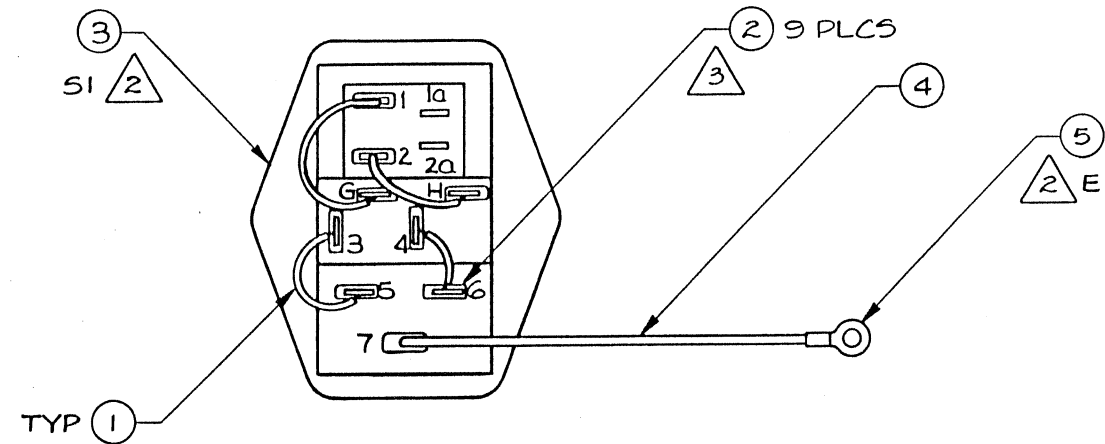


REVISIONS					
ZONE	LTR	DESCRIPTION	DATE	APPROVED	
	AO	RELEASED TO AO & INCORP RCI	2-7-85	MB	MB

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WIRING TABLE

ITEM NO.	AWG	COLOR	TW PR	CUT LENGTH	USEABLE CABLE LENGTH	STRIP LENGTH		TERMINAL LUG		COMPONENT		SIGNAL NAME
						START	FINISH	START	FINISH	START	FINISH	
1	16	WHT	-	AS REQD	AS REQD	.25	.25	-	-	S1-1	S1-G	JUMPER
1	16	WHT	-	AS REQD	AS REQD	.25	.25	-	-	S1-2	S1-H	JUMPER
1	16	WHT	-	AS REQD	AS REQD	.25	.25	-	-	S1-3	S1-5	JUMPER
1	16	WHT	-	AS REQD	AS REQD	.25	.25	-	-	S1-4	S1-6	JUMPER
4	16	GRN	-	3.50	3.00 ^{+0.50} _{-0.00}	.25	.25	-	ITEM 5	S1-7	E-1	GROUND

- NOTES:
- 1 TAG INDIVIDUALLY WITH PART NO. AND REV LEVEL.
 - 2 MARK COMPONENT OR TERMINAL/CONNECTOR AS SHOWN E&S PRODUCTION PROCESSES SECTION E-9.0.
 - 3 ADD HEAT SHRINK (ITEM 2) AS REQUIRED OVER SOLDER CONNECTIONS.

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 TOLERANCES ON
 .XX ± —
 .XXX ± —
 ANGLES ± —
 ✓
 HOLES PER AND 10387

DRAWN SBROWN 88-84
 CHECKED [Signature] 9/24/84
 MECH. [Signature] 9-26-84
 ELEC. [Signature]
 PROJ. ENG. S. Hadfield 9/27/84
 APPROVED

MATERIAL
 SEE PARTS LIST

FINISH

EVANS & SUTHERLAND
 SALT LAKE CITY, UTAH, 84108

SWITCH ASSY.,
 SPC9800

SIZE	CODE IDENT NO	REV
C	53938	200702-100
SCALE NONE	DO NOT SCALE	SHEET 1 OF 1

200702-100



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200703-100

REV: A2 = AC

DESC: FAN ASSEMBLY, SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	FAN, TUBEAX, BOX, 4.7SQ,	62292	EBM INDUSTRIES, INC	W2S107-AA01-A2 (TEMP)	801035-602	1
003	TERM, CRMP, MAL, 20-14AW	27264	MOLEX INC.	02-09-2103 (1190-M)	802326-001	4
002 P5	CONN, RCPT, (4PIN), MAL-	27264	MOLEX INC.	03-09-1042 (1490-4R)	802323-104	1

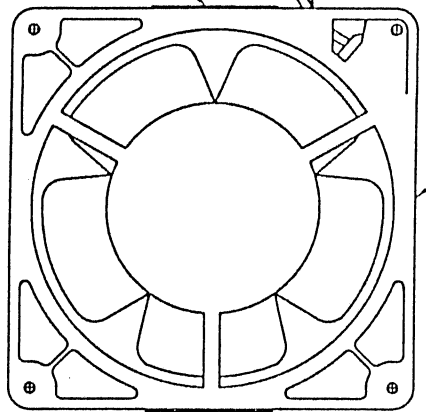
3 ITEMS LISTED



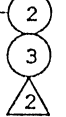
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PART/ASSEMBLY REVISION LEVEL		REVISIONS			
REV. LEVEL	DATE	BY	DESCRIPTION	DATE	APPROVAL
-101	-100	SCM	EDA		
-	A0				
-	A0		RELEASED TO A0	GGR 13:01:8	DLB
P0	A0		RC1 RELOCATED PART MARKING	GGR 16:03:8	DLB
P1	A0		ADDED -101 CONFIGURATION	DB 18:06:8	DLB
A0	A0		REVISED AND REDRAWN PER ECO	GGR 11:10:8	DLB
A0	A0		RELEASED -101 TO A0	HSC 14-29-8	JHB
A0	A0		INCOMP RC1	KMD 15-06-8	KT
A1	A1		DRAWING CHANGES PER ECO	JLB 11-03-8	KL 11-6-88
A2	A2		DEL NOTE 4 & COMB NOTE 1	IBD 14-06-8	

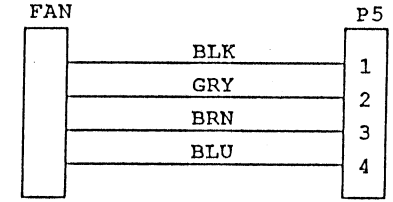
2 PLCS



-100 SHOWN



4 REQD



WIRING DIAGRAM -100 ONLY

WIRES ARE PART OF FAN (1)
 CUT LENGTH TO BE 6.50



2 PLCS



REF



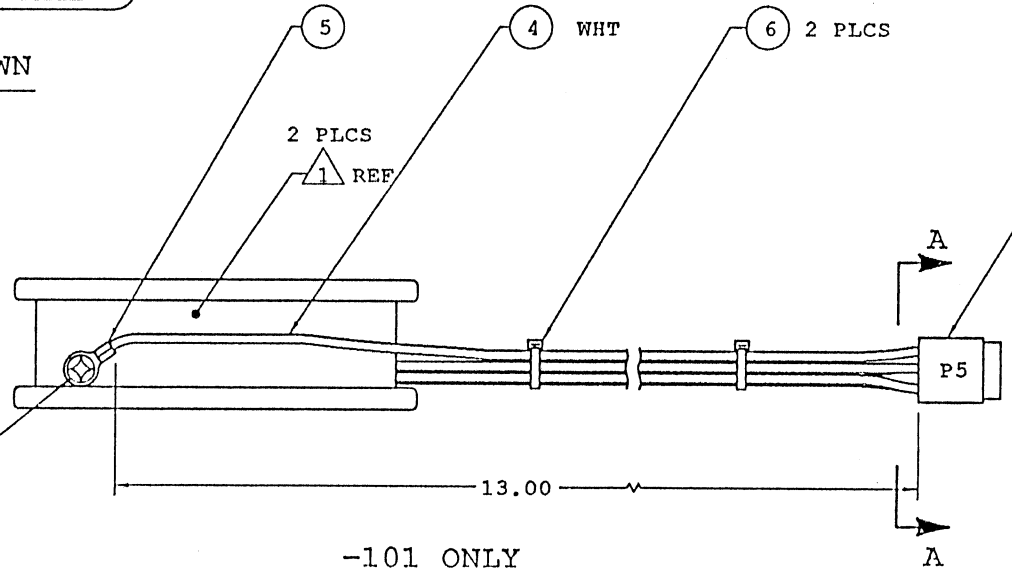
WHT



2 PLCS



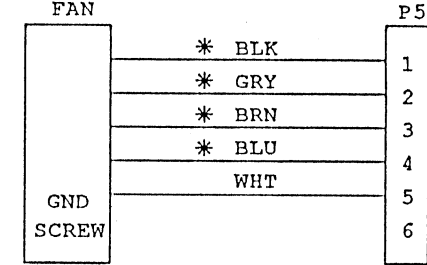
5 REQD



EXISTING GND SCREW ON FAN

-101 ONLY

VIEW A-A
 WIRE INSERTION SIDE



WIRING DIAGRAM -101 ONLY

* WIRES ARE PART OF FAN (1)
 CUT LENGTH TO BE 9.50

NOTES:

- ① MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN, ON TOP AND BOTTOM OF FAN HOUSING.
- ② MARK ALL CONNECTORS/TERMINALS AS SHOWN PER E&S PRODUCTION PROCESSES SECTION E-9.0.
- ③ FAN CABLE MAY NOT CONNECT TO FAN EXACTLY AS SHOWN. IT IS SHOWN FOR PURPOSES OF INDICATING P5 CONNECTOR TERMINATION.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .X ± .005 .XX ± .010 .XXX ± .015 ANGLES ± .5° ✓ PER ANST Y14.5M 1982	CONTRACT NO.	EVANS & SUTHERLAND
	DRAWN DB 7-12-84	SALT LAKE CITY, UTAH 84108
	CHECKED PHF 7-19-84	FAN ASSEMBLY
	MECH DLB 7-30-84	SPC 9800/SPX
	ELEC	
	PROJ. ENG SH 7-31-84	
	APPROVED	
MATERIAL SEE PARTS LIST	SIZE	CLAS
FINISH	B 53938	200703-TAB
	SCALE 1/2	DO NOT SCALE DIMS
		SHEET 1 OF 1

200703-TAB



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200770-230

REV: A0 = AA

DESC: OPTION,230V POWER ,SPC 9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
	CBL,PWR,CMPTR,230V,SP	53938	EVANS & SUTHERLAND.	200748-006	200748-006	1
	*SCD*LBL,BAR-CODE,PRE	53938	EVANS & SUTHERLAND	*SCD*802178-008	802178-008	1
	FUSE,3A,SLO-BLO,250V	75915	LITTELFUSE TRACOR INC.	313 003	802296-030	2

3 ITEMS LISTED



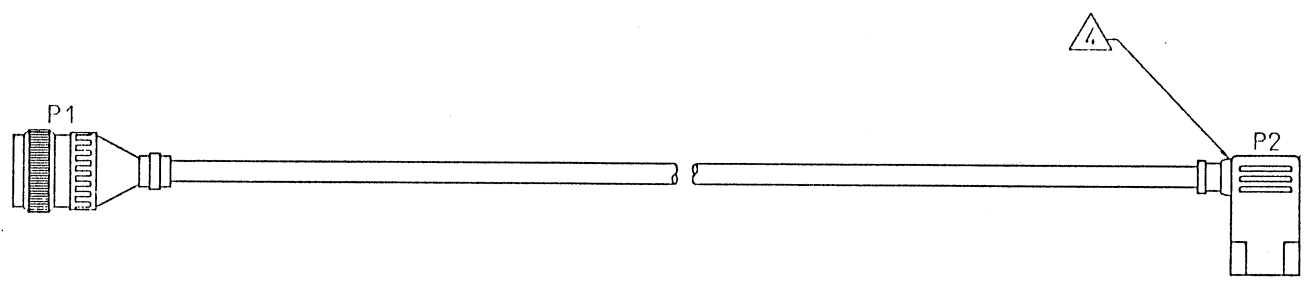
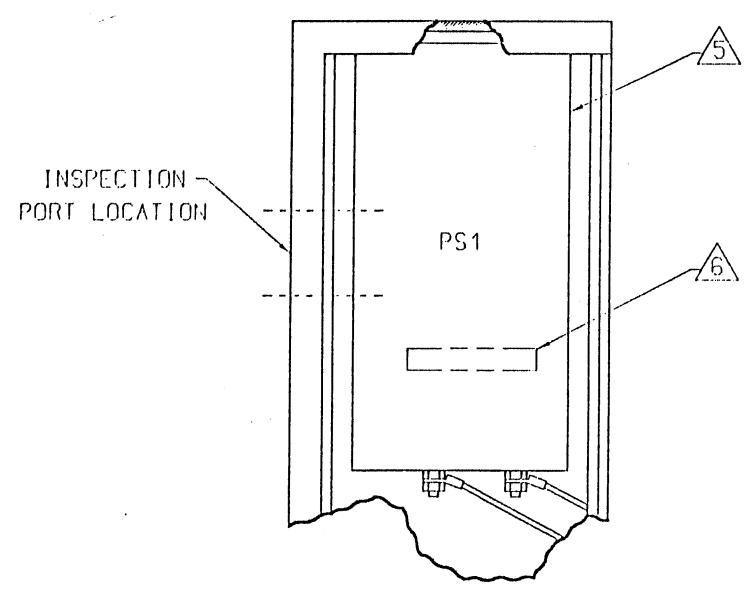
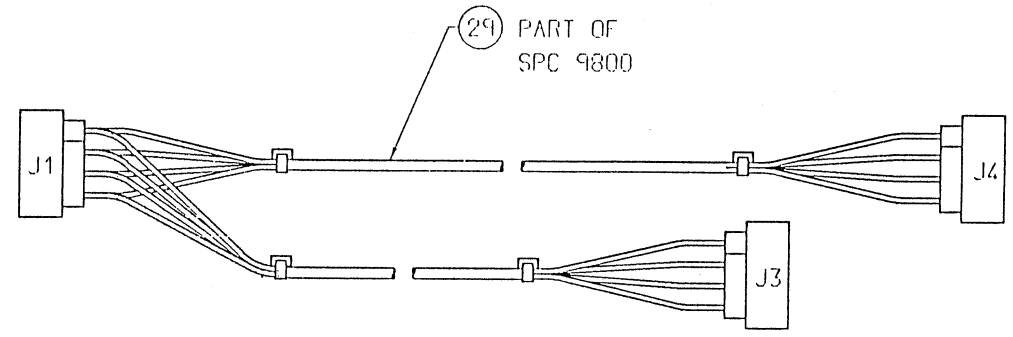
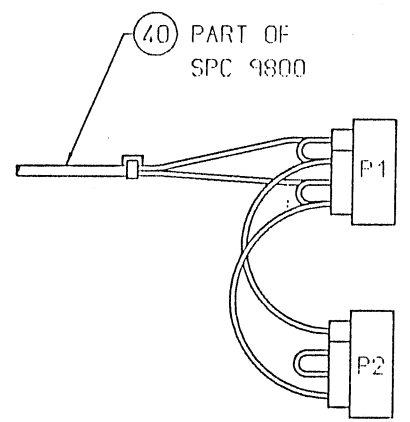
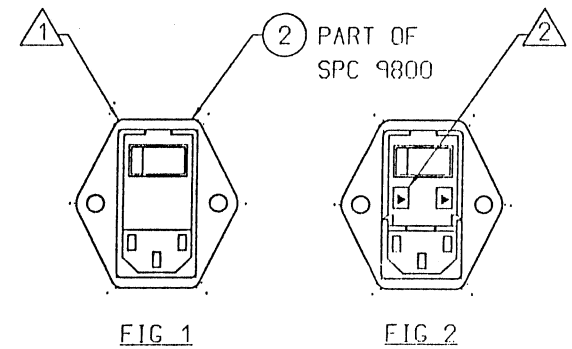
8 7 6 5 4 3 2 1

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ZONE	LTR	DESCRIPTION	DATE	APPROVED
AO		RELEASED TO AO	MB 2-28-85	

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 PER ASPR 7-104.9 (a) (b) 2ii

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NOTES:

- 1 PRY OPEN SWITCH ASSEMBLY AT POINT INDICATED. SWING OPEN DOOR TO EXPOSE FUSEHOLDERS.
- 2 INSTALL 3 AMP SLO-BLO FUSE (E&S P/N 802296-030) INTO EACH FUSE CARRIAGE.
- 3 TERMINATE 'J1' OF ITEM 29 (200704-100) TO 'P2' OF ITEM 40 (200705-100).
- 4 INSTALL 'P2' OF 200748-006 INTO RECEPTACLE PROVIDED BY ITEM 2 OF SPC 9800.

- 5 AC/DC POWER SUPPLY: MANIPULATE SLIDE SWITCH THRU INSPECTION PORT TO INDICATE '230 V' OPERATION.
 POWERTEC POWER SUPPLY: INSTALL 3-PRONG JUMPER SUPPLIED TO TERMINAL BLOCK POSITIONS 3, 4 & 5.
- 6 MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.

INSTALLATION INSTRUCTION DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± - .XXX ± - ANGLES - ✓ HOLE PER AND 10387	CONTRACT NO.	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
	DRAWN H. BURKHART 2-26-85	OPTION, 230 VOLT POWER, SPC 9800	
	CHECKED PRP 2-28-85	SIZE	REV
	MECH	D 53938	AO
ELEC	SCALE NONE	DO NOT SCALE DVC	SHEET 1 OF 1
PROJ. ENG. [Signature]	APPROVED [Signature]		

200770-230

8 7 6 5 4 3 2 1



SECTION 7

CABLE DATA

7.1 INTRODUCTION

This section contains engineering drawings and parts lists for the system cables. When ordering replacement parts, include the part name, description, reference designation (if applicable), and part number.



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200704-100

REV: A1 = AB

DESC: FAN CABLE ASSY,SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	HW,WIRE 20G,WHT	90484	SURPRENANT WIRE & CBL DIV	XML1932U(0165)	802510-999	6
004	HW,TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	4
003 IT	CONT,CRMP,FEM,20-14AW	27264	MOLEX INC.	02-09-1103 (1189-F)	802325-001	12
002 J1 J3 J4	CONN,PLUG,(4PIN),INLI	27264	MOLEX INC.	03-09-2042 (1490-4P)	802324-004	3

4 ITEMS LISTED

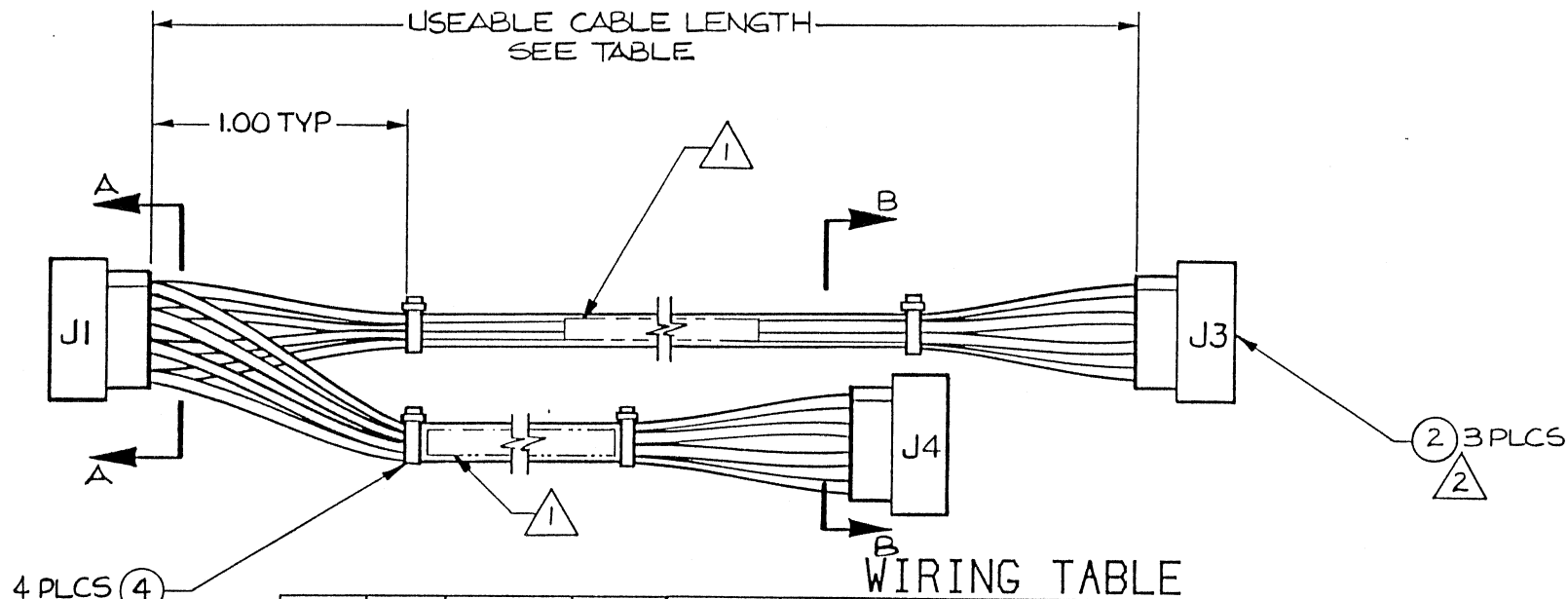
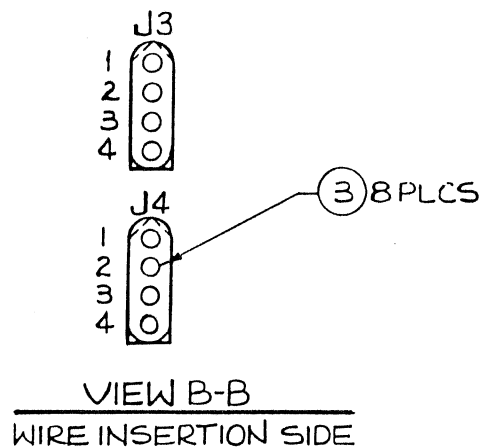
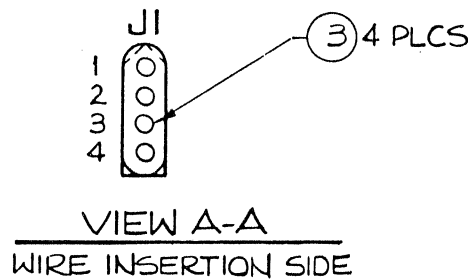


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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AO	RELEASED TO 10	2-5-85	JJK
	A1	CHNGD; PT MARK. & FINISH OF J1-4	4-16-85	JJK



WIRING TABLE

ITEM NO.	AWG	COLOR	TW PR	CUT LENGTH	USABLE CABLE LENGTH	STRIP LENGTH		TERMINAL LUG		COMPONENT		SIGNAL NAME
						START	FINISH	START	FINISH	START	FINISH	
1	20 AWG	WHT	—	4.50	4.00 +0.50 -0.00	.25	.25	ITEM 3	ITEM 3	J1-1	J4-1	—
				11.50	11.00 +1.00 -0.00					J1-1	J3-1	
				4.50	4.00 +0.50 -0.00					J1-2	J4-2	
				11.50	11.00 +1.00 -0.00					J1-2	J3-2	
				4.50	4.00 +0.50 -0.00					J1-3	J4-3	
				11.50	11.00 +1.00 -0.00					J1-3	J3-3	
				4.50	4.00 +0.50 -0.00					J1-4	J4-4	
				11.50	11.00 +1.00 -0.00					J1-4	J3-4	

NOTES :

- 1. MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.
- 2. MARK ALL CONNECTORS AS SHOWN PER E&S PRODUCTION PROCESSES SECTION E-9.0.

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 TOLERANCES ON
 .XX ± .50
 .XXX ± —
 ANGLES ± —
 ✓ HOLES PER AND 10387
 MATERIAL
 SEE PARTS LIST
 FINISH

DRAWN BROWN 8-12-84
 CHECKED [Signature] 9/6/84
 MECH. [Signature] 9-14-84
 ELEC. [Signature] 9/14/84
 PROJ. ENG. [Signature]
 APPROVED

EVANS & SUTHERLAND
 SALT LAKE CITY, UTAH, 84108

CABLE ASSY.,
 FAN
 SPC9800

SIZE	CODE IDENT NO	REV
C	53938 200704-100	A1

SCALE NONE DO NOT SCALE SHEET 1 OF 1

B 200704-100



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200705-100

REV: A2 = AC

DESC: CABLE ASSY, POWER INTERCONNECT, SPC9800

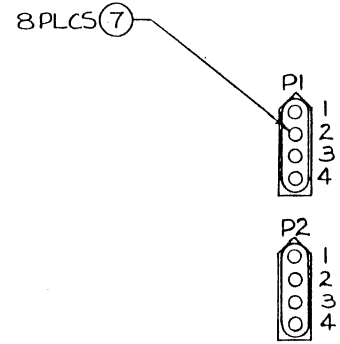
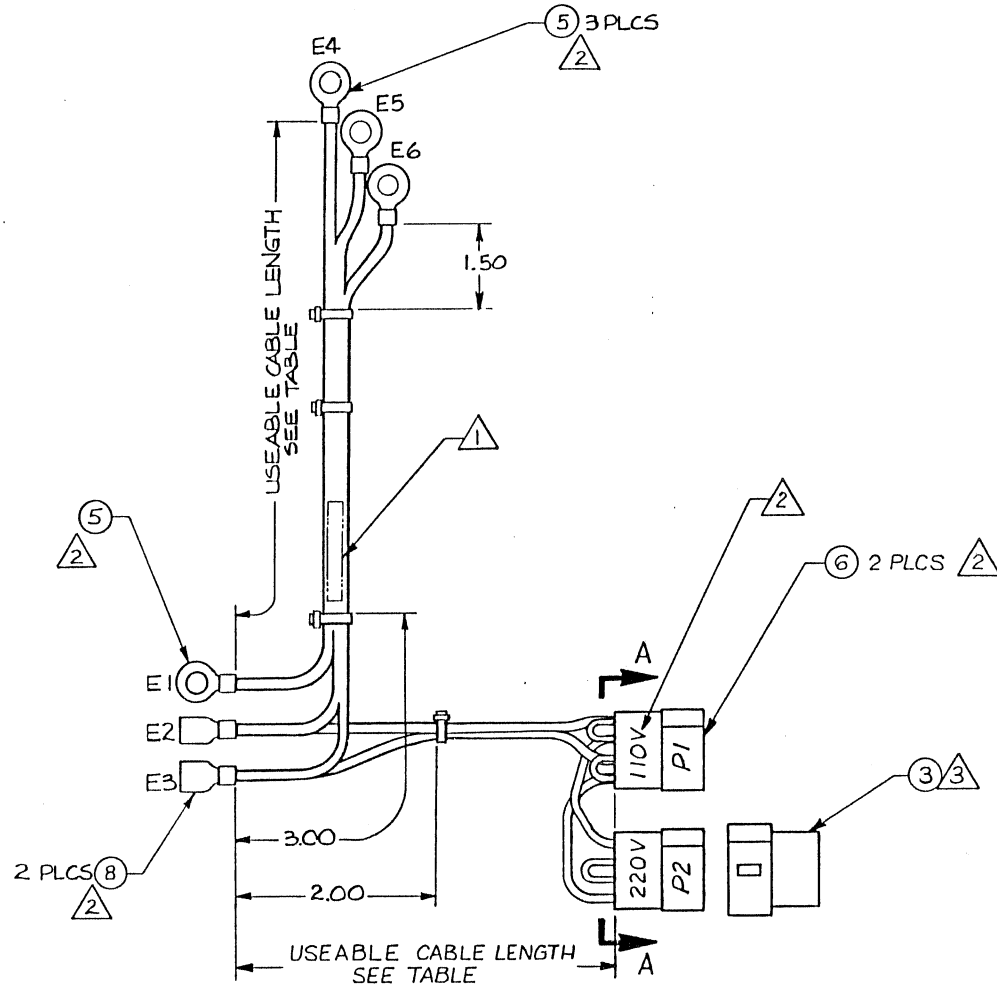
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	WIRE, 16AWG (STRANDED),	92194	ALPHA WIRE CORP.	3057	802508-999	3
002	HW, WIRE 20G, WHT	90484	SURPRENANT WIRE & CBL DIV	XML1932U(0165)	802510-999	3
003	CONN, PLUG, (4PIN), INLI	27264	MOLEX INC.	03-09-2042 (1490-4P)	802324-004	1
004	HW, TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	4
006	CONN, RCPT, (4PIN), MAL-	27264	MOLEX INC.	03-09-1042 (1490-4R)	802323-104	1
007	TERM, CRMP, MAL, 20-14AW	27264	MOLEX INC.	02-09-2103 (1190-M)	802326-001	8
009	WIRE, 16AWG (19/29; 26/3	73612	CONSOLATED ELEC, W/C CORP	9404 (16AWG) GREEN	802508-555	1
005 E1	TERM, RING, NO.6 STUD, 1	98410	ETC-MOLEX INC.	B-823-06T	802132-006	4
008 E2, E3	TERM, QDISC, FML, 16-14A	75037	MINN. MINING & MFG.	C-29-503 (.187X.02)	802293-002	2

9 ITEMS LISTED



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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A0		RELEASE TO A0	2-11-85	GLM
A1		SHORTENED WIRES	3-26-85	G.T.
RC1		INCRP RC1	7-11-86	MRC
A2		PARTS LIST CHNG ONLY	09-13-88	MH



SECTION A-A
 WIRE INSERTION SIDE

NOTES:

- 1. MARK ASSY NO., REV LEVEL AND S/N PER E'S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.
- 2. MARK ALL CONNECTORS/TERMINALS AS SHOWN PER E'S PRODUCTION PROCESSES SECTION E-9.0.
- 3. INSTALL BLANK FEMALE CONNECTOR HOUSING OVER P2 AFTER CONTINUITY TEST.

WIRING TABLE I

ITEM NO.	AWG	COLOR	TW PR	CUT LENGTH	USABLE CABLE LENGTH	STRIP LENGTH		TERMINAL LUG		COMPONENT		SIGNAL NAME
						START	FINISH	START	FINISH	START	FINISH	
9	16	GRN		10.00	8.00 +2.00 -0.00	.25	.25	ITEM 5	ITEM 5	E1	E4	GND
1		WHT		10.00	8.00 +2.00 -0.00			ITEM 8		E2	E5	+AC
1				10.00	8.00 +2.00 -0.00					E3	E6	-AC
2	20			4.50	3.00 +1.50 -0.00				ITEM 7	E2	P1-1	+AC
				2.00	1.00 +1.00 -0.00			ITEM 7		P1-1	P1-2	+AC JUMP
				3.00	2.00 +1.00 -0.00					P1-2	P2-1	+AC JUMP
				4.50	3.00 +1.50 -0.00			ITEM 8		E3	P1-3	-AC
				2.00	1.00 +1.00 -0.00			ITEM 7		P1-3	P1-4	-AC JUMP
				3.00	2.00 +1.00 -0.00					P1-4	P2-4	-AC JUMP
				2.00	1.00 +1.00 -0.00					P2-2	P2-3	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .50 .XXX ± — ANGLES ± —	CONTRACT NO.	EVANS & SUTHERLAND	
	DRAWN SBROWN 7-31-84	SALT LAKE CITY, UTAH 84108	
CHECKED [Signature] 9/5/84	CABLE ASSY, POWER INTERCONNECT		
MECH [Signature] 9-6-84	SPC9800		
ELEC	PROJ. ENG [Signature] 1/6/84	SIZE	CODE IDENT NO
APPROVED		D	53938
MATERIAL SEE PARTS LIST		200705-100	REV A2
FINISH		SCALE NONE	DO NOT SCALE DWG SHEET 1 OF 1

D
C
B
A
200705-100



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200706-100

REV: A1 = AB

DESC: CABLE ASSY,D.C. POWER,SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	WIRE,8AWG(7/16;19/.02	28105	DEARBORN WIRE & CABLE COR	530819(8AWG)WHITE	802504-999	10
002	HW,WIRE 18G,WHT	92194	ALPHA WIRE CORP.	3055	802509-999	8
003	TERM,RING,.312 STUD,8	75037	MINN. MINING & MFG.	E-01-405 (RED)	802137-312	4
004	HW,TERM 1/4RNG,18G	00779	AMP INC.	320571	802131-250	3
005	HW,TERM 6RNG,22G	98410	ETC-MOLEX INC.	A-820-06T	802131-006	3
006	HW,TIE TY-23M	59730	THOMAS AND BETTS CORP.	TY-23M	802061-003	5
007	TERM,RING,NO.1/4 STUD	83330	DIALIGHT CORP.	D-650-14X	802137-125	4
008	TERM,RING,NO.6 STUD,1	98410	ETC-MOLEX INC.	B-823-06T	802132-006	1

8 ITEMS LISTED

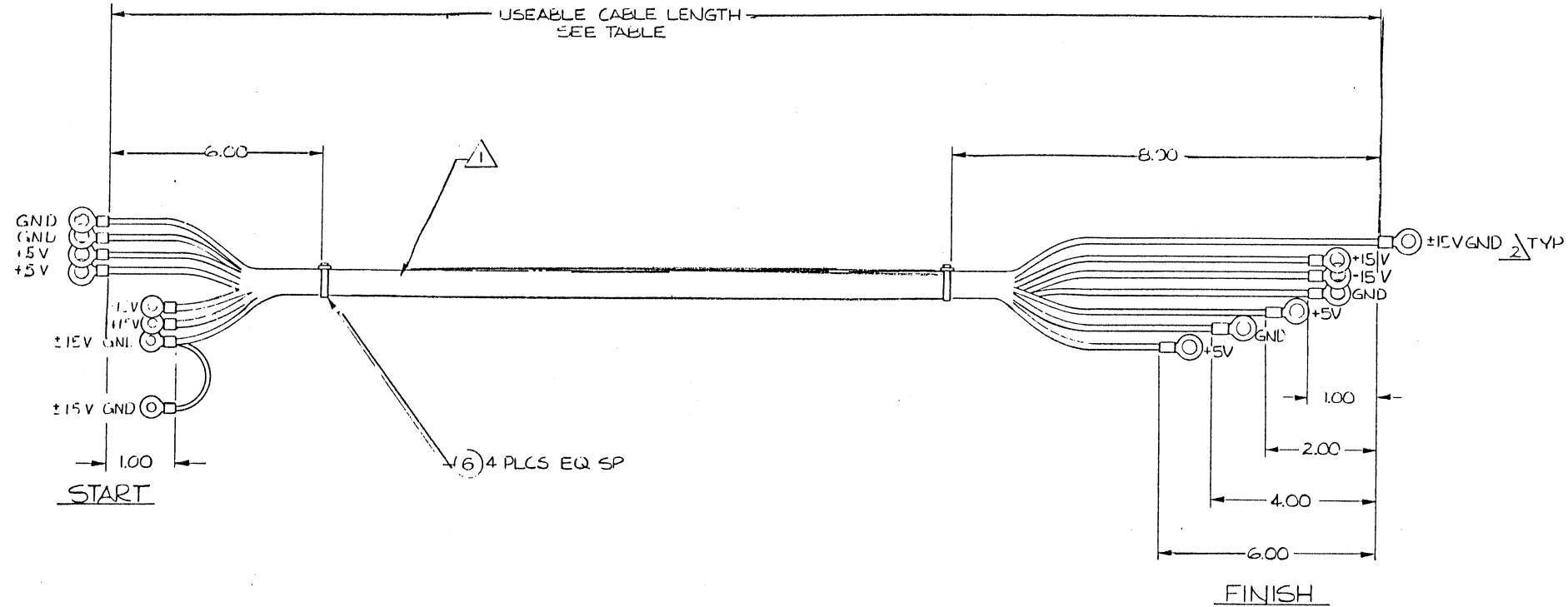


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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
A0		REVISED TO A0	2/8	
A1		REVISIONS TO A0	2/8	



WIRING TABLE

ITEM NO.	AVG	COLOR	TW PR	CUT LENGTH	USEABLE CABLE LENGTH	STRIP LENGTH		TERMINAL LUG		COMPONENT		SIGNAL NAME
						START	FINISH	START	FINISH	START	FINISH	
1	8	WHT	-	27.00	23.50 +3.00 -0.00	.25	.25	ITEM 3	ITEM 7	-	-	GND
1	8	WHT	-	23.00	20.50 +3.00 -0.00							GND
1	8	WHT	-	25.00	22.50 +3.00 -0.00							+5V
1	8	WHT	-	21.00	18.50 +3.00 -0.00			ITEM 3	ITEM 7			+5V
2	18	WHT	-	25.00	22.00 +3.00 -0.00			ITEM 5	ITEM 4			-15V
2	18	WHT	-	25.00	22.00 +3.00 -0.00			ITEM 5				+15V
2	18	WHT	-	26.00	23.00 +3.00 -0.00			ITEM 8	ITEM 4			±15V GND
2	18	WHT	-	5.00	4.50 +0.50 -0.00	.25	.25	ITEM 8	ITEM 5			±15V GND

NOTES:

1. MARK ASSY NO., REV LEVEL AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.0 LOCATE APPROX AS SHOWN.
2. MARK ALL WIRES PER DRAWING AND WIRING TABLE PER E&S PRODUCTION PROCESSES E-9.0.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± .50 .XXX ± — ANGLES ± — ✓	CONTRACT NO. DRAWN S. BROWN 7-13-84 CHECKED <i>[Signature]</i> 7/5/84 MECH <i>[Signature]</i> 9-7-84 ELEC <i>[Signature]</i> 7/7/84 PROJ. ENG. <i>[Signature]</i> 7/7/84 APPROVED	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
	MATERIAL SEE PARTS LIST FINISH	SIZE D 53938	CODE IDENT NO. 200706-100
SCALE NONE DO NOT SCALE DWG		SHEET 1 OF 1	



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200740-006

REV: A0 = AA

DESC: CABLE ASY,SERIAL I/O,RS232,SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	CONN,D-PLUG,25POS,FLA	00779	AMP INC.	745372-1	801229-025	1
002	CN,RIB 34SCKT	22526	DU PONT E I NEMOURS(CONN)	66900-234(2X17-POLAR	801614-134	1
003	CBL,FLAT,26-COND,28AW	16428	COOPER BELDEN ELEC WIRE	9L28026	802163-026	7
004	PULL-TAB,F/34-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-3 (34COND)	802313-034	1
005	HW,LOCK FMLASMY	71468	ITT CANNON DIV. OF ITT	D20418-2	801414-003	2

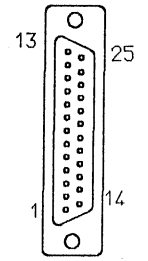
5 ITEMS LISTED



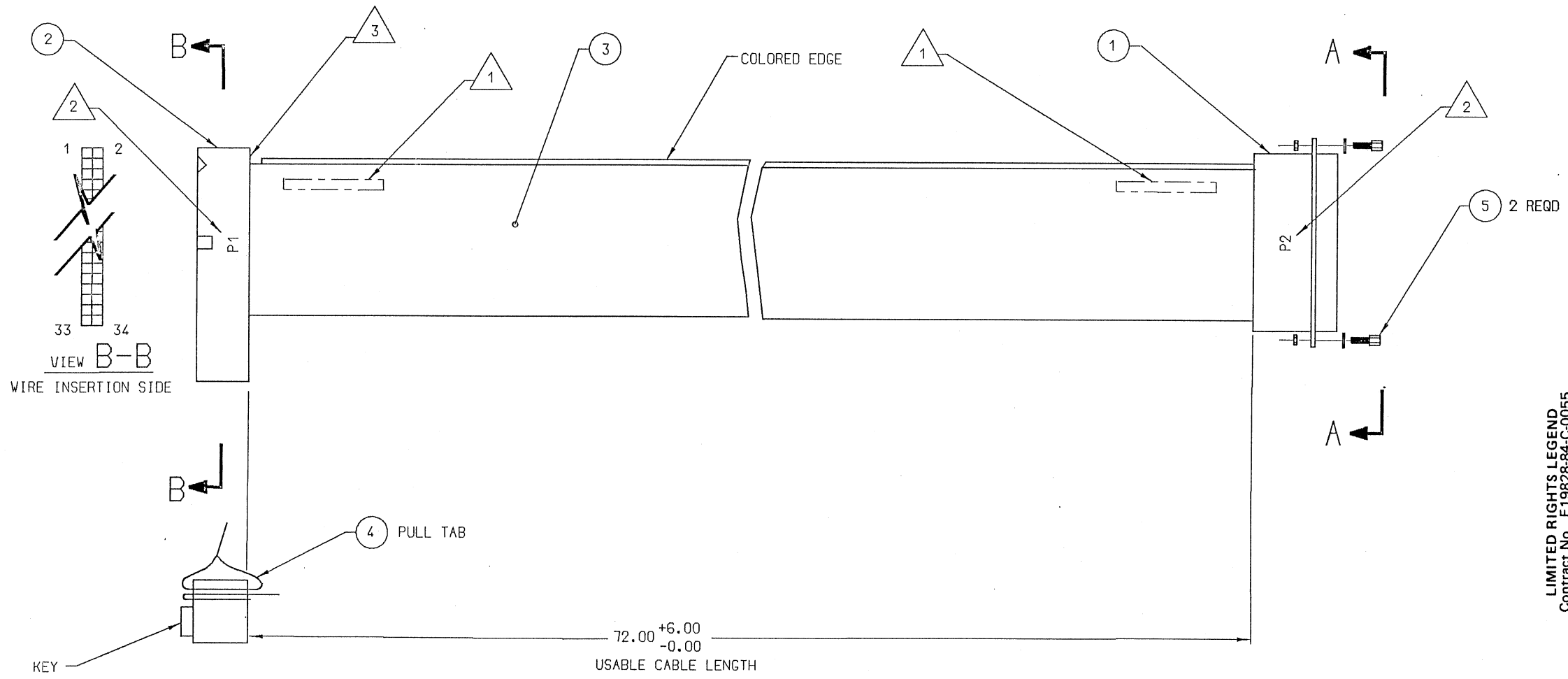
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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
AO		RELEASED TO AO	G.T. 3-7-85	Scott 3/20/85



VIEW A-A
 PIN SIDE



- NOTES:**
1. MARK ASSY NO., REV LEVEL, AND S/N PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.
 2. MARK ALL CONNECTORS AS SHOWN PER E&S PRODUCTION PROCESSES SECTION E-9.0.
 3. REMOVE OUTER CONDUCTOR ONE INCH FROM END OF CABLE BEFORE ASSEMBLY. JUSTIFY TO TRIANGLE SIDE OF P1.
 4. CONDUCTOR 1 (COLORED) IS NOT CRIMPED IN THE P2 CONNECTOR. CONDUCTORS 2 THROUGH 26 ARE CRIMPED IN THE CONNECTOR.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES — ✓ HOLES PER AND 10387	CONTRACT NO.	EVANS & SUTHERLAND		
	DRAWN M.D. BALDWIN 8-9-84	SALT LAKE CITY, UTAH 84108		
MATERIAL SEE PARTS LIST	CHECKED PRP 9-18-84	CABLE ASSY, SERIAL		
FINISH	MECH M. BYLUND 9-20-84	I/O, RS232, SPC9800		
	ELEC M. BYLUND 9-20-84	SIZE	CODE IDENT NO	REV
	PROJ. ENG J. BLEAK 9-20-84	C	53938 200740-006	AO
	APPROVED	SCALE NONE	DO NOT SCALE DWG	SHEET 1 OF 1

LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
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 PER ASPR 7-104.9 (a) (b) 2ii

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TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200745-003

REV: A0 = AA

DESC: CABLE ASSY,CPU INTERCONNECT,SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	CN,RIB 50SCKT	22526	DU PONT E I NEMOURS (CONN)	66900-250 (2X25-POLAR	801614-150	3
002	HW,CBL 50FLT CBL	16428	COOPER BELDEN ELEC WIRE	9L28050	802163-050	4
003	PULL-TAB,F/50-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-5 (50COND)	802313-050	3

3 ITEMS LISTED



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200745-100

REV: A0 = AA

DESC: CABLE ASSY,CPU INTERCONNECT,SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
002	HW,CBL 50FLTCBL	16428	COOPER BELDEN ELEC WIRE	9L28050	802163-050	1
003	PULL-TAB,F/50-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-5 (50COND)	802313-050	3
001 P1 P2 P3	CN,RIB 50SCKT	22526	DU PONT E I NEMOURS (CONN)	66900-250 (2X25-POLAR	801614-150	3

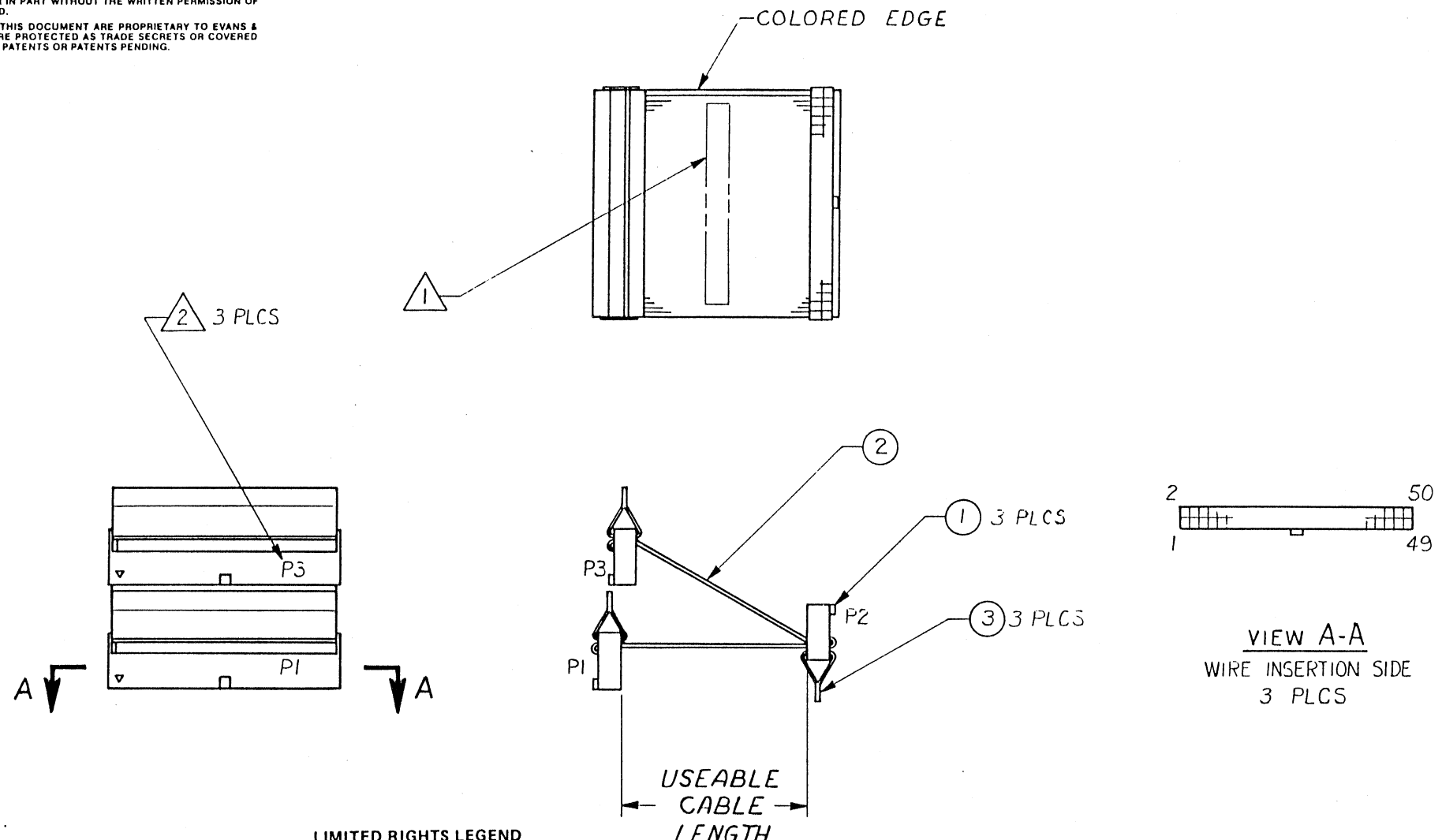
3 ITEMS LISTED



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REV LEVEL FOR DASH NO.		REVISIONS				
		ZONE	LTR	DESCRIPTION	DATE	APPROVED
-003	-100			RELEASE TO AO	2-12-85	GLM
-	AO			RELEASED TO AO	6-20-85	BH

D
C
B
A



LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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DASH NO.	USEABLE CABLE LENGTH
-100	2.00 +1.00 -0.00
-003	18.00 +2.00 -0.00

NOTES:

- 1. MARK ASSY NO., REV LEVEL AND S/N PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.
- 2. MARK ALL CONNECTORS AS SHOWN PER E & S PRODUCTION PROCESSES SECTION E-9.0.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± _____ .xxx ± _____ ANGLES ± _____ ✓ HOLES PER AND 10387	DRAWN <i>ELIOTT</i> 11-19-84	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108	
	CHECKED <i>R. K. ...</i> 11/27/84		
MATERIAL SEE PARTS LIST	ELEC. <i>M. ...</i> 12/9/84	SIZE C	CODE IDENT NO 53938
FINISH	PROJ. ENG. <i>M. ...</i> 12/4/84	200745-TAB	
	APPROVED	SCALE NONE	DO NOT SCALE
		SHEET 1	OF 1

D
C
B
A

200745-TAB

REV
SEE
REV
BLOCK



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200746-002

REV: A0 = AA

DESC: CABLE ASSY,CPU INTERCONNECT,SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	CN,RIB 50SCKT	22526	DU PONT E I NEMOURS (CONN)	66900-250 (2X25-POLAR	801614-150	2
002	HW,CBL 50FLTCBL	16428	COOPER BELDEN ELEC WIRE	9L28050	802163-050	2
003	PULL-TAB,F/50-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-5 (50COND)	802313-050	2
3 ITEMS LISTED						



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200746-100

REV: A0 = AA

DESC: CABLE ASSY,FPL INTERCONNECT,SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
002	HW,CBL 50FLTCBL	16428	COOPER BELDEN ELEC WIRE	9L28050	802163-050	1
003	PULL-TAB,F/50-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-5 (50COND)	802313-050	2
001 P1 P2	CN,RIB 50SCKT	22526	DU PONT E I NEMOURS (CONN)	66900-250(2X25-POLAR	801614-150	2

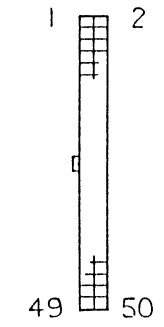
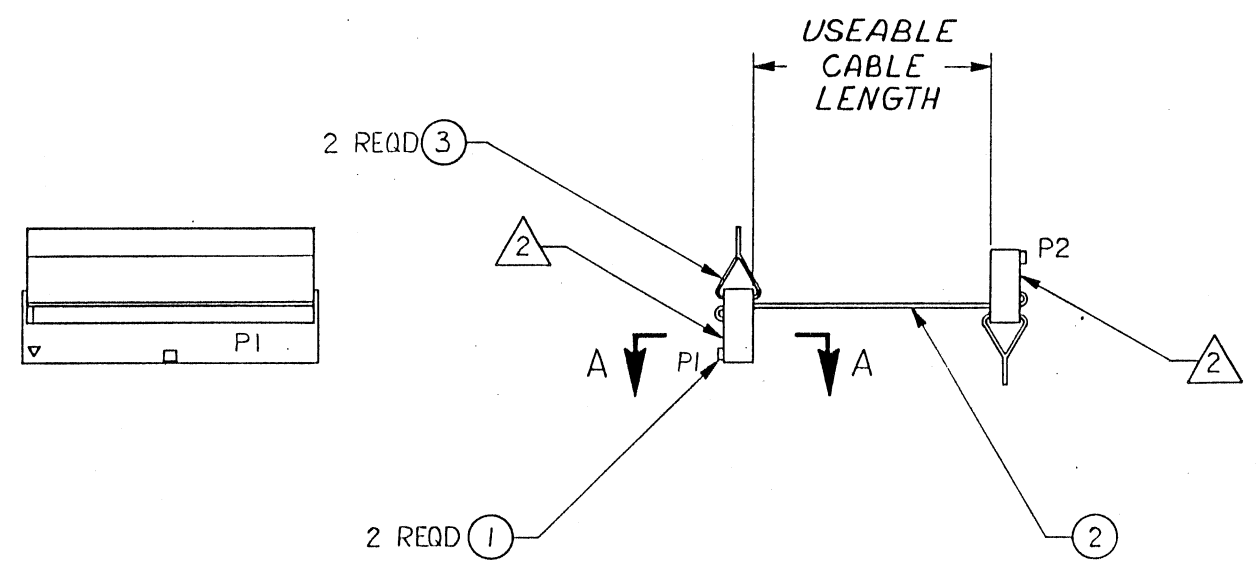
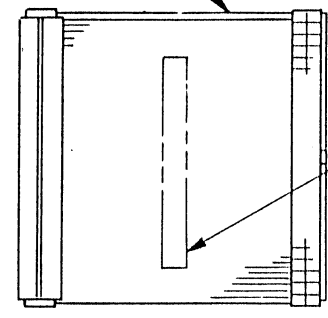
3 ITEMS LISTED



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REV LEVEL FOR DASH NO.				REVISIONS				
				ZONE	LTR	DESCRIPTION	DATE	APPROVED
-002	-100					RELEASE TO AO	2-12-85	GLM
-	AO					RELEASED TO AO	6-20-85	BH

COLORED EDGE



VIEW A-A
 WIRE INSERTION SIDE

DASH NO.	USEABLE CABLE LENGTH
-100	2.00 +1.00 -0.00
-002	18.00 +2.00 -0.00

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 Contractor: EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) (2)

NOTES:

- 1. MARK ASSY NO., REV LEVEL AND S/N PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROX AS SHOWN.
- 2. MARK ALL CONNECTORS AS SHOWN PER E & S PRODUCTION PROCESSES SECTION E-9.0.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .xx ± _____ .xxx ± _____ ANGLES ± _____ ✓ HOLES PER AND 10387	DRAWN <i>BT/DM</i> 11-15-84	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108		
	CHECKED <i>PP</i> 11/20/84			
MATERIAL SEE PARTS LIST	MECH.	CABLE ASSY, FPL INTERCONNECT, SPC9800		
FINISH	ELEC. <i>M. Bylund</i> 11/26/84 PROJ. ENG. <i>S. Hand/ptd</i> 11/26/84			
	APPROVED	SIZE C	CODE IDENT NO. 53938	REV SEE REV BLOCK
		SCALE NONE	DO NOT SCALE	SHEET 1 OF 1

200746-TAB



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200747-100

REV: A0 = AA

DESC: CABLE ASSY,DMA,SPC 9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	CBL,TWIST'N' FLAT,40-C	02660	AMPHENOL CORP.	843-132-2801-040	802317-040	4
002	JACKETING,CBL,IW=2.0,		SPECTRA STRIP AN ELTRA CO	843-161-2001-0200	802062-020	1
003	CBL-MKR,BLANK,1X6,WRI	85480	BRADY W.H. CO	PWC-PK-6	802335-006	2
004	HW,LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
005	PULL-TAB,F/40-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-4 (40COND)	802313-040	1
006	CN,RIB 50SCKT	22526	DU PONT E I NEMOURS(CONN)	66900-250(2X25-POLAR	801614-150	1
007	PULL-TAB,F/50-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-5 (50COND)	802313-050	1
008	*OBS*(USE 801614-240)		THOMAS & BETTS CORP.	609-4001M	801614-040	1

8 ITEMS LISTED



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

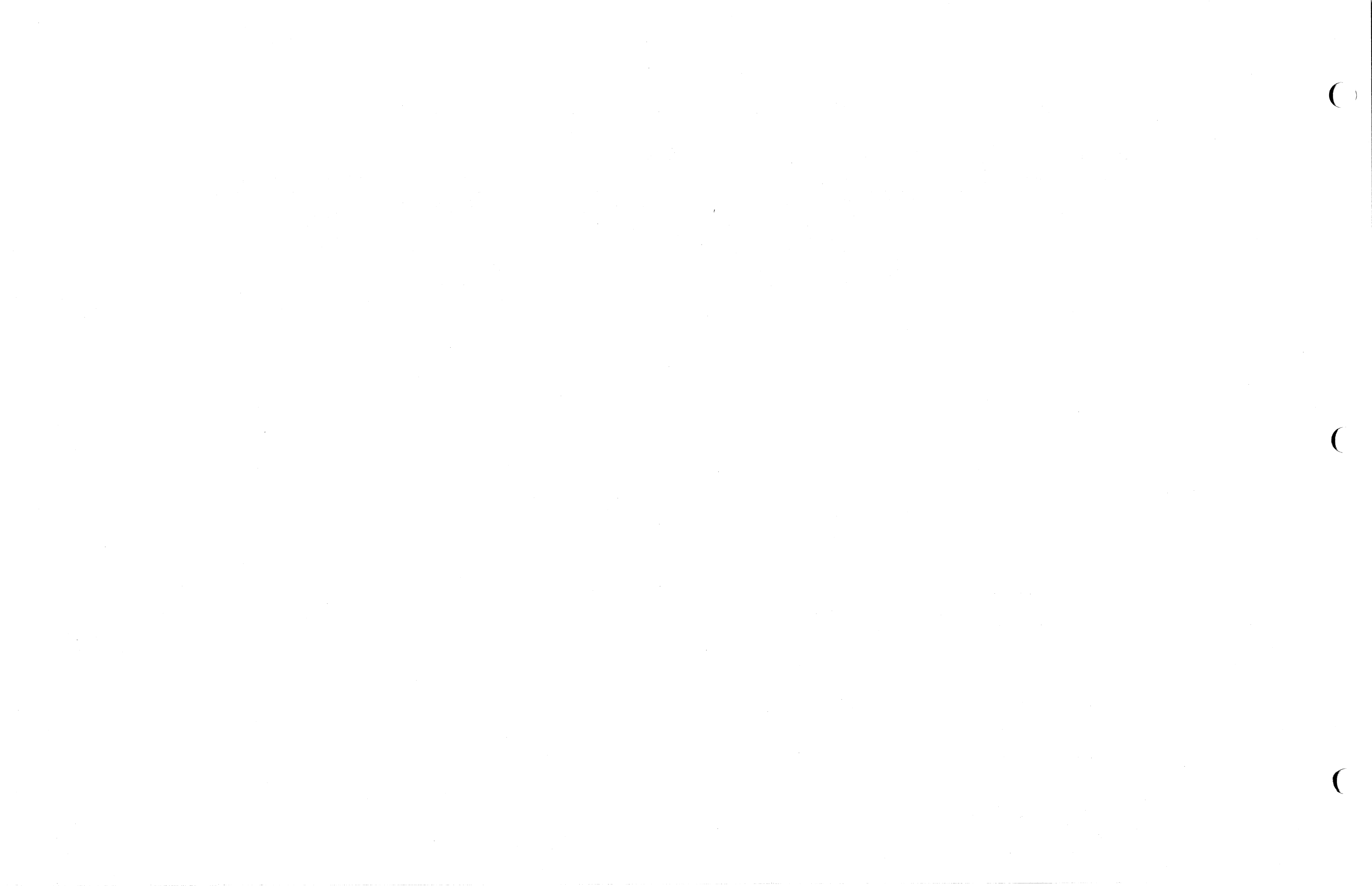
ASSEMBLY: PL 200747-101

REV: A0 = AA

DESC: CABLE ASSY,DMA,SPC 9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	CBL, TWIST'N' FLAT, 40-C	02660	AMPHENOL CORP.	843-132-2801-040	802317-040	4
002	JACKETING, CBL, IW=2.0,		SPECTRA STRIP AN ELTRA CO	843-161-2001-0200	802062-020	1
003	CBL-MKR, BLANK, 1X6, WRI	85480	BRADY W.H. CO	PWC-PK-6	802335-006	2
004	HW, LABL MARKING	53938	EVANS & SUTHERLAND	PER MFG PROCEDURE	802311-002	1
005	PULL-TAB, F/40-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-4 (40COND)	802313-040	1
006	CN, RIB 50SCKT	22526	DU PONT E I NEMOURS (CONN)	66900-250 (2X25-POLAR)	801614-150	1
007	PULL-TAB, F/50-CONDUCT	53387	MINN. MINING & MFG.EP DIV	3490-5 (50COND)	802313-050	1
008	*OBS*(USE 801614-240)		THOMAS & BETTS CORP.	609-4001M	801614-040	1

8 ITEMS LISTED



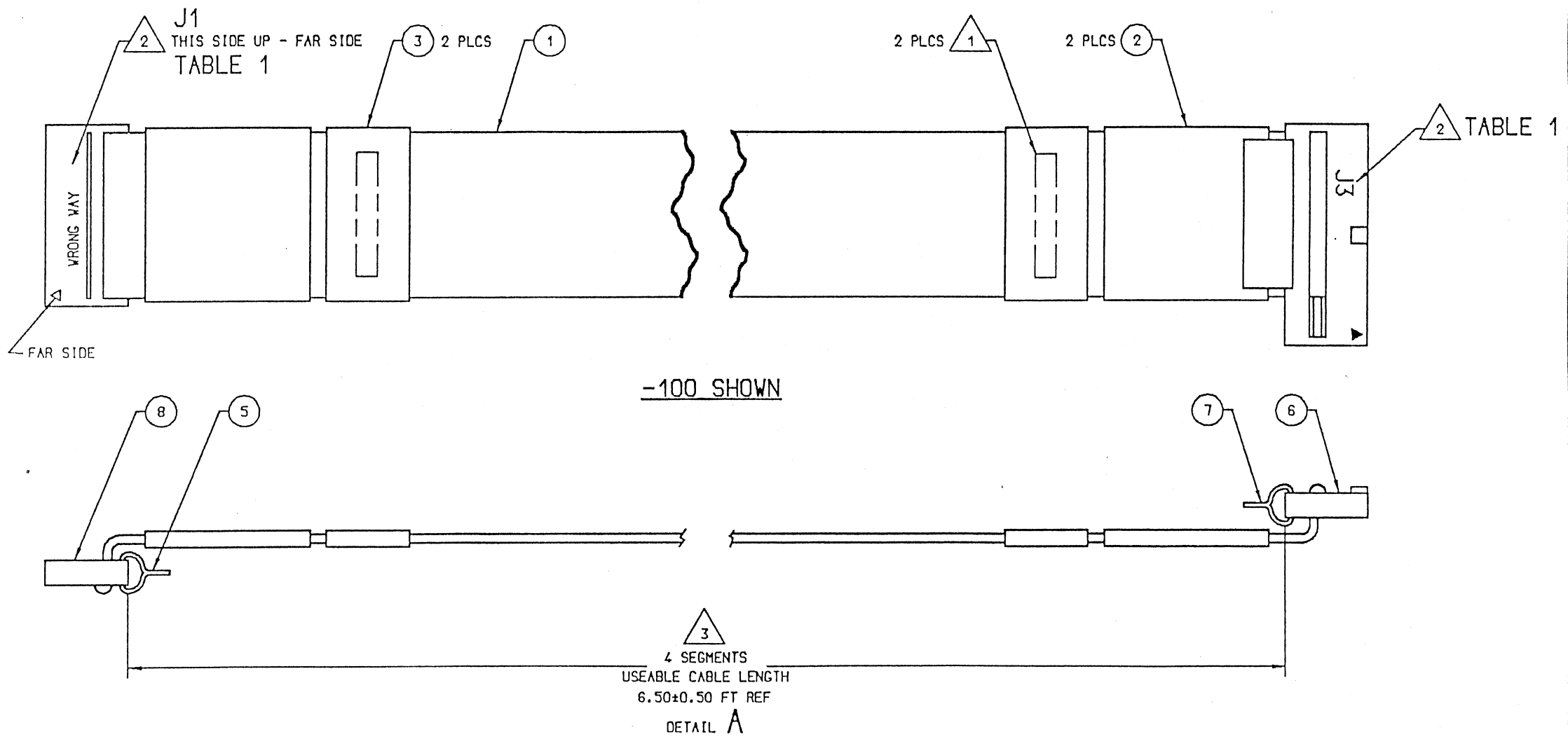
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 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
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 PER ASPR 7-104.9 (a) (b) 2ii

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PART/ASSEMBLY REVISION LEVEL FOR DASH NUMBER				REVISIONS			
	-101	-100	ZONE	LTR	DESCRIPTION	DATE	APPROVED
	PO	PO			CREATED AT PO	SB 2-11-85	SH 2-15-85
	AO	AO			INCORP -005 & ADD SHT 2	PRP 3-11-85	SoH 3/20/85



- NOTES:
- 1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 - 2. MARK ALL CONNECTORS AS SHOWN PER E&S PRODUCTION PROCESSES SECTION E-9.0.
 - 3. WHEN CUTTING RIBBON CABLE, CENTER CUT IN 2 INCH FLAT AREA.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± _____ .XXX ± .50 ANGLES _____ ✓ HOLES PER ANO 10387	CONTRACT NO.	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
	DRAWN SBROWN 1-07-85	CABLE ASSY, DMA, SPC9800		
	CHECKED P.R.P. 1-29-85	SIZE	CODE IDENT NO	DWG REV
	MECH ELEC J.BENTLEY 2-3-85 <i>thd flip 3/20/85</i>	C	53938	200747-TAB
MATERIAL SEE PARTS LIST	APPROVED	SCALE NONE	DO NOT SCALE DWG	SHEET 1 OF 2

200747-TAB

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

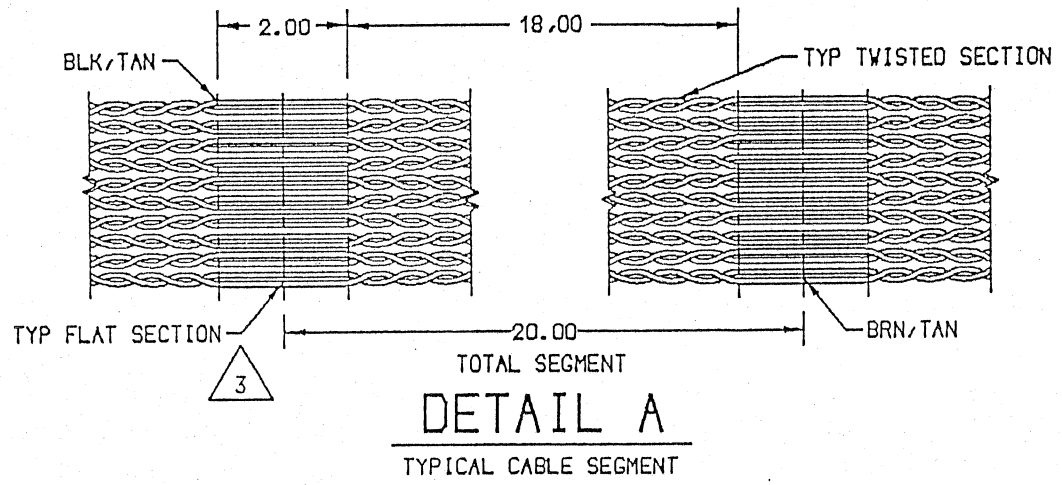


TABLE 1 \triangle 2

DASH NO.	40-PIN CONNECTOR DESIGNATION	50-PIN CONNECTOR DESIGNATION
-100	J1	J3
-101	J2	J4

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 Contract No. F19628-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
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SIZE	CODE IDENT NO	REV
C	53938 200747-TAB	TB
SCALE NONE	DO NOT SCALE DVG	SHEET 2 OF 2

200747-TAB

TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200748-006

REV: A0 = AA

DESC: CABLE ASSY, POWER, COMPUTER, 230V, SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
002 P1	CONN, PLUG, CIRC/PLSTC,	00779	AMP INC.	206429-1 (4POS/PLUGE	801815-703	1
003 P1	CLAMP, CBL, CIRC/PLSTC,	00779	AMP INC.	206358-1 (CLAMP #11)	801815-506	1
004 P1	CONT, PIN, 18-14AWG, TYP	00779	AMP INC.	66602-1 (PIN/18-14GA)	801815-215	3
001 P2	CORD, PWR, MAL+RTA-IEC	16428	COOPER BELDEN ELEC WIRE	17506 (MAL/FEM-RTA) BK	801823-106	1

4 ITEMS LISTED



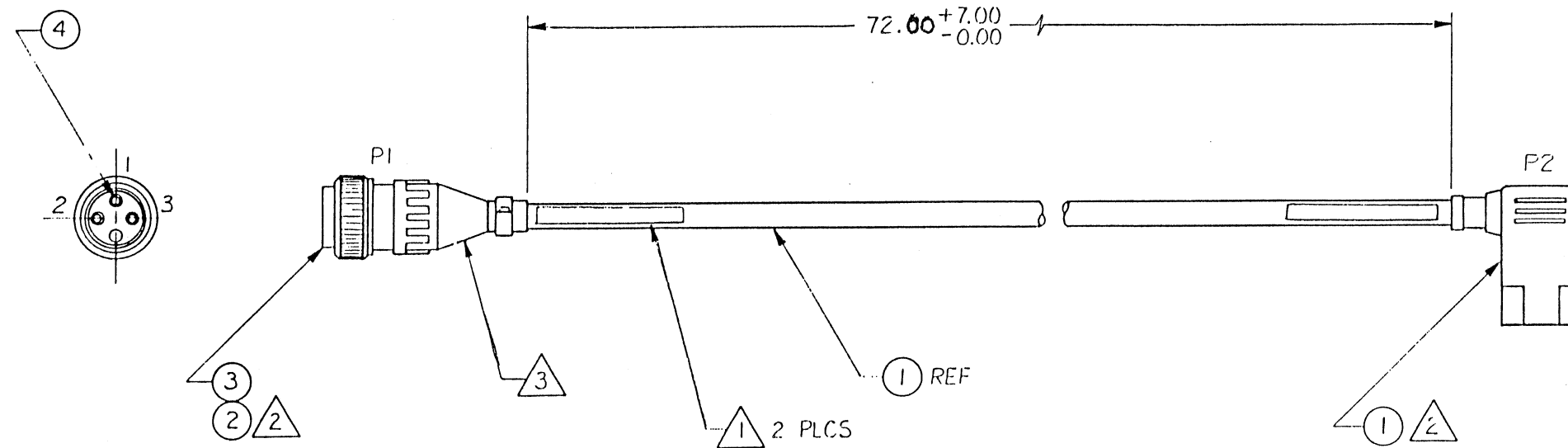
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CONTRACT NO. F19028 84 C 0055
 CONTRACTOR: EVANS & SUTHERLAND COMPUTER CORP. EXPLANATION OF LIMITED RIGHTS DATA IDENTIFICATION METHOD USED PER ASPR 7-104.9(a)(2) AND COVERS ALL INFORMATION ON THIS DRAWING.

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2	BLK OR BRN
3	GRN OR GRN/YEL
1	WHT OR BLU

WIRING DIAGRAM



LIMITED RIGHTS LEGEND

Contract No. F19028 84 C 0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
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NOTES:

- 1. MARK ASSY NO., REV LEVEL AND S/N PER E & S PRODUCTION PROCESSES NO. E-9.1. LOCATE APPROX AS SHOWN.
- 2. MARK ALL CONNECTORS AS SHOWN PER E & S PRODUCTION PROCESSES NO. E-9.1.
- 3. REMOVE 3 PRONG PLUG FROM ITEM 1 AND INSTALL PLUG ITEM 2, PINS ITEM 4, AND CLAMP ITEM 3.

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0	3-9-85	3/5/85 MBB

ALTERED ITEM DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON .XX ± — .XXX ± — ANGLES ± — ✓ HOLES PER AND 10387	DRAWN <i>J. M. [Signature]</i> 11-16-84	EVANS & SUTHERLAND SALT LAKE CITY, UTAH, 84108		
	CHECKED <i>[Signature]</i> 11/20/84	CABLE ASSY, POWER, COMPUTER, 230V, SPC9800		
	MECH. <i>[Signature]</i> 11/25/84	SIZE CODE IDENT NO REV C 53938 200748-006 A0		
	ELEC. <i>[Signature]</i> 11/26/84	SCALE NONE DO NOT SCALE SHEET 1 OF 1		
MATERIAL SEE PARTS LIST	PROJ. ENG. <i>[Signature]</i> 11/26/84			
FINISH	APPROVED			

200748-006



SECTION 8

CARD DATA

8.1 INTRODUCTION

This section includes the significant mechanical/electrical parts for each card. In addition all assembly drawings, block diagrams, and logics are included. When ordering replacement parts, include the part name, description, reference designation, and part number.



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200722-100

REV: A0 = AA

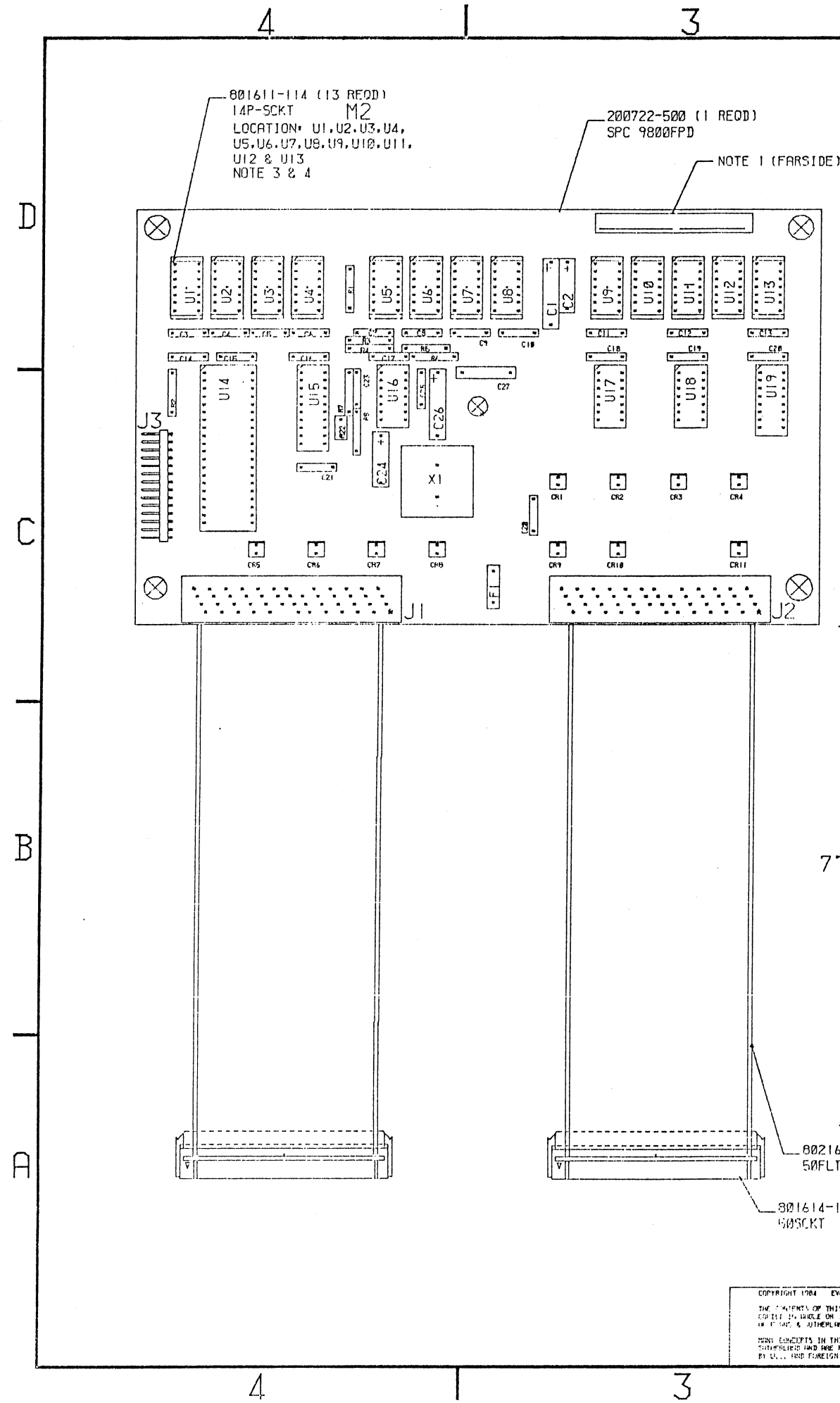
DESC: FRONT PANEL DISPLAY, ASSY, SPC9800

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
	BD,P02R SPC 9800FPD	53938	EVANS & SUTHERLAND.	200722-500	200722-500	1
C1 C26	C,,AXL 1UF	55680	NICHICON AMERICA CORP.	TKB1H-010-M	804134-105	2
C14	C,,AXL 39PF	59942	U S MICROTEK COMPONENTS	C90C390K (39PF)	804163-390	1
C2 C24	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	2
C22	C,,RDL .033UF	31433	KEMET ELECTRONICS CORP.	CO52K333K5X5CA	804119-333	1
C27	C,,AXL .22UF	31433	KEMET ELECTRONICS CORP.	C192C224K5R5CA	804106-224	1
C3 C4 C5 C6 C7 C8 C9 C10	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	21
C11 C12 C13 C15 C16 C17 C18						
C19 C20 C21 C23 C25 C28						
CR1 CR2 CR3 CR4 CR5 CR6 CR7	CR,LED 50824650	01295	TEXAS INSTR, SEMICON DIV.	5082-4650	814650-001	11
CR8 CR9 CR10 CR11						
F1	FU,PICO FUSE 2A	75915	LITTELFUSE TRACOR INC.	251 002 (2A,AXIAL)	802375-020	1
J1 J2	CONN,PC-FL/CA,50PIN(S	22526	DU PONT E I NEMOURS (CONN)	65495-030 (50PIN)	801280-050	2
J3	CN,HDR 14P,RTA	22526	DU PONT E I NEMOURS (CONN)	65521-214-114	801303-014	1
M2	HW,SCKT 14SCKT (.3LS)	00779	AMP INC.	640357-1	801611-114	13
M5 AS REQ'D	HW,CBL 50FLT CBL	16428	COOPER BELDEN ELEC WIRE	9L28050	802163-050	1
M6	CN,RIB 50SCKT	22526	DU PONT E I NEMOURS (CONN)	66900-250 (2X25-POLAR	801614-150	2
R1 R3 R4 R5	R,,AXL 681 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-681-1%	803452-681	4
R2	R,,AXL 100K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-100K-1%	803455-100	1
R6	R,,AXL 20.5K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-20.5K-1%	803454-205	1
R7	R,,AXL 2.21K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-2.21K-1%	803453-221	1
R8	R,,AXL 5.49K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-5.49K-1%-50PPM	803453-549	1
U1 U2 U3 U4 U5 U6 U7 U8 U9	CR,LED TIL311	01295	TEXAS INSTR, SEMICON DIV.	TIL311 (RED)	806415-888	13
U10 U11 U12 U13						
U14	IC,TTL KR9600-PRO	53848	STANDARD MICROSYSTEMS COR	KR9600	807096-001	1
U15	IC,TTL 74LS244	01295	TEXAS INSTR, SEMICON DIV.	SN74LS244N	807244-016	1
U16	IC,TTL NE556A	18324	SIGNETICS CORP. MILITARY	NE556N/F	806556-001	1
U17 U18	IC,TTL 7404	01295	TEXAS INSTR, SEMICON DIV.	SN7404N	807416-646	2
U19	R,,DIP 220 (R15)	4J937	BOURNS NETWORKS	4116R-002-221	807699-221	1
X1	X,,AUDI AT-20	04597	PROJECTS UNLIMITED INC	AT-20 (AUDIO-TRANSD)	801069-001	1

26 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0.	SB 02-04-85	



LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 211

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NOTES:

1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN ON FAR SIDE.
2. MAXIMUM COMPONENT HEIGHT TO BE .370 FOR CR1-CR11, AND U1-U13 FROM BOARD SURFACE. ALL OTHER COMPONENTS MAXIMUM HEIGHT TO BE .280 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
3. COMPONENTS U1-U13 REQUIRE SPECIAL INSTALLATION INSTRUCTION. REFER TO OPERATIONS TRAVELER FOR INSTALLATION INSTRUCTION.
4. COMPONENTS U1-U13 REQUIRE THE SAME BRIGHTNESS CODE ON EACH ASSEMBLY. REFER TO OPERATION TRAVELER FOR INSTRUCTIONS.

REFERENCE DOCUMENTS

SCHEMATIC - 200722-600
 PARTS LIST - PL200722-100

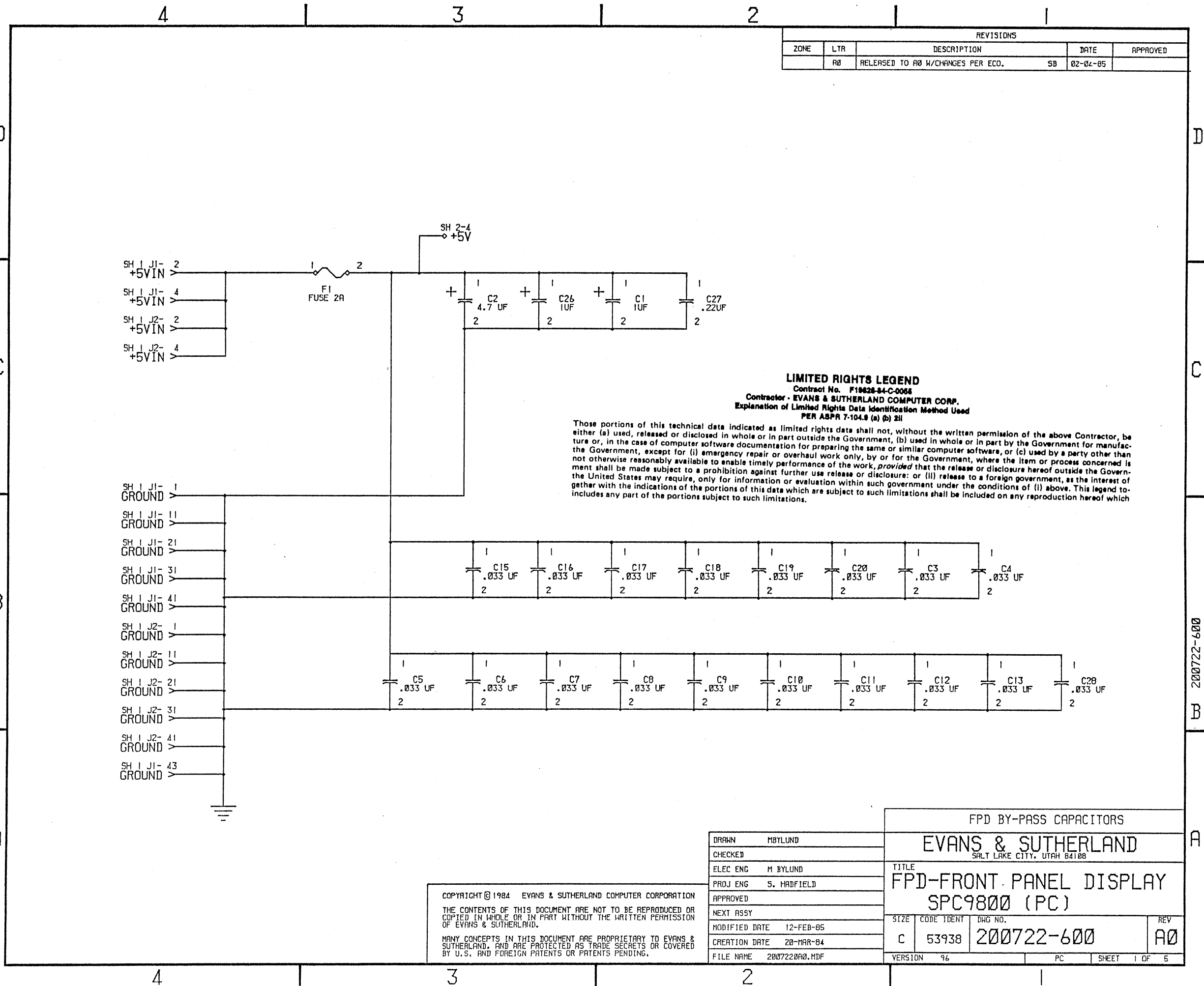
DRAWN S. BARBER		EVANS & SUTHERLAND <small>SALT LAKE CITY, UTAH 84109</small>	
CHECKED		TITLE	
ELEC ENG M BYLUND		ASSY. FPD-FRONT PANEL DISPLAY	
PROJ ENG S. HADFIELD		SPC9800 (PC)	
APPROVED		SIZE	REV. NO.
NEXT ASSY		C	53938
MODIFIED DATE 20-FEB-85		200722-100	REV
CREATION DATE 20-MAR-84			A0
FILE NAME 2007220A0.ADF		VERSION 97	SHEET 1 OF 1

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200722-100



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
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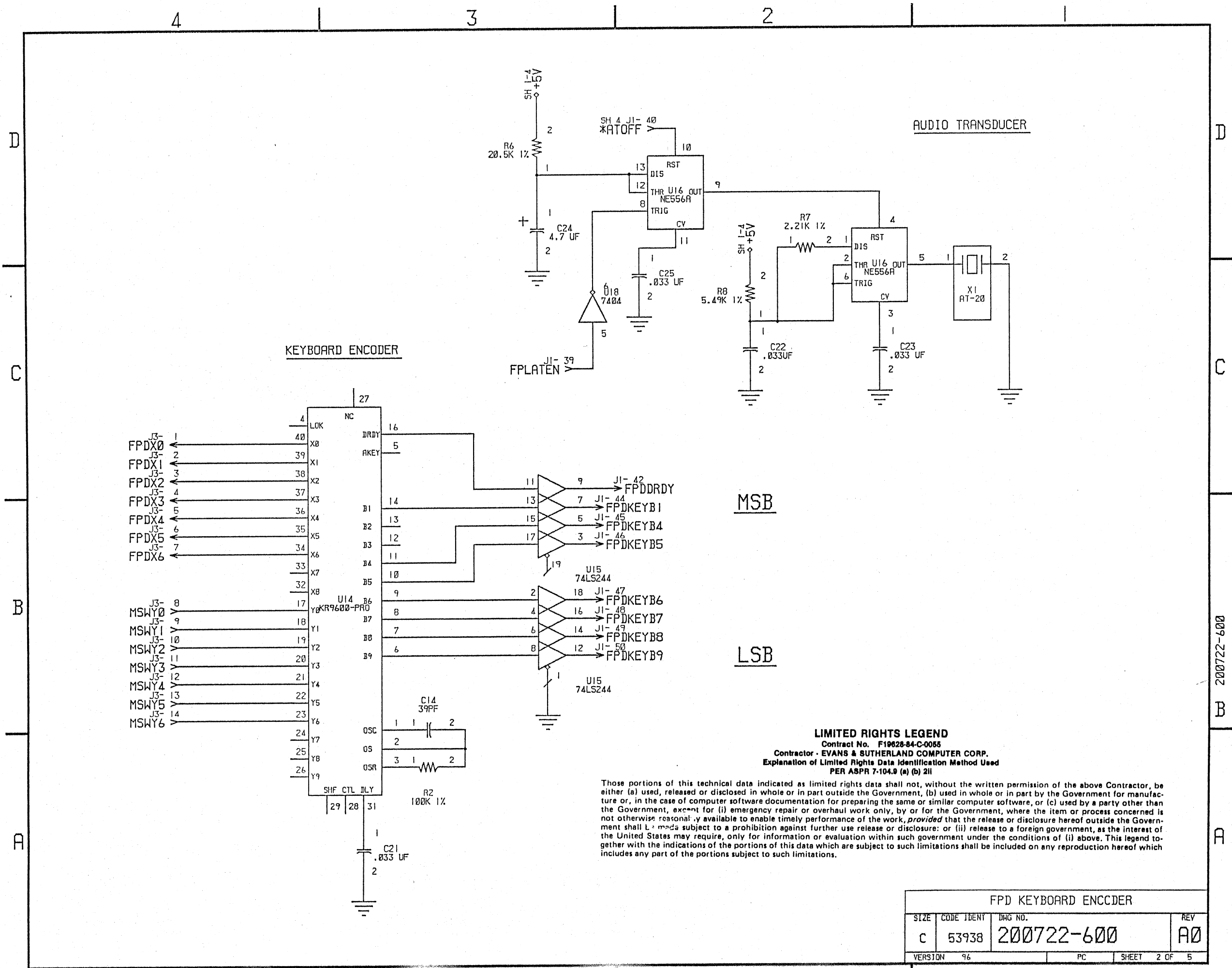


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DRAWN	MBYLUND
CHECKED	
ELEC ENG	M BYLUND
PROJ ENG	S. HADFIELD
APPROVED	
NEXT ASSY	
MODIFIED DATE	12-FEB-85
CREATION DATE	20-MAR-84
FILE NAME	2007220A0.MDF

FPD BY-PASS CAPACITORS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE FPD-FRONT PANEL DISPLAY SPC9800 (PC)			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200722-600	A0
VERSION	96	PC	SHEET 1 OF 5

200722-600



KEYBOARD ENCODER

AUDIO TRANSDUCER

MSB

LSB

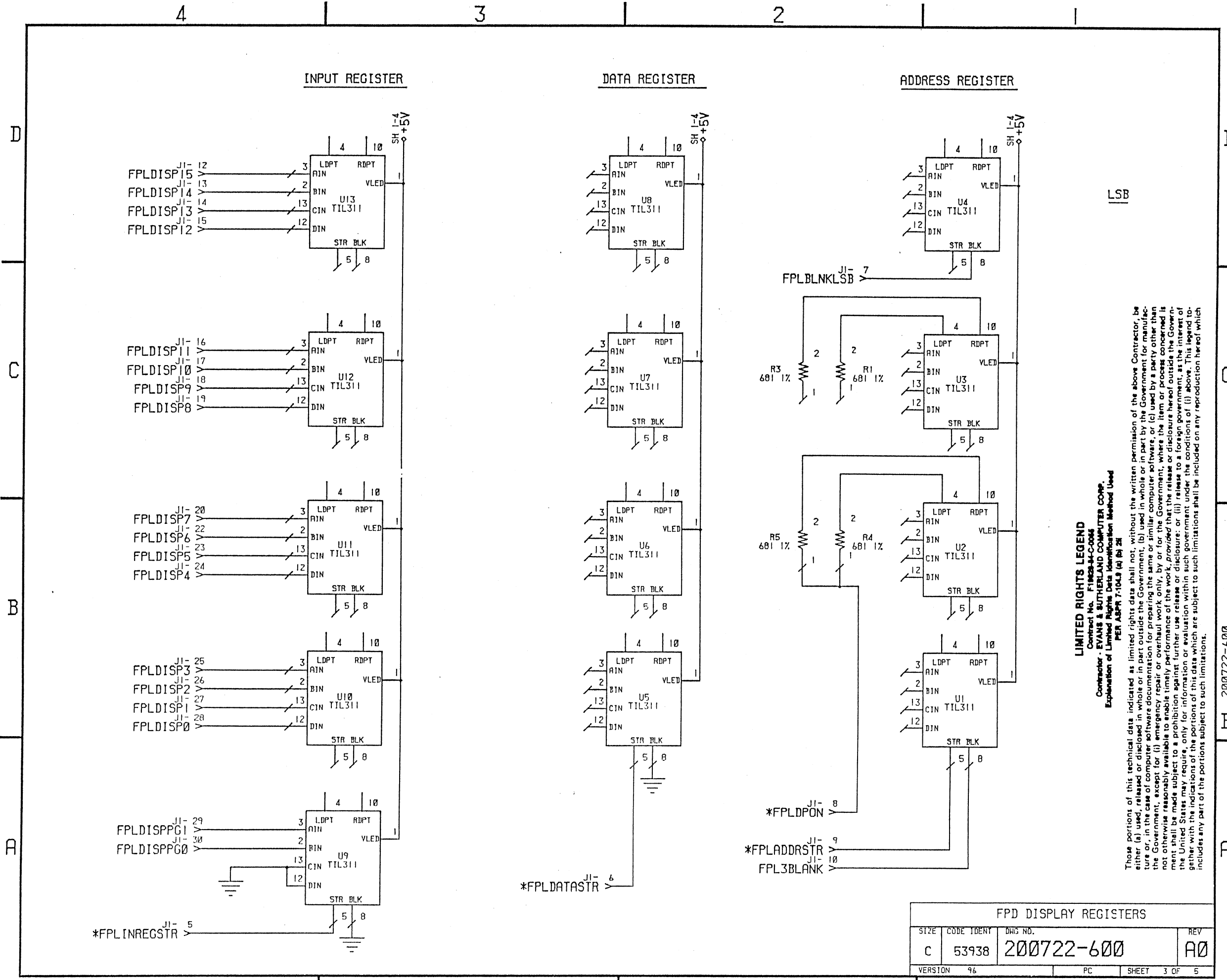
LIMITED RIGHTS LEGEND
 Contract No. F19628-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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FPD KEYBOARD ENCCDER			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200722-600	A0
VERSION	96	PC	SHEET 2 OF 5

200722-600

A



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 Contract No. F19629-84-C-0046
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (2) (i)

FPD DISPLAY REGISTERS			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200722-600	A0
VERSION	96	PC	SHEET 3 OF 5

4

3

2

D

D

C

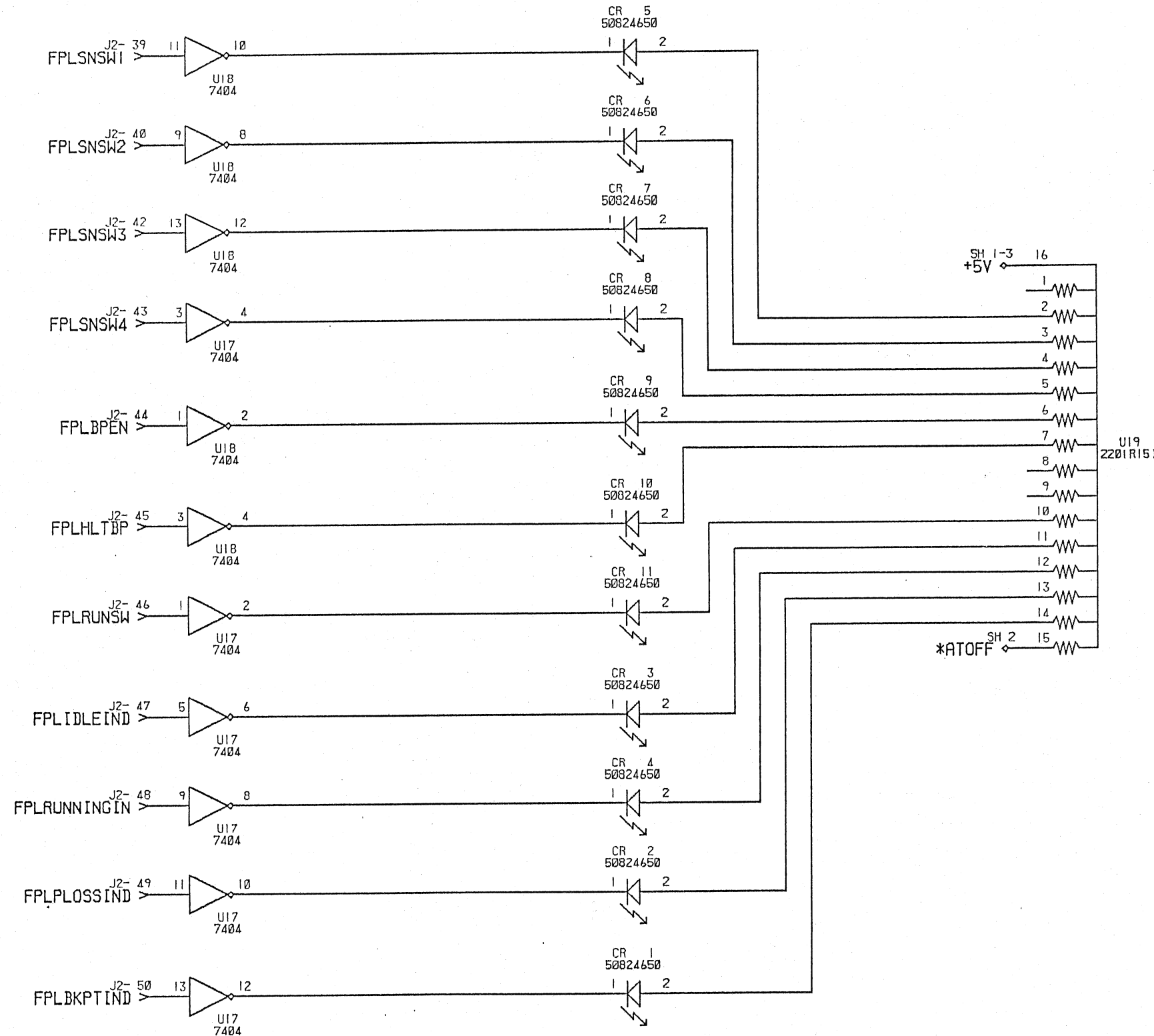
C

B

B

A

A

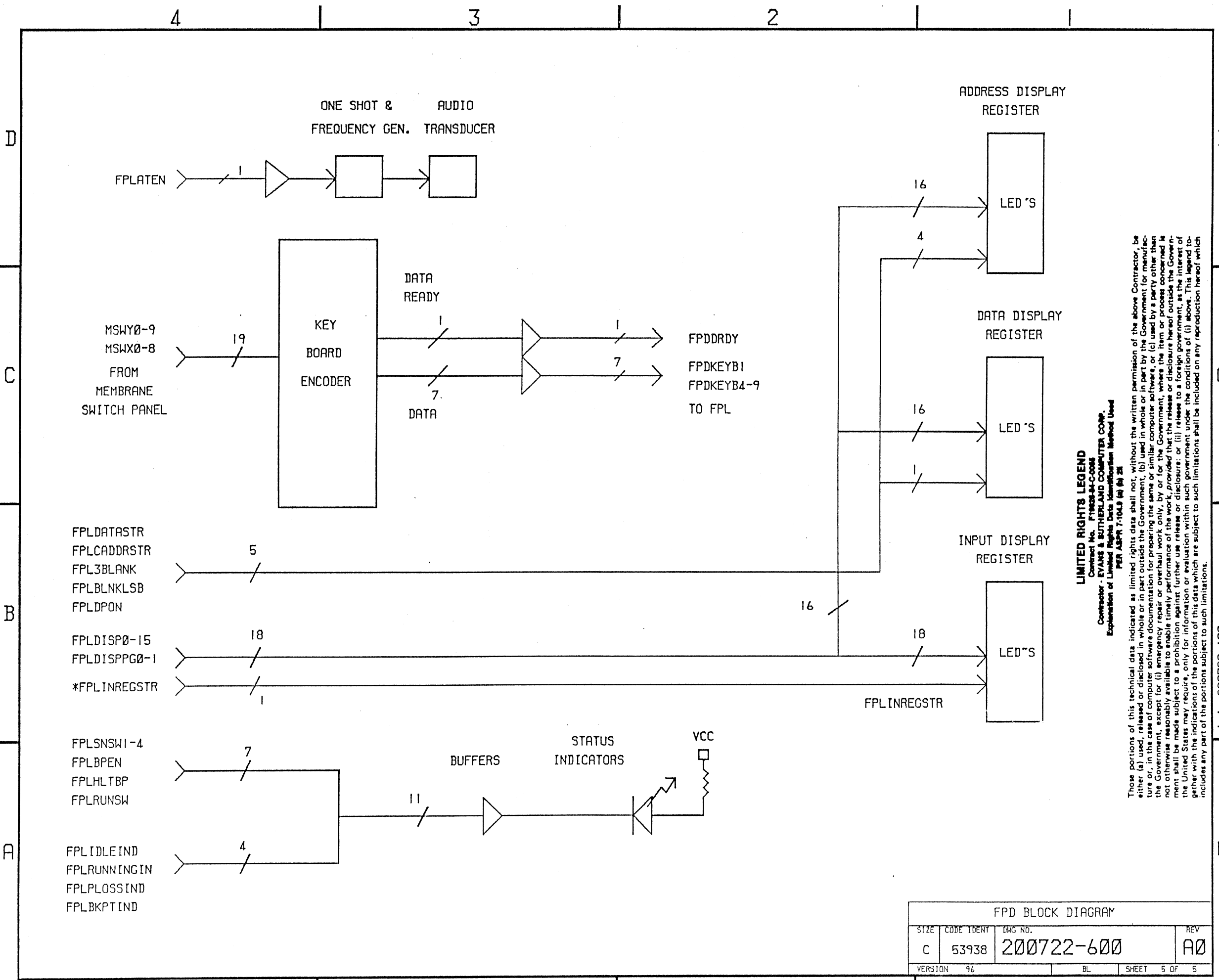


LIMITED RIGHTS LEGEND
 Contract No. F19828-84-C-0055
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (b) 2ii

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FPD LED INDICATOR			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200722-600	A0
VERSION	96	PC	SHEET 4 OF 5

200722-600



LIMITED RIGHTS LEGEND
 Contract No. F19628-66-C-0046
 Contractor - EVANS & SUTHERLAND COMPUTER CORP.
 Explanation of Limited Rights Data Identification Method Used
 PER ASPR 7-104.9 (a) (4) 28

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FPD BLOCK DIAGRAM			
SIZE	CODE IDENT	DRG NO.	REV
C	53938	200722-600	A0
VERSION	96	BL	SHEET 5 OF 5

200722-600



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200724-100

REV: B3 = BD

DESC: CARD ASSY,FPL-FRONT PANEL LOGIC,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,P02R PCBD11X13	53938	EVANS & SUTHERLAND.	200724-500	200724-500	1
C118 C120	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C119 C121	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	2
C2 C3 C4 C5	C,,RDL 4.7UF	31433	KEMET ELECTRONICS CORP.	T370D475M035AS	804128-475	2
C6 C7 C8 C9 C10 C11 C12 C13	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C14 C15 C16 C17 C18 C19 C20	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804169-333	103
C22 C23 C24 C25 C26 C27 C28						
C29 C30 C31 C32 C33 C34 C35						
C37 C38 C39 C40 C41 C42 C43						
C44 C45 C46 C47 C48 C49 C50						
C51 C52 C53 C54 C55 C56 C57						
C58 C59 C60 C61 C62 C63 C64						
C65 C66 C67 C68 C69 C70 C71						
C72 C73 C74 C75 C76 C77 C78						
C79 C80 C81 C82 C83 C84 C85						
C86 C87 C88 C89 C90 C91 C92						
C93 C94 C95 C96 C97 C98 C99						
C100 C101 C102 C103 C104						
C105 C106 C107 C108 C109						
CR1 CR5	CR,SWTC 1N914	N/A	ITT SEMICONDUCTORS	1N914-1N4148	810914-001	2
CR4	CR,ZENR 1N4731	24444	GENERAL SEMICONDUCTOR	1N4731 (4.3V,ZENR)	814731-001	1
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
F3 F4	FU,PICO FUSE1/2A	75915	LITTELFUSE TRACOR INC.	251.500 (.5A,AXIAL)	802375-005	2
J4	CN,HOUS 50P,RTA	22526	DU PONT E I NEMOURS(CONN)	65268-011 (2X25)	801290-050	1
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
M4	HW,SCKT 28SCKT(.6LS)	00779	AMP INC.	640362-1	801611-128	2
R1 R2 R3 R11 R12 R13 R14 R16	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	8
R15	R,,AXL 402K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-402K-1%	803455-402	1
R4 R10	R,,AXL 5.11K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-5.11K-1%-50PPM	803453-511	2
R5	R,,AXL 750 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-750-1%	803452-750	1
R6	R,,AXL 340 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-340-1%	803452-340	1
R7 R8	R,,AXL 4.99K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-4.99K-1%-50PPM	803453-499	2
U101 U145	IC,TTL 74S74	01295	TEXAS INSTR, SEMICON DIV.	SN74S74N/J	807474-055	2
U106	IC,TTL NE555	18324	SIGNETICS CORP. MILITARY	NE555N	806555-001	1
U10	IC,PROM 27128-2	53938	EVANS & SUTHERLAND.	807128-200-A17	807128-200-A17	1
U116 U126	IC,TTL S64	01295	TEXAS INSTR, SEMICON DIV.	SN74S64N	807464-055	2
U113 U124 U155	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	3
U11	IC,PROM 27128-2	53938	EVANS & SUTHERLAND.	807128-200-A16	807128-200-A16	1
U122	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	1
U12 U13 U14 U24	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	4
U133	IC,TTL 74S132	01295	TEXAS INSTR, SEMICON DIV.	SN74S132N/J	807501-055	1
U16	SW,DIP 4-SWITCH	81073	GRAYHILL INC	76SB04SRA	801549-104	1
U20 U21 U22 U23 U43 U103	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	10
U112 U120 U121 U152						
U30 U31 U141 U142 U151	IC,TTL 74F194	07263	FAIRCHILD IC'S & SEMICOND	74F194PC/DC	807994-035	5

TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 2

MAINTENANCE PARTS LIST

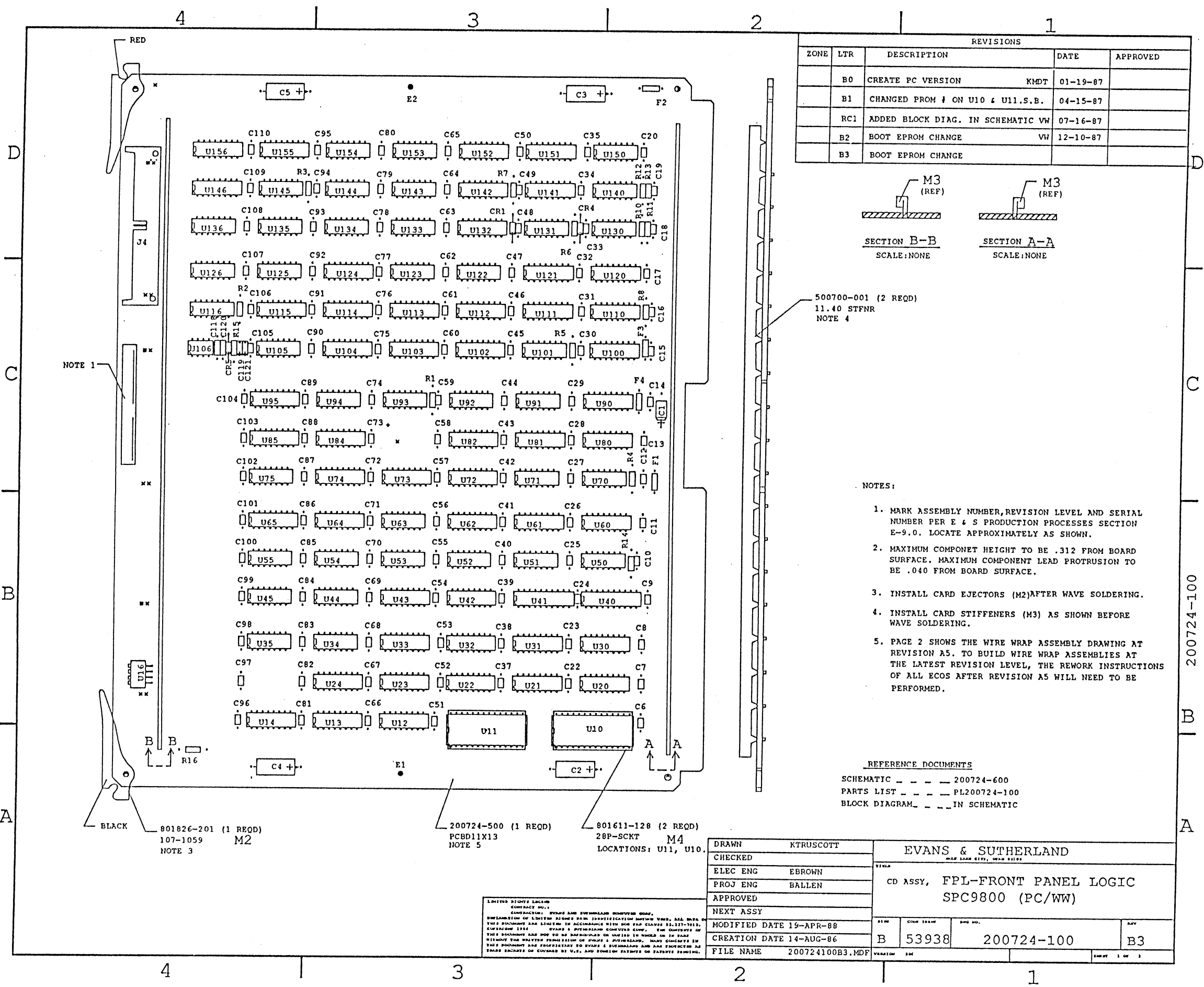
ASSEMBLY: PL 200724-100

REV: B3 = BD

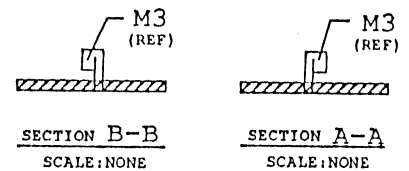
DESC: CARD ASSY, FPL-FRONT PANEL LOGIC, SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
U32 U33 U64 U65 U72 U73 U74 U81 U82 U84 U85 U95 U102 U104 U110 U111 U114 U115 U132 U146 U156	IC, TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	21
U34	IC, TTL 74LS27	01295	TEXAS INSTR, SEMICON DIV.	SN74LS27N/J	807439-016	1
U35 U44 U50 U53 U70 U71 U94 U105 U130 U131 U136 U153	IC, TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	13
U40	IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-B03	807808-016-B03	1
U41	IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-B02	807808-016-B02	1
U42	IC, TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	1
U45 U51 U93 U123 U143	IC, TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	5
U52 U134	IC, TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	2
U54 U55	IC, TTL 74S86	01295	TEXAS INSTR, SEMICON DIV.	SN74S86N	807486-055	2
U60	IC, TTL 74S151	01295	TEXAS INSTR, SEMICON DIV.	SN74S151N	807651-055	1
U61	IC, PROM, BIP, 32X8, TS, 5	53938	EVANS & SUTHERLAND.	807739-055-B95	807739-055-B95	1
U62	IC, PROM, BIP, 32X8, TS, 5	53938	EVANS & SUTHERLAND.	807739-055-B94	807739-055-B94	1
U63 U135 U140	IC, TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	3
U75	IC, TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U80 U90 U100	IC, TTL 93S46	07263	FAIRCHILD IC'S & SEMICOND	93S46DC/PC	807696-055	3
U91 U144 U150	IC, TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	3
U92 U125	IC, TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	2

50 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATE PC VERSION	KMDT 01-19-87	
	B1	CHANGED PROM # ON U10 & U11,S.B.	04-15-87	
	RC1	ADDED BLOCK DIAG. IN SCHEMATIC VW	07-16-87	
	B2	BOOT EPROM CHANGE	VW 12-10-87	
	B3	BOOT EPROM CHANGE		



500700-001 (2 REQD)
11.40 STFNR
NOTE 4

- NOTES:
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 2. MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
 3. INSTALL CARD EJECTORS (M2) AFTER WAVE SOLDERING.
 4. INSTALL CARD STIFFENERS (M3) AS SHOWN BEFORE WAVE SOLDERING.
 5. PAGE 2 SHOWS THE WIRE WRAP ASSEMBLY DRAWING AT REVISION A5. TO BUILD WIRE WRAP ASSEMBLIES AT THE LATEST REVISION LEVEL, THE REWORK INSTRUCTIONS OF ALL ECOS AFTER REVISION A5 WILL NEED TO BE PERFORMED.

REFERENCE DOCUMENTS
SCHEMATIC - - - - 200724-600
PARTS LIST - - - - PL200724-100
BLOCK DIAGRAM - - - IN SCHEMATIC

BLACK 801826-201 (1 REQD)
107-1059 M2
NOTE 3

200724-500 (1 REQD)
PCBD11X13
NOTE 5

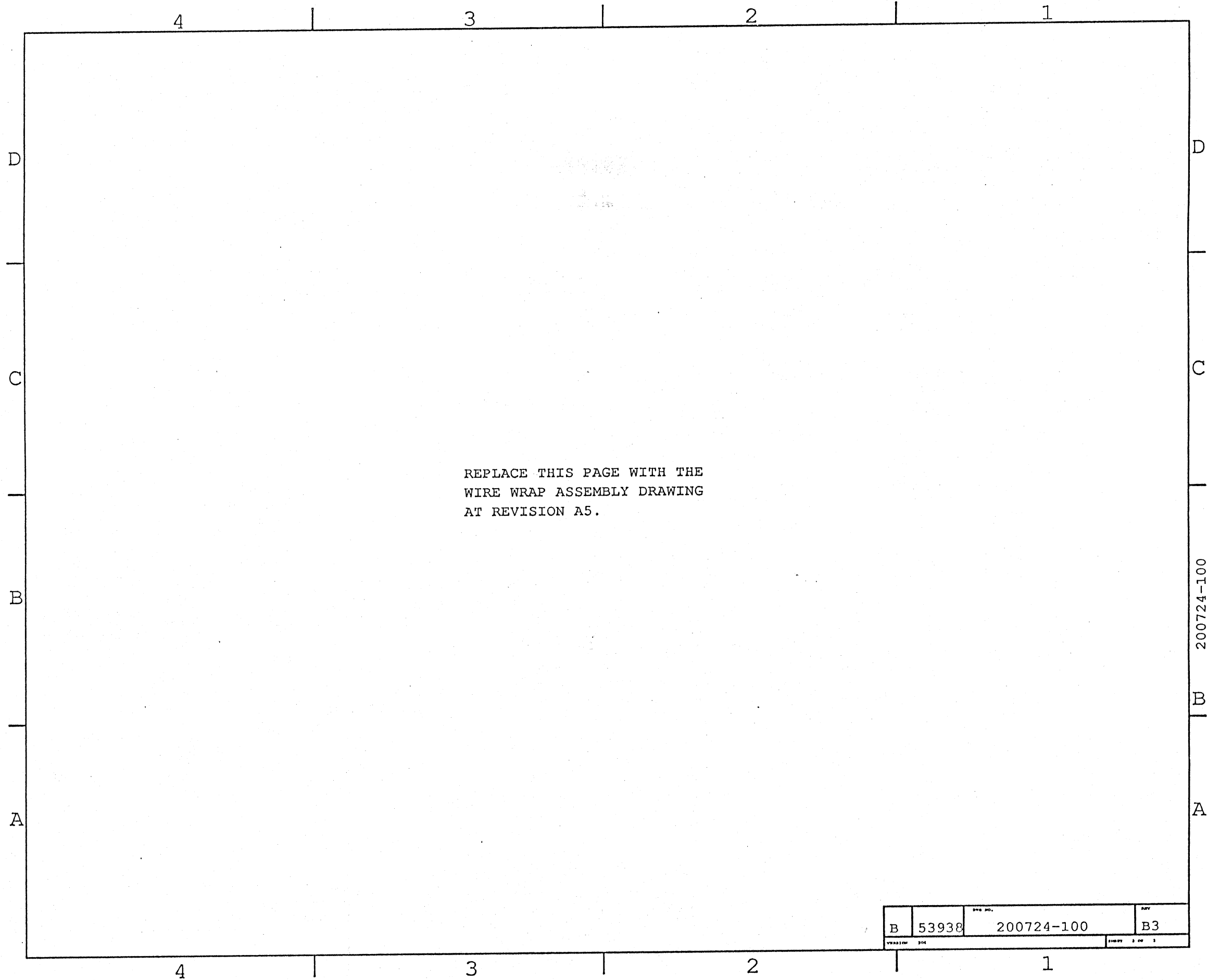
801611-128 (2 REQD)
28P-SCKT M4
LOCATIONS: U11, U10.

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CONTRACT NO. 1
CONTRACTOR: EVANS & SUTHERLAND COMPANY
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DRAWN	KTRUSCOTT	EVANS & SUTHERLAND		
CHECKED		CD ASSY, FPL-FRONT PANEL LOGIC SPC9800 (PC/WW)		
ELEC ENG	EBROWN			
PROJ ENG	BALLEN			
APPROVED				
NEXT ASSY				
MODIFIED DATE	19-APR-88			
CREATION DATE	14-AUG-86			
FILE NAME	200724100B3.MDF	REV	DATE	REV
		B	53938	200724-100
				B3

200724-100

A B C D



REPLACE THIS PAGE WITH THE
 WIRE WRAP ASSEMBLY DRAWING
 AT REVISION A5.

200724-100

B	53938	200724-100	B3
VERSION 304	DRAWN 3 OF 1		REV

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200724-100

REV: A5 = AF

DESC: CARD ASSY,FPL-FRONT PANEL LOGIC,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,WW STD SPC9800	53938	EVANS & SUTHERLAND.	200721-500	200721-500	1
C119 C121	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C2 C3 C4 C5	C,,RDL 4.7UF	31433	KEMET ELECTRONICS CORP.	T370D475M035AS	804128-475	2
C6 C7 C8 C9 C10 C11 C12 C13	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C14 C15 C16 C17 C18 C19 C20	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	105
C22 C23 C24 C25 C26 C27 C28						
C29 C30 C31 C32 C33 C34 C35						
C37 C38 C39 C40 C41 C42 C43						
C44 C45 C46 C47 C48 C49 C50						
C51 C52 C53 C54 C55 C56 C57						
C58 C59 C60 C61 C62 C63 C64						
C65 C66 C67 C68 C69 C70 C71						
C72 C73 C74 C75 C76 C77 C78						
C79 C80 C81 C82 C83 C84 C85						
C86 C87 C88 C89 C90 C91 C92						
C93 C94 C95 C96 C97 C98 C99						
C100 C101 C102 C103 C104						
C105 C106 C107 C108 C109						
C110 C118 C120						
CR1 CR5	CR,SWTC 1N914	N/A	ITT SEMICONDUCTORS	1N914-1N4148	810914-001	2
CR4	CR,ZENR 1N4731	24444	GENERAL SEMICONDUCTOR	1N4731 (4.3V,ZENR)	814731-001	1
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
F3 F4	FU,PICO FUSE1/2A	75915	LITTELFUSE TRACOR INC.	251.500 (.5A,AXIAL)	802375-005	2
J4	CN,HOUS 50P,RTA	22526	DU PONT E I NEMOURS (CONN)	65268-011 (2X25)	801290-050	1
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
M4	HW,SCKT 28SCKT(.6LS)	00779	AMP INC.	640362-1	801611-128	2
M6 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	2146
M7 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
R1 R2 R3 R11 R12 R13 R14 R16	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	8
R15	R,,AXL 402K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-402K-1%	803455-402	1
R4 R10	R,,AXL 5.11K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-5.11K-1%-50PPM	803453-511	2
R5	R,,AXL 750 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-750-1%	803452-750	1
R6	R,,AXL 340 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-340-1%	803452-340	1
R7 R8	R,,AXL 4.99K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-4.99K-1%-50PPM	803453-499	2
U101 U145	IC,TTL 74S74	01295	TEXAS INSTR, SEMICON DIV.	SN74S74N/J	807474-055	2
U106	IC,TTL NE555	18324	SIGNETICS CORP. MILITARY	NE555N	806555-001	1
U10	IC,PROM 27128-2	53938	EVANS & SUTHERLAND.	807128-200-A11	807128-200-A11	1
U116 U126	IC,TTL S64	01295	TEXAS INSTR, SEMICON DIV.	SN74S64N	807464-055	2
U113 U124 U155	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	3
U11	IC,PROM 27128-2	53938	EVANS & SUTHERLAND.	807128-200-A10	807128-200-A10	1
U122	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	1
U12 U13 U14 U24	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	4
U133	IC,TTL 74S132	01295	TEXAS INSTR, SEMICON DIV.	SN74S132N/J	807501-055	1
U16	SW,DIP 4-SWITCH	81073	GRAYHILL INC	76SB04SRA	801549-104	1
U20 U21 U22 U23 U43 U103	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	10

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RUN DATE=06/20/90

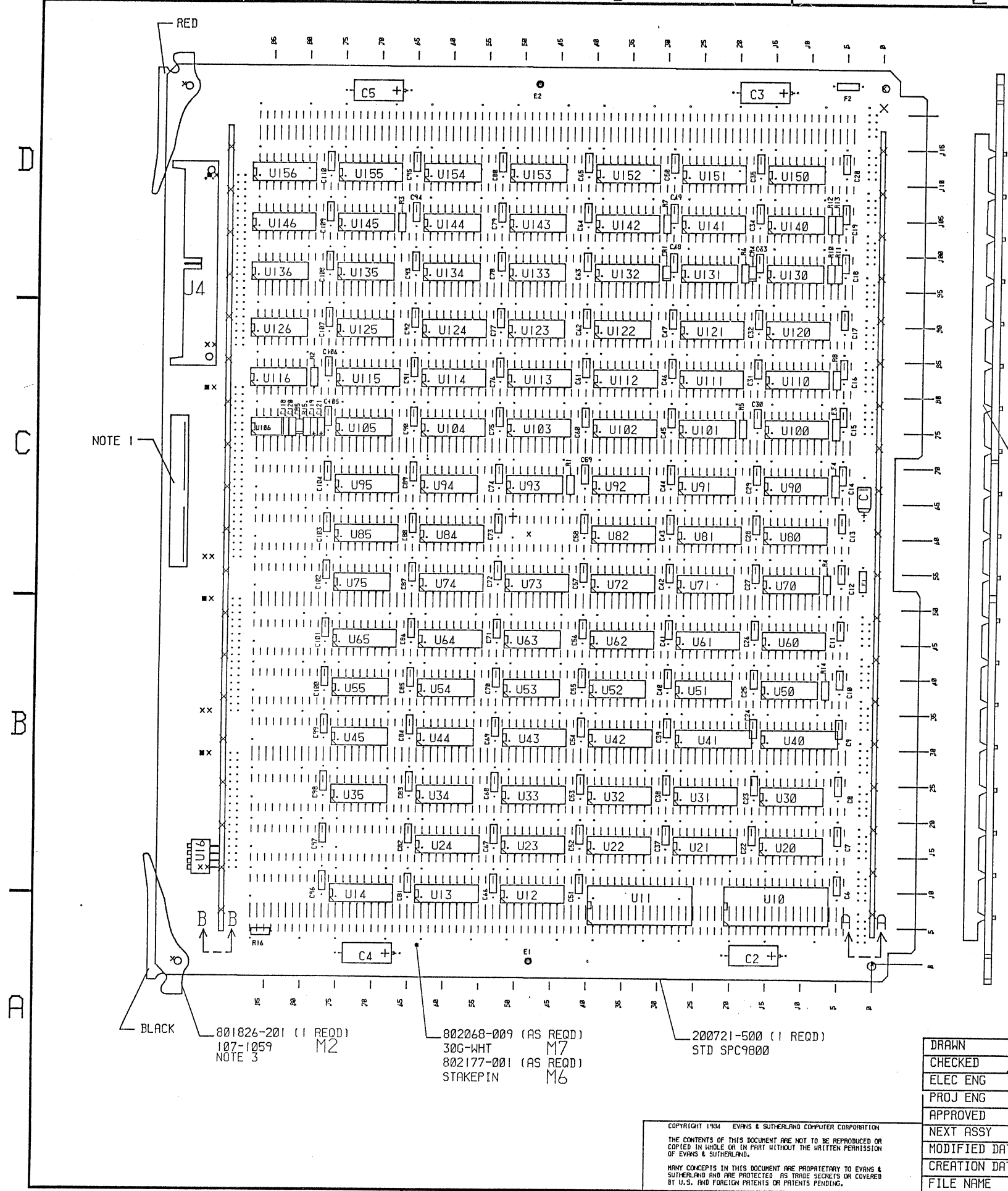
EVANS + SUTHERLAND

RPT ID=242 PAGE 2

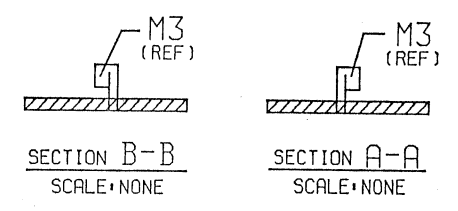
MAINTENANCE PARTS LIST

ASSEMBLY: PL 200724-100	REV: A5 = AF	DESC: CARD ASSY, FPL-FRONT PANEL LOGIC, SPC9800 (PC)			QTY/
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER ASSY
U112 U120 U121 U152					
U30 U31 U141 U142 U151	IC, TTL 74F194	07263	FAIRCHILD IC'S & SEMICON	74F194PC/DC	807994-035 5
U32 U33 U64 U65 U72 U73 U74	IC, TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055 21
U81 U82 U84 U85 U95 U102					
U104 U110 U111 U114 U115					
U132 U146 U156					
U34	IC, TTL 74LS27	01295	TEXAS INSTR, SEMICON DIV.	SN74LS27N/J	807439-016 1
U35 U44 U50 U53 U70 U71 U94	IC, TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055 13
U105 U130 U131 U136 U153					
U40	IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-B03	807808-016-B03 1
U41	IC, PROM, BIP, 256X8, TS,	53938	EVANS & SUTHERLAND.	807808-016-B02	807808-016-B02 1
U42	IC, TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055 1
U45 U51 U93 U123 U143	IC, TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055 5
U52 U134	IC, TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055 2
U54 U55	IC, TTL 74S86	01295	TEXAS INSTR, SEMICON DIV.	SN74S86N	807486-055 2
U60	IC, TTL 74S151	01295	TEXAS INSTR, SEMICON DIV.	SN74S151N	807651-055 1
U61	IC, PROM, BIP, 32X8, TS, 5	53938	EVANS & SUTHERLAND.	807739-055-B95	807739-055-B95 1
U62	IC, PROM, BIP, 32X8, TS, 5	53938	EVANS & SUTHERLAND.	807739-055-B94	807739-055-B94 1
U63 U135 U140	IC, TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055 3
U75	IC, TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055 1
U80 U90 U100	IC, TTL 93S46	07263	FAIRCHILD IC'S & SEMICON	93S46DC/PC	807696-055 3
U91 U144 U150	IC, TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055 3
U92 U125	IC, TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055 2

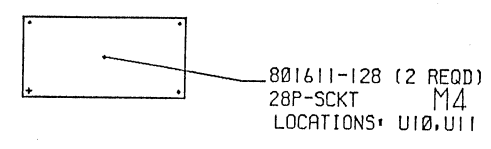
51 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0 W/MINOR CHANGES. SB	02-25-85	
	A1	REVISION LEVEL UPDATE ONLY. SB	09-18-85	
	A2	REVISION LEVEL UPDATE ONLY. SB	09-27-85	
	A3	REVISION LEVEL UPDATE ONLY. SAD	05-29-86	
	A4	CHANGED PROMS PER ECO.	SAD 07-23-86	
	A5	FIX DISK RESET	KMDT 09-11-86	M. Bylund 9/2/86



500700-001 (2 REQD)
11.40 STFNR M3
NOTE 4



- NOTES:
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 2. MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
 3. INSTALL CARD EJECTORS (M2) AFTER WIRE WRAPPING.
 4. INSTALL CARD STIFFENERS (M3) AS SHOWN BEFORE WAVE SOLDERING.

REFERENCE DOCUMENTS
SCHEMATIC - - - 200724-600
PARTS LIST - - PL200724-100

NOTE 1

BLACK 801826-201 (1 REQD)
107-1059 M2
NOTE 3

802068-009 (AS REQD)
30G-WHT M7
802177-001 (AS REQD)
STAKEPIN M6

200721-500 (1 REQD)
STD SPC9800

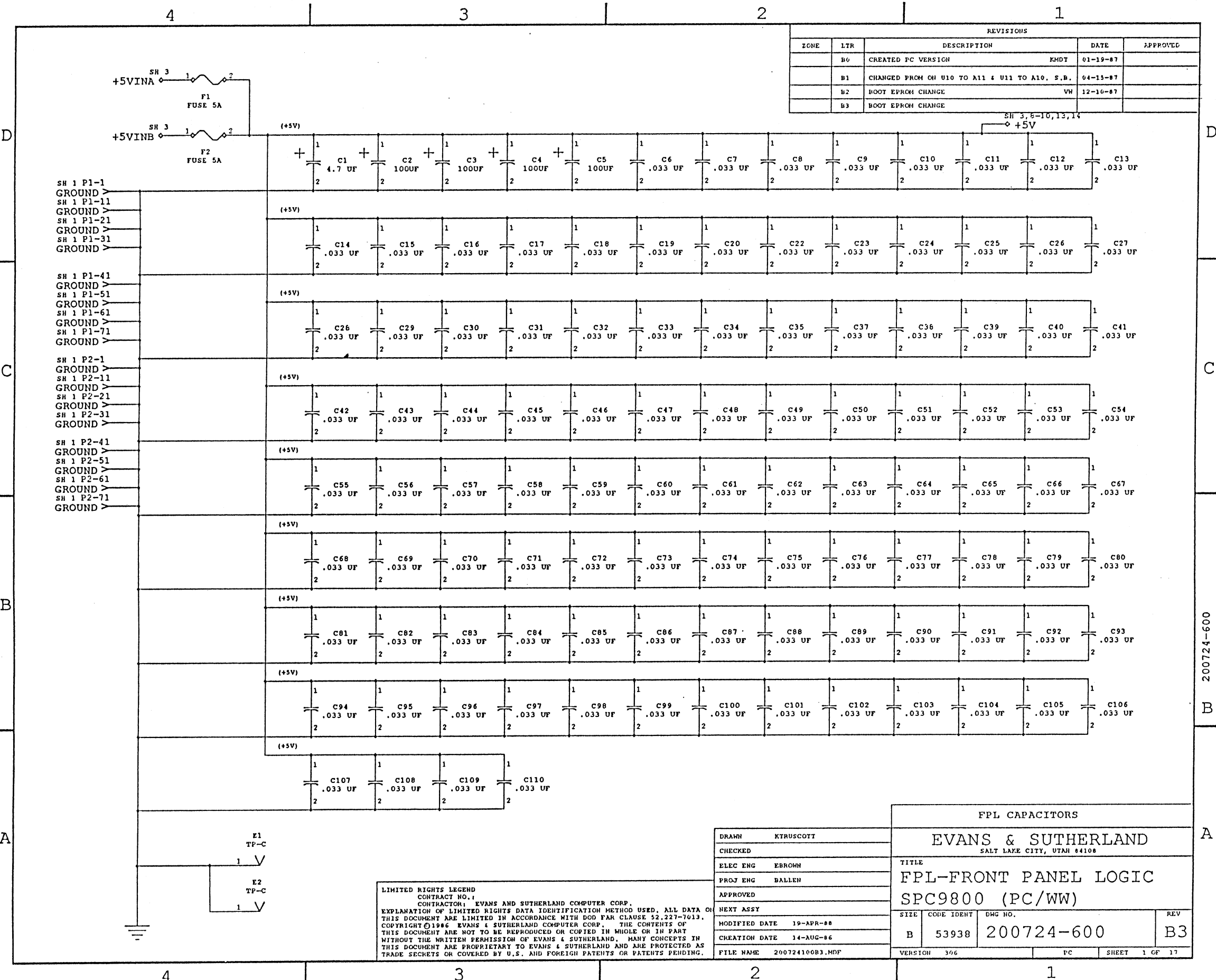
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DRAWN	S. BARBER	EVANS & SUTHERLAND <small>SALT LAKE CITY, UTAH 84108</small>	
CHECKED	<i>S. Bylund</i> 9-19-86	TITLE	
ELEC ENG	M. BYLUND	ASSY. FPL-FRONT PANEL LOGIC	
PROJ ENG	S. HADFIELD	SPC9800 (W/W)	
APPROVED		SIZE	CODE IDENT
NEXT ASSY		C	53938
MODIFIED DATE	19-SEP-86	DWG NO.	200724-100
CREATION DATE	20-MAR-84	REV	A5
FILE NAME	200724100A5.MDF	VERSION	208
			SHEET 1 OF 1

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Contract No. 200724-100
EVANS & SUTHERLAND COMPUTER CORP.

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATED PC VERSION	KMDT 01-19-87	
	B1	CHANGED FROM OH U10 TO A11 & U11 TO A10, S.B.	04-13-87	
	B2	BOOT EPROM CHANGE	VW 12-16-87	
	B3	BOOT EPROM CHANGE		

FPL CAPACITORS			
DRAWN		KTRUSCOTT	
CHECKED			
ELEC ENG		EBROWN	
PROJ ENG		BALLEN	
APPROVED			
NEXT ASSY			
MODIFIED DATE		19-APR-88	
CREATION DATE		14-AUG-86	
FILE NAME		200724100B3.MDF	
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE FPL-FRONT PANEL LOGIC SPC9800 (PC/WW)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	3/6	PC	SHEET 1 OF 17

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 CONTRACT NO. 1
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200724-600

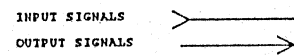
NOTES: UNLESS OTHERWISE SPECIFIED:

1. RESISTANCE VALUES ARE IN OHMS + - 1%, K DENOTES 1000.

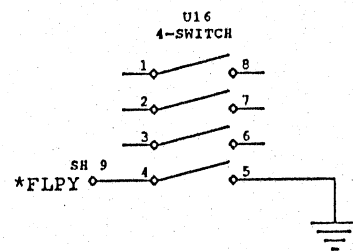
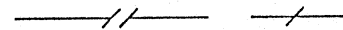
2. ON ALL IC'S, GROUND AND +5V (VCC) ARE AS FOLLOWS:

- 14 PIN IC, 7 AND 14
- 16 PIN IC, 8 AND 16
- 18 PIN IC, 9 AND 18
- 20 PIN IC, 10 AND 20
- 22 PIN IC, 11 AND 22
- 24 PIN IC, 12 AND 24
- 28 PIN IC, 14 AND 28

3. CARD CONNECTOR SYMBOL "F1-" DESIGNATES:

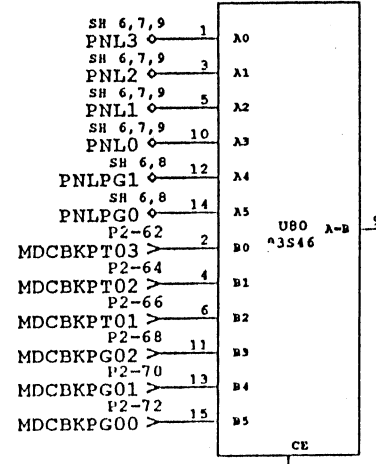
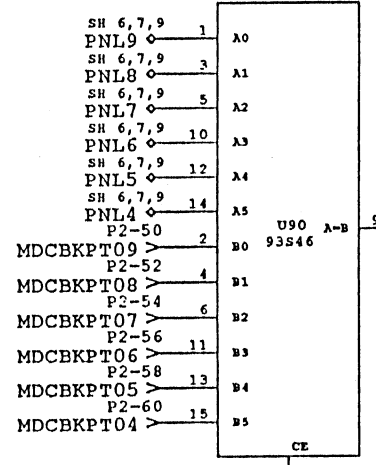
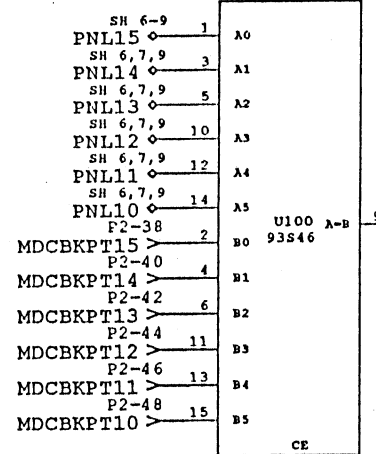
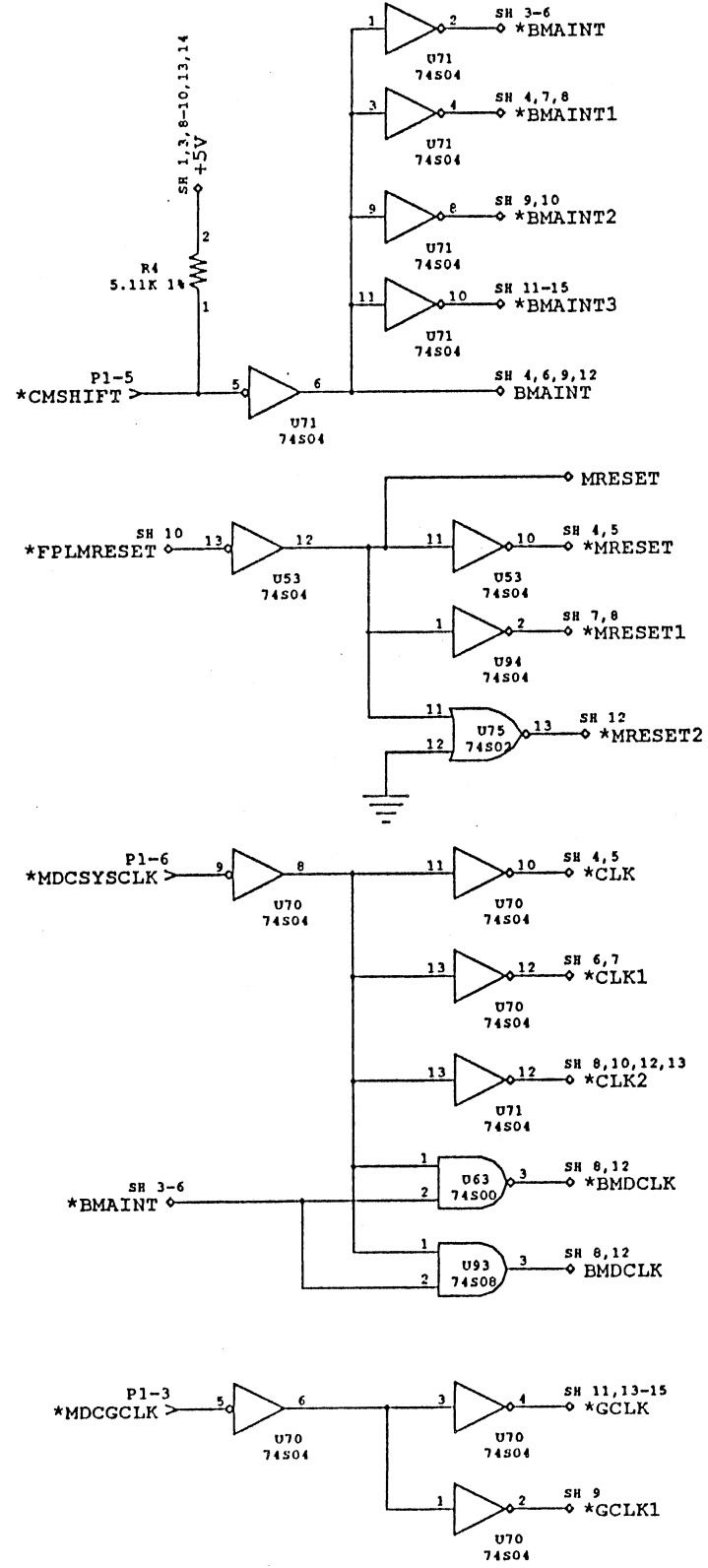


4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.

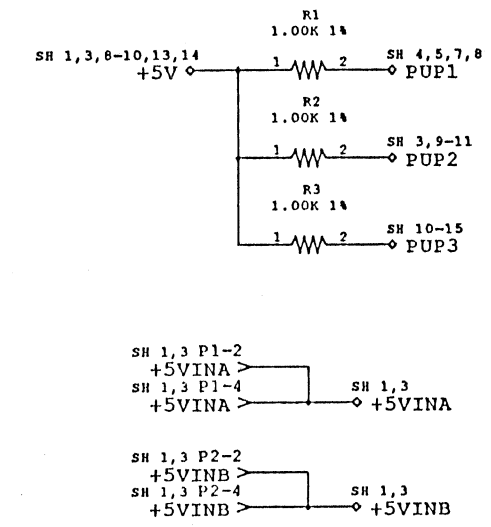


FPL CAPACITORS II			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	306	PC	SHEET 2 OF 17

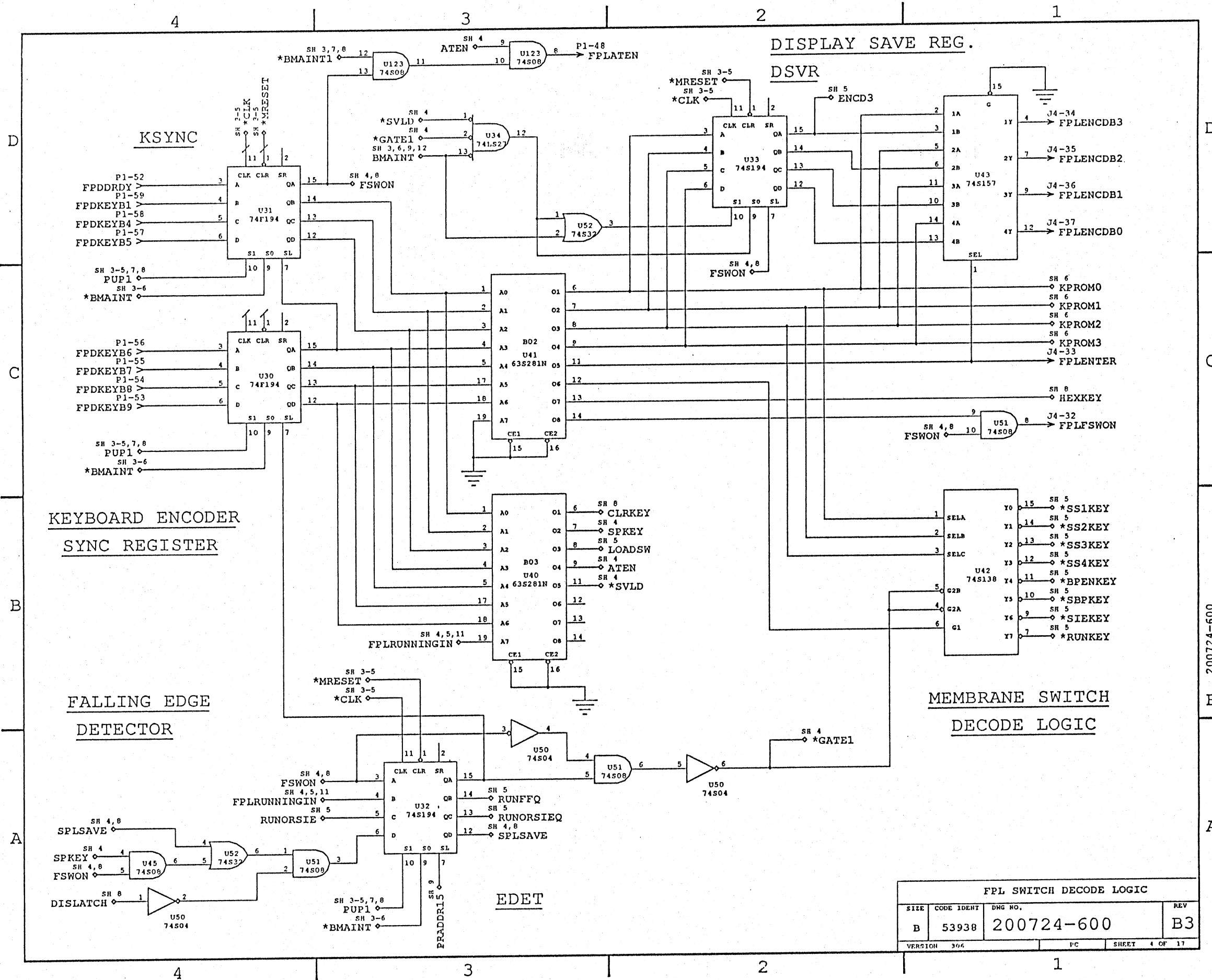
CONTROL SIGNAL BUFFERING



BREAKPOINT COMPARITORS

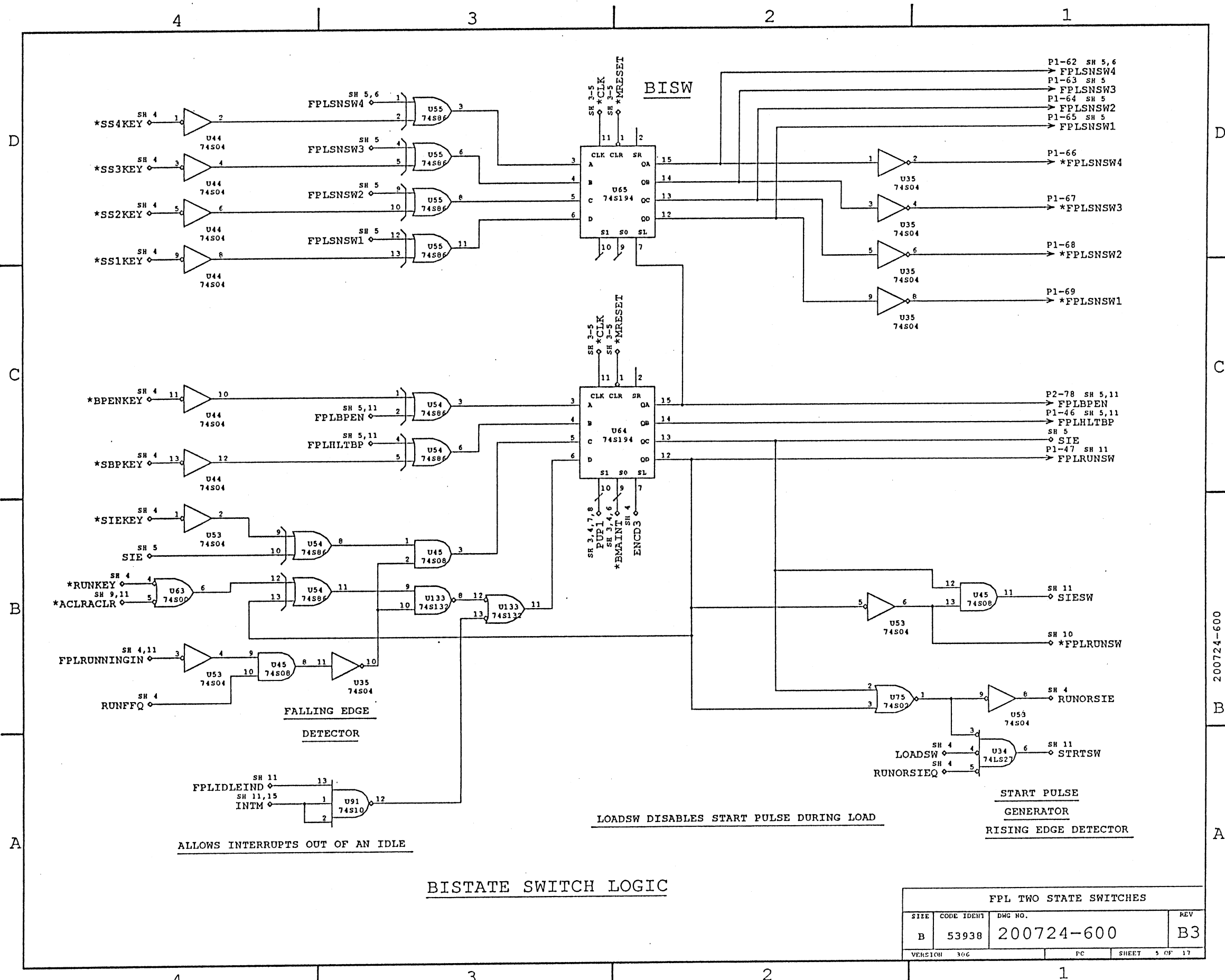


FPL BREAKPOINT COMPARE LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	306	FC	SHEET 3 OF 17



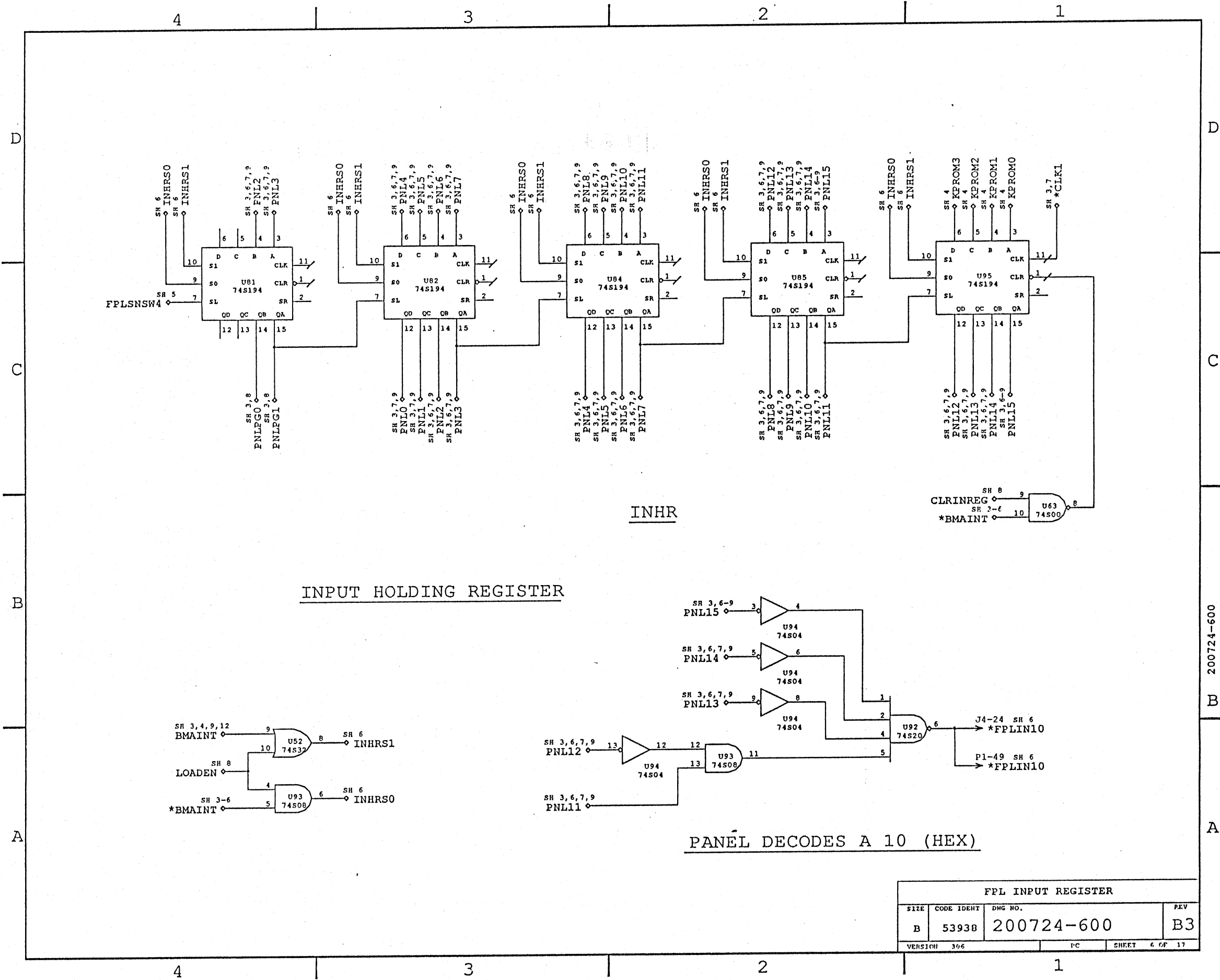
FPL SWITCH DECODE LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION 306		PC	SHEET 4 OF 17

200724-600



BISTATE SWITCH LOGIC

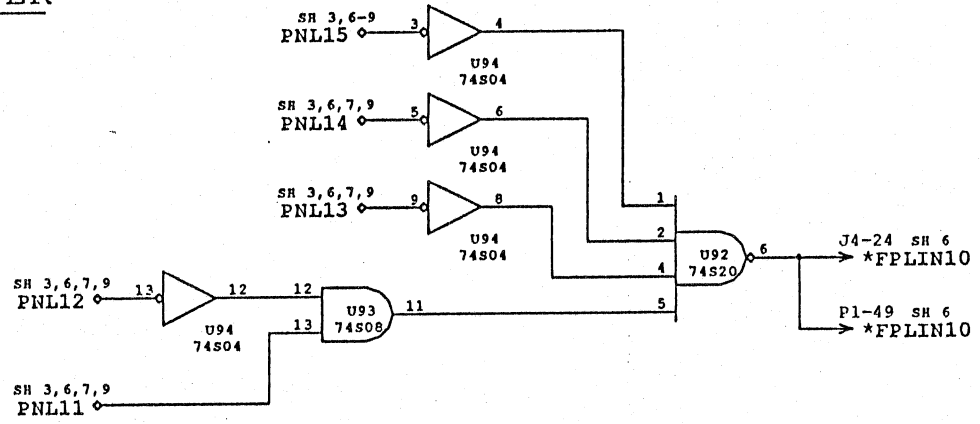
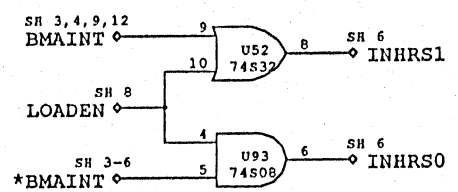
FPL TWO STATE SWITCHES			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	30G	PC	SHEET 5 OF 17



INPUT HOLDING REGISTER

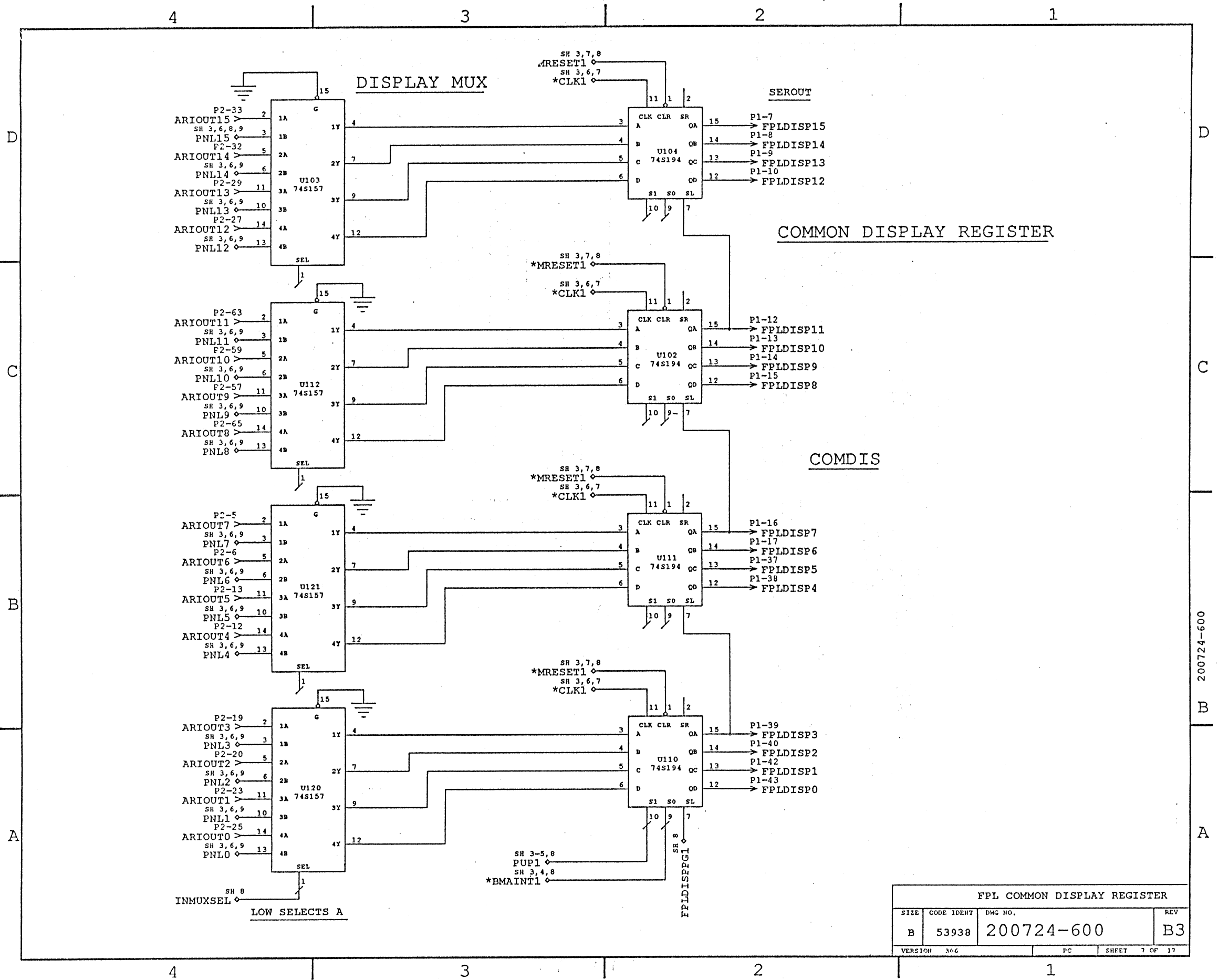
INHR

PANEL DECODES A 10 (HEX)



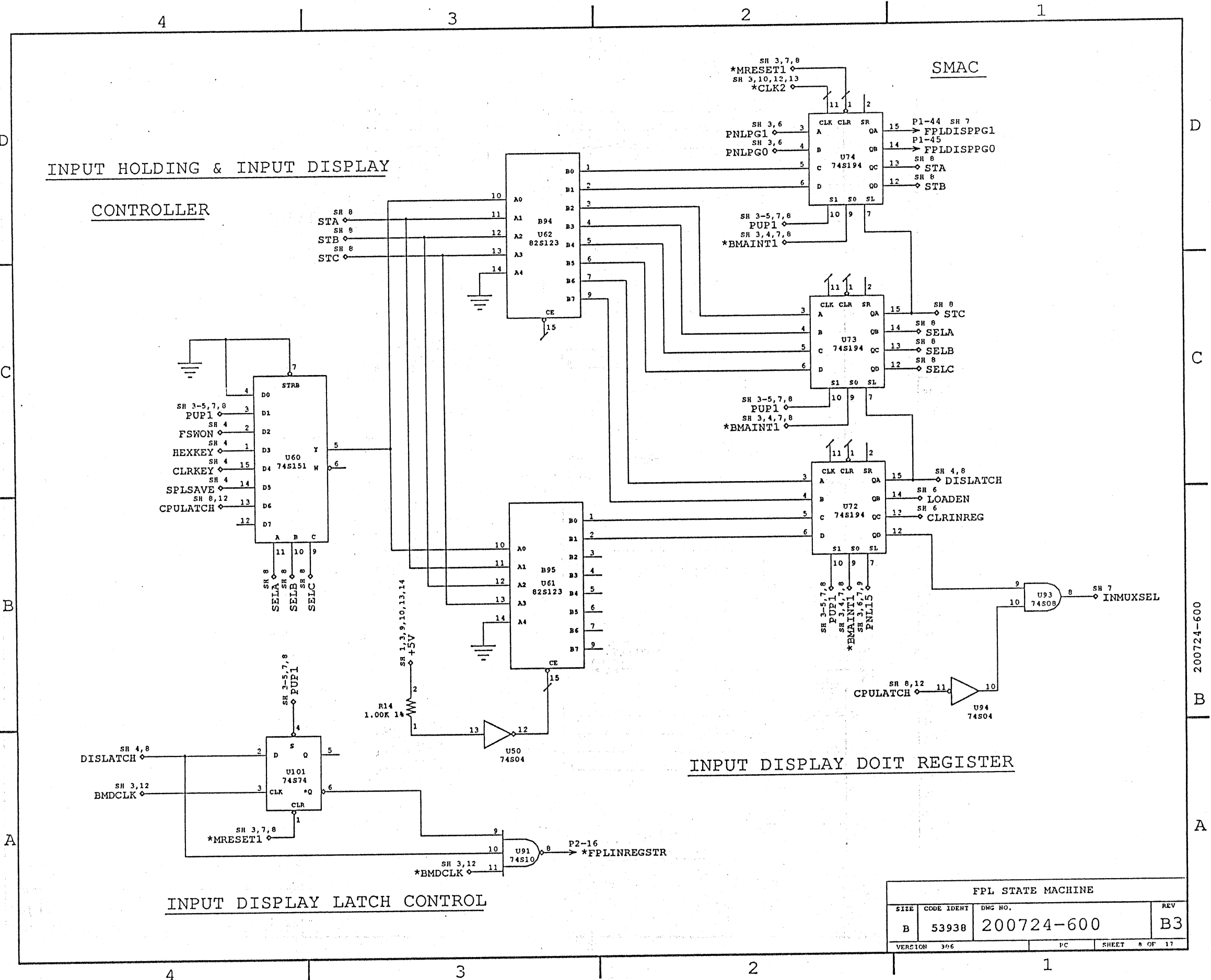
FPL INPUT REGISTER			
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B	5393B	200724-600	B3
VERSION 306		PC	SHEET 6 OF 17

200724-600 B A



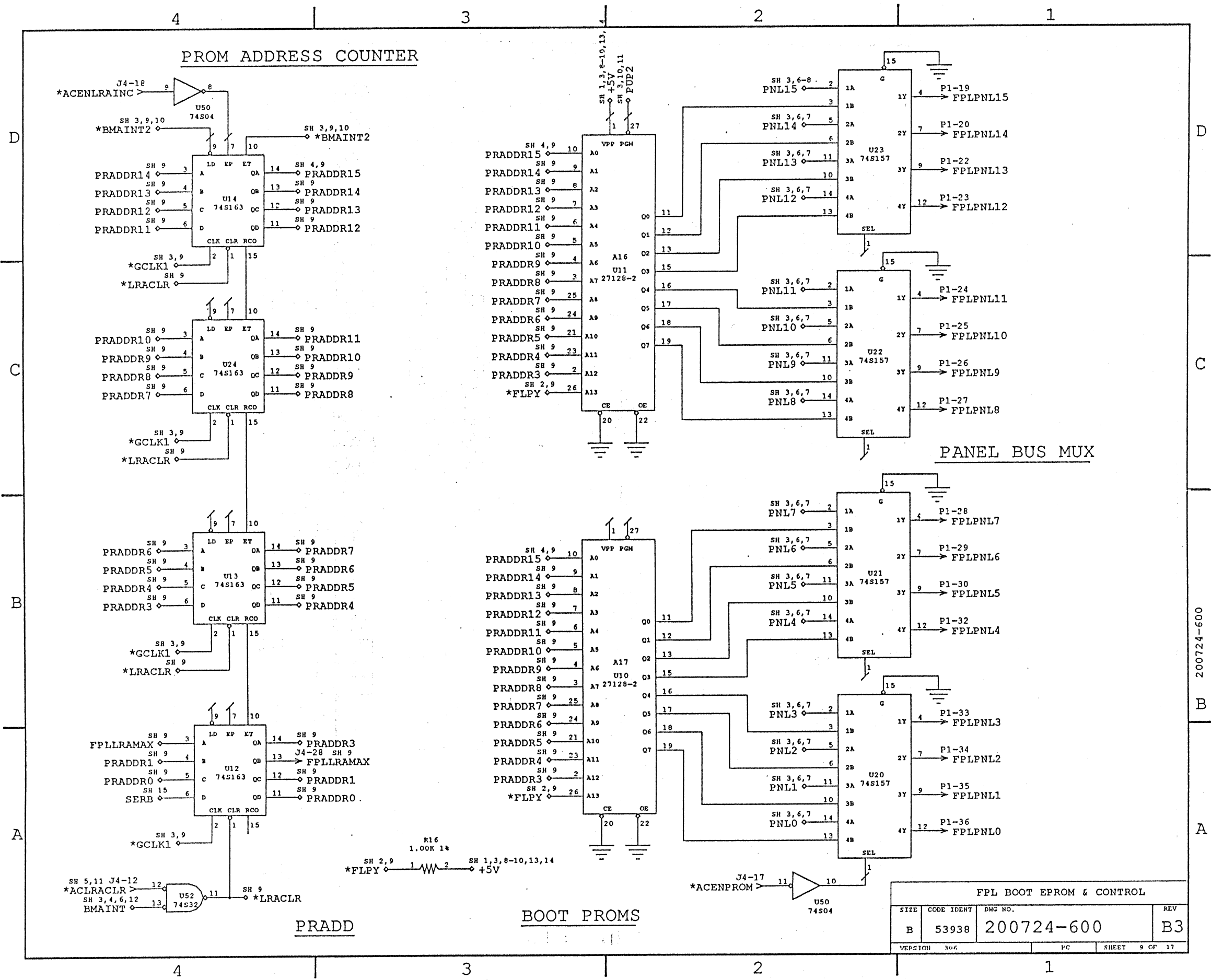
FPL COMMON DISPLAY REGISTER			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	366	PC	SHEET 7 OF 17

200724-600



FPL STATE MACHINE			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	306	PC	SHEET 8 OF 17

200724-600



PROM ADDRESS COUNTER

BOOT PROMS

PANEL BUS MUX

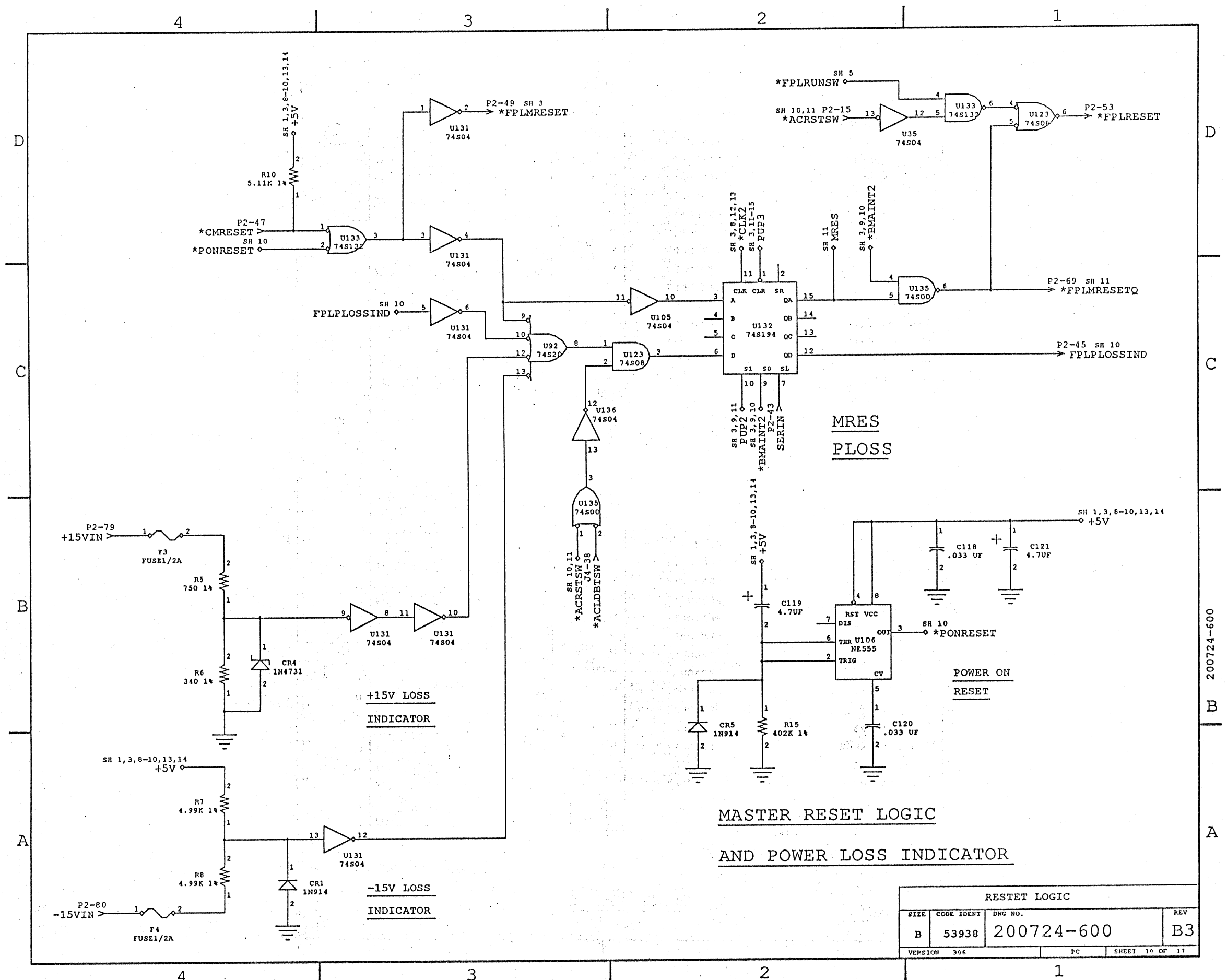
PRADD

FPL BOOT EPROM & CONTROL			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	306	PC	SHEET 9 OF 17

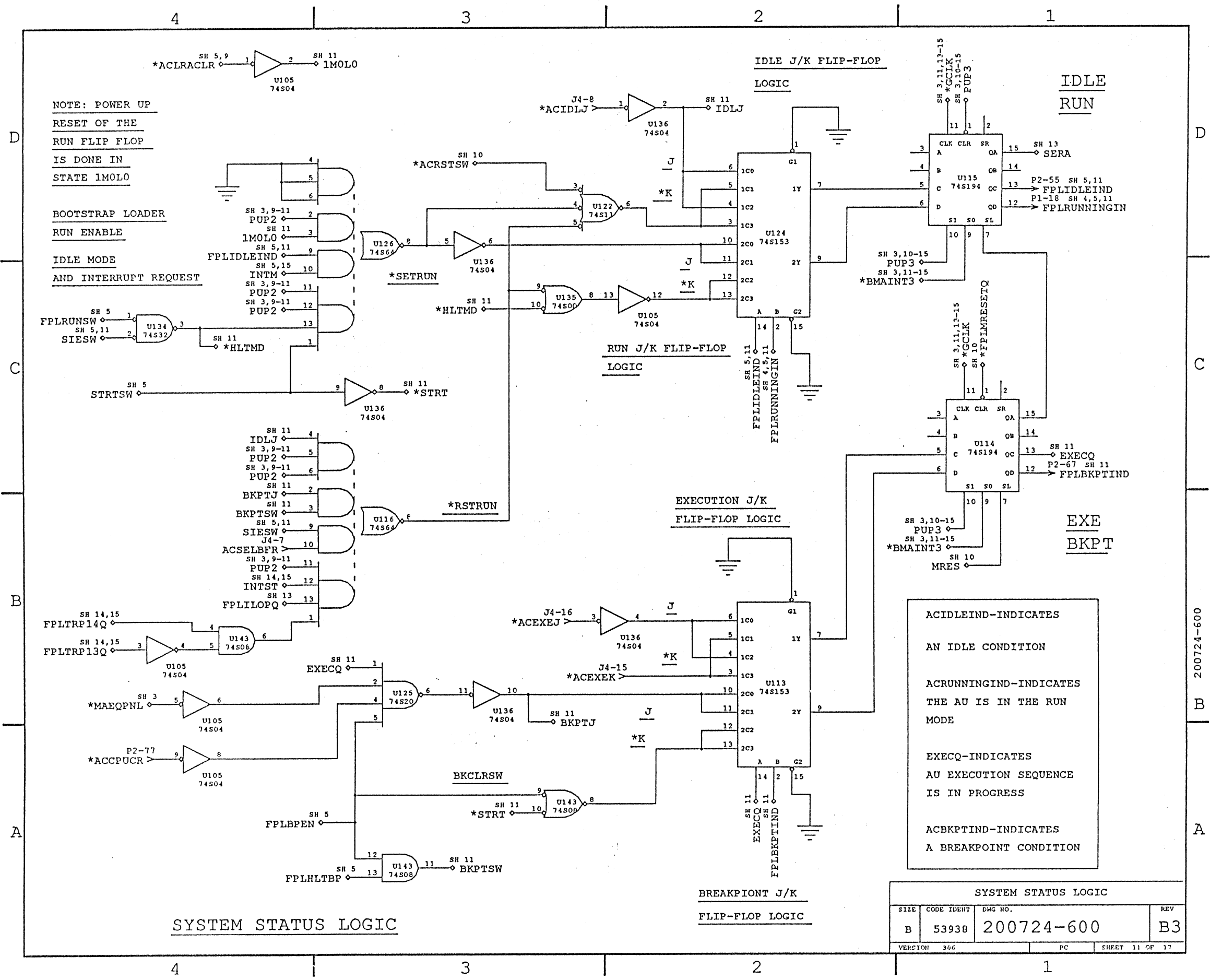
200724-600

B

A



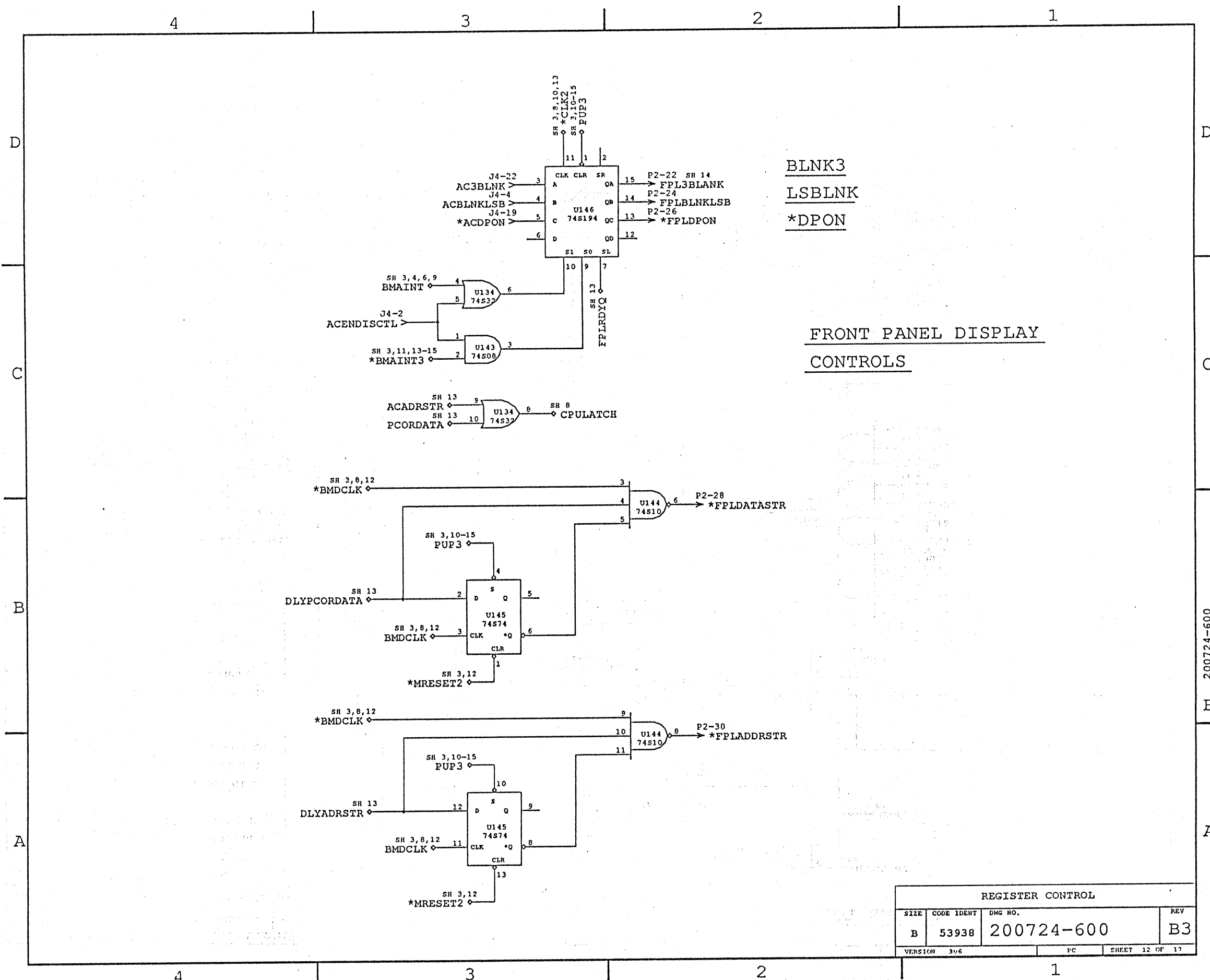
RESET LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	306	PC	SHEET 10 OF 17



SYSTEM STATUS LOGIC

SYSTEM STATUS LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	306	PC	SHEET 11 OF 17

200724-600

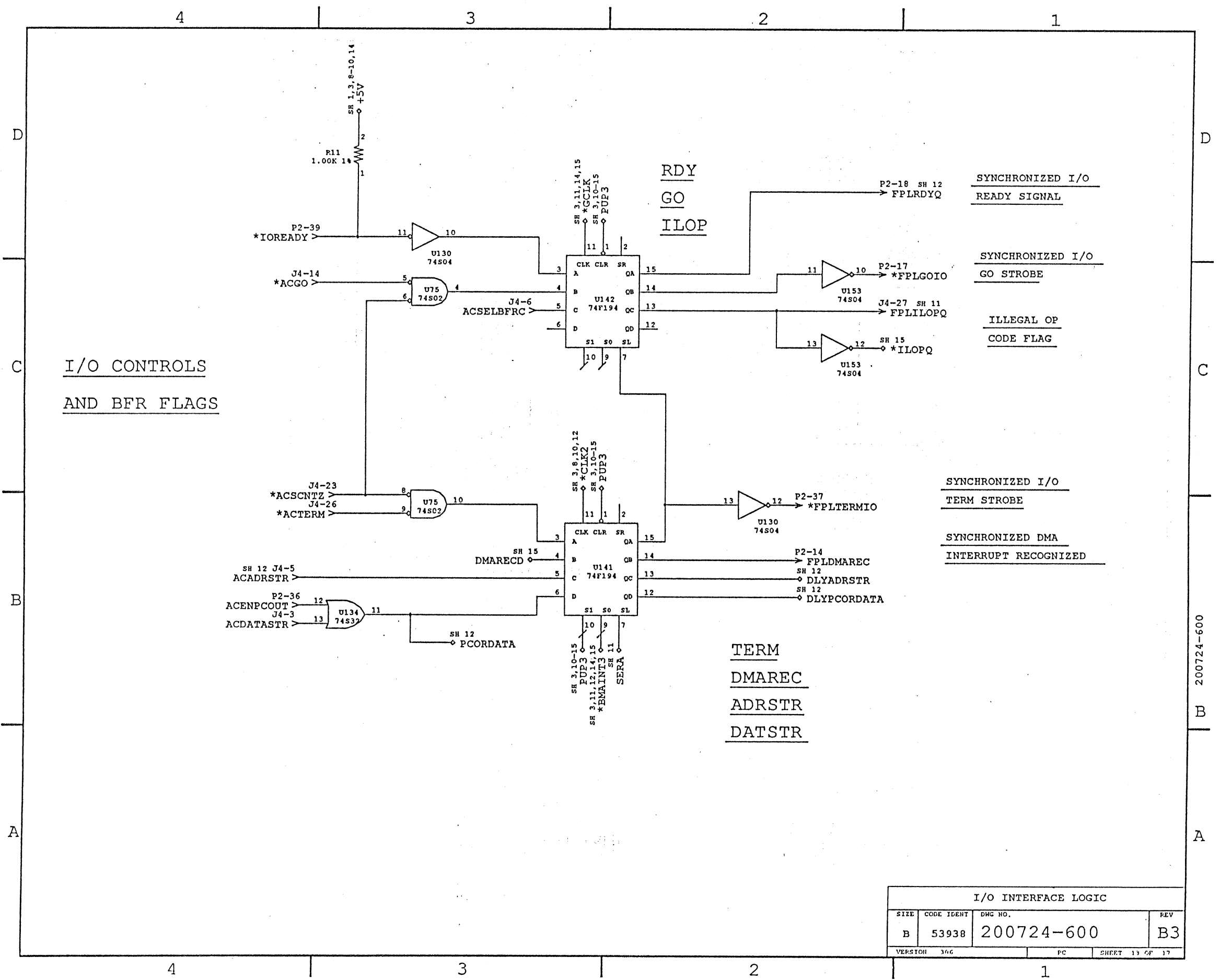


BLNK3
LSBLNK
*DPON

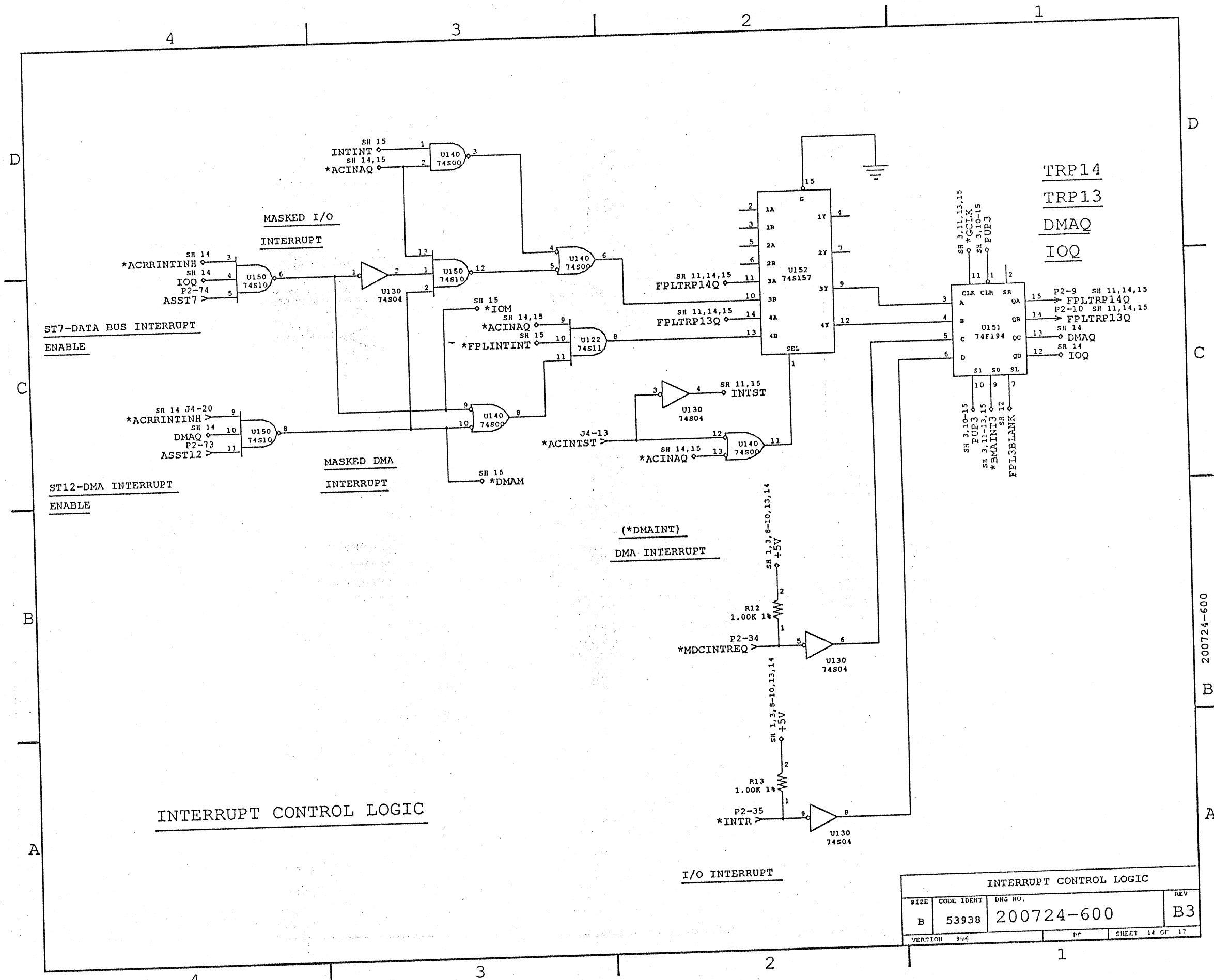
FRONT PANEL DISPLAY
CONTROLS

REGISTER CONTROL			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	306	PC	SHEET 12 OF 17

200724-600
B
A



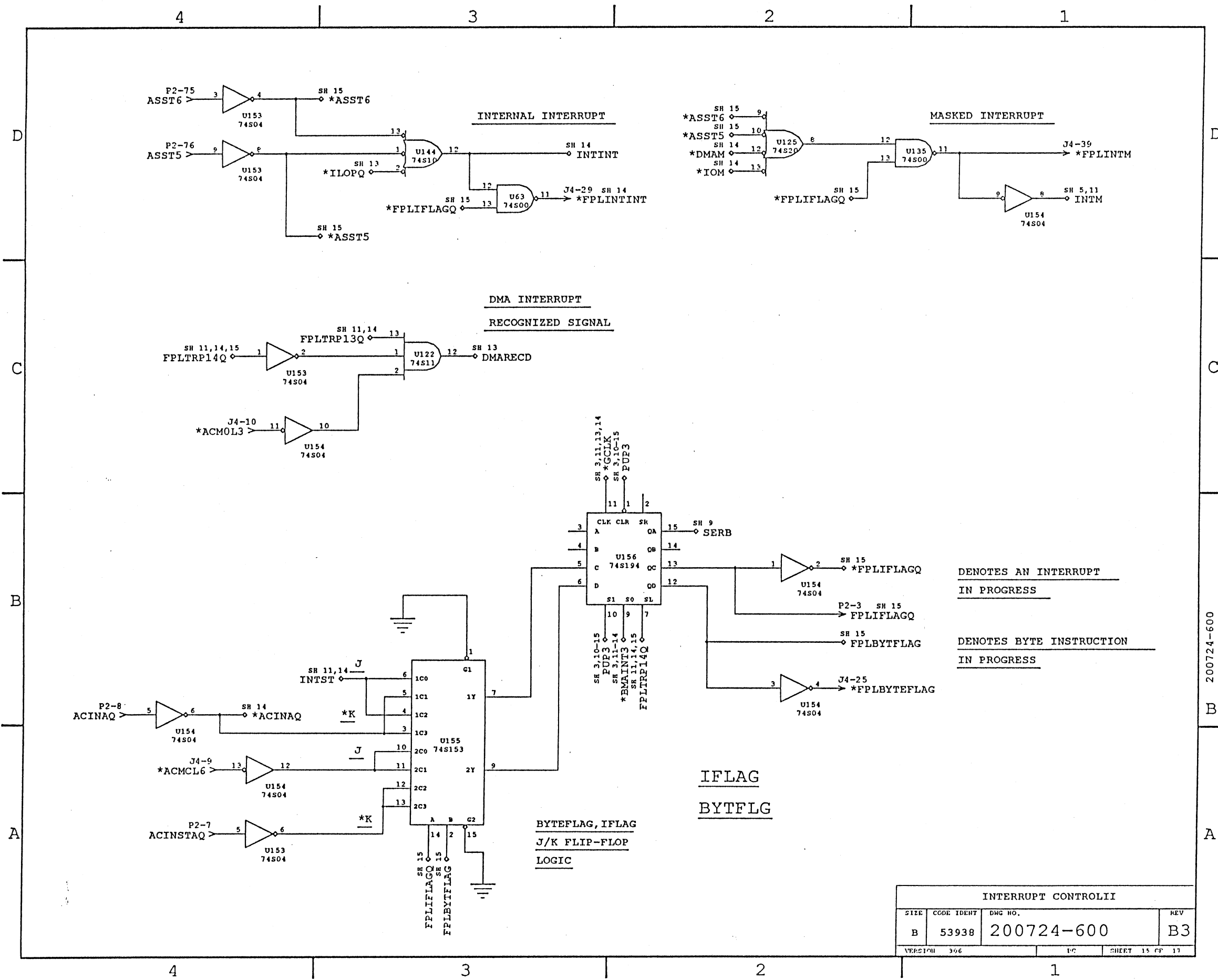
I/O INTERFACE LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	306	PC	SHEET 13 OF 17



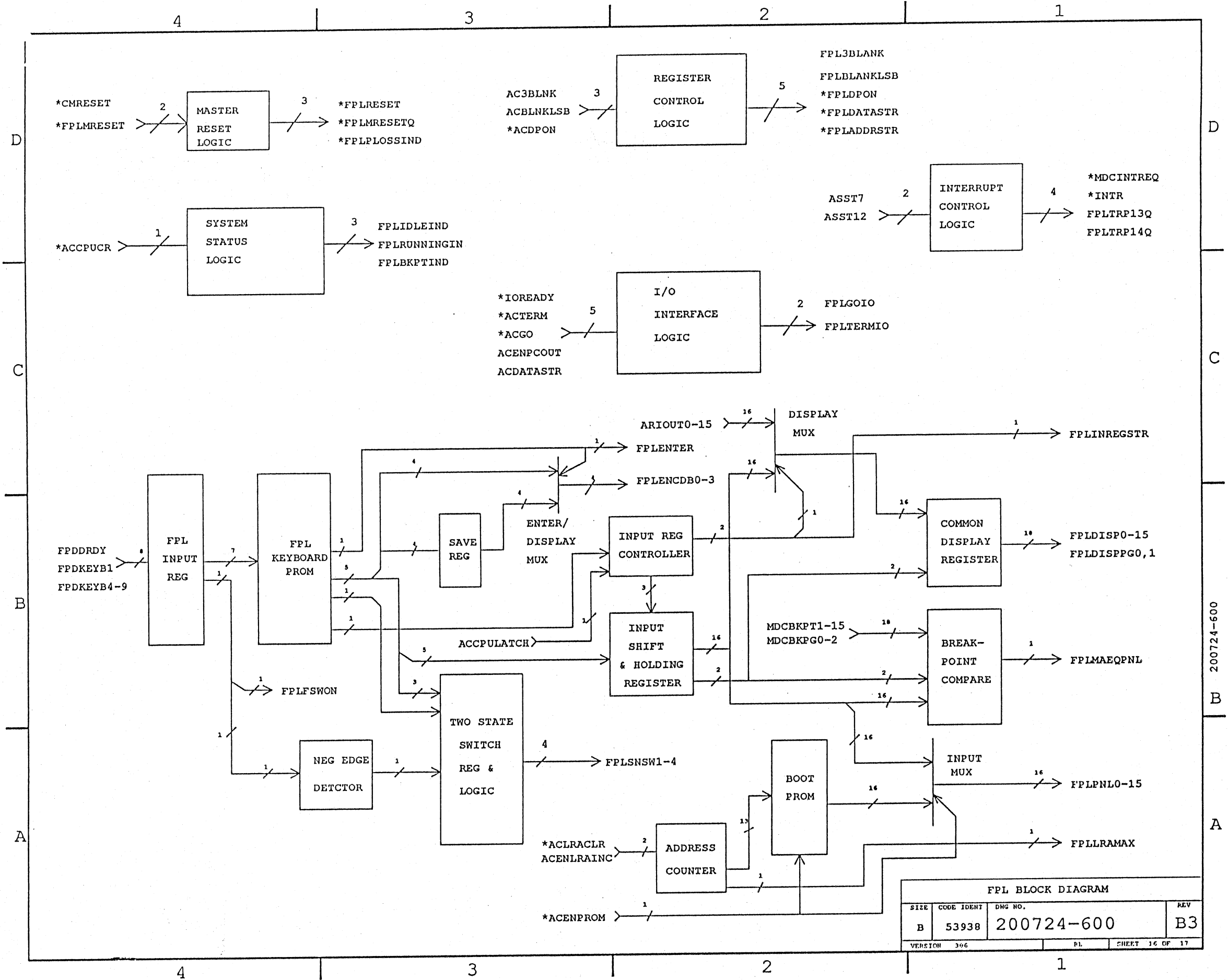
INTERRUPT CONTROL LOGIC

INTERRUPT CONTROL LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION 3/96	PC	SHEET 14 OF 17	

200724-600



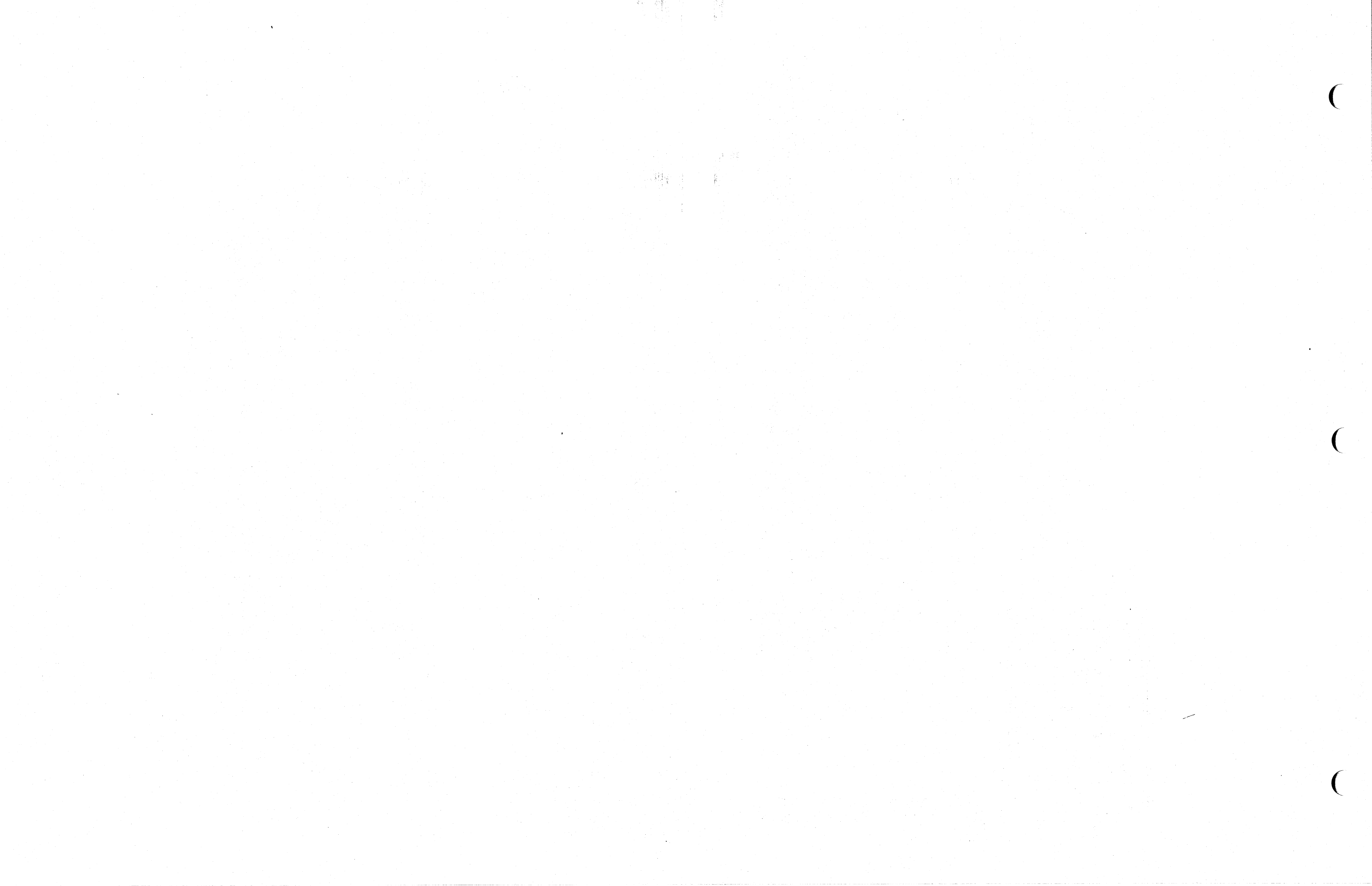
INTERRUPT CONTROL II			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	306	IC	SHEET 15 OF 17



FPL BLOCK DIAGRAM			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200724-600	B3
VERSION	306	PL	SHEET 16 OF 17

200724-600

4					3					2					1				
Unit	Pin	Type	String	Sheet	Unit	Pin	Type	String	Sheet	String	Unit	Pin	Type	Sheet	String	Unit	Pin	Type	Sheet
J4	2	In	ACENDISCTL	12 C3	P1	61	In	GROUND	1 C4	*ACCPUCR	P2	77	In	11 A4	FPLDISP1	P1	42	Out	7 A2
J4	3	In	ACDATASTR	13 B4	P1	62	Out	FPLSNSW4	5 D1	*ACDPON	J4	19	In	12 D3	FPLDISP10	P1	13	Out	7 C2
J4	4	In	ACBLNKLSB	12 D3	P1	63	Out	FPLSNSW3	5 D1	*ACENLRAIN	J4	18	In	9 D4	FPLDISP11	P1	12	Out	7 C2
J4	5	In	ACADRSTR	13 B4	P1	64	Out	FPLSNSW2	5 D1	*ACENPROM	J4	17	In	9 A2	FPLDISP12	P1	10	Out	7 L2
J4	6	In	ACSELBFRC	13 C3	P1	65	Out	FPLSNSW1	5 D1	*ACEXEP	J4	16	In	11 B3	FPLDISP13	P1	9	Out	7 D2
J4	7	In	ACSELBFR	11 B4	P1	66	Out	*FPLSNSW4	5 D1	*ACEXEK	J4	15	In	11 B2	FPLDISP14	P1	8	Out	7 D2
J4	8	In	*ACIDLJ	11 D2	P1	67	Out	*FPLSNSW3	5 D1	*ACGO	J4	14	In	13 C3	FPLDISP15	P1	7	Out	7 D2
J4	9	In	*ACMCL6	15 A4	P1	68	Out	*FPLSNSW2	5 D1	*ACIDLJ	J4	8	In	11 D2	FPLDISP2	P1	40	Out	7 A2
J4	10	In	*ACMOL3	15 C4	P1	69	Out	*FPLSNSW1	5 C1	*ACINTST	J4	13	In	14 C2	FPLDISP3	P1	39	Out	7 A2
J4	12	In	*ACLRACL	9 A4	P1	71	In	GROUND	1 C4	*ACLDBTSL	J4	38	In	10 B3	FPLDISP4	P1	38	Out	7 B2
J4	13	In	*ACINTST	14 C2	P2	1	In	GROUND	1 C4	*ACLRACL	J4	12	In	9 A4	FPLDISP5	P1	37	Out	7 B2
J4	14	In	*ACGO	13 C3	P2	2	In	+5VINB	3 A1	*ACMOL3	J4	10	In	15 C4	FPLDISP6	P1	17	Out	7 B2
J4	15	In	*ACEXEK	11 B2	P2	3	Out	FPLIFLAGQ	15 B2	*ACMCL6	J4	9	In	15 A4	FPLDISP7	P1	16	Out	7 B2
J4	16	In	*ACEXEJ	11 B3	P2	4	In	+5VINB	3 A1	*ACRRTINNH	J4	20	In	14 C4	FPLDISP8	P1	15	Out	7 C2
J4	17	In	*ACENPROM	9 A2	P2	5	In	ARIOUT7	7 B4	*ACRSTSW	J4	15	In	10 D2	FPLDISP9	P1	14	Out	7 C2
J4	18	In	*ACENLRAIN	9 D4	P2	6	In	ARIOUT6	7 B4	*ACSCNTZ	J4	23	In	13 B3	FPLDISPPG0	P1	45	Out	8 D1
J4	19	In	*ACDPON	12 D3	P2	7	In	ACINSTAQ	15 A4	*ACTERM	J4	26	In	13 B3	FPLDISPPG1	P1	44	Out	8 D1
J4	20	In	*ACRRTINNH	14 C4	P2	8	In	ACINAQ	15 B4	*CMRESET	P2	47	In	10 D4	FPLDMAREC	P2	14	Out	13 B2
J4	22	In	AC3BLNK	12 D3	P2	9	Out	FPLTRP14Q	14 C1	*CMSHIFT	P1	5	In	3 C4	FPLENCDB0	J4	37	Out	4 D1
J4	23	In	*ACSCNTZ	13 B3	P2	10	Out	FPLTRP13Q	14 C1	*FPLADDRSTR	P2	30	Out	12 A2	FPLENCDB1	J4	36	Out	4 D1
J4	24	Out	*FPLIN10	6 A1	P2	11	In	GROUND	1 C4	*FPLBYTEFLAG	J4	25	Out	15 B2	FPLENCDB2	J4	35	Out	4 D1
J4	25	Out	*FPLBYTEFLAG	15 B2	P2	12	In	ARIOUT4	7 B4	*FPLDATASTR	P2	28	Out	12 B2	FPLENCDB3	J4	34	Out	4 D1
J4	26	In	*ACTERM	13 B3	P2	13	In	ARIOUT5	7 B4	*FPLDPOIN	P2	26	Out	12 D2	FPLENTER	J4	33	Out	4 C1
J4	27	Out	FPLILOPO	13 C2	P2	14	Out	FPLDMAREC	13 B2	*FPLGOIO	P2	17	Out	13 C2	FPLFSWON	J4	32	Out	4 C1
J4	28	Out	FPLLRAMAX	9 A4	P2	15	In	*ACRSTSW	10 D2	*FPLIN10	J4	24	Out	6 A1	FPLHLTBP	P1	46	Out	5 C1
J4	29	Out	*FPLINTINT	15 D3	P2	16	Out	*FPLINREGSTR	8 A3	*FPLIN10	P1	49	Out	6 A1	FPLIDLEIND	P2	55	Out	11 D1
J4	32	Out	FPLFSWON	4 C1	P2	17	Out	*FPLGOIO	13 C2	*FPLINREGSTR	P2	16	Out	8 A3	FPLIFLAGQ	P2	3	Out	15 B2
J4	33	Out	FPLENTER	4 C1	P2	18	Out	FPLRDYQ	13 D2	*FPLINTNT	J4	29	Out	15 D3	FPLILOPO	J4	27	Out	15 B2
J4	34	Out	FPLENCDB3	4 D1	P2	19	In	ARIOUT3	7 B4	*FPLINTM	J4	39	Out	15 D1	FPLLRAMAX	J4	28	Out	15 B2
J4	35	Out	FPLENCDB2	4 D1	P2	20	In	ARIOUT2	7 A4	*FPLMRESET	P2	49	Out	10 D3	FPLLOSSIND	P2	45	Out	10 A4
J4	36	Out	FPLENCDB1	4 D1	P2	21	In	GROUND	1 C4	*FPLMRESETO	P2	69	Out	10 C1	FPLBL0	P1	36	Out	10 C1
J4	37	Out	FPLENCDB0	4 D1	P2	22	Out	FPL3BLANK	12 D2	*FPLRESETO	P2	53	Out	10 D1	FPLBL10	P1	35	Out	9 A1
J4	38	In	*ACLRACL	10 B3	P2	23	In	ARIOUT1	7 A4	*FPLSNSW1	P1	69	Out	5 C1	FPLBL11	P1	35	Out	9 A1
J4	39	Out	*FPLINTM	15 D1	P2	24	Out	FPLBLNKLSB	12 D2	*FPLSNSW2	P1	68	Out	5 D1	FPLBL11	P1	25	Out	9 C1
P1	1	In	GROUND	1 D4	P2	25	In	ARIOUT0	7 A4	*FPLSNSW3	P1	67	Out	5 D1	FPLBL11	P1	24	Out	9 C1
P1	2	In	+5VINA	3 A1	P2	26	Out	*FPLDPOIN	12 D2	*FPLSNSW4	P1	66	Out	5 D1	FPLBL12	P1	23	Out	9 D1
P1	3	In	*MDCGCLK	3 A4	P2	27	In	ARIOUT12	7 D4	*FPLTERMIO	P2	37	Out	13 B2	FPLBL13	P1	22	Out	9 D1
P1	4	In	+5VINA	3 A1	P2	28	Out	*FPLDATASTR	12 B2	*INTR	P2	35	In	14 A2	FPLBL14	P1	20	Out	9 D1
P1	5	In	*CMSHIFT	3 C4	P2	29	In	ARIOUT13	7 D4	*TOREADY	P2	39	In	13 D3	FPLBL15	P1	19	Out	9 D1
P1	6	In	*MDCSYSCCLK	3 B4	P2	30	Out	*FPLADDRSTR	12 A2	*FPLADDRSTR	P2	39	In	13 D3	FPLBL12	P1	34	Out	9 A1
P1	7	Out	FPLDISP15	7 D2	P2	31	In	GROUND	1 C4	*MDCGCLK	P1	3	In	3 A4	FPLBL13	P1	33	Out	9 B1
P1	8	Out	FPLDISP14	7 D2	P2	32	In	ARIOUT14	7 D4	*MDCINTREQ	P2	34	In	14 B2	FPLBL14	P1	32	Out	9 B1
P1	9	Out	FPLDISP13	7 D2	P2	33	In	ARIOUT15	7 D4	*MDCSYSCCLK	P1	6	In	3 B4	FPLBL15	P1	30	Out	9 B1
P1	10	Out	FPLDISP12	7 D2	P2	34	In	*MDCINTREQ	14 B2	+15VIN	P2	79	In	10 B4	FPLBL16	P1	29	Out	9 B1
P1	11	In	GROUND	1 D4	P2	35	In	*INTR	14 A2	+5VINA	P1	2	In	3 A1	FPLBL17	P1	28	Out	9 B1
P1	12	Out	FPLDISP11	7 C2	P2	36	In	ACENPCOUT	13 B2	+5VINA	P1	4	In	3 A1	FPLBL18	P1	27	Out	9 C1
P1	13	Out	FPLDISP10	7 C2	P2	37	Out	*FPLTERMIO	13 B2	+5VINB	P2	2	In	3 A1	FPLBL19	P1	26	Out	9 C1
P1	14	Out	FPLDISP9	7 C2	P2	38	In	MDCBKPT15	3 D2	+5VINB	P2	4	In	3 A1	FPLRDYQ	P2	18	Out	13 D2
P1	15	Out	FPLDISP8	7 C2	P2	39	In	*TOREADY	13 D3	-15VIN	P2	80	In	10 A4	FPLRUNNINGIN	P1	18	Out	11 D1
P1	16	Out	FPLDISP7	7 B2	P2	40	In	MDCBKPT14	3 D2	AC3BLNK	J4	22	In	12 D3	FPLRUNSW	P1	47	Out	5 D1
P1	17	Out	FPLDISP6	7 B2	P2	41	In	GROUND	1 C4	ACADRSTR	J4	5	In	13 B4	FPLSNSW1	P1	65	Out	5 D1
P1	18	Out	FPLRUNNINGIN	11 D1	P2	42	In	MDCBKPT13	3 D2	ACBLNKLSB	J4	4	In	12 D3	FPLSNSW2	P1	64	Out	5 D1
P1	19	Out	FPLPNL15	9 D1	P2	43	In	SERIN	10 C2	ACDATASTR	J4	3	In	13 B4	FPLSNSW3	P1	63	Out	5 D1
P1	20	Out	FPLPNL14	9 D1	P2	44	In	MDCBKPT12	3 D2	ACENDISCTL	J4	2	In	12 C3	FPLSNSW4	P1	62	Out	5 D1
P1	21	In	GROUND	1 D4	P2	45	Out	FPLLOSSIND	10 C1	ACENPCOUT	P2	36	In	13 B4	FPLTRP13Q	P2	10	Out	14 C1
P1	22	Out	FPLPNL13	9 D1	P2	46	In	MDCBKPT11	3 C2	ACINAQ	P2	8	In	15 B4	FPLTRP14Q	P2	9	Out	14 C1
P1	23	Out	FPLPNL12	9 D1	P2	47	In	*CMRESET	10 D4	ACINSTAQ	P2	7	In	15 A4	GROUND	P1	1	In	1 D4
P1	24	Out	FPLPNL11	9 C1	P2	48	In	MDCBKPT10	3 C2	ACSELBFR	J4	7	In	11 B4	GROUND	P1	11	In	1 D4
P1	25	Out	FPLPNL10	9 C1	P2	49	Out	*FPLMRESETO	10 D3	ACSELBFR	J4	6	In	13 C3	GROUND	P1	21	In	1 D4
P1	26	Out	FPLPNL9	9 C1	P2	50	In	MDCBKPT09	3 C2	ARIOUT0	P2	25	In	7 A4	GROUND	P1	31	In	1 D4
P1	27	Out	FPLPNL8	9 C1	P2	51	In	GROUND	1 C4	ARIOUT1	P2	23	In	7 A4	GROUND	P1	41	In	1 C4
P1	28	Out	FPLPNL7	9 B1	P2	52	In	MDCBKPT08	3 B2	ARIOUT10	P2	59	In	7 C4	GROUND	P1	51	In	1 C4
P1	29	Out	FPLPNL6	9 B1	P2	53	Out	*FPLRESETO	10 D1	ARIOUT11	P2	63	In	7 C4	GROUND	P1	61	In	1 C4
P1	30	Out	FPLPNL5	9 B1	P2	54	In	MDCBKPT07	3 B2	ARIOUT12	P2	27	In	7 D4	GROUND	P1	71	In	1 C4
P1	31	In	GROUND	1 D4	P2	55	Out	FPLIDLEIND	11 D1	ARIOUT13	P2	29	In	7 D4	GROUND	P2	1	In	1 C4
P1	32	Out	FPLPNL4	9 B1	P2	56	In	MDCBKPT06	3 B2	ARIOUT14	P2	32	In	7 D4	GROUND	P2	11	In	1 C4
P1	33	Out	FPLPNL3	9 B1	P2	57	In	ARIOUT9	7 C4	ARIOUT15	P2	33	In	7 D4	GROUND	P2	21	In	1 C4
P1	34	Out	FPLPNL2	9 A1	P2	58	In	MDCBKPT05	3 B2	ARIOUT2	P2	20	In	7 A4	GROUND	P2	31	In	1 C4
P1	35	Out	FPLPNL1	9 A1	P2	59	In	ARIOUT10	7 C4	ARIOUT3	P2	19	In	7 B4	GROUND	P2	41	In	1 C4
P1	36	Out	FPLPNL0	9 A1	P2	60	In	MDCBKPT04	3 B2	ARIOUT4	P2	12	In	7 B4	GROUND	P2	51	In	1 C4
P1	37	Out	FPLDISP5	7 B2	P2	61	In	GROUND	1 C4	ARIOUT5	P2	13	In	7 B4	GROUND	P2	61	In	1 C4
P1	38	Out	FPLDISP4	7 B2	P2	62	In	MDCBKPT03	3 A2	ARIOUT6	P2	6	In	7 B4	GROUND	P2	71	In	1 B4
P1	39	Out	FPLDISP3	7 A2	P2	63	In	ARIOUT11	7 C4	ARIOUT7	P2	5	In	7 B4	MDCBKPG00	P2	72	In	3 A2
P1	40	Out	FPLDISP2	7 A2	P2	64	In	MDCBKPT02	3 A2	ARIOUT8	P2	65	In	7 C4	MDCBKPG01	P2	70	In	3 A2
P1	41	In	GROUND	1 C4	P2	65	In	ARIOUT8	7 C4	ARIOUT9	P2	57	In	7 C4	MDCBKPG02	P2	68	In	3 A2
P1	42	Out	FPLDISP1	7 A2	P2	66	In	MDCBKPT01	3 A2	ASST12	P2	73	In	14 C4	MDCBKPT01	P2	66	In	3 A2
P1	43	Out	FPLDISP0	7 A2	P2	67	Out	FPLBKPTIND	11 C1	ASST5	P2	76	In	15 D4	MDCBKPT02	P2	64	In	3 A2
P1	44	Out	FPLDISPPG1	8 D1	P2	68	In	MDCBKPG02	3 A2	ASST6	P2	75	In	15 D4	MDCBKPT03	P2	62	In	3 A2
P1	45	Out	FPLDISPPG0	8 D1	P2	69	Out	*FPLMRESETO	10 C1	ASST7	P2	74	In	14 C4	MDCBKPT04	P2	60	In	3 B2
P1	46	Out	FPLHLTBP	5 C1	P2	70	In	MDCBKPG01	3 A2	FPDDRBY	P1	52	In	4 D4	MDCBKPT05	P2	58	In	3 B2
P1	47	Out	FPLRUNSW	5 C1	P2	71	In	GROUND	1 B4	FPDKEYB1	P1	59	In	4 D4	MDCBKPT06	P2	56	In	3 B2
P1	48	Out	FPLATEN	4 D3	P2	72	In	MDCBKPG00	3 A2	FPDKEYB4	P1	58	In	4 D4	MDCBKPT07	P2	54	In	3 B2
P1	49	Out	*FPLIN10	6 A1	P2	73	In	ASST12	14 C4	FPDKEYB5	P1	57	In	4 D4	MDCBKPT08	P2	52	In	3 B2



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200724-200

REV: A1 = AB

DESC: INSTALLATION INSTRUCTIONS, FRONT PANEL LOGIC

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
001	*SCD*LBL, BAR-CODE, PRE	53938	EVANS & SUTHERLAND	*SCD*802178-008	802178-008	1
004	CD, FPL-FRONT PNL LOGI	53938	EVANS & SUTHERLAND.	200724-100	200724-100	1

2 ITEMS LISTED



REV	REV. DESCRIPTION	DATE	APPROVED
AO	RELEASE		MBYLUND
A1	ADD FPL ASSEMBLY		P.Boyce

LEGEND
 CLOSED = ON , OPEN = OFF

SET SWITCH AT LOCATION U16 :				
CLOSED				
POSITION	1	2	3	4
OPEN	X	X	X	X

DISK/TAPE CONFIGURATION

SET SWITCH AT LOCATION U16 :				
CLOSED	X	X	X	X
POSITION	1	2	3	4
OPEN				

FLOPPY DISK CONFIGURATION

DRAWN M. BYLUND 06-19-86		EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
CHECKED <i>M. Bylund 11/26/86</i> MECH/ELEC		TITLE INSTALLATION INSTRUCTIONS, FRONT PANEL LOGIC		
PROJ. ENG. M. BYLUND	SIZE A	CODE ID 53938	DRAWING NUMBER 200724-200	REVISION A1 SHEET 1 OF 1



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200725-100

REV: B0 = BA

DESC: CARD ASSY,AC-ARITHMETIC CONTROL,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,P02R PCBD11X13	53938	EVANS & SUTHERLAND.	200725-500	200725-500	1
C2 C3 C4 C5	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C6 C7 C8 C9 C10 C11 C13 C15	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C16 C17 C18 C19 C20 C22 C23	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804169-333	96
C26 C31 C32 C37 C38 C41 C46						
C47 C50 C52 C65 C75 C80 C83						
C95 C96 C98 C106 C109 C110						
C111 C112 C113 C114 C115						
C116 C117 C118 C119 C120						
C121 C122 C123 C124 C125						
C126 C127 C128 C129 C130						
C131 C132 C133 C134 C135						
C136 C137 C138 C139 C140						
C141 C142 C143 C144 C145						
C146 C147 C148 C149 C150						
C151 C152 C153 C154 C155						
C156 C157 C158 C159 C160						
C161 C162 C163 C164 C165						
C166 C167 C168 C169 C170						
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
J4	CN,HOUS 50P,RTA	22526	DU PONT E I NEMOURS (CONN)	65268-011 (2X25)	801290-050	1
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
R1 R2 R3 R4	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	4
R5	R,,AXL 5.11K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-5.11K-1%-50PPM	803453-511	1
U107	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A30	807859-016-A30	1
U10	IC,PROM,1024X8,35NS,T	53938	EVANS & SUTHERLAND.	807204-035-A17	807204-035-A17	1
U106	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A29	807859-016-A29	1
U11	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A18	807204-035-A18	1
U110 U111	IC,TTL 74LS244	01295	TEXAS INSTR, SEMICON DIV.	SN74LS244N	807244-016	2
U112 U127 U133 U137	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	4
U114 U115	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	2
U113 U125	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	2
U120 U121	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	2
U12	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A19	807204-035-A19	1
U122 U126	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	2
U123	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	1
U130 U141 U152	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	3
U134	IC,PROM,BIP,32X8,TS,4	53938	EVANS & SUTHERLAND.	807739-045-A60	807739-045-A60	1
U13	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A20	807204-035-A20	1
U145	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	1
U14	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A21	807204-035-A21	1
U146 U147 U153 U155 U156	IC,TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	5
U150	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A24	807204-035-A24	1
U20 U21 U22	IC,TTL 74F194	07263	FAIRCHILD IC'S & SEMICOND	74F194PC/DC	807994-035	3
U23	IC,PAL,20L8A,OCTL,20I	53938	EVANS & SUTHERLAND.	807859-016-A12	807859-016-A12	1

TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

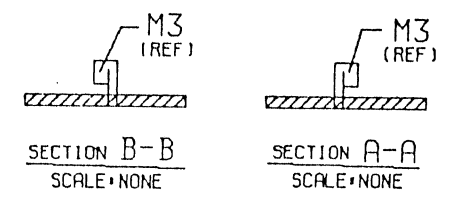
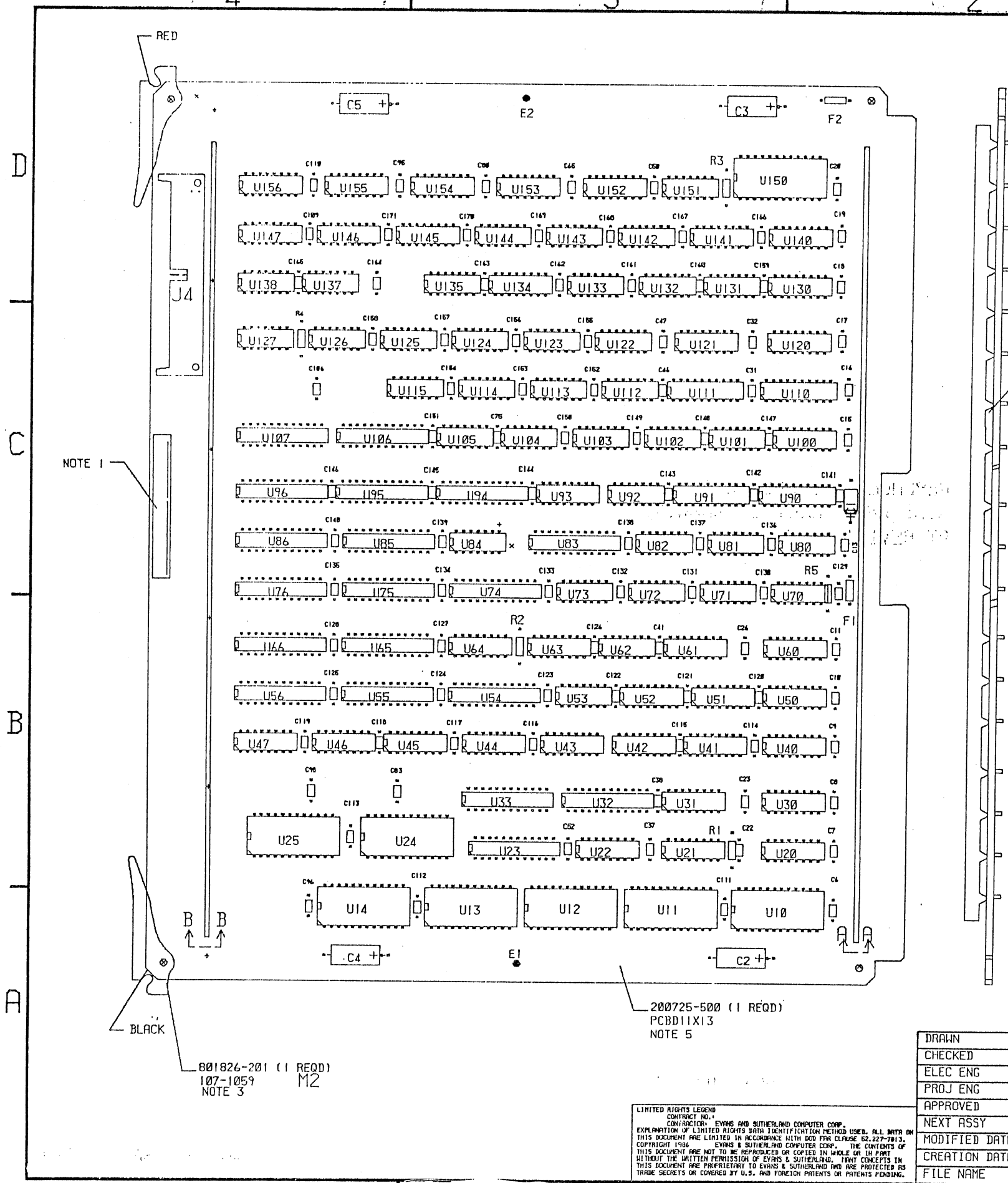
RPT ID=242 PAGE 2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200725-100	REV: B0 = BA	DESC: CARD ASSY,AC-ARITHMETIC CONTROL,SPC9800 (PC)					QTY/
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	ASSY	
U24	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A22	807204-035-A22	1	
U25	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A23	807204-035-A23	1	
U30 U31 U40 U41 U42 U50 U51	IC,TTL 74S151	01295	TEXAS INSTR, SEMICON DIV.	SN74S151N	807651-055	10	
U52 U60 U61							
U32	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A13	807859-016-A13	1	
U33	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A14	807859-016-A14	1	
U43 U44 U45	IC,TTL 74S283	27014	NATIONAL SEMICONDUCTOR	DM74S283N/J	807715-055	3	
U46 U47 U140 U154	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	4	
U53 U70 U73 U92 U103 U138	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	8	
U142 U144							
U54	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A15	807859-016-A15	1	
U55	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A16	807859-016-A16	1	
U56	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A17	807859-016-A17	1	
U62 U71 U72 U131 U143	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	5	
U63	IC,TTL 74F148	07263	FAIRCHILD IC'S & SEMICOND	74F148PC/DC	807048-035	1	
U64 U93 U100	IC,TTL 74S133	01295	TEXAS INSTR, SEMICON DIV.	SN74S133N	807613-055	3	
U65	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A18	807859-016-A18	1	
U66	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A19	807859-016-A19	1	
U74	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A20	807859-016-A20	1	
U75	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A21	807859-016-A21	1	
U76	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A22	807859-016-A22	1	
U80 U101 U102 U105 U124 U135	IC,TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	7	
U151							
U81 U82	IC,TTL S64	01295	TEXAS INSTR, SEMICON DIV.	SN74S64N	807464-055	2	
U83	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A23	807859-016-A23	1	
U84 U104 U132	IC,TTL 74S30	07263	FAIRCHILD IC'S & SEMICOND	74S30PC/DC	807430-055	3	
U85	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A24	807859-016-A24	1	
U86	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A25	807859-016-A25	1	
U90 U91	IC,TTL 74LS240	01295	TEXAS INSTR, SEMICON DIV.	SN74LS240N/J	807792-016	2	
U94	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A26	807859-016-A26	1	
U95	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A27	807859-016-A27	1	
U96	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A28	807859-016-A28	1	

61 ITEMS LISTED

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B8	CREATED PC VERSION	KMDT 01-28-87	



500700-001 (2 REQD)
11.40 STFN R M3
NOTE 4

NOTES:

1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
2. MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
3. INSTALL CARD EJECTORS (M2) AFTER WAVE SOLDERING
4. INSTALL CARD STIFFENERS (M3) AS SHOWN BEFORE WAVE SOLDERING.
5. PAGE 2 SHOWS THE WIRE WRAP ASSEMBLY DRAWING AT REVISION A0. TO BUILD WIRE WRAP ASSEMBLIES AT THE LATEST REVISION LEVEL, THE REWORK INSTRUCTIONS OF ALL ECOS AFTER REVISION A0 WILL NEED TO BE PERFORMED.

REFERENCE DOCUMENTS
SCHEMATIC - 200725-600
PARTS LIST - PL200725-100

NOTE 1

001826-201 (1 REQD)
107-1059 M2
NOTE 3

200725-500 (1 REQD)
PCBD11X13
NOTE 5

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DRAWN	KTRUSCOTT	EVANS & SUTHERLAND	
CHECKED		SALT LAKE CITY, UTAH 84100	
ELEC ENG	EDROWN	TITLE	
PROJ ENG	BALLEN	ASSY. AC-ARITHMETIC CONTROL	
APPROVED		SPC9800 (PC/WW)	
NEXT ASSY		SIZE	CODE IDENT
		B	53938
		BAG NO.	200725-100
MODIFIED DATE	13-MAR-87	REV	B8
CREATION DATE	14-AUG-86	VERSION	215
FILE NAME	200725100B8.MDF	SHEET 1 OF 2	

200725-100

4

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C

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B

B
200725-100

A

A

REPLACE THIS PAGE WITH THE
WIRE WRAP ASSEMBLY DRAWING
AT REVISION A0.

VERSION	216	DWG NO.	200725-100	REV	B0
				SHEET	2 OF 2

4

3

2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200725-100

REV: A0 = AA

DESC: CARD ASSY,AC-ARITHMETIC CONTROL,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,WW STD SPC9800	53938	EVANS & SUTHERLAND.	200721-500	200721-500	1
C2 C3 C4 C5	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C6 C7 C8 C9 C10 C11 C13 C15	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C16 C17 C18 C19 C20 C22 C23	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	96
C26 C31 C32 C37 C38 C41 C46						
C47 C50 C52 C65 C75 C80 C83						
C95 C96 C98 C106 C109 C110						
C111 C112 C113 C114 C115						
C116 C117 C118 C119 C120						
C121 C122 C123 C124 C125						
C126 C127 C128 C129 C130						
C131 C132 C133 C134 C135						
C136 C137 C138 C139 C140						
C141 C142 C143 C144 C145						
C146 C147 C148 C149 C150						
C151 C152 C153 C154 C155						
C156 C157 C158 C159 C160						
C161 C162 C163 C164 C165						
C166 C167 C168 C169 C170						
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
J4	CN,HOUS 50P,RTA	22526	DU PONT E I NEMOURS(CONN)	65268-011 (2X25)	801290-050	1
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
M6 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	2612
M7 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
R1 R2 R3 R4	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	4
R5	R,,AXL 5.11K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-5.11K-1%-50PPM	803453-511	1
U107	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A30	807859-016-A30	1
U10	IC,PROM,1024X8,35NS,T	53938	EVANS & SUTHERLAND.	807204-035-A17	807204-035-A17	1
U106	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A29	807859-016-A29	1
U11	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A18	807204-035-A18	1
U110 U111	IC,TTL 74LS244	01295	TEXAS INSTR, SEMICON DIV.	SN74LS244N	807244-016	2
U112 U127 U133 U137	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	4
U114 U115	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	2
U113 U125	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	2
U120 U121	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	2
U12	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A19	807204-035-A19	1
U122 U126	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	2
U123	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	1
U130 U141 U152	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	3
U134	IC,PROM,BIP,32X8,TS,4	53938	EVANS & SUTHERLAND.	807739-045-A60	807739-045-A60	1
U13	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A20	807204-035-A20	1
U145	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	1
U14	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A21	807204-035-A21	1
U146 U147 U153 U155 U156	IC,TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	5
U150	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A24	807204-035-A24	1

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RUN DATE=06/20/90

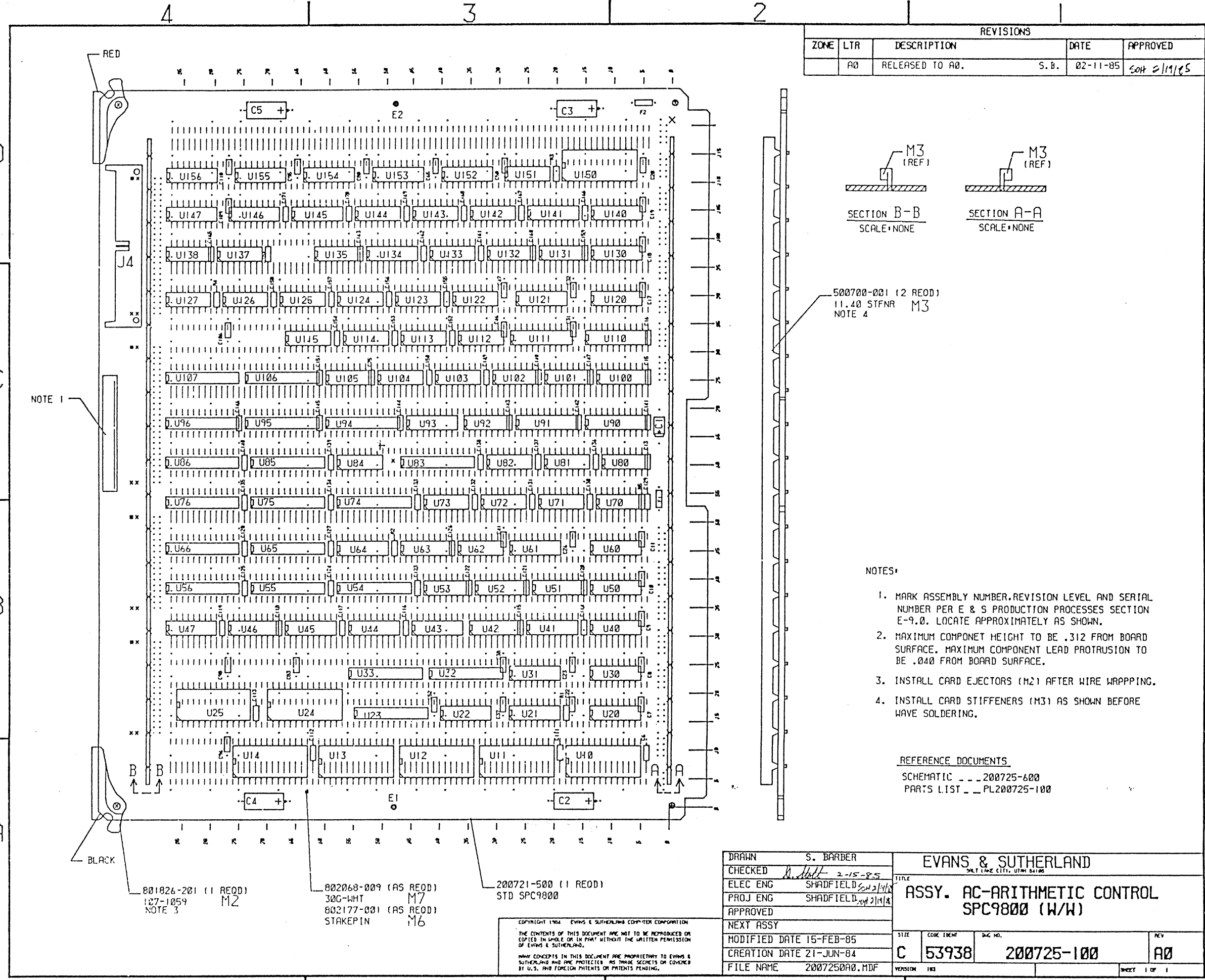
EVANS + SUTHERLAND

RPT ID=242 PAGE 2

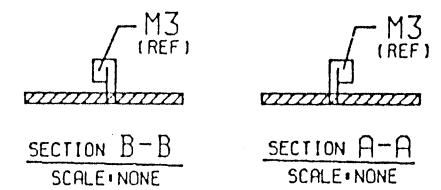
MAINTENANCE PARTS LIST

ASSEMBLY: PL 200725-100	REV: A0 = AA	DESC: CARD ASSY, AC-ARITHMETIC CONTROL, SPC9800 (PC)					QTY/
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	ASSY	
U20 U21 U22	IC, TTL 74F194	07263	FAIRCHILD IC'S & SEMICON	74F194PC/DC	807994-035	3	
U23	IC, PAL, 20L8A, OCTL, 20I	53938	EVANS & SUTHERLAND.	807859-016-A12	807859-016-A12	1	
U24	IC, PROM, 1024X8, 35NS,	53938	EVANS & SUTHERLAND.	807204-035-A22	807204-035-A22	1	
U25	IC, PROM, 1024X8, 35NS,	53938	EVANS & SUTHERLAND.	807204-035-A23	807204-035-A23	1	
U30 U31 U40 U41 U42 U50 U51	IC, TTL 74S151	01295	TEXAS INSTR, SEMICON DIV.	SN74S151N	807651-055	10	
U52 U60 U61							
U32	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A13	807859-016-A13	1	
U33	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A14	807859-016-A14	1	
U43 U44 U45	IC, TTL 74S283	27014	NATIONAL SEMICONDUCTOR	DM74S283N/J	807715-055	3	
U46 U47 U140 U154	IC, TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	4	
U53 U70 U73 U92 U103 U138	IC, TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	8	
U142 U144							
U54	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A15	807859-016-A15	1	
U55	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A16	807859-016-A16	1	
U56	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A17	807859-016-A17	1	
U62 U71 U72 U131 U143	IC, TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	5	
U63	IC, TTL 74F148	07263	FAIRCHILD IC'S & SEMICON	74F148PC/DC	807048-035	1	
U64 U93 U100	IC, TTL 74S133	01295	TEXAS INSTR, SEMICON DIV.	SN74S133N	807613-055	3	
U65	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A18	807859-016-A18	1	
U66	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A19	807859-016-A19	1	
U74	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A20	807859-016-A20	1	
U75	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A21	807859-016-A21	1	
U76	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A22	807859-016-A22	1	
U80 U101 U102 U105 U124 U135	IC, TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	7	
U151							
U81 U82	IC, TTL S64	01295	TEXAS INSTR, SEMICON DIV.	SN74S64N	807464-055	2	
U83	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A23	807859-016-A23	1	
U84 U104 U132	IC, TTL 74S30	07263	FAIRCHILD IC'S & SEMICON	74S30PC/DC	807430-055	3	
U85	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A24	807859-016-A24	1	
U86	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A25	807859-016-A25	1	
U90 U91	IC, TTL 74LS240	01295	TEXAS INSTR, SEMICON DIV.	SN74LS240N/J	807792-016	2	
U94	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A26	807859-016-A26	1	
U95	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A27	807859-016-A27	1	
U96	IC, PAL, 20L8A, OCTL, 20	53938	EVANS & SUTHERLAND.	807859-016-A28	807859-016-A28	1	

63 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0.	S. B. 02-11-85	SOH 2/11/85



500700-001 (2 REOD)
11.40 STFNR M3
NOTE 4

NOTES:

1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
2. MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
3. INSTALL CARD EJECTORS (M2) AFTER WIRE WRAPPING.
4. INSTALL CARD STIFFENERS (M3) AS SHOWN BEFORE WAVE SOLDERING.

REFERENCE DOCUMENTS

SCHEMATIC _ _ _ 200725-600
PARTS LIST _ _ PL200725-100

NOTE 1

BLACK

801826-201 (1 REOD)
127-1059 M2
NOTE 3

802068-009 (AS REOD)
30G-WHT M7
802177-001 (AS REOD)
STAKEPIN M6

200721-500 (1 REOD)
STD SPC9800

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DRAWN S. BARBER		EVANS & SUTHERLAND	
CHECKED <i>[Signature]</i> 2-15-85		TITLE	
ELEC ENG SHADFIELD <i>[Signature]</i>		ASSY. AC-ARITHMETIC CONTROL	
PROJ ENG SHADFIELD <i>[Signature]</i>		SPC9800 (W/W)	
APPROVED		SIZE	REV
NEXT ASSY		C	A0
MODIFIED DATE 15-FEB-85		CORE IDENT	DWG NO.
CREATION DATE 21-JUN-84		53938	200725-100
FILE NAME 2007250A0.MDF		VERSION 103	SHEET 1 OF 1

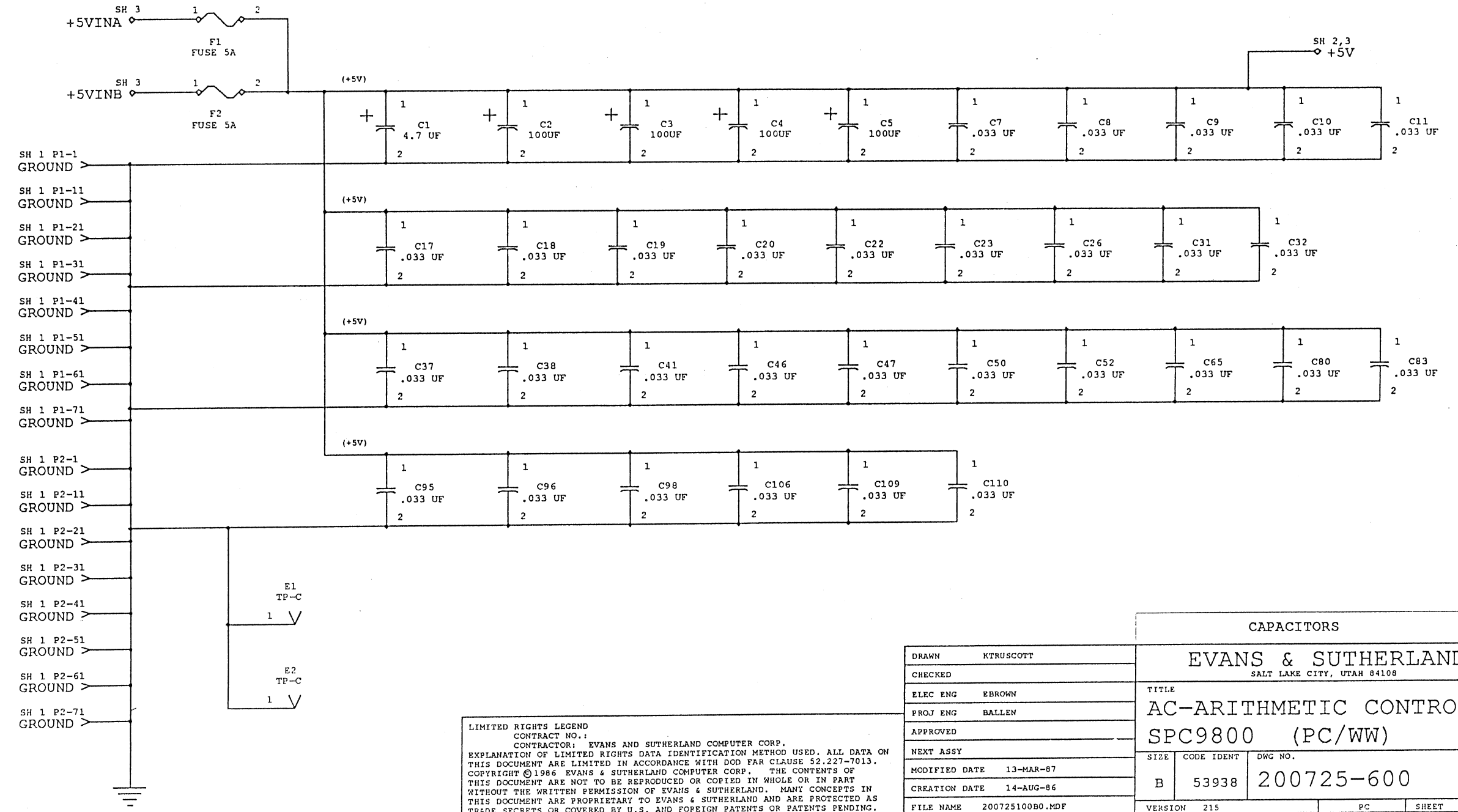
200725-100



REVISIONS				
LINE	LTR	DESCRIPTION	DATE	APPROVED
BC		CREATED PC VERSION	MSDT 01-20-87	

NOTES:

- ESSENTIAL ELEMENTS ARE IN BOLD TYPE - IN LINE LETTERING.
- IN ALL INSTANCES GROUND AND FUSE VALUES ARE AS FOLLOWS:
 14 PIN IC: 7 AND 14
 16 PIN IC: 8 AND 16
 18 PIN IC: 9 AND 18
 20 PIN IC: 13 AND 20
 22 PIN IC: 11 AND 22
 24 PIN IC: 12 AND 24
 28 PIN IC: 14 AND 28
- CARD CONNECTOR SYMBOL "P1-" DESIGNATES:
 INPUT SIGNALS \dashrightarrow
 OUTPUT SIGNALS \dashleftarrow
- THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.
 $\sim \sim \sim \sim \sim$



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DRAWN	KTRUSCOTT
CHECKED	
ELEC ENG	EBROWN
PROJ ENG	BALLEN
APPROVED	
NEXT ASSY	
MODIFIED DATE	13-MAR-87
CREATION DATE	14-AUG-86
FILE NAME	200725100B0.MDF

CAPACITORS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE AC-ARITHMETIC CONTROL SPC9800 (PC/WW)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 1 OF 24

4

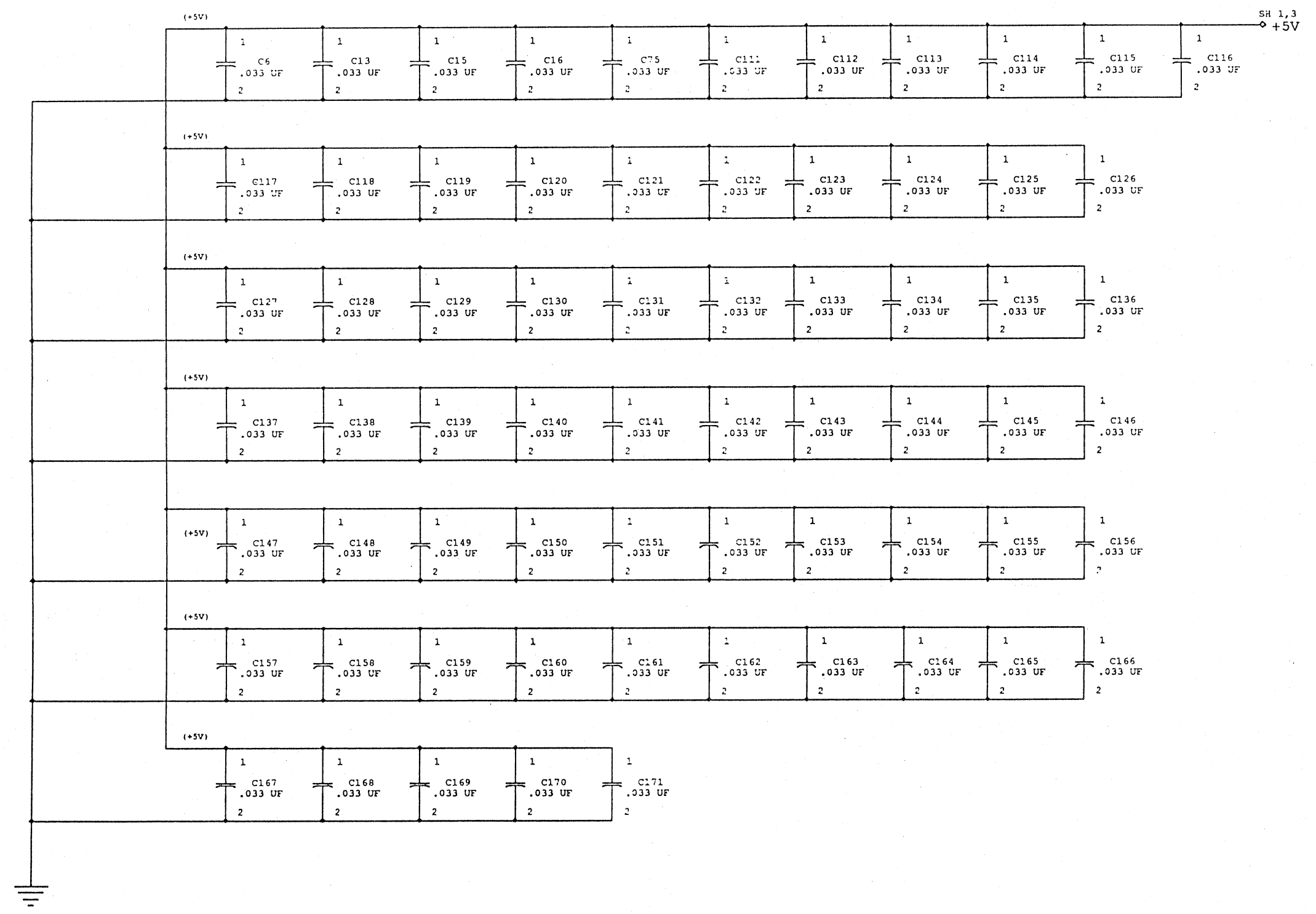
3

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B
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CAPACITORS

SIDE	CODE IDENT	DWG NO.	REV.
B	53938	200725-600	B0
VERSION	115	FC	CHIEF - 1F 24

200725-600
B

4

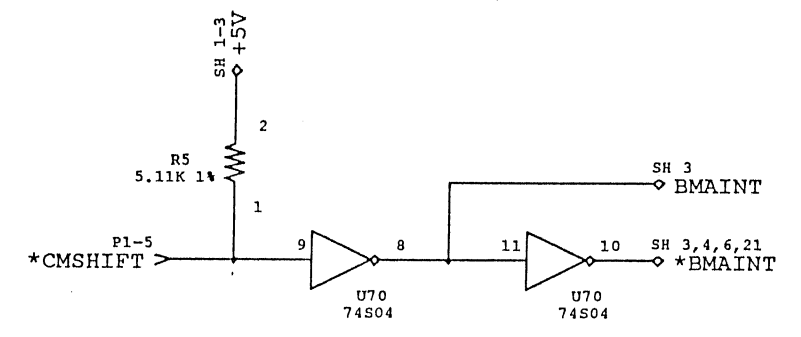
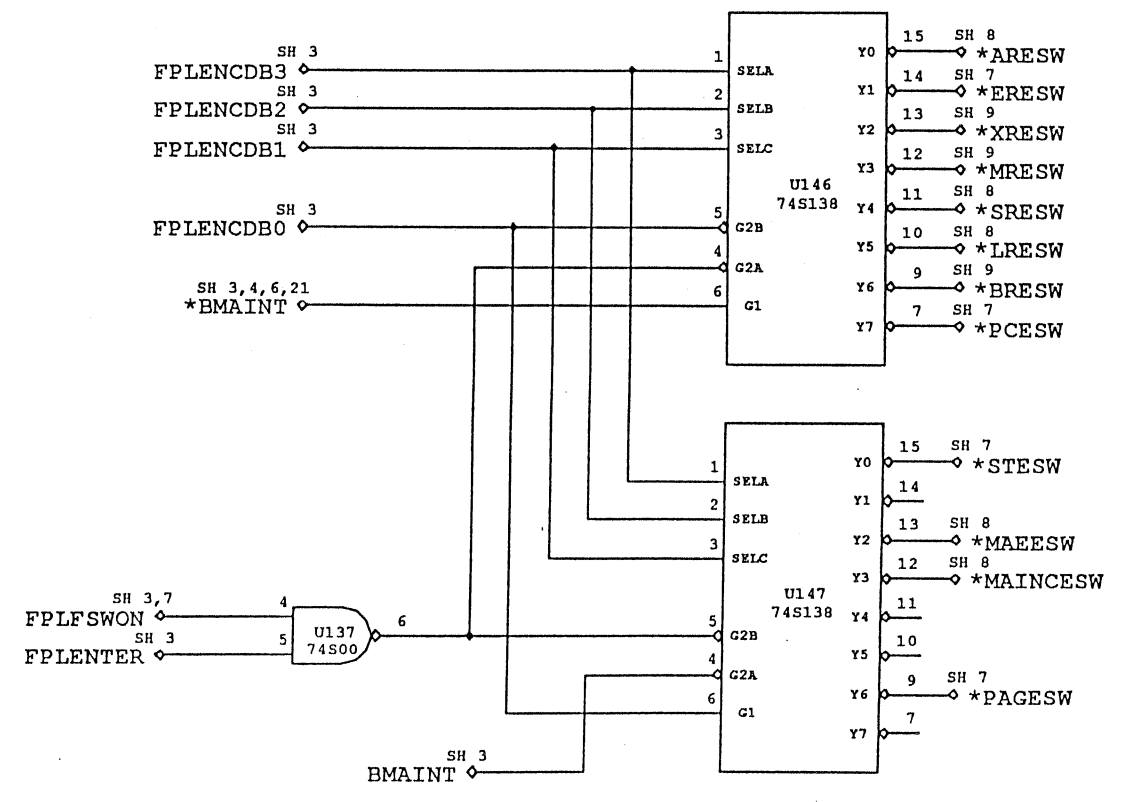
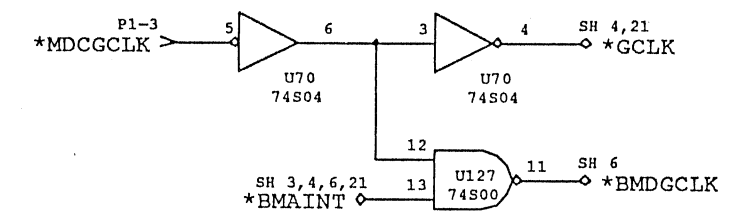
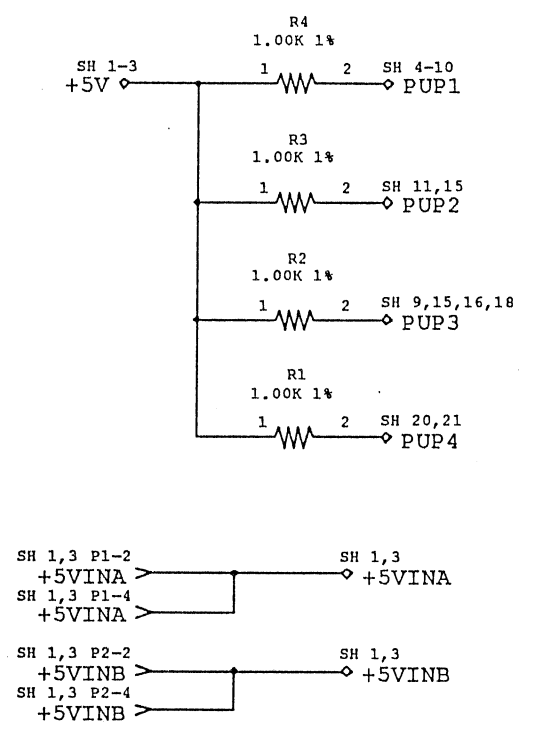
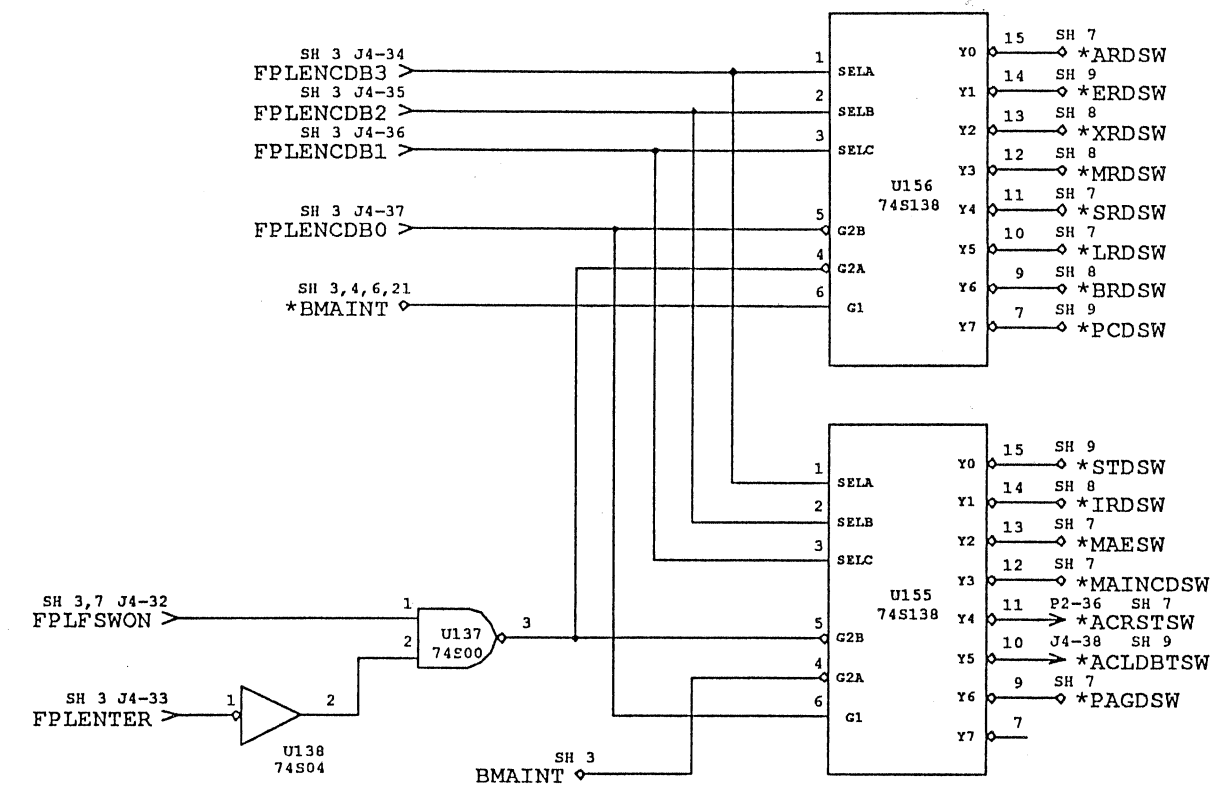
3

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D
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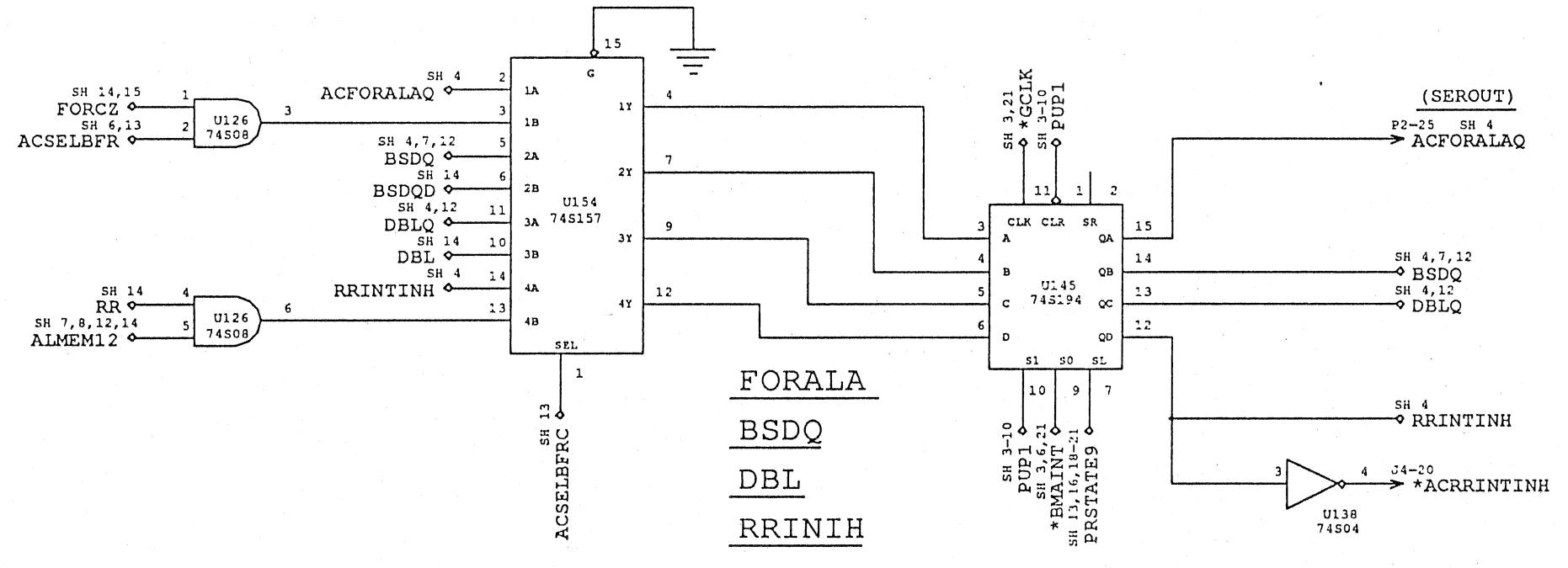
D
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B
A



FRONT PANEL SWITCH DECODING LOGIC

FRONT PANEL SWITCH DECODING			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 3 OF 24

200725-600



D FLIP-FLOP LOGIC

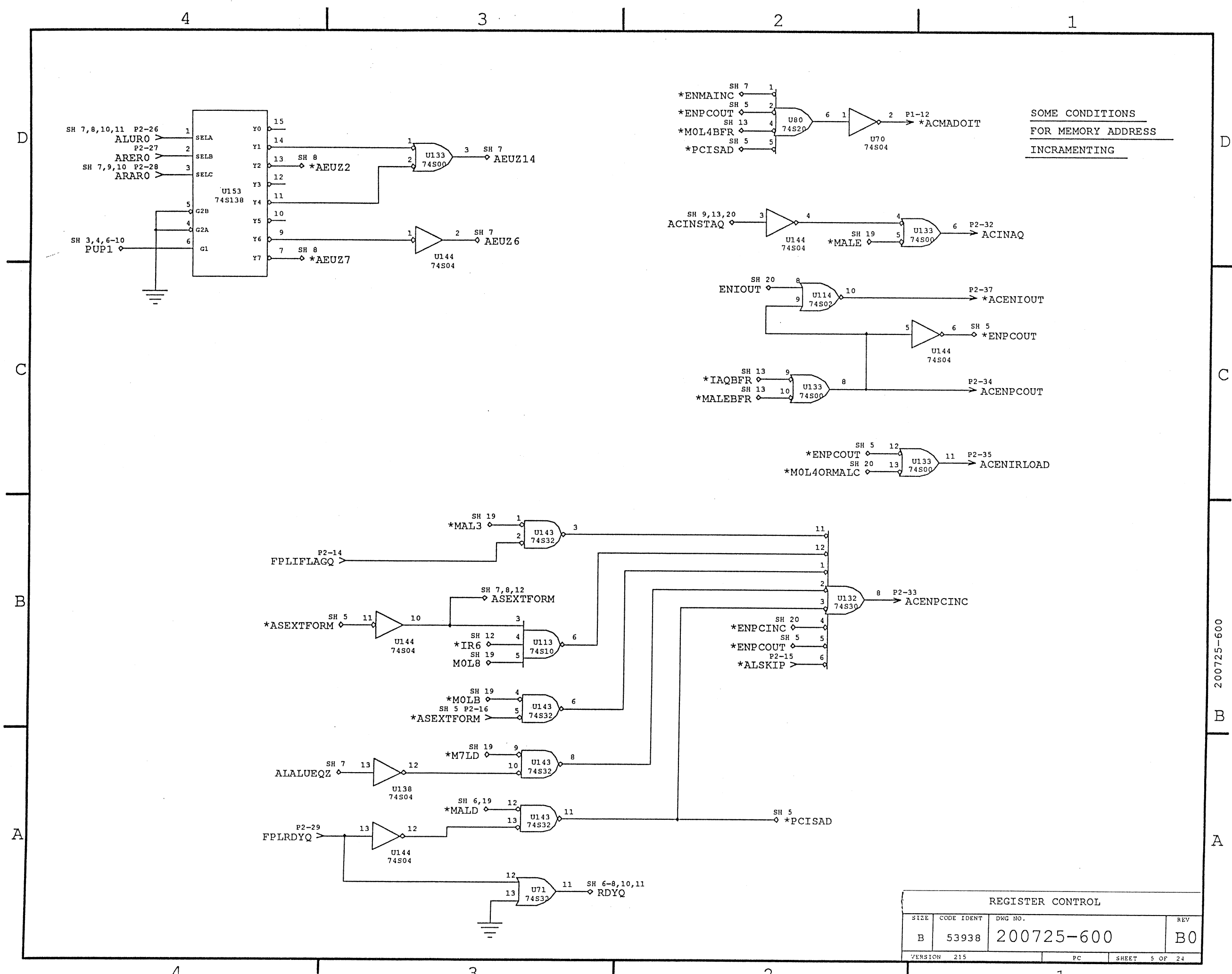
SPECIAL INSTRUCTION FLAGS

- BRANCH, STORE, OR
- DOUBLE INSTRUCTION FLAG
- DOUBLE LENGTH
- INSTRUCTION FLAG
- REGISTER TO REGISTER
- INTERRUPT INHIBIT
- WHEN DESTINATION IS
- THE STATUS REGISTER

200725-600

SPECIAL INSTRUCTION FLAGS

SIZE	CODE IDENT	DWG NO.	REV.
B	53938	200725-600	B0
VERSION	01	PC	SHEET 4 OF 14



SOME CONDITIONS
FOR MEMORY ADDRESS
INCRAMENTING

REGISTER CONTROL			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 5 OF 24

200725-600

D

C

B

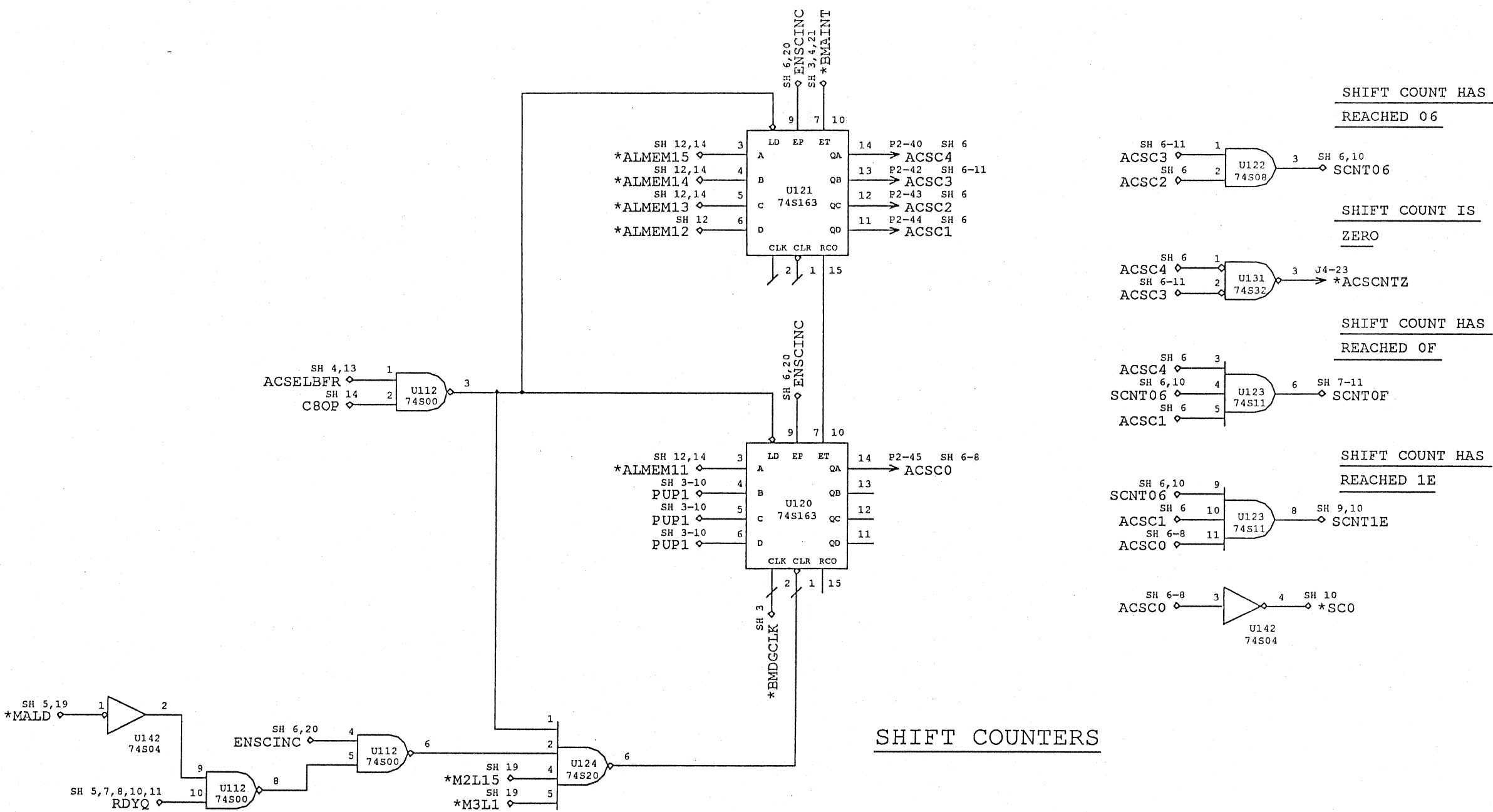
A

D

C

B

A



SHIFT COUNTERS

INHIBIT CLEAR SIGNALS

THE SHIFT COUNTERS
 ARE CLEARED
 EXCEPT IN THE
 CONDITIONS INDICATED
 BY THE INHIBIT CLEAR
 LOGIC

SHIFT COUNTER			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	FC	SHEET 6 OF 24

200725-600

D

C

B

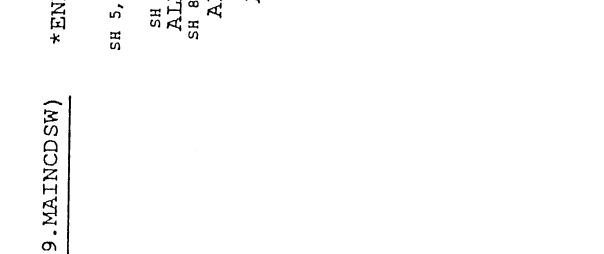
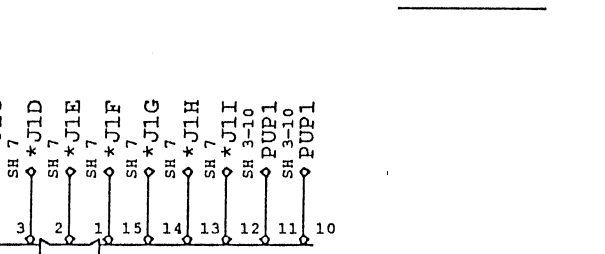
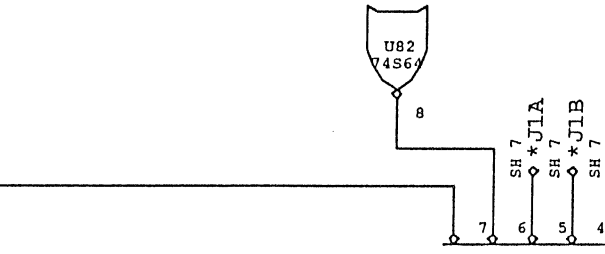
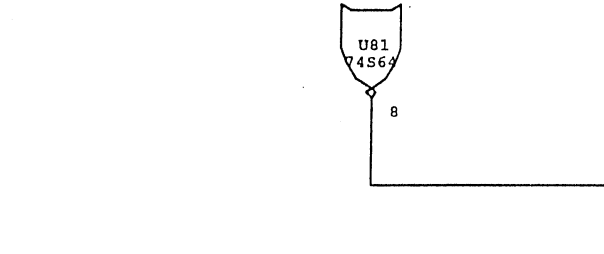
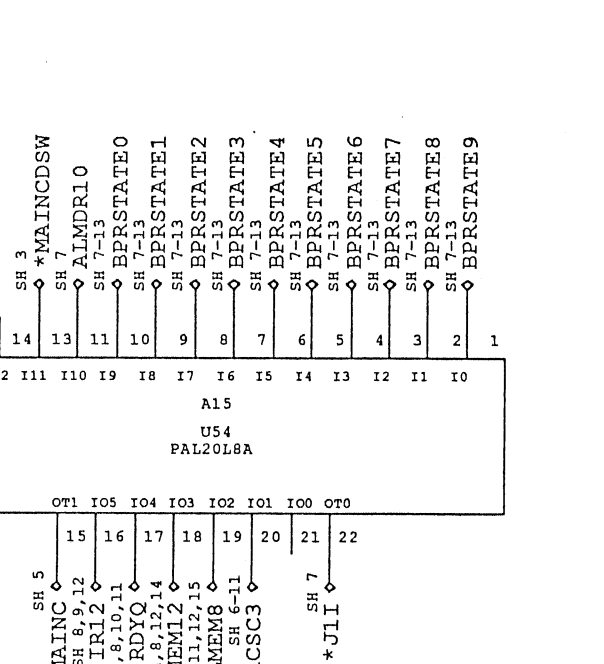
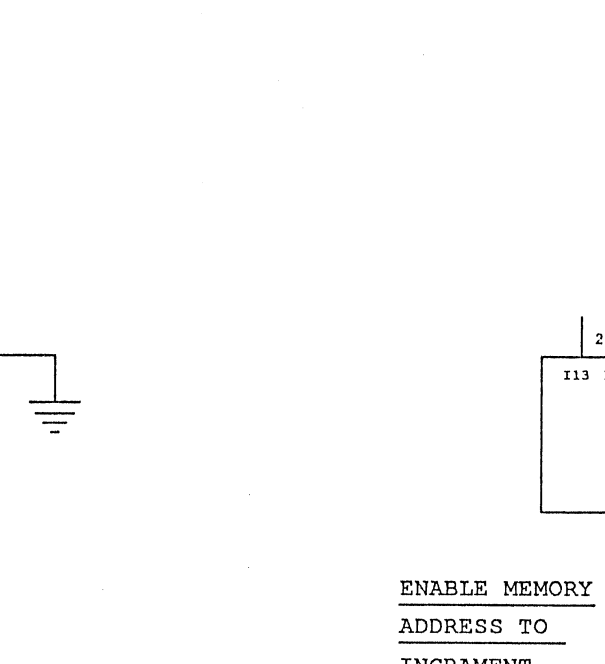
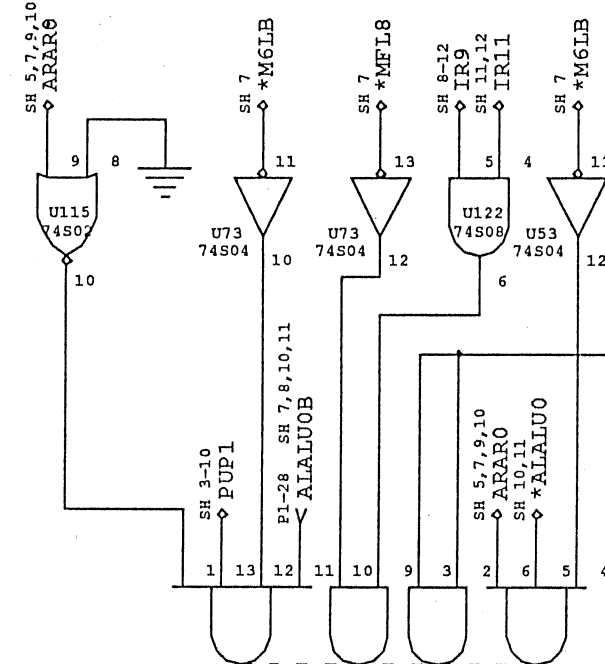
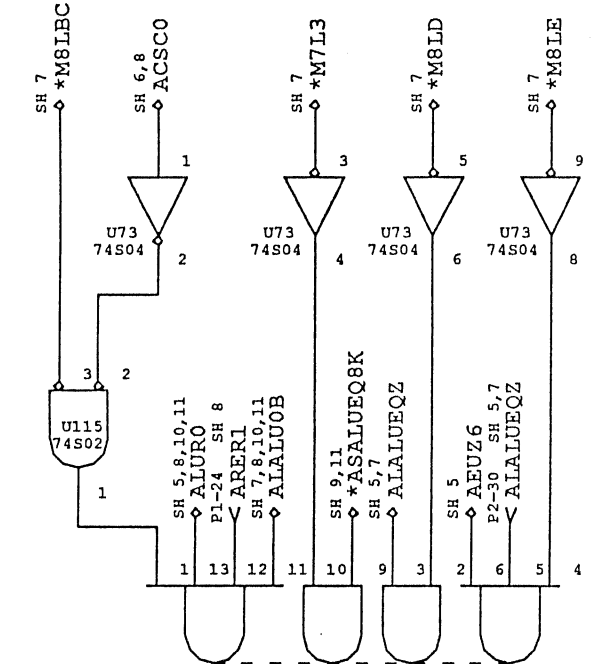
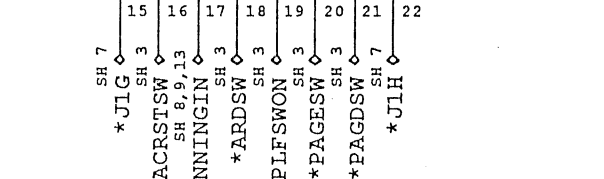
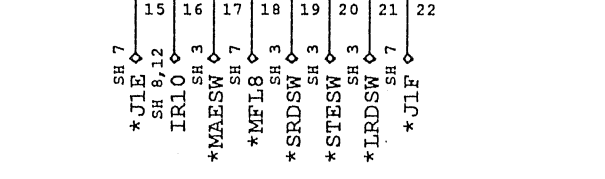
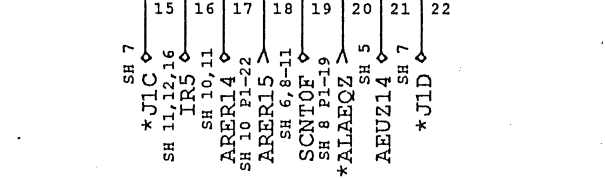
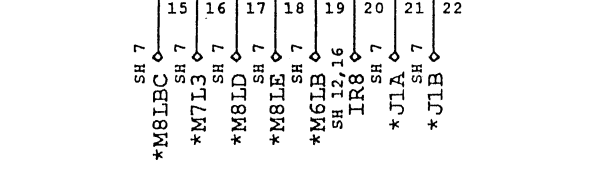
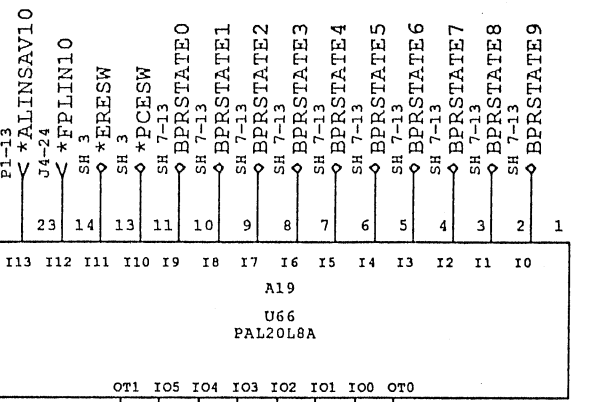
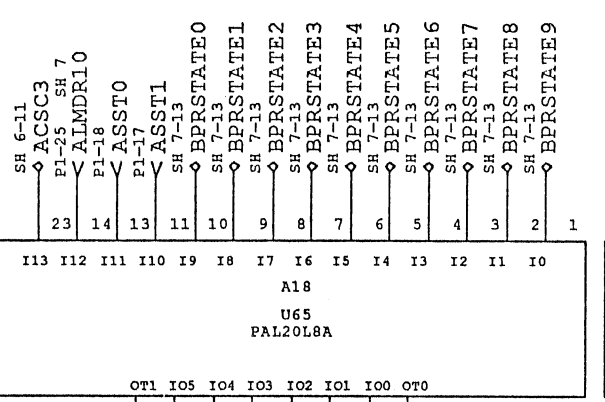
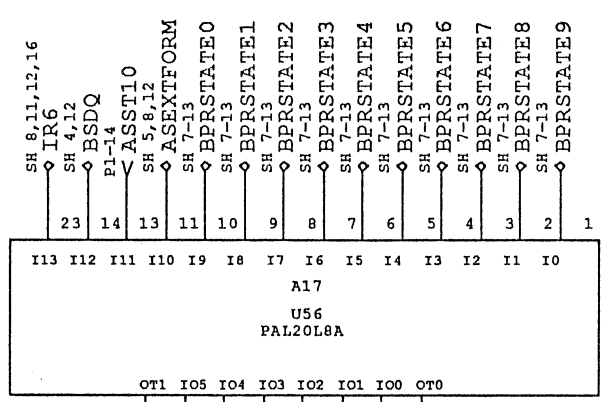
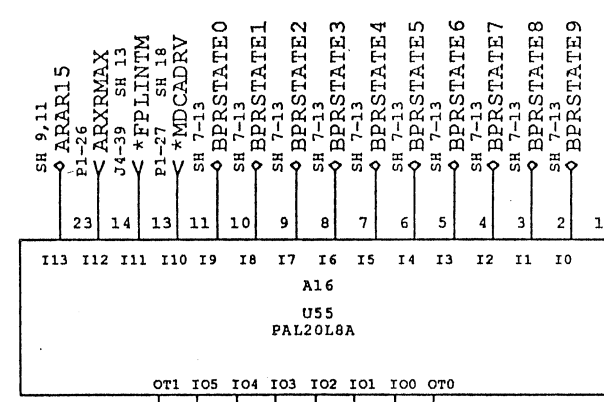
A

D

C

B

A

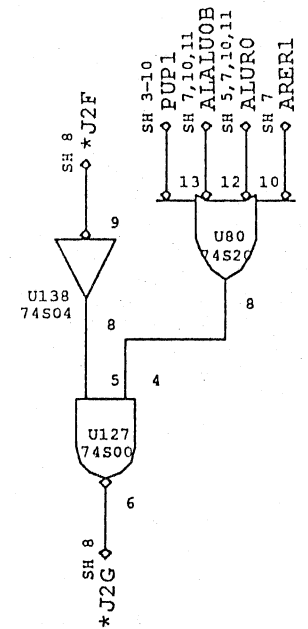
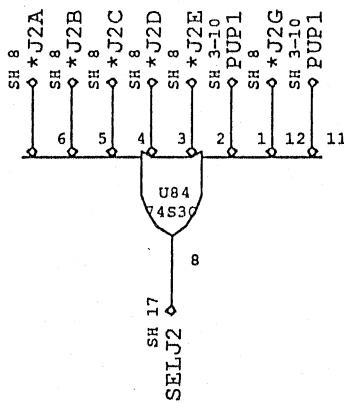
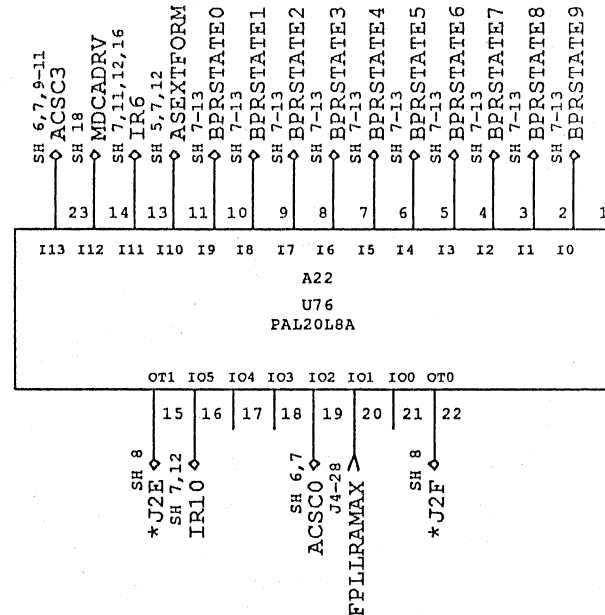
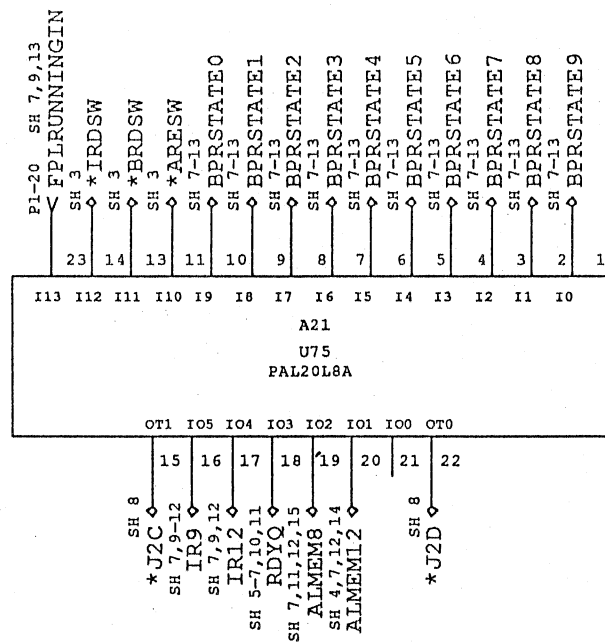
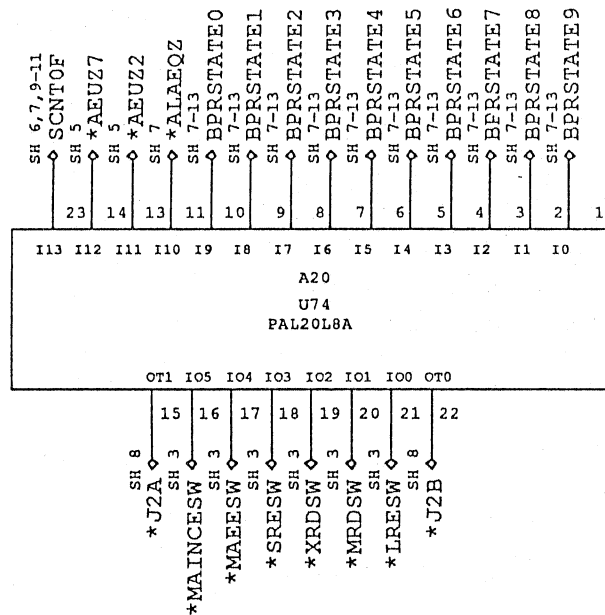


ENABLE MEMORY
ADDRESS TO
INCRAMENT

*(D9.MAINCDSW)

J1 JUMP ADDRESS SELECTOR

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 7 OF 24



J2 JUMP ADDRESS SELECTOR

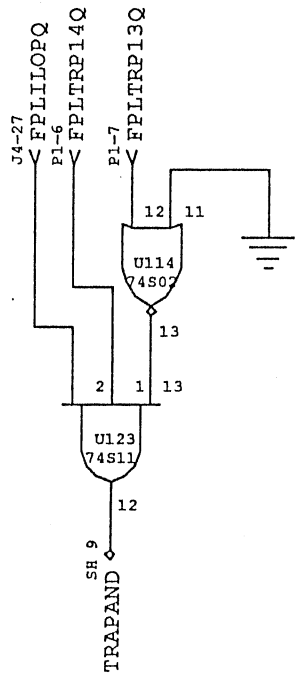
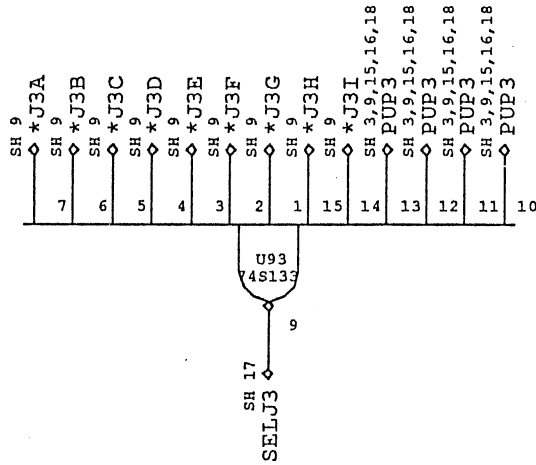
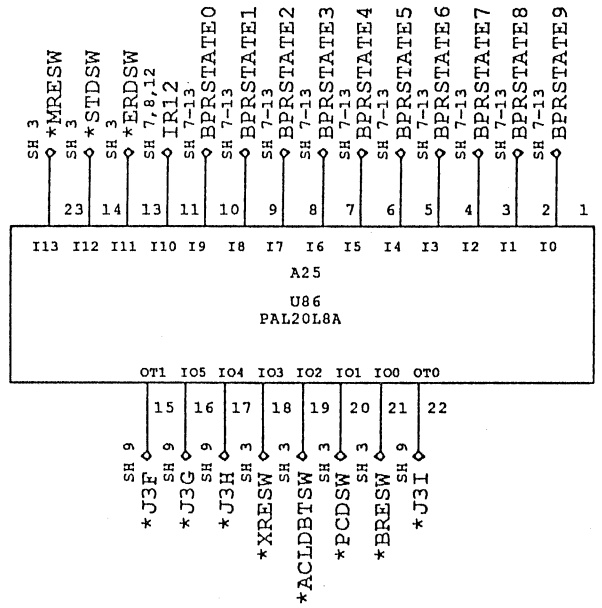
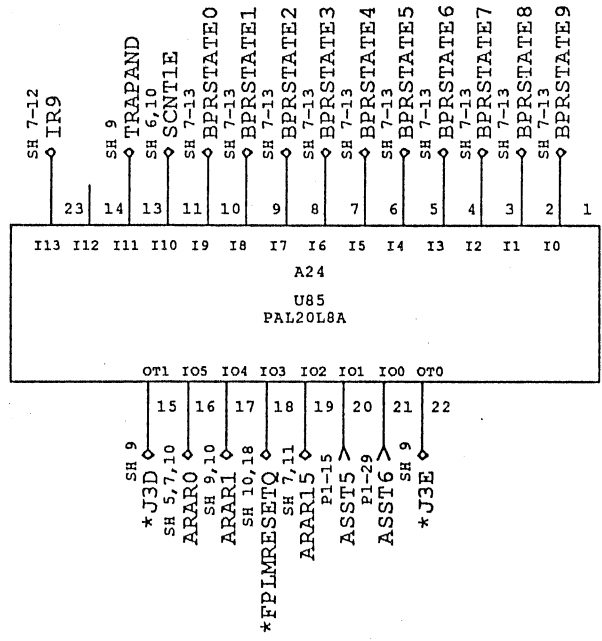
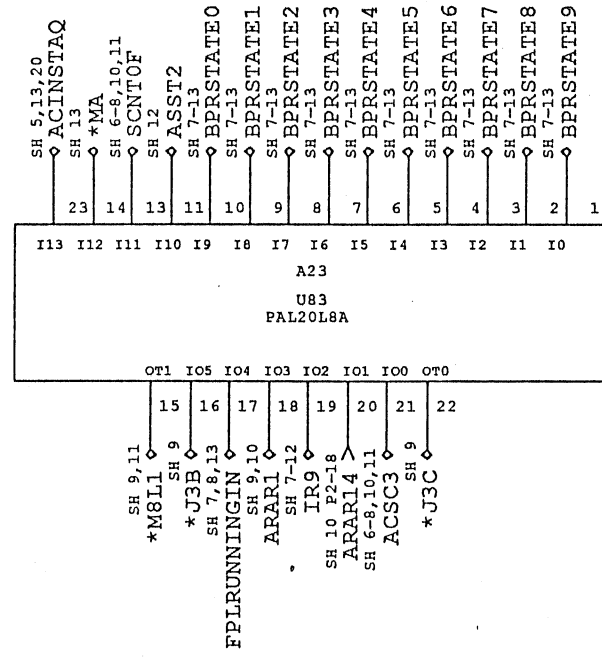
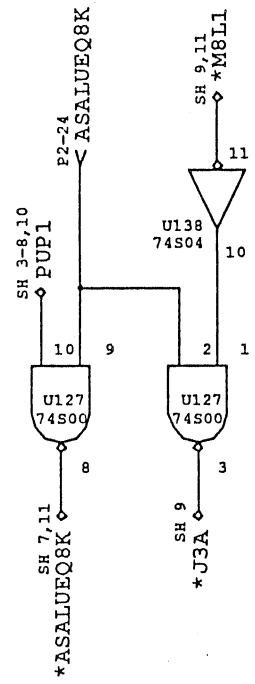
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 8 OF 24

D

C

B

A



D

C

B

A

J3 JUMP ADDRESS SELECTOR

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 9 OF 24

4

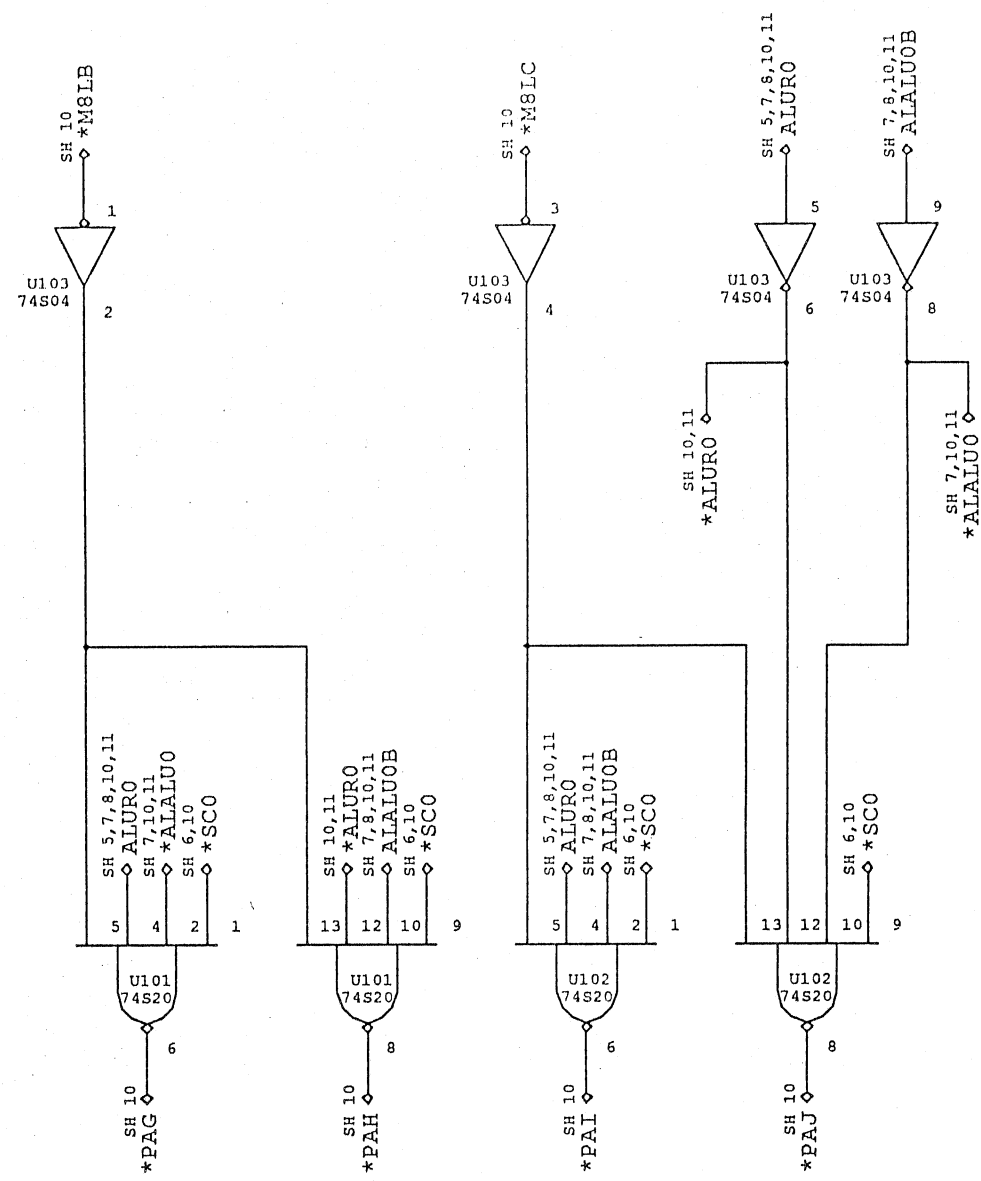
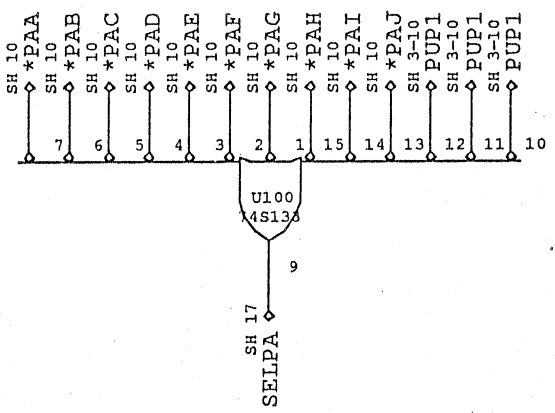
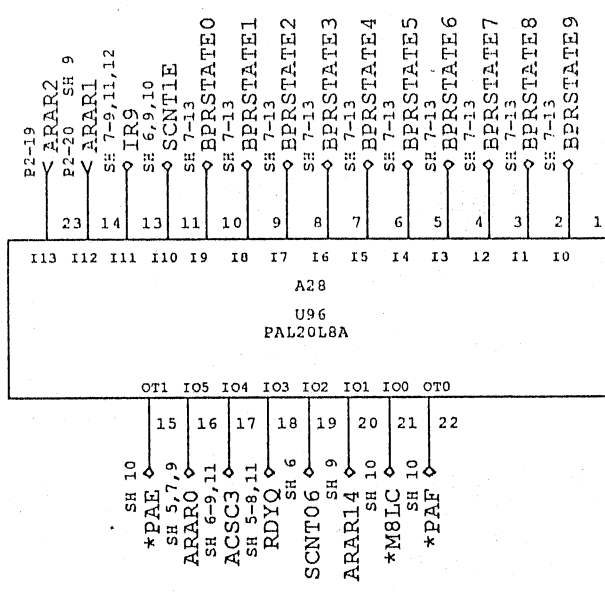
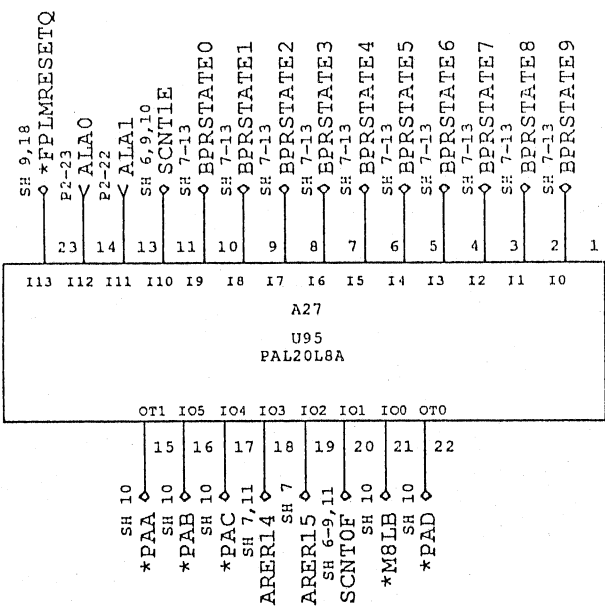
3

2

1

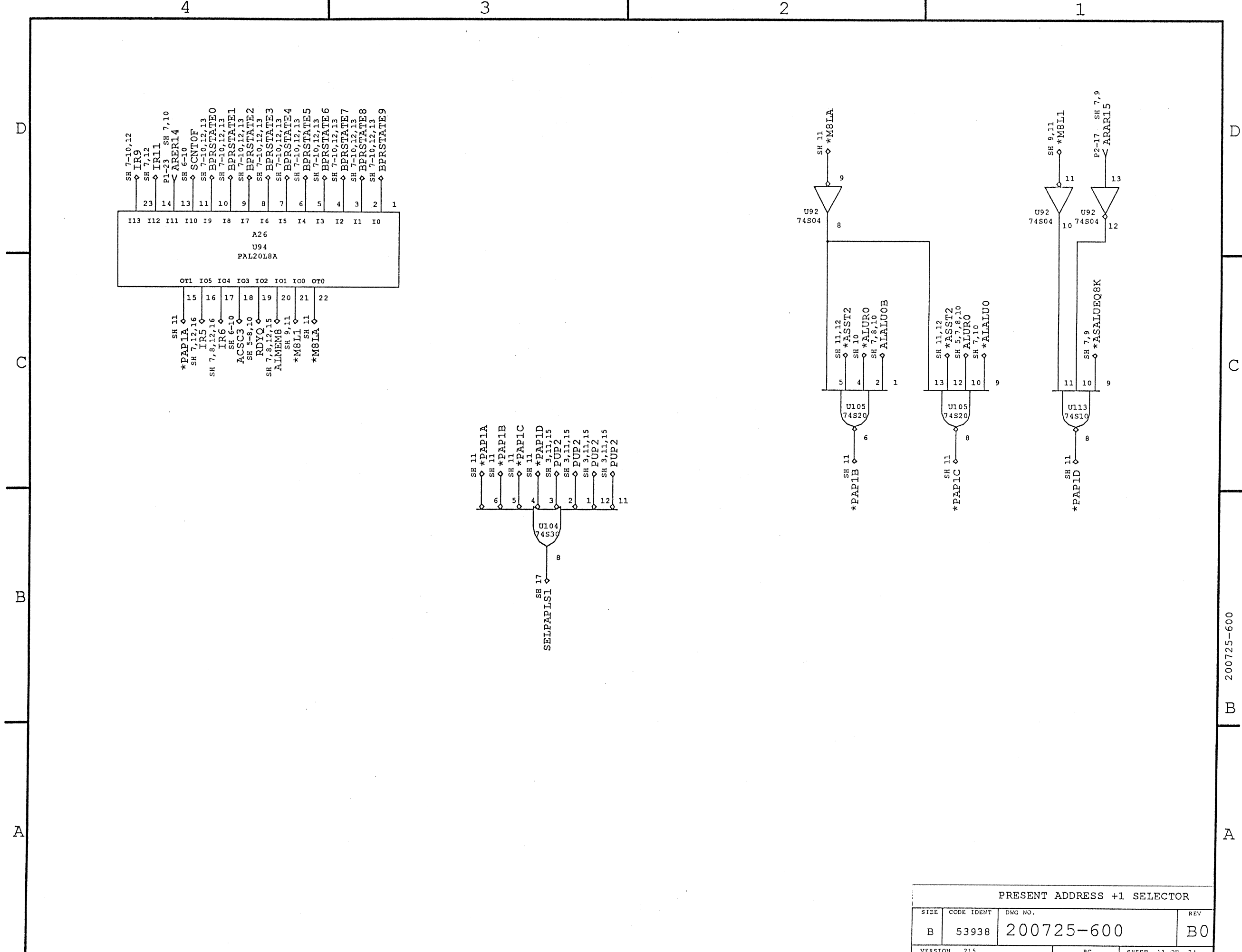
200725-600

A B C D



A B C D

PRESENT ADDRESS SELECTOR			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
SHEET 10 OF 24			



PRESENT ADDRESS +1 SELECTOR			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 11 OF 24

200725-600 B A

D

C

B

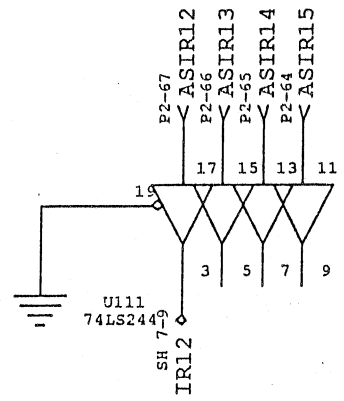
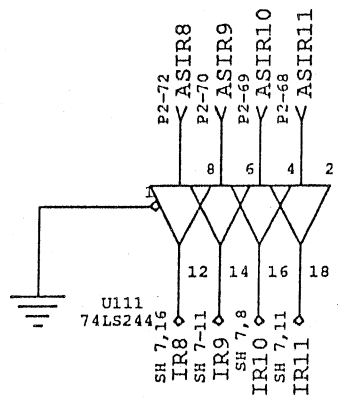
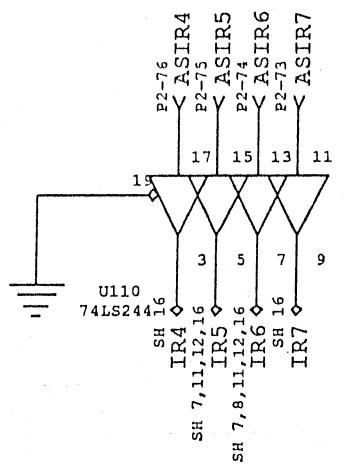
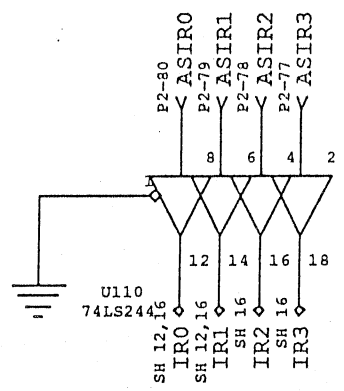
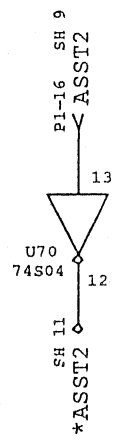
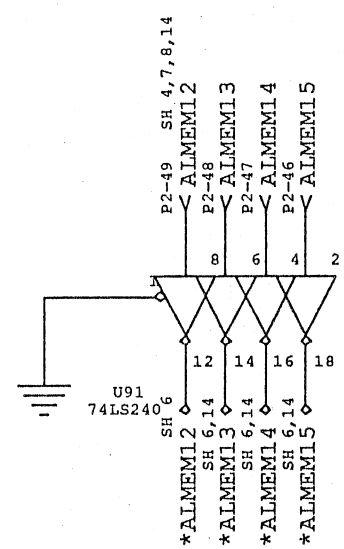
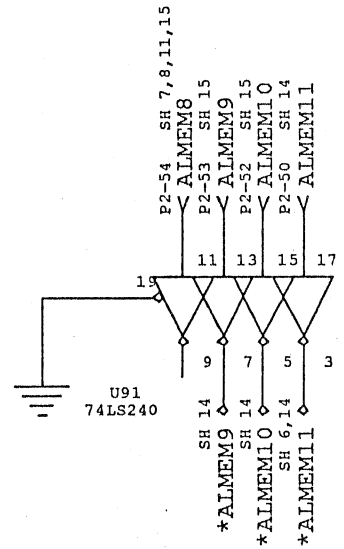
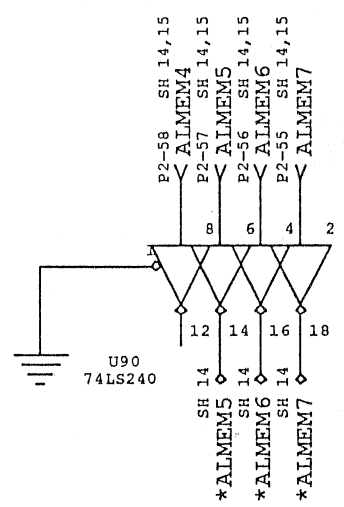
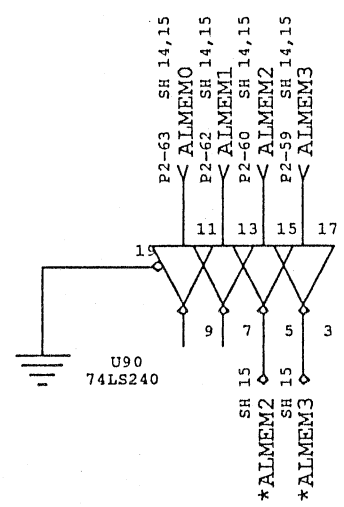
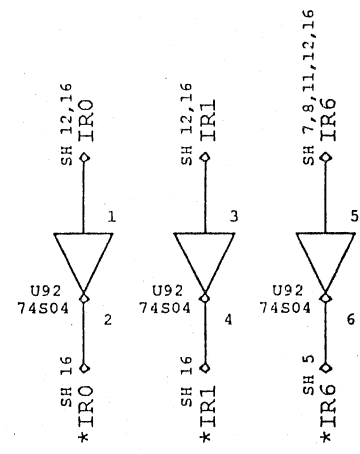
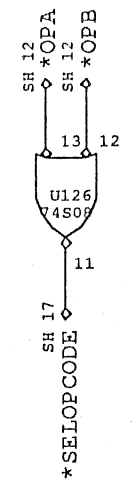
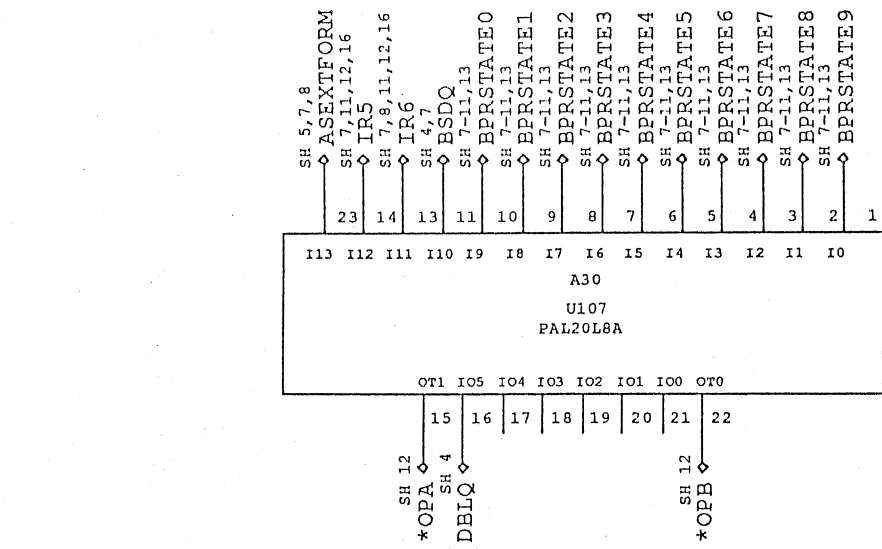
A

D

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B

A



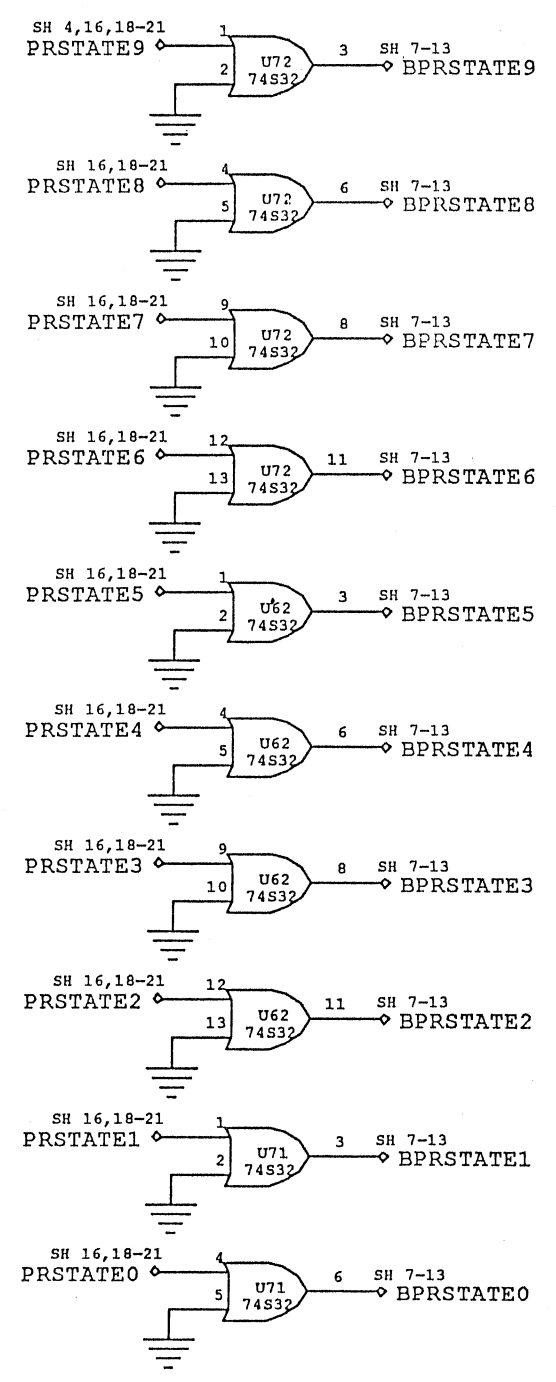
OPCODE SELECTOR

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VEPSTON 215	PC	SHEET 12 OF 24	

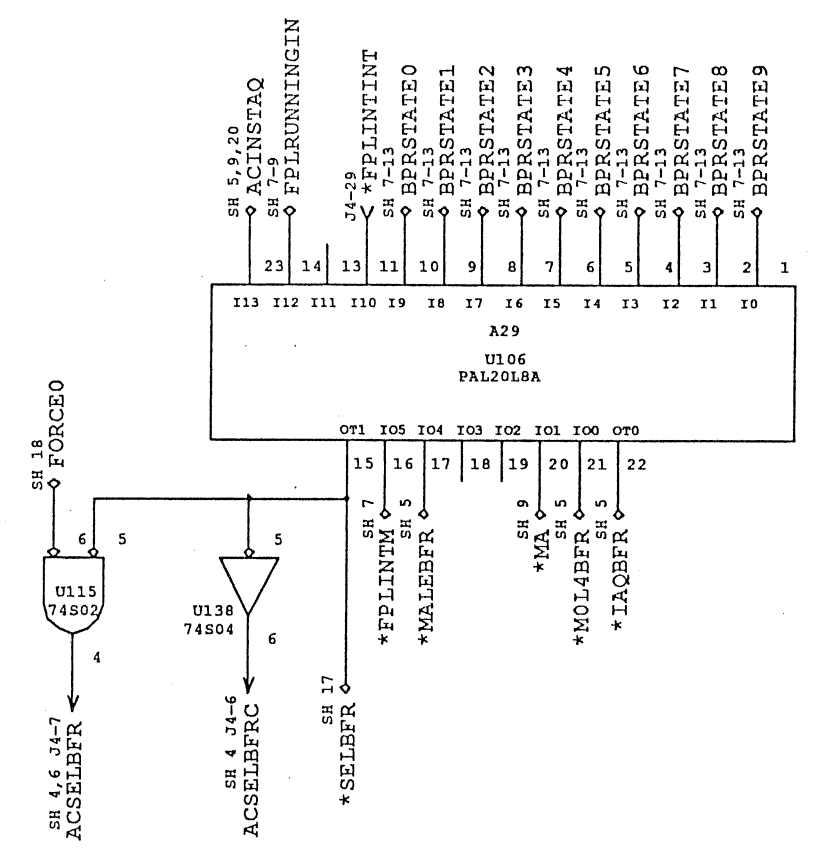
200725-600

D
C
B
A

D
C
B
A



PRESENT ADDRESS BUFFERS

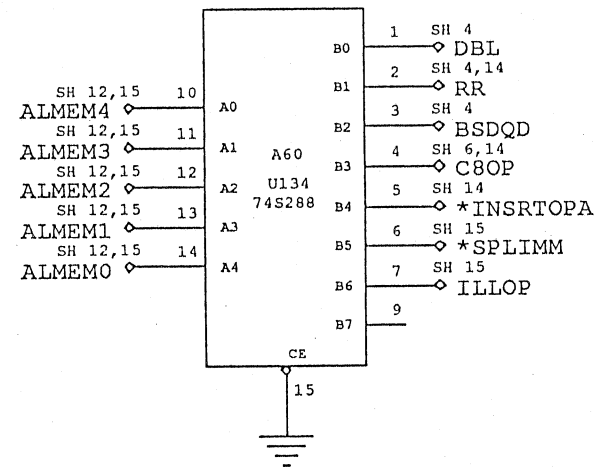


BFR SELECTOR

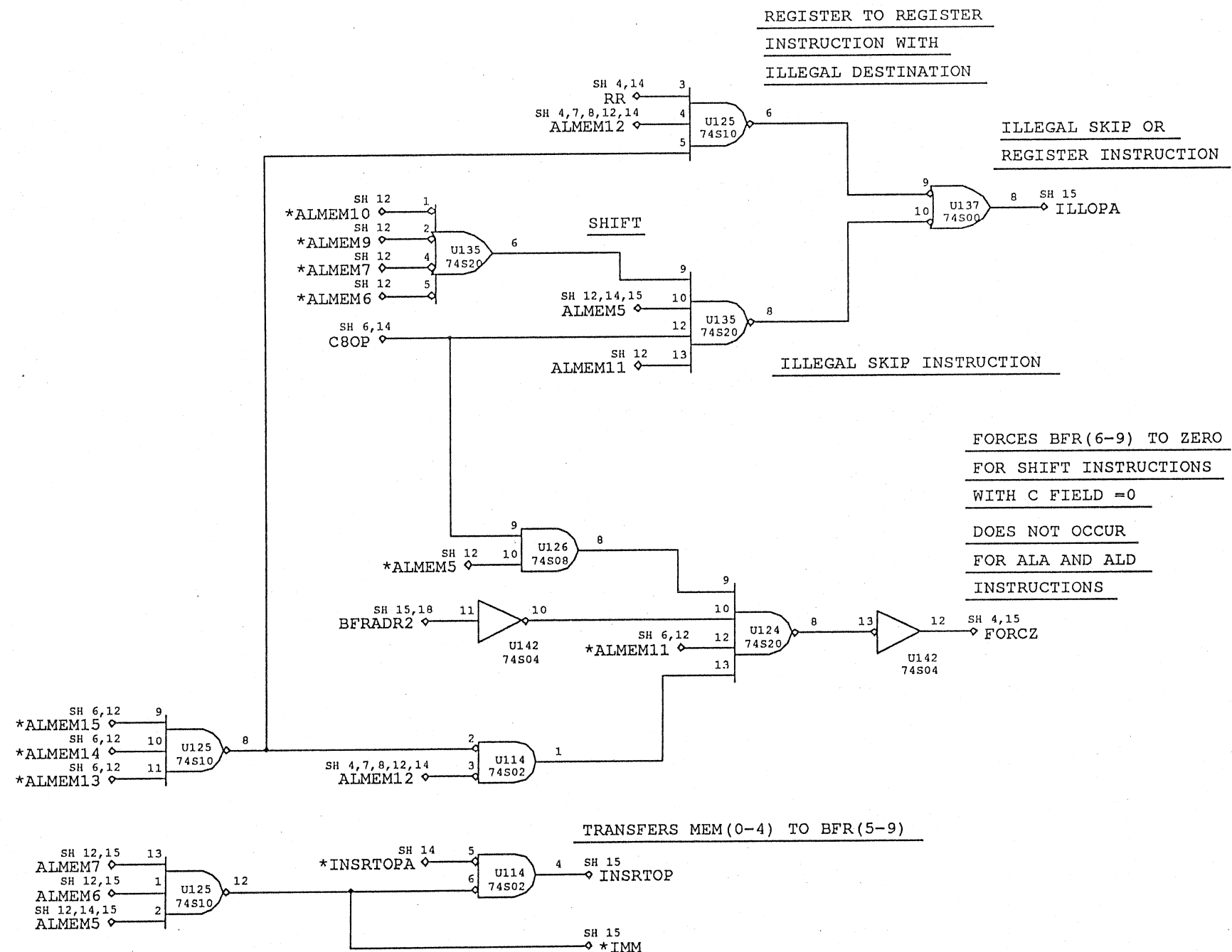
200725-600

BFR SELECTOR			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 13 OF 24

BASIC FUNCTION ROM
INSTRUCTION DECODE

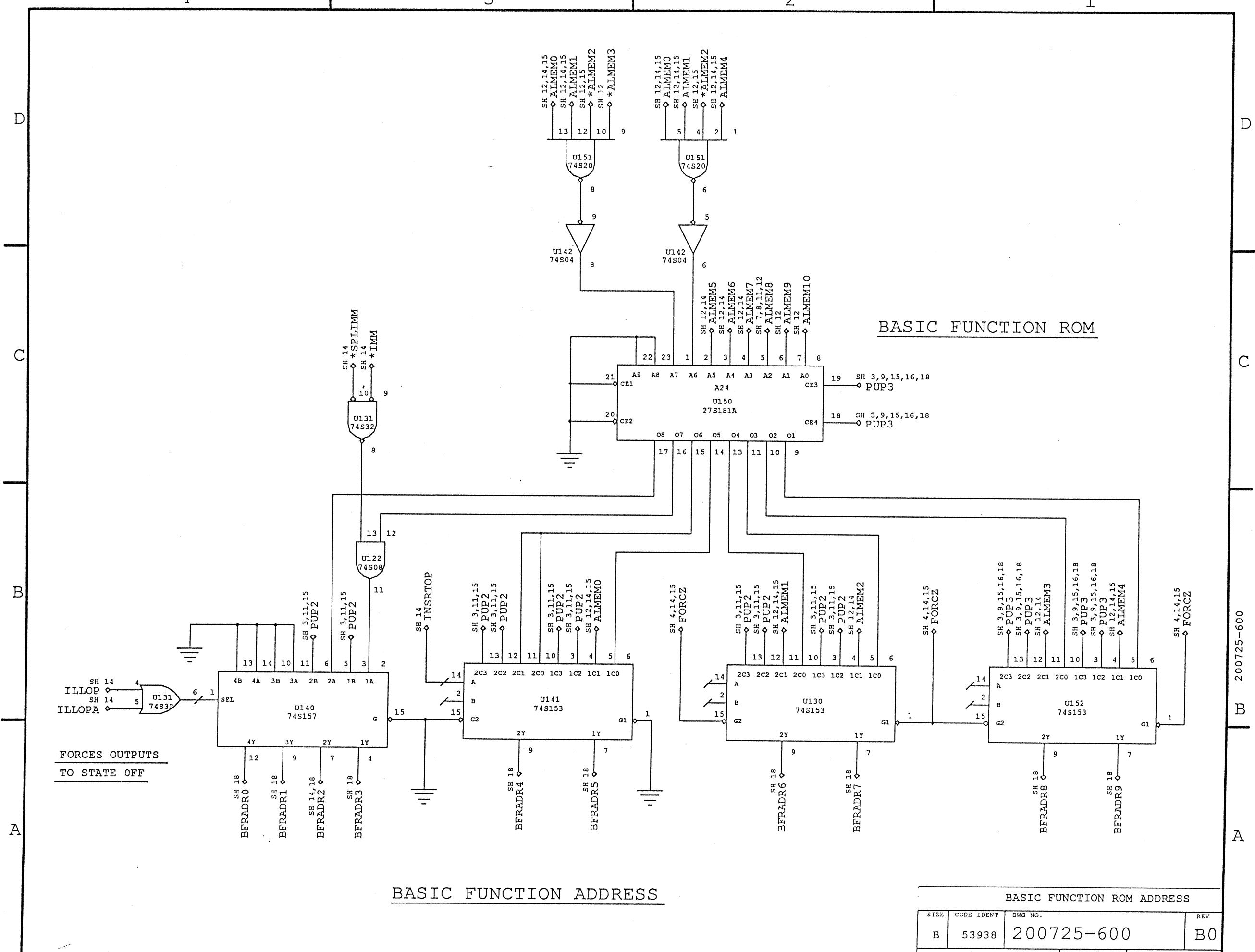


PROM SIGNAL NAME	FUNCTION
DBL	DOUBLE WORD INSTRUCTION
RR	REGISTER TO REGISTER INSTRUCTION
BSDQD	BIX, DMT, IMO, BRL BRU, STA, STE, STX DST, DSB, DLD, DAD INSTRUCTIONS
C8OP	C8 OP CODE , (SHIFT INSTRUCTIONS)
*INSRTOPA	OP CODE DETERMINES PART OF THE NEXT STATE ADDRESS
*SPLIMM	SPECIAL IMMEDIATE INSTRUCTIONS I.E. DSB, DLD, DAD, CPL, BRU, IOR, AND
ILLOP	ILLEGAL OP CODE



BASIC FUNCTION ROM			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200725-600	B0
VERSION 215	PC	SHEET 14 OF 24	

200725-600



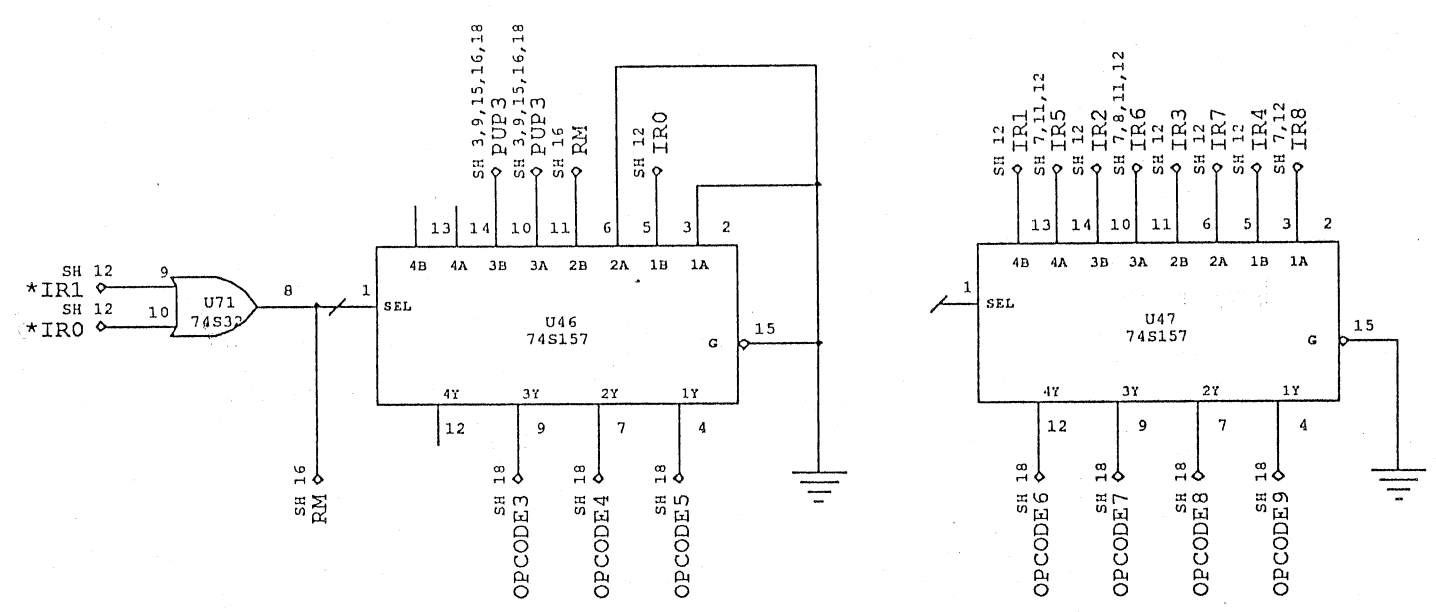
BASIC FUNCTION ROM

BASIC FUNCTION ADDRESS

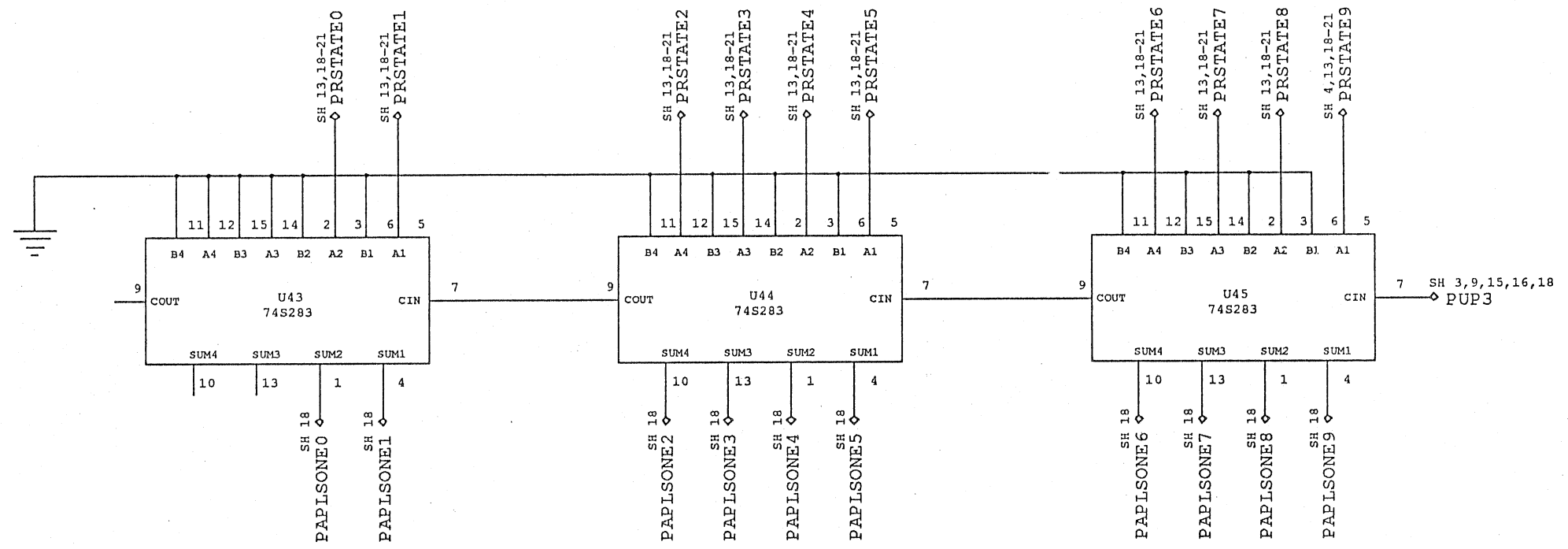
BASIC FUNCTION ROM ADDRESS

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 15 OF 24

200725-600



OPCODE ADDRESS MUX



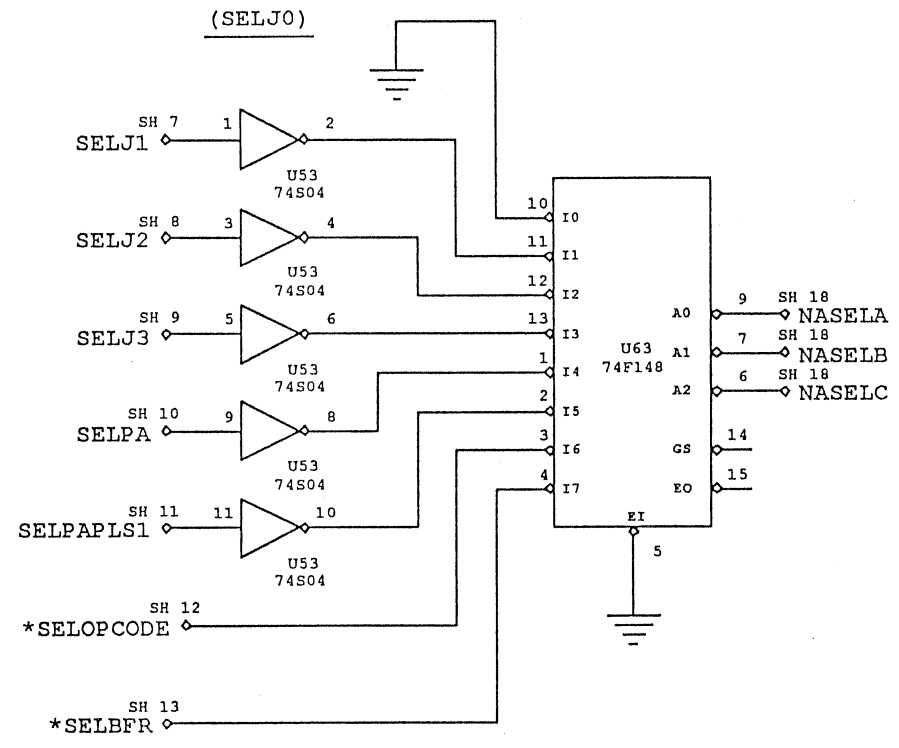
PRESENT ADDRESS INCRAMENTER

PRESENT ADDRESS INCRAMENTER			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	210	PC	SHEET 16 OF 24

200725-600

D
C
B
A

D
C
B
A

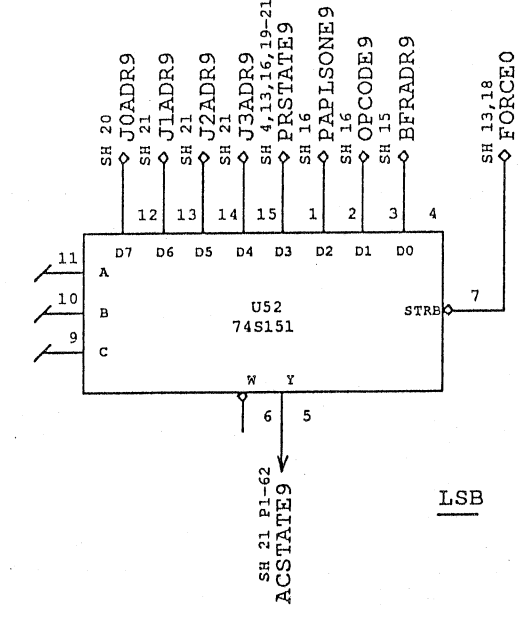
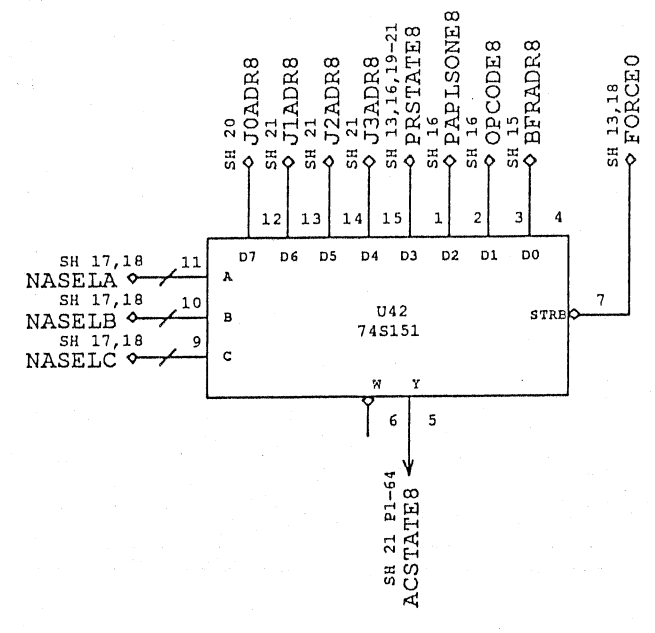
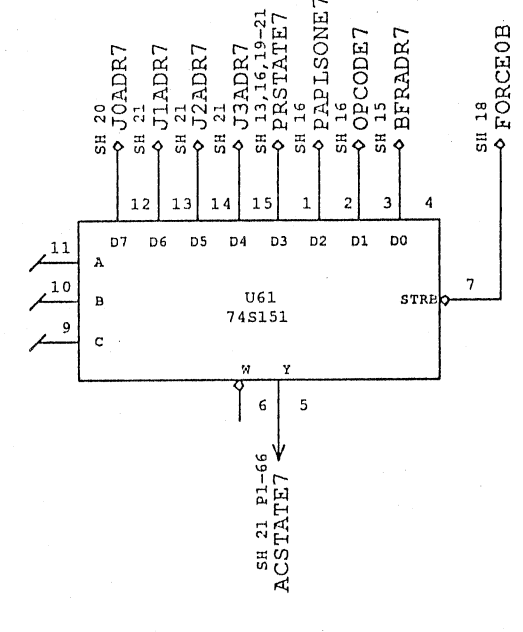
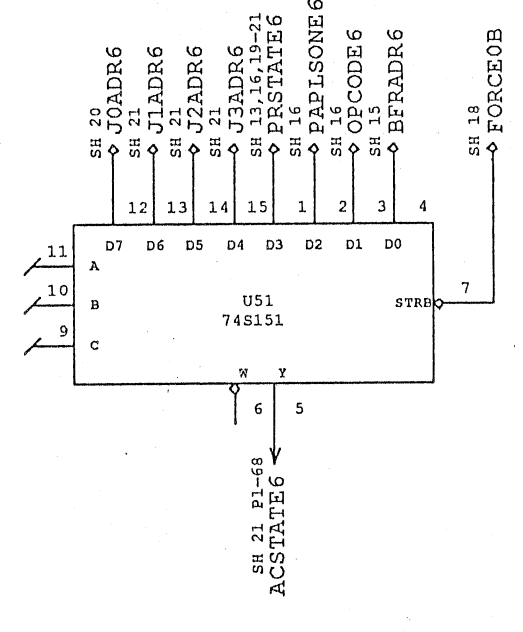
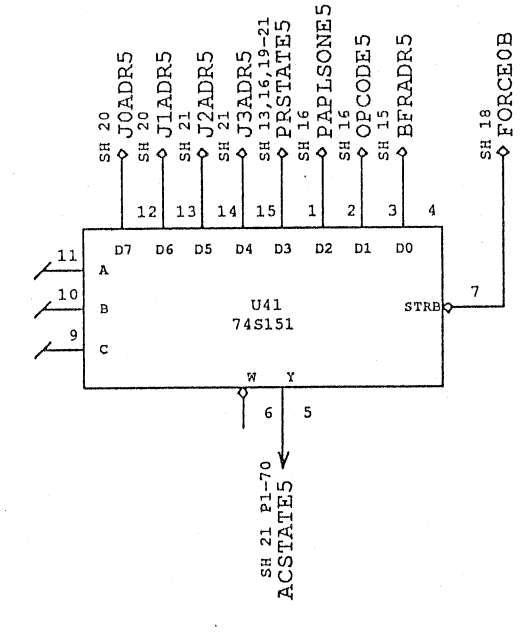
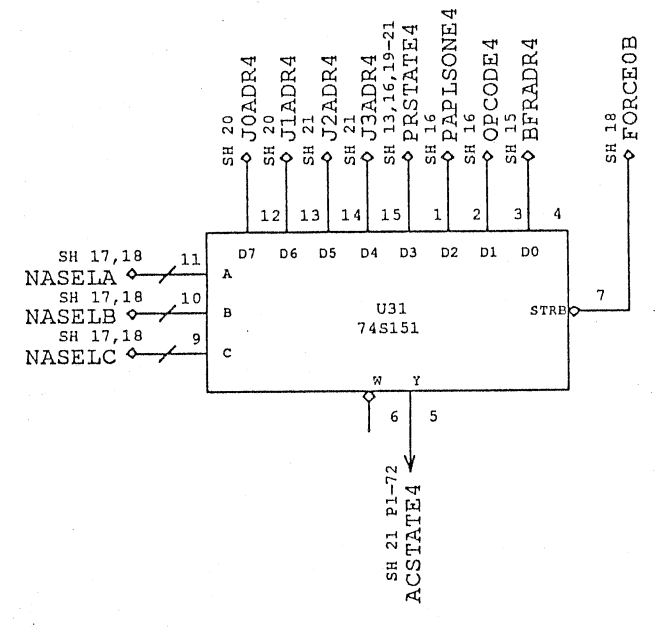
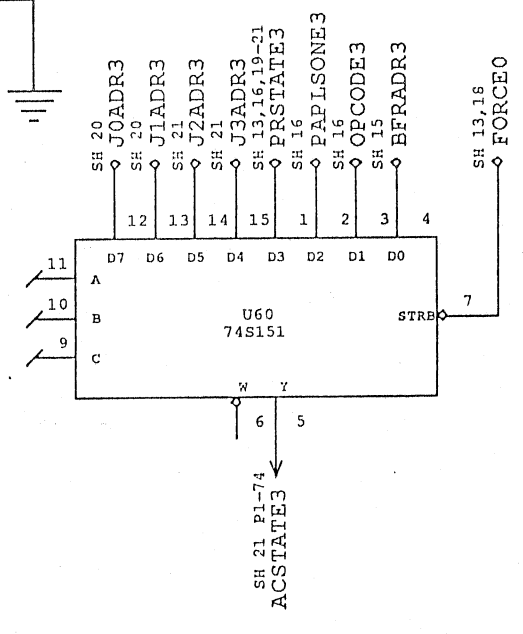
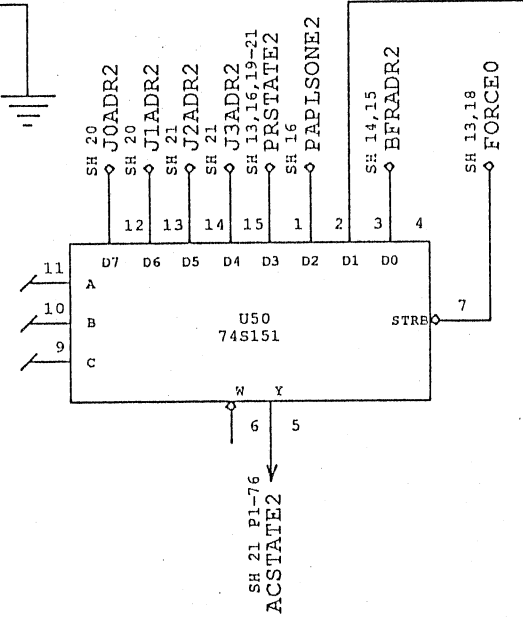
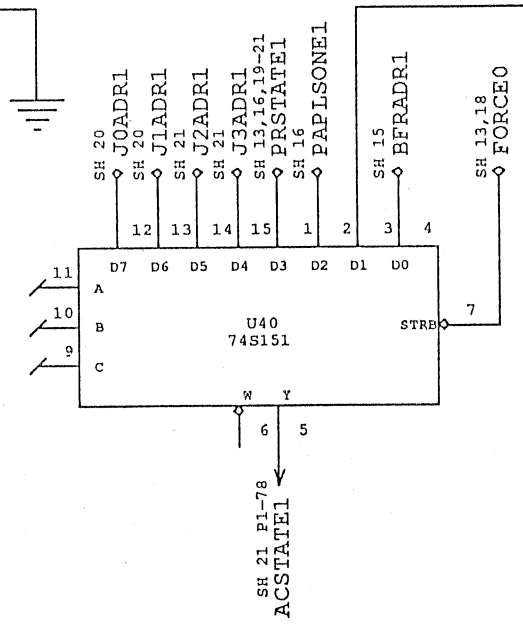
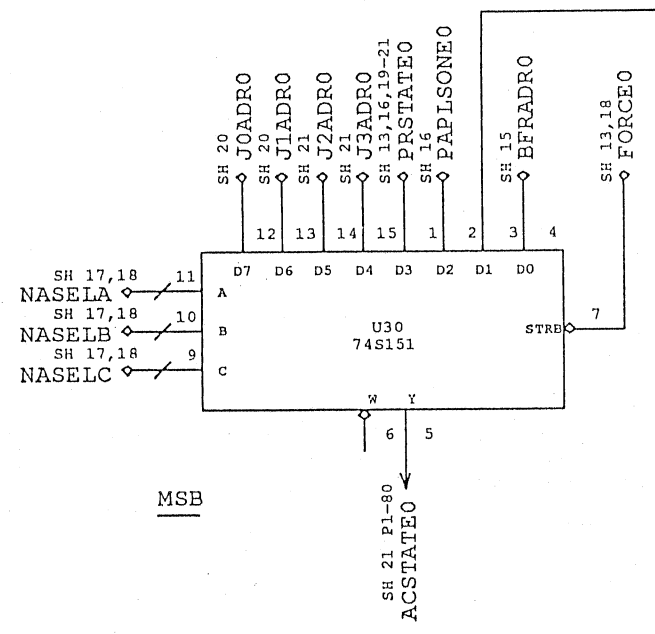


SELECT ADDRESS TABLE		
74F148 INPUT	OUTPUT CODE	SELECT ADDRESS
I0	7	J0
I1	6	J1
I2	5	J2
I3	4	J3
I4	3	PA
I5	2	PA+1
I6	1	OPCODE
I7	0	BFR

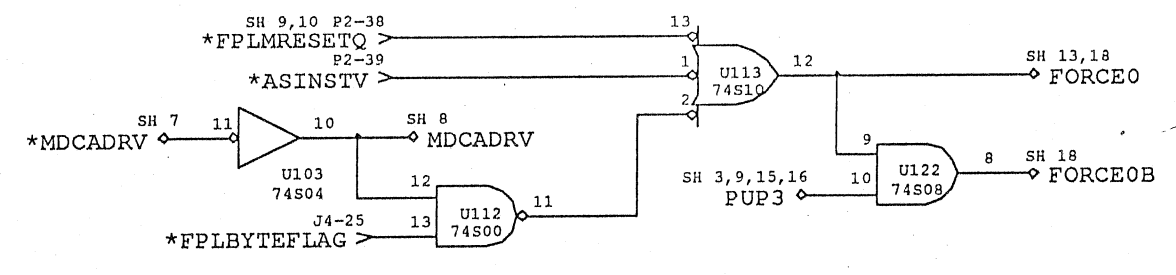
NEXT ADDRESS SELECTOR

200725-600

NEXT ADDRESS SELECTOR			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 17 OF 24



NEXT ADDRESS MUXES



NEXT ADDRESS MUXES			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 18 OF 24

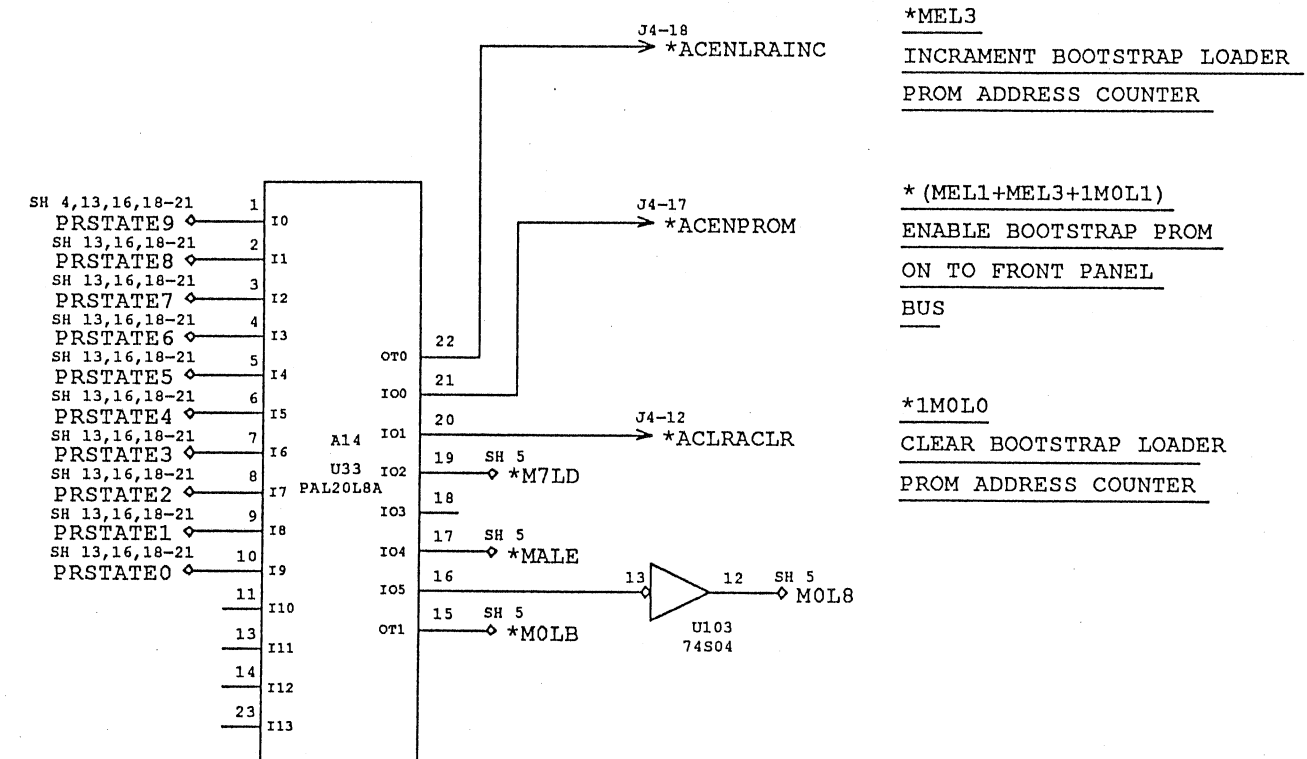
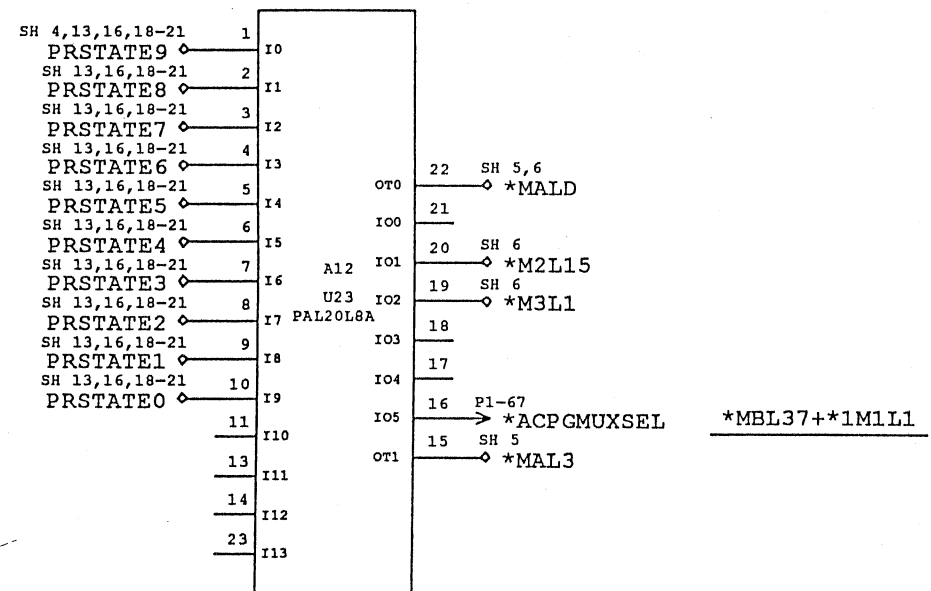
D
C
B
A

D
C
B
A

200725-600

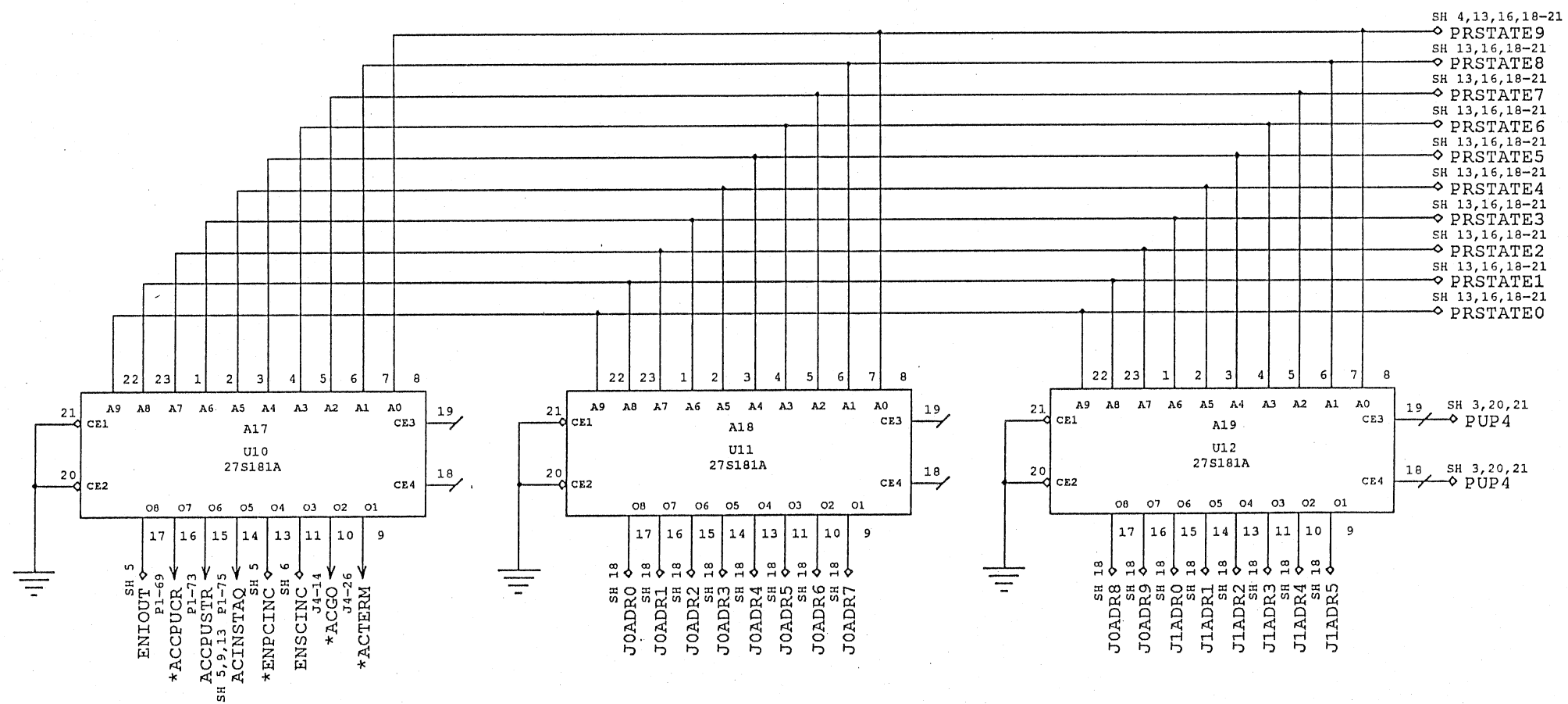
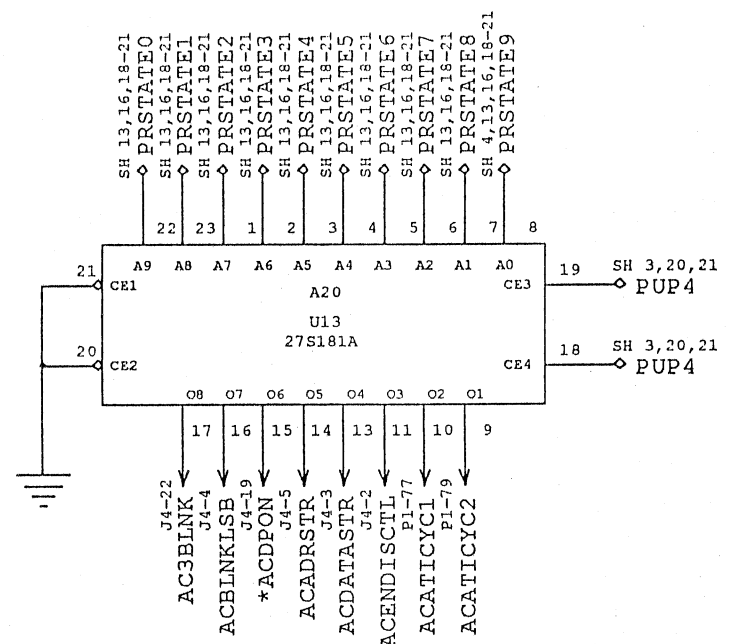
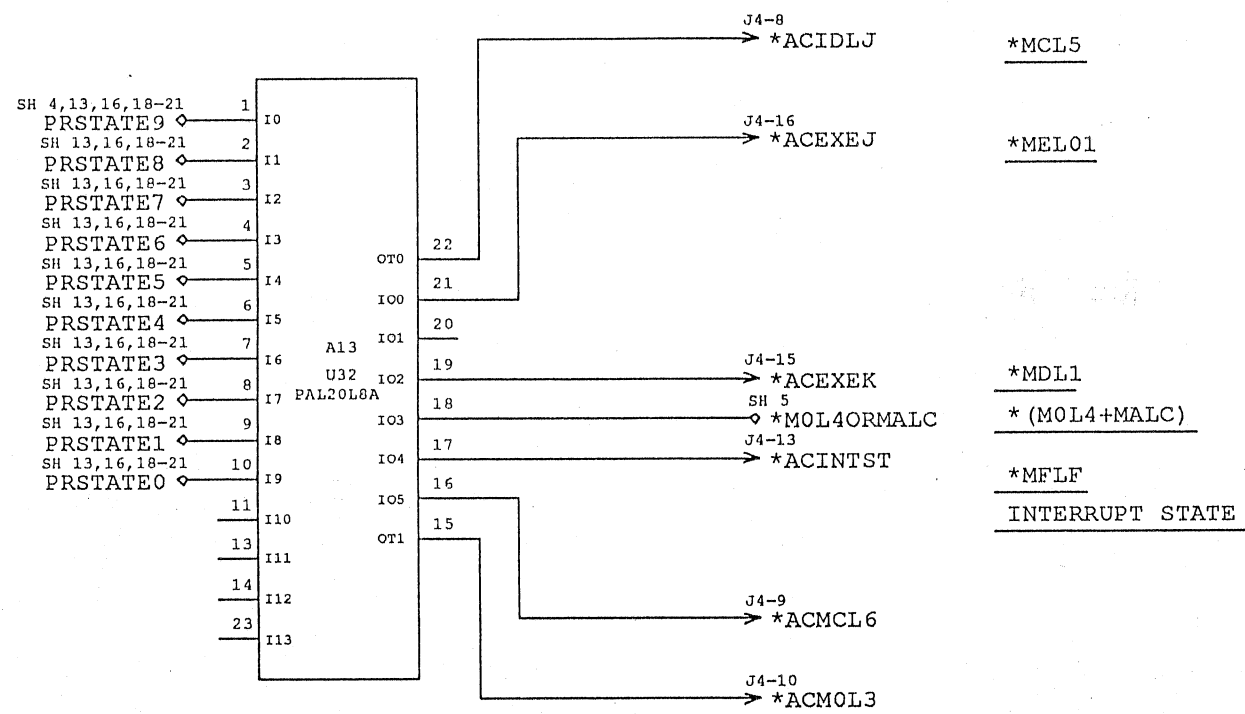
LSB

MSB



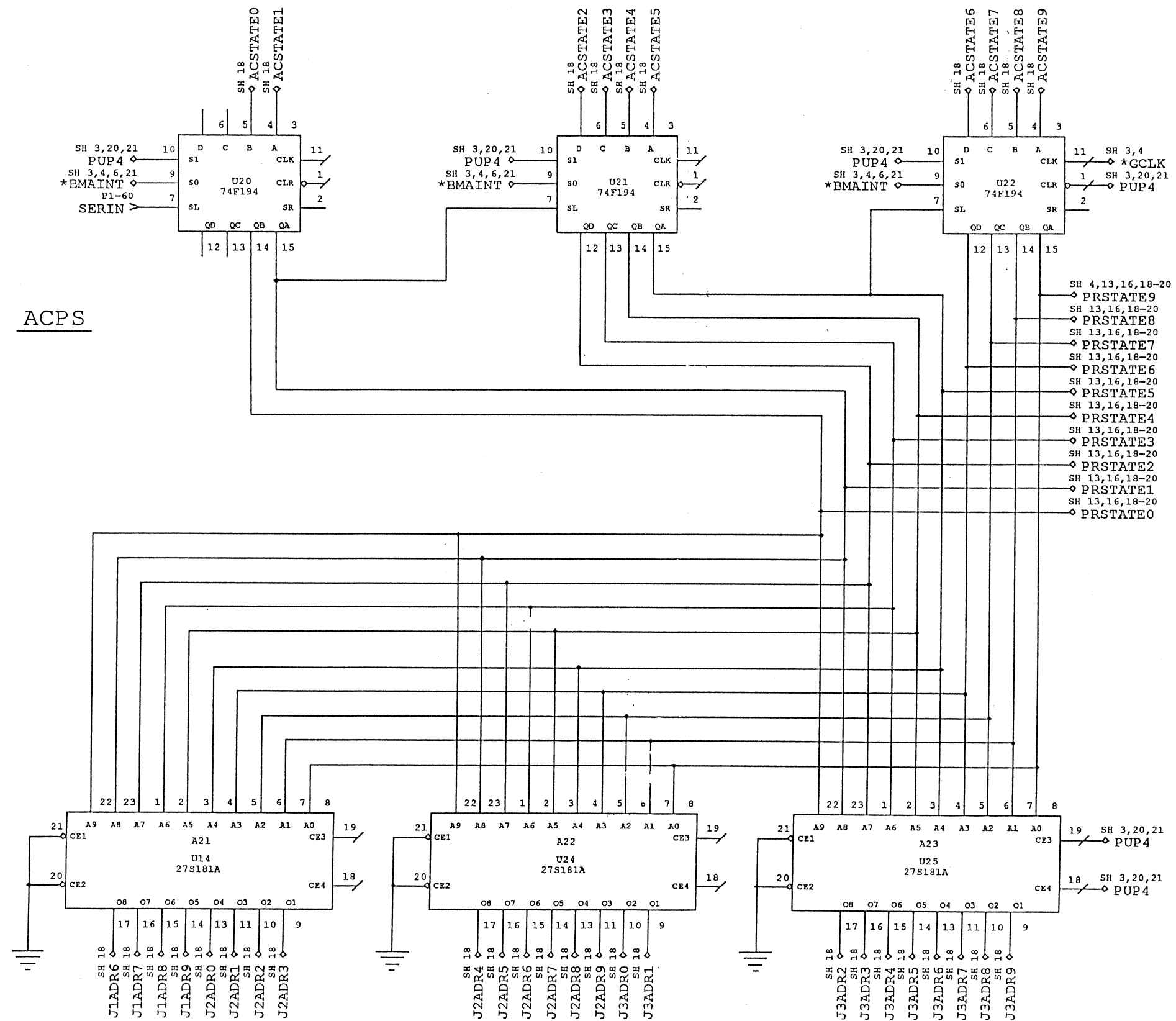
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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 19 OF 24

200725-600 B



NEXT ADDRESS PROM			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION 215		PC	SHEET 20 OF 24

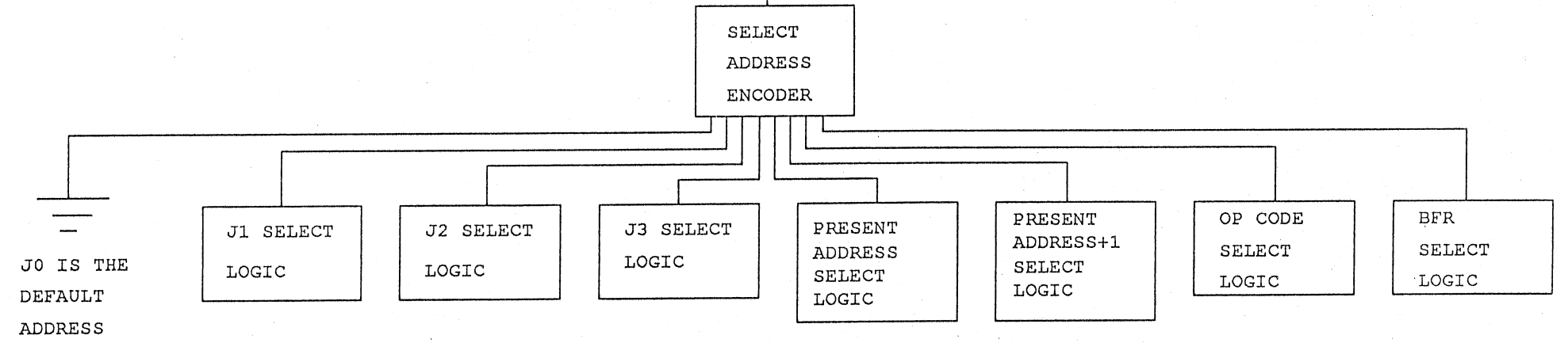
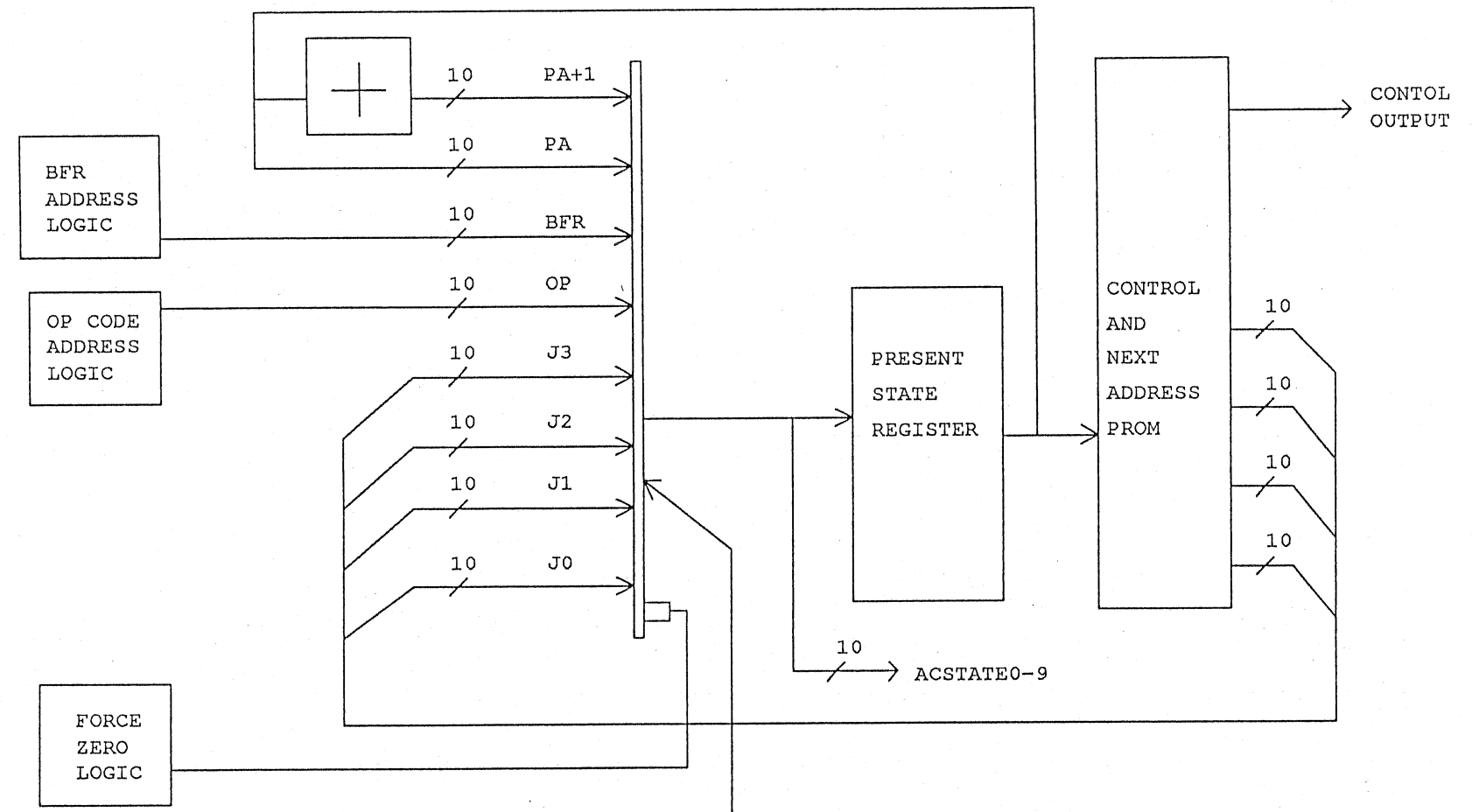
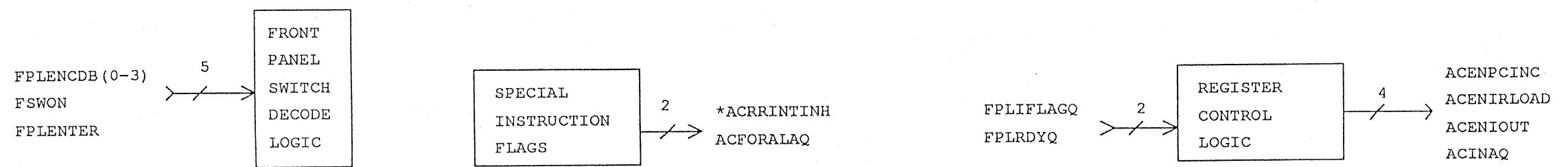
200725-600



ACPS

PRESENT ADDRESS AND PROMS			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	PC	SHEET 21 OF 24

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AC BLOCK DIAGRAM

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
VERSION	215	BL	SHEET 22 OF 24

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Unit	Pin	Type	String	Sheet
J4	2	Out	ACENDISCTL	20 C1
J4	3	Out	ACDATASTR	20 C1
J4	4	Out	ACBCLKLSB	20 C2
J4	5	Out	ACADRSTR	20 C1
J4	6	Out	ACSELBFRC	13 C2
J4	7	Out	ACSELBFR	13 C2
J4	8	Out	*ACIDLJ	20 D3
J4	9	Out	*ACMCL6	20 C3
J4	10	Out	*ACMOL3	20 C3
J4	12	Out	*ACLRACLR	19 C2
J4	13	Out	*ACINTST	20 C3
J4	14	Out	*ACGO	20 A3
J4	15	Out	*ACEXEK	20 D3
J4	16	Out	*ACEXEJ	20 D3
J4	17	Out	*ACENPROM	19 C2
J4	18	Out	*ACENLRAINC	19 C2
J4	19	Out	*ACDPON	20 C1
J4	20	Out	*ACRRINTINH	4 B2
J4	22	Out	AC3BLNK	20 C2
J4	23	Out	*ACSCNTZ	6 C1
J4	24	In	*FPLIN10	7 D1
J4	25	In	*FPLBYTEFLAG	18 A2
J4	26	Out	*ACTERM	20 A3
J4	27	In	FPLILOPQ	9 B2
J4	28	In	FPLLRAMAX	8 C2
J4	29	In	*FPLINTINT	13 C2
J4	32	In	FPLFSWON	3 C4
J4	33	In	FPLENTER	3 C4
J4	34	In	FPLENCDB3	3 D4
J4	35	In	FPLENCDB2	3 D4
J4	36	In	FPLENCDB1	3 D4
J4	37	In	FPLENCDB0	3 D4
J4	38	Out	*ACLDDBTSW	3 C3
J4	39	In	*FPLINTM	7 D4
P1	1	In	GROUND	1 C4
P1	2	In	+5VINA	3 C1
P1	3	In	*MDCGCLK	3 C2
P1	4	In	+5VINA	3 C1
P1	5	In	*CMSHIFT	3 A2
P1	6	In	FPLTRP14Q	9 B2
P1	7	In	FPLTRP13Q	9 B2
P1	11	In	GROUND	1 C4
P1	12	Out	*ACMADOIT	5 D2
P1	13	In	*ALINSAV10	7 D1
P1	14	In	ASST10	7 D3
P1	15	In	ASST5	9 C2
P1	16	In	ASST2	12 C1
P1	17	In	ASST1	7 D2
P1	18	In	ASST0	7 D2
P1	19	In	*ALAEQZ	7 C3
P1	20	In	FPLRUNNINGIN	8 C3
P1	21	In	GROUND	1 B4
P1	22	In	ARER15	7 C3
P1	23	In	ARER14	11 D4
P1	24	In	ARER1	7 B4
P1	25	In	ALMDR10	7 D2
P1	26	In	ARXRMAX	7 D4
P1	27	In	*MDCADRV	7 D4
P1	28	In	ALALU0B	7 B3
P1	29	In	ASST6	9 C2
P1	31	In	GROUND	1 B4
P1	41	In	GROUND	1 B4
P1	51	In	GROUND	1 B4
P1	60	In	SERIN	21 D4
P1	61	In	GROUND	1 B4
P1	62	Out	ACSTATE9	18 A3
P1	64	Out	ACSTATE8	18 A4
P1	66	Out	ACSTATE7	18 B1
P1	67	Out	*ACPGMUXSEL	19 B4
P1	68	Out	ACSTATE6	18 B2
P1	69	Out	*ACCPUCR	20 A4
P1	70	Out	ACSTATE5	18 B3
P1	71	In	GROUND	1 B4
P1	72	Out	ACSTATE4	18 B4
P1	73	Out	ACCPUSTR	20 A4
P1	74	Out	ACSTATE3	18 D1
P1	75	Out	ACINSTAQ	20 A4
P1	76	Out	ACSTATE2	18 D2
P1	77	Out	ACATICYC1	20 C1
P1	78	Out	ACSTATE1	18 D3
P1	79	Out	ACATICYC2	20 C1
P1	80	Out	ACSTATE0	18 D4
P2	1	In	GROUND	1 B4
P2	2	In	+5VINB	3 C1
P2	4	In	+5VINB	3 C1
P2	11	In	GROUND	1 B4
P2	14	In	FPLIFLAGQ	5 B3
P2	15	In	*ALSKIP	5 B2
P2	16	In	*ASEXTFORM	5 B3
P2	17	In	ARAR15	11 D1
P2	18	In	ARAR14	9 C3
P2	19	In	ARAR2	10 D3

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Unit	Pin	Type	String	Sheet
P2	20	In	ARAR1	10 D3
P2	21	In	GROUND	1 A4
P2	22	In	ALA1	10 D4
P2	23	In	ALAO	10 D4
P2	24	In	ASALUEQ8K	9 C4
P2	25	Out	ACFORALAQ	4 C2
P2	26	In	ALURO	5 D4
P2	27	In	ARER0	5 D4
P2	28	In	ARAR0	5 D4
P2	29	In	FPLRDYQ	5 A3
P2	30	In	ALALUEQZ	7 B4
P2	31	In	GROUND	1 A4
P2	32	Out	ACINAQ	5 D1
P2	33	Out	ACENPCINC	5 B2
P2	34	Out	ACENPCOUT	5 C1
P2	35	Out	ACENIRLOAD	5 C1
P2	36	Out	*ACRSTSW	3 C3
P2	37	Out	*ACENIOUT	5 C1
P2	38	In	*FPLMRESETQ	18 A2
P2	39	In	*ASINSTV	18 A2
P2	40	Out	ACSC4	6 D2
P2	41	In	GROUND	1 A4
P2	42	Out	ACSC3	6 D2
P2	43	Out	ACSC2	6 D2
P2	44	Out	ACSC1	6 C2
P2	45	Out	ACSC0	6 C2
P2	46	In	ALMEM15	12 C2
P2	47	In	ALMEM14	12 C2
P2	48	In	ALMEM13	12 C2
P2	49	In	ALMEM12	12 C2
P2	50	In	ALMEM11	12 C3
P2	51	In	GROUND	1 A4
P2	52	In	ALMEM10	12 C3
P2	53	In	ALMEM9	12 C3
P2	54	In	ALMEM8	12 C3
P2	55	In	ALMEM7	12 C3
P2	56	In	ALMEM6	12 C3
P2	57	In	ALMEM5	12 C3
P2	58	In	ALMEM4	12 C3
P2	59	In	ALMEM3	12 C4
P2	60	In	ALMEM2	12 C4
P2	61	In	GROUND	1 A4
P2	62	In	ALMEM1	12 C4
P2	63	In	ALMEM0	12 C4
P2	64	In	ASIR15	12 A2
P2	65	In	ASIR14	12 A2
P2	66	In	ASIR13	12 A2
P2	67	In	ASIR12	12 A2
P2	68	In	ASIR11	12 A3
P2	69	In	ASIR10	12 A3
P2	70	In	ASIR9	12 A3
P2	71	In	GROUND	1 A4
P2	72	In	ASIR8	12 A3
P2	73	In	ASIR7	12 A3
P2	74	In	ASIR6	12 A3
P2	75	In	ASIR5	12 A3
P2	76	In	ASIR4	12 A3
P2	77	In	ASIR3	12 A4
P2	78	In	ASIR2	12 A4
P2	79	In	ASIR1	12 A4
P2	80	In	ASIR0	12 A4

String	Unit	Pin	Type	Sheet
*ACCPUCR	P1	69	Out	20 A4
*ACDPON	J4	19	Out	20 C1
*ACENIOUT	P2	37	Out	5 C1
*ACENLRAINC	J4	18	Out	19 C2
*ACENPROM	J4	17	Out	19 C2
*ACEXEJ	J4	16	Out	20 D3
*ACEXEK	J4	15	Out	20 D3
*ACGO	J4	14	Out	20 A3
*ACIDLJ	J4	8	Out	20 D3
*ACINTST	J4	13	Out	20 C3
*ACLDDBTSW	J4	38	Out	3 C3
*ACLRACLR	J4	12	Out	19 C2
*ACMOL3	J4	10	Out	20 C3
*ACMADOIT	P1	12	Out	5 D2
*ACMCL6	J4	9	Out	20 C3
*ACPGMUXSEL	P1	67	Out	19 B4
*ACRRINTINH	J4	20	Out	4 B2
*ACRSTSW	P2	36	Out	3 C3
*ACSCNTZ	J4	23	Out	6 C1
*ACTERM	J4	26	Out	20 A3
*ALAEQZ	P1	19	In	7 C3
*ALINSAV10	P1	13	In	7 D1
*ALSKIP	P2	15	In	5 B2
*ASEXTFORM	P2	16	In	5 B3
*ASINSTV	P2	39	In	18 A2
*CMSHIFT	P1	5	In	3 A2
*FPLBYTEFLAG	J4	25	In	18 A2
*FPLIN10	J4	24	In	7 D1
*FPLINTINT	J4	29	In	13 C2
*FPLINTM	J4	39	In	7 D4
*FPLMRESETQ	P2	38	In	18 A2
*MDCADRV	P1	27	In	7 D4
*MDCGCLK	P1	3	In	3 C2
+5VINA	P1	2	In	3 C1
+5VINA	P1	4	In	3 C1
+5VINB	P2	2	In	3 C1
+5VINB	P2	4	In	3 C1
AC3BLNK	J4	22	Out	20 C2
ACADRSTR	J4	5	Out	20 C1
ACATICYC1	P1	77	Out	20 C1
ACATICYC2	P1	79	Out	20 C1
ACBCLKLSB	J4	4	Out	20 C2
ACCPUSTR	P1	73	Out	20 A4
ACDATASTR	J4	3	Out	20 C1
ACENDISCTL	J4	2	Out	20 C1
ACENIRLOAD	P2	35	Out	5 C1
ACENPCINC	P2	33	Out	5 B2
ACENPCOUT	P2	34	Out	5 C1
ACFORALAQ	P2	25	Out	4 C2
ACINAQ	P2	32	Out	5 D1
ACINSTAQ	P1	75	Out	20 A4
ACSC0	P2	45	Out	6 C2
ACSC1	P2	44	Out	6 C2
ACSC2	P2	43	Out	6 D2
ACSC3	P2	42	Out	6 D2
ACSC4	P2	40	Out	6 D2
ACSELBFR	J4	7	Out	13 C2
ACSELBFRC	J4	6	Out	13 C2
ACSTATE0	P1	80	Out	18 D4
ACSTATE1	P1	78	Out	18 D3
ACSTATE2	P1	76	Out	18 D2
ACSTATE3	P1	74	Out	18 D1
ACSTATE4	P1	72	Out	18 B4
ACSTATE5	P1	70	Out	18 B3
ACSTATE6	P1	68	Out	18 B2
ACSTATE7	P1	66	Out	18 B1
ACSTATE8	P1	64	Out	18 A4
ACSTATE9	P1	62	Out	18 A3
ALAO	P2	23	In	10 D4
ALA1	P2	22	In	10 D4
ALALU0B	P1	28	In	7 B3
ALALUEQZ	P2	30	In	7 B4
ALMDR10	P1	25	In	7 D2
ALMEM0	P2	63	In	12 C4
ALMEM1	P2	62	In	12 C4
ALMEM10	P2	52	In	12 C3
ALMEM11	P2	50	In	12 C3
ALMEM12	P2	49	In	12 C2
ALMEM13	P2	48	In	12 C2
ALMEM14	P2	47	In	12 C2
ALMEM15	P2	46	In	12 C2
ALMEM2	P2	60	In	12 C4
ALMEM3	P2	59	In	12 C4
ALMEM4	P2	58	In	12 C3
ALMEM5	P2	57	In	12 C3
ALMEM6	P2	56	In	12 C3
ALMEM7	P2	55	In	12 C3
ALMEM8	P2	54	In	12 C3
ALMEM9	P2	53	In	12 C3
ALURO	P2	26	In	5 D4
ARAR0	P2	28	In	5 D4
ARAR1	P2	20	In	10 D3

String	Unit	Pin	Type	Sheet
ARAR14	P2	18	In	9 C3
ARAR15	P2	17	In	11 D1
ARAR2	P2	19	In	10 D3
ARER0	P2	27	In	5 D4
ARER1	P1	24	In	7 B4
ARER14	P1	23	In	11 D4
ARER15	P1	22	In	7 C3
ARXRMAX	P1	26	In	7 D4
ASALUEQ8K	P2	24	In	9 C4
ASIR0	P2	80	In	12 A4
ASIR1	P2	79	In	12 A4
ASIR10	P2	69	In	12 A3
ASIR11	P2	68	In	12 A3
ASIR12	P2	67	In	12 A2
ASIR13	P2	66	In	12 A2
ASIR14	P2	65	In	12 A2
ASIR15	P2	64	In	12 A2
ASIR2	P2	78	In	12 A4
ASIR3	P2	77	In	12 A4
ASIR4	P2	76	In	12 A3
ASIR5	P2	75	In	12 A3
ASIR6	P2	74	In	12 A3
ASIR7	P2	73	In	12 A3
ASIR8	P2	72	In	12 A3
ASIR9	P2	70	In	12 A3
ASST0	P1	18	In	7 D2
ASST1	P1	17	In	7 D2
ASST10	P1	14	In	7 D3
ASST2	P1	16	In	12 C1
ASST5	P1	15	In	9 C2
ASST6	P1	29	In	9 C2
FPLENCDB0	J4	37	In	3 D4
FPLENCDB1	J4	36	In	3 D4
FPLENCDB2	J4	35	In	3 D4
FPLENCDB3	J4	34	In	3 D4
FPLENTER	J4	33	In	3 C4
FPLFSWON	J4	32	In	3 C4
FPLIFLAGQ	P2	14	In	5 B3
FPLILOPQ	J4	27	In	9 B2
FPLLRAMAX	J4	28	In	8 C2
FPLRDYQ	P2	29	In	5 A3
FPLRUNNINGIN	P1	20	In	8 C3
FPLTRP13Q	P1	7	In	9 B2
FPLTRP14Q	P1	6	In	9 B2
GROUND	P1	1	In	1 C4
GROUND	P1	11	In	1 C4
GROUND	P1	21	In	1 B4
GROUND	P1	31	In	1 B4
GROUND	P1	41	In	1 B4
GROUND	P1	51	In	1 B4
GROUND	P1	61	In	1 B4
GROUND	P1	71	In	1 B4
GROUND	P2	1	In	1 B4
GROUND	P2	11	In	1 B4
GROUND	P2	21	In	1 A4
GROUND	P2	31	In	1 A4

Page	Type	Page name
1	PC	CAPACITORS
2	PC	CAPACITORS
3	PC	FRONT PANEL SWITCH DECODING
4	PC	SPECIAL INSTRUCTION FLAGS
5	PC	REGISTER CONTROL
6	PC	SHIFT COUNTER
7	PC	J1 JUMP ADDRESS SELECTOR
8	PC	J2 JUMP ADDRESS SELECTOR
9	PC	J3 JUMP ADDRESS SELECTOR
10	PC	PRESENT ADDRESS SELECTOR
11	PC	PRESENT ADDRESS +1 SELECTOR
12	PC	OPCODE SELECTOR
13	PC	BFR SELECTOR
14	PC	BASIC FUNCTION ROM
15	PC	BASIC FUNCTION ROM ADDRESS
16	PC	PRESENT ADDRESS INCRAMENTER
17	PC	NEXT ADDRESS SELECTOR
18	PC	NEXT ADDRESS MUXES
19	PC	STATE DECODE
20	PC	NEXT ADDRESS PROM
21	PC	PRESENT ADDRESS AND PROMS
22	BL	AC BLOCK DIAGRAM

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SIZE	CODE IDENT	DWG NO.	REV
B	53938	200725-600	B0
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MAINTENANCE PARTS LIST

ASSEMBLY: PL 200727-100

REV: B0 = BA

DESC: CARD ASSY,AR-ARITHMETIC REGISTER,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,P02R PCBD11X13	53938	EVANS & SUTHERLAND.	200727-500	200727-500	1
C2 C3 C4 C5	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C6 C8 C9 C10 C11 C12 C13	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C14 C15 C16 C17 C18 C19 C20	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804169-333	115
C22 C24 C25 C26 C27 C28 C29						
C30 C31 C32 C33 C34 C35 C39						
C40 C41 C42 C44 C45 C46 C47						
C48 C49 C50 C82 C96 C97 C99						
C100 C101 C102 C103 C104						
C105 C106 C107 C108 C109						
C110 C111 C112 C113 C114						
C115 C116 C117 C118 C119						
C120 C121 C122 C123 C124						
C125 C126 C127 C128 C129						
C130 C131 C132 C133 C134						
C135 C136 C137 C138 C139						
C140 C141 C142 C143 C144						
C145 C146 C147 C148 C149						
C150 C151 C152 C153 C154						
C155 C156 C157 C158 C159						
C160 C161 C162 C163 C164						
C165 C166 C167 C168 C169						
C170 C171 C172						
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
J4	CN,HOUS 50P,RTA	22526	DU PONT E I NEMOURS(CONN)	65268-011 (2X25)	801290-050	1
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
R1 R2 R3	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	3
R4	R,,AXL 5.11K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-5.11K-1%-50PPM	803453-511	1
U10 U11 U12	IC,TTL 74F194	07263	FAIRCHILD IC'S & SEMICON	74F194PC/DC	807994-035	3
U124 U125 U126 U127 U134	IC,TTL 74F151	07263	FAIRCHILD IC'S & SEMICON	74F151(A)PC/DC	807912-035	16
U135 U136 U137 U144 U145						
U146 U147 U154 U155 U156						
U13	IC,PROM,1024X8,35NS,T	53938	EVANS & SUTHERLAND.	807204-035-A05	807204-035-A05	1
U130 U131 U141 U151	IC,TTL 74S158	01295	TEXAS INSTR, SEMICON DIV.	SN74S158N	807658-055	4
U14	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A06	807204-035-A06	1
U140 U150	IC,TTL 74S240	01295	TEXAS INSTR, SEMICON DIV.	SN74S240N/J	807792-020	2
U15 U16 U24 U25	IC,TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	4
U20	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A08	807859-016-A08	1
U21	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A09	807859-016-A09	1
U22	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A10	807859-016-A10	1
U23	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A11	807859-016-A11	1
U30 U60 U70 U122 U133	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	5
U31 U63 U123	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	3
U33 U73	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	2
U34 U81	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	2

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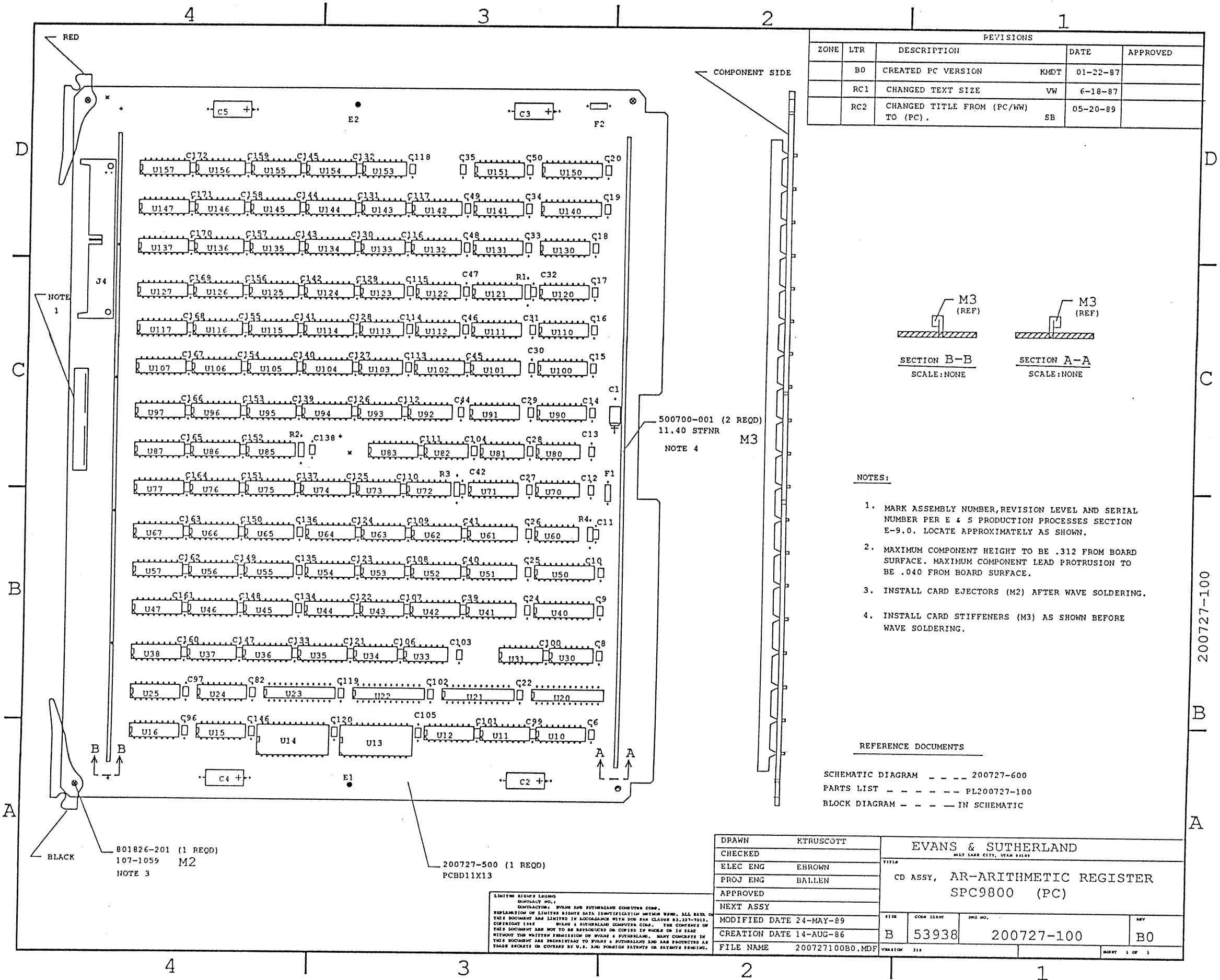
EVANS + SUTHERLAND

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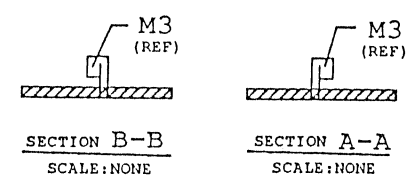
MAINTENANCE PARTS LIST

ASSEMBLY: PL 200727-100	REV: B0 = BA	DESC: CARD ASSY,AR-ARITHMETIC REGISTER,SPC9800 (PC)				QTY/
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	ASSY
U35 U36 U37 U38 U62 U64 U65 U66 U67 U90 U100 U104 U105 U106 U107 U110 U120	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	17
U40 U50	IC,TTL 74S241	27014	NATIONAL SEMICONDUCTOR	DM74S241N	807793-055	2
U41 U51 U54 U55 U56 U57 U61 U71 U83 U85 U86 U87 U94 U95 U96 U97 U142	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	17
U42 U52 U102 U132	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	4
U43 U53 U72 U103 U113	IC,TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	5
U44 U45 U46 U47 U74 U75 U76 U77 U91 U101 U111 U114 U115 U116 U117 U121	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	16
U80	IC,TTL 74S86	01295	TEXAS INSTR, SEMICON DIV.	SN74S86N	807486-055	1
U82 U143 U153	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	3
U92 U112	IC,TTL S64	01295	TEXAS INSTR, SEMICON DIV.	SN74S64N	807464-055	2
U93	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1

36 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATED PC VERSION	KMDT 01-22-87	
	RC1	CHANGED TEXT SIZE	VW 6-18-87	
	RC2	CHANGED TITLE FROM (PC/WW) TO (PC).	SB 05-20-89	



NOTES:

1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
2. MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
3. INSTALL CARD EJECTORS (M2) AFTER WAVE SOLDERING.
4. INSTALL CARD STIFFENERS (M3) AS SHOWN BEFORE WAVE SOLDERING.

REFERENCE DOCUMENTS

- SCHEMATIC DIAGRAM - - - - 200727-600
- PARTS LIST - - - - - PL200727-100
- BLOCK DIAGRAM - - - - IN SCHEMATIC

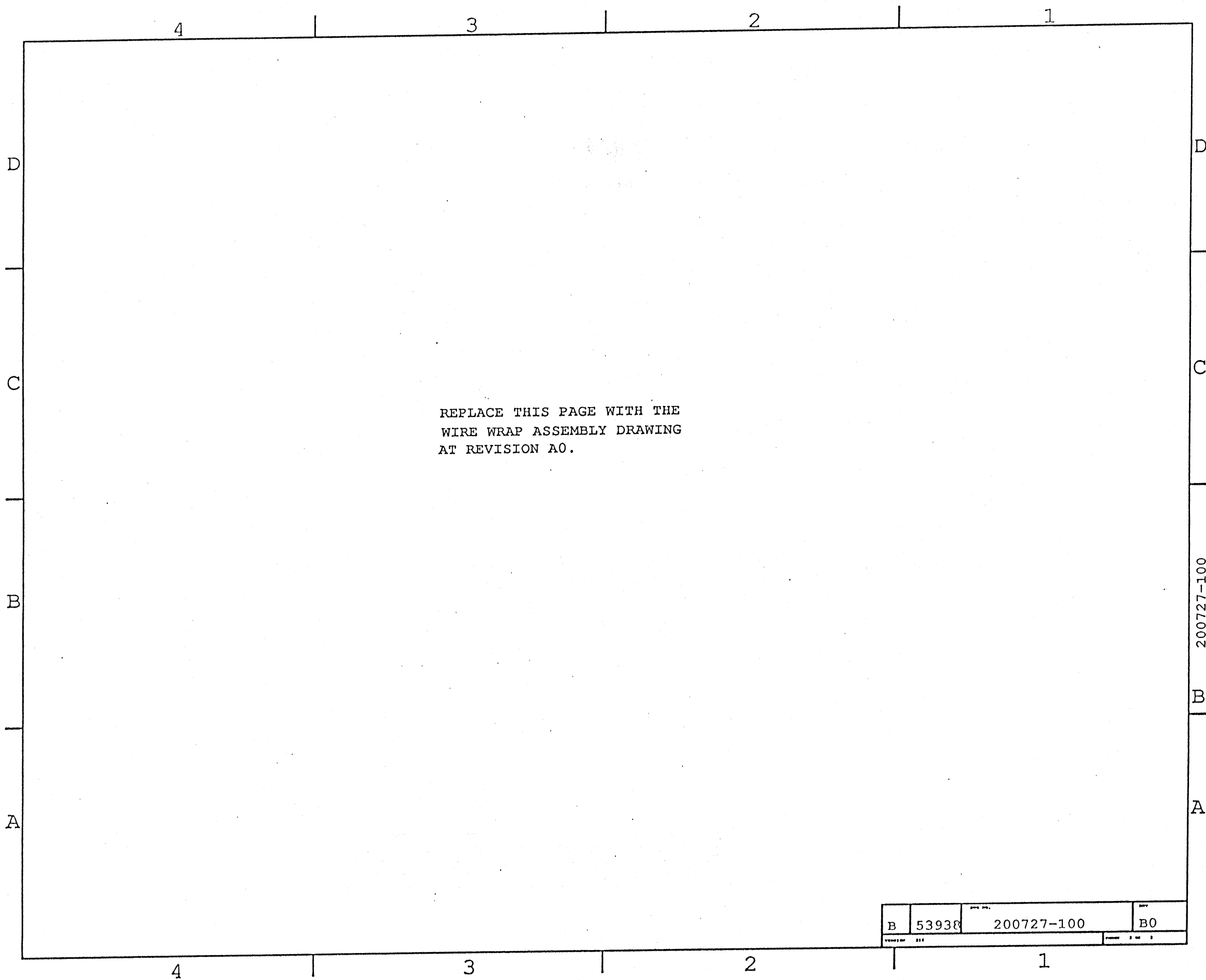
BLACK 801826-201 (1 REQD)
107-1059 M2
NOTE 3

200727-500 (1 REQD)
PCBD11X13

500700-001 (2 REQD)
11.40 STFN R
NOTE 4 M3

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EXPLANATION OF LIMITED RIGHTS DATA IDENTIFICATION METHOD USED: ALL DATA IN THIS DOCUMENT ARE LIMITED IN ACCORDANCE WITH FAR CLAUSE 53.227-7013, CONTINGENT 1348, EVANS & SUTHERLAND COMPUTER CORP., THE CONTENTS OF THIS DOCUMENT ARE NOT TO BE REPRODUCED OR COPIED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF EVANS & SUTHERLAND. MANY CONCEPTS IN THIS DOCUMENT ARE PROPRIETARY TO EVANS & SUTHERLAND AND ARE PROTECTED AS TRADE SECRETS OR COVERED BY U.S. AND FOREIGN PATENTS OR PATENTS PENDING.

DRAWN	KTRUSCOTT		
CHECKED			
ELEC ENG	EBROWN		
PROJ ENG	BALLEN		
APPROVED			
NEXT ASSY			
MODIFIED DATE	24-MAY-89		
CREATION DATE	14-AUG-86		
FILE NAME	200727100B0.MDF		
EVANS & SUTHERLAND <small>MILITARY CITY, TEXAS 75119</small>		TITLE	
CD ASSY, AR-ARITHMETIC REGISTER SPC9800 (PC)			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200727-100	B0
VERSION 212		SHEET 1 OF 1	



REPLACE THIS PAGE WITH THE
WIRE WRAP ASSEMBLY DRAWING
AT REVISION A0.

B	53938	200727-100	B0
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200727-100

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200727-100

REV: A0 = AA

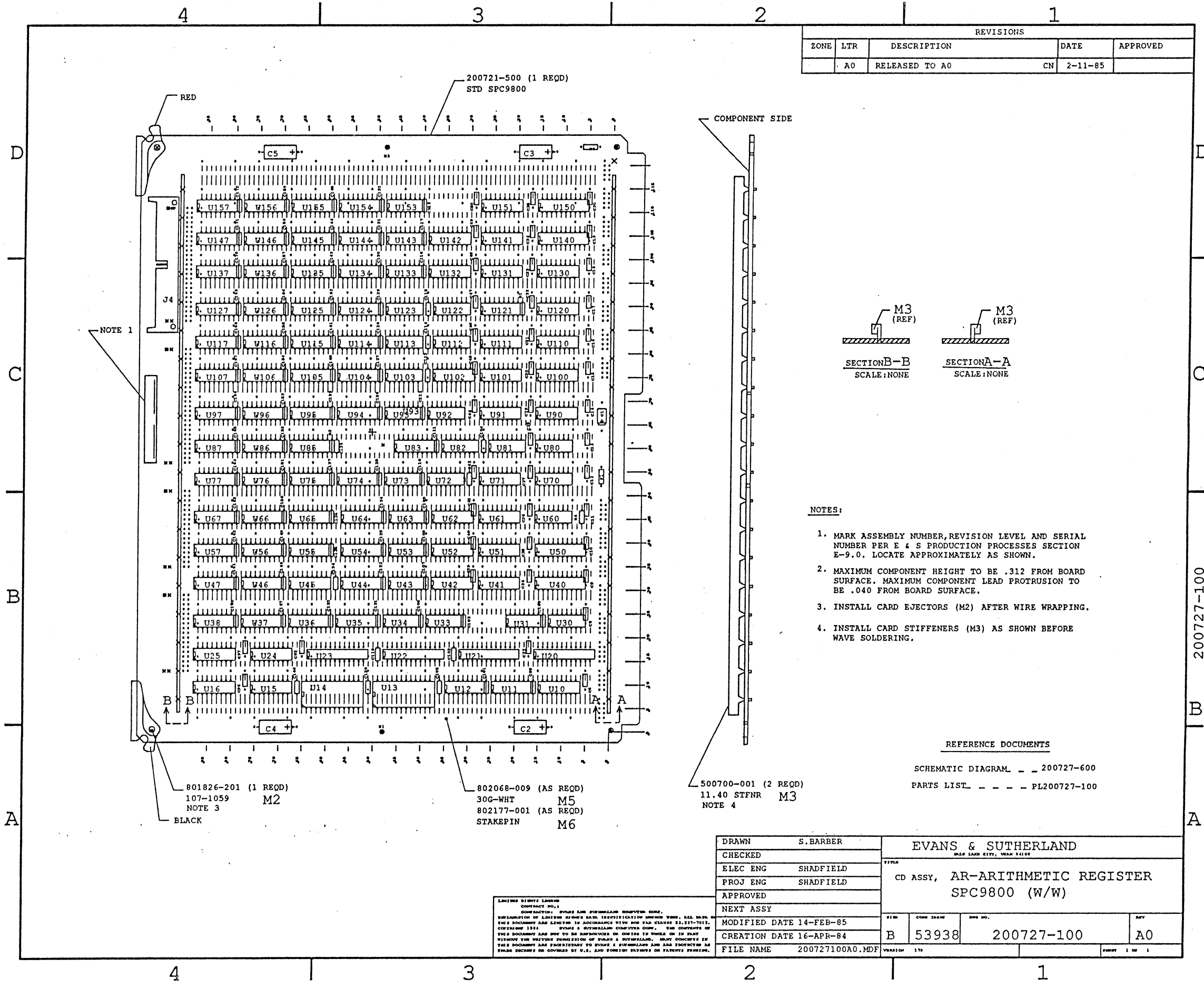
DESC: CARD ASSY,AR-ARITHMETIC REGISTER,SPC9800 (PC)

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C1	BD,WV STD SPC9800	53938	EVANS & SUTHERLAND.	200721-500	200721-500	1
C2 C3 C4 C5	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C6 C8 C9 C10 C11 C12 C13	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C14 C15 C16 C17 C18 C19 C20	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	115
C22 C24 C25 C26 C27 C28 C29						
C30 C31 C32 C33 C34 C35 C39						
C40 C41 C42 C44 C45 C46 C47						
C48 C49 C50 C82 C96 C97 C99						
C100 C101 C102 C103 C104						
C105 C106 C107 C108 C109						
C110 C111 C112 C113 C114						
C115 C116 C117 C118 C119						
C120 C121 C122 C123 C124						
C125 C126 C127 C128 C129						
C130 C131 C132 C133 C134						
C135 C136 C137 C138 C139						
C140 C141 C142 C143 C144						
C145 C146 C147 C148 C149						
C150 C151 C152 C153 C154						
C155 C156 C157 C158 C159						
C160 C161 C162 C163 C164						
C165 C166 C167 C168 C169						
C170 C171 C172						
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
J4	CN,HOUS 50P,RTA	22526	DU PONT E I NEMOURS (CONN)	65268-011 (2X25)	801290-050	1
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
M5 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
M6 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	2674
R1 R2 R3	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	3
R4	R,,AXL 5.11K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-5.11K-1%-50PPM	803453-511	1
U10 U11 U12	IC,TTL 74F194	07263	FAIRCHILD IC'S & SEMICOND	74F194PC/DC	807994-035	3
U124 U125 U126 U127 U134	IC,TTL 74F151	07263	FAIRCHILD IC'S & SEMICOND	74F151(A)PC/DC	807912-035	16
U135 U136 U137 U144 U145						
U146 U147 U154 U155 U156						
U13	IC,PROM,1024X8,35NS,T	53938	EVANS & SUTHERLAND.	807204-035-A05	807204-035-A05	1
U130 U131 U141 U151	IC,TTL 74S158	01295	TEXAS INSTR, SEMICON DIV.	SN74S158N	807658-055	4
U14	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A06	807204-035-A06	1
U140 U150	IC,TTL 74S240	01295	TEXAS INSTR, SEMICON DIV.	SN74S240N/J	807792-020	2
U15 U16 U24 U25	IC,TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	4
U20	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A08	807859-016-A08	1
U21	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A09	807859-016-A09	1
U22	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A10	807859-016-A10	1
U23	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A11	807859-016-A11	1
U30 U60 U70 U122 U133	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	5
U31 U63 U123	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	3

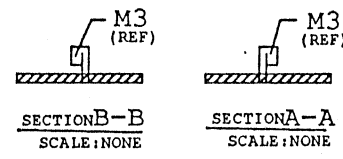
MAINTENANCE PARTS LIST

ASSEMBLY: PL 200727-100	REV: A0 = AA	DESC: CARD ASSY,AR-ARITHMETIC REGISTER,SPC9800 (PC)					QTY/
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	ASSY	
U33 U73	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	2	
U34 U81	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	2	
U35 U36 U37 U38 U62 U64	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	17	
U65 U66 U67 U90 U100 U104							
U105 U106 U107 U110 U120							
U40 U50	IC,TTL 74S241	27014	NATIONAL SEMICONDUCTOR	DM74S241N	807793-055	2	
U41 U51 U54 U55 U56 U57 U61	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	17	
U71 U83 U85 U86 U87 U94 U95							
U96 U97 U142							
U42 U52 U102 U132	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	4	
U43 U53 U72 U103 U113	IC,TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	5	
U44 U45 U46 U47 U74 U75 U76	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	16	
U77 U91 U101 U111 U114 U115							
U116 U117 U121							
U80	IC,TTL 74S86	01295	TEXAS INSTR, SEMICON DIV.	SN74S86N	807486-055	1	
U82 U143 U153	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	3	
U92 U112	IC,TTL S64	01295	TEXAS INSTR, SEMICON DIV.	SN74S64N	807464-055	2	
U93	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1	

38 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0	CN 2-11-85	



- NOTES:
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 2. MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
 3. INSTALL CARD EJECTORS (M2) AFTER WIRE WRAPPING.
 4. INSTALL CARD STIFFENERS (M3) AS SHOWN BEFORE WAVE SOLDERING.

REFERENCE DOCUMENTS
 SCHEMATIC DIAGRAM _ _ 200727-600
 PARTS LIST _ _ _ _ PL200727-100

DRAWN	S. BARBER	EVANS & SUTHERLAND		
CHECKED		CD ASSY, AR-ARITHMETIC REGISTER		
ELEC ENG	SHADFIELD	SPC9800 (W/W)		
PROJ ENG	SHADFIELD			
APPROVED				
NEXT ASSY				
MODIFIED DATE	14-FEB-85			
CREATION DATE	16-APR-84			
FILE NAME	200727100A0.MDF	REV	REV NO.	REV
		B	53938	200727-100
				A0

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200727-100

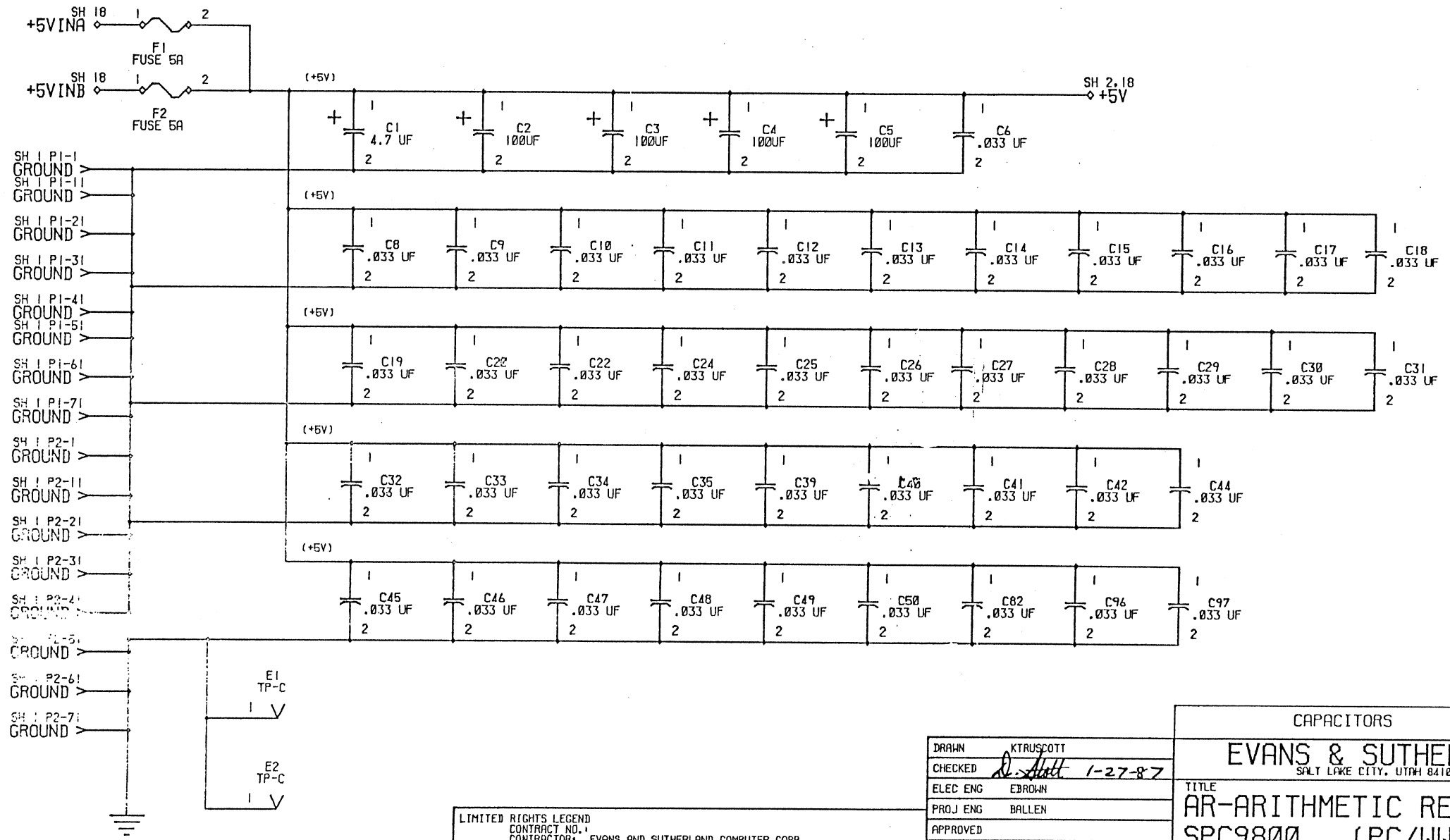


NOTES UNLESS OTHERWISE SPECIFIED:

1. RESISTANCE VALUES ARE IN OHMS + - 1% .K DENOTES 1000.
2. ON ALL IC'S, GROUND AND +5V (VCC) ARE AS FOLLOWS:
 - 14 PIN IC, 7 AND 14
 - 16 PIN IC, 8 AND 16
 - 18 PIN IC, 9 AND 18
 - 20 PIN IC, 10 AND 20
 - 22 PIN IC, 11 AND 22
 - 24 PIN IC, 12 AND 24
 - 28 PIN IC, 14 AND 28

3. CARD CONNECTOR SYMBOL "PI-" DESIGNATES:
 - INPUT SIGNALS \rhd
 - OUTPUT SIGNALS \leftarrow

4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.
 - $\text{---} \text{---} \text{---}$



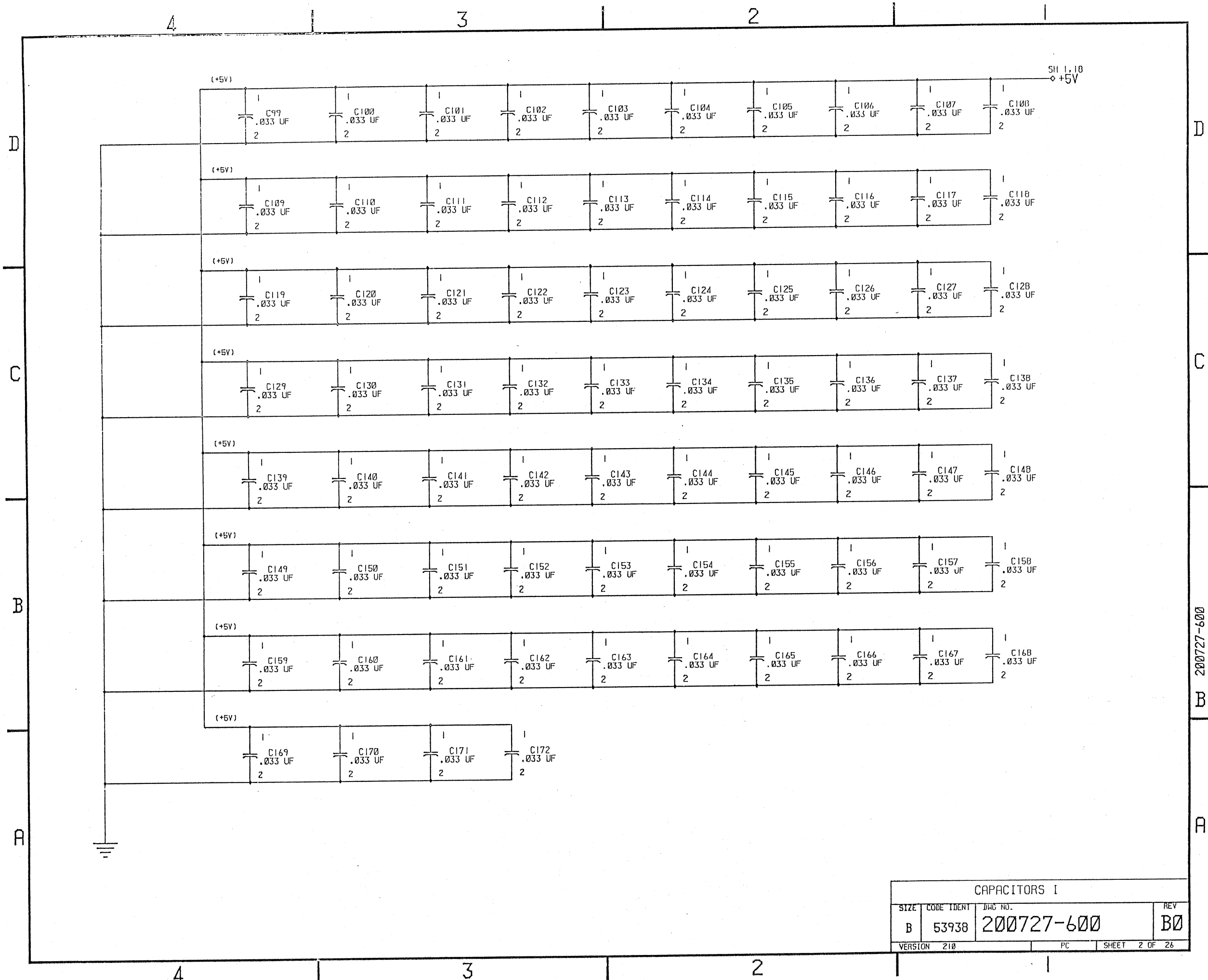
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DRAWN	KTRUSCOTT
CHECKED	<i>[Signature]</i> 1-27-87
ELEC ENG	EBROWN
PROJ ENG	BALLEN
APPROVED	
NEXT ASSY	
MODIFIED DATE	22-JAN-87
CREATION DATE	14-AUG-86
FILE NAME	20072710080.MDF

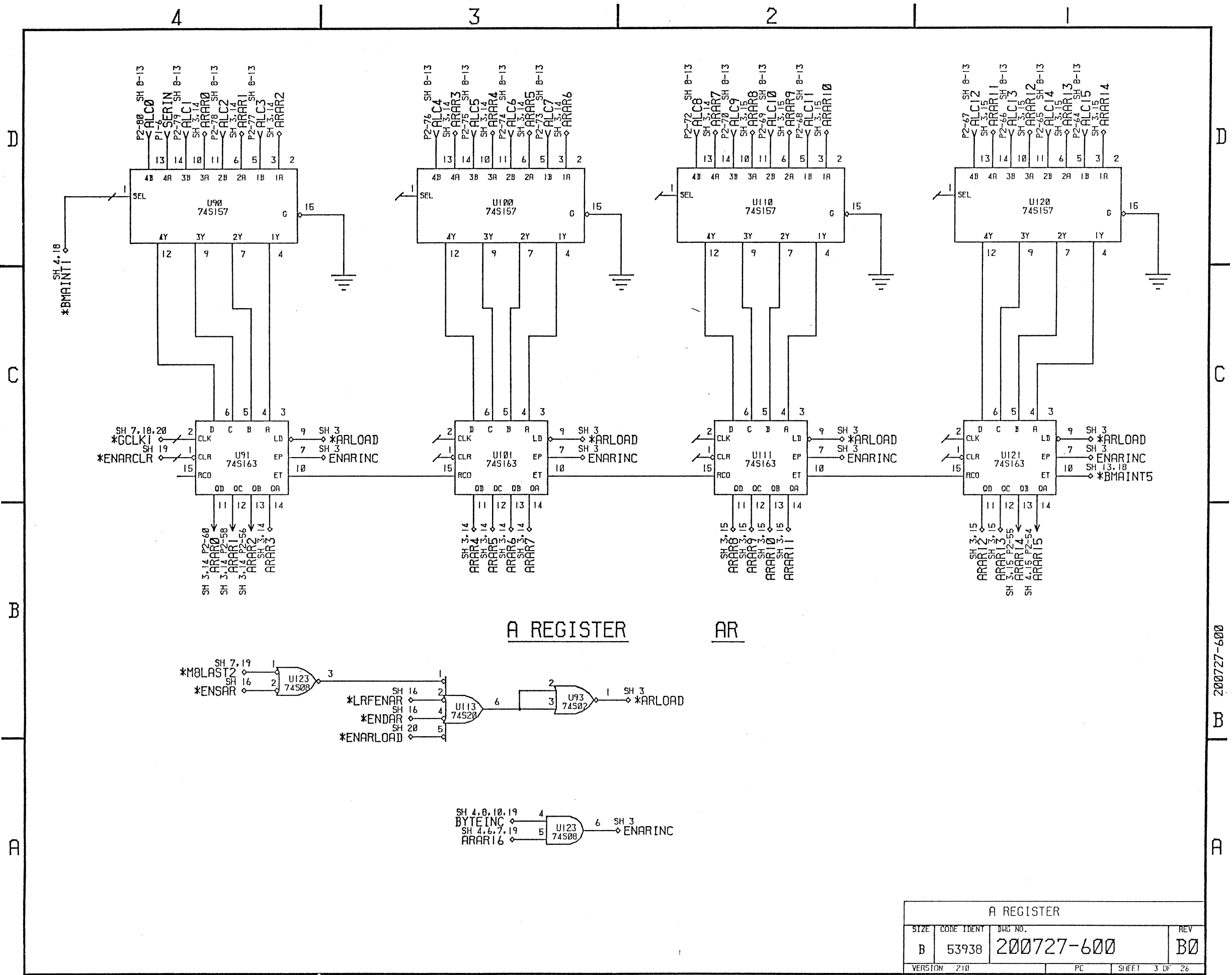
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EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE AR-ARITHMETIC REGISTER SPC9800 (PC/WW)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200727-600	B0
VERSION	210	PC	SHEET 1 OF 26

LIMITED RIGHTS LEGEND
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200727-600 B



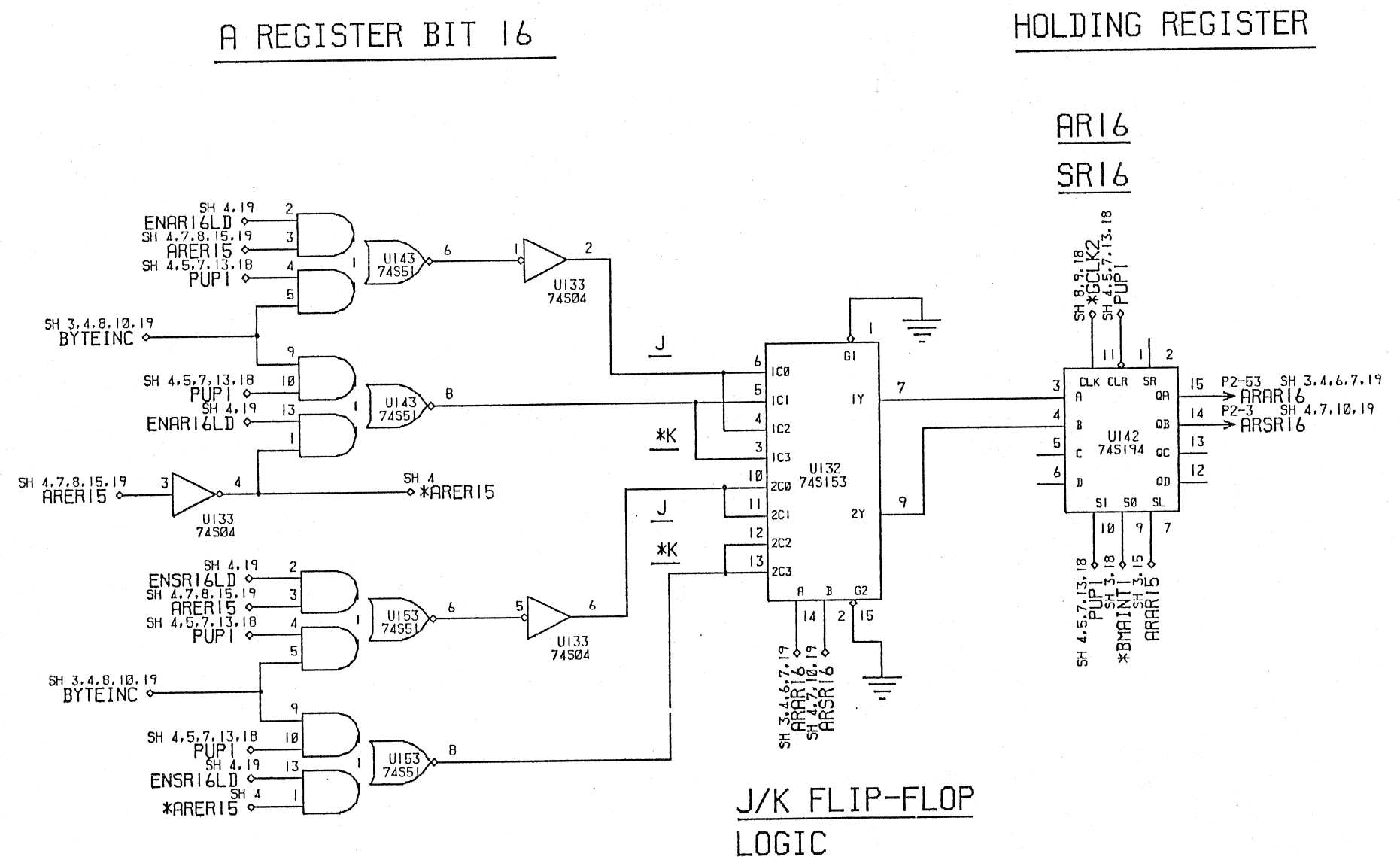
CAPACITORS I			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200727-600	B0
VERSION 210		PC	SHEET 2 OF 26



A REGISTER

AR

A REGISTER			
SIZE	CODE IDENT	DOC NO.	REV
B	53938	200727-600	B0
VERSION 210	PC	SHEET 3 OF 26	



A REGISTER BIT 16

HOLDING REGISTER

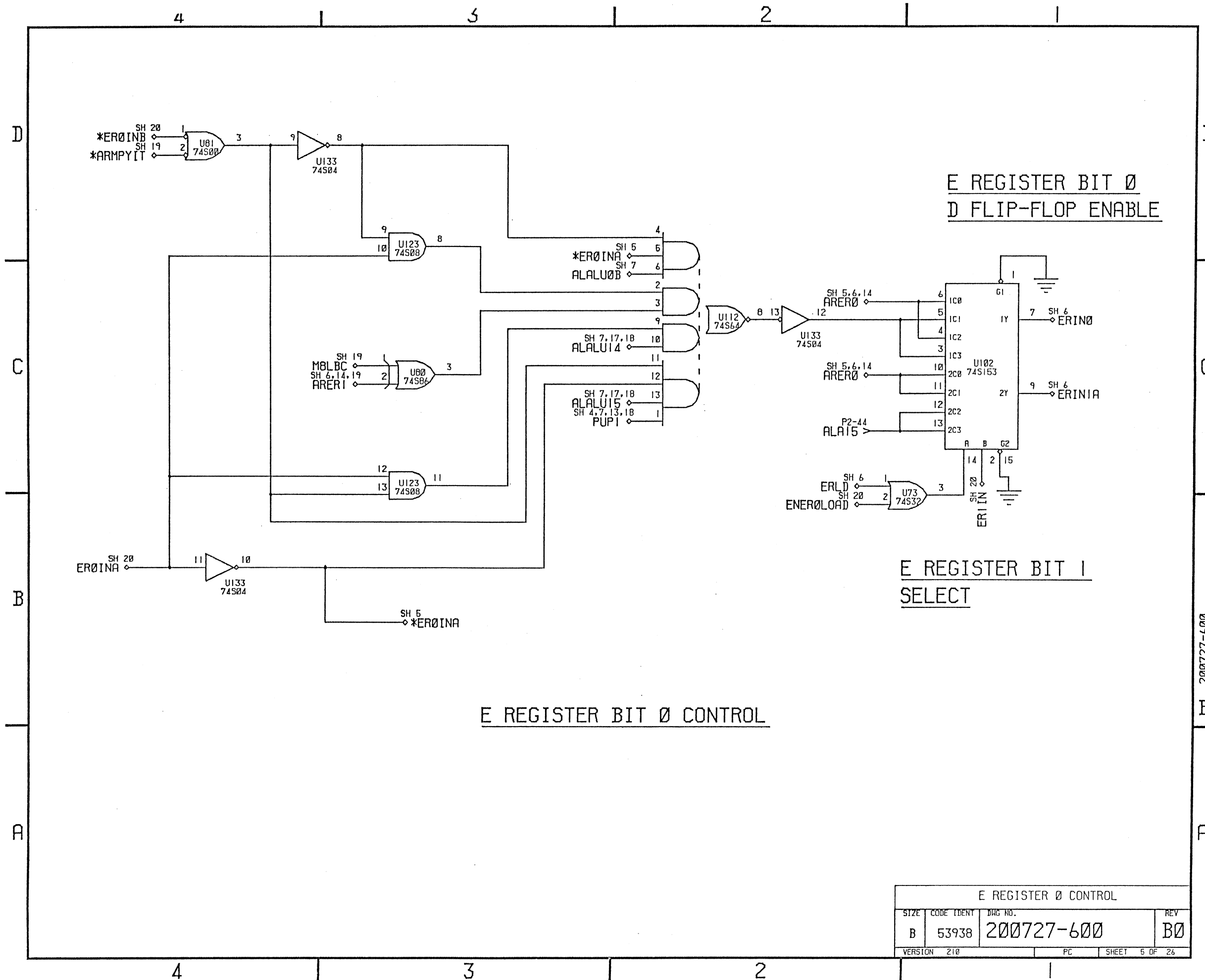
AR16
SR16

J/K FLIP-FLOP LOGIC

S REGISTER BIT 16

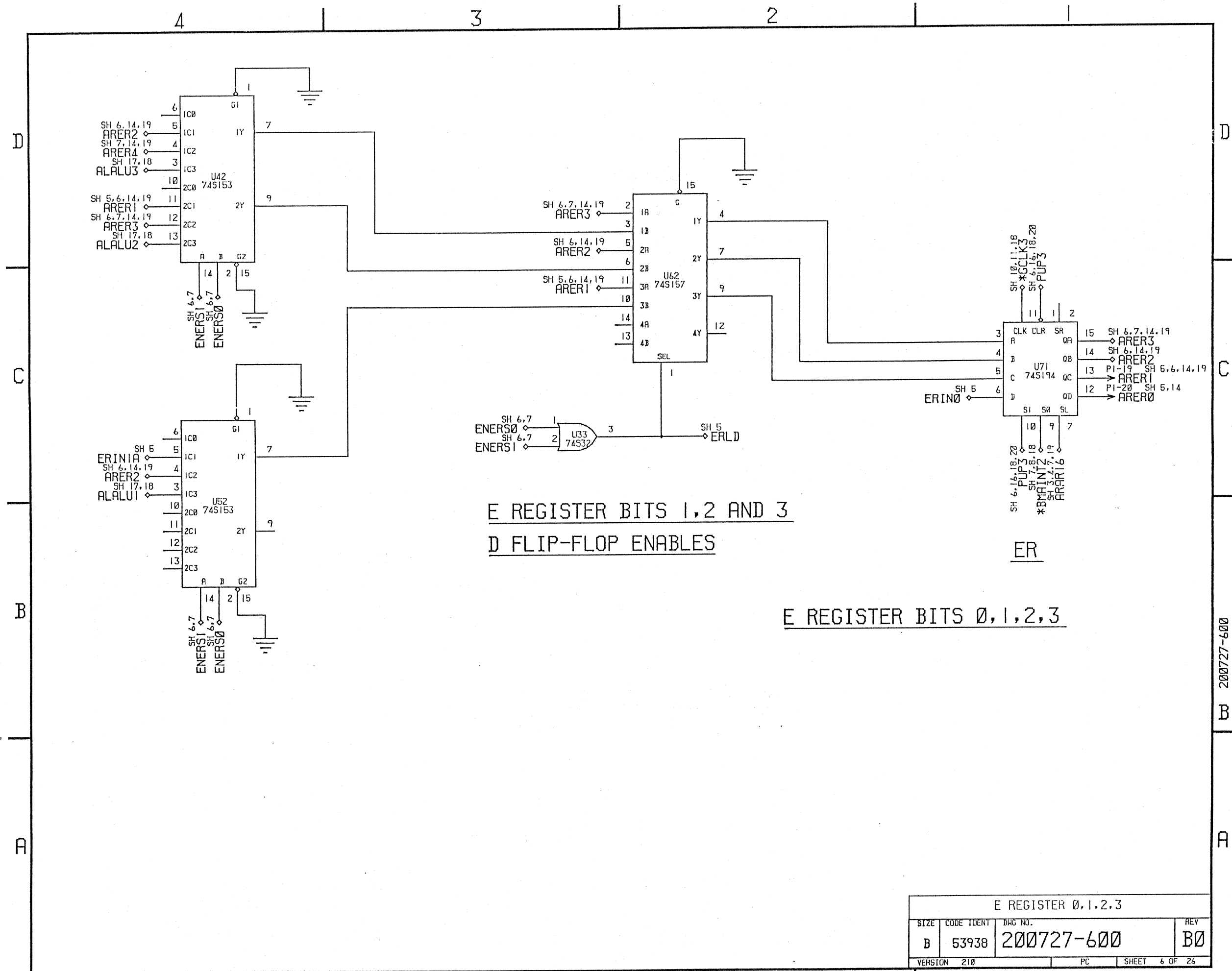
200727-600
B
A

A REGISTER BIT 16			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200727-600	B0
VERSION	210	PC	SHEET 4 OF 26



200727-600 B

E REGISTER 0 CONTROL			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200727-600	B0
VERSION	Z10	PC	SHEET 5 OF 26



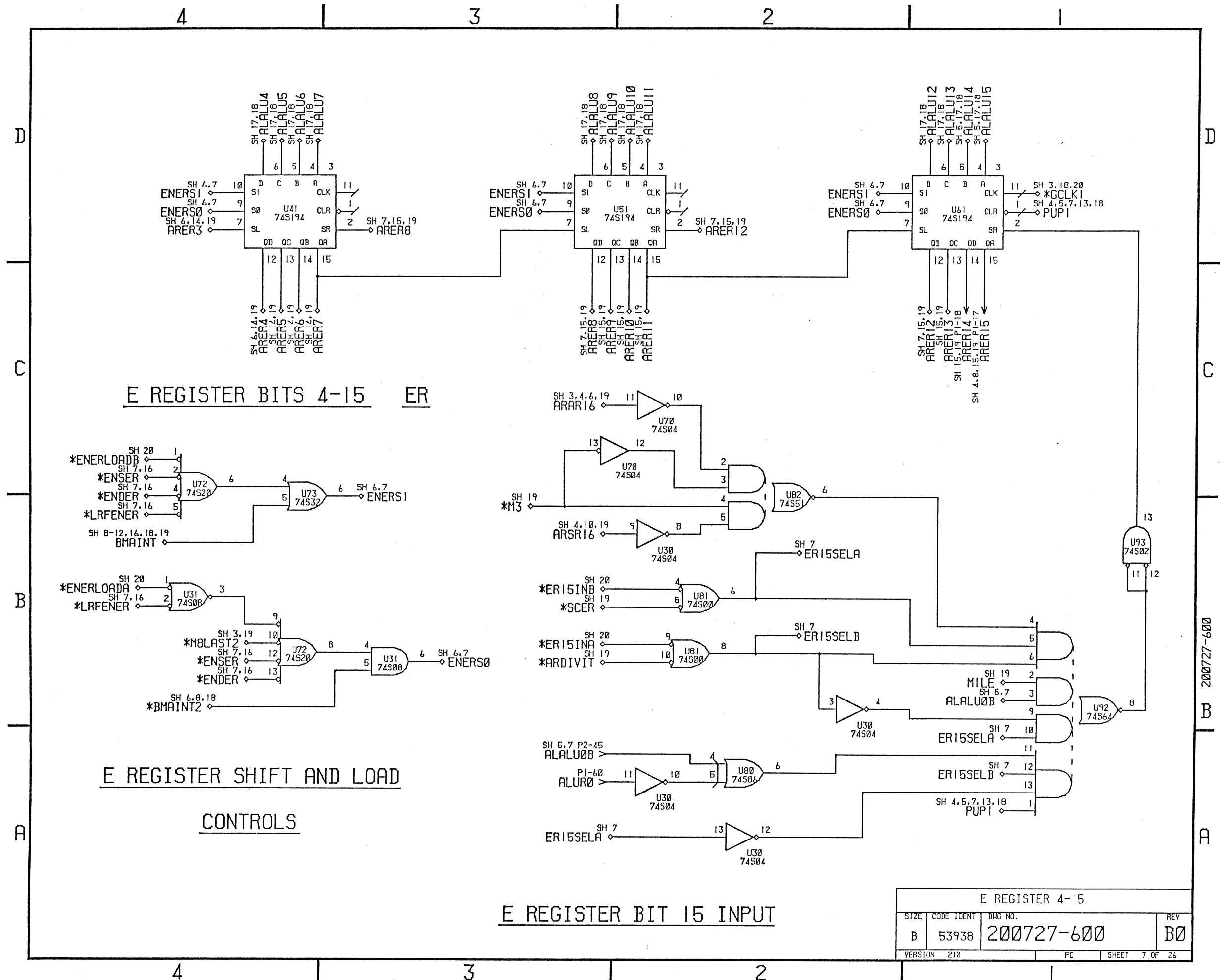
E REGISTER BITS 1,2 AND 3
D FLIP-FLOP ENABLES

E REGISTER BITS 0,1,2,3

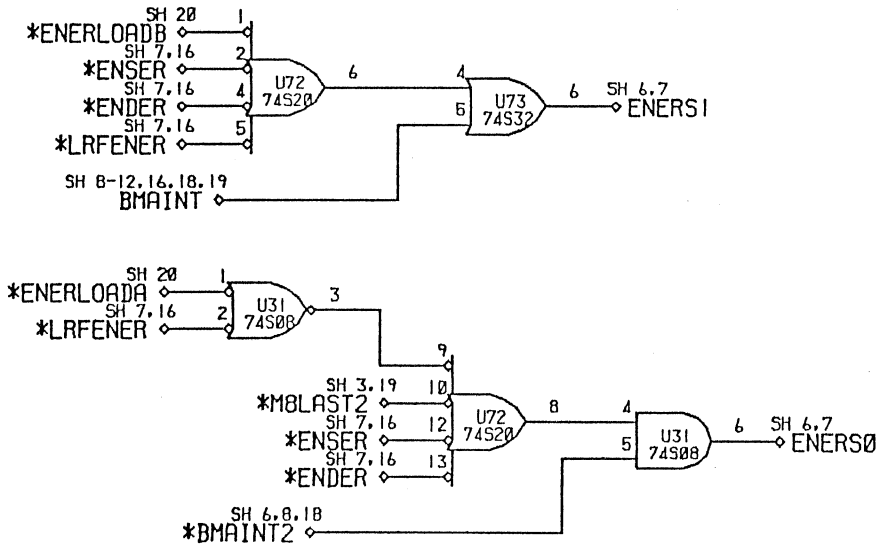
ER

E REGISTER 0,1,2,3			
SIZE	CODE IDENT	DRG NO.	REV
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VERSION	210	PC	SHEET 6 OF 26

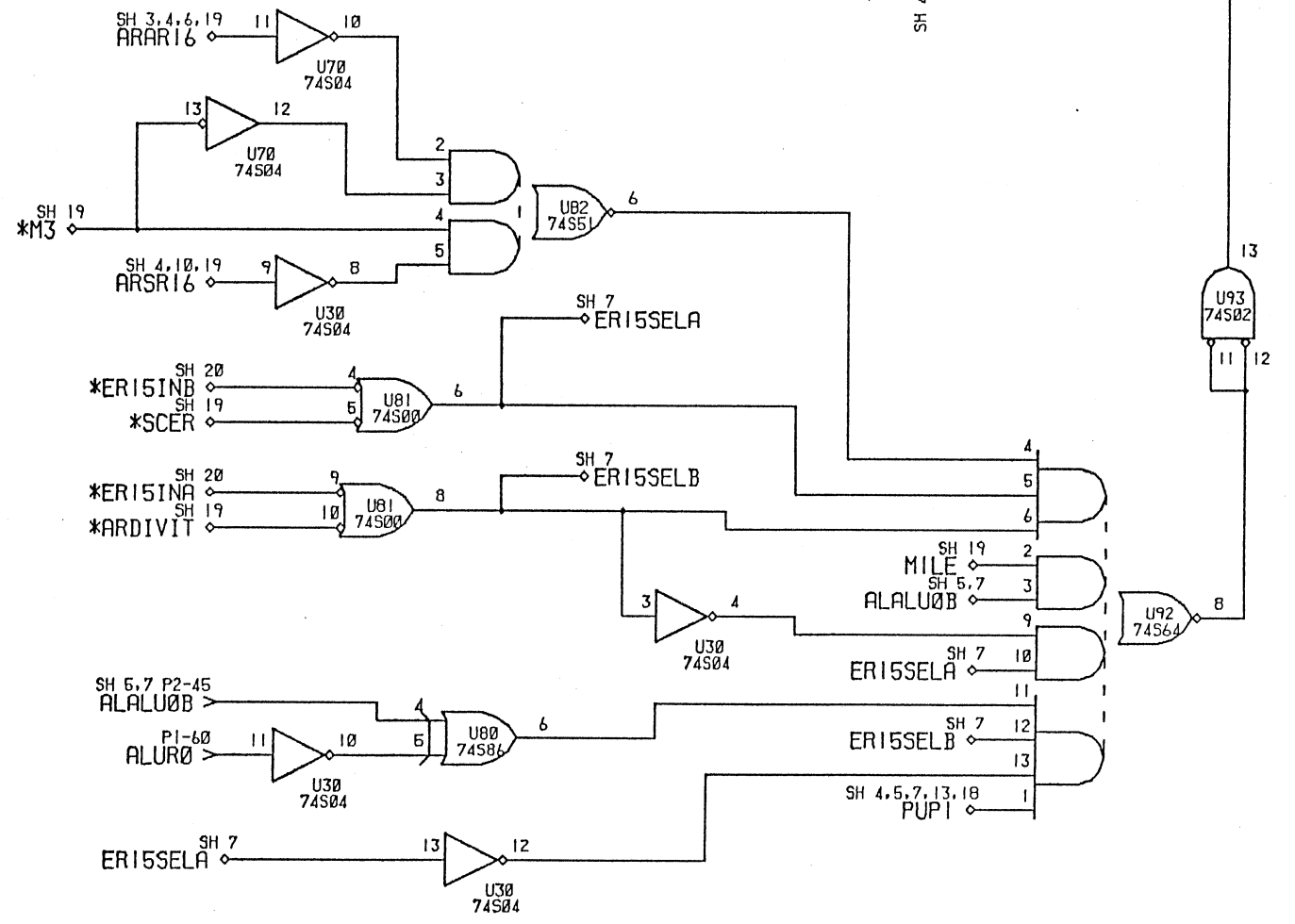
200727-600 B A



E REGISTER BITS 4-15 ER

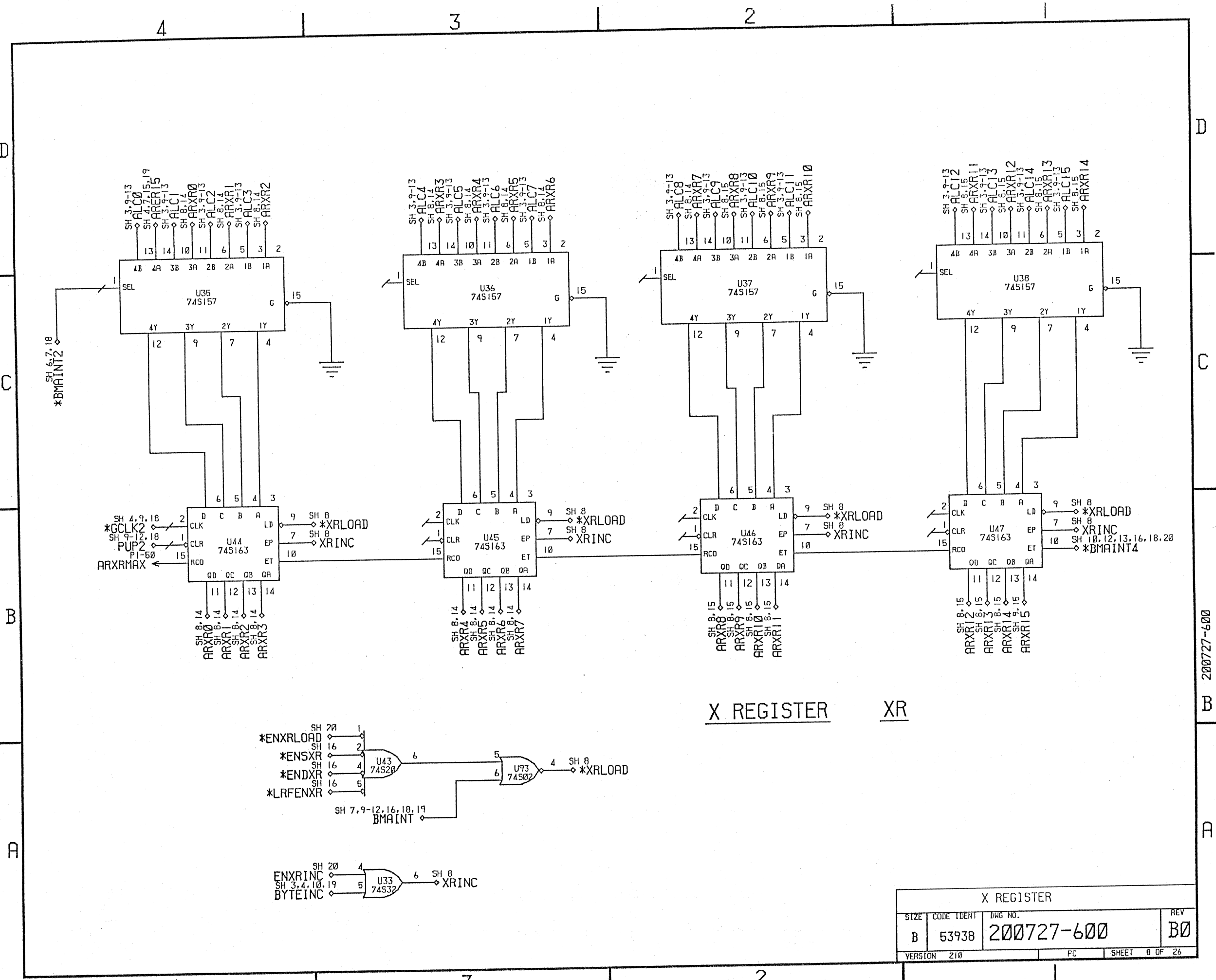


E REGISTER SHIF AND LOAD CONTROLS

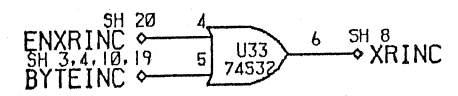
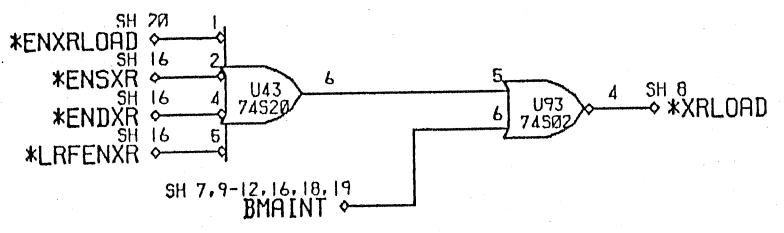


E REGISTER BIT 15 INPUT

E REGISTER 4-15			
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VERSION	210	PC	SHEET 7 OF 26

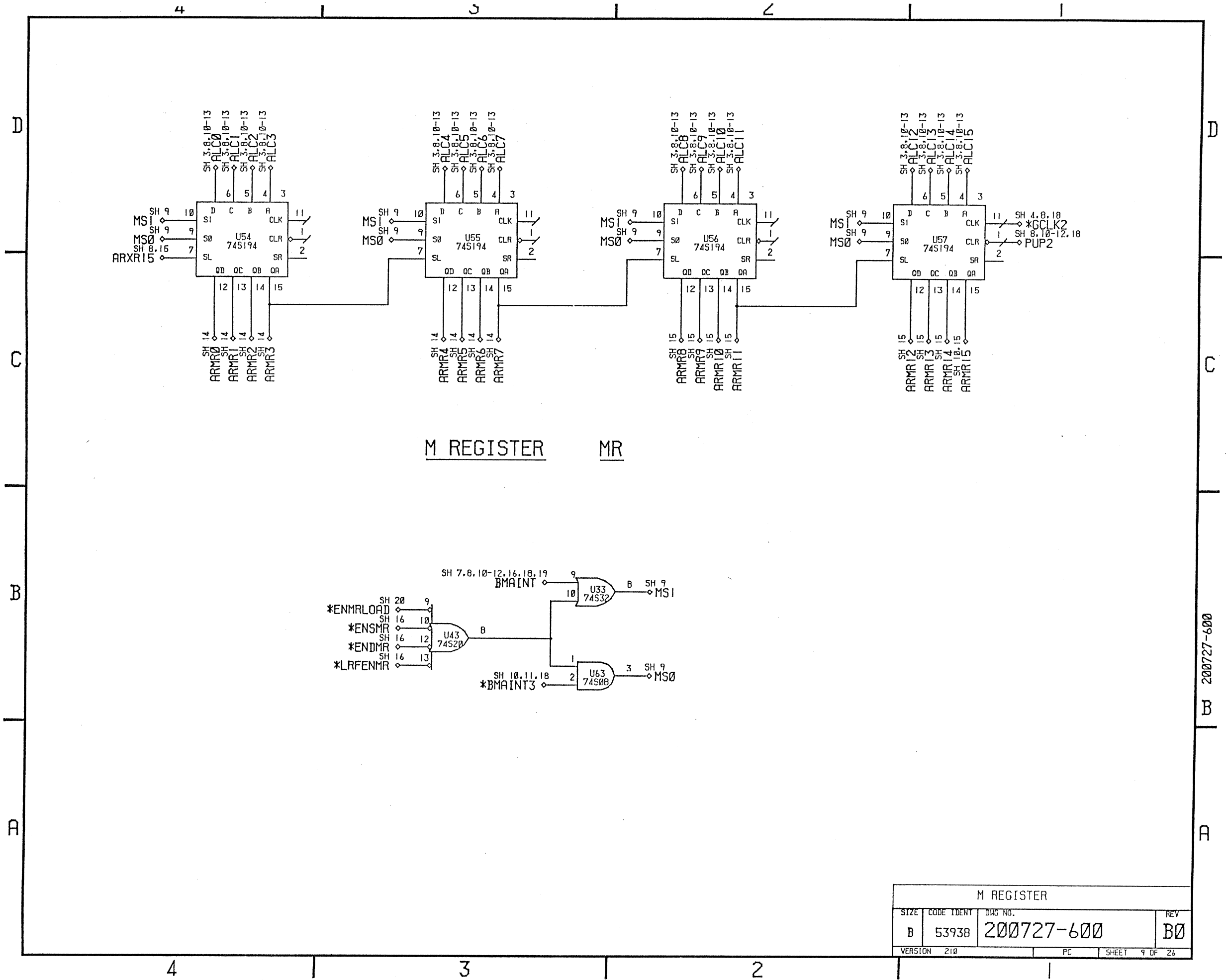


X REGISTER XR

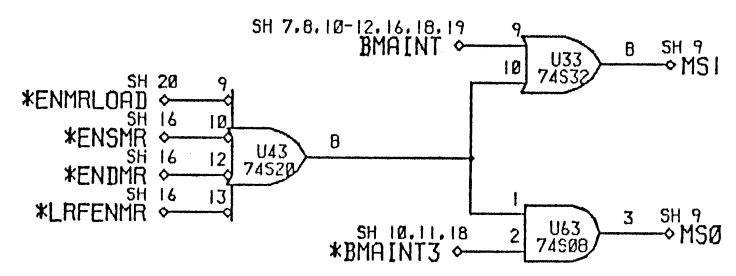


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VERSION	210	PC	SHEET 8 OF 26

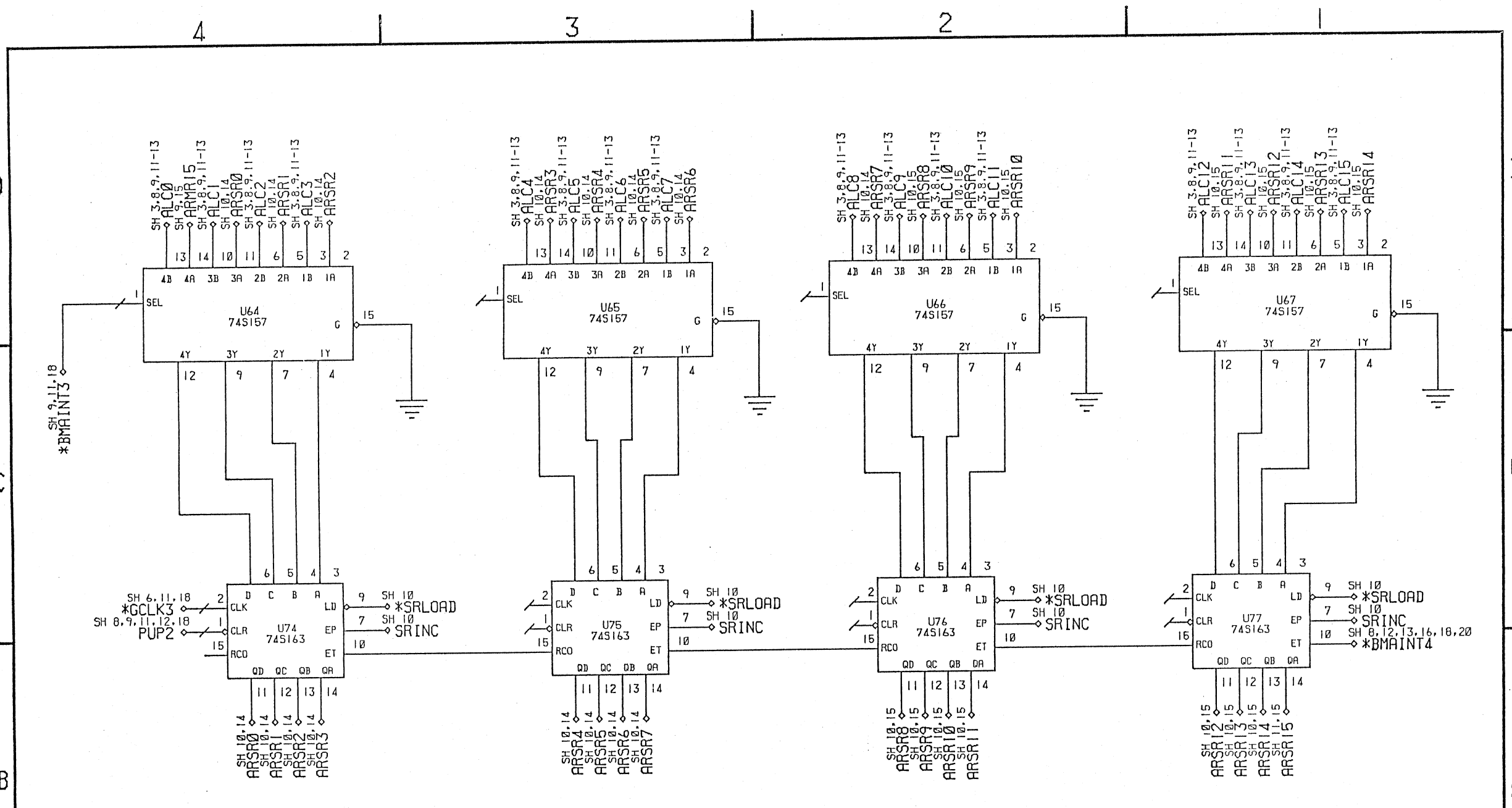
200727-600



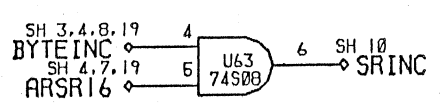
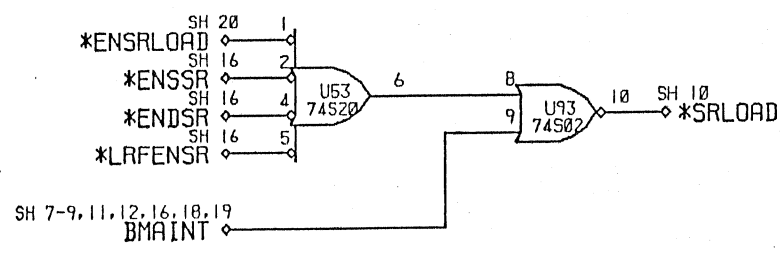
M REGISTER MR



M REGISTER			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200727-600	B0
VERSION	210	PC	SHEET 9 OF 26

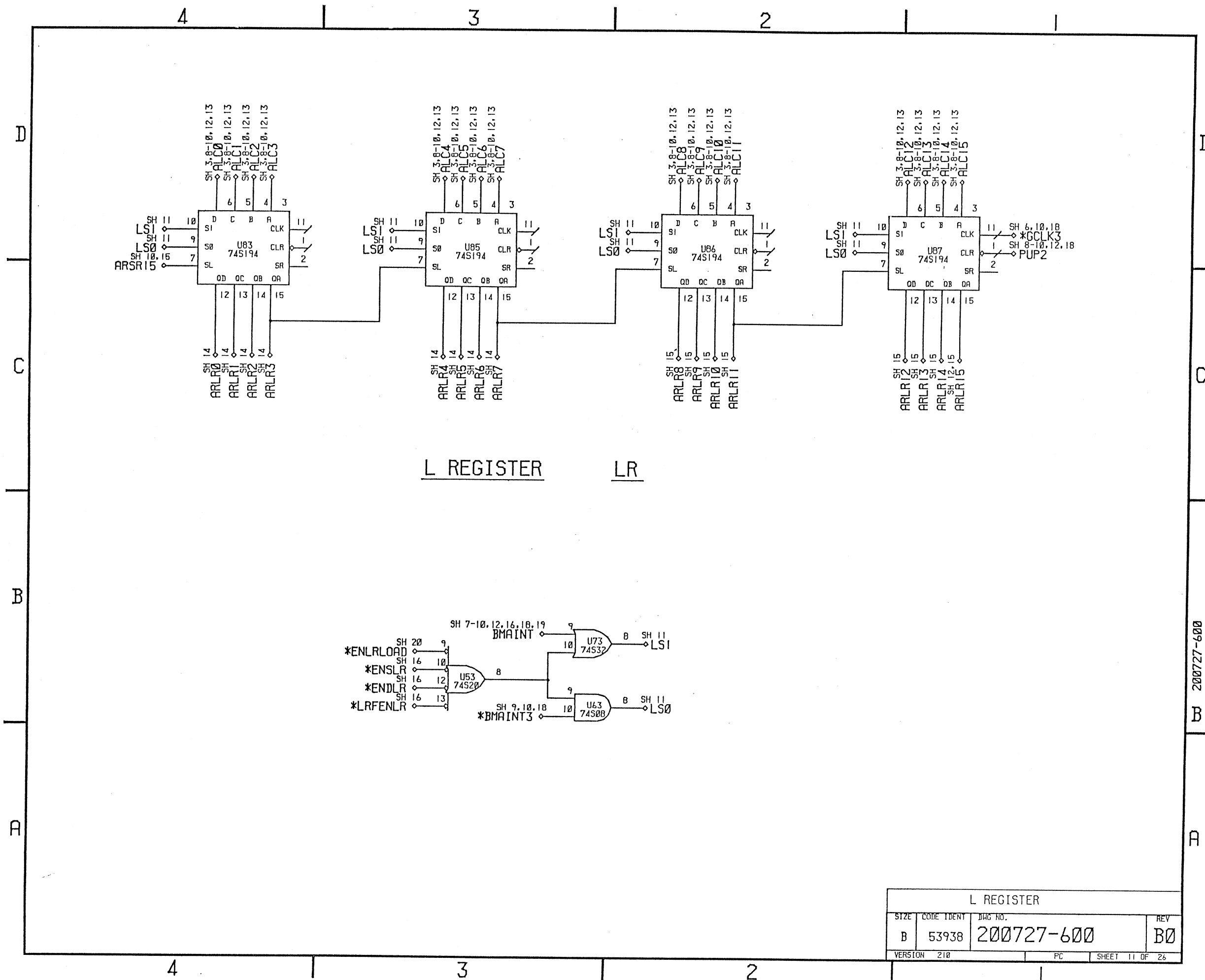


S REGISTER SR



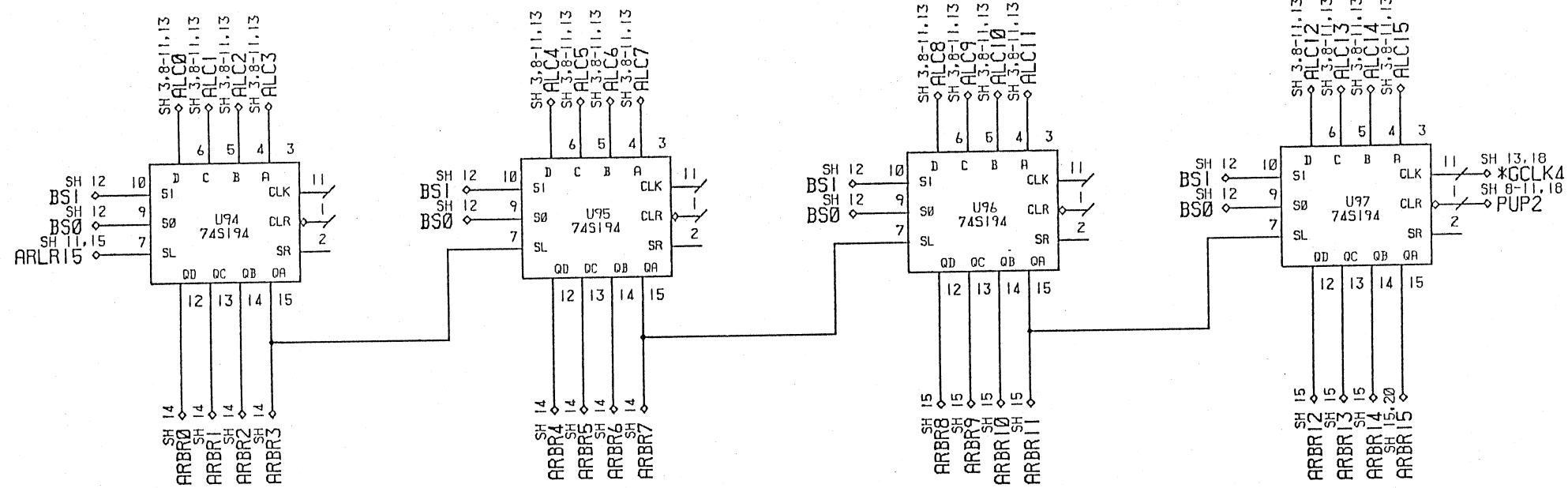
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VERSION	210	PC	SHEET 10 OF 26

B 200727-600

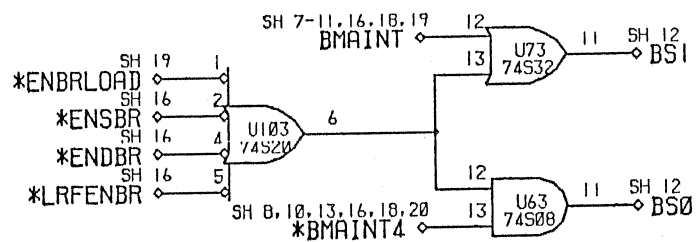


L REGISTER			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200727-600	B0
VERSION 210	PC	SHEET 11 OF 26	

200727-600



B REGISTER BR

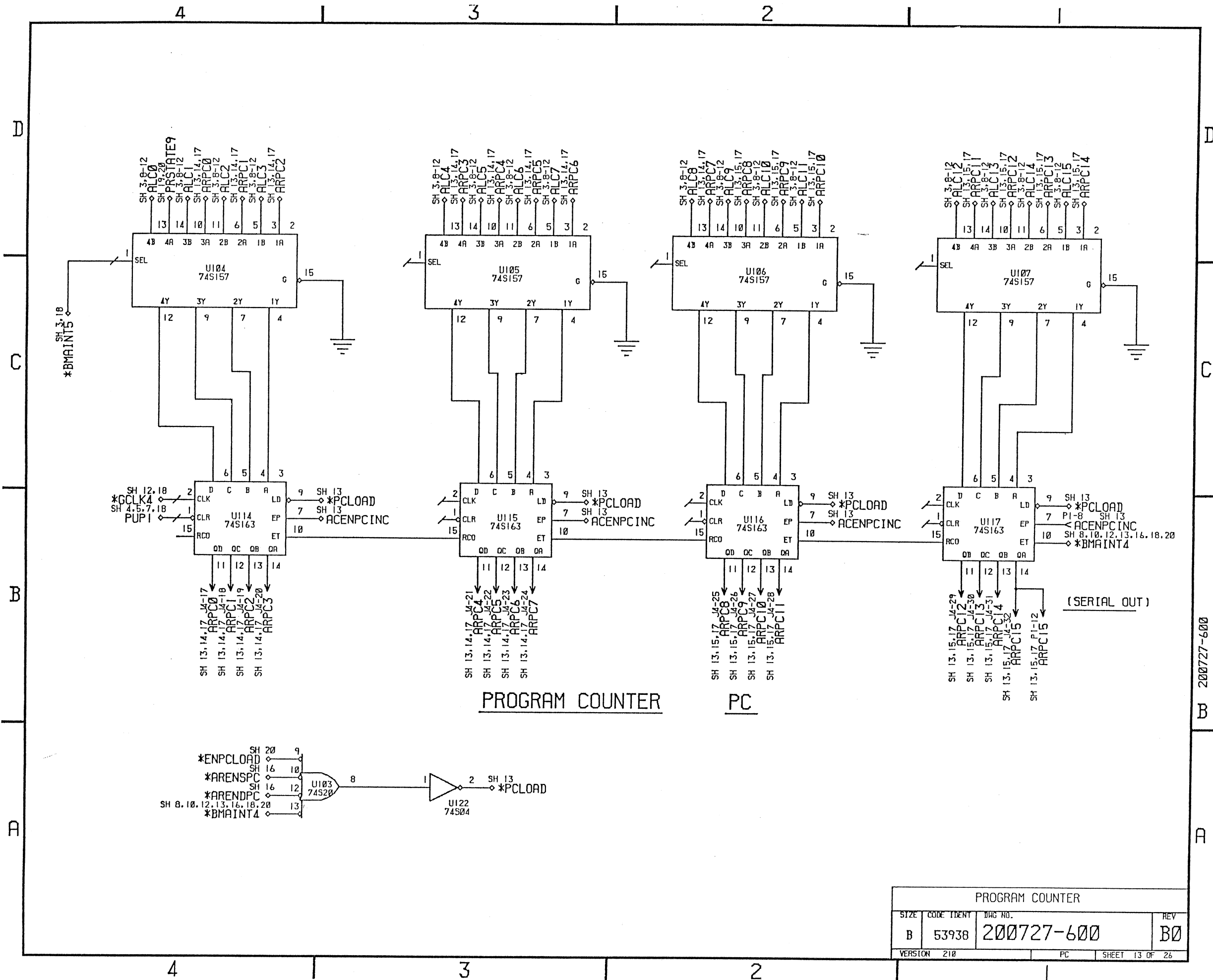


B REGISTER			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200727-600	B0
VERSION	210	PC	SHEET 12 OF 26

200727-600

B

A

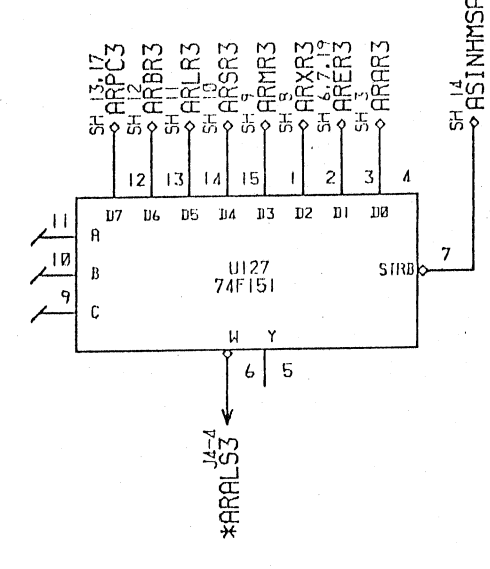
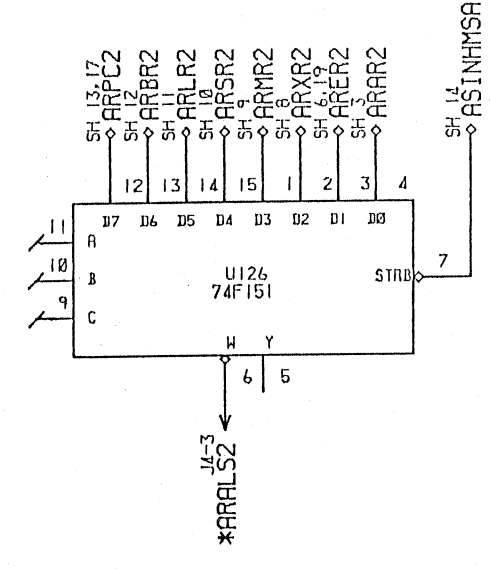
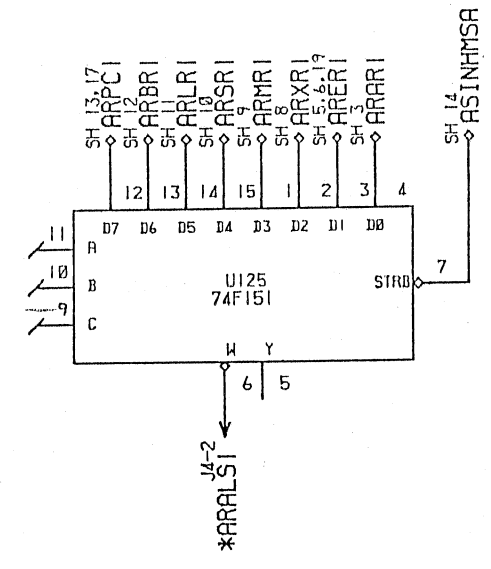
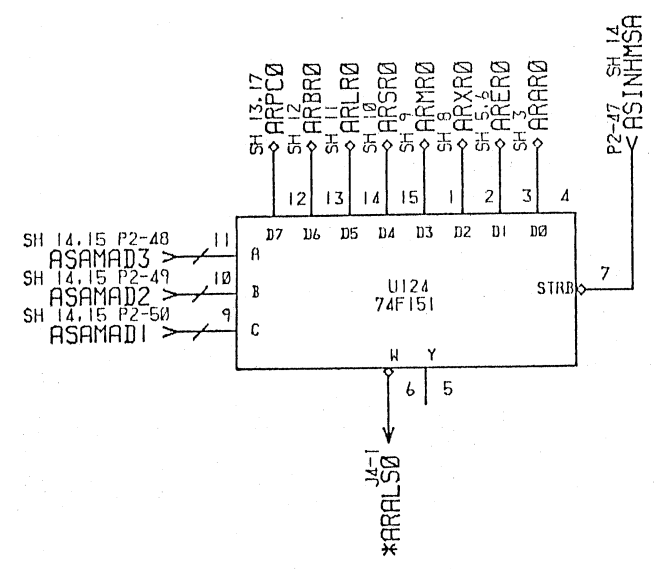


PROGRAM COUNTER

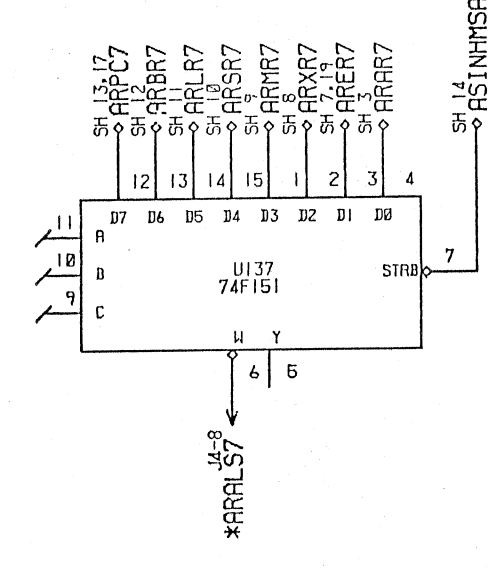
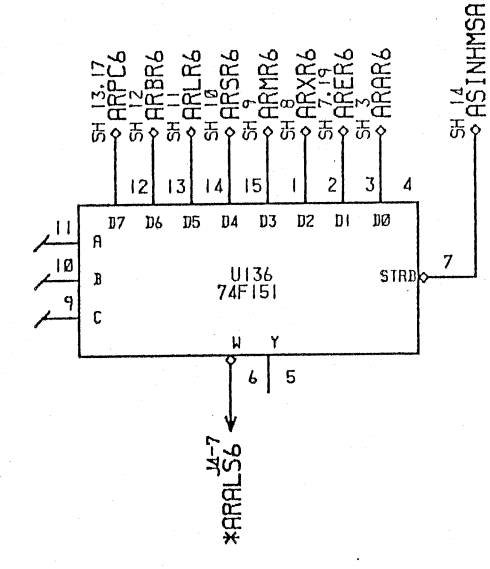
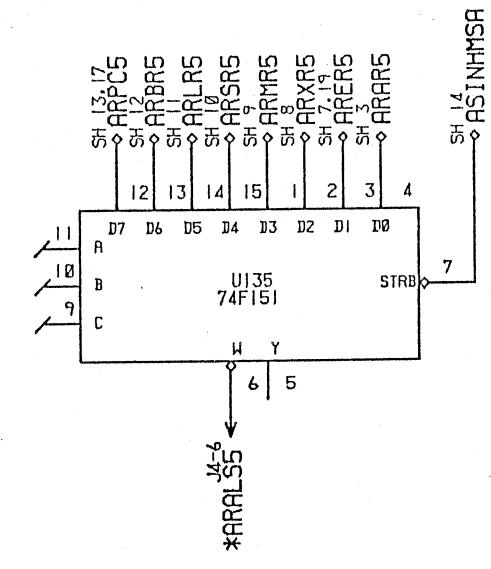
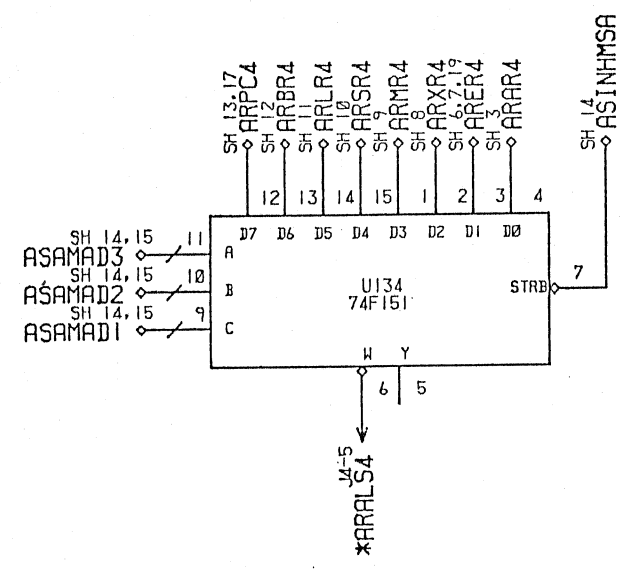
PC

(SERIAL OUT)

PROGRAM COUNTER			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200727-600	B0
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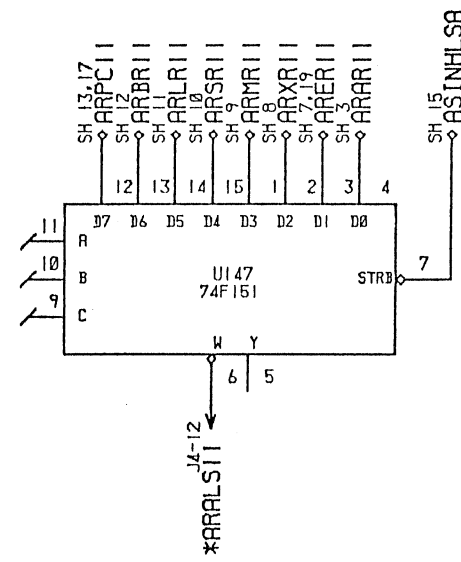
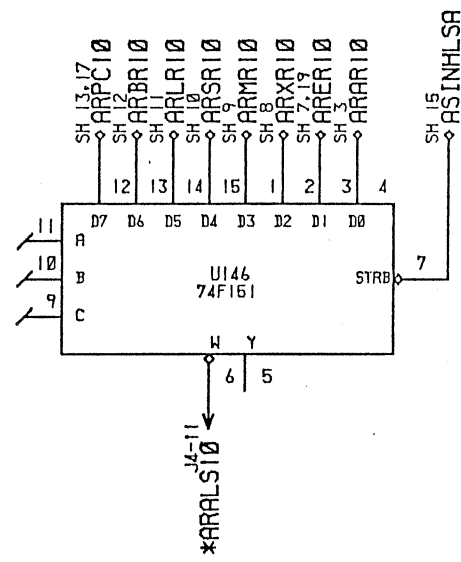
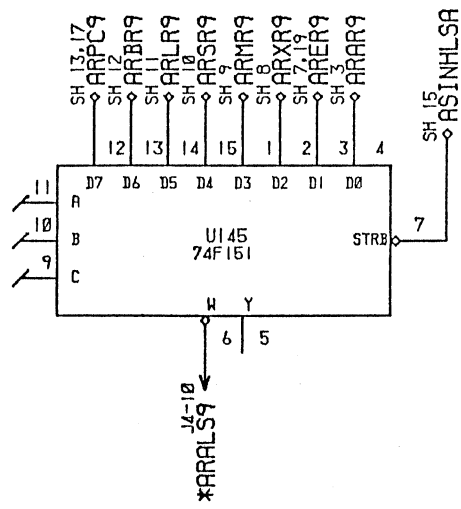
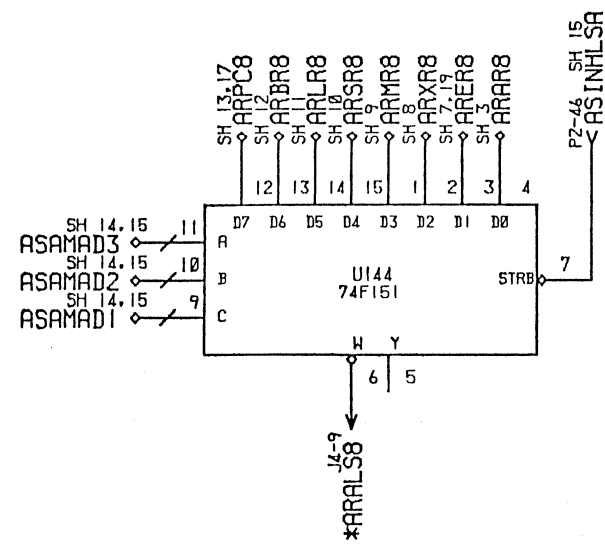


LEAST SIGNIFICANT A DATA BUS BITS 0-3

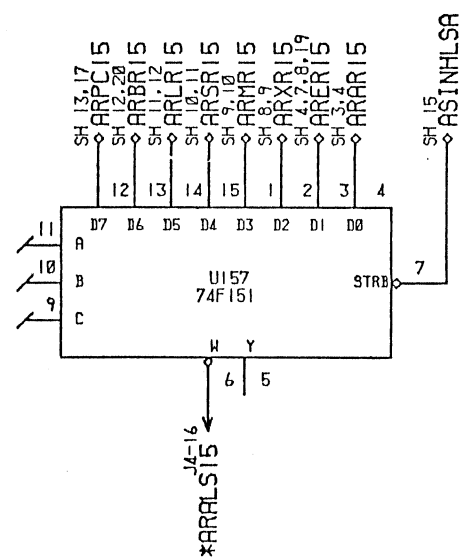
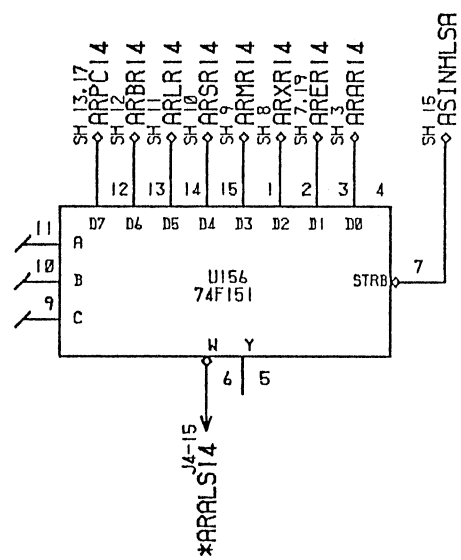
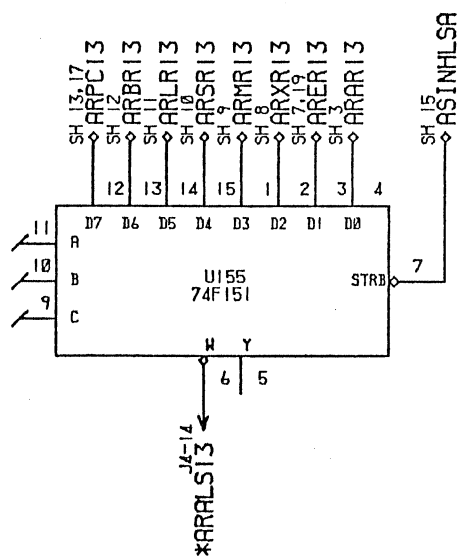
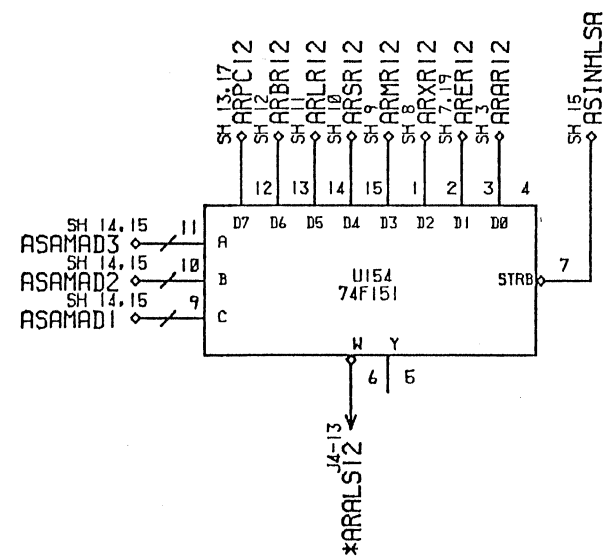


LEAST SIGNIFICANT A DATA BUS BITS 4-7

LOWER A DATA BUS			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200727-600	B0
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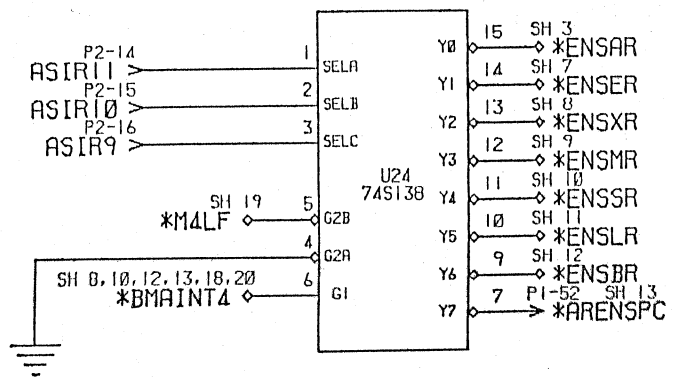
LEAST SIGNIFICANT A DATA BUS BITS 8-11



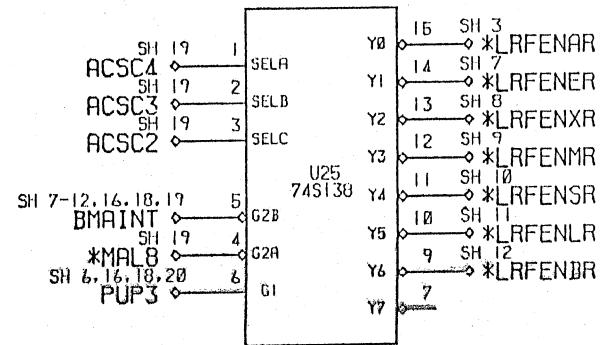
LEAST SIGNIFICANT A DATA BUS BITS 12-15

LOWER A DATA BUS II			
SIZE	CODE IDENT	FIG. NO.	REV
B	53938	200727-600	B0
VERSION	210	PC	SHEET 15 OF 26

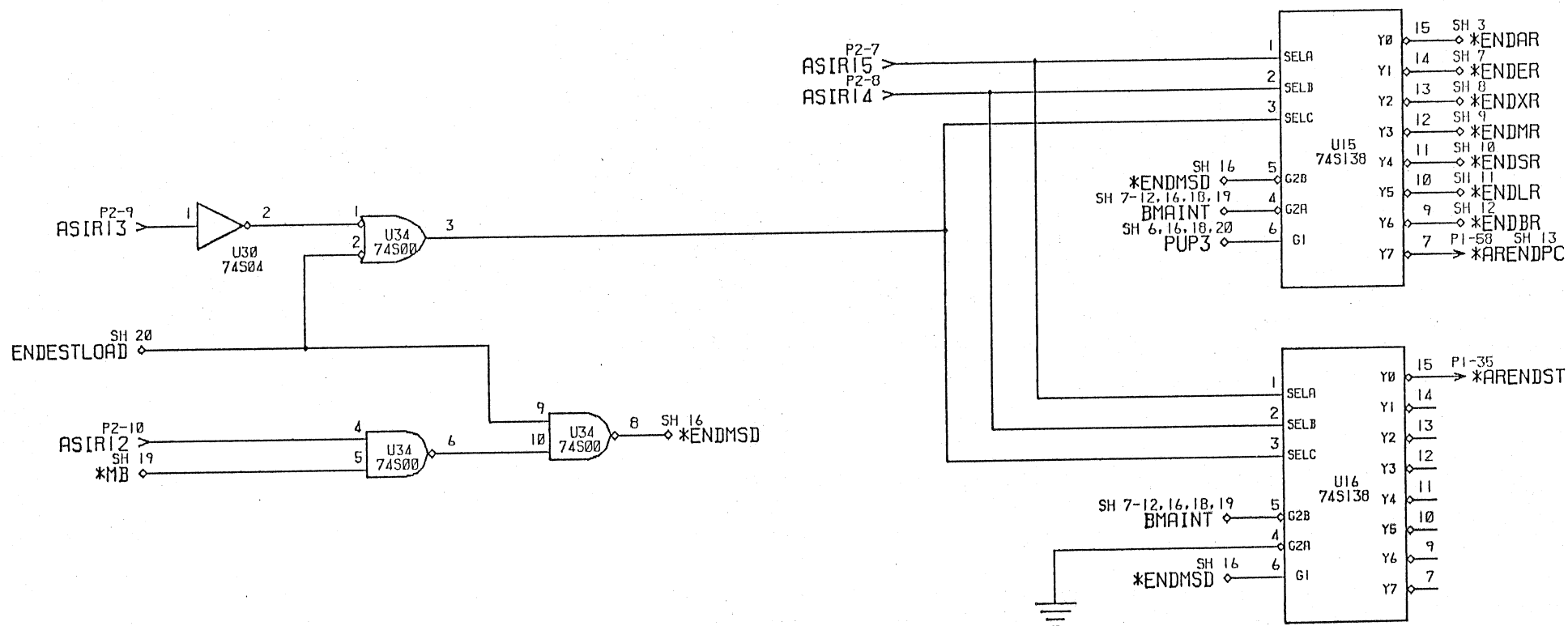
B 200727-600



SOURCE REGISTER
LOAD CONTROL

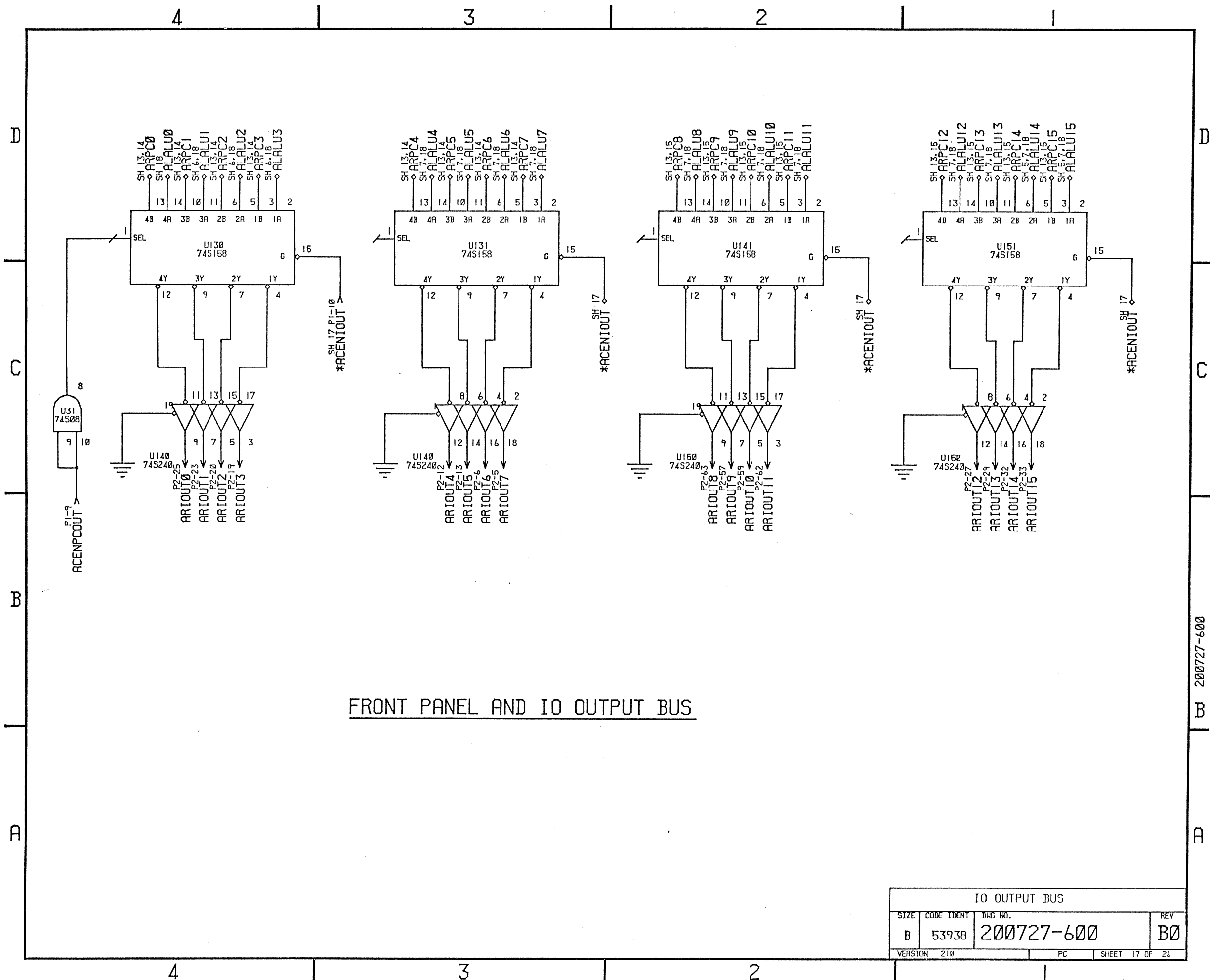


LOAD REGISTER FILES
LOAD CONTROL



DESTINATION REGISTER
LOAD CONTROL

SOURCE & DEST. REG LD CTL			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200727-600	B0
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FRONT PANEL AND IO OUTPUT BUS

IO OUTPUT BUS			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200727-600	B0
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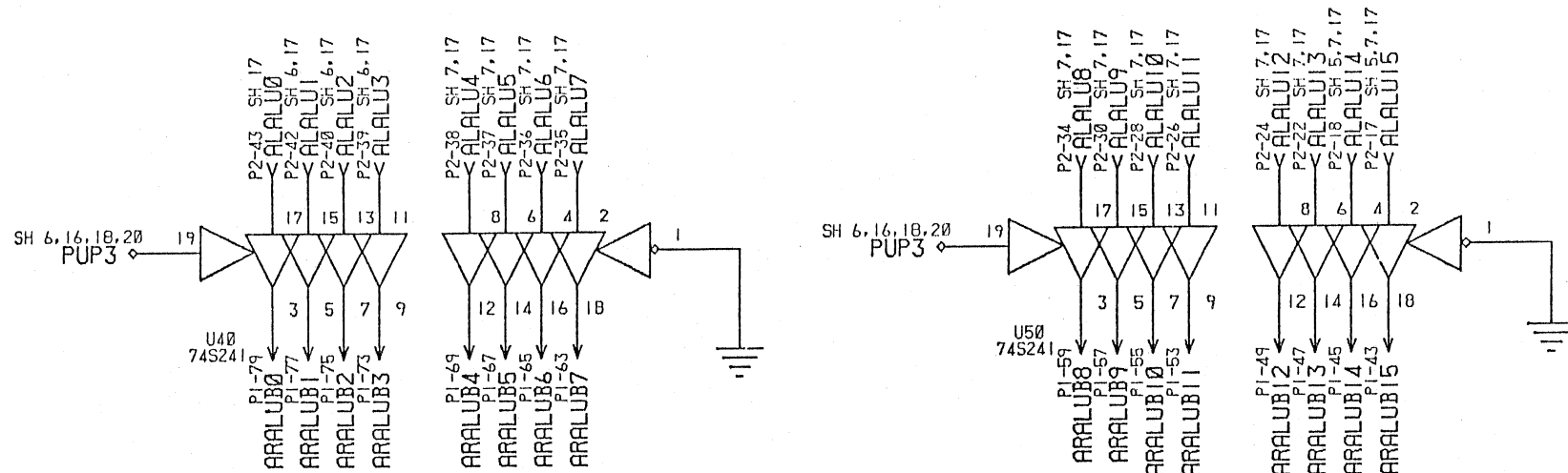
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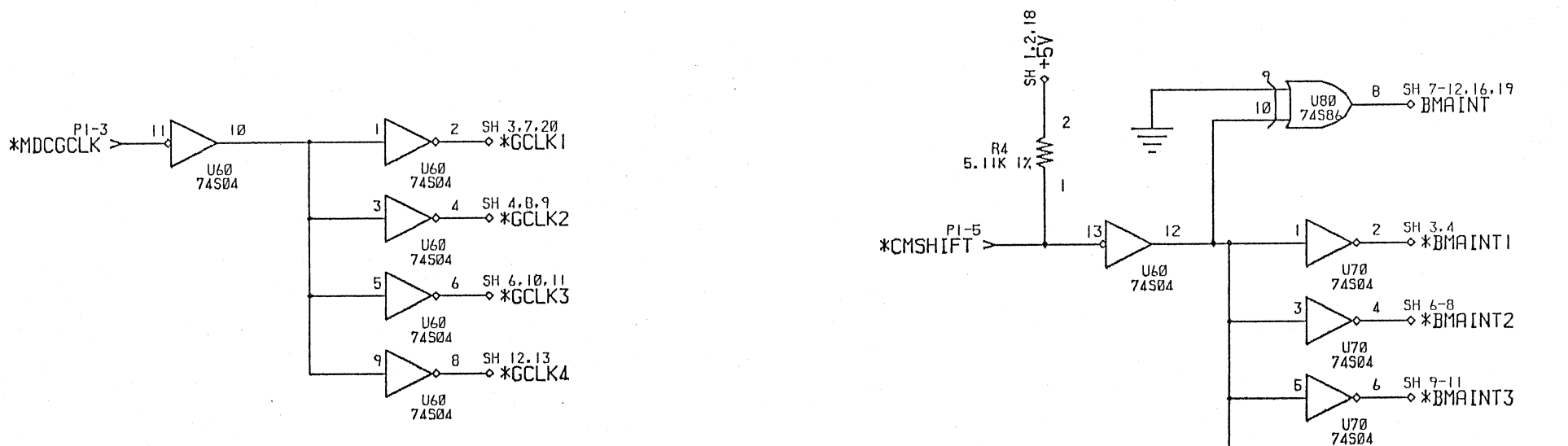
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ALU BUS BUFFERING

C

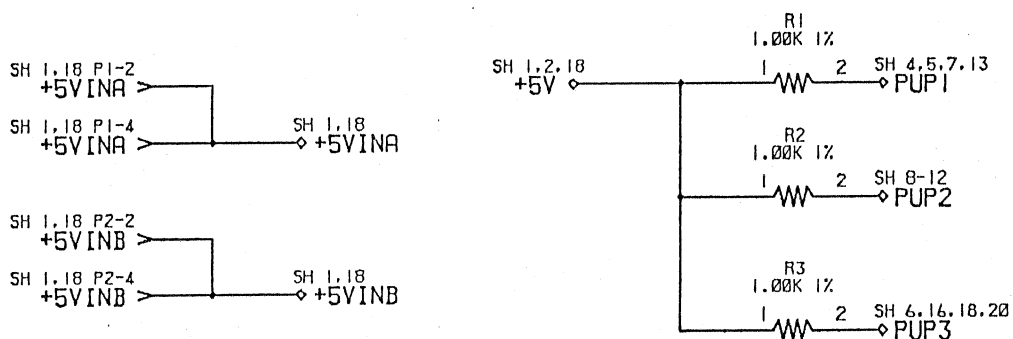
C



CLOCK AND MAINT BUFFERING

B

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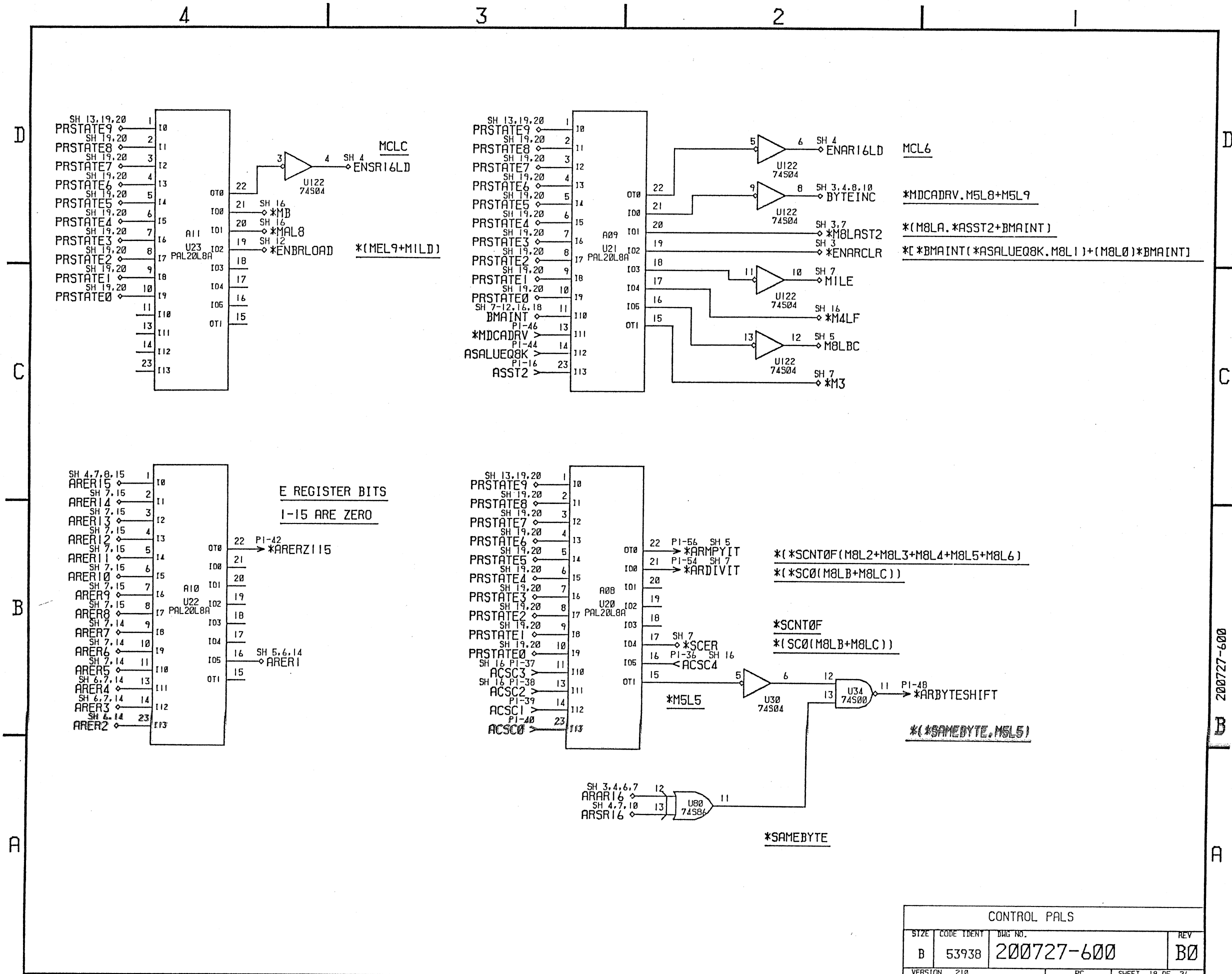
ALU BUS BUFFERING			
SIZE	CODE IDENT	FIG NO.	REV
B	53938	200727-600	B0
VERSION	210	PC	SHEET 18 OF 26

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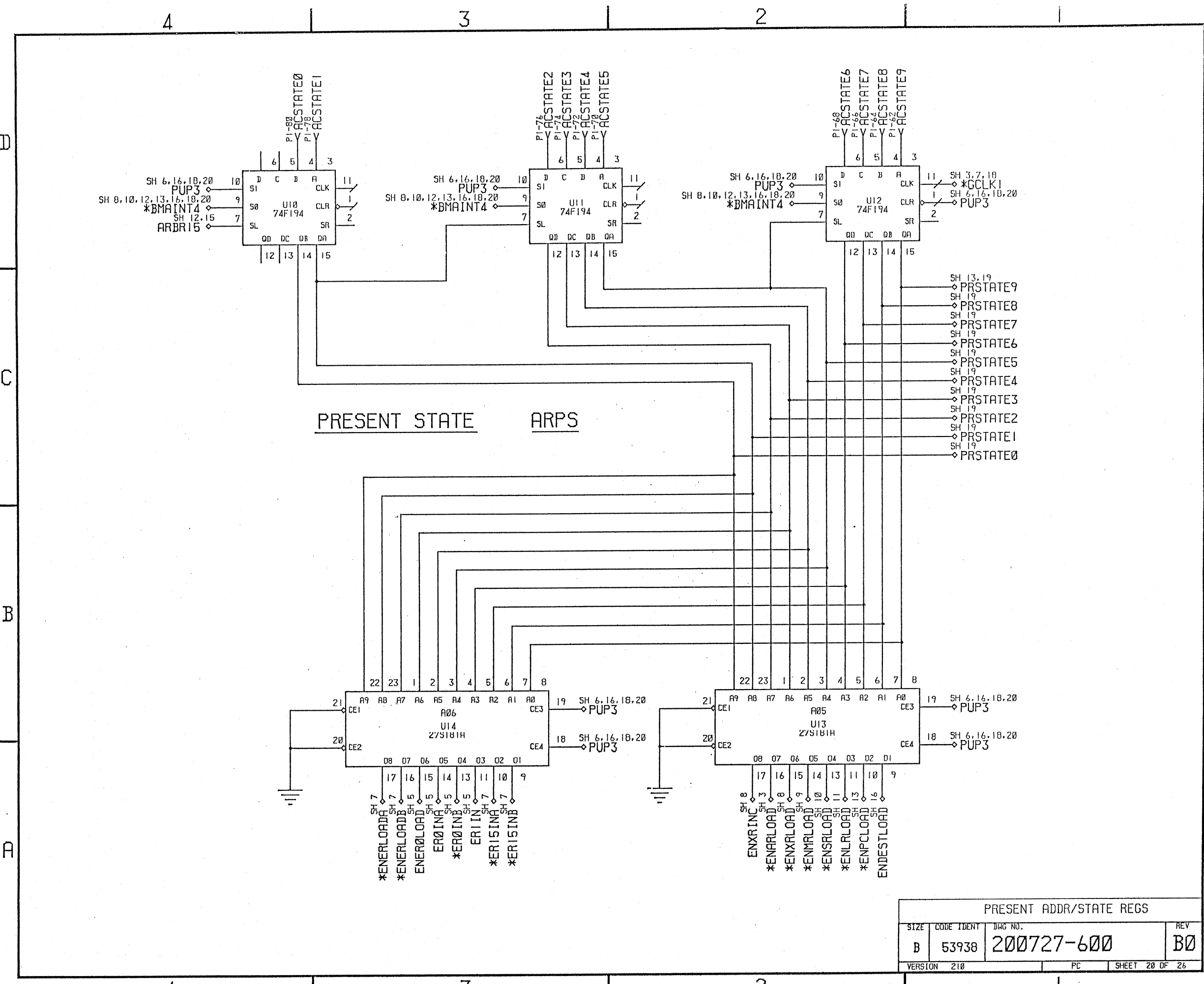
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200727-600

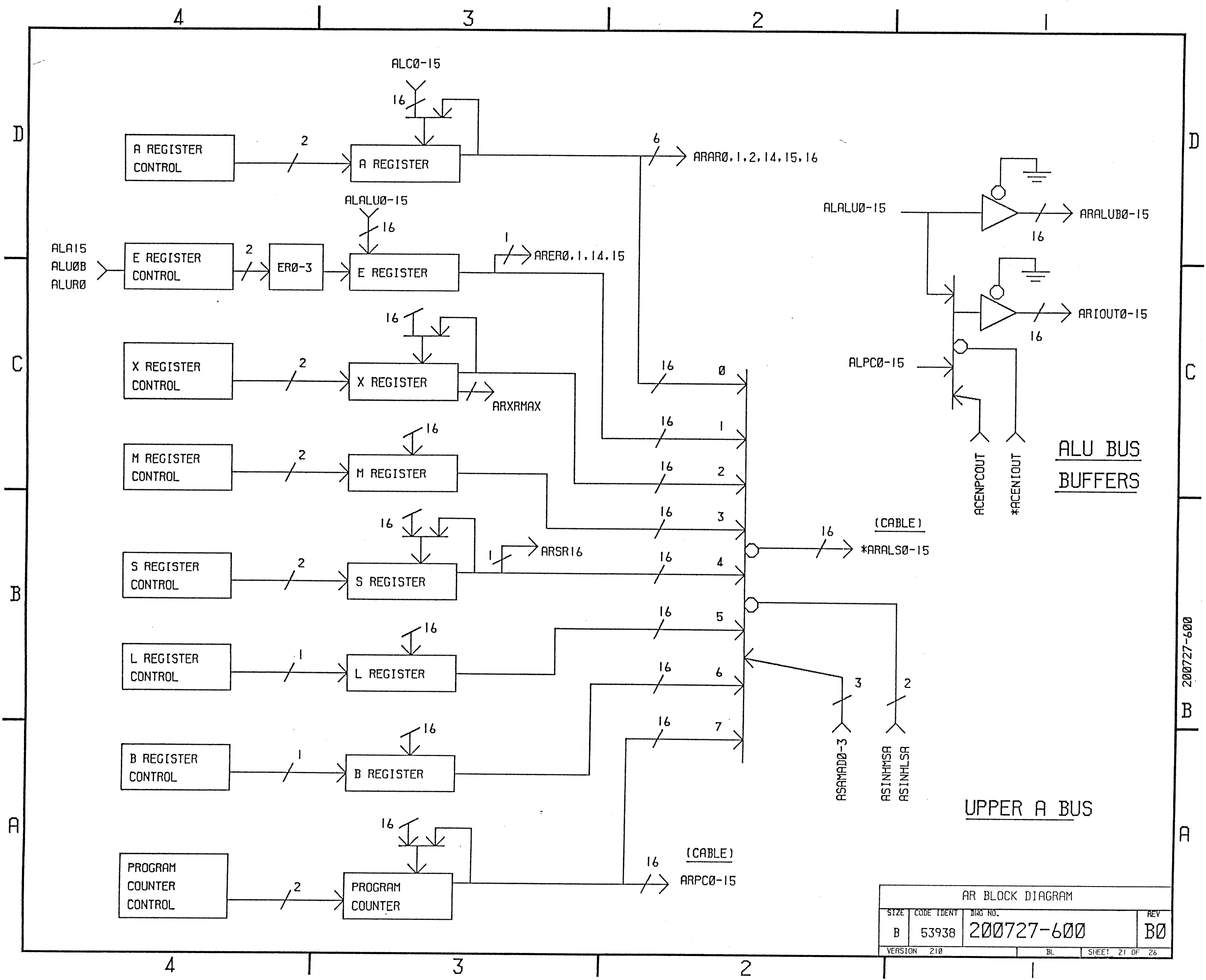


CONTROL PALS			
SIZE	CODE IDENT	DIAG NO.	REV
B	53938	200727-600	B0
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PRESENT ADDR/STATE REGS			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200727-600	B0
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AR BLOCK DIAGRAM			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200727-600	B0
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UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN
J4	1	MALE	*ARALS0	14	C4		PI	16	FEMALE	ASST2	19	C3		PI	71	FEMALE	GROUND	1	B4	
J4	2	MALE	*ARALS1	14	C3		PI	17	MALE	ARER15	7	C1		PI	72	FEMALE	ACSTATE4	20	D3	
J4	3	MALE	*ARALS2	14	C2		PI	18	MALE	ARER14	7	C1		PI	73	MALE	ARALUB3	18	D3	
J4	4	MALE	*ARALS3	14	C1		PI	19	MALE	ARER1	6	C1		PI	74	FEMALE	ACSTATE3	20	D3	
J4	5	MALE	*ARALS4	14	B4		PI	20	MALE	ARER0	6	C1		PI	75	MALE	ARALUB2	18	D3	
J4	6	MALE	*ARALS5	14	B3		PI	21	FEMALE	GROUND	1	C4		PI	76	FEMALE	ACSTATE2	20	D3	
J4	7	MALE	*ARALS6	14	B2		PI	31	FEMALE	GROUND	1	B4		PI	77	MALE	ARALUB1	18	D3	
J4	8	MALE	*ARALS7	14	B1		PI	35	MALE	*ARENDST	16	B1		PI	78	FEMALE	ACSTATE1	20	D3	
J4	9	MALE	*ARALS8	15	C4		PI	36	FEMALE	ACSC4	19	B2		PI	79	MALE	ARALUB0	18	D3	
J4	10	MALE	*ARALS9	15	C3		PI	37	FEMALE	ACSC3	19	B3		PI	80	FEMALE	ACSTATE0	20	D4	
J4	11	MALE	*ARALS10	15	C2		PI	38	FEMALE	ACSC2	19	B3		P2	1	FEMALE	GROUND	1	B4	
J4	12	MALE	*ARALS11	15	C1		PI	39	FEMALE	ACSC1	19	B3		P2	2	FEMALE	+5VINB	18	A4	
J4	13	MALE	*ARALS12	15	B4		PI	40	FEMALE	ACSC0	19	B3		P2	3	MALE	ARSR16	4	C2	
J4	14	MALE	*ARALS13	15	B3		PI	41	FEMALE	GROUND	1	B4		P2	4	FEMALE	+5VINB	18	A4	
J4	15	MALE	*ARALS14	15	B2		PI	42	MALE	*ARERZ115	19	B4		P2	5	MALE	ARIOUT7	17	C3	
J4	16	MALE	*ARALS15	15	B1		PI	43	MALE	ARALUB15	18	D2		P2	6	MALE	ARIOUT6	17	C3	
J4	17	MALE	ARPC0	13	B4		PI	44	FEMALE	ASALUEQ8K	19	C3		P2	7	FEMALE	ASIR15	16	C2	
J4	18	MALE	ARPC1	13	B4		PI	45	MALE	ARALUB14	18	D2		P2	8	FEMALE	ASIR14	16	B2	
J4	19	MALE	ARPC2	13	B4		PI	46	FEMALE	*MDCADRV	19	C3		P2	9	FEMALE	ASIR13	16	B4	
J4	20	MALE	ARPC3	13	B4		PI	47	MALE	ARALUB13	18	D2		P2	10	FEMALE	ASIR12	16	B4	
J4	21	MALE	ARPC4	13	B3		PI	48	MALE	*ARBYTESHIFT	19	B2		P2	11	FEMALE	GROUND	1	B4	
J4	22	MALE	ARPC5	13	B3		PI	49	MALE	ARALUB12	18	D2		P2	12	MALE	ARIOUT4	17	C3	
J4	23	MALE	ARPC6	13	B3		PI	50	MALE	ARXRMAX	8	B4		P2	13	MALE	ARIOUT5	17	C3	
J4	24	MALE	ARPC7	13	B3		PI	51	FEMALE	GROUND	1	B4		P2	14	FEMALE	ASIR11	16	D3	
J4	25	MALE	ARPC8	13	B2		PI	52	MALE	*ARENSPC	16	C3		P2	15	FEMALE	ASIR10	16	D3	
J4	26	MALE	ARPC9	13	B2		PI	53	MALE	ARALUB11	18	D2		P2	16	FEMALE	ASIR9	16	D3	
J4	27	MALE	ARPC10	13	B2		PI	54	MALE	*ARDIVIT	19	B2		P2	17	FEMALE	ALALU15	18	D2	
J4	28	MALE	ARPC11	13	B2		PI	55	MALE	ARALUB10	18	D2		P2	18	FEMALE	ALALU14	18	D2	
J4	29	MALE	ARPC12	13	B1		PI	56	MALE	*ARMPYIT	19	B2		P2	19	MALE	ARIOUT3	17	C4	
J4	30	MALE	ARPC13	13	B1		PI	57	MALE	ARALUB9	18	D2		P2	20	MALE	ARIOUT2	17	C4	
J4	31	MALE	ARPC14	13	B1		PI	58	MALE	*ARENDPC	16	B1		P2	21	FEMALE	GROUND	1	B4	
J4	32	MALE	ARPC15	13	B1		PI	59	MALE	ARALUB8	18	D2		P2	22	FEMALE	ALALU13	18	D2	
PI	1	FEMALE	GROUND	1	C4		PI	60	FEMALE	ALUR0	7	A2		P2	23	MALE	ARIOUT1	17	C4	
PI	2	FEMALE	+5VINA	18	A4		PI	61	FEMALE	GROUND	1	B4		P2	24	FEMALE	ALALU12	18	D2	
PI	3	FEMALE	*MDCGCLK	18	B4		PI	62	FEMALE	ACSTATE9	20	D2		P2	25	MALE	ARIOUT0	17	C4	
PI	4	FEMALE	+5VINA	18	A4		PI	63	MALE	ARALUB7	18	D3		P2	26	FEMALE	ALALU11	18	D2	
PI	5	FEMALE	*CMSSHIFT	18	B2		PI	64	FEMALE	ACSTATE8	20	D2		P2	27	MALE	ARIOUT12	17	C1	
PI	6	FEMALE	SERIN	3	D4		PI	65	MALE	ARALUB6	18	D3		P2	28	FEMALE	ALALU10	18	D2	
PI	8	FEMALE	ACENPCINC	13	B1		PI	66	FEMALE	ACSTATE7	20	D2		P2	29	MALE	ARIOUT13	17	C1	
PI	9	FEMALE	ACENPCOUT	17	C4		PI	67	MALE	ARALUB5	18	D3		P2	30	FEMALE	ALALU9	18	D2	
PI	10	FEMALE	*ACENIOUT	17	C3		PI	68	FEMALE	ACSTATE6	20	D2		P2	31	FEMALE	GROUND	1	B4	
PI	11	FEMALE	GROUND	1	C4		PI	69	MALE	ARALUB4	18	D3		P2	32	MALE	ARIOUT14	17	C1	
PI	12	MALE	ARPC15	13	B1		PI	70	FEMALE	ACSTATE5	20	D3		P2	33	MALE	ARIOUT15	17	C1	

CONNECTORS BY UNIT/PIN			
SIZE	CODE IDENT	DIAG NO.	REV
B	53938	200727-600	B0
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UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	
P2	34	FEMALE	ALALU8	18	D2		P2	78	FEMALE	ALC2	3	D4									
P2	35	FEMALE	ALALU7	18	D3		P2	79	FEMALE	ALC1	3	D4									
P2	36	FEMALE	ALALU6	18	D3		P2	80	FEMALE	ALC0	3	D4									
P2	37	FEMALE	ALALU5	18	D3																
P2	38	FEMALE	ALALU4	18	D3																
P2	39	FEMALE	ALALU3	18	D3																
P2	40	FEMALE	ALALU2	18	D3																
P2	41	FEMALE	GROUND	1	A4																
P2	42	FEMALE	ALALU1	18	D3																
P2	43	FEMALE	ALALU0	18	D3																
P2	44	FEMALE	ALA15	5	C2																
P2	45	FEMALE	ALALU0B	7	A2																
P2	46	FEMALE	ASINHLSA	15	D3																
P2	47	FEMALE	ASINHMSA	14	D3																
P2	48	FEMALE	ASAMAD3	14	D4																
P2	49	FEMALE	ASAMAD2	14	D4																
P2	50	FEMALE	ASAMAD1	14	D4																
P2	51	FEMALE	GROUND	1	A4																
P2	53	MALE	ARAR16	4	C2																
P2	54	MALE	ARAR15	3	B1																
P2	55	MALE	ARAR14	3	B1																
P2	56	MALE	ARAR2	3	B4																
P2	57	MALE	ARIOUT9	17	C2																
P2	58	MALE	ARAR1	3	B4																
P2	59	MALE	ARIOUT10	17	C2																
P2	60	MALE	ARAR0	3	B4																
P2	61	FEMALE	GROUND	1	A4																
P2	62	MALE	ARIOUT11	17	C2																
P2	63	MALE	ARIOUT8	17	C2																
P2	64	FEMALE	ALC15	3	D1																
P2	65	FEMALE	ALC14	3	D1																
P2	66	FEMALE	ALC13	3	D1																
P2	67	FEMALE	ALC12	3	D1																
P2	68	FEMALE	ALC11	3	D2																
P2	69	FEMALE	ALC10	3	D2																
P2	70	FEMALE	ALC9	3	D2																
P2	71	FEMALE	GROUND	1	A4																
P2	72	FEMALE	ALC8	3	D2																
P2	73	FEMALE	ALC7	3	D3																
P2	74	FEMALE	ALC6	3	D3																
P2	75	FEMALE	ALC5	3	D3																
P2	76	FEMALE	ALC4	3	D3																
P2	77	FEMALE	ALC3	3	D4																

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200727-600

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CONNECTORS BY UNIT/PIN			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200727-600	B0
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4							3							2							1						
STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN							
*ACENIOUT	PI	10	FEMALE	17	C3		ACSTATE5	P1	70	FEMALE	20	D3		ARALUB11	P1	53	MALE	18	D2								
*ARALS0	J4	1	MALE	14	C4		ACSTATE6	P1	68	FEMALE	20	D2		ARALUB12	P1	49	MALE	18	D2								
*ARALS1	J4	2	MALE	14	C3		ACSTATE7	P1	66	FEMALE	20	D2		ARALUB13	P1	47	MALE	18	D2								
*ARALS10	J4	11	MALE	15	C2		ACSTATE8	P1	64	FEMALE	20	D2		ARALUB14	P1	45	MALE	18	D2								
*ARALS11	J4	12	MALE	15	C1		ACSTATE9	P1	62	FEMALE	20	D2		ARALUB15	P1	43	MALE	18	D2								
*ARALS12	J4	13	MALE	15	B4		ALA15	P2	44	FEMALE	5	C2		ARALUB2	P1	75	MALE	18	D3								
*ARALS13	J4	14	MALE	15	B3		ALALU0	P2	43	FEMALE	18	D3		ARALUB3	P1	73	MALE	18	D3								
*ARALS14	J4	15	MALE	15	B2		ALALU0B	P2	45	FEMALE	7	A2		ARALUB4	P1	69	MALE	18	D3								
*ARALS15	J4	16	MALE	15	B1		ALALU1	P2	42	FEMALE	18	D3		ARALUB5	P1	67	MALE	18	D3								
*ARALS2	J4	3	MALE	14	C2		ALALU10	P2	28	FEMALE	18	D2		ARALUB6	P1	65	MALE	18	D3								
*ARALS3	J4	4	MALE	14	C1		ALALU11	P2	26	FEMALE	18	D2		ARALUB7	P1	63	MALE	18	D3								
*ARALS4	J4	5	MALE	14	B4		ALALU12	P2	24	FEMALE	18	D2		ARALUB8	P1	59	MALE	18	D2								
*ARALS5	J4	6	MALE	14	B3		ALALU13	P2	22	FEMALE	18	D2		ARALUB9	P1	57	MALE	18	D2								
*ARALS6	J4	7	MALE	14	B2		ALALU14	P2	18	FEMALE	18	D2		ARAR0	P2	60	MALE	3	B4								
*ARALS7	J4	8	MALE	14	B1		ALALU15	P2	17	FEMALE	18	D2		ARAR1	P2	58	MALE	3	B4								
*ARALS8	J4	9	MALE	15	C4		ALALU2	P2	40	FEMALE	18	D3		ARAR14	P2	55	MALE	3	B1								
*ARALS9	J4	10	MALE	15	C3		ALALU3	P2	39	FEMALE	18	D3		ARAR15	P2	54	MALE	3	B1								
*ARBYTESHIFT	PI	48	MALE	19	B2		ALALU4	P2	38	FEMALE	18	D3		ARAR16	P2	53	MALE	4	C2								
*ARDIVIT	PI	54	MALE	19	B2		ALALU5	P2	37	FEMALE	18	D3		ARAR2	P2	56	MALE	3	B4								
*ARENDPC	PI	58	MALE	16	B1		ALALU6	P2	36	FEMALE	18	D3		ARER0	P1	20	MALE	6	C1								
*ARENDST	PI	35	MALE	16	B1		ALALU7	P2	35	FEMALE	18	D3		ARER1	P1	19	MALE	6	C1								
*ARENSPC	PI	52	MALE	16	C3		ALALU8	P2	34	FEMALE	18	D2		ARER14	P1	18	MALE	7	C1								
*ARERZ115	PI	42	MALE	19	B4		ALALU9	P2	30	FEMALE	18	D2		ARER15	P1	17	MALE	7	C1								
*ARMPIIT	PI	56	MALE	19	B2		ALC0	P2	80	FEMALE	3	D4		ARIOUT0	P2	25	MALE	17	C4								
*CMSHIFT	PI	5	FEMALE	18	B2		ALC1	P2	79	FEMALE	3	D4		ARIOUT1	P2	23	MALE	17	C4								
*MDCADRV	PI	46	FEMALE	19	C3		ALC10	P2	69	FEMALE	3	D2		ARIOUT10	P2	59	MALE	17	C2								
*MDCGCLK	PI	3	FEMALE	18	B4		ALC11	P2	68	FEMALE	3	D2		ARIOUT11	P2	62	MALE	17	C2								
+5VINA	PI	2	FEMALE	18	A4		ALC12	P2	67	FEMALE	3	D1		ARIOUT12	P2	27	MALE	17	C1								
+5VINA	PI	4	FEMALE	18	A4		ALC13	P2	66	FEMALE	3	D1		ARIOUT13	P2	29	MALE	17	C1								
+5VINB	P2	2	FEMALE	18	A4		ALC14	P2	65	FEMALE	3	D1		ARIOUT14	P2	32	MALE	17	C1								
+5VINB	P2	4	FEMALE	18	A4		ALC15	P2	64	FEMALE	3	D1		ARIOUT15	P2	33	MALE	17	C1								
ACENPCINC	PI	8	FEMALE	13	B1		ALC2	P2	78	FEMALE	3	D4		ARIOUT2	P2	20	MALE	17	C4								
ACENPCOUT	PI	9	FEMALE	17	C4		ALC3	P2	77	FEMALE	3	D4		ARIOUT3	P2	19	MALE	17	C4								
ACSC0	PI	40	FEMALE	19	B3		ALC4	P2	76	FEMALE	3	D3		ARIOUT4	P2	12	MALE	17	C3								
ACSC1	PI	39	FEMALE	19	B3		ALC5	P2	75	FEMALE	3	D3		ARIOUT5	P2	13	MALE	17	C3								
ACSC2	PI	38	FEMALE	19	B3		ALC6	P2	74	FEMALE	3	D3		ARIOUT6	P2	6	MALE	17	C3								
ACSC3	PI	37	FEMALE	19	B3		ALC7	P2	73	FEMALE	3	D3		ARIOUT7	P2	5	MALE	17	C3								
ACSC4	PI	36	FEMALE	19	B2		ALC8	P2	72	FEMALE	3	D2		ARIOUT8	P2	63	MALE	17	C2								
ACSTATE0	PI	80	FEMALE	20	D4		ALC9	P2	70	FEMALE	3	D2		ARIOUT9	P2	57	MALE	17	C2								
ACSTATE1	PI	78	FEMALE	20	D3		ALUR0	P1	60	FEMALE	7	A2		ARPC0	J4	17	MALE	13	B4								
ACSTATE2	PI	76	FEMALE	20	D3		ARALUB0	P1	79	MALE	18	D3		ARPC1	J4	18	MALE	13	B4								
ACSTATE3	PI	74	FEMALE	20	D3		ARALUB1	P1	77	MALE	18	D3		ARPC10	J4	27	MALE	13	B2								
ACSTATE4	PI	72	FEMALE	20	D3		ARALUB10	P1	55	MALE	18	D2		ARPC11	J4	28	MALE	13	B2								

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200727-600

CONNECTORS BY STRING NAME			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200727-600	B0
VERSION	210	C5	SHEET 24 OF 26

4

3

2

1

D

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C

C

B

B

A

A

STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
ARPC12	J4	29	MALE	13	B1	
ARPC13	J4	30	MALE	13	B1	
ARPC14	J4	31	MALE	13	B1	
ARPC15	J4	32	MALE	13	B1	
ARPC15	P1	12	MALE	13	B1	
ARPC2	J4	19	MALE	13	B4	
ARPC3	J4	20	MALE	13	B4	
ARPC4	J4	21	MALE	13	B3	
ARPC5	J4	22	MALE	13	B3	
ARPC6	J4	23	MALE	13	B3	
ARPC7	J4	24	MALE	13	B3	
ARPC8	J4	25	MALE	13	B2	
ARPC9	J4	26	MALE	13	B2	
ARSR16	P2	3	MALE	4	C2	
ARXRMAX	P1	50	MALE	8	B4	
ASALUEQ8K	P1	44	FEMALE	19	C3	
ASAMAD1	P2	50	FEMALE	14	D4	
ASAMAD2	P2	49	FEMALE	14	D4	
ASAMAD3	P2	48	FEMALE	14	D4	
ASINHLSA	P2	46	FEMALE	15	D3	
ASINHMSA	P2	47	FEMALE	14	D3	
ASIR10	P2	15	FEMALE	16	D3	
ASIR11	P2	14	FEMALE	16	D3	
ASIR12	P2	10	FEMALE	16	B4	
ASIR13	P2	9	FEMALE	16	B4	
ASIR14	P2	8	FEMALE	16	B2	
ASIR15	P2	7	FEMALE	16	C2	
ASIR9	P2	16	FEMALE	16	D3	
ASST2	P1	16	FEMALE	19	C3	
GROUND	P1	1	FEMALE	1	C4	
GROUND	P1	11	FEMALE	1	C4	
GROUND	P1	21	FEMALE	1	C4	
GROUND	P1	31	FEMALE	1	B4	
GROUND	P1	41	FEMALE	1	B4	
GROUND	P1	51	FEMALE	1	B4	
GROUND	P1	61	FEMALE	1	B4	
GROUND	P1	71	FEMALE	1	B4	
GROUND	P2	1	FEMALE	1	B4	
GROUND	P2	11	FEMALE	1	B4	
GROUND	P2	21	FEMALE	1	B4	
GROUND	P2	31	FEMALE	1	B4	
GROUND	P2	41	FEMALE	1	A4	
GROUND	P2	51	FEMALE	1	A4	

STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
GROUND	P2	61	FEMALE	1	A4	
GROUND	P2	71	FEMALE	1	A4	
SERIN	P1	6	FEMALE	3	D4	

200727-600

CONNECTORS BY STRING NAME			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200727-600	B0
VERSION 210		CS	SHEET 25 OF 26

4

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2

1

PAGE	TYPE	PAGE NAME
1	PC	CAPACITORS
2	PC	CAPACITORS I
3	PC	A REGISTER
4	PC	A REGISTER BIT 16
5	PC	E REGISTER 0 CONTROL
6	PC	E REGISTER 0,1,2,3
7	PC	E REGISTER 4-15
8	PC	X REGISTER
9	PC	M REGISTER
10	PC	S REGISTER
11	PC	L REGISTER
12	PC	B REGISTER
13	PC	PROGRAM COUNTER
14	PC	LOWER A DATA BUS
15	PC	LOWER A DATA BUS II
16	PC	SOURCE & DEST. REG LD CTL
17	PC	IO OUTPUT BUS
18	PC	ALU BUS BUFFERING
19	PC	CONTROL PALS
20	PC	PRESENT ADDR/STATE REGS
21	BL	AR BLOCK DIAGRAM

TABLE OF CONTENTS			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200727-600	B0
VERSION	210	TC	SHEET 26 OF 26

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200728-100

REV: B0 = BA

DESC: CARD ASSY,AS-ARITHMETIC STATUS,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,P02R PCBD11X13	53938	EVANS & SUTHERLAND.	200728-500	200728-500	1
C2 C3 C4 C5	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C6 C7 C8 C9 C10 C11 C12 C13	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C14 C15 C16 C17 C18 C19 C20	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804169-333	99
C21 C23 C24 C25 C26 C27 C28						
C29 C30 C31 C32 C33 C34 C35						
C36 C38 C39 C40 C41 C42 C43						
C44 C45 C46 C47 C48 C49 C50						
C51 C52 C53 C54 C55 C56 C57						
C58 C59 C60 C61 C62 C63 C64						
C65 C68 C69 C70 C71 C72 C73						
C74 C75 C76 C77 C78 C79 C80						
C83 C84 C85 C86 C87 C88 C89						
C90 C91 C92 C93 C94 C95 C98						
C99 C100 C101 C102 C103 C104						
C105 C106 C107 C108 C109						
C110 C113 C114						
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
J4	CN,HOUS 50P,RTA	22526	DU PONT E I NEMOURS (CONN)	65268-011 (2X25)	801290-050	1
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
R1 R2 R3	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	3
R4	R,,AXL 5.11K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-5.11K-1%-50PPM	803453-511	1
U1 U2	R,,SIP 470 (R9)	1U696	STACKPOLE COMPONENTS CO	10-9-1-471G (SIP)	807524-471	2
U10 U11 U12	IC,TTL 74F194	07263	FAIRCHILD IC'S & SEMICOND	74F194PC/DC	807994-035	3
U121 U122	IC,TTL 74S40	07263	FAIRCHILD IC'S & SEMICOND	74S40PC	807420-090	2
U123 U124 U125 U126 U133	IC,TTL 74F151	07263	FAIRCHILD IC'S & SEMICOND	74F151 (A)PC/DC	807912-035	16
U134 U135 U136 U143 U144						
U145 U146 U153 U154 U155						
U131 U140 U150	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	3
U13	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A07	807204-035-A07	1
U14	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A08	807204-035-A08	1
U142	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U20	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A05	807859-016-A05	1
U21	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A06	807859-016-A06	1
U22	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A07	807859-016-A07	1
U30 U40 U50 U60 U93 U100	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	13
U101 U102 U103 U113 U114						
U115 U116						
U31 U41 U54 U55 U70 U85 U90	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	8
U92						
U32 U52	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	2
U33 U71 U74 U84 U120	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	5
U34 U35 U80 U110 U111 U112	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	6
U42 U62 U72	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	3
U43 U44 U53	IC,TTL 74S30	07263	FAIRCHILD IC'S & SEMICOND	74S30PC/DC	807430-055	3

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RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200728-100

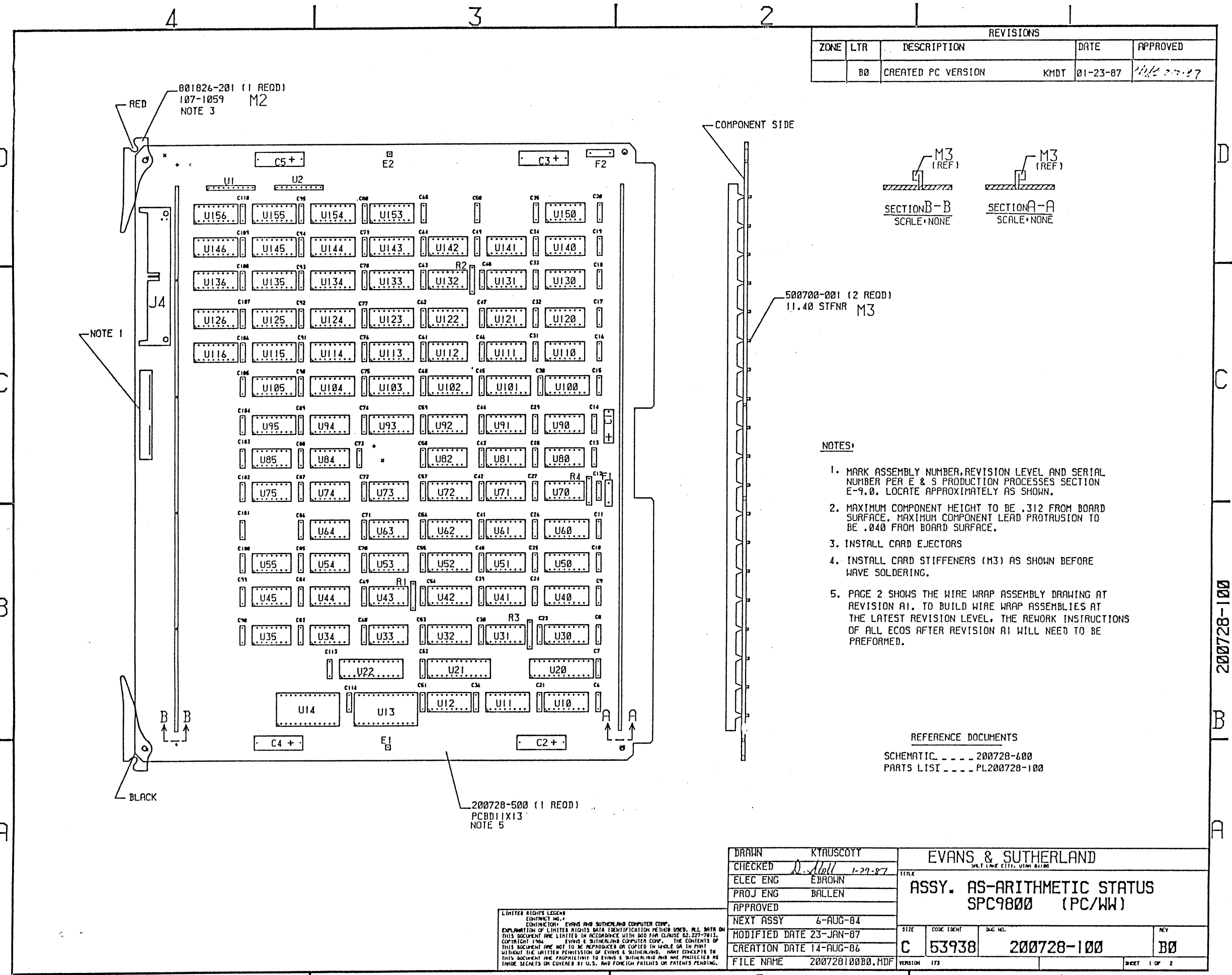
REV: B0 = BA

DESC: CARD ASSY,AS-ARITHMETIC STATUS,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
U45 U94	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	2
U51 U61 U132	IC,TTL S64	01295	TEXAS INSTR, SEMICON DIV.	SN74S64N	807464-055	3
U63 U130 U141	IC,TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	3
U64 U73 U75 U91	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	4
U81	IC,TTL 74S86	01295	TEXAS INSTR, SEMICON DIV.	SN74S86N	807486-055	1
U82	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
U95 U104 U105	IC,TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	3

36 ITEMS LISTED

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATED PC VERSION	KMDT 01-23-87	<i>[Signature]</i>



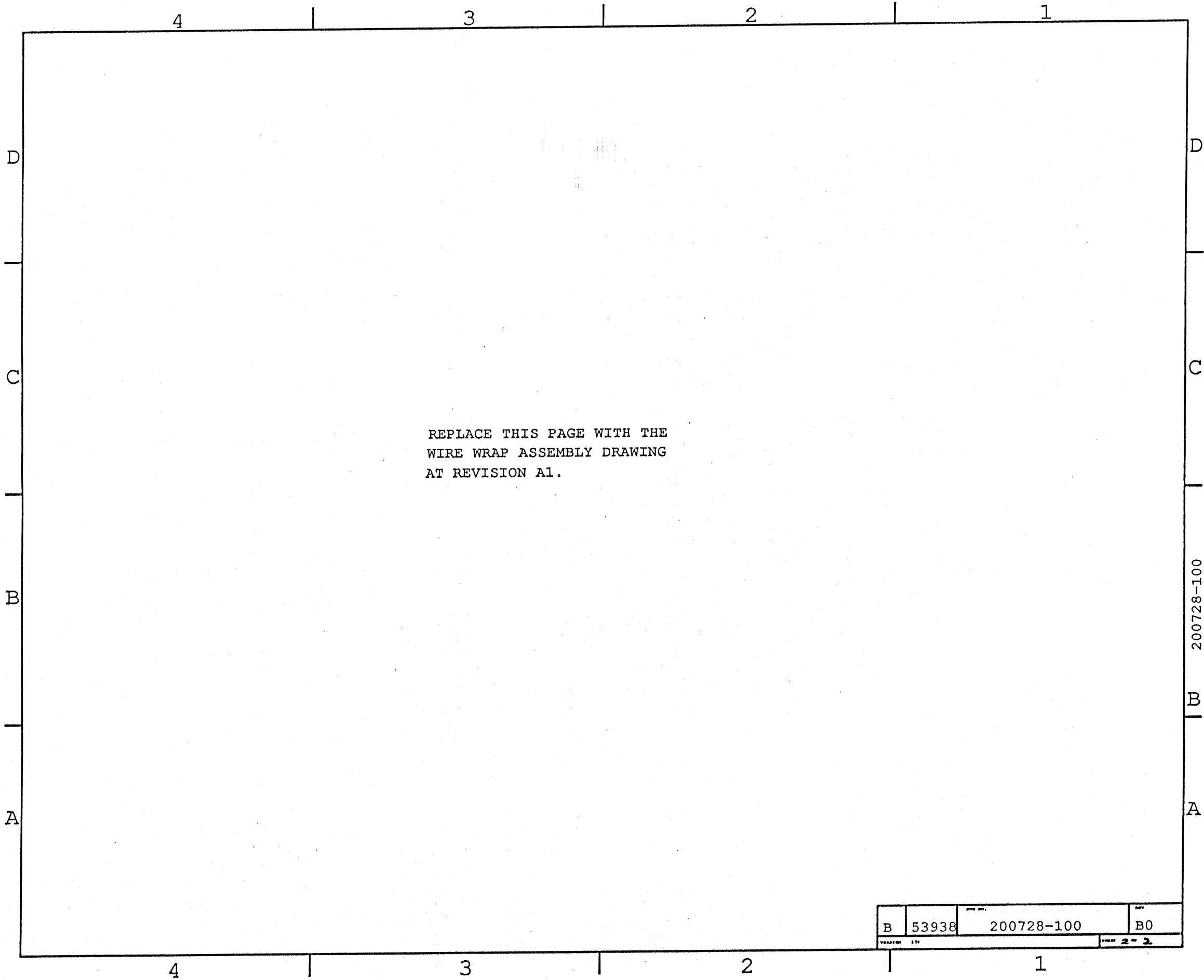
- NOTES:
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 2. MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
 3. INSTALL CARD EJECTORS
 4. INSTALL CARD STIFFENERS (M3) AS SHOWN BEFORE WAVE SOLDERING.
 5. PAGE 2 SHOWS THE WIRE WRAP ASSEMBLY DRAWING AT REVISION A1. TO BUILD WIRE WRAP ASSEMBLIES AT THE LATEST REVISION LEVEL, THE REWORK INSTRUCTIONS OF ALL ECOS AFTER REVISION A1 WILL NEED TO BE PERFORMED.

REFERENCE DOCUMENTS
 SCHEMATIC - - - - 200728-600
 PARTS LIST - - - - PL200728-100

DRAWN	KTRUSCOTT	EVANS & SUTHERLAND		
CHECKED	<i>[Signature]</i> 1-29-87	TITLE		
ELEC ENG	EBROWN	ASSY. AS-ARITHMETIC STATUS		
PROJ ENG	BALLEN	SPC9800 (PC/WW)		
APPROVED		SIZE	CODE IDENT	DWG NO.
NEXT ASSY	6-AUG-84	C	53938	200728-100
MODIFIED DATE	23-JAN-87	VERSION	173	
CREATION DATE	14-AUG-86	REV		B0
FILE NAME	200728100B0.MDF	SHEET 1 OF 2		

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200728-100



REPLACE THIS PAGE WITH THE
WIRE WRAP ASSEMBLY DRAWING
AT REVISION A1.

B	53938	200728-100	B0
VERSION 17	ISSUE 2 - 2		

200728-100

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200728-100

REV: A1 = AB

DESC: CARD ASSY,AS-ARITHMETIC STATUS,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,WW STD SPC9800	53938	EVANS & SUTHERLAND.	200721-500	200721-500	1
C2 C3 C4 C5	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C6 C7 C8 C9 C10 C11 C12 C13	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C14 C15 C16 C17 C18 C19 C20	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	99
C21 C23 C24 C25 C26 C27 C28						
C29 C30 C31 C32 C33 C34 C35						
C36 C38 C39 C40 C41 C42 C43						
C44 C45 C46 C47 C48 C49 C50						
C51 C52 C53 C54 C55 C56 C57						
C58 C59 C60 C61 C62 C63 C64						
C65 C68 C69 C70 C71 C72 C73						
C74 C75 C76 C77 C78 C79 C80						
C83 C84 C85 C86 C87 C88 C89						
C90 C91 C92 C93 C94 C95 C98						
C99 C100 C101 C102 C103 C104						
C105 C106 C107 C108 C109						
C110 C113 C114						
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
J4	CN,HOUS 50P,RTA	22526	DU PONT E I NEMOURS (CONN)	65268-011 (2X25)	801290-050	1
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
M6 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	2038
M7 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
R1 R2 R3	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	3
R4	R,,AXL 5.11K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-5.11K-1%-50PPM	803453-511	1
U1 U2	R,,SIP 470 (R9)	1U696	STACKPOLE COMPONENTS CO	10-9-1-471G (SIP)	807524-471	2
U10 U11 U12	IC,TTL 74F194	07263	FAIRCHILD IC'S & SEMICOND	74F194PC/DC	807994-035	3
U121 U122	IC,TTL 74S40	07263	FAIRCHILD IC'S & SEMICOND	74S40PC	807420-090	2
U123 U124 U125 U126 U133	IC,TTL 74F151	07263	FAIRCHILD IC'S & SEMICOND	74F151(A)PC/DC	807912-035	16
U134 U135 U136 U143 U144						
U145 U146 U153 U154 U155						
U131 U140 U150	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	3
U13	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A07	807204-035-A07	1
U14	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A08	807204-035-A08	1
U142	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U20	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A05	807859-016-A05	1
U21	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A06	807859-016-A06	1
U22	IC,PAL,20L8A,OCTL,20	53938	EVANS & SUTHERLAND.	807859-016-A07	807859-016-A07	1
U30 U40 U50 U60 U93 U100	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	13
U101 U102 U103 U113 U114						
U115 U116						
U31 U41 U54 U55 U70 U85 U90	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	8
U92						
U32 U52	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	2
U33 U71 U74 U84 U120	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	5
U34 U35 U80 U110 U111 U112	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	6

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RUN DATE=06/21/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 2

MAINTENANCE PARTS LIST

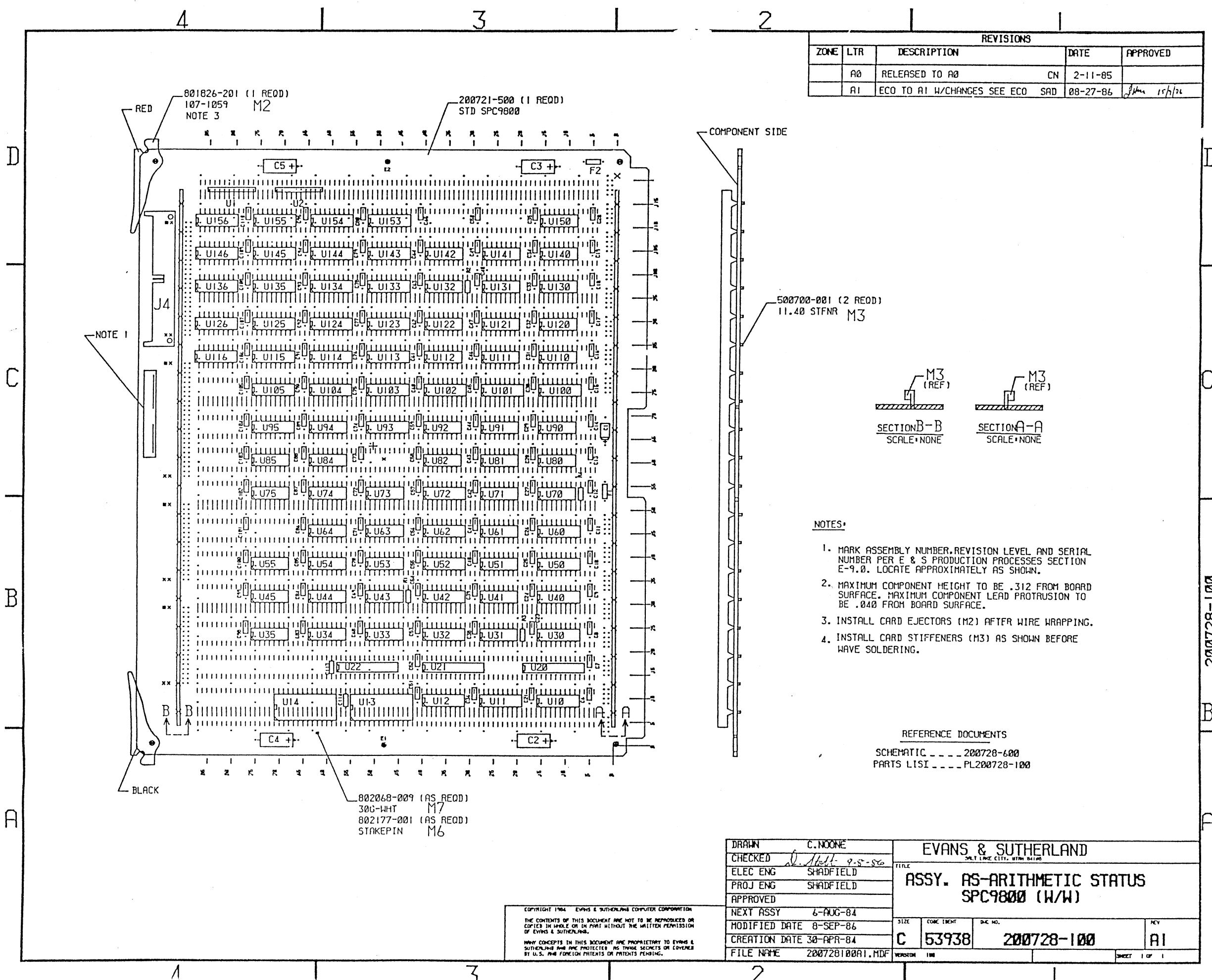
ASSEMBLY: PL 200728-100

REV: A1 = AB

DESC: CARD ASSY,AS-ARITHMETIC STATUS,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
U42 U62 U72	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	3
U43 U44 U53	IC,TTL 74S30	07263	FAIRCHILD IC'S & SEMICOND	74S30PC/DC	807430-055	3
U45 U94	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	2
U51 U61 U132	IC,TTL S64	01295	TEXAS INSTR, SEMICON DIV.	SN74S64N	807464-055	3
U63 U130 U141	IC,TTL 74S20	01295	TEXAS INSTR, SEMICON DIV.	SN74S20N/J	807420-055	3
U64 U73 U75 U91	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	4
U81	IC,TTL 74S86	01295	TEXAS INSTR, SEMICON DIV.	SN74S86N	807486-055	1
U82	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
U95 U104 U105	IC,TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	3

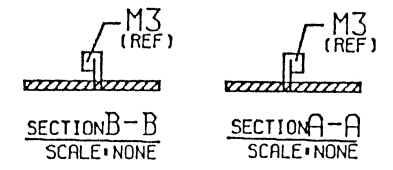
38 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0	CN 2-11-85	
	A1	ECO TO A1 W/CHANGES SEE ECO	SAD 08-27-86	<i>[Signature]</i> 15/7/86

COMPONENT SIDE

500700-001 (2 REOD)
11.40 STFNR M3



NOTES:

1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
2. MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
3. INSTALL CARD EJECTORS (M2) AFTER WIRE WRAPPING.
4. INSTALL CARD STIFFENERS (M3) AS SHOWN BEFORE HAVE SOLDERING.

REFERENCE DOCUMENTS
SCHEMATIC - 200728-600
PARTS LIST - PL200728-100

802068-009 (AS REOD)
30G-WHT M7
802177-001 (AS REOD)
STAKEPIN M6

DRAWN C. NOONE		EVANS & SUTHERLAND		
CHECKED <i>[Signature]</i>	ELEC ENG SHADFIELD	TITLE ASSY. AS-ARITHMETIC STATUS SPC9800 (W/W)		
PROJ ENG SHADFIELD	APPROVED	SIZE C	COMB INCH 53938	DWG NO. 200728-100
NEXT ASSY 6-AUG-84	MODIFIED DATE 8-SEP-86	REV	A1	
CREATION DATE 30-APR-84	FILE NAME 200728100A1.MDF	VERSION 100	SHEET 1 OF 1	

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200728-100



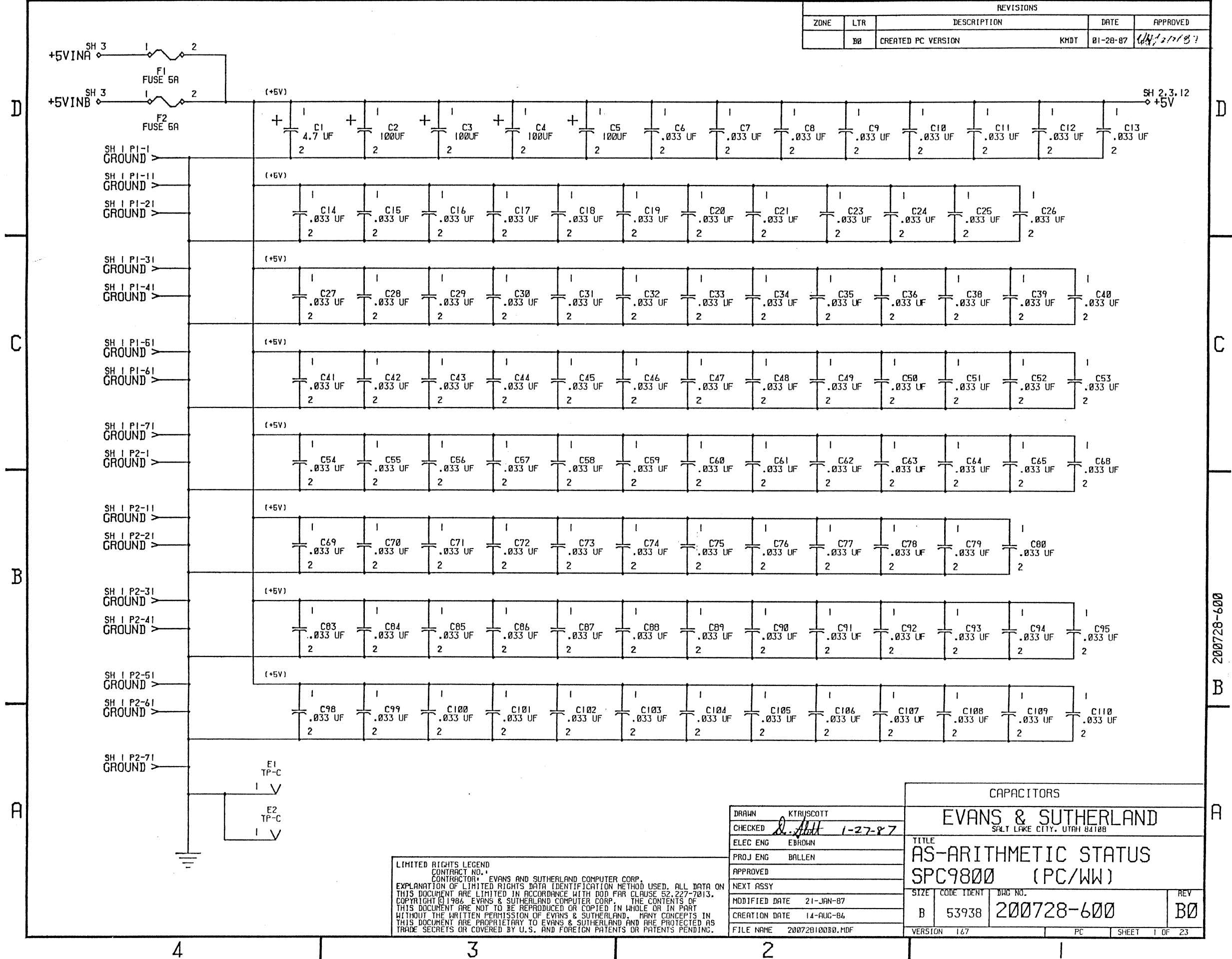
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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATED PC VERSION	KMDT 01-28-87	WJ/2/1/87



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 CONTRACTOR: EVANS AND SUTHERLAND COMPUTER CORP.
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DRAWN	KTRUSCOTT
CHECKED	<i>[Signature]</i> 1-27-87
ELEC ENG	EBROWN
PROJ ENG	BALLEN
APPROVED	
NEXT ASSY	
MODIFIED DATE	21-JAN-87
CREATION DATE	14-AUG-86
FILE NAME	20072810080.MDF

CAPACITORS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE AS-ARITHMETIC STATUS SPC9800 (PC/WW)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200728-600	B0
VERSION	167	PC	SHEET 1 OF 23

200728-600

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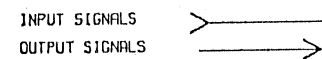
NOTES: UNLESS OTHERWISE SPECIFIED:

1. RESISTANCE VALUES ARE IN OHMS + - 1% .K DENOTES 1000.

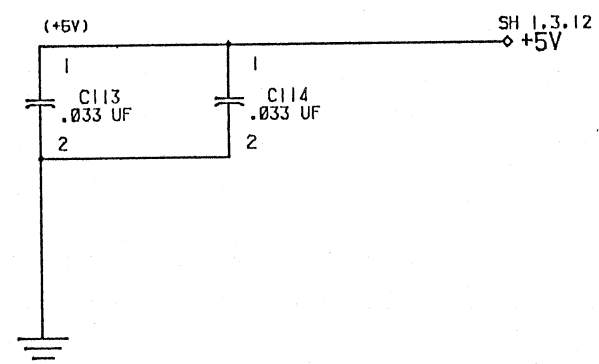
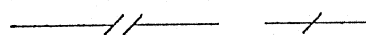
2. ON ALL IC'S. GROUND AND +5V (VCC) ARE AS FOLLOWS:

- 14 PIN IC. 7 AND 14
- 16 PIN IC. 8 AND 16
- 18 PIN IC. 9 AND 18
- 20 PIN IC. 10 AND 20
- 22 PIN IC. 11 AND 22
- 24 PIN IC. 12 AND 24
- 28 PIN IC. 14 AND 28

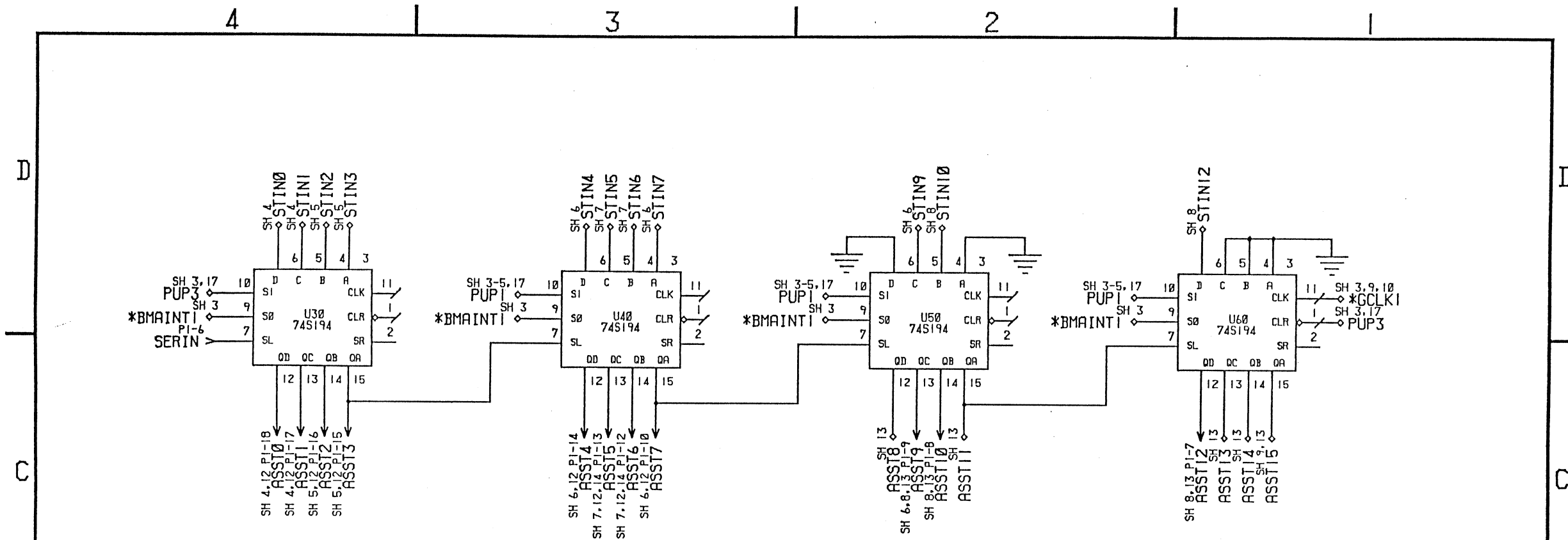
3. CARD CONNECTOR SYMBOL "PI-" DESIGNATES:



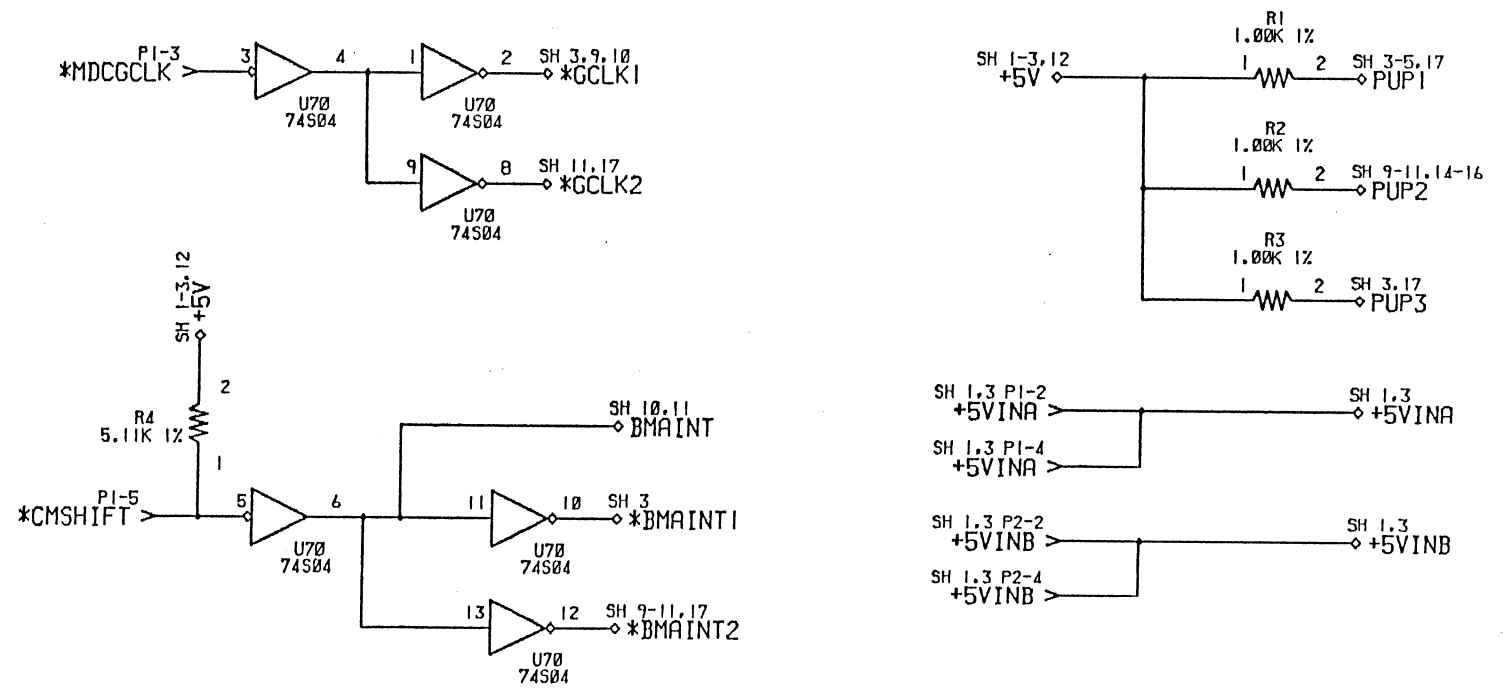
4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S. ETC.



CAPACITORS I			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200728-600	B0
VERSION	167	PC	SHEET 2 OF 23



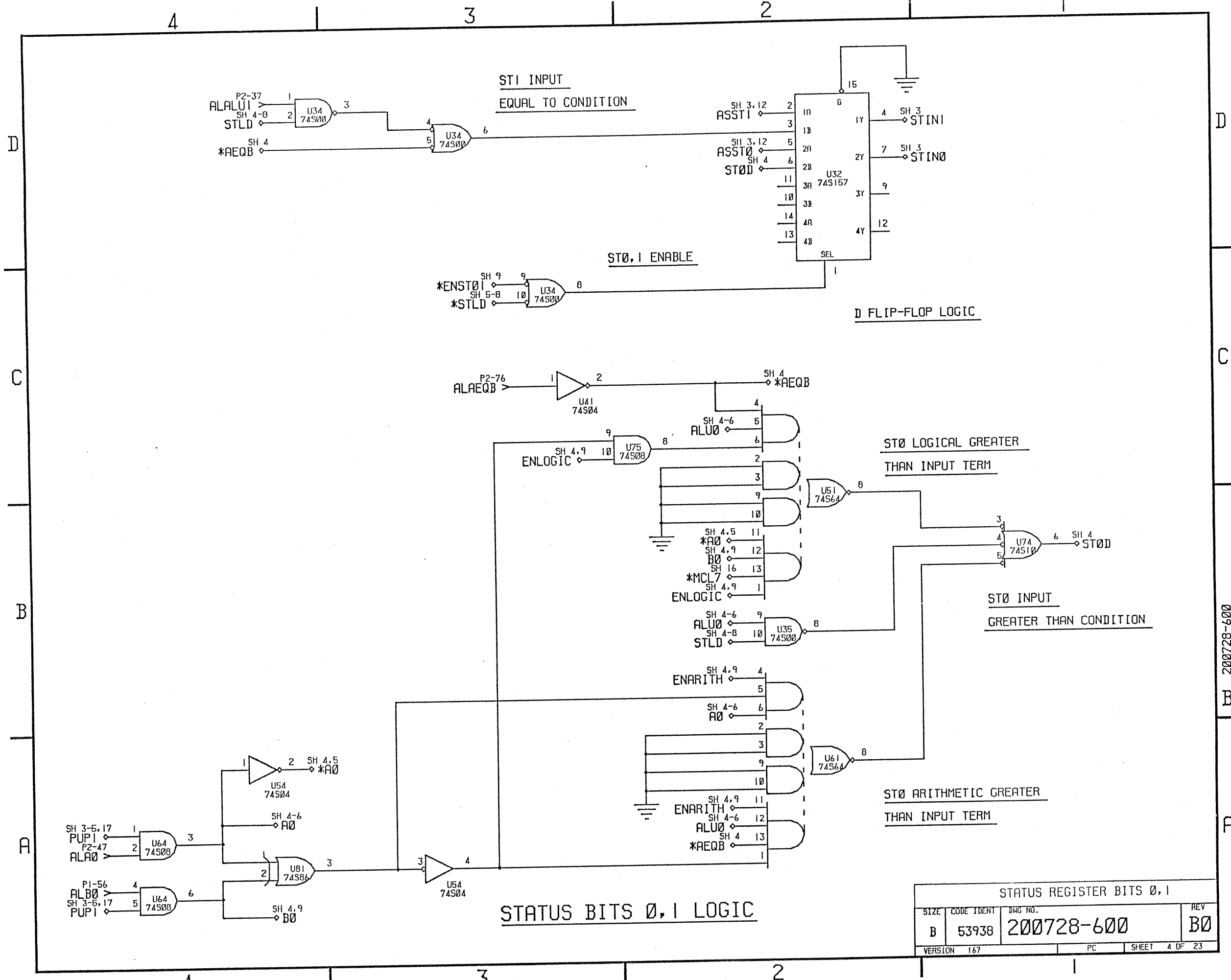
STATUS REGISTER STAT



CLOCK AND MAINTINANCE BUFFERS

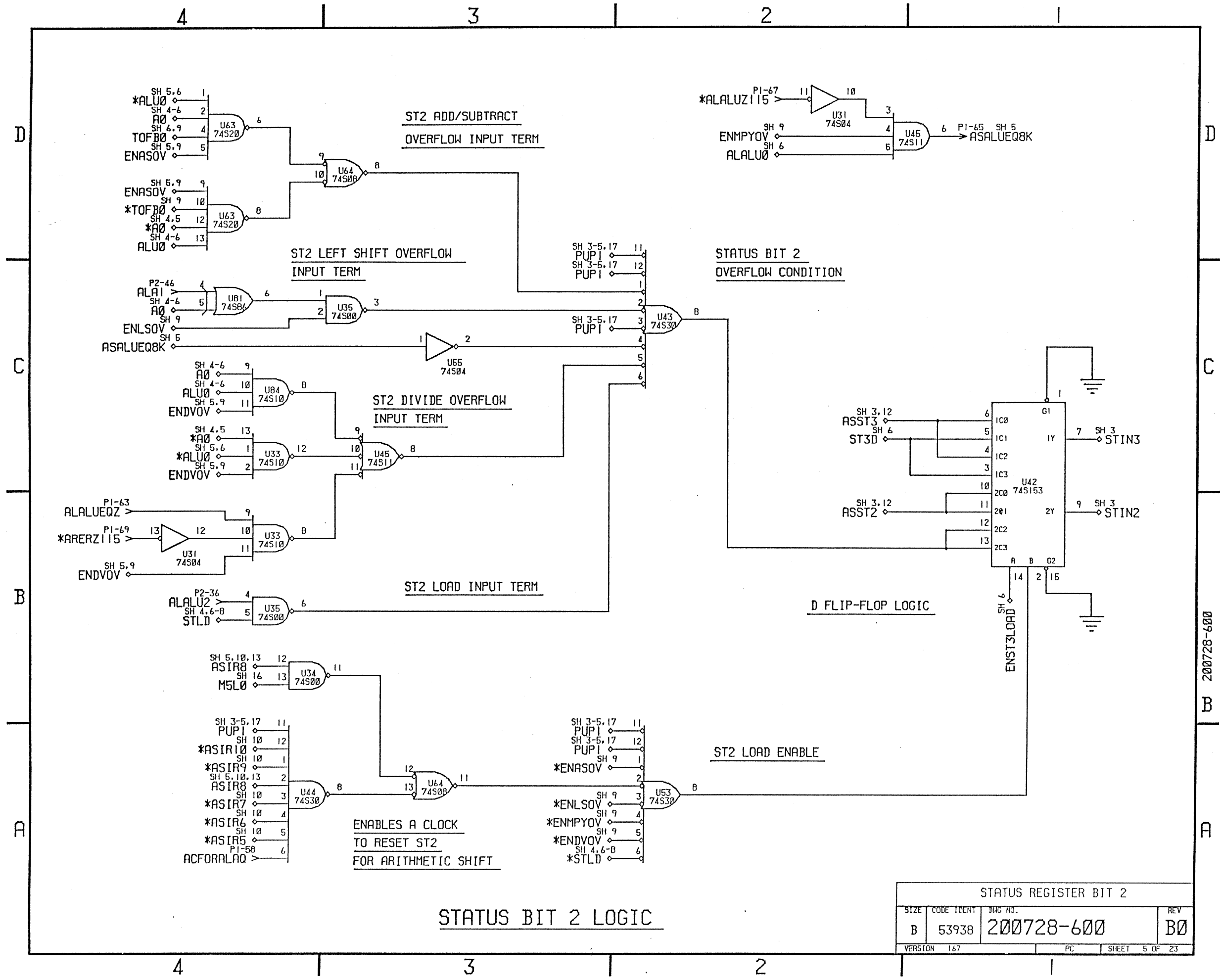
STATUS REGISTER			
SIZE	CODE IDENT	DOC NO.	REV
B	53938	200728-600	B0
VERSION	167	PC	SHEET 3 OF 23

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STATUS REGISTER BITS 0, 1			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200728-600	B0
VERSION	167	PC	SHEET 4 OF 23

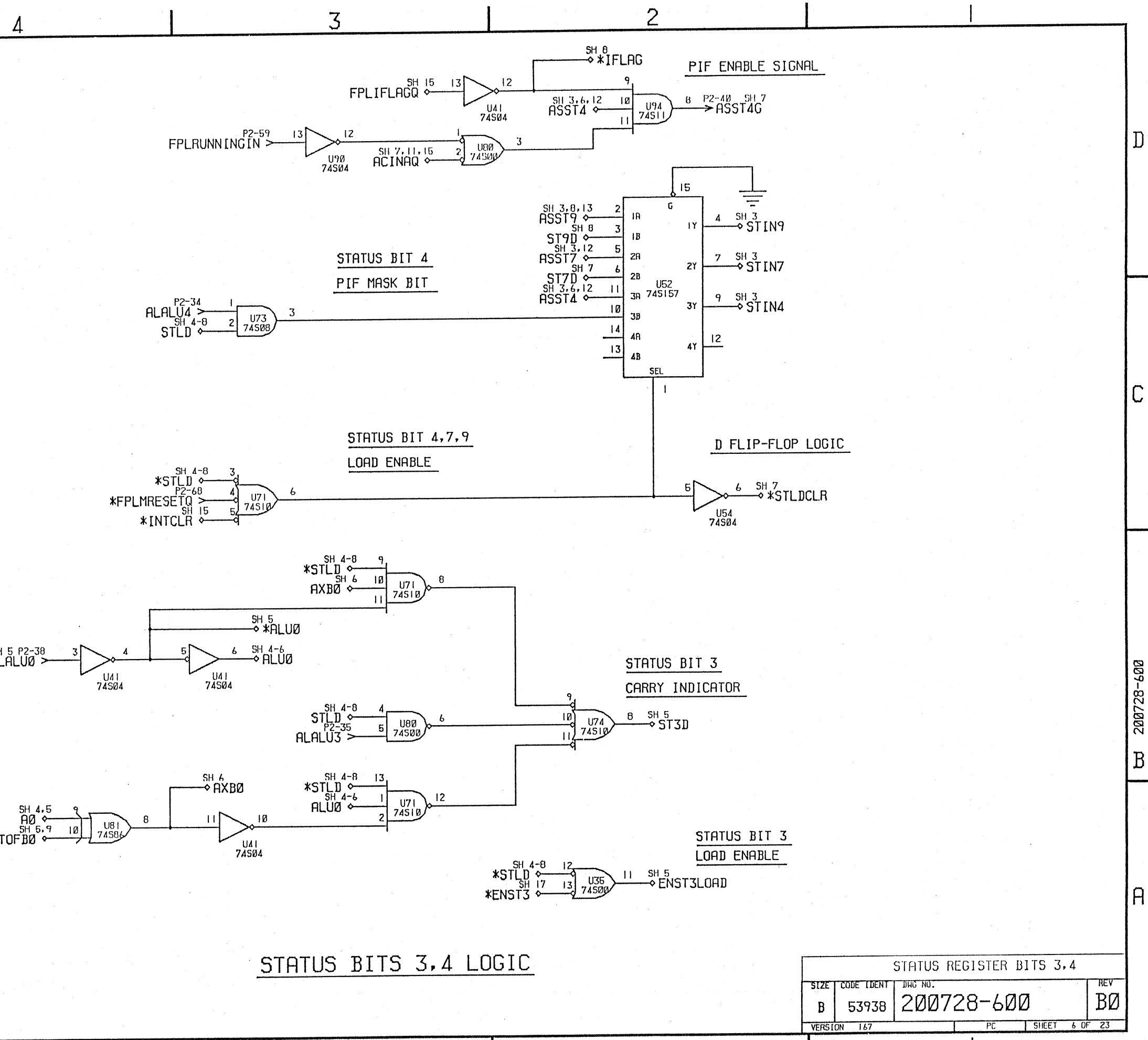
200728-600 B



STATUS BIT 2 LOGIC

STATUS REGISTER BIT 2			
SIZE	CODE IDENT	DOC NO.	REV
B	53938	200728-600	B0
VERSION 167	PC	SHEET 5 OF 23	

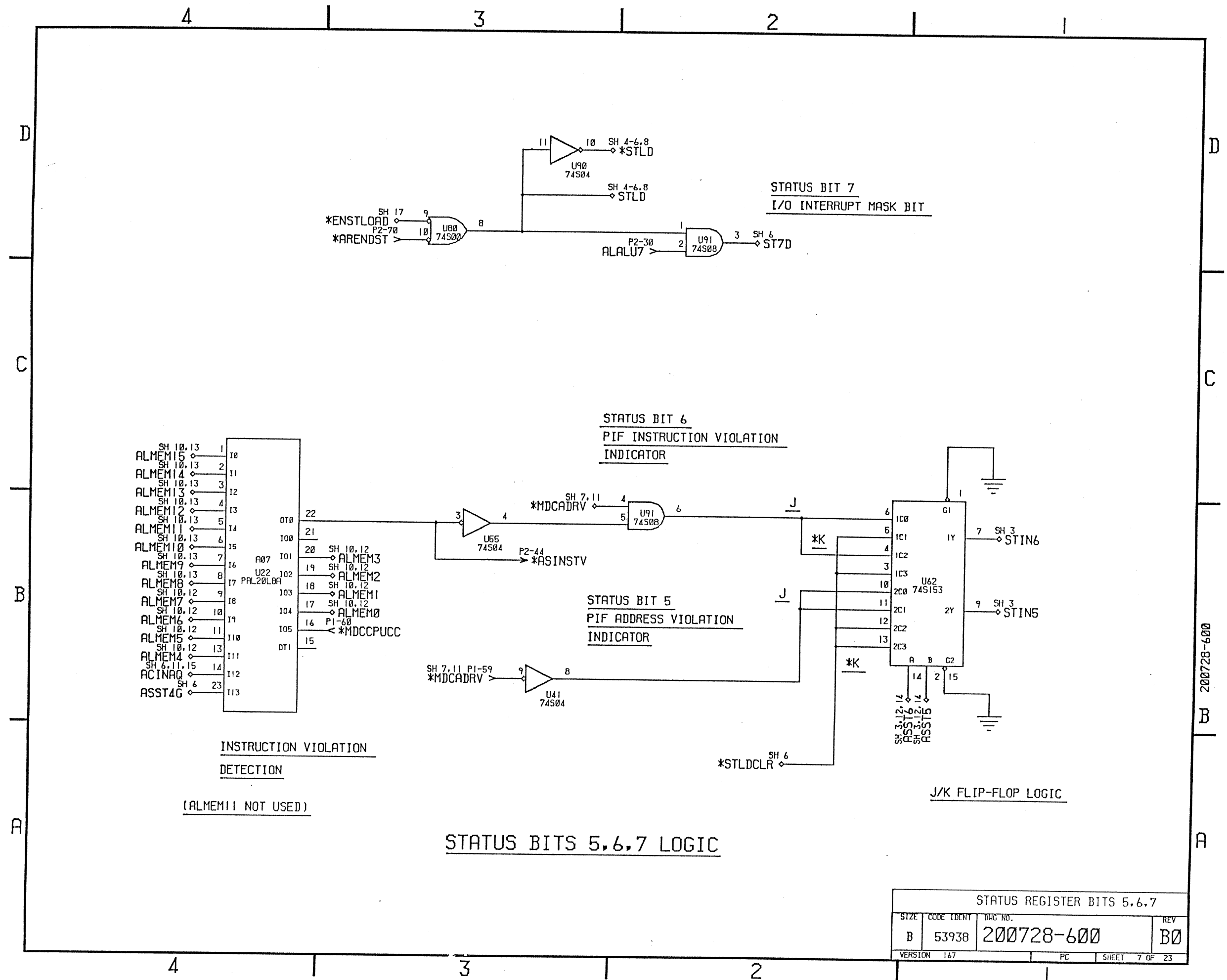
200728-600



STATUS BITS 3,4 LOGIC

STATUS REGISTER BITS 3,4			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200728-600	B0
VERSION	167	PC	SHEET 6 OF 23

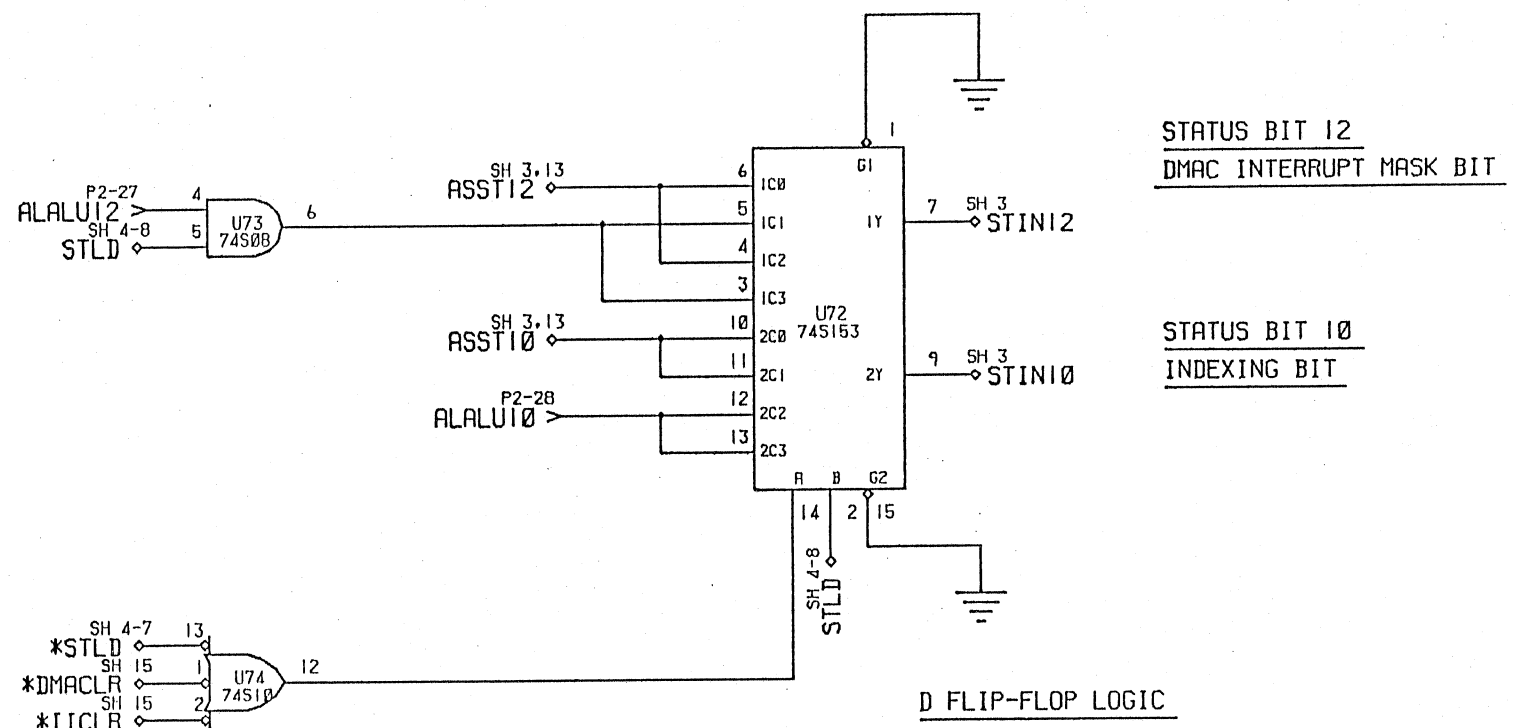
200728-600



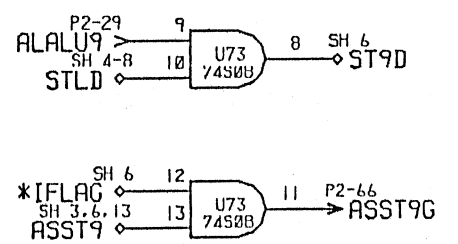
STATUS REGISTER BITS 5, 6, 7			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200728-600	B0
VERSION	167	PC	SHEET 7 OF 23

4 3 2 1

D
C
B
A



STATUS BIT 9
PIF LOWER LIMIT BIAS ENABLE

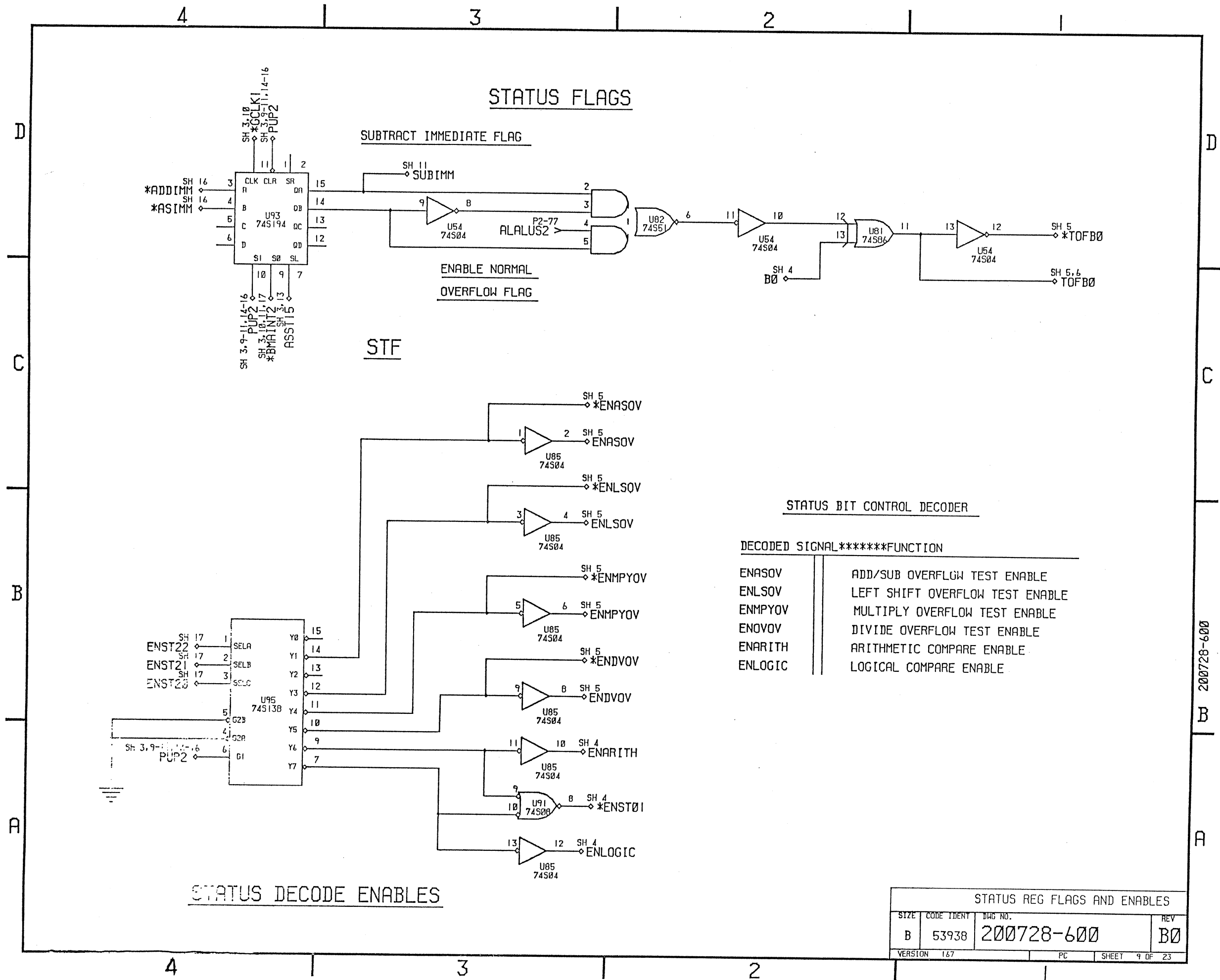


STATUS BITS 9, 10, 12 LOGIC

STATUS REGISTER BITS 9, 10, 12			
SIZE	CODE IDENT	DIAG NO.	REV
B	53938	200728-600	B0
VERSTON	167	PC	SHEET 8 OF 23

4 3 2 1

200728-600
B
A



STATUS FLAGS

SUBTRACT IMMEDIATE FLAG

ENABLE NORMAL OVERFLOW FLAG

STF

STATUS BIT CONTROL DECODER

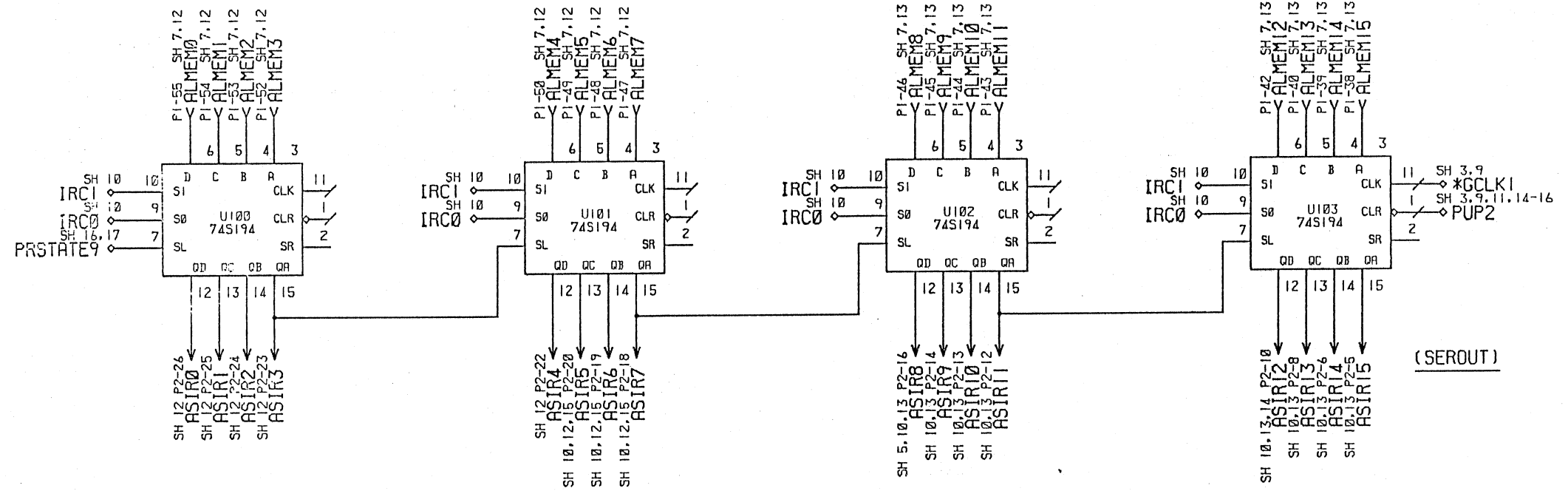
DECODED SIGNAL*****FUNCTION

ENASOV	ADD/SUB OVERFLOW TEST ENABLE
ENLSOV	LEFT SHIFT OVERFLOW TEST ENABLE
ENMPYOV	MULTIPLY OVERFLOW TEST ENABLE
ENDVOV	DIVIDE OVERFLOW TEST ENABLE
ENARITH	ARITHMETIC COMPARE ENABLE
ENLOGIC	LOGICAL COMPARE ENABLE

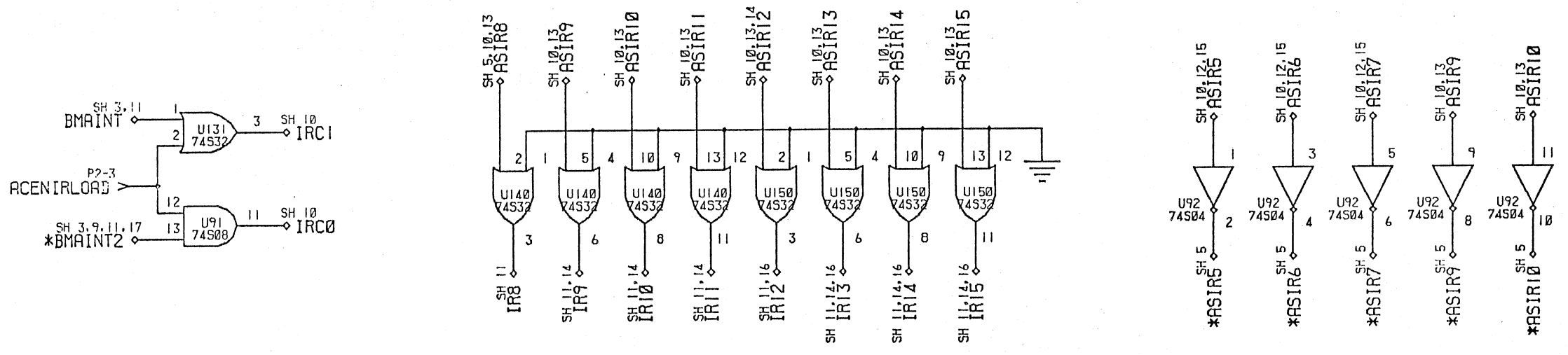
STATUS DECODE ENABLES

STATUS REG FLAGS AND ENABLES			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200728-600	B0
VERSION	1.67	PC	SHEET 9 OF 23

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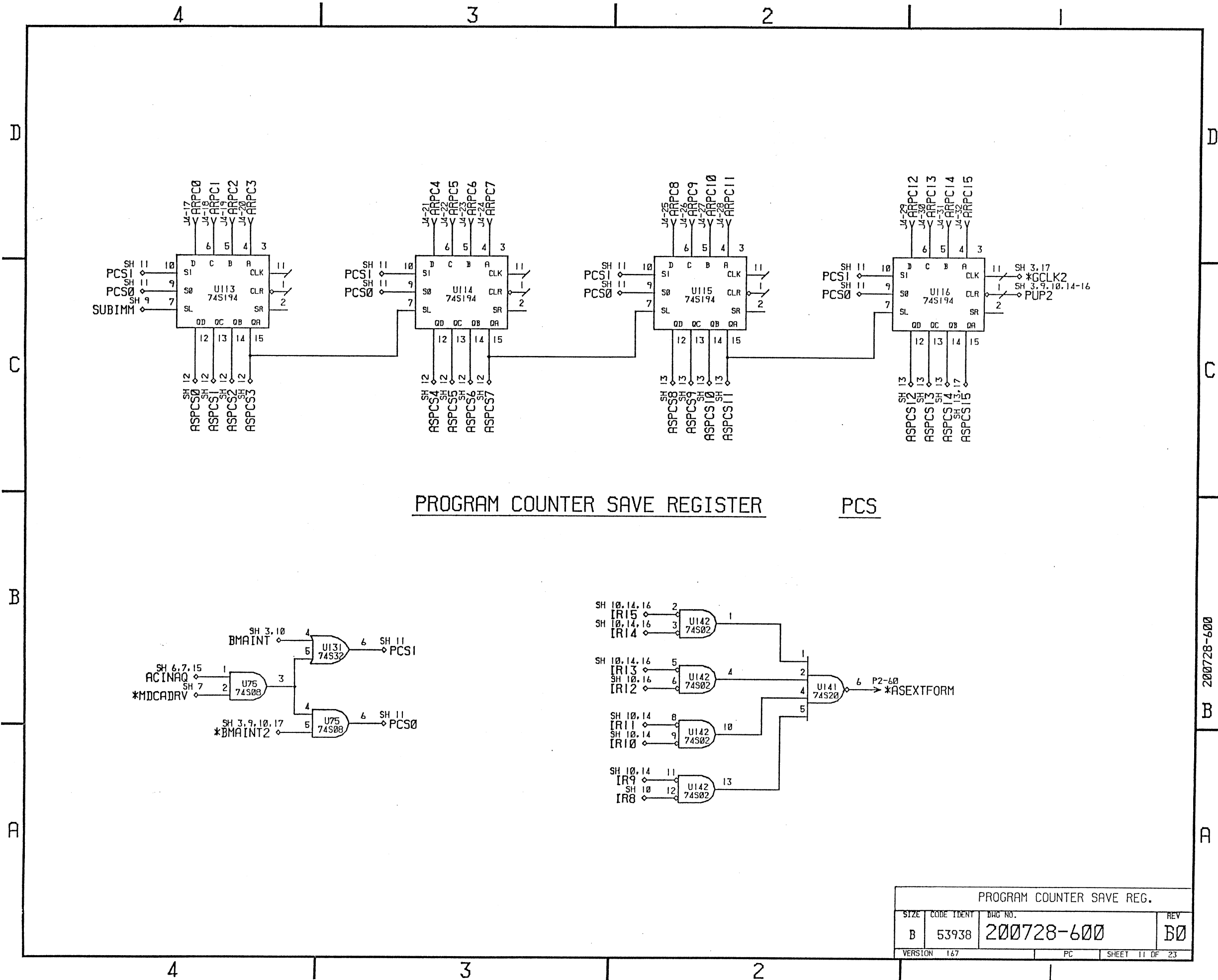


INSTRUCTION REGISTER IR



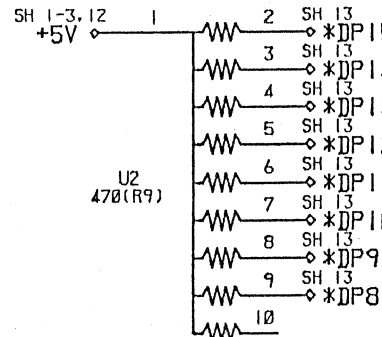
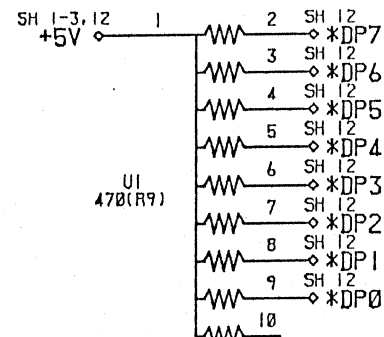
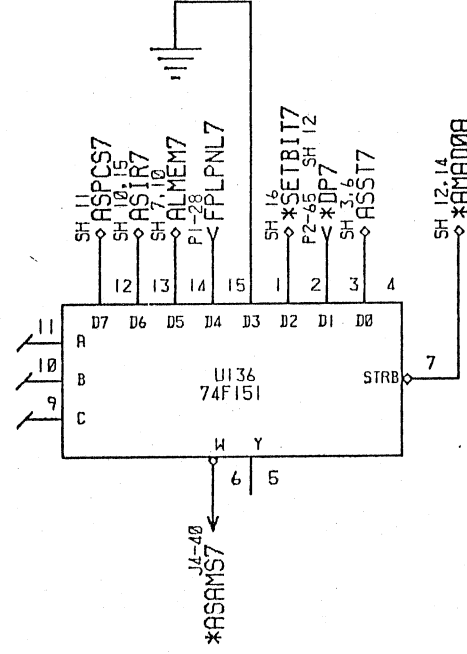
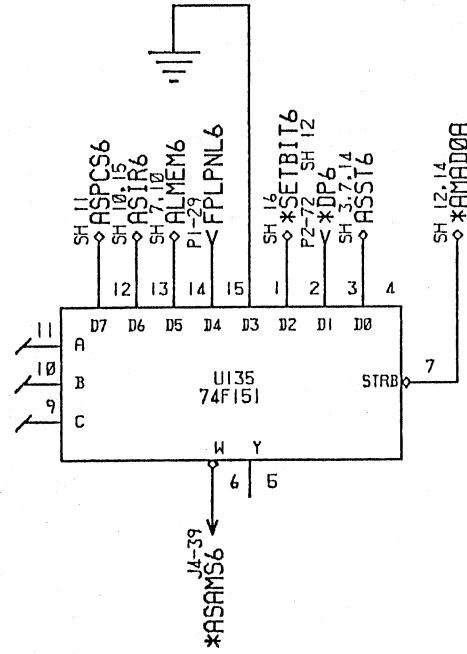
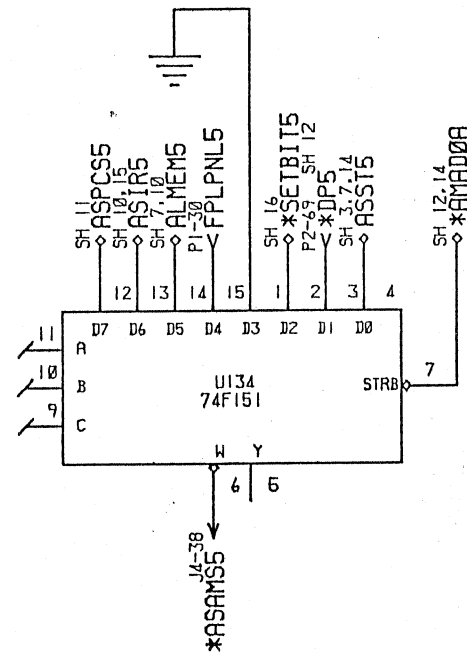
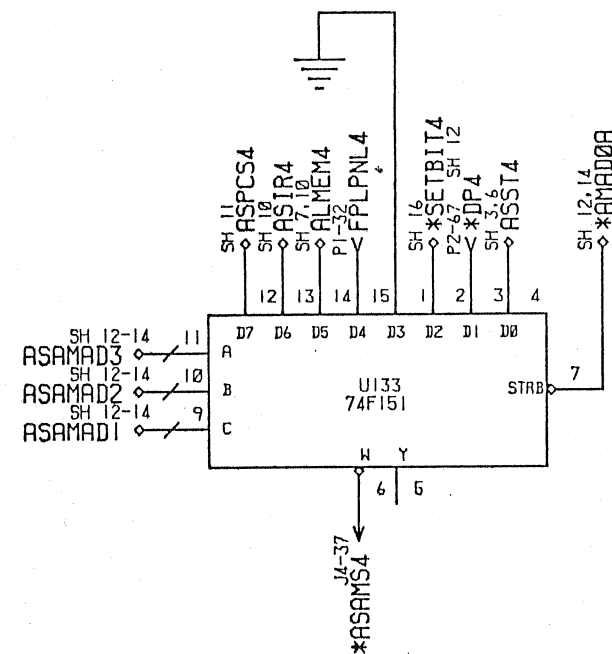
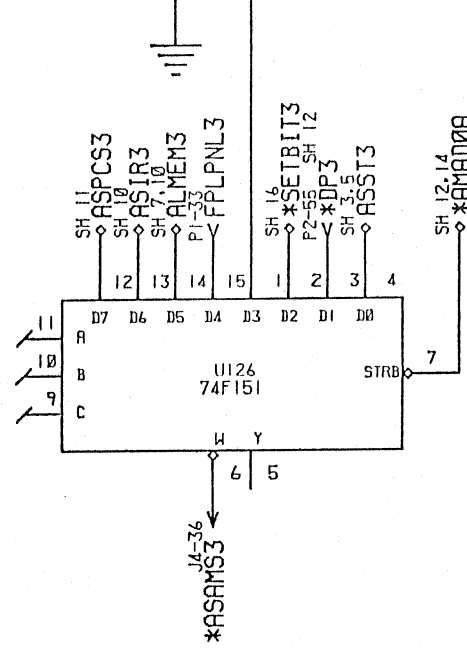
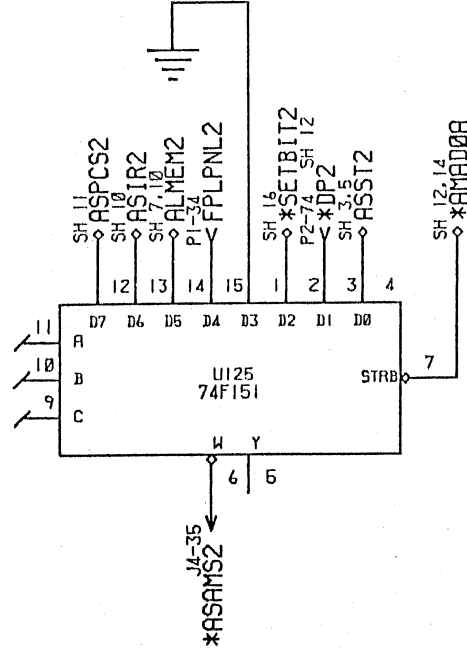
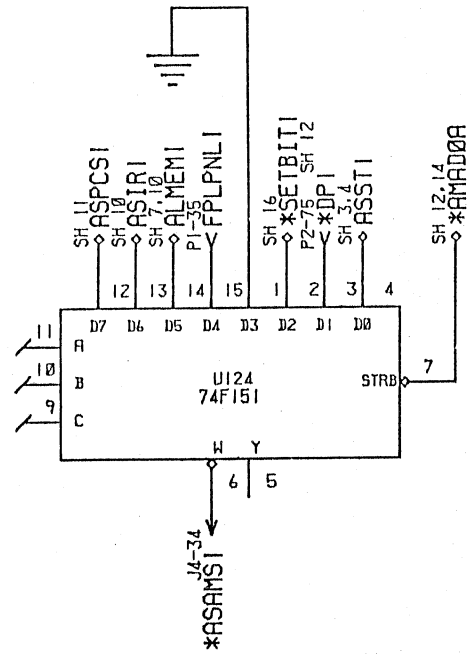
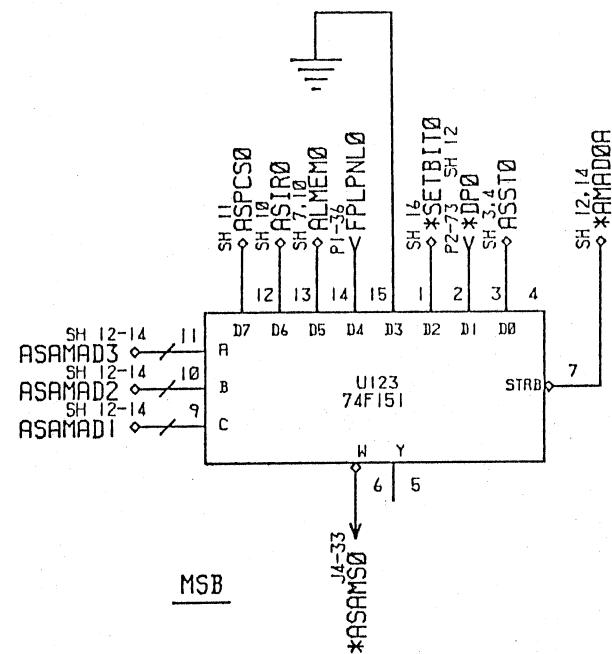
INSTRUCTION REGISTER			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200728-600	B0
VERSION 167	PC	SHEET 18 OF 23	

B 200728-600



PROGRAM COUNTER SAVE REGISTER PCS

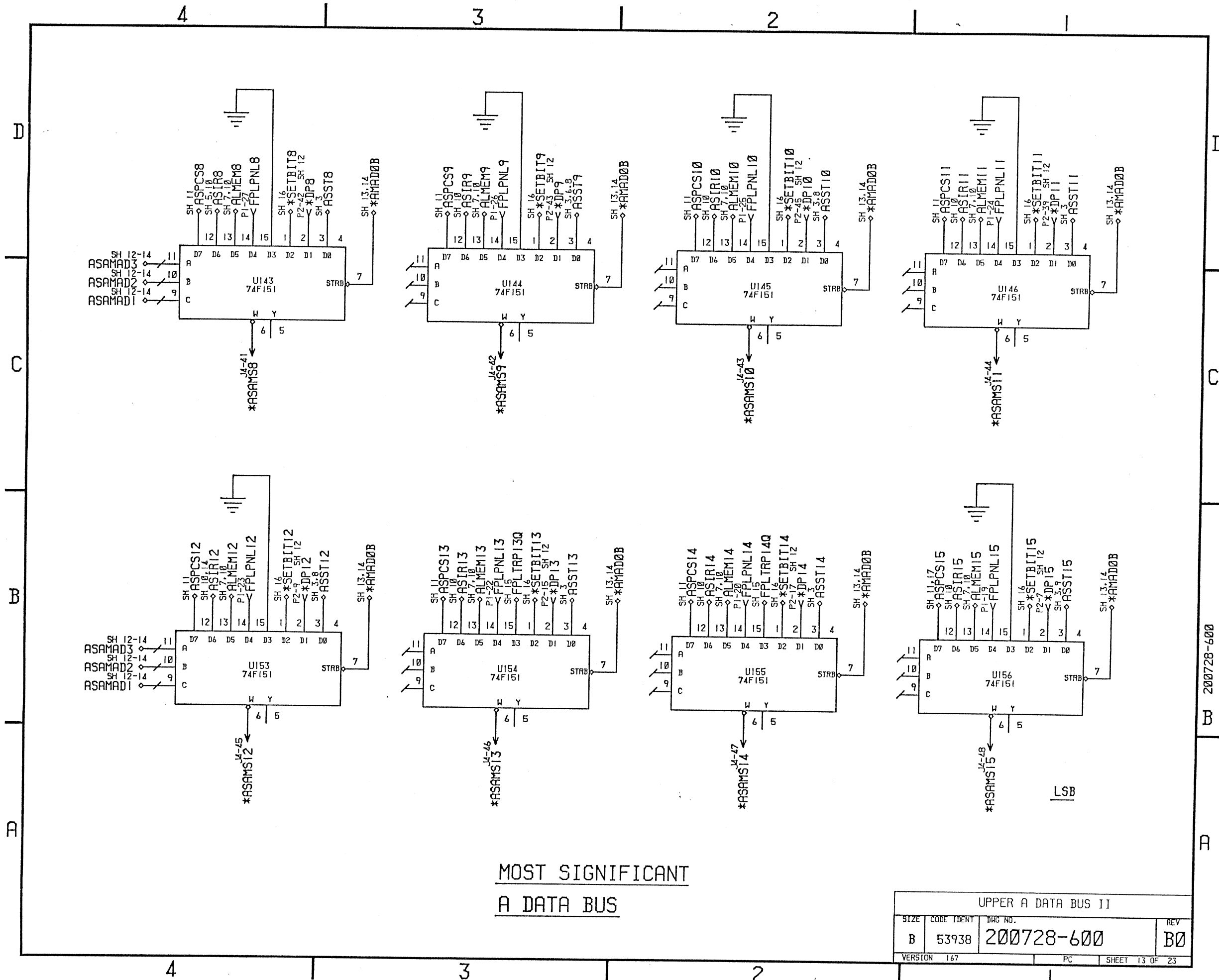
PROGRAM COUNTER SAVE REG.			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200728-600	B0
VERSION	167	PC	SHEET 11 OF 23



MOST SIGNIFICANT
A DATA BUS

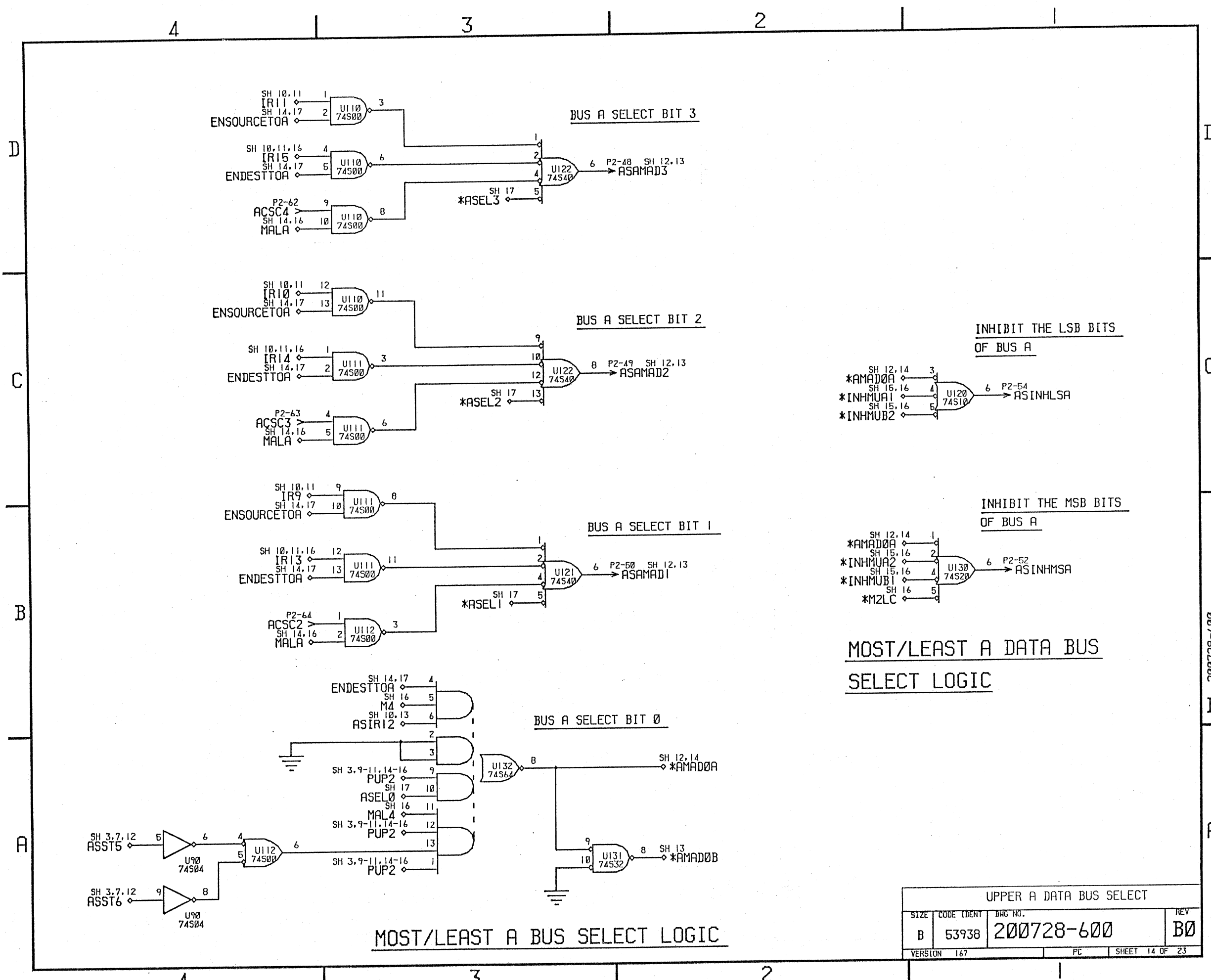
UPPER A DATA BUS 1			
SIZE	CODE IDENT	DIAG NO.	REV
B	53938	200728-600	B0
VERSION	167	PC	SHEET 12 OF 23

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MOST SIGNIFICANT
A DATA BUS

UPPER A DATA BUS II			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200728-600	B0
VERSION 167	PC	SHEET 13 OF 23	



MOST/LEAST A BUS SELECT LOGIC

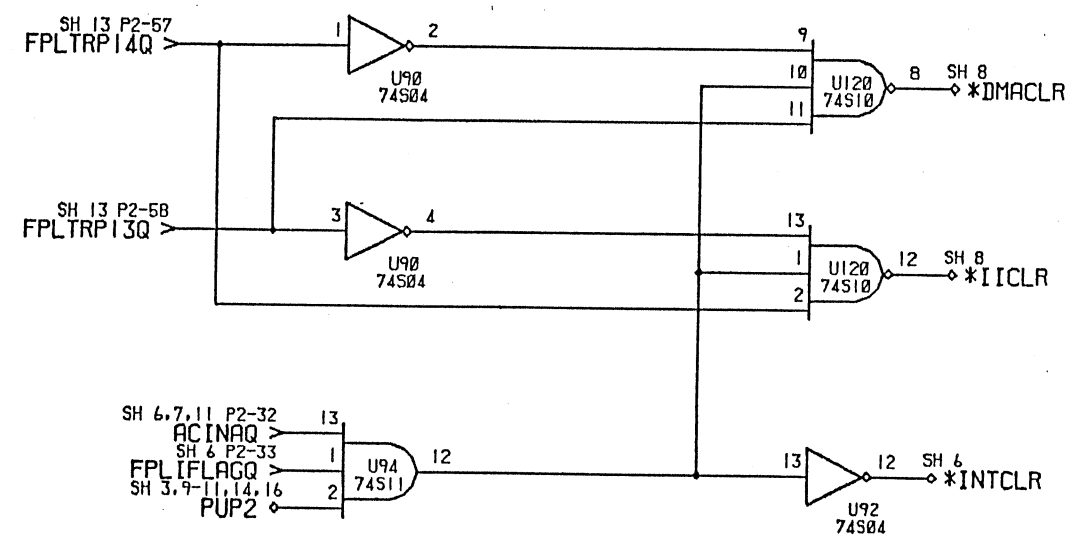
MOST/LEAST A DATA BUS SELECT LOGIC

INHIBIT THE LSB BITS OF BUS A

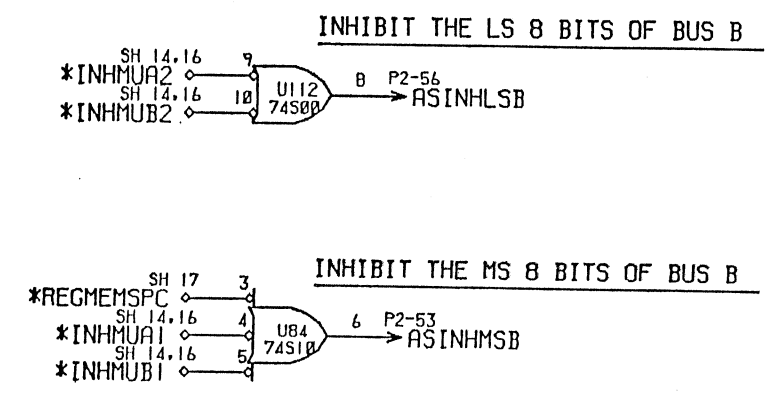
INHIBIT THE MSB BITS OF BUS A

UPPER A DATA BUS SELECT			
SIZE	CODE IDENT	DOC NO.	REV
B	53938	200728-600	B0
VERSION	167	PC	SHEET 14 OF 23

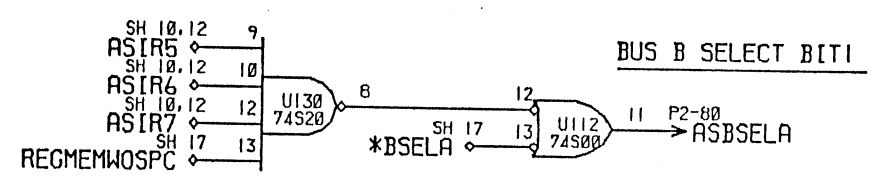
200728-600 B B A



INTERRUPT TRAP LOGIC

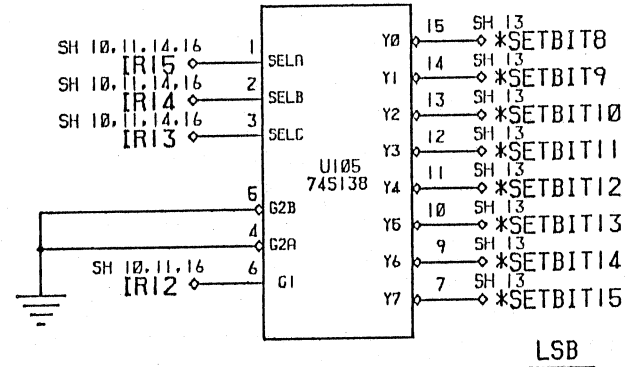
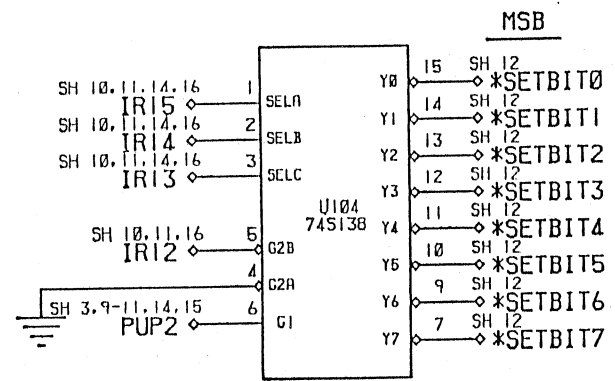


B BUS CONTROL

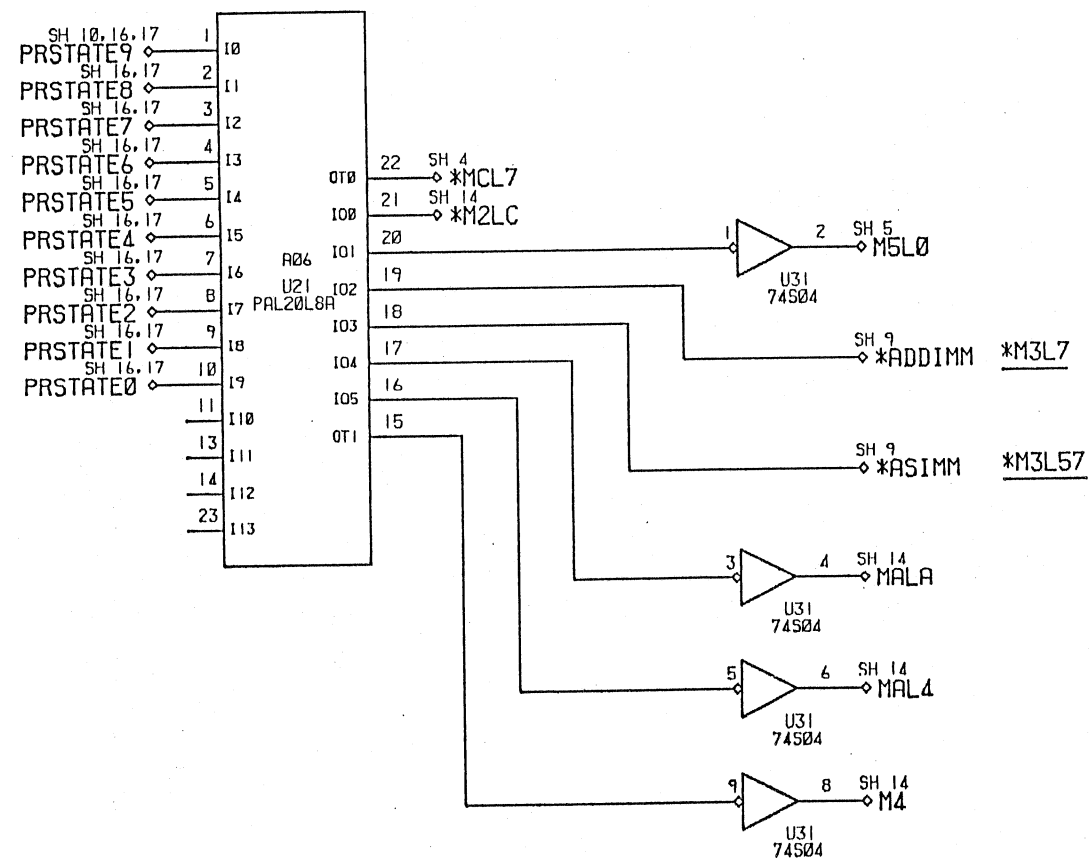


INTERRUPT TRAP LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200728-600	B0
VERSION 1.67		PC	SHEET 15 OF 23

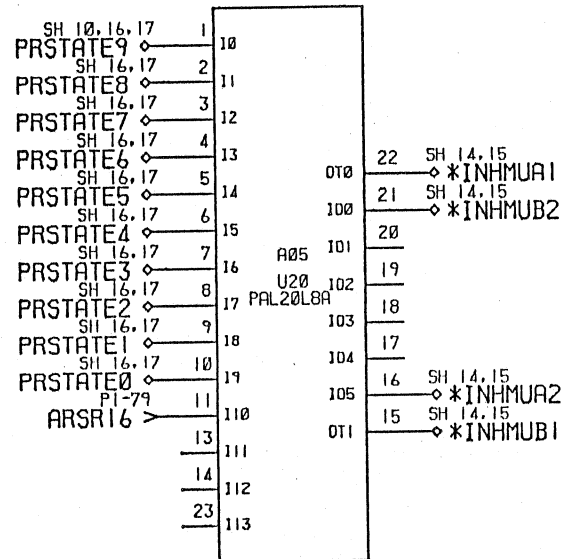
200728-600 B B A



SET BIT LOGIC



CONTROL PALS



INHIBIT 8 LSBS OF BUS A

*(M5L8.*ARSR16)

*(M5L9.*ARSR16)

INHIBIT 8 LSBS OF BUS A

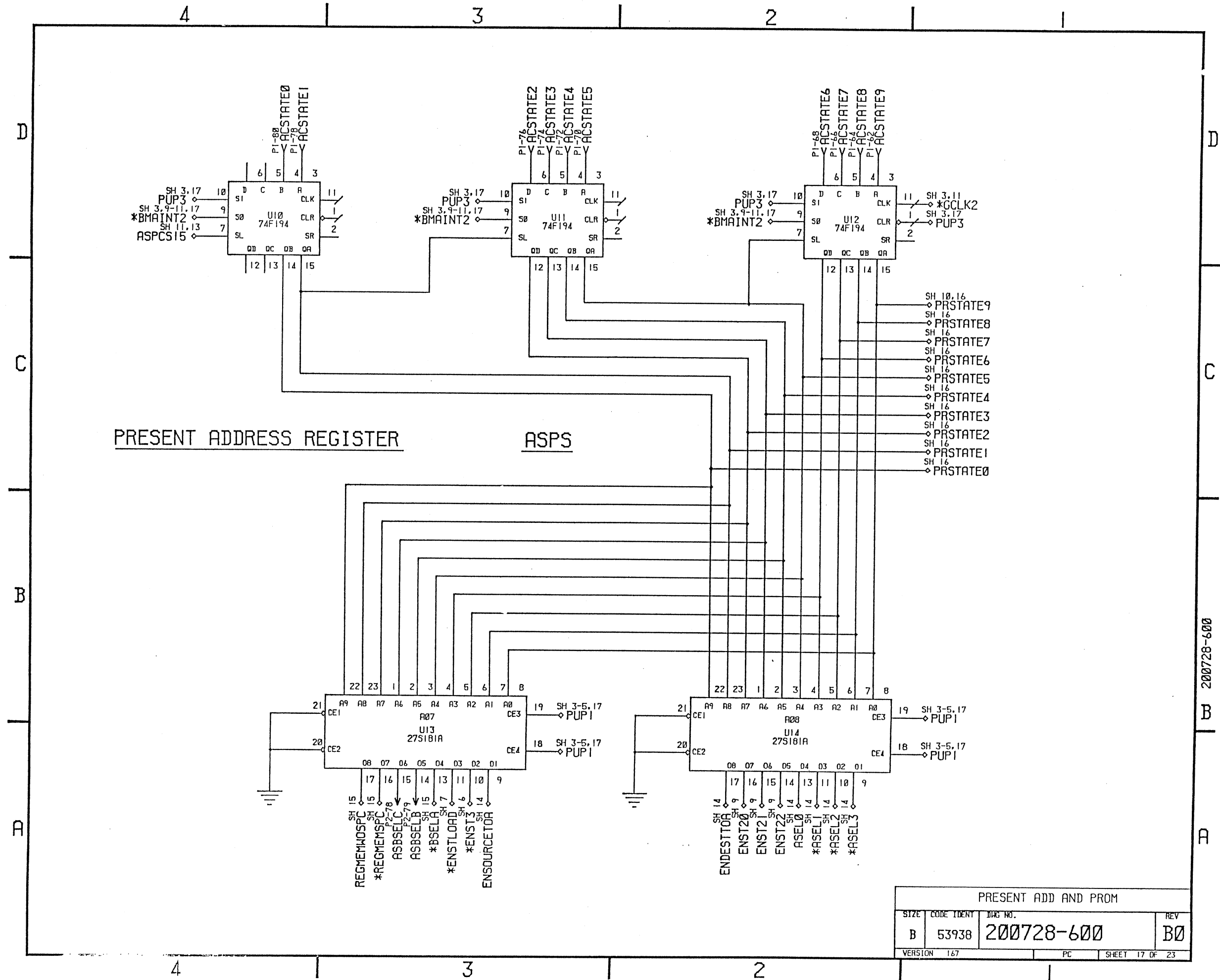
*(M5L8.*ARSR16)

*(M5L9.*ARSR16)

*(M5L8.*SR16)

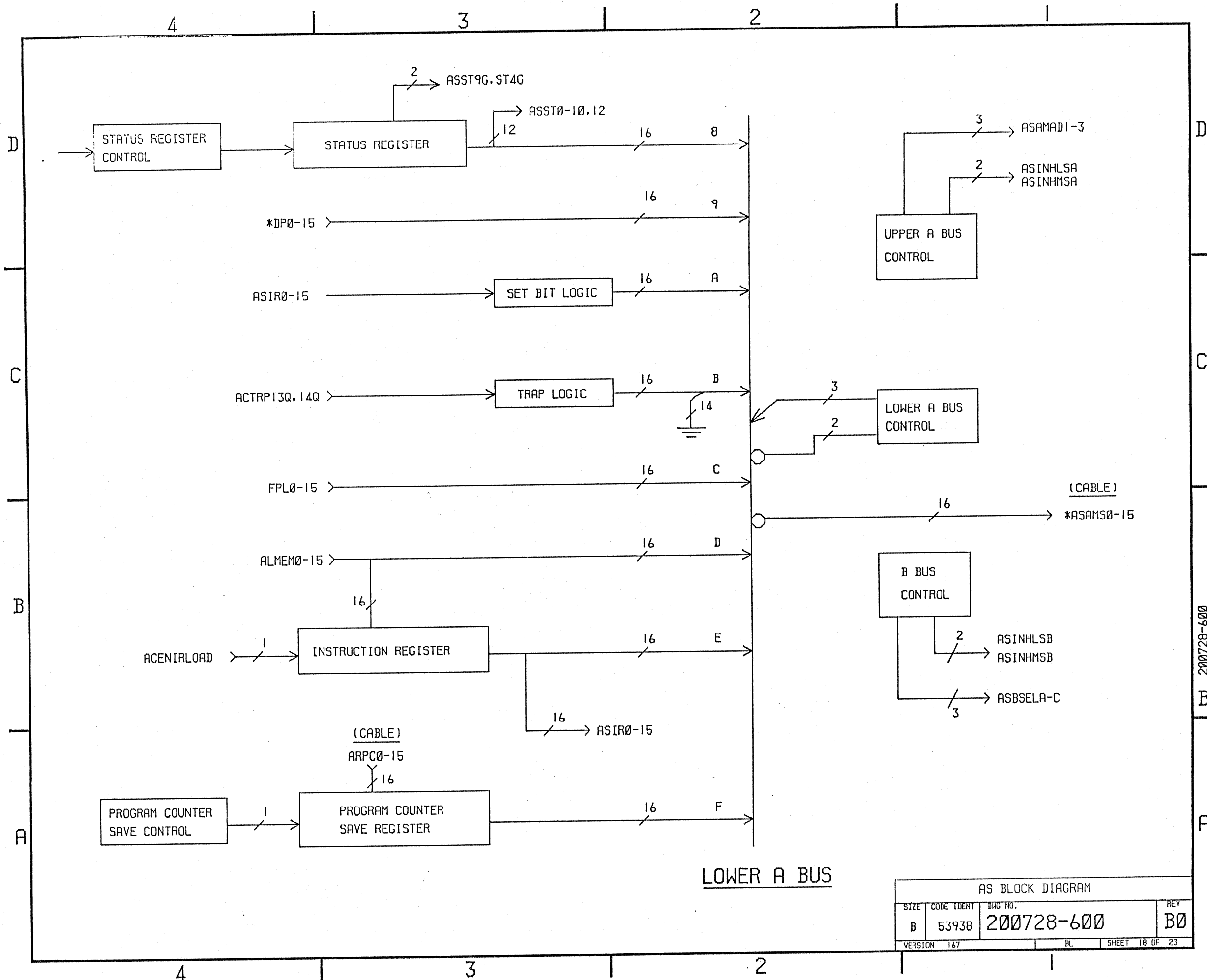
SET BIT LOGIC

SIZE	CODE IDENT	DRG NO.	REV
B	53938	200728-600	B0
VERSION	167	PC	SHEET 16 OF 23



PRESENT ADD AND PROM			
SIZE	CODE IDENT	DIAG NO.	REV
B	53938	200728-600	B0
VERSION	167	PC	SHEET 17 OF 23

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AS BLOCK DIAGRAM			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200728-600	B0
VERSION	167	BL	SHEET 18 OF 23

B 200728-600

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	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN
D	J4	17	FEMALE	ARPC0	11	D4		PI	12	MALE	ASST6	3	C3		PI	56	FEMALE	ALB0	4	A4	
	J4	18	FEMALE	ARPC1	11	D4		PI	13	MALE	ASST5	3	C3		PI	58	FEMALE	ACFORALAQ	5	A4	
	J4	19	FEMALE	ARPC2	11	D4		PI	14	MALE	ASST4	3	C3		PI	59	FEMALE	*MDCADRV	7	B3	
	J4	20	FEMALE	ARPC3	11	D4		PI	15	MALE	ASST3	3	C4		PI	60	FEMALE	*MDCCPUCC	7	B4	
	J4	21	FEMALE	ARPC4	11	D3		PI	16	MALE	ASST2	3	C4		PI	61	FEMALE	GROUND	1	C4	
	J4	22	FEMALE	ARPC5	11	D3		PI	17	MALE	ASST1	3	C4		PI	62	FEMALE	ACSTATE9	17	D2	
	J4	23	FEMALE	ARPC6	11	D3		PI	18	MALE	ASST0	3	C4		PI	63	FEMALE	ALALUEQZ	5	B4	
	J4	24	FEMALE	ARPC7	11	D3		PI	19	FEMALE	FPLPNL15	13	B1		PI	64	FEMALE	ACSTATE8	17	D2	
	J4	25	FEMALE	ARPC8	11	D2		PI	20	FEMALE	FPLPNL14	13	B2		PI	65	MALE	ASALUEQ8K	5	D1	
	J4	26	FEMALE	ARPC9	11	D2		PI	21	FEMALE	GROUND	1	D4		PI	66	FEMALE	ACSTATE7	17	D2	
	J4	27	FEMALE	ARPC10	11	D2		PI	22	FEMALE	FPLPNL13	13	B3		PI	67	FEMALE	*ALALUZ115	5	D2	
	J4	28	FEMALE	ARPC11	11	D2		PI	23	FEMALE	FPLPNL12	13	B4		PI	68	FEMALE	ACSTATE6	17	D2	
	J4	29	FEMALE	ARPC12	11	D1		PI	24	FEMALE	FPLPNL11	13	D1		PI	69	FEMALE	*ARERZ115	5	B4	
	J4	30	FEMALE	ARPC13	11	D1		PI	25	FEMALE	FPLPNL10	13	D2		PI	70	FEMALE	ACSTATE5	17	D3	
C	J4	31	FEMALE	ARPC14	11	D1		PI	26	FEMALE	FPLPNL9	13	D3		PI	71	FEMALE	GROUND	1	C4	
	J4	32	FEMALE	ARPC15	11	D1		PI	27	FEMALE	FPLPNL8	13	D4		PI	72	FEMALE	ACSTATE4	17	D3	
	J4	33	MALE	*ASAMS0	12	C4		PI	28	FEMALE	FPLPNL7	12	B1		PI	74	FEMALE	ACSTATE3	17	D3	
	J4	34	MALE	*ASAMS1	12	C3		PI	29	FEMALE	FPLPNL6	12	B2		PI	76	FEMALE	ACSTATE2	17	D3	
	J4	35	MALE	*ASAMS2	12	C2		PI	30	FEMALE	FPLPNL5	12	B3		PI	78	FEMALE	ACSTATE1	17	D4	
	J4	36	MALE	*ASAMS3	12	C1		PI	31	FEMALE	GROUND	1	C4		PI	79	FEMALE	ARSR16	16	B2	
	J4	37	MALE	*ASAMS4	12	B4		PI	32	FEMALE	FPLPNL4	12	B4		PI	80	FEMALE	ACSTATE0	17	D4	
	J4	38	MALE	*ASAMS5	12	B3		PI	33	FEMALE	FPLPNL3	12	D1		P2	1	FEMALE	GROUND	1	C4	
	J4	39	MALE	*ASAMS6	12	B2		PI	34	FEMALE	FPLPNL2	12	D2		P2	2	FEMALE	+5VINB	3	A2	
	J4	40	MALE	*ASAMS7	12	B1		PI	35	FEMALE	FPLPNL1	12	D3		P2	3	FEMALE	ACENIRLOAD	10	B4	
	J4	41	MALE	*ASAMS8	13	C4		PI	36	FEMALE	FPLPNL0	12	D4		P2	4	FEMALE	+5VINB	3	A2	
	J4	42	MALE	*ASAMS9	13	C3		PI	38	FEMALE	ALMEM15	10	D1		P2	5	MALE	ASIR15	10	C1	
	J4	43	MALE	*ASAMS10	13	C2		PI	39	FEMALE	ALMEM14	10	D1		P2	6	MALE	ASIR14	10	C1	
B	J4	44	MALE	*ASAMS11	13	C1		PI	40	FEMALE	ALMEM13	10	D1		P2	7	FEMALE	*DP15	13	B1	
	J4	45	MALE	*ASAMS12	13	B4		PI	41	FEMALE	GROUND	1	C4		P2	8	MALE	ASIR13	10	C1	
	J4	46	MALE	*ASAMS13	13	B3		PI	42	FEMALE	ALMEM12	10	D1		P2	9	FEMALE	*DP12	13	B4	
	J4	47	MALE	*ASAMS14	13	B2		PI	43	FEMALE	ALMEM11	10	D2		P2	10	MALE	ASIR12	10	C1	
	J4	48	MALE	*ASAMS15	13	B1		PI	44	FEMALE	ALMEM10	10	D2		P2	11	FEMALE	GROUND	1	B4	
	PI	1	FEMALE	GROUND	1	D4		PI	45	FEMALE	ALMEM9	10	D2		P2	12	MALE	ASIR11	10	C2	
	PI	2	FEMALE	+5VINA	3	B2		PI	46	FEMALE	ALMEM8	10	D2		P2	13	MALE	ASIR10	10	C2	
	PI	3	FEMALE	*MDCGCLK	3	B3		PI	47	FEMALE	ALMEM7	10	D3		P2	14	MALE	ASIR9	10	C2	
	PI	4	FEMALE	+5VINA	3	A2		PI	48	FEMALE	ALMEM6	10	D3		P2	15	FEMALE	*DP13	13	B3	
	PI	5	FEMALE	*CMSHIFT	3	A3		PI	49	FEMALE	ALMEM5	10	D3		P2	16	MALE	ASIR8	10	C2	
	PI	6	FEMALE	SERIN	3	C4		PI	50	FEMALE	ALMEM4	10	D3		P2	17	FEMALE	*DP14	13	B2	
	PI	7	MALE	ASST12	3	C1		PI	51	FEMALE	GROUND	1	C4		P2	18	MALE	ASIR7	10	C3	
	PI	8	MALE	ASST10	3	C2		PI	52	FEMALE	ALMEM3	10	D4		P2	19	MALE	ASIR6	10	C3	
	PI	9	MALE	ASST9	3	C2		PI	53	FEMALE	ALMEM2	10	D4		P2	20	MALE	ASIR5	10	C3	
A	PI	10	MALE	ASST7	3	C3		PI	54	FEMALE	ALMEM1	10	D4		P2	21	FEMALE	GROUND	1	B4	
	PI	11	FEMALE	GROUND	1	D4		PI	55	FEMALE	ALMEM0	10	D4		P2	22	MALE	ASIR4	10	C3	

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B

A

CONNECTORS BY UNIT/PIN

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200728-600	B0

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4				3			2			1			
UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN
P2	23	MALE	ASIR3	10	C4		P2	66	MALE	ASST9G	8	A3	
P2	24	MALE	ASIR2	10	C4		P2	67	FEMALE	*DP4	12	B4	
P2	25	MALE	ASIR1	10	C4		P2	68	FEMALE	*FPLMRESETQ	6	C3	
P2	26	MALE	ASIR0	10	C4		P2	69	FEMALE	*DP5	12	B3	
P2	27	FEMALE	ALALU12	8	C3		P2	70	FEMALE	*ARENDST	7	D3	
P2	28	FEMALE	ALALU10	8	C3		P2	71	FEMALE	GROUND	1	A4	
P2	29	FEMALE	ALALU9	8	B3		P2	72	FEMALE	*DP6	12	B2	
P2	30	FEMALE	ALALU7	7	D2		P2	73	FEMALE	*DP0	12	D4	
P2	31	FEMALE	GROUND	1	B4		P2	74	FEMALE	*DP2	12	D2	
P2	32	FEMALE	ACINAQ	15	C3		P2	75	FEMALE	*DP1	12	D3	
P2	33	FEMALE	FPLIFLAGQ	15	C3		P2	76	FEMALE	ALAEQB	4	C3	
P2	34	FEMALE	ALALU4	6	C3		P2	77	FEMALE	ALALUS2	9	D3	
P2	35	FEMALE	ALALU3	6	B3		P2	78	MALE	ASBSELC	17	A3	
P2	36	FEMALE	ALALU2	5	B4		P2	79	MALE	ASBSELB	17	A3	
P2	37	FEMALE	ALALU1	4	D4		P2	80	MALE	ASBSELA	15	B1	
P2	38	FEMALE	ALALU0	6	B4								
P2	39	FEMALE	*DP11	13	D1								
P2	40	MALE	ASST4G	6	D2								
P2	41	FEMALE	GROUND	1	B4								
P2	42	FEMALE	*DP8	13	D4								
P2	43	FEMALE	*DP9	13	D3								
P2	44	MALE	*ASINSTV	7	B3								
P2	45	FEMALE	*DP10	13	D2								
P2	46	FEMALE	ALA1	5	C4								
P2	47	FEMALE	ALA0	4	A4								
P2	48	MALE	ASAMAD3	14	D3								
P2	49	MALE	ASAMAD2	14	C3								
P2	50	MALE	ASAMAD1	14	B3								
P2	51	FEMALE	GROUND	1	B4								
P2	52	MALE	ASINHMSA	14	B1								
P2	53	MALE	ASINHMSB	15	A3								
P2	54	MALE	ASINHLSA	14	C1								
P2	55	FEMALE	*DP3	12	D1								
P2	56	MALE	ASINHLSB	15	B3								
P2	57	FEMALE	FPLTRP14Q	15	D3								
P2	58	FEMALE	FPLTRP13Q	15	D3								
P2	59	FEMALE	FPLRUNNINGIN	6	D3								
P2	60	MALE	*ASEXTFORM	11	B2								
P2	61	FEMALE	GROUND	1	A4								
P2	62	FEMALE	ACSC4	14	D4								
P2	63	FEMALE	ACSC3	14	C4								
P2	64	FEMALE	ACSC2	14	B3								
P2	65	FEMALE	*DP7	12	B1								

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SIZE	CODE IDENT	DRG NO.	REV
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4						3						2						1					
STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN			
*ALALUZI15	P1	67	FEMALE	5	D2		+5VINA	P1	4	FEMALE	3	A2		ALMEM3	P1	52	FEMALE	10	D4				
*ARENDST	P2	70	FEMALE	7	D3		+5VINB	P2	2	FEMALE	3	A2		ALMEM4	P1	50	FEMALE	10	D3				
*ARERZI15	P1	69	FEMALE	5	B4		+5VINB	P2	4	FEMALE	3	A2		ALMEM5	P1	49	FEMALE	10	D3				
*ASAMS0	J4	33	MALE	12	C4		ACENIRLOAD	P2	3	FEMALE	10	B4		ALMEM6	P1	48	FEMALE	10	D3				
*ASAMS1	J4	34	MALE	12	C3		ACFORALAQ	P1	58	FEMALE	5	A4		ALMEM7	P1	47	FEMALE	10	D3				
*ASAMS10	J4	43	MALE	13	C2		ACINAQ	P2	32	FEMALE	15	C3		ALMEM8	P1	46	FEMALE	10	D2				
*ASAMS11	J4	44	MALE	13	C1		ACSC2	P2	64	FEMALE	14	B3		ALMEM9	P1	45	FEMALE	10	D2				
*ASAMS12	J4	45	MALE	13	B4		ACSC3	P2	63	FEMALE	14	C4		ARPC0	J4	17	FEMALE	11	D4				
*ASAMS13	J4	46	MALE	13	B3		ACSC4	P2	62	FEMALE	14	D4		ARPC1	J4	18	FEMALE	11	D4				
*ASAMS14	J4	47	MALE	13	B2		ACSTATE0	P1	80	FEMALE	17	D4		ARPC10	J4	27	FEMALE	11	D2				
*ASAMS15	J4	48	MALE	13	B1		ACSTATE1	P1	78	FEMALE	17	D4		ARPC11	J4	28	FEMALE	11	D2				
*ASAMS2	J4	35	MALE	12	C2		ACSTATE2	P1	76	FEMALE	17	D3		ARPC12	J4	29	FEMALE	11	D1				
*ASAMS3	J4	36	MALE	12	C1		ACSTATE3	P1	74	FEMALE	17	D3		ARPC13	J4	30	FEMALE	11	D1				
*ASAMS4	J4	37	MALE	12	B4		ACSTATE4	P1	72	FEMALE	17	D3		ARPC14	J4	31	FEMALE	11	D1				
*ASAMS5	J4	38	MALE	12	B3		ACSTATE5	P1	70	FEMALE	17	D3		ARPC15	J4	32	FEMALE	11	D1				
*ASAMS6	J4	39	MALE	12	B2		ACSTATE6	P1	68	FEMALE	17	D2		ARPC2	J4	19	FEMALE	11	D4				
*ASAMS7	J4	40	MALE	12	B1		ACSTATE7	P1	66	FEMALE	17	D2		ARPC3	J4	20	FEMALE	11	D4				
*ASAMS8	J4	41	MALE	13	C4		ACSTATE8	P1	64	FEMALE	17	D2		ARPC4	J4	21	FEMALE	11	D3				
*ASAMS9	J4	42	MALE	13	C3		ACSTATE9	P1	62	FEMALE	17	D2		ARPC5	J4	22	FEMALE	11	D3				
*ASEXTFORM	P2	60	MALE	11	B2		ALA0	P2	47	FEMALE	4	A4		ARPC6	J4	23	FEMALE	11	D3				
*ASINSTV	P2	44	MALE	7	B3		ALA1	P2	46	FEMALE	5	C4		ARPC7	J4	24	FEMALE	11	D3				
*CMSHIFT	P1	5	FEMALE	3	A3		ALAEQB	P2	76	FEMALE	4	C3		ARPC8	J4	25	FEMALE	11	D2				
*DP0	P2	73	FEMALE	12	D4		ALALU0	P2	38	FEMALE	6	B4		ARPC9	J4	26	FEMALE	11	D2				
*DP1	P2	75	FEMALE	12	D3		ALALU1	P2	37	FEMALE	4	D4		ARSR16	P1	79	FEMALE	16	B2				
*DP10	P2	45	FEMALE	13	D2		ALALU10	P2	28	FEMALE	8	C3		ASALUEQ8K	P1	65	MALE	5	D1				
*DP11	P2	39	FEMALE	13	D1		ALALU12	P2	27	FEMALE	8	C3		ASAMAD1	P2	50	MALE	14	B3				
*DP12	P2	9	FEMALE	13	B4		ALALU2	P2	36	FEMALE	5	B4		ASAMAD2	P2	49	MALE	14	C3				
*DP13	P2	15	FEMALE	13	B3		ALALU3	P2	35	FEMALE	6	B3		ASAMAD3	P2	48	MALE	14	D3				
*DP14	P2	17	FEMALE	13	B2		ALALU4	P2	34	FEMALE	6	C3		ASBSELA	P2	80	MALE	15	B1				
*DP15	P2	7	FEMALE	13	B1		ALALU7	P2	30	FEMALE	7	D2		ASBSELB	P2	79	MALE	17	A3				
*DP2	P2	74	FEMALE	12	D2		ALALU9	P2	29	FEMALE	8	B3		ASBSELC	P2	78	MALE	17	A3				
*DP3	P2	55	FEMALE	12	D1		ALALUEQZ	P1	63	FEMALE	5	B4		ASINHLSA	P2	54	MALE	14	C1				
*DP4	P2	67	FEMALE	12	B4		ALALUS2	P2	77	FEMALE	9	D3		ASINHLSB	P2	56	MALE	15	B3				
*DP5	P2	69	FEMALE	12	B3		ALB0	P1	56	FEMALE	4	A4		ASINHMSA	P2	52	MALE	14	B1				
*DP6	P2	72	FEMALE	12	B2		ALMEM0	P1	55	FEMALE	10	D4		ASINHMSB	P2	53	MALE	15	A3				
*DP7	P2	65	FEMALE	12	B1		ALMEM1	P1	54	FEMALE	10	D4		ASIR0	P2	26	MALE	10	C4				
*DP8	P2	42	FEMALE	13	D4		ALMEM10	P1	44	FEMALE	10	D2		ASIR1	P2	25	MALE	10	C4				
*DP9	P2	43	FEMALE	13	D3		ALMEM11	P1	43	FEMALE	10	D2		ASIR10	P2	13	MALE	10	C2				
*FPLMRESETQ	P2	68	FEMALE	6	C3		ALMEM12	P1	42	FEMALE	10	D1		ASIR11	P2	12	MALE	10	C2				
*MDCADRV	P1	59	FEMALE	7	B3		ALMEM13	P1	40	FEMALE	10	D1		ASIR12	P2	10	MALE	10	C1				
*MDCCPUCC	P1	60	FEMALE	7	B4		ALMEM14	P1	39	FEMALE	10	D1		ASIR13	P2	8	MALE	10	C1				
*MDCGCLK	P1	3	FEMALE	3	B3		ALMEM15	P1	38	FEMALE	10	D1		ASIR14	P2	6	MALE	10	C1				
+5VINA	P1	2	FEMALE	3	B2		ALMEM2	P1	53	FEMALE	10	D4		ASIR15	P2	5	MALE	10	C1				

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STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
ASIR2	P2	24	MALE	10	C4		GROUND	P1	21	FEMALE	1	D4															
ASIR3	P2	23	MALE	10	C4		GROUND	P1	31	FEMALE	1	C4															
ASIR4	P2	22	MALE	10	C3		GROUND	P1	41	FEMALE	1	C4															
ASIR5	P2	20	MALE	10	C3		GROUND	P1	51	FEMALE	1	C4															
ASIR6	P2	19	MALE	10	C3		GROUND	P1	61	FEMALE	1	C4															
ASIR7	P2	18	MALE	10	C3		GROUND	P1	71	FEMALE	1	C4															
ASIR8	P2	16	MALE	10	C2		GROUND	P2	1	FEMALE	1	C4															
ASIR9	P2	14	MALE	10	C2		GROUND	P2	11	FEMALE	1	B4															
ASST0	P1	18	MALE	3	C4		GROUND	P2	21	FEMALE	1	B4															
ASST1	P1	17	MALE	3	C4		GROUND	P2	31	FEMALE	1	B4															
ASST10	P1	8	MALE	3	C2		GROUND	P2	41	FEMALE	1	B4															
ASST12	P1	7	MALE	3	C1		GROUND	P2	51	FEMALE	1	B4															
ASST2	P1	16	MALE	3	C4		GROUND	P2	61	FEMALE	1	A4															
ASST3	P1	15	MALE	3	C4		GROUND	P2	71	FEMALE	1	A4															
ASST4	P1	14	MALE	3	C3		SERIN	P1	6	FEMALE	3	C4															
ASST4G	P2	40	MALE	6	D2																						
ASST5	P1	13	MALE	3	C3																						
ASST6	P1	12	MALE	3	C3																						
ASST7	P1	10	MALE	3	C3																						
ASST9	P1	9	MALE	3	C2																						
ASST9C	P2	66	MALE	8	A3																						
FPLIFLAGQ	P2	33	FEMALE	15	C3																						
FPLPNL0	P1	36	FEMALE	12	D4																						
FPLPNL1	P1	35	FEMALE	12	D3																						
FPLPNL10	P1	25	FEMALE	13	D2																						
FPLPNL11	P1	24	FEMALE	13	D1																						
FPLPNL12	P1	23	FEMALE	13	B4																						
FPLPNL13	P1	22	FEMALE	13	B3																						
FPLPNL14	P1	20	FEMALE	13	B2																						
FPLPNL15	P1	19	FEMALE	13	B1																						
FPLPNL2	P1	34	FEMALE	12	D2																						
FPLPNL3	P1	33	FEMALE	12	D1																						
FPLPNL4	P1	32	FEMALE	12	B4																						
FPLPNL5	P1	30	FEMALE	12	B3																						
FPLPNL6	P1	29	FEMALE	12	B2																						
FPLPNL7	P1	28	FEMALE	12	B1																						
FPLPNL8	P1	27	FEMALE	13	D4																						
FPLPNL9	P1	26	FEMALE	13	D3																						
FPLRUNNINGIN	P2	59	FEMALE	6	D3																						
FPLTRP13Q	P2	58	FEMALE	15	D3																						
FPLTRP14Q	P2	57	FEMALE	15	D3																						
GROUND	P1	1	FEMALE	1	D4																						
GROUND	P1	11	FEMALE	1	D4																						

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PAGE	TYPE	PAGE NAME
1	PC	CAPACITORS
2	PC	CAPACITORS I
3	PC	STATUS REGISTER
4	PC	STATUS REGISTER BITS 0,1
5	PC	STATUS REGISTER BIT 2
6	PC	STATUS REGISTER BITS 3,4
7	PC	STATUS REGISTER BITS 5,6,7
8	PC	STATUS REGISTER BITS 9,10,12
9	PC	STATUS REG FLAGS AND ENABLES
10	PC	INSTRUCTION REGISTER
11	PC	PROGRAM COUNTER SAVE REG.
12	PC	UPPER A DATA BUS I
13	PC	UPPER A DATA BUS II
14	PC	UPPER A DATA BUS SELECT
15	PC	INTERRUPT TRAP LOGIC
16	PC	SET BIT LOGIC
17	PC	PRESENT ADD AND PROM
18	BL	AS BLOCK DIAGRAM

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MAINTENANCE PARTS LIST

ASSEMBLY: PL 200729-100

REV: B0 = BA

DESC: CARD ASSY,AL-ARITHMETIC LOGIC,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,P02R PCBD11X13	53938	EVANS & SUTHERLAND.	200729-500	200729-500	1
C2 C3 C4 C5	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C6 C7 C8 C9 C10 C11 C12 C13	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C14 C15 C16 C17 C18 C19 C20	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804169-333	101
C22 C24 C25 C26 C27 C28 C29						
C30 C31 C32 C33 C34 C37 C38						
C39 C40 C41 C42 C43 C44 C45						
C46 C47 C48 C49 C52 C53 C54						
C55 C56 C57 C58 C59 C60 C61						
C62 C63 C64 C68 C69 C70 C71						
C72 C73 C74 C75 C76 C77 C78						
C79 C83 C84 C85 C86 C87 C88						
C89 C90 C91 C92 C93 C94 C95						
C98 C99 C100 C101 C102 C103						
C104 C105 C106 C107 C108						
C109 C110 C111 C112 C113						
C114 C115 C116 C117 C118						
C119 C120						
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
J4	CN,HOUS 50P,RTA	22526	DU PONT E I NEMOURS(CONN)	65268-011 (2X25)	801290-050	1
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
R1 R2 R3	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	3
R4	R,,AXL 511 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-511-1%	803452-511	1
R5	R,,AXL 5.11K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-5.11K-1%-50PPM	803453-511	1
U100 U101 U102 U103 U104	IC,TTL 74F151	07263	FAIRCHILD IC'S & SEMICON	74F151(A)PC/DC	807912-035	16
U105 U106 U110 U111 U112						
U113 U114 U115 U116 U120						
U10	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A09	807204-035-A09	1
U11	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A10	807204-035-A10	1
U12	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A11	807204-035-A11	1
U121 U122 U123 U124 U125	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	11
U130 U131 U132 U134 U135						
U13	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A12	807204-035-A12	1
U133	IC,TTL 74S30	07263	FAIRCHILD IC'S & SEMICON	74S30PC/DC	807430-055	1
U14	IC,PROM,1024X8,35NS,T	53938	EVANS & SUTHERLAND.	807204-035-A14	807204-035-A14	1
U142	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1
U141	IC,TTL 74S182	01295	TEXAS INSTR, SEMICON DIV.	SN74S182N	807682-055	1
U150 U151 U152 U153	IC,TTL 74F181	07263	FAIRCHILD IC'S & SEMICON	74F181PC/DC	807981-035	4
U20 U21 U22	IC,TTL 74F194	07263	FAIRCHILD IC'S & SEMICON	74F194PC/DC	807994-035	3
U23	IC,PAL,20L8A,OCTL,20I	53938	EVANS & SUTHERLAND.	807859-016-A04	807859-016-A04	1
U30 U31 U40 U41 U50 U51 U60	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	13
U61 U80 U91 U92 U93 U94						
U32 U42 U52 U62	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	4
U33 U43 U53 U63	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	4
U34 U45 U70 U71 U74 U90	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	6

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MAINTENANCE PARTS LIST

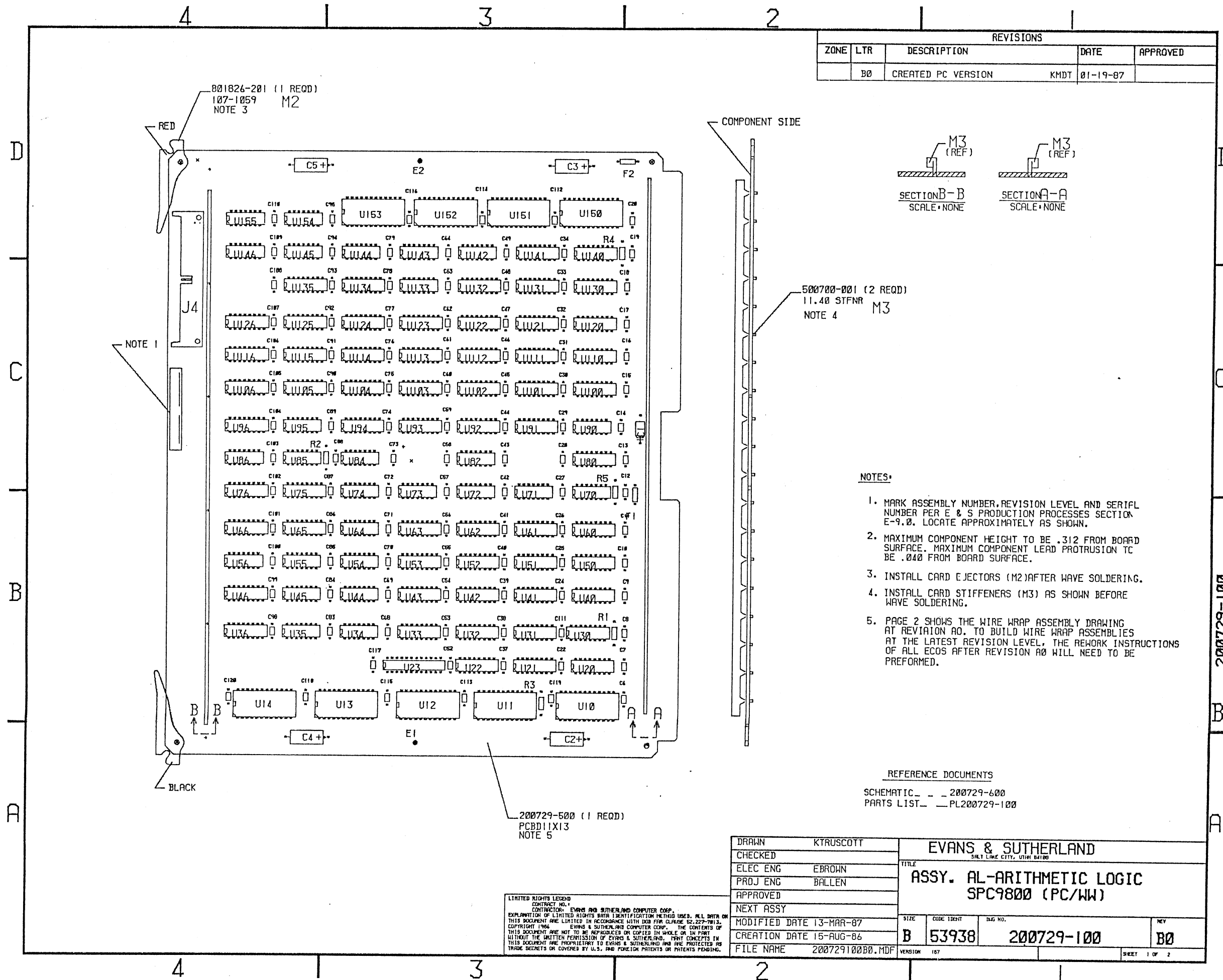
ASSEMBLY: PL 200729-100

REV: B0 = BA

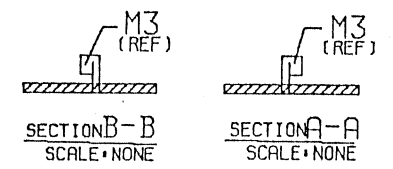
DESC: CARD ASSY,AL-ARITHMETIC LOGIC,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
U35 U72 U85	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	3
U36 U46 U66 U76 U96	IC,TTL 74S151	01295	TEXAS INSTR, SEMICON DIV.	SN74S151N	807651-055	5
U44 U56	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	2
U54 U84	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	2
U55 U73 U145 U146 U154 U155	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	6
U64 U86	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	2
U65 U75	IC,TTL 74S133	01295	TEXAS INSTR, SEMICON DIV.	SN74S133N	807613-055	2
U82	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	1
U95 U143 U144	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	3

38 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATED PC VERSION	KMDT 01-19-87	



500700-001 (2 REQD)
11.40 STFNR
NOTE 4 M3

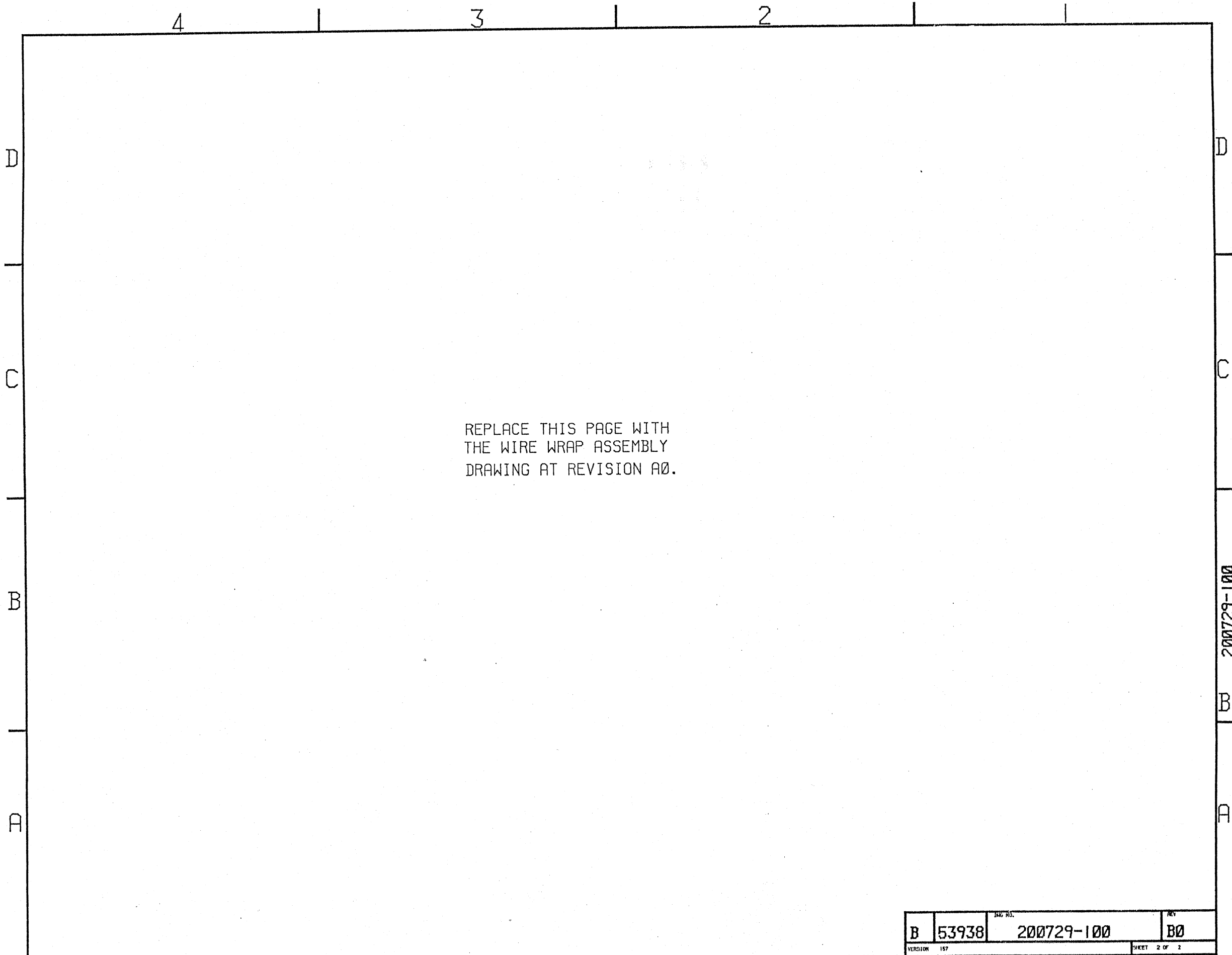
- NOTES:
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 2. MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
 3. INSTALL CARD EJECTORS (M2) AFTER WAVE SOLDERING.
 4. INSTALL CARD STIFFENERS (M3) AS SHOWN BEFORE WAVE SOLDERING.
 5. PAGE 2 SHOWS THE WIRE WRAP ASSEMBLY DRAWING AT REVISION A0. TO BUILD WIRE WRAP ASSEMBLIES AT THE LATEST REVISION LEVEL, THE REWORK INSTRUCTIONS OF ALL ECOS AFTER REVISION A0 WILL NEED TO BE PERFORMED.

REFERENCE DOCUMENTS
SCHEMATIC - 200729-600
PARTS LIST - PL200729-100

200729-500 (1 REQD)
PCBD1X13
NOTE 5

LIMITED RIGHTS LEGEND
CONTRACT NO. 1
CONTRACTOR: EVANS AND SUTHERLAND COMPUTER CORP.
EXPLANATION OF LIMITED RIGHTS DATA IDENTIFICATION METHOD USED: ALL DATA ON THIS DOCUMENT ARE LIMITED IN ACCORDANCE WITH DOD FAR REGS. 27.201-1, 27.201-3, 27.201-5, 27.201-6, 27.201-7, 27.201-8, 27.201-9, 27.201-10, 27.201-11, 27.201-12, 27.201-13, 27.201-14, 27.201-15, 27.201-16, 27.201-17, 27.201-18, 27.201-19, 27.201-20, 27.201-21, 27.201-22, 27.201-23, 27.201-24, 27.201-25, 27.201-26, 27.201-27, 27.201-28, 27.201-29, 27.201-30, 27.201-31, 27.201-32, 27.201-33, 27.201-34, 27.201-35, 27.201-36, 27.201-37, 27.201-38, 27.201-39, 27.201-40, 27.201-41, 27.201-42, 27.201-43, 27.201-44, 27.201-45, 27.201-46, 27.201-47, 27.201-48, 27.201-49, 27.201-50, 27.201-51, 27.201-52, 27.201-53, 27.201-54, 27.201-55, 27.201-56, 27.201-57, 27.201-58, 27.201-59, 27.201-60, 27.201-61, 27.201-62, 27.201-63, 27.201-64, 27.201-65, 27.201-66, 27.201-67, 27.201-68, 27.201-69, 27.201-70, 27.201-71, 27.201-72, 27.201-73, 27.201-74, 27.201-75, 27.201-76, 27.201-77, 27.201-78, 27.201-79, 27.201-80, 27.201-81, 27.201-82, 27.201-83, 27.201-84, 27.201-85, 27.201-86, 27.201-87, 27.201-88, 27.201-89, 27.201-90, 27.201-91, 27.201-92, 27.201-93, 27.201-94, 27.201-95, 27.201-96, 27.201-97, 27.201-98, 27.201-99, 27.201-100.

DRAWN	KTRUSCOTT	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84100		
CHECKED		TITLE		
ELEC ENG	EBROWN	ASSY. AL-ARITHMETIC LOGIC		
PROJ ENG	BALLEN	SPC9800 (PC/WW)		
APPROVED		SIZE	CODE IDENT	DWG NO.
NEXT ASSY		B	53938	200729-100
MODIFIED DATE	13-MAR-87	REV	B0	
CREATION DATE	15-AUG-86	VERSION	157	SHEET 1 OF 2
FILE NAME	200729100B0.MDF			



REPLACE THIS PAGE WITH
THE WIRE WRAP ASSEMBLY
DRAWING AT REVISION A0.

VERSION	157	REV. NO.	200729-100	REV	B0
			SHEET 2 OF 2		

200729-100

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200729-100

REV: A0 = AA

DESC: CARD ASSY,AL-ARITHMETIC LOGIC,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,WW STD SPC9800	53938	EVANS & SUTHERLAND.	200721-500	200721-500	1
C2 C3 C4 C5	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C6 C7 C8 C9 C10 C11 C12 C13	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C14 C15 C16 C17 C18 C19 C20	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	101
C22 C24 C25 C26 C27 C28 C29						
C30 C31 C32 C33 C34 C37 C38						
C39 C40 C41 C42 C43 C44 C45						
C46 C47 C48 C49 C52 C53 C54						
C55 C56 C57 C58 C59 C60 C61						
C62 C63 C64 C68 C69 C70 C71						
C72 C73 C74 C75 C76 C77 C78						
C79 C83 C84 C85 C86 C87 C88						
C89 C90 C91 C92 C93 C94 C95						
C98 C99 C100 C101 C102 C103						
C104 C105 C106 C107 C108						
C109 C110 C111 C112 C113						
C114 C115 C116 C117 C118						
C119 C120						
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
J4	CN,HOUS 50P,RTA	22526	DU PONT E I NEMOURS(CONN)	65268-011 (2X25)	801290-050	1
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
M6 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	2254
M7 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
R1 R2 R3	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	3
R4	R,,AXL 511 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-511-1%	803452-511	1
R5	R,,AXL 5.11K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-5.11K-1%-50PPM	803453-511	1
U100 U101 U102 U103 U104	IC,TTL 74F151	07263	FAIRCHILD IC'S & SEMICOND	74F151(A)PC/DC	807912-035	16
U105 U106 U110 U111 U112						
U113 U114 U115 U116 U120						
U10	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A09	807204-035-A09	1
U11	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A10	807204-035-A10	1
U12	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A11	807204-035-A11	1
U121 U122 U123 U124 U125	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	11
U130 U131 U132 U134 U135						
U13	IC,PROM,1024X8,35NS,	53938	EVANS & SUTHERLAND.	807204-035-A12	807204-035-A12	1
U133	IC,TTL 74S30	07263	FAIRCHILD IC'S & SEMICOND	74S30PC/DC	807430-055	1
U14	IC,PROM,1024X8,35NS,T	53938	EVANS & SUTHERLAND.	807204-035-A14	807204-035-A14	1
U142	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	1
U141	IC,TTL 74S182	01295	TEXAS INSTR, SEMICON DIV.	SN74S182N	807682-055	1
U150 U151 U152 U153	IC,TTL 74F181	07263	FAIRCHILD IC'S & SEMICOND	74F181PC/DC	807981-035	4
U20 U21 U22	IC,TTL 74F194	07263	FAIRCHILD IC'S & SEMICOND	74F194PC/DC	807994-035	3
U23	IC,PAL,20L8A,OCTL,20I	53938	EVANS & SUTHERLAND.	807859-016-A04	807859-016-A04	1
U30 U31 U40 U41 U50 U51 U60	IC,TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	13
U61 U80 U91 U92 U93 U94						
U32 U42 U52 U62	IC,TTL 74S163	27014	NATIONAL SEMICONDUCTOR	DM74S163N/J	807663-055	4

TIME=19:02

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 2

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200729-100

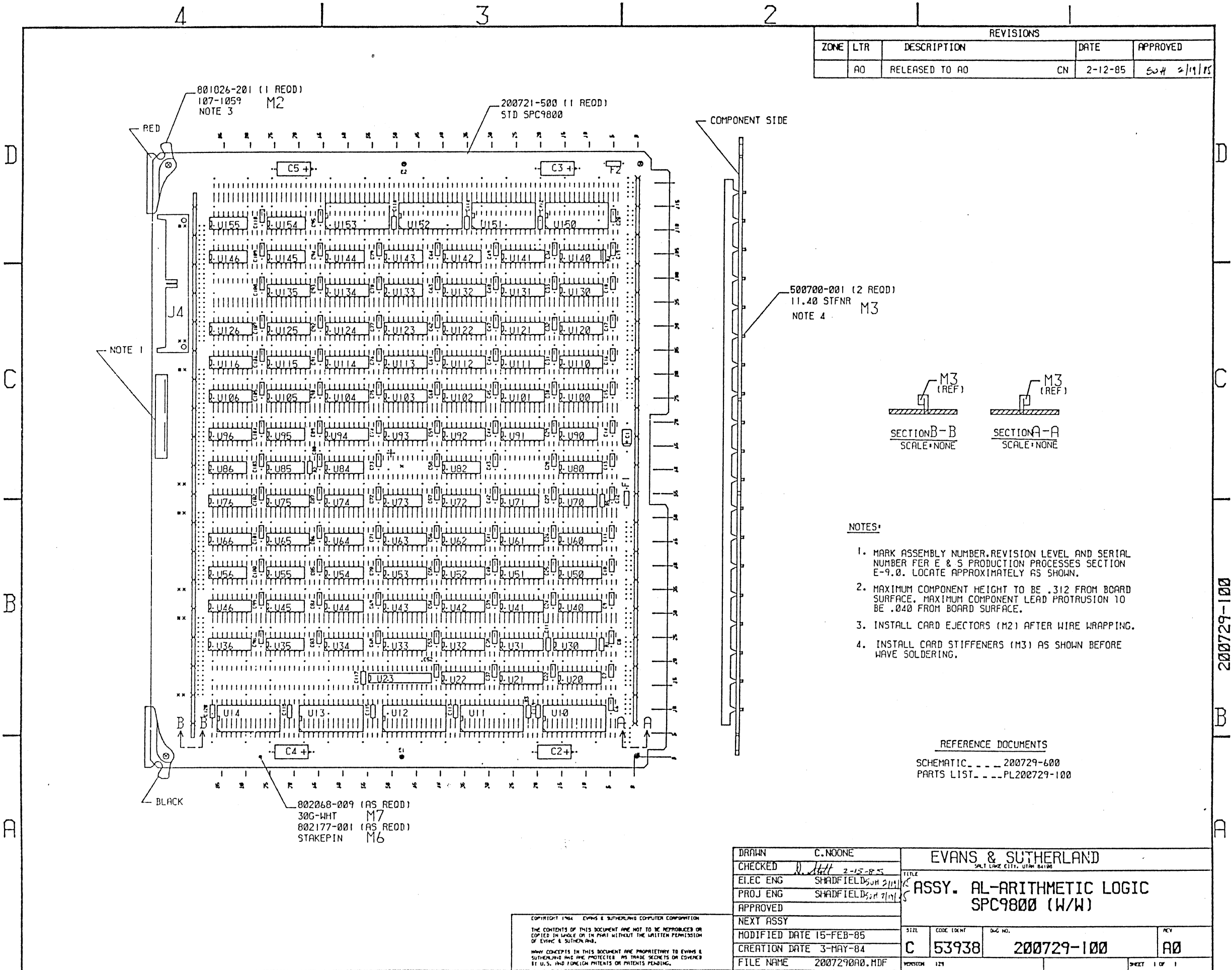
REV: A0 = AA

DESC: CARD ASSY,AL-ARITHMETIC LOGIC,SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
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U34 U45 U70 U71 U74 U90	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	6
U35 U72 U85	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	3
U36 U46 U66 U76 U96	IC,TTL 74S151	01295	TEXAS INSTR, SEMICON DIV.	SN74S151N	807651-055	5
U44 U56	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	2
U54 U84	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	2
U55 U73 U145 U146 U154 U155	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	6
U64 U86	IC,TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	2
U65 U75	IC,TTL 74S133	01295	TEXAS INSTR, SEMICON DIV.	SN74S133N	807613-055	2
U82	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	1
U95 U143 U144	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	3

40 ITEMS LISTED

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	AO	RELEASED TO AO	CN 2-12-85	SWH 2/19/85

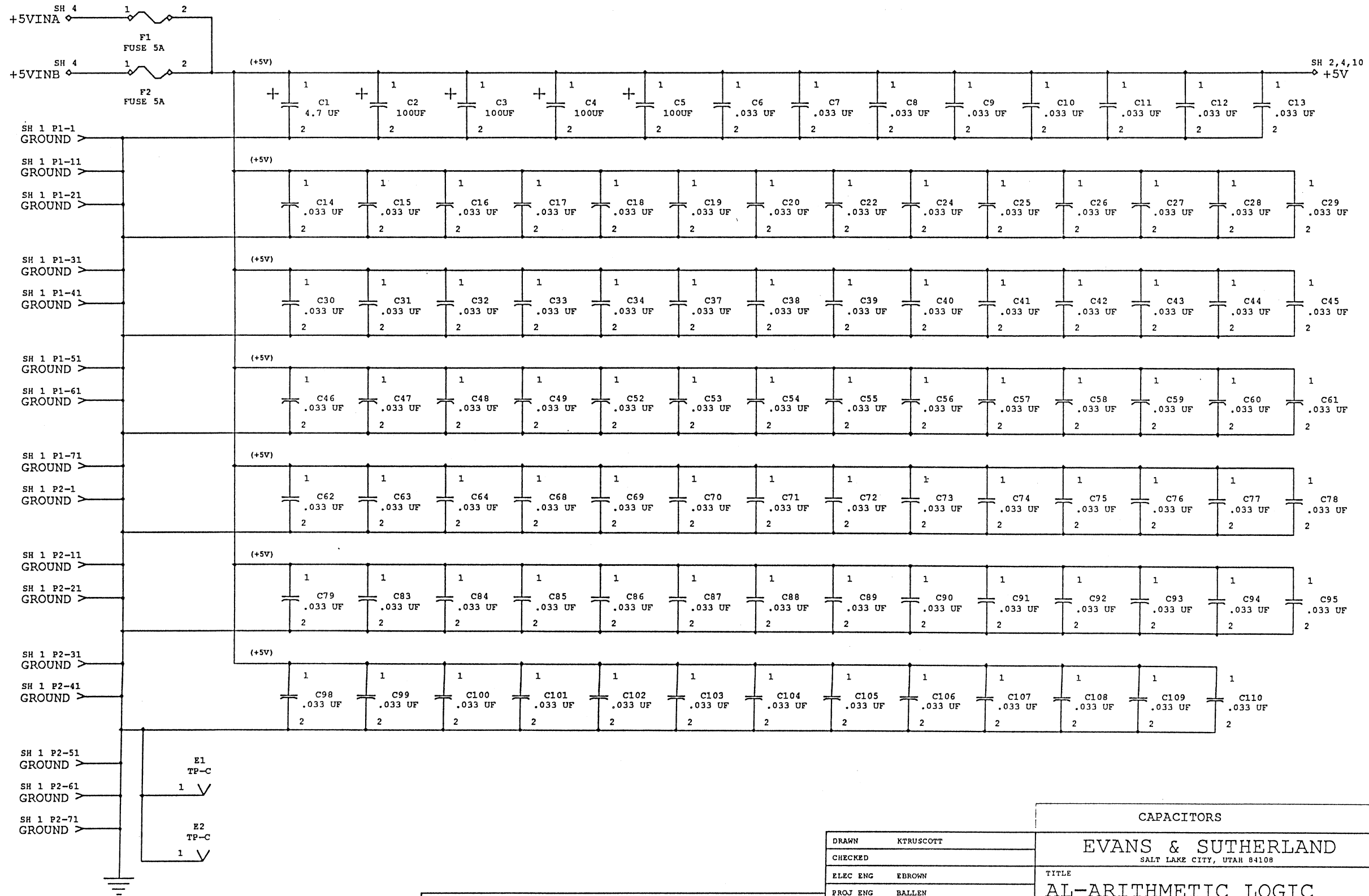


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DRAWN C. NOONE		EVANS & SUTHERLAND <small>SALT LAKE CITY, UTAH 84108</small>	
CHECKED <i>[Signature]</i> 2-15-85	TITLE		
ELEC ENG SHADFIELD, SM 2/11/85	ASSY. AL-ARITHMETIC LOGIC SPC9800 (W/W)		
PROJ ENG SHADFIELD, SM 2/11/85	APPROVED		
NEXT ASSY	SIZE C	CODE IDENT 53938	DWG NO. 200729-100
MODIFIED DATE 15-FEB-85	REV	AO	
CREATION DATE 3-MAY-84	VERSION 129	SHEET 1 OF 1	
FILE NAME 200729000.MDF			



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
BO		CREATED PC VERSION	KMDT 01-19-87	



LIMITED RIGHTS LEGEND
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 CONTRACTOR: EVANS AND SUTHERLAND COMPUTER CORP.
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DRAWN	KTRUSCOTT
CHECKED	
ELEC ENG	EBROWN
PROJ ENG	BALLEN
APPROVED	
NEXT ASSY	
MODIFIED DATE	13-MAR-87
CREATION DATE	15-AUG-86
FILE NAME	200729100B0.MDF

CAPACITORS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE			
AL-ARITHMETIC LOGIC SPC9800 (PC/WW)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
VERSION	157	PC	SHEET 1 OF 20

200729-600

A

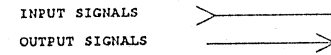
NOTES: UNLESS OTHERWISE SPECIFIED:

1. RESISTANCE VALUES ARE IN OHMS + - 1%, K DENOTES 1000.

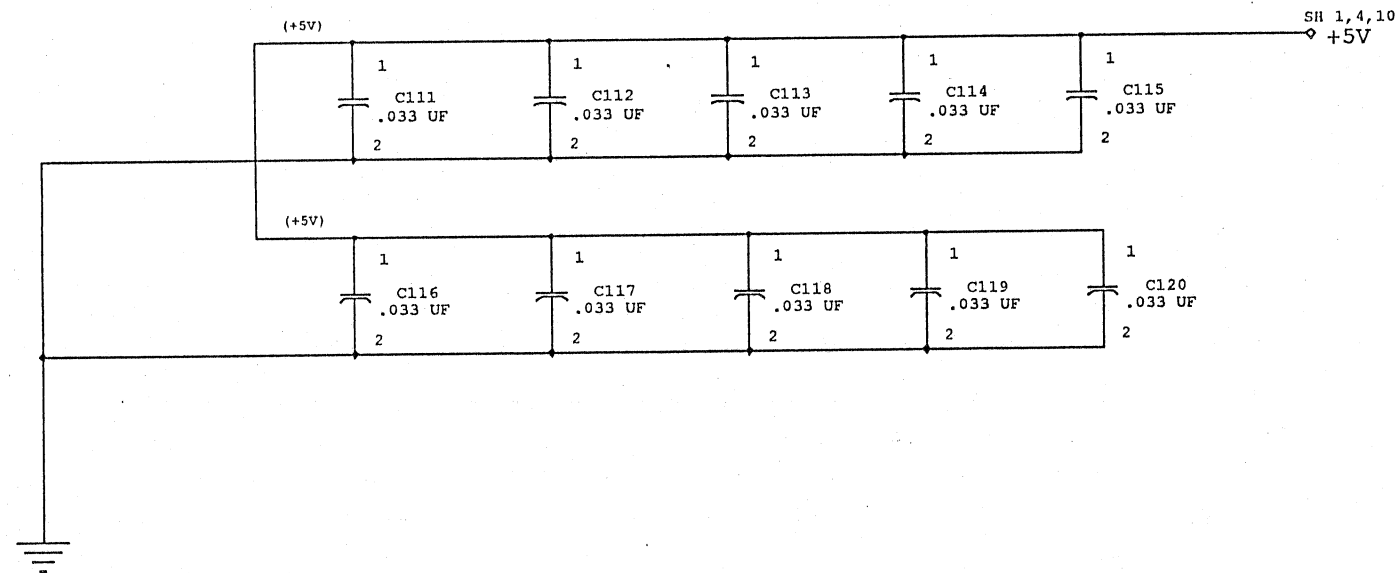
2. ON ALL IC'S, GROUND AND +5V (VCC) ARE AS FOLLOWS:

- 14 PIN IC, 7 AND 14
- 16 PIN IC, 8 AND 16
- 18 PIN IC, 9 AND 18
- 20 PIN IC, 10 AND 20
- 22 PIN IC, 11 AND 22
- 24 PIN IC, 12 AND 24
- 28 PIN IC, 14 AND 28

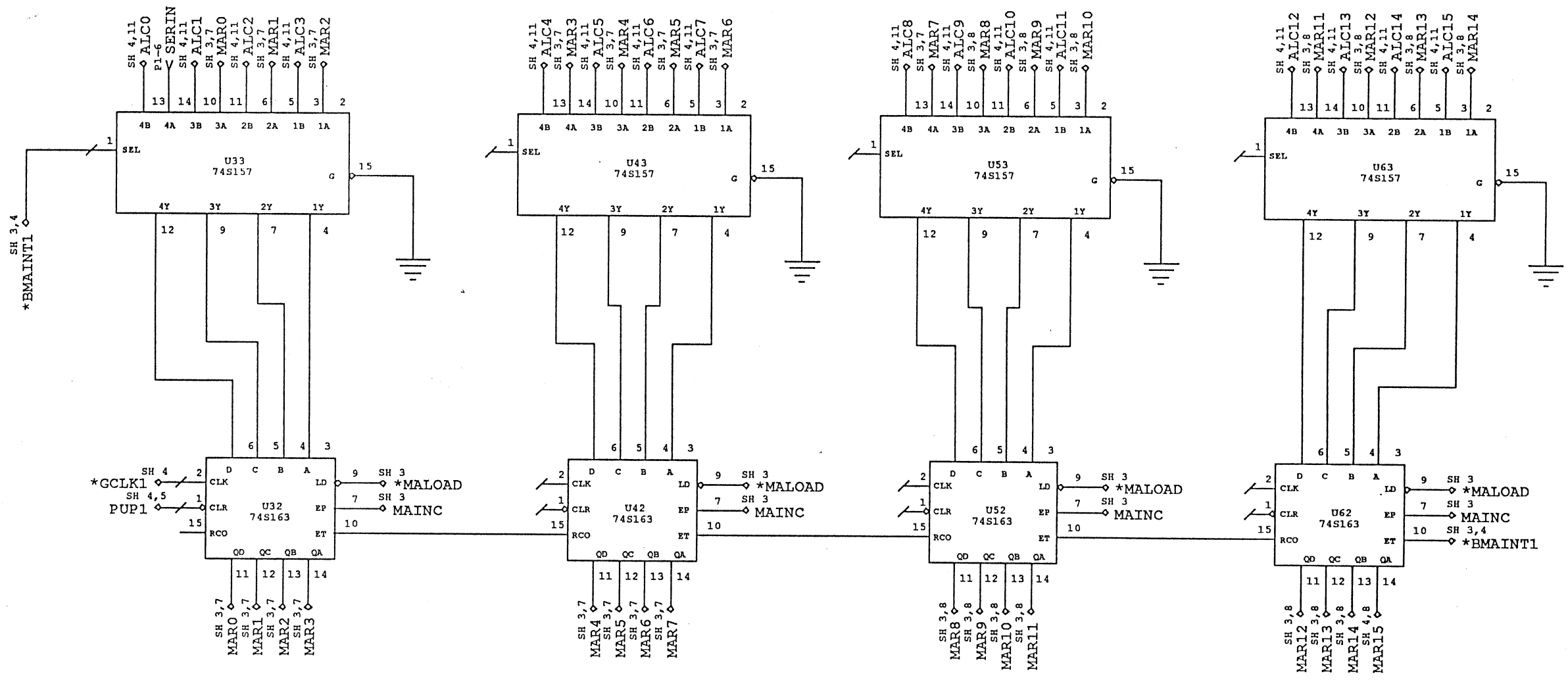
3. CARD CONNECTOR SYMBOL "P1-" DESIGNATES:



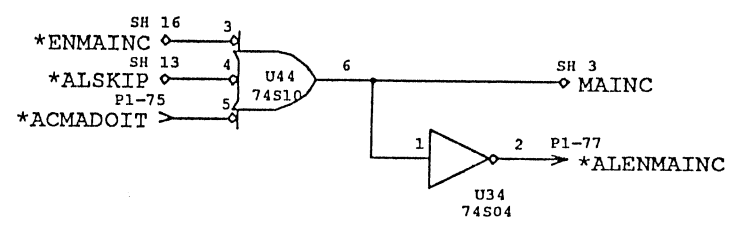
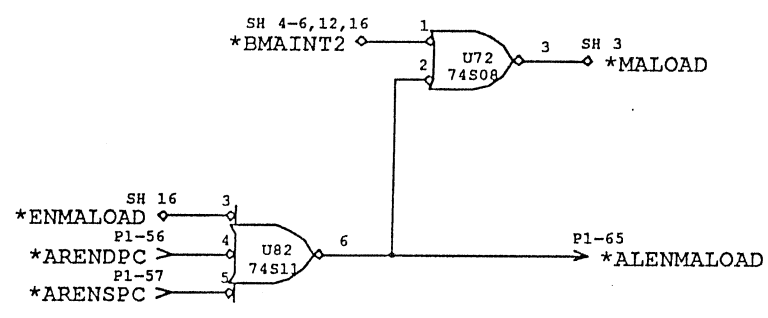
4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.



CAPACITORS I			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
VERSION 157		PC	SHEET 2 OF 20

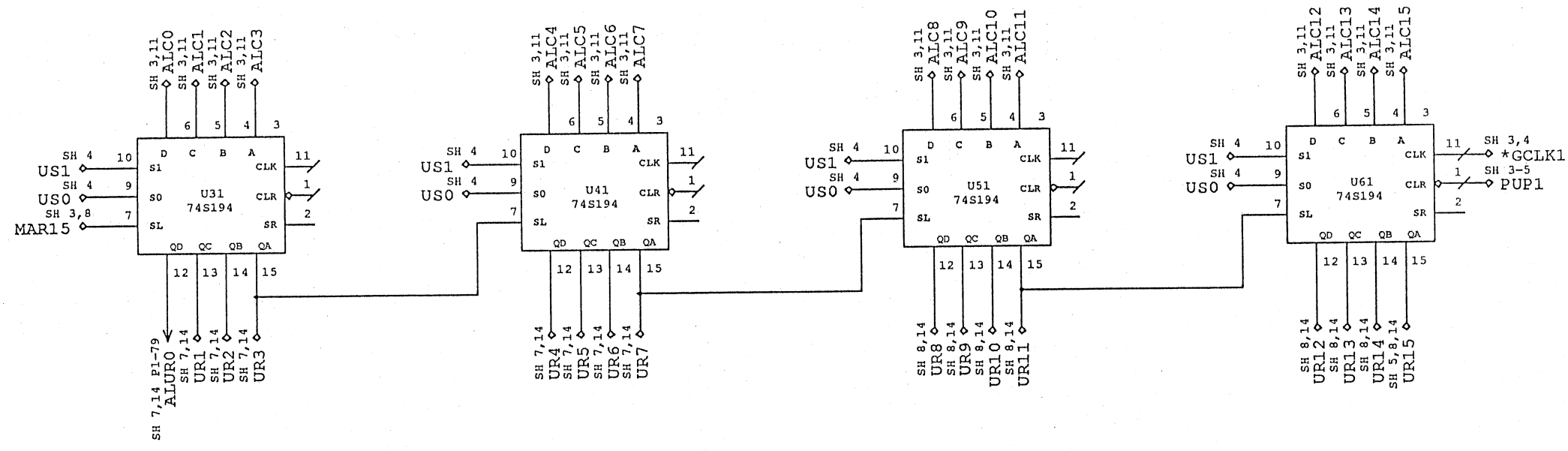


MEMORY ADDRESS REGISTER MA

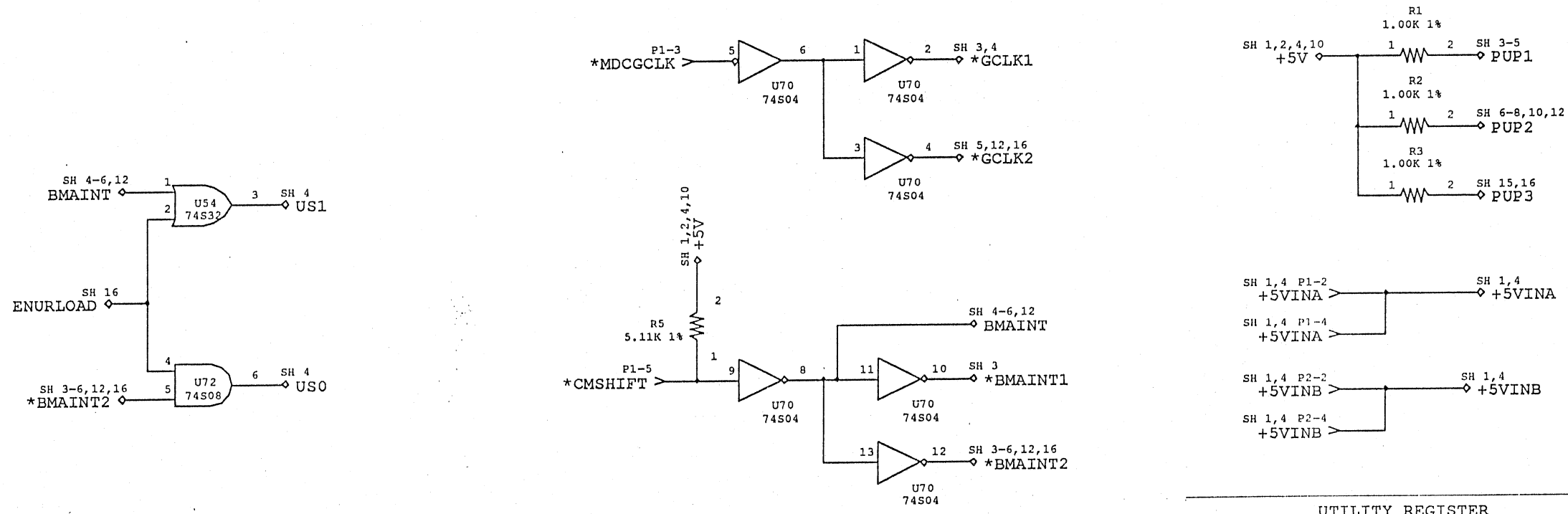


MEMORY ADDRESS REGISTER			
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B	53938	200729-600	B0
VERSION 157	PC	SHEET 3 OF 20	

200729-600
B
A

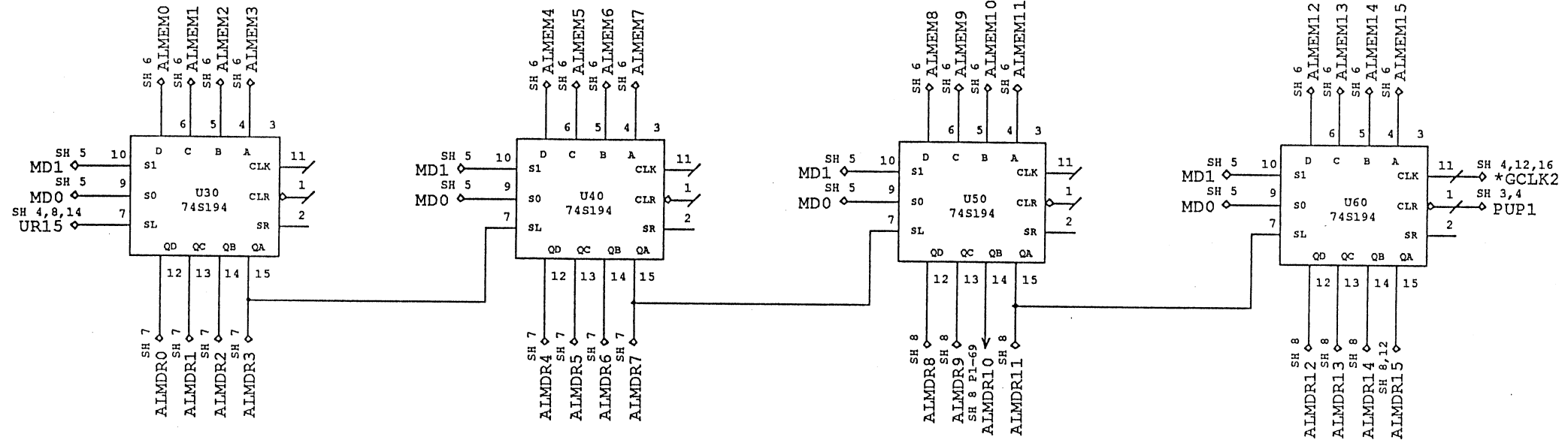


UTILITY REGISTER UR

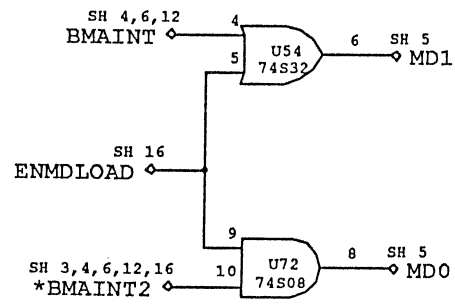


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VERSION	157	PC	SHEET 4 OF 20

200729-600 B A

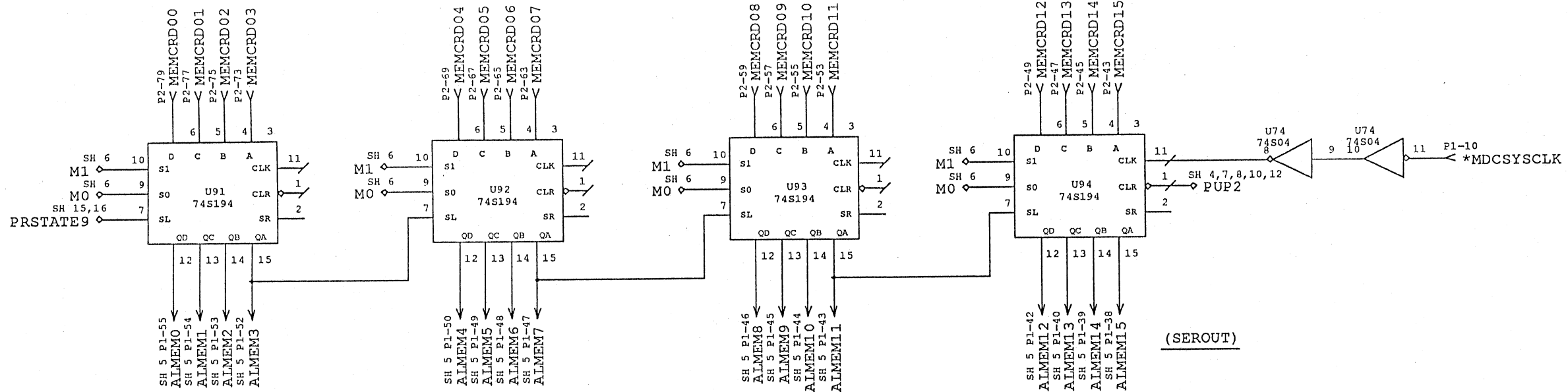


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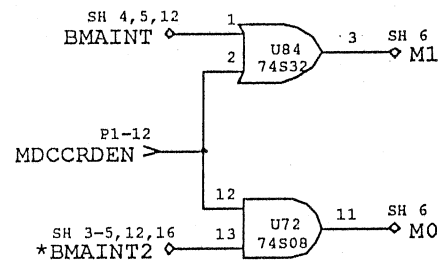


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VERSION	157	PC	SHEET 5 OF 20

200729-600

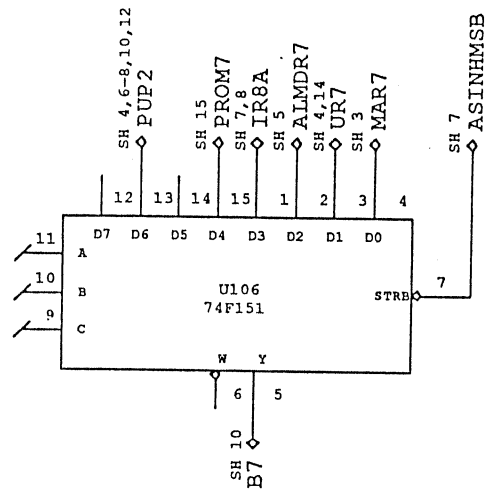
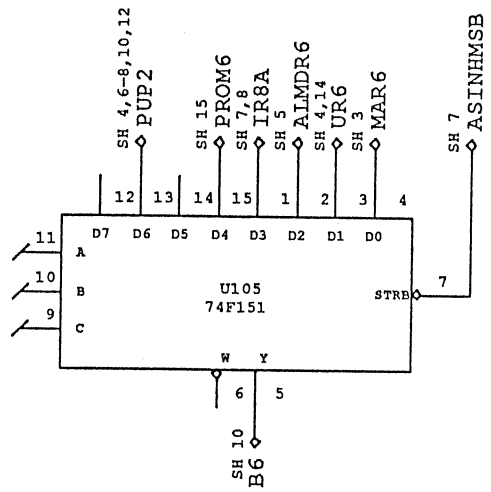
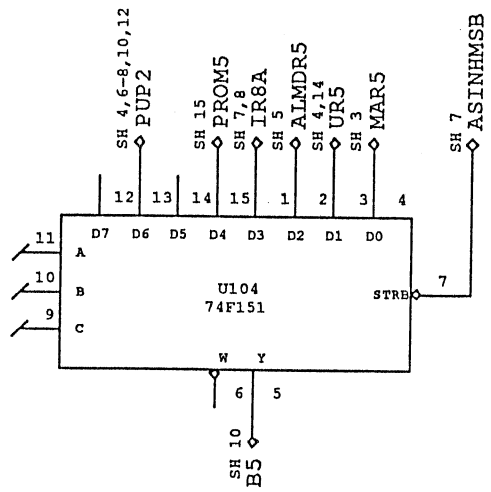
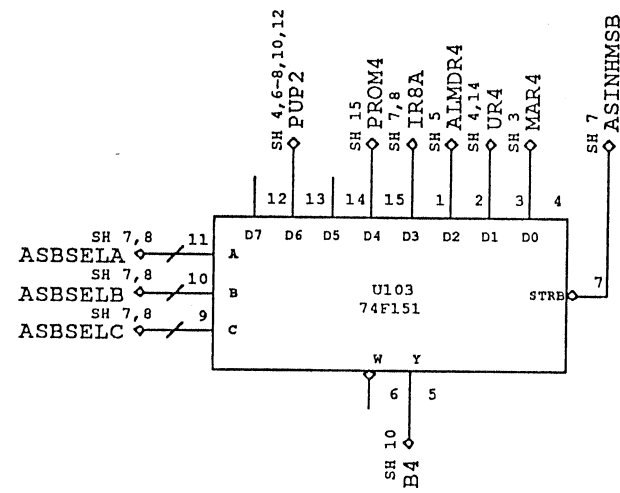
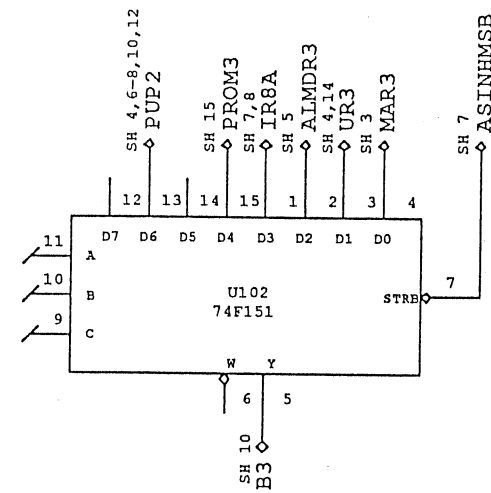
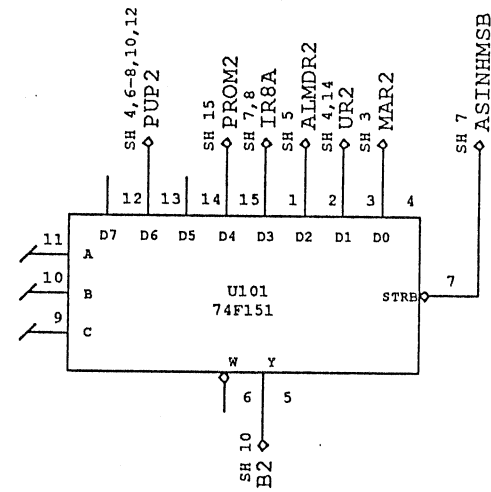
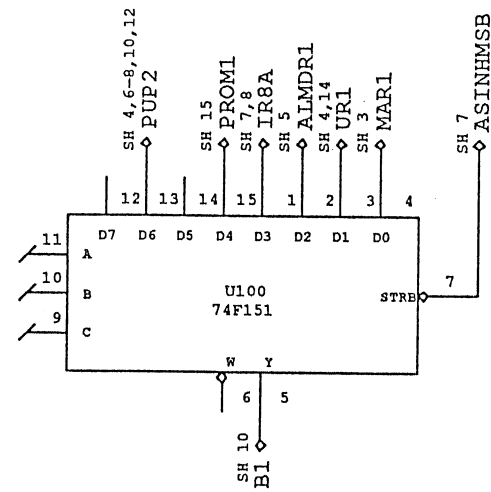
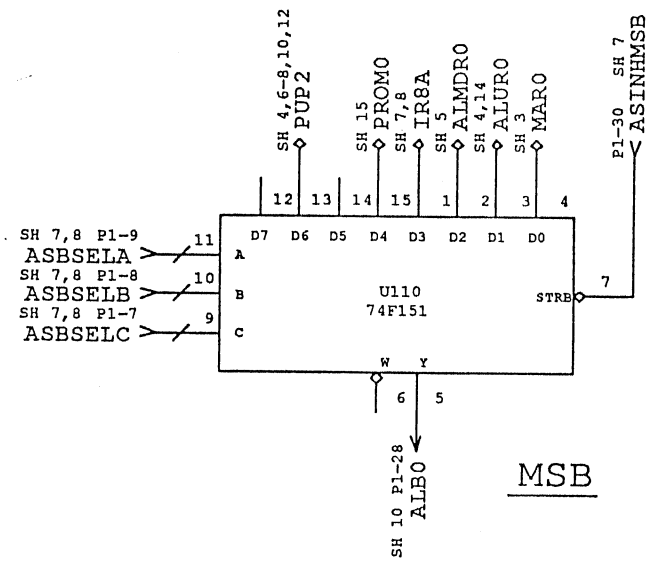


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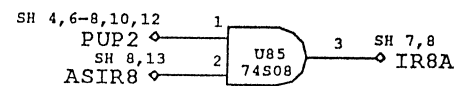


MEMORY OUTPUT REGISTER			
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B	53938	200729-600	B0
VERSION	157	PC	SHEET 6 OF 20

200729-600
B
A



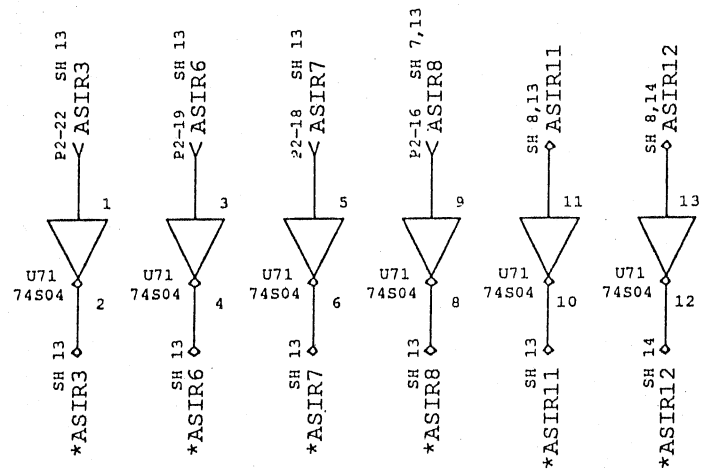
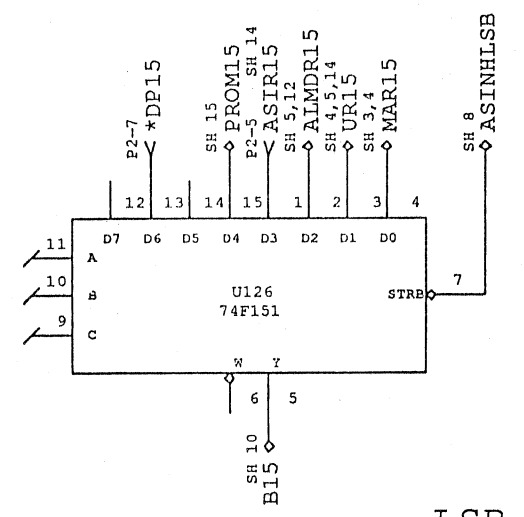
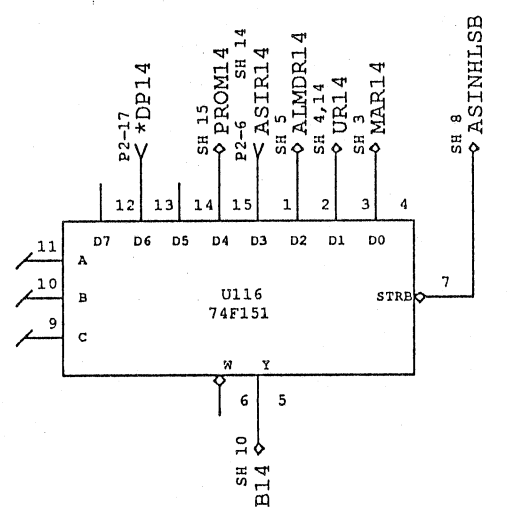
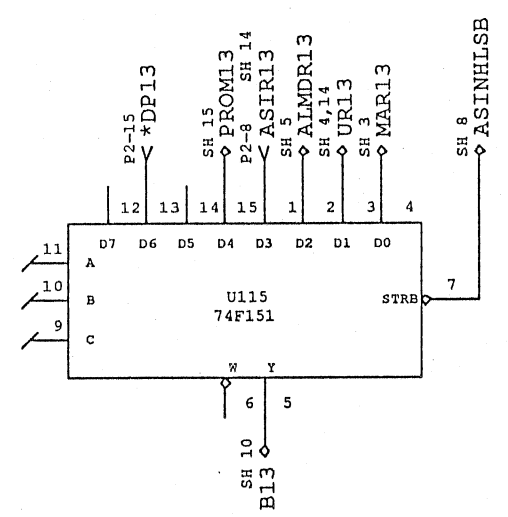
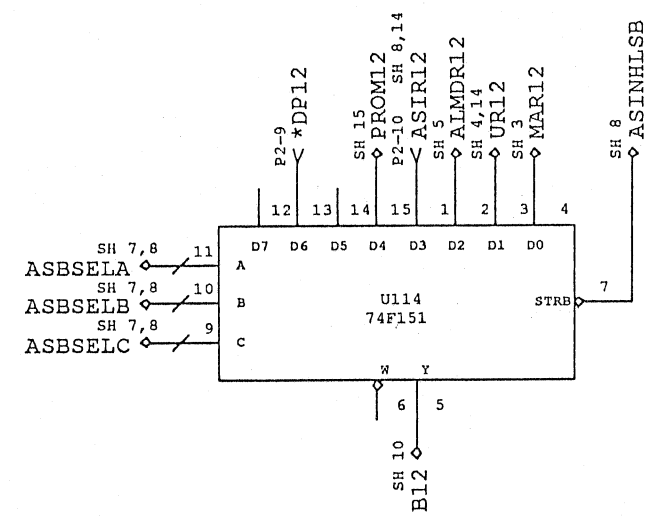
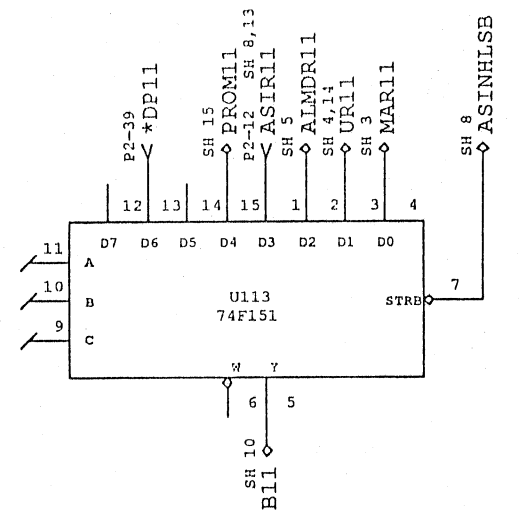
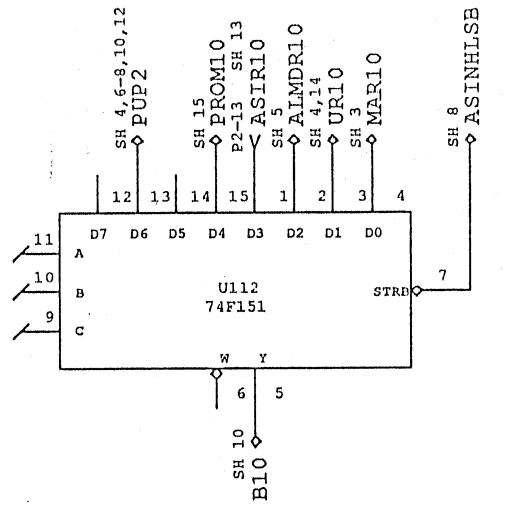
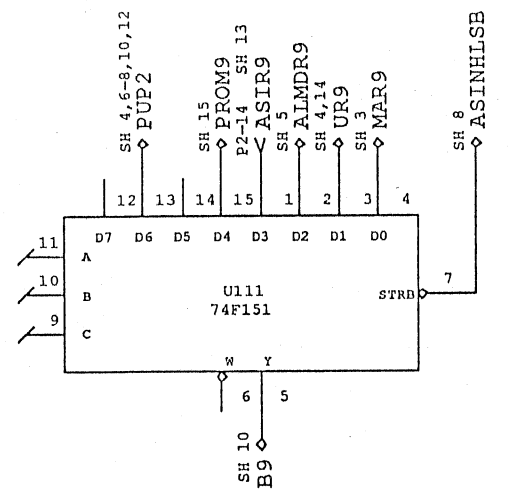
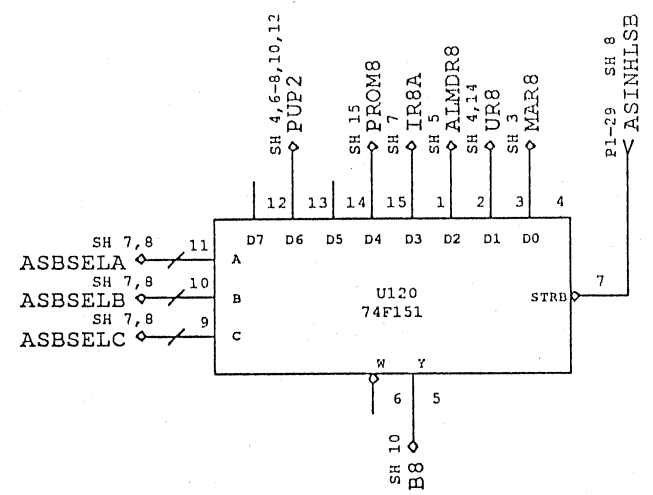
B DATA BUS MSBS



SIGN SMEARED BIT 8

200729-600

B DATA BUS I			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
VERSION	157	PC	SHEET 7 OF 20



B DATA BUS LSBS

LSB

B DATA BUS II			REV
SIZE	CODE IDENT	DWG NO.	B0
B	53938	200729-600	
VERSION	157	PC	SHEET 8 OF 20

200729-600

4

3

2

1

D

C

B

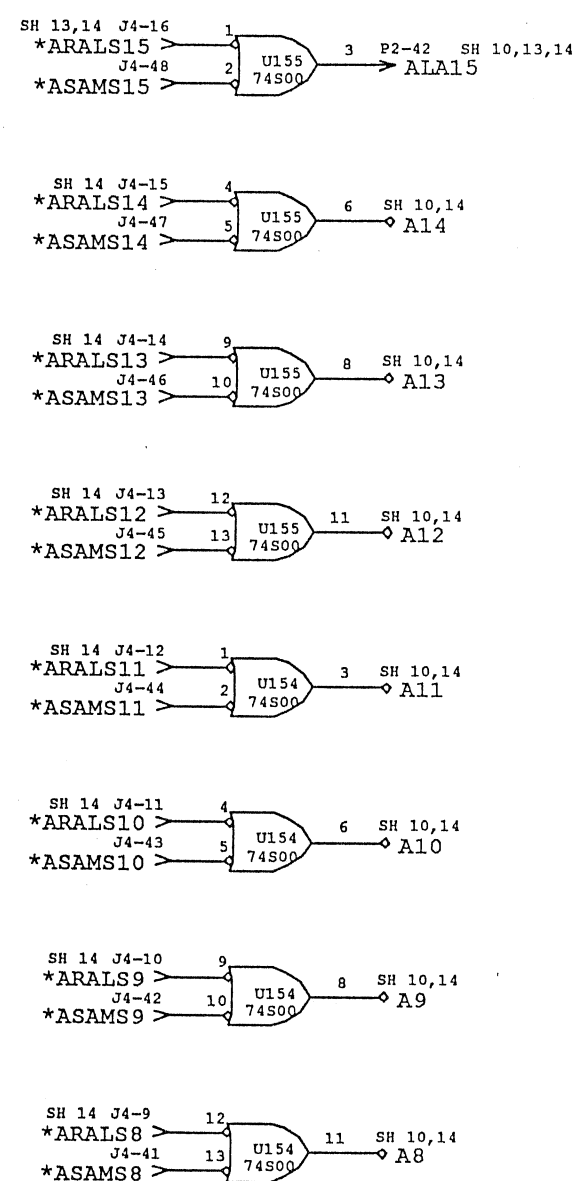
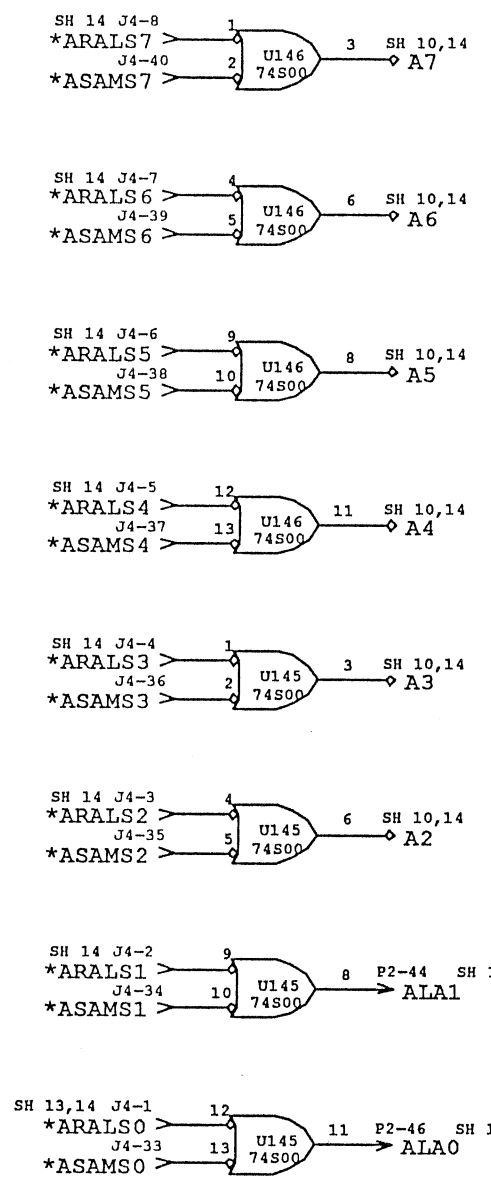
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A BUS INPUTS

200729-600

A BUS INPUTS			
SIZE	CODE IDENT	DWG NO.	REV
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VERSION	157	PC	SHEET 9 OF 20

4

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B

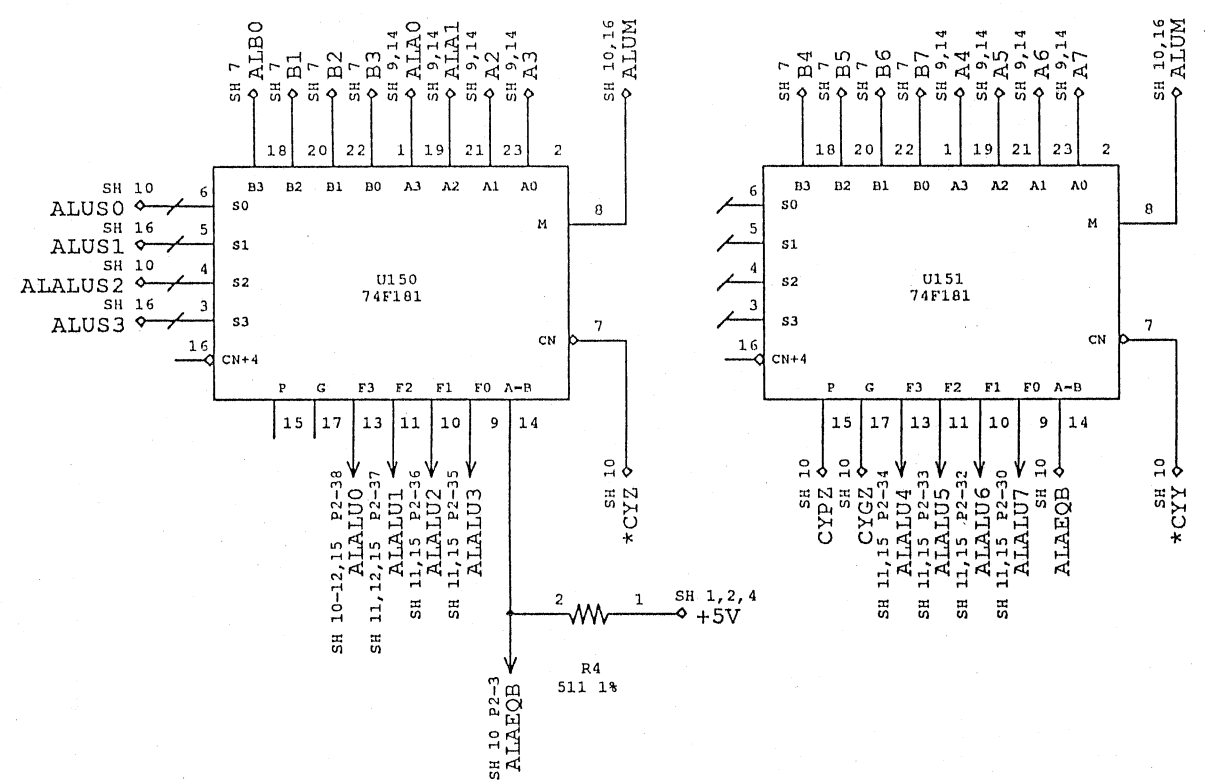
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D

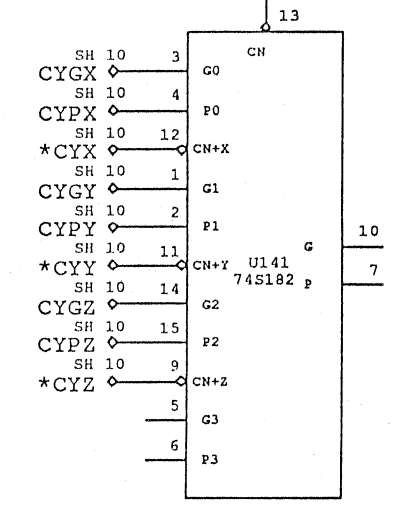
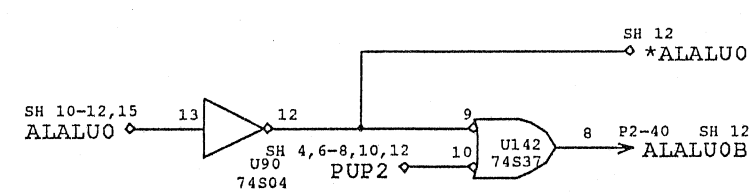
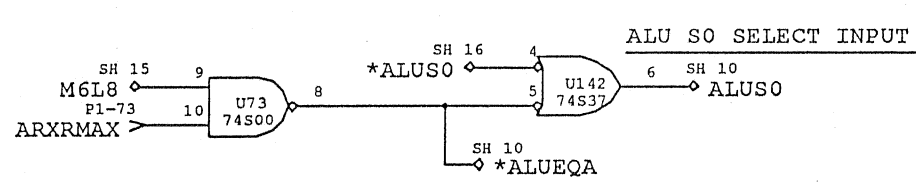
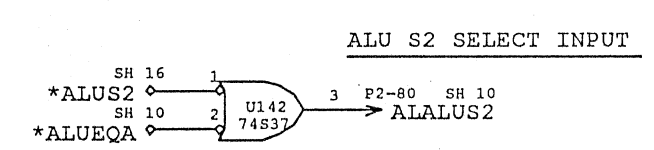
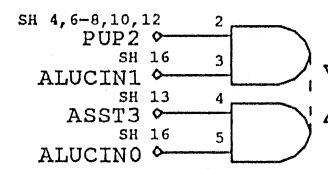
C

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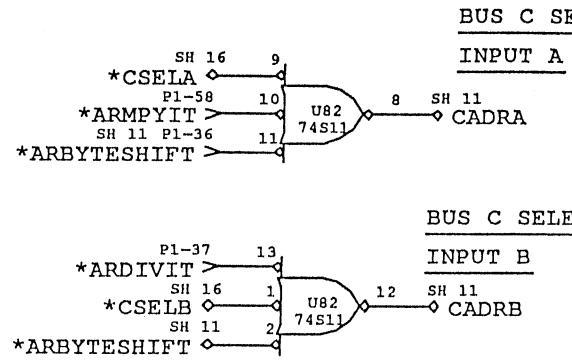
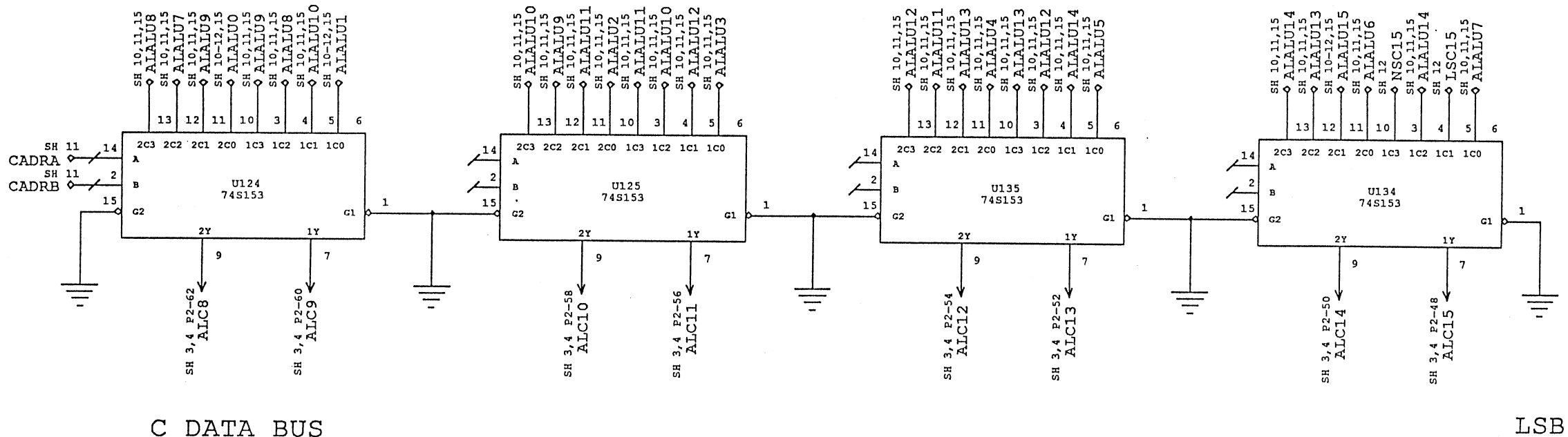
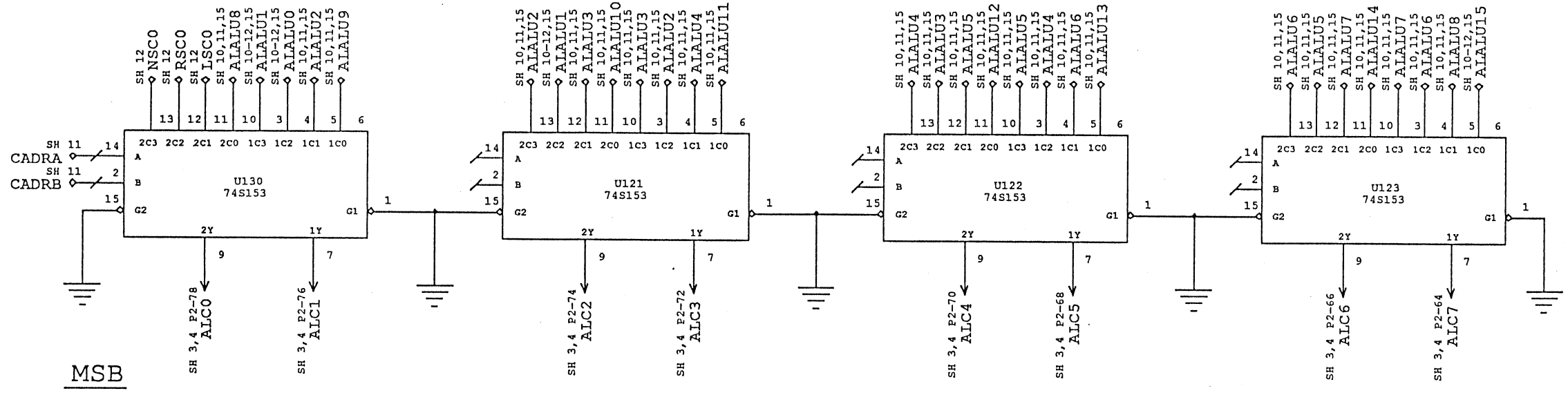


ALU



ARITHMETIC LOGIC UNIT			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
VERSION 157		PC	SHEET 10 OF 20

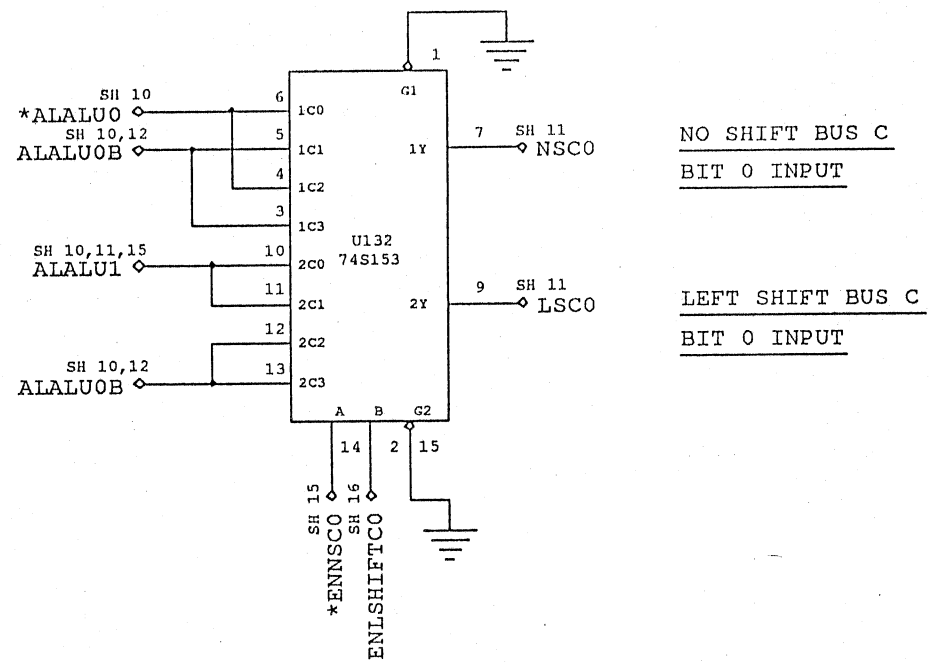
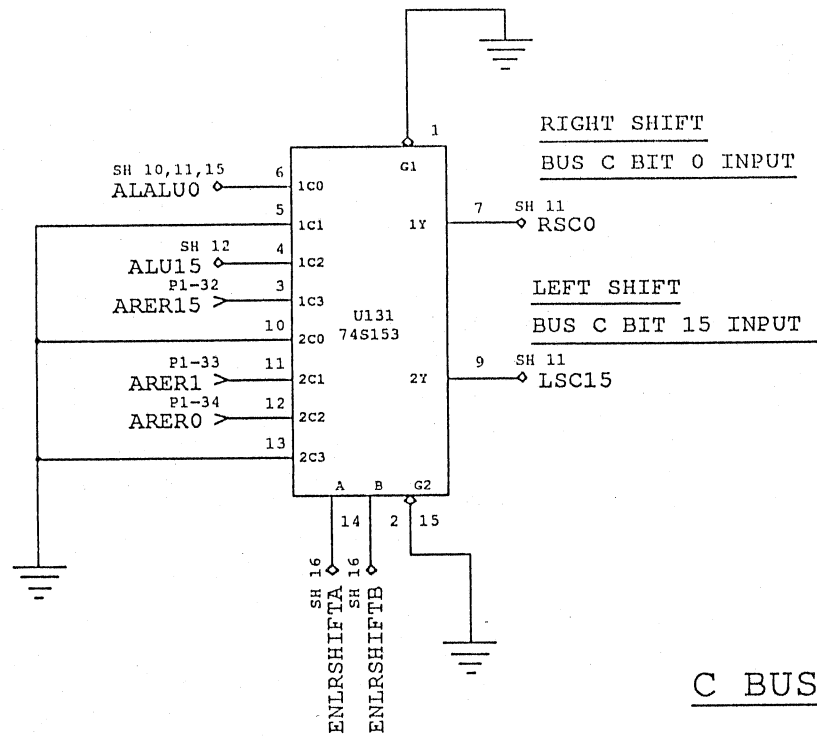
200729-600



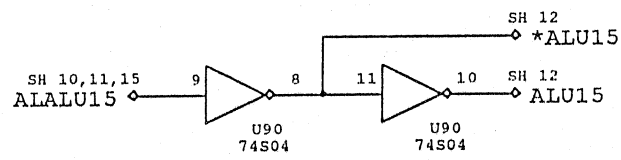
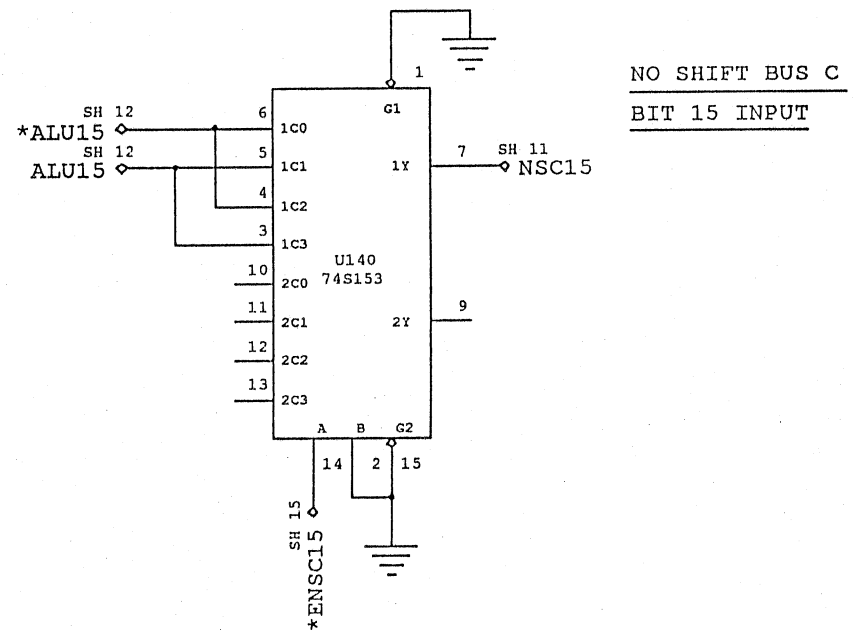
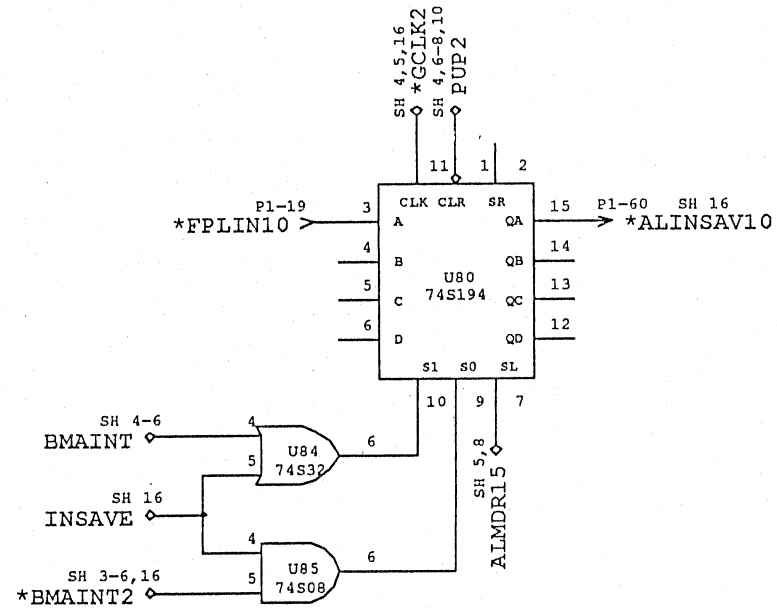
DIVIDE ENABLES A LEFT SHIFT
MULTIPLY ENABLES A RIGHT SHIFT

C DATA BUS I			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
VERSION	157	PC	SHEET 11 OF 20

200729-600



C BUS BIT SHIFT MUXES



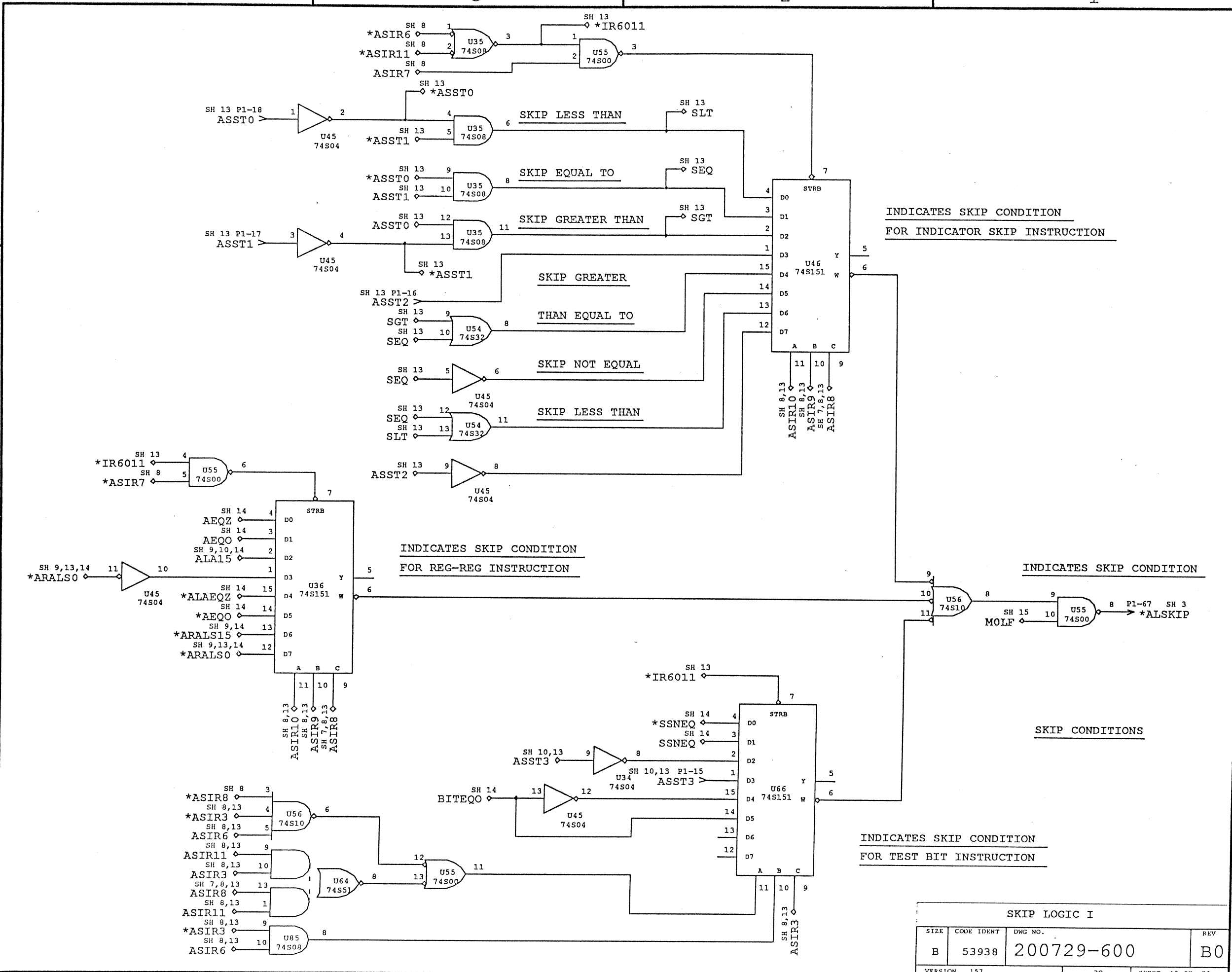
C BUS INPUT LOGIC

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
VERSION	157	PC	SHEET 12 OF 20

200729-600
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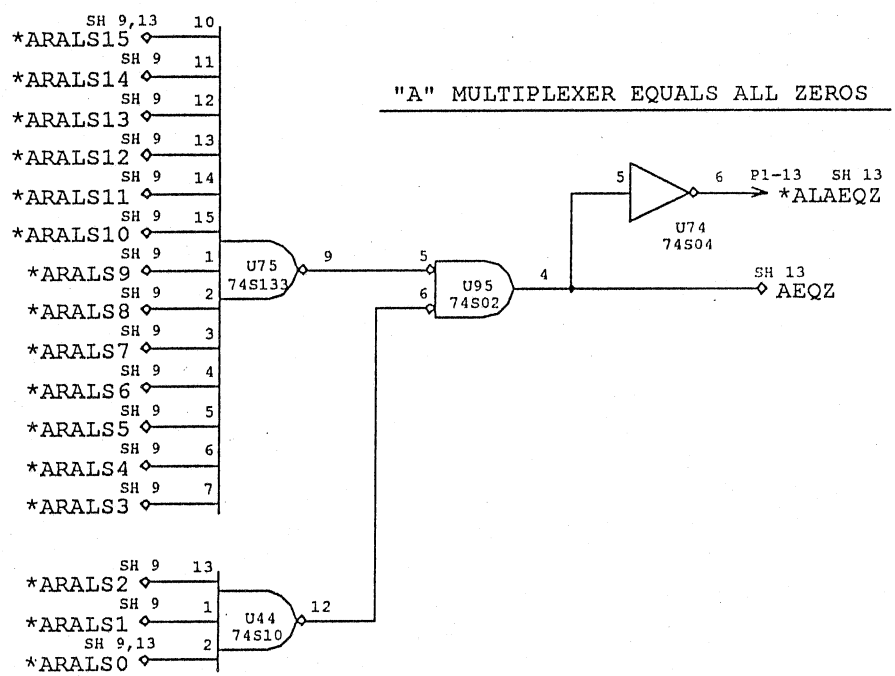
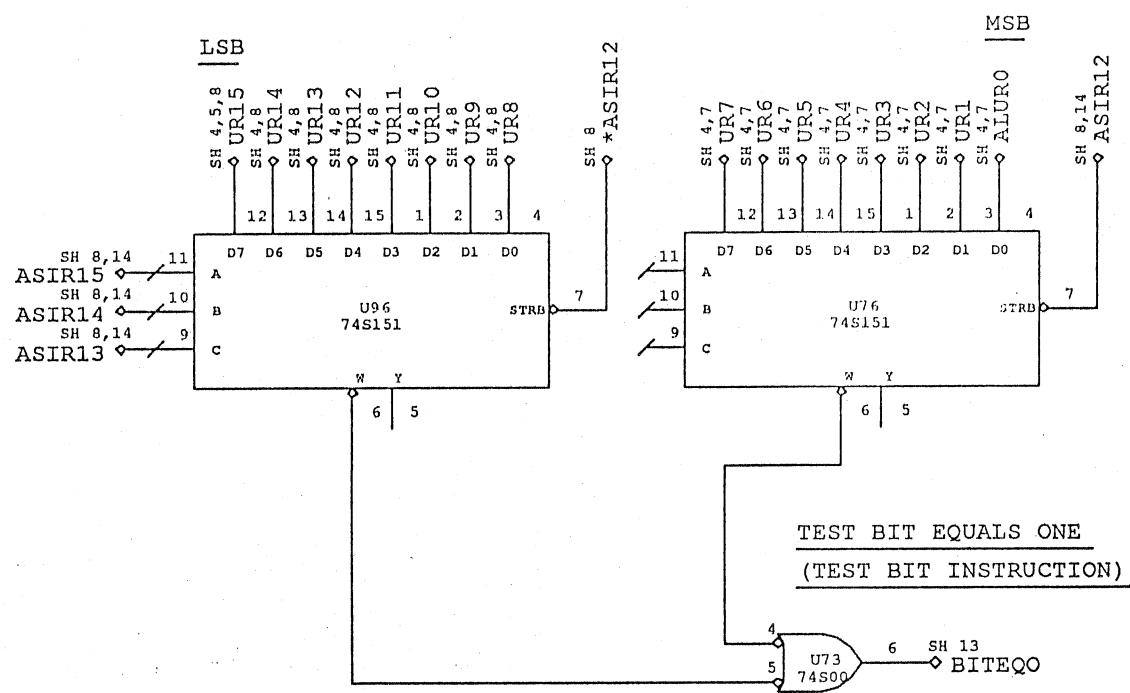
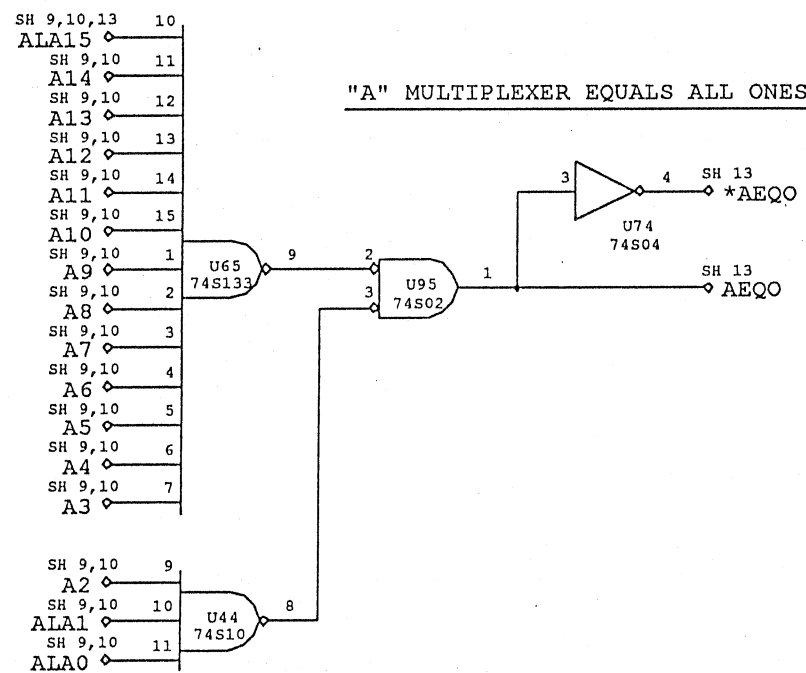
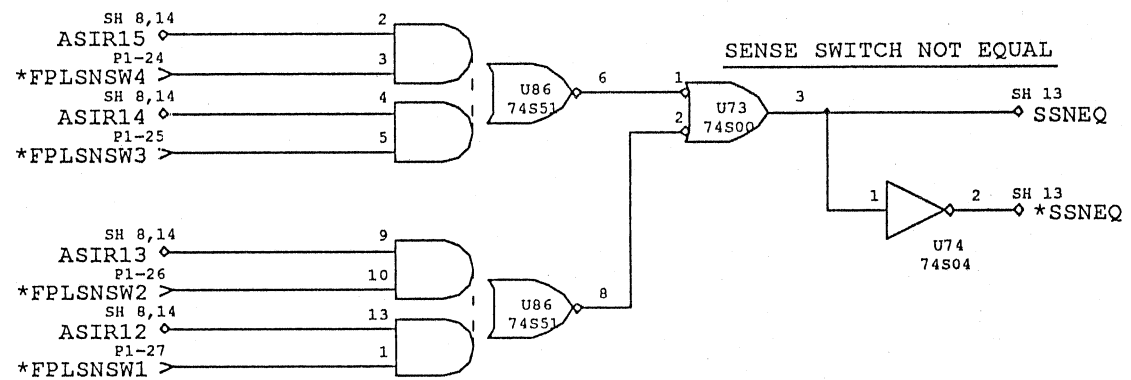
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D
C
B
A



SKIP LOGIC I			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
VERSION	157	PC	SHEET 13 OF 20

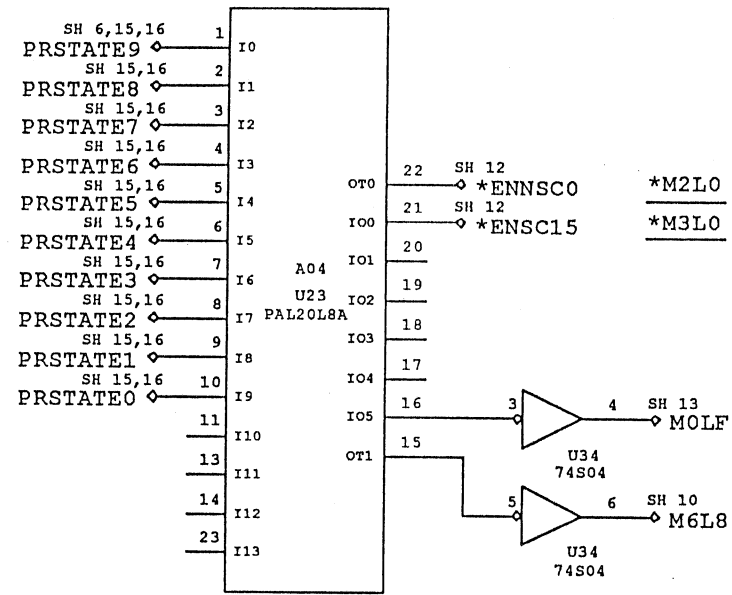
200729-600



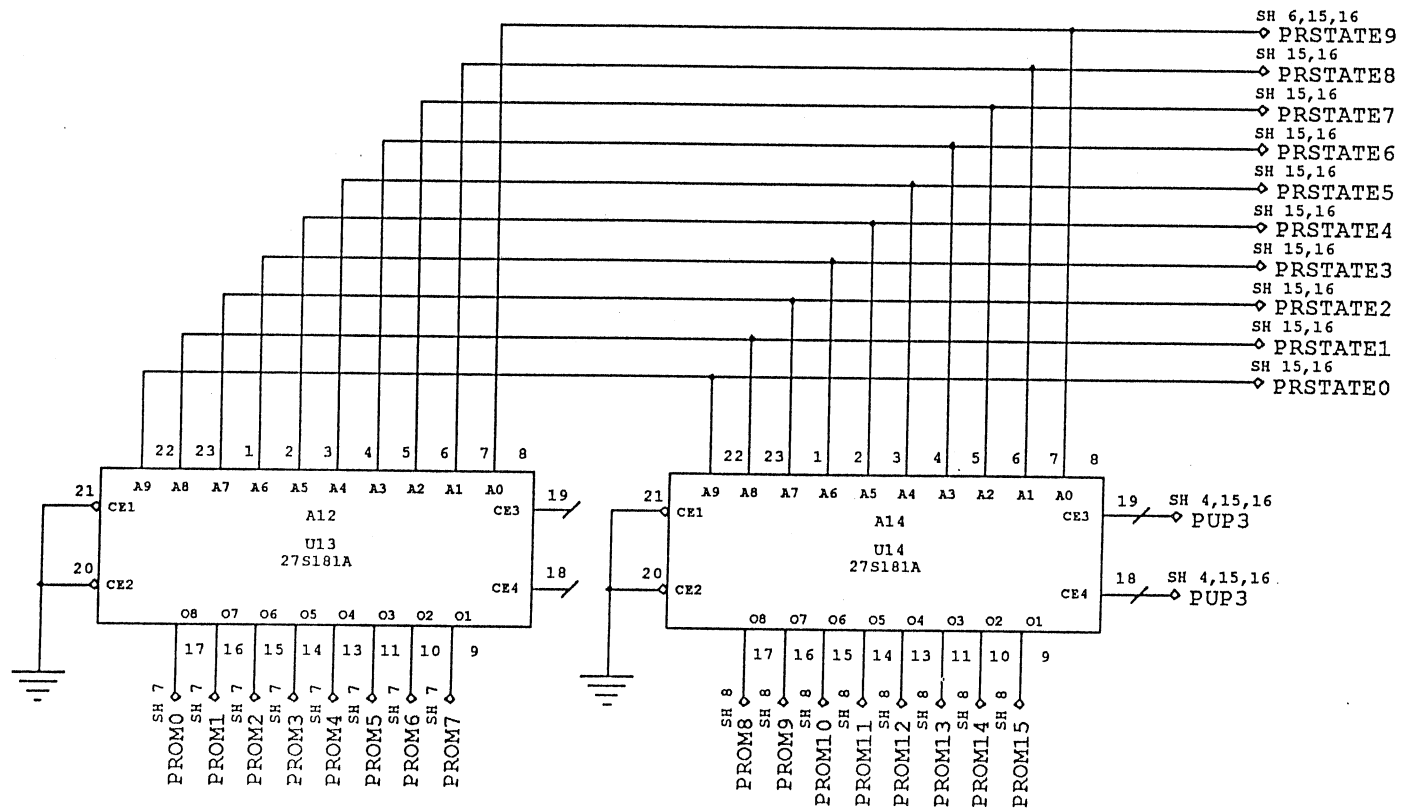
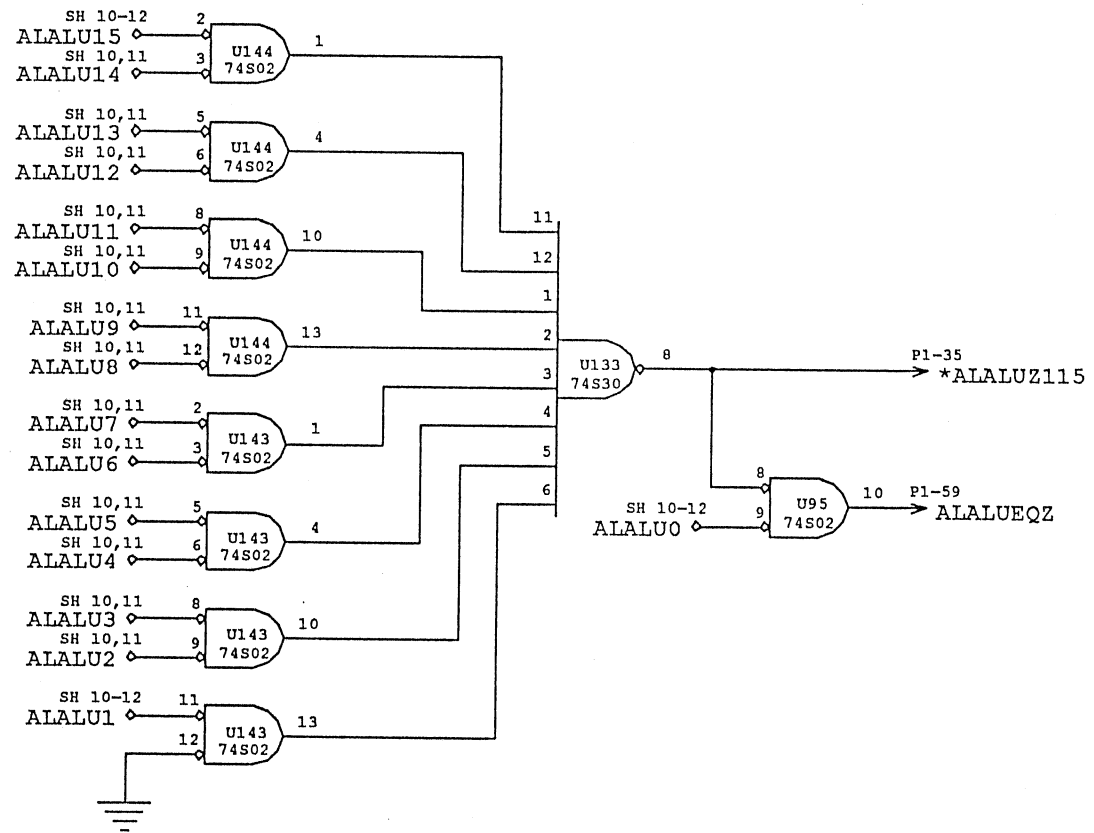
SKIP LIGIC II

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
VERSION 157	PC	SHEET 14 OF 20	

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STATE DECODE LOGIC

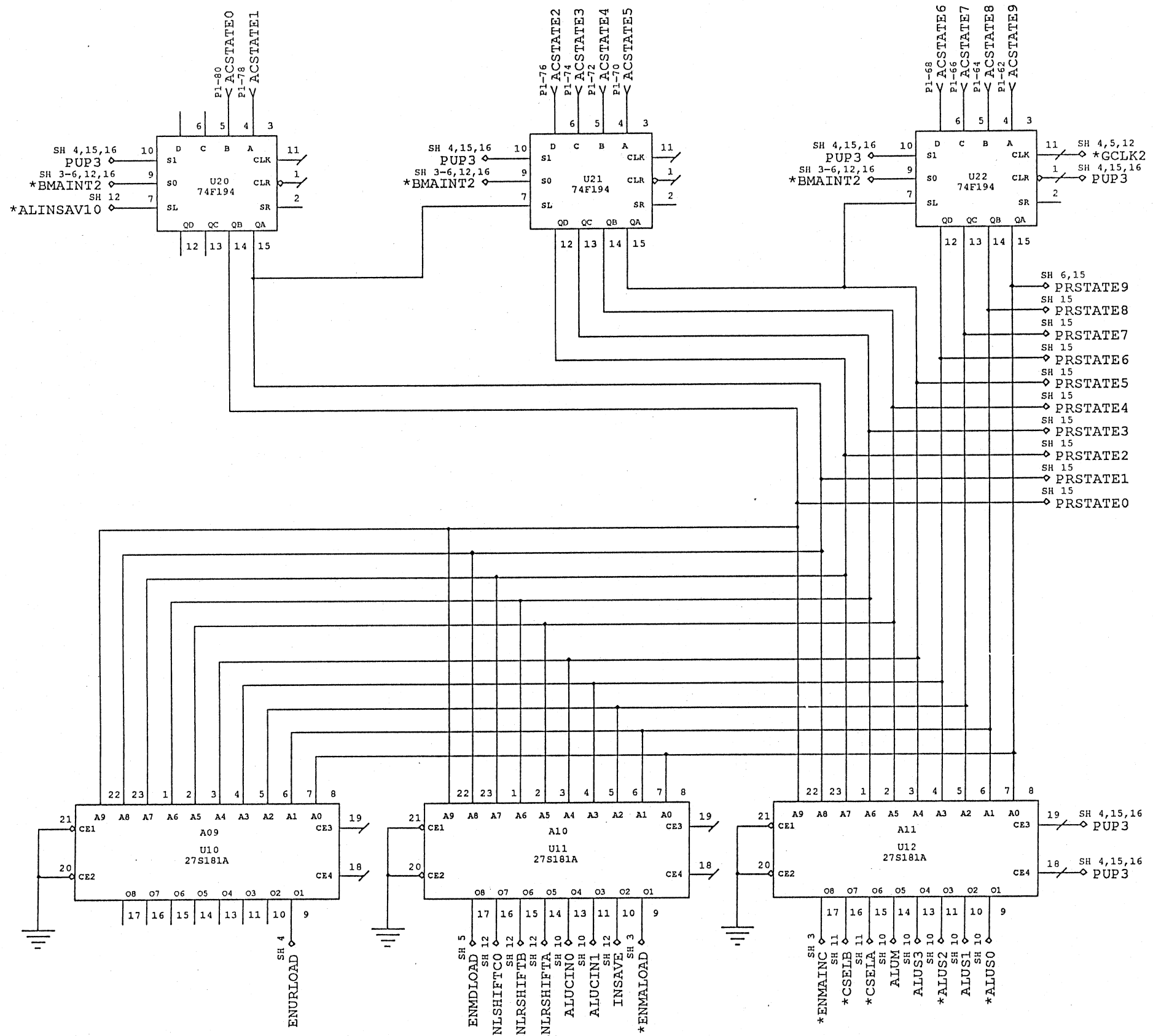


DIRECT DATA

STATE DECODE LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
VERSION	157	PC	SHEET 15 OF 20

200729-600

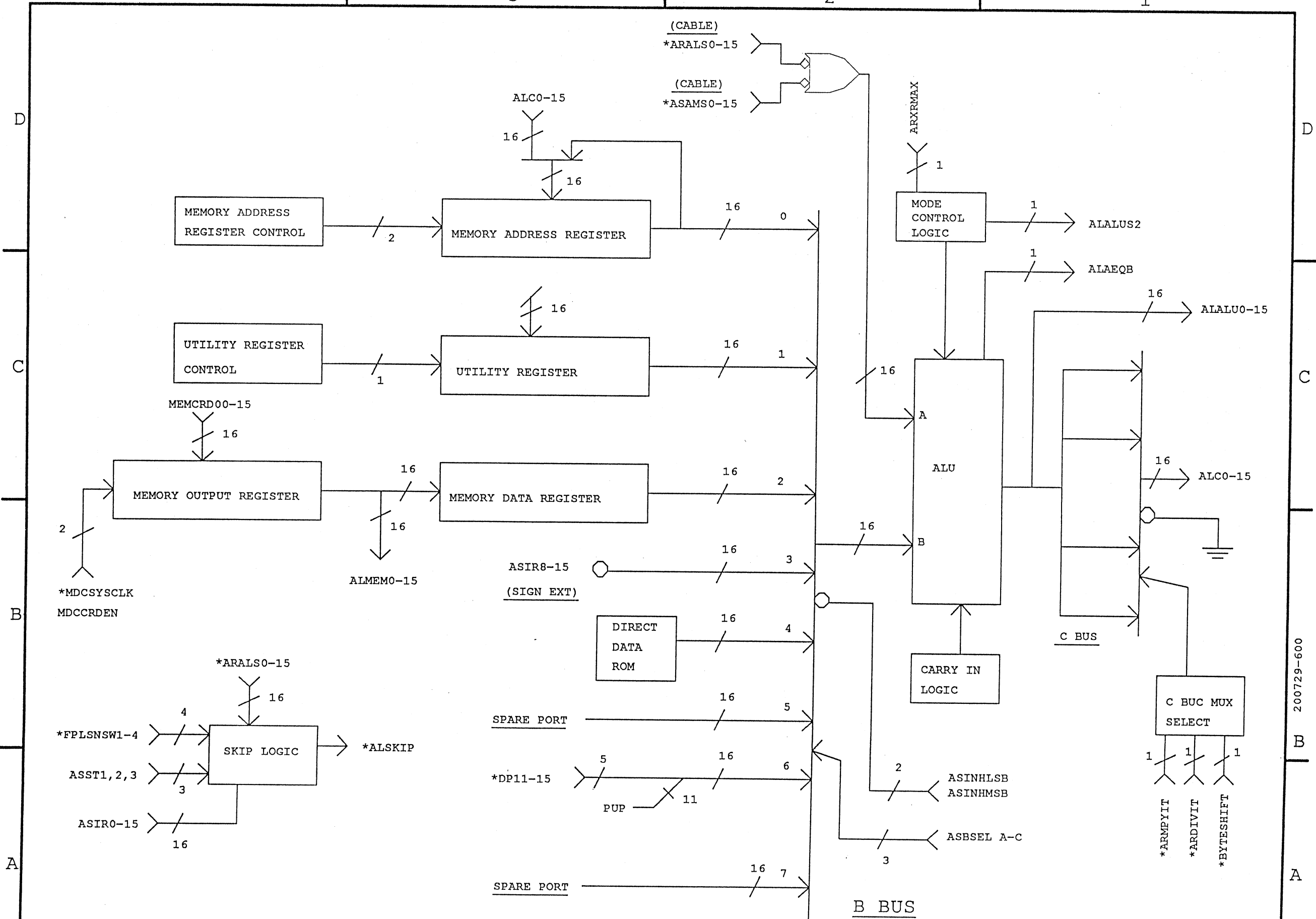
ALPS



PRESENT ADDRESS AND PROMS

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
VERSION 157		PC	SHEET 16 OF 20

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AL BLOCK DIAGRAM			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
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Unit	Pin	Type	String	Sheet	Unit	Pin	Type	String	Sheet
J4	1	In	*ARALS0	9 B3	P1	66	In	ACSTATE7	16 D1
J4	2	In	*ARALS1	9 B3	P1	67	Out	*ALSKIP	13 B1
J4	3	In	*ARALS2	9 B3	P1	68	In	ACSTATE6	16 D2
J4	4	In	*ARALS3	9 C3	P1	69	Out	ALMDR10	5 C2
J4	5	In	*ARALS4	9 C3	P1	70	In	ACSTATE5	16 D2
J4	6	In	*ARALS5	9 C3	P1	71	In	GROUND	1 B4
J4	7	In	*ARALS6	9 D3	P1	72	In	ACSTATE4	16 D2
J4	8	In	*ARALS7	9 D3	P1	73	In	ARXRMAX	10 A4
J4	9	In	*ARALS8	9 B2	P1	74	In	ACSTATE3	16 D2
J4	10	In	*ARALS9	9 B2	P1	75	In	*ACMADOIT	3 A2
J4	11	In	*ARALS10	9 B2	P1	76	In	ACSTATE2	16 D3
J4	12	In	*ARALS11	9 C2	P1	77	Out	*ALENMAINC	3 A1
J4	13	In	*ARALS12	9 C2	P1	78	In	ACSTATE1	16 D3
J4	14	In	*ARALS13	9 C2	P1	79	Out	ALURO	4 C4
J4	15	In	*ARALS14	9 D2	P1	80	In	ACSTATE0	16 D3
J4	16	In	*ARALS15	9 D2	P2	1	In	GROUND	1 B4
J4	33	In	*ASAMS0	9 B3	P2	2	In	+5VINB	4 A1
J4	34	In	*ASAMS1	9 B3	P2	3	Out	ALAEQB	10 C4
J4	35	In	*ASAMS2	9 B3	P2	4	In	+5VINB	4 A1
J4	36	In	*ASAMS3	9 C3	P2	5	In	ASIR15	8 B1
J4	37	In	*ASAMS4	9 C3	P2	6	In	ASIR14	8 B2
J4	38	In	*ASAMS5	9 C3	P2	7	In	*DP15	8 B1
J4	39	In	*ASAMS6	9 D3	P2	8	In	ASIR13	8 B3
J4	40	In	*ASAMS7	9 D3	P2	9	In	*DP12	8 B4
J4	41	In	*ASAMS8	9 B2	P2	10	In	ASIR12	8 B4
J4	42	In	*ASAMS9	9 B2	P2	11	In	GROUND	1 B4
J4	43	In	*ASAMS10	9 B2	P2	12	In	ASIR11	8 D1
J4	44	In	*ASAMS11	9 C2	P2	13	In	ASIR10	8 D2
J4	45	In	*ASAMS12	9 C2	P2	14	In	ASIR9	8 D3
J4	46	In	*ASAMS13	9 C2	P2	15	In	*DP13	8 B3
J4	47	In	*ASAMS14	9 D2	P2	16	In	ASIR8	8 A4
J4	48	In	*ASAMS15	9 D2	P2	17	In	*DP14	8 B2
P1	1	In	GROUND	1 D4	P2	18	In	ASIR7	8 A4
P1	2	In	+5VINA	4 A1	P2	19	In	ASIR6	8 A4
P1	3	In	*MDCGCLK	4 B3	P2	20	Out	ALALU15	10 C1
P1	4	In	+5VINA	4 A1	P2	21	In	GROUND	1 B4
P1	5	In	*CMSHIFT	4 A3	P2	22	In	ASIR3	8 A4
P1	6	In	SERIN	3 D4	P2	23	Out	ALALU14	10 C1
P1	7	In	ASBSEL	7 C4	P2	24	Out	ALALU13	10 C1
P1	8	In	ASBSELB	7 D4	P2	25	Out	ALALU12	10 C1
P1	9	In	ASBSELA	7 D4	P2	26	Out	ALALU11	10 C2
P1	10	In	*MDCSYSCLK	6 D1	P2	27	Out	ALALU10	10 C2
P1	11	In	GROUND	1 C4	P2	28	Out	ALALU9	10 C2
P1	12	In	MDCCRDN	6 B3	P2	29	Out	ALALU8	10 C2
P1	13	Out	*ALAEQZ	14 B1	P2	30	Out	ALALU7	10 C3
P1	15	In	ASST3	13 A2	P2	31	In	GROUND	1 B4
P1	16	In	ASST2	13 C3	P2	32	Out	ALALU6	10 C3
P1	17	In	ASST1	13 D4	P2	33	Out	ALALU5	10 C3
P1	18	In	ASST0	13 D4	P2	34	Out	ALALU4	10 C3
P1	19	In	*FPLIN10	12 B4	P2	35	Out	ALALU3	10 C4
P1	21	In	GROUND	1 C4	P2	36	Out	ALALU2	10 C4
P1	24	In	*FPLNSW4	14 C4	P2	37	Out	ALALU1	10 C4
P1	25	In	*FPLNSW3	14 C4	P2	38	Out	ALALU0	10 C4
P1	26	In	*FPLNSW2	14 C4	P2	39	In	*DP11	8 D1
P1	27	In	*FPLNSW1	14 C4	P2	40	Out	ALALU0B	10 B2
P1	28	Out	ALB0	7 C4	P2	41	In	GROUND	1 B4
P1	29	In	ASINHLSB	8 D3	P2	42	Out	ALA15	9 D2
P1	30	In	ASINHMSB	7 D3	P2	43	In	MEMCRD15	6 D2
P1	31	In	GROUND	1 C4	P2	44	Out	ALA1	9 B3
P1	32	In	ARER15	12 D4	P2	45	In	MEMCRD14	6 D2
P1	33	In	ARER1	12 D4	P2	46	Out	ALA0	9 B3
P1	34	In	ARER0	12 C4	P2	47	In	MEMCRD13	6 D2
P1	35	Out	*ALALUZ115	15 D1	P2	48	Out	ALC15	11 B1
P1	36	In	*ARBYTESHIFT	11 A3	P2	49	In	MEMCRD12	6 D2
P1	37	In	*ARDIVIT	11 A3	P2	50	Out	ALC14	11 B1
P1	38	Out	ALMEM15	6 C2	P2	51	In	GROUND	1 A4
P1	39	Out	ALMEM14	6 C2	P2	52	Out	ALC13	11 B2
P1	40	Out	ALMEM13	6 C2	P2	53	In	MEMCRD11	6 D2
P1	41	In	GROUND	1 C4	P2	54	Out	ALC12	11 B2
P1	42	Out	ALMEM12	6 C2	P2	55	In	MEMCRD10	6 D2
P1	43	Out	ALMEM11	6 C2	P2	56	Out	ALC11	11 B3
P1	44	Out	ALMEM10	6 C2	P2	57	In	MEMCRD09	6 D3
P1	45	Out	ALMEM9	6 C3	P2	58	Out	ALC10	11 B3
P1	46	Out	ALMEM8	6 C3	P2	59	In	MEMCRD08	6 D3
P1	47	Out	ALMEM7	6 C3	P2	60	Out	ALC9	11 B4
P1	48	Out	ALMEM6	6 C3	P2	61	In	GROUND	1 A4
P1	49	Out	ALMEM5	6 C3	P2	62	Out	ALC8	11 B4
P1	50	Out	ALMEM4	6 C3	P2	63	In	MEMCRD07	6 D3
P1	51	In	GROUND	1 C4	P2	64	Out	ALC7	11 C1
P1	52	Out	ALMEM3	6 C4	P2	65	In	MEMCRD06	6 D3
P1	53	Out	ALMEM2	6 C4	P2	66	Out	ALC6	11 C1
P1	54	Out	ALMEM1	6 C4	P2	67	In	MEMCRD05	6 D3
P1	55	Out	ALMEM0	6 C4	P2	68	Out	ALC5	11 C2
P1	56	In	*ARENDPC	3 A4	P2	69	In	MEMCRD04	6 D3
P1	57	In	*ARENSPC	3 A4	P2	70	Out	ALC4	11 C2
P1	58	In	*ARMPYIT	11 A3	P2	71	In	GROUND	1 A4
P1	59	Out	ALALUEQZ	15 C1	P2	72	Out	ALC3	11 C3
P1	60	Out	*ALINSAV10	12 B3	P2	73	In	MEMCRD03	6 D4
P1	61	In	GROUND	1 C4	P2	74	Out	ALC2	11 C3
P1	62	In	ACSTATE9	16 D1	P2	75	In	MEMCRD02	6 D4
P1	64	In	ACSTATE8	16 D1	P2	76	Out	ALC1	11 C4
P1	65	Out	*ALENMALOAD	3 A3	P2	77	In	MEMCRD01	6 D4

Unit	Pin	Type	String	Sheet
P2	78	Out	ALCO	11 C4
P2	79	In	MEMCRD00	6 D4
P2	80	Out	ALALUS2	10 B4

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Connectors by unit/pin

SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
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String	Unit	Pin	Type	Sheet
*ACMADOIT	P1	75	In	3 A2
*ALAEQZ	P1	13	Out	14 B1
*ALALU2115	P1	35	Out	15 D1
*ALENMAINC	P1	77	Out	3 A1
*ALENMALOAD	P1	65	Out	3 A3
*ALINSAV10	P1	60	Out	12 B3
*ALSKIP	P1	67	Out	13 B1
*ARALS0	J4	1	In	9 B3
*ARALS1	J4	2	In	9 B3
*ARALS10	J4	11	In	9 B2
*ARALS11	J4	12	In	9 C2
*ARALS12	J4	13	In	9 C2
*ARALS13	J4	14	In	9 C2
*ARALS14	J4	15	In	9 D2
*ARALS15	J4	16	In	9 D2
*ARALS2	J4	3	In	9 B3
*ARALS3	J4	4	In	9 C3
*ARALS4	J4	5	In	9 C3
*ARALS5	J4	6	In	9 C3
*ARALS6	J4	7	In	9 D3
*ARALS7	J4	8	In	9 D3
*ARALS8	J4	9	In	9 B2
*ARALS9	J4	10	In	9 B2
*ARBYTESHIFT	P1	36	In	11 A3
*ARDIVIT	P1	37	In	11 A3
*ARENDCPC	P1	56	In	3 A4
*ARENSPC	P1	57	In	3 A4
*ARMPYIT	P1	58	In	11 A3
*ASAMS0	J4	33	In	9 B3
*ASAMS1	J4	34	In	9 B3
*ASAMS10	J4	43	In	9 B2
*ASAMS11	J4	44	In	9 C2
*ASAMS12	J4	45	In	9 C2
*ASAMS13	J4	46	In	9 C2
*ASAMS14	J4	47	In	9 D2
*ASAMS15	J4	48	In	9 D2
*ASAMS2	J4	35	In	9 B3
*ASAMS3	J4	36	In	9 C3
*ASAMS4	J4	37	In	9 C3
*ASAMS5	J4	38	In	9 C3
*ASAMS6	J4	39	In	9 D3
*ASAMS7	J4	40	In	9 D3
*ASAMS8	J4	41	In	9 B2
*ASAMS9	J4	42	In	9 B2
*CMSHIFT	P1	5	In	4 A3
*DP11	P2	39	In	8 D1
*DP12	P2	9	In	8 B4
*DP13	P2	15	In	8 B3
*DP14	P2	17	In	8 B2
*DP15	P2	7	In	8 B1
*FPLIN10	P1	19	In	12 B4
*FPLSNSW1	P1	27	In	14 C4
*FPLSNSW2	P1	26	In	14 C4
*FPLSNSW3	P1	25	In	14 C4
*FPLSNSW4	P1	24	In	14 C4
*MDCGCLK	P1	3	In	4 B3
*MDCSYSCLK	P1	10	In	6 D1
+5VINA	P1	2	In	4 A1
+5VINA	P1	4	In	4 A1
+5VINB	P2	2	In	4 A1
+5VINB	P2	4	In	4 A1
ACSTATE0	P1	80	In	16 D3
ACSTATE1	P1	78	In	16 D3
ACSTATE2	P1	76	In	16 D3
ACSTATE3	P1	74	In	16 D2
ACSTATE4	P1	72	In	16 D2
ACSTATE5	P1	70	In	16 D2
ACSTATE6	P1	68	In	16 D2
ACSTATE7	P1	66	In	16 D1
ACSTATE8	P1	64	In	16 D1
ACSTATE9	P1	62	In	16 D1
ALAO	P2	46	Out	9 B3
ALAI	P2	44	Out	9 B3
ALAI5	P2	42	Out	9 D2
ALAEQB	P2	3	Out	10 C4
ALALU0	P2	38	Out	10 C4
ALALU0B	P2	40	Out	10 B2
ALALU1	P2	37	Out	10 C4
ALALU10	P2	27	Out	10 C2
ALALU11	P2	26	Out	10 C2
ALALU12	P2	25	Out	10 C1
ALALU13	P2	24	Out	10 C1
ALALU14	P2	23	Out	10 C1
ALALU15	P2	20	Out	10 C1
ALALU2	P2	36	Out	10 C4
ALALU3	P2	35	Out	10 C4
ALALU4	P2	34	Out	10 C3
ALALU5	P2	33	Out	10 C3
ALALU6	P2	32	Out	10 C3
ALALU7	P2	30	Out	10 C3
ALALU8	P2	29	Out	10 C2
ALALU9	P2	28	Out	10 C2

String	Unit	Pin	Type	Sheet
ALALUEQZ	P1	59	Out	15 C1
ALALUS2	P2	80	Out	10 B4
ALB0	P1	28	Out	7 C4
ALC0	P2	78	Out	11 C4
ALC1	P2	76	Out	11 C4
ALC10	P2	58	Out	11 B3
ALC11	P2	56	Out	11 B3
ALC12	P2	54	Out	11 B2
ALC13	P2	52	Out	11 B2
ALC14	P2	50	Out	11 B1
ALC15	P2	48	Out	11 B1
ALC2	P2	74	Out	11 C3
ALC3	P2	72	Out	11 C3
ALC4	P2	70	Out	11 C2
ALC5	P2	68	Out	11 C2
ALC6	P2	66	Out	11 C1
ALC7	P2	64	Out	11 C1
ALC8	P2	62	Out	11 B4
ALC9	P2	60	Out	11 B4
ALMDR10	P1	69	Out	5 C2
ALMEM0	P1	55	Out	6 C4
ALMEM1	P1	54	Out	6 C4
ALMEM10	P1	44	Out	6 C2
ALMEM11	P1	43	Out	6 C2
ALMEM12	P1	42	Out	6 C2
ALMEM13	P1	40	Out	6 C2
ALMEM14	P1	39	Out	6 C2
ALMEM15	P1	38	Out	6 C2
ALMEM2	P1	53	Out	6 C4
ALMEM3	P1	52	Out	6 C4
ALMEM4	P1	50	Out	6 C3
ALMEM5	P1	49	Out	6 C3
ALMEM6	P1	48	Out	6 C3
ALMEM7	P1	47	Out	6 C3
ALMEM8	P1	46	Out	6 C3
ALMEM9	P1	45	Out	6 C3
ALURO	P1	79	Out	4 C4
ARERO	P1	34	In	12 C4
ARER1	P1	33	In	12 D4
ARER15	P1	32	In	12 D4
ARXRMAX	P1	73	In	10 A4
ASBSELA	P1	9	In	7 D4
ASBSELB	P1	8	In	7 D4
ASBSELC	P1	7	In	7 C4
ASINHLSB	P1	29	In	8 D3
ASINHMSB	P1	30	In	7 D3
ASIR10	P2	13	In	8 D2
ASIR11	P2	12	In	8 D1
ASIR12	P2	10	In	8 B4
ASIR13	P2	8	In	8 B3
ASIR14	P2	6	In	8 B2
ASIR15	P2	5	In	8 B1
ASIR3	P2	22	In	8 A4
ASIR6	P2	19	In	8 A4
ASIR7	P2	18	In	8 A4
ASIR8	P2	16	In	8 A4
ASIR9	P2	14	In	8 D3
ASST0	P1	18	In	13 D4
ASST1	P1	17	In	13 D4
ASST2	P1	16	In	13 C3
ASST3	P1	15	In	13 A2
GROUND	P1	1	In	1 D4
GROUND	P1	11	In	1 C4
GROUND	P1	21	In	1 C4
GROUND	P1	31	In	1 C4
GROUND	P1	41	In	1 C4
GROUND	P1	51	In	1 C4
GROUND	P1	61	In	1 C4
GROUND	P1	71	In	1 B4
GROUND	P2	1	In	1 B4
GROUND	P2	11	In	1 B4
GROUND	P2	21	In	1 B4
GROUND	P2	31	In	1 B4
GROUND	P2	41	In	1 B4
GROUND	P2	51	In	1 A4
GROUND	P2	61	In	1 A4
GROUND	P2	71	In	1 A4
MDCCRDEN	P1	12	In	6 B3
MEMCRD00	P2	79	In	6 D4
MEMCRD01	P2	77	In	6 D4
MEMCRD02	P2	75	In	6 D4
MEMCRD03	P2	73	In	6 D4
MEMCRD04	P2	69	In	6 D3
MEMCRD05	P2	67	In	6 D3
MEMCRD06	P2	65	In	6 D3
MEMCRD07	P2	63	In	6 D3
MEMCRD08	P2	59	In	6 D3
MEMCRD09	P2	57	In	6 D3
MEMCRD10	P2	55	In	6 D2
MEMCRD11	P2	53	In	6 D2
MEMCRD12	P2	49	In	6 D2
MEMCRD13	P2	47	In	6 D2

String	Unit	Pin	Type	Sheet
MEMCRD14	P2	45	In	6 D2
MEMCRD15	P2	43	In	6 D2
SERIN	P1	6	In	3 D4

D
C
B
A

D
C
B
A

200729-600

Connectors by string name			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200729-600	B0
VERSION	157	CS	SHEET 19 OF 20

Page	Type	Page name
1	PC	CAPACITORS
2	PC	CAPACITORS I
3	PC	MEMORY ADDRESS REGISTER
4	PC	UTILITY REGISTER
5	PC	MEMORY DATA REGISTER
6	PC	MEMORY OUTPUT REGISTER
7	PC	B DATA BUS I
8	PC	B DATA BUS II
9	PC	A BUS INPUTS
10	PC	ARITHMETIC LOGIC UNIT
11	PC	C DATA BUS I
12	PC	C BUS INPUT LOGIC
13	PC	SKIP LOGIC I
14	PC	SKIP LOGIC II
15	PC	STATE DECODE LOGIC
16	PC	PRESENT ADDRESS AND PROMS
17	BL	AL BLOCK DIAGRAM

D

D

C

C

B

B

A

A

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Table of contents

SIZE	CODE IDENT	DRG NO.	REV
B	53938	200729-600	B0
VERSION 157		TC	SHEET 20 OF 20

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200732-100

REV: B2 = BC

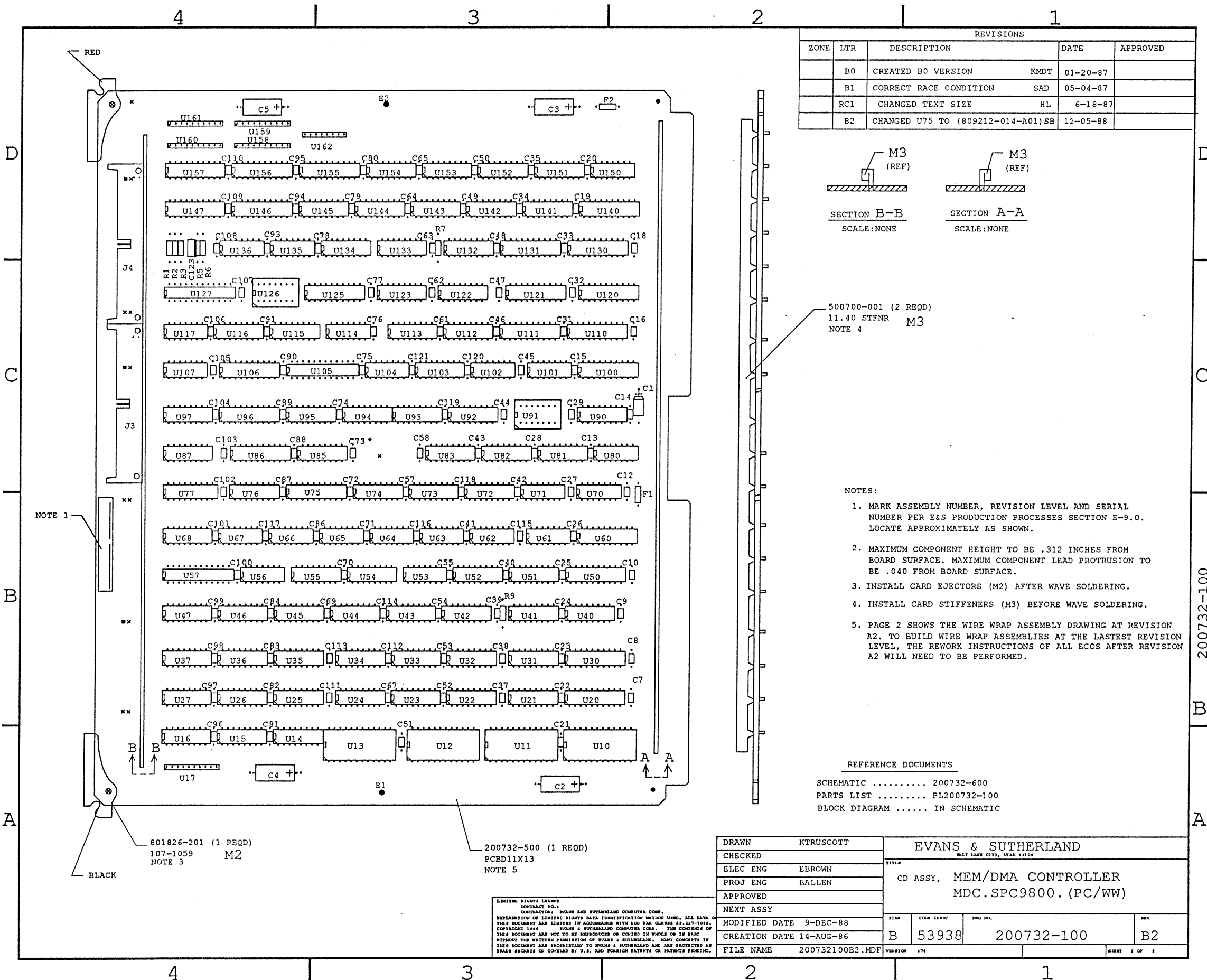
DESC: CARD ASSY, MEM/DMA CONTROLLER, SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD, PC PCBD11X13	53938	EVANS & SUTHERLAND.	200732-500	200732-500	1
C123	C,, AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C2 C3 C4 C5	C,, RDL 680PF	59821	MEPCO/CENTRALAB	DD-681	804103-681	1
C7 C8 C9 C10 C12 C13 C14	C,, AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C15 C16 C18 C19 C20 C21 C22	C,, AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804169-333	104
C23 C24 C25 C26 C27 C28 C29						
C31 C32 C33 C34 C35 C37 C38						
C39 C40 C41 C42 C43 C44 C45						
C46 C47 C48 C49 C50 C51 C52						
C53 C54 C55 C57 C58 C61 C62						
C63 C64 C65 C67 C69 C70 C71						
C72 C73 C74 C75 C76 C77 C78						
C79 C80 C81 C82 C83 C84 C86						
C87 C88 C89 C90 C91 C93 C94						
C95 C96 C97 C98 C99 C100						
C101 C102 C103 C104 C105						
C106 C107 C108 C109 C110						
C111 C112 C113 C114 C115						
C116 C117 C118 C119 C120						
E1 E2	HW, TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU, PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A, AXIAL)	802375-050	2
J4 J3	CN, HOUS 50P, RTA	22526	DU PONT E I NEMOURS (CONN)	65268-011 (2X25)	801290-050	2
M2	HW, EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW, STFNR 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
R1 R3	R,, AXL 180 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF181J	803201-181	2
R2	R,, AXL 470 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF471J	803201-471	1
R5 R6	R,, AXL 270 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF271J	803201-271	2
R7 R9	R,, AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	2
U103 U116 U123 U134	IC, TTL 74F153	07263	FAIRCHILD IC'S & SEMICOND	74F153PC/DC	807953-035	4
U107 U136	IC, TTL 74F74	07263	FAIRCHILD IC'S & SEMICOND	74F74PC/DC	807974-035	2
U10 U11 U12 U13	IC, TTL 74F181	07263	FAIRCHILD IC'S & SEMICOND	74F181PC/DC	807981-035	4
U102	IC, TTL 74F11	07263	FAIRCHILD IC'S & SEMICOND	74F11PC/DC	807911-035	1
U105	IC, PAL 22V10APC	53938	EVANS & SUTHERLAND.	807109-015-A71	807109-015-A71	1
U113	IC, TTL 74F194	07263	FAIRCHILD IC'S & SEMICOND	74F194PC/DC	807994-035	1
U127	IC, PAL, 20L8A, OCTL, 20I	53938	EVANS & SUTHERLAND.	807859-016-A02	807859-016-A02	1
U126	IC, OSC XO12.0M	13075	SAVOY ELECTRONICS INC.	S1100-12.0MHZHZ	806011-020	1
U125	IC, PAL, 16L8A, OCTL, 16I	53938	EVANS & SUTHERLAND.	807838-014-A17	807838-014-A17	1
U135	IC, TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	1
U146 U147 U155 U156 U157	IC, TTL 74F373	07263	FAIRCHILD IC'S & SEMICOND	74F373PC/DC	807973-035	5
U14	IC, TTL 74F182	07263	FAIRCHILD IC'S & SEMICOND	74F182PC/DC	807182-035	1
U15 U16 U22 U23 U24 U25 U26	IC, TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	28
U27 U54 U55 U73 U74 U81 U82						
U83 U112 U122 U132 U133 U141						
U142 U143 U144 U145 U151						
U152 U153 U154						
U158 U159 U160 U161	R,, SIP 470 (R9)	1U696	STACKPOLE COMPONENTS CO	10-9-5-471G (SIP)	807505-471	4
U162	R,, SIP 4.7K (R7)	4J937	BOURNS NETWORKS	4608X-101-472 (SIP)	807519-472	1

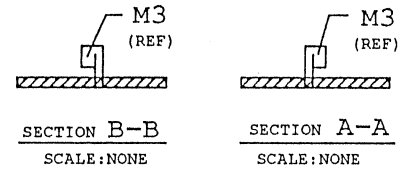
MAINTENANCE PARTS LIST

ASSEMBLY: PL 200732-100		REV: B2 = BC	DESC: CARD ASSY, MEM/DMA CONTROLLER, SPC9800 (PC)			QTY/
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	ASSY
U17	R,,SIP 1K(R9)	1U696	STACKPOLE COMPONENTS CO	10-9-5-102G (SIP)	807505-102	1
U20 U30 U86 U96 U100 U110	IC,TTL 74S244	81349	MILITARY SPECIFICATIONS	54S244N	807244-055	12
U111 U120 U121 U130 U131						
U21 U31 U32 U33 U34 U35 U36	IC,TTL 74S85	01295	TEXAS INSTR, SEMICON DIV.	SN74S85N	807685-055	9
U37 U72						
U40 U90	IC,TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	2
U41	IC,TTL 74F157	07263	FAIRCHILD IC'S & SEMICON	74F157APC/DC	807957-035	1
U42 U43 U44 U45	IC,TTL 74F161	07263	FAIRCHILD IC'S & SEMICON	74F161APC	807061-035	4
U46 U47	IC,TTL 74LS166	04713	MOTOROLA INC. SEMI PRODUC	SN74LS166N/J	807665-016	2
U50 U60 U106	IC,TTL 74S240	01295	TEXAS INSTR, SEMICON DIV.	SN74S240N/J	807792-020	3
U51 U52	IC, RAM 74F219	07263	FAIRCHILD IC'S & SEMICON	74F219PC/DC	807219-035	2
U53 U67 U80	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	3
U56	IC,TTL 74LS02	01295	TEXAS INSTR, SEMICON DIV.	SN74LS02N	807402-618	1
U57	IC,PAL,20R8A,OCTL,20I	53938	EVANS & SUTHERLAND.	807858-016-A10	807858-016-A10	1
U61 U114	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	2
U62	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U63 U101	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	2
U64	IC,TTL #74LS04	01295	TEXAS INSTR, SEMICON DIV.	SN74LS04N/J	807416-016	1
U65	IC,TTL 74LS08	01295	TEXAS INSTR, SEMICON DIV.	SN74LS08N/J	807408-618	1
U66	IC,TTL #74LS32	01295	TEXAS INSTR, SEMICON DIV.	SN74LS32N/J	807431-016	1
U68 U76	IC,TTL 74LS194A	18324	SIGNETICS CORP. MILITARY	N74LS194AN	807694-016	2
U70 U104 U117	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	3
U71 U150	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	2
U75	IC,PAL PAL18P8B	53938	EVANS & SUTHERLAND.	809212-014-A01	809212-014-A01	1
U77	SW,DIP 9 SWITCH	95146	ALCO ELECTRONIC PRODUCTS	ADF09	801549-009	1
U85 U93 U94 U95	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N	807657-055	4
U87 U97	R,,DIP 22(R8)	73138	BECKMAN INDUSTRIES CORP.	898-3-R22	807750-220	2
U91	IC,OSC XO18.0M	13075	SAVOY ELECTRONICS INC.	S1100-18.0MHZ	806011-021	1
U92 U115	IC,TTL 74S112	18324	SIGNETICS CORP. MILITARY	N74S112N	807612-055	2

56 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATED B0 VERSION	KMDT 01-20-87	
	B1	CORRECT RACE CONDITION	SAD 05-04-87	
	RC1	CHANGED TEXT SIZE	HL 6-18-87	
	B2	CHANGED U75 TO (809212-014-A01)SB	12-05-88	



500700-001 (2 REQD)
11.40 STFNR M3
NOTE 4

- NOTES:
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 2. MAXIMUM COMPONENT HEIGHT TO BE .312 INCHES FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
 3. INSTALL CARD EJECTORS (M2) AFTER WAVE SOLDERING.
 4. INSTALL CARD STIFFENERS (M3) BEFORE WAVE SOLDERING.
 5. PAGE 2 SHOWS THE WIRE WRAP ASSEMBLY DRAWING AT REVISION A2. TO BUILD WIRE WRAP ASSEMBLIES AT THE LATEST REVISION LEVEL, THE REWORK INSTRUCTIONS OF ALL ECOS AFTER REVISION A2 WILL NEED TO BE PERFORMED.

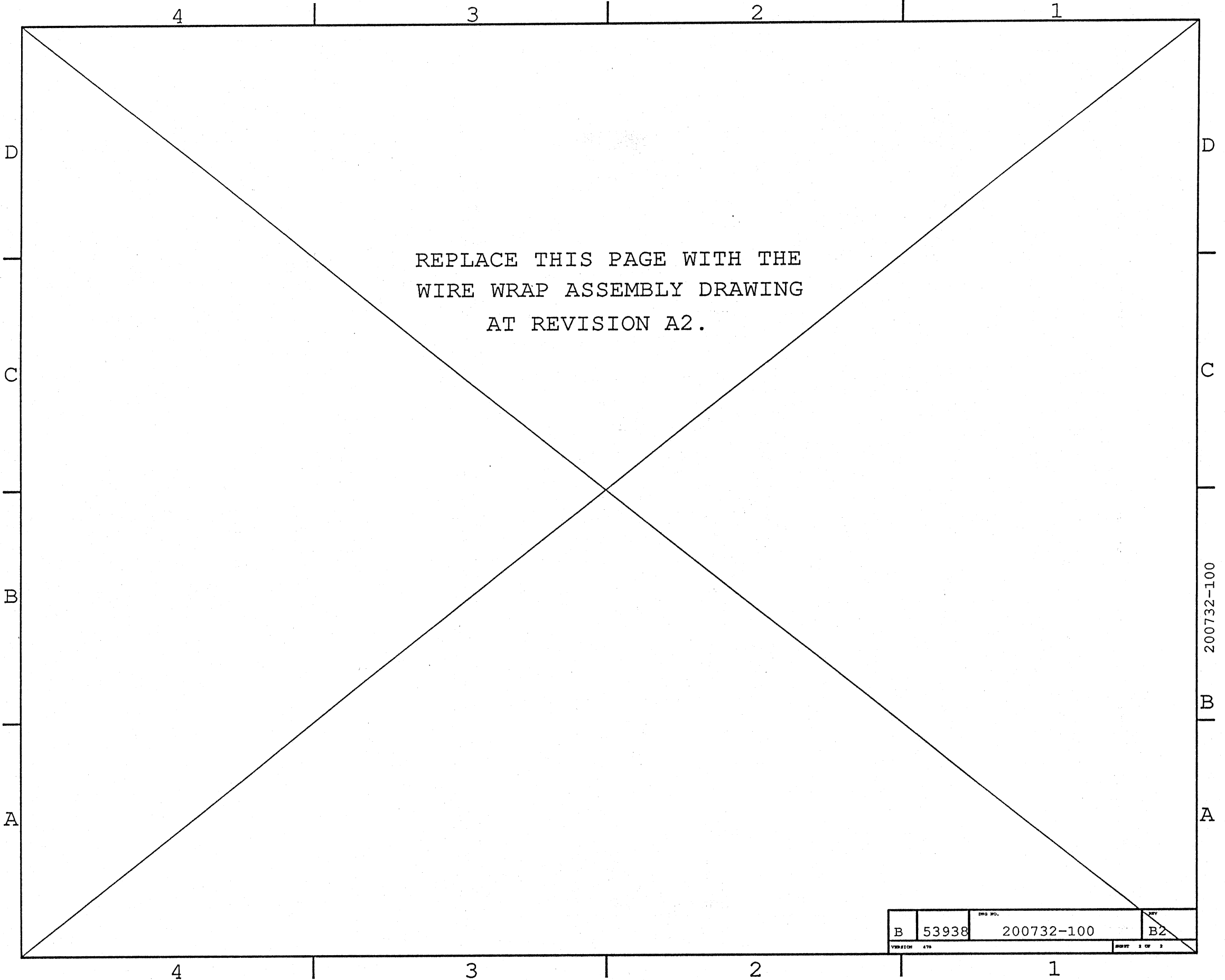
REFERENCE DOCUMENTS
SCHEMATIC 200732-600
PARTS LIST PL200732-100
BLOCK DIAGRAM IN SCHEMATIC

801826-201 (1 REQD)
107-1059 M2
NOTE 3
BLACK

200732-500 (1 REQD)
PCBD11X13
NOTE 5

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DRAWN KTRUSCOTT		EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108	
CHECKED		TITLE	
ELEC ENG EBROWN		CD ASSY, MEM/DMA CONTROLLER	
PROJ ENG HALLEN		MDC.SPC9800.(PC/WW)	
APPROVED			
NEXT ASSY			
MODIFIED DATE 9-DEC-88	ITEM B	COOK IDENT 53938	DWG NO. 200732-100
CREATION DATE 14-AUG-86	VERSION 478		REV B2
FILE NAME 200732100B2.MDF			SHEET 1 OF 2



REPLACE THIS PAGE WITH THE
WIRE WRAP ASSEMBLY DRAWING
AT REVISION A2.

VERSION	478	DWG NO.	200732-100	REV	B2
			SHEET 1 OF 2		

200732-100

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200732-100

REV: A2 = AC

DESC: CARD ASSY, MEM/DMA CONTROLLER, SPC9800 (PC)

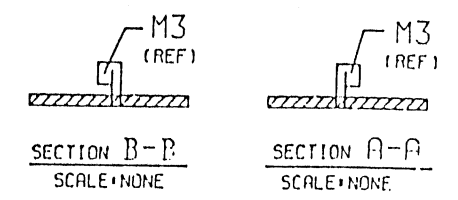
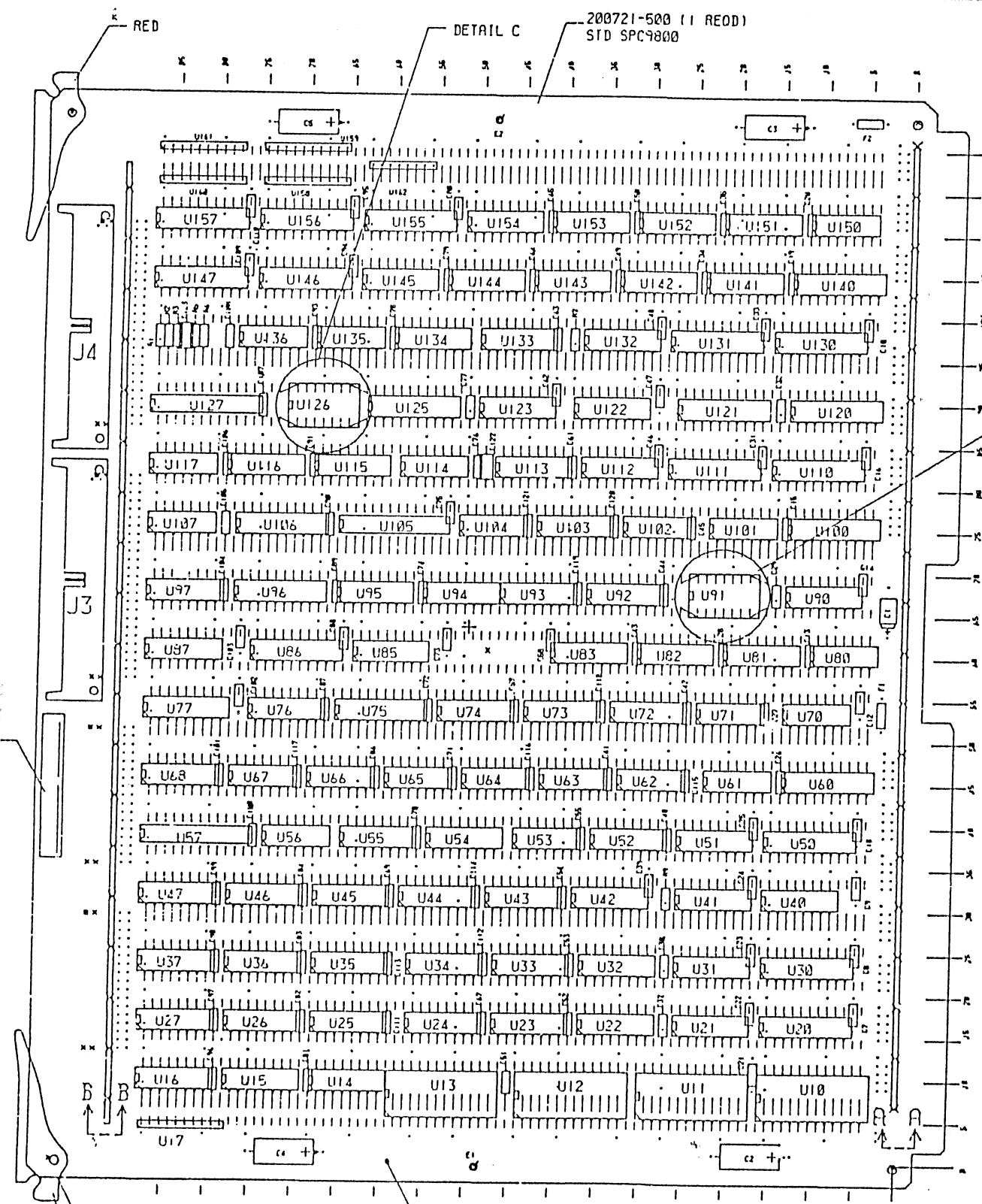
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
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C1	C,, AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C123	C,, RDL 680PF	59821	MEPCO/CENTRALAB	DD-681	804103-681	1
C122	C,, RDL 470PF	02799	ARCO ELECTRONICS (CAPS)	CCD-471 (470PF)	804103-471	1
C2 C3 C4 C5	C,, AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C7 C8 C9 C10 C12 C13 C14	C,, AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	104
C15 C16 C18 C19 C20 C21 C22						
C23 C24 C25 C26 C27 C28 C29						
C31 C32 C33 C34 C35 C37 C38						
C39 C40 C41 C42 C43 C44 C45						
C46 C47 C48 C49 C50 C51 C52						
C53 C54 C55 C57 C58 C61 C62						
C63 C64 C65 C67 C69 C70 C71						
C72 C73 C74 C75 C76 C77 C78						
C79 C80 C81 C82 C83 C84 C86						
C87 C88 C89 C90 C91 C93 C94						
C95 C96 C97 C98 C99 C100						
C101 C102 C103 C104 C105						
C106 C107 C108 C109 C110						
C111 C112 C113 C114 C115						
C116 C117 C118 C119 C120						
E1 E2	HW, TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU, PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A, AXIAL)	802375-050	2
J3 J4	CN, HOUS 50P, RTA	22526	DU PONT E I NEMOURS (CONN)	65268-011 (2X25)	801290-050	2
M2	HW, EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW, STFEN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
M6 AS REQ'D	HW, STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	2836
M7 AS REQ'D	HW, WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
R1 R3	R,, AXL 180 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF181J	803201-181	2
R2	R,, AXL 470 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF471J	803201-471	1
R5 R6	R,, AXL 270 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF271J	803201-271	2
R7 R9	R,, AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	2
U103 U116 U123 U134	IC, TTL 74F153	07263	FAIRCHILD IC'S & SEMICOND	74F153PC/DC	807953-035	4
U107 U136	IC, TTL 74F74	07263	FAIRCHILD IC'S & SEMICOND	74F74PC/DC	807974-035	2
U10 U11 U12 U13	IC, TTL 74F181	07263	FAIRCHILD IC'S & SEMICOND	74F181PC/DC	807981-035	4
U105	IC, PAL, 20R4A, QUAD, 20I	53938	EVANS & SUTHERLAND.	807852-016-A00	807852-016-A00	1
U102	IC, TTL 74F11	07263	FAIRCHILD IC'S & SEMICOND	74F11PC/DC	807911-035	1
U113	IC, TTL 74F194	07263	FAIRCHILD IC'S & SEMICOND	74F194PC/DC	807994-035	1
U127	IC, PAL, 20L8A, OCTL, 20I	53938	EVANS & SUTHERLAND.	807859-016-A02	807859-016-A02	1
U126	IC, OSC XO12.0M	13075	SAVOY ELECTRONICS INC.	S1100-12.0MHZHZ	806011-020	1
U125	IC, PAL, 16L8A, OCTL, 16I	53938	EVANS & SUTHERLAND.	807838-014-A17	807838-014-A17	1
U135	IC, TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	1
U146 U147 U155 U156 U157	IC, TTL 74F373	07263	FAIRCHILD IC'S & SEMICOND	74F373PC/DC	807973-035	5
U14	IC, TTL 74F182	07263	FAIRCHILD IC'S & SEMICOND	74F182PC/DC	807182-035	1
U15 U16 U22 U23 U24 U25 U26	IC, TTL 74S194	01295	TEXAS INSTR, SEMICON DIV.	SN74S194N	807694-055	28
U27 U54 U55 U73 U74 U81 U82						
U83 U112 U122 U132 U133 U141						
U142 U143 U144 U145 U151						

MAINTENANCE PARTS LIST

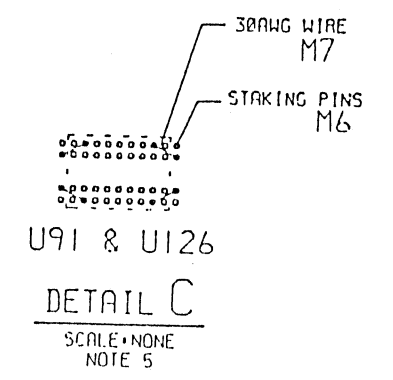
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ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	E/S PART NUMBER ASSY
U152 U153 U154				
U158 U159 U160 U161	R,,SIP 470(R9)	1U696	STACKPOLE COMPONENTS CO	10-9-5-471G (SIP) 807505-471 4
U162	R,,SIP 4.7K(R7)	4J937	BOURNS NETWORKS	4608X-101-472 (SIP) 807519-472 1
U17	R,,SIP 1K(R9)	1U696	STACKPOLE COMPONENTS CO	10-9-5-102G (SIP) 807505-102 1
U20 U30 U86 U96 U100 U110	IC,TTL 74S244	81349	MILITARY SPECIFICATIONS	54S244N 807244-055 12
U111 U120 U121 U130 U131				
U21 U31 U32 U33 U34 U35 U36	IC,TTL 74S85	01295	TEXAS INSTR, SEMICON DIV.	SN74S85N 807685-055 9
U37 U72				
U40 U90	IC,TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N 807638-055 2
U41	IC,TTL 74F157	07263	FAIRCHILD IC'S & SEMICON	74F157APC/DC 807957-035 1
U42 U43 U44 U45	IC,TTL 74F161	07263	FAIRCHILD IC'S & SEMICON	74F161APC 807061-035 4
U46 U47	IC,TTL 74LS166	04713	MOTOROLA INC. SEMI PRODUC	SN74LS166N/J 807665-016 2
U50 U60 U106	IC,TTL 74S240	01295	TEXAS INSTR, SEMICON DIV.	SN74S240N/J 807792-020 3
U51 U52	IC, RAM 74F219	07263	FAIRCHILD IC'S & SEMICON	74F219PC/DC 807219-035 2
U53 U67 U80	IC,TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N 807431-055 3
U56	IC,TTL 74LS02	01295	TEXAS INSTR, SEMICON DIV.	SN74LS02N 807402-618 1
U57	IC,PAL,20R8A,OCTL,20I	53938	EVANS & SUTHERLAND.	807858-016-A10 807858-016-A10 1
U61 U114	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N 807402-055 2
U62	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N 807400-055 1
U63 U101	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N 807400-090 2
U64	IC,TTL #74LS04	01295	TEXAS INSTR, SEMICON DIV.	SN74LS04N/J 807416-016 1
U65	IC,TTL 74LS08	01295	TEXAS INSTR, SEMICON DIV.	SN74LS08N/J 807408-618 1
U66	IC,TTL #74LS32	01295	TEXAS INSTR, SEMICON DIV.	SN74LS32N/J 807431-016 1
U68 U76	IC,TTL 74LS194A	18324	SIGNETICS CORP. MILITARY	N74LS194AN 807694-016 2
U70 U104 U117	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N 807416-055 3
U71 U150	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J 807408-055 2
U75	IC,PAL PAL16H8A	53938	EVANS & SUTHERLAND.	807863-725-A00 807863-725-A00 1
U77	SW,DIP 9 SWITCH	95146	ALCO ELECTRONIC PRODUCTS	ADF09 801549-009 1
U85 U93 U94 U95	IC,TTL 74S157	01295	TEXAS INSTR, SEMICON DIV.	SN74S157N 807657-055 4
U87 U97	R,,DIP 22(R8)	73138	BECKMAN INDUSTRIES CORP.	898-3-R22 807750-220 2
U91	IC,OSC XO18.0M	13075	SAVOY ELECTRONICS INC.	S1100-18.0MHZ 806011-021 1
U92 U115	IC,TTL 74S112	18324	SIGNETICS CORP. MILITARY	N74S112N 807612-055 2

59 ITEMS LISTED

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	MINOR CHANGES PER ECO.	SB 03-12-85	
	A1	MINOR CHANGES PER ECO.	SB 04-30-85	
	A2	CAP CHANGE FOR DMA PAL.	SAD 05-07-86	



500700-001 (2 RECD)
11.40 STFR M3
NOTE 4



NOTES:

- MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E&S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
- MAXIMUM COMPONENT HEIGHT TO BE .312 INCHES FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
- INSTALL CARD EJECTORS (M2) AFTER WIRE WRAPPING.
- INSTALL CARD STIFFENERS (M3) BEFORE WAVE SOLDERING.
- ON U91 ADD JUMPER WIRES:
 - FROM: 69.16 TO 70.18
 - FROM: 70.24 TO 69.26
 - FROM: 66.16 TO 65.18
 - FROM: 65.24 TO 66.26
- ON U126 ADD JUMPER WIRES:
 - FROM: 91.63 TO 92.65
 - FROM: 92.71 TO 91.73
 - FROM: 88.63 TO 87.65
 - FROM: 87.71 TO 88.73

REFERENCE DOCUMENTS
SCHEMATIC -- 200732-600
PARTS LIST -- PL200732-100

801826-201 (1 RECD)
127-1259 M2
NOTE 3
BLACK

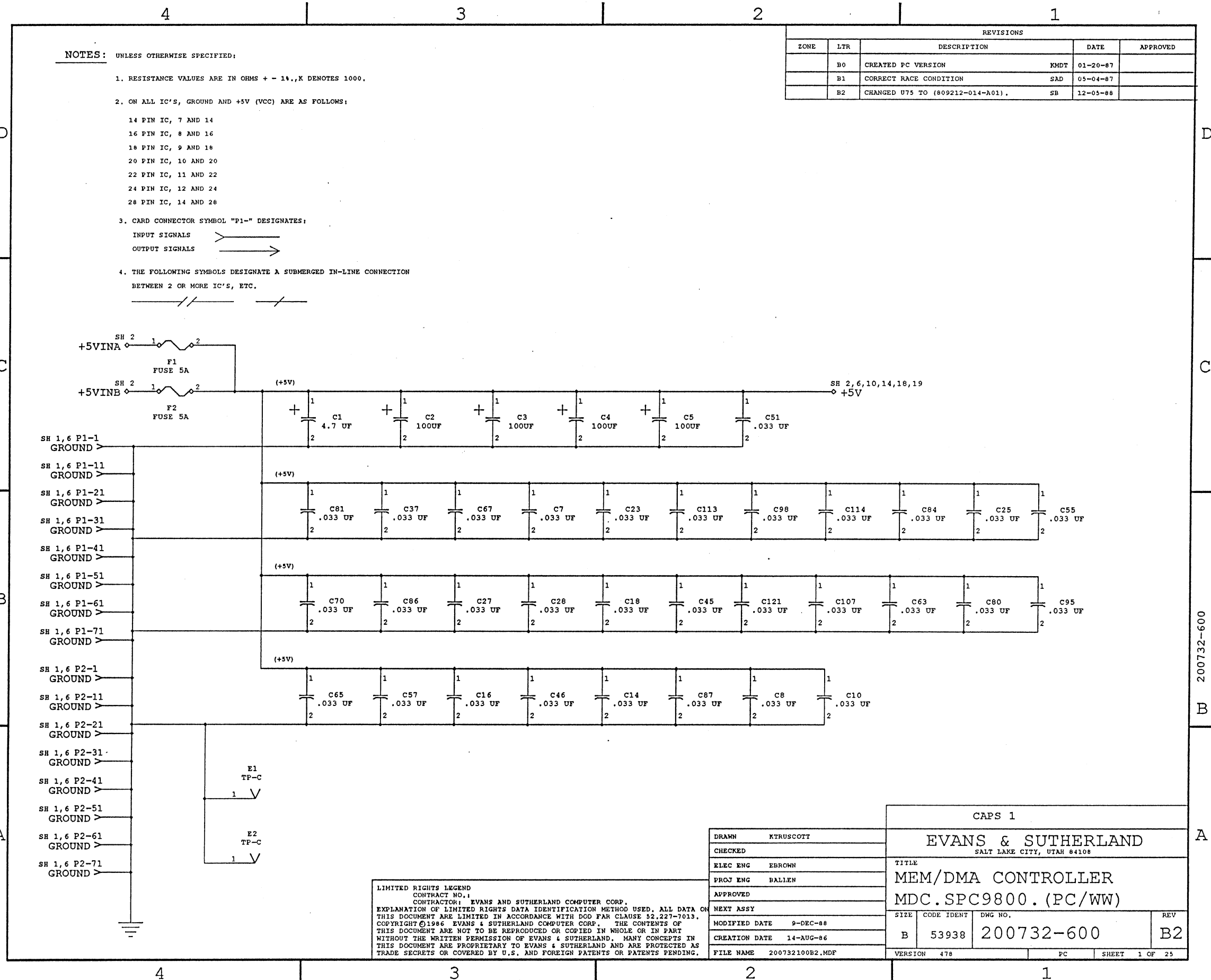
802068-209 (15 RECD)
30G-WHT M7
802177-001 (15 RECD)
STAKEPIN M6

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DRAWN	S. BARBER	EVANS & SUTHERLAND	
CHECKED	J. BENTLEY	ASSY. CD ASSY, MEMORY/DMA CON- TROLLER, MDC, SPC9800, W/W	
ELEC ENG	J. BENTLEY	SIZE	CODE IDENT
PROJ ENG	S. HADFIELD	C	53938
APPROVED		DOC NO.	200732-100
NEXT ASSY		REV	A2
MODIFIED DATE	12-MAY-86	PAGE 1 OF 1	
CREATION DATE	21-FEB-84		
FILE NAME	20073210002.MDF		

200732-100





- NOTES:** UNLESS OTHERWISE SPECIFIED:
- RESISTANCE VALUES ARE IN OHMS + - 1K DENOTES 1000.
 - ON ALL IC'S, GROUND AND +5V (VCC) ARE AS FOLLOWS:
 - 14 PIN IC, 7 AND 14
 - 16 PIN IC, 8 AND 16
 - 18 PIN IC, 9 AND 18
 - 20 PIN IC, 10 AND 20
 - 22 PIN IC, 11 AND 22
 - 24 PIN IC, 12 AND 24
 - 28 PIN IC, 14 AND 28
 - CARD CONNECTOR SYMBOL "P1-" DESIGNATES:
 - INPUT SIGNALS \rightarrow
 - OUTPUT SIGNALS \leftarrow
 - THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.
 - $\text{---} \text{---} \text{---}$
 - $\text{---} \text{---} \text{---}$

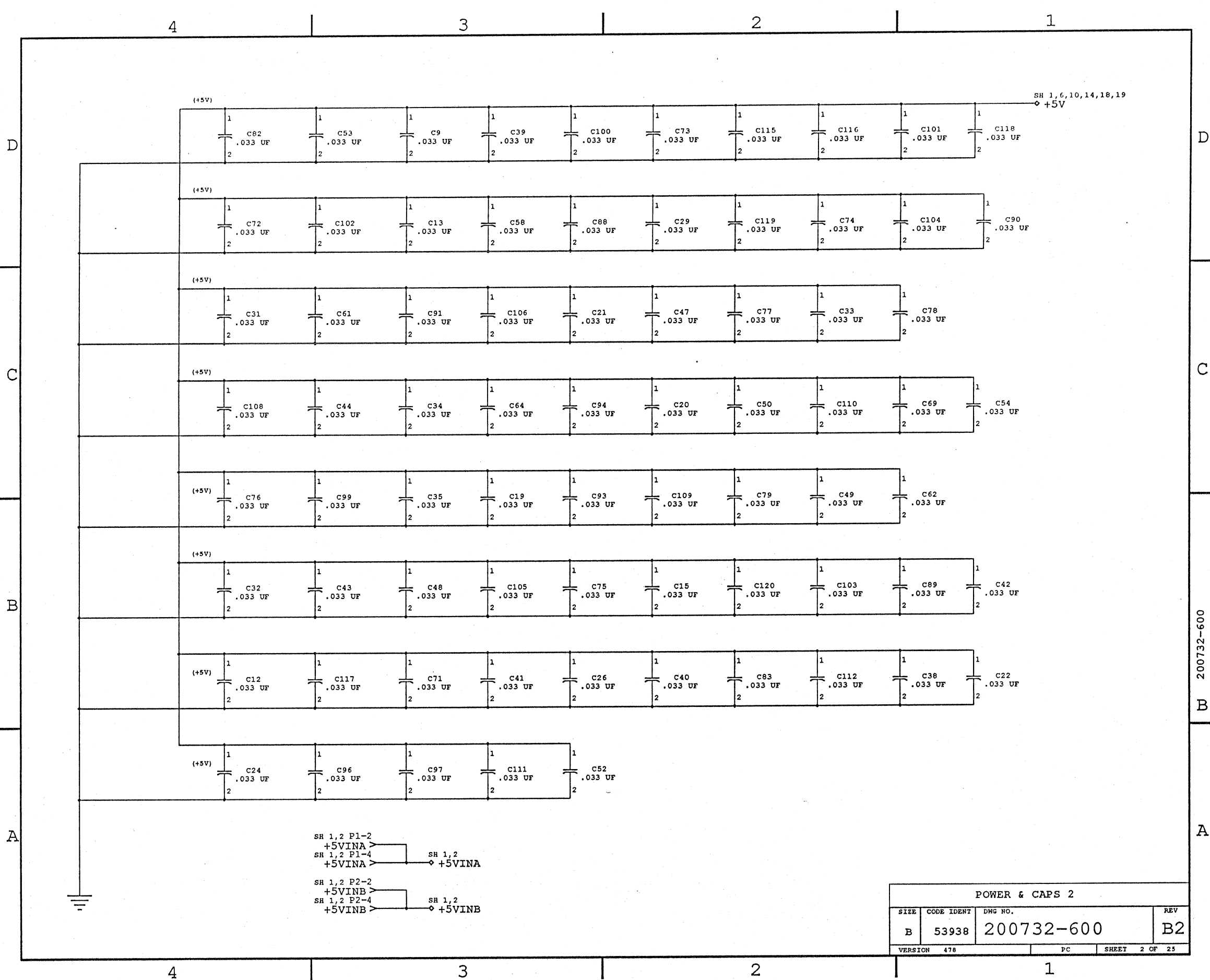
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATED PC VERSION	KMDT 01-26-87	
	B1	CORRECT RACE CONDITION	SAD 05-04-87	
	B2	CHANGED U75 TO (809212-014-A01).	SB 12-05-88	

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DRAWN	KTRUSCOTT
CHECKED	
ELEC ENG	EBROWN
PROJ ENG	BALLEN
APPROVED	
NEXT ASSY	
MODIFIED DATE	9-DEC-88
CREATION DATE	14-AUG-86
FILE NAME	200732100B2.MDF

CAPS 1			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE MEM/DMA CONTROLLER MDC.SPC9800.(PC/WW)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 1 OF 25

200732-600

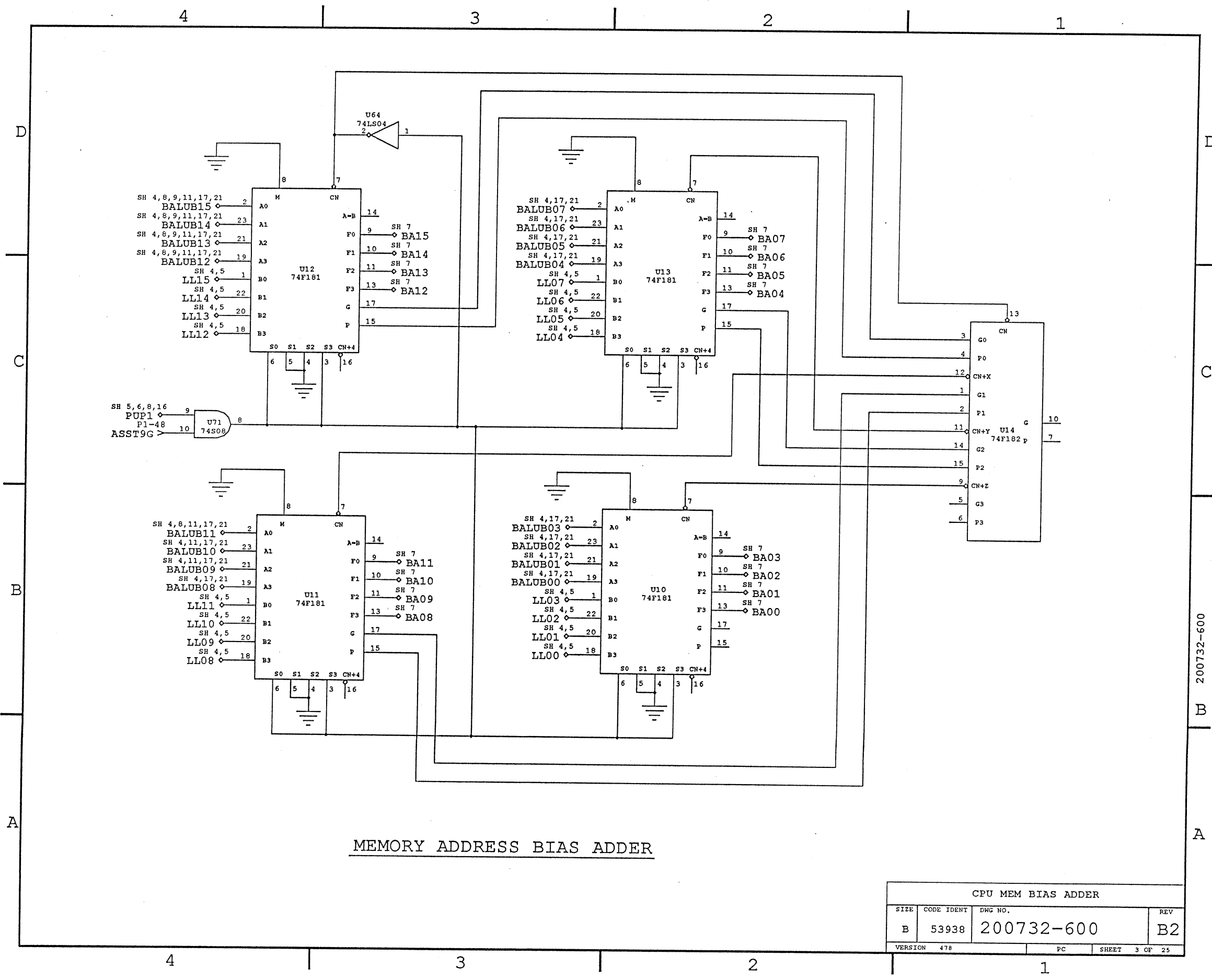


SH 1,2 P1-2
 +5VINA >
 SH 1,2 P1-4 > SH 1,2
 +5VINA > +5VINA

 SH 1,2 P2-2
 +5VINB >
 SH 1,2 P2-4 > SH 1,2
 +5VINB > +5VINB

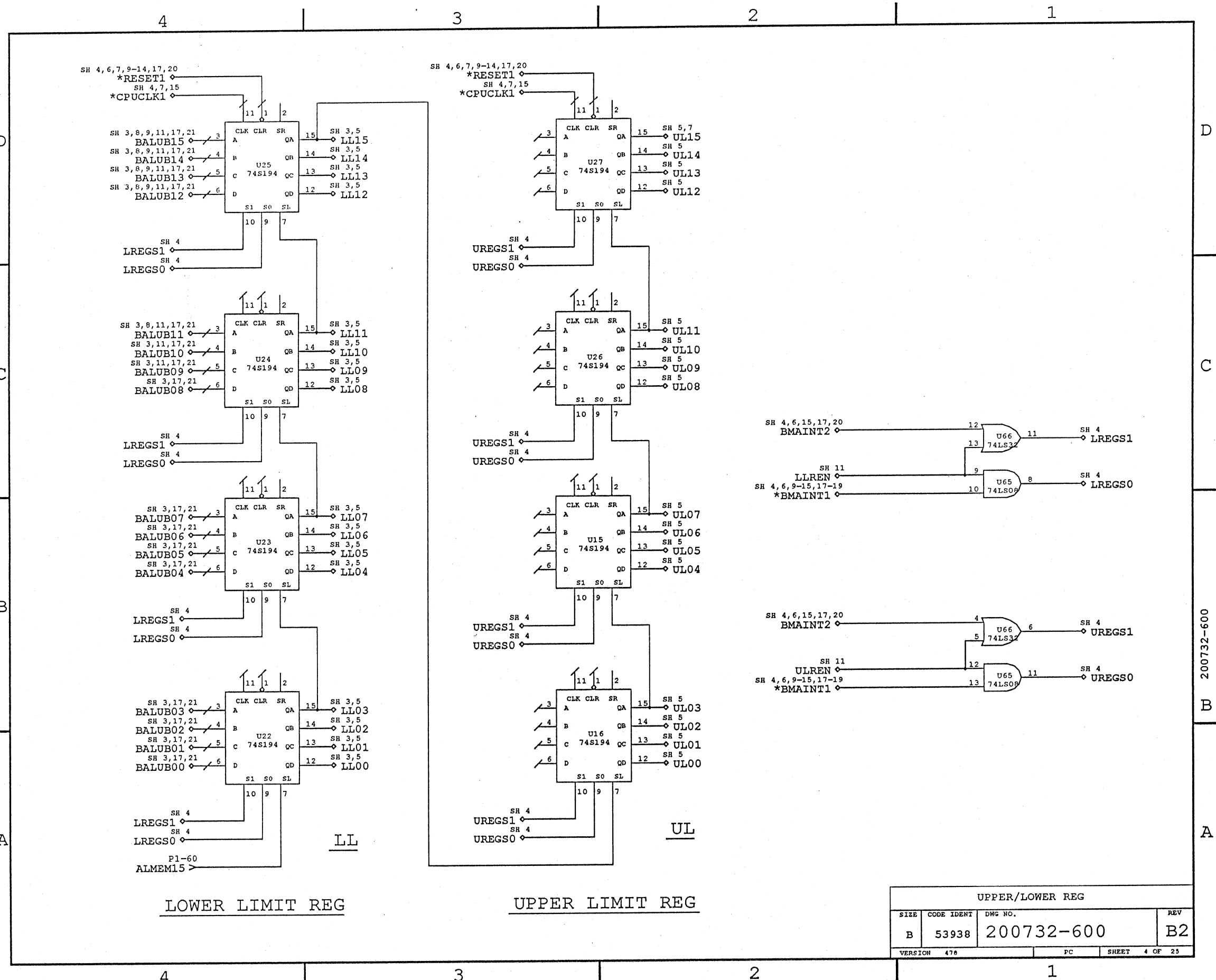
POWER & CAPS 2			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 2 OF 25

200732-600 B B A



CPU MEM BIAS ADDER			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 3 OF 25

200732-600

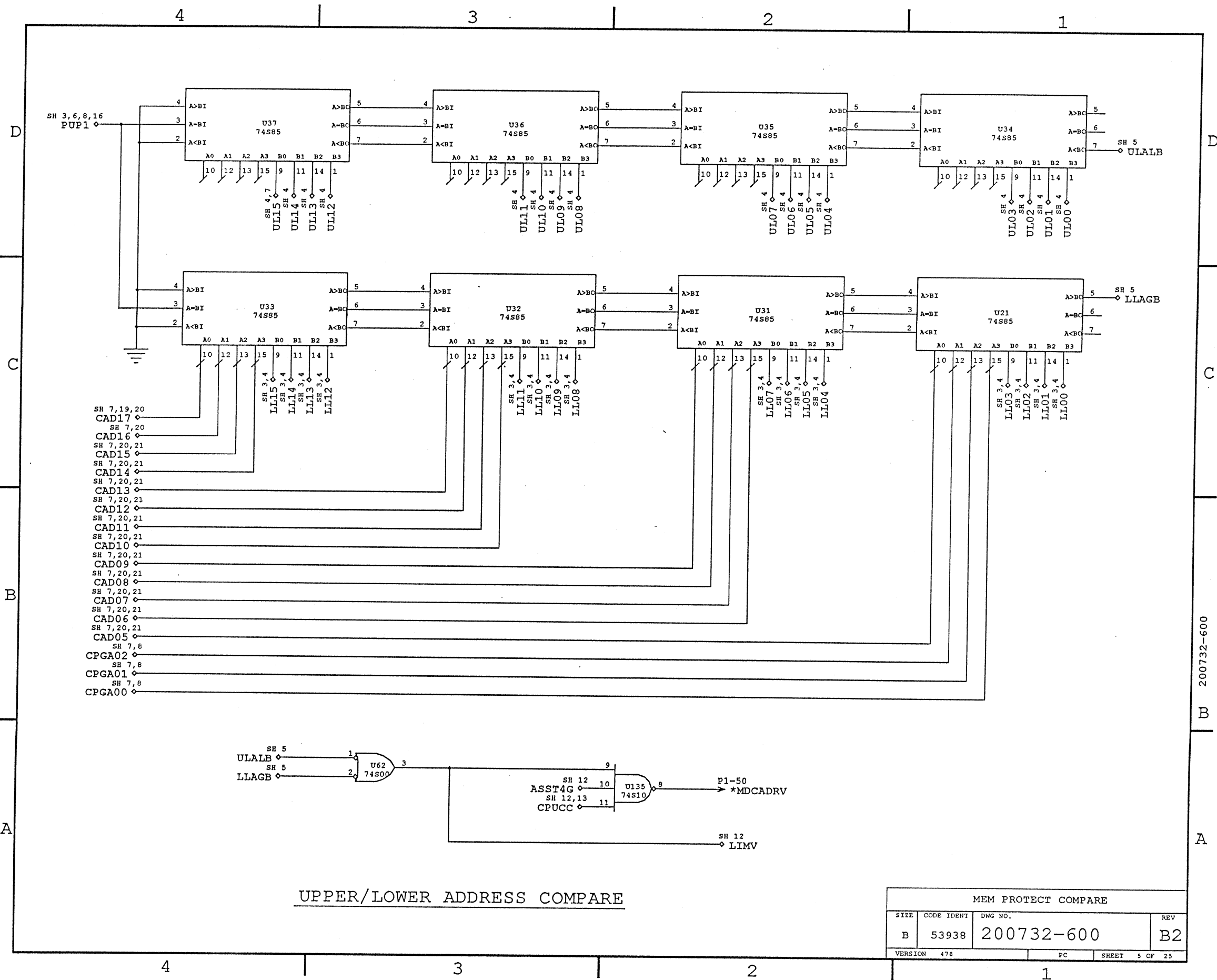


LOWER LIMIT REG

UPPER LIMIT REG

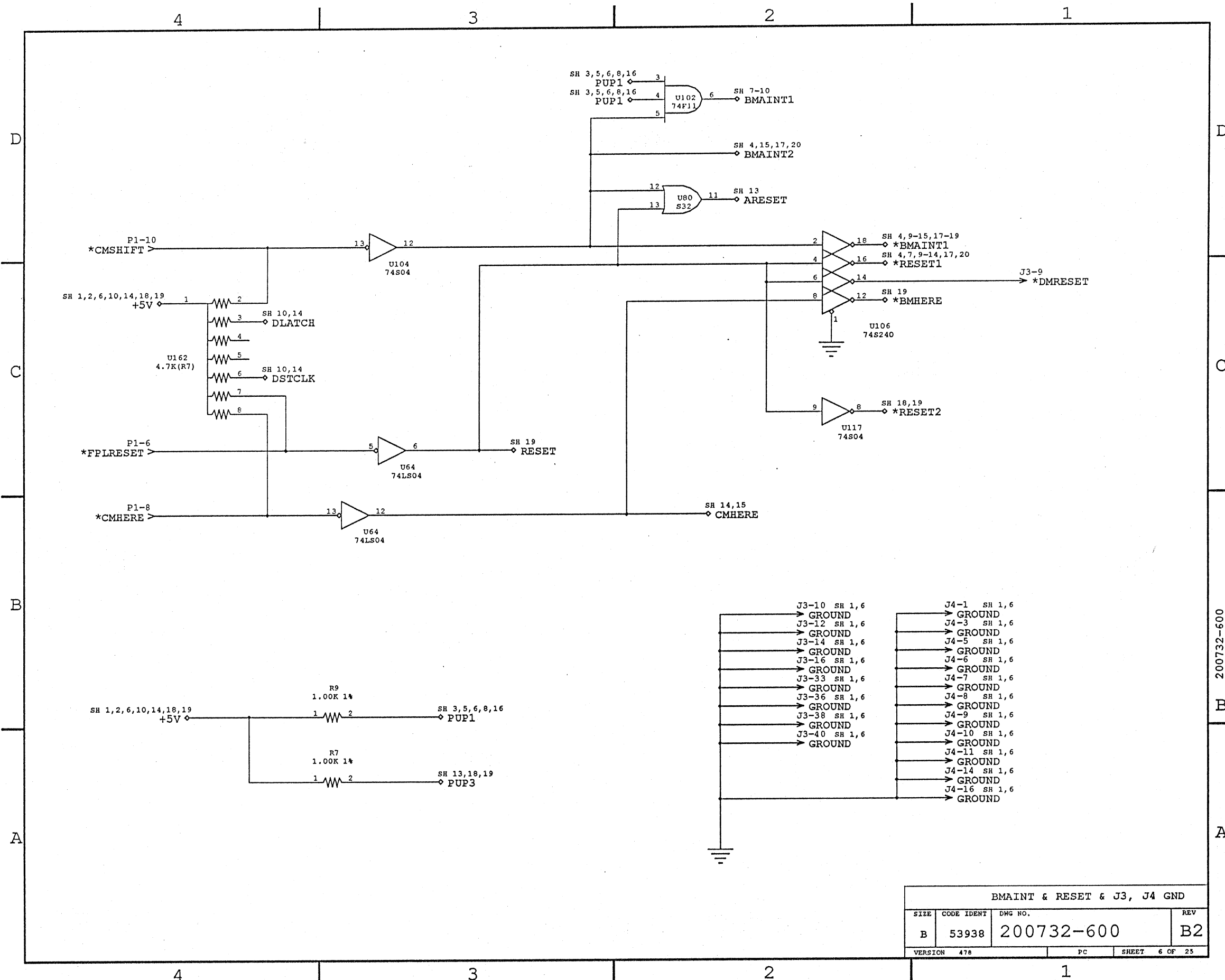
UPPER/LOWER REG			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 4 OF 25

200732-600

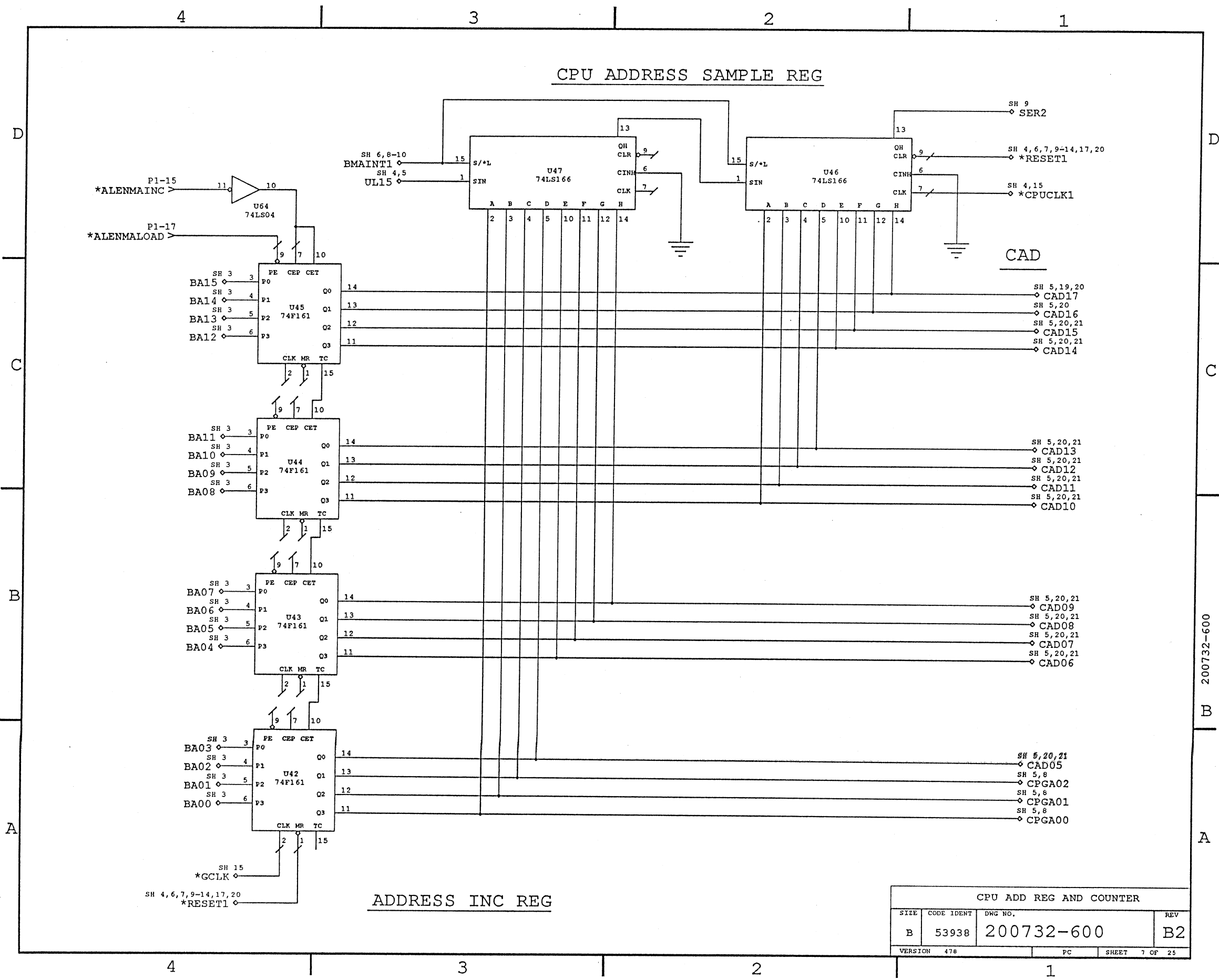


UPPER/LOWER ADDRESS COMPARE

MEM PROTECT COMPARE			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 5 OF 25



BMAINT & RESET & J3, J4 GND			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 6 OF 25

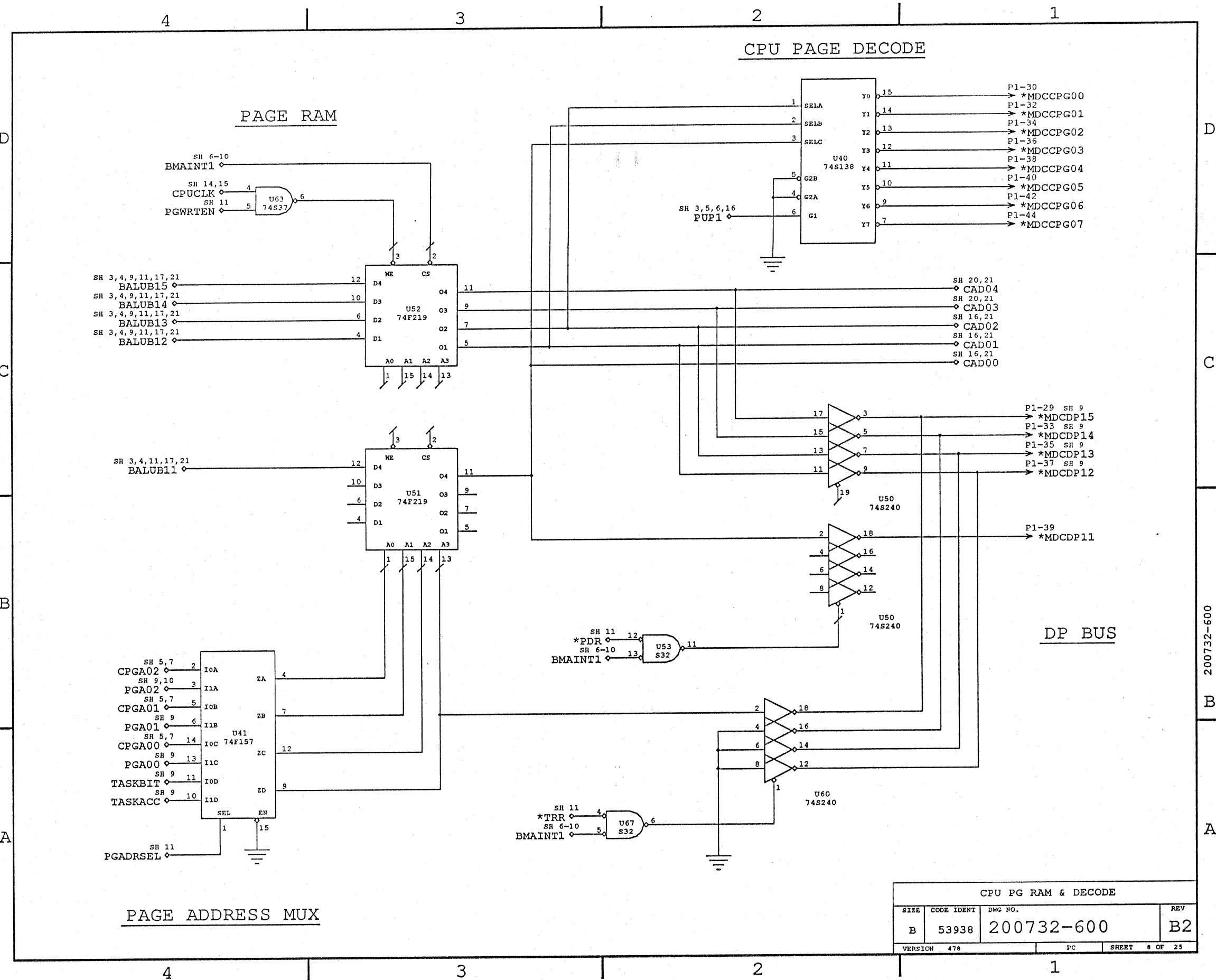


CPU ADDRESS SAMPLE REG

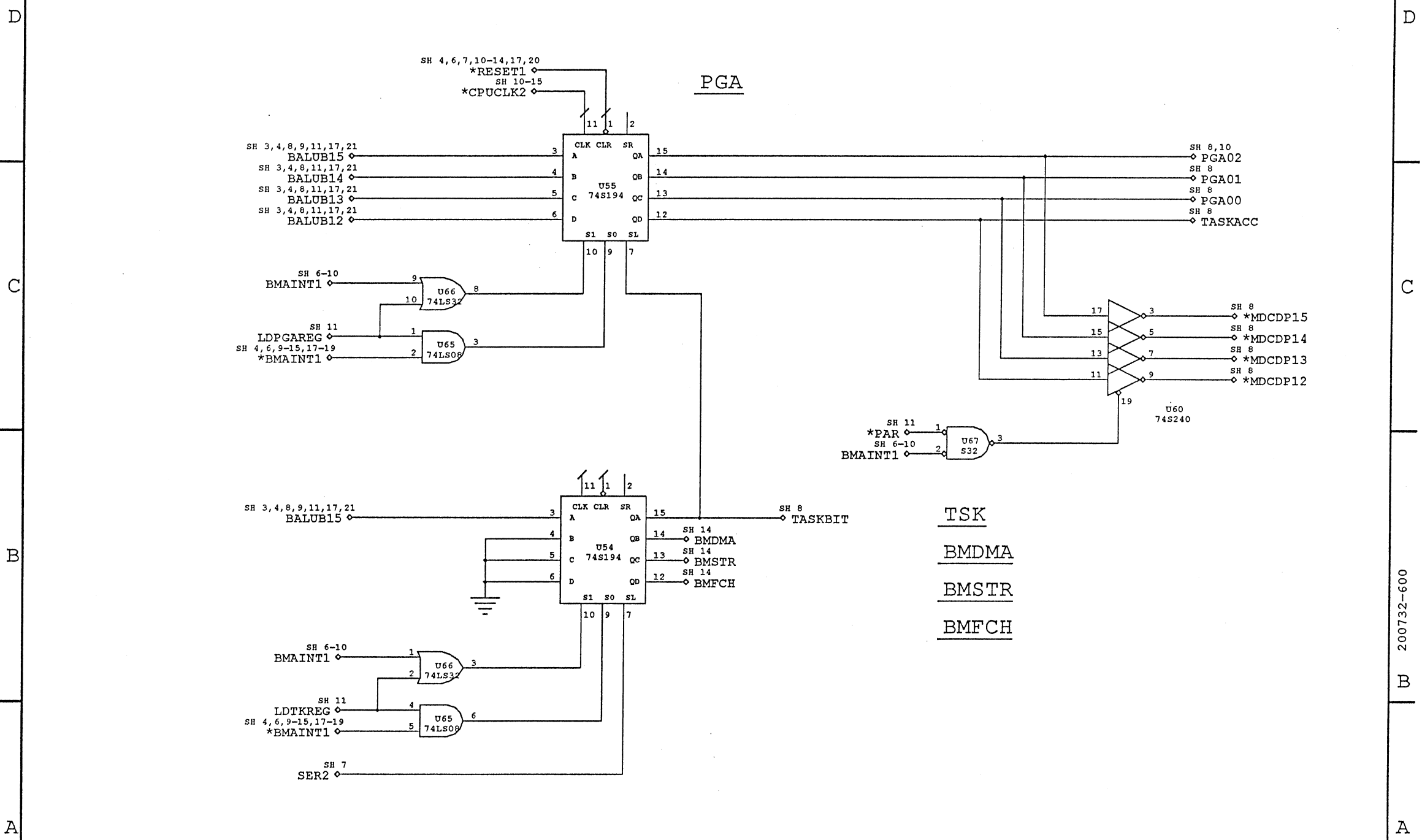
ADDRESS INC REG

CPU ADD REG AND COUNTER			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 7 OF 25

200732-600



CPU PG RAM & DECODE			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	476	PC	SHEET 8 OF 25



PAGE ADDRESS REG

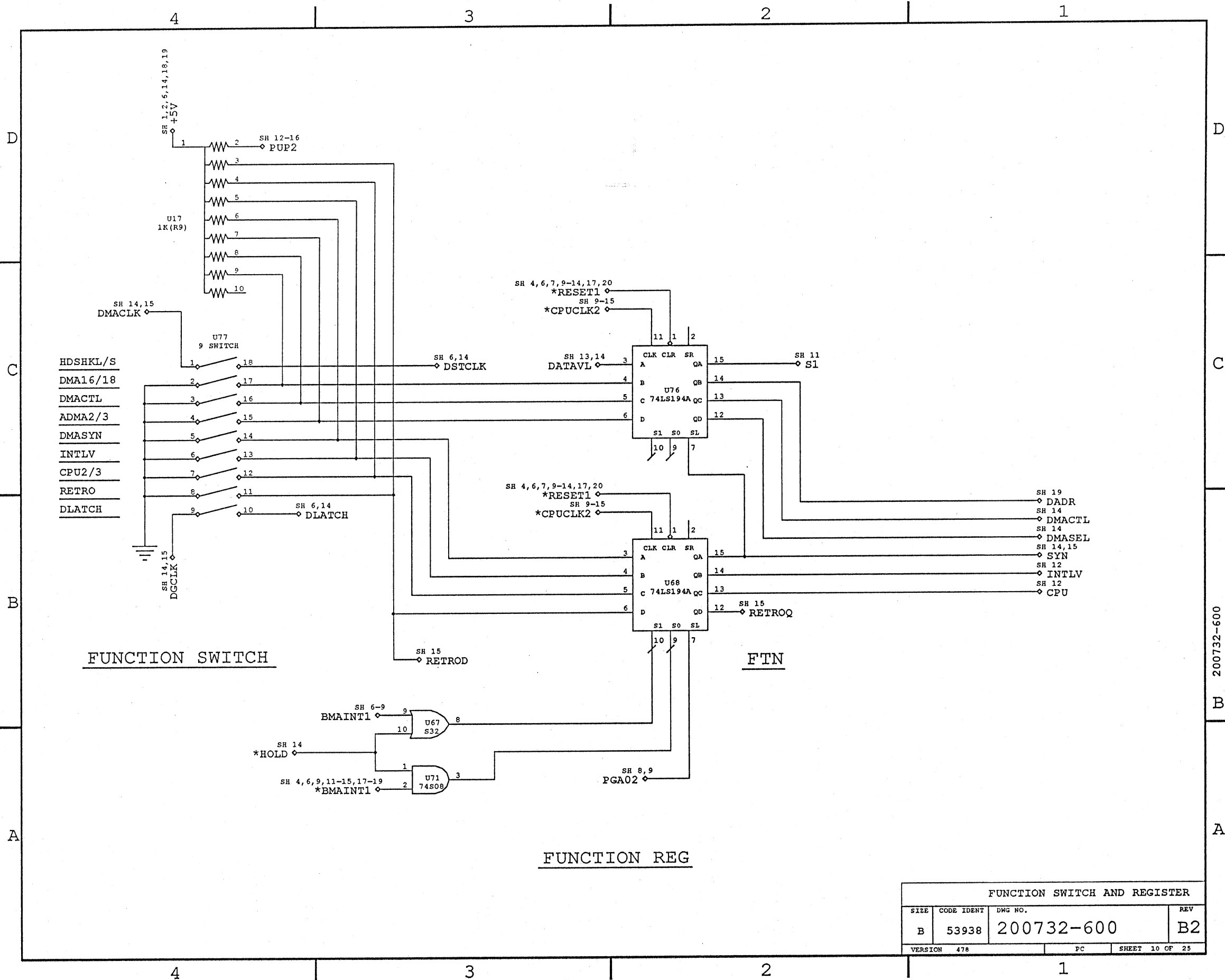
PGA

TASK REG

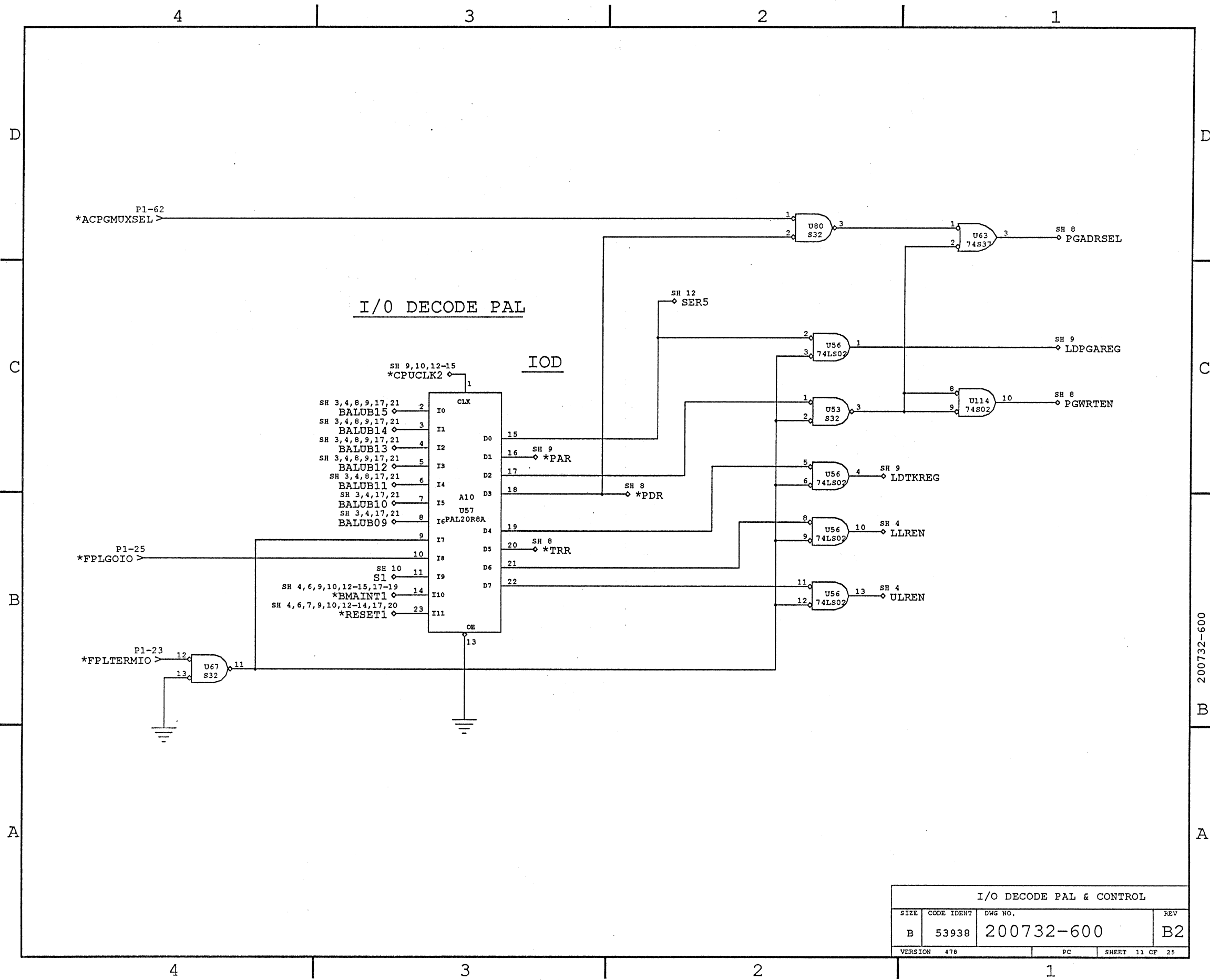
- TSK
- BMDMA
- BMSTR
- BMFCH

TASK REG & PG ADD REG			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 9 OF 25

200732-600



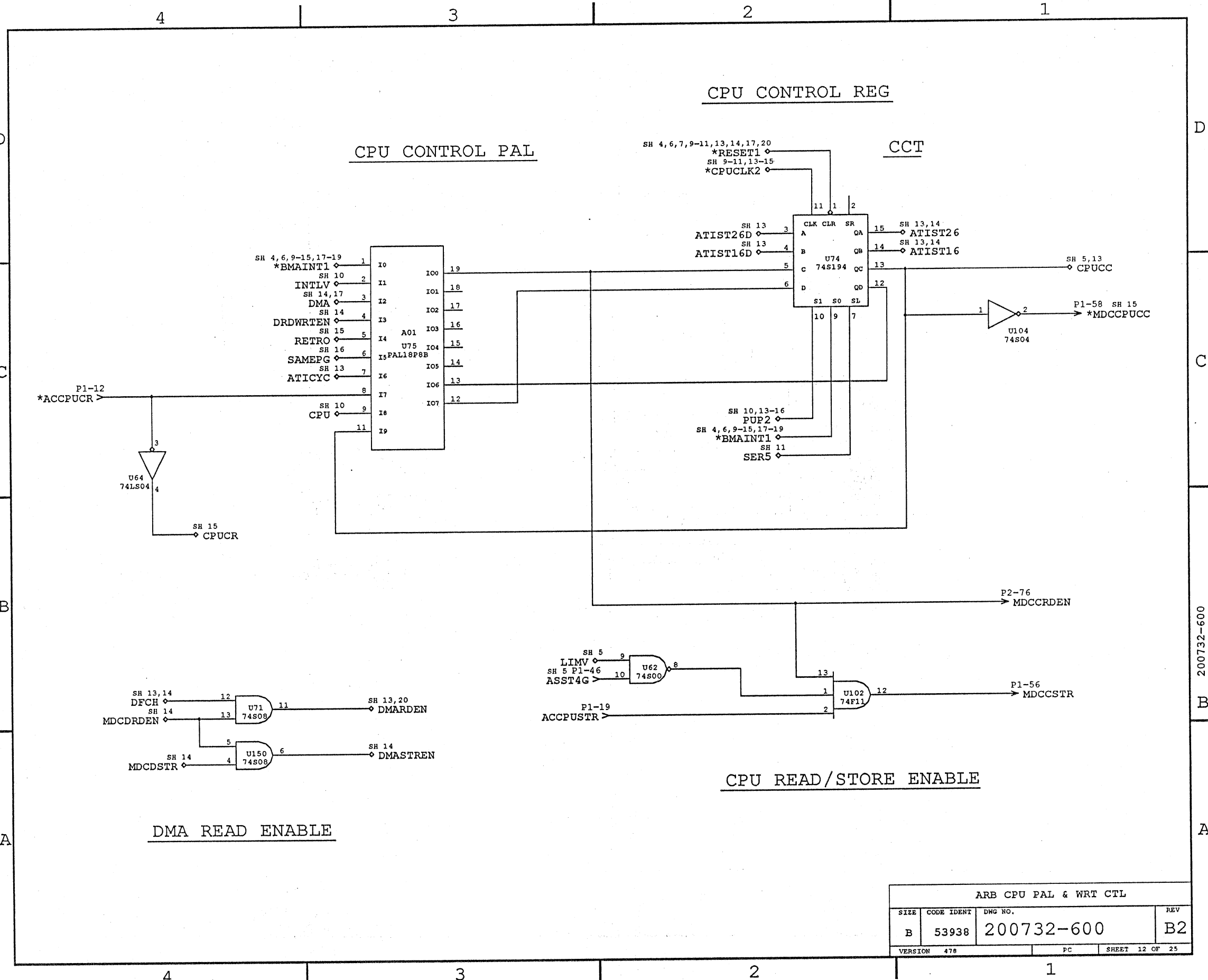
FUNCTION SWITCH AND REGISTER			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 10 OF 25



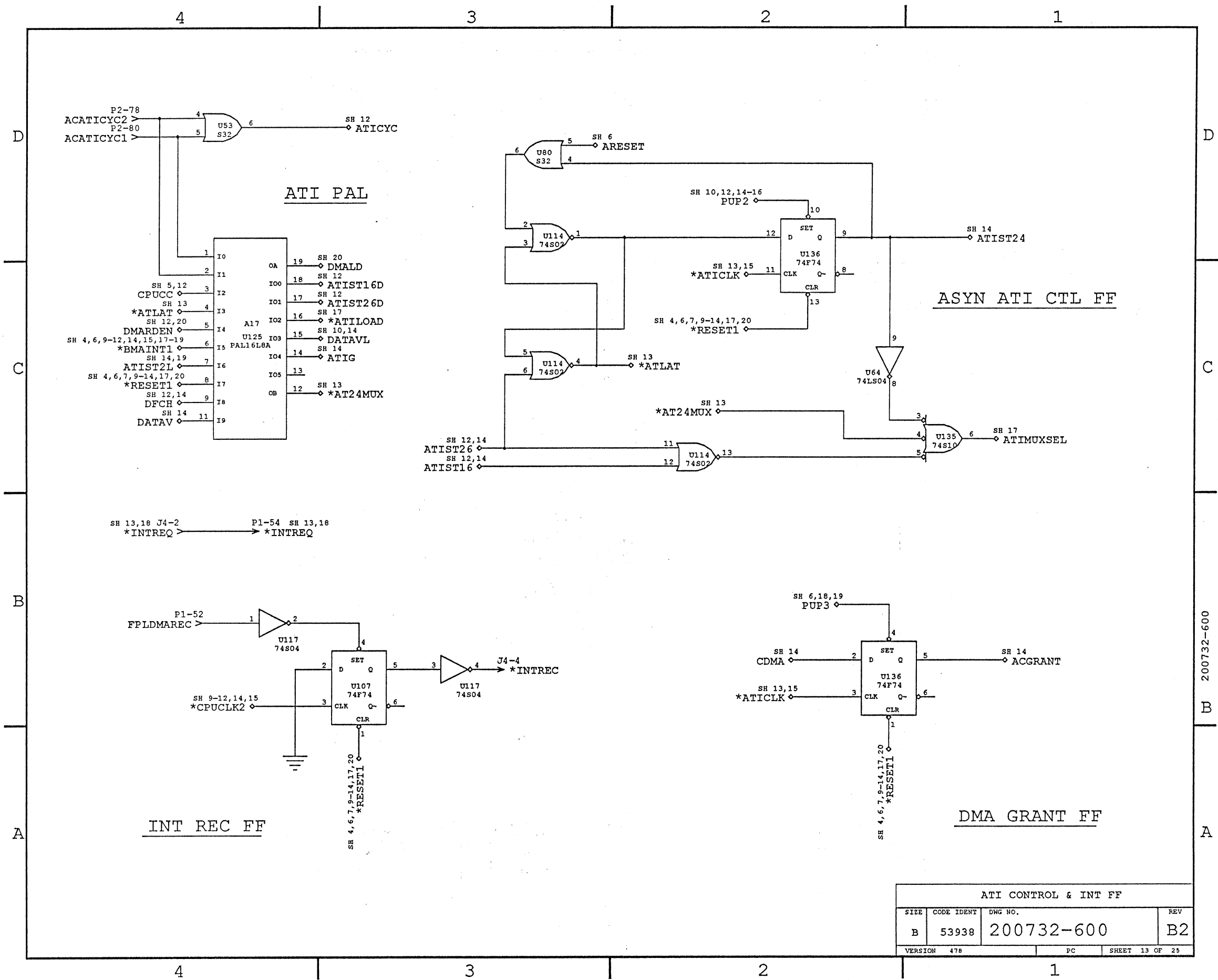
I/O DECODE PAL

IOD

I/O DECODE PAL & CONTROL			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 11 OF 25

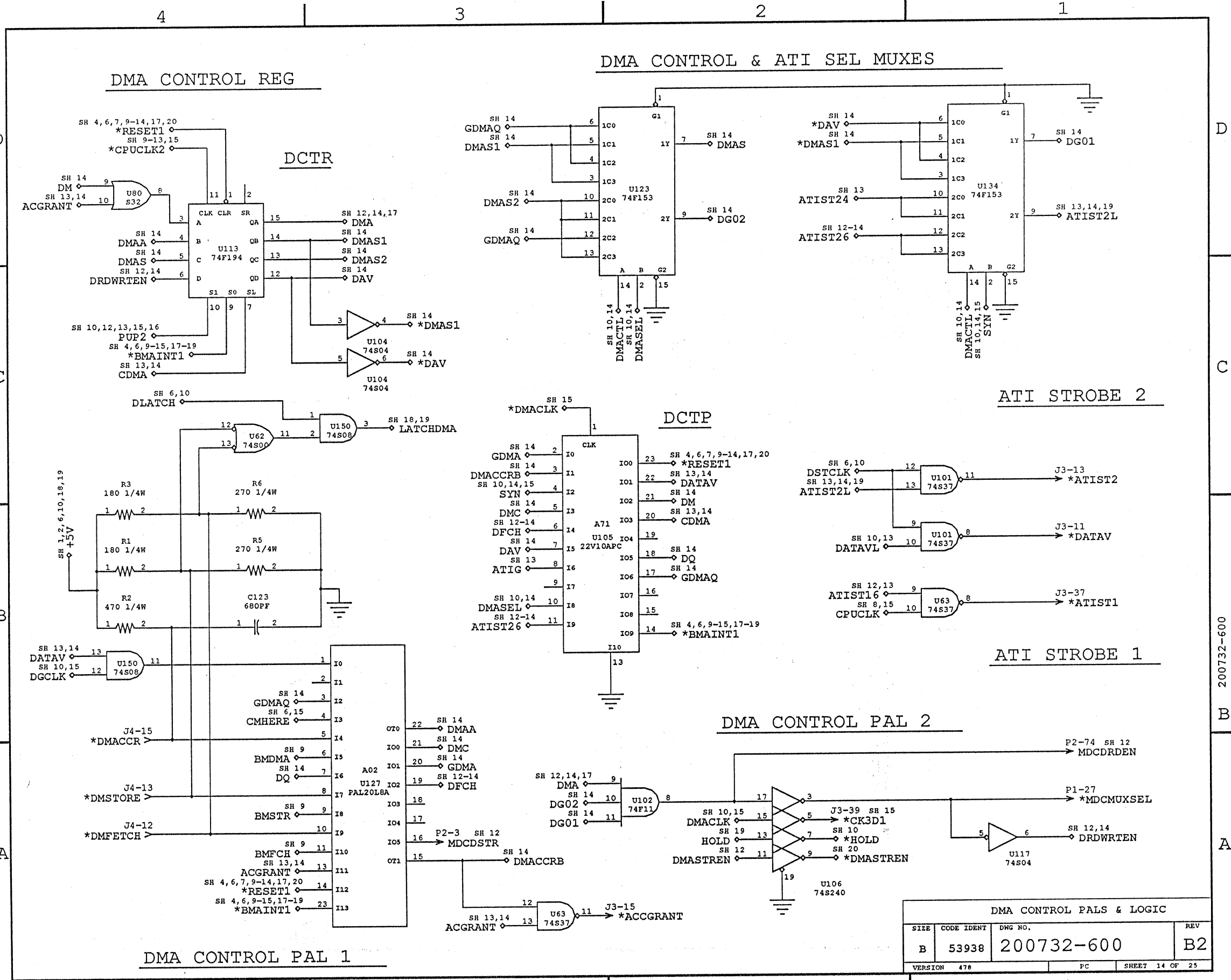


ARB CPU PAL & WRT CTL			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 12 OF 25



ATI CONTROL & INT FF			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION 47B		PC	SHEET 13 OF 25

200732-600



D

C

B

A

200732-600

4

3

2

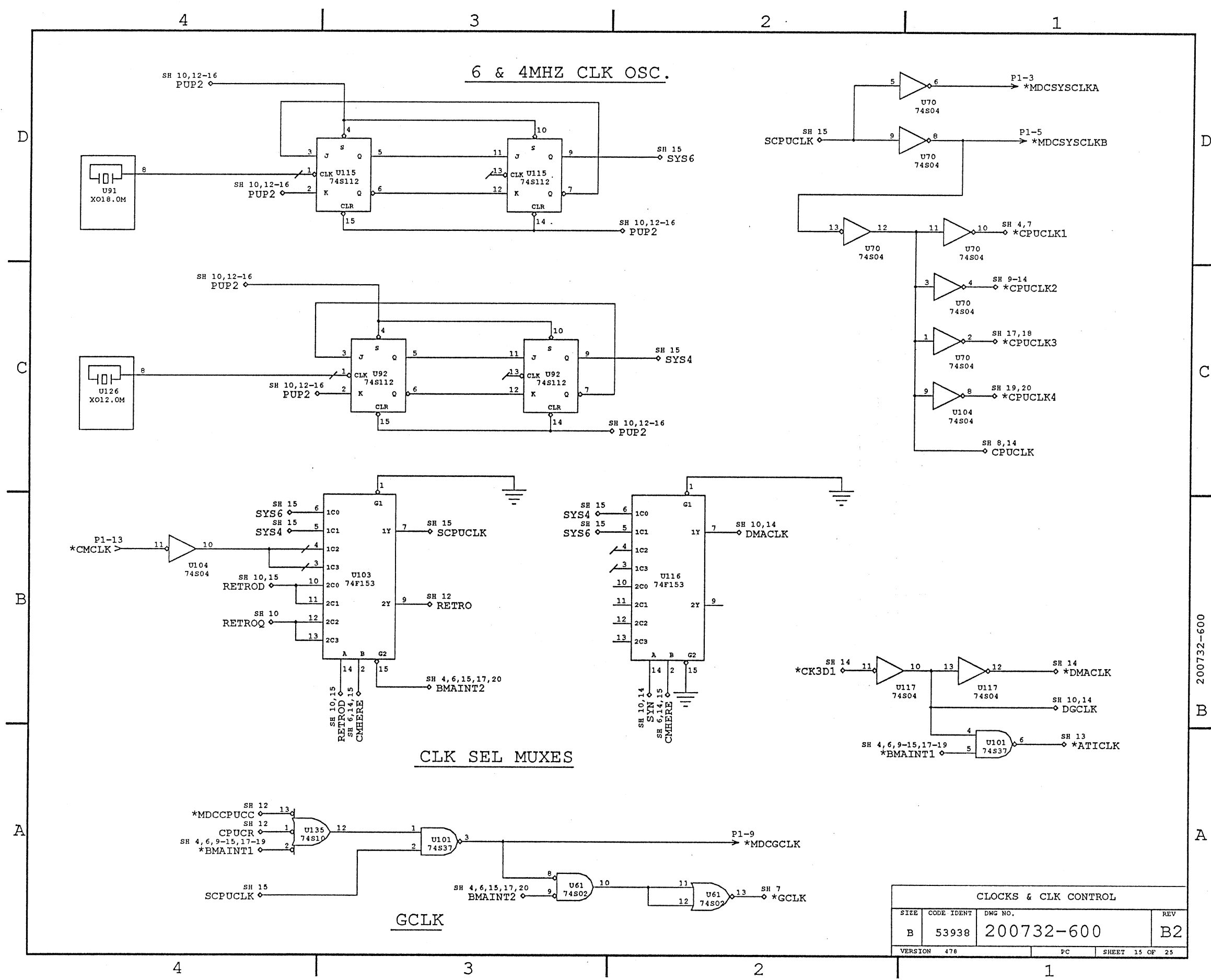
1

4

3

2

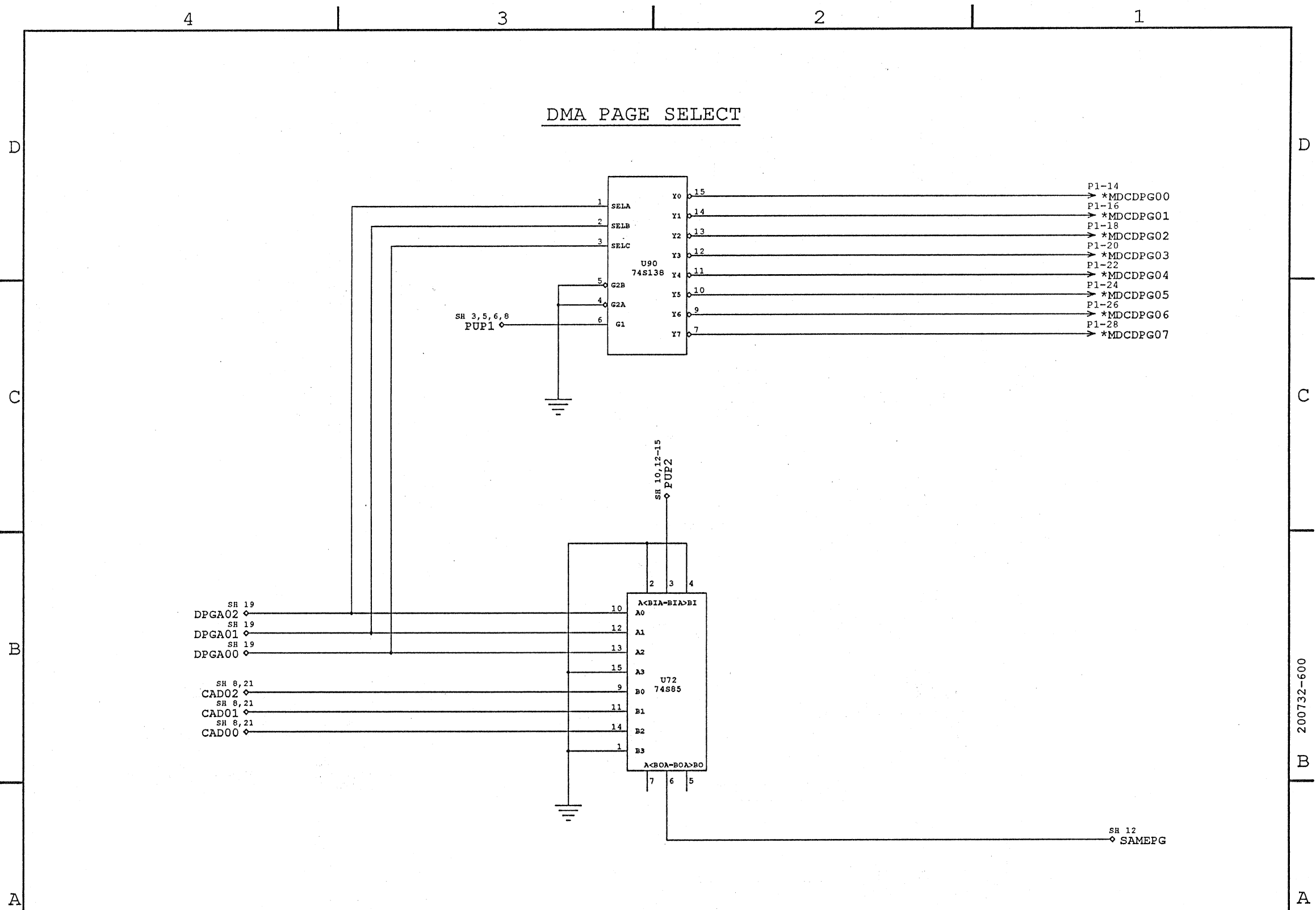
1



200732-600

CLOCKS & CLK CONTROL			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	476	PC	SHEET 15 OF 25

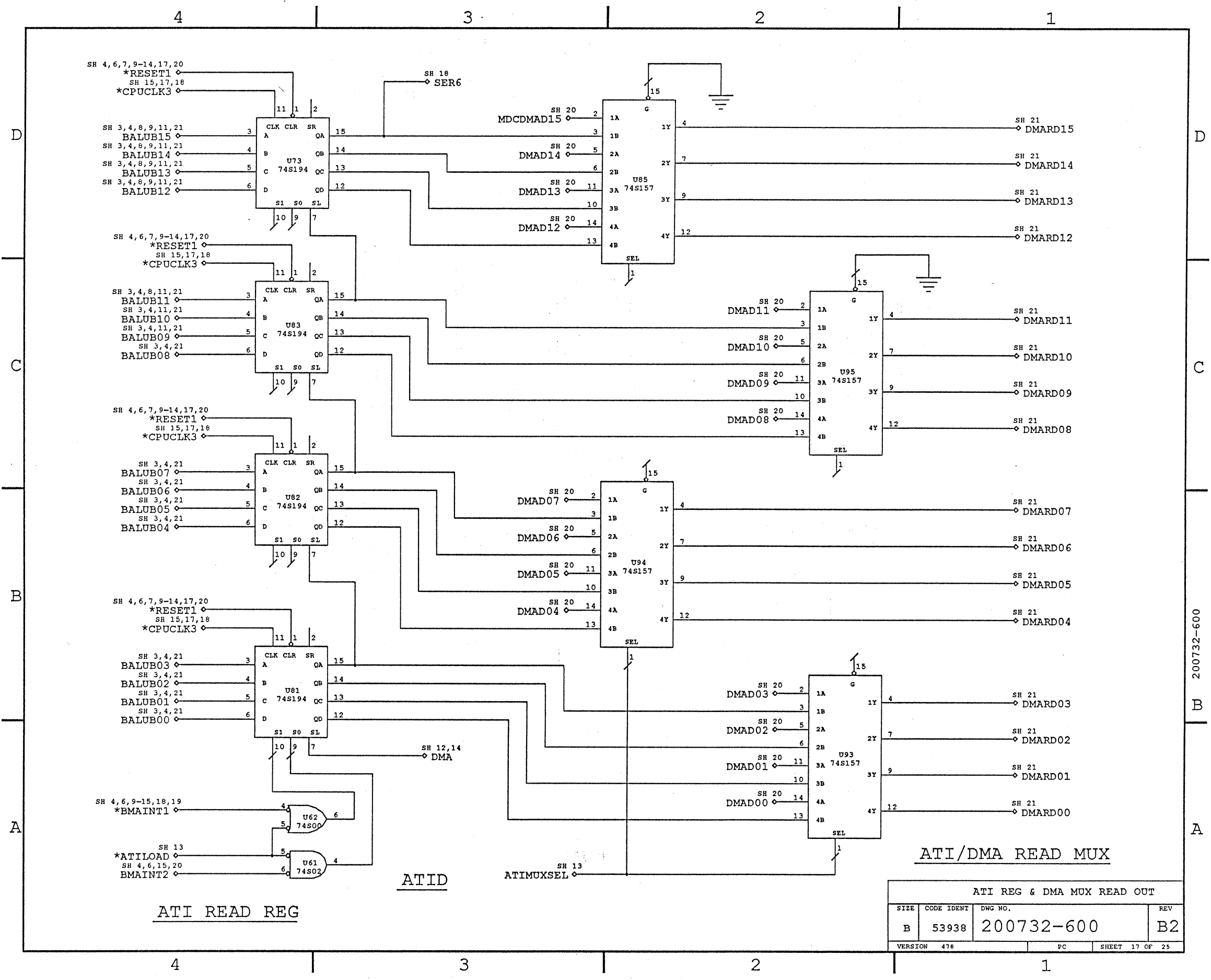
DMA PAGE SELECT



SAME PAGE COMPARE

DMA PG DECODE & PG COMPARE			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION 478		PC	SHEET 16 OF 25

200732-600



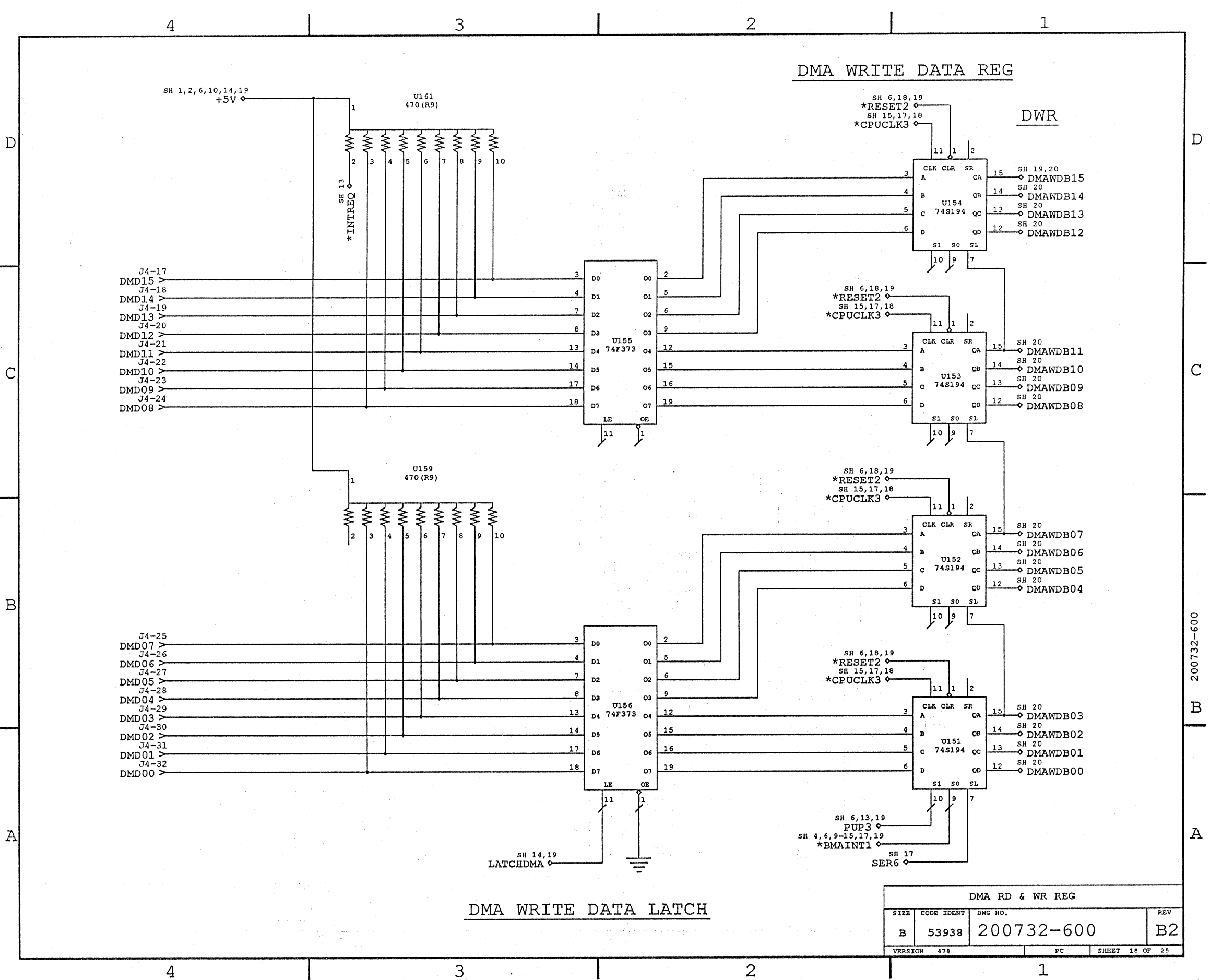
ATI READ REG

ATID

ATI/DMA READ MUX

ATI REG & DMA MUX READ OUT			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 17 OF 25

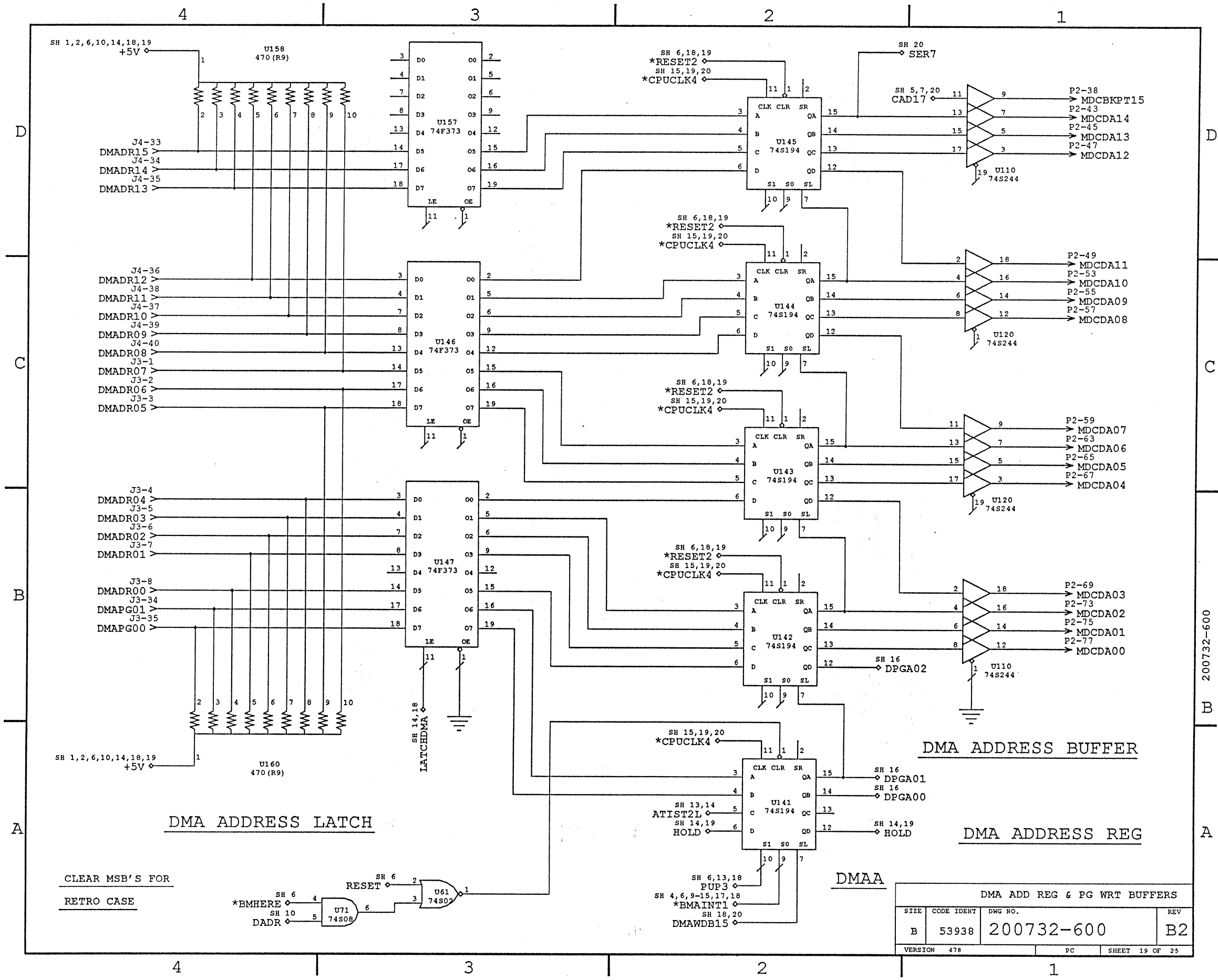
200732-600



DMA WRITE DATA LATCH

DMA RD & WR REG			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 18 OF 25

200732-600



CLEAR MSB'S FOR
RETRO CASE

DMA ADDRESS LATCH

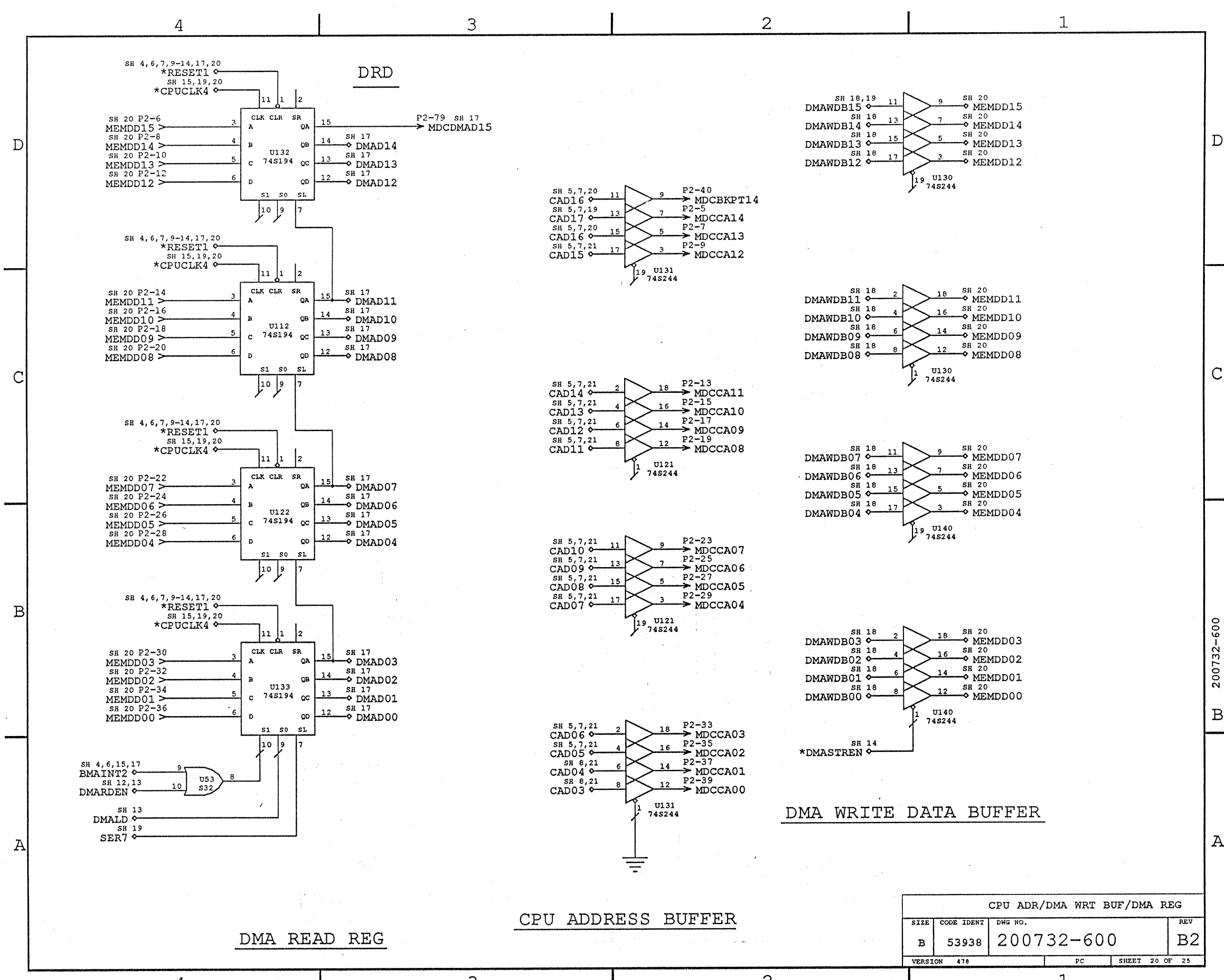
DMA ADDRESS BUFFER

DMA ADDRESS REG

DMAA

DMA ADD REG & PG WRT BUFFERS			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 19 OF 25

200732-600



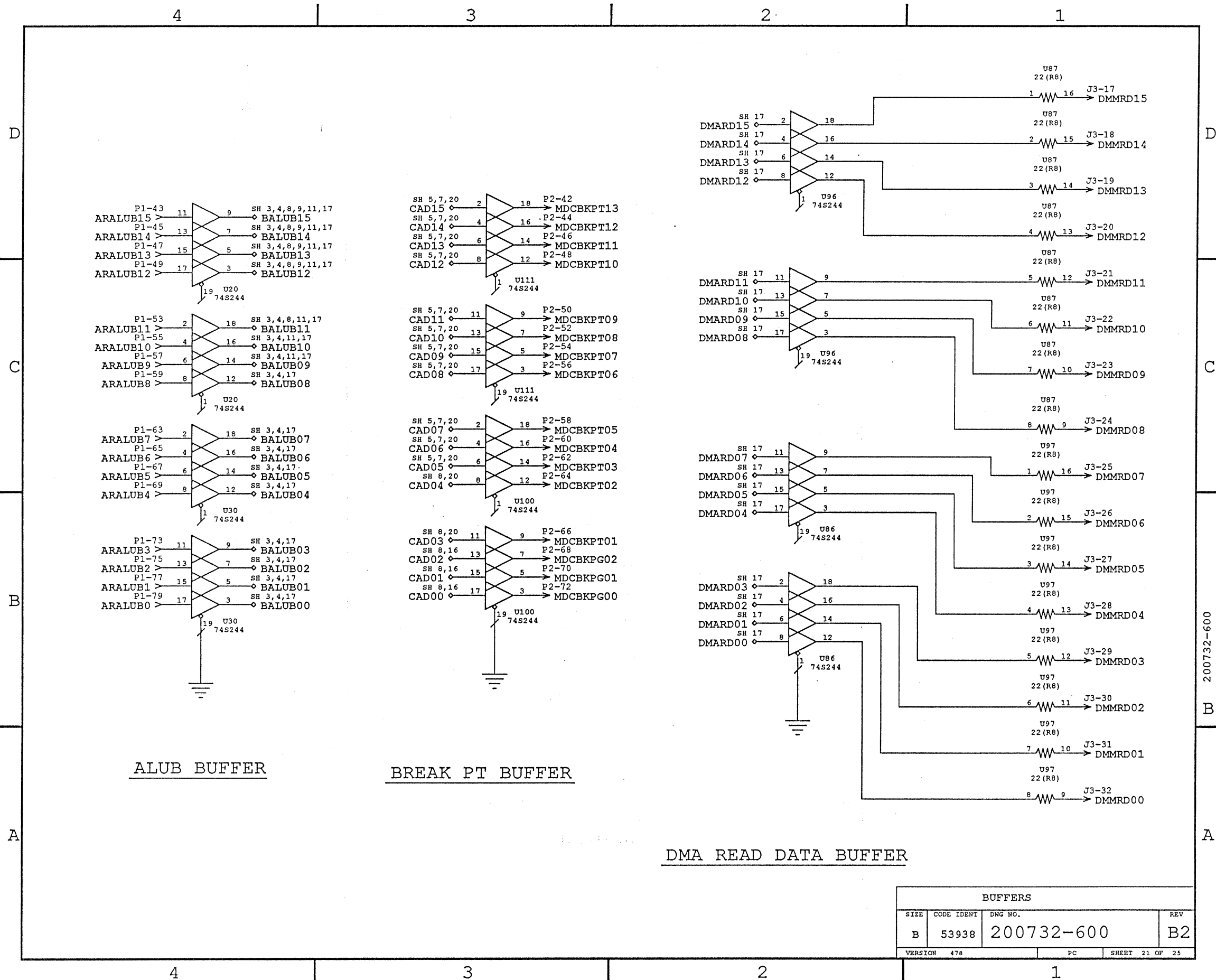
DMA READ REG

CPU ADDRESS BUFFER

DMA WRITE DATA BUFFER

CPU ADR/DMA WRT BUF/DMA REG			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION 478		PC	SHEET 20 OF 25

200732-600



ALUB BUFFER

BREAK PT BUFFER

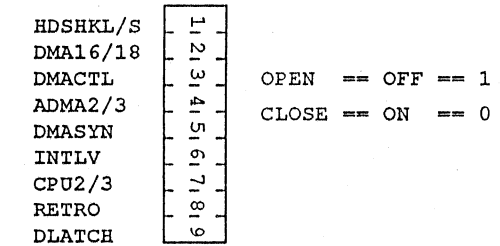
DMA READ DATA BUFFER

BUFFERS			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	PC	SHEET 21 OF 25

FUNCTION SWITCH TABLE

SWITCH		FUNCTION	DESCRIPTION
HDSHKL/S	S1		
1	(**)	*ATIST2L/*DATAVL	*ATISTB2 AND *DATAV NOT GATED WITH CLOCK
0	(***)	*ATIST2/*DATAV	*ATISTB2 AND *DATAV ARE GATED WITH CLOCK
DMA16/18	S2		
1	(*)	16 BIT DMA ADDRESS	DMA ADDRESS SPACE 64K WORDS
0		18 BIT DMA ADDRESS	DMA ADDRESS SPACE 265K WORDS
DMACTL	S3		
1		ASYN 3 CLK DMA	ASYN DMA MEMORY CYCLE (3 CLKS)
0	(*)	ASYN 2 CLK DMA	ASYN DMA MEMORY CYCLE (2 CLKS)
ADMA2/3	S4		
1		2 CYC ASYN CTL	ASYN DMA HANDSHAKING CONTROL 2 CLKS
0	(*)	3 CYC ASYN CTL	ASYN DMA HANDSHAKING CONTROL 3 CLKS
DMASYN	S5		
1		DMA CONTROL SYNC	SELECTS SYNC DMA CONTROL HANDSHAKING AND 6 MHZ DMA CLK
0	(*)	DMA CONTROL ASYN	SELECTS ASYN DMA CONTROL HANDSHAKING AND 4 MHZ DMA CLK
INTLV	S6		
1		MEM CYC INTERLEAVE	CPU/DMA MEMORY CYCLES INTERLEAVED
0	(*)	MEM CYC NON-INTERLEAVE	CPU/DMA MEMORY CYCLES NON-INTERLEAVED
CPU2/3	S7		
1		CPU MEM CYC 2 CLK	2 CLOCK CPU MEMORY CYCLES
0	(*)	CPU MEM CYC 3 CLK	3 CLOCK CPU MEMORY CYCLES
RETRO	S8		
1	(*)	CPU CLK SELECT	SELECT 4 MHZ CPU CLK, PUP SAME PAGE
0		CPU CLK SELECT	SELECT 6 MHZ CPU CLK, ACTIVATE SAME PAGE
DLATCH	S9		
1		DMA LATCH NOT GATED	DMA DATA/ADDRESS LATCH NOT GATED WITH DMA CLOCK
0	(****)	DMA LATCH GATED	DMA DATA/ADDRESS LATCH GATED WITH DMA CLOCK

TOP OF BOARD



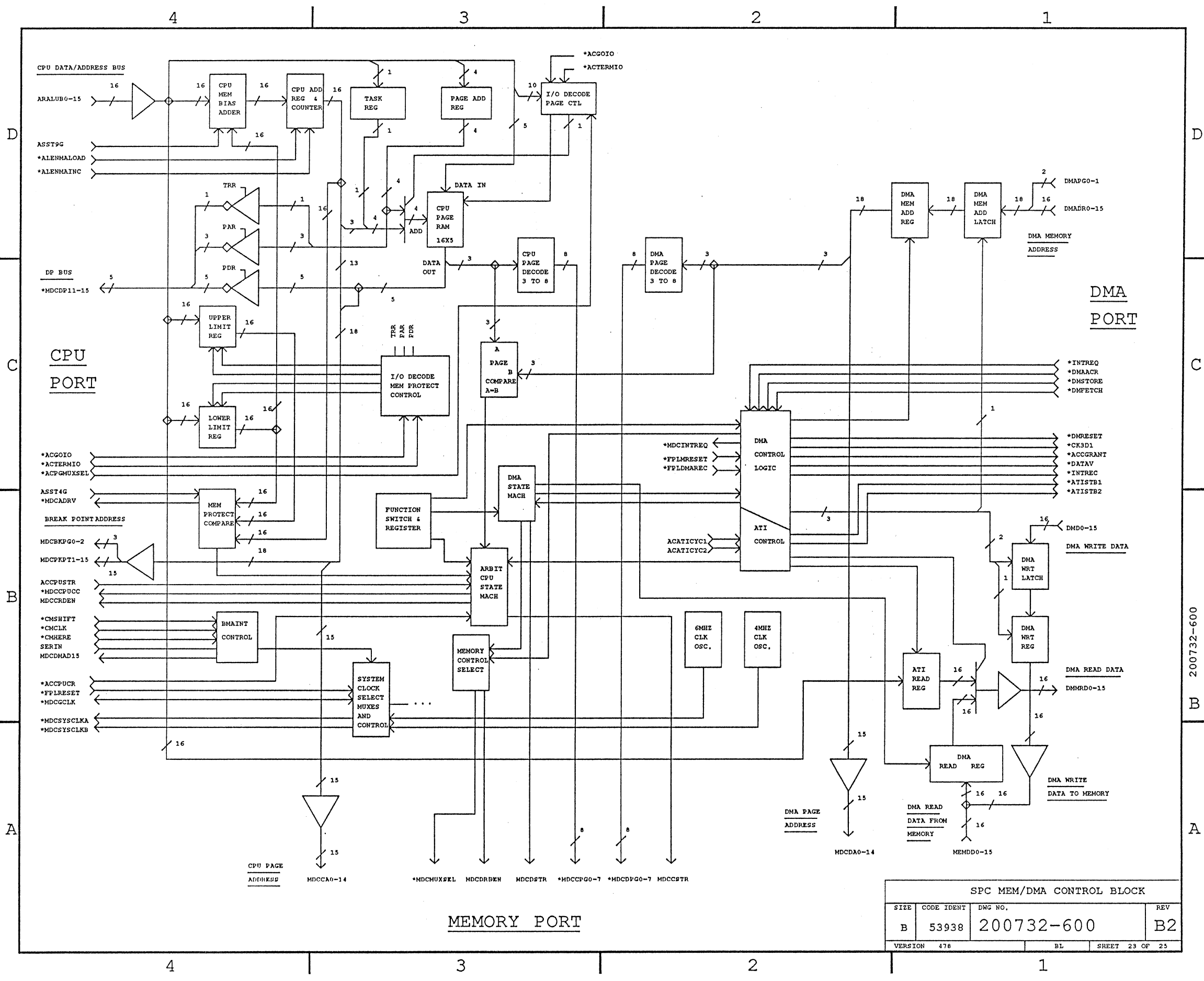
FUNCTION SWITCH

NOTES

- (*) SWITCH SETTINGS FOR FULL RETRO FIT CONFIGURATION
- (**) SP2, SP3/T CONFIGURATION
- (***) SP1 CONFIGURATION
- (****) CLOSED FOR ALL CASES

FUNCTION SWITCH TABLE			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION 476	BL	SHEET 22 OF 25	

200732-600



SPC MEM/DMA CONTROL BLOCK			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	BL	SHEET 23 OF 25

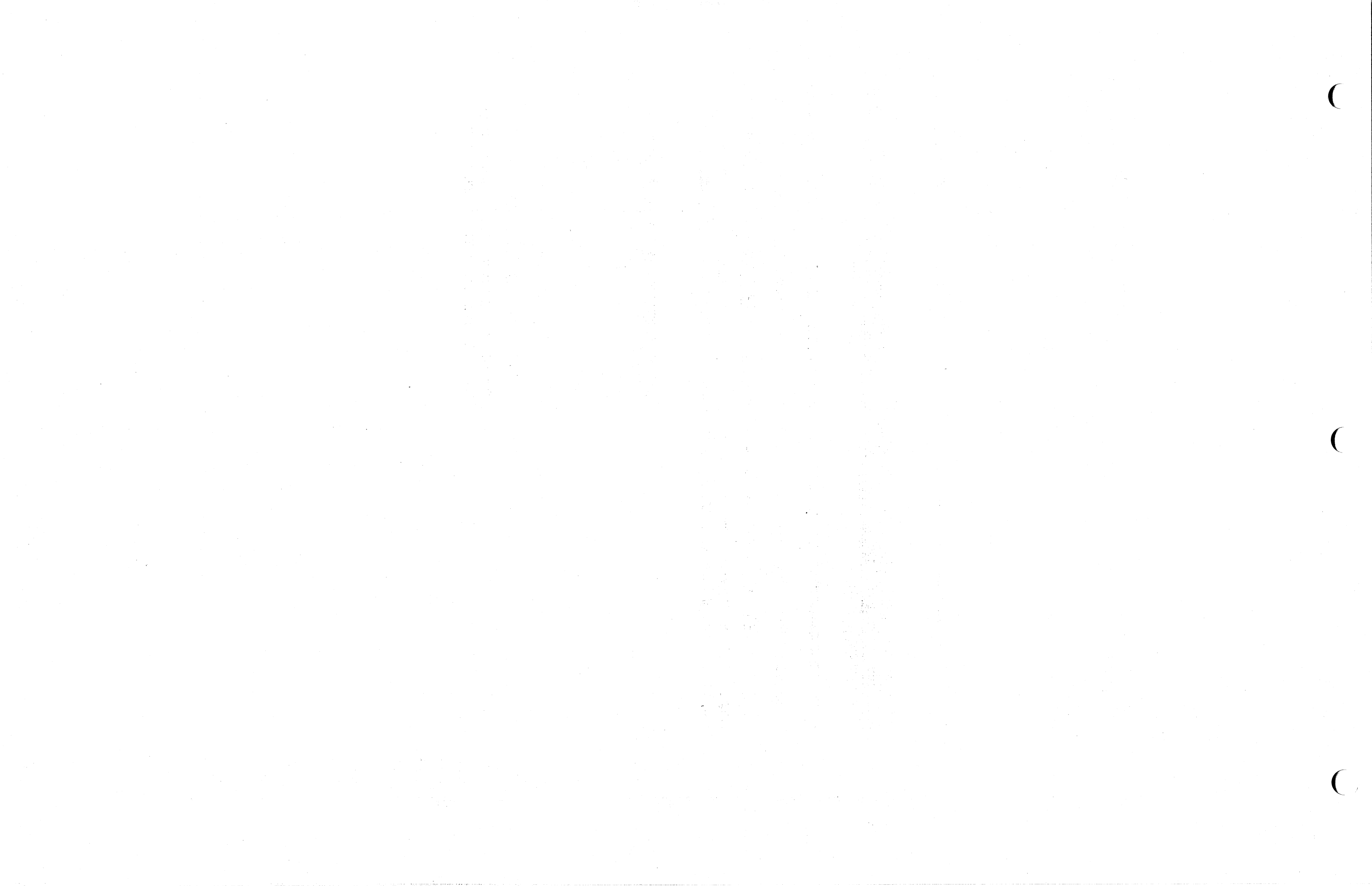
4					3					2					1				
Unit	Pin	Type	String	Sheet	Unit	Pin	Type	String	Sheet	Unit	Pin	Type	String	Sheet	Unit	Pin	Type	String	Sheet
J3	1	In	DMADR07	19 C4	P1	14	Out	*MDCDFG00	16 D1	P2	35	Out	MDCCA02	20 A2					
J3	2	In	DMADR06	19 C4	P1	15	In	*ALENNMAINC	7 D4	P2	36	In	MEMDD00	20 B4					
J3	3	In	DMADR05	19 C4	P1	16	Out	*MDCDFG01	16 D1	P2	37	Out	MDCCA01	20 A2					
J3	4	In	DMADR04	19 B4	P1	17	In	*ALENNALOAD	7 D4	P2	38	Out	MDCBKPT15	19 D1					
J3	5	In	DMADR03	19 B4	P1	18	Out	*MDCDFG02	16 D1	P2	39	Out	MDCCA00	20 A2					
J3	6	In	DMADR02	19 B4	P1	19	In	ACCPUSSTR	12 B2	P2	40	Out	MDCBKPT14	20 D2					
J3	7	In	DMADR01	19 B4	P1	20	Out	*MDCDFG03	16 D1	P2	41	In	GROUND	1 A4					
J3	8	In	DMADR00	19 B4	P1	21	In	GROUND	1 B4	P2	42	Out	MDCBKPT13	21 D3					
J3	9	Out	*DMRESET	6 C1	P1	22	Out	*MDCDFG04	16 D1	P2	43	Out	MDCDA14	19 D1					
J3	10	Out	GROUND	6 B2	P1	23	In	*FPLTERMIO	11 B4	P2	44	Out	MDCBKPT12	21 D3					
J3	11	Out	*DATAV	14 B1	P1	24	Out	*MDCDFG05	16 C1	P2	45	Out	MDCDA13	19 D1					
J3	12	Out	GROUND	6 B2	P1	25	In	*FPLSOTIO	11 B4	P2	46	Out	MDCBKPT11	21 D3					
J3	13	Out	*ATIST2	14 C1	P1	26	Out	*MDCDFG06	16 C1	P2	47	Out	MDCDA12	19 D1					
J3	14	Out	GROUND	6 B2	P1	27	Out	*MDCMUXSEL	14 A1	P2	48	Out	MDCBKPT10	21 C3					
J3	15	Out	*ACCGRANT	14 A3	P1	28	Out	*MDCDFG07	16 C1	P2	49	Out	MDCDA11	19 C1					
J3	16	Out	GROUND	6 B2	P1	29	Out	*MDCDF15	8 D1	P2	50	Out	MDCBKPT09	21 C3					
J3	17	Out	DMMRD15	21 D1	P1	30	Out	*MDCDFG00	16 C1	P2	51	In	GROUND	1 A4					
J3	18	Out	DMMRD14	21 D1	P1	31	In	GROUND	1 B4	P2	52	Out	MDCBKPT08	21 C3					
J3	19	Out	DMMRD13	21 D1	P1	32	Out	*MDCDFG01	16 D1	P2	53	Out	MDCDA10	19 C1					
J3	20	Out	DMMRD12	21 D1	P1	33	Out	*MDCDF14	8 C1	P2	54	Out	MDCBKPT07	21 C3					
J3	21	Out	DMMRD11	21 C1	P1	34	Out	*MDCDFG02	16 D1	P2	55	Out	MDCDA09	19 C1					
J3	22	Out	DMMRD10	21 C1	P1	35	Out	*MDCDF13	8 D1	P2	56	Out	MDCBKPT06	21 C3					
J3	23	Out	DMMRD09	21 C1	P1	36	Out	*MDCDFG03	16 C1	P2	57	Out	MDCDA08	19 C1					
J3	24	Out	DMMRD08	21 C1	P1	37	Out	*MDCDF12	8 D1	P2	58	Out	MDCBKPT05	21 C3					
J3	25	Out	DMMRD07	21 C1	P1	38	Out	*MDCDFG04	16 D1	P2	59	Out	MDCDA07	19 C1					
J3	26	Out	DMMRD06	21 B1	P1	39	Out	*MDCDF11	8 B1	P2	60	Out	MDCBKPT04	21 C3					
J3	27	Out	DMMRD05	21 B1	P1	40	Out	*MDCDFG05	16 D1	P2	61	In	GROUND	1 A4					
J3	28	Out	DMMRD04	21 B1	P1	41	In	GROUND	1 B4	P2	62	Out	MDCBKPT03	21 C3					
J3	29	Out	DMMRD03	21 B1	P1	42	Out	*MDCDFG06	16 D1	P2	63	Out	MDCDA06	19 C1					
J3	30	Out	DMMRD02	21 B1	P1	43	In	ARALUB15	21 D4	P2	64	Out	MDCBKPT02	21 C3					
J3	31	Out	DMMRD01	21 A1	P1	44	Out	*MDCDFG07	16 D1	P2	65	Out	MDCDA05	19 C1					
J3	32	Out	GROUND	6 B2	P1	45	In	ARALUB14	21 D4	P2	66	Out	MDCBKPT01	19 B3					
J3	33	Out	GROUND	6 B2	P1	46	In	ASST4G	12 B2	P2	67	Out	MDCBKFG02	21 B3					
J3	34	In	DMAPG01	19 B4	P1	47	In	ARALUB13	21 D4	P2	68	Out	MDCDA03	19 B1					
J3	35	In	DMAPG00	19 B4	P1	48	In	ASST9G	3 C4	P2	69	Out	MDCBKFG01	21 B3					
J3	36	Out	GROUND	6 B2	P1	49	In	ARALUB12	21 C4	P2	70	In	GROUND	1 A4					
J3	37	Out	*ATIST1	14 B1	P1	50	Out	*MDCADRV	5 A2	P2	71	In	GROUND	1 A4					
J3	38	Out	GROUND	6 B2	P1	51	In	GROUND	1 B4	P2	72	Out	MDCBKFG00	21 B3					
J3	39	Out	*CK3D1	14 A2	P1	52	In	FPLDMAREC	13 B4	P2	73	Out	MDCDA02	19 B1					
J3	40	Out	GROUND	6 B1	P1	53	In	ARALUB11	21 C4	P2	74	Out	MDCDRDEN	14 A1					
J4	1	In	GROUND	6 B1	P1	54	Out	*INTREQ	13 B4	P2	75	Out	MDCDA01	19 B1					
J4	2	Out	*INTREQ	13 B4	P1	55	In	ARALUB10	21 C4	P2	76	Out	MDCDRDEN	12 B1					
J4	3	Out	GROUND	6 B1	P1	56	Out	MDCSTR	12 B1	P2	77	Out	MDCDA00	13 D4					
J4	4	Out	*INTREC	13 B3	P1	57	In	ARALUB9	21 C4	P2	78	In	ACATICYC2	20 D3					
J4	5	Out	GROUND	6 B1	P1	58	Out	*MDCDFG08	12 C1	P2	79	Out	MDCDMAD15	13 D4					
J4	6	Out	GROUND	6 B1	P1	59	In	ARALUB8	21 C4	P2	80	In	ACATICYC1	13 D4					
J4	7	Out	GROUND	6 B1	P1	60	In	ALMEM15	4 A4										
J4	8	Out	GROUND	6 B1	P1	61	In	GROUND	1 B4										
J4	9	Out	GROUND	6 B1	P1	62	In	*ACPGMUXSEL	11 D4										
J4	10	Out	GROUND	6 A1	P1	63	In	ARALUB7	21 C4										
J4	11	Out	GROUND	6 A1	P1	64	In	ARALUB6	21 C4										
J4	12	In	*DMFETCH	14 A4	P1	65	In	ARALUB5	21 C4										
J4	13	In	*DMSTORE	14 A4	P1	66	In	ARALUB4	21 C4										
J4	14	Out	GROUND	6 A1	P1	67	In	ARALUB3	21 B4										
J4	15	In	*DMACCR	14 B4	P1	69	In	GROUND	1 B4										
J4	16	Out	GROUND	6 A1	P1	71	In	ARALUB2	21 B4										
J4	17	In	DMD15	18 C4	P1	73	In	ARALUB1	21 B4										
J4	18	In	DMD14	18 C4	P1	75	In	ARALUB0	21 B4										
J4	19	In	DMD13	18 C4	P1	77	In	GROUND	1 B4										
J4	20	In	DMD12	18 C4	P1	79	In	GROUND	1 B4										
J4	21	In	DMD11	18 C4	P1	1	Out	+5VINB	2 A3										
J4	22	In	DMD10	18 C4	P1	3	Out	MDCDSTR	14 A3										
J4	23	In	DMD09	18 C4	P1	4	Out	+5VINB	2 A3										
J4	24	In	DMD08	18 C4	P1	5	Out	MDCCA14	20 D2										
J4	25	In	DMD07	18 B4	P1	6	Out	MEMDD15	20 D4										
J4	26	In	DMD06	18 B4	P1	7	Out	MDCCA13	20 D2										
J4	27	In	DMD05	18 B4	P1	8	Out	MEMDD14	20 D4										
J4	28	In	DMD04	18 B4	P1	9	Out	MDCCA12	20 D2										
J4	29	In	DMD03	18 B4	P1	10	In	MEMDD13	20 D4										
J4	30	In	DMD02	18 A4	P1	11	In	GROUND	1 B4										
J4	31	In	DMD01	18 A4	P1	12	In	MEMDD12	20 D4										
J4	32	In	DMD00	18 A4	P1	13	Out	MEMDD11	20 C2										
J4	33	In	DMADR15	19 D4	P1	14	Out	MDCCA11	20 C4										
J4	34	In	DMADR14	19 D4	P1	15	In	MEMDD10	20 C4										
J4	35	In	DMADR13	19 D4	P1	16	Out	MDCCA10	20 C4										
J4	36	In	DMADR12	19 C4	P1	17	In	MEMDD09	20 C2										
J4	37	In	DMADR10	19 C4	P1	18	Out	MDCCA09	20 C4										
J4	38	In	DMADR11	19 C4	P1	19	In	MEMDD08	20 C2										
J4	39	In	DMADR09	19 C4	P1	20	Out	MDCCA08	20 C4										
J4	40	In	DMADR08	19 C4	P1	21	In	MEMDD07	20 C4										
P1	1	In	GROUND	1 C4	P2	22	In	GROUND	1 A4										
P1	2	In	+5VINA	2 A3	P2	23	Out	MEMDD06	20 B2										
P1	3	Out	*MDCSYSCLKA	15 D1	P2	24	In	MDCCA07	20 B4										
P1	4	In	+5VINA	2 A3	P2	25	Out	MEMDD05	20 B2										
P1	5	Out	*MDCSYSCLKB	15 D1	P2	26	In	MDCCA06	20 B4										
P1	6	In	*FPLRESET	6 C4	P2	27	Out	MEMDD04	20 B2										
P1	7	In	*CMHERE	6 B4	P2	28	In	MDCCA05	20 B4										
P1	8	Out	*MDCGCLK	15 A2	P2	29	Out	MEMDD03	20 B2										
P1	9	In	*CMSHIFT	6 D4	P2	30	In	MDCCA04	20 B4										
P1	10	In	GROUND	1 C4	P2	31	In	MEMDD02	1 A4										
P1	11	In	*ACCPUCR	1 C4	P2	32	In	GROUND	1 A4										
P1	12	In	*CMCLK	15 B4	P2	33	Out	MEMDD01	20 B4										
P1	13	In			P2	34	In												

Connectors by unit/pin			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	CS	SHEET 24 OF 25

4					3					2					1					
String	Unit	Pin	Type	Sheet	String	Unit	Pin	Type	Sheet	String	Unit	Pin	Type	Sheet	String	Unit	Pin	Type	Sheet	
*ACCGRANT	J3	15	Out	14 A3	DMAPG01	J3	34	In	19 B4	MDCCA05	P2	27	Out	20 B2						
*ACCPUCR	P1	12	In	12 C4	DMD00	J4	32	In	18 A4	MDCCA06	P2	25	Out	20 B2						
*ACPGMUXSEL	P1	62	In	11 D4	DMD01	J4	31	In	18 A4	MDCCA07	P2	23	Out	20 B2						
*ALENMAINC	P1	15	In	7 D4	DMD02	J4	30	In	18 A4	MDCCA08	P2	19	Out	20 C2						
*ALENMALOAD	P1	17	In	7 D4	DMD03	J4	29	In	18 B4	MDCCA09	P2	17	Out	20 C2						
*ATIST1	J3	37	Out	14 B1	DMD04	J4	28	In	18 B4	MDCCA10	P2	15	Out	20 C2						
*ATIST2	J3	13	Out	14 C1	DMD05	J4	27	In	18 B4	MDCCA11	P2	13	Out	20 C2						
*CK3D1	J3	39	Out	14 A2	DMD06	J4	26	In	18 B4	MDCCA12	P2	9	Out	20 D2						
*CMCLK	P1	13	In	15 B4	DMD07	J4	25	In	18 B4	MDCCA13	P2	7	Out	20 D2						
*CMHERE	P1	8	In	6 B4	DMD08	J4	24	In	18 C4	MDCCA14	P2	5	Out	20 D2						
*CMSHIFT	P1	10	In	6 D4	DMD09	J4	23	In	18 C4	MDCCRDEN	P2	76	Out	12 B1						
*DATAV	J3	11	Out	14 B1	DMD10	J4	22	In	18 C4	MDCSTR	P1	56	Out	12 B1						
*DMACCR	J4	15	In	14 B4	DMD11	J4	21	In	18 C4	MDCDA00	P2	77	Out	19 B1						
*DMFETCH	J4	12	In	14 A4	DMD12	J4	20	In	18 C4	MDCDA01	P2	75	Out	19 B1						
*DMRESET	J3	9	Out	6 C1	DMD13	J4	19	In	18 C4	MDCDA02	P2	73	Out	19 B1						
*DMSTORE	J4	13	In	14 A4	DMD14	J4	18	In	18 C4	MDCDA03	P2	69	Out	19 B1						
*FPLGOIO	P1	25	In	11 B4	DMD15	J4	17	In	18 C4	MDCDA04	P2	67	Out	19 C1						
*FPLRESET	P1	6	In	6 C4	DMMRD00	J3	32	Out	21 A1	MDCDA05	P2	65	Out	19 C1						
*FPLTERMIO	P1	23	In	11 B4	DMMRD01	J3	31	Out	21 A1	MDCDA06	P2	63	Out	19 C1						
*INTREC	J4	4	Out	13 B3	DMMRD02	J3	30	Out	21 B1	MDCDA07	P2	59	Out	19 C1						
*INTREQ	J4	2	In	13 B4	DMMRD03	J3	29	Out	21 B1	MDCDA08	P2	57	Out	19 C1						
*INTREQ	P1	54	Out	13 B4	DMMRD04	J3	28	Out	21 B1	MDCDA09	P2	55	Out	19 C1						
*MDCADRV	P1	50	Out	5 A2	DMMRD05	J3	27	Out	21 B1	MDCDA10	P2	53	Out	19 C1						
*MDCCPG00	P1	30	Out	8 D1	DMMRD06	J3	26	Out	21 B1	MDCDA11	P2	49	Out	19 C1						
*MDCCPG01	P1	32	Out	8 D1	DMMRD07	J3	25	Out	21 C1	MDCDA12	P2	47	Out	19 D1						
*MDCCPG02	P1	34	Out	8 D1	DMMRD08	J3	24	Out	21 C1	MDCDA13	P2	45	Out	19 D1						
*MDCCPG03	P1	36	Out	8 D1	DMMRD09	J3	23	Out	21 C1	MDCDA14	P2	43	Out	19 D1						
*MDCCPG04	P1	38	Out	8 D1	DMMRD10	J3	22	Out	21 C1	MDCDMAD15	P2	39	Out	20 D3						
*MDCCPG05	P1	40	Out	8 D1	DMMRD11	J3	21	Out	21 C1	MDCDRDEN	P2	74	Out	14 A1						
*MDCCPG06	P1	42	Out	8 D1	DMMRD12	J3	20	Out	21 D1	MDCSTR	P2	36	Out	14 A3						
*MDCCPG07	P1	44	Out	8 D1	DMMRD13	J3	19	Out	21 D1	MEMDD00	P2	34	In	20 B4						
*MDCCPUCC	P1	58	Out	12 C1	DMMRD14	J3	18	Out	21 D1	MEMDD01	P2	32	In	20 B4						
*MDCDP11	P1	39	Out	8 B1	DMMRD15	J3	17	Out	21 B1	MEMDD02	P2	30	In	20 B4						
*MDCDP12	P1	37	Out	8 C1	FPLDMAREC	P1	52	In	13 B4	MEMDD03	P2	28	In	20 B4						
*MDCDP13	P1	35	Out	8 C1	GROUND	J3	10	Out	6 B2	MEMDD04	P2	26	In	20 B4						
*MDCDP14	P1	33	Out	8 C1	GROUND	J3	12	Out	6 B2	MEMDD05	P2	24	In	20 B4						
*MDCDP15	P1	31	Out	8 C1	GROUND	J3	14	Out	6 B2	MEMDD06	P2	22	In	20 B4						
*MDCDEG00	P1	14	Out	16 D1	GROUND	J3	16	Out	6 B2	MEMDD07	P2	20	In	20 C4						
*MDCDEG01	P1	16	Out	16 D1	GROUND	J3	18	Out	6 B2	MEMDD08	P2	18	In	20 C4						
*MDCDEG02	P1	18	Out	16 D1	GROUND	J3	20	Out	6 B2	MEMDD09	P2	16	In	20 C4						
*MDCDEG03	P1	20	Out	16 D1	GROUND	J3	22	Out	6 B2	MEMDD10	P2	14	In	20 C4						
*MDCDEG04	P1	22	Out	16 D1	GROUND	J3	24	Out	6 A2	MEMDD11	P2	12	In	20 C4						
*MDCDEG05	P1	24	Out	16 C1	GROUND	J4	1	Out	6 B1	MEMDD12	P2	10	In	20 D4						
*MDCDEG06	P1	26	Out	16 C1	GROUND	J4	3	Out	6 B1	MEMDD13	P2	8	In	20 D4						
*MDCDEG07	P1	28	Out	16 C1	GROUND	J4	5	Out	6 B1	MEMDD14	P2	6	In	20 D4						
*MDCGCLK	P1	9	Out	15 A2	GROUND	J4	7	Out	6 B1	MEMDD15	P2	6	In	20 D4						
*MDCMUXSEL	P1	27	Out	14 A1	GROUND	J4	8	Out	6 B1											
*MDCSYSCLKA	P1	15	Out	15 D1	GROUND	J4	9	Out	6 B1											
*MDCSYSCLKB	P1	55	Out	15 D1	GROUND	J4	10	Out	6 A1											
+5VINA	P1	2	In	2 A3	GROUND	J4	11	Out	6 A1											
+5VINA	P1	4	In	2 A3	GROUND	J4	12	Out	6 A1											
+5VINB	P2	2	In	2 A3	GROUND	J4	13	Out	6 A1											
+5VINB	P2	4	In	2 A3	GROUND	J4	14	Out	6 A1											
ACATICYC1	P2	80	In	13 D4	GROUND	J4	15	Out	6 A1											
ACATICYC2	P2	78	In	13 D4	GROUND	P1	1	In	1 C4											
ACCPSTR	P1	19	In	12 B2	GROUND	P1	11	In	1 B4											
ALMEM15	P1	60	In	4 A4	GROUND	P1	21	In	1 B4											
ARALUB0	P1	79	In	21 B4	GROUND	P1	31	In	1 B4											
ARALUB1	P1	77	In	21 B4	GROUND	P1	41	In	1 B4											
ARALUB10	P1	55	In	21 C4	GROUND	P1	51	In	1 B4											
ARALUB11	P1	53	In	21 C4	GROUND	P1	61	In	1 B4											
ARALUB12	P1	49	In	21 C4	GROUND	P1	71	In	1 B4											
ARALUB13	P1	47	In	21 D4	GROUND	P2	1	In	1 B4											
ARALUB14	P1	45	In	21 D4	GROUND	P2	11	In	1 A4											
ARALUB15	P1	43	In	21 D4	GROUND	P2	21	In	1 A4											
ARALUB2	P1	75	In	21 B4	GROUND	P2	31	In	1 A4											
ARALUB3	P1	73	In	21 B4	GROUND	P2	41	In	1 A4											
ARALUB4	P1	69	In	21 B4	GROUND	P2	51	In	1 A4											
ARALUB5	P1	67	In	21 C4	GROUND	P2	61	In	1 A4											
ARALUB6	P1	65	In	21 C4	GROUND	P2	71	In	1 A4											
ARALUB7	P1	63	In	21 C4	MDCBKP G00	P2	72	Out	21 B3											
ARALUB8	P1	59	In	21 C4	MDCBKP G01	P2	70	Out	21 B3											
ARALUB9	P1	57	In	21 C4	MDCBKP G02	P2	68	Out	21 B3											
ASST4G	P1	46	In	12 B2	MDCBKP T01	P2	66	Out	21 B3											
ASST9G	P1	48	In	3 C4	MDCBKP T02	P2	64	Out	21 C3											
DMADR00	J3	8	In	19 B4	MDCBKP T03	P2	62	Out	21 C3											
DMADR01	J3	7	In	19 B4	MDCBKP T04	P2	60	Out	21 C3											
DMADR02	J3	6	In	19 B4	MDCBKP T05	P2	58	Out	21 C3											
DMADR03	J3	5	In	19 B4	MDCBKP T06	P2	56	Out	21 C3											
DMADR04	J3	4	In	19 B4	MDCBKP T07	P2	54	Out	21 C3											
DMADR05	J3	3	In	19 C4	MDCBKP T08	P2	52	Out	21 C3											
DMADR06	J3	2	In	19 C4	MDCBKP T09	P2	50	Out	21 C3											
DMADR07	J3	1	In	19 C4	MDCBKP T10	P2	48	Out	21 C3											
DMADR08	J4	40	In	19 C4	MDCBKP T11	P2	46	Out	21 D3											
DMADR09	J4	39	In	19 C4	MDCBKP T12	P2	44	Out	21 D3											
DMADR10	J4	37	In	19 C4	MDCBKP T13	P2	42	Out	21 D3											
DMADR11	J4	38	In	19 C4	MDCBKP T14	P2	40	Out	20 D1											
DMADR12	J4	36	In	19 C4	MDCBKP T15	P2	38	Out	19 D1											
DMADR13	J4	35	In	19 D4	MDCCA00	P2	39	Out	20 A2											
DMADR14	J4	34	In	19 D4	MDCCA01	P2	37	Out	20 A2											
DMADR15	J4	33	In	19 D4	MDCCA02	P2	35	Out	20 A2											
DMAPG00	J3	35	In	19 B4	MDCCA03	P2	33	Out	20 B2											
					MDCCA04	P2	29	Out	20 B2											

Connectors by string name			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200732-600	B2
VERSION	478	CS	SHEET 25 OF 25

200732-600



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE

1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200732-200

REV: A1 = AB

DESC: INSTALLATION INSTRUCTIONS, 6 MHZ CONFIGURATION,

SPC9800

ITEM/REFERENCE DESIGNATORS

SHORT DESCRIPTION

CAGE
CODE

MANUFACTURER NAME

MFG PART NUMBER

E/S PART NUMBER

QTY/
ASSY

*SCD*LBL, BAR-CODE, PRE

53938

EVANS & SUTHERLAND

*SCD*802178-008

802178-008

1

1 ITEMS LISTED



REV	REV. DESCRIPTION	DATE	APPROVED
A0	RELEASE	4-01-85	PKB
A1	CHANGE SWITCH SETTING POSITION 9 F/ SP3/T CONFIGURATION	6-03-85	PKB <i>6/3</i>

6 MHz CONFIGURATION INSTRUCTIONS

LEGEND :

OPEN - OFF - 1
CLOSED - ON - 0

MDC CARD-200732-100 LOCATION U77

NOVOVIEW SP1	NOVOVIEW SP3/T																																																												
<p>----- TOP OF BOARD -----</p> <table border="1"> <thead> <tr> <th>'0'</th> <th>POSITION</th> <th>'1'</th> </tr> </thead> <tbody> <tr><td>X</td><td>1</td><td></td></tr> <tr><td></td><td>2</td><td>X</td></tr> <tr><td></td><td>3</td><td>X</td></tr> <tr><td>X</td><td>4</td><td></td></tr> <tr><td>X</td><td>5</td><td></td></tr> <tr><td></td><td>6</td><td>X</td></tr> <tr><td></td><td>7</td><td>X</td></tr> <tr><td>X</td><td>8</td><td></td></tr> <tr><td>X</td><td>9</td><td></td></tr> </tbody> </table>	'0'	POSITION	'1'	X	1			2	X		3	X	X	4		X	5			6	X		7	X	X	8		X	9		<p>----- TOP OF BOARD -----</p> <table border="1"> <thead> <tr> <th>'0'</th> <th>POSITION</th> <th>'1'</th> </tr> </thead> <tbody> <tr><td></td><td>1</td><td>X</td></tr> <tr><td></td><td>2</td><td>X</td></tr> <tr><td></td><td>3</td><td>X</td></tr> <tr><td>X</td><td>4</td><td></td></tr> <tr><td>X</td><td>5</td><td></td></tr> <tr><td></td><td>6</td><td>X</td></tr> <tr><td></td><td>7</td><td>X</td></tr> <tr><td>X</td><td>8</td><td></td></tr> <tr><td>X</td><td>9</td><td></td></tr> </tbody> </table>	'0'	POSITION	'1'		1	X		2	X		3	X	X	4		X	5			6	X		7	X	X	8		X	9	
'0'	POSITION	'1'																																																											
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SET 9 POSITION DIP SWITCH, LOCATION U77 AS INDICATED ABOVE ACCORDING TO SYSTEM CONFIGURATION.
INSTALL 6 MHZ. CONFIGURATION BAR CODE LABEL NEXT TO ASSEMBLY TAG LOCATED IN REAR OF SPC 9800.

DRAWN Paul Boyce 6-03-85	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108		
CHECKED <i>PR Pedersen</i> 6/11/85 MECH/ELEC	TITLE INSTALLATION INSTRUCTIONS, 6 MHZ. CONFIGURATION, SPC 9800		
PROJ. ENG. Paul Boyce	SIZE A	CODE ID 53938	DRAWING NUMBER 200732-200
			REVISION A1 SHEET 1 OF 1



MAINTENANCE PARTS LIST

ASSEMBLY: PL 200734-100

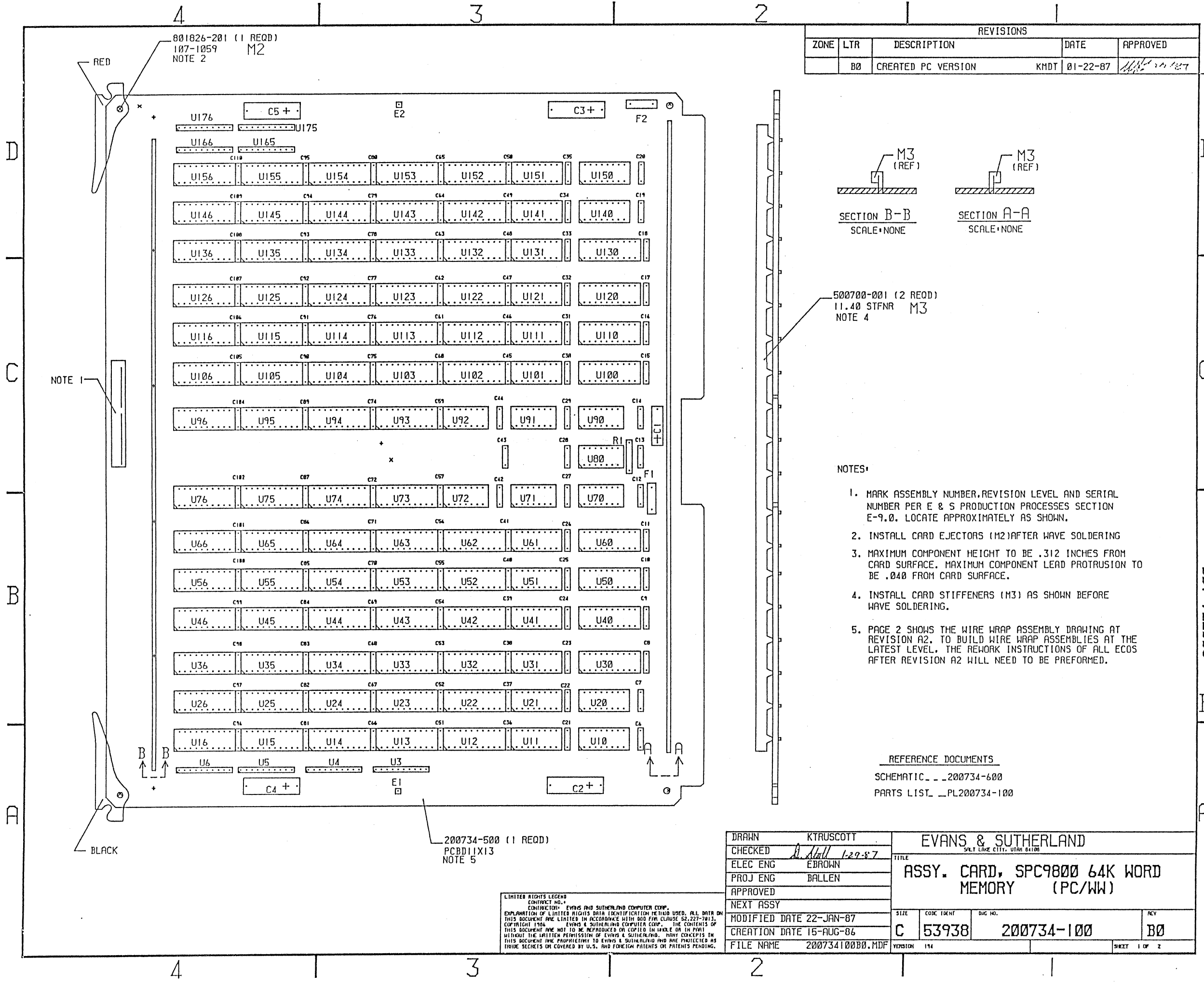
REV: B0 = BA

DESC: CARD ASSY,64K WORD MEMORY,SPC98000 (PC)

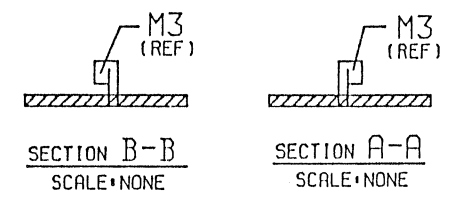
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,P02R PCBD11X13	53938	EVANS & SUTHERLAND.	200734-500	200734-500	1
C2 C3 C4 C5	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C6 C7 C8 C9 C10 C11 C12 C13	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C14 C15 C16 C17 C18 C19 C20	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804169-333	101
C21 C22 C23 C24 C25 C26 C27						
C28 C29 C30 C31 C32 C33 C34						
C35 C36 C37 C38 C39 C40 C41						
C42 C43 C44 C45 C46 C47 C48						
C49 C50 C51 C52 C53 C54 C55						
C56 C57 C59 C60 C61 C62 C63						
C64 C65 C66 C67 C68 C69 C70						
C71 C72 C74 C75 C76 C77 C78						
C79 C80 C81 C82 C83 C84 C85						
C86 C87 C89 C90 C91 C92 C93						
C94 C95 C96 C97 C98 C99 C100						
C101 C102 C104 C105 C106						
C107 C108 C109 C110						
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
R1	R,,AXL 1K 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	1
U10 U11 U20 U21 U31 U41 U51	IC,TTL 74F157	07263	FAIRCHILD IC'S & SEMICON	74F157APC/DC	807957-035	16
U61 U101 U111 U121 U131 U140						
U141 U150 U151						
U12 U13 U14 U15 U16 U22 U23	IC, RAM 1400-55	34335	ADVANCED MICRO DEVICES IN	AM2167-55PC	807167-055	64
U24 U25 U26 U32 U33 U34 U35						
U36 U42 U43 U44 U45 U46 U53						
U54 U55 U56 U63 U64 U65 U66						
U73 U74 U75 U76 U93 U94 U95						
U96 U103 U104 U105 U106 U113						
U114 U115 U116 U122 U123						
U124 U125 U126 U132 U133						
U134 U135 U136 U142 U143						
U144 U145 U146 U152 U153						
U154 U155 U156						
U3 U5 U165 U175	R,,SIP 330(R9)	91637	DALE ELECTRONICS INC	CSC10B01-331G	807524-331	4
U30 U40 U50 U60 U100 U110	IC,TTL 74S244	81349	MILITARY SPECIFICATIONS	54S244N	807244-055	8
U120 U130						
U4 U6 U166 U176	R,,SIP 220(R9)	1U696	STACKPOLE COMPONENTS CO	10-9-1-221G	807524-221	4
U52 U62 U102 U112	IC,TTL 74F244	07263	FAIRCHILD IC'S & SEMICON	74F244PC/DC	807954-035	4
U70	IC,TTL 74F04	07263	FAIRCHILD IC'S & SEMICON	74F04PC/DC	807904-035	1
U71	IC,TTL #74F08	07263	FAIRCHILD IC'S & SEMICON	74F08PC/DC	807908-035	1
U72 U92	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	2
U80 U91	IC,TTL #74F00	07263	FAIRCHILD IC'S & SEMICON	74F00PC/DC	807900-035	2
U90	IC,TTL #74F02	07263	FAIRCHILD IC'S & SEMICON	74F02PC/DC	807902-035	1

20 ITEMS LISTED





REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATED PC VERSION	KMDT 01-22-87	<i>[Signature]</i>



500700-001 (2 REQD)
11.40 STFNR M3
NOTE 4

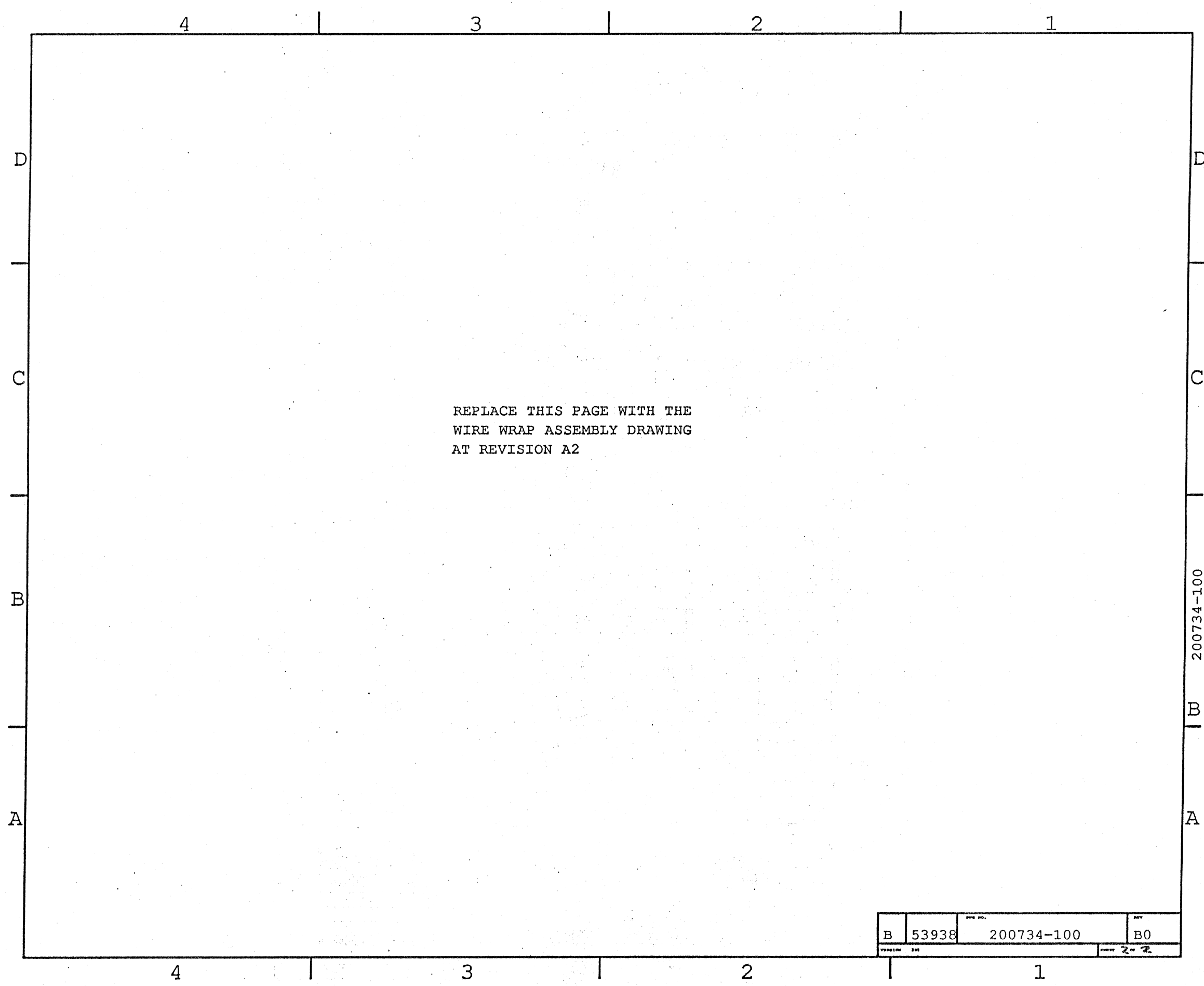
- NOTES:
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 2. INSTALL CARD EJECTORS (M2) AFTER WAVE SOLDERING
 3. MAXIMUM COMPONENT HEIGHT TO BE .312 INCHES FROM CARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM CARD SURFACE.
 4. INSTALL CARD STIFFENERS (M3) AS SHOWN BEFORE WAVE SOLDERING.
 5. PAGE 2 SHOWS THE WIRE WRAP ASSEMBLY DRAWING AT REVISION A2. TO BUILD WIRE WRAP ASSEMBLIES AT THE LATEST LEVEL, THE REWORK INSTRUCTIONS OF ALL ECOS AFTER REVISION A2 WILL NEED TO BE PERFORMED.

REFERENCE DOCUMENTS
SCHEMATIC _ _ 200734-600
PARTS LIST _ _ PL200734-100

DRAWN	KTRUSCOTT	EVANS & SUTHERLAND <small>SALT LAKE CITY, UTAH 84108</small>	
CHECKED	<i>[Signature]</i> 1-29-87	TITLE	
ELEC ENG	EBROWN	ASSY. CARD, SPC9800 64K WORD	
PROJ ENG	BALLEN	MEMORY (PC/WW)	
APPROVED		SIZE	CODE IDENT
NEXT ASSY		C	53938
MODIFIED DATE	22-JAN-87	DWG NO.	200734-100
CREATION DATE	15-AUG-86	REV	B0
FILE NAME	200734100B0.MDF	VERSION	114
		SHEET 1 OF 2	

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200734-100
B
A



REPLACE THIS PAGE WITH THE
WIRE WRAP ASSEMBLY DRAWING
AT REVISION A2

B	53938	200734-100	B0
VERSION 10	DRAW 2 of 2		

200734-100

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200734-100

REV: A2 = AC

DESC: CARD ASSY,64K WORD MEMORY,SPC98000 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,WW STD SPC9800	53938	EVANS & SUTHERLAND.	200721-500	200721-500	1
C2 C3 C4 C5	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C6 C7 C8 C9 C10 C11 C12 C13	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C14 C15 C16 C17 C18 C19 C20	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	101
C21 C22 C23 C24 C25 C26 C27						
C28 C29 C30 C31 C32 C33 C34						
C35 C36 C37 C38 C39 C40 C41						
C42 C43 C44 C45 C46 C47 C48						
C49 C50 C51 C52 C53 C54 C55						
C56 C57 C59 C60 C61 C62 C63						
C64 C65 C66 C67 C68 C69 C70						
C71 C72 C74 C75 C76 C77 C78						
C79 C80 C81 C82 C83 C84 C85						
C86 C87 C89 C90 C91 C92 C93						
C94 C95 C96 C97 C98 C99 C100						
C101 C102 C104 C105 C106						
C107 C108 C109 C110						
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
M7 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	2618
M8 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
R1	R,,AXL 1K 1/4W	50139	ALLEN-BRADLEY CO. ELECTRO	RC07GF102J	803201-102	1
U10 U11 U20 U21 U31 U41 U51	IC,TTL 74F157	07263	FAIRCHILD IC'S & SEMICON	74F157APC/DC	807957-035	16
U61 U101 U111 U121 U131 U140						
U141 U150 U151						
U12 U13 U14 U15 U16 U22 U23	IC,RAM 1400-55	34335	ADVANCED MICRO DEVICES IN	AM2167-55PC	807167-055	64
U24 U25 U26 U32 U33 U34 U35						
U36 U42 U43 U44 U45 U46 U53						
U54 U55 U56 U63 U64 U65 U66						
U73 U74 U75 U76 U93 U94 U95						
U96 U103 U104 U105 U106 U113						
U114 U115 U116 U122 U123						
U124 U125 U126 U132 U133						
U134 U135 U136 U142 U143						
U144 U145 U146 U152 U153						
U154 U155 U156						
U3 U5 U165 U175	R,,SIP 330(R9)	91637	DALE ELECTRONICS INC	CSC10B01-331G	807524-331	4
U30 U40 U50 U60 U100 U110	IC,TTL 74S244	81349	MILITARY SPECIFICATIONS	54S244N	807244-055	8
U120 U130						
U4 U6 U166 U176	R,,SIP 220(R9)	1U696	STACKPOLE COMPONENTS CO	10-9-1-221G	807524-221	4
U52 U62 U102 U112	IC,TTL 74F244	07263	FAIRCHILD IC'S & SEMICON	74F244PC/DC	807954-035	4
U70	IC,TTL 74F04	07263	FAIRCHILD IC'S & SEMICON	74F04PC/DC	807904-035	1
U71	IC,TTL #74F08	07263	FAIRCHILD IC'S & SEMICON	74F08PC/DC	807908-035	1
U72 U92	IC,TTL 74S37	01295	TEXAS INSTR, SEMICON DIV.	SN74S37N	807400-090	2
U80 U91	IC,TTL #74F00	07263	FAIRCHILD IC'S & SEMICON	74F00PC/DC	807900-035	2

TIME=19:02

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 2

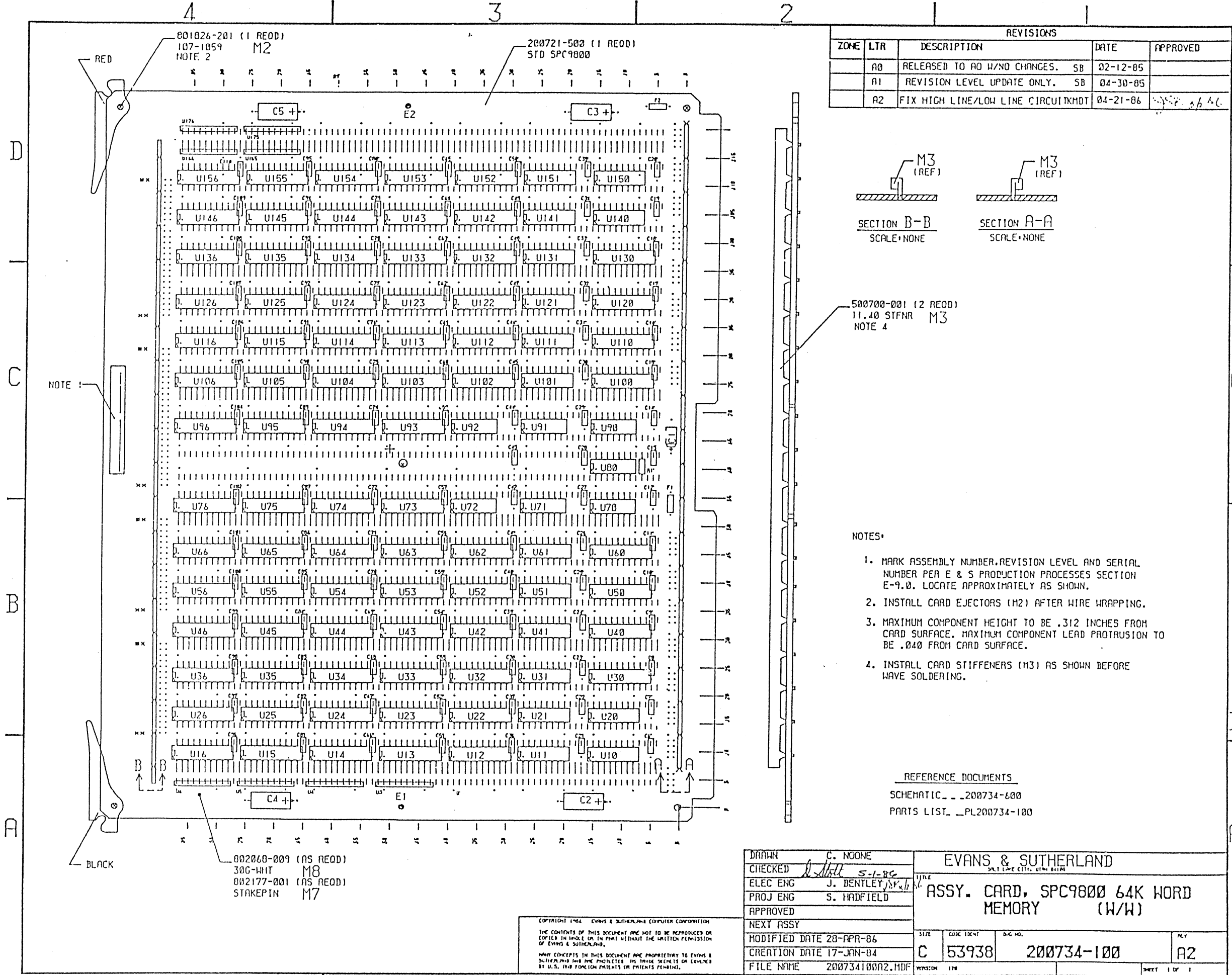
MAINTENANCE PARTS LIST

ASSEMBLY: PL 200734-100

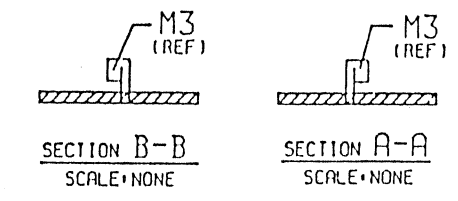
REV: A2 = AC

DESC: CARD ASSY, 64K WORD MEMORY, SPC98000 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
U90	IC, TTL #74F02	07263	FAIRCHILD IC'S & SEMICOND	74F02PC/DC 22 ITEMS LISTED	807902-035	1



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO AO W/NO CHANGES.	SB 02-12-85	
	A1	REVISION LEVEL UPDATE ONLY.	SB 04-30-85	
	A2	FIX HIGH LINE/LOW LINE CIRCUIT KMDT	04-21-86	<i>SB</i>



500700-001 (2 REOD)
11.40 STFNR M3
NOTE 4

NOTES:

1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
2. INSTALL CARD EJECTORS (M2) AFTER WIRE WRAPPING.
3. MAXIMUM COMPONENT HEIGHT TO BE .312 INCHES FROM CARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM CARD SURFACE.
4. INSTALL CARD STIFFENERS (M3) AS SHOWN BEFORE WAVE SOLDERING.

REFERENCE DOCUMENTS
SCHEMATIC _ _ 200734-600
PARTS LIST _ _ PL200734-100

801826-201 (1 REOD)
107-1059 M2
NOTE 2

200721-500 (1 REOD)
STD SPC9800

002060-009 (AS REOD)
300-HIT M8
002177-001 (AS REOD)
STAKEPIN M7

DRAWN	C. NOONE
CHECKED	<i>J. Bentley</i> S-1-RC
ELEC ENG	J. BENTLEY
PROJ ENG	S. HADFIELD
APPROVED	
NEXT ASSY	
MODIFIED DATE	28-APR-86
CREATION DATE	17-JAN-84
FILE NAME	200734100A2.MDF

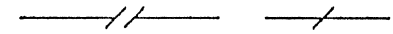
EVANS & SUTHERLAND			
ASSY. CARD, SPC9800 64K WORD MEMORY (W/W)			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200734-100	A2
PARTS LIST			SHEET 1 OF 1

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200734-100



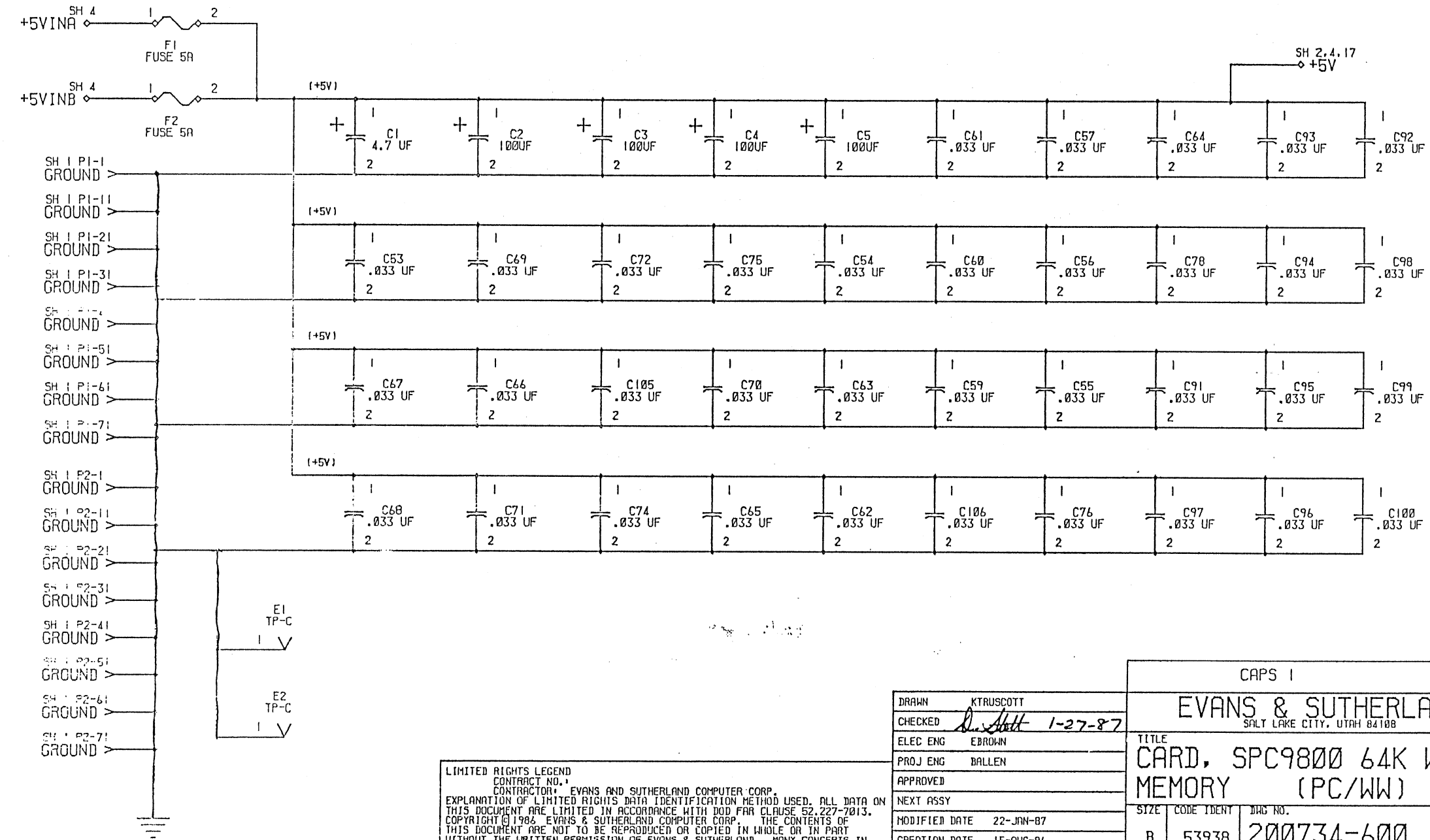
NOTES: UNLESS OTHERWISE SPECIFIED:

1. RESISTANCE VALUES ARE IN OHMS + - 1%..K DENOTES 1000.
2. ON ALL IC'S, GROUND AND +5V (VCC) ARE AS FOLLOWS:
 - 14 PIN IC, 7 AND 14
 - 16 PIN IC, 8 AND 16
 - 18 PIN IC, 9 AND 18
 - 20 PIN IC, 10 AND 20
 - 22 PIN IC, 11 AND 22
 - 24 PIN IC, 12 AND 24
 - 28 PIN IC, 14 AND 28
3. CARD CONNECTOR SYMBOL "PI-" DESIGNATES:
 - INPUT SIGNALS \triangleright
 - OUTPUT SIGNALS \longrightarrow
4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.
 

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
B0		CREATED PC VERSION	KHDT 01-22-87	44224/07

D
C
B
A

D
C
B
A

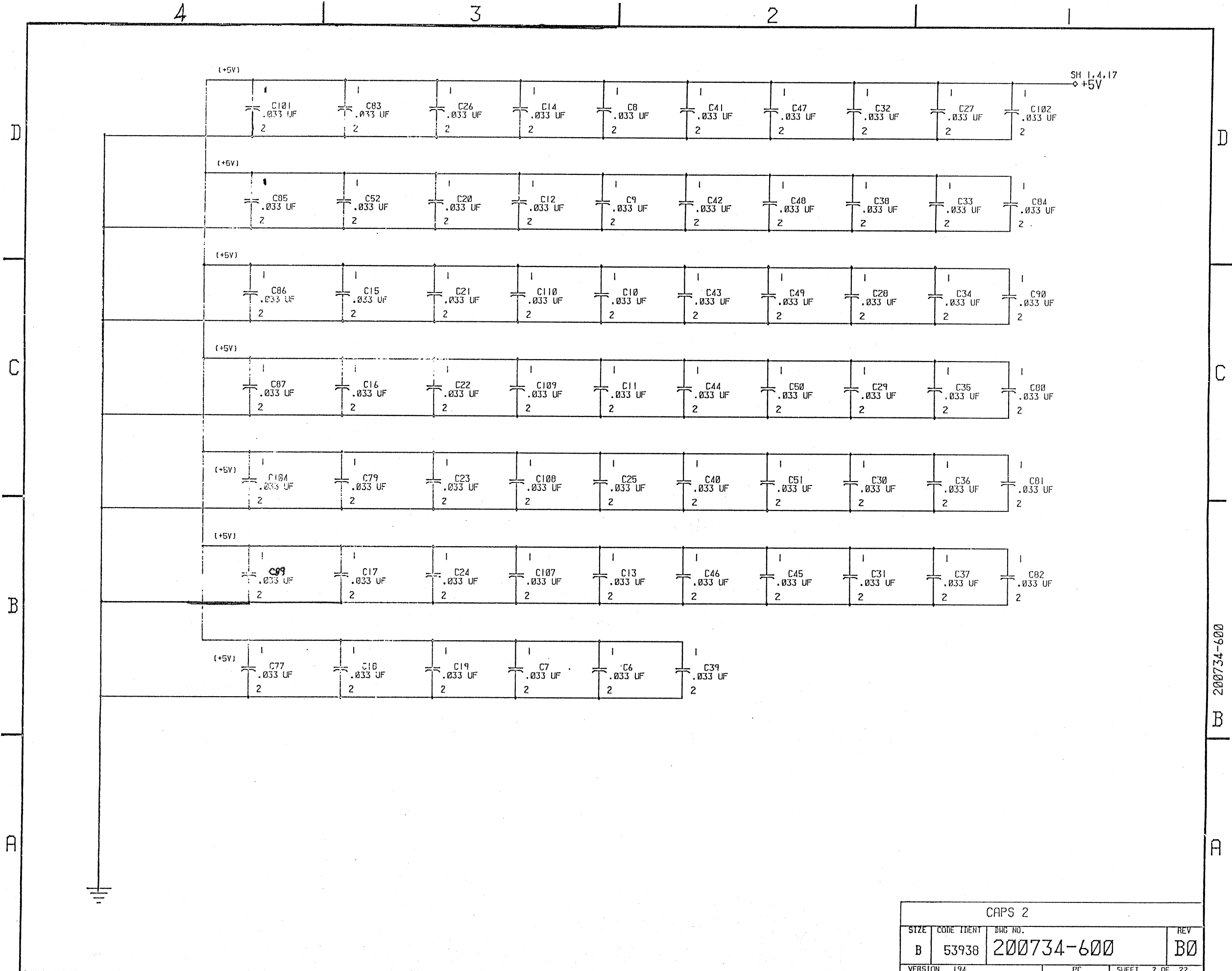


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DRAWN	KTRUSCOTT
CHECKED	<i>D. Hill</i> 1-27-87
ELEC ENG	EBROWN
PROJ ENG	BALLEN
APPROVED	
NEXT ASSY	
MODIFIED DATE	22-JAN-87
CREATION DATE	15-AUG-86
FILE NAME	200734100B0.MDF

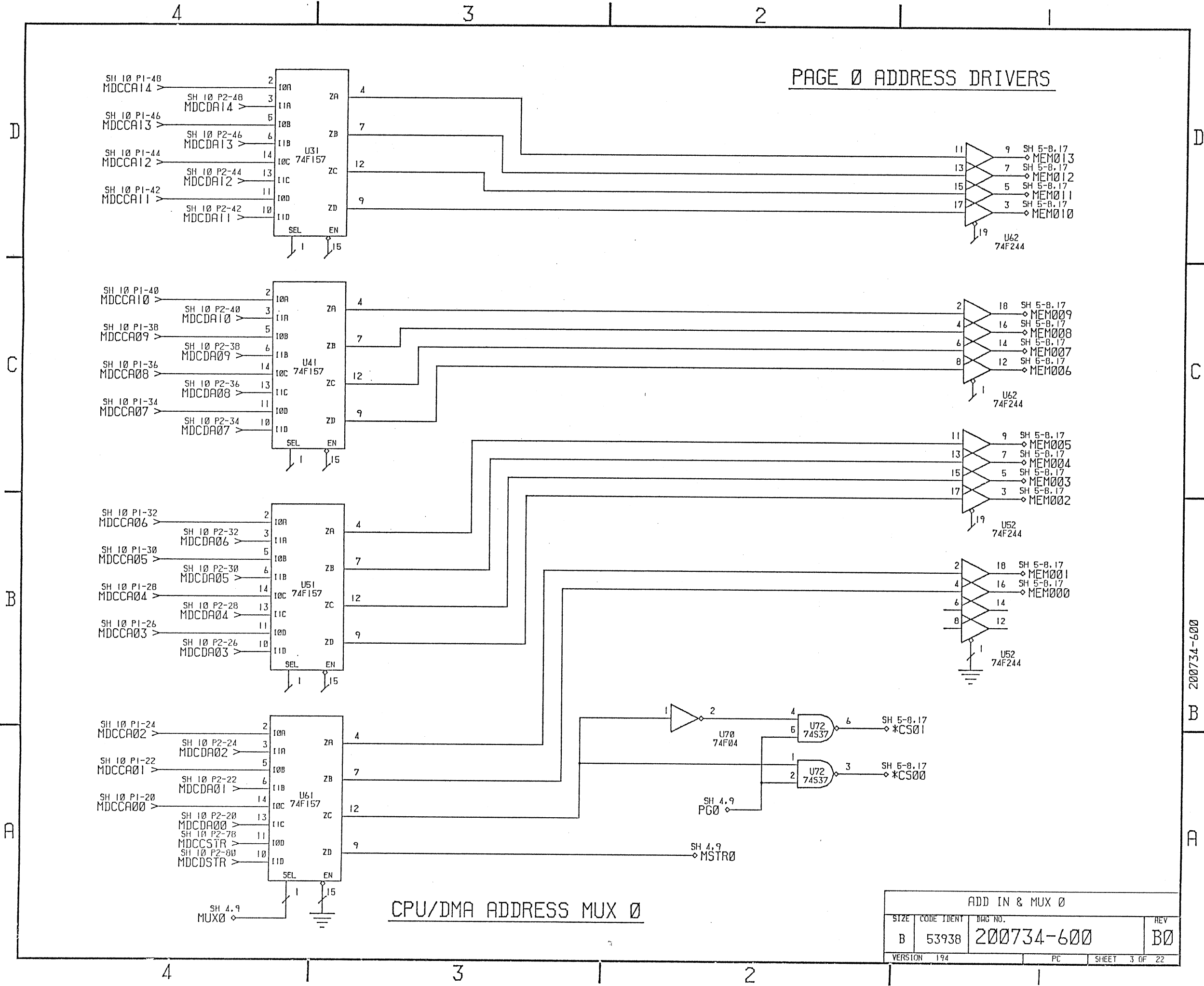
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EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE CARD, SPC9800 64K WORD MEMORY (PC/WW)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200734-600	B0
VERSION	194	PC	SHEET 1 OF 22

B 200734-600



CAPS 2			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200734-600	B0
VERSION	194	PC	SHEET 2 OF 22

200734-600



PAGE 0 ADDRESS DRIVERS

CPU/DMA ADDRESS MUX 0

ADD IN & MUX 0			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200734-600	B0
VERSION	194	PC	SHEET 3 OF 22

200734-600

A

C

D

4

3

2

1

4

3

2

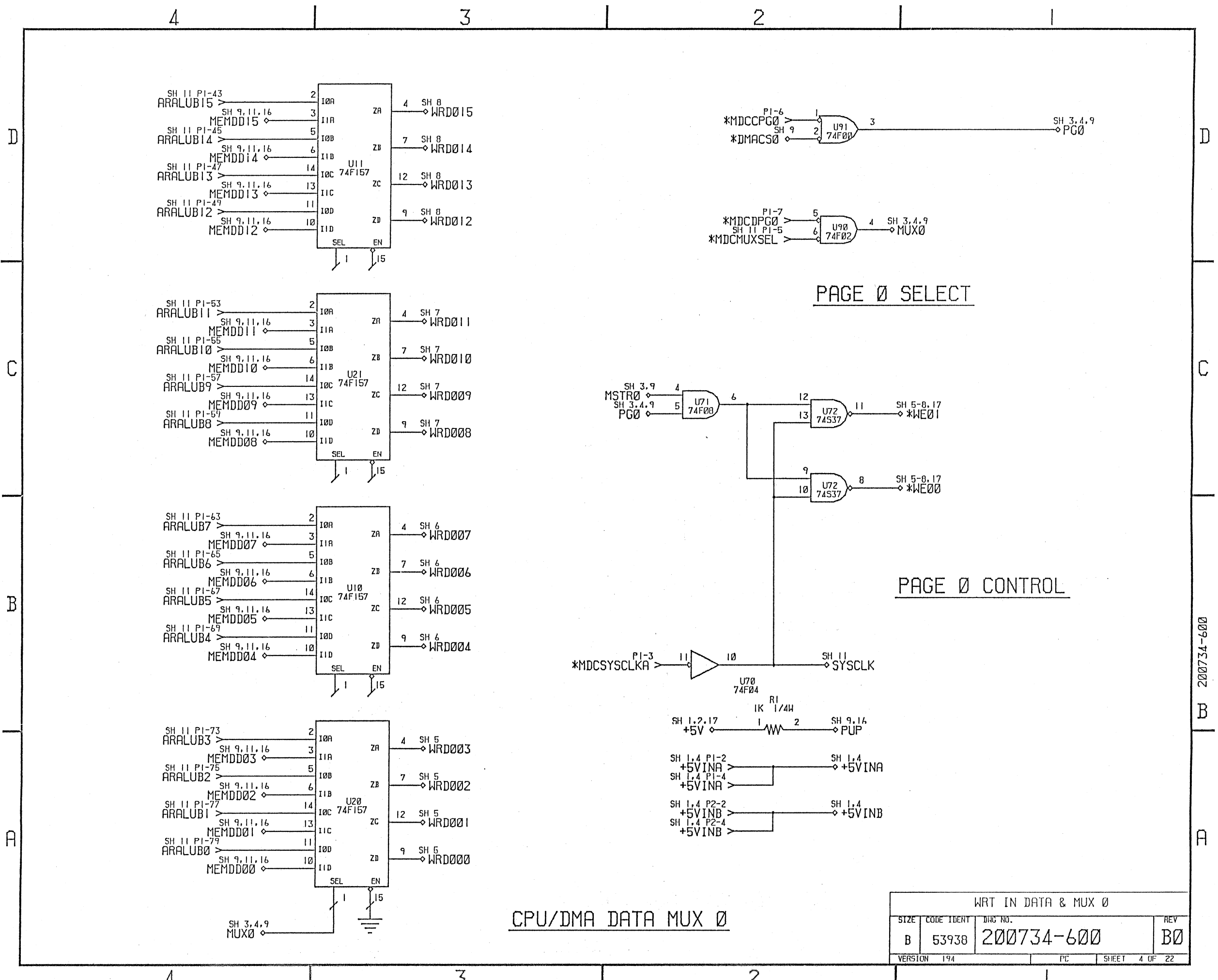
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D

C

B

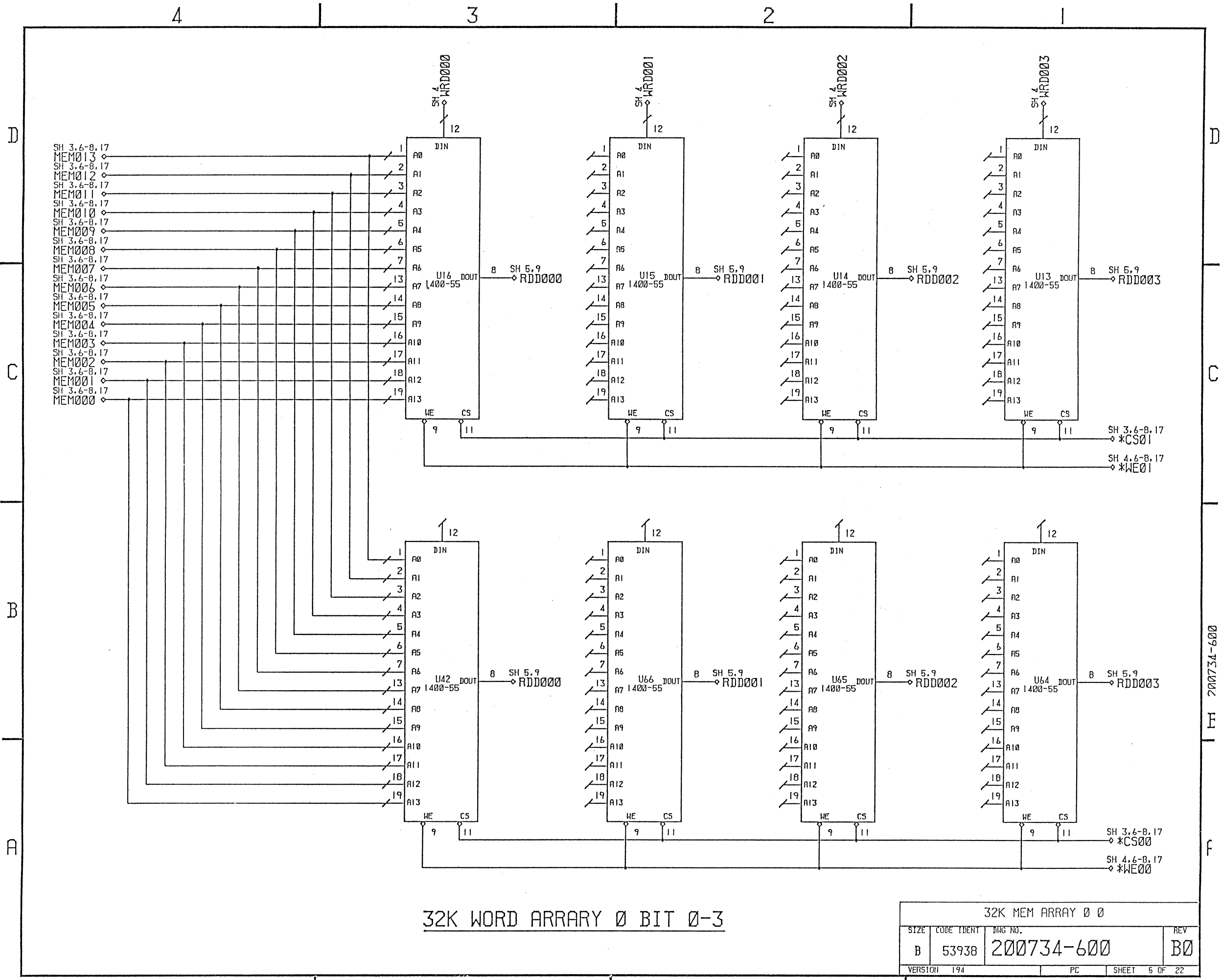
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CPU/DMA DATA MUX 0

WRT IN DATA & MUX 0			
SIZE	CODE IDENT	DOC NO.	REV
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VERSION	194	PC	SHEET 4 OF 22

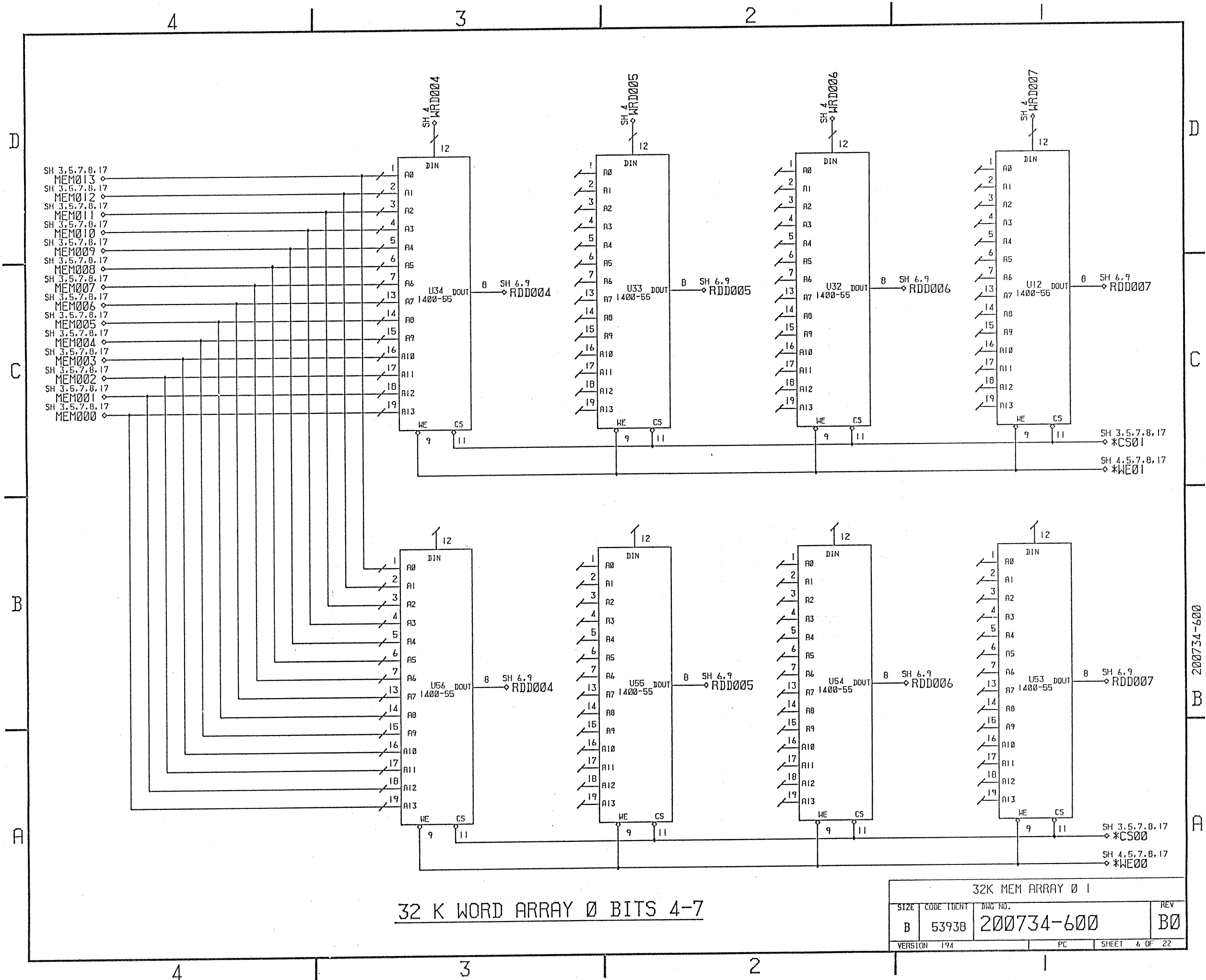
200734-600 B



32K WORD ARRAY 0 BIT 0-3

32K MEM ARRAY 0 0			
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VERSION	194	PC	SHEET 5 OF 22

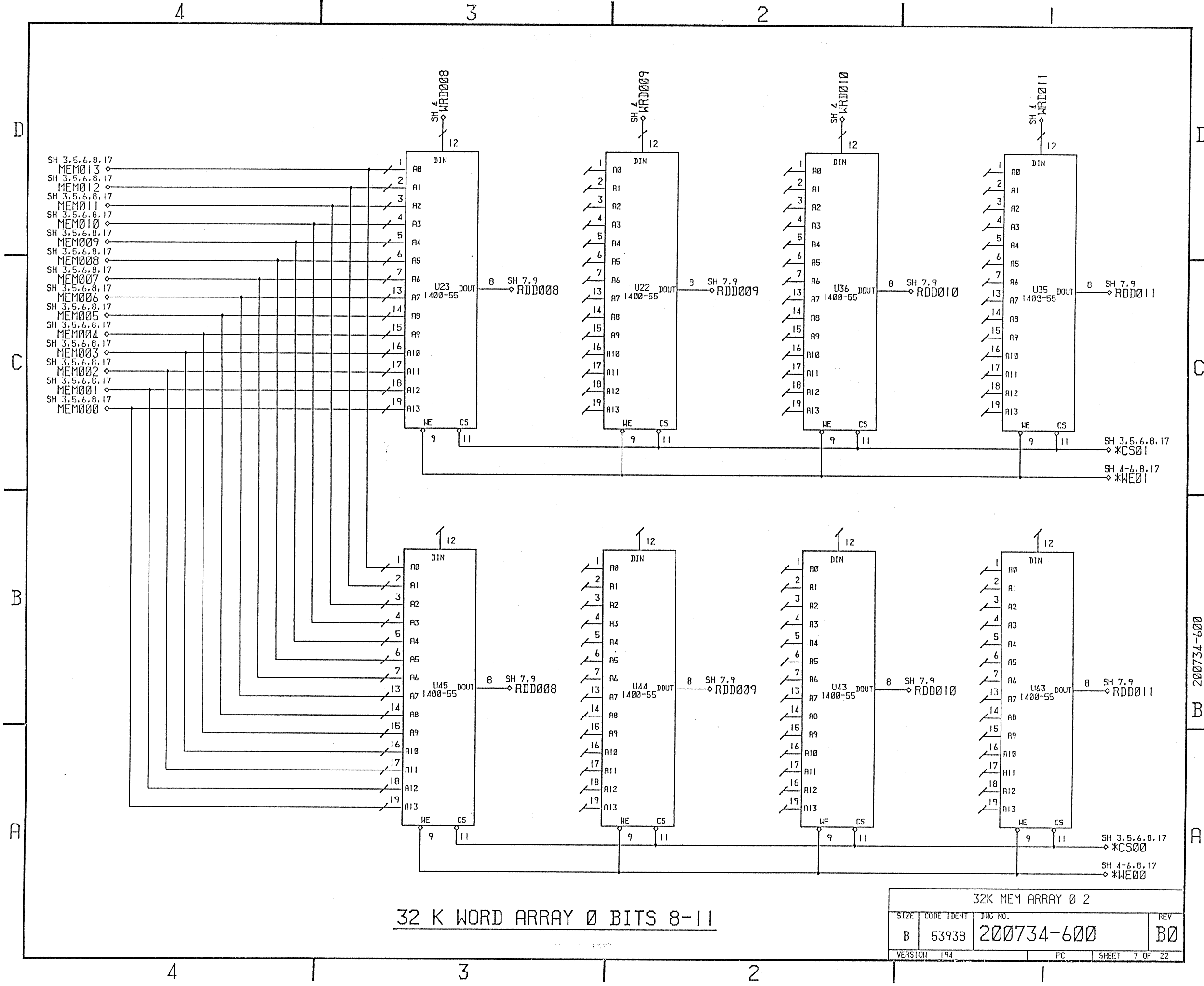
200734-600



32 K WORD ARRAY 0 BITS 4-7

32K MEM ARRAY 0 1			
SIZE	CODE IDENT	DRG NO.	REV
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VERSION 194	PC	SHEET 6 OF 22	

B 200734-600

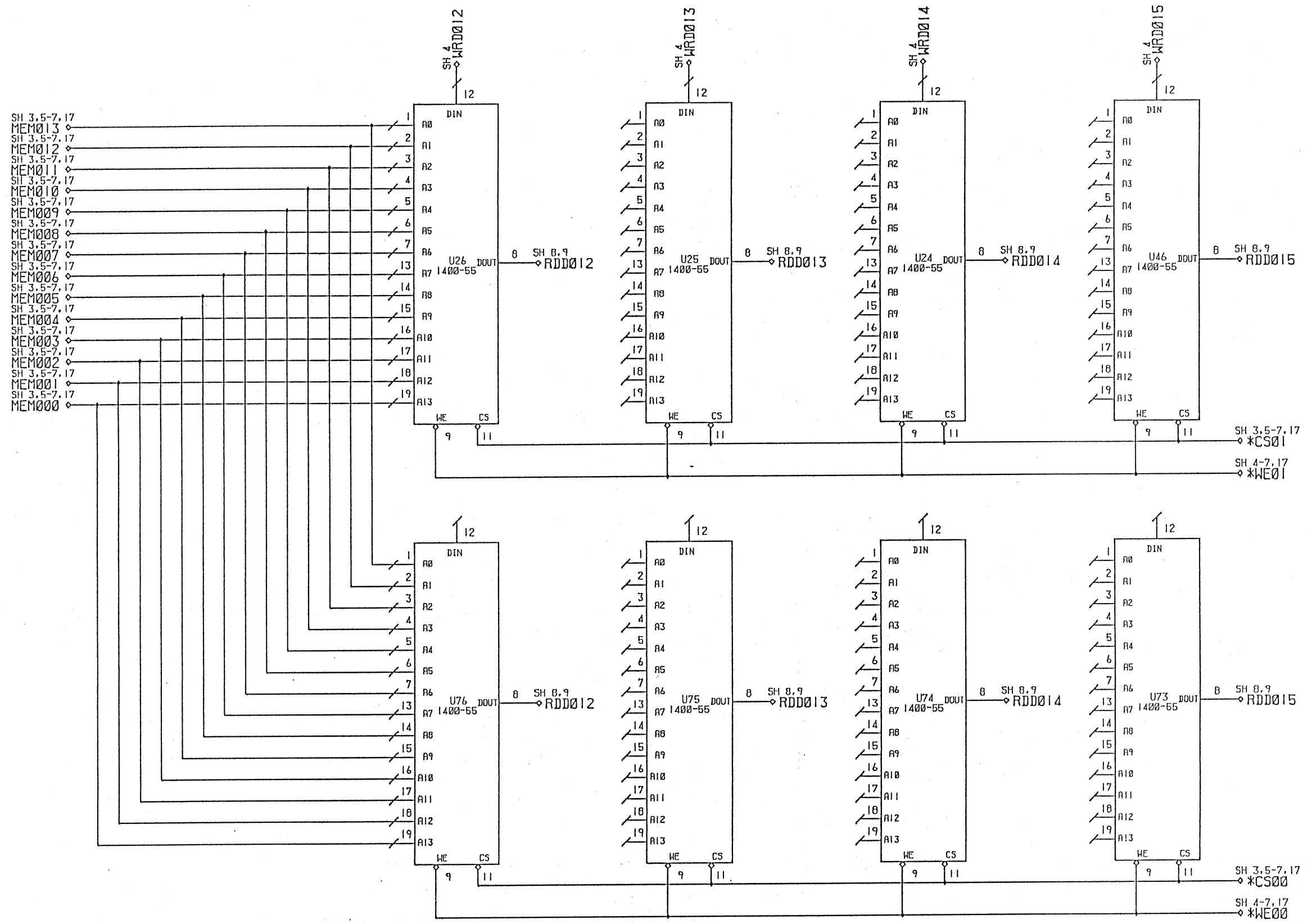


32 K WORD ARRAY 0 BITS 8-11

32K MEM ARRAY 0 2			
SIZE	CODE IDENT	FIG NO.	REV
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VERSION	194	PC	SHEET 7 OF 22

200734-600

D
C
B
A



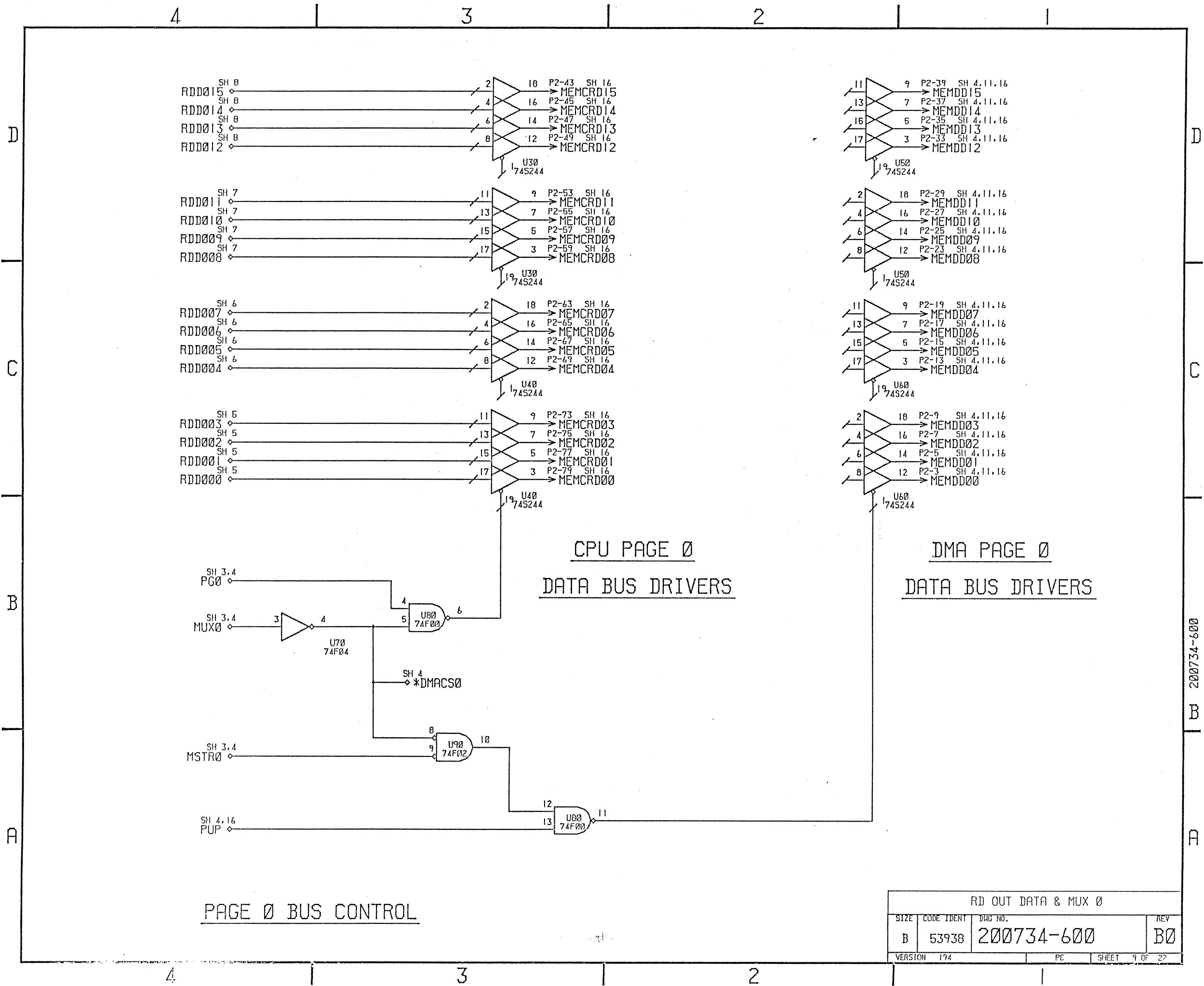
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32K MEM ARRAY 0 3			
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VERSION	194	PC	SHEET 0 OF 22

200734-600
F
F

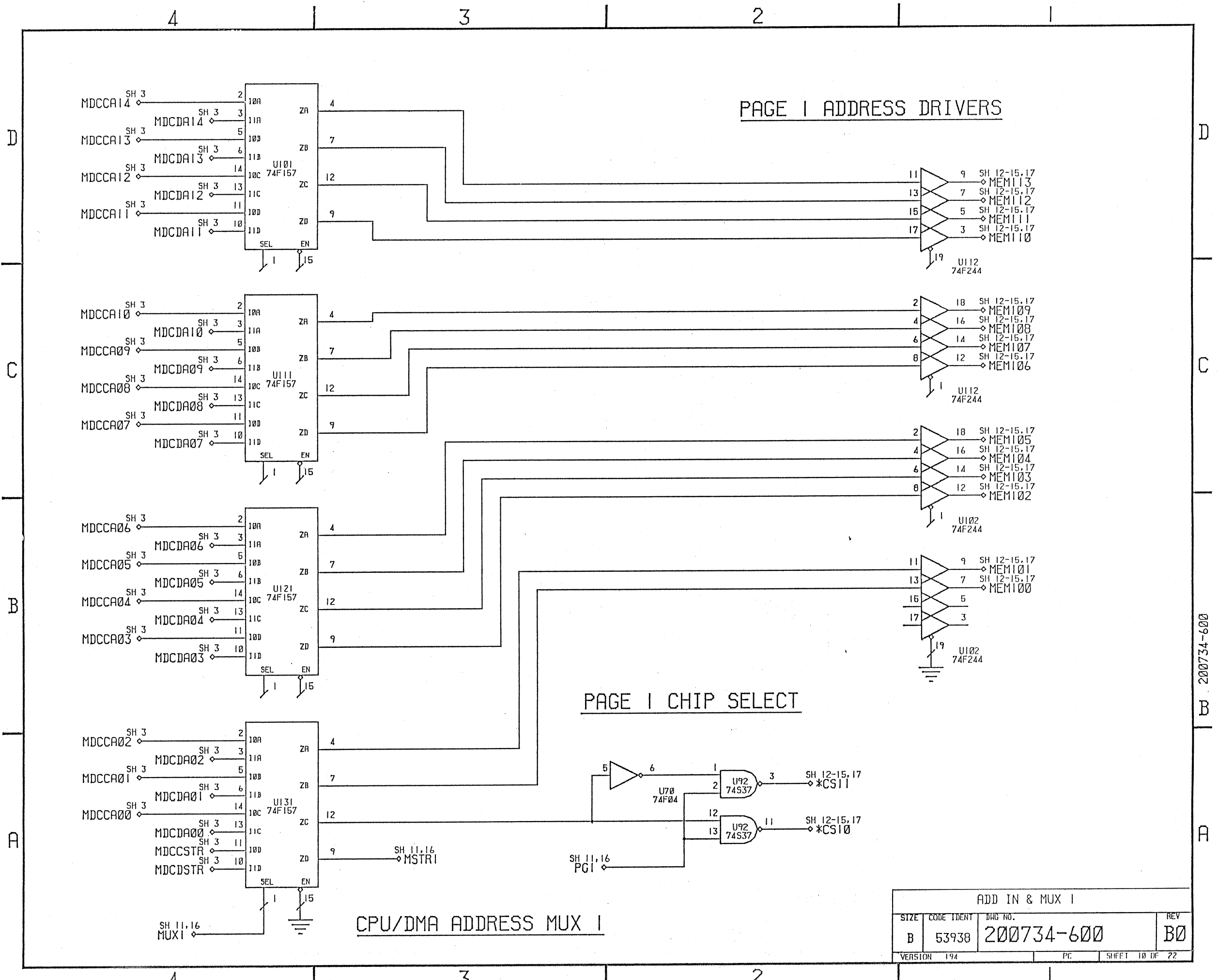
4 3 2 1

4 3 2 1



RD OUT DATA & MUX 0			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200734-600	B0
VERSION	174	PC	SHEET 9 OF 22

200734-600 B B



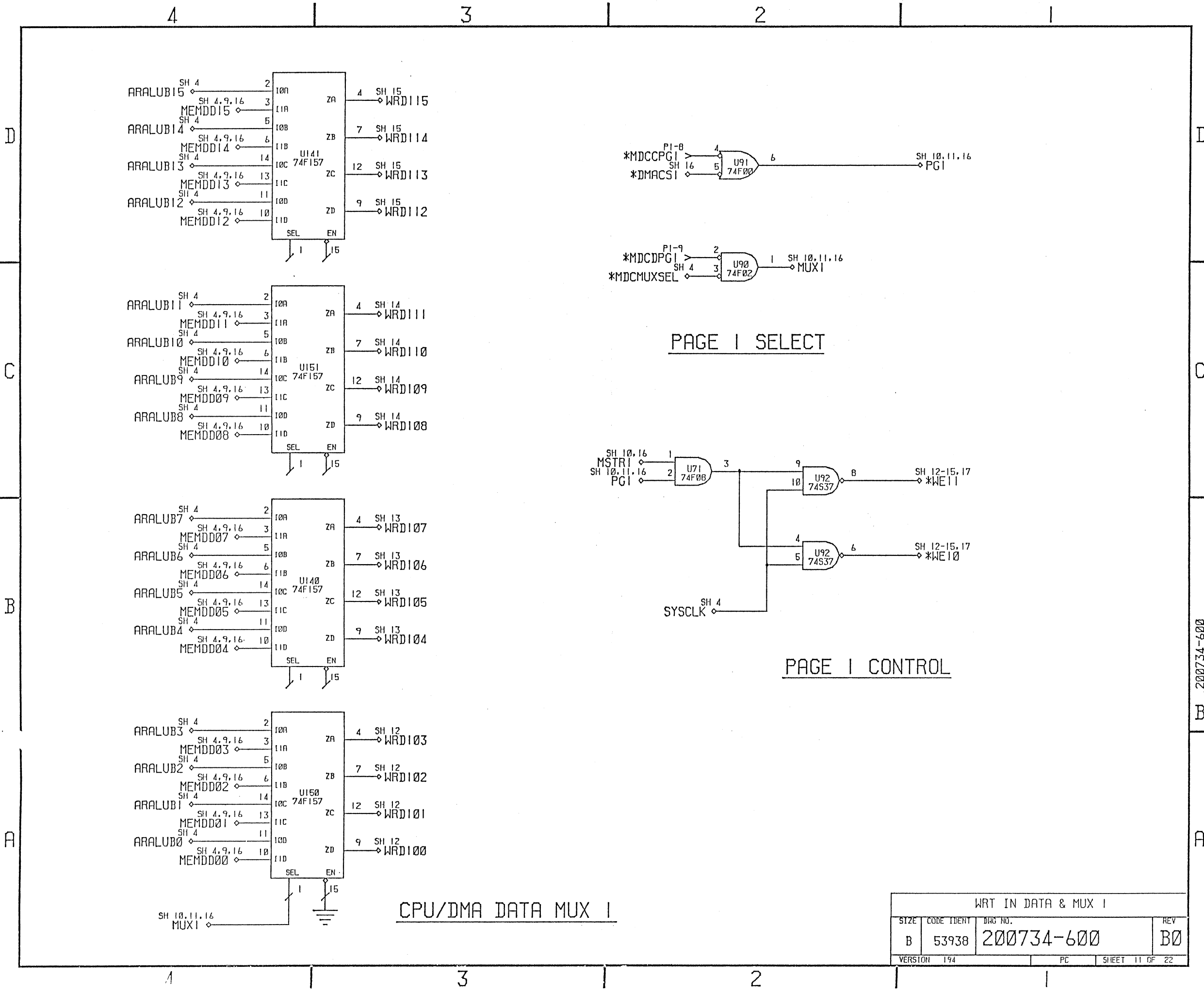
PAGE 1 ADDRESS DRIVERS

PAGE 1 CHIP SELECT

CPU/DMA ADDRESS MUX 1

ADD IN & MUX 1			
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B	53938	200734-600	B0
VERSION	194	PC	SHEET 10 OF 22

200734-600



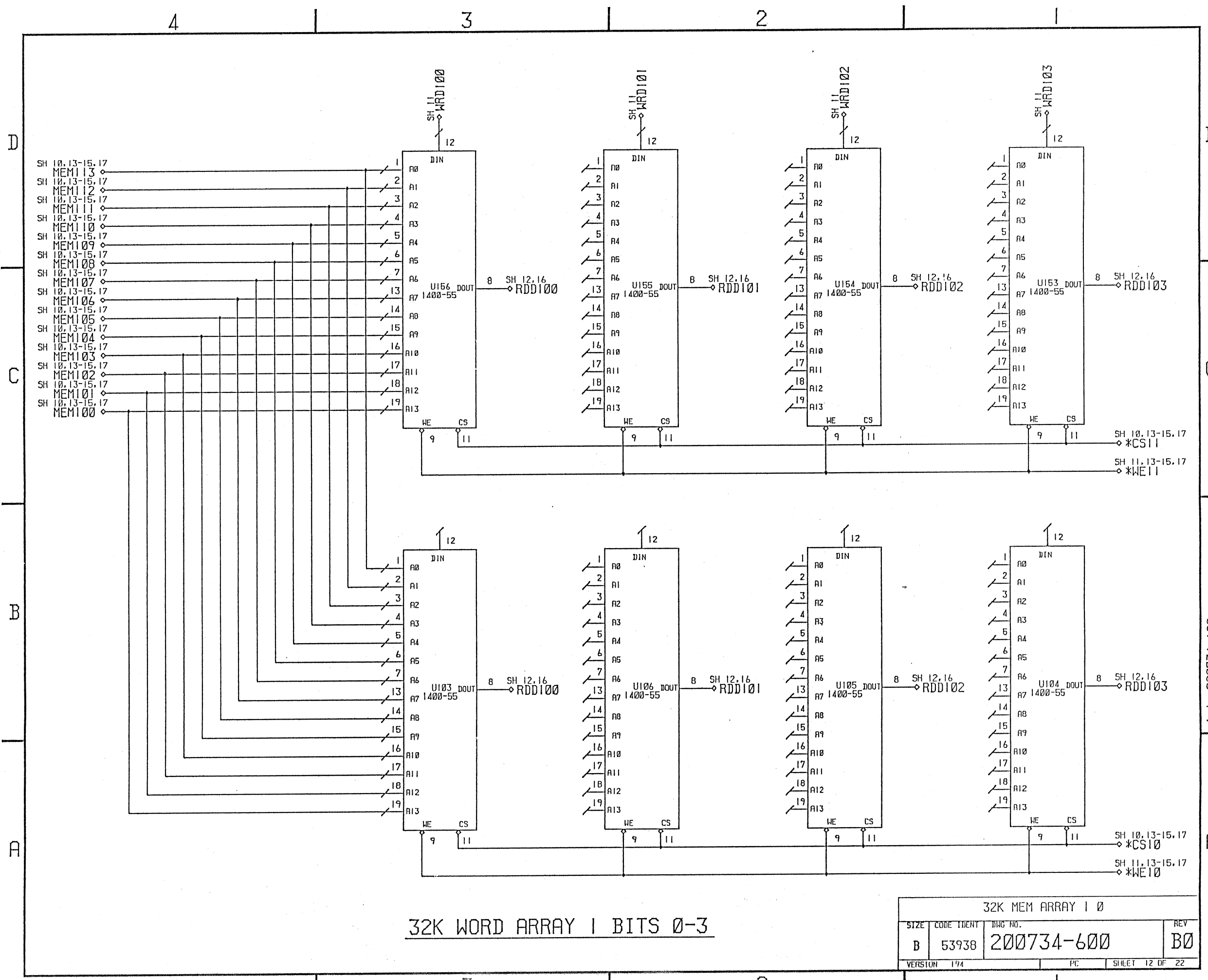
CPU/DMA DATA MUX 1

PAGE 1 SELECT

PAGE 1 CONTROL

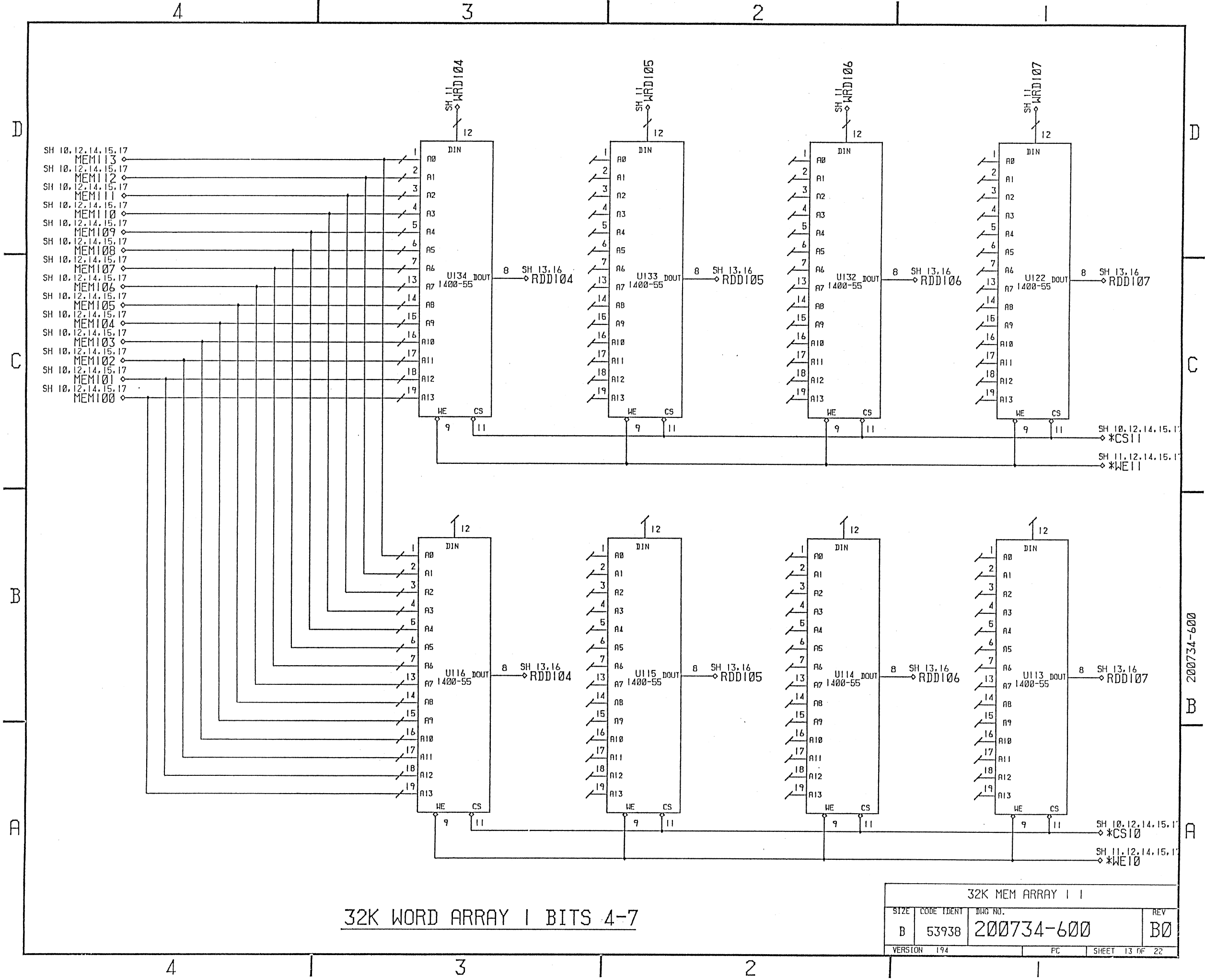
WRT IN DATA & MUX 1			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200734-600	B0
VERSION	194	PC	SHEET 11 OF 22

B 200734-600



32K WORD ARRAY 1 BITS 0-3

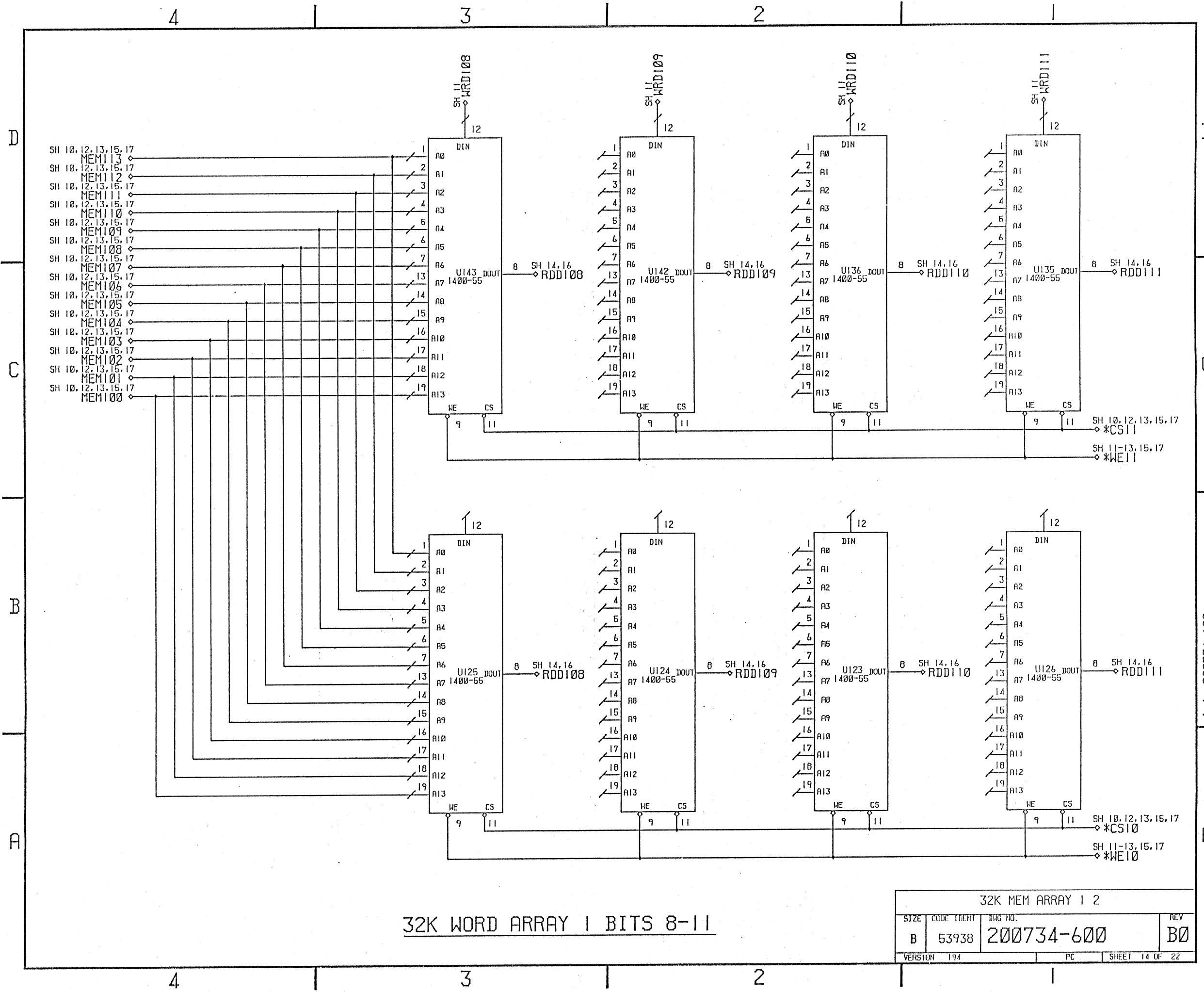
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SIZE	CODE IDENT	DRG NO.	REV
B	53938	200734-600	B0
VERSION	174	PC	SHEET 12 OF 22



32K WORD ARRAY 1 BITS 4-7

32K MEM ARRAY 1 1			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200734-600	B0
VERSION 194	PC	SHEET 13 OF 22	

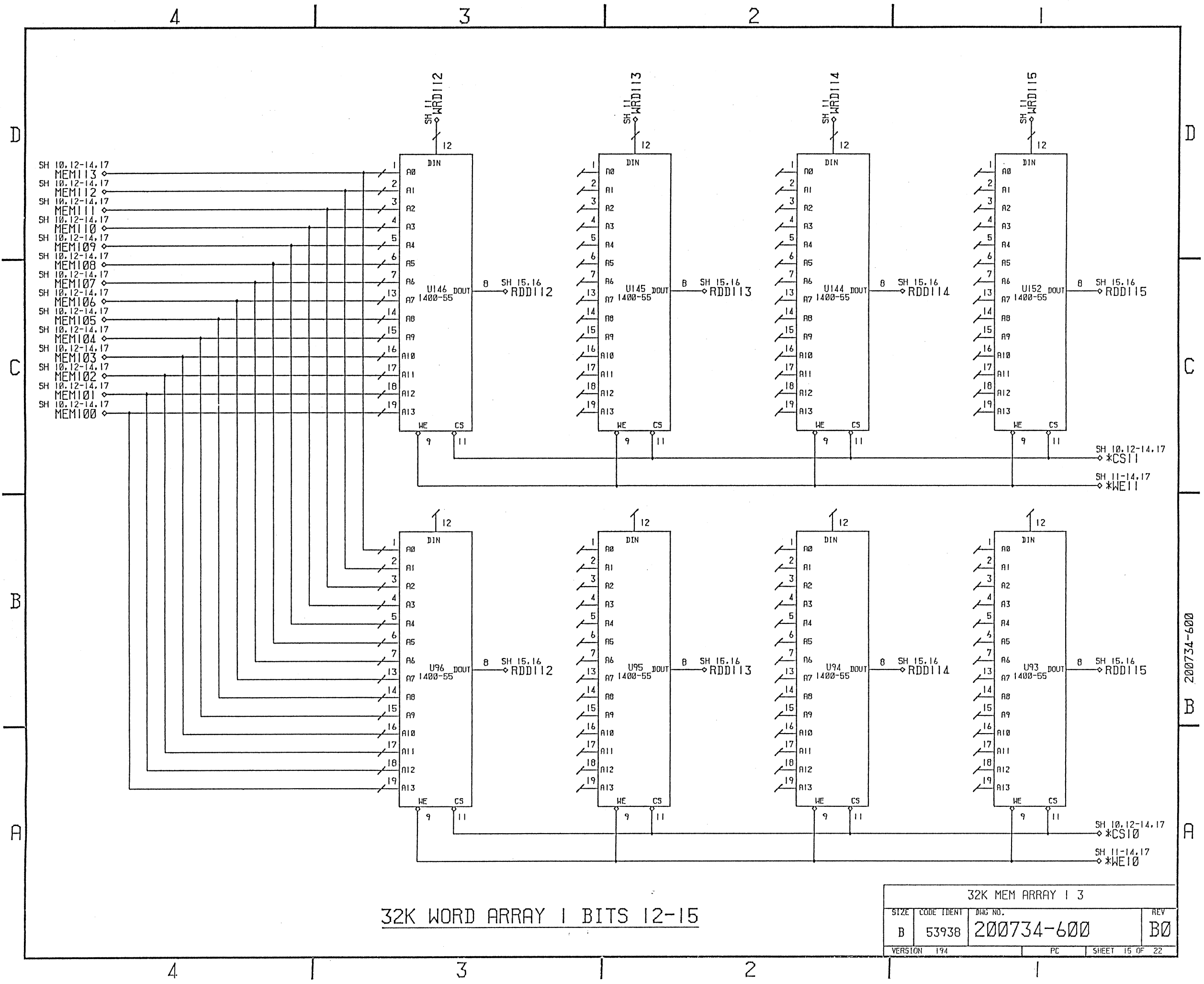
200734-600



32K WORD ARRAY | BITS 8-11

32K MEM ARRAY 2			
SIZE	CODE IDENT	DWG NO.	REV
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VERSION 174	PC	SHEET 14 OF 22	

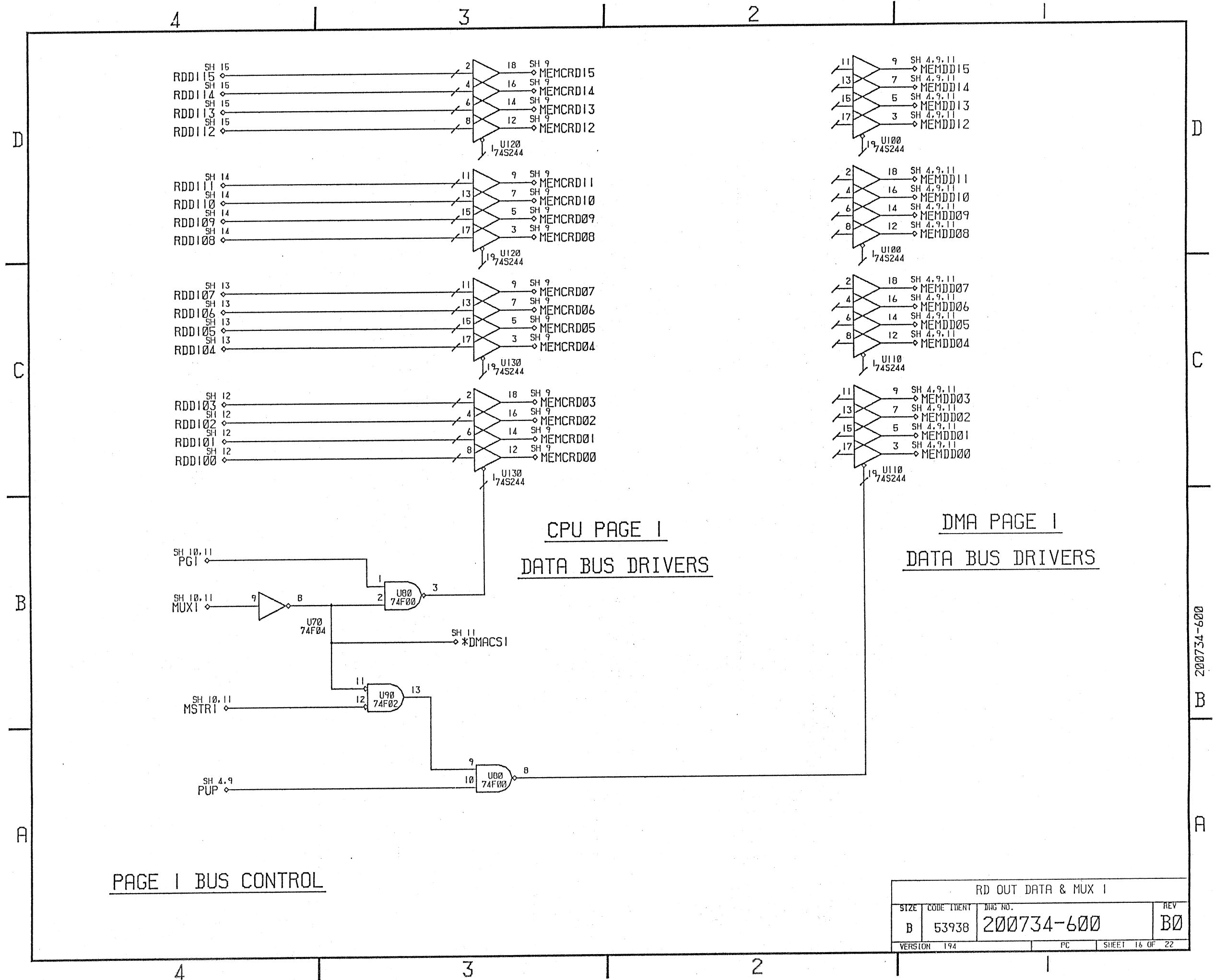
200734-600



32K WORD ARRAY 1 BITS 12-15

32K MEM ARRAY 1 3			
SIZE	CODE IDENT	DWG NO.	REV
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VERSION	194	PC	SHEET 15 OF 22

200734-600



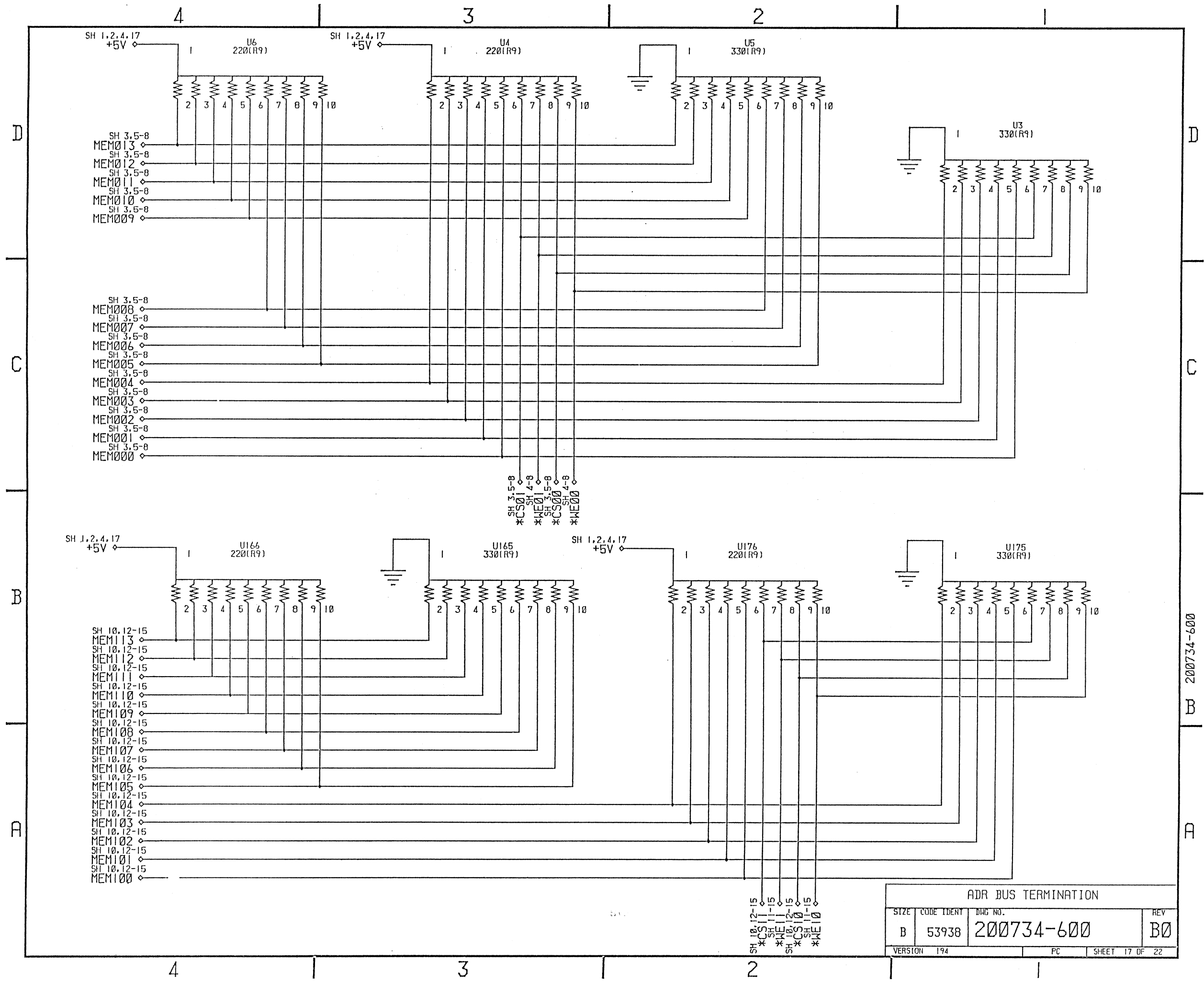
PAGE 1 BUS CONTROL

CPU PAGE 1
DATA BUS DRIVERS

DMA PAGE 1
DATA BUS DRIVERS

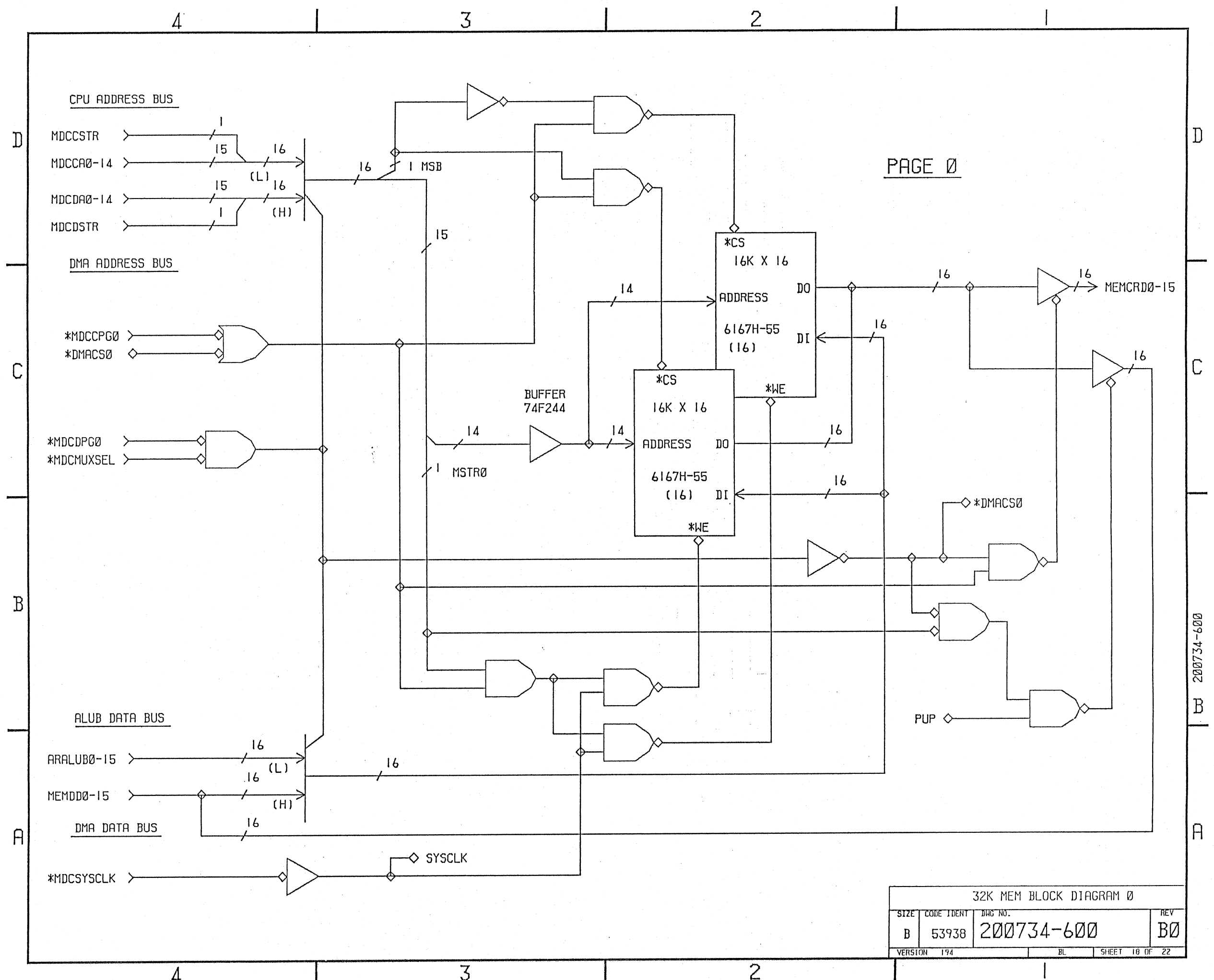
RD OUT DATA & MUX 1			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200734-600	B0
VERSION 194	PC	SHEET 16 OF 22	

200734-600
B
A



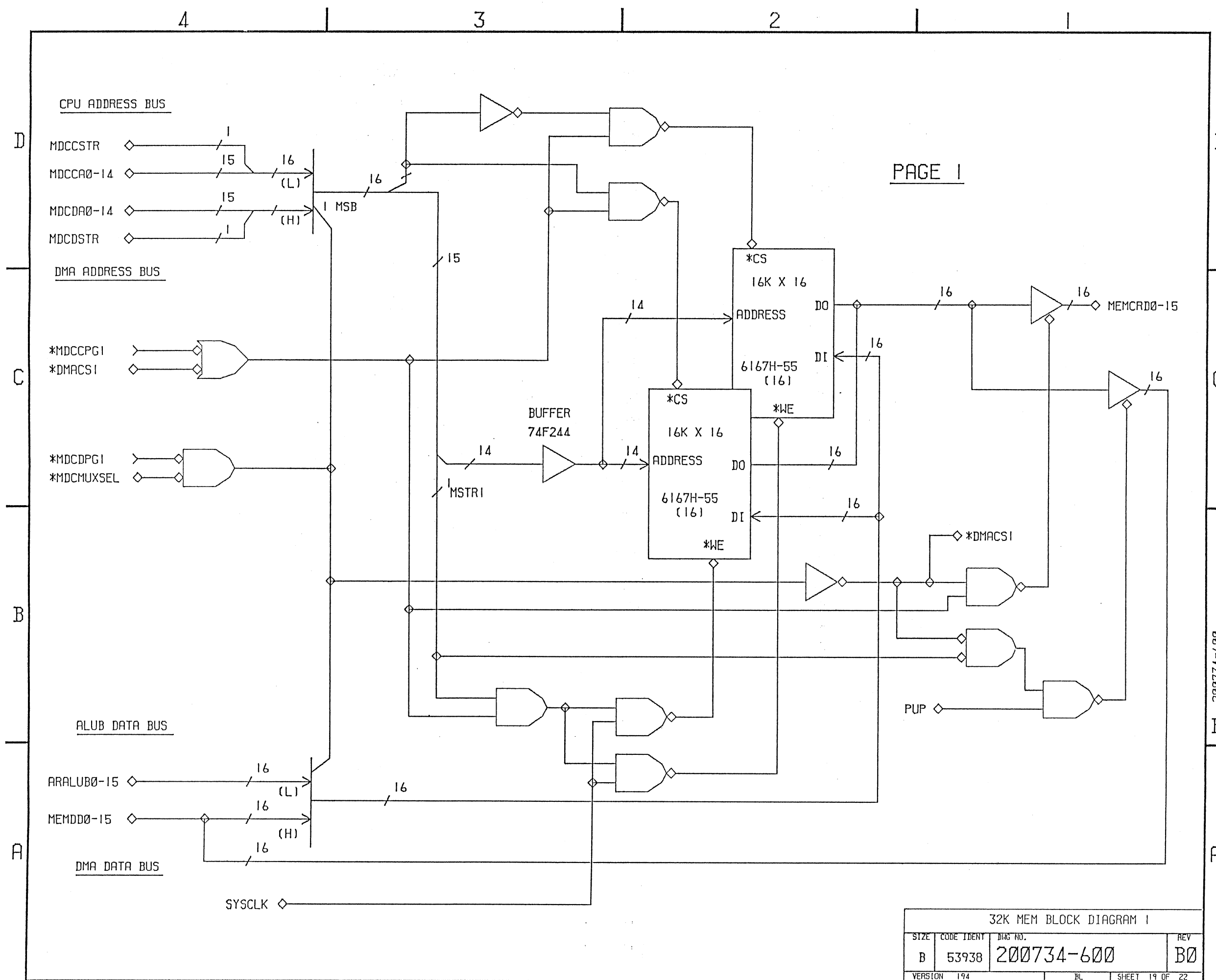
ADR BUS TERMINATION			
SIZE	CODE IDENT	DRG NO.	REV
B	53938	200734-600	B0
VERSION	194	PC	SHEET 17 OF 22

200734-600 B



32K MEM BLOCK DIAGRAM 0

SIZE	CODE IDENT	DRG NO.	REV
B	53938	200734-600	B0
VERSION 194	BL	SHEET 18 OF 22	



PAGE 1

32K MEM BLOCK DIAGRAM 1			
SIZE	CODE IDENT	DIAG NO.	REV
B	53938	200734-600	B0
VERSION 194		BL	SHEET 19 OF 22

200734-600

4

3

2

1

D

D

C

C

B

B

A

A

UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN
PI	1	FEMALE	GROUND	1	C4		PI	73	FEMALE	ARALUB3	4	A4		P2	47	MALE	MEMCRD13	9	D3	
PI	2	FEMALE	+5VINA	4	A2		PI	75	FEMALE	ARALUB2	4	A4		P2	48	FEMALE	MDCDA14	3	D4	
PI	3	FEMALE	*MDCSYSCLKA	4	B2		PI	77	FEMALE	ARALUB1	4	A4		P2	49	MALE	MEMCRD12	9	D3	
PI	4	FEMALE	+5VINA	4	A2		PI	79	FEMALE	ARALUB0	4	A4		P2	51	FEMALE	GROUND	1	A4	
PI	5	FEMALE	*MDCMUXSEL	4	D2		P2	1	FEMALE	GROUND	1	B4		P2	53	MALE	MEMCRD11	9	D3	
PI	6	FEMALE	*MDCCPG0	4	D2		P2	2	FEMALE	+5VINB	4	A2		P2	55	MALE	MEMCRD10	9	D3	
PI	7	FEMALE	*MDCDPG0	4	D2		P2	3	MALE	MEMDD00	9	C1		P2	57	MALE	MEMCRD09	9	D3	
PI	8	FEMALE	*MDCCPG1	11	D2		P2	4	FEMALE	+5VINB	4	A2		P2	59	MALE	MEMCRD08	9	D3	
PI	9	FEMALE	*MDCDPG1	11	D2		P2	5	MALE	MEMDD01	9	C1		P2	61	FEMALE	GROUND	1	A4	
PI	11	FEMALE	GROUND	1	C4		P2	7	MALE	MEMDD02	9	C1		P2	63	MALE	MEMCRD07	9	C3	
PI	20	FEMALE	MDCCA00	3	A4		P2	9	MALE	MEMDD03	9	C1		P2	65	MALE	MEMCRD06	9	C3	
PI	21	FEMALE	GROUND	1	B4		P2	11	FEMALE	GROUND	1	B4		P2	67	MALE	MEMCRD05	9	C3	
PI	22	FEMALE	MDCCA01	3	A4		P2	13	MALE	MEMDD04	9	C1		P2	69	MALE	MEMCRD04	9	C3	
PI	24	FEMALE	MDCCA02	3	A4		P2	15	MALE	MEMDD05	9	C1		P2	71	FEMALE	GROUND	1	A4	
PI	26	FEMALE	MDCCA03	3	B4		P2	17	MALE	MEMDD06	9	C1		P2	73	MALE	MEMCRD03	9	C3	
PI	28	FEMALE	MDCCA04	3	B4		P2	19	MALE	MEMDD07	9	C1		P2	75	MALE	MEMCRD02	9	C3	
PI	30	FEMALE	MDCCA05	3	B4		P2	20	FEMALE	MDCDA00	3	A4		P2	77	MALE	MEMCRD01	9	C3	
PI	31	FEMALE	GROUND	1	B4		P2	21	FEMALE	GROUND	1	A4		P2	78	FEMALE	MDCSTR	3	A4	
PI	32	FEMALE	MDCCA06	3	B4		P2	22	FEMALE	MDCDA01	3	A4		P2	79	MALE	MEMCRD00	9	C3	
PI	34	FEMALE	MDCCA07	3	C4		P2	23	MALE	MEMDD08	9	D1		P2	80	FEMALE	MDCDSTR	3	A4	
PI	36	FEMALE	MDCCA08	3	C4		P2	24	FEMALE	MDCDA02	3	A4								
PI	38	FEMALE	MDCCA09	3	C4		P2	25	MALE	MEMDD09	9	D1								
PI	40	FEMALE	MDCCA10	3	C4		P2	26	FEMALE	MDCDA03	3	B4								
PI	41	FEMALE	GROUND	1	B4		P2	27	MALE	MEMDD10	9	D1								
PI	42	FEMALE	MDCCA11	3	D4		P2	28	FEMALE	MDCDA04	3	B4								
PI	43	FEMALE	ARALUB15	4	D4		P2	29	MALE	MEMDD11	9	D1								
PI	44	FEMALE	MDCCA12	3	D4		P2	30	FEMALE	MDCDA05	3	B4								
PI	45	FEMALE	ARALUB14	4	D4		P2	31	FEMALE	GROUND	1	A4								
PI	46	FEMALE	MDCCA13	3	D4		P2	32	FEMALE	MDCDA06	3	B4								
PI	47	FEMALE	ARALUB13	4	D4		P2	33	MALE	MEMDD12	9	D1								
PI	48	FEMALE	MDCCA14	3	D4		P2	34	FEMALE	MDCDA07	3	C4								
PI	49	FEMALE	ARALUB12	4	D4		P2	35	MALE	MEMDD13	9	D1								
PI	51	FEMALE	GROUND	1	B4		P2	36	FEMALE	MDCDA08	3	C4								
PI	53	FEMALE	ARALUB11	4	C4		P2	37	MALE	MEMDD14	9	D1								
PI	55	FEMALE	ARALUB10	4	C4		P2	38	FEMALE	MDCDA09	3	C4								
PI	57	FEMALE	ARALUB9	4	C4		P2	39	MALE	MEMDD15	9	D1								
PI	59	FEMALE	ARALUB8	4	C4		P2	40	FEMALE	MDCDA10	3	C4								
PI	61	FEMALE	GROUND	1	B4		P2	41	FEMALE	GROUND	1	A4								
PI	63	FEMALE	ARALUB7	4	B4		P2	42	FEMALE	MDCDA11	3	D4								
PI	65	FEMALE	ARALUB6	4	B4		P2	43	MALE	MEMCRD15	9	D3								
PI	67	FEMALE	ARALUB5	4	B4		P2	44	FEMALE	MDCDA12	3	D4								
PI	69	FEMALE	ARALUB4	4	B4		P2	45	MALE	MEMCRD14	9	D3								
PI	71	FEMALE	GROUND	1	B4		P2	46	FEMALE	MDCDA13	3	D4								

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CONNECTORS BY UNIT/PIN			
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	4						3						2						1					
	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE DOMAIN	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE DOMAIN	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE DOMAIN						
D	*MDCCPG0	PI	6	FEMALE	4	D2	MDCCA01	PI	22	FEMALE	3	A4	MEMCRD12	P2	49	MALE	9	D3						
	*MDCCPG1	PI	8	FEMALE	11	D2	MDCCA02	PI	24	FEMALE	3	A4	MEMCRD13	P2	47	MALE	9	D3						
	*MDCDPG0	PI	7	FEMALE	4	D2	MDCCA03	PI	26	FEMALE	3	B4	MEMCRD14	P2	45	MALE	9	D3						
	*MDCDPG1	PI	9	FEMALE	11	D2	MDCCA04	PI	28	FEMALE	3	B4	MEMCRD15	P2	43	MALE	9	D3						
	*MDCMUXSEL	PI	5	FEMALE	4	D2	MDCCA05	PI	30	FEMALE	3	B4	MEMDD00	P2	3	MALE	9	C1						
	*MDCSYSCLKA	PI	3	FEMALE	4	B2	MDCCA06	PI	32	FEMALE	3	B4	MEMDD01	P2	5	MALE	9	C1						
	+5VINA	PI	2	FEMALE	4	A2	MDCCA07	PI	34	FEMALE	3	C4	MEMDD02	P2	7	MALE	9	C1						
	+5VINA	PI	4	FEMALE	4	A2	MDCCA08	PI	36	FEMALE	3	C4	MEMDD03	P2	9	MALE	9	C1						
	+5VINB	P2	2	FEMALE	4	A2	MDCCA09	PI	38	FEMALE	3	C4	MEMDD04	P2	13	MALE	9	C1						
	+5VINB	P2	4	FEMALE	4	A2	MDCCA10	PI	40	FEMALE	3	C4	MEMDD05	P2	15	MALE	9	C1						
	ARALUB0	PI	79	FEMALE	4	A4	MDCCA11	PI	42	FEMALE	3	D4	MEMDD06	P2	17	MALE	9	C1						
	ARALUB1	PI	77	FEMALE	4	A4	MDCCA12	PI	44	FEMALE	3	D4	MEMDD07	P2	19	MALE	9	C1						
	ARALUB10	PI	55	FEMALE	4	C4	MDCCA13	PI	46	FEMALE	3	D4	MEMDD08	P2	23	MALE	9	D1						
	ARALUB11	PI	53	FEMALE	4	C4	MDCCA14	PI	48	FEMALE	3	D4	MEMDD09	P2	25	MALE	9	D1						
	ARALUB12	PI	49	FEMALE	4	D4	MDCSTR	P2	78	FEMALE	3	A4	MEMDD10	P2	27	MALE	9	D1						
C	ARALUB13	PI	47	FEMALE	4	D4	MDCDA00	P2	20	FEMALE	3	A4	MEMDD11	P2	29	MALE	9	D1						
	ARALUB14	PI	45	FEMALE	4	D4	MDCDA01	P2	22	FEMALE	3	A4	MEMDD12	P2	33	MALE	9	D1						
	ARALUB15	PI	43	FEMALE	4	D4	MDCDA02	P2	24	FEMALE	3	A4	MEMDD13	P2	35	MALE	9	D1						
	ARALUB2	PI	75	FEMALE	4	A4	MDCDA03	P2	26	FEMALE	3	B4	MEMDD14	P2	37	MALE	9	D1						
	ARALUB3	PI	73	FEMALE	4	A4	MDCDA04	P2	28	FEMALE	3	B4	MEMDD15	P2	39	MALE	9	D1						
	ARALUB4	PI	69	FEMALE	4	B4	MDCDA05	P2	30	FEMALE	3	B4												
	ARALUB5	PI	67	FEMALE	4	B4	MDCDA06	P2	32	FEMALE	3	B4												
	ARALUB6	PI	65	FEMALE	4	B4	MDCDA07	P2	34	FEMALE	3	C4												
	ARALUB7	PI	63	FEMALE	4	B4	MDCDA08	P2	36	FEMALE	3	C4												
	ARALUB8	PI	59	FEMALE	4	C4	MDCDA09	P2	38	FEMALE	3	C4												
	ARALUB9	PI	57	FEMALE	4	C4	MDCDA10	P2	40	FEMALE	3	C4												
	GROUND	PI	1	FEMALE	1	C4	MDCDA11	P2	42	FEMALE	3	D4												
	GROUND	PI	11	FEMALE	1	C4	MDCDA12	P2	44	FEMALE	3	D4												
	B	GROUND	PI	21	FEMALE	1	B4	MDCDA13	P2	46	FEMALE	3	D4											
		GROUND	PI	31	FEMALE	1	B4	MDCDA14	P2	48	FEMALE	3	D4											
GROUND		PI	41	FEMALE	1	B4	MDCDSTR	P2	80	FEMALE	3	A4												
GROUND		PI	51	FEMALE	1	B4	MEMCRD00	P2	79	MALE	9	C3												
GROUND		PI	61	FEMALE	1	B4	MEMCRD01	P2	77	MALE	9	C3												
GROUND		PI	71	FEMALE	1	B4	MEMCRD02	P2	75	MALE	9	C3												
GROUND		P2	1	FEMALE	1	B4	MEMCRD03	P2	73	MALE	9	C3												
GROUND		P2	11	FEMALE	1	B4	MEMCRD04	P2	69	MALE	9	C3												
GROUND		P2	21	FEMALE	1	A4	MEMCRD05	P2	67	MALE	9	C3												
GROUND		P2	31	FEMALE	1	A4	MEMCRD06	P2	65	MALE	9	C3												
GROUND		P2	41	FEMALE	1	A4	MEMCRD07	P2	63	MALE	9	C3												
GROUND		P2	51	FEMALE	1	A4	MEMCRD08	P2	59	MALE	9	D3												
GROUND		P2	61	FEMALE	1	A4	MEMCRD09	P2	57	MALE	9	D3												
A		GROUND	P2	71	FEMALE	1	A4	MEMCRD10	P2	55	MALE	9	D3											
		MDCCA00	PI	20	FEMALE	3	A4	MEMCRD11	P2	53	MALE	9	D3											

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CONNECTORS BY STRING NAME			
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PAGE	TYPE	PAGE NAME
1	PC	CAPS 1
2	PC	CAPS 2
3	PC	ADD IN & MUX 0
4	PC	WRT IN DATA & MUX 0
5	PC	32K MEM ARRAY 0 0
6	PC	32K MEM ARRAY 0 1
7	PC	32K MEM ARRAY 0 2
8	PC	32K MEM ARRAY 0 3
9	PC	RD OUT DATA & MUX 0
10	PC	ADD IN & MUX 1
11	PC	WRT IN DATA & MUX 1
12	PC	32K MEM ARRAY 1 0
13	PC	32K MEM ARRAY 1 1
14	PC	32K MEM ARRAY 1 2
15	PC	32K MEM ARRAY 1 3
16	PC	RD OUT DATA & MUX 1
17	PC	ADR BUS TERMINATION
18	BL	32K MEM BLOCK DIAGRAM 0
19	BL	32K MEM BLOCK DIAGRAM 1

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TABLE OF CONTENTS			
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B	53938	200734-600	B0
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MAINTENANCE PARTS LIST

ASSEMBLY: PL 200736-100

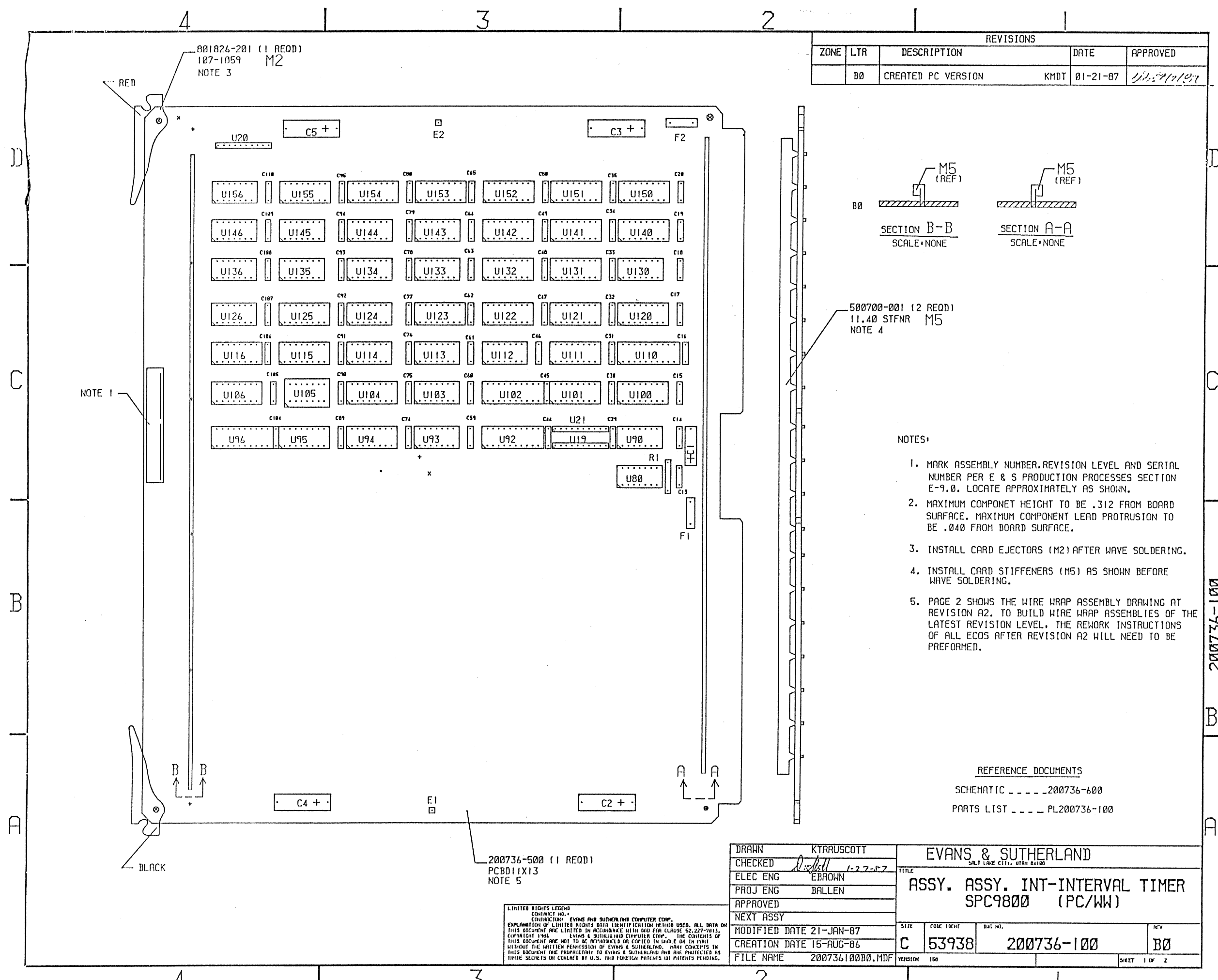
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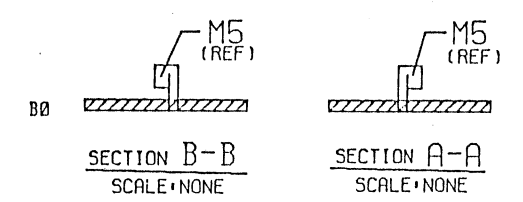
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,P02R PCBD11X13	53938	EVANS & SUTHERLAND.	200736-500	200736-500	1
C13 C14 C15 C16 C17 C18 C19	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C20 C29 C30 C31 C32 C33 C34	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804169-333	50
C35 C44 C45 C46 C47 C48 C49						
C50 C59 C60 C61 C62 C63 C64						
C65 C74 C75 C76 C77 C78 C79						
C80 C89 C90 C91 C92 C93 C94						
C95 C104 C105 C106 C107 C108						
C109 C110						
C2 C3 C4 C5	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M5	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
R1	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	1
U103 U113	IC,TTL 74S30	07263	FAIRCHILD IC'S & SEMICON	74S30PC/DC	807430-055	2
U101 U121 U141	IC,TTL 74LS163A	04713	MOTOROLA INC. SEMI PRODUC	SN74LS163AN/J	807663-016	3
U105	IC,OSC XO8.0MHZ	13075	SAVOY ELECTRONICS INC.	S1100-8.0MHZ	806011-013	1
U104 U106 U115 U116 U125	IC,TTL 74LS162	01295	TEXAS INSTR, SEMICON DIV.	SN74LS162AN/J	807262-016	5
U100 U120 U140 U150	IC,TTL 74LS173	01295	TEXAS INSTR, SEMICON DIV.	SN74LS173AN	807701-016	4
U110	IC,TTL 74LS240	01295	TEXAS INSTR, SEMICON DIV.	SN74LS240N/J	807792-016	1
U111 U123	IC,TTL 74LS175	62786	HITACHI AMERICA LTD.(IC'S	HD74LS175P	807617-618	2
U112	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	1
U114	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	1
U126	IC,TTL 7406	01295	TEXAS INSTR, SEMICON DIV.	7406N/J	807011-646	1
U124 U136 U145	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	3
U133	IC,TTL 74LS74	01295	TEXAS INSTR, SEMICON DIV.	SN74LS74AN/J	807474-618	1
U132	IC,TTL 74S133	01295	TEXAS INSTR, SEMICON DIV.	SN74S133N	807613-055	1
U131	IC,TTL 74LS174	07263	FAIRCHILD IC'S & SEMICON	74LS174PC	807674-016	1
U134 U143 U146	IC,TTL 74LS00	01295	TEXAS INSTR, SEMICON DIV.	SN74LS00N/J	807400-618	3
U135	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U144	IC,TTL 74LS08	01295	TEXAS INSTR, SEMICON DIV.	SN74LS08N/J	807408-618	1
U142	IC,TTL 74F175	07263	FAIRCHILD IC'S & SEMICON	74F175PC/DC	807875-035	1
U151 U152 U153 U154 U155	IC,TTL 74S112	18324	SIGNETICS CORP. MILITARY	N74S112N	807612-055	5
U156	IC,TTL 74LS20	01295	TEXAS INSTR, SEMICON DIV.	SN74LS20N/J	807420-016	1
U19 U20 U21	R,,SIP 1K(R9)	1U696	STACKPOLE COMPONENTS CO	10-9-5-102G (SIP)	807505-102	3
U80	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U90 U93 U130	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	3
U92 U102	IC,TTL 74LS244	01295	TEXAS INSTR, SEMICON DIV.	SN74LS244N	807244-016	2
U94 U122	IC,TTL 93S46	07263	FAIRCHILD IC'S & SEMICON	93S46DC/PC	807696-055	2
U95	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	1
U96	SW,DIP 10 SWITC	95146	ALCO ELECTRONIC PRODUCTS	ADF10	801549-010	1

36 ITEMS LISTED





REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATED PC VERSION	KMDT 01-21-87	<i>[Signature]</i>



500700-001 (2 REQD)
11.40 STFNR M5
NOTE 4

- NOTES:
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 2. MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
 3. INSTALL CARD EJECTORS (M2) AFTER WAVE SOLDERING.
 4. INSTALL CARD STIFFENERS (M5) AS SHOWN BEFORE WAVE SOLDERING.
 5. PAGE 2 SHOWS THE WIRE WRAP ASSEMBLY DRAWING AT REVISION A2. TO BUILD WIRE WRAP ASSEMBLIES OF THE LATEST REVISION LEVEL, THE REWORK INSTRUCTIONS OF ALL ECOS AFTER REVISION A2 WILL NEED TO BE PREFORMED.

REFERENCE DOCUMENTS
SCHEMATIC ----- 200736-600
PARTS LIST ----- PL200736-100

801826-201 (1 REQD)
107-1059 M2
NOTE 3

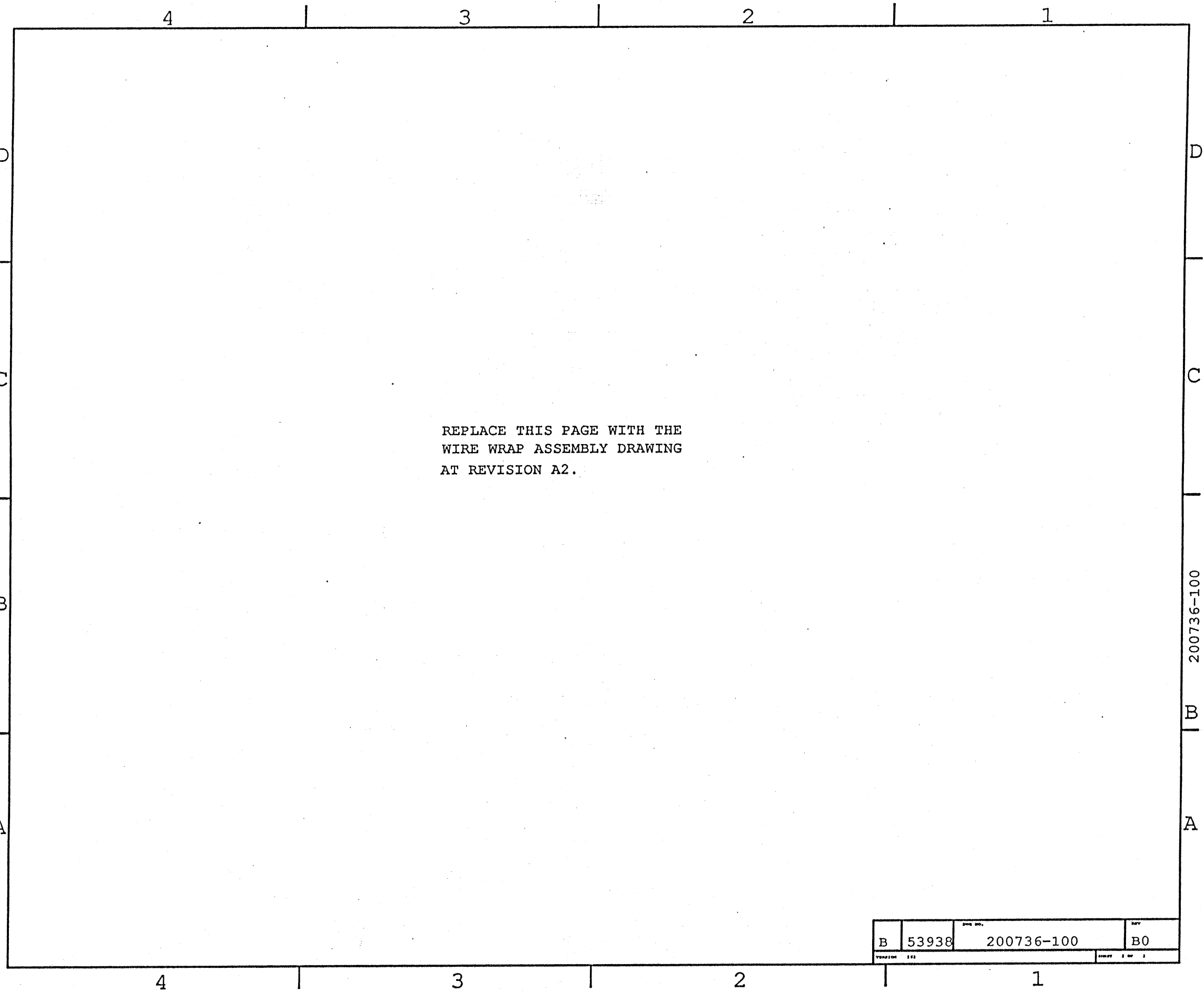
200736-500 (1 REQD)
PCBD11X13
NOTE 5

DRAWN	KTRAUSCOTT
CHECKED	<i>[Signature]</i> 1-27-87
ELEC ENG	EBROWN
PROJ ENG	BALLEN
APPROVED	
NEXT ASSY	
MODIFIED DATE	21-JAN-87
CREATION DATE	15-AUG-86
FILE NAME	200736100B0.MDF

EVANS & SUTHERLAND <small>SALT LAKE CITY, UTAH 84108</small>			
ASSY. ASSY. INT-INTERVAL TIMER SPC9800 (PC/WW)			
SIZE	CODE IDENT	DWG NO.	REV
C	53938	200736-100	B0
VERSION	150	SHEET 1 OF 2	

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200736-100



REPLACE THIS PAGE WITH THE
WIRE WRAP ASSEMBLY DRAWING
AT REVISION A2.

B	53938	200736-100	B0
<small>VERSION</small>	<small>REV</small>	<small>DATE</small>	<small>BY</small>

200736-100

B

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MAINTENANCE PARTS LIST

ASSEMBLY: PL 200736-100

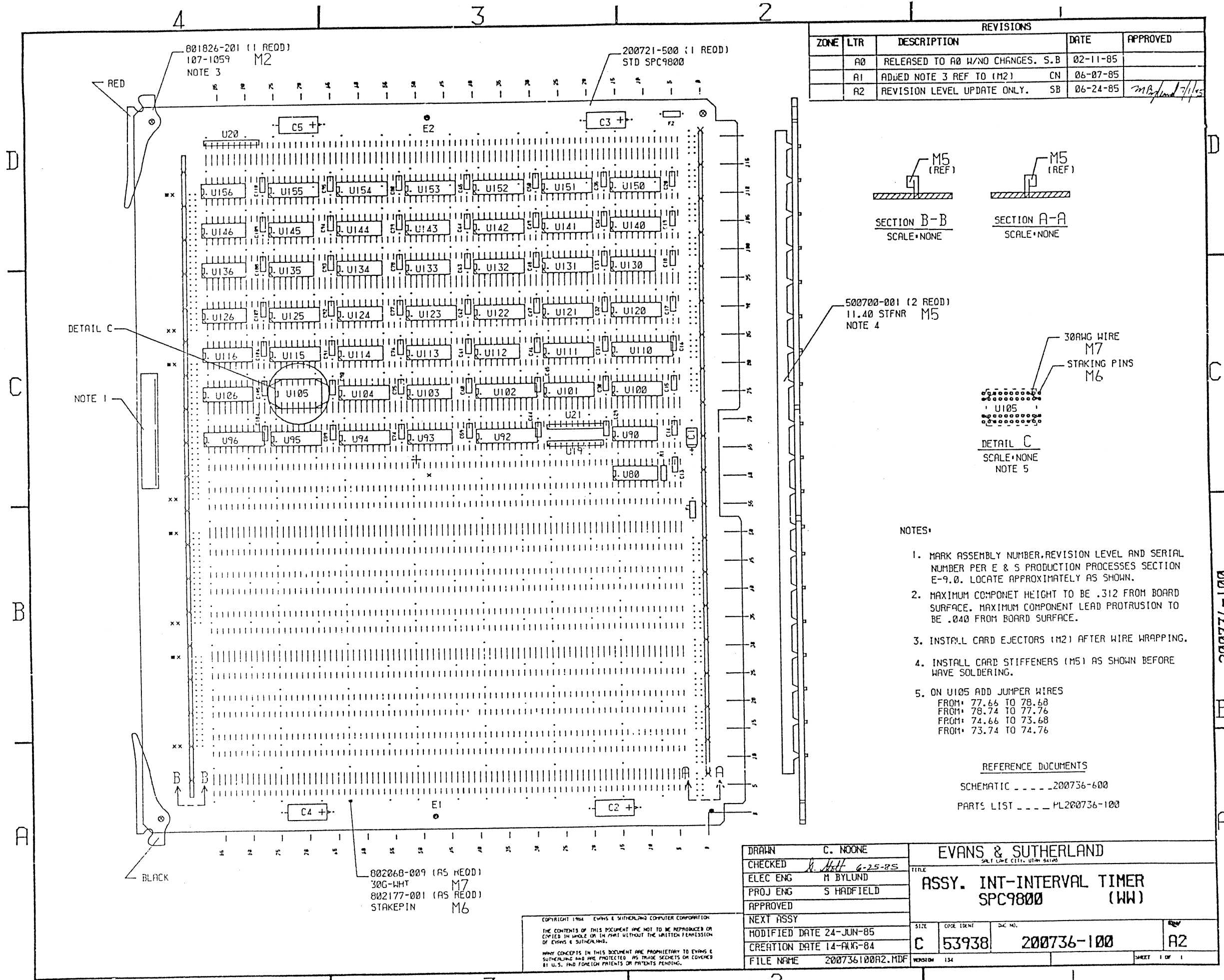
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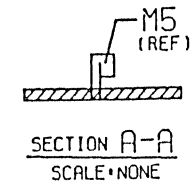
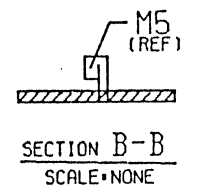
ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
C1	BD,WW STD SPC9800	53938	EVANS & SUTHERLAND.	200721-500	200721-500	1
C13 C14 C15 C16 C17 C18 C19	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	1
C20 C29 C30 C31 C32 C33 C34	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	50
C35 C44 C45 C46 C47 C48 C49						
C50 C59 C60 C61 C62 C63 C64						
C65 C74 C75 C76 C77 C78 C79						
C80 C89 C90 C91 C92 C93 C94						
C95 C104 C105 C106 C107 C108						
C109 C110						
C2 C3 C4 C5	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	2
M2	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M5	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
M6 AS REQ'D	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	1444
M7 AS REQ'D	HW,WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
R1	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	1
U103 U113	IC,TTL 74S30	07263	FAIRCHILD IC'S & SEMICON	74S30PC/DC	807430-055	2
U101 U121 U141	IC,TTL 74LS163A	04713	MOTOROLA INC. SEMI PRODUC	SN74LS163AN/J	807663-016	3
U105	IC,OSC XO8.0MHZ	13075	SAVOY ELECTRONICS INC.	S1100-8.0MHZ	806011-013	1
U104 U106 U115 U116 U125	IC,TTL 74LS162	01295	TEXAS INSTR, SEMICON DIV.	SN74LS162AN/J	807262-016	5
U100 U120 U140 U150	IC,TTL 74LS173	01295	TEXAS INSTR, SEMICON DIV.	SN74LS173AN	807701-016	4
U110	IC,TTL 74LS240	01295	TEXAS INSTR, SEMICON DIV.	SN74LS240N/J	807792-016	1
U111 U123	IC,TTL 74LS175	62786	HITACHI AMERICA LTD.(IC'S	HD74LS175P	807617-618	2
U112	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	1
U114	IC,TTL 74S11	01295	TEXAS INSTR, SEMICON DIV.	SN74S11N	807411-055	1
U126	IC,TTL 7406	01295	TEXAS INSTR, SEMICON DIV.	7406N/J	807011-646	1
U124 U136 U145	IC,TTL 74S10	01295	TEXAS INSTR, SEMICON DIV.	SN74S10N	807410-055	3
U133	IC,TTL 74LS74	01295	TEXAS INSTR, SEMICON DIV.	SN74LS74AN/J	807474-618	1
U132	IC,TTL 74S133	01295	TEXAS INSTR, SEMICON DIV.	SN74S133N	807613-055	1
U131	IC,TTL 74LS174	07263	FAIRCHILD IC'S & SEMICON	74LS174PC	807674-016	1
U134 U143 U146	IC,TTL 74LS00	01295	TEXAS INSTR, SEMICON DIV.	SN74LS00N/J	807400-618	3
U135	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U144	IC,TTL 74LS08	01295	TEXAS INSTR, SEMICON DIV.	SN74LS08N/J	807408-618	1
U142	IC,TTL 74F175	07263	FAIRCHILD IC'S & SEMICON	74F175PC/DC	807875-035	1
U151 U152 U153 U154 U155	IC,TTL 74S112	18324	SIGNETICS CORP. MILITARY	N74S112N	807612-055	5
U156	IC,TTL 74LS20	01295	TEXAS INSTR, SEMICON DIV.	SN74LS20N/J	807420-016	1
U19 U20 U21	R,,SIP 1K(R9)	1U696	STACKPOLE COMPONENTS CO	10-9-5-102G (SIP)	807505-102	3
U80	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U90 U93 U130	IC,TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	3
U92 U102	IC,TTL 74LS244	01295	TEXAS INSTR, SEMICON DIV.	SN74LS244N	807244-016	2
U94 U122	IC,TTL 93S46	07263	FAIRCHILD IC'S & SEMICON	93S46DC/PC	807696-055	2
U95	IC,TTL 74S153	01295	TEXAS INSTR, SEMICON DIV.	SN74S153N	807653-055	1
U96	SW,DIP 10 SWITC	95146	ALCO ELECTRONIC PRODUCTS	ADF10	801549-010	1

38 ITEMS LISTED

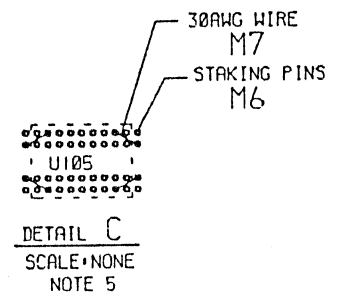




REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0 W/NO CHANGES. S.B	02-11-85	
	A1	ADDED NOTE 3 REF TO (M2)	06-07-85	
	A2	REVISION LEVEL UPDATE ONLY. SB	06-24-85	<i>M.B. / 7/1/85</i>



500700-001 (2 REOD)
11.40 STFN M5
NOTE 4



- NOTES:
- MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 - MAXIMUM COMPONENT HEIGHT TO BE .312 FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
 - INSTALL CARD EJECTORS (M2) AFTER WIRE WRAPPING.
 - INSTALL CARD STIFFENERS (M5) AS SHOWN BEFORE WAVE SOLDERING.
 - ON U105 ADD JUMPER WIRES
FROM: 77.66 TO 78.68
FROM: 78.74 TO 77.76
FROM: 74.66 TO 73.68
FROM: 73.74 TO 74.76

REFERENCE DOCUMENTS
SCHEMATIC _____ 200736-600
PARTS LIST _____ PL200736-100

DRAWN C. NOONE		EVANS & SUTHERLAND	
CHECKED <i>H. Bylund</i>	6-25-85	TITLE	
ELEC ENG H. BYLUND		ASSY. INT-INTERVAL TIMER	
PROJ ENG S. HADFIELD		SPC9800 (WW)	
APPROVED		SIZE	CODE IDENT
NEXT ASSY		C	53938
MODIFIED DATE 24-JUN-85		DWG NO.	200736-100
CREATION DATE 14-AUG-84		REV	A2
FILE NAME 200736100A2.MDF	VERSION 134	SHEET 1 OF 1	

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200736-100



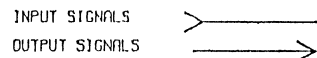
NOTES: UNLESS OTHERWISE SPECIFIED:

1. RESISTANCE VALUES ARE IN OHMS + - 1% .K DENOTES 1000.

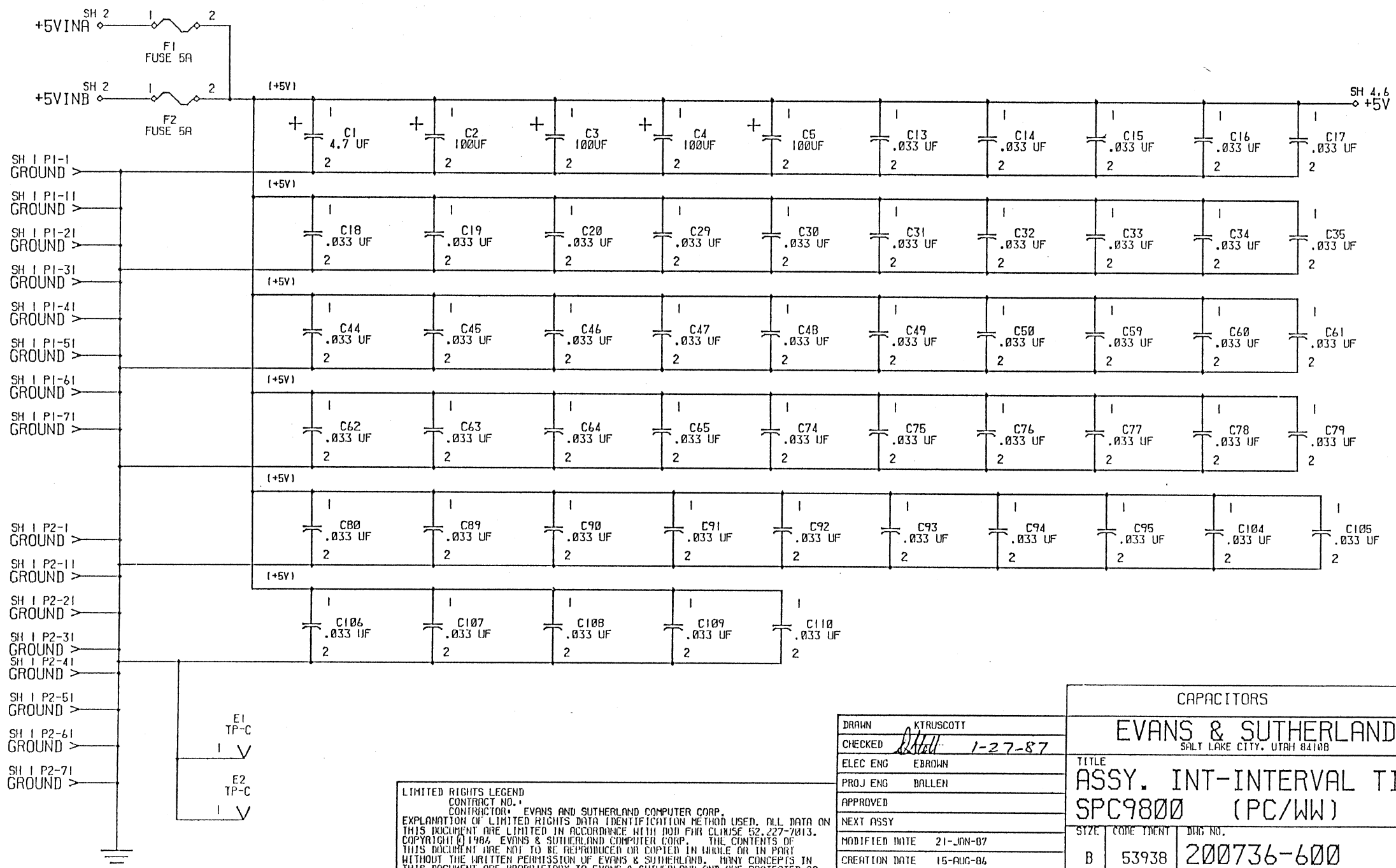
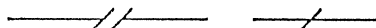
2. ON ALL IC'S, GROUND AND +5V (VCC) ARE AS FOLLOWS:

- 14 PIN IC, 7 AND 14
- 16 PIN IC, 8 AND 16
- 18 PIN IC, 9 AND 18
- 20 PIN IC, 10 AND 20
- 22 PIN IC, 11 AND 22
- 24 PIN IC, 12 AND 24
- 28 PIN IC, 14 AND 28

3. CARD CONNECTOR SYMBOL "PI-" DESIGNATES:



4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.



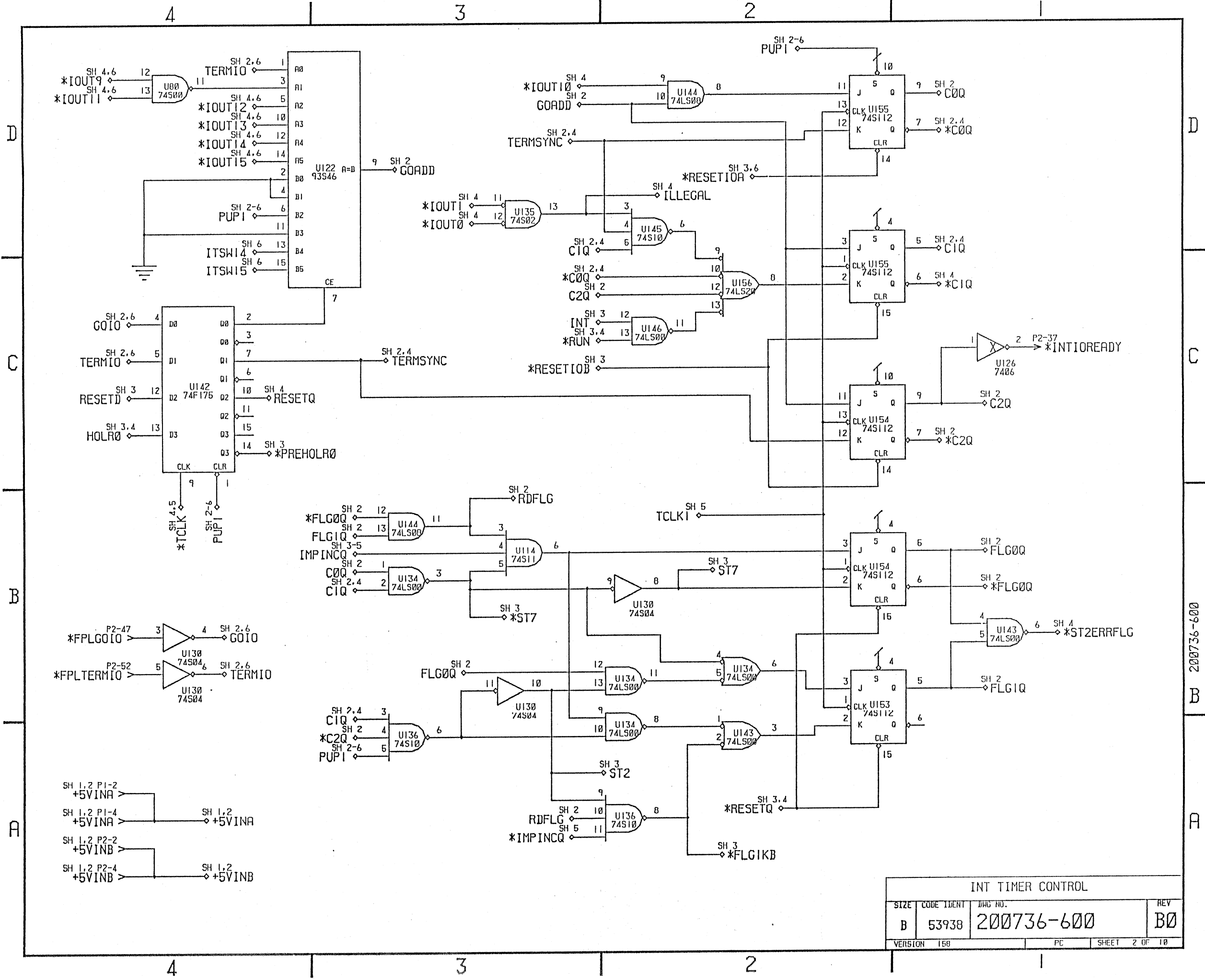
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATED PC VERSION	KHDT 01-27-87	[Signature]

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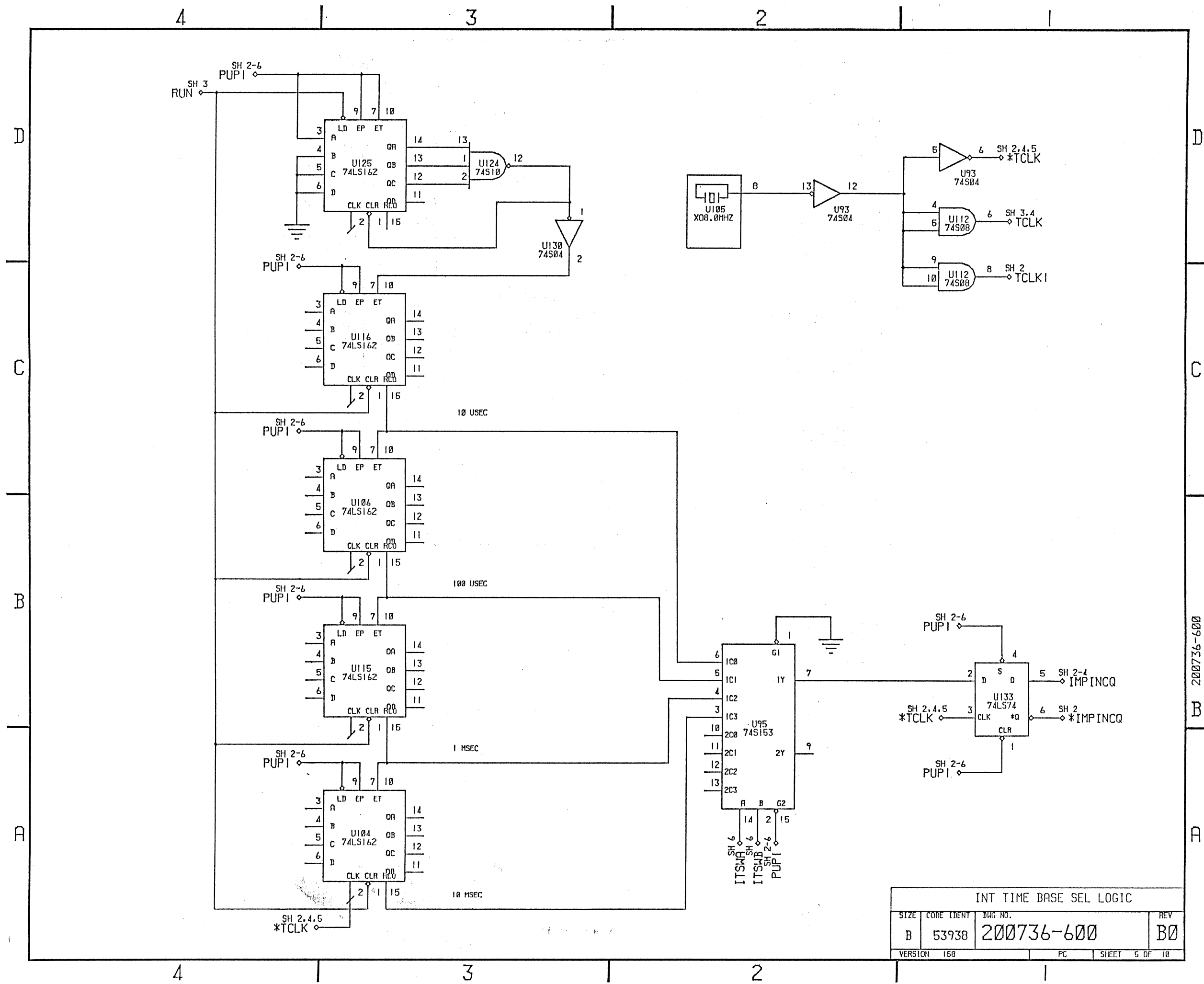
DRAWN	KTRUSCOTT
CHECKED	[Signature] 1-27-87
ELEC ENG	EBROWN
PROJ ENG	BALLEN
APPROVED	
NEXT ASSY	
MODIFIED DATE	21-JAN-87
CREATION DATE	15-AUG-86
FILE NAME	2007361000.MDF

CAPACITORS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE ASSY. INT-INTERVAL TIMER SPC9800 (PC/WW)			
SIZE	CORE IDENT	DWG NO.	REV
B	53938	200736-600	B0
VERSION	150	PC	SHEET 1 OF 10

200736-600

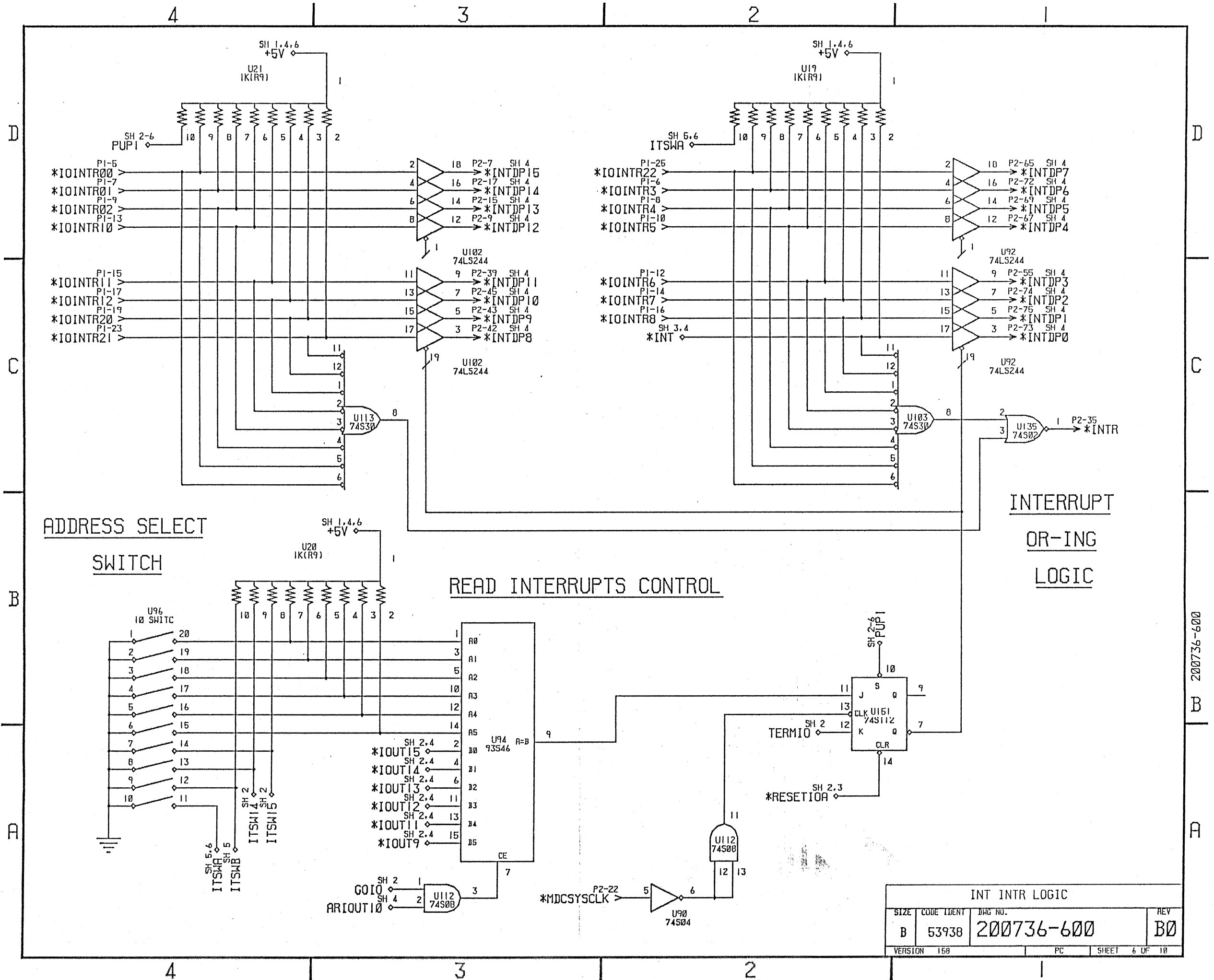


INT TIMER CONTROL			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200736-600	B0
VERSION 158		PC	SHEET 2 OF 10



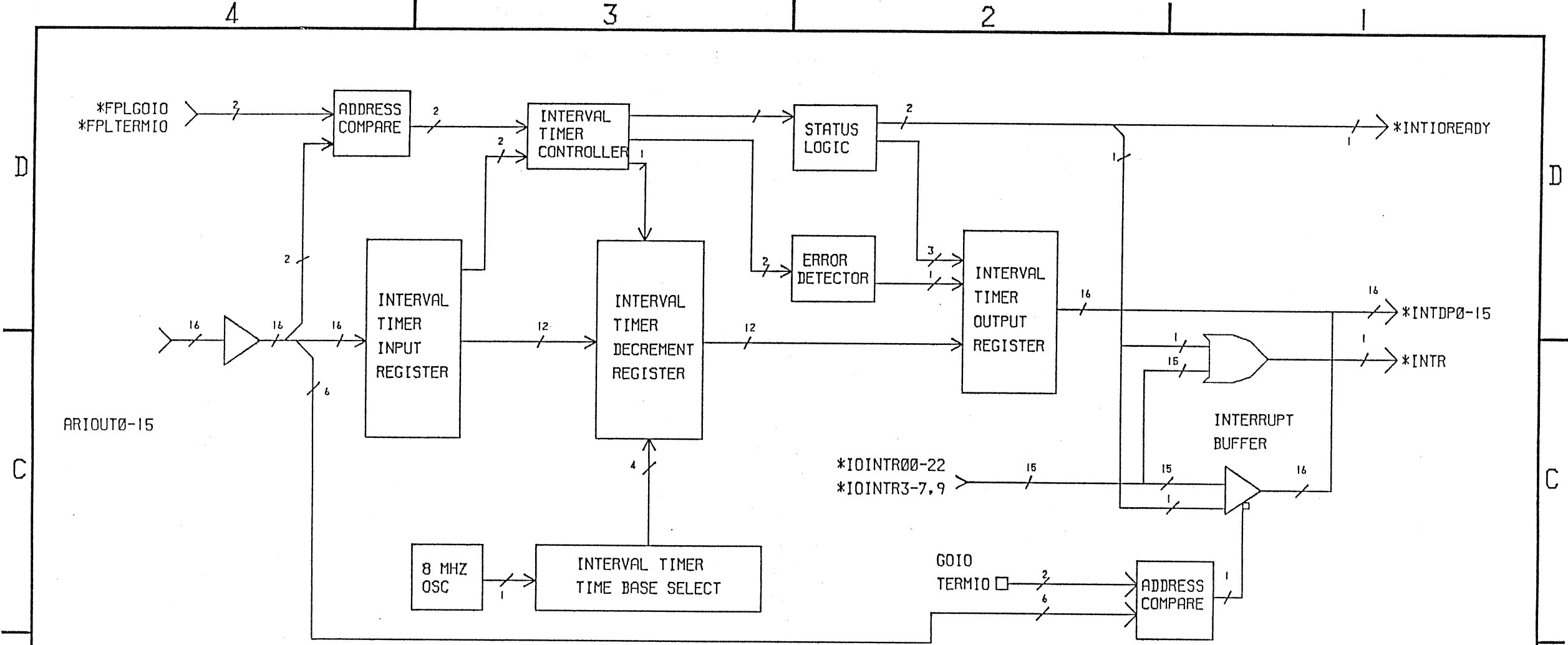
INT TIME BASE SEL LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200736-600	B0
VERSION 150	PC	SHEET 6 OF 10	

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INT INTR LOGIC			
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B 200736-600



SWITCH U96

INTERRUPT ADDRESS SELECT

SWITCHES 6 - 1

MSD	SW 6	SW 5
	DB9	DB11
0	OFF	OFF
1	OFF	ON
4	ON	OFF
5	ON	ON

LSD	SW 4	SW 3	SW 2	SW 1
	DB12	DB13	DB14	DB15
0	OFF	OFF	OFF	OFF
1	OFF	OFF	OFF	ON
2	OFF	OFF	ON	OFF
3	OFF	OFF	ON	ON
4	OFF	ON	OFF	OFF
5	OFF	ON	OFF	ON
6	OFF	ON	ON	OFF
7	OFF	ON	ON	ON
8	ON	OFF	OFF	OFF
9	ON	OFF	OFF	ON
A	ON	OFF	ON	OFF
B	ON	OFF	ON	ON
C	ON	ON	OFF	OFF
D	ON	ON	OFF	ON
E	ON	ON	ON	OFF
F	ON	ON	ON	ON

SWITCH U96

INTERVAL TIMER ADDRESS

SWITCHES 7 & 8

ADDRESS	SW8	SW7
04	OFF	OFF
05	OFF	ON
06	ON	OFF
07	ON	ON

SWITCH U96

TIME BASE SELECT

SWITCHES 9 & 10

SECONDS	SW 9	SW 10
10 MILLI	OFF	OFF
1 MILLI	OFF	ON
100 MICRO	ON	OFF
10 MICRO	ON	ON

INT BLOCK DIAGRAM			
SIZE	CODE TITENT	DWG NO.	REV
B	53938	200736-600	B0
VERSION	150	BL	SHEET 7 OF 10

200736-600 B

UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN	UNIT	PIN	PIN-TYPE	STRING	PAGE	ZONE	DOMAIN
P1	1	FEMALE	GROUND	1	C4		P2	31	FEMALE	GROUND	1	A4	
P1	2	FEMALE	+5VINA	2	A4		P2	32	FEMALE	ARIOUT14	4	D4	
P1	4	FEMALE	+5VINA	2	A4		P2	33	FEMALE	ARIOUT15	4	D4	
P1	5	FEMALE	*IOINTR00	6	D4		P2	35	MALE	*INTR	6	C1	
P1	6	FEMALE	*IOINTR3	6	D2		P2	37	MALE	*INTIOREADY	2	C1	
P1	7	FEMALE	*IOINTR01	6	D4		P2	39	MALE	*INTDP11	6	C3	
P1	8	FEMALE	*IOINTR4	6	D2		P2	41	FEMALE	GROUND	1	A4	
P1	9	FEMALE	*IOINTR02	6	D4		P2	42	MALE	*INTDP8	6	C3	
P1	10	FEMALE	*IOINTR5	6	D2		P2	43	MALE	*INTDP9	6	C3	
P1	11	FEMALE	GROUND	1	C4		P2	45	MALE	*INTDP10	6	C3	
P1	12	FEMALE	*IOINTR6	6	C2		P2	47	FEMALE	*FPLGOIO	2	B4	
P1	13	FEMALE	*IOINTR10	6	D4		P2	49	FEMALE	*FPLRESET	3	D3	
P1	14	FEMALE	*IOINTR7	6	C2		P2	51	FEMALE	GROUND	1	A4	
P1	15	FEMALE	*IOINTR11	6	C4		P2	52	FEMALE	*FPLTERMIO	2	B4	
P1	16	FEMALE	*IOINTR8	6	C2		P2	55	MALE	*INTDP3	6	C1	
P1	17	FEMALE	*IOINTR12	6	C4		P2	57	FEMALE	ARIOUT9	4	C4	
P1	19	FEMALE	*IOINTR20	6	C4		P2	59	FEMALE	ARIOUT10	4	C4	
P1	21	FEMALE	GROUND	1	C4		P2	61	FEMALE	GROUND	1	A4	
P1	23	FEMALE	*IOINTR21	6	C4		P2	62	FEMALE	ARIOUT11	4	C4	
P1	25	FEMALE	*IOINTR22	6	D2		P2	63	FEMALE	ARIOUT8	4	C4	
P1	31	FEMALE	GROUND	1	B4		P2	65	MALE	*INTDP7	6	D1	
P1	41	FEMALE	GROUND	1	B4		P2	67	MALE	*INTDP4	6	D1	
P1	51	FEMALE	GROUND	1	B4		P2	69	MALE	*INTDP5	6	D1	
P1	61	FEMALE	GROUND	1	B4		P2	71	FEMALE	GROUND	1	A4	
P1	71	FEMALE	GROUND	1	B4		P2	72	MALE	*INTDP6	6	D1	
P2	1	FEMALE	GROUND	1	B4		P2	73	MALE	*INTDP0	6	C1	
P2	2	FEMALE	+5VINB	2	A4		P2	74	MALE	*INTDP2	6	C1	
P2	4	FEMALE	+5VINB	2	A4		P2	75	MALE	*INTDP1	6	C1	
P2	5	FEMALE	ARIOUT7	4	C4								
P2	6	FEMALE	ARIOUT6	4	B4								
P2	7	MALE	*INTDP15	6	D3								
P2	9	MALE	*INTDP12	6	D3								
P2	11	FEMALE	GROUND	1	B4								
P2	12	FEMALE	ARIOUT4	4	B4								
P2	13	FEMALE	ARIOUT5	4	B4								
P2	15	MALE	*INTDP13	6	D3								
P2	17	MALE	*INTDP14	6	D3								
P2	21	FEMALE	GROUND	1	A4								
P2	22	FEMALE	*MDCSYSCLK	6	A2								
P2	23	FEMALE	ARIOUT1	4	B4								
P2	25	FEMALE	ARIOUT0	4	A4								
P2	27	FEMALE	ARIOUT12	4	D4								
P2	29	FEMALE	ARIOUT13	4	D4								

D

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CONNECTORS BY UNIT/PIN			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200736-600	B0
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STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN	STRING NAME	UNIT	PIN	PIN-TYPE	PAGE	ZONE	DOMAIN
*FPLG010	P2	47	FEMALE	2	B4		ARIOUT10	P2	59	FEMALE	4	C4	
*FPLRESET	P2	49	FEMALE	3	D3		ARIOUT11	P2	62	FEMALE	4	C4	
*FPLTERMIO	P2	52	FEMALE	2	B4		ARIOUT12	P2	27	FEMALE	4	D4	
*INTDP0	P2	73	MALE	6	C1		ARIOUT13	P2	29	FEMALE	4	D4	
*INTDP1	P2	75	MALE	6	C1		ARIOUT14	P2	32	FEMALE	4	D4	
*INTDP10	P2	45	MALE	6	C3		ARIOUT15	P2	33	FEMALE	4	D4	
*INTDP11	P2	39	MALE	6	C3		ARIOUT4	P2	12	FEMALE	4	B4	
*INTDP12	P2	9	MALE	6	D3		ARIOUT5	P2	13	FEMALE	4	B4	
*INTDP13	P2	15	MALE	6	D3		ARIOUT6	P2	6	FEMALE	4	B4	
*INTDP14	P2	17	MALE	6	D3		ARIOUT7	P2	5	FEMALE	4	C4	
*INTDP15	P2	7	MALE	6	D3		ARIOUT8	P2	63	FEMALE	4	C4	
*INTDP2	P2	74	MALE	6	C1		ARIOUT9	P2	57	FEMALE	4	C4	
*INTDP3	P2	55	MALE	6	C1		GROUND	P1	1	FEMALE	1	C4	
*INTDP4	P2	67	MALE	6	D1		GROUND	P1	11	FEMALE	1	C4	
*INTDP5	P2	69	MALE	6	D1		GROUND	P1	21	FEMALE	1	C4	
*INTDP6	P2	72	MALE	6	D1		GROUND	P1	31	FEMALE	1	B4	
*INTDP7	P2	65	MALE	6	D1		GROUND	P1	41	FEMALE	1	B4	
*INTDP8	P2	42	MALE	6	C3		GROUND	P1	51	FEMALE	1	B4	
*INTDP9	P2	43	MALE	6	C3		GROUND	P1	61	FEMALE	1	B4	
*INTIOREADY	P2	37	MALE	2	C1		GROUND	P1	71	FEMALE	1	B4	
*INTR	P2	35	MALE	6	C1		GROUND	P2	1	FEMALE	1	B4	
*IOINTR00	P1	5	FEMALE	6	D4		GROUND	P2	11	FEMALE	1	B4	
*IOINTR01	P1	7	FEMALE	6	D4		GROUND	P2	21	FEMALE	1	A4	
*IOINTR02	P1	9	FEMALE	6	D4		GROUND	P2	31	FEMALE	1	A4	
*IOINTR10	P1	13	FEMALE	6	D4		GROUND	P2	41	FEMALE	1	A4	
*IOINTR11	P1	15	FEMALE	6	C4		GROUND	P2	51	FEMALE	1	A4	
*IOINTR12	P1	17	FEMALE	6	C4		GROUND	P2	61	FEMALE	1	A4	
*IOINTR20	P1	19	FEMALE	6	C4		GROUND	P2	71	FEMALE	1	A4	
*IOINTR21	P1	23	FEMALE	6	C4								
*IOINTR22	P1	25	FEMALE	6	D2								
*IOINTR3	P1	6	FEMALE	6	D2								
*IOINTR4	P1	8	FEMALE	6	D2								
*IOINTR5	P1	10	FEMALE	6	D2								
*IOINTR6	P1	12	FEMALE	6	C2								
*IOINTR7	P1	14	FEMALE	6	C2								
*IOINTR8	P1	16	FEMALE	6	C2								
*MDCSYSCLK	P2	22	FEMALE	6	A2								
+5VINA	P1	2	FEMALE	2	A4								
+5VINA	P1	4	FEMALE	2	A4								
+5VINB	P2	2	FEMALE	2	A4								
+5VINB	P2	4	FEMALE	2	A4								
ARIOUT0	P2	25	FEMALE	4	A4								
ARIOUT1	P2	23	FEMALE	4	B4								

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CONNECTORS BY STRING NAME			
SIZE	CODE IDENT	DWG NO.	REV
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PAGE	TYPE	PAGE NAME
1	PC	CAPACITORS
2	PC	INT TIMER CONTROL
3	PC	INT TIMER CTRL2
4	PC	INT TIMER REGISTERS
5	PC	INT TIME BASE SEL LOGIC
6	PC	INT INTR LOGIC
7	BL	INT BLOCK DIAGRAM

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VERSION	160	TC	SHEET 10 OF 10

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MAINTENANCE PARTS LIST

ASSEMBLY: PL 200737-100

REV: B0 = BA

DESC: CARD ASSY, IO-SERIAL & PARALLEL, SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
	BD,P02R PCBD11X13	53938	EVANS & SUTHERLAND.	200737-500	200737-500	1
C1 C119 C120	C,,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	3
C111 C121 C122	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	3
C116 C117	C,,AXL 33 UF	31433	KEMET ELECTRONICS CORP.	T372F336M025 (35)AS	804144-336	2
C118	C,,RDL .001UF	04222	A V X CERAMICS DIV.OF AVX	CK05BX102K	804147-102	1
C2 C3 C4 C5	C,,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C7 C8 C9 C10 C11 C12 C13	C,,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804169-333	93
C14 C15 C16 C17 C18 C19 C20						
C22 C23 C24 C25 C26 C27 C28						
C29 C30 C31 C32 C33 C34 C35						
C37 C38 C39 C40 C41 C42 C43						
C44 C45 C46 C47 C48 C49 C50						
C51 C52 C53 C54 C55 C56 C57						
C59 C60 C61 C62 C63 C64 C65						
C67 C68 C69 C70 C71 C72 C73						
C74 C75 C76 C77 C78 C81 C82						
C83 C84 C85 C86 C87 C88 C89						
C90 C91 C92 C93 C96 C97 C101						
C102 C103 C104 C105 C106						
C107 C108 C109 C110						
CR1 CR2 CR3	CR,RECT 1N4148	01002	GENERAL ELECTRIC CO. CAP	1N4148	814148-001	3
E1 E2	HW,TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B(M55-155-30-5S	802330-002	2
F1 F2	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (.5A,AXIAL)	802375-050	2
F3 F4	FU,PICO FUSE1/2A	75915	LITTELFUSE TRACOR INC.	251.500 (.5A,AXIAL)	802375-005	2
J1 J2	CN,HOUS 34P,RTA	22526	DU PONT E I NEMOURS(CONN)	65268-010 (2X17)	801290-034	2
J4	CN,HOUS 50P,RTA	22526	DU PONT E I NEMOURS(CONN)	65268-011 (2X25)	801290-050	1
M3	HW,STFN 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
M5	HW,EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M7	HW,WIRE 26G-KYNR	71124	BRAND-REX CO	28-128-1422-WHITE	802067-009	1
M8	HW,STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	4
R1 R2	R,,AXL 100 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-100-1%	803452-100	2
R10 R11	R,,AXL 32.4K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-32.4K-1%	803454-324	2
R3 R4	R,,AXL 562 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-562-1%	803452-562	2
R5 R6 R7	R,,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	3
R8	R,,AXL 2.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-2.00K-1%	803453-200	1
R9	R,,AXL 3.01K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-3.01K-1%-50PPM	803453-301	1
U102	IC,TTL 74S112	18324	SIGNETICS CORP. MILITARY	N74S112N	807612-055	1
U100 U120 U143	IC,TTL 74S174	01295	TEXAS INSTR, SEMICON DIV.	SN74S174N	807674-055	3
U106 U125	R,,DIP 220/330R	73138	BECKMAN INDUSTRIES CORP.	898-5-R220/330	807720-221	2
U10 U12	IC,TTL TR186500	52840	WESTERN DIGITAL CORP	TR1865PL00-XX	807307-001	2
U104	IC,TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U101 U131	IC,TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	2
U115	IC,TTL 74S114	01295	TEXAS INSTR, SEMICON DIV.	SN74S114N	807481-055	1
U111	IC,TTL 74LS175	62786	HITACHI AMERICA LTD.(IC'S	HD74LS175P	807617-618	1
U11	IC,OSC XO5.068M	13075	SAVOY ELECTRONICS INC.	S1100-5.0688MHZHZ	806011-010	1
U113	IC,TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U112	IC,TTL 74LS11	01295	TEXAS INSTR, SEMICON DIV.	SN74LS11N/J	807411-016	1
U123 U124	IC,TTL 74LS00	01295	TEXAS INSTR, SEMICON DIV.	SN74LS00N/J	807400-618	2

MAINTENANCE PARTS LIST

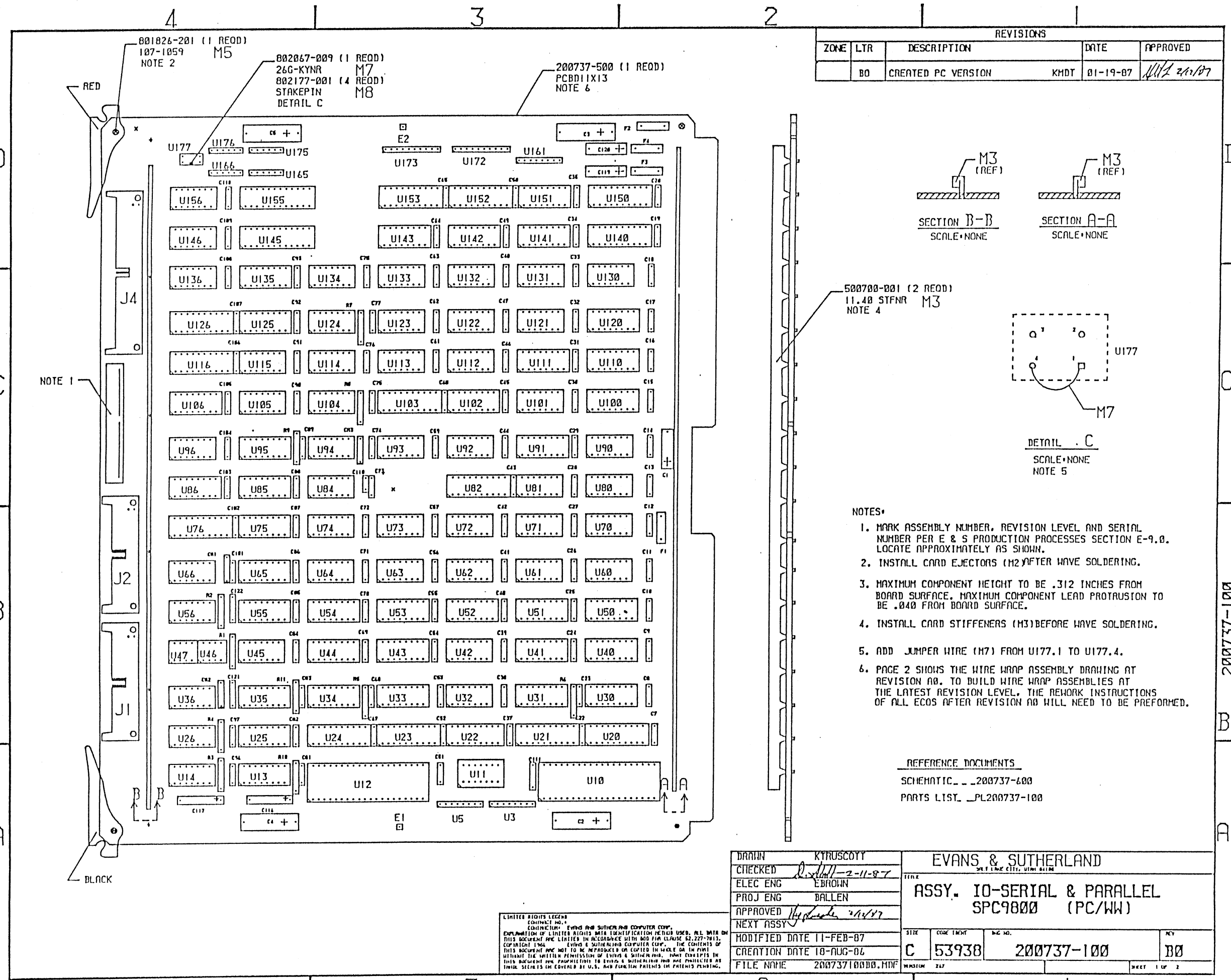
ASSEMBLY: PL 200737-100

REV: B0 = BA

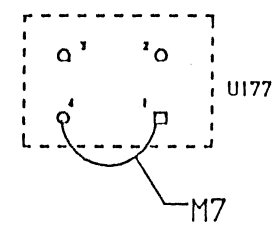
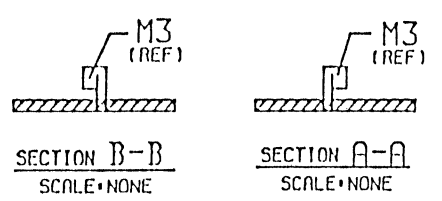
DESC: CARD ASSY, IO-SERIAL & PARALLEL, SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
U122 U130 U132	IC, TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	3
U121	IC, TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	1
U13	IC, TTL #74123	01295	TEXAS INSTR, SEMICON DIV.	SN74123N	807622-647	1
U135	IC, TTL 74LS157	01295	TEXAS INSTR, SEMICON DIV.	SN74LS157N/J	807657-016	1
U136 U146 U156	IC, TTL 7407	01295	TEXAS INSTR, SEMICON DIV.	SN7407N	807407-646	3
U14 U26 U56	IC, TTL 75189	01295	TEXAS INSTR, SEMICON DIV.	SN75189N	807589-798	3
U142	IC, TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	1
U145 U155	IC, PAL, 20R8A, OCTL, 20I	53938	EVANS & SUTHERLAND.	807858-016-A11	807858-016-A11	2
U140 U150	IC, TTL 74S244	81349	MILITARY SPECIFICATIONS	54S244N	807244-055	2
U165 U166 U175 U176	R, SIP 1K(R5)	1U696	STACKPOLE COMPONENTS CO	6-5-5-102G (SIP)	807517-102	4
U177	HW, JMPR 2 JUMPER	53938	EVANS & SUTHERLAND	*SCD*802177-102	802177-102	1
U172 U173	R, SIP 1K(R9)	1U696	STACKPOLE COMPONENTS CO	10-9-5-102G (SIP)	807505-102	2
U20 U23 U24 U82 U103 U116 U126	IC, TTL 74LS240	01295	TEXAS INSTR, SEMICON DIV.	SN74LS240N/J	807792-016	7
U21 U76 U152 U153	IC, TTL 74LS244	01295	TEXAS INSTR, SEMICON DIV.	SN74LS244N	807244-016	4
U22	IC, TTL COM8116	53848	STANDARD MICROSYSTEMS COR	COM8116 (18PIN)	807822-888	1
U25	IC, TTL 74153	18324	SIGNETICS CORP. MILITARY	N74153N	807653-646	1
U3 U5 U161	R, SIP 1K(R7)	4J937	BOURNS NETWORKS	4608X-101-102 (SIP)	807519-102	3
U30 U33 U40 U43 U50 U53	IC, TTL 74LS161	01295	TEXAS INSTR, SEMICON DIV.	SN74LS161AN/J	807661-016	6
U31 U34 U41 U44 U151	SW, DIP 8 SWITCH	95146	ALCO ELECTRONIC PRODUCTS	ADF08	801549-001	5
U32 U45 U96	IC, TTL #74LS04	01295	TEXAS INSTR, SEMICON DIV.	SN74LS04N/J	807416-016	3
U35 U55 U65 U86	IC, TTL 74LS174	07263	FAIRCHILD IC'S & SEMICON	74LS174PC	807674-016	4
U36 U66	IC, TTL 75188	01295	TEXAS INSTR, SEMICON DIV.	SN75188N	807588-748	2
U42	IC, TTL 74LS21	01295	TEXAS INSTR, SEMICON DIV.	SN74LS21N/J	807421-016	1
U46	IC, TTL 9637	01295	TEXAS INSTR, SEMICON DIV.	UA9637AC (8-PIN-DIP)	807427-055	1
U47	IC, TTL 9638	01295	TEXAS INSTR, SEMICON DIV.	UA9638CP	807436-055	1
U51 U54 U75 U85 U141	IC, TTL 93S46	07263	FAIRCHILD IC'S & SEMICON	93S46DC/PC	807696-055	5
U52 U95	IC, TTL 74F175	07263	FAIRCHILD IC'S & SEMICON	74F175PC/DC	807875-035	2
U60 U63	IC, TTL 74S74	01295	TEXAS INSTR, SEMICON DIV.	SN74S74N/J	807474-055	2
U61 U64 U80	IC, TTL 74LS10	01295	TEXAS INSTR, SEMICON DIV.	SN74LS10N/J	807410-618	3
U62	IC, TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
U70 U73	IC, TTL #74LS32	01295	TEXAS INSTR, SEMICON DIV.	SN74LS32N/J	807431-016	2
U71 U74 U84 U105 U114 U133 U134	IC, TTL 74LS08	01295	TEXAS INSTR, SEMICON DIV.	SN74LS08N/J	807408-618	7
U72 U81	IC, TTL 74LS02	01295	TEXAS INSTR, SEMICON DIV.	SN74LS02N	807402-618	2
U90	IC, TTL 7406	01295	TEXAS INSTR, SEMICON DIV.	7406N/J	807011-646	1
U91 U110	IC, TTL 74S175	01295	TEXAS INSTR, SEMICON DIV.	SN74S175N	807617-055	2
U92	IC, TTL 74LS27	01295	TEXAS INSTR, SEMICON DIV.	SN74LS27N/J	807439-016	1
U93 U94	IC, TTL 74LS74	01295	TEXAS INSTR, SEMICON DIV.	SN74LS74AN/J	807474-618	2

72 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATED PC VERSION	KMDT 01-19-87	<i>[Signature]</i> 2/1/87



500700-001 (2 REOD)
11.40 STFNR M3
NOTE 4

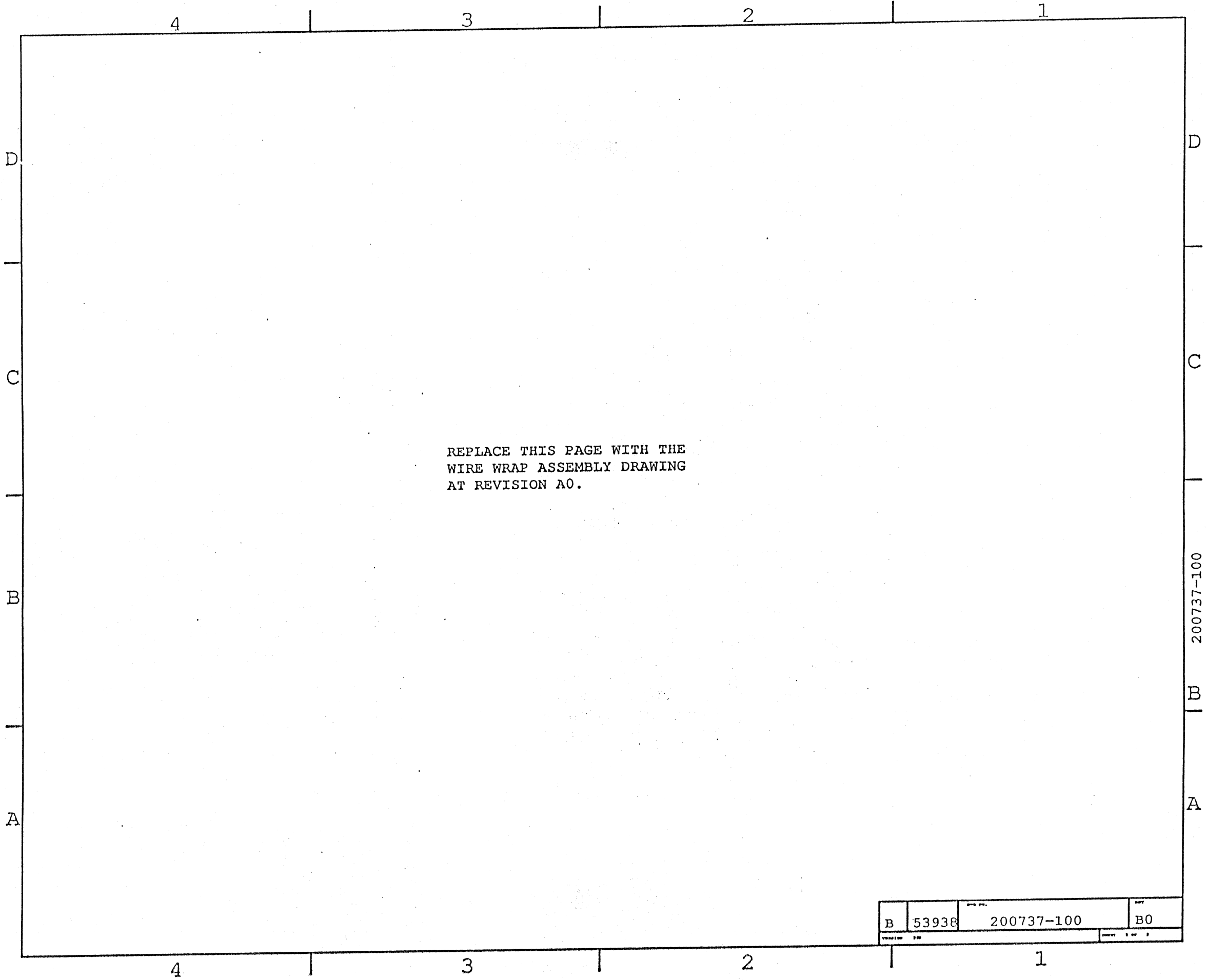
- NOTES:
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 2. INSTALL CARD EJECTORS (M2) AFTER WAVE SOLDERING.
 3. MAXIMUM COMPONENT HEIGHT TO BE .312 INCHES FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
 4. INSTALL CARD STIFFENERS (M3) BEFORE WAVE SOLDERING.
 5. ADD JUMPER WIRE (M7) FROM U177.1 TO U177.4.
 6. PAGE 2 SHOWS THE WIRE WRAP ASSEMBLY DRAWING AT REVISION A0. TO BUILD WIRE WRAP ASSEMBLIES AT THE LATEST REVISION LEVEL, THE REWORK INSTRUCTIONS OF ALL ECOS AFTER REVISION A0 WILL NEED TO BE PERFORMED.

REFERENCE DOCUMENTS
SCHEMATIC _ _ 200737-600
PARTS LIST _PL200737-100

DRAWN KTRUSCOTT		EVANS & SUTHERLAND	
CHECKED <i>[Signature]</i> 2-11-87	ELEC ENG EBROWN	ASSY. IO-SERIAL & PARALLEL SPC9800 (PC/WW)	
PROJ ENG BALLEW	APPROVED <i>[Signature]</i> 2/1/87	SIZE C	CODE TMOVT 53938
NEXT ASSY	MODIFIED DATE 11-FEB-87	WGT NO. 200737-100	REV B0
CREATION DATE 18-AUG-86	FILE NAME 200737100DB.MDF	SHEET 1 OF 2	

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CONTRACT NO. 4
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200737-100



REPLACE THIS PAGE WITH THE
WIRE WRAP ASSEMBLY DRAWING
AT REVISION A0.

B	53938	200737-100	B0

200737-100

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200737-100

REV: A0 = AA

DESC: CARD ASSY, IO-SERIAL & PARALLEL, SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
	BD, WW STD SPC9800	53938	EVANS & SUTHERLAND.	200721-500	200721-500	1
C1 C119 C120	C, ,AXL 4.7 UF	56289	SPRAGUE ELECTRONIC CO.	173D475X9035W	804102-475	3
C116 C117	C, ,AXL 33 UF	31433	KEMET ELECTRONICS CORP.	T372F336M025 (35) AS	804144-336	2
C118	C, ,RDL .001UF	04222	A V X CERAMICS DIV.OF AVX	CK05BX102K	804147-102	1
C2 C3 C4 C5	C, ,AXL 100UF	31433	KEMET ELECTRONICS CORP.	T110C107K010AS	804133-107	4
C7 C8 C9 C10 C11 C12 C13	C, ,AXL .033 UF	56289	SPRAGUE ELECTRONIC CO.	592CZ5U333Z050B	804122-333	96
C14 C15 C16 C17 C18 C19 C20						
C22 C23 C24 C25 C26 C27 C28						
C29 C30 C31 C32 C33 C34 C35						
C37 C38 C39 C40 C41 C42 C43						
C44 C45 C46 C47 C48 C49 C50						
C51 C52 C53 C54 C55 C56 C57						
C59 C60 C61 C62 C63 C64 C65						
C67 C68 C69 C70 C71 C72 C73						
C74 C75 C76 C77 C78 C81 C82						
C83 C84 C85 C86 C87 C88 C89						
C90 C91 C92 C93 C96 C97 C101						
C102 C103 C104 C105 C106						
C107 C108 C109 C110 C111						
C121 C122						
CR1 CR2 CR3	CR, RECT 1N4148	01002	GENERAL ELECTRIC CO. CAP	1N4148	814148-001	3
E1 E2	HW, TERM TP-C	86577	PRECISION METAL PROD. INC	1D3-8B (M55-155-30-5S	802330-002	2
F1 F2	FU, PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A, AXIAL)	802375-050	2
F3 F4	FU, PICO FUSE1/2A	75915	LITTELFUSE TRACOR INC.	251.500 (.5A, AXIAL)	802375-005	2
J1 J2	CN, HOUS 34P, RTA	22526	DU PONT E I NEMOURS (CONN)	65268-010 (2X17)	801290-034	2
J4	CN, HOUS 50P, RTA	22526	DU PONT E I NEMOURS (CONN)	65268-011 (2X25)	801290-050	1
M3	HW, STFNR 11.40 STFNR	53938	EVANS & SUTHERLAND.	500700-001	500700-001	2
M5	HW, EJCT 107-1059	52094	CALMARK CORP	107-1059-100	801826-201	1
M6 AS REQ'D	HW, STKP 2X25 W/W	53938	EVANS & SUTHERLAND	*SCD*802177-001	802177-001	2398
M7 AS REQ'D	HW, WIRE 26G-KYNR	71124	BRAND-REX CO	28-128-1422-WHITE	802067-009	1
M8 AS REQ'D	HW, WIRE 30G-WHT	71124	BRAND-REX CO	BR-21211-30-WHITE	802068-009	1
R1 R2	R, ,AXL 100 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-100-1%	803452-100	2
R10 R11	R, ,AXL 32.4K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-32.4K-1%	803454-324	2
R3 R4	R, ,AXL 562 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-562-1%	803452-562	2
R5 R6 R7	R, ,AXL 1.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-1.00K-1%	803453-100	3
R8	R, ,AXL 2.00K 1%	1U696	STACKPOLE COMPONENTS CO	RN1/4-T2-2.00K-1%	803453-200	1
R9	R, ,AXL 3.01K 1%	4U402	ROEDERSTEIN ELECTRONICS	MK2-3.01K-1%-50PPM	803453-301	1
U102	IC, TTL 74S112	18324	SIGNETICS CORP. MILITARY	N74S112N	807612-055	1
U100 U120 U143	IC, TTL 74S174	01295	TEXAS INSTR, SEMICON DIV.	SN74S174N	807674-055	3
U106 U125	R, ,DIP 220/330R	73138	BECKMAN INDUSTRIES CORP.	898-5-R220/330	807720-221	2
U10 U12	IC, TTL TR186500	52840	WESTERN DIGITAL CORP	TR1865PL00-XX	807307-001	2
U104	IC, TTL 74S02	01295	TEXAS INSTR, SEMICON DIV.	SN74S02N	807402-055	1
U101 U131	IC, TTL 74S08	01295	TEXAS INSTR, SEMICON DIV.	SN74S08N/J	807408-055	2
U115	IC, TTL 74S114	01295	TEXAS INSTR, SEMICON DIV.	SN74S114N	807481-055	1
U111	IC, TTL 74LS175	62786	HITACHI AMERICA LTD. (IC'S	HD74LS175P	807617-618	1
U11	IC, OSC XO5.068M	13075	SAVOY ELECTRONICS INC.	S1100-5.0688MHZHZ	806011-010	1
U113	IC, TTL 74S00	01295	TEXAS INSTR, SEMICON DIV.	SN74S00N	807400-055	1
U112	IC, TTL 74LS11	01295	TEXAS INSTR, SEMICON DIV.	SN74LS11N/J	807411-016	1

MAINTENANCE PARTS LIST

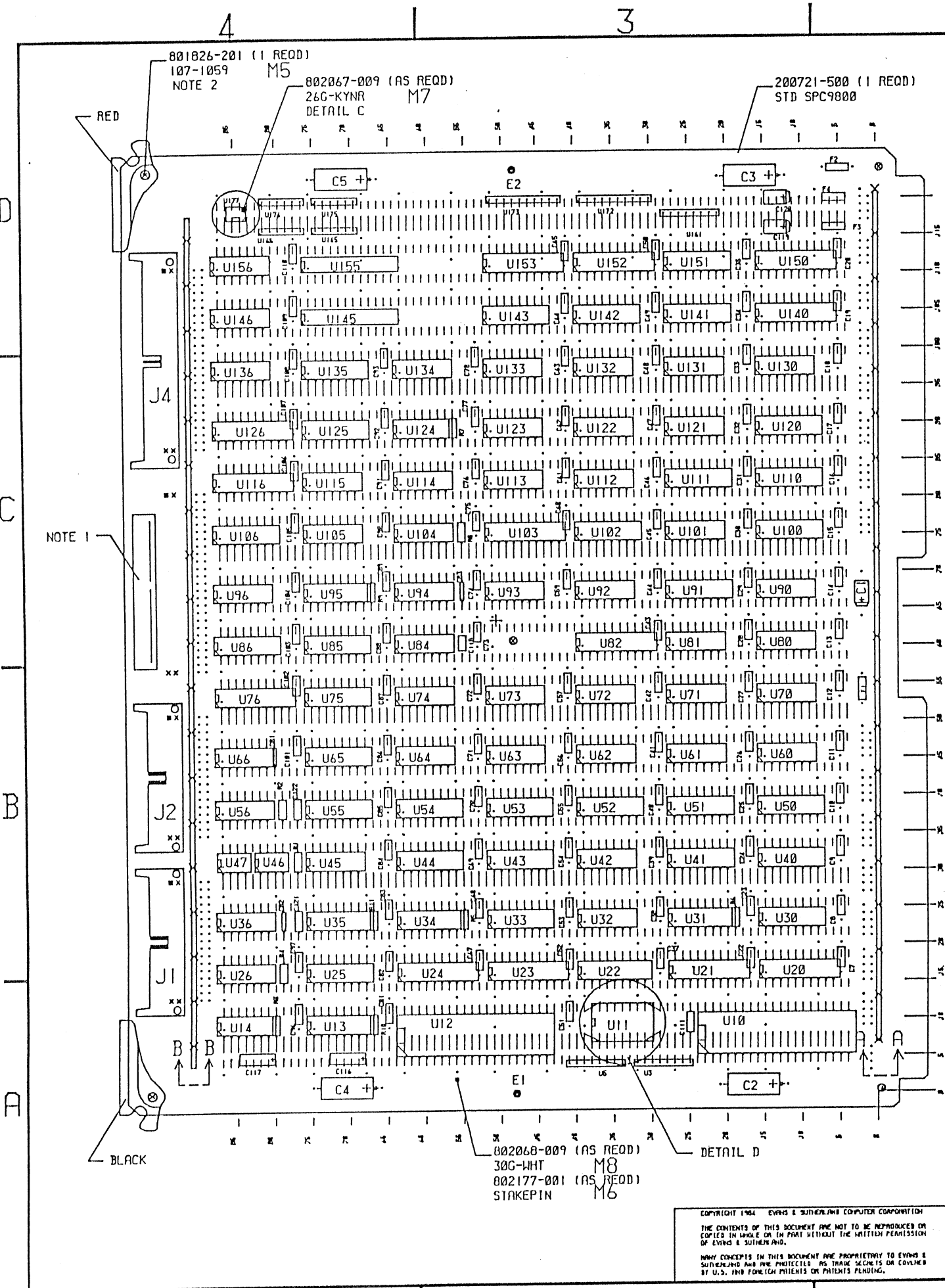
ASSEMBLY: PL 200737-100

REV: A0 = AA

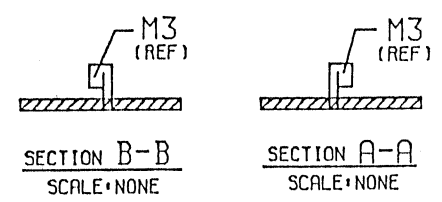
DESC: CARD ASSY, IO-SERIAL & PARALLEL, SPC9800 (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
U123 U124	IC, TTL 74LS00	01295	TEXAS INSTR, SEMICON DIV.	SN74LS00N/J	807400-618	2
U122 U130 U132	IC, TTL 74S04	01295	TEXAS INSTR, SEMICON DIV.	SN74S04N	807416-055	3
U121	IC, TTL S32	01295	TEXAS INSTR, SEMICON DIV.	SN74S32N	807431-055	1
U13	IC, TTL #74123	01295	TEXAS INSTR, SEMICON DIV.	SN74123N	807622-647	1
U135	IC, TTL 74LS157	01295	TEXAS INSTR, SEMICON DIV.	SN74LS157N/J	807657-016	1
U136 U146 U156	IC, TTL 7407	01295	TEXAS INSTR, SEMICON DIV.	SN7407N	807407-646	3
U14 U26 U56	IC, TTL 75189	01295	TEXAS INSTR, SEMICON DIV.	SN75189N	807589-798	3
U142	IC, TTL 74S138	01295	TEXAS INSTR, SEMICON DIV.	SN74S138N	807638-055	1
U145 U155	IC, PAL, 20R8A, OCTL, 20I	53938	EVANS & SUTHERLAND.	807858-016-A11	807858-016-A11	2
U140 U150	IC, TTL 74S244	81349	MILITARY SPECIFICATIONS	54S244N	807244-055	2
U165 U166 U175 U176	R, , SIP 1K(R5)	1U696	STACKPOLE COMPONENTS CO	6-5-5-102G (SIP)	807517-102	4
U177	HW, JUMPER 2 JUMPER	53938	EVANS & SUTHERLAND	*SCD*802177-102	802177-102	1
U172 U173	R, , SIP 1K(R9)	1U696	STACKPOLE COMPONENTS CO	10-9-5-102G (SIP)	807505-102	2
U20 U23 U24 U82 U103 U116 U126	IC, TTL 74LS240	01295	TEXAS INSTR, SEMICON DIV.	SN74LS240N/J	807792-016	7
U21 U76 U152 U153	IC, TTL 74LS244	01295	TEXAS INSTR, SEMICON DIV.	SN74LS244N	807244-016	4
U22	IC, TTL COM8116	53848	STANDARD MICROSYSTEMS COR	COM8116 (18PIN)	807822-888	1
U25	IC, TTL 74153	18324	SIGNETICS CORP. MILITARY	N74153N	807653-646	1
U3 U5 U161	R, , SIP 1K(R7)	4J937	BOURNS NETWORKS	4608X-101-102 (SIP)	807519-102	3
U30 U33 U40 U43 U50 U53	IC, TTL 74LS161	01295	TEXAS INSTR, SEMICON DIV.	SN74LS161AN/J	807661-016	6
U31 U34 U41 U44 U151	SW, DIP 8 SWITCH	95146	ALCO ELECTRONIC PRODUCTS	ADF08	801549-001	5
U32 U45 U96	IC, TTL #74LS04	01295	TEXAS INSTR, SEMICON DIV.	SN74LS04N/J	807416-016	3
U35 U55 U65 U86	IC, TTL 74LS174	07263	FAIRCHILD IC'S & SEMICOND	74LS174PC	807674-016	4
U36 U66	IC, TTL 75188	01295	TEXAS INSTR, SEMICON DIV.	SN75188N	807588-748	2
U42	IC, TTL 74LS21	01295	TEXAS INSTR, SEMICON DIV.	SN74LS21N/J	807421-016	1
U46	IC, TTL 9637	01295	TEXAS INSTR, SEMICON DIV.	UA9637AC (8-PIN-DIP)	807427-055	1
U47	IC, TTL 9638	01295	TEXAS INSTR, SEMICON DIV.	UA9638CP	807436-055	1
U51 U54 U75 U85 U141	IC, TTL 93S46	07263	FAIRCHILD IC'S & SEMICOND	93S46DC/PC	807696-055	5
U52 U95	IC, TTL 74F175	07263	FAIRCHILD IC'S & SEMICOND	74F175PC/DC	807875-035	2
U60 U63	IC, TTL 74S74	01295	TEXAS INSTR, SEMICON DIV.	SN74S74N/J	807474-055	2
U61 U64 U80	IC, TTL 74LS10	01295	TEXAS INSTR, SEMICON DIV.	SN74LS10N/J	807410-618	3
U62	IC, TTL 74S51	01295	TEXAS INSTR, SEMICON DIV.	SN74S51N	807451-055	1
U70 U73	IC, TTL #74LS32	01295	TEXAS INSTR, SEMICON DIV.	SN74LS32N/J	807431-016	2
U71 U74 U84 U105 U114 U133 U134	IC, TTL 74LS08	01295	TEXAS INSTR, SEMICON DIV.	SN74LS08N/J	807408-618	7
U72 U81	IC, TTL 74LS02	01295	TEXAS INSTR, SEMICON DIV.	SN74LS02N	807402-618	2
U90	IC, TTL 7406	01295	TEXAS INSTR, SEMICON DIV.	7406N/J	807011-646	1
U91 U110	IC, TTL 74S175	01295	TEXAS INSTR, SEMICON DIV.	SN74S175N	807617-055	2
U92	IC, TTL 74LS27	01295	TEXAS INSTR, SEMICON DIV.	SN74LS27N/J	807439-016	1
U93 U94	IC, TTL 74LS74	01295	TEXAS INSTR, SEMICON DIV.	SN74LS74AN/J	807474-618	2

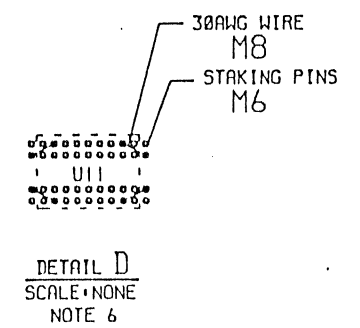
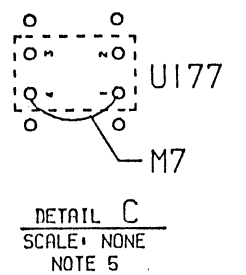
72 ITEMS LISTED



REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO AO W/CHANGES.	02-11-85	<i>M. Bylund</i>



500700-001 (2 REOD)
11.40 STFNR M3
NOTE 4



- NOTES:
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES NO. E-9.1. LOCATE APPROXIMATELY AS SHOWN.
 2. INSTALL CARD EJECTORS (M5) AFTER WIRE WRAPPING.
 3. MAXIMUM COMPONENT HEIGHT TO BE .312 INCHES FROM BOARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM BOARD SURFACE.
 4. INSTALL CARD STIFFENERS (M3) AS SHOWN BEFORE HAVE SOLDERING.
 5. ON U177 ADD JUMPER WIRES FROM U177.1 TO U177.4 USING (M7).
 6. ON U11 ADD JUMPER WIRES
FROM: 29.11 TO 31.12
FROM: 37.12 TO 39.11
FROM: 29.8 TO 31.7
FROM: 37.7 TO 39.8

REFERENCE DOCUMENTS
SCHEMATIC _ _ 200737-600
PARTS LIST _ _ PL200737-100

DRAWN C. NOONE		EVANS & SUTHERLAND	
CHECKED <i>M. Bylund</i>	DATE 2-13-85	TITLE	
ELEC ENG <i>M. Bylund</i>	BY M. BYLUND	ASSY. IO-SERIAL & PARALLEL	
PROJ ENG <i>S. HADFIELD</i>	DATE 6-SEP-84	SPC9800 (W/W)	
APPROVED		SIZE C	CODE TIGHT 53938
NEXT ASSY	MODIFIED DATE 12-FEB-85	DWG NO. 200737-100	REV A0
CREATION DATE 6-SEP-84	FILE NAME 2007370A0.MDF	VERSION 233	SHEET 1 OF 1

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200737-100



4

3

2

1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	B0	CREATED PC VERSION	KMDT 01-19-87	

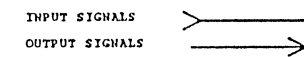
NOTES: UNLESS OTHERWISE SPECIFIED:

1. RESISTANCE VALUES ARE IN OHMS + - 1%, K DENOTES 1000.

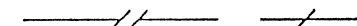
2. ON ALL IC'S, GROUND AND +5V (VCC) ARE AS FOLLOWS:

- 14 PIN IC, 7 AND 14
- 16 PIN IC, 8 AND 16
- 18 PIN IC, 9 AND 18
- 20 PIN IC, 10 AND 20
- 22 PIN IC, 11 AND 22
- 24 PIN IC, 12 AND 24
- 28 PIN IC, 14 AND 28

3. CARD CONNECTOR SYMBOL "P1-" DESIGNATES:



4. THE FOLLOWING SYMBOLS DESIGNATE A SUBMERGED IN-LINE CONNECTION BETWEEN 2 OR MORE IC'S, ETC.



D

D

C

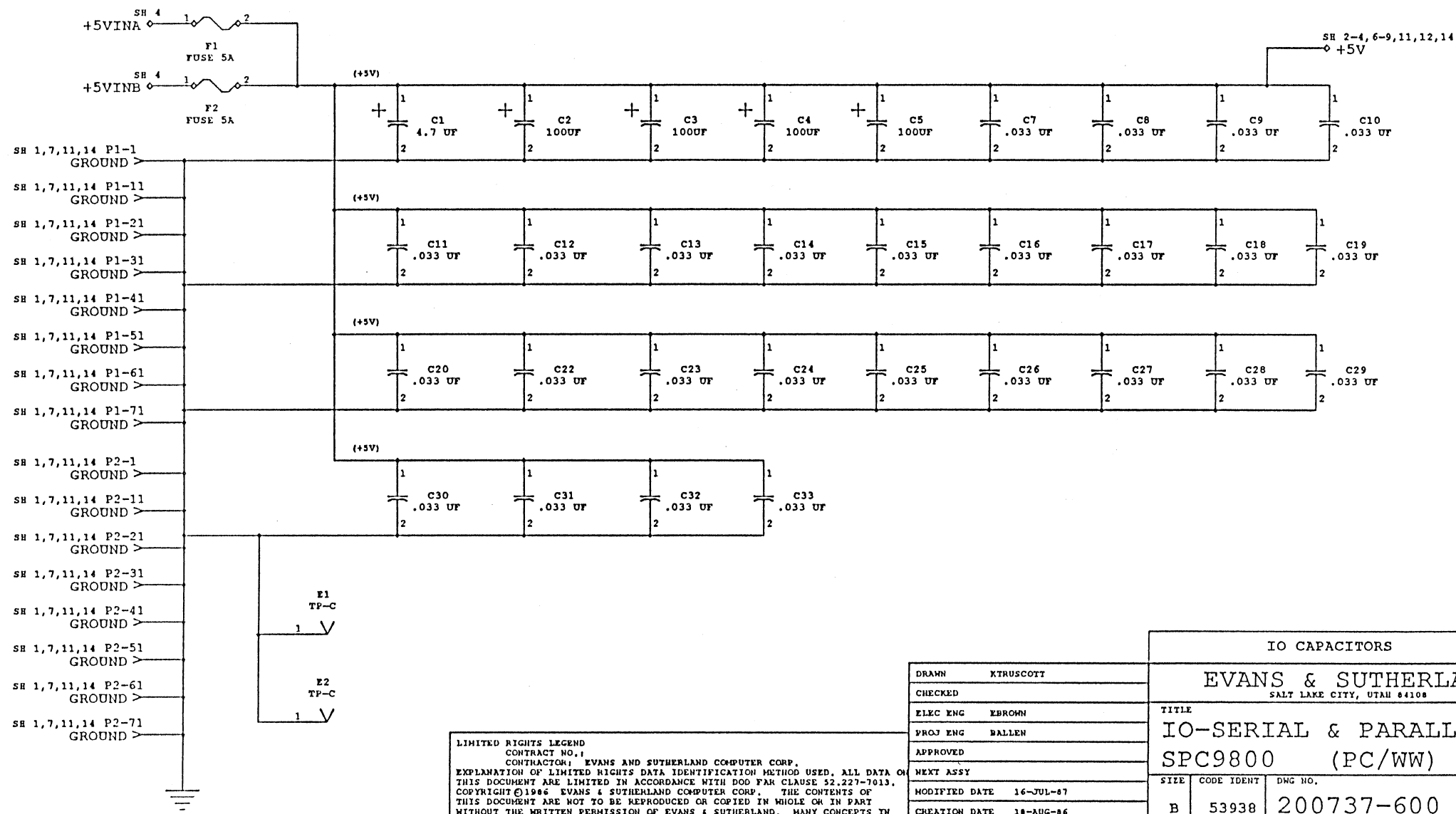
C

B

B

A

A



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DRAWN	KTRUSCOTT
CHECKED	
ELEC ENG	EBROWN
PROJ ENG	BALLEN
APPROVED	
NEXT ASSY	
MODIFIED DATE	16-JUL-87
CREATION DATE	18-AUG-86
FILE NAME	20073710080.MDF

IO CAPACITORS			
EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE IO-SERIAL & PARALLEL SPC9800 (PC/WW)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION	269	FC	SHEET 1 OF 17

200737-600

4

3

2

1



IO CAPACITORS			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION 269		FC	SHEET 2 OF 17

D

D

C

C

B

B

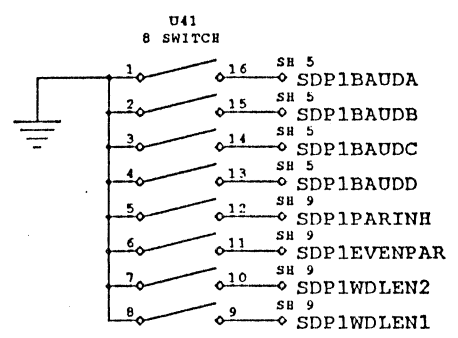
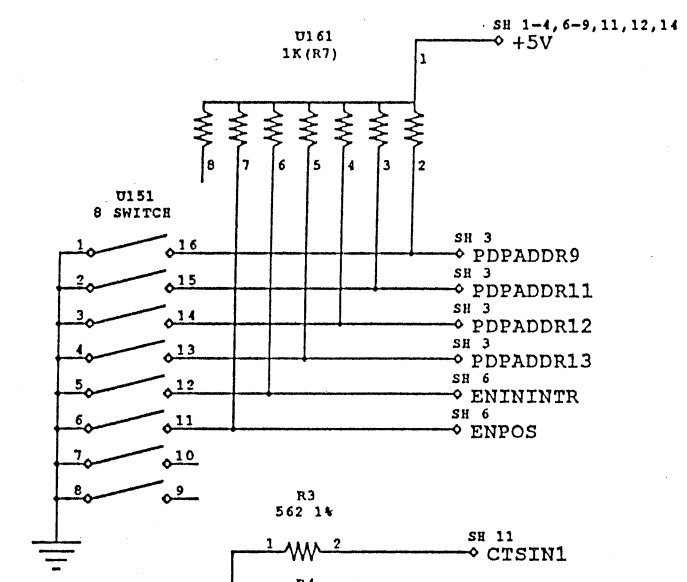
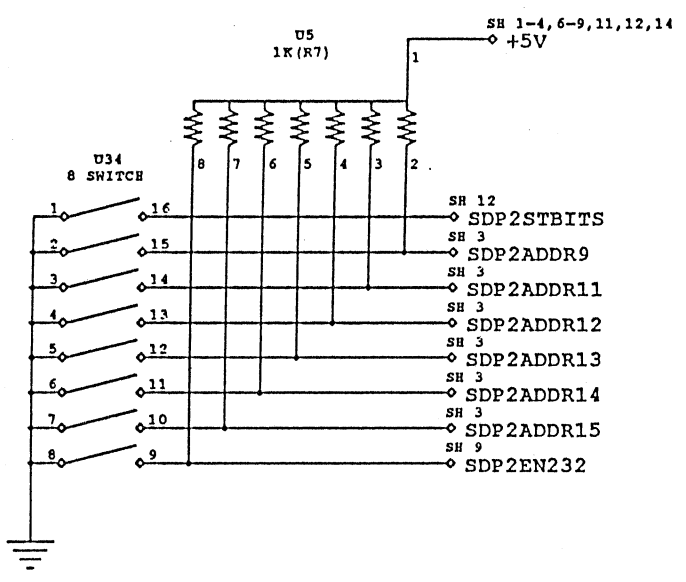
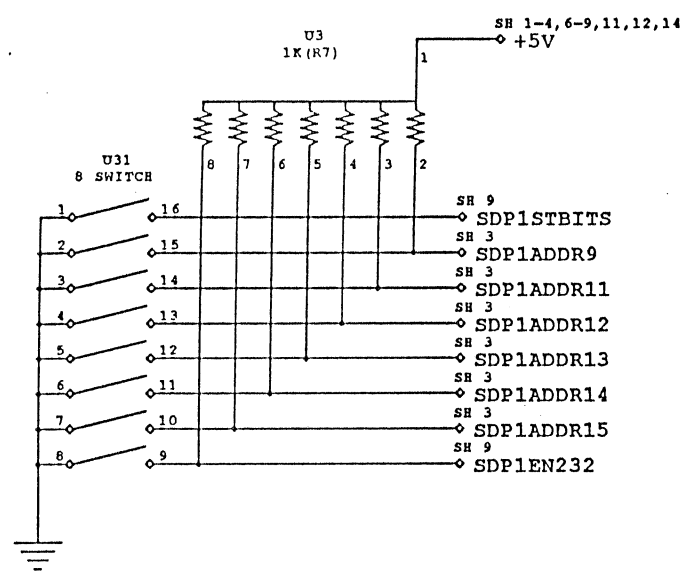
A

A

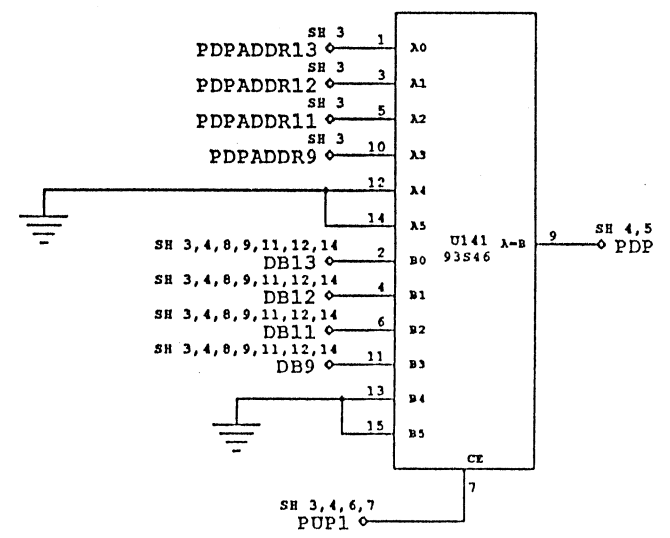
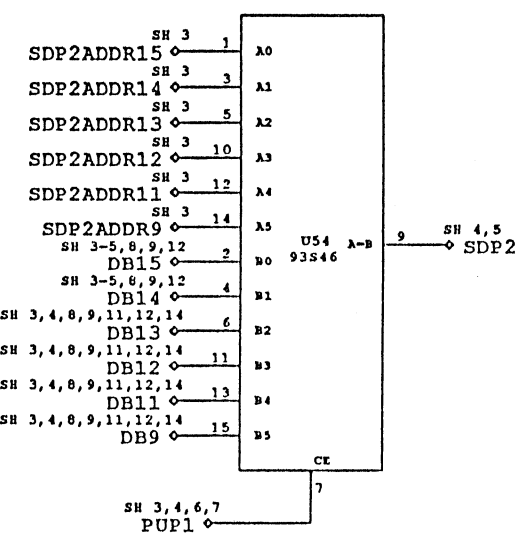
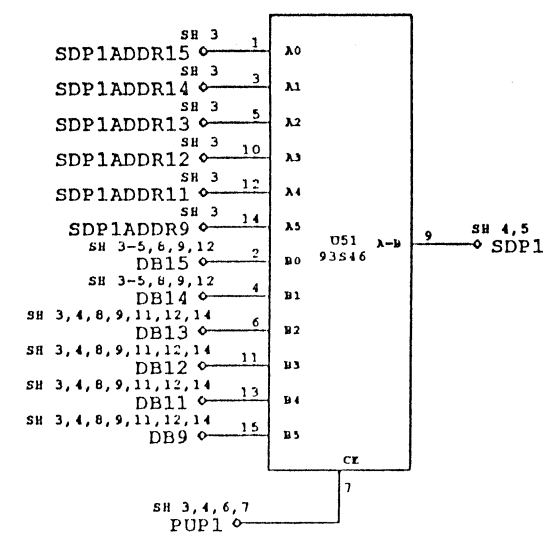
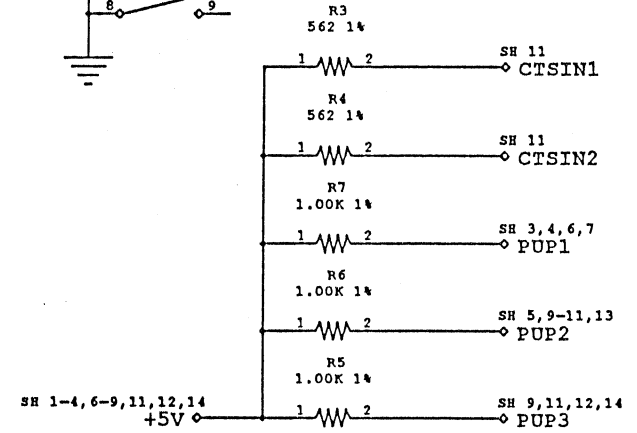
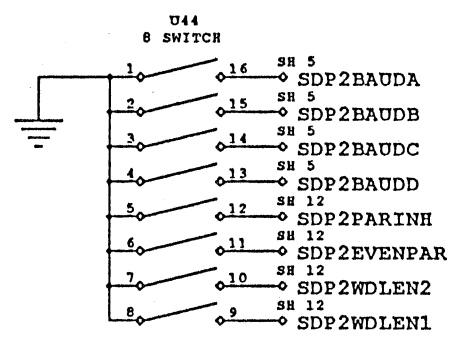
SDP1 CONFIGURATION SWITCHES

SDP2 CONFIGURATION SWITCHES

PDP CONFIGURATION SWITCHES

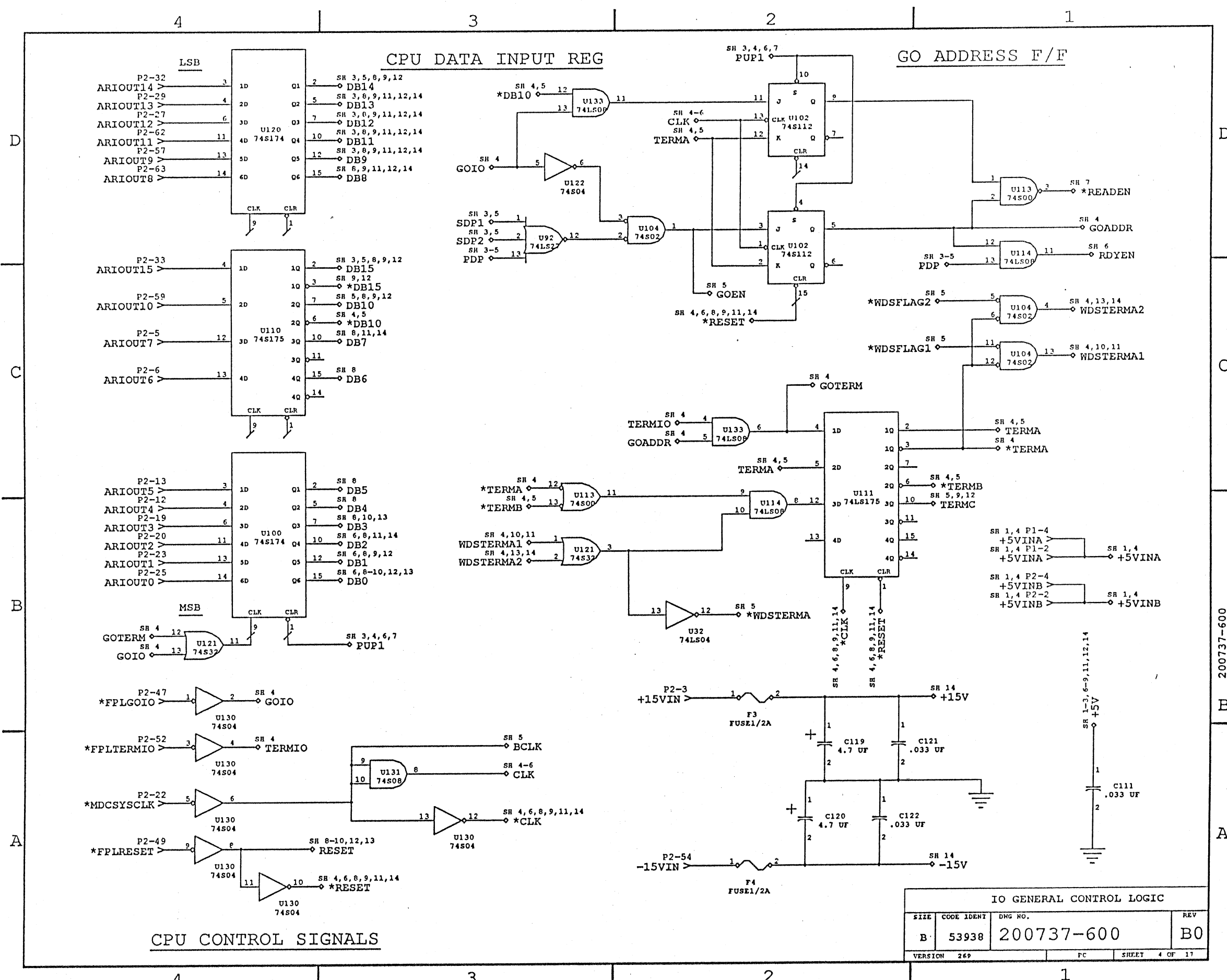


NOTE:
 THESE INPUTS ARE
 INTERNALLY PULLED-UP
 IN THE UART &
 BAUD RATE GEN.

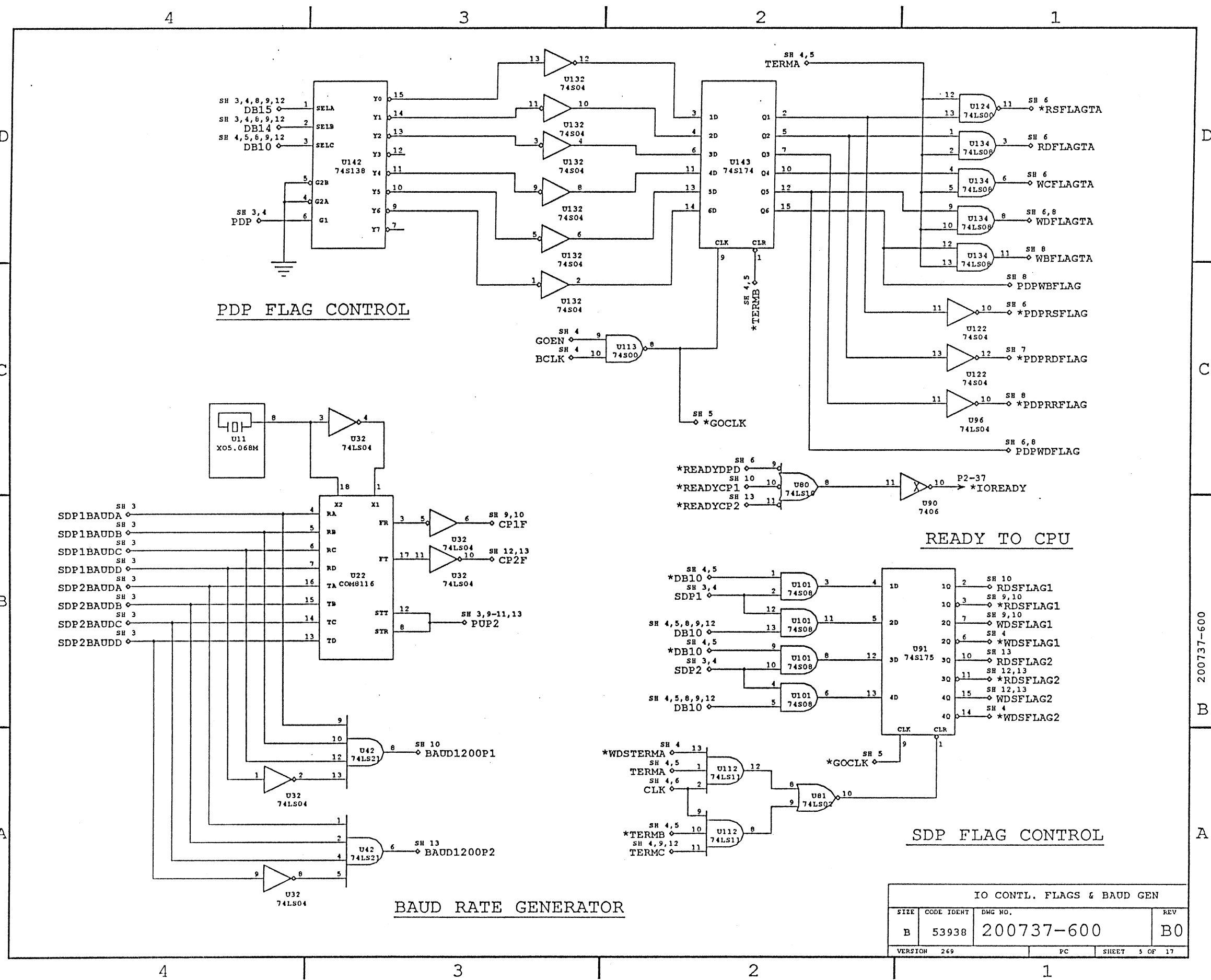


IO CONFIGURATION SWITCHES			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION 269	PC	SHEET 3 OF 17	

200737-600



IO GENERAL CONTROL LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION 269		FC	SHEET 4 OF 17



PDP FLAG CONTROL

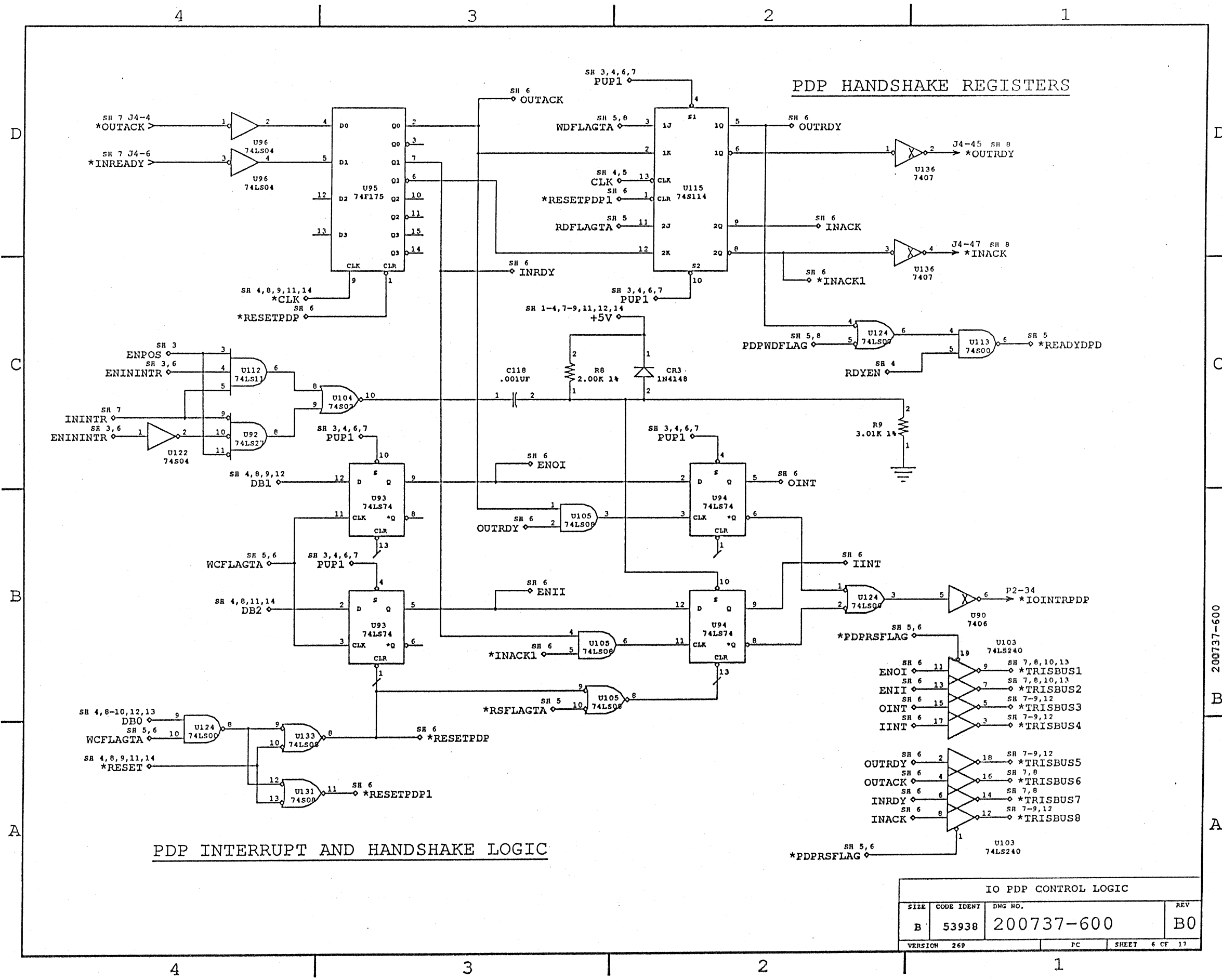
BAUD RATE GENERATOR

READY TO CPU

SDP FLAG CONTROL

IO CONTL. FLAGS & BAUD GEN			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION	269	PC	SHEET 5 OF 17

200737-600

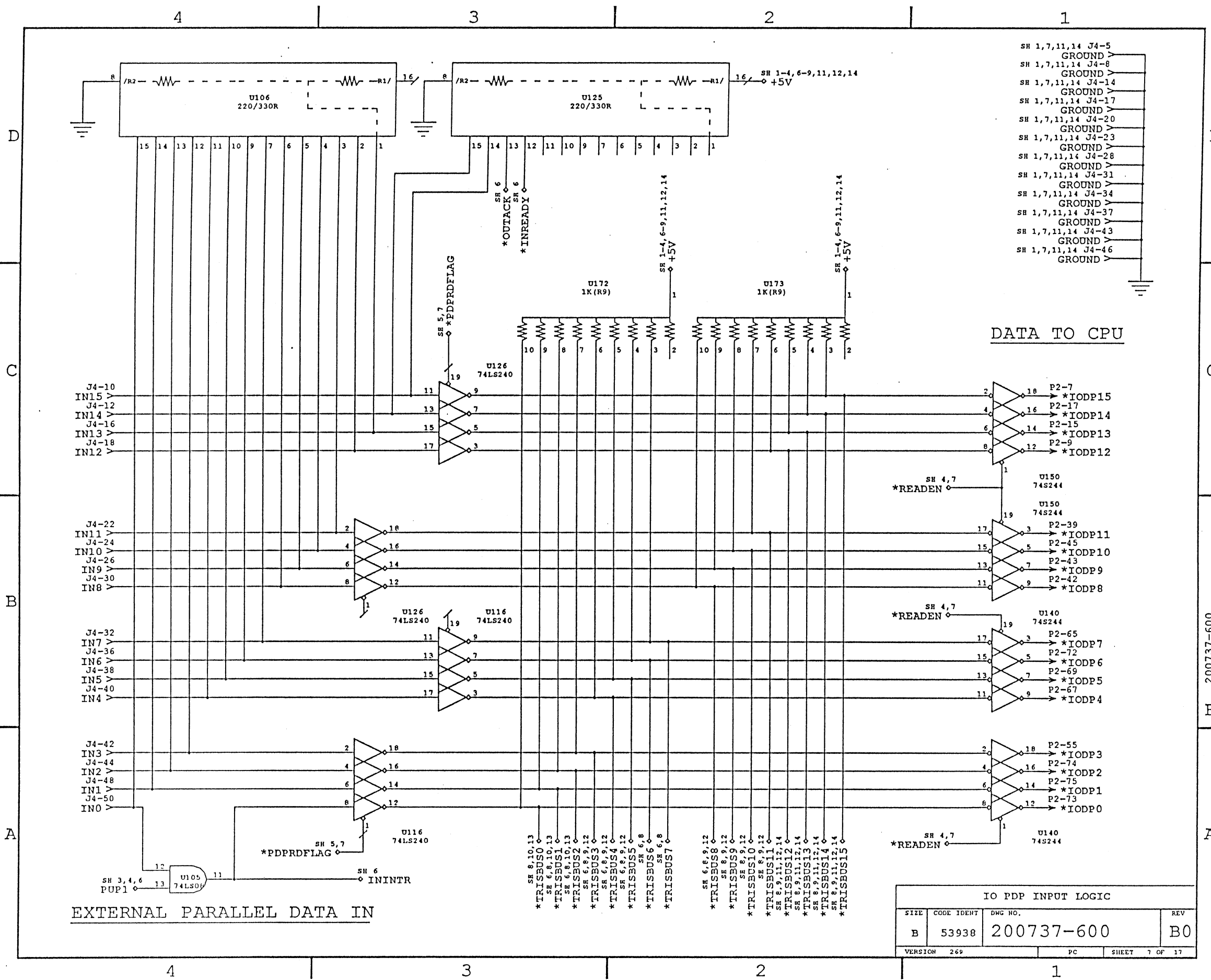


PDP HANDSHAKE REGISTERS

PDP INTERRUPT AND HANDSHAKE LOGIC

IO PDP CONTROL LOGIC			
SIZE	CODE IDENT	DMG NO.	REV
B	53938	200737-600	B0
VERSION	269	PC	SHEET 6 OF 17

200737-600 B A

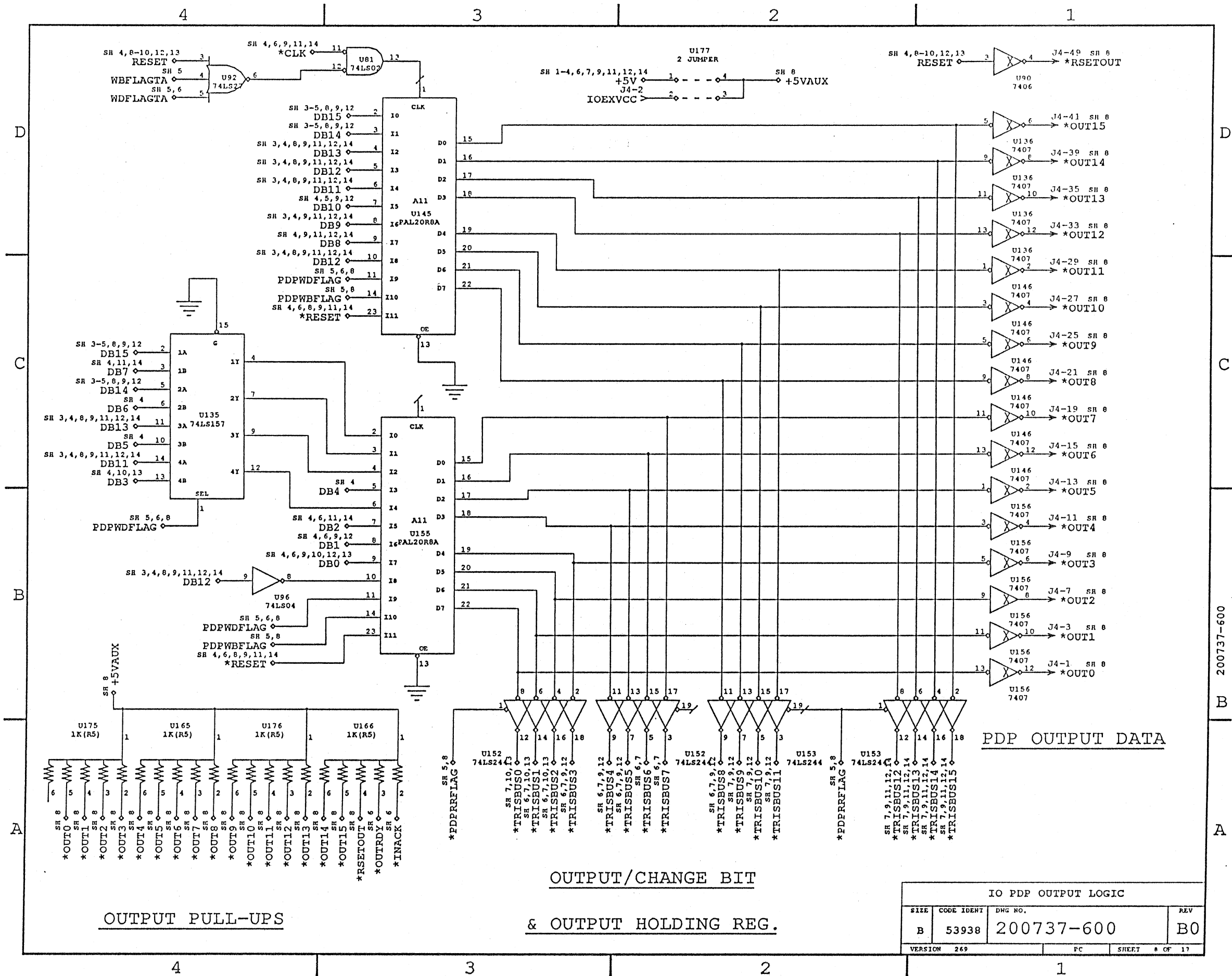


EXTERNAL PARALLEL DATA IN

DATA TO CPU

IO PDP INPUT LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION 269	PC	SHEET 7 OF 17	

200737-600

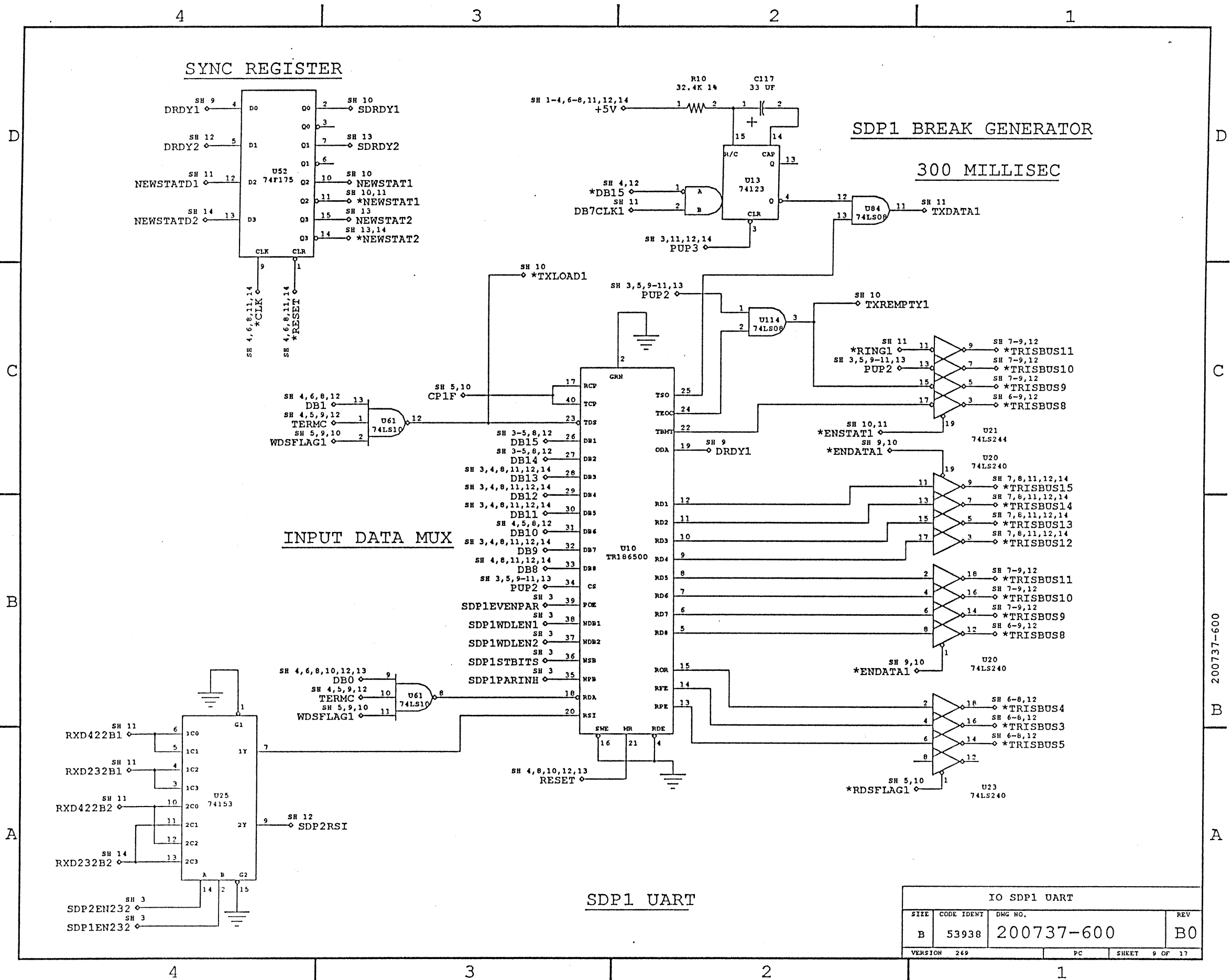


OUTPUT PULL-UPS

OUTPUT/CHANGE BIT
& OUTPUT HOLDING REG.

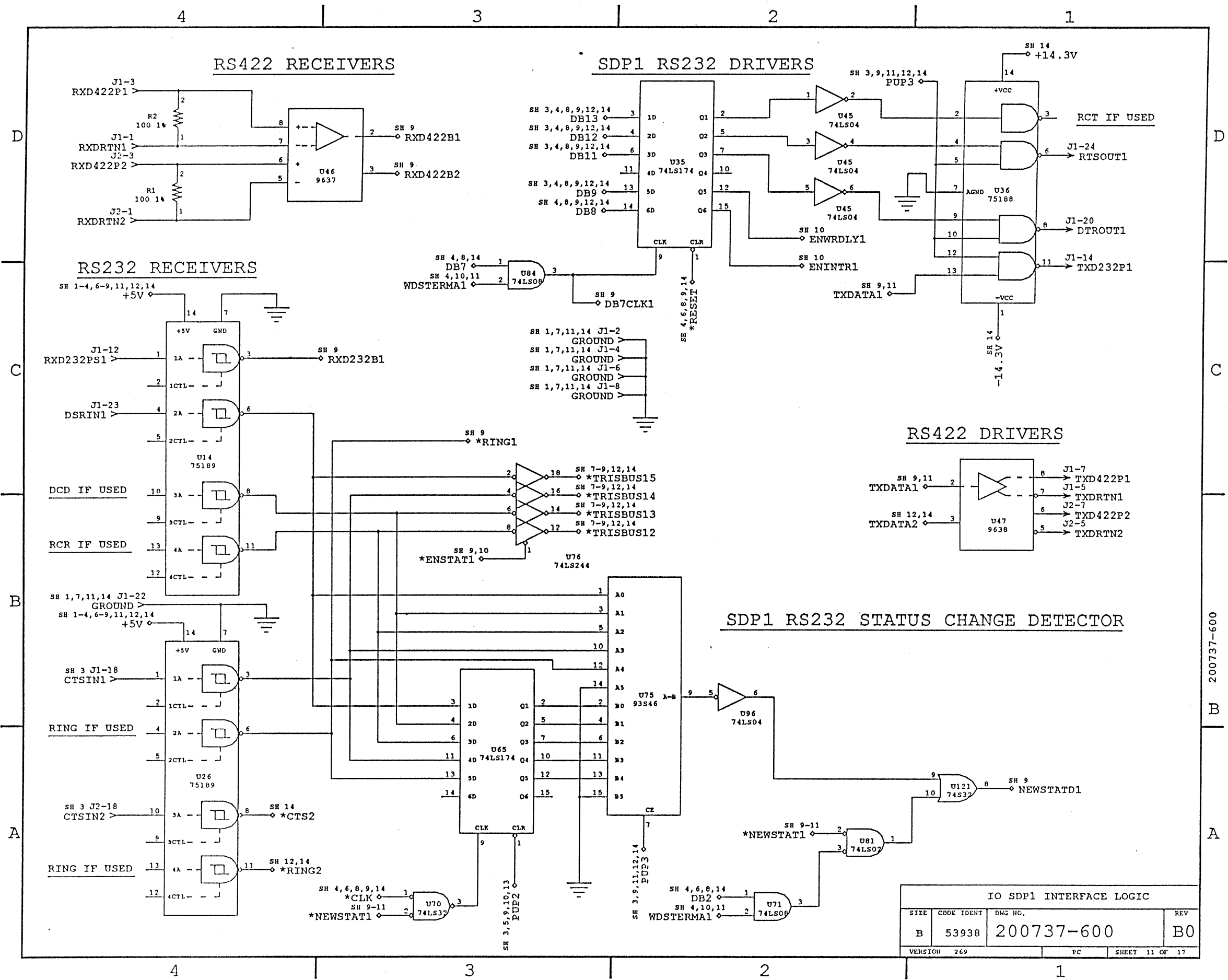
IO PDP OUTPUT LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION	269	FC	SHEET 8 OF 17

200737-600

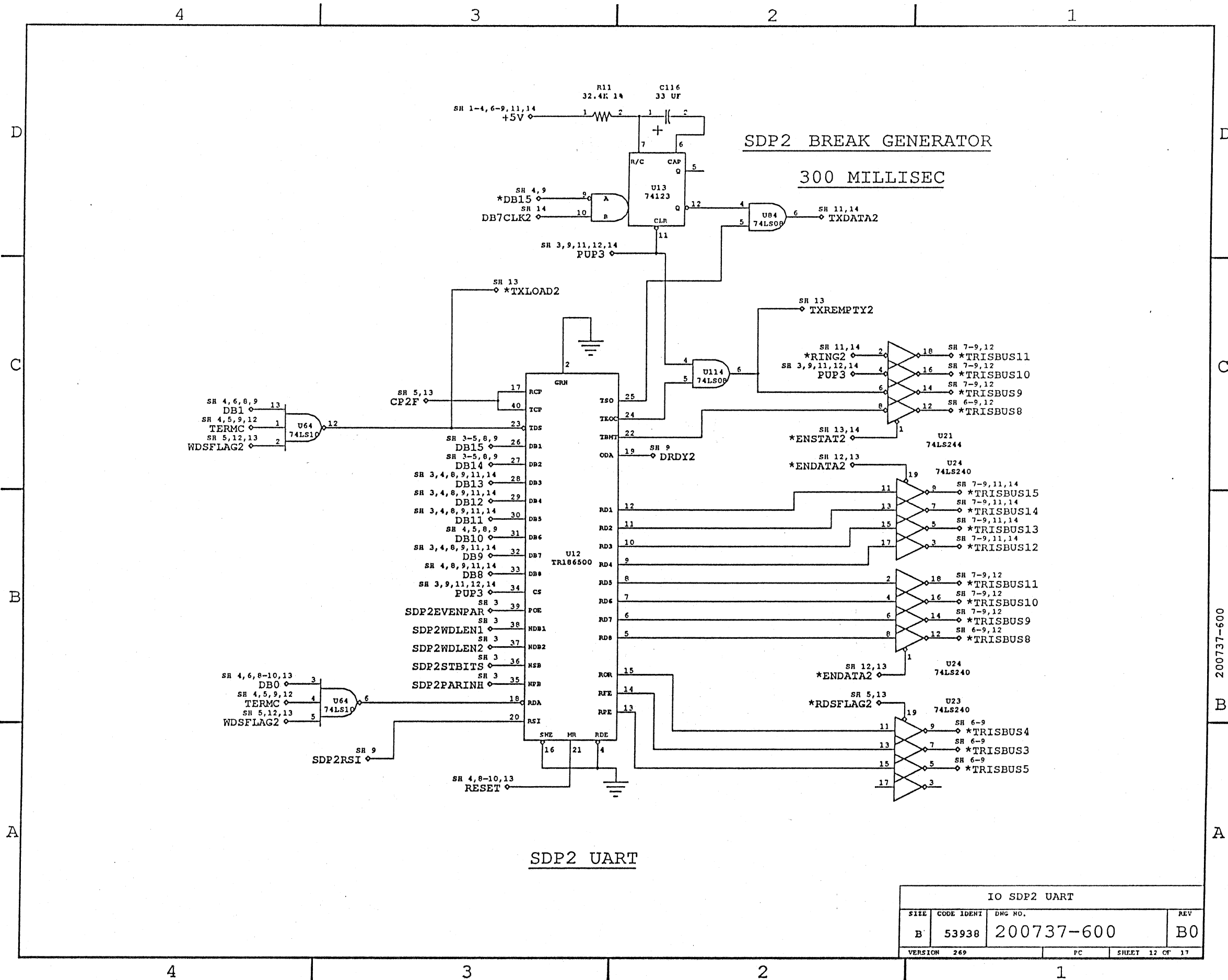


IO SDP1 UART			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION	269	PC	SHEET 9 OF 17

200737-600



IO SDP1 INTERFACE LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION	269	PC	SHEET 11 OF 17

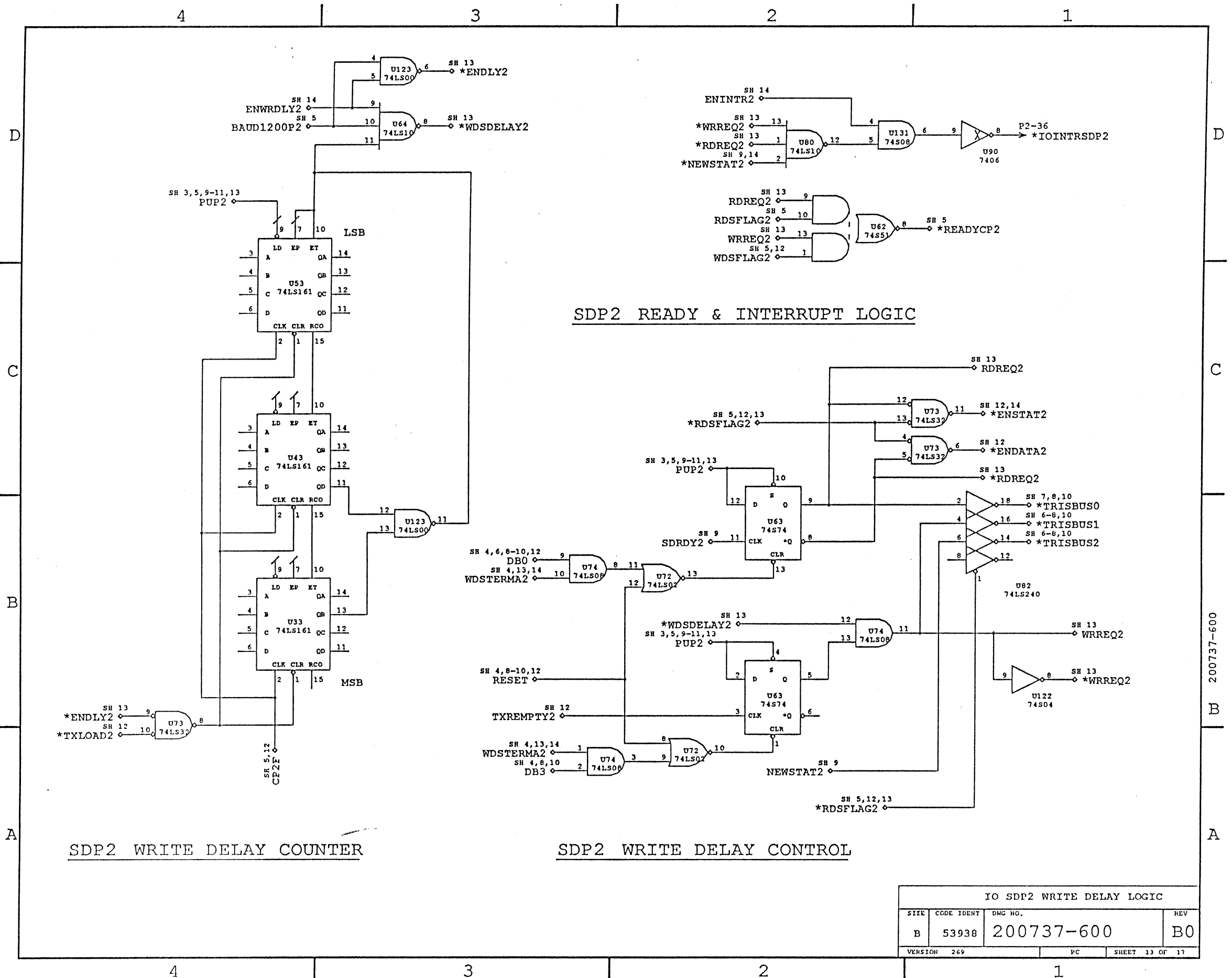


SDP2 BREAK GENERATOR
300 MILLISEC

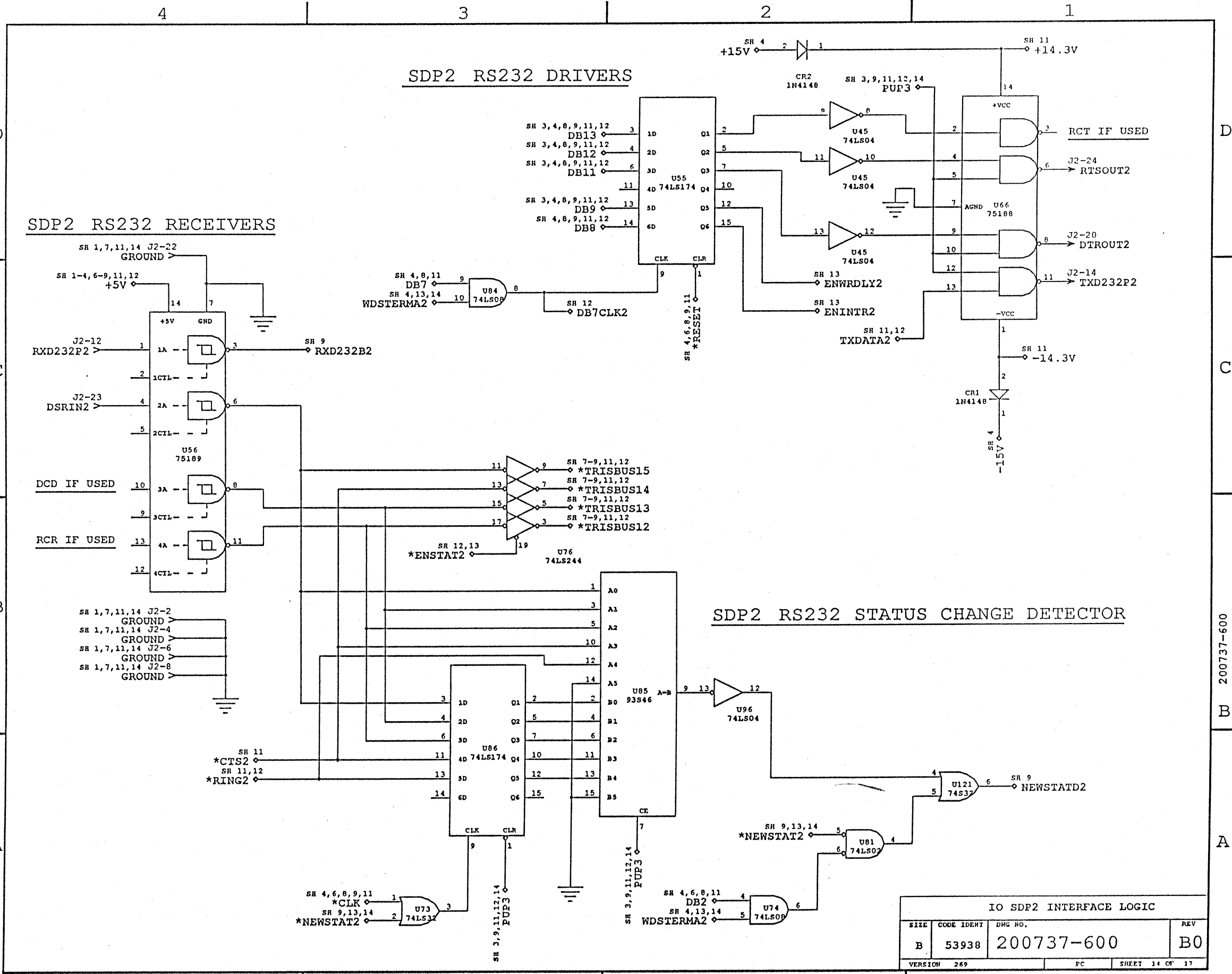
SDP2 UART

IO SDP2 UART			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION	269	PC	SHEET 12 OF 17

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IO SDP2 WRITE DELAY LOGIC			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION	269	PC	SHEET 13 OF 17



SDP2 RS232 RECEIVERS

SDP2 RS232 DRIVERS

SDP2 RS232 STATUS CHANGE DETECTOR

IO SDP2 INTERFACE LOGIC			
SIZE	CODE IDENT	DMG NO.	REV
B	53938	200737-600	B0
VERSION	269	PC	SHEET 14 OF 17

200737-600 B

SWITCH U31 SDP1 OR U34 SDP2

SPD ADDRESS, INTERFACE & STOP BITS

MSD	SW 2	SW 3		
	DB9	DB11		
0	ON	ON		
1	ON	OFF		
4	OFF	ON		
5	OFF	OFF		
	SW 4	SW 5	SW 6	SW 7
LSD	DB12	DB13	DB14	DB15
0	ON	ON	ON	ON
1	ON	ON	ON	OFF
2	ON	ON	OFF	ON
3	ON	ON	OFF	OFF
4	ON	OFF	ON	ON
5	ON	OFF	ON	OFF
6	ON	OFF	OFF	ON
7	ON	OFF	OFF	OFF
8	OFF	ON	ON	ON
9	OFF	ON	ON	OFF
A	OFF	ON	OFF	ON
B	OFF	ON	OFF	OFF
C	OFF	OFF	ON	ON
D	OFF	OFF	ON	OFF
E	OFF	OFF	OFF	ON
F	OFF	OFF	OFF	OFF
INTERFACE SELECTION		SW 8		
RS422		ON		
RS232		OFF		
STOP BITS SELECTION		SW 1		
1		ON		
2		OFF		

SWITCH U41 SDP1 OR U44 SDP2

BAUD RATE, PAITY & WORD LENGTH

BAUD RATE	SW 4	SW 3	SW 2	SW 1	
	BAUDD	BAUDC	BAUDB	BAUDA	
50	ON	ON	ON	ON	
75	ON	ON	ON	OFF	
110	ON	ON	OFF	ON	
134.5	ON	ON	OFF	OFF	
150	ON	OFF	ON	ON	
300	ON	OFF	ON	OFF	
600	ON	OFF	OFF	ON	
1200	ON	OFF	OFF	OFF	
1800	OFF	ON	ON	ON	
2000	OFF	ON	ON	OFF	
2400	OFF	ON	OFF	ON	
3600	OFF	ON	OFF	OFF	
4800	OFF	OFF	ON	ON	
7200	OFF	OFF	ON	OFF	
9600	OFF	OFF	OFF	ON	
19200	OFF	OFF	OFF	OFF	
PARITY SELECTION				SW 5	SW 6
INHIBITED				OFF	X
ODD				ON	ON
EVEN				ON	OFF
WORD LENGTH SELECTION		(NUMBER OF BITS)		SW 7	SW 8
5				ON	ON
6				ON	OFF
7				OFF	ON
8				OFF	OFF

SWITCH U151 DPD

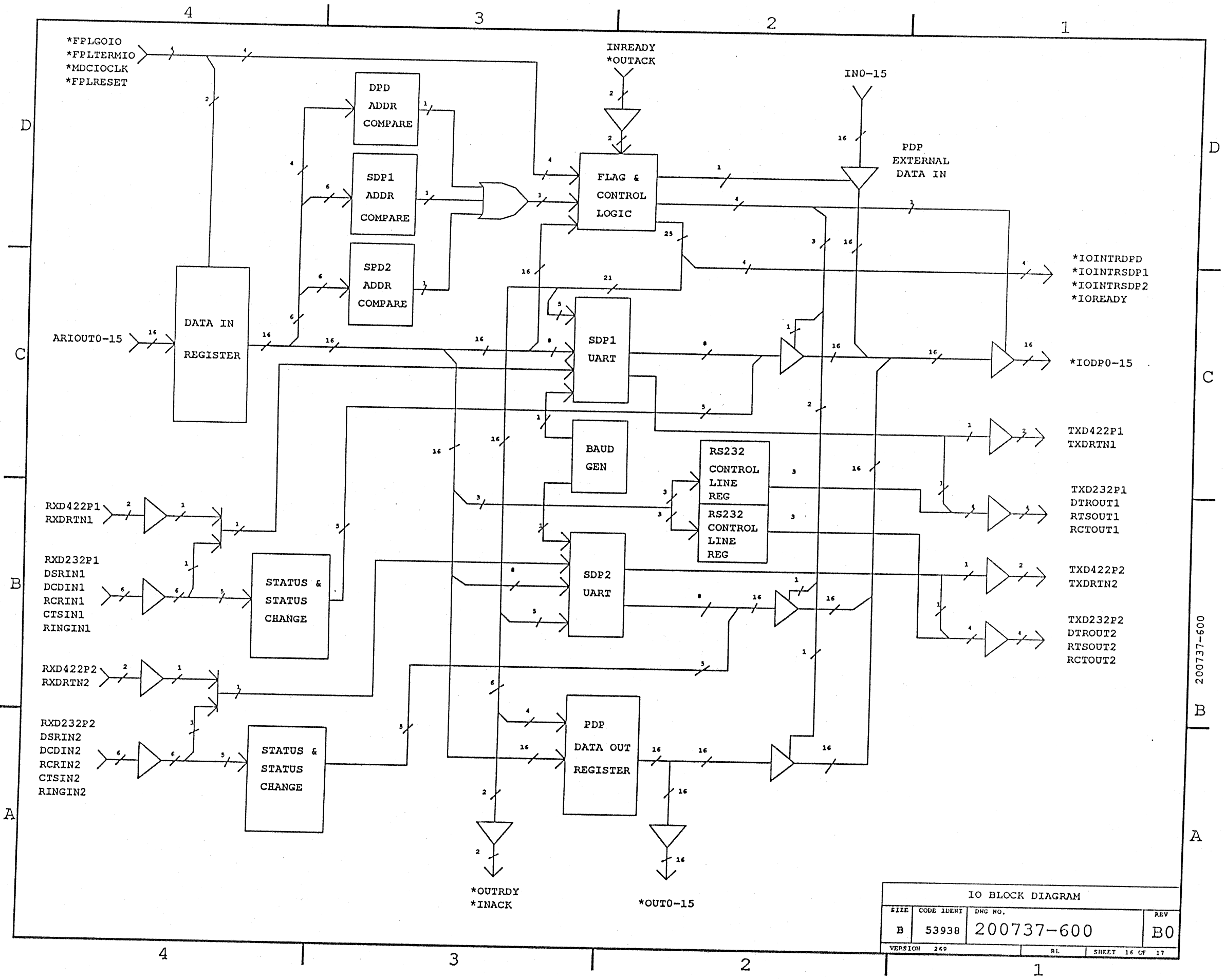
DPD ADDRESS & EXTERNAL INTERRUPT

ADDR	SW 1	SW 2	SW 3	SW 4
	DB9	DB11	DB12	DB13
00	ON	ON	ON	ON
04	ON	ON	ON	OFF
08	ON	ON	OFF	ON
0C	ON	ON	OFF	OFF
10	ON	OFF	ON	ON
14	ON	OFF	ON	OFF
18	ON	OFF	OFF	ON
1C	ON	OFF	OFF	OFF
40	OFF	ON	ON	ON
44	OFF	ON	ON	OFF
48	OFF	ON	OFF	ON
4C	OFF	ON	OFF	OFF
50	OFF	OFF	ON	ON
54	OFF	OFF	ON	OFF
58	OFF	OFF	OFF	ON
5C	OFF	OFF	OFF	OFF
INTERRUPT SELECTION			SW 5	SW 6
DISABLED			ON	X
NEGATIVE EDGE			OFF	ON
POSITIVE EDGE			OFF	OFF

DB9

200737-600

IO SWITCH INFORMATION			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION 269		BL	SHEET 15 OF 17



IO BLOCK DIAGRAM			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION	269	BL	SHEET 16 OF 17

200737-600

4					3					2					1				
Unit	Pin	Type	String	Sheet	Unit	Pin	Type	String	Sheet	String	Unit	Pin	Type	Sheet	String	Unit	Pin	Type	Sheet
J1	1	In	RXDRTN1	11 D4	P2	3	In	+15VIN	4 B2	*FPLGOIO	P2	47	In	4 B4	GROUND	J4	37	In	7 D1
J1	2	In	GROUND	11 C2	P2	4	In	+5VINB	4 B1	*FPLRESET	P2	49	In	4 A4	GROUND	J4	43	In	7 D1
J1	3	In	RXD422P1	11 D4	P2	5	In	ARIOUT7	4 C4	*FPLTERMIO	P2	52	In	4 A4	GROUND	J4	46	In	7 D1
J1	4	In	GROUND	11 C2	P2	6	In	ARIOUT6	4 C4	*INACK	J4	47	Out	6 D1	GROUND	P1	1	In	1 C4
J1	5	Out	TXDRTN1	11 B1	P2	7	Out	*IODP15	7 C1	*INREADY	J4	6	In	6 D4	GROUND	P1	11	In	1 C4
J1	6	In	GROUND	11 C2	P2	9	Out	*IODP12	7 C1	*IODP0	P2	73	Out	7 A1	GROUND	P1	21	In	1 B4
J1	7	Out	TXD422P1	11 C1	P2	11	In	GROUND	1 B4	*IODP1	P2	75	Out	7 A1	GROUND	P1	31	In	1 B4
J1	8	In	GROUND	11 C2	P2	12	In	ARIOUT4	4 B4	*IODP10	P2	45	Out	7 B1	GROUND	P1	41	In	1 B4
J1	12	In	RXD232PS1	11 C4	P2	13	In	ARIOUT5	4 C4	*IODP11	P2	39	Out	7 B1	GROUND	P1	51	In	1 B4
J1	14	Out	TXD232P1	11 C1	P2	15	Out	*IODP13	7 C1	*IODP12	P2	9	Out	7 C1	GROUND	P1	61	In	1 B4
J1	18	In	CTSIN1	11 B4	P2	17	Out	*IODP14	7 C1	*IODP13	P2	15	Out	7 C1	GROUND	P1	71	In	1 B4
J1	20	Out	DTROUT1	11 D1	P2	19	In	ARIOUT3	4 B4	*IODP14	P2	17	Out	7 C1	GROUND	P2	1	In	1 B4
J1	22	In	GROUND	11 B4	P2	20	In	ARIOUT2	4 B4	*IODP15	P2	1	Out	7 C1	GROUND	P2	11	In	1 B4
J1	23	In	DSRIN1	11 C4	P2	21	In	GROUND	1 A4	*IODP2	P2	74	Out	7 A1	GROUND	P2	21	In	1 A4
J1	24	Out	RTSOUT1	11 D1	P2	22	In	*MDCSYSCLK	4 A4	*IODP3	P2	55	Out	7 A1	GROUND	P2	31	In	1 A4
J2	1	In	RXDRTN2	11 D4	P2	23	In	ARIOUT1	4 B4	*IODP4	P2	67	Out	7 B1	GROUND	P2	41	In	1 A4
J2	2	In	GROUND	14 B4	P2	25	In	ARIOUT0	4 B4	*IODP5	P2	69	Out	7 B1	GROUND	P2	51	In	1 A4
J2	3	In	RXD422P2	11 D4	P2	27	In	ARIOUT12	4 D4	*IODP6	P2	72	Out	7 B1	GROUND	P2	61	In	1 A4
J2	4	In	GROUND	14 B4	P2	29	In	ARIOUT13	4 D4	*IODP7	P2	65	Out	7 B1	GROUND	P2	71	In	1 A4
J2	5	Out	TXDRTN2	11 B1	P2	31	In	GROUND	1 A4	*IODP8	P2	42	Out	7 B1	INO	J4	50	In	7 A4
J2	6	In	GROUND	14 B4	P2	32	In	ARIOUT14	4 D4	*IODP9	P2	43	Out	7 B1	IN1	J4	48	In	7 A4
J2	7	Out	TXD422P2	11 B1	P2	33	In	ARIOUT15	4 C4	*IOINTRPDP	P2	34	Out	6 B1	IN10	J4	24	In	7 B4
J2	8	In	GROUND	14 B4	P2	34	Out	*IOINTRPDP	6 B1	*IOINTRSDP1	P2	35	Out	10 D1	IN11	J4	22	In	7 B4
J2	12	In	RXD232P2	14 C4	P2	35	Out	*IOINTRSDP1	10 D1	*IOINTRSDP2	P2	36	Out	13 D1	IN12	J4	18	In	7 C4
J2	14	Out	TXD232P2	14 C1	P2	36	Out	*IOINTRSDP2	13 D1	*IOREADY	P2	37	Out	5 C1	IN13	J4	16	In	7 C4
J2	18	In	CTSIN2	11 A4	P2	37	Out	*IOREADY	5 C1	*MDCSYSCLK	P2	22	In	4 A4	IN14	J4	12	In	7 C4
J2	20	Out	DTROUT2	14 D1	P2	39	Out	*IODP11	7 B1	*OUT0	J4	1	Out	8 B1	IN15	J4	10	In	7 C4
J2	22	In	GROUND	14 D4	P2	41	In	GROUND	1 A4	*OUT1	J4	3	Out	8 B1	IN2	J4	44	In	7 A4
J2	23	In	DSRIN2	14 C4	P2	42	Out	*IODP8	7 B1	*OUT10	J4	27	Out	8 C1	IN3	J4	42	In	7 A4
J2	24	Out	RTSOUT2	14 D1	P2	43	Out	*IODP9	7 B1	*OUT11	J4	29	Out	8 C1	IN4	J4	40	In	7 B4
J4	1	Out	*OUT0	8 B1	P2	45	Out	*IODP10	7 B1	*OUT12	J4	33	Out	8 D1	IN5	J4	38	In	7 B4
J4	2	In	IOEXVCC	8 D2	P2	47	In	*FPLGOIO	4 B4	*OUT13	J4	35	Out	8 D1	IN6	J4	36	In	7 B4
J4	3	Out	*OUT1	8 B1	P2	49	In	*FPLRESET	4 A4	*OUT14	J4	39	Out	8 D1	IN7	J4	32	In	7 B4
J4	4	In	*OUTACK	6 D4	P2	51	In	GROUND	1 A4	*OUT15	J4	41	Out	8 D1	IN8	J4	30	In	7 B4
J4	5	In	GROUND	7 D1	P2	52	In	*FPLTERMIO	4 A4	*OUT2	J4	7	Out	8 B1	IN9	J4	26	In	7 B4
J4	6	In	*INREADY	6 D4	P2	54	In	-15VIN	4 A2	*OUT3	J4	9	Out	8 B1	IOEXVCC	J4	2	In	8 D2
J4	7	Out	*OUT2	8 B1	P2	55	Out	*IODP3	7 A1	*OUT4	J4	11	Out	8 B1	RTSOUT1	J1	24	Out	11 D1
J4	8	In	GROUND	7 D1	P2	57	In	ARIOUT9	4 D4	*OUT5	J4	13	Out	8 B1	RTSOUT2	J2	24	Out	14 D1
J4	9	Out	*OUT3	8 B1	P2	59	In	ARIOUT10	4 C4	*OUT6	J4	15	Out	8 C1	RXD232P2	J2	12	In	14 C4
J4	10	In	IN15	7 C4	P2	61	In	GROUND	1 A4	*OUT7	J4	19	Out	8 C1	RXD232PS1	J1	12	In	11 C4
J4	11	Out	*OUT4	8 B1	P2	62	In	ARIOUT11	4 D4	*OUT8	J4	21	Out	8 C1	RXD422P1	J1	3	In	11 D4
J4	12	In	IN14	7 C4	P2	63	In	ARIOUT8	4 D4	*OUT9	J4	25	Out	8 C1	RXD422P2	J2	3	In	11 D4
J4	13	Out	*OUT5	8 B1	P2	65	Out	*IODP7	7 B1	*OUTACK	J4	4	In	6 D4	RXDRTN1	J1	1	In	11 D4
J4	14	In	GROUND	7 D1	P2	67	Out	*IODP4	7 B1	*OUTRDY	J4	45	Out	8 D1	RXDRTN2	J2	1	In	11 D4
J4	15	Out	*OUT6	8 C1	P2	69	Out	*IODP5	7 B1	*RSETOUT	J4	49	Out	8 D1	TXD232P1	J1	14	Out	11 C1
J4	16	In	IN13	7 C4	P2	71	In	GROUND	1 A4	+15VIN	P2	3	In	4 B2	TXD232P2	J2	14	Out	14 C1
J4	17	In	GROUND	7 D1	P2	72	Out	*IODP6	7 B1	+5VINA	P1	2	In	4 B1	TXD422P1	J1	7	Out	11 C1
J4	18	In	IN12	7 C4	P2	73	Out	*IODP0	7 A1	+5VINA	P1	4	In	4 B1	TXD422P2	J2	7	Out	11 B1
J4	19	Out	*OUT7	8 C1	P2	74	Out	*IODP2	7 A1	+5VINB	P2	2	In	4 B1	TXDRTN1	J1	5	Out	11 B1
J4	20	In	GROUND	7 D1	P2	75	Out	*IODP1	7 A1	+5VINB	P2	4	In	4 B2	TXDRTN2	J2	5	Out	11 B1
J4	21	Out	*OUT8	8 C1						-15VIN	P2	54	In	4 A2					
J4	22	In	IN11	7 B4						ARIOUT0	P2	25	In	4 B4					
J4	23	In	GROUND	7 D1						ARIOUT1	P2	23	In	4 B4					
J4	24	In	IN10	7 B4						ARIOUT10	P2	59	In	4 C4					
J4	25	Out	*OUT9	8 C1						ARIOUT11	P2	62	In	4 D4					
J4	26	In	IN9	7 B4						ARIOUT12	P2	27	In	4 D4					
J4	27	Out	*OUT10	8 C1						ARIOUT13	P2	29	In	4 D4					
J4	28	In	GROUND	7 D1						ARIOUT14	P2	32	In	4 C4					
J4	29	Out	*OUT11	8 C1						ARIOUT15	P2	33	In	4 D4					
J4	30	In	IN8	7 B4						ARIOUT2	P2	20	In	4 B4					
J4	31	In	GROUND	7 D1						ARIOUT3	P2	19	In	4 B4					
J4	32	In	IN7	7 B4						ARIOUT4	P2	12	In	4 B4					
J4	33	Out	*OUT12	8 D1						ARIOUT5	P2	13	In	4 C4					
J4	34	In	GROUND	7 D1						ARIOUT6	P2	6	In	4 C4					
J4	35	Out	*OUT13	8 D1						ARIOUT7	P2	5	In	4 C4					
J4	36	In	IN6	7 B4						ARIOUT8	P2	63	In	4 D4					
J4	37	In	GROUND	7 D1						ARIOUT9	P2	57	In	4 D4					
J4	38	In	IN5	7 B4						CTSIN1	J1	18	In	11 B4					
J4	39	Out	*OUT14	8 D1						CTSIN2	J2	18	In	11 A4					
J4	40	In	IN4	7 B4						DSRIN1	J1	23	In	11 C4					
J4	41	Out	*OUT15	8 D1						DSRIN2	J2	23	In	14 C4					
J4	42	In	IN3	7 A4						DTROUT1	J1	20	Out	11 D1					
J4	43	In	GROUND	7 D1						DTROUT2	J2	20	Out	14 D1					
J4	44	In	IN2	7 A4						GROUND	J1	2	In	11 C2					
J4	45	Out	*OUTRDY	6 D1						GROUND	J1	4	In	11 C2					
J4	46	In	GROUND	7 D1						GROUND	J1	6	In	11 C2					
J4	47	Out	*INACK	6 D1						GROUND	J1	8	In	11 C2					
J4	48	In	IN1	7 A4						GROUND	J1	22	In	11 B4					
J4	49	Out	*RSETOUT	8 D1						GROUND	J2	2	In	14 B4					
J4	50	In	INO	7 A4						GROUND	J2	4	In	14 B4					
P1	1	In	GROUND	1 C4						GROUND	J2	6	In	14 B4					
P1	2	In	+5VINA	4 B1						GROUND	J2	8	In	14 B4					
P1	4	In	+5VINA	4 B1						GROUND	J2	22	In	14 D4					
P1	11	In	GROUND	1 C4						GROUND	J4	5	In	7 D1					
P1	21	In	GROUND	1 B4						GROUND	J4	8	In	7 D1					
P1	31	In	GROUND	1 B4						GROUND	J4	14	In	7 D1					
P1	41	In	GROUND	1 B4						GROUND	J4	17	In	7 D1					
P1	51	In	GROUND	1 B4						GROUND	J4	20	In	7 D1					
P1	61	In	GROUND	1 B4						GROUND	J4	23	In	7 D1					
P1	71	In	GROUND	1 B4						GROUND	J4	28	In	7 D1					
P2	1	In	GROUND	1 B4						GROUND	J4	31	In	7 D1					
P2	2	In	+5VINB	4 B1						GROUND	J4	34	In	7 D1					

Connector summary			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	200737-600	B0
VERSION	269	CS	SHEET 17 OF 17

200737-600 B A



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 200737-201 REV: A1 = AB DESC: SERIAL/PARALLEL OPTION,I/O INTERFACE,TERMINAL, PRINTER AN

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
	CD,IO-SERIAL & PARALL	53938	EVANS & SUTHERLAND.	200737-100	200737-100	1
	*SCD*LBL,BAR-CODE,PRE	53938	EVANS & SUTHERLAND	*SCD*802178-008	802178-008	1

2 ITEMS LISTED



REV	REV. DESCRIPTION	DATE	APPROVED
A0	RELEASE	2-26-85	PKB
A1	CORRECT SWITCH SETTINGS	4-9-85	PKB

SWITCH SETTINGS FOR 200737-100 I/O CARD TO SUPPORT OPERATION OF 'J1' AS A SERIAL PORT, 'J2' AS A SERIAL PORT AND 'J4' AS A PARALLEL PORT ARE AS FOLLOWS :

LEGEND

CLOSED = ON , OPEN = OFF

GENERAL NOTE : DIP SWITCHES AT LOCATIONS U31 & U41 SET CONFIGURATION AND ADDRESS FOR 'J1'
 DIP SWITCHES AT LOCATIONS U34 & U44 SET CONFIGURATION AND ADDRESS FOR 'J2'
 DIP SWITCH AT LOCATION U151 SETS CONFIGURATION AND ADDRESS FOR 'J4'

SET SWITCH AT LOCATION U31 :										
CLOSED	X	X	X	X	X					
POSITION	1	2	3	4	5	6	7	8		
OPEN					X		X	X		

SET SWITCH AT LOCATION U41 :										
CLOSED	X				X	X		X		
POSITION	1	2	3	4	5	6	7	8		
OPEN		X	X	X				X		

SET SWITCH AT LOCATION U34 :										
CLOSED	X	X	X	X				X		
POSITION	1	2	3	4	5	6	7	8		
OPEN					X	X		X		

SET SWITCH AT LOCATION U44 :										
CLOSED					X	X	X			
POSITION	1	2	3	4	5	6	7	8		
OPEN	X	X	X					X	X	

SET SWITCH AT LOCATION U151 :										
CLOSED									X	
POSITION	1	2	3	4	5	6	7	8		
OPEN	X	X	X	X			X	X	X	

INSTALL P1 OF 200740-006 CABLE INTO 'J1'
 INSTALL P2 OF 200740-006 CABLE INTO EMI BULKHEAD BOX WITH HARDWARE SUPPLIED

MATE D-CONNECTOR OF 801130-125 RS-232C INTERFACE CABLE TO P2 OF 200740-006 CABLE WITHIN THE EMI INTERFACE BOX

DRAWN P. Boyce 04-09-85 CHECKED <i>Paul Pedersen</i> 4/23/85 MECH/ELEC	EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			TITLE OPTION, SERIAL/PARALLEL I/O INTERFACE	
PROJ. ENG. P. BOYCE	SIZE A	CODE ID 53938	DRAWING NUMBER 200737-201	REVISION A1 SHEET 1 OF 1	



TIME=17:07

RUN DATE=06/20/90

EVANS + SUTHERLAND

RPT ID=242 PAGE 1

MAINTENANCE PARTS LIST

ASSEMBLY: PL 203130-100

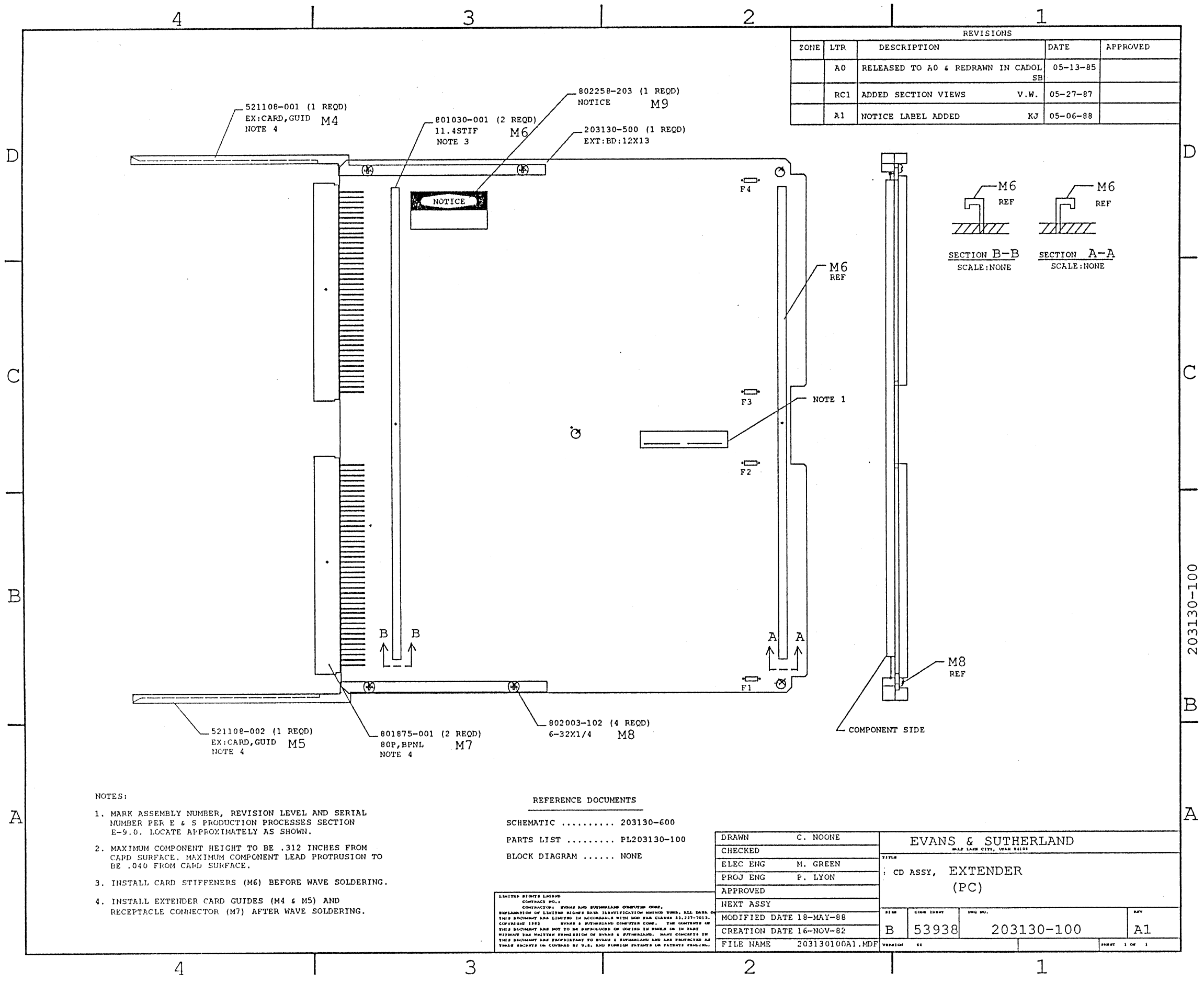
REV: A1 = AB

DESC: CARD ASY, EXTENDER (PC)

ITEM/REFERENCE DESIGNATORS	SHORT DESCRIPTION	CAGE CODE	MANUFACTURER NAME	MFG PART NUMBER	E/S PART NUMBER	QTY/ ASSY
	BD,P02R EXT:BD:12X13	53938	EVANS & SUTHERLAND.	203130-500	203130-500	1
F1 F2 F3 F4	FU,PICO FUSE 5A	75915	LITTELFUSE TRACOR INC.	251 005 (5A,AXIAL)	802375-050	4
M4	HW,GUID EX:CARD,GUID	53938	EVANS & SUTHERLAND.	521108-001	521108-001	1
M5	HW,GUID EX:CARD,GUID	53938	EVANS & SUTHERLAND.	521108-002	521108-002	1
M6	*SCD*STIF,PC,TIN/BRAS	53495	COASTAL INDUSTRIES INC.	BDS2343204034060019T	801030-001	2
M7	CN,CARD 80P,BPNL	0AAS0	BEVMAR INDUSTRIES INC.	1402500040	801875-001	2
M8	HW,SCR 6-32X1/4	N/A	DISTRIBUTORS	6-32X1/4 (M-P-PH-SS)	802003-102	4
M9	HW,LBL NOTICE	N/A	3P INC	*SCD*802258-203	802258-203	1

8 ITEMS LISTED





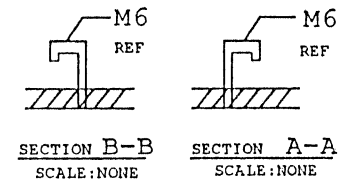
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0 & REDRAWN IN CADOL SB	05-13-85	
	RC1	ADDED SECTION VIEWS	V.W. 05-27-87	
	A1	NOTICE LABEL ADDED	KJ 05-06-88	

521108-001 (1 REQD)
EX: CARD, GUID M4
NOTE 4

801030-001 (2 REQD)
11.4STIF M6
NOTE 3

802258-203 (1 REQD)
NOTICE M9

203130-500 (1 REQD)
EXT:BD:12X13



521108-002 (1 REQD)
EX: CARD, GUID M5
NOTE 4

801875-001 (2 REQD)
80P, BPNL M7
NOTE 4

802003-102 (4 REQD)
6-32X1/4 M8

- NOTES:
1. MARK ASSEMBLY NUMBER, REVISION LEVEL AND SERIAL NUMBER PER E & S PRODUCTION PROCESSES SECTION E-9.0. LOCATE APPROXIMATELY AS SHOWN.
 2. MAXIMUM COMPONENT HEIGHT TO BE .312 INCHES FROM CARD SURFACE. MAXIMUM COMPONENT LEAD PROTRUSION TO BE .040 FROM CARD SURFACE.
 3. INSTALL CARD STIFFENERS (M6) BEFORE WAVE SOLDERING.
 4. INSTALL EXTENDER CARD GUIDES (M4 & M5) AND RECEPTACLE CONNECTOR (M7) AFTER WAVE SOLDERING.

REFERENCE DOCUMENTS

SCHEMATIC 203130-600

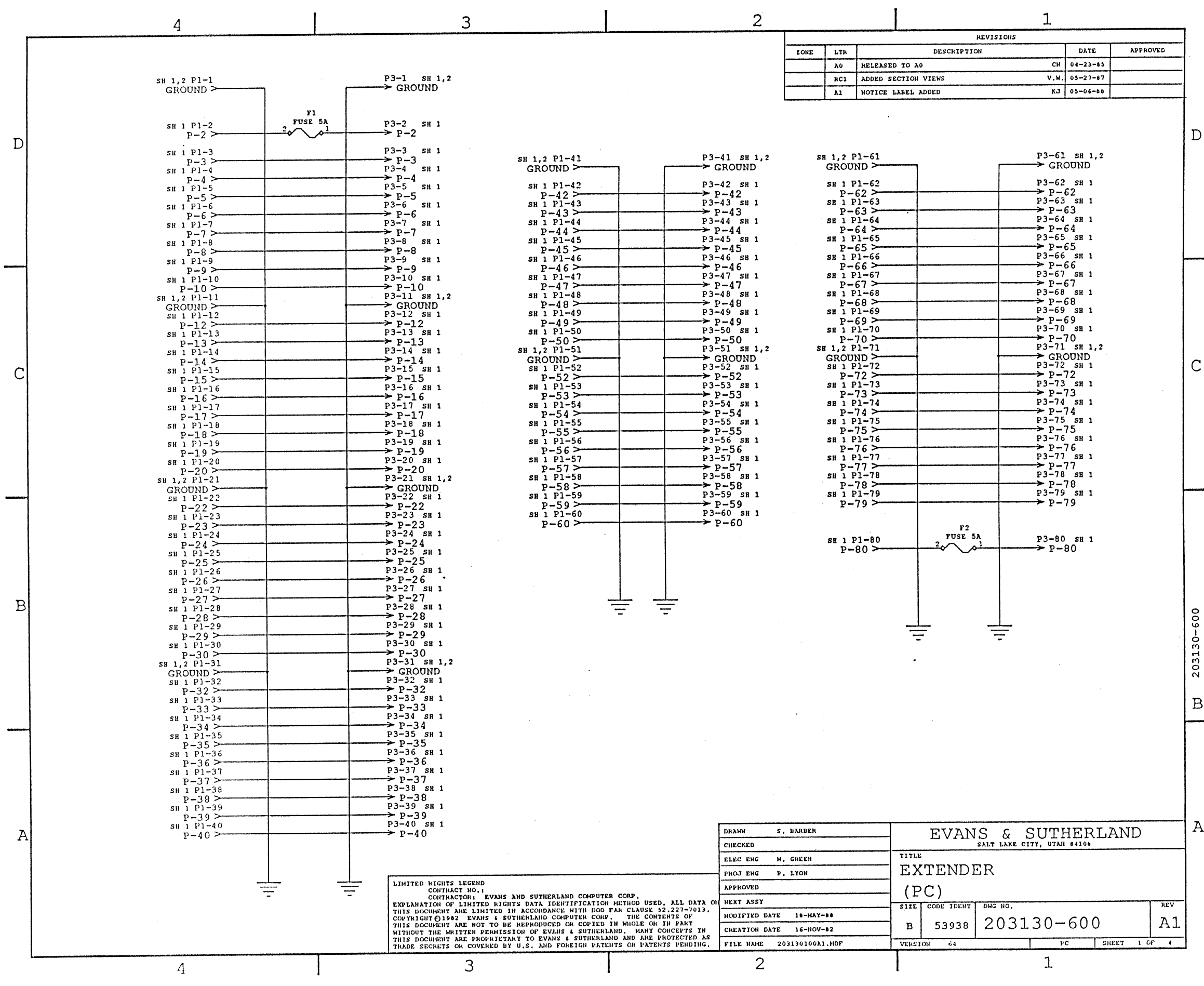
PARTS LIST PL203130-100

BLOCK DIAGRAM NONE

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DRAWN	C. NOONE	EVANS & SUTHERLAND <small>MAY LAKE CITY, UTAH 84103</small>		
CHECKED		TITLE		
ELEC ENG	M. GREEN	CD ASSY, EXTENDER		
PROJ ENG	F. LYON	(PC)		
APPROVED		ITEM	CDR NUMBER	DRG NO.
NEXT ASSY		B	53938	203130-100
MODIFIED DATE	18-MAY-88	REV	A1	
CREATION DATE	16-NOV-82	SHEET 1 OF 1		
FILE NAME	203130100A1.MDF			





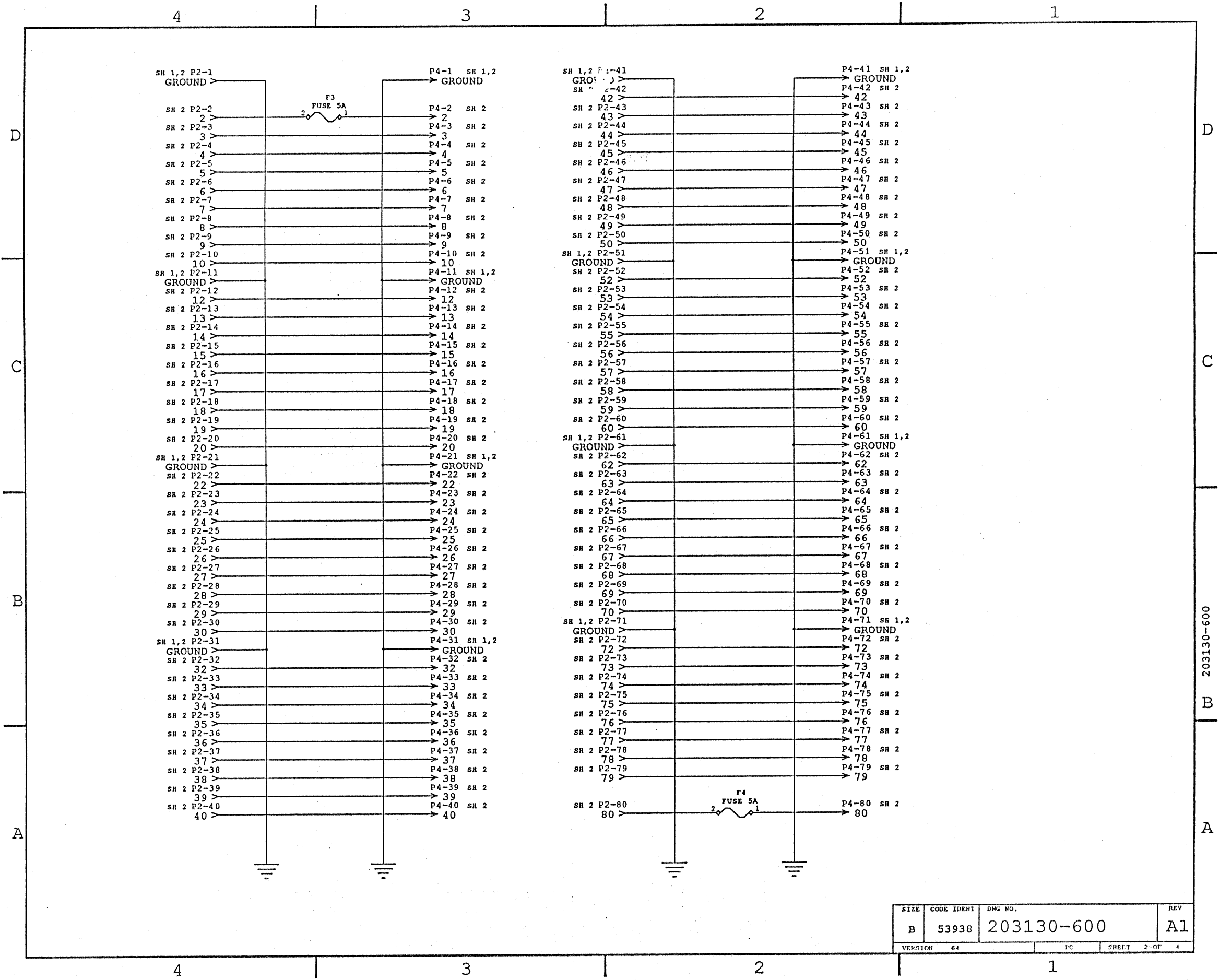
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A0	RELEASED TO A0	CN 04-23-85	
	RC1	ADDED SECTION VIEWS	V.W. 03-27-87	
	A1	NOTICE LABEL ADDED	KJ 05-06-88	

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DRAWN	S. BARBER
CHECKED	
ELEC ENG	H. GREEN
PROJ ENG	P. LYON
APPROVED	
NEXT ASSY	
MODIFIED DATE	18-MAY-88
CREATION DATE	16-NOV-82
FILE NAME	203130100A1.HDF

EVANS & SUTHERLAND SALT LAKE CITY, UTAH 84108			
TITLE EXTENDER (PC)			
SIZE	CODE IDENT	DWG NO.	REV
B	53938	203130-600	A1
VERSION	64	PC	SHEET 1 OF 4

203130-600 B



203130-600

SIZE	CODE IDENT	DWG NO.	REV
B	53938	203130-600	A1
VERSION	64	FC	SHEET 2 OF 4

4					3					2					1				
Unit	Pin	Type	String	Sheet	Unit	Pin	Type	String	Sheet	Unit	Pin	Type	String	Sheet	Unit	Pin	Type	String	Sheet
P1	1	In	GROUND	1 D4	P2	13	In	13	2 C4	P3	25	Out	P-25	1 B3	P4	37	Out	37	2 A3
P1	2	In	P-2	1 D4	P2	14	In	14	2 C4	P3	26	Out	P-26	1 B3	P4	38	Out	38	2 A3
P1	3	In	P-3	1 D4	P2	15	In	15	2 C4	P3	27	Out	P-27	1 B3	P4	39	Out	39	2 A3
P1	4	In	P-4	1 D4	P2	16	In	16	2 C4	P3	28	Out	P-28	1 B3	P4	40	Out	40	2 A3
P1	5	In	P-5	1 D4	P2	17	In	17	2 C4	P3	29	Out	P-29	1 B3	P4	41	Out	GROUND	2 D2
P1	6	In	P-6	1 D4	P2	18	In	18	2 C4	P3	30	Out	P-30	1 B3	P4	42	Out	42	2 D2
P1	7	In	P-7	1 D4	P2	19	In	19	2 C4	P3	31	Out	GROUND	1 B3	P4	43	Out	43	2 D2
P1	8	In	P-8	1 D4	P2	20	In	20	2 C4	P3	32	Out	P-32	1 B3	P4	44	Out	44	2 D2
P1	9	In	P-9	1 D4	P2	21	In	GROUND	2 C4	P3	33	Out	P-33	1 B3	P4	45	Out	45	2 D2
P1	10	In	P-10	1 C4	P2	22	In	GROUND	2 C4	P3	34	Out	P-34	1 B3	P4	46	Out	46	2 D2
P1	11	In	GROUND	1 C4	P2	23	In	23	2 B4	P3	35	Out	P-35	1 A3	P4	47	Out	47	2 D2
P1	12	In	P-12	1 C4	P2	24	In	24	2 B4	P3	36	Out	P-36	1 A3	P4	48	Out	48	2 D2
P1	13	In	P-13	1 C4	P2	25	In	25	2 B4	P3	37	Out	P-37	1 A3	P4	49	Out	49	2 D2
P1	14	In	P-14	1 C4	P2	26	In	26	2 B4	P3	38	Out	P-38	1 A3	P4	50	Out	50	2 D2
P1	15	In	P-15	1 C4	P2	27	In	27	2 B4	P3	39	Out	P-39	1 A3	P4	51	Out	GROUND	2 C2
P1	16	In	P-16	1 C4	P2	28	In	28	2 B4	P3	40	Out	P-40	1 A3	P4	52	Out	52	2 C2
P1	17	In	P-17	1 C4	P2	29	In	29	2 B4	P3	41	Out	GROUND	1 D2	P4	53	Out	53	2 C2
P1	18	In	P-18	1 C4	P2	30	In	30	2 B4	P3	42	Out	P-42	1 D2	P4	54	Out	54	2 C2
P1	19	In	P-19	1 C4	P2	31	In	GROUND	2 B4	P3	43	Out	P-43	1 D2	P4	55	Out	55	2 C2
P1	20	In	P-20	1 C4	P2	32	In	GROUND	2 B4	P3	44	Out	P-44	1 D2	P4	56	Out	56	2 C2
P1	21	In	GROUND	1 C4	P2	33	In	GROUND	2 B4	P3	45	Out	P-45	1 D2	P4	57	Out	57	2 C2
P1	22	In	P-22	1 B4	P2	34	In	GROUND	2 B4	P3	46	Out	P-46	1 C2	P4	58	Out	58	2 C2
P1	23	In	P-23	1 B4	P2	35	In	GROUND	2 B4	P3	47	Out	P-47	1 C2	P4	59	Out	59	2 C2
P1	24	In	P-24	1 B4	P2	36	In	GROUND	2 B4	P3	48	Out	P-48	1 C2	P4	60	Out	60	2 C2
P1	25	In	P-25	1 B4	P2	37	In	GROUND	2 B4	P3	49	Out	P-49	1 C2	P4	61	Out	GROUND	2 C2
P1	26	In	P-26	1 B4	P2	38	In	GROUND	2 B4	P3	50	Out	P-50	1 C2	P4	62	Out	62	2 C2
P1	27	In	P-27	1 B4	P2	39	In	GROUND	2 B4	P3	51	Out	GROUND	1 C2	P4	63	Out	63	2 C2
P1	28	In	P-28	1 B4	P2	40	In	GROUND	2 B4	P3	52	Out	P-52	1 C2	P4	64	Out	64	2 B2
P1	29	In	P-29	1 B4	P2	41	In	GROUND	2 B4	P3	53	Out	P-53	1 C2	P4	65	Out	65	2 B2
P1	30	In	P-30	1 B4	P2	42	In	GROUND	2 B4	P3	54	Out	P-54	1 C2	P4	66	Out	66	2 B2
P1	31	In	GROUND	1 B4	P2	43	In	GROUND	2 B4	P3	55	Out	P-55	1 C2	P4	67	Out	67	2 B2
P1	32	In	P-32	1 B4	P2	44	In	GROUND	2 B4	P3	56	Out	P-56	1 C2	P4	68	Out	68	2 B2
P1	33	In	P-33	1 B4	P2	45	In	GROUND	2 B4	P3	57	Out	P-57	1 C2	P4	69	Out	69	2 B2
P1	34	In	P-34	1 B4	P2	46	In	GROUND	2 B4	P3	58	Out	P-58	1 C2	P4	70	Out	70	2 B2
P1	35	In	P-35	1 A4	P2	47	In	GROUND	2 B4	P3	59	Out	P-59	1 B2	P4	71	Out	GROUND	2 B2
P1	36	In	P-36	1 A4	P2	48	In	GROUND	2 B4	P3	60	Out	P-60	1 B2	P4	72	Out	72	2 B2
P1	37	In	P-37	1 A4	P2	49	In	GROUND	2 B4	P3	61	Out	GROUND	1 B2	P4	73	Out	73	2 B2
P1	38	In	P-38	1 A4	P2	50	In	GROUND	2 B4	P3	62	Out	P-62	1 D1	P4	74	Out	74	2 B2
P1	39	In	P-39	1 A4	P2	51	In	GROUND	2 C2	P3	63	Out	P-63	1 D1	P4	75	Out	75	2 B2
P1	40	In	P-40	1 A4	P2	52	In	GROUND	2 C2	P3	64	Out	P-64	1 D1	P4	76	Out	76	2 B2
P1	41	In	GROUND	1 D3	P2	53	In	GROUND	2 C2	P3	65	Out	P-65	1 D1	P4	77	Out	77	2 B2
P1	42	In	P-42	1 D3	P2	54	In	GROUND	2 C2	P3	66	Out	P-66	1 C1	P4	78	Out	78	2 B2
P1	43	In	P-43	1 D3	P2	55	In	GROUND	2 C2	P3	67	Out	P-67	1 C1	P4	79	Out	79	2 B2
P1	44	In	P-44	1 D3	P2	56	In	GROUND	2 C2	P3	68	Out	P-68	1 C1	P4	80	Out	80	2 B2
P1	45	In	P-45	1 D3	P2	57	In	GROUND	2 C2	P3	69	Out	P-69	1 C1					
P1	46	In	P-46	1 C3	P2	58	In	GROUND	2 C2	P3	70	Out	P-70	1 C1					
P1	47	In	P-47	1 C3	P2	59	In	GROUND	2 C2	P3	71	Out	GROUND	1 C1					
P1	48	In	P-48	1 C3	P2	60	In	GROUND	2 C2	P3	72	Out	P-72	1 C1					
P1	49	In	P-49	1 C3	P2	61	In	GROUND	2 C2	P3	73	Out	P-73	1 C1					
P1	50	In	P-50	1 C3	P2	62	In	GROUND	2 C2	P3	74	Out	P-74	1 C1					
P1	51	In	GROUND	1 C3	P2	63	In	GROUND	2 C2	P3	75	Out	P-75	1 C1					
P1	52	In	P-52	1 C3	P2	64	In	GROUND	2 B2	P3	76	Out	P-76	1 C1					
P1	53	In	P-53	1 C3	P2	65	In	GROUND	2 B2	P3	77	Out	P-77	1 C1					
P1	54	In	P-54	1 C3	P2	66	In	GROUND	2 B2	P3	78	Out	P-78	1 C1					
P1	55	In	P-55	1 C3	P2	67	In	GROUND	2 B2	P3	79	Out	P-79	1 B1					
P1	56	In	P-56	1 C3	P2	68	In	GROUND	2 B2	P3	80	Out	P-80	1 B1					
P1	57	In	P-57	1 C3	P2	69	In	GROUND	2 B2	P4	1	Out	GROUND	1 D3					
P1	58	In	P-58	1 C3	P2	70	In	GROUND	2 B2	P4	2	Out	2	1 D3					
P1	59	In	P-59	1 B3	P2	71	In	GROUND	2 B2	P4	3	Out	3	1 D3					
P1	60	In	P-60	1 B3	P2	72	In	GROUND	2 B2	P4	4	Out	4	1 D3					
P1	61	In	GROUND	1 D2	P2	73	In	GROUND	2 B2	P4	5	Out	5	1 D3					
P1	62	In	P-62	1 D2	P2	74	In	GROUND	2 B2	P4	6	Out	6	1 D3					
P1	63	In	P-63	1 D2	P2	75	In	GROUND	2 B2	P4	7	Out	7	1 D3					
P1	64	In	P-64	1 D2	P2	76	In	GROUND	2 B2	P4	8	Out	8	1 D3					
P1	65	In	P-65	1 D2	P2	77	In	GROUND	2 B2	P4	9	Out	9	1 D3					
P1	66	In	P-66	1 D2	P2	78	In	GROUND	2 A2	P4	10	Out	10	1 D3					
P1	67	In	P-67	1 C2	P2	79	In	GROUND	2 A2	P4	11	Out	GROUND	1 C3					
P1	68	In	P-68	1 C2	P2	80	In	GROUND	2 A2	P4	12	Out	12	1 C3					
P1	69	In	P-69	1 C2	P3	1	Out	GROUND	1 D3	P4	13	Out	13	1 C3					
P1	70	In	P-70	1 C2	P3	2	Out	GROUND	1 D3	P4	14	Out	14	1 C3					
P1	71	In	GROUND	1 C2	P3	3	Out	GROUND	1 D3	P4	15	Out	15	1 C3					
P1	72	In	P-72	1 C2	P3	4	Out	GROUND	1 D3	P4	16	Out	16	1 C3					
P1	73	In	P-73	1 C2	P3	5	Out	GROUND	1 D3	P4	17	Out	17	1 C3					
P1	74	In	P-74	1 C2	P3	6	Out	GROUND	1 D3	P4	18	Out	18	1 C3					
P1	75	In	P-75	1 C2	P3	7	Out	GROUND	1 D3	P4	19	Out	19	1 C3					
P1	76	In	P-76	1 C2	P3	8	Out	GROUND	1 D3	P4	20	Out	GROUND	1 C3					
P1	77	In	P-77	1 C2	P3	9	Out	GROUND	1 C3	P4	21	Out	GROUND	1 C3					
P1	78	In	P-78	1 C2	P3	10	Out	GROUND	1 C3	P4	22	Out	22	1 C3					
P1	79	In	P-79	1 B2	P3	11	Out	GROUND	1 C3	P4	23	Out	23	1 B3					
P1	80	In	P-80	1 B2	P3	12	Out	GROUND	1 C3	P4	24	Out	24	1 B3					
P2	1	In	GROUND	1 D4	P3	13	Out	P-13	1 C3	P4	25	Out	25	1 B3					
P2	2	In	P-2	1 D4	P3	14	Out	P-14	1 C3	P4	26	Out	26	1 B3					
P2	3	In	P-3	1 D4	P3	15	Out	P-15	1 C3	P4	27	Out	27	1 B3					
P2	4	In	P-4	1 D4	P3	16	Out	P-16	1 C3	P4	28	Out	28	1 B3					
P2	5	In	P-5	1 D4	P3	17	Out	P-17	1 C3	P4	29	Out	29	1 B3					
P2	6	In	P-6	1 D4	P3	18	Out	P-18	1 C3	P4	30	Out	30	1 B3					
P2	7	In	P-7	1 D4	P3	19	Out	P-19	1 C3	P4	31	Out	GROUND	1 B3					
P2	8	In	P-8	1 D4	P3	20	Out	P-20	1 C3	P4	32	Out	32	1 B3					
P2	9	In	P-9	1 D4	P3	21	Out	GROUND	1 C3	P4	33	Out	33	1 B3					
P2	10	In	P-10	1 C4	P3	22	Out	P-22	1 B3	P4	34	Out	34	1 B3					
P2	11	In	GROUND	1 C4	P3	23	Out	P-23	1 B3	P4	35	Out	35	1 B3					
P2	12	In	P-12	1 C4	P3	24	Out	P-24	1 B3	P4	36	Out	36	1 A3					

4					3					2					1				
String	Unit	Pin	Type	Sheet	String	Unit	Pin	Type	Sheet	String	Unit	Pin	Type	Sheet	String	Unit	Pin	Type	Sheet
10	P2	10	In	C2	57	P2	57	In	C2	P-15	P1	15	In	C4	P-60	P1	60	In	B3
10	P4	10	Out	C3	57	P4	57	Out	C2	P-15	P3	15	Out	C3	P-60	P3	60	Out	B2
12	P2	12	In	C3	58	P2	58	In	C2	P-16	P1	16	In	C4	P-62	P1	62	In	D2
12	P4	12	Out	C3	58	P4	58	Out	C2	P-16	P3	16	Out	C3	P-62	P3	62	Out	D1
13	P2	13	In	C4	59	P2	59	In	C2	P-17	P1	17	In	C4	P-63	P1	63	In	D2
13	P4	13	Out	C3	59	P4	59	Out	D4	P-17	P3	17	Out	C3	P-63	P3	63	Out	D1
14	P2	14	In	C4	60	P2	60	In	D3	P-18	P1	18	In	C4	P-64	P1	64	In	D2
14	P4	14	Out	C3	60	P4	60	Out	C2	P-18	P3	18	Out	C3	P-64	P3	64	Out	D1
15	P2	15	In	C4	60	P2	60	Out	C2	P-19	P1	19	In	C4	P-65	P1	65	In	D2
15	P4	15	Out	C3	60	P4	60	In	C2	P-19	P3	19	Out	C3	P-65	P3	65	Out	D1
16	P2	16	In	C4	62	P2	62	Out	C2	P-20	P1	20	In	C4	P-66	P1	66	In	D2
16	P4	16	Out	C3	62	P4	62	In	C2	P-20	P3	20	Out	C3	P-66	P3	66	Out	D1
17	P2	17	In	C4	63	P2	63	Out	C2	P-22	P1	22	In	C4	P-67	P1	67	In	D2
17	P4	17	Out	C3	63	P4	63	In	B2	P-22	P3	22	Out	C3	P-67	P3	67	Out	D1
18	P2	18	In	C4	64	P2	64	Out	B2	P-22	P1	22	In	B3	P-68	P1	68	In	C2
18	P4	18	Out	C3	64	P4	64	In	B2	P-22	P3	22	Out	B4	P-68	P3	68	Out	C1
19	P2	19	In	C4	65	P2	65	Out	B2	P-23	P1	23	In	B3	P-69	P1	69	In	C2
19	P4	19	Out	C3	65	P4	65	In	B2	P-23	P3	23	Out	B4	P-69	P3	69	Out	C1
22	P2	22	In	D4	66	P2	66	Out	B2	P-24	P1	24	In	B3	P-70	P1	70	In	D4
22	P4	22	Out	B3	66	P4	66	In	B2	P-24	P3	24	Out	B4	P-70	P3	70	Out	D3
20	P2	20	In	C3	67	P2	67	Out	B2	P-25	P1	25	In	B3	P-72	P1	72	In	C2
20	P4	20	Out	C4	67	P4	67	In	B2	P-25	P3	25	Out	B4	P-72	P3	72	Out	C1
22	P2	22	In	C3	68	P2	68	Out	B2	P-26	P1	26	In	B3	P-73	P1	73	In	C2
22	P4	22	Out	C4	68	P4	68	In	B2	P-26	P3	26	Out	B4	P-73	P3	73	Out	C1
23	P2	23	In	B4	69	P2	69	Out	B2	P-27	P1	27	In	B3	P-74	P1	74	In	C2
23	P4	23	Out	B3	69	P4	69	In	D4	P-27	P3	27	Out	B4	P-74	P3	74	Out	C1
24	P2	24	In	B4	70	P2	70	Out	D3	P-28	P1	28	In	B3	P-75	P1	75	In	C2
24	P4	24	Out	B3	70	P4	70	In	B2	P-28	P3	28	Out	B4	P-75	P3	75	Out	C1
25	P2	25	In	B4	72	P2	72	Out	B2	P-29	P1	29	In	B3	P-76	P1	76	In	C2
25	P4	25	Out	B3	72	P4	72	In	B2	P-29	P3	29	Out	B4	P-76	P3	76	Out	C1
26	P2	26	In	B4	72	P2	72	Out	B2	P-30	P1	30	In	D3	P-77	P1	77	In	C2
26	P4	26	Out	B3	72	P4	72	In	B2	P-30	P3	30	Out	B4	P-77	P3	77	Out	C1
27	P2	27	In	B4	73	P2	73	Out	B2	P-32	P1	32	In	B3	P-78	P1	78	In	C2
27	P4	27	Out	B3	73	P4	73	In	B2	P-32	P3	32	Out	B4	P-78	P3	78	Out	C1
28	P2	28	In	B4	74	P2	74	Out	B2	P-33	P1	33	In	B3	P-79	P1	79	In	B2
28	P4	28	Out	B3	74	P4	74	In	B2	P-33	P3	33	Out	B4	P-79	P3	79	Out	B1
29	P2	29	In	B4	75	P2	75	Out	B2	P-33	P1	33	In	B3	P-80	P1	80	In	D4
29	P4	29	Out	B3	75	P4	75	In	B2	P-33	P3	33	Out	B4	P-80	P3	80	Out	B3
30	P2	30	In	D4	76	P2	76	Out	B2	P-34	P1	34	In	A4	P-80	P1	80	In	B2
30	P4	30	Out	D3	76	P4	76	In	B2	P-34	P3	34	Out	A3	P-80	P3	80	Out	B1
30	P2	30	In	B4	77	P2	77	Out	A2	P-35	P1	35	In	A4	P-9	P1	9	In	C4
30	P4	30	Out	B3	77	P4	77	In	A2	P-35	P3	35	Out	A3	P-9	P3	9	Out	C3
32	P2	32	In	B4	78	P2	78	Out	A2	P-36	P1	36	In	A4					
32	P4	32	Out	B3	78	P4	78	In	A2	P-36	P3	36	Out	A3					
33	P2	33	In	B4	79	P2	79	Out	A2	P-37	P1	37	In	A4					
33	P4	33	Out	B3	79	P4	79	In	A2	P-37	P3	37	Out	A3					
34	P2	34	In	B4	8	P2	8	Out	D4	P-38	P1	38	In	A4					
34	P4	34	Out	B3	8	P4	8	In	D3	P-38	P3	38	Out	A3					
35	P2	35	In	B4	80	P2	80	Out	A2	P-39	P1	39	In	A4					
35	P4	35	Out	B3	80	P4	80	In	A2	P-39	P3	39	Out	A3					
36	P2	36	In	A4	9	P2	9	Out	D4	P-4	P1	4	In	D3					
36	P4	36	Out	A3	9	P4	9	In	D3	P-4	P3	4	Out	D3					
37	P2	37	In	A4	GROUND	P2	11	In	D4	P-40	P1	40	In	A4					
37	P4	37	Out	A3	GROUND	P4	11	Out	C4	P-40	P3	40	Out	A3					
38	P2	38	In	A4	GROUND	P2	21	In	C4	P-42	P1	42	In	D3					
38	P4	38	Out	A3	GROUND	P4	21	Out	B4	P-42	P3	42	Out	D3					
39	P2	39	In	A4	GROUND	P2	41	In	D3	P-43	P1	43	In	D3					
39	P4	39	Out	A3	GROUND	P4	41	Out	C3	P-43	P3	43	Out	D3					
40	P2	40	In	D4	GROUND	P2	61	In	D2	P-44	P1	44	In	D3					
40	P4	40	Out	D3	GROUND	P4	61	Out	C2	P-44	P3	44	Out	D2					
42	P2	42	In	A4	GROUND	P2	11	In	D4	P-45	P1	45	In	D3					
42	P4	42	Out	A3	GROUND	P4	11	Out	C4	P-45	P3	45	Out	D2					
43	P2	43	In	D2	GROUND	P2	21	In	B4	P-46	P1	46	In	C3					
43	P4	43	Out	D2	GROUND	P4	21	Out	B4	P-46	P3	46	Out	C2					
44	P2	44	In	D2	GROUND	P2	41	In	D2	P-47	P1	47	In	C3					
44	P4	44	Out	D2	GROUND	P4	41	Out	D2	P-47	P3	47	Out	C2					
44	P2	44	In	D2	GROUND	P2	51	In	C2	P-48	P1	48	In	C3					
44	P4	44	Out	D2	GROUND	P4	51	Out	C2	P-48	P3	48	Out	C2					
45	P2	45	In	D2	GROUND	P2	71	In	B2	P-49	P1	49	In	C3					
45	P4	45	Out	D2	GROUND	P4	71	Out	D3	P-49	P3	49	Out	C2					
46	P2	46	In	D2	GROUND	P2	11	In	C3	P-50	P1	50	In	D4					
46	P4	46	Out	D2	GROUND	P4	11	Out	C3	P-50	P3	50	Out	D3					
47	P2	47	In	D2	GROUND	P2	21	In	B4	P-50	P1	50	In	C3					
47	P4	47	Out	D2	GROUND	P4	21	Out	B4	P-50	P3	50	Out	C2					
48	P2	48	In	D2	GROUND	P2	31	In	D1	P-52	P1	52	In	C3					
48	P4	48	Out	D2	GROUND	P4	31	Out	C1	P-52	P3	52	Out	C2					
49	P2	49	In	D2	GROUND	P2	61	In	D3	P-53	P1	53	In	C3					
49	P4	49	Out	D2	GROUND	P4	61	Out	D3	P-53	P3	53	Out	C2					
50	P2	50	In	D2	GROUND	P2	11	In	C3	P-54	P1	54	In	C3					
50	P4	50	Out	D2	GROUND	P4	11	Out	C3	P-54	P3	54	Out	C2					
50	P2	50	In	D2	GROUND	P2	21	In	B3	P-54	P1	54	In	C3					
50	P4	50	Out	D2	GROUND	P4	21	Out	B3	P-54	P3	54	Out	C2					
52	P2	52	In	D2	GROUND	P2	31	In	D2	P-55	P1	55	In	C3					
52	P4	52	Out	D2	GROUND	P4	31	Out	C2	P-55	P3	55	Out	C2					
53	P2	53	In	C2	GROUND	P2	51	In	C2	P-56	P1	56	In	C3					
53	P4	53	Out	C2	GROUND	P4	51	Out	B2	P-56	P3	56	Out	C3					
54	P2	54	In	C4	P-10	P2	10	In	C4	P-57	P1	57	In	C3					
54	P4	54	Out	C3	P-10	P4	10	Out	C3	P-57	P3	57	Out	C3					
55	P2	55	In	C4	P-12	P2	12	In	C3	P-58	P1	58	In	C3					
55	P4	55	Out	C3	P-12	P4	12	Out	C3	P-58	P3	58	Out	C3					
55	P2	55	In	C4	P-13	P2	13	In	C4	P-59	P1	59	In	C3					
55	P4	55	Out	C3	P-13	P4	13	Out	C3	P-59	P3	59	Out	C3					
56	P2	56	In	C4	P-14	P2	14	In	C4	P-6	P1	6	In	C3					
56	P4	56	Out	C3	P-14	P4	14	Out	C3	P-6	P3	6	Out	D4					

D
C
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D
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B
A

Connectors by string name			
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B	53938	203130-600	A1
VERSION	64	CS	SHEET 4 OF 4

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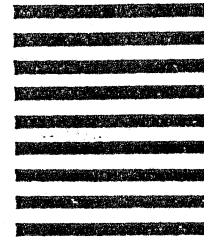
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